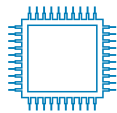




OPTIPLEX 3080 TOWER, SMALL FORM FACTOR AND MICRO

Business desktops with streamlined performance
and essential manageability options to drive
maximum value.



POWER YOUR SUCCESS

Speed through routine tasks seamlessly with 10th generation Intel® Core™ processors and up to 65W CPU for towers. Now supporting double maximum memory than previous generation - up to 64GB DDR4 (32GB DIMMS) - and delivering faster user experiences.



CONVENIENT CONNECTIONS

Create a multi-monitor set up to improve productivity and task accuracy with support for up to three monitors, including native DisplayPort 1.4 and HDMI, and optional VGA, HDMI 2.0b or 2nd DisplayPort.



SECURE SOLUTION

The redesigned OptiPlex 3080 offers more security than ever. Work smart with secure features including TPM 2.0, SED hard drive, standard security lock slot, padlock loop and intrusion switch. Protect your IT investment completely with Dell Endpoint Security.



EFFICIENT DESIGN

New "shift" venting pattern of the chassis maximizes air intake to help your system stay cool. The compact, entry tool-less design, now provides easier access to parts for quicker serviceability, without the need to remove the front bezel. Versatile mounting options enable a personalized, clutter-free workspace.

LET'S MAKE
GENIUS
REAL

Recommended Accessories

OPTIPLEX 3080 TOWER, SMALL FORM FACTOR AND MICRO

CUSTOM STANDS AND MOUNTS



DELL SINGLE MONITOR
ARM - MSA20

Maximize your desk space with this sleek arm that supports both system and monitor mounting.



OPTIPLEX MICRO ALL-IN-ONE
MOUNT FOR DELL
E SERIES MONITORS

This mount allows the Micro to be VESA mounted to select Dell E Series displays.



OPTIPLEX MICRO
DUAL VESA MOUNT WITH
ADAPTER BRACKET

Mount your system between two VESA compatible devices. Includes an adapter box to securely house the system's power adapter.



OPTIPLEX MICRO
DVD+/-RW ENCLOSURE

Mount your system on a wall or under a surface with a VESA-compatible DVD+/-RW enclosure with full optical drive access. Includes an adapter box to securely house the system's power adapter.



OPTIPLEX MICRO VESA MOUNT
WITH ADAPTER BRACKET

Mount your system on a wall or under a desk. Includes an adapter box to securely house the system's power adapter.



OPTIPLEX MICRO ALL-IN-ONE STAND

Small footprint mounting solution adapts to your environment, with cable management and monitor height adjustability, tilt, swivel and pivot functions.



OPTIPLEX SMALL FORM FACTOR
ALL-IN-ONE STAND (COMING SOON)

Small footprint mounting solution featuring integrated monitor power and Ethernet cables, as well as monitor adjustability with height, tilt, swivel and pivot functions.

PURPOSE-BUILT SOLUTIONS



DELL 24
MONITOR - P2419H

23.8" ultrathin bezel optimized for dual display productivity. Easy Arrange feature enables multitasking efficiency and its small base frees valuable workspace.



DELL 22 MONITOR - P2219H

Optimize your workspace with this efficient 21.5" monitor built with an ultrathin bezel, a small footprint and comfort-enhancing features.



DELL PROFESSIONAL
SOUND BAR - AE515M

Optimize conference calls and multimedia streaming with exceptional audio clarity. Minimize background noise while on calls with the dual mic array and echo cancellation feature.



DELL WIRELESS KEYBOARD
AND MOUSE - KM636

Compact design and chiclet keys, this essential desktop solution offers the convenience of wireless and clutter-free performance.



DELL WIRED MOUSE
WITH FINGERPRINT
READER - MS819

Wired mouse with fingerprint reader offers convenient and secure login and online access without passwords.



DELL PRO STEREO
HEADSET - UC350

Communicate clearly with a headset optimized to provide in-person sound quality, certified for Microsoft Skype for Business.



OPTIPLEX CABLE COVERS

Thermally tested custom cable covers offer an easy to install and attractive way to manage cables and secure ports.



OPTIPLEX DUST FILTERS

Custom dust filters safeguard internal components in factory, warehouse, or retail environments.

Intelligence built in. Modernization built on.

Dell Technologies Unified Workspace

We know that having the right device is just the start to a great workday. Employees need intelligent, intuitive and responsive experiences that allow them to work productively and without interruption. According to research, 1 out of every 4 users would question their job and the company they work for if they had a negative experience with their technology.³

Dell Technologies Unified Workspace is transforming the employee experience and ensuring IT has proactive, predictive and automated solutions to deliver on the promise of a modern workday, while simplifying their ability to deploy, secure, manage and support their environment.



DEPLOY

ProDeploy in the Unified Workspace allows IT to move away from traditional, high-touch, manual deployment, and instead, ship devices preconfigured with company apps and settings from the Dell factory directly to their end users—having end users up and working on day one.



SECURE

Dell Trusted Devices provide a foundation to a modern workforce environment with invisible and seamless protection to ensure smarter, faster experiences. End users stay productive and IT stays confident with modern security solutions for the Dell Trusted Device.



MANAGE

Dell Client Command Suite + VMware Workspace ONE offers integrated capabilities that deliver a unified endpoint management experience for IT, enabling them to manage firmware, OS, and apps from one console, while also creating seamless experiences for end users.



SUPPORT

ProSupport resolves hardware issues up to 11x faster than the competition. ProSupport for PCs offers 24x7 access to in-region ProSupport engineers who contact IT when critical issues arise,² so you can focus on what's next, not what just happened. ProSupport Plus helps IT stay a step ahead and virtually eliminate unplanned downtime due to hardware issues. You get all the capabilities of ProSupport, as well as AI-driven alerts to prevent failures and repairs for accidents.³

¹ ESG Research Report. 2019 Digital Work Survey. December 2019.

² Based on a Principled Technologies test report, "Spend Less Time and Effort Troubleshooting Laptop Hardware Failures" dated April 2018. Testing commissioned by Dell, conducted in the United States. Actual results will vary. Full report: <http://facts.pt/L52XKM>.

³ Based on a Principled Technologies test report, "Dell ProSupport Plus with Support Assist warns you about hardware issues so you can fix them before they cause downtime" dated April 2019. Testing commissioned by Dell, conducted in the United States. Actual results will vary. Full report: <http://facts.pt/0xvze8>. Hardware issues detected by SupportAssist include hard drives, solid state drives, batteries and fans.

Features & Technical Specifications

OPTIPLEX 3080 TOWER, SMALL FORM FACTOR AND MICRO

Feature	OptiPlex 3080 Technical Specifications ¹
Processors ¹	Tower, Small Form Factor: Intel® Celeron® G5900, 2 MB Cache, 2 Cores, 2 Threads, 3.4 GHz, 58 W Intel® Pentium® G6400, 4 MB Cache, 2 Cores, 4 Threads, 4.0 GHz, 58 W Intel® Pentium® G6500, 4 MB Cache, 2 Cores, 4 Threads, 4.1 GHz, 58 W 10 th Generation Intel® Core™ i3-10100, 6 MB Cache, 4 Cores, 8 Threads, 3.6 GHz to 4.3 GHz, 65 W 10 th Generation Intel® Core™ i3-10300, 8 MB Cache, 4 Cores, 8 Threads, 3.7 GHz to 4.4 GHz, 65 W 10 th Generation Intel® Core™ i5-10400, 12 MB Cache, 6 Cores, 12 Threads, 2.9 GHz to 4.3 GHz, 65 W 10 th Generation Intel® Core™ i5-10500, 12 MB Cache, 6 Cores, 12 Threads, 3.1 GHz to 4.5 GHz, 65 W 10 th Generation Intel® Core™ i5-10600, 12 MB Cache, 6 Cores, 12 Threads, 3.3 GHz to 4.8 GHz, 65 W Micro: Intel® Celeron® G5900T, 2 MB Cache, 2 Cores, 2 Threads, 3.2 GHz, 35 W Intel® Pentium® Gold G6400T, 4 MB Cache, 2 Cores, 4 Threads, 3.4 GHz, 35 W Intel® Pentium® Gold G6500T, 4 MB Cache, 2 Cores, 4 Threads, 3.5 GHz, 35 W 10 th Generation Intel® Core™ i3-10100T, 6 MB Cache, 4 Cores, 8 Threads, 3.0 GHz to 3.8 GHz, 35 W 10 th Generation Intel® Core™ i3-10300T, 8 MB Cache, 4 Cores, 8 Threads, 3.0 GHz to 3.9 GHz, 35 W 10 th Generation Intel® Core™ i5-10400T, 12 MB Cache, 6 Cores, 12 Threads, 2.0 GHz to 3.6 GHz, 35 W 10 th Generation Intel® Core™ i5-10500T, 12 MB Cache, 6 Cores, 12 Threads, 2.3 GHz to 3.8 GHz, 35 W 10 th Generation Intel® Core™ i5-10600T, 12 MB Cache, 6 Cores, 12 Threads, 2.4 GHz to 4.0 GHz, 35 W
Chipset	Intel® B460 Chipset
Operating System Options ¹	Windows® 10 Home (64-bit) Windows® 10 IoT Enterprise 2019 LTSC (OEM only) Windows® 10 Professional (64-bit) Windows® 10 Pro Education (64-bit) NeoKylin® 7.0 (China only) Ubuntu® 18.04 (64-bit)
Video Card ²	Intel® UHD Graphics 630 Intel® UHD Graphics 610 NVIDIA® GeForce® GT730, 2 GB, GDDR5 (optional, Tower and Small Form Factor only) AMD Radeon™ RX 640, 4 GB, GDDR5 (optional, Tower and Small Form Factor only) AMD Radeon™ R5 430, 2 GB, GDDR5 (optional, Tower and Small Form Factor only)
Memory ^{2,3}	4 GB, 1 x 4 GB, DDR4, 2666 MHz 8 GB, 1 x 8 GB, DDR4, 2666 MHz 8 GB, 2 x 4 GB, DDR4, 2666 MHz 16 GB, 1 x 16 GB, DDR4, 2666 MHz 16 GB, 2 x 8 GB, DDR4, 2666 MHz 32 GB, 1 x 32 GB, DDR4, 2666 MHz 32 GB, 2 x 16 GB, DDR4, 2666 MHz 64 GB, 2 x 32 GB, DDR4, 2666 MHz
Wireless ^{1,4}	Qualcomm® QCA61x4a 802.11ac dual band 2x2 + Bluetooth 5.0 Intel® 3165 802.11ac dual band 1x1 + Bluetooth 4.2 Intel® Wi-Fi 6 AX200 2x2 (Gig+) + Bluetooth 5.1
Ports	Tower: 1 RJ-45 port 10/100/1000 Mbps (rear) 2 USB 2.0 Type-A ports (front) 2 USB 3.2 Gen 1 Type-A port (front) 2 USB 2.0 ports with Smart Power on (rear) 2 USB 3.2 Gen 1 Type-A ports (rear) 1 Universal Audio Jack (front) 1 Line-out audio port (rear, retaksable) 1 DisplayPort 1.4 (rear) 1 HDMI 1.4b port (rear) 1 Serial /PS2 slot (optional) 1 Optional 3rd Video Port (VGA/DP 1.4/HDMI 2.0b) Small Form Factor: 1 RJ-45 port 10/100/1000 Mbps (rear) 2 USB 2.0 Type-A ports (front) 2 USB 3.2 Gen 1 Type-A ports (front) 2 USB 2.0 Type-A ports with Smart Power On (rear) 2 USB 3.2 Gen 1 Type-A ports (rear) 1 Universal Audio Jack (front)

Features & Technical Specifications

OPTIPLEX 3080 TOWER, SMALL FORM FACTOR AND MICRO

Feature	OptiPlex 3080 Technical Specifications ¹
Ports	<ul style="list-style-type: none">1 DisplayPort 1.4 port (rear)1 HDMI 1.4b port (rear)1 Serial/PS2 slot (Optional)1 Optional video port—HDMI 2.0b, DP, or VGA1 Line-out audio port (rear, retaksable) Micro: <ul style="list-style-type: none">1 RJ-45 port 10/100/1000 Mbps (rear)2 USB 3.2 Gen1 Type-A ports (front)2 USB 3.2 Gen1 Type-A ports (rear)1 USB 2.0 port (rear)1 USB 2.0 port with Smart Power on (rear)1 Universal Audio Jack (front)1 Line-out audio port (front, retaksable)1 DisplayPort 1.4 port (rear)1 HDMI 1.4 port (rear)1 VGA Port/DisplayPort 1.4 Port/HDMI 2.0b Port (optional)
Optical Drive	<ul style="list-style-type: none">Optional 8x DVD-ROM 9.5mm ODD (Tower and Small Form Factor)Optional 8x DVD+/-RW 9.5mm ODD (Tower and Small Form Factor)Dell OptiPlex Micro DVD/RW Enclosure Mount (Micro only)
Slots	Tower: <ul style="list-style-type: none">1 full-height PCIe x16 Gen 3 slot2 full-height PCIe x1 Gen 3 slot1 M.2 2230 slot for wireless1 M.2 2230/2280 slot for storage3 SATA slots Small Form Factor: <ul style="list-style-type: none">1 half-height PCIe x16 Gen 3 slot1 half-height PCIe x1 Gen 3 slot1 M.2 2230 slot for wireless1 M.2 2230/2280 slots for storage2 SATA slots - 1x3.5" HDD or 1x2.5" HDD, 1 slim ODD Micro: <ul style="list-style-type: none">1 M.2 2230 slot for wireless1 M.2 2230/2280 slot for storage1 SATA slot - 1x2.5" HDD
Primary Hard Drive ^{1,5}	<ul style="list-style-type: none">3.5-inch, 500 GB, 7200 RPM, SATA HDD (Tower and Small Form Factor only)3.5-inch, 1 TB, 7200 RPM, SATA HDD (Tower and Small Form Factor only)3.5-inch, 2 TB, 7200 RPM, SATA HDD (Tower and Small Form Factor only)3.5-inch, 4 TB, 5400 RPM, SATA HDD (Tower and Small Form Factor only)2.5-inch, 500 GB, 5400 RPM, SATA HDD (Micro only)2.5-inch, 500 GB, 7200 RPM, SATA HDD (All form factors)2.5-inch, 500 GB, 7200 RPM, Opal Self-Encrypting FIPS HDD (All form factors)2.5-inch, 1 TB, 5400 RPM, SATA HDD (All form factors)2.5-inch, 1 TB, 7200 RPM, SATA HDD (All form factors)2.5-inch, 2 TB, 5400 RPM, SATA HDD (All form factors)M.2 2230, 128 GB, Gen 3 PCIe x4 NVMe, Class 35 SSD (All form factors)M.2 2230, 256 GB, Gen 3 PCIe x4 NVMe, Class 35 SSD (All form factors)M.2 2230, 512 GB, Gen 3 PCIe x4 NVMe, Class 35 SSD (All form factors)M.2 2280, 256 GB, Gen 3 PCIe x4 NVMe, Class 40 SSD (All form factors)M.2 2280, 256 GB, Gen 3 PCIe x4 NVMe, Opal Self-Encrypting Class 40 SSD (All form factors)M.2 2280, 512 GB, Gen 3 PCIe x4 NVMe, Class 40 SSD (All form factors)M.2 2280, 512 GB, Gen 3 PCIe x4 NVMe, Opal Self-Encrypting Class 40 SSD (All form factors)M.2 2280, 1 TB, Gen 3 PCIe x4 NVMe, Class 40 SSD (All form factors)M.2 2280, 2 TB, Gen 3 PCIe x4 NVMe, Class 40 SSD (Micro only)M.2 2280, 1 TB, Gen 3 PCIe x4 NVMe, Opal Self-Encrypting Class 40 SSD (Micro only)
Intel® Optane™ Memory	<ul style="list-style-type: none">M.2 2280, 16 GB, Gen 3 PCIe x4, NVMe, Intel® Optane™ Memory

Features & Technical Specifications

OPTIPLEX 3080 TOWER, SMALL FORM FACTOR AND MICRO

Chassis	<table><tr><th>Form Factor</th><th>Tower</th><th>Small Form Factor (SFF)</th><th>Micro</th></tr><tr><td>Dimensions (H x W x D)</td><td>Front Height: 12.77 in. (324.30 mm) Rear Height: 12.77 in. (324.30 mm) Width: 6.06 in. (154.00 mm) Depth: 11.50 in. (292.20 mm)</td><td>Front Height: 11.42 in. (290.00 mm) Rear Height: 11.42 in. (290.00 mm) Width: 3.65 in. (92.60 mm) Depth: 11.53 in. (292.80 mm)</td><td>Front height: 7.16 in. (182.00 mm) Rear height: 7.16 in. (182.00 mm) Width: 1.42 in. (36.00 mm) Depth: 7.03 in. (178.56 mm)</td></tr><tr><td>Min. Weight (lbs/kg)</td><td>11.79 lb (5.35 kg)</td><td>11.07 lb (5.02 kg)</td><td>3.04 lb (1.38 kg)</td></tr><tr><td>Power Supply^{1,6}</td><td>260 W typical 85% Efficient PSU (80 PLUS Bronze) 260 W typical 92% Efficient PSU (80 PLUS Platinum)</td><td>200 W typical 85% Efficient PSU (80 PLUS Bronze) 200 W typical 92% Efficient PSU (80 PLUS Platinum)</td><td>65 W, 4.5 mm external PSU (for 35W CPU)</td></tr></table>				Form Factor	Tower	Small Form Factor (SFF)	Micro	Dimensions (H x W x D)	Front Height: 12.77 in. (324.30 mm) Rear Height: 12.77 in. (324.30 mm) Width: 6.06 in. (154.00 mm) Depth: 11.50 in. (292.20 mm)	Front Height: 11.42 in. (290.00 mm) Rear Height: 11.42 in. (290.00 mm) Width: 3.65 in. (92.60 mm) Depth: 11.53 in. (292.80 mm)	Front height: 7.16 in. (182.00 mm) Rear height: 7.16 in. (182.00 mm) Width: 1.42 in. (36.00 mm) Depth: 7.03 in. (178.56 mm)	Min. Weight (lbs/kg)	11.79 lb (5.35 kg)	11.07 lb (5.02 kg)	3.04 lb (1.38 kg)	Power Supply ^{1,6}	260 W typical 85% Efficient PSU (80 PLUS Bronze) 260 W typical 92% Efficient PSU (80 PLUS Platinum)	200 W typical 85% Efficient PSU (80 PLUS Bronze) 200 W typical 92% Efficient PSU (80 PLUS Platinum)	65 W, 4.5 mm external PSU (for 35W CPU)
Form Factor	Tower	Small Form Factor (SFF)	Micro																	
Dimensions (H x W x D)	Front Height: 12.77 in. (324.30 mm) Rear Height: 12.77 in. (324.30 mm) Width: 6.06 in. (154.00 mm) Depth: 11.50 in. (292.20 mm)	Front Height: 11.42 in. (290.00 mm) Rear Height: 11.42 in. (290.00 mm) Width: 3.65 in. (92.60 mm) Depth: 11.53 in. (292.80 mm)	Front height: 7.16 in. (182.00 mm) Rear height: 7.16 in. (182.00 mm) Width: 1.42 in. (36.00 mm) Depth: 7.03 in. (178.56 mm)																	
Min. Weight (lbs/kg)	11.79 lb (5.35 kg)	11.07 lb (5.02 kg)	3.04 lb (1.38 kg)																	
Power Supply ^{1,6}	260 W typical 85% Efficient PSU (80 PLUS Bronze) 260 W typical 92% Efficient PSU (80 PLUS Platinum)	200 W typical 85% Efficient PSU (80 PLUS Bronze) 200 W typical 92% Efficient PSU (80 PLUS Platinum)	65 W, 4.5 mm external PSU (for 35W CPU)																	
Recommended accessories	<p>Monitors: Qualified with select Dell UltraSharp, Professional, and E-series monitors</p> <p>Keyboards: Dell wired keyboard with multimedia functionality, Dell smart card keyboard, Dell wireless keyboard</p> <p>Mouse: Dell wired mouse, Dell wireless mouse, Dell laser mouse, Dell wired fingerprint reader mouse</p> <p>Audio Speakers: Internal Dell business audio speaker, Dell stereo speaker systems, Dell sound bar for select flat-panel displays, Dell wireless speaker system</p> <p>Audio Headsets: Dell pro stereo headsets</p> <p>Micro Mounting Options: Micro Vertical Stand, Micro VESA Mount, Micro Dual VESA Mount, Micro All-in-One Stand, Micro All-in-One Mount for E Series Displays, Micro DVD+/-RW Enclosure</p> <p>Small Form Factor Mounting Option: Small Form Factor All-in-One Stand (Coming Soon)</p>																			
Productivity Software	Microsoft® Office 30 Day Trial Microsoft® Office Home and Business 2019 Microsoft® Office Professional 2019																			
Software Security	Absolute Control (Pro) 1 Year, Absolute Control (Pro) 3 Years, Absolute Resilience (Prem) 3 Years, Absolute Resilience 1 Year, Absolute Visibility (Std) 1 Year, Absolute Visibility (Std) 3 Years Dell Encryption Enterprise 1 Year, Dell Encryption Enterprise 2 Years, Dell Encryption Personal 1 Year, Dell Encryption Personal 3 Years, Emergency Incident Response, Encryption-SED HDD (Opal FIPS), Endpoint Detection and Response (EDR), Incident Management Retainer, Intel® Guard Technologies & Secure Key: Software Guard (SGX), Data Guard (vPro only), Boot Guard, BIOS Guard (Core CPU's only), OS Guard (Core CPU's only) and Secure Key (i5 or greater only), Intel® Runtime BIOS Resilience (Copper Point) with attestation via Nifty Rock + Intel® TXT, Local HDD data wipe via BIOS ("Secure Erase"), Managed Endpoint Detection and Response, McAfee® Small Business Security 12-month subscription, McAfee® Small Business Security 30 Day Free Trial, McAfee® Small Business Security 36 month Subscription, Next Generation Antivirus (NGAV) OpenXT validation required, SafeData, SafeGuard and Response (powered by VMware Carbon Black and Secureworks), Support of Absolute Persistent Module BIOS agent v2, Threat Detection and Response (TDR), VMware Carbon Black Cloud Endpoint Standard NGAV, B-EDR, 1 Year, VMware Carbon Black Cloud Endpoint Standard NGAV, B-EDR, 3 Years, VMware Carbon Black Cloud Endpoint Standard NGAV,B-EDR+Secureworks TDR (Data center housed in US) 1 Year, VMware Carbon Black Cloud Endpoint Standard NGAV,B-EDR+Secureworks TDR (Data center housed in US) 3 Years																			
Hardware Security	SafeBIOS: includes Dell Off-host BIOS Verification, BIOS Resilience, BIOS Recovery, and additional BIOS Controls; SafeID credential protection; Trusted Platform Module (TPM) 2.0 ⁷ , Microsoft® Windows 10 Device Guard and Credential Guard (Enterprise SKU), Microsoft® Windows Bitlocker, Local hard drive data wipe through BIOS (Secure Erase), Self-Encrypting Storage Drives (Opal, FIPS), China TPM, Intel® Secure Boot, Intel® Authenticate, Physical Security Options: 1 Kensington security-cable slot, 1 Padlock loop, Chassis lock slot support, Chassis Intrusion Switch, Lockable Cable Covers, Smart Card Keyboard (FIPS)																			
Systems Management Options	Dell Client Command Suite for In-Band Systems Management																			
Regulatory ^{9,10}	EPEAT registered configurations available, ENERGY STAR qualified configurations available, CEL, WEEE, Japan Energy Law, South Korea E-standby, South Korea, Eco-label, EU RoHS, China RoHS																			
Warranty	3 Years Hardware Service with Onsite/In-Home Service after Remote Diagnosis ¹¹ , warranty extensions up to 5 years ProSupport with Next Business Day Onsite Service is available to complement certain warranty options ProSupport Plus for Client is available to complement certain warranty options. ¹²																			
Accidental Damage Services ¹³	Accidental Damage Service is available to complement certain warranty options from 3-5 years																			
Configuration Services	Factory Image load, BIOS Customization, Hardware Customization, Asset Tagging and Reporting.																			



OPTIPLEX 3080 TOWER, SMALL FORM FACTOR AND MICRO

Business desktops with streamlined performance
and essential manageability options to drive
maximum value.



Discover professional class desktops at www.dell.com/OptiPlex

1. Offering may vary by region. Some items may be available after product introduction. For complete details, refer to the Technical Guidebook published on www.dell.com.
2. System Memory and Graphics: Significant system memory may be used to support graphics, depending on system memory size and other factors.
3. 4GB or Greater System Memory Capability: A 64-bit operating system is required to support 4GB or more of system memory.
4. Particular versions of Microsoft Windows may not support the full Bluetooth 4.2 functionality
5. Storage: GB means 1 billion bytes and TB equals 1 trillion bytes; actual capacity varies with preloaded material and operating environment and will be less.
6. PSU: This form factor utilizes a more efficient Active Power Factor Correction (APFC) power supply. Dell recommends only Universal Power Supplies (UPS) based on Sine Wave output for APFC PSUs, not an approximation of a Sine Wave, Square Wave, or quasi-Square Wave (see UPS technical specifications). If you have questions please contact the manufacturer to confirm the output type.
7. TPM is not available in all regions.
8. Absolute™ Data & Device Security: An Absolute™ offer. Some conditions apply. Terms and Conditions at www.absolute.com/legal
9. For complete listing of declarations and certifications, refer to the Dell Regulatory and Environmental Datasheet found in the Manuals section of Product Support information at www.dell.com/support/home/us/en/19
10. Please refer to www.epeat.net for specific country registration rating and participation.
11. Limited Hardware Warranty: For copy of Ltd Hardware Warranty, write Dell USA LP, Attn: Warranties, One Dell Way, Round Rock, TX 78682 or see www.dell.com/warranty
12. Onsite Service after Remote Diagnosis: Remote Diagnosis is determination by online/phone technician of cause of issue; may involve customer access to inside of system and multiple or extended sessions. If issue is covered by Limited Hardware Warranty (www.dell.com/warranty) and not resolved remotely, technician and/or part will be dispatched, usually within 1 business day following completion of Remote Diagnosis. Availability varies. Other conditions apply.
13. Dell Services: Availability and terms of Dell Services vary by region. For more information, visit www.dell.com/servicedescriptions



Processador Intel® Core™ i3-10100T

6 M de cache, até 3,80 GHz

Especificações

Especificações de exportação

Essenciais

Coleção de produtos	10ª geração de processadores Intel® Core™ i3
Codinome	Produtos com denominação anterior Comet Lake
Segmento vertical	Desktop
Número do processador	i3-10100T
Status	Launched
Data de introdução	Q2'20
Litografia	14 nm
Condições de uso	PC/Client/Tablet
Preço recomendado para o cliente	\$122.00

Especificações de desempenho

Número de núcleos	4
Nº de threads	8
Frequência baseada em processador	3.00 GHz
Frequência turbo max	3.80 GHz

Cache	6 MB Intel® Smart Cache
Velocidade do barramento	8 GT/s
TDP	35 W
Frequência de TDP Configurável - baixo	2.40 GHz
TDP Configurável - baixo	25 W

Informações complementares

Opções integradas disponíveis	Não
Ficha técnica	Ver agora

Especificações de memória

Tamanho máximo de memória (de acordo com o tipo de memória)	128 GB
Tipos de memória	DDR4-2666
Nº máximo de canais de memória	2
Largura de banda máxima da memória	41.6 GB/s
Compatibilidade com memória ECC ‡	Não

Gráficos de processador

Gráficos do processador ‡	Gráficos UHD Intel® 630
Frequência da base gráfica	350 MHz
Máxima frequência dinâmica da placa gráfica	1.10 GHz
Quantidade máxima de memória gráfica de vídeo	64 GB
Suporte para 4K	Yes, at 60Hz
Resolução máxima (HDMI 1.4)‡	4096 x 2160@30Hz
Resolução máxima (DP)‡	4096 x 2304@60Hz

Resolução máxima (eDP - tela plana integrada)‡	4096 x 2304@60Hz
Suporte para DirectX*	12
Suporte para OpenGL*	4.5
Intel® Quick Sync Video	Sim
Tecnologia Intel InTru 3D	Sim
Tecnologia de Alta Definição Intel® Clear Video	Sim
Intel® Clear Video Technology	Sim
Nº de monitores aceitos ‡	3
ID do dispositivo	0x9BC8

Opções de expansão

Escalabilidade	1S Only
Revisão de PCI Express	3.0
Configurações PCI Express ‡	Up to 1x16, 2x8, 1x8+2x4
Nº máximo de linhas PCI Express	16

Especificações de encapsulamento

Soquetes suportados	FCLGA1200
Configuração máxima da CPU	1
Especificação de solução térmica	PCG 2015B
T _{JUNCTION}	100°C
Tamanho do pacote	37.5mm x 37.5mm

Tecnologias avançadas

Compatível com Intel® Optane™ Memory ‡	Sim
Intel® Thermal Velocity Boost	Não

Tecnologia Intel® Turbo Boost Max 3.0 ‡	Não
Tecnologia Intel® Turbo Boost ‡	2.0
Elegibilidade da plataforma Intel® vPro™ ‡	Não
Tecnologia Hyper-Threading Intel® ‡	Sim
Tecnologia de virtualização Intel® (VT-x) ‡	Sim
Tecnologia de virtualização Intel® para E/S dirigida (VT-d) ‡	Sim
Intel® VT-x com Tabelas de páginas estendidas (EPT) ‡	Sim
Intel® TSX-NI	Não
Intel® 64 ‡	Sim
Conjunto de instruções	64-bit
Extensões do conjunto de instruções	Intel® SSE4.1, Intel® SSE4.2, Intel® AVX2
Estados ociosos	Sim
Tecnologia Enhanced Intel SpeedStep®	Sim
Tecnologias de monitoramento térmico	Sim
Tecnologia de proteção da identidade Intel® Identity ‡	Sim
Programa Intel® da Plataforma de Imagem Estável (SIPP)	Não

Segurança e confiabilidade

Novas instruções Intel® AES	Sim
Chave Segura	Sim
Intel® Software Guard Extensions (Intel®SGX)	Yes with Intel® ME
Intel® OS Guard	Sim
Intel® Trusted Execution Technology ‡	Não
Bit de desativação de execução ‡	Sim
Intel® Boot Guard	Sim

Pedidos e conformidade

Imagens do produto

Produtos compatíveis

Drivers e software

Documentação técnica

Todas as informações fornecidas estão sujeitas a alterações a qualquer momento, sem aviso prévio. A Intel pode alterar o ciclo de vida da fabricação, as especificações e as descrições dos produtos a qualquer momento, sem aviso prévio. As informações aqui contidas são fornecidas "no estado em que se encontram" e a Intel não atribui qualquer declaração ou garantias relacionadas à precisão das informações, nem sobre os recursos dos produtos, disponibilidade, funcionalidade ou compatibilidade dos produtos listados. Para obter mais informações sobre os produtos ou sistemas, entre em contato com o fornecedor do sistema.

As classificações da Intel são apenas para fins informativos e consistem em Export Control Classification Numbers (ECCN — Número de Classificação de Controle de Exportações) e Harmonized Tariff Schedule (HTS — Programa de Tarifas Harmonizadas). Quaisquer usos das classificações da Intel são sem os recursos da Intel e não devem ser interpretados como uma representação ou garantia relacionada ao ECCN ou HTS apropriado. Como exportadora e/ou importadora, sua empresa é responsável por determinar a classificação correta de sua transação

Consulte a Ficha técnica para obter definições formais de propriedades e recursos de produtos.

‡ Este recurso pode não estar disponível em todos os sistemas de computação. Verifique com o fornecedor do sistema para determinar se seu sistema oferece este recurso ou consulte as especificações de seu sistema (motherboard, processador, chipset, alimentação, HDD, controle gráfico, memória, BIOS, drivers, monitor de máquina virtual [VMM], software de plataforma e/ou sistema operacional) para saber sobre a compatibilidade do recurso. A funcionalidade, o desempenho e outros benefícios deste recurso podem variar, dependendo das configurações do sistema.

Os números dos processadores Intel não são indicação de desempenho. Os números dos processadores diferenciam recursos dentro de cada família de processador, e não entre famílias diferentes de processadores. Consulte <https://www.intel.com.br/content/www/br/pt/processors/processor-numbers.html>

para obter mais detalhes.

SKUs "anunciados" ainda não estão disponíveis. Favor consultar a data de lançamento para a disponibilidade no mercado.

Consulte <https://www.intel.com.br/content/www/br/pt/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper+threading>

para obter mais informações, incluindo detalhes sobre quais processadores são compatíveis com a Tecnologia Hyper-Threading Intel®.

O TDP máximo e do sistema se baseiam nos piores casos. O TDP real pode ser inferior, se nem todas as E/Ss para chipsets forem utilizadas.

Frequência máxima de turbo refere-se à frequência máxima do processador de núcleo único que pode ser atingida com a Tecnologia Intel® Turbo Boost. Mais informações estão disponíveis no site <https://www.intel.com/content/www/br/pt/architecture-and-technology/turbo-boost/turbo-boost-technology.html>

Os processadores compatíveis com a computação de 64 bits na arquitetura Intel® requerem BIOS habilitados para arquitetura Intel 64.



DELL - D14U : OptiPlex 7080 Micro

Specifications

Brand Name:	DELL
Model Name:	D14U
Model Number:	OptiPlex 7080 Micro
Type:	Desktop
Notebooks, Desktops, Integrated Computers, Slate/Tablets, Two-in-one Notebooks, and Portable All-in-ones Category for TEC (Typical Energy Consumption) Criteria:	Desktop D1,Desktop D2,Desktop I1 or Integrated Desktop 1,Desktop I2 or Integrated Desktop 2
Category I1: Processor Brand:	Intel
Category I1: Processor Name:	Pentium G6400
Category I1: Operating System Name:	Ubuntu,Windows 10
Category I1: Base Processor Speed Per Core (GHz):	4.0
Category I1: Default Low-power Mode:	Sleep Mode
Category I1: Long Idle Power Used for Sleep Mode:	No
Category I1: Off Mode (watts):	0.4
Category I1: Sleep Mode (watts):	1.0
Category I1: Long Idle (watts):	5.8
Category I1: Short Idle (watts):	6.3
Category I1: Base TEC Allowance (kWh):	26
Category I1: Functional Adder Allowances (kWh):	19.2
Category I1: TEC of Model (kWh):	26.3
Category I2: Processor Brand:	Intel
Category I2: Processor Name:	Core i7-10700
Category I2: Operating System Name:	Ubuntu,Windows 10
Category I2: Physical CPU Cores (count):	8
Category I2: Base Processor Speed Per Core (GHz):	2.9
Category I2: System Memory (GB):	64
Category I2: Default Low-power Mode:	Sleep Mode
Category I2: Long Idle Power Used for Sleep Mode:	No
Category I2: Off Mode (watts):	0.4

Category I2: Sleep Mode (watts):	1.0
Category I2: Long Idle (watts):	6.1
Category I2: Short Idle (watts):	7.3
Category I2: Base TEC Allowance (kWh):	46
Category I2: Functional Adder Allowances (kWh):	19.2
Category I2: TEC of Model (kWh):	29.1
Category D1: Processor Brand:	Intel
Category D1: Processor Name:	Pentium G6400T
Category D1: Operating System Name:	Ubuntu,Windows 10
Category D1: Physical CPU Cores (count):	2
Category D1: Base Processor Speed Per Core (GHz):	3.4
Category D1: System Memory (GB):	64
Category D1: Default Low-power Mode:	Sleep Mode
Category D1: Long Idle Power Used for Sleep Mode:	No
Category D1: Off Mode (watts):	0.4
Category D1: Sleep Mode (watts):	1.0
Category D1: Long Idle (watts):	11.8
Category D1: Short Idle (watts):	12.7
Category D1: Base TEC Allowance (kWh):	35
Category D1: Functional Adder Allowances (kWh):	51.7
Category D1: TEC of Model (kWh):	48.1
Category D2: Processor Brand:	Intel
Category D2: Processor Name:	Core i7-1700T
Category D2: Operating System Name:	Ubuntu,Windows 10
Category D2: Physical CPU Cores (count):	8
Category D2: Base Processor Speed Per Core (GHz):	16.0
Category D2: System Memory (GB):	64
Category D2: Default Low-power Mode:	Sleep Mode
Category D2: Long Idle Power Used for Sleep Mode:	No
Category D2: Off Mode (watts):	0.4
Category D2: Sleep Mode (watts):	1.1
Category D2: Long Idle (watts):	11.9
Category D2: Short Idle (watts):	12.6
Category D2: Base TEC Allowance (kWh):	45
Category D2: Functional Adder Allowances (kWh):	51.7
Category D2: TEC of Model (kWh):	48.3
Sleep Mode Default Time Upon Shipment (min.):	30

Display Sleep Mode Default Time Upon Shipment (min.):	10
WOL (Wake on LAN) From Sleep:	Shipped Disabled
Will the Speed of Any Active 1 GB/s or Higher Ethernet Network Links be Reduced to Less Than 1 GB/s When Transitioning to Sleep or Off Mode?:	Yes
WLAN Capability:	Yes
Ethernet Capability:	Yes
Bluetooth Capability:	Yes
Touch Screen:	No
Date Available On Market:	2020-05-01
Date Certified:	2020-03-17
Markets:	United States, Switzerland, Taiwan, Japan, Canada
Category I1: Physical CPU Cores (count):	2
ENERGY STAR Certified:	Yes

Additional Model Information

D14U,OptiPlex 3080 Micro,; D14U,OptiPlex 5080 Micro,

Captured On:
09/18/2020

[RETURN TO SEARCH](#)

OptiPlex 3080 Micro (65W adapter)

Product Summary:

Product Type:	Desktop
Registered In:	Brazil
Manufacturer:	DELL
EPEAT Tier:	Gold
Registration Date:	2020-09-15
Product Status:	Active
Exceptions:	ENERGY STAR compliant power management features and power supply. Computers without such features may not conform to 4.5.1.1 ENERGY STAR and would not be in conformance with EPEAT.
Manufacturer Part Number(s):	N/A

COMPUTERS & DISPLAYS

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria. [Click here](#) to see a list of the required criteria for this product category.

This product has met the necessary **required criteria**.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at

EPEAT Bronze

Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at

EPEAT Silver

Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at

EPEAT Gold

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
4.1 Substance Management	10 / 16
4.4 Product longevity/life-cycle extension	2 / 2
4.5 Energy Conservation	2 / 3
4.7 Packaging	1 / 2
4.8 Life cycle assessment and carbon footprint	6 / 6
4.9 Corporate Environmental Performance	6 / 9

TOTAL OPTIONAL CRITERIA SCORE: 33 / 44

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please [contact us](#).

[EPEAT PROGRAM POLICY MANUAL](#) [SUPPORT](#)

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product
Produit

Desktop Computer

Name and address of the applicant
Nom et adresse du demandeurDell Inc.
One Dell Way, Round Rock
TX 78682
USAName and address of the manufacturer
Nom et adresse du fabricantDell Inc.
One Dell Way, Round Rock
TX 78682
USAName and address of the factory
Nom et adresse de l'usineNote: When more than one factory, please report on page 2
Note: Lorsque il y plus d'une usine, veuillez utiliser la deuxième page☒ Additional information on page 2Ratings and principal characteristics
Valeurs nominales et caractéristiques principales3.34A or 4.62A or 6.7A or 9.23A 19.5Vdc (For D14U; D14U...);
3.34A or 4.62A 19.5Vdc (For OptiPlex 3080 Micro.....);
4.62A or 6.7A 19.5Vdc (For OptiPlex 5080 Micro.....);
4.62A or 6.7A or 9.23A 19.5Vdc (For OptiPlex 7080 Micro.....)
Cl. III.

DELL

Trademark (if any)
Marque de fabrique (si elle existe)Type of Manufacturer's Testing Laboratories used
Type de programme du laboratoire d'essais constructeurModel / Type Ref.
Ref. De typeD14U; D14U...; OptiPlex 3080 Micro.....; OptiPlex 5080 Micro.....;
OptiPlex 7080 Micro.....Additional information (if necessary may also be reported on page 2)
Les informations complémentaires (si nécessaire, peuvent être indiqués sur la deuxième page)

The dots '.' in model name can be 0 to 9, A to Z, a to z, - or blank, for marketing purpose only.

☐ Additional information on page 2A sample of the product was tested and found to be in conformity with
Un échantillon de ce produit a été essayé et a été considéré conforme à la

IEC 60950-1:2005, IEC 60950-1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013

As shown in the Test Report Ref. No. which forms part of this Certificate
Comme indiqué dans le Rapport de tests numéro de référence qui constitue partie de ce Certificat

393427

This certificate replaces the certificate NO110096/A1, due to technical modification.

This CB Test Certificate is issued by the National Certification Body
Ce Certificat de test OC est établi par l'Organisme National de CertificationPhilip Pedersen vei 11,
NO-1366 Lysaker, Norway

Date: 24-02-2020

Jiyea Gim

Signature: Jiyea Gim
Certification Department

Dell Global Business Center Sdn. Bhd.
Plot 76, Mukim 11, Bukit Tengah Industrial Park, 14000
Bukit Mertajam, Penang
Malaysia

Dell International Services India Private Limited.
Sriperumbudur Hi-Tech SEZ, SIPCOT Industrial
Park, Sriperumbudur Phase-II Sunguvarchatram
Post, Sirumangadu Village, Sriperumbudur Taluk,
Kancheepuram, Tamil Nadu 602106
India

PCE TECHNOLOGY DE JUAREZ S.A. DE C.V.
Blvd. Internacional #888, San Jeronimo CD Juarez,
Chihuahua C.P. 32505
Mexico

Dell (Xiamen) Company Limited
No. 2366 Jinshang Road, Information Photo-Electronic
Park, Xiamen Torch Hi-tech Zone 361000
China

Dell Computadores do Brasil Ltda.
Av. Emancipação, 5000 13184-654–Hortolândia–SP
Brazil

Dell Products (Poland) Sp. z o.o.
ul. Informatyczna 1, 92-410 Lodz
Poland

Dell (China) Company Limited
No. 2388 Jinshang Road, Information Photo-Electronic
Park, Xiamen Torch Hi-tech Zone 361000
China

Dell (Chengdu) Company Limited
No. 800 of Tianqin Road western Hi-tech Zone, Chengdu
611731
China



Philip Pedersen vei 11,
NO-1366 Lysaker, Norway

Date: 24-02-2020

Jiyea Gim

Signature: Jiyea Gim
Certification Department

Fornecedor / Supplier (100120-728)	DELL COMPUTADORES DO BRASIL LTDA Av. Emancipação, 5000 13184-654 – Hortolândia – SP – Brasil CNPJ: 72.381.189/0006-25
Produto Certificado / Certified Product	COMPUTADOR DE MESA / <i>DESKTOP COMPUTER</i> COMPUTADOR PESSOAL / <i>PERSONAL COMPUTER</i>
Família de produto / Product's Family	N/A
Modelo - Tipo / Model - Type	Modelo(s)/Model(s): D18M(refer to appendix C), D11S(refer to appendix D), D10U(refer to appendix B), D13S (refer to appendix A), D13U(refer to appendix E), D15S(refer to appendix F), D14U(refer to appendix G) Tipo(s)/Type(s): D18M...(refer to appendix C), D11S... (refer to appendix D), D10U... (refer to appendix B), D13S... (refer to appendix A), D13U...(refer to appendix E) , D15S...(refer to appendix F), D14U...(refer to appendix G)
Descrição (Nome comercial) / Description (Brand Name)	DELL
Marca comercial / Trademark	DELL
Lote ou No. de Série / Lot or Serial Number	N/A
Normas Aplicáveis / Applicable standards	REFER TO APPENDIX PAGE
Programa de certificação ou Portaria / Certification Program or Decree	PORTARIA NO. 170/2012 / DECREE NO. 170/2012 PORTARIA NO. 407/2015 / DECREE NO. 407/2015
Relatório de Avaliação e Ensaio / Assessment and Test Report #	BR2263, Vol. 1, Sec. 69; Sec 70; Sec 71; Sec 81; Sec 122 ; Sec. 129 ; Sec. 131
Concessão Para / Concession for	Ostentar o Selo de Identificação da Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado. <i>Bearing the Conformity Identification Seal of the Brazilian System of Evaluation of Conformity (SBAC) on the product covered by this certificate.</i>
Revisão / Revision date	06 de abril de 2020 / April 06, 2020
Validade / Expire date	05 de Julho de 2020 / July 5, 2020

Delzuite M. Ferreira Jr.
Gerente de Operações /
Operations Manager

UL do Brasil Certificações, organismo acreditado pela Coordenação Geral de Acreditação do INMETRO – CGCRE, segundo o registro No.: OCP-0029 confirma que o produto está em conformidade com a(s) Norma(s) e programas ou Portarias acima descritas.
UL do Brasil Certificações, Certification Body accredited by Coordenação Geral de Acreditação do INMETRO - CGCRE according to the register No.: OCP-0029 confirms that the product is in compliance with the standards and certification Program or Decree above mentioned.



Solicitante / Applicant **Dell Inc.**
(654965-006) One Dell Way
Mail Stop PS4-30
Round Rock, TX 78682-0001

Fabricante / Manufacture **DELL COMPUTADORES DO BRASIL LTDA**
(100120-728) AV. EMANCIPAÇÃO, 5000
13184-654 – HORTOLÂNDIA – SP – BRASIL

MARCAÇÃO / MARKING: Marca do fabricante, modelo e características elétricas.

LISTA DE ACESSÓRIOS / LIST OF ACCESSORIES: N/A

MODELO DE CERTIFICAÇÃO / CERTIFICATION MODEL: 5

VERSÃO DO PROJETO DO PRODUTO / PRODUCT DESIGN VERSION: N/A

DOCUMENTOS / DOCUMENTS:

Título / <i>Title</i>	Número / <i>Number</i>	Revisão / <i>Revision</i>	Data emissão / <i>Issuing Date</i>	Data de Realização <i>Performance</i> <i>Date</i>
<<Dados da Auditoria / Audit data >> (Fornecedor & Fabricante / Supplier & Manufacture) DELL COMPUTADORES DO BRASIL LTDA	BR2263	0	2019-02-22	N/A

Appendix A (Modelo/Model: D13S, D13S...)

(The dots "." in model name can be 0 to 9, A to Z, a to z or blank for marketing purpose)

CARACTERÍSTICAS NOMINAIS / RATINGS:

I/P: 3A, 100-240V~, 50-60Hz or 1.5A, 200-240V~, 50-60Hz or 6/3A, 100-127/200-240V~, 50-60Hz (For Main Board 1, 2)
 3.2A, 100-240V~, 50-60Hz or 1.6A, 200-240V~, 50-60Hz or 6.6/3.3A, 100-127/200-240V~, 50-60Hz (For Main Board 3)

Class I; IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 Class B, CISPR 32:2015 Class B, CISPR 24: 2010 +A1:2015, IEC 61000-3-2: 2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Front bezel (Decorative part)	Interchangeable	Interchangeable	HB min.	UL94	UL
Fire enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	—	Tested in the equip.
Power supply for building-in (PSU) (For Main Board 1)	Lite-On Technology Corp. (DELL)	L180ES-00, L180AS-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: 12A max. +12VA, 14A max. +12VB, 2.5A max. +12VSB. Max. continuous total DC output power shall not exceed 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85417), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H180AS-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: 12A +12VADC, 14A +12VBDC, 2.5A +12VSB. Max. output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85308), N, UL
	Delta Electronics Inc. (DELL)	D180ES-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA/12A, +12VB/14A,+12VSB/2.5A, OUTPUT MAX POWER 180W.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85131), N, UL
	Acbel Polytech Inc. (DELL)	AC180ES-00, AC180AS-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: 12.0A +12.0VA; 14.0A +12.0VB; 2.5A +12.0VSB Total power 180W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85537), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B180AS-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: 12A +12VA, 14A +12VB, 2.5A +12VSB; TOTAL 180W MAX	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85471), N, UL
	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU180AS-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12Vdc 12A, +12VBdc 14A, +12VSBdc 2.5A, Max. Output power: 180W.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85150), N, UL
	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU180ES-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12Vdc 12A, +12VBdc 14A, +12VSBdc 2.5A, Max. Output power: 180W.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85151), N, UL
	Flextronics sales & Marketing(A-P) Ltd. (DELL)	F180ES-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; +12VSB, 2.5A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85203), N, UL
	Lite-On Technology Corp. (DELL)	L180AS-01	I/P:200-240Vac, 1.5A, 50-60Hz, Cl. I. DC-outputs: 12A max. +12VA, 14A max. +12VB, 2.5A max. +12VSB. Max. continuous total DC output power shall not exceed 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85417), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B180AS-01	I/P:200-240Vac, 1.5A, 50-60Hz, Cl. I. DC-outputs: 12A +12VA, 14A +12VB, 2.5A +12VSB; TOTAL 180W MAX	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85471), N, UL

Alt. Power supply for building-in (PSU) (For Main Board 2)	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU180ES-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93724), N, UL
	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU180AS-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93724), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H180AS-02	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93345), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H180ES-00	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93345), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B180AS-02	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93497/M1), N, UL
	Lite-On Technology Corp. (DELL)	L180AS-02	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93689), N, UL
	Lite-On Technology Corp. (DELL)	L180ES-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93689), N, UL
	Acbel Polytech Inc. (DELL)	AC180AS-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93603), N, UL
	Acbel Polytech Inc. (DELL)	AC180ES-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93603), N, UL
	Delta Electronics Inc. (DELL)	D180ES-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93538), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B180AS-03	I/P: 200-240Vac, 1.5A, 50-60Hz, Cl. I. DC-outputs: 12A +12VA, 14A +12VB; TOTAL 180W MAX	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93497/M1), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H180AS-03	I/P: 200-240Vac, 1.5A, 50-60Hz, Cl. I. DC-outputs: 12A +12VA, 14A +12VB; TOTAL 180W MAX	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93345), N, UL
	Lite-On Technology Corp. (DELL)	L180AS-03	I/P: 200-240Vac, 1.5A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93689), N, UL
Alt. Power supply for building-in (PSU) (For Main Board 3)	Acbel Polytech Inc. (DELL)	AC200AS-00, AC200EBS-00	I/P: 3.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12.0VA, 14.0A +12.0VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by TUV (Cert. No.: JPTUV-082976-A3), UL
	Chicony Power Technology Co., Ltd. (DELL)	H200AS-00, H200EBS-00	I/P: 3.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12.0VA, 14.0A +12.0VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO99279), UL
	Lite-On Technology Corporation (DELL)	L200EBS-00, L200AS-00	I/P: 3.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12VA, 14.0A +12VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by TUV (Cert. No.: JPTUV-083383), UL

	Bestec Power Electronics Co Ltd (DELL)	B200AS-00	I/P: 1.6A 200-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12.0VA, 14.0A +12.0VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO99400), N, UL
	Delta Electronics, Inc. (DELL)	D200AS-00	I/P: 1.6A 200-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12.0VA, 14.0A +12.0VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by TUV (Cert. No.: JPTUV-083393), UL
	Shenzhen Huntkey Electric Co Ltd (DELL)	HU200AS-00, HU200EBS-00	I/P: 3.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12.0VA, 14.0A +12.0VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by UL/Demko (Cert. No.: DK-67276-UL), N, UL
System Fan (optional)	Sunonwealth Electronic Machine Industry Co., Ltd.	MF80201VX-Q06Z (Z stands for third characters. Each character can be 0-9, A-Z, (,), ., /, - or blank)	12Vdc, 0.2A max., 40.8 CFM(min.)	EN 60950-1/A12, UL 507	TUV, UL
	Foxconn Technology Co., Ltd.	PVA080F12H	12Vdc, 0.36A max., 40 CFM(min.)	EN 60950-1/A12, UL 507	TUV, UL
	Cheng Home Electronics Co., Ltd.	CHB8012XYWZZ ("X" Stands for A, B, C, D, or E, "Y" Stands for B, S or BS, "W" Stands for - or blank, "Z" Stands for 0-9, A-Z or blank)	12Vdc, 0.44A max., 43.5 CFM(min.)	EN 60950-1/A12, UL 507	TUV, UL
	Interchangeable	Interchangeable	12Vdc, 0.44A max., 40 CFM(min.)	EN 60950-1/A12, UL 507	Verify by Nemko or other cert. body, UL.
Optical Disk Drive (Optional)	Toshiba Samsung Storage Technology Korea Corporation	TS-H663*; TS-H662; SH-S222; TS-H652; TS-H653*; SH-S202; SH-S203; SH-S223; SH-S243; SH-S163 (The symbol *** can be any alphanumeric character or blank, not affecting safety)	1.0A, 1.5A, 2.0A or 2.5A 5Vdc, 1.5A, 2.0A or 3.0A 12Vdc, Laser class 1	IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1	CB by Nemko, UL
- Front bezel for each source	Interchangeable	Interchangeable	Max. 2.5/3.0A, 5/12Vdc, Laser class 1 Min. V-1.	IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1 UL 94	Verify by Nemko or other cert. body, UL.
CPU Fan	Sunonwealth Electronic Machine Industry Co., Ltd.	MF80251V2-QZ, (Z stands for 15 characters. Each character stands for one of the following signs: 0-9, A-Z, (,), ., /, -, or blank for marketing purpose only)	12Vdc, 0.3A max., 48.0 CFM(min.)	EN 60950-1: 2006+A11+A1+A12+A2, UL 507	TUV, UL
Alt. CPU Fan	Foxconn Technology Co., Ltd.	PVA080G12Q	12Vdc, 0.65A max., 59.0 CFM(min.)	EN 60950-1: 2006+A11+A1+A12+A2, UL 507	TUV, UL
	Cheng Home Electronics Co., Ltd.	CHA8012XY-ZZ-WW ("X" Stands for A, B, C, D or E, "Y" Stands for B, S or BS, "Z" Stands for 0-9, A-Z or blank, "W" Stands for 0-9, A-Z or blank)	12Vdc, 0.4A max., 51.84 CFM(min.)	EN 60950-1/A12, UL 507	TUV, UL
	Interchangeable	Interchangeable	12Vdc, 0.65A max., 48.0 CFM (min.)	EN 60950-1/A12, UL 507	Verify by Nemko or other cert. body, UL.
RTC Battery (Lithium type)	Jhlih Hong Technology Co Ltd	CR2032	10mA abnormal charging current	UL 1642	UL
	Mitsubishi Electric Home Appliance Co Ltd	CR2032	10mA abnormal charging current	UL 1642	UL
	Vic-Dawn Enterprise Co Ltd	CR2032	10mA abnormal charging current	UL 1642	UL
	Panasonic Corporation, Panasonic Corporation Of North America	CR2032	10mA abnormal charging current	UL 1642	UL
	Mitsubishi Electric Corp	CR2032	10mA abnormal charging current	UL 1642	UL

Hard Disk Drive (HDD) (two provided max.) (Optional) (2.5 or 3.5 inch HDD)	Hitachi Global Storage Technologies Japan Ltd. Seagate Technology International Interchangeable	H Series, D Series ST9 or 2.5 Series or ST with additional suffixes Interchangeable	5Vdc/12Vdc, 1.5A max./2.0A max. 5Vdc, 1.5A max. Max. 1.5/2.0A, 5/12Vdc	IEC 60950-1, UL 60950-1, CSA 60950-1 IEC 60950-1, UL 60950-1, CSA 60950-1 IEC 60950-1, UL 60950-1, CSA 60950-1	CB by TUV-Rh, UL CB by UL, UL. Verify by Nemko or other cert. body, UL.
PCB	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data Realização Performance Date	de /
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	285136	0	2015-05-07	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	295868	0	2015-10-06	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	316905	0	2016-09-30	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	340533	0	2017-10-24	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE236CE	0	2015-06-11	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE236CE-R1	0	2015-10-07	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE236FB	0	2015-06-11	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE236FB-R1	0	2015-10-07	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE492CE	0	2016-11-01	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE492FB	0	2016-11-01	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-17LE696CE	0	2017-11-10	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-17LE696FB	0	2017-11-27	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LS016OS	0	2015-09-18	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LS032OS	0	2016-10-25	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-17LS018OS	0	2017-12-15	N/A	
<<Software / Software>>	N/A				
<<Manual do usuário / User's manual>>	N/A				

Appendix B (Modelo/Model: D10U, D10U...)

(The dots "." in model name can be 0 to 9, A to Z, a to z, or blank, for marketing purpose only)

CARACTERÍSTICAS NOMINAIS / RATINGS:

I/P: 3.34A 19.5Vdc (For Main Board 1, 3, 4, 8); 4.62A 19.5Vdc (For Main Board 7); 6.7A 19.5Vdc (For Main Board 5,6) / Class III; IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 22:2008 / CISPR 32:2012 Class B / CISPR 32:2015 Class B, CISPR 24: 2010 +A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Front bezel (decorate parts)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber Stand	Interchangeable	Interchangeable	HB min.	UL 94	UL
Fire enclosure	Interchangeable	Interchangeable	Metal, min. 0.6 mm thick	IEC 60950-1	Tested in the equip.
Internal plastic	Interchangeable	Interchangeable	V-2 min.	UL 94	UL
PCBs	Inter-changeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Stand (Optional)	Inter-changeable	Interchangeable	HB min.	UL 94	UL
AC/DC Adapter	Acbel (Dell Inc. or DELL) Delta (Dell Inc.) Chicony (Dell Inc. or DELL) Lite-On (DELL) Chicony (DELL) Delta (DELL) Lite-On (DELL)	AA65NM121 DA65NM111-00 HA65NS5-00 LA65NS2-.. The dots "." in model name can be any alphanumeric character including blank, for marketing use only. HA130PM16Z The Z in model name can be 0 to 9, for marketing purpose. DA130PE1-XX (X can be any alphanumeric characters or blank) LA130PM121	I/P: 1.7A 100-240V~ 50-60Hz, Cl. I with class II construction throughout O/P: 3.34A +19.5V I/P: 100-240Vac; 1.6A; 50-60Hz, Cl. I O/P: 19.5Vdc; 3.34A I/P: 1.7A 100-240V~ 50-60Hz, Cl. I O/P: 3.34A 19.5V I/P: 1.6A 100-240V 50-60Hz, Cl. I O/P: 3.34A max. 19.5V Input: 1.8A 100-240V~ 50-60Hz DC-output: 6.7A 19.5V Input: AC 100-240V, 2.5A, 50-60Hz Output: DC19.5V, 6.7A I/P: 2.5A 100-240V~ 50-60Hz DC-output: 6.7A 19.5V	IEC 60950-1 (ed.2);am1; am2, UL 60950-1	CB by Nemko (NO88505), UL CB by UL (Demko) (DK-45612-UL), UL CB by Nemko (NO89677), UL CB by Nemko (NO82445), UL CB by Nemko (NO91721/M1), UL CB by TUV RH (JPTUV-065556), UL CB by Nemko (NO86084), UL
Alt. AC/DC Adapter	Delta (Dell Inc.) Lite-On (DELL)	DA90PM111 LA90PM111	Input: 100-240Vac 1.5A , 50-60Hz Output: 19.5Vdc 4.62A Input: 2.5A 100-240V, 50-60Hz or 1.5A 100-240V 50-60Hz DC-output: 4.62A 19.5V	IEC 60950-1 (ed.2);am1; am2, UL 60950-1	CB by UL (DK-43004-UL), UL CB by Nemko (NO85959), UL
HDD / SSD (optional)	Western Digital Technology, Inc Lite-On IT Corporation Micron Technology, Inc. Interchangeable	WDU000UXZYYXXYY LMS-xxL6Mxxxxx (x can be any alphanumeric or blank) MTFDDAKxxxMAV, (where xxx may be any alpha numeric character representing density) Interchangeable	5Vdc, 1.5 A max. 3.3Vdc, 2.0A max. 5Vdc, 2.0A max. 5Vdc, 2.0 A max or 3.3Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1 IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL TUV, UL TUV, UL Verified by Nemko or other certificate body, UL
RTC battery (Lithium type)	Mitsubishi	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH212249)

	Panasonic	BR-2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging, etc.)	3Vdc, maximum abnormal charging current 5mA		UL (MH12210)
	Shun Wo	CR2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging, etc.)	3Vdc, maximum abnormal charging current 10mA		UL (MH25881)
Alt.RTC battery (Lithium type)	Vic Dawn	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH20550)
	Jhih Hong	CR2032	3Vdc, maximum abnormal charging current 10mA		UL (MH48406)
	Panasonic	CR-2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging, etc.)	3Vdc, maximum abnormal charging current 10mA		UL (MH12210)
CPU Fan (For MB1, MB2, MB3, MB4, MB7 and MB8 used)	Sunonwealth	EF70150SX-CZ (Z stands for 30 characters. Each character stands for one of the following signs): 0-9, A-Z, (,), ., /, - or blank for marketing purpose only.)	5Vdc, max. 0.9 A, 11CFM min.	EN 60950-1:2006+A11+A1+A12+A2, UL 507	TUV, UL
	Foxconn Delta	PVB070E05N-P02 KSB0705HB-AXXXXXXX (X stands for 0-9, A-Z, - or blank for marketing purpose only)	5Vdc, 1.1 A max., 11 CFM min. 5Vdc, max. 1.0 A, 10.55CFM min.		TUV, UL TUV, UL
CPU Fan (For MB5 and MB6 used)	Delta	BUC1612VD-00XXXXXX (X stands for A-Z, 0-9, - or blank for marketing purpose only)	12Vdc, max. 1.1 A, 13.9 CFM min.	EN 60950-1:2006+A11+A1+A12+A2, UL 507	TUV, UL
	AVC	BAZB0715R2UV (V can be ABCD where A, B, C, D may be A-Z or 0-9 or -)	12Vdc, max. 1.0A, 14 CFM min.		
External USB Optical Disk Drive (Optional)	Hitachi-LG Data Storage, Inc	GU9**	5Vdc, 1.8A. Laser class I.	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11+A1+A12+A2, EN 60825-1	TUV
	or equivalent	or equivalent	5Vdc, 1.8A, Laser class 1	EN 60950-1:2006+A11+A1+A12+A2, EN 60825-1	Verified by Nemko or other certificate body, UL
PCBs	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Stand (Optional)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data Realização Performance Date	de /
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	283154	0	2015-04-22	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	303954	0	2016-03-04	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	305355	0	2016-03-17	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	315629	0	2016-09-08	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	337871	0	2017-08-23	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	339549	0	2017-09-29	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	341950	0	2017-11-13	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE191CE	0	2015-05-22	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE191FB	0	2015-05-26	N/A	
Relatório de ensaio emitido por / Test report issued by Central Research Technology Co. EMC Test Laboratory	O-P321-1607-099	0	2016-09-07	N/A	
Relatório de ensaio emitido por / Test report issued by Central Research Technology Co. EMC Test Laboratory	F-P321-1607-099	0	2016-09-07	N/A	
Relatório de ensaio emitido por / Test report issued by Central Research Technology Co. EMC Test Laboratory	O32-P320-1709-175	0	2017-10-24	N/A	
Relatório de ensaio emitido por / Test report issued by Central Research Technology Co. EMC Test Laboratory	F-P320-1709-175	0	2017-10-24	N/A	
Relatório de ensaio emitido por / Test report issued by Underwriters Laboratories Taiwan Co., Ltd.	4787592249	0	2016-12-02	N/A	
Relatório de ensaio emitido por / Test report issued by Underwriters Laboratories Taiwan Co., Ltd.	4788375372	0	2018-03-13	N/A	
<<Software / Software>>	N/A				
<<Manual do usuário / User's manual>>	N/A				

Appendix C (Modelo/Model: D18M, D18M...)

(The dots "." in model name can be 0 to 9, A to Z, a to z, or blank, for marketing purpose)

CARACTERÍSTICAS NOMINAIS / RATINGS:

I/P: 4A 100-240V~ 50-60Hz or 4.2A 100-240V~ 50-60Hz or 5A 100-240V~ 50-60Hz / Class I / IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 22:2008 / CISPR 32:2012 Class B / CISPR 32:2015 Class B, CISPR 24: 2010 +A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/Technical data	Norma/Standard	Marca de conformidade/Mark(s) of conformity
Front bezel (Decorative part)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber stand Cover bottom opening	Interchangeable	Interchangeable	HB min.	UL 94	UL
Fire enclosure	Interchangeable	Interchangeable	Metal, min. 0.6 mm thick	IEC 60950-1	Tested in the equip.
Internal Plastic	Interchangeable	Interchangeable	V-2 min.	UL 94	UL
Power supply for building-in	Lite-On Technology Corp. (DELL)	L240EPM-00; L240AM-00; L240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs 16.5A max. +12VA, 16A max. +12VB, 2.5A max. +12VSB, Maximum continuous total DC output power shall not exceed 240W. (Altitude during operation: 5000m)	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1 +A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85503), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H240EM-00; H240AM-02	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs 16.5A +12VADC, 16A +12VBDC, 2.5A +12VSB, Max. output power is 240W. (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85308), N, UL
	Delta Electronics Inc. (DELL)	D240EPM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA/16.5A, +12VB/16A, +12VSB/2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO84799), N, UL
Alt. power supply for building-in	Delta Electronics Inc. (DELL)	D240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA/16.5A, +12VB/16A, +12VSB/2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1 +A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85131), N, UL
	Acbel Polytech Inc. (DELL)	AC240AM-00; AC240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA/16.5A, +12VB/16A, +12VSB/2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85533), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B240AM-00; B240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs 16.5A +12VA, 16A +12VB, 2.5A +12VSB; TOTAL 240W MAX (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85472), N, UL
	Flextronics sales & Marketing(A-P) Ltd. (DELL)	F240EPM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA 16.5A, +12VB 16A, +12VSB 2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85204), N, UL
	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU240AM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VAdc 16.5A, +12VBdc 16A, +12VSBdc 2.5A, Max. output power: 240W. (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85149), N, UL

Alt. power supply for building-in	Lite-On Technology Corp. (DELL)	L240AS-01, L240ES-00, L240EPS-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: 16.5A MAX +12VA, 16A MAX +12VB Standby mode: 0.5A +12VA, 2.5A +12VB, Max. total output current 2.5A. Maximum continuous total DC output power shall not exceed 240W. (Altitude during operation: 5000m)	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1 +A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93733), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H240ES-02, H240AS-02	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB Max. output power is 240W or Standby mode: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB shall not exceed 2.5A. (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO93345), N, UL
	Delta Electronics Inc. (DELL)	D240EPS-00, D240ES-02	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: +12VA/16.5A, +12VB/16.0A, STANDBY MODE: +12VA/0.5A, +12VB/2.5A, MAX COMBINED +12VA AND +12VB CURRENT IS 2.5A, MAX OUTPUT POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO93538), N, UL
Alt. power supply for building-in	Acbel Polytech Inc. (DELL)	AC240AS-02, AC240ES-02	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: 16.5A +12.0VA, 16.0A +12.0VB TOTAL POWER 240W MAX. 0.5A +12.0VA, 2.5A +12.0VB MAX. 2.5A for STANDBY MODE. (Altitude during operation: 5000m)	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by Nemko (Cert. No.: NO93603), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B240AS-00, B240ES-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: +12VA/ 16.5A, +12VB/ 16A, STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, STANDBY MODE +12VA & +12VB MAX. 2.5A , TOTAL 240W MAX. (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO93497/M1), N, UL
	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU240AS-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: +12VA 16.5A, +12VB 16A, Max. output power: 240W. Standby mode +12VA 0.5A, +12VB 2.5A,+12VA and +12VB combine output current should not exceed 2.5A (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO94060), N, UL
Alt. power supply for building-in	Acbel Polytech Inc. (DELL)	AC260EBM-00; AC260AM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: + 12VA; 16.5A, + 12VB; 16.0A Standby mode: + 12VA; 0.5A, + 12VB; 2.5A, Max. 2.5A Total power 260W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by TUV-Rh (Cert. No.: JPTUV-083184), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B260EBM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: +12VA/16.5A, +12VB/ 16A, STANDBY MODE MAX.2.5A: +12VA/0.5A, +12VB/2.5A, TOTAL 260W MAX.		CB by Nemko (Cert. No.: NO99400), N, UL
	Delta Electronics, Inc. (DELL)	D260AM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: Normal condition: DC +12VA/16.5A, +12VB/16.0A Total max. output power 260W Standby mode: DC +12VA/0.5A, +12VB/2.5A Total max. output current 2.5A		CB by TUV-Rh (Cert. No.: JPTUV-083393), N, UL
	Delta Electronics, Inc. (DELL)	D260EPM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I Output rating: +12VADC/16.5A, +12VBDC/16.0A. Total power 260W. Standby mode: +12VADC/0.5A, +12VBDC/2.5A. +12VADC and +12VBDC combined max total output 2.5A		CB by Nemko (Cert. No.:NO99408), N, UL

Alt. power supply for building-in	Chicony Power Technology Co., Ltd. (DELL)	H260EBM-00; H260AM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I 16.5A +12VA, 16A +12VB. STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A. MAX OUPUT POWER: 260W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by Nemko (Cert. No.: NO99279), N, UL
	Chicony Power Technology Co., Ltd. (DELL)	H260EPM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12VA, 16A +12VB MAX OUPUT POWER: 260W or STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A.		CB by Nemko (Cert. No.: NO99356), N, UL
	Lite-On Technology Corporation (DELL)	L260EPM-00; L260EBM-00; L260AM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I O/P: +12VA/16.5A max; +12VB/16A max Standby mode: +12VA/0.5A max; +12VB/2.5A max, total max. 2.5A Continuous total DC output power 260W max.		CB by TUV-Rh (Cert. No.: JPTUV-083217), N, UL
	Chicony Power Technology Co., Ltd. (DELL)	H360EGM-00	I/P: 5A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12VA, 16A +12VB, 8A +12VC Standby mode: 0.5A +12VA, 2.5A +12VB +12VA & +12VB shall not exceed 2.5A. MAX OUTPUT POWER 360W for model H360EGM-00		CB by Nemko (Cert. No.:NO99300), N, UL
Alt. power supply for building-in	Lite-On Technology Corporation (DELL)	L360EGM-00	I/P: 5A 100-240V~ 50-60Hz, Cl. I DC-outputs: (normal mode) +12VA/16.5Amax., +12VB/16A max., +12VC/8A max., (standby mode) +12VA/0.5Amax., +12VB/2.5A max.,; total Max.2.5A Max. continuous total DC output Power shall not exceed 360W at 45 °C Max. continuous total DC output Power shall not exceed 300W at 55°C Max. continuous total DC output current for standby mode shall not exceed 2.5A at 40°C	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by TUV-Rh (Cert. No.: JPTUV-083700-A1), N, UL
Hard Disk Drive (HDD) (Three provided max.) (Optional) (2.5 or 3.5 inch HDD)	Hitachi Global Storage Technologies Japan Ltd.	H Series, D Series	5Vdc/12Vdc, 1.5A max./2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1 IEC 60950-1, EN 60950-1, UL 60950-1	CB by TUV-Rh, UL
	Seagate Technology International	ST9 or 2.5 Series or ST with additional suffixes	5Vdc, 1.5A max.		CB by UL, UL
	Interchangeable	Interchangeable	5Vdc/12Vdc, 1.5A max./2.0A max. or 5Vdc, 1.5A max.	IEC 60950-1, EN 60950-1, UL 60950-1	Verify by Nemko or other cert. body, UL
Optical Disk Drive (Two provided ax.) (Optional)	Toshiba Samsung Storage Technology Korea Corporation	TS-H663*; TS-H662; SH-S222; TS-H652; TS-H653*; SH-S202; SH-S203; SH-S223; SH-S243; SH-S163 (The symbol "*" can be any alphanumeric character or blank, not affecting safety.)	1.0A, 1.5A, 2.0A or 2.5A 5Vdc, 1.5A, 2.0A or 3.0A 12Vdc, Laser class 1	IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1	CB by Nemko, UL
-Front bezel	Interchangeable	Interchangeable	Min. V-1.	UL 94 IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1 UL 94	UL Verify by Nemko or other cert. body, UL UL
Alt. Optical Disk Drive (Optional)	Interchangeable	Interchangeable	Max. 2.5A 5Vdc, max. 3.0A 12Vdc, Laser class 1		
-Front bezel	Interchangeable	Interchangeable	Min. V-1.		
CPU Fan	Asia Vital Components Co., Ltd.	DS08025R12UV (V can be ABCD, where A,B,C,D may be A-Z, 0-9 or "-" for marketing purpose only)	12Vdc, 0.7A max., 53.82CFM min.	EN 60950-1, UL 507 EN 60950-1, UL 507 EN 60950-1, UL 507 EN 60950-1, UL 507	TUV, UL
	Delta Electronics Inc. Sunonwealth Electronic Machine Industry Co., Ltd.	QUR0812SH MF80251V2-QZ, (Z stands for 15 characters. Each character stands for one of the following signs: 0-9, A-Z, (,), ., /, -, or blank for marketing purpose only)	12Vdc, 0.5A max., 52.83CFM(min.) 12Vdc, 0.3A max., 48.0CFM(min.)		VDE, UL TUV, UL
	Foxconn Technology Co., Ltd.	PVA080G12Q	12Vdc, 0.65A max., 59.0CFM(min.)		TUV, UL

Alt. CPU Fan	Shenzhen DongWeifeng Electronic Technology Co., LTD.	EF(X)-08E12(Y)(Z), where (X) may be S, H, B, C or F, (Y), may be W, (Z) may be blank, may be - WWWW, W can be 0 to 9 or A to Z.	12Vdc, 0.7A max., 53.45 CFM (min.)	EN 60950-1, UL 507	TUV, UL
	Asia Vital Components Co., Ltd.	DASD0825B2SV (V=ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, 1.20A max., 70.85CFM (min.)	EN 60950-1, UL 507	TUV, UL
	Delta Electronics Inc.	QFR0812UHZ (Z stands for 5 characters. Each character stands for one of the following signs: 0-9, A-Z or blank)	12Vdc, 0.87A max., 63.21CFM (min.)	EN 60950-1, UL 507	TUV, UL
	Foxconn Technology Co., Ltd.	PVA080G12R	12Vdc, 0.80A max., 71CFM (min.)	EN 60950-1, UL 507	TUV, UL
System Fan (Optional)	Asia Vital Components Co., Ltd.	DASA0820R2UV (V can be ABCD, where A,B,C,D may be A-Z, 0-9 or "-" for marketing purpose only)	12Vdc, 0.6A max., 46.02CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Delta Electronics Inc.	AUB0812HHD	12Vdc, 0.4A max., 46.31CFM(min.)	EN 60950-1, UL 507	VDE, UL
	Sunonwealth Electronic Machine Industry Co., Ltd.	MF80201VX-Q0Z(Z stands for 30 characters. Each character stands for one of the following signs: 0-9, A-Z, (,), "-", or blank)	12Vdc, 0.32A max., 40.8CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Foxconn Technology Co., Ltd.	PVA080F12H	12Vdc, 0.36A max., 40.0CFM(min.)	EN 60950-1, UL 507	TUV, UL
Alt. System Fan (Optional)	Shenzhen Dongweifeng Electronic Technology Co., LTD	EFS-08D12H	12Vdc, 0.4A max., 49.5CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Delta Electronics Inc.	AFC0812DD	12Vdc, 0.75A max., 54.64 CFM(min.)	EN 60950-1, UL 507	VDE, UL
	Shenzhen DongWeifeng Electronic Technology Co., LTD.	EFx-08D12De Where x= S,H,B,C or F; e= additional code for markeing purpose, e= blank or -www (w can be 0-9 or A-Z)	12Vdc, 0.70A max., 56.73 CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Foxconn Technology Co., Ltd.	PVA080F12S	12Vdc, 0.56A max., 57.60CFM (min.)	EN 60950-1, UL 507	TUV, UL
RTC battery	Asia Vital Components Co., Ltd.	DASA0820B2UV (V=ABCD where A,B,C,D may be A-Z, 0-9 or "-")	12Vdc, 0.60A max., 55.48CFM (min.)	EN 60950-1, UL 507	TUV, UL
	Jhih Hong Technology Co Ltd	CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH48406)
	Mitsubishi Electric Home Appliance Co Ltd	CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH21249)
	Vic-Dawn Enterprise Co Ltd	CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH20550)
PCB	Panasonic Corporation, Of North America	CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH12210)
	Interchangeable	Interchangeable	V-1 min., 105°C	UL 796	UL
	Interchangeable	Interchangeable	4ohm, max. 2.5Watt	--	Test in the equipment.
	Interchangeable	Interchangeable	3.3Vdc or 12Vdc	--	Test in the equipment.
Main Board 1 (type:WF0122)					
Main Board 2 (type:SF1015)					
Main Board 3 (type: SF0509)					
Main Board 4 (type:AF0509)					
Main Board 5 (type:BF0509)					
Main Board MB7 (type: BE0724)					

Main Board MB8 (type: CG0724)					
VGA small board 1 (optional)					
VGA small board 2 (optional)					
VGA small board 3 (optional)					
VGA small board 4 (optional)					
Sub-board 1 (VGA) (Optional)					
Sub-board 2 (HDMI) (Optional)					
Sub-board 3 (Display) (Optional)					
Sub-board 4 (USB type C) (Optional)					
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data Realização Performance Date	de /
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	284760	0	2015-05-12	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	297979	0	2015-12-01	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	306254	0	2016-04-06	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	316837	0	2016-10-13	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	332989	0	2017-06-15	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	339191	0	2017-09-15	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	342675	0	2017-12-01	N/A	
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	350821	0	2018-03-22	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE118CE	0	2015-05-22	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE118FB	0	2015-05-22	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE452CE	0	2016-10-13	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE452FB	0	2016-10-13	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE452CE-R3	0	2017-06-26	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE452FB-R3	0	2017-06-26	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-18LE143CE	0	2018-03-19	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-18LE143FB	0	2018-03-19	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LS009OS	0	2015-06-17	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LS031OS	0	2016-10-26	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-17LS011OS	0	2017-06-27	N/A	
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-18LS011OS	0	2018-03-30	N/A	
<<Software / Software>>	N/A				
<<Manual do usuário / User's manual>>	N/A				

Appendix D (Modelo/Model: D11S, D11S...)

(The dots "." in model name can be 0 to 9, A to Z or blank, for marketing purpose only)

CARACTERÍSTICAS NOMINAIS / RATINGS:

I/P: 3.0A 100-240V~ 50/60Hz or 4.0A 100-240V~ 50/60Hz or 3.2A 100-240V~50/60Hz, Class I; IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1:2005 (2nd Edition); Am 1:2009; Am 2:2013, CISPR 22: 2008, CISPR 32:2012, Class B / CISPR 32:2015, Class B, CISPR 24: 2010+A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6:2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004; e Anexo E da Portaria no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Front bezel (decorate parts)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	--	Tested in the equip.
Rubber stand	Interchangeable	Interchangeable	HB min.	UL94	UL
Internal plastic	Interchangeable	Interchangeable	V-2 min. or HF-2 min.	UL 94	UL
Power supply for building-in (PSU)	Acbel (DELL)	AC180AS-00, AC180ES-00	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12.0A +12.0VA, 14.0A +12.0VB, 2.5A +12.0VSB. Total power 180W max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Bestec (DELL)	B180AS-00	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A +12VA, 14A +12VB, 2.5A +12VSB TOTAL 180W MAX	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H180AS-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A +12VADC, 14A +12VBDC, 2.5A +12VSB Max. output power is 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D180EPS-00	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA/12A, +12VB/14A, +12VSB/2.5A OUTPUT MAX POWER 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D240EPM-00	I/P: 4.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA/16.5A, +12VB/16A, +12VSB/2.5A OUTPUT MAX POWER 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Flextronics (DELL)	F180ES-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA, 12A; +12VB, 14A; +12VSB, 2.5A Max output power is 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Flextronics (DELL)	F180EPS-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA 12A, +12VB 14A, +12VSB 2.5A OUTPUT MAX POWER 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Flextronics (DELL)	F240EPM-00	I/P: 4A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA, 16.5A, +12VB, 16A, +12VSB, 2.5A OUTPUT MAX POWER 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L180ES-00, L180AS-00, L180EPS-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A max. +12VA, 14A max. +12VB, 2.5A max. +12VSB. Max. continuous total DC output power shall not exceed 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L240EPM-00	I/P: 4A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 16.5A MAX +12VA, 16A MAX +12VB, 2.5A MAX +12VSB. Maximum continuous total DC output power shall not exceed 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL

Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU180AS-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I DC outputs: +12VAdc 12A, +12VBdc 14A, +12VSBdc 2.5A Max. output power: 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU180ES-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I DC outputs: +12VAdc 12A, +12VBdc 14A, +12VSBdc 2.5A Max. output power: 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Acbel (DELL)	AC180AS-01, AC180ES-01	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12.0A +12.0VA, 14.0A +12.0VB TOTAL POWER 180W MAX. 0.5A +12.0VA, 2.5A +12.0VB MAX. 2.5A for STANDBY MODE.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Bestec (DELL)	B180AS-02	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA/ 12A, +12VB/ 14A, STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, STANDBY MODE +12VA & +12VB MAX. 2.5A TOTAL 180W MAX.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H180AS-02, H180ES-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A +12VA, 14A +12VB Max. output power is 180W or Standby mode: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB shall not exceed 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D180ES-01, D180EPS-01	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA/12A, +12VB/14A, STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, MAX COMBINED +12VA AND +12VB CURRENT IS 2.5A, MAX OUTPUT POWER 180W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L180EPS-01; L180ES-01; L180AS-02	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A MAX +12VA, 14A MAX +12VB Standby mode: 0.5A +12VA, 2.5A +12VB, Max. total output current 2.5A Maximum continuous total DC output power shall not exceed 180W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU180AS-01, HU180ES-01	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VAd.c. 12A, +12VBd.c. 14A, Max. output power 180W. Standby Mode: +12V/0.5A; +12VB/2.5A; +12VA & +12VB, total load 2.5A max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Acbel (DELL)	AC240AS-02, AC240ES-02	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12.0VA, 16.0A +12.0VB TOTAL POWER 240W MAX. 0.5A +12.0VA, 2.5A +12.0VB MAX. 2.5A for STANDBY MODE.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Bestec (DELL)	B240AS-00, B240ES-00	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VA/ 16.5A, +12VB/ 16A, STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, STANDBY MODE +12VA & +12VB MAX. 2.5A , TOTAL 240W MAX.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H240ES-02, H240AS-02	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB Max. output power is 240W or Standby mode: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB shall not exceed 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D240EPS-00, D240ES-02	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VA/16.5A, +12VB/16.0A, STANDBY MODE: +12VA/0.5A, +12VB/2.5A, MAX COMBINED +12VA AND +12VB CURRENT IS 2.5A, MAX OUTPUT POWER 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL

Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L240AS-01, L240ES-00, L240EPS-00	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A MAX +12VA, 16A MAX +12VB Standby mode: 0.5A +12VA, 2.5A +12VB, Max. total output current 2.5A. Maximum continuous total DC output power shall not exceed 240W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU240AS-00	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VA 16.5A, +12VB 16A, Max. output power: 240W. Standby mode +12VA 0.5A, +12VB 2.5A, +12VA and +12VB combine output current should not exceed 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Acbel (DELL)	AC200AS-00, AC200EBS-00	Input: AC 100-240V, 50-60Hz, 3.2A Cl. I. Output: DC +12.0VA; 16.5A, +12.0VB: 14.0A Standby mode DC +12.0VA; 0.5A, +12.0VB; 2.5A (Max. 2.5A) TOTAL POWER 200W MAX.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV Rh, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H200AS-00, H200EBS-00	I/P: 3.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 14A +12VB. STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A. MAX OUPUT POWER: 200W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H200EPS-00	I/P: 3.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 14A +12VB MAX OUPUT POWER: 200W or STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H260EPM-00	I/P: 4.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB MAX OUPUT POWER: 260W or STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H300EGS-00	I/P: 4.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB, 8A +12VC Standby mode: 0.5A +12VA, 2.5A +12VB +12VA & +12VB shall not exceed 2.5A. MAX OUTPUT POWER 300W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D200EPS-00	I/P: 3.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VADC/16.5A, +12VBDC/14.0A. Total power 200W. Standby mode: +12VADC/0.5A, +12VBDC/2.5A. +12VADC and +12VBDC combined max total output 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D260EPM-00	I/P: 4.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VADC/16.5A, +12VBDC/16.0A. Total power 260W. Standby mode: +12VADC/0.5A, +12VBDC/2.5A. +12VADC and +12VBDC combined max total output 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L200AS-00, L200EBS-00	Input: AC 100-240V, 3.2A, 50-60Hz, Cl. I. Output: DC +12VA/16.5A max., +12VB/ 14A max.(Normal Mode), +12VA/ 0.5A max., +12VB/ 2.5A max.; total Max. 2.5A (Standby Mode); Max. continuous total DC output Power shall not exceed 200W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV Rh, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L200EPS-00	Input: 100-240V, 50-60Hz, 3.2A Cl. I. Output: +12VA/16.5A max., +12VB/ 14A max Standby mode: +12VA/ 0.5A max., +12VB/ 2.5A max.; total Max. 2.5A. continuous total DC output Power 200W max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV Rh, UL

Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L260EPM-00	Input: 100-240V, 50-60Hz, 4.2A Cl. I. Output: +12VA/16.5A max., +12VB/ 16A max Standby mode: +12VA/ 0.5A max., +12VB/ 2.5A max.; total Max. 2.5A. continuous total DC output Power 260W max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU200AS-00, HU200EBS-00	Input: 100-240V, 50-60Hz, 3.2A Cl. I. DC Output: +12VA/16.5A, +12VB/14A Max. 200W. Standby mode: +12VA/0.5A, +12VB/2.5A, Max. 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by UL (Demko), UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU300EGS-00	Input: 100-240V, 50-60Hz, 4.2A Cl. I. DC Output: +12VA/16.5A; +12VB/16A; +12VC, 8A. MAX. OUTPUT POWER: 300W. Standby mode: +12VA/0.5A, +12VB/2.5A, Max. 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by UL (Demko), UL
HDD / SSD (Optional)	Hitachi Global Storage	HDS7225nnVLATnn	Max. 1.5/2.0A, 5/12Vdc	EN 60950-1: 2006/A2, UL 60950-1	TUV, UL
	LITE-ON	LMS-xxL6Mxxxxx (x can be any alphanumeric or blank)	3.3Vdc, 2.0A max.		TUV, UL
	Lite-On	CF1-CPxxxxxxx	5Vdc, 2.0A max.		CB by TUV, UL
	Interchangeable	Interchangeable	Max. 1.5/2.0A, 5/12Vdc or 5Vdc or 3.3Vdc, 2.0A max.	EN 60950-1: 2006/A2, UL 60950-1	Verify by Nemko or other cert. body, UL
Optical Disk Drive (Optional)	Hitachi-LG Data Storage Inc.	DRW-24xyST (The "X" can be A to Z and the "y" can be 0 to 9 and the "z" or blank according to buyer, color or other configurations not related with safety.	5/12Vdc, 2.0/2.5A max. Laser class 1	EN 60950-1: 2006/A2, EN 60825-1, UL 60950-1	TUV, UL
	Hitachi-LG Data Storage Inc.	GUCxy (x can be any number 0 to 9 and y can be any alphanumeric denoting non safety related)	5Vdc, 1.5A max. Laser class 1	EN 60950-1: 2006/A2, EN 60825-1, UL 60950-1	TUV, UL
	Interchangeable	Interchangeable	Max. 5/12Vdc, 2.0/2.5A or Max. 5Vdc, 1.5A, Laser class 1	EN 60950-1: 2006/A2, EN 60825-1, UL 60950-1	Verify by Nemko or other cert. body, UL
CPU Fan	AVC	DS08025R12UV (V= ABCD where A, B, C, D may be A-Z, 0-9, or "-")	12Vdc, max. 0.7 A, 53.82 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	QUR0812SH	12Vdc, max. 0.5 A, 52.83 CFM min.	EN 60950-1: 2006/A2, UL507	VDE, UL
	Foxconn	PVA080G12Q	12Vdc, max. 0.65 A, 59 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Sunonwealth	MF80251V2-QZ (Z stands for 15 Characters. Each Character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank.)	12Vdc, max. 0.3A, 48 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Shenzhen Dongweifeng	EFH-08E12WY (Y=Blank or - WWWWW, W can be 0 to 9 or A to Z)	12Vdc, max. 0.7 A, 53.45 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	AVC	DASD0825B2SV (V can be ABCD where A, B, C,D may be A-Z, 0-9 or "-")	12Vdc, max. 1.2 A, 70.85 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
Alt. CPU Fan	Delta	QFR0812UHZ (Z stands for 5 characters. Each character stands for one of the following signs): 0-9, A-Z, - or blank	12Vdc, max. 0.87 A, 63.21 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn	PVA080G12R	12Vdc, max. 0.8 A, 71 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	AUB0712VH	12Vdc, max. 0.56 A, 43.68 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn	PVA070G12Q	12Vdc, max. 0.5 A, 42 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	AVC	BAZB0925R2UV (V can be ABCD where A, B, C, D may be A-Z, 0-9 or -)	12Vdc, max. 1.0 A, 22 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL

	Delta	BUC1012SJ-00XXXXXX (X stands for A-Z, 0-9, - or blank for marketing purpose only)	12Vdc, max. 1.2 A, 23.25 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Shenzhen Dongweifeng	EFH-08E12WY (Y=Blank or -WWWWW, W can be 0 to 9 or A to Z)	12Vdc, max. 0.7 A, 20.7 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn Sunonwealth	PVB120G12H-P01 MF80251V2-Q0Z (Z stands for 30 Characters. Each Character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank for marketing purpose only.)	12Vdc, max. 0.75 A, 20.47 CFM min. 12Vdc, max. 0.55 A, 20.7 CFM min.	EN 60950-1: 2006/A2, UL507 EN 60950-1: 2006/A2, UL507	TUV, UL TUV, UL
	AVC	BAZA1233R2UV (V can be ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, max. 0.9 A, 28.2 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	BUC1412VE-00XXXXXX (X stands for A-Z, 0-9, - or blank)	12Vdc, max. 1.2 A, 32.83 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
Alt. CPU Fan	Shenzhen Dongweifeng	EFH-12J12WZ (Z=blank or -WWWWW, W can be 0-9 or A-Z)	12Vdc, max. 1.0 A, 28.6 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn Interchangeable	PVB120J12H-P01 Interchangeable	12Vdc, max. 0.8 A, 30.03 CFM min. 12Vdc, max. 1.2 A, 20.47 CFM min.	EN 60950-1: 2006/A2, UL507 EN 60950-1: 2006/A2, UL507	TUV, UL Verify by Nemko or other cert. body, UL
Front system Fan (optional)	AVC	DASA0820R2UV (V= ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, max. 0.6 A, 48.02 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta Foxconn Sunonwealth	AUB0812HHD PVA080F12R MF80201VX-QZ (Z stands for 15 Characters. Each character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank.)	12Vdc, max. 0.4 A, 46.31 CFM min. 12Vdc, max. 0.36 A, 40 CFM min. 12Vdc, max. 0.219A, 40.8 CFM min.	EN 60950-1: 2006/A2, UL507 EN 60950-1: 2006/A2, UL507 EN 60950-1: 2006/A2, UL507	VDE, UL TUV, UL TUV, UL
	AVC	DASA0820B2UV (V can be ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, max. 0.6 A, 55.48 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta Foxconn	AFC0812DD PVA080F12S	12Vdc, max. 0.75 A, 54.64 CFM min. 12Vdc, max. 0.56 A, 56.7 CFM min.	EN 60950-1: 2006/A2, UL507 EN 60950-1: 2006/A2, UL507	TUV, UL TUV, UL
	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Following components used on motherboard					
RTC Battery (Lithium type)	Mitsubishi	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL(MH21249)
	Panasonic	CR2032*, CR-2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging, etc.)			UL(MH12210)
	Shun Wo	CR2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc.)			UL(MH25881)
	Jih Hong (JHT)	CR2032			UL(MH48406)

Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO
----------	---------	---------	------	------------------------------	---------

DOCUMENTOS / DOCUMENTS:

Título / <i>Title</i>	Número / <i>Number</i>	Revisão / <i>Revision</i>	Data emissão / <i>Issuing Date</i>	Data de Realização <i>Performance</i> <i>Date</i>
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	285383	0	2015-05-12	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	305346	0	2016-03-17	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	317002	0	2016-10-06	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	329007	0	2017-04-20	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	332284	0	2017-06-03	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	342811	0	2017-12-07	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-15LE172CE	0	2015-06-02	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-15LE172FB	0	2015-06-02	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LE446CE	0	2016-10-11	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LE446FB	0	2016-10-11	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-17LE710CE-R1	0	2018-03-22	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-17LE710FB-R1	0	2018-03-22	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-15LS011OS	0	2015-07-06	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LS033OS	0	2016-10-28	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-18LS020OS	0	2018-03-30	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix E (Modelo/Model: D13U, D13U...)

(The dots "." can be 0-9, a-z, A-Z or blank for marketing purposes only)

CARACTERÍSTICAS NOMINAIS / RATINGS: I/P: 3.34A 19.5Vdc; Class III; IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 Class B; CISPR 32:2015/COR1:2016 Class B, CISPR 24: 2010+A1: 2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1:2007+A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004+A1:2017, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/Technical data	Norma/Standard	Marca de conformidade/Mark(s) of conformity
Plastic Enclosure	Interchangeable	Interchangeable	HB min. thickness 1.5mm min.	UL 94	UL
Metal Enclosure	Interchangeable	Interchangeable	Thickness 0.6mm min.	IEC 60950-1	Tested in the equip.
AC/DC adapter	Lite-On Technology Corporation (DELL)	LA65NS2-.. (The dots "." in model name can be any alphanumeric character including blank or "-", for marketing use only.)	I/P: 1.6A 100-240V 50-60Hz Cl. I, DC-outputs: 3.34A 19.5V (Altitude: 5000m, Tmra: 40°C), LPS	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by Nemko (NO101136), U
	Chicony Power Technology Co., Ltd. (DELL or Dell Inc)	HA65NS5-00	I/P: 1.7A 100-240V~ 50-60Hz DC-output: 3.34A 19.5V Cl. I., (Altitude: 5000m for PCB layout type C, D and E; Tmra: 40°C), LPS.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by Nemko (NO89677), UL
	DELTA ELECTRONICS INC (Dell Inc.)	DA65NM111-00	Input: 100-240Vac, 1.6A, 50-60Hz Output: 19.5Vdc, 3.34A (Altitude: 5000m for Construction B and C and D; Tmra: 40°C), LPS.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by UL (DK-45610-UL), UL
DC Fan	FOXCONN TECHNOLOGY CO LTD	PVB060B05H	Max. 0.78A, 5Vdc, 5.49 CFM min.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 507	TUV Rh, UL
	FORCECON TECH CO LTD	DF(X)160005(Y)0T, (X) stands for B, C or S, (Y) stands for 00-99, 0A-ZZ	Max. 0.5A, 5Vdc, 4.8 CFM min.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 507	TUV Rh, UL
RTC Battery	Jhih Hong Technology Co., Ltd.	CR2032	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH48406)
	DOUBLE BEST CO LTD	CR2032	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH46388)
	Vic-Dawn Enterprise Co Ltd (KTS)	CR2032	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH20550)
	PANASONIC CORPORATION, PANASONIC CORPORATION OF NORTH AMERICA MAXELL, LTD	CR2032*	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH12210)
	MITSUBISHI ELECTRIC CORP	CR2032*	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH12568)
	Guangdong Tianqiu Electronics Technology Co Ltd	CR2032+	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH15370)
Hard Disk Device (optional)	Seagate Technology L L C	ST9 or 2.5 Series or ST with additional suffixes or equivalent	1.5A max., 5Vdc.	IEC 60950-1, UL 60950-1	CB by UL (US), UL
	or equivalent		1.5A max., 5Vdc.	IEC 60950-1, EN 60950-1, UL 60950-1	Verify by Nemko or other cert. body, UL
Wireless LAN Module (Optional)	Interchangeable	Interchangeable	3.3Vdc, PCB V-1 or better, 105°C min.	IEC 60950-1	Test with equipment
Bluetooth Module (Optional)	Interchangeable	Interchangeable	3.3Vdc, PCB V-1 or better, 105°C min.	IEC 60950-1	Test with equipment

PCB	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / <i>Title</i>	Número / <i>Number</i>	Revisão / <i>Revision</i>	Data emissão / <i>Issuing Date</i>	Data de Realização / <i>Performance Date</i>
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	374657	0	2019-05-22	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-19LE216CE	0	2019-05-14	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-19LE216FB	0	2019-05-14	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-19LS051OS	0	2019-06-13	N/A
<< Software / Software >>	N/A			
<< Manual do usuário / User's manual >>	N/A			

Appendix F (Modelo/Model: D15S, D15S...)

(The dots '.' in model name can be 0 to 9, A to Z or blank, for marketing purpose only.)

CARACTERÍSTICAS NOMINAIS / RATINGS: I/P: 3.2A, 100-240Vac, 50/60Hz; Class I, IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012; CISPR 32:2015/COR1:2016 Class B, CISPR 24: 2010+A1: 2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004+A1:2017, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/Technical data	Norma/Standard	Marca de conformidade/Mark(s) of conformity
Front bezel (Decorative part)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber stand covered right side and bottom opening	Interchangeable	Interchangeable	HB min.	UL 94	UL
Enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	IEC 60950-1	Tested in the equip.
Power supply for building-in	Acbel (DELL)	AC200EBS-01	I/P: AC 100-240V;50-60Hz; 3.2A;Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Chincony (DELL)	H200EBS-01	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Delta (DELL)	D200EBS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 50°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 62368-1, UL 60950-1	CB by Nemko, N, UL
Alt. Power supply for building-in	Huntkey (DELL)	HU200EBS-01	I/P: AC 100-240V;50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Lite-On (DELL)	L200EBS-01	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Acbel (DELL)	AC200EPS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Chincony (DELL)	H200EPS-01	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Lite-On (DELL)	L200EPS-01	I/P: AC 100-240V;50-60Hz; 3.2A; Class I. Tma: 45°C (Tma for standby mode: 40°C) Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL

Alt. Power supply for building-in	Acbel (DELL)	AC200EBS-00	I/P: AC 100-240V;50-60Hz; 3.2A;Class I. Tma: 45°C Output:Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by TUV, N, UL
	Chicony (DELL)	H200EBS-00	I/P: AC 100-240V;50-60Hz; 3.2A;Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by Nemko for 60950-1, CB by TUV for 62368-1, N, UL
	Huntkey (DELL)	HU200EBS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by UL, N, UL
	Lite-On (DELL)	L200EBS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C (Tma for standby mode: 40°C) Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by TUV, N, UL
	Acbel (DELL)	AC260EPM-00	I/P: AC 100-240V; 50-60Hz; 4.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 260W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
Alt. Power supply for building-in	Delta (DELL)	D260EPM-01	I/P: AC 100-240V; 50-60Hz; 4.2A; Class I. Tma: 50°C Output: Max. TOTAL Power 260W (Altitude: 5000m)	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11+A1+A12+A2, UL 62368-1	CB by Nemko, N, UL
	Lite-On (DELL)	L260EPM-01	I/P: AC 100-240V; 50-60Hz; 4.2A; Class I. Tma: 45°C (Standby mode 40°C) Output: Max. TOTAL Power 260W (Altitude: 5000m)	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11+A1+A12+A2, IEC 62368-1:2014 EN 62368-1:2014, UL 62368-1	CB by Nemko, N, UL
HDD/SSD (Optional)	Samsung Electronics Co., Ltd.	MZ-2***** (* = 0-9, A-Z, slash, dash or blank)	3.3Vdc, 4.8A max.	EN 60950-1	TUV
	HGST Japan, Ltd	HDS7225nnVLATnn	Max. 1.5/2.0A, 5/12Vdc	EN 60950-1, IEC 60950-1	TUV, VDE, UL, cUL
	Interchangeable	Interchangeable	3.3Vdc, 4.8A max. or 5Vdc, 1.5A max. or 12Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1, CSA 60950-1	TUV or VDE, UL, cUL, CSA
Optical Disk Drive (Optional)	Hitachi-LG Data Storage Inc.	GHBzt (where z can be any number 0 to 9, t can be any alphanumeric character, denoting non safety related differences.)	5Vdc/12Vdc, 2.0/2.5A max. Laser class 1	EN 60950-1, EN 60825-1	TUV
	Hitachi-LG Data Storage Inc.	GU9xy (* "x" can be any number 0 to 9 and "y" can be any alphanumeric denoting brand name or shape not related with safety)	5Vdc, 1.8A max. Laser class 1	EN 60950-1, EN 60825-1	TUV
	Interchangeable	Interchangeable	5Vdc/12Vdc, 2.0/2.5A max. or 5Vdc, 1.8A max., Laser class 1	IEC/EN 60950-1, IEC/EN 60825-1, UL 60950-1	TUV or VDE, UL, cUL, CSA
CPU Fan with CPU cooler Type A	AVC	BAZA1233R2UV (V = ABCD where A, B, C,D may be A-Z, 0-9, "-" or blank)	12Vdc, max. 0.9 A, 28.2 CFM min.	EN 60950-1, UL 507	TUV, UL
	Shenzhen Dongweifeng	EFH-12J12WZ (Z=blank or - WWW, (W can be 0 to 9 or A to Z))	12Vdc, max. 1.0 A, 28.6 CFM min.	EN 60950-1, UL 507	TUV, UL

	Delta	BUC1412VE-00XXXXXX; (X satands for A-Z, 0-9, - or blank.)	12Vdc, max. 1.20 A, 32.83 CFM min.	EN 60950-1, UL 507	VDE, UL
	Foxconn	PVB120J12HP01	12Vdc, max. 0.80 A, 30.03 CFM min.	EN 60950-1 EN 62368-1, UL 507	TUV, UL
CPU Fan with CPU cooler Type B	Delta	AUB0712VH	12Vdc, max. 0.56A, 48.54 CFM min.	EN 60950-1 UL 507	VDE, UL
	Foxconn	PVB120E12H	12Vdc, max. 1.00 A, 23 CFM min.	EN 60950-1 EN 62368-1, UL 507	TUV, UL
CPU Fan with CPU cooler Type C	AVC	DS08025R12UV; V=ABCD where A,B,C,D may be A-Z, 0-9 or "-"	12Vdc, max. 0.7 A, 53.82 CFM min.	EN 60950-1, UL 507	TUV, UL
	Delta	QUR0812SH	12Vdc, max. 0.50 A, 52.83 CFM min.	EN 60950-1, UL 507	VDE, UL
	Shenzhen Dongweifeng	EFH-08E12W-Y (Z=blank or - WWW, (W can be 0 to 9 or A to Z))	12Vdc, max. 0.70 A, 53.45 CFM min.	EN 60950-1, UL 507	TUV, UL
	Foxconn	PVB080G12Q	12Vdc, max. 0.65 A, 59 CFM min.	EN 60950-1 EN 62368-1, UL 507	TUV, UL
System Fan (Optional) for Configuration E use only	AVC	DASA0820R2UV (V=ABCD where A,B,C,D may be A-Z, 0-9 or "-"	12Vdc, max. 0.6 A, 48.02 CFM min.	EN 60950-1, UL 507	TUV, UL
	Foxconn	PVA080F12R	12Vdc, max. 0.36 A, 40 CFM min.	EN 60950-1, UL 507	TUV, UL
RTC Battery (Lithium type) (For all MBs used)	Mitsubishi	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL
Alt. RTC Battery (Lithium type) (For all MBs used)	Shun Wo	CR2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc.)	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL
	Jhih Hong Technology	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL
PCB	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Cord Set	Various	Various	---	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data de Realização / Performance Date
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	390330	0	2020-01-03	N/A
Relatório de ensaio emitido por / Test report issued by Audix Technology Corporation, EMC Department	EM-E190737	0	2019-12-18	N/A
Relatório de ensaio emitido por / Test report issued by Audix Technology Corporation, EMC Department	EM-F190509	0	2019-12-18	N/A
Relatório de ensaio emitido por / Test report issued by Shanghai Intertek Testing Services Co., Ltd.	200101320SHA-001	0	2020-02-21	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix G (Modelo/Model: D14U, D14U...)

(The dots '.' in model name can be 0 to 9, A to Z, a to z, - or blank, for marketing purpose only.)

CARACTERÍSTICAS NOMINAIS / RATINGS: I/P: 3.34A or 4.62A or 6.7A or 9.23A 19.5Vdc; Class III, IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012; CISPR 32:2015/COR1:2016 Class B, CISPR 24: 2010+A1: 2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004+A1:2017, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Front bezel (decorate parts)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber stand	Interchangeable	Interchangeable	HB min.	UL 94	UL
Fire Enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	IEC 60950-1	Test with the equip.
Internal plastic	Interchangeable	Interchangeable	V-2 min.	UL 94	UL
PCBs	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
AC/DC Adapter	Lite-On (DELL)	LA65NS2-.. (The dots "." in model name can be any alphanumeric character including blank or "-", for marketing use only.) DA65NM191	I/P: 1.6A 100-240V 50-60Hz DC-output: 3.34A 19.5V, Cl. I (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:(ed.2);am1;am2, UL 60950-1	CB by Nemko (NO82445/A1/M3), UL
	Delta (Dell)		AC Input: 100-240V~, 1.6A, 50-60Hz DC Output:19.5Vdc, 3.34A (Altitude: 5000m, ambient 40 °C)	IEC 62368-1:2014, EN62368-1:2014 +A11:2017, UL 62368-1	CB by TUVRh (JPTUV-102356), UL
	Chicony (Dell Inc. Or DELL)	HA65NS5-00	I/P: 1.7A 100-240V~50-60Hz, Cl. I (For PCB layout type C, D and E: 5,000m, ambient 40 °C) O/P: 3.34A 19.5V	IEC 60950-1:(ed.2); am1;am2, UL 60950-1	CB by Nemko (NO89677/A1/M1), UL
	Chicony (DELL)	HA90PM19Z (The Z in model name can be 0 to 9, for marketing purpose.) DA90PM19X	Input: 1.5A 100-240V~ 50-60Hz DC-output: 4.62A 19.5Vdc (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:(ed.2); am1;am2, UL 60950-1	CB by TUV RH (JPTUV-098108-M1), UL
	Delta (Dell)	DA90PM19X (X= 0-9; Marketing purpose only, no technical differences.)	AC Input: 100-240V~, 1.5A, 50-60Hz DC Output:19.5Vdc, 4.62A (Altitude: 5000m, ambient 40 °C)	IEC 62368-1:2014, EN62368-1:2014 +A11:2017, UL 60950-1	CB by TUVRh (JPTUV-102287), UL
Alt. AC/DC Adapter	Lite-On (DELL)	LA90PM111	Input: 2.5A 100-240V, 50-60Hz or 1.5A 100-240V 50-60Hz DC-output: 4.62A 19.5V (For PCB4: 5,000m, ambient 40 °C)	IEC 60950-1:(ed.2); am1;am2, UL 60950-1	CB by Nemko (NO108932), UL
	CHICONY (DELL)	HA130PM19Z (The Z in model name can be 0 to 9, for marketing purpose)	I/P: 100-240V~, 50-60Hz, 1.8A O/P: 19.5V, 6.7A (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:2005+A1+A2, UL 60950-1	CB by TUVRh (JPTUV-097291-M1), UL
	Lite-On (DELL)	LA130PM19Z (Z=0-9)	I/P: AC 100-240V; 50-60Hz; 2.5A DC-output: 19.5Vdc 6.7A, Class II with functional earth (Altitude: 5000m, ambient 40 °C)	IEC 62368-1:2014, EN 62368-1:2014 +A11:2017, UL 60950-1	CB by TUVRh (JPTUV-084784), UL
	Delta (Dell Inc)	DA180PM111	Input: 100-240 V~,2.34 A, 50-60 Hz. Output: 19.5 Vdc, 9.23 A. (Construction B and C: 5000m, ambient 40 °C)	IEC 60950-1(ed.2);am1;am2, UL 60950-1	CB by UL (DK-70970-M1-UL), UL
	Chicony (DELL)	HA180PM180	I/P: 2.34A 100-240V~ 50-60Hz DC-output: 19.5Vdc 9.23A, Class I (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:2005+am1+am2, UL 60950-1,	CB by Nemko (NO99276), UL
	Lite-On (DELL)	LA180PM180	I/P: 2.34A; AC100-240V; 50-60Hz DC-output: DC19.5; 9.23A, Class II with functional earth (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:2005+am1+am2, UL 60950-1	CB by TUVRh (JPTUV-083430), UL

HDD (optional) (except MB3 type B, all MB used)	Western Digital Technology, Inc	WDUUUUXZYXXYY	5Vdc, 1.5 A max.	IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL
Alt. HDD (optional) (except MB3 type B, all MB used)	Interchangeable	Interchangeable	5Vdc, 1.5 A max.	IEC 60950-1, EN 60950-1, UL 60950-1	Verified by Nemko or other certificate body, UL
SSD (optional)	Lite-On IT Corporation	LMS-xxL6Mxxxx (x can be any alphanumeric or blank)	3.3Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL
	Micron Technology, Inc.	MTFDDAKxxxM AV, where xxx may be any alpha numeric character representing density)	5Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL
	Interchangeable	Interchangeable	5Vdc, 2.0 A max or 3.3Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1	Verified by Nemko or other certificate body, UL
CPU Fan (For MB1and MB2 used)	Foxconn Technology Co., Ltd Asia Vital Components Co.,Ltd.	PVB070E05N- P02	5Vdc, max. 1.1 A, 12.69 CFM min.	EN 62368-1:2014, UL507	TUV, UL
		BAZC0715R5UP 003	5Vdc, max. 1 A, 10.46 CFM min.	EN 62368- 1:2014/A11:2017, UL507	TUV, UL
CPU Fan (For MB3 Type A used)	Foxconn Technology Co., Ltd	PVB070E12H- P01-13	12Vdc, max. 0.95 A, 14.20 CFM min.	EN 60950-1:2006+A11+ A1+A12+A2, UL507	TUV, UL
CPU Fan (For MB3 Type B used)	Asia Vital Components Co.,Ltd.	BAZB0715R2UP 004	12Vdc, max. 0.8 A, 14.52 CFM min.	EN 62368-1:2014/A11:2017, UL507	TUV, UL
	Foxconn Technology Co., Ltd	PVB070E12H- P01-12	12Vdc, max. 0.95 A, 12.62 CFM min.	EN 60950-1:2006+A11+ A1+A12+A2, UL507	TUV, UL
	Asia Vital Components Co.,Ltd.	BAZA0812R2UP 003	12Vdc, max. 0.7A, 11.83 CFM min.	EN 62368- 1:2014/A11:2017, UL507	TUV, UL
Speaker (Optional)	Interchangeable	Interchangeable	Generic, 4Ω± 15% min., 2.5 Watts max.	IEC 60950-1	Tested in the equip.
RTC battery (Lithium type)	JHIH HONG TECHNOLOGY CO LTD	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH48406)
Alt. RTC battery (Lithium type)	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD PANASONIC CORPORATION OF NORTH AMERICA PANASONIC CORPORATION OF NORTH AMERICA SHUN WO NEW POWER BATTERY TECHNOLOGY LTD VIC-DAWN ENTERPRISE CO LTD (KTS)	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL(MH21249)
		BR-2032*	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH12210)
		CR-2032*	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH12210)
		CR2032*	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL(MH25881)
		CR2032 Cells may be provided with alphanumeric suffix (j) or (k), (j) may come with an optional single or multiple alphanumeric suffix denoting various insulating tube, ring, or tape. (k) may come with an optional single or multiple alphanumeric suffix denoting various pin, tab, cap or wire termination types	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH20550)
PCBs	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Cord Set	Various	Various	---	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data de Realização /
-------------------	--------------------	-----------------------	--------------------------------	-------------------------

				Performance <i>Date</i>
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	390052	0	2020-01-07	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	391119	0	2020-01-10	N/A
Relatório de ensaio emitido por / Test report issued by <i>Audix Technology Corporation, EMC Department</i>	EM-E190646	0	2019-11-25	N/A
Relatório de ensaio emitido por / Test report issued by <i>Underwriters Laboratories Taiwan Co., Ltd.</i>	4789371860	0	2020-03-05	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

OBSERVAÇÕES / OBSERVATIONS:

1. **A validade deste Certificado está condicionada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da UL do Brasil Certificações e previstas nos procedimentos específicos. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro.**
The validation of this certificate depends on the surveillance inspections performing and Non conformity treatments, according to UL do Brasil Certificações procedures. To verify the updated condition of regularity of this Conformity Certificate shall be consulted the certified products and services Inmetro database.
2. **Este certificado aplica-se aos equipamentos (produtos) idênticos ao protótipo avaliado e certificado, manufaturados na(s) unidade (s) fabril (is) mencionada (S) acima.**
This certificate applies to the products that are identical to the prototype investigated, certified and manufactured at the production site mentioned in this certificate
3. **Qualquer alteração no produto, incluindo a marcação, invalidará o presente certificado, salvo se o solicitante informar por escrito à UL do Brasil Certificações sobre esta modificação, a qual procederá à avaliação e decidirá quanto à continuidade da validade do certificado.**
Any non-authorized changes performed in the product, including marking, will invalidate this certificate. UL do Brasil Certificações must be notified about any desired change. This notification will be analyzed by UL do Brasil Certificações that will decide about certificate force.

Histórico de Revisões / Revisions Description:

06 de abril de 2020 / April 06, 2020	- Adicionar modelo no. D14U, D14U... / Add model no. D14U, D14U...
10 de Março de 2020 / March 10, 2020	- Adicionar modelo no. D15S, D15S... / Add model no. D15S, D15S...
03 de Julho de 2019 / July 03, 2019	- Adicionar modelo no. D13U, D13U... / Add model no. D13U, D13U...
02 de Maio de 2018 / May 2, 2018	<ul style="list-style-type: none"> - Adicione três novas placas principais (chamadas MB8, MB9 e MB10) e novas fontes de dezesseis fontes de alimentação. - Adicione a classificação de entrada 3.2A 100-240V ~ 50/60Hz. - Adicione o dissipador alternativo D e o invólucro alternativo C para MB8, MB9 e MB10 usados. - Adicione Ventilador de CPU alternativo e Ventilador do sistema frontal. - Add three new main boards (called MB8, MB9 and MB10) and new sixteen PSU sources. - Add input rating 3.2A 100-240V~ 50/60Hz. - Add alternative heatsink D and alternative enclosure C for MB8, MB9 and MB10 used. - Add alternative CPU Fan and Front system Fan.
17 de Abril de 2018 / April 17, 2018	<ul style="list-style-type: none"> - Adicione fontes de componentes alternativos para o ventilador da CPU, ventilador do sistema e chave de distribuição de energia. - Adicione duas novas classificações de entrada (4.2A 100-240V ~ 50-60Hz ou 5A 100-240V ~ 50-60Hz) a duas novas configurações (chamadas de Configuração 3 e 4). - Adicione novas fontes de treze fontes de alimentação, duas novas placas principais (MB7 e MB8) e cinco sub-placas (chamadas de sub-placa de 1 a 5). - Atualizar informações de Polyswitch - Add alternative component sources for CPU fan, system fan and Power Distribution Switch. - Add two new input ratings (4.2A 100-240V~ 50-60Hz or 5A 100-240V~ 50-60Hz) to two new configurations (called Configuration 3 and 4). - Add new thirteen PSU sources, two new main boards (MB7 and MB8), five sub-boards (called Sub-board 1 to 5). - Update Polyswitch information.
19 de Março de 2018 / March 19, 2018	<ul style="list-style-type: none"> - Adicione três placas principais alternativas (MB6, MB7 e MB8) e cartões de complemento. - Adicionar nova classificação 4.62A 19.5Vdc para MB7 usado. - Adicione o cartão opcional VGA MICRO CABLE, o cartão PS2 COMM CABLE, o cartão HDMI CABLE, o cartão DISPLAY CABLE, o cartão USB TYPE C CABLE e o cartão SFP. - Adicione uma nova forma de gabinete de decoração na parte da frente. - Mude o nome do produto para Computador Pessoal. - Reorganize a ilustração de Schematics, placa de classificação, instruções de segurança e Layout de PCB - Adicionar fonte alternativa de adaptador AC / DC da DA90PM111 de Delta e LA90PM111 de Lite-On - Add three alternative main boards (MB6, MB7 and MB8) and add-in cards. - Add new rating 4.62A 19.5Vdc for MB7 used. - Add optional VGA MICRO CABLE Card, VGA MICRO CABLE Card, PS2 COMM CABLE Card, PS2 COMM CABLE Card-2, HDMI CABLE Card, DISPLAY CABLE Card, USB TYPE C CABLE

	<p><i>Card, and SFP Card.</i></p> <ul style="list-style-type: none"> - Add a new decoration enclosure shape on the front side. - Change product name to Personal Computer. - Reorganize illustration of Schematics, rating plate, safety instruction and PCB Layout.. - Add alternate AC/DC Adapter source of DA90PM111 of Delta and LA90PM111 of Lite-On
05 de Janeiro de 2018 / January 05, 2018	<ul style="list-style-type: none"> - Reorganize o formato CoC para D13S, D13S ... - Adicione uma placa principal alternativa chamada MB3. - Adicione dez fontes alternativas de fontes de energia para o MB3 usado apenas. - Adicionar nova classificação de entrada de "3.2A, 100-240V ~, 50-60Hz ou 1.6A, 200-240V ~, 50-60Hz ou 6.6 / 3.3A, 100-127 / 200-240V ~, 50-60Hz" para 200W PSUs / MB3 utilizados apenas. - Reorder CoC format for D13S, D13S... - Add one alternative main board called MB3. - Add ten alternative sources of power supplies for MB3 used only. - Add new input rating of "3.2A, 100-240V~, 50-60Hz or 1.6A, 200-240V~, 50-60Hz or 6.6/3.3A, 100-127/200-240V~, 50-60Hz" for 200W PSUs/MB3 used only.
20 de Outubro de 2017 / October 20, 2017	Renovação do certificado / Certificate renewal
31 de Agosto de 2017 / August 31, 2017	Unificação do certificado ULBR 15.0534, ULBR 15.0552 e ULBR 15.0981 a este certificado / <i>Unification of the certificate ULBR 15.0534, ULBR 15.0552 and ULBR 15.0981 to this certificate.</i>
23 de Novembro de 2016 / November 23, 2016	<ul style="list-style-type: none"> - Adicionar placa PCB principal alternativa tipo B. - Adicionar três placas principais alternativas MB3, MB4 e MB5. - Adicionar fontes de fonte de alimentação para MB3, MB4 e MB5 usados - Adicione uma placa alternativa VGA pequena. - Add alternative main board PCB type B. - Add three alternative main board MB3, MB4 and MB5. - Add PSU sources for MB3, MB4 and MB5 used - Add one alternative VGA small board.
21 de Janeiro de 2016 / January 21, 2016	<ul style="list-style-type: none"> - Co1. Correct typo of component sources for system fan. - Ad 2. Alternative component sources for CPU fan.
12 de Janeiro de 2015 / January 12, 2015	Emissão inicial / Initial Issue
<p>A última revisão substitui e cancela as anteriores <i>The last review cancel and substitutes the previous ones</i></p>	

Fornecedor / Supplier (100120-728)	DELL COMPUTADORES DO BRASIL LTDA Av. Emancipação, 5000 13184-654 – Hortolândia – SP – Brasil CNPJ: 72.381.189/0006-25
Produto Certificado / Certified Product	COMPUTADOR DE MESA / DESKTOP COMPUTER COMPUTADOR PESSOAL / PERSONAL COMPUTER
Família de Produto / Product's Family	N/A
Modelo - Tipo / Model - Type	Modelo(s)/Model(s): D10U(refer to appendix A), D18M(refer to appendix B), D11S(refer to appendix C), D15S(refer to appendix D), D29M(refer to appendix E), D14U(refer to appendix F) Tipo(s)/Type(s): D10U...(refer to appendix A), D18M...(refer to appendix B), D11S...(refer to appendix C), D15S...(refer to appendix D), D29MXXX(refer to appendix E), D14U...(refer to appendix F)
Descrição (Nome comercial) / Description (Brand Name)	DELL
Marca Comercial / Trademark	DELL
Lote ou No. de Série / Lot or Serial Number	N/A
Normas Aplicáveis / Applicable standards	REFER TO APPENDIX PAGE
Programa de Certificação ou Portaria / Certification Program or Decree	PORTARIA NO. 170/2012 / DECREE NO. 170/2012 PORTARIA NO. 407/2015 / DECREE NO. 407/2015
Relatório de Avaliação e Ensaios / Assessment and Test Report #	BR2263, VOL. 2, SEC 81, 90, 91, 108, 109, 110
Concessão Para / Concession for	Ostentar o Selo de Identificação da Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado. <i>Bearing the Conformity Identification Seal of the Brazilian System of Evaluation of Conformity (SBAC) on the product covered by this certificate</i>

Revisão / Revision date
Validade / Expire date

06 de abril de 2020 / April 06, 2020
07 de Novembro de 2022 / November 07, 2022

Délzuite M. Ferreira Jr.
Gerente de Operações /
Operations Manager

UL do Brasil Certificações , organismo acreditado pela Coordenação Geral de Acreditação do INMETRO – CGCRE, segundo o registro N° OCP-0029 confirma que o produto está em conformidade com a(s) Norma(s) e programas ou Portarias acima descritas.

UL do Brasil Certificações , Certification Body accredited by Coordenação Geral de Acreditação do INMETRO - CGCRE according to the register Nr OCP-0029 confirms that the product is in compliance with the standards and certification Programs or Decrees above mentioned.



Solicitante / Applicant
(654965-006) **Dell Inc.**
One Dell Way
Mail Stop PS4-30
Round Rock, TX 78682

Fabricante / Manufacture
(100514-856) **PCE TECHNOLOGY DE JUAREZ S A DE C V**
Blvd. Internacional 888
San Jeronimo CD
32505 – Juarez Chihuahua – Mexico

MARCAÇÃO / MARKING: Marca do fabricante, modelo e características elétricas.

LISTA DE ACESSÓRIOS / LIST OF ACCESSORIES: N/A

MODELO DE CERTIFICAÇÃO / CERTIFICATION MODEL: 5

VERSÃO DO PROJETO DO PRODUTO / PRODUCT DESIGN VERSION: N/A

DOCUMENTOS / DOCUMENTS:

Título / <i>Title</i>	Número / <i>Number</i>	Revisão / <i>Revision</i>	Data emissão / <i>Issuing Date</i>	Data de Realização / <i>Performance Date</i>
<<Dados da Auditoria / Audit data >> (Fabricante / Manufacture) PCE TECHNOLOGY DE JUAREZ S A DE C V	BR2263	0	2020-03-13	N/A
<<Dados da Auditoria / Audit data >> (Fornecedor / Supplier) DELL COMPUTADORES DO BRASIL LTDA	BR2263	0	2019-02-22	N/A

Appendix A (Modelo/Model: D10U, D10U...)

(The dots "." in model name can be 0 to 9, A to Z, a to z, or blank for marketing purpose only)

CARACTERÍSTICAS NOMINAIS / RATINGS:

IP: 3.34A 19.5Vdc (For Main Board 2); 4.62A 19.5Vdc (For Main Board 7) / Class III; IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 22:2008 / CISPR 32:2012 Class B / CISPR 32:2015 Class B, CISPR 24: 2010 +A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Front bezel (decorate parts)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber Stand	Interchangeable	Interchangeable	HB min.	UL 94	UL
Fire enclosure	Interchangeable	Interchangeable	Metal, min. 0.6 mm thick	IEC 60950-1	Tested in the equip.
Internal plastic	Interchangeable	Interchangeable	V-2 min.	UL 94	UL
PCBs	Inter-changeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Stand (Optional)	Inter-changeable	Interchangeable	HB min.	UL 94	UL
AC/DC Adapter	Acbel (Dell Inc. or DELL)	AA65NM121	I/P: 1.7A 100-240V~ 50-60Hz, Cl. I with class II construction throughout O/P: 3.34A +19.5V	IEC 60950-1 (ed.2);am1; am2, UL 60950-1	CB by Nemko (NO88505), UL
	Delta (Dell Inc.)	DA65NM111-00	I/P: 100-240Vac; 1.6A; 50-60Hz, Cl. I O/P: 19.5Vdc; 3.34A		CB by UL (Demko) (DK-45612-UL), UL
	Chicony (Dell Inc. or DELL)	HA65NS5-00	I/P: 1.7A 100-240V~ 50-60Hz, Cl. I O/P: 3.34A 19.5V		CB by Nemko (NO89677), UL
	Lite-On (DELL)	LA65NS2-.. The dots "." in model name can be any alphanumeric character including blank, for marketing use only.	I/P: 1.6A 100-240V 50-60Hz, Cl. I O/P: 3.34A max. 19.5V		CB by Nemko (NO82445), UL
	Chicony (DELL)	HA130PM16Z The Z in model name can be 0 to 9, for marketing purpose.	Input: 1.8A 100-240V~ 50-60Hz DC-output: 6.7A 19.5V		CB by Nemko (NO91721/M1), UL
	Delta (DELL)	DA130PE1-XX (X can be any alphanumeric characters or blank)	Input: AC 100-240V, 2.5A, 50-60Hz Output: DC19.5V, 6.7A		CB by TUV RH (JPTUV- 065556), UL
Alt. AC/DC Adapter	Delta (Dell Inc.)	DA90PM111	I/P: 2.5A 100-240V~ 50-60Hz DC-output: 6.7A 19.5V	IEC 60950-1 (ed.2);am1; am2, UL 60950-1	CB by Nemko (NO86084), UL
	Lite-On (DELL)	LA90PM111	Input: 100-240Vac 1.5A , 50-60Hz Output: 19.5Vdc 4.62A Input: 2.5A 100-240V, 50-60Hz or 1.5A 100-240V 50-60Hz DC-output: 4.62A 19.5V		CB by UL (DK-43004- UL), UL CB by Nemko (NO85959), UL
HDD / SSD (optional)	Western Digital Technology, Inc	WDU000UXZYYXXYY	5Vdc, 1.5 A max.	IEC 60950-1, EN 60950-1, UL 60950-1 IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL
	Lite-On IT Corporation	LMS-xxL6Mxxxxx (x can be any alphanumeric or blank)	3.3Vdc, 2.0A max.		TUV, UL
	Micron Technology, Inc.	MTFDDAKxxxMAV, (where xxx may be any alpha numeric character representing density)	5Vdc, 2.0A max.		TUV, UL
	Interchangeable	Interchangeable	5Vdc, 2.0 A max or 3.3Vdc, 2.0A max.		Verified by Nemko or other certificate body, UL
RTC battery (Lithium type)	Mitsubishi	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH212249)
	Panasonic	BR-2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as	3Vdc, maximum abnormal charging current 5mA		UL (MH12210)

	Shun Wo	various mounting tabs, connecting leads or plugs, packaging, etc.) CR2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc.)	3Vdc, maximum abnormal charging current 10mA		UL (MH25881)
Alt.RTC battery (Lithium type)	Vic Dawn Jhih Hong Panasonic	CR2032 CR2032 CR-2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging, etc.)	3Vdc, maximum abnormal charging current 10mA 3Vdc, maximum abnormal charging current 10mA 3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH20550) UL (MH48406) UL (MH12210)
CPU Fan (For MB1, MB2, MB3, MB4, MB7 and MB8 used)	Sunonwealth Foxconn Delta	EF70150SX-CZ (Z stands for 30 characters. Each character stands for one of the following signs): 0-9, A-Z, (,), ., /, - or blank for marketing purpose only.) PVB070E05N-P02 KSB0705HB-AXXXXXXX (X stands for 0-9, A-Z, - or blank for marketing purpose only)	5Vdc, max. 0.9 A, 11CFM min. 5Vdc, 1.1 A max., 11 CFM min. 5Vdc, max. 1.0 A, 10.55CFM min.	EN 60950-1:2006+A11+A1+A12+A2, UL 507	TUV, UL TUV, UL TUV, UL
CPU Fan (For MB5 and MB6 used)	Delta AVC	BUC1612VD-00XXXXXX (X stands for A-Z, 0-9, - or blank for marketing purpose only) BAZB0715R2UV (V can be ABCD where A, B, C, D may be A-Z or 0-9 or -)	12Vdc, max. 1.1 A, 13.9 CFM min. 12Vdc, max. 1.0A, 14 CFM min.	EN 60950-1:2006+A11+A1+A12+A2, UL 507	TUV, UL
External USB Optical Disk Drive (Optional)	Hitachi-LG Data Storage, Inc or equivalent	GU9** or equivalent	5Vdc, 1.8A. Laser class I. 5Vdc, 1.8A, Laser class 1	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11+A1+A12+A2, EN 60825-1 EN 60950-1:2006+A11+A1+A12+A2, EN 60825-1	TUV Verified by Nemko or other certificate body, UL
PCBs	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Stand (Optional)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data de Realização / Performance Date
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	283154	0	2015-04-22	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	303954	0	2016-03-04	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	305355	0	2016-03-17	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	315629	0	2016-09-08	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	337871	0	2017-08-23	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	339549	0	2017-09-29	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	341950	0	2017-11-13	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE191CE	0	2015-05-22	N/A

Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE191FB	0	2015-05-26	N/A
Relatório de ensaio emitido por / Test report issued by Central Research Technology Co. EMC Test Laboratory	O-P321-1607-099	0	2016-09-07	N/A
Relatório de ensaio emitido por / Test report issued by Central Research Technology Co. EMC Test Laboratory	F-P321-1607-099	0	2016-09-07	N/A
Relatório de ensaio emitido por / Test report issued by Central Research Technology Co. EMC Test Laboratory	O32-P320-1709-175	0	2017-10-24	N/A
Relatório de ensaio emitido por / Test report issued by Central Research Technology Co. EMC Test Laboratory	F-P320-1709-175	0	2017-10-24	N/A
Relatório de ensaio emitido por / Test report issued by Underwriters Laboratories Taiwan Co., Ltd.	4787592249	0	2016-12-02	N/A
Relatório de ensaio emitido por / Test report issued by Underwriters Laboratories Taiwan Co., Ltd.	4788375372	0	2018-03-13	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix B (Modelo/Model: D18M, D18M...)

(The dots "." in model name can be 0 to 9, A to Z, a to z or blank for marketing purpose.)

CARACTERÍSTICAS NOMINAIS / RATINGS:

I/P: 4A 100-240V~ 50-60Hz, or 4.2A 100-240V~ 50-60Hz or 5A 100-240V~ 50-60Hz, Class I, IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 22:2008 / CISPR 32:2012 Class B / CISPR 32:2015 Class B, CISPR 24: 2010 +A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Front bezel (Decorative part)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber stand Cover bottom opening	Interchangeable	Interchangeable	HB min.	UL 94	UL.
Fire enclosure	Interchangeable	Interchangeable	Metal, min. 0.6 mm thick	IEC 60950-1	Tested in the equip.
Internal Plastic	Interchangeable	Interchangeable	V-2 min.	UL 94	UL
Power supply for building-in	Lite-On Technology Corp. (DELL)	L240EPM-00; L240AM-00; L240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs 16.5A max. +12VA, 16A max. +12VB, 2.5A max. +12VSB, Maximum continuous total DC output power shall not exceed 240W. (Altitude during operation: 5000m)	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1 +A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85503), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H240EM-00; H240AM-02	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs 16.5A +12VADC, 16A +12VBDC, 2.5A +12VSB, Max. output power is 240W. (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85308), N, UL
	Delta Electronics Inc. (DELL)	D240EPM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA/16.5A, +12VB/16A,+12VSB/2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO84799), N, UL
Alt. power supply for building-in	Delta Electronics Inc. (DELL)	D240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA/16.5A, +12VB/16A,+12VSB/2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1 +A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85131), N, UL
	Acbel Polytech Inc. (DELL)	AC240AM-00; AC240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA/16.5A, +12VB/16A,+12VSB/2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85533), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B240AM-00; B240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs 16.5A +12VA, 16A +12VB, 2.5A +12VSB; TOTAL 240W MAX (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85472), N, UL
	Flextronics sales & Marketing(A-P) Ltd. (DELL)	F240EPM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA 16.5A, +12VB 16A, +12VSB 2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85204), N, UL
	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU240AM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VAdc 16.5A, +12VBdc 16A, +12VSBdc 2.5A, Max. output power: 240W. (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85149), N, UL
Alt. power supply for building-in	Lite-On Technology Corp. (DELL)	L240AS-01, L240ES-00, L240EPS-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: 16.5A MAX +12VA, 16A MAX +12VB Standby mode: 0.5A +12VA, 2.5A +12VB, Max. total output current 2.5A. Maximum continuous total DC output	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1 +A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93733), N, UL

	Chicony Power Technology Co., Ltd.(DELL)	H240ES-02, H240AS-02	power shall not exceed 240W. (Altitude during operation: 5000m) I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB Max. output power is 240W or Standby mode: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB shall not exceed 2.5A. (Altitude during operation: 5000m) I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: +12VA/16.5A,+12VB/16.0A, STANDBY MODE: +12VA/0.5A, +12VB/2.5A, MAX COMBINED +12VA AND +12VB CURRENT IS 2.5A, MAX OUTPUT POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO93345), N, UL CB by Nemko (Cert. No.: NO93538), N, UL
Alt. power supply for building-in	Acbel Polytech Inc. (DELL) Bestec Power Electronics Co., Ltd. (DELL) Shenzhen Huntkey Electric Co., Ltd.(DELL)	AC240AS-02, AC240ES-02 B240AS-00, B240ES-00 HU240AS-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: 16.5A +12.0VA, 16.0A +12.0VB TOTAL POWER 240W MAX. 0.5A +12.0VA, 2.5A +12.0VB MAX. 2.5A for STANDBY MODE. (Altitude during operation: 5000m) I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: +12VA/ 16.5A, +12VB/ 16A, STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, STANDBY MODE +12VA & +12VB MAX. 2.5A , TOTAL 240W MAX. (Altitude during operation: 5000m) I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: +12VA 16.5A, +12VB 16A, Max. output power: 240W. Standby mode +12VA 0.5A, +12VB 2.5A,+12VA and +12VB combine output current should not exceed 2.5A (Altitude during operation: 5000m)	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by Nemko (Cert. No.: NO93603), N, UL CB by Nemko (Cert. No.: NO93497/M1), N, UL CB by Nemko (Cert. No.: NO94060), N, UL
Alt. power supply for building-in	Acbel Polytech Inc. (DELL) Bestec Power Electronics Co., Ltd. (DELL) Delta Electronics, Inc. (DELL) Delta Electronics, Inc. (DELL)	AC260EBM-00; AC260AM-00 B260EBM-00 D260AM-00 D260EPM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: + 12VA; 16.5A, + 12VB; 16.0A Standby mode: + 12VA; 0.5A, + 12VB; 2.5A, Max. 2.5A Total power 260W max. I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: +12VA/16.5A, +12VB/ 16A, STANDBY MODE MAX.2.5A: +12VA/0.5A, +12VB/2.5A, TOTAL 260W MAX. I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: Normal condition: DC +12VA/16.5A, +12VB/16.0A Total max. output power 260W Standby mode: DC +12VA/0.5A, +12VB/2.5A Total max. output current 2.5A I/P: 4.2A 100-240V~ 50-60Hz, Cl. I Output rating: +12VADC/16.5A, +12VBDC/16.0A. Total power 260W. Standby mode: +12VADC/0.5A, +12VBDC/2.5A. +12VADC and +12VBDC combined max total output 2.5A	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by TUV-Rh (Cert. No.: JPTUV-083184), N, UL CB by Nemko (Cert. No.: NO99400), N, UL CB by TUV-Rh (Cert. No.: JPTUV-083393), N, UL CB by Nemko (Cert. No.:NO99408), N, UL
Alt. power supply for building-in	Chicony Power Technology Co., Ltd. (DELL) Chicony Power Technology Co., Ltd. (DELL)	H260EBM-00; H260AM-00 H260EPM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I 16.5A +12VA, 16A +12VB. STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A. MAX OUPUT POWER: 260W I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12VA, 16A +12VB MAX OUPUT POWER: 260W or STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by Nemko (Cert. No.: NO99279), N, UL CB by Nemko (Cert. No.: NO99356), N, UL

	Lite-On Technology Corporation (DELL) Chicony Power Technology Co., Ltd. (DELL)	L260EPM-00; L260EBM-00; L260AM-00 H360EGM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I O/P: +12VA/16.5A max; +12VB/16A max Standby mode: +12VA/0.5A max; +12VB/2.5A max, total max. 2.5A Continuous total DC output power 260W max. I/P: 5A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12VA, 16A +12VB, 8A +12VC Standby mode: 0.5A +12VA, 2.5A +12VB +12VA & +12VB shall not exceed 2.5A. MAX OUTPUT POWER 360W for model H360EGM-00		CB by TUV-Rh (Cert. No.: JPTUV-083217), N, UL CB by Nemko (Cert. No.: NO99300), N, UL
Alt. power supply for building-in	Lite-On Technology Corporation (DELL)	L360EGM-00	I/P: 5A 100-240V~ 50-60Hz, Cl. I DC-outputs: (normal mode) +12VA/16.5A max., +12VB/16A max., +12VC/8A max., (standby mode) +12VA/0.5A max., +12VB/2.5A max.; total Max. 2.5A Max. continuous total DC output Power shall not exceed 360W at 45 °C Max. continuous total DC output Power shall not exceed 300W at 55°C Max. continuous total DC output current for standby mode shall not exceed 2.5A at 40°C	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by TUV-Rh (Cert. No.: JPTUV-083700-A1), N, UL
Hard Disk Drive (HDD) (Three provided max.) (Optional) (2.5 or 3.5 inch HDD)	Hitachi Global Storage Technologies Japan Ltd.	H Series, D Series	5Vdc/12Vdc, 1.5A max./2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1	CB by TUV-Rh, UL
	Seagate Technology International	ST9 or 2.5 Series or ST with additional suffixes	5Vdc, 1.5A max.	IEC 60950-1, EN 60950-1, UL 60950-1	CB by UL, UL
	Interchangeable	Interchangeable	5Vdc/12Vdc, 1.5A max./2.0A max. or 5Vdc, 1.5A max.	IEC 60950-1, EN 60950-1, UL 60950-1	Verify by Nemko or other cert. body, UL
Optical Disk Drive (Two provided ax.) (Optional)	Toshiba Samsung Storage Technology Korea Corporation	TS-H663*; TS-H662; SH-S222; TS-H652; TS-H653*; SH-S202; SH-S203; SH-S223; SH-S243; SH-S163 (The symbol "*" can be any alphanumeric character or blank, not affecting safety.)	1.0A, 1.5A, 2.0A or 2.5A 5Vdc, 1.5A, 2.0A or 3.0A 12Vdc, Laser class 1	IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1	CB by Nemko, UL
-Front bezel	Interchangeable	Interchangeable	Min. V-1.	UL 94	UL
Alt. Optical Disk Drive (Optional)	Interchangeable	Interchangeable	Max. 2.5A 5Vdc, max. 3.0A 12Vdc, Laser class 1	IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1	Verify by Nemko or other cert. body, UL
-Front bezel	Interchangeable	Interchangeable	Min. V-1.	UL 94	UL
CPU Fan	Asia Vital Components Co., Ltd.	DS08025R12UV (V can be ABCD, where A,B,C,D may be A-Z, 0-9 or "-" for marketing purpose only)	12Vdc, 0.7A max., 53.82CFM min.	EN 60950-1, UL 507	TUV, UL
	Delta Electronics Inc. Sunonwealth Electronic Machine Industry Co., Ltd.	QUR0812SH MF80251V2-QZ, (Z stands for 15 characters. Each character stands for one of the following signs: 0-9, A-Z, (,), ., /, -, or blank for marketing purpose only)	12Vdc, 0.5A max., 52.83CFM(min.) 12Vdc, 0.3A max., 48.0CFM(min.)	EN 60950-1, UL 507 EN 60950-1, UL 507	VDE, UL TUV, UL
	Foxconn Technology Co., Ltd.	PVA080G12Q	12Vdc, 0.65A max., 59.0CFM(min.)	EN 60950-1, UL 507	TUV, UL
Alt. CPU Fan	Shenzhen DongWeifeng Electronic Technology Co., LTD.	EF(X)-08E12(Y)(Z), where (X) may be S, H, B, C or F, (Y), may be W, (Z) may be blank, may be - - WWWW, W can be 0 to 9 or A to Z.	12Vdc, 0.7A max., 53.45 CFM (min.)	EN 60950-1, UL 507	TUV, UL
	Asia Vital Components Co., Ltd.	DASD0825B2SV (V=ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, 1.20A max., 70.85CFM (min.)	EN 60950-1, UL 507	TUV, UL
	Delta Electronics Inc.	QFR0812UHZ	12Vdc, 0.87A max., 63.21CFM (min.)	EN 60950-1, UL 507	TUV, UL

	Foxconn Technology Co., Ltd.	(Z stands for 5 characters. Each character stands for one of the following signs: 0-9, A-Z or blank) PVA080G12R	12Vdc, 0.80A max., 71CFM (min.)	EN 60950-1, UL 507	TUV, UL
System Fan (Optional)	Asia Vital Components Co., Ltd.	DASA0820R2UV (V can be ABCD, where A,B,C,D may be A-Z, 0-9 or "-" for marketing purpose only)	12Vdc, 0.6A max., 46.02CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Delta Electronics Inc. Sunonwealth Electronic Machine Industry Co., Ltd.	AUB0812HHD MF80201VX-Q0Z(Z stands for 30 characters. Each character stands for one of the following signs: 0-9, A-Z, (,), "-", or blank)	12Vdc, 0.4A max., 46.31CFM(min.) 12Vdc, 0.32A max., 40.8CFM(min.)	EN 60950-1, UL 507 EN 60950-1, UL 507	VDE, UL TUV, UL
	Foxconn Technology Co., Ltd.	PVA080F12H	12Vdc, 0.36A max., 40.0CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Shenzhen Dongweifeng Electronic Technology CO., LTD	EFS-08D12H	12Vdc, 0.4A max., 49.5CFM(min.)	EN 60950-1, UL 507	TUV, UL
Alt. System Fan (Optional)	Delta Electronics Inc.	AFC0812DD	12Vdc, 0.75A max., 54.64 CFM(min.)	EN 60950-1, UL 507	VDE, UL
	Shenzhen DongWeifeng Electronic Technology Co., LTD.	EFx-08D12De Where x= S,H,B,C or F; e= additional code for marketing purpose, e= blank or -www (w can be 0-9 or A-Z)	12Vdc, 0.70A max., 56.73 CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Foxconn Technology Co., Ltd. Asia Vital Components Co., Ltd.	PVA080F12S DASA0820B2UV (V=ABCD where A,B,C,D may be A-Z, 0-9 or "-")	12Vdc, 0.56A max., 57.60CFM (min.) 12Vdc, 0.60A max., 55.48CFM (min.)	EN 60950-1, UL 507 EN 60950-1, UL 507	TUV, UL TUV, UL
RTC battery	Jihh Hong Technology Co Ltd	CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH48406)
	Mitsubishi Electric Home Appliance Co Ltd	CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH21249)
	Vic-Dawn Enterprise Co Ltd	CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH20550)
	Panasonic Corporation, Panasonic Corporation Of North America	CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH12210)
PCB	Interchangeable	Interchangeable	V-1 min., 105°C	UL 796	UL
Speaker (one provided)	Interchangeable	Interchangeable	4ohm, max. 2.5Watt	--	Test in the equipment.
Wireless LAN Module (Optional)	Interchangeable	Interchangeable	3.3Vdc or 12Vdc	--	Test in the equipment.
Main Board 1 (type:WF0122)					
Main Board 2 (type:SF1015)					
Main Board 3 (type: SF0509)					
Main Board 4 (type:AF0509)					
Main Board 5 (type:BF0509)					
Main Board MB7 (type: BE0724)					
Main Board MB8 (type: CG0724)					
VGA small board 1 (optional)					
VGA small board 2 (optional)					
VGA small board 3 (optional)					
VGA small board 4 (optional)					
Sub-board 1 (VGA) (Optional)					
Sub-board 2 (HDMI) (Optional)					
Sub-board 3 (Display) (Optional)					
Sub-board 4 (USB type C) (Optional)					

Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO
----------	---------	---------	------	------------------------------	---------

DOCUMENTOS / DOCUMENTS:

Título / <i>Title</i>	Número / <i>Number</i>	Revisão / <i>Revision</i>	Data emissão / <i>Issuing Date</i>	Data de Realização <i>Performance Date</i>
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	284760	0	2015-05-12	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	297979	0	2015-12-01	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	306254	0	2016-04-06	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	316837	0	2016-10-13	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	332989	0	2017-06-15	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	339191	0	2017-09-15	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	342675	0	2017-12-01	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	350821	0	2018-03-22	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-15LE118CE	0	2015-05-22	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-15LE118FB	0	2015-05-22	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LE452CE	0	2016-10-13	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LE452FB	0	2016-10-13	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LE452CE-R3	0	2017-06-26	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LE452FB-R3	0	2017-06-26	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-18LE143CE	0	2018-03-19	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-18LE143FB	0	2018-03-19	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-15LS009OS	0	2015-06-17	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LS031OS	0	2016-10-26	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-17LS011OS	0	2017-06-27	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-18LS011OS	0	2018-03-30	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix C (Modelo/Model: D11S, D11S...)

(The dots "." in model name can be 0 to 9, A to Z or blank, for marketing purpose only.)

CARACTERÍSTICAS NOMINAIS / RATINGS:

I/P: 3.0A 100-240V~ 50/60Hz or 4.0A 100-240V~ 50/60Hz or 3.2A 100-240V~50/60Hz, Class I; IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1:2005 (2nd Edition); Am 1:2009; Am 2:2013, CISPR 22: 2008, CISPR 32:2012, Class B / CISPR 32:2015, Class B, CISPR 24: 2010+A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6:2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004; e Anexo E da Portaria no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/Technical data	Norma/Standard	Marca de conformidade/Mark(s) of conformity
Front bezel (decorate parts)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	--	Tested in the equip.
Rubber stand	Interchangeable	Interchangeable	HB min.	UL94	UL
Internal plastic	Interchangeable	Interchangeable	V-2 min. or HF-2 min.	UL 94	UL
Power supply for building-in (PSU)	Acbel (DELL)	AC180AS-00, AC180ES-00	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12.0A +12.0VA, 14.0A +12.0VB, 2.5A +12.0VSB. Total power 180W max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Bestec (DELL)	B180AS-00	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A +12VA, 14A +12VB, 2.5A +12VSB TOTAL 180W MAX	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H180AS-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A +12VADC, 14A +12VBDC, 2.5A +12VSB Max. output power is 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D180EPS-00	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA/12A, +12VB/14A, +12VSB/2.5A OUTPUT MAX POWER 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D240EPM-00	I/P: 4.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA/16.5A, +12VB/16A, +12VSB/2.5A OUTPUT MAX POWER 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Flextronics (DELL)	F180ES-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA, 12A; +12VB, 14A; +12VSB, 2.5A Max output power is 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Flextronics (DELL)	F180EPS-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA 12A, +12VB 14A, +12VSB 2.5A OUTPUT MAX POWER 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Flextronics (DELL)	F240EPM-00	I/P: 4A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA, 16.5A, +12VB, 16A, +12VSB, 2.5A OUTPUT MAX POWER 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L180ES-00, L180AS-00, L180EPS-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A max. +12VA, 14A max. +12VB, 2.5A max. +12VSB. Max. continuous total DC output power shall not exceed 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L240EPM-00	I/P: 4A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 16.5A MAX +12VA, 16A MAX +12VB, 2.5A MAX +12VSB. Maximum continuous total DC output power shall not exceed 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL

Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU180AS-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I DC outputs: +12VAdc 12A, +12VBdc 14A, +12VSBdc 2.5A Max. output power: 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU180ES-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VAdc 12A, +12VBdc 14A, +12VSBdc 2.5A Max. output power: 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Acbel (DELL)	AC180AS-01, AC180ES-01	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12.0A +12.0VA, 14.0A +12.0VB TOTAL POWER 180W MAX. 0.5A +12.0VA, 2.5A +12.0VB MAX. 2.5A for STANDBY MODE.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Bestec (DELL)	B180AS-02	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA/ 12A, +12VB/ 14A, STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, STANDBY MODE +12VA & +12VB MAX. 2.5A TOTAL 180W MAX.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H180AS-02, H180ES-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A +12VA, 14A +12VB Max. output power is 180W or Standby mode: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB shall not exceed 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D180ES-01, D180EPS-01	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA/12A, +12VB/14A, STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, MAX COMBINED +12VA AND +12VB CURRENT IS 2.5A, MAX OUTPUT POWER 180W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L180EPS-01; L180ES-01; L180AS-02	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A MAX +12VA, 14A MAX +12VB Standby mode: 0.5A +12VA, 2.5A +12VB, Max. total output current 2.5A Maximum continuous total DC output power shall not exceed 180W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU180AS-01, HU180ES-01	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VAd.c. 12A, +12VBd.c. 14A, Max. output power 180W. Standby Mode: +12V/0.5A; +12VB/2.5A; +12VA & +12VB, total load 2.5A max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Acbel (DELL)	AC240AS-02, AC240ES-02	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12.0VA, 16.0A +12.0VB TOTAL POWER 240W MAX. 0.5A +12.0VA, 2.5A +12.0VB MAX. 2.5A for STANDBY MODE.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Bestec (DELL)	B240AS-00, B240ES-00	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VA/ 16.5A, +12VB/ 16A, STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, STANDBY MODE +12VA & +12VB MAX. 2.5A, TOTAL 240W MAX.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H240ES-02, H240AS-02	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB Max. output power is 240W or Standby mode: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB shall not exceed 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D240EPS-00, D240ES-02	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VA/16.5A, +12VB/16.0A, STANDBY MODE: +12VA/0.5A, +12VB/2.5A, MAX COMBINED +12VA AND +12VB CURRENT IS 2.5A, MAX OUTPUT POWER 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL

Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L240AS-01, L240ES-00, L240EPS-00	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A MAX +12VA, 16A MAX +12VB Standby mode: 0.5A +12VA, 2.5A +12VB, Max. total output current 2.5A. Maximum continuous total DC output power shall not exceed 240W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU240AS-00	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VA 16.5A, +12VB 16A, Max. output power: 240W. Standby mode +12VA 0.5A, +12VB 2.5A, +12VA and +12VB combine output current should not exceed 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Acbel (DELL)	AC200AS-00, AC200EBS-00	Input: AC 100-240V, 50-60Hz, 3.2A Cl. I. Output: DC +12.0VA; 16.5A, +12.0VB: 14.0A Standby mode DC +12.0VA; 0.5A, +12.0VB; 2.5A (Max. 2.5A) TOTAL POWER 200W MAX.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV Rh, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H200AS-00, H200EBS-00	I/P: 3.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 14A +12VB. STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A. MAX OUPUT POWER: 200W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H200EPS-00	I/P: 3.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 14A +12VB MAX OUPUT POWER: 200W or STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H260EPM-00	I/P: 4.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB MAX OUPUT POWER: 260W or STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H300EGS-00	I/P: 4.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB, 8A +12VC Standby mode: 0.5A +12VA, 2.5A +12VB +12VA & +12VB shall not exceed 2.5A. MAX OUTPUT POWER 300W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D200EPS-00	I/P: 3.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VADC/16.5A, +12VBDC/14.0A. Total power 200W. Standby mode: +12VADC/0.5A, +12VBDC/2.5A. +12VADC and +12VBDC combined max total output 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D260EPM-00	I/P: 4.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VADC/16.5A, +12VBDC/16.0A. Total power 260W. Standby mode: +12VADC/0.5A, +12VBDC/2.5A. +12VADC and +12VBDC combined max total output 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L200AS-00, L200EBS-00	Input: AC 100-240V, 3.2A, 50-60Hz, Cl. I. Output: DC +12VA/16.5A max., +12VB/ 14A max.(Normal Mode), +12VA/ 0.5A max., +12VB/ 2.5A max.; total Max. 2.5A (Standby Mode); Max. continuous total DC output Power shall not exceed 200W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV Rh, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L200EPS-00	Input: 100-240V, 50-60Hz, 3.2A Cl. I. Output: +12VA/16.5A max., +12VB/ 14A max Standby mode: +12VA/ 0.5A max., +12VB/ 2.5A max.; total Max. 2.5A. continuous total DC output Power 200W max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV Rh, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L260EPM-00	Input: 100-240V, 50-60Hz, 4.2A Cl. I. Output: +12VA/16.5A max., +12VB/ 16A max Standby mode: +12VA/ 0.5A max., +12VB/ 2.5A max.; total Max. 2.5A. continuous total DC output Power 260W max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV

Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU200AS-00, HU200EBS-00	Input: 100-240V, 50-60Hz, 3.2A Cl. I. DC Output: +12VA/16.5A, +12VB/14A Max. 200W. Standby mode: +12VA/0.5A, +12VB/2.5A, Max. 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A12+A2, UL 60950-1 (ed.2)	CB by UL (Demko), UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU300EGS-00	Input: 100-240V, 50-60Hz, 4.2A Cl. I. DC Output: +12VA/16.5A; +12VB/16A; +12VC, 8A. MAX. OUTPUT POWER: 300W. Standby mode: +12VA/0.5A, +12VB/2.5A, Max. 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A12+A2, UL 60950-1 (ed.2)	CB by UL (Demko), UL
HDD / SSD (Optional)	Hitachi Global Storage	HDS7225nnVLATnn	Max. 1.5/2.0A, 5/12Vdc	EN 60950-1: 2006/A2, UL 60950-1	TUV, UL
	LITE-ON	LMS-xxL6Mxxxxx (x can be any alphanumeric or blank)	3.3Vdc, 2.0A max.		TUV, UL
	Lite-On	CF1-CPxxxxxxx	5Vdc, 2.0A max.		CB by TUV, UL
	Interchangeable	Interchangeable	Max. 1.5/2.0A, 5/12Vdc or 5Vdc or 3.3Vdc, 2.0A max.	EN 60950-1: 2006/A2, UL 60950-1	Verify by Nemko or other cert. body, UL
Optical Disk Drive (Optional)	Hitachi-LG Data Storage Inc.	DRW-24xyST (The "X" can be A to Z and the "y" can be 0 to 9 and the "z" or blank according to buyer, color or other configurations not related with safety.	5/12Vdc, 2.0/2.5A max. Laser class 1	EN 60950-1: 2006/A2, EN 60825-1, UL 60950-1	TUV, UL
	Hitachi-LG Data Storage Inc.	GUCxy (x can be any number 0 to 9 and y can be any alphanumeric denoting non safety related)	5Vdc, 1.5A max. Laser class 1	EN 60950-1: 2006/A2, EN 60825-1, UL 60950-1	TUV, UL
	Interchangeable	Interchangeable	Max. 5/12Vdc, 2.0/2.5A or Max. 5Vdc, 1.5A, Laser class 1	EN 60950-1: 2006/A2, EN 60825-1, UL 60950-1	Verify by Nemko or other cert. body, UL
CPU Fan	AVC	DS08025R12UV (V= ABCD where A, B, C, D may be A-Z, 0-9, or "-")	12Vdc, max. 0.7 A, 53.82 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	QUR0812SH	12Vdc, max. 0.5 A, 52.83 CFM min.	EN 60950-1: 2006/A2, UL507	VDE, UL
	Foxconn	PVA080G12Q	12Vdc, max. 0.65 A, 59 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Sunonwealth	MF80251V2-QZ (Z stands for 15 Characters. Each Character stands for one of the following signs: 0-9, A-Z, (,), -, /, - or blank.)	12Vdc, max. 0.3A, 48 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Shenzhen Dongweifeng	EFH-08E12WY (Y=Blank or - WWWWW, W can be 0 to 9 or A to Z)	12Vdc, max. 0.7 A, 53.45 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
Alt. CPU Fan	AVC	DASD0825B2SV (V can be ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, max. 1.2 A, 70.85 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	QFR0812UHZ (Z stands for 5 characters. Each character stands for one of the following signs): 0-9, A-Z, - or blank	12Vdc, max. 0.87 A, 63.21 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn	PVA080G12R	12Vdc, max. 0.8 A, 71 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	AUB0712VH	12Vdc, max. 0.56 A, 43.68 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn	PVA070G12Q	12Vdc, max. 0.5 A, 42 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
Alt. CPU Fan	AVC	BAZB0925R2UV (V can be ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, max. 1.0 A, 22 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	BUC1012SJ-00XXXXXX (X stands for A-Z, 0-9, - or blank for marketing purpose only)	12Vdc, max. 1.2 A, 23.25 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL

	Shenzhen Dongweifeng	EFH-08E12WY (Y=Blank or -WWWWW, W can be 0 to 9 or A to Z)	12Vdc, max. 0.7 A, 20.7 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn Sunonwealth	PVB120G12H-P01 MF80251V2-Q0Z (Z stands for 30 Characters. Each Character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank for marketing purpose only.)	12Vdc, max. 0.75 A, 20.47 CFM min. 12Vdc, max. 0.55 A, 20.7 CFM min.	EN 60950-1: 2006/A2, UL507 EN 60950-1: 2006/A2, UL507	TUV, UL TUV, UL
	AVC	BAZA1233R2UV (V can be ABCD where A, B, C,D may be A-Z, 0-9 or "-")	12Vdc, max. 0.9 A, 28.2 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	BUC1412VE-00XXXXXX (X stands for A-Z, 0-9, - or blank)	12Vdc, max. 1.2 A, 32.83 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
Alt. CPU Fan	Shenzhen Dongweifeng	EFH-12J12WZ (Z=blank or -WWWWW, W can be 0-9 or A-Z)	12Vdc, max. 1.0 A, 28.6 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn Interchangeable	PVB120J12H-P01 Interchangeable	12Vdc, max. 0.8 A, 30.03 CFM min. 12Vdc, max. 1.2 A, 20.47 CFM min.	EN 60950-1: 2006/A2, UL507 EN 60950-1: 2006/A2, UL507	TUV, UL Verify by Nemko or other cert. body, UL
Front system Fan (optional)	AVC	DASA0820R2UV (V= ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, max. 0.6 A, 48.02 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta Foxconn Sunonwealth	AUB0812HHD PVA080F12R MF80201VX-QZ (Z stands for 15 Characters. Each character stands for one of the following signs): 0-9, A-Z, (,), ., /, - or blank.)	12Vdc, max. 0.4 A, 46.31 CFM min. 12Vdc, max. 0.36 A, 40 CFM min. 12Vdc, max. 0.219A, 40.8 CFM min.	EN 60950-1: 2006/A2, UL507 EN 60950-1: 2006/A2, UL507 EN 60950-1: 2006/A2, UL507	VDE, UL TUV, UL TUV, UL
	AVC	DASA0820B2UV (V can be ABCD where A, B, C,D may be A-Z, 0-9 or "-")	12Vdc, max. 0.6 A, 55.48 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta Foxconn	AFC0812DD PVA080F12S	12Vdc, max. 0.75 A, 54.64 CFM min. 12Vdc, max. 0.56 A, 56.7 CFM min.	EN 60950-1: 2006/A2, UL507 EN 60950-1: 2006/A2, UL507	TUV, UL TUV, UL
PCB	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Following components used on motherboard					
RTC Battery (Lithium type)	Mitsubishi	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL(MH21249)
	Panasonic	CR2032*, CR-2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging, etc.)			UL(MH12210)
	Shun Wo	CR2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc.)			UL(MH25881)
	Jihh Hong (JHT)	CR2032			UL(MH48406)

Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO
----------	---------	---------	------	------------------------------	---------

DOCUMENTOS / DOCUMENTS:

Título / <i>Title</i>	Número / <i>Number</i>	Revisão / <i>Revision</i>	Data emissão / <i>Issuing Date</i>	Data de Realização <i>Performance Date</i>
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	285383	0	2015-05-12	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	305346	0	2016-03-17	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	317002	0	2016-10-06	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	329007	0	2017-04-20	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	332284	0	2017-06-03	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	342811	0	2017-12-07	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-15LE172CE	0	2015-06-02	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-15LE172FB	0	2015-06-02	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LE446CE	0	2016-10-11	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LE446FB	0	2016-10-11	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-17LE710CE-R1	0	2018-03-22	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-17LE710FB-R1	0	2018-03-22	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-15LS011OS	0	2015-07-06	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LS033OS	0	2016-10-28	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-18LS020OS	0	2018-03-30	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix D (Modelo/Model: D15S, D15S...)

(The dots '.' in model name can be 0 to 9, A to Z or blank, for marketing purpose only.)

CARACTERÍSTICAS NOMINAIS / RATINGS: I/P: 3.2A or 4.2A, 100-240Vac, 50/60Hz; Class I, IP20**Normas aplicáveis / Applicable standards:**

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012; CISPR 32:2015/COR1:2016 Class B, CISPR 24: 2010+A1: 2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004+A1:2017, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/Technical data	Norma/Standard	Marca de conformidade/Mark(s) of conformity
Front bezel (Decorative part)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber stand covered right side and bottom opening	Interchangeable	Interchangeable	HB min.	UL 94	UL
Enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	IEC 60950-1	Tested in the equip.
Power supply for building-in	Acbel (DELL)	AC200EBS-01	I/P: AC 100-240V;50-60Hz; 3.2A;Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Chincony (DELL)	H200EBS-01	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014	CB by Nemko, N, UL
	Delta (DELL)	D200EBS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 50°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 62368-1, UL 60950-1	CB by Nemko, N, UL
Alt. Power supply for building-in	Huntkey (DELL)	HU200EBS-01	I/P: AC 100-240V;50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014	CB by Nemko, N, UL
	Lite-On (DELL)	L200EBS-01	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014	CB by Nemko, N, UL
	Acbel (DELL)	AC200EPS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014	CB by Nemko, N, UL
	Chincony (DELL)	H200EPS-01	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014	CB by Nemko, N, UL
	Lite-On (DELL)	L200EPS-01	I/P: AC 100-240V;50-60Hz; 3.2A; Class I. Tma: 45°C (Tma for standby mode: 40°C) Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014	CB by Nemko, N, UL
Alt. Power supply for building-in	Acbel (DELL)	AC200EBS-00	I/P: AC 100-240V;50-60Hz; 3.2A;Class I. Tma: 45°C Output:Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014	CB by TUV, N, UL
	Chicony (DELL)	H200EBS-00	I/P: AC 100-240V;50-60Hz; 3.2A;Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	EN 62368-1: 2014, UL 62368-1 IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014	CB by Nemko for 60950-1, CB by TUV for 62368-1, N, UL

	Huntkey (DELL)	HU200EBS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by UL, N, UL
	Lite-On (DELL)	L200EBS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C (Tma for standby mode: 40°C) Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, UL 62368-1	CB by TUV, N, UL
	Acbel (DELL)	AC260EPM-00	I/P: AC 100-240V; 50-60Hz; 4.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 260W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
Alt. Power supply for building-in	Delta (DELL)	D260EPM-01	I/P: AC 100-240V; 50-60Hz; 4.2A; Class I. Tma: 50°C Output: Max. TOTAL Power 260W (Altitude: 5000m)	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11+A1+A12+A2, UL 62368-1	CB by Nemko, N, UL
	Lite-On (DELL)	L260EPM-01	I/P: AC 100-240V; 50-60Hz; 4.2A; Class I. Tma: 45°C (Standby mode 40°C) Output: Max. TOTAL Power 260W (Altitude: 5000m)	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11+A1+A12+A2, IEC 62368-1:2014 EN 62368-1:2014, UL 62368-1	CB by Nemko, N, UL
HDD/SSD (Optional)	Samsung Electronics Co., Ltd.	MZ-2***** (* = 0-9, A-Z, slash, dash or blank)	3.3Vdc, 4.8A max.	EN 60950-1	TUV
	HGST Japan, Ltd	HDS7225nnVLATnn	Max. 1.5/2.0A, 5/12Vdc	EN 60950-1, IEC 60950-1	TUV, VDE, UL, cUL
	Interchangeable	Interchangeable	3.3Vdc, 4.8A max. or 5Vdc, 1.5A max. or 12Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1, CSA 60950-1	TUV or VDE, UL, cUL, CSA
Optical Disk Drive (Optional)	Hitachi-LG Data Storage Inc.	GHBzt (where z can be any number 0 to 9, t can be any alphanumeric character, denoting non safety related differences.)	5Vdc/12Vdc, 2.0/2.5A max. Laser class 1	EN 60950-1, EN 60825-1	TUV
	Hitachi-LG Data Storage Inc.	GU9xy ("x" can be any number 0 to 9 and "y" can be any alphanumeric denoting brand name or shape not related with safety)	5Vdc, 1.8A max. Laser class 1	EN 60950-1, EN 60825-1	TUV
	Interchangeable	Interchangeable	5Vdc/12Vdc, 2.0/2.5A max. or 5Vdc, 1.8A max., Laser class 1	IEC/EN 60950-1, IEC/EN 60825-1, UL 60950-1	TUV or VDE, UL, cUL, CSA
CPU Fan with CPU cooler Type A	AVC	BAZA1233R2UV (V = ABCD where A, B, C,D may be A-Z, 0-9, "-" or blank)	12Vdc, max. 0.9 A, 28.2 CFM min.	EN 60950-1, UL 507	TUV, UL
	Shenzhen Dongweifeng	EFH-12J12WZ (Z=blank or - WWW, (W can be 0 to 9 or A to Z))	12Vdc, max. 1.0 A, 28.6 CFM min.	EN 60950-1, UL 507	TUV, UL
	Delta	BUC1412VE- 00XXXXXX; (X satands for A-Z, 0-9, - or blank.)	12Vdc, max. 1.20 A, 32.83 CFM min.	EN 60950-1, UL 507	VDE, UL
	Foxconn	PVB120J12HP01	12Vdc, max. 0.80 A, 30.03 CFM min.	EN 60950-1 EN 62368-1, UL 507	TUV, UL
CPU Fan with CPU cooler Type B	Delta	AUB0712VH	12Vdc, max. 0.56A, 48.54 CFM min.	EN 60950-1, UL 507	VDE, UL
	Foxconn	PVB120E12H	12Vdc, max. 1.00 A, 23 CFM min.	EN 60950-1, EN 62368-1, UL 507	TUV, UL
CPU Fan with CPU cooler Type C	AVC	DS08025R12UV; V=ABCD where A,B,C,D may be A-Z, 0- 9 or "-"	12Vdc, max. 0.7 A, 53.82 CFM min.	EN 60950-1, UL 507	TUV, UL
	Delta	QUR0812SH	12Vdc, max. 0.50 A, 52.83 CFM min.	EN 60950-1, UL 507	VDE, UL

	Shenzhen Dongweifeng	EFH-08E12W-Y (Z=blank or - WWW, (W can be 0 to 9 or A to Z))	12Vdc, max. 0.70 A, 53.45 CFM min.	EN 60950-1, UL 507	TUV, UL
	Foxconn	PVB080G12Q	12Vdc, max. 0.65 A, 59 CFM min.	EN 60950-1, EN 62368-1, UL 507	TUV, UL
System Fan (Optional) for Configuration E use only	AVC	DASA0820R2UV (V=ABCD where A,B,C,D may be A-Z, 0- 9 or "-" or blank for Internal Control Code/ Control Type / Signal Output)	12Vdc, max. 0.6 A, 48.02 CFM min.	EN 60950-1, UL 507	TUV, UL
	Foxconn	PVA080F12R	12Vdc, max. 0.36 A, 40 CFM min.	EN 60950-1, UL 507	TUV, UL
RTC Battery (Lithium type) (For all MBs used)	Mitsubishi	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL
Alt. RTC Battery (Lithium type) (For all MBs used)	Shun Wo	CR2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc.)	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL
	Jihui Hong Technology	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL
PCB	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Cord Set	Various	Various	---	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data de Realização / Performance Date
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	390330	0	2020-01-03	N/A
Relatório de ensaio emitido por / Test report issued by Audix Technology Corporation, EMC Department	EM-E190737	0	2019-12-18	N/A
Relatório de ensaio emitido por / Test report issued by Audix Technology Corporation, EMC Department	EM-F190509	0	2019-12-18	N/A
Relatório de ensaio emitido por / Test report issued by Shanghai Intertek Testing Services Co., Ltd.	200101320SHA-001	0	2020-02-21	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix E (Modelo/Model: D29M, D29MXXX)

(The 'X' in the model name can be a to z, A to Z, 0 to 9, '-' or blank for marketing use only.)

CARACTERÍSTICAS NOMINAIS / RATINGS: I/P: 4.2A 100-240V~ 50-60Hz or 5A 100-240V~ 50-60Hz; Class I , IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012; CISPR 32:2015/COR1:2016 Class B, CISPR 24: 2010+A1: 2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1:2007+A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004+A1:2017, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/Technical data	Norma/Standard	Marca de conformidade/Mark(s) of conformity
Front bezel (Decorative part)	Interchangeable	Interchangeable	Min. HB	UL 94	UL
Rubber stand (For bottom opening)	Interchangeable	Interchangeable	Min. HB	UL 94	UL
Fire Enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	IEC 60950-1	Test with the equi.
PCB	Interchangeable	Interchangeable	V-0 min., 105°C	UL 796	UL
Alt. Switching Power Supply (PSU)	Lite-On Technology Corporation (DELL)	L260EBM-00	Input: 100-240V~;4.2A, 50-60Hz Cl. I Output: +12VA/16.5A max; +12VB/16A max Standby mode: +12VA/0.5A max; +12VB/2.5 max, total max. 2.5A Continuous total DC output power 260W max.	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1	CB by TUV/Rh (CB Cert. No.: JPTUV-083217), UL
Alt. Switching Power Supply (PSU)	Chicony Power Technology Co., Ltd. (DELL)	H260EBM-00	Input:4.2A, 100-240V~, 50-60Hz Cl. I Output:16.5A +12VA,16A +12VB.STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A. MAX OUPUT POWER: 260W	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1	CB by NEMKO (CB Cert. No.: NO99279/M1), UL
	Acbel Polytech Inc. (DELL)	AC260EBM-00	Input:100-240V~; 50-60Hz; 4.2A Cl. I Output:+12VA; 16.5A;+12VB; 16.0A Standby mode: +12VA; 0.5A,+12VB; 2.5A max. 2.5A Total Power 260W max.	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1	CB by TUV/Rh (CB Cert. No.: JPTUV-083184), UL
	Bestec Power Electronics Co., Ltd. (DELL)	B260EBM-00	Input:100-240V~,4.2A, 50-60Hz Cl. I Output: 12VA/16.5A,+12VB/16A,STANDBY MODE MAX.2.5A: +12VA/0.5A, +12VB/2.5A, TOTAL 260W MAX.	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1	CB by NEMKO (CB Cert. No.: NO99400), UL
Alt. Switching Power Supply (PSU)	Lite-On Technology Corporation (DELL)	L260EPM-01; L260EBM-01	Input:100-240V~ 4.2A 50-60Hz Cl. I Output:+12VA1DC/16.5A max;+12VA2DC/16.5A max;+12VBDC/18A max Standby mode:+12VA1DC/1.5A max;+12VA2DC/1.5A max;+12VA1DC)+(+12VA2DC)/1.5A max;+12VBDC/2.5A max, total Max.2.5A Maximum continuous total DC output shall not exceed 260W.	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1	CB by NEMKO (CB Cert. No.: NO108649), UL
	Chicony Power Technology Co., Ltd. (DELL)	H260EBM-01	Input:4.2A 100-240V~ 50-60Hz Cl. I Output: 16.5A +12 VA1, 16.5A +12 VA2, 18A +12 VB +12VA1 and +12 VA2 MAX 16.5A. STANDBY MODE: 1.5A +12 VA1, 1.5A +12VA2, 2.5A +12 VB +12 VA1 and +12 VA2 MAX 1.5A +12 VA1, +12 VA2 and +12 VB MAX 2.5A MAX OUPUT POWER: 260W	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1	CB by NEMKO (CB Cert. No.: NO108594), UL

Alt. Switching Power Supply (PSU)	Delta Electronics, Inc. (DELL)	D260EBM-00; D260EPM-01	Input:4.2A, 100-240V~ 50-60Hz Cl. I Output:+12VA1dc/16.5A,+12VA2dc/16.5A,+12VBdc/18A,+12VA1,+12VA2 combined 16.5A max. OUTPUT MAX POWER 260W. Standby mode: +12VA1dc/1.5A, +12VA2dc/1.5A, +12VBdc/2.5A. +12VA1,+12VA2. combined 1.5A max, +12VA1, +12VA2, +12VB combined 2.5A max.	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1	CB by NEMKO (CB Cert. No.: NO108520), UL
Alt. Switching Power Supply (PSU)	ACBEL POLYTECH INC. (DELL) SHENZHEN HUNTKEY ELECTRIC CO LTD.	AC260EBM-01 HU260EBM-00	Input:100-240V~ 4.2A 50-60Hz Cl. I Output: +12VA1DC/16.5A max; +12VA2DC/16.5A max (+12VA1DC)+(+12VA2DC)/16.5A max; +12VBDC/18A max Standby mode:+12VA1DC/1.5A max;+12VA2DC/1.5A max(+12VA1DC)+(+12VA2DC)/1.5A max;+12VBDC/2.5A max, total Max. 2.5A Maximum continuous total DC output shall not exceed 260W. Input:100-240 V~, 50-60Hz, 4.2 A Cl. I Output:+12VA1, 16.5A,+12VA2, 16.5A,+12VB, 18.0A,Max. Output Power:260W, +12VA1&+12VA2 max. Output not exceed 16.5A Standby mode: +12VA1, 1.5A;+12VA2, 1.5A;+12VB, 2.5A;Max. output not exceed 2.5A; +12VA1&+12VA2 max output not exceed 1.5A	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1 IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1	CB by NEMKO (CB Cert. No.: NO108649), UL CB by UL(Demko) (CB Cert. No.: DK-88566-UL), UL
Alt. Switching Power Supply (PSU)	ACBEL POLYTECH INC. (DELL)	AC260EPM-00	Input:4.2A 100-240V~ 50-60 Hz Cl. I Output:+12.0VA1/16.5A,+12.0VA2/16.5A,+12.0VB/18.0A;+12.0VA1/16.5A and +12.0VA2/16.5A: MAX. 16.5A;Standby Mode:+12.0VA1/1.5A,+12.0VA2/1.5A,+12.0VB/2.5A;+12.0VA1/1.5A and +12.0VA2/1.5A:MAX. 1.5A;+12.0VA1/1.5A,+12.0VA2/1.5A and +12.0VB/2.5A:MAX. 2.5A; Total Power 260W MAX.	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1	CB by NEMKO (CB Cert. No.: NO108564), UL
Alt. Switching Power Supply (PSU)	Lite-On Technology Corporation (DELL)	L360EBM-00	Input:5.0A 100-240V~50-60Hz Cl. I Output:+12VA1DC/18A max;+12VA2DC/18A max(+12VA1DC)+(+12VA2DC)/18A max;+12VBDC/18A max;+12VDC/12A Max Maximum Continuous total DC output power shall not exceed 360W. Standby mode: +12VA1DC/1.5A max; +12VA2DC/1.5A max;+12VBDC/2.5A max;(+12VA1DC)+(+12VA2DC)/1.5A max;(+12VA1DC)+(+12VA2DC)+(+12VBDC)/2.5 A max	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1	CB by TUV/Rh (CB Cert. No.: JPTUV-095347-M1), UL
Alt. Switching Power Supply (PSU)	Chicony Power Technology Co., Ltd. (DELL)	H360EBM-00	Input:100-240 V~, 50-60 Hz, 5A Cl. I Output: +12VA1 / 18A, +12VA2 / 18A, +12VB / 18 A, +12VC / 12 A;+12 VA1 & +12VA2 MAX 18 A;STANDBY MODE: +12 VA1 / 1.5 A, +12 VA2 / 1.5 A, +12 VB / 2.5 A; +12 VA1 & +12VA2 MAX 1.5 A;+12 VA1 & +12VA2 & +12 VB MAX 2.5 A;MAX OUTPUT POWER: 360W	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013, UL 62368-1	CB by NEMKO (CB Cert. No.: NO105953/M1), UL

	SHENZHEN HUNTKEY ELECTRIC CO LTD (DELL)	HU360EBM-00	Input:100-240Vac,50-60Hz, 5.0A Cl. I Output:+12VA1; 18.0A;+12VA2; 18.0A;+12VB; 18.0A;+12VC; 12.0A;Max. Output power: 360W;+12VA1&+12VA2 max output not exceed 18.0A;Standby mode:+12VA1; 1.5A;+12VA2; 1.5A;+12VB; 2.5A;Max output not exceed 2.5A;+12VA1&+12VA2 max output not exceed 1.5A.	IEC 60950-1:2005+A1+A2, EN 60950- 1:2006+A11:2009+A1:2010+A12:201 1+A2: 2013, UL 62368-1	CB by UL(Demko) (CB Cert. No.: DK- 82251-UL), UL
	Lite-On Technology Corporation (DELL)	L360EPM-00	Input:5.0A 100-240V~50-60Hz Cl. I Output:+12VA1DC /18A MAX.;+12VA2DC /18A MAX.+12VBDC / 18A MAX.;+12VDCDC / 12A MAX(+12VA1DC)+(+12VA2DC) /18A MAX.Maximum continuous total DC output power shall not exceed 360W. STANDBY MODE: +12VA1DC /1.5A MAX.;+12VA2DC /1.5A MAX.+12VBDC /2.5A MAX.(+12VA1DC)+(+12VA2DC) / MAX. 1.5A(+12VA1DC)+(+12VA2DC)+(+12VBDC) / MAX.2.5A	IEC 60950-1:2005+A1+A2, EN 60950- 1:2006+A11:2009+A1:2010+A12:201 1+A2: 2013, UL 62368-1	CB by NEMKO (CB Cert. No.: NO108546/A1), UL
Alt. Switching Power Supply (PSU)	Chicony Power Technology Co., Ltd. (DELL)	H360EPM-00	Input:5A 100-240V~50-60Hz Cl. I Output: 18A +12VA1, 18A +12VA2, 18A +12VB, 12A +12 VC +12 VA1 and +12 VA2 MAX 18A. STANDBY MODE: 1.5A +12 VA1, 1.5A +12 VA2, 2.5A +12 VB +12 VA1 and +12 VA2 MAX 1.5A +12 VA1, +12VA2 and +12VB MAX 2.5A MAX OUPUT POWER: 360W	IEC 60950-1:2005+A1+A2, EN 60950- 1:2006+A11:2009+A1:2010+A12:201 1+A2: 2013, UL 62368-1	CB by NEMKO (CB Cert. No.: NO108494), UL
	Delta Electronics, Inc. (DELL)	D360EPM-00	Input:100-240V~;5.0A 50-60Hz Cl. I Output: +12VA1, 18.0A+12VA2, 18.0A;+12VB, 18.0A;+12VC, 12.0A MAX 18.0A @+12VA1 and +12VA2 combined STANDBY MODE:+12VA1, 1.5A;+12VA2, 1.5A;+12VB, 2.5A MAX 1.5A @+12VA1 and +12VA2 combined; MAX 2.5A @+12VA1 and +12VA2 and +12VB combined	IEC 60950-1:2005+A1+A2, EN 60950- 1:2006+A11:2009+A1:2010+A12:201 1+A2: 2013, UL 62368-1	CB by TUV/Rh (CB Cert. No.: JPTUV-101771- M1), UL
Hard Disk Drive (HDD) (Max. three Provided) (Optional)	Hitachi Global Storage Technologies Japan Ltd. Interchangeable	H Series, D Series Interchangeable	5Vdc/12Vdc, 1.5A max./2.5A max. 5Vdc/12Vdc, 1.5A max./2.5A max.	IEC 60950-1, EN 60950-1, UL 60950-1 IEC 60950-1, EN 60950-1, UL 60950-1	CB by TUV-Rh, UL Verify by Nemko or other cert. body, UL
Optical Disk Drive (Optional)	Toshiba Samsung Storage Technology Korea Corporation Interchangeable	TS-H663*; TS-H662; SH-S222; TS-H652; TS-H653*; SH-S202; SH-S203; SH-S223; SH-S243; SH-S163 (The symbol "*" can be any alphanumeric character or blank, not affecting safety) Interchangeable	1.0A, 1.5A, 2.0A or 2.5A 5Vdc, 1.5A, 2.0A or 3.0A 12Vdc, Laser class 1, Front bezel is min. V-1 1.0A, 1.5A, 2.0A or 2.5A 5Vdc, 1.5A, 2.0A or 3.0A 12Vdc, Laser class 1, Front bezel is min. V-1	IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1 IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1	CB by Nemko, UL Verify by Nemko or other cert. body, UL
CPU Fan	Asia Vital Components Co., Ltd. Shenzhen Dongweifeng Electronic Technology Co., Ltd. Foxconn Technology Co., Ltd. Delta Electronics Inc.	DS08025R12UP272 EFH-08E12W-IP02 PVA080G12Q QUR0812SH	12Vdc, 0.7A max., 53.82CFM min. 12Vdc, 0.7A, 53.45CFM min. 12Vdc, 0.65A max., 59CFM min. 12Vdc, 0.5A max., 51.16CFM min.	EN 60950-1:2006+A11+A1+A12+A2, UL 507 EN 60950-1:2006+A11+A1+A12+A2, UL 507 EN 62368-1:2014, UL 507 EN 62368-1:2014, UL 507	TUV/PS, UL TUV/Rh, UL TUV/Rh, UL VDE, UL
RTC battery	JHIH HONG TECHNOLOGY CO LTD	CR2032	Max. abnormal charging current 10mA.	UL 1642	UL

	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD	CR2032		UL 1642	UL
	VIC-DAWN ENTERPRISE CO LTD	CR2032		UL 1642	UL
	PANASONIC CORPORATION OF NORTH AMERICA	CR2032*		UL 1642	UL
	GUANGDONG TIANQIU ELECTRONICS TECHNOLOGY CO LTD	CR2032		UL 1642	UL
Wireless LAN/WAN Module (Optional)	Interchangeable	Interchangeable	3.3Vdc, PCB V-1 or better, 105°C min.	IEC 60950-1	Tested in the equip.
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data de Realização / Performance Date
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	391782	0	2020-01-21	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory Corp.	ISL-20LE034CE	0	2020-01-13	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory Corp.	ISL-20LE034FB	0	2020-01-13	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory Corp.	ISL-20LE035CE	0	2020-01-13	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory Corp.	ISL-20LE035FB	0	2020-01-13	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory Corp.	ISL-20LS031OS	0	2020-03-05	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory Corp.	ISL-20LS032OS	0	2020-03-05	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix F (Modelo/Model: D14U, D14U...)

(The dots '.' in model name can be 0 to 9, A to Z, a to z, - or blank, for marketing purpose only.)

CARACTERÍSTICAS NOMINAIS / RATINGS: I/P: 3.34A or 4.62A or 6.7A or 9.23A 19.5Vdc; Class III, IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012; CISPR 32:2015/COR1:2016 Class B, CISPR 24: 2010+A1: 2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004+A1:2017, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/Technical data	Norma/Standard	Marca de conformidade/Mark(s) of conformity
Front bezel (decorate parts)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber stand	Interchangeable	Interchangeable	HB min.	UL 94	UL
Fire Enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	IEC 60950-1	Test with the equip.
Internal plastic	Interchangeable	Interchangeable	V-2 min.	UL 94	UL
PCBs	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
AC/DC Adapter	Lite-On (DELL)	LA65NS2-.. (The dots "." in model name can be any alphanumeric character Including blank or "-", for marketing use only.)	I/P: 1.6A 100-240V 50-60Hz DC-output: 3.34A 19.5V, Cl. I (Altitude: 5000m, ambient 40 °C)	IEC 60950-1(ed.2);am1;am2, UL 60950-1	CB by Nemko (NO82445/A1/M3), UL
	Delta (Dell)	DA65NM191	AC Input: 100-240V~, 1.6A, 50-60Hz DC Output:19.5Vdc, 3.34A (Altitude: 5000m, ambient 40 °C)	IEC 62368-1:2014, EN62368-1:2014 +A11:2017, UL 62368-1	CB by TUVRh (JPTUV-102356), UL
	Chicony (Dell Inc. Or DELL)	HA65NS5-00	I/P: 1.7A 100-240V~50-60Hz, Cl. I (For PCB layout type C, D and E: 5,000m, ambient 40 °C) O/P: 3.34A 19.5V	IEC 60950-1:(ed.2); am1;am2, UL 60950-1	CB by Nemko (NO89677/A1/M1), UL
	Chicony (DELL)	HA90PM19Z (The Z in model name can be 0 to 9, for marketing purpose.)	Input: 1.5A 100-240V~ 50-60Hz DC-output: 4.62A 19.5Vdc (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:(ed.2); am1;am2, UL 60950-1	CB by TUV RH (JPTUV-098108-M1), UL
Alt. AC/DC Adapter	Delta (Dell)	DA90PM19X (X= 0-9; Marketing purpose only, no technical differences.)	AC Input: 100-240V~, 1.5A, 50-60Hz DC Output:19.5Vdc, 4.62A (Altitude: 5000m, ambient 40 °C)	IEC 62368-1:2014, EN62368-1:2014 +A11:2017, UL 60950-1	CB by TUVRh (JPTUV-102287), UL
	Lite-On (DELL)	LA90PM111	Input: 2.5A 100-240V, 50-60Hz or 1.5A 100-240V 50-60Hz DC-output: 4.62A 19.5V (For PCB4: 5,000m, ambient 40 °C)	IEC 60950-1:(ed.2); am1;am2, UL 60950-1	CB by Nemko (NO108932), UL
	CHICONY (DELL)	HA130PM19Z (The Z in model name can be 0 to 9, for marketing purpose)	I/P: 100-240V~, 50-60Hz, 1.8A O/P: 19.5V, 6.7A (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:2005+A1+A2, UL 60950-1	CB by TUVRh (JPTUV-097291-M1), UL
	Lite-On (DELL)	LA130PM19Z (Z=0-9)	I/P: AC 100-240V; 50-60Hz; 2.5A DC-output: 19.5Vdc 6.7A, Class II with functional earth (Altitude: 5000m, ambient 40 °C)	IEC 62368-1:2014, EN 62368-1:2014 +A11:2017, UL 60950-1	CB by TUVRh (JPTUV-084784), UL
	Delta (Dell Inc)	DA180PM111	Input: 100-240 V~, 2.34 A, 50-60 Hz. Output: 19.5 Vdc, 9.23 A. (Construction B and C: 5000m, ambient 40 °C)	IEC 60950-1(ed.2);am1;am2, UL 60950-1	CB by UL (DK-70970-M1-UL), UL
	Chicony (DELL)	HA180PM180	I/P: 2.34A 100-240V~ 50-60Hz DC-output: 19.5Vdc 9.23A, Class I (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:2005+am1+am2, UL 60950-1,	CB by Nemko (NO99276), UL
	Lite-On (DELL)	LA180PM180	I/P: 2.34A; AC100-240V; 50-60Hz DC-output: DC19.5; 9.23A, Class II with functional earth (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:2005+am1+am2, UL 60950-1	CB by TUVRh (JPTUV-083430), UL

HDD (optional) (except MB3 type B, all MB used)	Western Digital Technology, Inc	WDU000XZYYXXYY	5Vdc, 1.5 A max.	IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL
Alt. HDD (optional) (except MB3 type B, all MB used)	Interchangeable	Interchangeable	5Vdc, 1.5 A max.	IEC 60950-1, EN 60950-1, UL 60950-1	Verified by Nemko or other certificate body, UL
SSD (optional)	Lite-On IT Corporation	LMS-xxL6Mxxxx (x can be any alphanumeric or blank)	3.3Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL
	Micron Technology, Inc.	MTFDDAKxxxM AV, where xxx may be any alpha numeric character representing density)	5Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL
	Interchangeable	Interchangeable	5Vdc, 2.0 A max or 3.3Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1	Verified by Nemko or other certificate body, UL
CPU Fan (For MB1and MB2 used)	Foxconn Technology Co., Ltd Asia Vital Components Co.,Ltd.	PVB070E05N- P02	5Vdc, max. 1.1 A, 12.69 CFM min.	EN 62368-1:2014, UL507	TUV, UL
		BAZC0715R5UP 003	5Vdc, max. 1 A, 10.46 CFM min.	EN 62368- 1:2014/A11:2017, UL507	TUV, UL
CPU Fan (For MB3 Type A used)	Foxconn Technology Co., Ltd	PVB070E12H- P01-13	12Vdc, max. 0.95 A, 14.20 CFM min.	EN 60950-1:2006+A11+ A1+A12+A2, UL507	TUV, UL
CPU Fan (For MB3 Type B used)	Asia Vital Components Co.,Ltd. Foxconn Technology Co., Ltd Asia Vital Components Co.,Ltd.	BAZB0715R2UP 004	12Vdc, max. 0.8 A, 14.52 CFM min.	EN 62368-1:2014/A11:2017, UL507	TUV, UL
		PVB070E12H- P01-12	12Vdc, max. 0.95 A, 12.62 CFM min.	EN 60950-1:2006+A11+ A1+A12+A2, UL507	TUV, UL
		BAZA0812R2UP 003	12Vdc, max. 0.7A, 11.83 CFM min.	EN 62368- 1:2014/A11:2017, UL507	TUV, UL
Speaker (Optional)	Interchangeable	Interchangeable	Generic, 4Ω± 15% min., 2.5 Watts max.	IEC 60950-1	Tested in the equip.
RTC battery (Lithium type)	JHIH HONG TECHNOLOGY CO LTD	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH48406)
Alt. RTC battery (Lithium type)	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD PANASONIC CORPORATION OF NORTH AMERICA PANASONIC CORPORATION OF NORTH AMERICA SHUN WO NEW POWER BATTERY TECHNOLOGY LTD VIC-DAWN ENTERPRISE CO LTD (KTS)	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL(MH21249)
		BR-2032*	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH12210)
		CR-2032*	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH12210)
		CR2032*	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL(MH25881)
		CR2032 Cells may be provided with alphanumeric suffix (j) or (k). (j) may come with an optional single or multiple alphanumeric suffix denoting various insulating tube, ring, or tape. (k) may come with an optional single or multiple alphanumeric suffix denoting various pin, tab, cap or wire termination types	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH20550)
PCBs	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data de Realização / Performance Date
----------------	-----------------	--------------------	-----------------------------	---------------------------------------

Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	390052	0	2020-01-07	N/A
Relatório de ensaio emitido por / Test report issued by <i>Nemko Taiwan</i>	391119	0	2020-01-10	N/A
Relatório de ensaio emitido por / Test report issued by <i>Audix Technology Corporation, EMC Department</i>	EM-E190646	0	2019-11-25	N/A
Relatório de ensaio emitido por / Test report issued by <i>Underwriters Laboratories Taiwan Co., Ltd.</i>	4789371860	0	2020-03-05	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

OBSERVAÇÕES / OBSERVATIONS:

- 1. A validade deste Certificado está condicionada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da UL do Brasil Certificações e previstas nos procedimentos específicos. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro.**
The validation of this certificate depends on the surveillance inspections performing and Non conformity treatments, according to UL do Brasil Certificações procedures. To verify the updated condition of regularity of this Conformity Certificate shall be consulted the certified products and services Inmetro database.
- 2. Este certificado aplica-se aos equipamentos (produtos) idênticos ao protótipo avaliado e certificado, manufaturados na(s) unidade (s) fabril (is) mencionada (S) acima.**
This certificate applies to the products that are identical to the prototype investigated, certified and manufactured at the production site mentioned in this certificate.
- 3. Qualquer alteração no produto, incluindo a marcação, invalidará o presente certificado, salvo se o solicitante informar por escrito à UL do Brasil Certificações sobre esta modificação, a qual procederá à avaliação e decidirá quanto à continuidade da validade do certificado.**
Any non-authorized changes performed in the product, including marking, will invalidate this certificate. UL do Brasil Certificações must be notified about any desired change. This notification will be analyzed by UL do Brasil Certificações that will decide about certificate force.

Histórico de Revisões / Revisions Description:

06 de abril de 2020 / April 06, 2020	Adicionar modelo no. D14U, D14U... / Add model no. D14U, D14U...
23 de março de 2023 / March 23, 2020	Adicionar modelo no. D29M, D29MXXX / Add model no. D29M, D29MXXX
10 de Março de 2020 / March 10, 2020	Adicionar modelo no. D15S, D15S... e reorganize o formato do CoC. Add model no. D15S, D15S... and reorganize the format of CoC.
08 de Novembro de 2019 / November 08, 2019	Emissão inicial com recertificação do certificado UL-BR 16.1110 / Initial issue with renewall of certificate UL-BR 16.1110
A última revisão substitui e cancela as anteriores <i>The last review cancel and substitutes the previous ones</i>	

Fornecedor / Supplier (100120-728)	DELL COMPUTADORES DO BRASIL LTDA Av. Emancipação, 5000 13184-654 – Hortolândia – SP – Brasil CNPJ: 72.381.189/0006-25
Produto Certificado / Certified Product	COMPUTADOR DE MESA / <i>DESKTOP COMPUTER</i> COMPUTADOR PESSOAL / <i>PERSONAL COMPUTER</i>
Família de produto / Product's Family	N/A
Modelo - Tipo / Model - Type	Modelo(s)/Model(s): D18M(refer to appendix C), D11S(refer to appendix D), D10U(refer to appendix B), D13S (refer to appendix A), D13U(refer to appendix E), D15S(refer to appendix F), D14U(refer to appendix G) Tipo(s)/Type(s): D18M...(refer to appendix C), D11S... (refer to appendix D), D10U... (refer to appendix B), D13S... (refer to appendix A), D13U...(refer to appendix E) , D15S...(refer to appendix F), D14U...(refer to appendix G)
Descrição (Nome comercial) / Description (Brand Name)	DELL
Marca comercial / Trademark	DELL
Lote ou No. de Série / Lot or Serial Number	N/A
Normas Aplicáveis / Applicable standards	REFER TO APPENDIX PAGE
Programa de certificação ou Portaria / Certification Program or Decree	PORTARIA NO. 170/2012 / DECREE NO. 170/2012 PORTARIA NO. 407/2015 / DECREE NO. 407/2015
Relatório de Avaliação e Ensaios / Assessment and Test Report #	BR2263, Vol. 1, Sec. 69; Sec 70; Sec 71; Sec 81; Sec 122 ; Sec. 129 ; Sec. 131
Concessão Para / Concession for	Ostentar o Selo de Identificação da Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado. <i>Bearing the Conformity Identification Seal of the Brazilian System of Evaluation of Conformity (SBAC) on the product covered by this certificate.</i>



Revisão / Revision date
Validade / Expire date

06 de julho de 2023 / July 06, 2023


Délcio M. Ferrel Jr.
Gerente de Operações /
Operations Manager

UL do Brasil Certificações, organismo acreditado pela Coordenação Geral de Acreditação do INMETRO – CGCRE, segundo o registro No.: OCP-0029 confirma que o produto está em conformidade com a(s) Norma(s) e programas ou Portarias acima descritas.
UL do Brasil Certificações, Certification Body accredited by Coordenação Geral de Acreditação do INMETRO - CGCRE according to the register No.: OCP-0029 confirms that the product is in compliance with the standards and certification Program or Decree above mentioned.

Solicitante / Applicant **Dell Inc.**
(654965-006) One Dell Way
Mail Stop PS4-30
Round Rock, TX 78682-0001

Fabricante / Manufacture **DELL COMPUTADORES DO BRASIL LTDA**
(100120-728) AV. EMANCIPAÇÃO, 5000
13184-654 – HORTOLÂNDIA – SP – BRASIL

MARCAÇÃO / MARKING: Marca do fabricante, modelo e características elétricas.

LISTA DE ACESSÓRIOS / LIST OF ACCESSORIES: N/A

MODELO DE CERTIFICAÇÃO / CERTIFICATION MODEL: 5

VERSÃO DO PROJETO DO PRODUTO / PRODUCT DESIGN VERSION: N/A

DOCUMENTOS / DOCUMENTS:

Título / <i>Title</i>	Número / <i>Number</i>	Revisão / <i>Revision</i>	Data emissão / <i>Issuing Date</i>	Data de Realização <i>Performance</i> <i>Date</i>
<<Dados da Auditoria / Audit data >> (Fornecedor & Fabricante / Supplier & Manufacture) DELL COMPUTADORES DO BRASIL LTDA	BR2263	0	2019-02-22	N/A

Appendix A (Modelo/Model: D13S, D13S...)

(The dots "." in model name can be 0 to 9, A to Z, a to z or blank for marketing purpose)

CARACTERÍSTICAS NOMINAIS / RATINGS:

I/P: 3A, 100-240V~, 50-60Hz or 1.5A, 200-240V~, 50-60Hz or 6/3A, 100-127/200-240V~, 50-60Hz (For Main Board 1, 2)

3.2A, 100-240V~, 50-60Hz or 1.6A, 200-240V~, 50-60Hz or 6.6/3.3A, 100-127/200-240V~, 50-60Hz (For Main Board 3)

Class I; IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 Class B, CISPR 32:2015 Class B, CISPR 24: 2010 +A1:2015, IEC 61000-3-2: 2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Front bezel (Decorative part)	Interchangeable	Interchangeable	HB min.	UL94	UL
Fire enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	--	Tested in the equip.
Power supply for building-in (PSU) (For Main Board 1)	Lite-On Technology Corp. (DELL)	L180ES-00, L180AS-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: 12A max. +12VA, 14A max. +12VB, 2.5A max. +12VSB. Max. continuous total DC output power shall not exceed 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85417), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H180AS-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: 12A +12VADC, 14A +12VBDC, 2.5A +12VSB. Max. output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85308), N, UL
	Delta Electronics Inc. (DELL)	D180ES-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA/12A, +12VB/14A,+12VSB/2.5A, OUTPUT MAX POWER 180W.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85131), N, UL
	Acbel Polytech Inc. (DELL)	AC180ES-00, AC180AS-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: 12.0A +12.0VA; 14.0A +12.0VB; 2.5A +12.0VSB Total power 180W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85537), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B180AS-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: 12A +12VA, 14A +12VB, 2.5A +12VSB; TOTAL 180W MAX	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85471), N, UL
	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU180AS-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12Vdc 12A, +12VBdc 14A, +12VSBdc 2.5A, Max. Output power: 180W.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85150), N, UL

	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU180ES-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12Vdc 12A, +12VBdc 14A, +12VSBdc 2.5A, Max. Output power: 180W.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85151), N, UL
	Flextronics sales & Marketing(A-P) Ltd. (DELL)	F180ES-00	I/P:100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; +12VSB, 2.5A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85203), N, UL
	Lite-On Technology Corp. (DELL)	L180AS-01	I/P:200-240Vac, 1.5A, 50-60Hz, Cl. I. DC-outputs: 12A max. +12VA, 14A max. +12VB, 2.5A max. +12VSB. Max. continuous total DC output power shall not exceed 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85417), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B180AS-01	I/P:200-240Vac, 1.5A, 50-60Hz, Cl. I. DC-outputs: 12A +12VA, 14A +12VB, 2.5A +12VSB; TOTAL 180W MAX	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85471), N, UL
Alt. Power supply for building-in (PSU) (For Main Board 2)	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU180ES-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93724), N, UL
	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU180AS-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93724), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H180AS-02	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93345), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H180ES-00	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93345), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B180AS-02	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A; +12VB, 14A; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93497/M1), N, UL
	Lite-On Technology Corp. (DELL)	L180AS-02	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93689), N, UL
	Lite-On Technology Corp. (DELL)	L180ES-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93689), N, UL

	Acbel Polytech Inc. (DELL)	AC180AS-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93603), N, UL
	Acbel Polytech Inc. (DELL)	AC180ES-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93603), N, UL
	Delta Electronics Inc. (DELL)	D180ES-01	I/P: 100-240Vac, 3A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93538), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B180AS-03	I/P: 200-240Vac, 1.5A, 50-60Hz, Cl. I. DC-outputs: 12A +12VA, 14A +12VB; TOTAL 180W MAX	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93497/M1), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H180AS-03	I/P: 200-240Vac, 1.5A, 50-60Hz, Cl. I. DC-outputs: 12A +12VA, 14A +12VB; TOTAL 180W MAX	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93345), N, UL
	Lite-On Technology Corp. (DELL)	L180AS-03	I/P: 200-240Vac, 1.5A, 50-60Hz, Cl. I. DC-outputs: +12VA, 12A MAX; +12VB, 14A MAX; Max output power is 180W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93689), N, UL
Alt. Power supply for building-in (PSU) (For Main Board 3)	Acbel Polytech Inc. (DELL)	AC200AS-00, AC200EBS-00	I/P: 3.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12.0VA, 14.0A +12.0VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by TUV (Cert. No.: JPTUV-082976-A3), UL
	Chicony Power Technology Co., Ltd. (DELL)	H200AS-00, H200EBS-00	I/P: 3.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12.0VA, 14.0A +12.0VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO99279), UL
	Lite-On Technology Corporation (DELL)	L200EBS-00, L200AS-00	I/P: 3.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12VA, 14.0A +12VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by TUV (Cert. No.: JPTUV-083383), UL
	Bestec Power Electronics Co Ltd (DELL)	B200AS-00	I/P: 1.6A 200-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12.0VA, 14.0A +12.0VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO99400), N, UL
	Delta Electronics, Inc. (DELL)	D200AS-00	I/P: 1.6A 200-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12.0VA, 14.0A +12.0VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by TUV (Cert. No.: JPTUV-083393), UL

	Shenzhen Huntkey Electric Co Ltd (DELL)	HU200AS-00, HU200EBS-00	I/P: 3.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12.0VA, 14.0A +12.0VB, Total power 200W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1	CB by UL/Demko (Cert. No.: DK-67276-UL), N, UL
System Fan (optional)	Sunonwealth Electronic Machine Industry Co., Ltd.	MF80201VX-Q06Z (Z stands for third characters. Each character can be 0-9, A-Z, (,), ., /, - or blank) PVA080F12H	12Vdc, 0.2A max., 40.8 CFM(min.)	EN 60950-1/A12, UL 507	TUV, UL
	Foxconn Technology Co., Ltd.	CHB8012XYWZZ ("X" Stands for A, B, C, D, or E, "Y" Stands for B, S or BS, "W" Stands for - or blank, "Z" Stands for 0-9, A-Z or blank)	12Vdc, 0.36A max., 40 CFM(min.)	EN 60950-1/A12, UL 507	TUV, UL
	Cheng Home Electronics Co., Ltd.	CHB8012XYWZZ ("X" Stands for A, B, C, D, or E, "Y" Stands for B, S or BS, "W" Stands for - or blank, "Z" Stands for 0-9, A-Z or blank)	12Vdc, 0.44A max., 43.5 CFM(min.)	EN 60950-1/A12, UL 507	TUV, UL
	Interchangeable	Interchangeable	12Vdc, 0.44A max., 40 CFM(min.)	EN 60950-1/A12, UL 507	Verify by Nemko or other cert. body, UL.
Optical Disk Drive (Optional)	Toshiba Samsung Storage Technology Korea Corporation	TS-H663*; TS-H662; SH-S222; TS-H652; TS-H653*; SH-S202; SH-S203; SH-S223; SH-S243; SH-S163 (The symbol "*" can be any alphanumeric character or blank, not affecting safety)	1.0A, 1.5A, 2.0A or 2.5A 5Vdc, 1.5A, 2.0A or 3.0A 12Vdc, Laser class 1	IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1	CB by Nemko, UL
	Interchangeable	Interchangeable	Max. 2.5/3.0A, 5/12Vdc, Laser class 1	IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1	Verify by Nemko or other cert. body, UL.
	- Front bezel for each source	Interchangeable	Min. V-1.	UL 94	UL
CPU Fan	Sunonwealth Electronic Machine Industry Co., Ltd.	MF80251V2-QZ, (Z stands for 15 characters. Each character stands for one of the following signs: 0-9, A-Z, (,), ., /, -, or blank for marketing purpose only)	12Vdc, 0.3A max., 48.0 CFM(min.)	EN 60950-1: 2006+A11+A1+A12+A2, UL 507	TUV, UL
Alt. CPU Fan	Foxconn Technology Co., Ltd.	PVA080G12Q	12Vdc, 0.65A max., 59.0 CFM(min.)	EN 60950-1: 2006+A11+A1+A12+A2, UL 507	TUV, UL
	Cheng Home Electronics Co., Ltd.	CHA8012XY-ZZ-VWW ("X" Stands for A, B, C, D or E, "Y" Stands for B, S or BS, "Z" Stands for 0-9, A-Z or blank, "W" Stands for 0-9, A-Z or blank)	12Vdc, 0.4A max., 51.84 CFM(min.)	EN 60950-1/A12, UL 507	TUV, UL
	Interchangeable	Interchangeable	12Vdc, 0.65A max., 48.0 CFM (min.)	EN 60950-1/A12, UL 507	Verify by Nemko or other cert. body, UL.
RTC Battery (Lithium type)	Jhih Hong Technology Co Ltd	CR2032	10mA abnormal charging current	UL 1642	UL

	Mitsubishi Electric Home Appliance Co Ltd	CR2032	10mA abnormal charging current	UL 1642	UL
	Vic-Dawn Enterprise Co Ltd	CR2032	10mA abnormal charging current	UL 1642	UL
	Panasonic Corporation, Panasonic Corporation Of North America	CR2032	10mA abnormal charging current	UL 1642	UL
	Mitsubishi Electric Corp	CR2032	10mA abnormal charging current	UL 1642	UL
Hard Disk Drive (HDD) (two provided max.) (Optional) (2.5 or 3.5 inch HDD)	Hitachi Global Storage Technologies Japan Ltd.	H Series, D Series	5Vdc/12Vdc, 1.5A max./2.0A max.	IEC 60950-1, UL 60950-1, CSA 60950-1	CB by TUV-Rh, UL
	Seagate Technology International	ST9 or 2.5 Series or ST with additional suffixes	5Vdc, 1.5A max.	IEC 60950-1, UL 60950-1, CSA 60950-1	CB by UL, UL.
	Interchangeable	Interchangeable	Max. 1.5/2.0A, 5/12Vdc	IEC 60950-1, UL 60950-1, CSA 60950-1	Verify by Nemko or other cert. body, UL.
PCB	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data de Realização / Performance Date
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	285136	0	2015-05-07	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	295868	0	2015-10-06	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	316905	0	2016-09-30	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	340533	0	2017-10-24	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE236CE	0	2015-06-11	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE236CE-R1	0	2015-10-07	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE236FB	0	2015-06-11	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE236FB-R1	0	2015-10-07	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE492CE	0	2016-11-01	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE492FB	0	2016-11-01	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-17LE696CE	0	2017-11-10	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-17LE696FB	0	2017-11-27	N/A
Relatório de ensaio emitido por / Test report issued by	ISL-15LS016OS	0	2015-09-18	N/A

<i>International Standards Laboratory</i>				
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-16LS032OS	0	2016-10-25	N/A
Relatório de ensaio emitido por / Test report issued by <i>International Standards Laboratory</i>	ISL-17LS018OS	0	2017-12-15	N/A
<< Software / Software >>	N/A			
<< Manual do usuário / User's manual >>	N/A			

Appendix B (Modelo/Model: D10U, D10U...)

(The dots "." in model name can be 0 to 9, A to Z, a to z, or blank, for marketing purpose only)

CARACTERÍSTICAS NOMINAIS / RATINGS:

I/P: 3.34A 19.5Vdc (For Main Board 1, 3, 4, 8); 4.62A 19.5Vdc (For Main Board 7); 6.7A 19.5Vdc (For Main Board 5,6) / Class III; IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 22:2008 / CISPR 32:2012 Class B / CISPR 32:2015 Class B, CISPR 24: 2010 +A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Front bezel (decorate parts)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber Stand	Interchangeable	Interchangeable	HB min.	UL 94	UL
Fire enclosure	Interchangeable	Interchangeable	Metal, min. 0.6 mm thick	IEC 60950-1	Tested in the equip.
Internal plastic	Interchangeable	Interchangeable	V-2 min.	UL 94	UL
PCBs	Inter-changeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Stand (Optional)	Inter-changeable	Interchangeable	HB min.	UL 94	UL
AC/DC Adapter	Acbel (Dell Inc. or DELL)	AA65NM121	I/P: 1.7A 100-240V~ 50-60Hz, Cl. I with class II construction throughout O/P: 3.34A +19.5V	IEC 60950-1 (ed.2);am1; am2, UL 60950-1	CB by Nemko (NO88505), UL
	Delta (Dell Inc.)	DA65NM111-00	I/P: 100-240Vac; 1.6A; 50- 60Hz, Cl. I O/P: 19.5Vdc; 3.34A		CB by UL (Demko) (DK-45612-UL), UL
	Chicony (Dell Inc. or DELL)	HA65NS5-00	I/P: 1.7A 100-240V~ 50-60Hz, Cl. I O/P: 3.34A 19.5V		CB by Nemko (NO89677), UL
	Lite-On (DELL)	LA65NS2-.. The dots "." in model name can be any alphanumeric character including blank, for marketing use only.	I/P: 1.6A 100-240V 50-60Hz, Cl. I O/P: 3.34A max. 19.5V		CB by Nemko (NO82445), UL
	Chicony (DELL)	HA130PM16Z The Z in model name can be 0 to 9, for marketing purpose.	Input: 1.8A 100-240V~ 50-60Hz DC-output: 6.7A 19.5V		CB by Nemko (NO91721/M1), UL
	Delta (DELL)	DA130PE1-XX (X can be any alphanumeric characters or blank)	Input: AC 100-240V, 2.5A, 50- 60Hz Output: DC19.5V, 6.7A		CB by TUV RH (JPTUV-065556), UL
	Lite-On (DELL)	LA130PM121	I/P: 2.5A 100-240V~ 50-60Hz DC-output: 6.7A 19.5V		CB by Nemko (NO86084), UL
Alt. AC/DC Adapter	Delta (Dell Inc.)	DA90PM111	Input: 100-240Vac 1.5A , 50- 60Hz Output: 19.5Vdc 4.62A	IEC 60950-1 (ed.2);am1; am2, UL 60950-1	CB by UL (DK- 43004-UL), UL
	Lite-On (DELL)	LA90PM111	Input: 2.5A 100-240V, 50-60Hz or 1.5A 100-240V 50-60Hz DC-output: 4.62A 19.5V		CB by Nemko (NO85959), UL

HDD / SSD (optional)	Western Digital Technology, Inc	WDUUUUXZYYXXYY	5Vdc, 1.5 A max.	IEC 60950-1, EN 60950-1, UL 60950-1 IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL
	Lite-On IT Corporation	LMS-xxL6Mxxxxx (x can be any alphanumeric or blank)	3.3Vdc, 2.0A max.		TUV, UL
	Micron Technology, Inc.	MTFDDAKxxxMAV, (where xxx may be any alpha numeric character representing density)	5Vdc, 2.0A max.		TUV, UL
	Interchangeable	Interchangeable	5Vdc, 2.0 A max or 3.3Vdc, 2.0A max.		Verified by Nemko or other certificate body, UL
RTC battery (Lithium type)	Mitsubishi	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH212249)
	Panasonic	BR-2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging, etc.)	3Vdc, maximum abnormal charging current 5mA		UL (MH12210)
Alt.RTC battery (Lithium type)	Shun Wo	CR2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc.)	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH25881)
	Vic Dawn	CR2032	3Vdc, maximum abnormal charging current 10mA		UL (MH20550)
	Jhieh Hong	CR2032	3Vdc, maximum abnormal charging current 10mA		UL (MH48406)
	Panasonic	CR-2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging, etc.)	3Vdc, maximum abnormal charging current 10mA		UL (MH12210)

CPU Fan (For MB1, MB2, MB3, MB4, MB7 and MB8 used)	Sunonwealth	EF70150SX-CZ (Z stands for 30 characters. Each character stands for one of the following signs): 0- 9, A-Z, (,), ., /, - or blank for marketing purpose only.)	5Vdc, max. 0.9 A, 11CFM min.	EN 60950- 1:2006+A11+A1+A12+ A2, UL 507	TUV, UL
	Foxconn Delta	PVB070E05N-P02 KSB0705HB- AXXXXXXX (X stands for 0-9, A-Z, - or blank for marketing purpose only)	5Vdc, 1.1 A max., 11 CFM min. 5Vdc, max. 1.0 A, 10.55CFM min.		
CPU Fan (For MB5 and MB6 used)	Delta	BUC1612VD- 00XXXXXX (X stands for A-Z, 0-9, - or blank for marketing purpose only)	12Vdc, max. 1.1 A, 13.9 CFM min.	EN 60950- 1:2006+A11+A1+A12+ A2, UL 507	TUV, UL
	AVC	BAZB0715R2UV (V can be ABCD where A, B, C, D may be A-Z or 0-9 or -)	12Vdc, max. 1.0A, 14 CFM min.		
External USB Optical Disk Drive (Optional)	Hitachi-LG Data Storage, Inc	GU9**	5Vdc, 1.8A. Laser class I.	IEC 60950- 1:2005+A1+A2, EN 60950- 1:2006+A11+A1+A12+ A2, EN 60825-1 EN 60950-1:2006 +A11+A1+A12+A2, EN 60825-1	TUV Verified by Nemko or other certificate body, UL
	or equivalent	or equivalent	5Vdc, 1.8A, Laser class 1		
PCBs	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Stand (Optional)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / <i>Title</i>	Número / <i>Number</i>	Revisão / <i>Revision</i>	Data emissão / <i>Issuing Date</i>	Data de Realização / <i>Performance Date</i>
Relatório de ensaio emitido por / <i>Test report issued by Nemko Taiwan</i>	283154	0	2015-04-22	N/A
Relatório de ensaio emitido por / <i>Test report issued by Nemko Taiwan</i>	303954	0	2016-03-04	N/A
Relatório de ensaio emitido por / <i>Test report issued by Nemko Taiwan</i>	305355	0	2016-03-17	N/A
Relatório de ensaio emitido por / <i>Test report issued by Nemko Taiwan</i>	315629	0	2016-09-08	N/A
Relatório de ensaio emitido por / <i>Test report issued by Nemko Taiwan</i>	337871	0	2017-08-23	N/A
Relatório de ensaio emitido por / <i>Test report issued by Nemko Taiwan</i>	339549	0	2017-09-29	N/A
Relatório de ensaio emitido por / <i>Test report issued by Nemko Taiwan</i>	341950	0	2017-11-13	N/A
Relatório de ensaio emitido por / <i>Test report issued by International Standards Laboratory</i>	ISL-15LE191CE	0	2015-05-22	N/A
Relatório de ensaio emitido por / <i>Test report issued by International Standards Laboratory</i>	ISL-15LE191FB	0	2015-05-26	N/A
Relatório de ensaio emitido por / <i>Test report issued by Central Research Technology Co. EMC Test Laboratory</i>	O-P321-1607-099	0	2016-09-07	N/A
Relatório de ensaio emitido por / <i>Test report issued by Central Research Technology Co. EMC Test Laboratory</i>	F-P321-1607-099	0	2016-09-07	N/A
Relatório de ensaio emitido por / <i>Test report issued by Central Research Technology Co. EMC Test Laboratory</i>	O32-P320-1709-175	0	2017-10-24	N/A
Relatório de ensaio emitido por / <i>Test report issued by Central Research Technology Co. EMC Test Laboratory</i>	F-P320-1709-175	0	2017-10-24	N/A
Relatório de ensaio emitido por / <i>Test report issued by Underwriters Laboratories Taiwan Co., Ltd.</i>	4787592249	0	2016-12-02	N/A
Relatório de ensaio emitido por / <i>Test report issued by Underwriters Laboratories Taiwan Co., Ltd.</i>	4788375372	0	2018-03-13	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix C (Modelo/Model: D18M, D18M...)

(The dots "." in model name can be 0 to 9, A to Z, a to z, or blank, for marketing purpose)

CARACTERÍSTICAS NOMINAIS / RATINGS:

I/P: 4A 100-240V~ 50-60Hz or 4.2A 100-240V~ 50-60Hz or 5A 100-240V~ 50-60Hz / Class I / IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 22:2008 / CISPR 32:2012 Class B / CISPR 32:2015 Class B, CISPR 24: 2010 +A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Front bezel (Decorative part)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber stand Cover bottom opening	Interchangeable	Interchangeable	HB min.	UL 94	UL.
Fire enclosure	Interchangeable	Interchangeable	Metal, min. 0.6 mm thick	IEC 60950-1	Tested in the equip.
Internal Plastic	Interchangeable	Interchangeable	V-2 min.	UL 94	UL
Power supply for building-in	Lite-On Technology Corp. (DELL)	L240EPM-00; L240AM-00; L240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs 16.5A max. +12VA, 16A max. +12VB, 2.5A max. +12VSB, Maximum continuous total DC output power shall not exceed 240W. (Altitude during operation: 5000m)	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1 +A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85503), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H240EM-00; H240AM-02	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs 16.5A +12VADC, 16A +12VBDC, 2.5A +12VSB, Max. output power is 240W. (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85308), N, UL
	Delta Electronics Inc. (DELL)	D240EPM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA/16.5A, +12VB/16A,+12VSB/2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO84799), N, UL
Alt. power supply for building-in	Delta Electronics Inc. (DELL)	D240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA/16.5A, +12VB/16A,+12VSB/2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1 +A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO85131), N, UL
	Acbel Polytech Inc. (DELL)	AC240AM-00; AC240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA/16.5A, +12VB/16A,+12VSB/2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85533), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B240AM-00; B240EM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs 16.5A +12VA, 16A +12VB, 2.5A +12VSB; TOTAL 240W MAX (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85472), N, UL

	Flextronics sales & Marketing(A-P) Ltd. (DELL)	F240EPM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VA 16.5A, +12VB 16A, +12VSB 2.5A, OUTPUT MAX POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85204), N, UL
	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU240AM-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs +12VAdc 16.5A, +12VBdc 16A, +12VSBdc 2.5A, Max. output power: 240W. (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO85149), N, UL
Alt. power supply for building-in	Lite-On Technology Corp. (DELL)	L240AS-01, L240ES-00, L240EPS-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: 16.5A MAX +12VA, 16A MAX +12VB Standby mode: 0.5A +12VA, 2.5A +12VB, Max. total output current 2.5A. Maximum continuous total DC output power shall not exceed 240W. (Altitude during operation: 5000m)	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006 +A11+A1 +A12+A2 UL 60950-1	CB by Nemko (Cert. No.: NO93733), N, UL
	Chicony Power Technology Co., Ltd.(DELL)	H240ES-02, H240AS-02	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB Max. output power is 240W or Standby mode: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB shall not exceed 2.5A. (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO93345), N, UL
	Delta Electronics Inc. (DELL)	D240EPS-00, D240ES-02	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: +12VA/16.5A,+12VB/16.0A, STANDBY MODE: +12VA/0.5A, +12VB/2.5A, MAX COMBINED +12VA AND +12VB CURRENT IS 2.5A, MAX OUTPUT POWER 240W (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO93538), N, UL
Alt. power supply for building-in	Acbel Polytech Inc. (DELL)	AC240AS-02, AC240ES-02	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: 16.5A +12.0VA, 16.0A +12.0VB TOTAL POWER 240W MAX. 0.5A +12.0VA, 2.5A +12.0VB MAX. 2.5A for STANDBY MODE. (Altitude during operation: 5000m)	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2 , UL 60950-1	CB by Nemko (Cert. No.: NO93603), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B240AS-00, B240ES-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: +12VA/ 16.5A, +12VB/ 16A, STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, STANDBY MODE +12VA & +12VB MAX. 2.5A , TOTAL 240W MAX. (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO93497/M1), N, UL
	Shenzhen Huntkey Electric Co., Ltd.(DELL)	HU240AS-00	I/P:100-240Vac, 4A, 50-60Hz, Cl. I. DC-outputs: +12VA 16.5A, +12VB 16A, Max. output power: 240W. Standby mode +12VA 0.5A, +12VB 2.5A,+12VA and +12VB combine output current should not exceed 2.5A (Altitude during operation: 5000m)		CB by Nemko (Cert. No.: NO94060), N, UL

Alt. power supply for building-in	Acbel Polytech Inc. (DELL)	AC260EBM-00; AC260AM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: + 12VA; 16.5A, + 12VB; 16.0A Standby mode: + 12VA; 0.5A, + 12VB; 2.5A, Max. 2.5A Total power 260W max.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2 , UL 60950-1	CB by TUV-Rh (Cert. No.: JPTUV-083184), N, UL
	Bestec Power Electronics Co., Ltd. (DELL)	B260EBM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: +12VA/16.5A, +12VB/16A, STANDBY MODE MAX.2.5A: +12VA/0.5A, +12VB/2.5A, TOTAL 260W MAX.		CB by Nemko (Cert. No.: NO99400), N, UL
	Delta Electronics, Inc. (DELL)	D260AM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: Normal condition: DC +12VA/16.5A, +12VB/16.0A Total max. output power 260W Standby mode: DC +12VA/0.5A, +12VB/2.5A Total max. output current 2.5A		CB by TUV-Rh (Cert. No.: JPTUV-083393), N, UL
	Delta Electronics, Inc. (DELL)	D260EPM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I Output rating: +12VADC/16.5A, +12VBDC/16.0A. Total power 260W. Standby mode: +12VADC/0.5A, +12VBDC/2.5A. +12VADC and +12VBDC combined max total output 2.5A		CB by Nemko (Cert. No.: NO99408), N, UL
Alt. power supply for building-in	Chicony Power Technology Co., Ltd. (DELL)	H260EBM-00; H260AM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I 16.5A +12VA, 16A +12VB. STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A. MAX OUPUT POWER: 260W	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2 , UL 60950-1	CB by Nemko (Cert. No.: NO99279), N, UL
	Chicony Power Technology Co., Ltd. (DELL)	H260EPM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12VA, 16A +12VB MAX OUPUT POWER: 260W or STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A.		CB by Nemko (Cert. No.: NO99356), N, UL
	Lite-On Technology Corporation (DELL)	L260EPM-00; L260EBM-00; L260AM-00	I/P: 4.2A 100-240V~ 50-60Hz, Cl. I O/P: +12VA/16.5A max; +12VB/16A max Standby mode: +12VA/0.5A max; +12VB/2.5A max, total max. 2.5A Continuous total DC output power 260W max.		CB by TUV-Rh (Cert. No.: JPTUV-083217), N, UL
	Chicony Power Technology Co., Ltd. (DELL)	H360EGM-00	I/P: 5A 100-240V~ 50-60Hz, Cl. I DC-outputs: 16.5A +12VA, 16A +12VB, 8A +12VC Standby mode: 0.5A +12VA, 2.5A +12VB +12VA & +12VB shall not exceed 2.5A. MAX OUTPUT POWER 360W for model H360EGM-00		CB by Nemko (Cert. No.: NO99300), N, UL

Alt. power supply for building-in	Lite-On Technology Corporation (DELL)	L360EGM-00	I/P: 5A 100-240V~ 50-60Hz, Cl. I DC-outputs: (normal mode) +12VA/16.5Amax., +12VB/16A max., +12VC/8A max., (standby mode) +12VA/0.5Amax., +12VB/2.5A max.,; total Max.2.5A Max. continuous total DC output Power shall not exceed 360W at 45 °C Max. continuous total DC output Power shall not exceed 300W at 55°C Max. continuous total DC output current for standby mode shall not exceed 2.5A at 40°C	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11+A1+A12+A2 , UL 60950-1	CB by TUV-Rh (Cert. No.: JPTUV- 083700-A1), N, UL
Hard Disk Drive (HDD) (Three provided max.) (Optional) (2.5 or 3.5 inch HDD)	Hitachi Global Storage Technologies Japan Ltd. Seagate Technology International	H Series, D Series ST9 or 2.5 Series or ST with additional suffixes	5Vdc/12Vdc, 1.5A max./2.0A max. 5Vdc, 1.5A max.	IEC 60950-1, EN 60950-1, UL 60950-1 IEC 60950-1, EN 60950-1, UL 60950-1	CB by TUV-Rh, UL CB by UL, UL
	Interchangeable	Interchangeable	5Vdc/12Vdc, 1.5A max./2.0A max. or 5Vdc, 1.5A max.	IEC 60950-1, EN 60950-1, UL 60950-1	Verify by Nemko or other cert. body, UL
Optical Disk Drive (Two provided ax.) (Optional)	Toshiba Samsung Storage Technology Korea Corporation	TS-H663*; TS-H662; SH-S222; TS-H652; TS-H653*; SH-S202; SH-S203; SH-S223; SH-S243; SH-S163 (The symbol "*" can be any alphanumeric character or blank, not affecting safety.)	1.0A, 1.5A, 2.0A or 2.5A 5Vdc, 1.5A, 2.0A or 3.0A 12Vdc, Laser class 1	IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1	CB by Nemko, UL
-Front bezel Alt. Optical Disk Drive (Optional)	Interchangeable Interchangeable	Interchangeable Interchangeable	Min. V-1. Max. 2.5A 5Vdc, max. 3.0A 12Vdc, Laser class 1	UL 94 IEC 60950-1, EN 60950-1, IEC 60825-1, UL 60950-1 UL 94	UL Verify by Nemko or other cert. body, UL UL
-Front bezel	Interchangeable	Interchangeable	Min. V-1.	UL 94	UL
CPU Fan	Asia Vital Components Co., Ltd.	DS08025R12UV (V can be ABCD, where A,B,C,D may be A-Z, 0-9 or "-" for marketing purpose only)	12Vdc, 0.7A max., 53.82CFM min.	EN 60950-1, UL 507	TUV, UL
	Delta Electronics Inc.	QUR0812SH	12Vdc, 0.5A max., 52.83CFM(min.)	EN 60950-1, UL 507	VDE, UL
	Sunonwealth Electronic Machine Industry Co., Ltd.	MF80251V2-QZ, (Z stands for 15 characters. Each character stands for one of the following signs: 0-9, A-Z, (,), ., /, -, or blank for marketing purpose only)	12Vdc, 0.3A max., 48.0CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Foxconn Technology Co., Ltd.	PVA080G12Q	12Vdc, 0.65A max., 59.0CFM(min.)	EN 60950-1, UL 507	TUV, UL

Alt. CPU Fan	Shenzhen DongWeifeng Electronic Technology Co., LTD.	EF(X)-08E12(Y)(Z), where (X) may be S, H, B, C or F, (Y), may be W, (Z) may be blank, may be - WWWWW, W can be 0 to 9 or A to Z.	12Vdc, 0.7A max., 53.45 CFM (min.)	EN 60950-1, UL 507	TUV, UL
	Asia Vital Components Co., Ltd.	DASD0825B2SV (V=ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, 1.20A max., 70.85CFM (min.)	EN 60950-1, UL 507	TUV, UL
	Delta Electronics Inc.	QFR0812UHZ (Z stands for 5 characters. Each character stands for one of the following signs: 0-9, A-Z or blank)	12Vdc, 0.87A max., 63.21CFM (min.)	EN 60950-1, UL 507	TUV, UL
	Foxconn Technology Co., Ltd.	PVA080G12R	12Vdc, 0.80A max., 71CFM (min.)	EN 60950-1, UL 507	TUV, UL
System Fan (Optional)	Asia Vital Components Co., Ltd.	DASA0820R2UV (V can be ABCD, where A,B,C,D may be A-Z, 0-9 or "-" for marketing purpose only)	12Vdc, 0.6A max., 46.02CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Delta Electronics Inc.	AUB0812HHD	12Vdc, 0.4A max., 46.31CFM(min.)	EN 60950-1, UL 507	VDE, UL
	Sunonwealth Electronic Machine Industry Co., Ltd.	MF80201VX-Q0Z(Z stands for 30 characters. Each character stands for one of the following signs: 0-9, A-Z, (,), ".", or blank)	12Vdc, 0.32A max., 40.8CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Foxconn Technology Co., Ltd.	PVA080F12H	12Vdc, 0.36A max., 40.0CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Shenzhen Dongweifeng Electronic Technology CO., LTD	EFS-08D12H	12Vdc, 0.4A max., 49.5CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Delta Electronics Inc.	AFC0812DD	12Vdc, 0.75A max., 54.64 CFM(min.)	EN 60950-1, UL 507	VDE, UL
Alt. System Fan (Optional)	Shenzhen DongWeifeng Electronic Technology Co., LTD.	EFx-08D12De Where x= S,H,B,C or F; e= additional code for markeing purpose, e= blank or -www (w can be 0-9 or A-Z)	12Vdc, 0.70A max., 56.73 CFM(min.)	EN 60950-1, UL 507	TUV, UL
	Foxconn Technology Co., Ltd.	PVA080F12S	12Vdc, 0.56A max., 57.60CFM (min.)	EN 60950-1, UL 507	TUV, UL

	Asia Vital Components Co., Ltd.	DASA0820B2UV (V=ABCD where A,B,C,D may be A-Z, 0-9 or "-")	12Vdc, 0.60A max., 55.48CFM (min.)	EN 60950-1, UL 507	TUV, UL
RTC battery	Jhih Hong Technology Co Ltd Mitsubishi Electric Home Appliance Co Ltd Vic-Dawn Enterprise Co Ltd Panasonic Corporation, Panasonic Corporation Of North America	CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH48406)
		CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH21249)
		CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH20550)
		CR2032	Max. abnormal charging current 10mA.	UL 1642	UL (MH12210)
PCB	Interchangeable	Interchangeable	V-1 min., 105°C	UL 796	UL
Speaker (one provided)	Interchangeable	Interchangeable	4ohm, max. 2.5Watt	--	Test in the equipment.
Wireless LAN Module (Optional)	Interchangeable	Interchangeable	3.3Vdc or 12Vdc	--	Test in the equipment.
Main Board 1 (type:WF0122)					
Main Board 2 (type:SF1015)					
Main Board 3 (type: SF0509)					
Main Board 4 (type:AF0509)					
Main Board 5 (type:BF0509)					
Main Board MB7 (type: BE0724)					
Main Board MB8 (type: CG0724)					
VGA small board 1 (optional)					
VGA small board 2 (optional)					
VGA small board 3 (optional)					
VGA small board 4 (optional)					
Sub-board 1 (VGA) (Optional)					
Sub-board 2 (HDMI) (Optional)					
Sub-board 3 (Display) (Optional)					
Sub-board 4 (USB type C) (Optional)					
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data Realização de / Performance Date
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	284760	0	2015-05-12	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	297979	0	2015-12-01	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	306254	0	2016-04-06	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	316837	0	2016-10-13	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	332989	0	2017-06-15	N/A
Relatório de ensaio emitido por / Test report issued by	339191	0	2017-09-15	N/A

Nemko Taiwan				
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	342675	0	2017-12-01	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	350821	0	2018-03-22	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE118CE	0	2015-05-22	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE118FB	0	2015-05-22	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE452CE	0	2016-10-13	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE452FB	0	2016-10-13	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE452CE-R3	0	2017-06-26	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE452FB-R3	0	2017-06-26	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-18LE143CE	0	2018-03-19	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-18LE143FB	0	2018-03-19	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LS009OS	0	2015-06-17	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LS031OS	0	2016-10-26	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-17LS011OS	0	2017-06-27	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-18LS011OS	0	2018-03-30	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix D (Modelo/Model: D11S, D11S...)

(The dots "." in model name can be 0 to 9, A to Z or blank, for marketing purpose only)

CARACTERÍSTICAS NOMINAIS / RATINGS:

I/P: 3.0A 100-240V~ 50/60Hz or 4.0A 100-240V~ 50/60Hz or 3.2A 100-240V~50/60Hz, Class I; IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1:2005 (2nd Edition); Am 1:2009; Am 2:2013, CISPR 22: 2008, CISPR 32:2012, Class B / CISPR 32:2015, Class B, CISPR 24: 2010+A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6:2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004; e Anexo E da Portaria no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Front bezel (decorate parts)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	--	Tested in the equip.
Rubber stand	Interchangeable	Interchangeable	HB min.	UL94	UL
Internal plastic	Interchangeable	Interchangeable	V-2 min. or HF-2 min.	UL 94	UL
Power supply for building-in (PSU)	Acbel (DELL)	AC180AS-00, AC180ES-00	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12.0A +12.0VA, 14.0A +12.0VB, 2.5A +12.0VSB. Total power 180W max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Bestec (DELL)	B180AS-00	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A +12VA, 14A +12VB, 2.5A +12VSB TOTAL 180W MAX	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H180AS-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A +12VADC, 14A +12VBDC, 2.5A +12VSB Max. output power is 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D180EPS-00	I/P: 3.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA/12A, +12VB/14A, +12VSB/2.5A OUTPUT MAX POWER 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D240EPM-00	I/P: 4.0A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA/16.5A, +12VB/16A, +12VSB/2.5A OUTPUT MAX POWER 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Flextronics (DELL)	F180ES-00	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VA, 12A; +12VB, 14A; +12VSB, 2.5A Max output power is 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL

Alt. Power supply for building-in (PSU)	Flextronics (DELL)	F180EPS-00	I/P: 3A, 100-240Vac, 50-60Hz C.I.I. DC outputs: +12VA 12A, +12VB 14A, +12VSB 2.5A OUTPUT MAX POWER 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Flextronics (DELL)	F240EPM-00	I/P: 4A, 100-240Vac, 50-60Hz C.I.I. DC outputs: +12VA, 16.5A, +12VB, 16A, +12VSB, 2.5A OUTPUT MAX POWER 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L180ES-00, L180AS-00, L180EPS-00	I/P: 3A, 100-240Vac, 50-60Hz C.I.I. DC outputs: 12A max. +12VA, 14A max. +12VB, 2.5A max. +12VSB. Max. continuous total DC output power shall not exceed 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L240EPM-00	I/P: 4A, 100-240Vac, 50-60Hz C.I.I. DC outputs: 16.5A MAX +12VA, 16A MAX +12VB, 2.5A MAX +12VSB. Maximum continuous total DC output power shall not exceed 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU180AS-00	I/P: 3A, 100-240Vac, 50-60Hz C.I.I. DC outputs: +12VAdc 12A, +12VBdc 14A, +12VSBdc 2.5A Max. output power: 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU180ES-00	I/P: 3A, 100-240Vac, 50-60Hz C.I.I. DC outputs: +12VAdc 12A, +12VBdc 14A, +12VSBdc 2.5A Max. output power: 180W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Acbel (DELL)	AC180AS-01, AC180ES-01	I/P: 3.0A, 100-240Vac, 50-60Hz C.I.I. DC outputs: 12.0A +12.0VA, 14.0A +12.0VB TOTAL POWER 180W MAX. 0.5A +12.0VA, 2.5A +12.0VB MAX. 2.5A for STANDBY MODE.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Bestec (DELL)	B180AS-02	I/P: 3.0A, 100-240Vac, 50-60Hz C.I.I. DC outputs: +12VA/ 12A, +12VB/ 14A,STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, STANDBY MODE +12VA & +12VB MAX. 2.5A TOTAL 180W MAX.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H180AS-02, H180ES-00	I/P: 3A, 100-240Vac, 50-60Hz C.I.I. DC outputs: 12A +12VA, 14A +12VB Max. output power is 180W or Standby mode: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB shall not exceed 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D180ES-01, D180EPS-01	I/P: 3.0A, 100-240Vac, 50-60Hz C.I.I. DC outputs: +12VA/12A, +12VB/14A, STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, MAX COMBINED +12VA AND +12VB CURRENT IS 2.5A, MAX OUTPUT POWER 180W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL

Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L180EPS-01; L180ES-01; L180AS-02	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: 12A MAX +12VA, 14A MAX +12VB Standby mode: 0.5A +12VA, 2.5A +12VB, Max. total output current 2.5A Maximum continuous total DC output power shall not exceed 180W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU180AS-01, HU180ES-01	I/P: 3A, 100-240Vac, 50-60Hz Cl.I. DC outputs: +12VAd.c. 12A, +12VBd.c. 14A, Max. output power 180W. Standby Mode: +12V/0.5A; +12VB/2.5A; +12VA & +12VB, total load 2.5A max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Acbel (DELL)	AC240AS-02, AC240ES-02	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12.0VA, 16.0A +12.0VB TOTAL POWER 240W MAX. 0.5A +12.0VA, 2.5A +12.0VB MAX. 2.5A for STANDBY MODE.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Bestec (DELL)	B240AS-00, B240ES-00	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VA/ 16.5A, +12VB/ 16A, STANDBY MODE +12VA/ 0.5A, +12VB/ 2.5A, STANDBY MODE +12VA & +12VB MAX. 2.5A , TOTAL 240W MAX.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H240ES-02, H240AS-02	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB Max. output power is 240W or Standby mode: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB shall not exceed 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D240EPS-00, D240ES-02	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VA/16.5A,+12VB/16.0A, STANDBY MODE: +12VA/0.5A, +12VB/2.5A, MAX COMBINED +12VA AND +12VB CURRENT IS 2.5A, MAX OUTPUT POWER 240W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L240AS-01, L240ES-00, L240EPS-00	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A MAX +12VA, 16A MAX +12VB Standby mode: 0.5A +12VA, 2.5A +12VB, Max. total output current 2.5A. Maximum continuous total DC output power shall not exceed 240W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU240AS-00	I/P: 4A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VA 16.5A, +12VB 16A, Max. output power: 240W. Standby mode +12VA 0.5A, +12VB 2.5A,+12VA and +12VB combine output current should not exceed 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL

Alt. Power supply for building-in (PSU)	Acbel (DELL)	AC200AS-00, AC200EBS-00	Input: AC 100-240V, 50-60Hz, 3.2A Cl. I. Output: DC +12.0VA; 16.5A, +12.0VB; 14.0A Standby mode DC +12.0VA; 0.5A, +12.0VB; 2.5A (Max. 2.5A) TOTAL POWER 200W MAX.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV Rh, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H200AS-00, H200EBS-00	I/P: 3.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 14A +12VB. STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A. MAX OUPUT POWER: 200W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H200EPS-00	I/P: 3.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 14A +12VB MAX OUPUT POWER: 200W or STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H260EPM-00	I/P: 4.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB MAX OUPUT POWER: 260W or STANDBY MODE: 0.5A +12VA, 2.5A +12VB. +12VA & +12VB MAX 2.5A.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Chicony (DELL)	H300EGS-00	I/P: 4.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: 16.5A +12VA, 16A +12VB, 8A +12VC Standby mode: 0.5A +12VA, 2.5A +12VB +12VA & +12VB shall not exceed 2.5A. MAX OUTPUT POWER 300W	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D200EPS-00	I/P: 3.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VADC/16.5A, +12VBDC/14.0A. Total power 200W. Standby mode: +12VADC/0.5A, +12VBDC/2.5A. +12VADC and +12VBDC combined max total output 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL
Alt. Power supply for building-in (PSU)	Delta (DELL)	D260EPM-00	I/P: 4.2A, 100-240Vac, 50-60Hz, Cl. I. DC-outputs: +12VADC/16.5A, +12VBDC/16.0A. Total power 260W. Standby mode: +12VADC/0.5A, +12VBDC/2.5A. +12VADC and +12VBDC combined max total output 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by Nemko, N, UL

Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L200AS-00, L200EBS-00	Input: AC 100-240V, 3.2A, 50-60Hz, Cl. I. Output: DC +12VA/16.5A max., +12VB/ 14A max.(Normal Mode), +12VA/ 0.5A max., +12VB/ 2.5A max.; total Max. 2.5A (Standby Mode); Max. continuous total DC output Power shall not exceed 200W.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV Rh, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L200EPS-00	Input: 100-240V, 50-60Hz, 3.2A Cl. I. Output: +12VA/16.5A max., +12VB/ 14A max Standby mode: +12VA/ 0.5A max., +12VB/ 2.5A max.; total Max. 2.5A. continuous total DC output Power 200W max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV Rh, UL
Alt. Power supply for building-in (PSU)	Lite-on (DELL)	L260EPM-00	Input: 100-240V, 50-60Hz, 4.2A Cl. I. Output: +12VA/16.5A max., +12VB/ 16A max Standby mode: +12VA/ 0.5A max., +12VB/ 2.5A max.; total Max. 2.5A. continuous total DC output Power 260W max.	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by TUV
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU200AS-00, HU200EBS-00	Input: 100-240V, 50-60Hz, 3.2A Cl. I. DC Output: +12VA/16.5A, +12VB/14A Max. 200W. Standby mode: +12VA/0.5A, +12VB/2.5A, Max. 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by UL (Demko), UL
Alt. Power supply for building-in (PSU)	Shenzhen Huntkey (DELL)	HU300EGS-00	Input: 100-240V, 50-60Hz, 4.2A Cl. I. DC Output: +12VA/16.5A; +12VB/16A; +12VC, 8A. MAX. OUTPUT POWER: 300W. Standby mode: +12VA/0.5A, +12VB/2.5A, Max. 2.5A	IEC 60950-1 ed.2; am1; am2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1 (ed.2)	CB by UL (Demko), UL
HDD / SSD (Optional)	Hitachi Global Storage LITE-ON	HDS7225nnVLATnn	Max. 1.5/2.0A, 5/12Vdc	EN 60950-1: 2006/A2, UL 60950-1	TUV, UL
	Lite-On Interchangeable	LMS-xxL6Mxxxxx (x can be any alphanumeric or blank) CF1-CPxxxxxxx Interchangeable	3.3Vdc, 2.0A max. 5Vdc, 2.0A max. Max. 1.5/2.0A, 5/12Vdc or 5Vdc or 3.3Vdc, 2.0A max.	EN 60950-1: 2006/A2, UL 60950-1	CB by TUV, UL Verify by Nemko or other cert. body, UL
Optical Disk Drive (Optional)	Hitachi-LG Data Storage Inc.	DRW-24xyST (The "X" can be A to Z and the "y" can be 0 to 9 and the "z" or blank according to buyer, color or other configurations not related with safety.	5/12Vdc, 2.0/2.5A max. Laser class 1	EN 60950-1: 2006/A2, EN 60825-1, UL 60950-1	TUV, UL
	Hitachi-LG Data Storage Inc.	GUCxy (x can be any number 0 to 9 and y can be any alphanumeric denoting non safety related)	5Vdc, 1.5A max. Laser class 1	EN 60950-1: 2006/A2, EN 60825-1, UL 60950-1	TUV, UL
	Interchangeable	Interchangeable	Max. 5/12Vdc, 2.0/2.5A or Max. 5Vdc, 1.5A, Laser class 1	EN 60950-1: 2006/A2, EN 60825-1, UL 60950-1	Verify by Nemko or other cert. body, UL

CPU Fan	AVC	DS08025R12UV (V= ABCD where A, B, C, D may be A-Z, 0-9, or "-")	12Vdc, max. 0.7 A, 53.82 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	QUR0812SH	12Vdc, max. 0.5 A, 52.83 CFM min.	EN 60950-1: 2006/A2, UL507	VDE, UL
	Foxconn	PVA080G12Q	12Vdc, max. 0.65 A, 59 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Sunonwealth	MF80251V2-QZ (Z stands for 15 Characters. Each Character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank.)	12Vdc, max. 0.3A, 48 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Shenzhen Dongweifeng	EFH-08E12WY (Y=Blank or - WWWW, W can be 0 to 9 or A to Z)	12Vdc, max. 0.7 A, 53.45 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	AVC	DASD0825B2SV (V can be ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, max. 1.2 A, 70.85 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
Alt. CPU Fan	Delta	QFR0812UHZ (Z stands for 5 characters. Each character stands for one of the following signs): 0-9, A-Z, - or blank	12Vdc, max. 0.87 A, 63.21 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn	PVA080G12R	12Vdc, max. 0.8 A, 71 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	AUB0712VH	12Vdc, max. 0.56 A, 43.68 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn	PVA070G12Q	12Vdc, max. 0.5 A, 42 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	AVC	BAZB0925R2UV (V can be ABCD where A, B, C, D may be A-Z, 0-9 or -)	12Vdc, max. 1.0 A, 22 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	BUC1012SJ-00XXXXXX (X stands for A-Z, 0-9, - or blank for marketing purpose only)	12Vdc, max. 1.2 A, 23.25 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Shenzhen Dongweifeng	EFH-08E12WY (Y=Blank or -WWWWW, W can be 0 to 9 or A to Z)	12Vdc, max. 0.7 A, 20.7 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn	PVB120G12H-P01	12Vdc, max. 0.75 A, 20.47 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Sunonwealth	MF80251V2-Q0Z (Z stands for 30 Characters. Each Character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank for marketing purpose only.)	12Vdc, max. 0.55 A, 20.7 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL

	AVC	BAZA1233R2UV (V can be ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, max. 0.9 A, 28.2 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	BUC1412VE-00XXXXXX (X stands for A-Z, 0-9, - or blank)	12Vdc, max. 1.2 A, 32.83 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
Alt. CPU Fan	Shenzhen Dongweifeng	EFH-12J12WZ (Z=blank or -WWWW, W can be 0-9 or A-Z)	12Vdc, max. 1.0 A, 28.6 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn	PVB120J12H-P01	12Vdc, max. 0.8 A, 30.03 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Interchangeable	Interchangeable	12Vdc, max. 1.2 A, 20.47 CFM min.	EN 60950-1: 2006/A2, UL507	Verify by Nemko or other cert. body, UL
Front system Fan (optional)	AVC	DASA0820R2UV (V= ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, max. 0.6 A, 48.02 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	AUB0812HHD	12Vdc, max. 0.4 A, 46.31 CFM min.	EN 60950-1: 2006/A2, UL507	VDE, UL
	Foxconn	PVA080F12R	12Vdc, max. 0.36 A, 40 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Sunonwealth	MF80201VX-QZ (Z stands for 15 Characters. Each character stands for one of the following signs): 0-9, A-Z, (,), ., /, - or blank.)	12Vdc, max. 0.219A, 40.8 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	AVC	DASA0820B2UV (V can be ABCD where A, B, C, D may be A-Z, 0-9 or "-")	12Vdc, max. 0.6 A, 55.48 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Delta	AFC0812DD	12Vdc, max. 0.75 A, 54.64 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
	Foxconn	PVA080F12S	12Vdc, max. 0.56 A, 56.7 CFM min.	EN 60950-1: 2006/A2, UL507	TUV, UL
PCB	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Following components used on motherboard					
RTC Battery (Lithium type)	Mitsubishi	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL(MH21249)
	Panasonic	CR2032*, CR-2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging, etc.)			UL(MH12210)

	Shun Wo	CR2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc.)			UL(MH25881)
	Jhih Hong (JHT)	CR2032			UL(MH48406)
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data de Realização / Performance Date
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	285383	0	2015-05-12	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	305346	0	2016-03-17	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	317002	0	2016-10-06	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	329007	0	2017-04-20	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	332284	0	2017-06-03	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	342811	0	2017-12-07	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE172CE	0	2015-06-02	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LE172FB	0	2015-06-02	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE446CE	0	2016-10-11	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LE446FB	0	2016-10-11	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-17LE710CE-R1	0	2018-03-22	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-17LE710FB-R1	0	2018-03-22	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-15LS011OS	0	2015-07-06	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-16LS033OS	0	2016-10-28	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-18LS020OS	0	2018-03-30	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix E (Modelo/Model: D13U, D13U...)

(The dots "." can be 0-9, a-z, A-Z or blank for marketing purposes only)

CARACTERÍSTICAS NOMINAIS / RATINGS: I/P: 3.34A 19.5Vdc; Class III; IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 Class B; CISPR 32:2015/COR1:2016 Class B, CISPR 24: 2010+A1: 2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1:2007+A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004+A1:2017, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Plastic Enclosure	Interchangeable	Interchangeable	HB min. thickness 1.5mm min.	UL 94	UL
Metal Enclosure	Interchangeable	Interchangeable	Thickness 0.6mm min.	IEC 60950-1	Tested in the equip.
AC/DC adapter	Lite-On Technology Corporation (DELL)	LA65NS2-... (The dots "." in model name can be any alphanumeric character including blank or "-", for marketing use only.)	I/P: 1.6A 100-240V 50-60Hz Cl. I, DC-outputs: 3.34A 19.5V (Altitude: 5000m, Tmra: 40°C), LPS	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by Nemko (NO101136), U
	Chicony Power Technology Co., Ltd. (DELL or Dell Inc)	HA65NS5-00	I/P: 1.7A 100-240V~ 50-60Hz DC-output: 3.34A 19.5V Cl. I., (Altitude: 5000m for PCB layout type C, D and E; Tmra: 40°C), LPS.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by Nemko (NO89677), UL
	DELTA ELECTRONICS INC (Dell Inc.)	DA65NM111-00	Input: 100-240Vac, 1.6A, 50-60Hz Output: 19.5Vdc, 3.34A (Altitude: 5000m for Construction B and C and D; Tmra: 40°C), LPS.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by UL (DK-45610-UL), UL
DC Fan	FOXCONN TECHNOLOGY CO LTD	PVB060B05H	Max. 0.78A, 5Vdc, 5.49 CFM min.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 507	TUV Rh, UL
	FORCECON TECH CO LTD	DF(X)160005(Y)0T, (X) stands for B, C or S, (Y) stands for 00-99, 0A-ZZ	Max. 0.5A, 5Vdc, 4.8 CFM min.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 507	TUV Rh, UL
RTC Battery	Jhih Hong Technology Co., Ltd.	CR2032	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH48406)
	DOUBLE BEST CO LTD	CR2032	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH46388)
	Vic-Dawn Enterprise Co Ltd (KTS)	CR2032	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH20550)

	PANASONIC CORPORATION, PANASONIC CORPORATION OF NORTH AMERICA MAXELL, LTD	CR2032*	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH12210)
	MITSUBISHI ELECTRIC CORP Guangdong Tianqiu Electronics Technology Co Ltd	CR2032*	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH12568)
		CR2032+	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH15370)
		CR2032	3V, max. of min. abnormal charging current 10mA	UL 1642	UL (MH48705)
Hard Disk Device (optional)	Seagate Technology L L C or equivalent	ST9 or 2.5 Series or ST with additional suffixes or equivalent	1.5A max., 5Vdc. 1.5A max., 5Vdc.	IEC 60950-1, UL 60950-1 IEC 60950-1, EN 60950-1, UL 60950-1	CB by UL (US), UL Verify by Nemko or other cert. body, UL
Wireless LAN Module (Optional)	Interchangeable	Interchangeable	3.3Vdc, PCB V-1 or better, 105°C min.	IEC 60950-1	Test with equipment
Bluetooth Module (Optional)	Interchangeable	Interchangeable	3.3Vdc, PCB V-1 or better, 105°C min.	IEC 60950-1	Test with equipment
PCB	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data de Realização / Performance Date
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	374657	0	2019-05-22	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-19LE216CE	0	2019-05-14	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-19LE216FB	0	2019-05-14	N/A
Relatório de ensaio emitido por / Test report issued by International Standards Laboratory	ISL-19LS051OS	0	2019-06-13	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix F (Modelo/Model: D15S, D15S...)

(The dots '.' in model name can be 0 to 9, A to Z or blank, for marketing purpose only.)

CARACTERÍSTICAS NOMINAIS / RATINGS: I/P: 3.2A, 100-240Vac, 50/60Hz; Class I, IP20**Normas aplicáveis / Applicable standards:**

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012; CISPR 32:2015/COR1:2016 Class B, CISPR 24: 2010+A1: 2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004+A1:2017, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/Technical data	Norma/Standard	Marca de conformidade/Mark(s) of conformity
Front bezel (Decorative part)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber stand covered right side and bottom opening	Interchangeable	Interchangeable	HB min.	UL 94	UL
Enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	IEC 60950-1	Tested in the equip.
Power supply for building-in	Acbel (DELL)	AC200EBS-01	I/P: AC 100-240V;50-60Hz; 3.2A;Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Chincony (DELL)	H200EBS-01	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Delta (DELL)	D200EBS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 50°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 62368-1, UL 60950-1	CB by Nemko, N, UL
Alt. Power supply for building-in	Huntkey (DELL)	HU200EBS-01	I/P: AC 100-240V;50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Lite-On (DELL)	L200EBS-01	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL

	Acbel (DELL)	AC200EPS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Chincony (DELL)	H200EPS-01	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
	Lite-On (DELL)	L200EPS-01	I/P: AC 100-240V;50-60Hz; 3.2A; Class I. Tma: 45°C (Tma for standby mode: 40°C) Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
Alt. Power supply for building-in	Acbel (DELL)	AC200EBS-00	I/P: AC 100-240V;50-60Hz; 3.2A;Class I. Tma: 45°C Output:Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by TUV, N, UL
	Chicony (DELL)	H200EBS-00	I/P: AC 100-240V;50-60Hz; 3.2A;Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by Nemko for 60950-1, CB by TUV for 62368-1, N, UL
	Huntkey (DELL)	HU200EBS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by UL, N, UL
	Lite-On (DELL)	L200EBS-00	I/P: AC 100-240V; 50-60Hz; 3.2A; Class I. Tma: 45°C (Tma for standby mode: 40°C) Output: Max. TOTAL Power 200W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by TUV, N, UL
	Acbel (DELL)	AC260EPM-00	I/P: AC 100-240V; 50-60Hz; 4.2A; Class I. Tma: 45°C Output: Max. TOTAL Power 260W (Altitude: 5000m)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1: 2014 EN 62368-1: 2014, UL 62368-1	CB by Nemko, N, UL
Alt. Power supply for building-in	Delta (DELL)	D260EPM-01	I/P: AC 100-240V; 50-60Hz; 4.2A; Class I. Tma: 50°C Output: Max. TOTAL Power 260W (Altitude: 5000m)	IEC 60950-1:2005+A1+A2, EN 60950- 1:2006+A11+A1+A12+A2, UL 62368-1	CB by Nemko, N, UL

	Lite-On (DELL)	L260EPM-01	I/P: AC 100-240V; 50-60Hz; 4.2A; Class I. Tma: 45°C (Standby mode 40°C) Output: Max. TOTAL Power 260W (Altitude: 5000m)	IEC 60950-1:2005+A1+A2, EN 60950-1:2006+A11+A1+A12+A2, IEC 62368-1:2014 EN 62368-1:2014, UL 62368-1	CB by Nemko, N, UL
HDD/SSD (Optional)	Samsung Electronics Co., Ltd.	MZ-2***** (* = 0-9, A-Z, slash, dash or blank)	3.3Vdc, 4.8A max.	EN 60950-1	TUV
	HGST Japan, Ltd	HDS7225nnVLATnn	Max. 1.5/2.0A, 5/12Vdc	EN 60950-1, IEC 60950-1	TUV, VDE, UL, cUL
	Interchangeable	Interchangeable	3.3Vdc, 4.8A max. or 5Vdc, 1.5A max. or 12Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1, CSA 60950-1	TUV or VDE, UL, cUL, CSA
Optical Disk Drive (Optional)	Hitachi-LG Data Storage Inc.	GHBzt (where z can be any number 0 to 9, t can be any alphanumeric character, denoting non safety related differences.)	5Vdc/12Vdc, 2.0/2.5A max. Laser class 1	EN 60950-1, EN 60825-1	TUV
	Hitachi-LG Data Storage Inc.	GU9xy (* "x" can be any number 0 to 9 and "y" can be any alphanumeric denoting brand name or shape not related with safety)	5Vdc, 1.8A max. Laser class 1	EN 60950-1, EN 60825-1	TUV
	Interchangeable	Interchangeable	5Vdc/12Vdc, 2.0/2.5A max. or 5Vdc, 1.8A max., Laser class 1	IEC/EN 60950-1, IEC/EN 60825-1, UL 60950-1	TUV or VDE, UL, cUL, CSA
CPU Fan with CPU cooler Type A	AVC	BAZA1233R2UV (V = ABCD where A, B, C,D may be A-Z, 0-9, "-" or blank)	12Vdc, max. 0.9 A, 28.2 CFM min.	EN 60950-1, UL 507	TUV, UL
	Shenzhen Dongweifeng	EFH-12J12WZ (Z=blank or - WWW, (W can be 0 to 9 or A to Z))	12Vdc, max. 1.0 A, 28.6 CFM min.	EN 60950-1, UL 507	TUV, UL
	Delta	BUC1412VE- 00XXXXXX; (X satands for A-Z, 0-9, - or blank.)	12Vdc, max. 1.20 A, 32.83 CFM min.	EN 60950-1, UL 507	VDE, UL
	Foxconn	PVB120J12HP01	12Vdc, max. 0.80 A, 30.03 CFM min.	EN 60950-1 EN 62368-1, UL 507	TUV, UL
CPU Fan with CPU cooler Type B	Delta	AUB0712VH	12Vdc, max. 0.56A, 48.54 CFM min.	EN 60950-1 UL 507	VDE, UL
	Foxconn	PVB120E12H	12Vdc, max. 1.00 A, 23 CFM min.	EN 60950-1 EN 62368-1, UL 507	TUV, UL
CPU Fan with CPU cooler Type C	AVC	DS08025R12UV; V=ABCD where A,B,C,D may be A-Z, 0-9 or "-"	12Vdc, max. 0.7 A, 53.82 CFM min.	EN 60950-1, UL 507	TUV, UL
	Delta	QUR0812SH	12Vdc, max. 0.50 A, 52.83 CFM min.	EN 60950-1, UL 507	VDE, UL

	Shenzhen Dongweifeng	EFH-08E12W-Y (Z=blank or - WWW, (W can be 0 to 9 or A to Z))	12Vdc, max. 0.70 A, 53.45 CFM min.	EN 60950-1, UL 507	TUV, UL
	Foxconn	PVB080G12Q	12Vdc, max. 0.65 A, 59 CFM min.	EN 60950-1 EN 62368-1, UL 507	TUV, UL
System Fan (Optional) for Configuration E use only	AVC	DASA0820R2UV (V=ABCD where A,B,C,D may be A-Z, 0-9 or "." or blank for Internal Control Code/ Control Type / Signal Output)	12Vdc, max. 0.6 A, 48.02 CFM min.	EN 60950-1, UL 507	TUV, UL
	Foxconn	PVA080F12R	12Vdc, max. 0.36 A, 40 CFM min.	EN 60950-1, UL 507	TUV, UL
RTC Battery (Lithium type) (For all MBs used)	Mitsubishi	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL
Alt. RTC Battery (Lithium type) (For all MBs used)	Shun Wo	CR2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc.)	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL
	Jhih Hong Technology	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL
PCB	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Cord Set	Various	Various	---	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data de Realização / Performance Date
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	390330	0	2020-01-03	N/A
Relatório de ensaio emitido por / Test report issued by Audix Technology Corporation, EMC Department	EM-E190737	0	2019-12-18	N/A
Relatório de ensaio emitido por / Test report issued by Audix Technology Corporation, EMC Department	EM-F190509	0	2019-12-18	N/A
Relatório de ensaio emitido por / Test report issued by Shanghai Intertek Testing Services Co., Ltd.	200101320SHA-001	0	2020-02-21	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

Appendix G (Modelo/Model: D14U, D14U...)

(The dots '.' in model name can be 0 to 9, A to Z, a to z, - or blank, for marketing purpose only.)

CARACTERÍSTICAS NOMINAIS / RATINGS: I/P: 3.34A or 4.62A or 6.7A or 9.23A 19.5Vdc; Class III, IP20

Normas aplicáveis / Applicable standards:

IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012; CISPR 32:2015/COR1:2016 Class B, CISPR 24: 2010+A1: 2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004+A1:2017, Annex E of INMETRO Decree no. 170/2012

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/Manufacturer	Tipo/Modelo Type/Model	Características técnicas/Technical data	Norma/Standard	Marca de conformidade/Mark(s) of conformity
Front bezel (decorate parts)	Interchangeable	Interchangeable	HB min.	UL 94	UL
Rubber stand	Interchangeable	Interchangeable	HB min.	UL 94	UL
Fire Enclosure	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	IEC 60950-1	Test with the equip.
Internal plastic	Interchangeable	Interchangeable	V-2 min.	UL 94	UL
PCBs	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
AC/DC Adapter	Lite-On (DELL)	LA65NS2-.. (The dots "." in model name can be any alphanumeric character Including blank or "-", for marketing use only.)	I/P: 1.6A 100-240V 50-60Hz DC-output: 3.34A 19.5V, Cl. I (Altitude: 5000m, ambient 40 °C)	IEC 60950-1(ed.2);am1;am2, UL 60950-1	CB by Nemko (NO82445/A1/M3), UL
	Delta (Dell)	DA65NM191	AC Input: 100-240V~, 1.6A, 50-60Hz DC Output:19.5Vdc, 3.34A (Altitude: 5000m, ambient 40 °C)	IEC 62368-1:2014, EN62368-1:2014 +A11:2017, UL 62368-1	CB by TUV Rh (JPTUV-102356), UL
	Chicony (Dell Inc. Or DELL)	HA65NS5-00	I/P: 1.7A 100-240V~50-60Hz, Cl. I (For PCB layout type C, D and E: 5,000m, ambient 40 °C) O/P: 3.34A 19.5V	IEC 60950-1:(ed.2); am1;am2, UL 60950-1	CB by Nemko (NO89677/A1/M1), UL
	Chicony (DELL)	HA90PM19Z (The Z in model name can be 0 to 9, for marketing purpose.)	Input: 1.5A 100-240V~ 50-60Hz DC-output: 4.62A 19.5Vdc (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:(ed.2); am1;am2, UL 60950-1	CB by TUV RH (JPTUV-098108-M1), UL
Alt. AC/DC Adapter	Delta (Dell)	DA90PM19X (X= 0-9; Marketing purpose only, no technical differences.)	AC Input: 100-240V~, 1.5A, 50-60Hz DC Output:19.5Vdc, 4.62A (Altitude: 5000m, ambient 40 °C)	IEC 62368-1:2014, EN62368-1:2014 +A11:2017, UL 60950-1	CB by TUV Rh (JPTUV-102287), UL
		LA90PM111	Input: 2.5A 100-240V, 50-60Hz or 1.5A 100-240V 50-60Hz DC-output: 4.62A 19.5V (For PCB4: 5,000m, ambient 40 °C)	IEC 60950-1:(ed.2); am1;am2, UL 60950-1	CB by Nemko (NO108932), UL

	CHICONY (DELL)	HA130PM19Z (The Z in model name can be 0 to 9, for marketing purpose)	I/P: 100-240V~, 50-60Hz, 1.8A O/P: 19.5V, 6.7A (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:2005+A1+A2, UL 60950-1	CB by TUVRh (JPTUV-097291-M1), UL
	Lite-On (DELL)	LA130PM19Z (Z=0-9)	I/P: AC 100-240V; 50-60Hz; 2.5A DC-output: 19.5Vdc 6.7A, Class II with functional earth (Altitude: 5000m, ambient 40 °C)	IEC 62368-1:2014, EN 62368-1:2014 +A11:2017, UL 60950-1	CB by TUVRh (JPTUV-084784), UL
	Delta (Dell Inc)	DA180PM111	Input: 100-240 V~, 2.34 A, 50-60 Hz. Output: 19.5 Vdc, 9.23 A. (Construction B and C: 5000m, ambient 40 °C)	IEC 60950-1(ed.2);am1;am2, UL 60950-1	CB by UL (DK-70970-M1-UL), UL
	Chicony (DELL)	HA180PM180	I/P: 2.34A 100-240V~ 50-60Hz DC-output: 19.5Vdc 9.23A, Class I (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:2005+am1+am2, UL 60950-1,	CB by Nemko (NO99276), UL
	Lite-On (DELL)	LA180PM180	I/P: 2.34A; AC100-240V; 50-60Hz DC-output: DC19.5; 9.23A, Class II with functional earth (Altitude: 5000m, ambient 40 °C)	IEC 60950-1:2005+am1+am2, UL 60950-1	CB by TUVRh (JPTUV-083430), UL
HDD (optional) (except MB3 type B, all MB used)	Western Digital Technology, Inc	WDUUUUXZYXX YY	5Vdc, 1.5 A max.	IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL
Alt. HDD (optional) (except MB3 type B, all MB used)	Interchangeable	Interchangeable	5Vdc, 1.5 A max.	IEC 60950-1, EN 60950-1, UL 60950-1	Verified by Nemko or other certificate body, UL
SSD (optional)	Lite-On IT Corporation	LMS-xxL6Mxxxxx (x can be any alphanumeric or blank)	3.3Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL
	Micron Technology, Inc.	MTFDDAKxxxM AV, where xxx may be any alpha numeric character representing density)	5Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1	TUV, UL
	Interchangeable	Interchangeable	5Vdc, 2.0 A max or 3.3Vdc, 2.0A max.	IEC 60950-1, EN 60950-1, UL 60950-1	Verified by Nemko or other certificate body, UL
CPU Fan (For MB1and MB2 used)	Foxconn Technology Co., Ltd Asia Vital Components Co.,Ltd.	PVB070E05N- P02	5Vdc, max. 1.1 A, 12.69 CFM min.	EN 62368-1:2014, UL507	TUV, UL
		BAZC0715R5UP 003	5Vdc, max. 1 A, 10.46 CFM min.	EN 62368- 1:2014/A11:2017, UL507	TUV, UL
CPU Fan (For MB3 Type A used)	Foxconn Technology Co., Ltd	PVB070E12H- P01-13	12Vdc, max. 0.95 A, 14.20 CFM min.	EN 60950-1:2006+A11+ A1+A12+A2, UL507	TUV, UL
CPU Fan (For MB3 Type B used)	Asia Vital Components Co.,Ltd.	BAZB0715R2UP 004	12Vdc, max. 0.8 A, 14.52 CFM min.	EN 62368-1:2014/A11:2017, UL507	TUV, UL
	Foxconn Technology Co., Ltd	PVB070E12H- P01-12	12Vdc, max. 0.95 A, 12.62 CFM min.	EN 60950-1:2006+A11+ A1+A12+A2, UL507	TUV, UL
	Asia Vital Components Co.,Ltd.	BAZA0812R2UP 003	12Vdc, max. 0.7A, 11.83 CFM min.	EN 62368- 1:2014/A11:2017, UL507	TUV, UL

Speaker (Optional)	Interchangeable	Interchangeable	Generic, 4Ω± 15% min., 2.5 Watts max.	IEC 60950-1	Tested in the equip.
RTC battery (Lithium type)	JHIH HONG TECHNOLOGY CO LTD	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH48406)
Alt. RTC battery (Lithium type)	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD PANASONIC CORPORATION OF NORTH AMERICA PANASONIC CORPORATION OF NORTH AMERICA SHUN WO NEW POWER BATTERY TECHNOLOGY LTD VIC-DAWN ENTERPRISE CO LTD (KTS)	CR2032	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL(MH21249)
		BR-2032*	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH12210)
		CR-2032*	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH12210)
		CR2032*	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL(MH25881)
		CR2032 Cells may be provided with alphanumeric suffix (j) or (k), (j) may come with an optional single or multiple alphanumeric suffix denoting various insulating tube, ring, or tape. (k) may come with an optional single or multiple alphanumeric suffix denoting various pin, tab, cap or wire termination types	3Vdc, maximum abnormal charging current 10mA	UL 1642	UL (MH20550)
PCBs	Interchangeable	Interchangeable	V-1 min., 105°C min.	UL 796	UL
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data de Realização / Performance Date
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	390052	0	2020-01-07	N/A
Relatório de ensaio emitido por / Test report issued by Nemko Taiwan	391119	0	2020-01-10	N/A
Relatório de ensaio emitido por / Test report issued by Audix Technology Corporation, EMC Department	EM-E190646	0	2019-11-25	N/A
Relatório de ensaio emitido por / Test report issued by Underwriters Laboratories Taiwan Co., Ltd.	4789371860	0	2020-03-05	N/A
<<Software / Software>>	N/A			
<<Manual do usuário / User's manual>>	N/A			

OBSERVAÇÕES / OBSERVATIONS:

1. **A validade deste Certificado está condicionada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da UL do Brasil Certificações e previstas nos procedimentos específicos. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro.**
The validation of this certificate depends on the surveillance inspections performing and Non conformity treatments, according to UL do Brasil Certificações procedures. To verify the updated condition of regularity of this Conformity Certificate shall be consulted the certified products and services Inmetro database.
2. **Este certificado aplica-se aos equipamentos (produtos) idênticos ao protótipo avaliado e certificado, manufaturados na(s) unidade (s) fabril (is) mencionada (S) acima.**
This certificate applies to the products that are identical to the prototype investigated, certified and manufactured at the production site mentioned in this certificate
3. **Qualquer alteração no produto, incluindo a marcação, invalidará o presente certificado, salvo se o solicitante informar por escrito à UL do Brasil Certificações sobre esta modificação, a qual procederá à avaliação e decidirá quanto à continuidade da validade do certificado.**
Any non-authorized changes performed in the product, including marking, will invalidate this certificate. UL do Brasil Certificações must be notified about any desired change. This notification will be analyzed by UL do Brasil Certificações that will decide about certificate force.

Histórico de Revisões / Revisions Description:

07 de julho de 2020 / July 07, 2020	Emissão inicial com recertificação do certificado UL-BR 15.0495 / Initial Issue with renewal of certificate UL-BR 15.0495
A última revisão substitui e cancela as anteriores <i>The last review cancel and substitutes the previous ones</i>	

[RETURN TO SEARCH](#)

COMPUTERS &
DISPLAYS

OptiPlex 3080 Micro (65W adapter)

Product Summary:

Product Type:	Desktop
Registered In:	Brazil
Manufacturer:	DELL
EPEAT Tier:	Gold
Registration Date:	2020-09-15
Product Status:	Active
Exceptions:	ENERGY STAR compliant power management features and power supply. Computers without such features may not conform to 4.5.1.1 ENERGY STAR and would not be in conformance with EPEAT.
Manufacturer Part Number(s):	N/A

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria. [Click here](#) to see a list of the required criteria for this product category.

This product has met the necessary **required criteria**.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at

EPEAT Bronze

Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at

EPEAT Silver

Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at

EPEAT Gold

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
4.1 Substance Management	10 / 16
4.4 Product longevity/life-cycle extension	2 / 2
4.5 Energy Conservation	2 / 3
4.7 Packaging	1 / 2
4.8 Life cycle assessment and carbon footprint	6 / 6
4.9 Corporate Environmental Performance	6 / 9

TOTAL OPTIONAL CRITERIA SCORE: 33 / 44

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please [contact us](#).

[EPEAT PROGRAM POLICY MANUAL](#) [SUPPORT](#)



Product Compliance Datasheet

MARKETING NAME.....: OptiPlex 3080 Micro

REGULATORY MODEL.....: D14U

REGULATORY TYPE.....: D14U002

EMC EMISSIONS CLASS.....: B

EFFECTIVE DATE.....: May 27, 2020

Table of contents

I.	Statement of Compliance	2
II.	Global Environmental Information	3
III.	NFPA 99 Conformity	3
IV.	Declaration of Similarity.....	3
V.	Power Cords and User Documentation.....	4
VI.	Trade (Import/Export) Compliance Data	4
VII.	Product Dimensions and Weight.....	4
VIII.	Performance Data	4
IX.	Product Materials Information	6
X.	Packaging.....	8
XI.	Batteries	8
XII.	Design for Environment.....	8
XIII.	Recycling / End-of-Life Service Information	8
XIV.	Helpful Links	9
	Appendix A: ErP Lot 3 Product Energy Consumption Information.....	10
	Appendix B: ErP Lot 26 Network Standby Energy Consumption Information	12

I. Statement of Compliance

This product has been determined to be compliant with the applicable standards, regulations, and directives for the countries where the product is marketed. The product is affixed with regulatory marking and text as necessary for the country/agency. Dell manufactures and markets Multimedia Equipment (MME), Information Technology Equipment (ITE), Audio Visual Equipment (A/V), Industrial, Scientific, Medical Equipment (ISM) or combinations of these. Generally, products Electromagnetic Compatibility (EMC) and Product Safety compliance is based on International IEC and CISPR standards and their national equivalent along with national standards for Radio (wireless), Telecommunications (Modem) and Energy. Dell products have been verified to comply with the Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU of the European Parliament and the Council. Dell product does not contain any of the restricted substances in concentrations and applications not permitted by the RoHS Directive.

EMC Emissions Class refers to one of the following use environments:

- EMC Class B product is intended for use in residential/domestic environments but may also be used in nonresidential/non-domestic environments.
- EMC Class A product is intended for use in non-residential/non-domestic environments. Class A product may also be utilized in residential/domestic environments but may cause interference and require the user to take adequate corrective measures.

For Product Safety and EMC compliance, this product has been assigned a unique regulatory model and regulatory type that is imprinted on the product regulatory labeling to provide traceability to the regulatory approvals noted on this datasheet. This datasheet applies to any product that utilizes the assigned regulatory model and type including marketing names other than those listed on this datasheet. Dell products with the CE marking have been verified to comply with Energy Related Products (ErP) Directive 2009/125/EC of the European Parliament and of the Council. [https://www.dell.com/ErP User Information](https://www.dell.com/ErP_User_Information). REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), Regulation (EC) 1907/2006 of the European Parliament and of the Council is the European Union's (EU) chemical substances regulatory framework. Dell complies with the REACH regulation. For information on SVHC (Substances of Very High Concern), see www.dell.com/REACH. This products compliance documentation, such as this datasheet and the European Union Declaration of Conformity are available on the product support page, manuals tab <http://www.dell.com/support>. Additional compliance documentation for the product is available upon submitting a request at http://www.dell.com/regulatory_compliance. Please include product identifiers such as marketing name, regulatory model, regulatory type and country that compliance information is needed in the email request.

II. Global Environmental Information

Environmental (Voluntary Marks)		
Country	Approval	Compliance
Global	ENERGY STAR (Configuration Dependent)	<i>Spec Version 8.0</i>
Global	TCO Certified	<i>Generation 8</i>
China	CECP	Yes
China	CEC	Yes
Japan	Green PC Label	Yes
Taiwan	Greenmark	Yes
Varies by Country See EPEAT.net	EPEAT (Configuration Dependent)	Refer to EPEAT.net for specific registration levels and countries

Adapter Certification and Declarations	
Country	Authority/Mark
Australia/New Zealand	Australia/NZ MEPS
Canada	NRCan
US – California Energy Commission	Adapter & Battery Charger
European Union	Regulation EC No 278/2009
South Korea	South Korea MEPS

III. NFPA 99 Conformity

Select Dell systems have been tested and found to comply with the touch current requirements as defined in 10.3.5 of National Fire Protection Association standard NFPA 99:2012. The touch current does not exceed 100 μ A with ground wire intact (if a ground wire is provided) and 500 μ A with ground disconnected at 127 V AC, 60 Hz when tested in accordance with 10.3.5 of NFPA 99: 2012. To determine if this product complies with the above requirements, send a request to Product_Compliance@Dell.com. Please include product identifiers such as marketing name, regulatory type and country for which compliance information is needed.

IV. Declaration of Similarity

Object of the Declaration	
Product Type	Desktops
Regulatory Model Number	D14U
Regulatory Type Number	D14U002
Trade Name/ Trade Mark	DELL
Marketing Name(s)	OptiPlex 3080 Micro

Dell Inc. hereby declares that the products identified by the product designations listed in this declaration are strictly identical in design (shape, opening, etc.) components, materials,

manufacturing process, and markings except for product designation – Trade Name and/or Trade Mark as specified in this declaration.

The products may have very minor differences which do not impact the level of conformity. All products identified by the product designations in this declaration have the same level of conformity according to the certificate(s) provided.

The Trade Name / Trade Mark and/or Marketing Name(s) are the property of Dell Inc. Any differences in the product designation are for marketing purposes only.

Date of Issue	May 27, 2020	Signature on behalf of Dell Inc.	Dell Inc. Dell Global Product Compliance and Environmental Affairs
Title	Dell Global Product Compliance and Environmental Affairs		

V. Power Cords and User Documentation

Dell products are provided with the power cord and user documentation suitable for the intended country of delivery. Products that are relocated to other countries should use nationally certified power cords and plugs to ensure safe operation of the product. Contact Dell to determine if alternate power cords or user documentation in other languages is available for your market.

VI. Trade (Import/Export) Compliance Data

For any questions related to importing & exporting classification of Dell products, please obtain information from the following link: <http://www.dell.com/learn/us/en/uscorp1/import-export> or send email request to WW_Export_Compliance@dell.com. Please include product identifiers such as marketing name, regulatory model, regulatory type and country that compliance information is needed in the email request.

VII. Product Dimensions and Weight

Depth, mm/cm	Width, mm/cm	Height, mm/cm	Weight, kg
178 mm	36 mm	182 mm	1.4 Kg (depending upon installed options)

For Display products please refer to the user manual for weight and dimension information.

VIII. Performance Data

ErP Lot 3, Lot 26 and ErP Lot 9 information is in Appendices A, B and C respectively.

For additional information on how Dell's commitment to energy efficiency benefits you go to: [Reducing your Footprint](#)

For additional information on ENERGY STAR models refer to the following database: [ENERGY STAR Product Finder](#)

Computer:

Service Level	Energy Consumption (Wattage)	BTU Calculation	Description of Service Level
CPU stressed	48.80	156.64	The system is running programs to maximize the CPU utilization and/or running programs to maximize the power consumption
Short Idle	7.43	25.40	As specified per EPA ENERGY STAR
Long Idle	6.17	21.10	As specified EPA ENERGY STAR
S3 "Sleep" or Modern Standby	0.99	3.39	S3=Suspend-to-RAM, or Modern Standby
Off/Standby	0.39	1.34	System is turned off but still connected to its AC power source.

Energy Consumption¹

Energy efficiency benefits the environment and lowers the total cost of equipment ownership by reducing power consumption. Click [here](#) for Dell's Energy efficient products.

***Energy Consumption** results are based solely upon the laboratory testing of the **System Configuration** and in accordance to the described service level. Energy consumption is tested at 230 Volts / 50 Hz.

Declared noise emission values in accordance with ISO 9296. Testing performed in compliance with ISO 7779 with operating modes defined by ECMA-74.

OptiPlex Desktop:

Declared noise emission values in accordance with ISO 9296. Testing performed in compliance with ISO 7779 with operating modes defined by ECMA-74.

SSD/Integrated Graphics Configuration	
Component	Configuration
CPU	Intel i7-10700T
Memory	32G*2

¹ This document is informational only and reflects laboratory performance. Your product may perform differently, depending on the software, components and peripherals you ordered. Accordingly, the customer should not rely upon this information in making decisions about electrical tolerances or otherwise. No warranty as to accuracy or completeness is expressed or implied. For more details visit <https://www.dell.com/learn/us/en/uscorp1/dell-environment>

HDD/SSD (#, capacity)	M2.SSD + M2.SSD + 2.5" HDD	
RMSD (Removable Media Storage Device)	N/A	
Graphic Adapter	UMA	
Power Supply Output Wattage & Efficiency	65W	N/A

Operating Mode	Sound Power Declared mean A- weighted level	Sound Power Statistical adder for verification	Sound Pressure Declared mean A-weighted emission level $L_{pA,m}$ (dB)	
	$L_{WA,m}$ (bels)	K_v , (bels)	Operator	Bystander
Idle	2.6	0.4	17.0	16.4
HDD Operating	2.6	0.4	17.6	16.5
CPU Stressed	3.9	0.4	31.1	28.4
ODD Operating	N/A	N/A	N/A	N/A

OptiPlex Desktop: SSD/Integrated Graphics Configuration ¹			
Service Level	Energy Consumption (Wattage)	BTU Calculation	Description of Service Level
CPU stressed	45.80	156.64	System is running programs to maximize CPU utilization.
Short Idle	7.43	25.40	As specified EPA Energy Star Computers
Long Idle	6.17	21.10	
Sleep	0.99	3.39	Suspend-to-RAM (low-power/sleep mode) or Modern Standby
Off	0.39	1.34	System is turned off but still connected to its AC power source.
E-TEC	32.86	112.39	Calculated annual energy consumption in kWh using conventional duty cycle

¹ This document is informational only and reflects laboratory performance. Your product may perform differently, depending on the software, components and peripherals you ordered. Accordingly, the customer should not rely upon this information in making decisions about electrical tolerances or otherwise. No warranty as to accuracy or completeness is expressed or implied. For more details visit <https://www.dell.com/learn/us/en/uscorp1/dell-environment>

IX. Product Materials Information

Information on Dell's material use is available [here](#).

Dell's Restricted Material for Use guidance document is available at www.dell.com/restrictedsubstanceslist.

- The case material is SGCC.

- This product contains 41.1% post-consumer recycled plastic and /or closed loop recycled plastics (ITE-derived)*
(*Measured as a percentage of total amount of plastic (by weight) in the product as per guidance in EPEAT standard as applies to plastics parts)

Mechanical plastic parts ² > 25 g are BFR/PVC free	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Marking of plastics parts greater than 25 grams is in accordance with ISO 11469 (see below)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Printed circuit boards (without components) >25g are BFR PVC free ³	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Insulation materials of external electrical cables are PVC free	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Insulation materials of internal electrical cables are PVC free	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Product is BFR/PVC Free (Accessories & Options may not be BFR/PVC-Free, refer to spec ENV0199)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Flame Retardants Used in Motherboard

Part	Flame Retardant
Motherboard	Brominated Epoxy

Flame Retardants Used in Mechanical Plastic Parts > 25 grams

Resin Material Name	Plastic Part Marking per ISO 11469:2016	Flame Retardant Marking per ISO 1043-4 (i.e. FR(16), FR(40), etc.)	Flame Retardant (i.e. TBBPA, triaryl phosphate ester, etc.)	List applicable R-Phrase(s) or Hazard Statement(s) per EU Directive 67/548/EEG or 1272/2008
N/A	N/A	N/A	N/A	N/A

Mercury Information

Number of bulbs	Average per bulb
0	N/A

Additional information:

- Refer to Dell Technologies' [Chemical Use Policy](#) for more information on RoHS and REACH.
- Products MSDS (Material Safety Data Sheets):
 - Batteries: [Battery MSDS Documentation and Declaration](#)
 - Printer Toner and Ink: [MSDS Documentation](#)

² Mechanical plastic part: plastic parts that do not internally carry an electrical signal such as housings, brackets, bezels, latches, etc. that form the basic structure of the product and/or have mechanical functions. Plastic parts such as fans, connectors, printer fuser assemblies, etc. are not considered "mechanical plastic parts" in the context of this specification. Plastics parts do not contain no more than 0.1% weight (1000 ppm) bromine and 0.1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride (Per Dell Spec ENV0424)

³ Dell will adopt the BFR/CFR/PVC-free definition as set forth in the "INEMI Position Statement on the Definition of 'Low-Halogen' Electronics (BFR/CFR/PVC-Free)." Plastic parts contain <1000 ppm (0.1 percent) of bromine (if the Br source is from BFRs) and <1000 ppm (0.1 percent) of chlorine if the Cl source is from CFRs, PVC or PVC copolymers. All printed circuit board (PCB) and substrate laminates contain bromine/chlorine totaling less than 1,500 ppm (0.15 percent), with maximum chlorine of 900 ppm (0.09 percent) and maximum bromine of 900 ppm (0.09 percent)

X. Packaging

Information on Dell's sustainable packaging effort available [here](#). Additional materials restricted in Packaging as per Dell's Material Restricted for Use Standard document can be found at www.dell.com/restrictedsubstanceslist.

Packaging Materials	Total Weight, (g)	Sustainable Material Content[1] (e.g Recycled content *, bio-based, Sustainable Forested materials)	% Sustainable Material		
			APJ region	DAO region	EMEA region
Corrugated Fiberboard	761	Recycled Content	Min 35%	Min 35%	Min 35%
LDPE (Including EPE Foam)	9	Recycled Content	0-80%	0-80%	0%
Molded paper pulp	41	Recycled content	100%	100%	100%

XI. Batteries

Below is a listing of batteries that could be present in the product:

Battery Description – Batteries	Battery Type	Battery Weight (kg)	Rating
CR-2032 coin cell	Lithium Metal	0.0032	N/A

XII. Design for Environment

Dell systems are, when applicable, designed for easy assembly, disassembly, and servicing. For more information on Dell's Environmental product attributes please visit <https://www.dell.com/learn/is/en/is/corp1/dell-environment-greener-products>

XIII. Recycling / End-of-Life Service Information

Take back and recycling services are offered for this product in certain countries. If you want to dispose of system components, please visit www.dell.com/recyclingworldwide and select the relevant country.

XIV. Helpful Links

- **Environmental Policy**
https://i.dell.com/sites/csdocuments/Corporate_corp-Comm_Documents/en/dell-global-environmental-policy.pdf
- **Environment Website**
<https://www.dell.com/learn/ai/en/aicorp1/dell-environment>
- **Corporate Social Responsibility Report**
<http://www.dell.com/Learn/us/en/uscorp1/report?c=us&l=en&s=corp&delphi:gr=true>
- **ISO 14001 Certification**
<http://i.dell.com/sites/content/corporate/corp-comm/en/Documents/dell-iso14001-worldwide.pdf>
- **Materials Restricted for Use**
www.dell.com/restrictedsubstanceslist
- **Chemical Use Policy**
<http://i.dell.com/sites/doccontent/corporate/environment/en/Documents/chemical-use-policy.pdf>
- **Product Carbon Footprint**
https://www.dell.com/learn/us/en/uscorp1/corp-comm/environment_carbon_footprint_products
- **RoHS Compliance**
<https://www.dell.com/learn/us/en/uscorp1/envt-info-materials>
- **REACH Compliance**
www.dell.com/REACH
- **Recycling Information**
<http://www.dell.com/recycling>
- **Supplier Responsibility**
<https://www.dell.com/learn/gy/en/gycorp1/cr-social-responsibility>

Appendix A: ErP Lot 3 Product Energy Consumption Information

European Union (EU) ErP Lot 3 (Commission Regulation (EC) No. 617/2013)

The ErP Lot 3 regulation includes requirements for certain product specific information to be provided by the manufacturer. This is applicable to Desktops, Integrated Desktops (All-in-One), Notebooks, Tablets, Slates, Notebook Thin Clients, Desktop Thin Clients, Workstations, Mobile Workstations, and Small-Scale Servers.

ErP Lot 3 provides certain exclusions based upon product type, screen size, and/or the amount of power consumed in idle mode. Product energy and acoustic information might be reported for products that are out of scope of ErP Lot 3 for informational purposes only.

Additional information on ErP Lot 3, Lot 7 & Lot 26 available [here](#).

Category	Category B	Category D
Processor Speed in GHz	3.4	2
Number of Cores	2	8
Total Installed System Memory in GB	64	64
Graphics	Integrated	Integrated
WOL enabled in "Sleep" Mode	No	No
WOL enabled in "Off" Mode	No	No
<i>As Tested: Lowest Power State</i>	0.39	0.39
<i>As Tested: Poff(W) WOL Disabled</i>	0.39	0.39
<i>As Tested: Poff(W) WOL Enabled</i>		
<i>As Tested: Psleep(W) WOL Disabled</i>	1.00	0.99
<i>As Tested: Psleep(W) WOL Enabled</i>		
<i>As Tested: Pidle(W)</i>	5.54	6.17
Base TEC Limit (kWh)	112	150.00
TEC Adders Limit (kWh)	87.00	85.00
Base + Adders TEC Limit (kWh)	199.00	235.00
Results TEC	21.75	43.47

Power Supply Model #	Internal or External	Link to efficiency report
LA65NS2-01	External	http://oe.e.nrcan.gc.ca/pml-lmp/index.cfm?action=app.formHandler&operation=details-details&ref=5485275&appliance=EPS&nr=1
HA65NS5-00	External	http://oe.e.nrcan.gc.ca/pml-lmp/index.cfm?action=app.formHandler&operation=details-details&ref=5470487&appliance=EPS&nr=1
DA65NM199	External	http://oe.e.nrcan.gc.ca/pml-lmp/index.cfm?action=app.formHandler&operation=details-details&ref=34247978&appliance=EPS&nr=1
LA90PM111	External	http://oe.e.nrcan.gc.ca/pml-lmp/index.cfm?action=app.formHandler&operation=details-details&ref=34247978&appliance=EPS&nr=1

		Imp/index.cfm?action=app.formHandler&operation=details-details&ref=14419075&appliance=EPS&nr=1
HA90PM190	External	http://oee.nrcan.gc.ca/pml-Imp/index.cfm?action=app.formHandler&operation=details-details&ref=33610954&appliance=EPS&nr=1
DA90PM190	External	http://oee.nrcan.gc.ca/pml-Imp/index.cfm?action=app.formHandler&operation=details-details&ref=34247977&appliance=EPS&nr=1

* **Energy Consumption** results are based solely upon the laboratory testing of the **System Configuration** listed above. Energy consumption is tested at 230 Volts / 50 Hz.

Energy Consumption⁴

Energy efficiency benefits the environment and lowers the total cost of equipment ownership by reducing power consumption. Click [here](#) for Dell's Energy efficient products

Declared Noise Emissions in accordance with ISO 9296. Testing performed in accordance with ISO 7779 at operating modes defined by ECMA 74. Your product may perform differently, depending on the software, components and peripherals you ordered. No warranty as to accuracy or completeness is expressed or implied.

Computers Category B:

Service Level	Sound Power Declared mean A- weighted level	Statistical adder for verification	Sound Pressure Declared mean A- weighted emission level
	L _{WA,m} (B)	K _V (B)	L _{pA,m} (dB)
HDD Accessing	2.6	0.4	16.4
ODD Accessing	N/A	N/A	N/A
Idle	2.6	0.4	16.4

Computers Category D:

Service Level	Sound Power Declared mean A- weighted level	Statistical adder for verification	Sound Pressure Declared mean A- weighted emission level
	L _{WA,m} (B)	K _V (B)	L _{pA,m} (dB)
HDD Accessing	2.6	0.4	16.5
ODD Accessing	N/A	N/A	N/A
Idle	2.6	0.4	16.4

⁴ This document is informational only and reflects laboratory performance. Your product may perform differently, depending on the software, components and peripherals you ordered. Accordingly, the customer should not rely upon this information in making decisions about electrical tolerances or otherwise. No warranty as to accuracy or completeness is expressed or implied.

Appendix B: ErP Lot 26 Network Standby Energy Consumption Information

European Union (EU) ErP Lot 26 (Commission Regulation (EC) No 801/2013)

The ErP Lot 26 regulation includes Network Standby power requirements to be provided by the manufacturer. This is applicable to multiple product categories. If no information is reported, it's assumed it is out of scope of ErP Lot 26.



Certificate of Registration of Environmental Management System to ISO 14001:2015

The National Standards Authority of Ireland certifies that:

Dell Inc.
One Dell Way
Round Rock, TX 78682
USA

has been assessed and deemed to comply with the
requirements of the above standard in respect of the scope of
operations given below:

**The Development, Manufacture, Supply, and
Takeback Services of Computers, Storage and
Server Products and Technology Products.**

**Additional sites covered under this multi-site certification are listed on the
Annex. (File No. 14.5000)**

Approved by:
Geraldine Larkin
Chief Executive Officer

Approved by:
Lisa Greenleaf
Operations Manager

Registration Number: 14.5000
Certification Granted: Jan 25, 2011
Effective Date: Jun 05, 2018
Expiry Date: Jan 24, 2020



Annex to Certificate Number: 14.5000

Scope of Registration:

The Development, Manufacture, Supply, and Takeback Services of Computers, Storage and Server Products and Technology Products.

Activity

Location

Central Function, Manufacture and Supply, Takeback Services, Product Development

Dell Inc.
One Dell Way
Round Rock, TX 78682
USA
File No.: 14.5000

Manufacture and Supply

Dell Computadores do Brazil Ltda.
BRH1 Facility
Av da. Emancipação, 5000
Hortolândia, SP 13.184-654
Brazil
File No.: 14.5000/R1/A

Global Product Development

Dell Inc.
One Dell Way
Round Rock, TX 78682
USA
File No.: 14.5000/R1/S

Manufacture and Supply

Dell EMC
50 Constitution Blvd
Franklin, MA 02038
USA
File No.: 14.5000/R1/T

Manufacture and Supply

Dell EMC
5800 Technology Drive
Apex, NC 27539
USA
File No.: 14.5000/R1/U

Annex to Certificate Number: 14.5000

Scope of Registration:

The Development, Manufacture, Supply, and Takeback Services of Computers, Storage and Server Products and Technology Products.

Activity	Location
Global Takeback Services	Dell Inc. One Dell Way Round Rock, Texas 78682 USA File No.: 14.5000/R1/EE
Manufacture and Supply	Dell Products (Poland) Sp. z.o.o. Informatyczna Street No 1, 92-410 Lodz Poland File No.: 14.5000/R2/DD
Manufacture and Supply	Dell EMC EMC Information Systems International Unit B IDA Industrial Estate Ovens Co. Cork Ireland File No.: 14.5000/R2/EE
Manufacture and Supply	Dell International Services India, Pvt. Ltd. Sriperumbudur Hi-Tech SEZ SIPCOT Industrial Park Sriperumbudur Phase-II Sunguvarchatram Post Sirumangadu Village Sriperumbudur Taluk Kancheepuram Tamil Nadu 602106 India File No.: 14.5000/R3/E

Annex to Certificate Number: 14.5000

Scope of Registration:

The Development, Manufacture, Supply, and Takeback Services of Computers, Storage and Server Products and Technology Products.

Activity

Location

Manufacture and Supply

Dell Global Business Center Sdn Bhd (APCC)
Plot 76, Mukim 11
Bukit Tengah Industrial Park
14000 Bukit Mertajam
Penang
Malaysia
File No.: 14.5000/R3/N

Manufacture and Supply

Dell (Chengdu) Company Limited
No. 800 TianQin Road
Hi-Tech Zone (West)
Chengdu
Sichuan, 611731
China
File No.: 14.5000/R3/NN

Manufacture and Supply

Dell (Xiamen) Co. Ltd. (CCC4)
No. 2366 Jinshang Road
Information Photo-Electronic Park
Xiamen Torch Hi-Tech Zone
Fujian
China 361011
File No.: 14.5000/R3/T

Manufacture and Supply

Dell (China) Co. Ltd. (CCC2)
No. 2388 Jinshang Road
Information Photo-Electronic Park
Xiamen Torch Hi-Tech Zone
Fujian
China 361011
File No.: 14.5000/R3/U

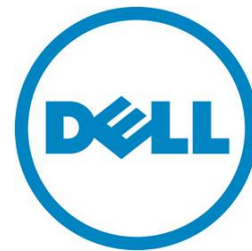
**Verified by:
Operations Manager**

Dell Client BIOS: Signed Firmware Update

An Implementation and Deployment Guide to NIST SP800-147 BIOS Protections for Dell Client BIOS

Rick Martinez

Dell Client BIOS



Executive summary

In April 2011, the National Institute of Standards and Technology (NIST) released Special Publication 800-147 ***BIOS Protection Guidelines*** to offer BIOS vendors, OEMs, and end customers the information needed to help protect the system BIOS from malicious attacks.

The NIST document defines guidelines on how to protect the BIOS code on a system from unauthorized modification and also provides deployment strategies to allow customers to take full advantage of these protections.

This white paper outlines the BIOS implementation building blocks and remote management details necessary to understand and deploy these protections on Dell Client systems and is intended for technical audiences who have an interest in the endpoint security in their organizations.



Contents

Introduction.....	4
What is “Dell Client BIOS”?.....	5
Analysis of NIST Recommendations.....	5
Approved BIOS Update Mechanisms	5
BIOS Update Authentication	6
Integrity Protection.....	8
Non-Bypassability	8
Client BIOS Deployment.....	8
Signed Firmware Update Detection	8
Detection via BIOS Setup	8
Detection via CCTK.....	9
Anti-Rollback Support	10
Signed Firmware Update Systems.....	11
Summary	12
Appendix A. Legacy BIOS Support	13
Legacy BIOS Updates	13
BIOS Setup Changes.....	13
BIOS Setup Option	13
Setup Help Text.....	15
Opt-In Status	15
Remote Management.....	15
Transition BIOS Concept.....	16
Transition BIOS Limitations.....	20
Legacy Systems Supported.....	21



Introduction

Computer and network security represents a major piece of today's connected landscape and culture. Computer security is not only critically important with respect to protecting customer data and privacy in an isolated infrastructure but it also plays an expanding role in society's security in general; every day we get closer to the vision that "computer security *is* security."ⁱ

Securing the endpoints, the devices that we use every day, is a fundamental goal in any enterprise level security strategy. The most prevalent endpoints in many corporate infrastructures are the "client" systems, also known as the personal computers: desktops, notebooks, workstations, and tablets. These endpoints are typically the last link in the chain of sensitive data extending from the enterprise "cloud" all the way down to the end user. It is important that these endpoints remain protected at all levels of the software stack.

Nearly all client systems rely on the system BIOS (Basic Input/Output System)ⁱⁱ to initialize hardware and prepare the platform for the operating system. The BIOS is typically stored on flash memory on the motherboard and occupies a very privileged role in the system based on several factors: it has full control of the hardware during system boot, includes persistent storage for code and data, and it even maintains some capabilities after the operating system has loaded.

The unfortunate consequence of these privileges is that the BIOS has become an attractive target for attack. There have been several viruses and research papers targeted at or describing how to replace or modify BIOS code for malicious purposes and this trend is expected to continue. Most of these attacks have centered on legacy BIOS bugs or other vulnerabilities to gain entrance to the BIOS realm.

In April 2011 the National Institute of Standards and Technology (NIST) released Special Publication 800-147 **BIOS Protection Guidelines**ⁱⁱⁱ to give BIOS vendors, OEMs, and end customers the data needed to combat the growing threat of attacks against BIOS. This comprehensive document provides guidelines on how to protect the BIOS code on a system from unauthorized modification and also provides deployment strategies to allow customers to take full advantage of these protections.

Dell engineers put significant effort into hardening the BIOS protection and authentication capabilities on client systems in accordance with NIST SP800-147 to support Dell's customers. This white paper delves into the implementation and deployment details that are specific to Dell Business Client systems to increase customer awareness of the security technologies employed to assist in managing these technologies across the enterprise.

This paper assumes that the reader is familiar with the terminology in the NIST document and has an understanding of security concepts such as digital signing.



What is “Dell Client BIOS”?

The support and behavior described in this document are applicable to Dell Business Client systems. These platforms are commonly referred to as Dell Client systems and this terminology will be used in the rest of this document. The brands that are included in this group are:

- OptiPlex
- Latitude
- Dell Precision

Several other Dell platforms and brands include support for NIST SP800-147 in the system BIOS but the details of implementation are beyond the scope of this document.

Analysis of NIST Recommendations

The following capabilities are summarized in **Appendix A - Summary of Guidelines for System BIOS Implementations** of the NIST Special Publication 800-147 BIOS Protection Guidelines document:

- Approved BIOS Update Mechanisms
- BIOS Update Authentication
- Integrity Protection
- Non-Bypassability

Dell Client BIOS platforms implement these NIST requirements as part of the Signed Firmware Update functionality included in Dell’s customer BIOS update support. Other computer OEMs and BIOS vendors may implement these requirements differently. The following sections include a brief analysis of each of these requirements from a Dell Client BIOS implementation perspective.

Approved BIOS Update Mechanisms

Dell Client BIOS releases that support the Signed Firmware Update functionality are available on the Dell Support website (<http://support.dell.com>) for many of Dell’s enterprise-level client systems. These BIOS update releases represent one half of the authenticated BIOS update mechanism as specified in the NIST documentation, the “approved BIOS update”.

These approved BIOS releases are DOS/Windows executable files developed by Dell that include BIOS and onboard firmware update payloads that have been signed by a Dell process using protected private signing keys. End users can download these releases and use them to update the BIOS on endpoint systems.

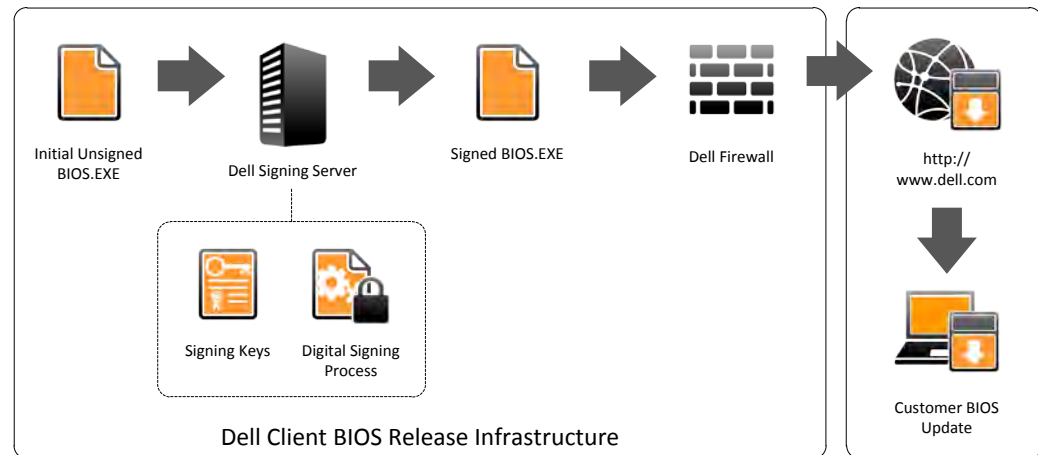


The other half of the authenticated BIOS update mechanism exists in the BIOS Root of Trust for Update (RTU) of the system BIOS running on Dell systems that support Signed Firmware Update. This RTU module already in the system BIOS will use the appropriate stored public key(s) to verify the authenticity of the BIOS and firmware payloads before allowing any update to the system BIOS flash memory.

In summary, the BIOS running on a system that supports Signed Firmware Update contains information in its RTU that supports a cryptographically hardened verification mechanism which allows only approved BIOS updates to modify the system BIOS code. More details about how this works is provided in the following sections.

Figure 1 below illustrates the high level process that is used to create an approved BIOS update for a Dell Client platform.

Figure 1. BIOS Signing Flow



BIOS Update Authentication

Dell Client BIOS uses a “capsule” type update that is invoked by the end user or enterprise manager by running an update executable under the user operating system. This update executable copies the BIOS and firmware payloads and corresponding digital signatures to system memory where they will persist until the system reboots. After reboot, the currently running BIOS (the Root of Trust for Update, i.e. the RTU) detects these payloads in the system memory, verifies the digital signatures, and updates the BIOS and firmware upon successful verification.

As described in the previous section, the RTU is located in the system BIOS running on Dell Client BIOS systems and includes both the list of approved public keys (the “key store”) and the signature verification algorithm to allow authentication of all



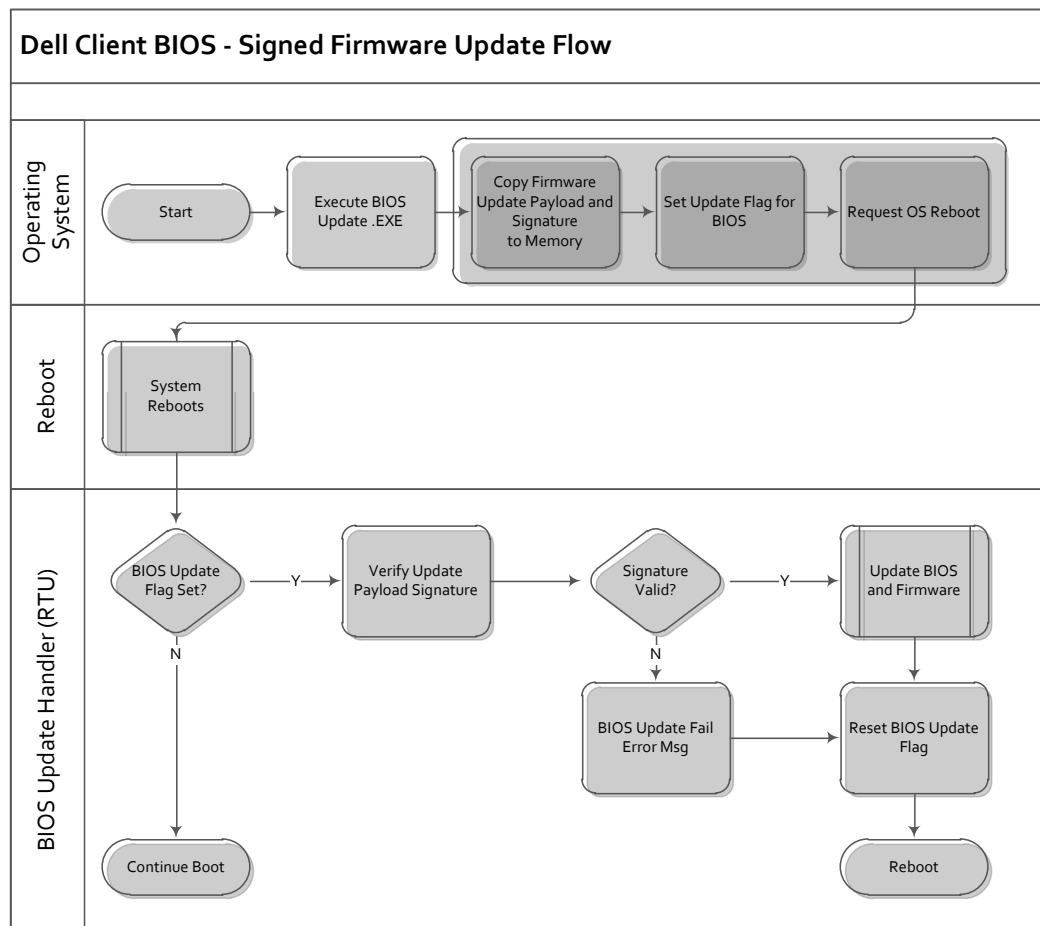
BIOS updates. The RTU is protected by Dell proprietary flash locking mechanisms at the hardware level and all updates to the RTU must be signed.

In this implementation, the BIOS key store includes the full public key used to verify the signature of all BIOS and firmware updates. This public key can be injected into the BIOS update executable during the BIOS signing process but is only programmed into the RTU during an authenticated RTU update. This can coincide with a normal BIOS update when needed.

All BIOS update images are signed using the RSA PKCS #1 v2.1 algorithm with RSA 2048-bit keys as per FIPS Publication 186-3 **Digital Signature Standard (DSS)**. The SHA-256 algorithm was selected to hash the payload in the signing and verification process based on this algorithm's acceptance in NIST Special Publication 800-131A. Update images are verified by the BIOS using the public key contained in the RTU before the BIOS or other firmware currently running on the system is modified.

The full Signed Firmware Update cycle is illustrated in Figure 2 below.

Figure 2. Signed Firmware Update Flow



Integrity Protection

The RTU and BIOS are protected from unauthorized modification using Dell proprietary cycle trapping and locking mechanisms supported by the system hardware. All unauthorized attempts to enable writes to the flash storage are trapped and blocked by these mechanisms. These protections are instantiated by the BIOS during system boot.

All programmatic code update attempts that are not approved by the RTU verification mechanisms and any attempts to update BIOS data not approved by the BIOS storage handler are blocked from the system flash memory using flash disable mechanisms. These mechanisms are not designed to protect against physical access to the motherboard with a hardware programmer.

Non-Bypassability

The Signed Firmware Update mechanism in the RTU that enforces authenticated updates is the exclusive mechanism for modifying the system BIOS. This enforcement cannot be bypassed by any firmware or software running on the platform that is not controlled by the RTU.

Client BIOS Deployment

The Dell Client BIOS and Dell Enterprise manageability offerings allow customers to detect the Signed Firmware Update capability on Dell Client systems in their enterprise for inventory purposes as well as provide mechanisms for Dell to help protect the customers from possible BIOS threats in the future.

Signed Firmware Update Detection

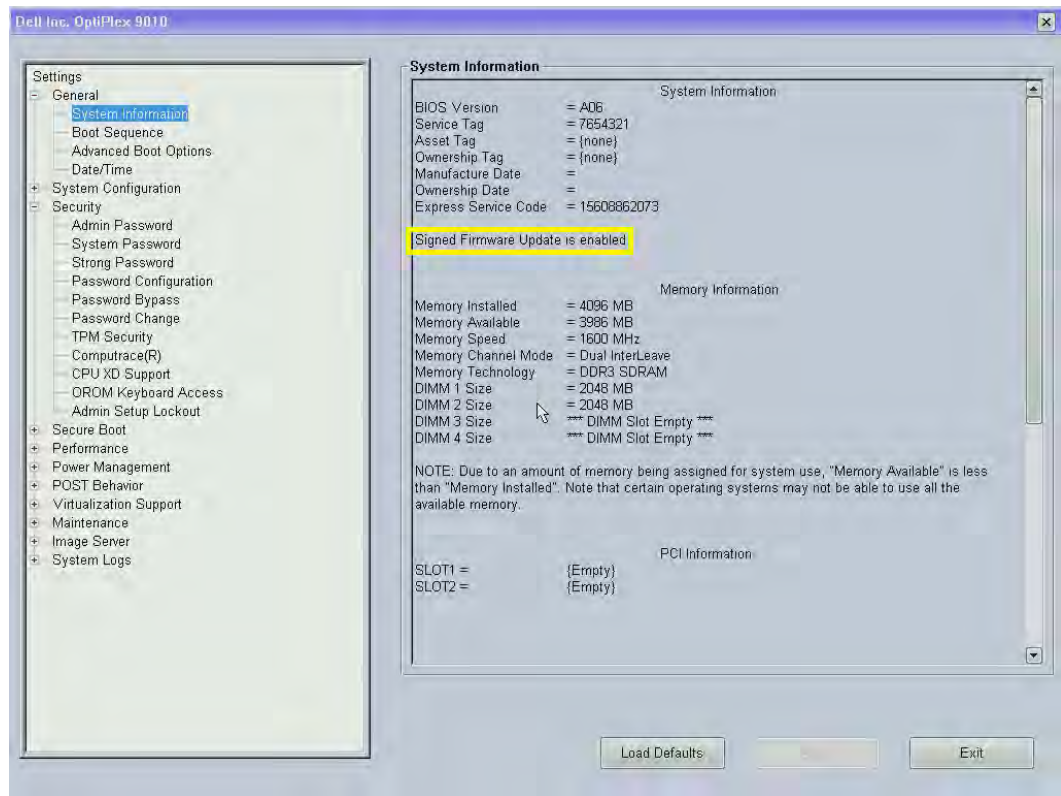
There are two different ways to verify whether a particular system is protected by the Signed Firmware Update feature: locally through the BIOS Setup interface or remotely through the Dell Client Configuration Toolkit (CCTK).

Detection via BIOS Setup

The Signed Firmware Update feature is enabled by default on all new Dell Client systems and can be verified in BIOS Setup. The BIOS Setup interface is invoked using F2 at boot or through the F12 boot menu. After entering Setup the user can check the feature in the General → System Information → BIOS pane by looking for the text string "Signed Firmware Update is enabled". This string indicates that the BIOS is enforcing digital signature checking on all firmware updates. This text is highlighted in yellow in Figure 3.



Figure 3. Enable Signed Firmware Update



Detection via CCTK

Customers can use the Dell Client Configuration Toolkit (CCTK) version 2.1 and later to detect Signed Firmware update on Dell Client systems. More details about the toolkit are available at <http://www.dell.com>^{iv}.

The status of the Signed Firmware Update feature can be verified using the following command:

```
cctk.exe --sfuenabled
```

This command returns the following output based on the status of the Signed Firmware Update feature:

CCTK Returns	Signed Firmware Update is...
sfuenabled=no	Not enabled.
sfuenabled=yes	Enabled.

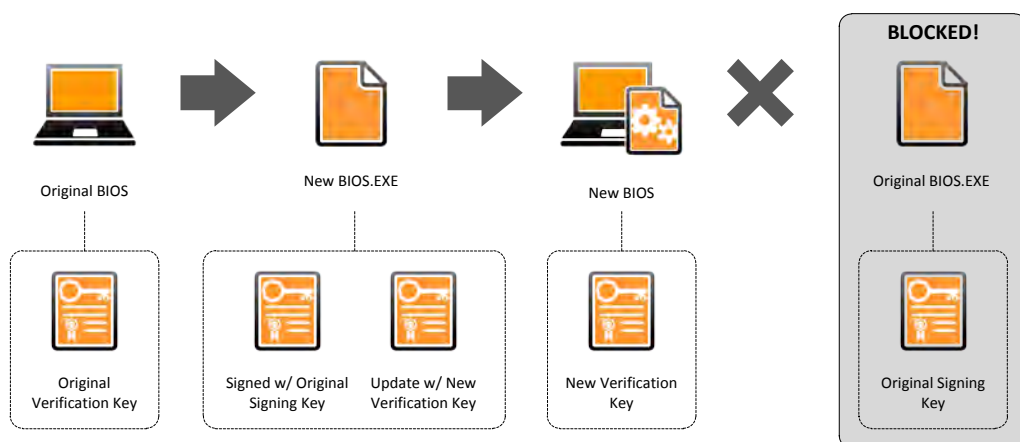


Anti-Rollback Support

The Signed Firmware Update feature provides an opportunity for Dell to protect customers from potential BIOS vulnerabilities that may be discovered in the future. The feature allows Dell to prohibit customers from rolling back to a potentially undesirable BIOS by providing a mechanism to enforce anti-rollback support through signing key revocation. This protection can be invoked by the Dell BIOS team by releasing a new BIOS with an updated verification key in the RTU that unconditionally blocks flash updates to all earlier BIOS revisions that were previously signed with the old (revoked) key.

The anti-rollback through key revocation concept is illustrated in Figure 4.

Figure 4. Anti-Rollback by Key Revocation



Signed Firmware Update Systems

The systems listed in the following table were the first Dell Client platforms to support the Signed Firmware Update feature at launch. All BIOS revisions for these systems provide Signed Firmware Update protections by default with no option to disable and all BIOS updates for these systems are digitally signed per NIST recommendations.

All Dell Client systems released after the systems in the list will follow this same model.

Dell Latitude	
Latitude E6230	Latitude E6330
Latitude E6430	Latitude E6530
Latitude E5430	Latitude E5530
Latitude E6430s	

Dell OptiPlex	
OptiPlex 3010	OptiPlex 9010
OptiPlex 7010	OptiPlex 9010 All In One

Dell Precision Mobile	
Precision M4700	Precision M6700

Dell Precision Workstation	
Precision T7600	Precision T5600
Precision T3600	Precision T1650

Systems released prior to those in the above list may support Signed Firmware Update through a BIOS update. For more details about these legacy systems, please see Appendix A.



Summary

This whitepaper walked through an analysis of the recommendations in the NIST Special Publication 800-147 ***BIOS Protection Guidelines*** and provided educational insights into the Dell Client BIOS implementation pertaining to the processes and functionality developed in accordance with these recommendations. The Dell-specific details in this document provide the reader with the security fundamentals and understanding needed to confidently deploy Dell Client systems protected by Signed Firmware Update.

The Signed Firmware Update feature, including digitally signed and authenticated BIOS updates, BIOS-hardened flash locking, and the inability for attackers to programmatically bypass these protections continues to provide an important piece in the endpoint security solution for all customers who use Dell Client systems in their enterprise, small business, or at home.



Appendix A. Legacy BIOS Support

Several BIOS feature and behavioral changes were necessary to securely implement the Signed Firmware Update feature on legacy platforms that were already in the field during NIST SP800-147 publication. These changes are discussed in the following sections.

Legacy BIOS Updates

Many systems that did not originally include support for the Signed Firmware Update feature at launch can be updated to a BIOS that offers NIST 800-147 protection. Updated BIOS releases supporting the feature are available for the legacy systems listed in the “Legacy Systems Supported” section.

BIOS Setup Changes

The Signed Firmware Update feature was launched on shipping platforms in the form of block release BIOS updates available at <http://support.dell.com>. At the time of customer BIOS update it is not possible to determine whether each end customer wishes to accept the behavioral changes required to securely support a digitally signed firmware update.

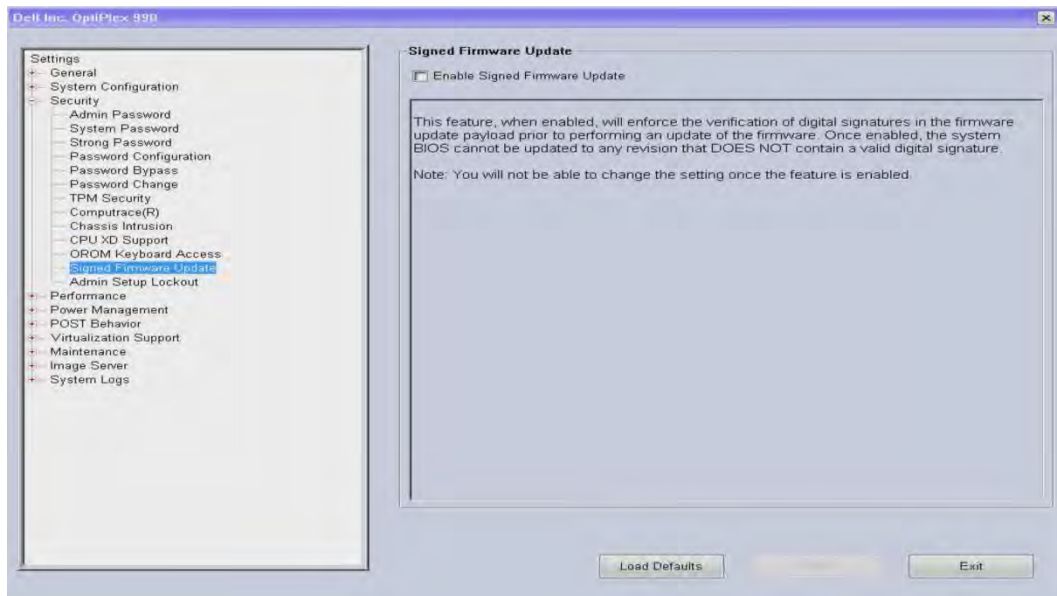
To meet the needs of all Dell customers and provide the desired protections to meet the NIST requirements, a write-once BIOS setup option was added to the BIOS to allow the customer to “opt-in” to the Signed Firmware Update feature if the enhanced security is desired. This option is set to “disabled” by default and is locked down by the BIOS protections once “enable” has been selected and confirmed by the customer.

BIOS Setup Option

The BIOS Setup option is accessible through the BIOS Setup interface invoked by F2 during system boot or from the F12 boot menu. The new option is labeled “Signed Firmware Update” and is located in the “Security” section of the left pane Setup screen. The “Enable Signed Firmware Update” checkbox is the user’s only choice in the right pane as shown in Figure 5 on the next page.

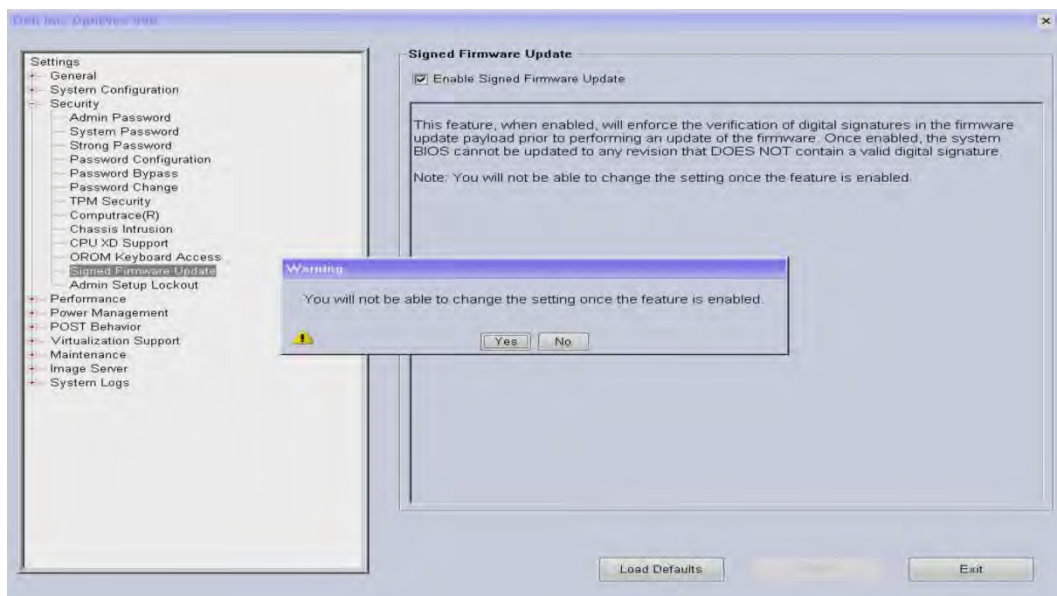


Figure 5. Signed Firmware Update Setup Screen



After selecting "Enable Signed Firmware Update", the BIOS Setup engine will prompt the user, as shown in Figure 6, to verify before saving the selection since it cannot be undone. The "Signed Firmware Update" option will no longer show up in the BIOS Setup left pane after the user has opted in.

Figure 6. Signed Firmware Update Prompt



Setup Help Text

Setup option help text is included below:

[] Enable Signed Firmware Update

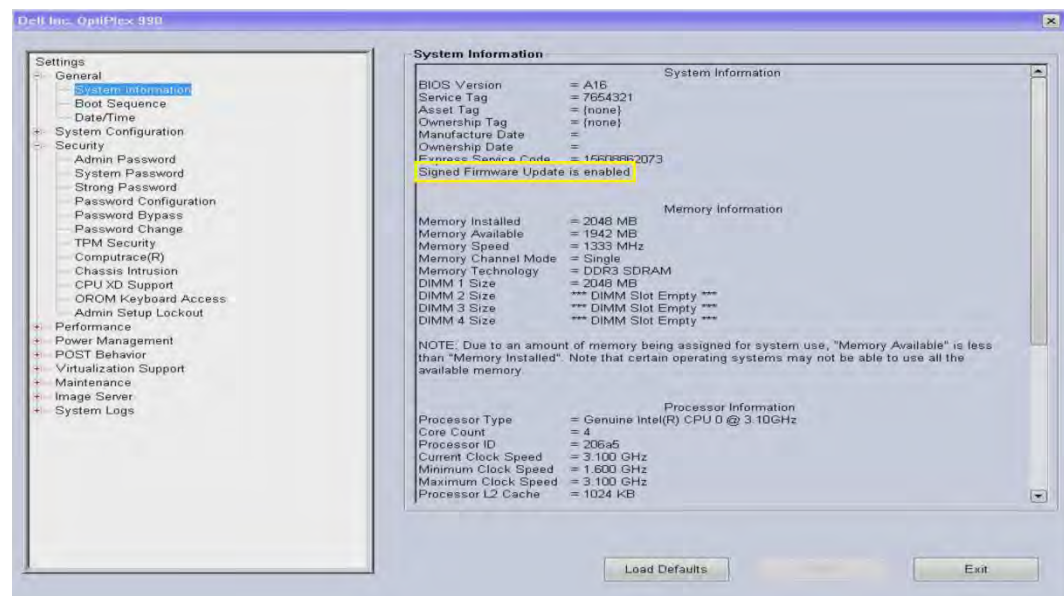
This feature, when enabled, will enforce the verification of digital signatures in the firmware update payload prior to performing an update of the firmware. Once enabled, the system BIOS cannot be updated to any revision that DOES NOT contain a valid digital signature.

Note: You will not be able to change the setting once the feature is enabled.

Opt-In Status

After the customer has opted in to "Signed Firmware Update" the setup option will disappear but the opt-in status is displayed to the customer in the General → System Information → BIOS pane with the text "Signed Firmware Update is enabled". The user can use this text to verify that the BIOS is enforcing digital signature checking on all firmware updates and the indicator is present on all new Dell Client systems as well. This text is highlighted in yellow in Figure 7.

Figure 7. Signed Firmware Update Enabled



Remote Management

Customers can use the Dell Client Configuration Toolkit (CCTK) version 2.1 and later to enable Signed Firmware update on all systems listed in this appendix. More



details about the toolkit are available at <http://www.dell.com>; a brief summary of its capabilities with respect to Signed Firmware Update is as follows.

The following command line can be invoked to enable Signed Firmware Update using CCTK:

```
cctk.exe --sfuenabled=yes
```

If a BIOS admin password has been set to protect the BIOS Setup option from non-administrator access, the valsetuppwd modifier must be used on the command line:

```
cctk.exe --sfuenabled=yes --valsetuppwd=<admin password>
```

The status of the Signed Firmware Update feature enable can be verified using:

```
cctk.exe --sfuenabled
```

The command returns the following output based on the status of the Signed Firmware Update feature:

CCTK Returns	Signed Firmware Update is...
sfuenabled=no	Not enabled.
sfuenabled=yes	Enabled.

Note: Some of the first BIOS releases that implemented Signed Firmware Update did not properly support the tokens above. These have been fixed in subsequent BIOS releases.

Transition BIOS Concept

Some Dell Client platforms supported an older type of authentication of BIOS updates well before the Signed Firmware Update feature was introduced. The challenge faced during the initial deployment of signed BIOS on these systems was that the new BIOS updates needed to support the old authentication mechanism and also needed to deploy the new RTUs to support digital signature verification as required for Signed Firmware Update.

This scenario required a "transition" or "pre-requisite" BIOS to transition or "bridge the gap" between the old authentication mechanism and the new signature verification support. There are three important aspects of the transition BIOS that should help to highlight this type of scenario:



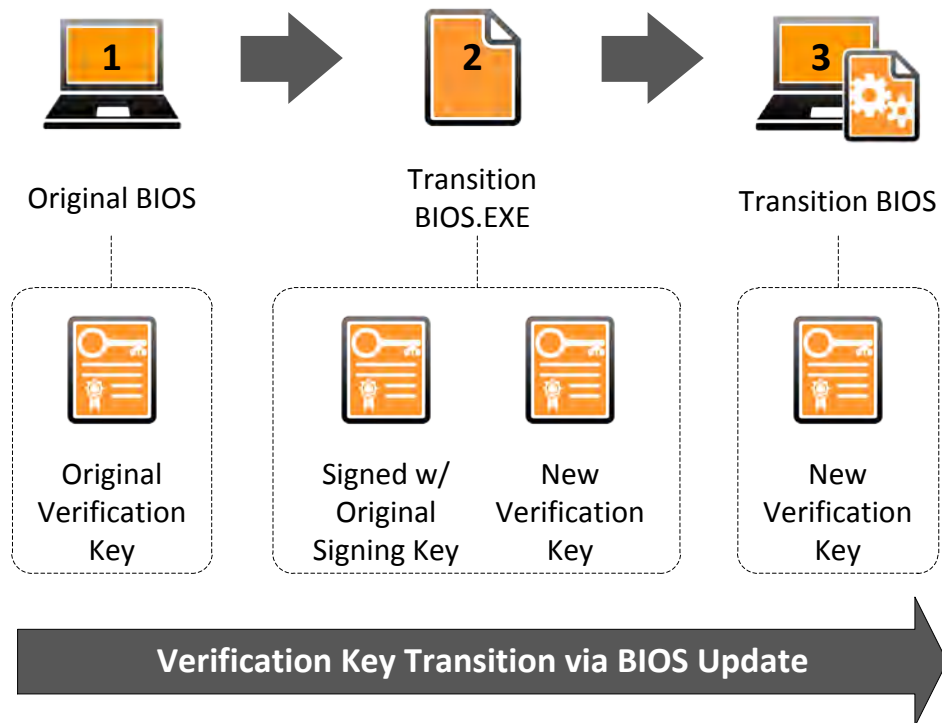
- Transition BIOS must be the first Signed Firmware Update capable BIOS flashed onto a system that is running a BIOS that does not support Signed Firmware Update
- Transition BIOS includes all Signed Firmware Update protections for the BIOS including verification of future BIOS updates (if enabled) and other hardened BIOS protections in accordance with the NIST specification
- Transition BIOS does not imply that a second BIOS update is required immediately after updating to the transition BIOS. It can be deployed and is supported just like any other Dell BIOS

Details about how the keys are transitioned in this scenario can be seen in the following procedure and illustrations.

1. System is running the original BIOS without Signed Firmware Update support. This BIOS includes an older RTU that expects all BIOS updates to be signed with the old signing mechanism.
2. Customer runs the transition BIOS executable on the system to update the BIOS and firmware. This BIOS is signed with the original signing key but includes an updated RTU that includes the new verification key as per the NIST recommendations.
3. System is running the transition BIOS with Signed Firmware Update support and is protected from unauthorized updates as per the NIST recommendations.



Figure 8. Update to Transition BIOS

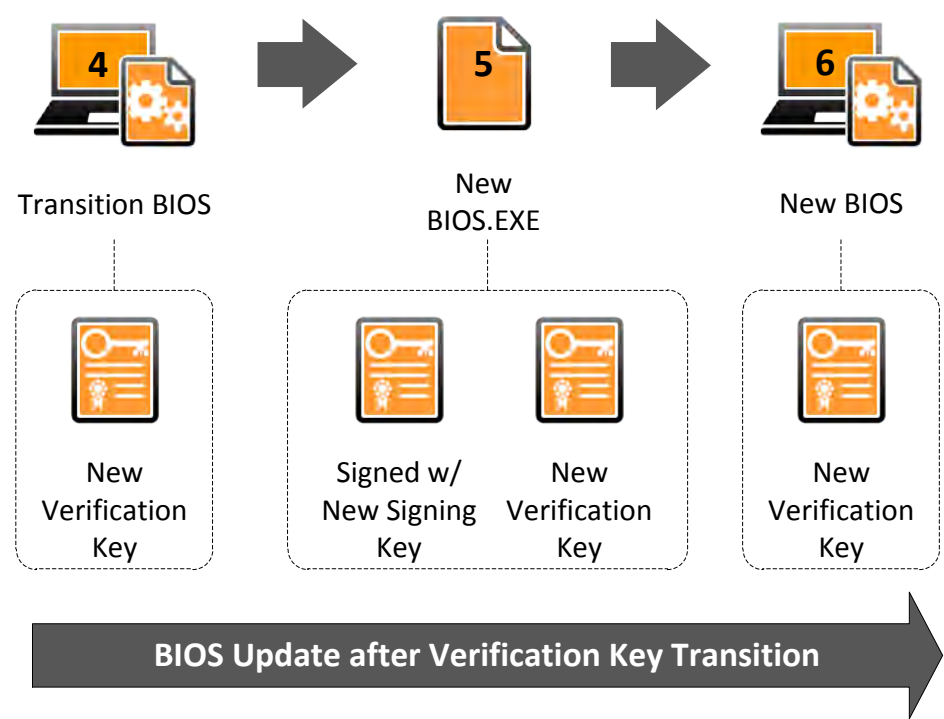


Now that the transition BIOS is running on the system and assuming Signed Firmware Update has been enabled, all future BIOS updates must be signed with the new signing key. This update may happen days, months, or years after the original transition BIOS was flashed onto the system, or may never happen at all depending on customer requirements. This next phase is detailed in the following procedure and illustrations.

4. System is running the transition BIOS with Signed Firmware Update support and is protected from unauthorized updates per the NIST recommendations.
5. Customer runs a new BIOS update executable signed with the signing key that matches the verification key in the transition BIOS. BIOS RTU in the transition BIOS verifies this update per NIST recommendations and flashes the new BIOS on the system.
6. System is running the new BIOS with Signed Firmware Update support and continues to be protected from unauthorized updates per the NIST recommendations.



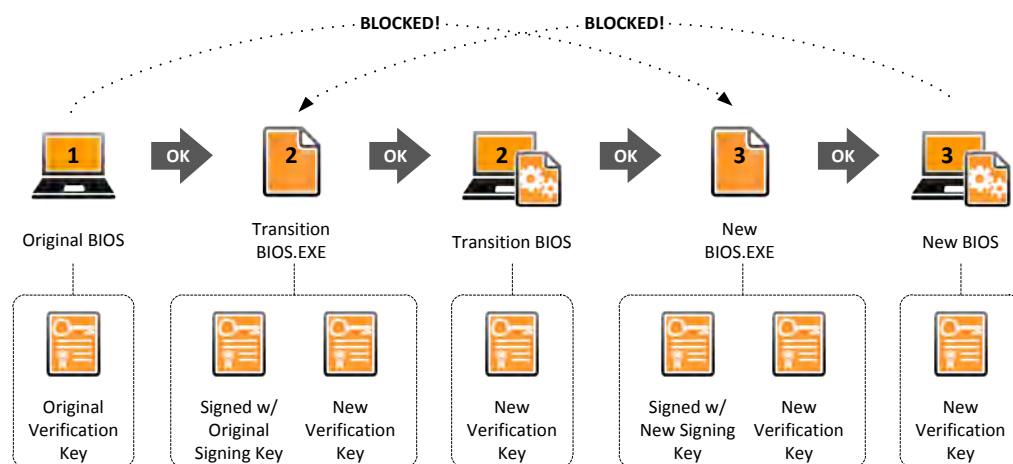
Figure 9. Update to Post-Transition BIOS



Transition BIOS Limitations

Unfortunately, the transition BIOS concept does create some specific limitations with respect to update, backdate, and skipping BIOS revisions. These limitations are highlighted in Figure 10 below:

Figure 10. Transition BIOS Blocked Scenarios



In the illustration above:

1. BIOS 1 – original BIOS without Signed Firmware Update support
2. BIOS 2 – transition BIOS signed with old key but protected by hardened mechanisms and new keys per the NIST recommendations once flashed on the system
3. BIOS 3 – any new BIOS released after the transition BIOS, signed with the new keys per the NIST recommendations

The following table further highlights the allowed/disallowed BIOS transitions:

Starting BIOS	Allow update to this BIOS?			
	BIOS 1	BIOS 2	BIOS 3	Future BIOS
BIOS 1	Yes	Yes	No	No
BIOS 2	No	No	Yes	Yes
BIOS 3	No	No	Yes	Yes
Future BIOS	No	No	Yes	Yes



Legacy Systems Supported

The following systems support the Signed Firmware Update feature and protections through BIOS update from <http://www.dell.com>.

Dell Latitude	
Latitude 5420	Latitude E4310
Latitude 5520	Latitude E5400
Latitude 6320	Latitude E5500
Latitude 6420 / ATG	Latitude E5410
Latitude 6420 XFR	Latitude E5510
Latitude 6520	Latitude E6220
Latitude D430	Latitude E6400 / ATG / XFR
Latitude D531	Latitude E6410 / ATG
Latitude D630	Latitude E6500
Latitude D631	Latitude E6510
Latitude D830	Latitude XT2
Latitude E4200	Latitude XT3
Latitude E4300	Latitude Z600

Dell OptiPlex	
OptiPlex 330	OptiPlex 760
OptiPlex 360	OptiPlex 780
OptiPlex 380	OptiPlex 790
OptiPlex 390	OptiPlex 960
OptiPlex 745	OptiPlex 980
OptiPlex 755	OptiPlex 990

Dell Precision Mobile	
Precision M2300	Precision M4600
Precision M2400	Precision M6300
Precision M4300	Precision M6400
Precision M4400	Precision M6500
Precision M4500	Precision M6600

Dell Precision Workstation	
Precision R5400	Precision T5400
Precision R5500	Precision T5500
Precision T1600	Precision T7400
Precision T3400	Precision T7500
Precision T3500	



Learn more

Visit Dell.com for more information on Dell Client platforms.

About the author

Rick Martinez is a BIOS Security Architect at Dell working with internal and external customers on the Strategy, Development, and Deployment of BIOS Security infrastructure and solutions for Dell Client BIOS. Rick has over 15 years of experience providing innovative technology solutions, development support, and consulting for clients ranging from Small and Medium Businesses to Fortune 100 companies.

© 2013 Dell Inc. All rights reserved. Dell and its affiliates cannot be responsible for errors or omissions in typography or photography. Dell and the Dell logo are trademarks of Dell Inc.

January 2013 | Rev 1.0

ⁱ *The Importance of Security Engineering*. <http://www.schneier.com/crypto-gram-1209.html>

ⁱⁱ *BIOS*. <http://en.wikipedia.org/wiki/BIOS>

ⁱⁱⁱ *NIST SP800-147: BIOS Protection Guidelines*. <http://csrc.nist.gov/publications/nistpubs/800-147/NIST-SP800-147-April2011.pdf>


^{iv} *Dell TechCenter*. <http://en.community.dell.com/techcenter/systems-management/w/wiki/1952.dell-client-configuration-toolkit-cctk.aspx>



OptiPlex 3080 Micro

Guia de configuração e especificações

Notas, avisos e advertências

 **NOTA:** Uma NOTA indica informações importantes que ajudam você a usar melhor o seu produto.

 **CUIDADO:** um AVISO indica possíveis danos ao hardware ou a possibilidade de perda de dados e informa como evitar o problema.

 **ATENÇÃO:** uma ADVERTÊNCIA indica possíveis danos à propriedade, lesões corporais ou risco de morte.

Capítulo 1: Configurar seu computador.....	5
Capítulo 2: Visão geral do chassi.....	10
Vista frontal.....	10
Visão traseira.....	11
Layout da placa de sistema.....	12
Capítulo 3: Especificações técnicas.....	13
Dimensões e peso.....	13
Chipset.....	14
Processadores.....	14
Sistema operacional.....	15
Memória.....	16
Memória Intel Optane.....	16
Portas e conectores.....	17
Comunicação.....	17
Controlador de vídeo e placa gráfica.....	18
Áudio e alto-falante.....	18
Armazenamento.....	19
Adaptador de energia.....	19
Segurança de dados.....	20
Requisitos ambientais.....	20
Energy Star, EPEAT e Trusted Platform Module (TPM).....	20
Características ambientais do computador.....	21
Serviço e suporte.....	21
Capítulo 4: Software.....	23
Como fazer o download de drivers do Windows.....	23
Capítulo 5: Configuração do sistema.....	24
Menu de inicialização.....	24
Tecclas de navegação.....	24
Boot Sequence.....	25
Opções de configuração do sistema.....	25
Opções gerais.....	25
Informações do sistema.....	26
Opções da tela de vídeo.....	27
Segurança.....	27
Opções de inicialização segura.....	29
Opções do Intel Software Guard Extensions.....	29
Desempenho.....	30
Gerenciamento de energia.....	30
Comportamento do POST.....	31
Suporte à virtualização.....	32

Opções de rede sem fio.....	32
Manutenção.....	33
Registros do sistema.....	33
Configurações avançadas.....	33
Resolução do sistema SupportAssist.....	34
Como atualizar o BIOS no Windows.....	34
Como atualizar o BIOS em sistemas com o BitLocker ativado.....	34
Como atualizar o BIOS de sistema usando uma unidade flash USB.....	35
Senhas do sistema e de configuração.....	35
Como atribuir uma senha de configuração do sistema.....	36
Como apagar ou alterar uma senha de configuração existente.....	36
Capítulo 6: Como obter ajuda.....	38
Como entrar em contato com a Dell.....	38

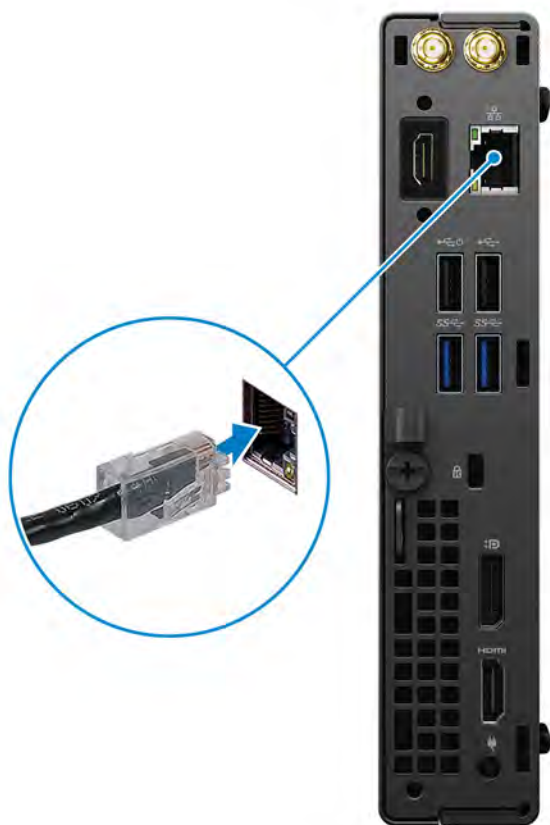
Configurar seu computador

Etapas

1. Conecte o teclado e o mouse.



2. Conectar à rede usando um cabo ou conectar a uma rede wireless.



3. Conecte a tela.



4. Conecte o cabo de alimentação.



5. Pressione o botão liga/desliga.



6. Concluir a configuração do sistema operacional Windows.

Siga as instruções na tela para concluir a configuração. Quando estiver configurando, a Dell recomenda que você:

- Conecte-se a uma rede para obter as atualizações do Windows.
- **NOTA:** Se estiver se conectando a uma rede de rede sem fio segura, digite a senha de acesso à rede de rede sem fio quando solicitado.
- Se estiver conectado à Internet, faça login ou crie uma conta da Microsoft. Se não estiver conectado à Internet, crie uma conta off-line.
- Na tela **Suporte e proteção**, insira suas informações de contato.

7. Localize e use os aplicativos da Dell no menu Iniciar do Windows (recomendado)

Tabela 1. Localizar aplicativos Dell







Aplicativos Dell	Detalhes
	Registro do produto da Dell Registre o seu computador na Dell.
	Dell Help & Support Acesse a ajuda e suporte para o seu computador.

Tabela 1. Localizar aplicativos Dell (continuação)

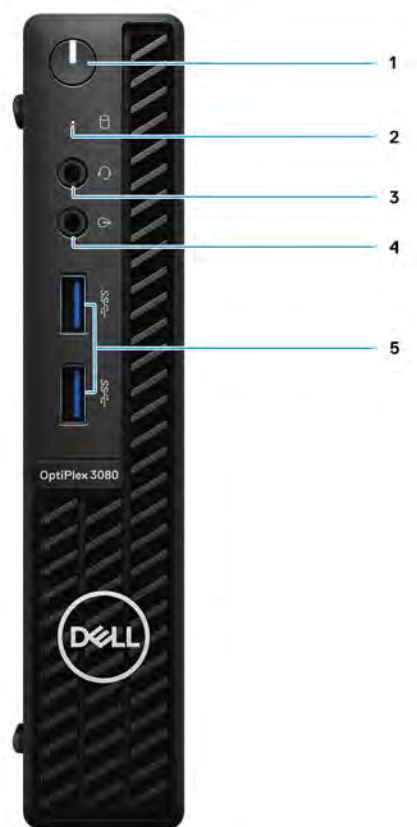
Aplicativos Dell	Detalhes
	<p>SupportAssist</p> <p>Verifica proativamente a integridade do hardware e do software do computador.</p> <p> NOTA: Clicar na data de validade da garantia no SupportAssist para renovar ou atualizar.</p>
	<p>Dell Update</p> <p>Atualiza seu computador com correções essenciais e os drivers de dispositivos importantes à medida que ficarem disponíveis.</p>
	<p>Dell Digital Delivery</p> <p>Faça o download dos aplicativos de software, incluindo os que são adquiridos, mas não são pré-instalados em seu computador.</p>

Visão geral do chassi

Tópicos:

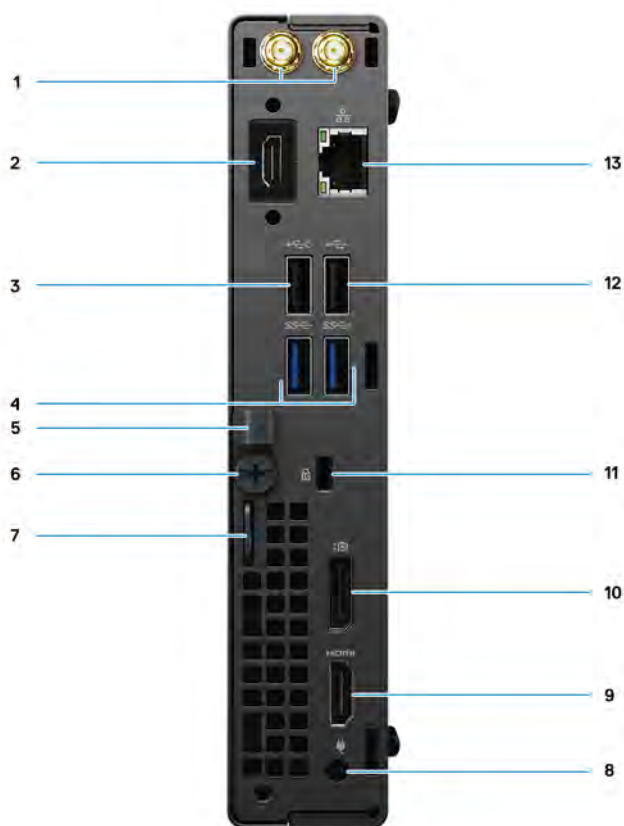
- Vista frontal
- Visão traseira
- Layout da placa de sistema

Vista frontal



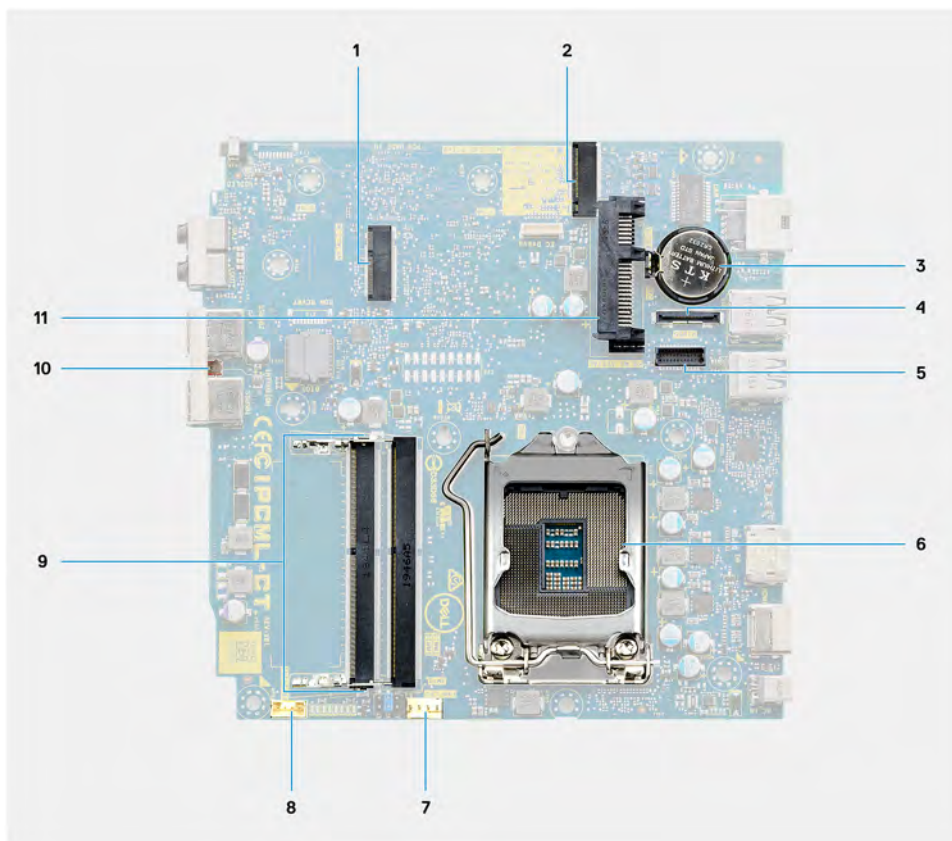
1. Botão liga/desliga com LED de diagnóstico
2. Indicador de atividade do disco rígido
3. Porta de áudio universal
4. Porta de saída de linha (linha retaskable)
5. Portas USB 3.2 de 1ª geração Type-A (2)

Visão traseira



1. Conectores da antena externa
2. Porta serial/de vídeo (serial/PS2/DP 1.4/HDMI 2.0b/VGA) (opcional)
3. Porta USB 2.0 com Smart Power On
4. Portas USB 3.2 de 1ª geração Type-A (2)
5. Suporte do cabo
6. Parafuso de aperto manual
7. Volta de cadeado
8. Porta do conector de alimentação
9. Porta HDMI 1.4
10. DisplayPort 1.4
11. Slot do cabo de segurança Kensington
12. Porta USB 2.0
13. Porta RJ-45 de 10/100/1000 Mbps

Layout da placa de sistema



1. Conector da WLAN M.2
2. Conector M.2 SSD PCIe
3. Bateria de célula tipo moeda
4. Conector de vídeo opcional (porta VGA/DisplayPort 1.4/porta HDMI 2.0b)
5. Conector da porta serial do teclado e mouse
6. Soquete do processador
7. Conector do ventilador da CPU
8. Conector do alto-falante interno
9. Slots de memória
10. Sensor de violação
11. Conector HDD

Especificações técnicas

NOTA: As ofertas podem variar por região. As especificações a seguir são apenas as exigidas por lei, a serem fornecidas com o computador. Para obter mais informações sobre a configuração do computador, acesse Ajuda e Suporte no sistema operacional Windows e selecione a opção para exibir as informações sobre o computador.

Tópicos:

- [Dimensões e peso](#)
- [Chipset](#)
- [Processadores](#)
- [Sistema operacional](#)
- [Memória](#)
- [Memória Intel Optane](#)
- [Portas e conectores](#)
- [Comunicação](#)
- [Controlador de vídeo e placa gráfica](#)
- [Áudio e alto-falante](#)
- [Armazenamento](#)
- [Adaptador de energia](#)
- [Segurança de dados](#)
- [Requisitos ambientais](#)
- [Energy Star, EPEAT e Trusted Platform Module \(TPM\)](#)
- [Características ambientais do computador](#)
- [Serviço e suporte](#)

Dimensões e peso

Tabela 2. Dimensões e peso

Descrição	Valores
Altura:	
Frente	182.00 mm (7.16 in.)
Parte traseira	182.00 mm (7.16 in.)
Largura	36.00 mm (1.42 in.)
Profundidade	178.56 mm (7.03 in.)
Peso (máximo)	1.28 kg (2.82 lb)
	NOTA: O peso do seu computador depende da configuração solicitada e da variabilidade na fabricação.

Chipset

Tabela 3. Chipset

Descrição	Valores
Chipset	Intel B460
Processador	10 th Generation Intel Core i3/i5/Pentium/Celeron
Largura do barramento de DRAM	64-bit (for single channel)
Flash EPROM	32 MB
Barramento PCIe	Up to Gen 3.0
Memória não volátil	Sim
Interface serial de periférico (SPI) de configuração do BIOS	256 Mbit (32 MB) localizado em SPI_FLASH no chipset
Trusted Platform Module (TPM discreto ativado)	24 KB localizados no TPM 2.0 no chipset
Firmware TPM (TPM discreto desativado)	Por padrão, o recurso Platform Trust Technology está visível para o sistema operacional
EEPROM NIC	Configuração de LOM contida no LOM e-fuse

Processadores

NOTA: Produtos de Padrão Global (GSP) são um subconjunto de produtos de relacionamento Dell gerenciados para obter informações sobre disponibilidade e transições sincronizadas em todo o mundo. Eles asseguram que a mesma plataforma está disponível globalmente para compra. Isso permite que os clientes reduzam o número de configurações gerenciadas mundialmente o que reduz os seus custos. Além disso, permitem que as empresas implementem padrões globais de TI definindo configurações específicas de produto em todo o mundo.

O Device Guard (DG) e o Credential Guard (CG) são os novos recursos de segurança que só estão disponíveis no Windows 10 Enterprise atualmente.

O Device Guard é uma combinação de recursos de segurança de software e hardware relacionados à empresa que, quando configurados juntos, bloqueará um dispositivo para que ele possa executar somente aplicativos confiáveis. Se não for um aplicativo confiável, não poderá ser executado.

O Credential Guard utiliza a segurança baseada em virtualização para isolar segredos (credenciais), para que apenas o software do sistema privilegiado possa acessá-los. O acesso não autorizado a esses segredos pode levar a ataques de roubo de credenciais. O Credential Guard impede esses ataques por meio da proteção de hashes de senha NTLM e dos tíquetes de concessão de tíquetes Kerberos.

NOTA: Os números de processador não são uma medida de desempenho. A disponibilidade do processador está sujeita a alterações e podem mudar conforme a região/país.

Tabela 4. Processadores

Processadores	Potência	Contagem de núcleos	Contagem de threads	Velocidade	Cache	Placas de vídeo integradas	GSP	Pronto para DG/CG
Intel Celeron G5900T	35 W	2	2	3.2 GHz	2 MB	Intel UHD Graphics 610	Não	Sim
Intel Pentium Gold G6400T	35 W	2	4	3.4 GHz	4 MB	Intel UHD Graphics 610	Não	Sim

Tabela 4. Processadores (continuação)

Processadores	Potência	Contagem de núcleos	Contagem de threads	Velocidade	Cache	Placas de vídeo integradas	GSP	Pronto para DG/CG
Intel Pentium Gold G6500T	35 W	2	4	3.5 GHz	4 MB	Intel UHD Graphics 630	Não	Sim
10 th Generation Intel Core i3-10100T	35 W	4	8	3.0 GHz to 3.8 GHz	6 MB	Intel UHD Graphics 630	Não	Sim
10 th Generation Intel Core i3-10300T	35 W	4	8	3.0 GHz to 3.9 GHz	8 MB	Intel UHD Graphics 630	Não	Sim
10 th Generation Intel Core i5-10400T	35 W	6	12	2.0 GHz to 3.6 GHz	12 MB	Intel UHD Graphics 630	Não	Sim
10 th Generation Intel Core i5-10500T	35 W	6	12	2.3 GHz to 3.8 GHz	12 MB	Intel UHD Graphics 630	Sim	Sim
10 th Generation Intel Core i5-10600T	35 W	6	12	2.4 GHz to 4.0 GHz	12 MB	Intel UHD Graphics 630	Sim	Sim

Sistema operacional

- Windows 10 Home (64-bit)
- Windows 10 Professional (64-bit)
- Windows 10 Pro Education (64-bit)
- Windows 10 Home Plus
- Windows 10 Home Advanced
- Windows 10 IoT Enterprise 2019 LTSC (OEM only)
- Ubuntu 18.04 (64-bit)
- NeoKylin 7.0 (China only)

Plataforma comercial Windows 10 N-2 e suporte ao sistema operacional por 5 anos

Todas as plataformas comerciais mais recentes (Latitude, OptiPlex e Precision) se qualificam e são fornecidas com a versão mais recente (N) do Windows 10 com canal semianual instalado de fábrica e se qualificam (mas não são fornecidas) com as duas versões anteriores (N-1, N-2). A plataforma desse dispositivo será RTS com Windows 10 versão v19H2 no momento do lançamento, e essa versão determinará as versões N-2 que são qualificadas inicialmente para esta plataforma.

Para versões futuras do Windows 10, a Dell continuará testando a plataforma comercial com as novas versões do Windows 10 durante a produção do dispositivo e durante cinco anos após a produção, inclusive as versões do 4º e 2º trimestre da Microsoft.

Consulte o site da Dell Windows como serviço (WaaS) para obter mais informações sobre a N-2 e a capacidade de suporte do sistema operacional Windows de 5 anos. O site pode ser encontrado no seguinte link:

[Plataformas qualificadas em versões específicas do Windows 10](#)

Este site inclui também uma matriz de outras plataformas que são qualificadas em versões específicas do Windows 10.

Memória

NOTA: Uma opção de memória DIMM múltipla é recomendada para evitar qualquer redução no desempenho. Se a configuração do sistema incluir placa de vídeo integrada, considere a seleção de 2 ou mais DIMMs.

NOTA: Os módulos de memória devem ser instalados em pares com o mesmo tamanho de memória, velocidade e tecnologia. Se os módulos de memória não forem instalados em pares correspondentes, o computador continuará a funcionar, mas com uma pequena redução no desempenho. O intervalo total de memória está disponível para sistemas operacionais de 64 bits.

Tabela 5. Especificações da memória

Descrição	Valores
Slots	Two SODIMM
Tipo	DDR4
Velocidade	2666 MHz
Memória máxima	64 GB
Memória mínima	4 GB
Tamanho da memória por slot	4 GB, 8 GB, 16 GB, 32 GB
Configurações compatíveis	<ul style="list-style-type: none">• 4 GB, 1 x 4 GB• 8 GB, 2 x 4 GB• 8 GB, 1 x 8 GB• 16 GB, 2 x 8 GB• 16 GB, 1 x 16 GB• 32 GB, 2 x 16 GB• 32 GB, 1 x 32 GB• 64 GB, 2 x 32 GB

Memória Intel Optane

A memória Intel Optane funciona apenas como um acelerador de armazenamento. Não substitui nem adiciona à memória (RAM) instalada no seu computador.

NOTA: A memória Intel Optane é suportada em computadores que atendem aos seguintes requisitos:


- 7ª geração ou acima do processador Intel Core i3/i5/i7
- Windows versão 10 64 bit ou posterior (Anniversary Update)
- Versão mais recente do driver Tecnologia de armazenamento Intel Rapid
- Configuração do modo de inicialização UEFI

Tabela 6. Memória Intel Optane

Descrição	Valores
Tipo	Memory/Storage/Storage accelerator
Interface	Gen 3 PCIe x4 NVMe
Conector	M.2 2280
Configurações compatíveis	16 GB
Capacity (Capacidade)	16 GB

Portas e conectores

Tabela 7. Portas e conectores

Descrição	Valores
Externa:	
Rede	One RJ-45 port 10/100/1000 Mbps (rear)
USB	<ul style="list-style-type: none">Two USB 3.2 Gen 1 Type-A ports (front)One USB 2.0 port (rear)One USB 2.0 with Smart Power on (rear)Two USB 3.2 Gen 1 Type-A ports (rear)
Áudio	<ul style="list-style-type: none">One Universal Audio Jack (front)One Line-out port (retaskable Line-in) (front)
Vídeo	<ul style="list-style-type: none">One HDMI 1.4 port (rear)One DisplayPort 1.4 port (rear)One Serial/Video (Serial/PS2/VGA Port/DisplayPort 1.4 Port/HDMI 2.0 Port (optional))
Leitor de placa de memória	Not supported
Porta de alimentação	4.5 mm barrel type
Segurança	One kensington security-cable slot
Antena	Dois conectores SMA (opcional)
Interna:	
SATA	Um slot SATA para disco rígido de 2,5 polegadas
M.2	<ul style="list-style-type: none">One M.2 2230 slot for WiFi and Bluetooth cardOne M.2 slot for 2280 PCIe solid-state drive/Optane or 2230 PCIe solid-state drive <p> NOTA: Para saber mais sobre os recursos de diferentes tipos de placas M.2, consulte o artigo da base de conhecimento SLN301626.</p>

Comunicação

Ethernet

Tabela 8. Especificações de Ethernet

Descrição	Valores
Número do modelo	REALTEK RTL8111HSD-CG
Taxa de transferência	10/100/1000 Mbps

Módulo sem fio

Tabela 9. Especificações do módulo sem fio

Descrição	Valores		
Número do modelo	Qualcomm QCA61x4A	Intel Wi-Fi 6 AX200	Intel 3165
Taxa de transferência	Up to 867 Mbps	Up to 2.4 Gbps	Up to 867 Mbps
Bandas de frequência suportadas	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz
Padrões sem fio	802.11ac	• 802.11ax (Wi-Fi 6)	802.11ac
Criptografia	• 64-bit and 128-bit WEP • 128-bit AES-CCMP • TKIP	• 64-bit and 128-bit WEP • 128-bit AES-CCMP • TKIP	• 64-bit and 128-bit WEP • 128-bit AES-CCMP • TKIP
Bluetooth	5.0	5.1	4.2

Controlador de vídeo e placa gráfica

Tabela 10. Especificações da placa de vídeo integrada

Placas de vídeo integradas			
Controlador	Suporte a monitor externo	Tamanho da memória	Processador
Intel UHD Graphics 610	• One HDMI 1.4 port (rear) • One DisplayPort 1.4 port (rear)	Shared system memory	Intel Celeron/Pentium Gold
Intel UHD Graphics 630	• One HDMI 1.4 port (rear) • One DisplayPort 1.4 port (rear)	Shared system memory	10 th Generation Intel Core i3/i5

Áudio e alto-falante

Tabela 11. Especificações de áudio

Descrição	Valores
Tipo	Áudio de alta definição em 4 canais
Controlador	Realtek ALC3246
Conversão estéreo	24-bit DAC (Digital-to-Analog) and ADC (Analog-to-Digital)
Interface interna	Intel HDA (high-definition audio)
Interface externa	• One Universal Audio Jack • One Line-out audio port
Alto-falantes	One (optional)
Amplificador interno de alto-falante	Integrated in ALC3246 (Class-D 2 W)
Controles de volume externo	Keyboard shortcut controls.
Média de saída do alto-falante	2 W

Tabela 11. Especificações de áudio (continuação)

Descrição	Valores
Pico de saída do alto-falante	2.5 W
Saída do caixa acústica de sons graves (subwoofer)	Not supported
Microfone	Not supported

Armazenamento

Your computer supports one of the following configurations:

- One 2.5-inch hard-disk drive
- One M.2 2230 or 2280 solid-state drive (class 35 or class 40)
- One 2.5-inch hard-disk drive and one M.2 16 or 32 GB Intel Optane memory

The primary drive of your computer varies with the storage configuration. For computers:

- with a M.2 solid-state drive, the M.2 solid-state drive is the primary drive
- without a M.2 drive, the 2.5-inch hard-disk drive is the primary drive

Tabela 12. Especificações de armazenamento

Tipo de armazenamento	Tipo de interface	Capacity (Capacidade)
2.5-inch, 5400 RPM, hard-disk drive	SATA 3.0	Up to 2 TB
2.5-inch, 7200 RPM, hard-disk drive	SATA 3.0	Up to 1 TB
2.5-inch, 7200 RPM, FIPS Self Encrypting Opal 2.0, hard-disk drive	SATA 3.0	500 GB
M.2 2230 solid-state drive	Gen 3 PCIe x4 NVMe, Class 35	Up to 512 GB
M.2 2280 solid-state drive	Gen 3 PCIe x4 NVMe, Class 40	Up to 2 TB
M.2 2280 Opal Self-Encrypting solid-state drive	Gen 3 PCIe x4 NVMe, Class 40	Up to 1 TB
TBD	TBD	TBD GB

Adaptador de energia

Tabela 13. Especificações do adaptador de alimentação

Descrição	Valores
Tipo	65 W (4.5 mm barrel type)
Diâmetro (conector)	4.5 mm
Tensão de entrada	100 VAC to 240 VAC
Frequência de entrada	50 Hz to 60 Hz
Corrente de entrada (máxima)	1.50 A
Corrente de saída (contínua)	3.34 A
Tensão de saída nominal	19.50 VDC

Tabela 13. Especificações do adaptador de alimentação (continuação)

Descrição		Valores
Faixa de temperatura:		
	De operação	0°C–40°C (32°F–104°F)
	Armazenamento	-40°C–70°C (-40°F–158°F)

Segurança de dados

Tabela 14. Segurança de dados

Opções de segurança de dados	Valores
Avaliação gratuita de 30 dias do McAfee Small Business Security	Suportado
Assinatura de 12 meses do McAfee Small Business Security	Suportado
Assinatura de 36 meses do McAfee Small Business Security	Suportado
SafeGuard and Response, criado por VMware Carbon Black e Secureworks	Suportado
Antivírus de última geração (NGAV)	Suportado
Endpoint Detection and Response (EDR)	Suportado
Threat Detection and Response (TDR)	Suportado
Managed Endpoint Detection and Response	Suportado
Incident Management Retainer	Suportado
Emergency Incident Response	Suportado
SafeData	Suportado

Requisitos ambientais

Tabela 15. Especificações ambientais

Recurso	OptiPlex 3080 Micro
Embalagem reciclável	Sim
BFR/PVC - sem chassi	Não
Embalagem MultiPack	Sim (apenas EUA) (opcional)
Fonte de alimentação com uso eficiente de energia	Norma
Compatível com ENV0424	Sim

NOTA: As embalagens de fibra à base de madeira contêm um mínimo de 35% de conteúdo reciclado, em peso total de fibra à base de madeira. A embalagem que contém sem fibra de madeira pode ser reivindicada como Não Aplicável.

Energy Star, EPEAT e Trusted Platform Module (TPM)

Tabela 16. Energy Star, EPEAT e TPM

Recursos	Especificações
Energy Star 8.0	Configurações compatíveis disponíveis

Tabela 16. Energy Star, EPEAT e TPM (continuação)

Recursos	Especificações
EPEAT	Configurações em conformidade Gold e Silver disponíveis
Trusted Platform Module (TPM) 2.0 ^{1,2}	Integrado na placa de sistema
Firmware -TPM (TPM discreto desativado)	Opcionais

NOTA:

¹O TPM 2.0 é certificado para FIPS 140-2.

²O TPM não está disponível em todos os países.

Características ambientais do computador

Nível de poluentes transportados: G1, conforme definido pela norma ISA-S71.04-1985

Tabela 17. Características ambientais do computador

Descrição	De operação	Armazenamento
Faixa de temperatura	10°C–35°C (50°F–95°F)	-40°C–65°C (-40°F–149°F)
Umidade relativa (máxima)	20% to 80% (non-condensing)	5% to 95% (non-condensing)
Vibração (máxima)*	0.26 GRMS random at 5 Hz to 350 Hz	1.37 GRMS random at 5 Hz to 350 Hz
Choque (máximo)	Bottom half-sine pulse with a change in velocity of 50.8 cm/sec (20 in./sec)	105G half-sine pulse with a change in velocity of 133 cm/sec (52.5 in./sec)
Altitude (máxima)	3048 m (10,000 ft)	10,668 m (35,000 ft)

* Medida usando um espectro de vibração aleatório que simula o ambiente do usuário.

† Medido usando um pulso de meia senoide de 2 ms quando a unidade de disco rígido está em uso.

Serviço e suporte

NOTA: Para obter mais detalhes sobre os planos de serviço da Dell, consulte <https://www.dell.com/learn/us/en/19/services/warranty-support-services>.

Tabela 18. Garantia

Garantia
Garantia básica de 1 ano com serviço de hardware no local após diagnóstico remoto
Extensão de garantia básica de 2 anos
Extensão de garantia básica de 3 anos
Extensão de garantia básica de 4 anos
Extensão de garantia básica de 5 anos
1 ano de ProSupport e serviço no local no próximo dia útil
2 ano de ProSupport e serviço no local no próximo dia útil
3 ano de ProSupport e serviço no local no próximo dia útil
4 ano de ProSupport e serviço no local no próximo dia útil

Tabela 18. Garantia (continuação)

Garantia
5 ano de ProSupport e serviço no local no próximo dia útil
1 ano de ProSupport Plus para Client com serviço no local no próximo dia útil
2 anos de ProSupport Plus para Client com serviço no local no próximo dia útil
3 anos de ProSupport Plus para Client com serviço no local no próximo dia útil
4 anos de ProSupport Plus para Client com serviço no local no próximo dia útil
5 anos de ProSupport Plus para Client com serviço no local no próximo dia útil

Tabela 19. Serviços de danos acidentais

Serviços de danos acidentais
1 ano de serviço de danos acidentais
2 anos de serviço de danos acidentais
3 anos de serviço de danos acidentais
4 anos de serviço de danos acidentais
5 anos de serviço de danos acidentais

Software

Este capítulo apresenta em detalhes os sistemas operacionais compatíveis, além de instruções sobre como instalar os drivers.

Tópicos:

- [Como fazer o download de drivers do Windows](#)

Como fazer o download de drivers do Windows

Etapas


1. Ligue o .
2. Visite **Dell.com/support**.
3. Clique em **Suporte ao Produto**, digite a etiqueta de serviço do e clique em **Enviar**.




NOTA: Se você não tiver a etiqueta de serviço, use o recurso de detecção automática ou procure manualmente em seu modelo de .

4. Clique em **Drivers and Downloads (Drivers e Downloads)**.
5. Selecione o sistema operacional instalado no .
6. Role para baixo na página e selecione o driver a ser instalado.
7. Clique em **Fazer download do arquivo** para fazer download do driver para o .
8. Depois que o download estiver concluído, navegue até a pasta onde salvou o arquivo do driver.
9. Clique duas vezes no ícone do arquivo do driver e siga as instruções na tela.

Configuração do sistema

 **CUIDADO:** A menos que você seja um usuário experiente, não altere as configurações no programa de configuração do BIOS. Certas alterações podem fazer com que o computador funcione de modo incorreto.

 **NOTA:** Antes de alterar o programa de configuração do BIOS, recomenda-se que você anote as informações da tela do programa de configuração do BIOS para referência futura.

Use o programa de configuração do BIOS para os seguintes fins:

- Obter informações sobre o hardware instalado em seu computador, como a quantidade de memória RAM e o tamanho da unidade de disco rígido.
- Alterar as informações de configuração do sistema.
- Definir ou alterar uma opção selecionável pelo usuário, como a senha do usuário, tipo da unidade de disco rígido instalada e habilitar ou desabilitar os dispositivos de base.

Tópicos:

- [Menu de inicialização](#)
- [Teclas de navegação](#)
- [Boot Sequence](#)
- [Opções de configuração do sistema](#)
- [Como atualizar o BIOS no Windows](#)
- [Senhas do sistema e de configuração](#)


Menu de inicialização

Pressione <F12> quando o logotipo Dell for exibido para iniciar um menu de inicialização a ser executado uma única vez com uma lista de dispositivos de inicialização válidos para o sistema. As opções de diagnóstico e de configuração do BIOS também estão incluídas neste menu. Os dispositivos listados no menu de inicialização dependem dos dispositivos inicializáveis no sistema. Este menu é útil quando você estiver tentando inicializar para um dispositivo específico ou visualizar os diagnósticos do sistema. O uso do menu de inicialização não faz nenhuma alteração na ordem de inicialização armazenada no BIOS.

As opções são:

- Inicialização UEFI:
 - Gerenciador de Inicialização do Windows
- Outras opções:
 - Configuração do BIOS
 - Atualização do BIOS
 - Diagnóstico
 - Change Boot Mode Settings (Alterar configurações do modo de inicialização)

Teclas de navegação

 **NOTA:** Para a maioria das opções de configuração do sistema, as alterações efetuadas são registradas, mas elas só serão aplicadas quando o sistema for reiniciado.

Teclas	Navegação
Seta para cima	Passa para o campo anterior.
Seta para baixo	Passa para o próximo campo.

Teclas	Navegação
Enter	Seleciona um valor no campo selecionado (se aplicável) ou segue o link no campo.
Barra de espaço	Expande ou recolhe uma lista suspensa, se aplicável.
Guia	Passa para a próxima área de foco.
Esc	Passa para a página anterior até que você veja a tela principal. Pressione Esc na tela principal para exibir uma mensagem que pede para salvar as mudanças feitas e reiniciar o sistema.


Boot Sequence

Com a sequência de inicialização, é possível ignorar a ordem do dispositivo de inicialização definida na configuração do sistema e inicializar diretamente um dispositivo específico (por exemplo: unidade óptica ou disco rígido). Durante o POST (Power-On Self Test, Teste Automático de Ligação), quando o logotipo da Dell aparece, você pode:

- Acessar a Configuração do sistema pressionando a tecla F2
- Pressionar a tecla F12 para acessar o menu de inicialização a ser executada uma única vez.

O menu de inicialização a ser executada uma única vez exibe os dispositivos dos quais você pode inicializar, incluindo a opção de diagnóstico. As opções do menu de inicialização são:

- Removable Drive (Unidade removível, se aplicável)
- STXXXX Drive (Unidade STXXXX)

 **NOTA:** XXXX identifica o número da unidade SATA.

- Unidade óptica (se disponível)
- Unidade de disco rígido SATA (se disponível)
- Diagnóstico

 **NOTA:** Se você selecionar **Diagnostics**, a tela **ePSA diagnostics** será exibida.

A tela de sequência de inicialização exibe também a opção de acessar a tela da configuração do sistema.

Opções de configuração do sistema

 **NOTA:** Dependendo do , computador, e dos dispositivos instalados, os itens listados nesta seção poderão ser exibidos ou não.

Opções gerais

Tabela 20. Diretrizes gerais

Opção	Descrição
Informações do sistema	<p>Exibe as seguintes informações:</p> <ul style="list-style-type: none"> • Informações do sistema: exibe a versão do BIOS, a etiqueta de serviço, a marca do ativo, a etiqueta de propriedade, a data de fabricação, a data de aquisição e o código de serviço expresso. • Informações da memória: exibe informações sobre a Memória instalada, Memória disponível, Velocidade da memória, Modo de canal da memória, Tecnologia da memória, Memória instalada no DIMM 1 e Memória instalada no DIMM 2. • Informações sobre PCI: exibe Slot1_M.2, Slot2_M.2 • Processor Information (Informações do processador): exibe informações sobre Processor Type (Tipo do processador), Core Count (Número de núcleos), Processor ID (ID do processador), Current Clock Speed (Velocidade atual do clock), Minimum Clock Speed (Velocidade do clock mínima do processador), Maximum Clock Speed (Velocidade do clock máxima do processador), Processor L2 Cache (Cache L2 do processador), Processor L3 Cache (Cache L3 do processador), HT Capable (Compatibilidade com a tecnologia HT) e 64-Bit Technology (Tecnologia de 64 bits).

Tabela 20. Diretrizes gerais (continuação)

Opção	Descrição
	<ul style="list-style-type: none"> Informações de dispositivo: exibe informações sobre SATA-0, M.2 PCIe SSD-2, Endereço MAC para LOM, Controlador de vídeo, Controlador de áudio, Dispositivo Wi-Fi e Dispositivo Bluetooth.
Boot Sequence	Permite especificar a ordem na qual o computador tenta localizar um sistema operacional a partir dos dispositivos especificados nesta lista.
UEFI Boot Path Security (Segurança do caminho de inicialização UEFI)	Essa opção controla se o sistema solicitará que o usuário insira a senha de admin durante a inicialização de um caminho UEFI do Menu de inicialização F12.
Data/Hora	Permite definir as configurações de data e hora. As alterações na data e na hora do sistema terão efeito imediatamente.

Informações do sistema

Tabela 21. System Configuration (Configuração do sistema)


Opção	Descrição
NIC integrado	<p>Permite gerenciar o controlador de LAN integrado. A opção "Enable UEFI Network Stack" (Habilitar a pilha de rede UEFI) não está selecionada por padrão. As opções são:</p> <ul style="list-style-type: none"> Desativado Ativada Enabled w/PXE (Habilitado com PXE) (padrão) <p>NOTA: Dependendo do computador e dos dispositivos instalados, os itens listados nesta seção podem ou não ser exibidos.</p>
Operação de SATA	<p>Permite configurar o modo operacional do controlador de disco rígido integrado.</p> <ul style="list-style-type: none"> Disabled (Desabilitado) = os controladores SATA estão ocultos A opção AHCI = SATA está configurada para o modo AHCI A opção RAID ON = SATA está configurada para oferecer suporte ao modo RAID (selecionado por padrão)
Unidades	<p>Permite habilitar ou desabilitar as diversas unidades integradas:</p> <ul style="list-style-type: none"> SATA-0 (habilitada por padrão) SSD-0 M.2 PCIe (ativado por padrão)
Relatório Smart	Este campo controla se os erros de disco rígido das unidades integradas são relatados durante a inicialização do sistema. A opção Enable Smart Reporting (Habilitar relatório SMART) está desabilitada por padrão.
Configuração de USB	<p>Permite habilitar ou desabilitar o controlador USB integrado para:</p> <ul style="list-style-type: none"> Enable USB Boot Support (Habilitar suporte a inicialização via USB) Enable Front USB Ports (Habilitar portas USB frontais) Enable Rear USB Ports (Habilitar portas USB traseiras) <p>Todas as opções estão habilitadas por padrão.</p>
Configuração USB frontal	Permite habilitar ou desabilitar as portas USB frontais. Todas as portas estão ativadas por padrão.
Configuração USB da parte traseira	Permite ativar ou desativar as portas USB traseiras. Todas as portas estão ativadas por padrão.
Audio	Permite habilitar ou desabilitar o controlador de áudio integrado. A opção Enable Audio (Habilitar áudio) está selecionada por padrão.

Tabela 21. System Configuration (Configuração do sistema) (continuação)

Opção	Descrição
	<ul style="list-style-type: none"> • Enable Microphone (Habilitar microfone) • Enable Internal Speaker (Habilitar alto-falante interno) <p>Ambas as opções estão selecionadas por padrão.</p>
Manutenção do filtro de poeira	<p>Permite que você ative ou desative as mensagens do BIOS para manter o filtro de poeira opcional instalado em seu computador. O BIOS irá gerar um lembrete de pré-inicialização para limpar ou substituir o filtro de pó com base no intervalo definido. A opção Disabled (Desativado) está selecionada por padrão.</p> <ul style="list-style-type: none"> • Desativado • 15 dias • 30 dias • 60 dias • 90 dias • 120 dias • 150 dias • 180 dias

Opções da tela de vídeo

Tabela 22. Vídeo


Opção	Descrição
Primary Display	<p>Permite selecionar a tela principal quando vários controladores estão disponíveis no sistema.</p> <ul style="list-style-type: none"> • Auto (Automático - configuração padrão) • Intel HD Graphics <p> NOTA: caso a opção Automática não seja selecionada, o dispositivo gráfico integrado (on-board) estará presente e habilitado.</p>

Segurança

Tabela 23. Segurança


Opção	Descrição
Admin Password (Senha do administrador)	Permite definir, alterar ou excluir a senha do administrador (admin).
System Password (Senha do sistema)	Permite definir, alterar ou excluir a senha do sistema.
Internal HDD-0 Password	Permite definir, alterar ou excluir a senha do disco rígido interno do computador.
Password Configuration (Configuração da senha)	Permite controlar os números mínimo e máximo de caracteres que são permitidos para uma senha administrativa e do sistema. A faixa de caracteres fica entre 4 e 32.
Password Bypass (Ignorar senha)	<p>Esta opção permite ignorar as solicitações de senhas (inicialização) do sistema e do disco rígido interno durante uma reinicialização do sistema.</p> <ul style="list-style-type: none"> • Disabled (Desativada) — sempre solicita as senhas do sistema e da HDD interna quando elas estão definidas. Esta opção está desabilitada por padrão. • Reboot Bypass (Ignorar a senha na inicialização) - Ignorar as solicitações de senha nas reinicializações ("warm boots", inicializações a quente).

Tabela 23. Segurança (continuação)

Opção	Descrição
	<p> NOTA: O sistema sempre solicitará as senhas do sistema e da HDD interna quando for ligado de um estado desligado (uma inicialização a frio). Além disso, o sistema sempre solicitará as senhas em todas as HDDs de compartimento de módulos existentes.</p>
Password Change	<p>Esta opção permite determinar se são permitidas alterações nas senhas do sistema e do HDD quando há uma senha de administrador definida.</p> <p>Allow Non-Admin Password Changes (Permitir alterações em senhas sem bloqueio do administrador) - Esta opção está habilitada por padrão.</p>
UEFI Capsule Firmware Updates (Atualizações de firmware da cápsula UEFI)	<p>Essa opção controla se o sistema permite atualizações do BIOS através de pacotes de atualização de cápsula UEFI. Essa opção é selecionada por padrão. Desabilitar esta opção irá bloquear atualizações do BIOS através de serviços tais como o Microsoft Windows Update e o Linux Vendor Firmware Service (LVFS).</p>
TPM 2.0 Security	<p>Permite controlar se o módulo TPM (Trusted Platform Module) está visível para o sistema operacional.</p> <ul style="list-style-type: none"> • TPM On (TPM ativo - configuração padrão) • Clear (Desmarcar) • PPI Bypass for Enabled Commands (Ignorar PPI para comandos habilitados) • PPI Bypass for Disabled Commands (Ignorar PPI para comandos desabilitados) • PPI Bypass for Clear Commands (Ignorar PPI para comandos de apagamento) • Attestation Enable (Atestado habilitado - configuração padrão) • Key Storage Enable (Armazenamento de chave habilitado - configuração padrão) • SHA-256 (padrão) <p>Escolha qualquer uma das opções:</p> <ul style="list-style-type: none"> • Desativado • Enabled (Habilitado) (padrão)
Absolute	<p>Esse campo permite que você ative, desative ou desative permanentemente a interface do módulo BIOS do serviço opcional Absolute Persistence Module (módulo de persistência absoluta) do software Absolute.</p> <ul style="list-style-type: none"> • Desativado – é a opção selecionada por padrão. • Disable (Desabilitar) • Desativado permanentemente
Chassis Intrusion	<p>Este campo controla o recurso da violação do chassi.</p> <p>Escolha uma das seguintes opções:</p> <ul style="list-style-type: none"> • Disabled (Desabilitada) (padrão) • Ativada • On-Silent (Em silêncio)
Admin Setup Lockout (Bloqueio da configuração pelo administrador)	<p>Permite evitar que os usuários acessem a configuração do sistema quando houver uma senha de administrador definida. Essa opção não está definida por padrão.</p>
Master Password Lockout (Bloqueio da senha mestra)	<p>Permite desabilitar o suporte para senha mestre. As senhas do disco rígido precisam ser apagadas antes da configuração ser alterada. Essa opção não está definida por padrão.</p>
SMM Security Mitigation (Redução de segurança do SMM)	<p>Permite ativar ou desativar proteções UEFI SMM Security Mitigation adicionais. Essa opção não está definida por padrão.</p>

Opções de inicialização segura

Tabela 24. Secure Boot (Inicialização segura)

Opção	Descrição
Secure Boot Enable (Ativar inicialização segura)	<p>Permite habilitar ou desabilitar o recurso de inicialização segura</p> <ul style="list-style-type: none"> Secure Boot Enable (Ativar inicialização segura) <p>Esta opção não é selecionada por padrão.</p>
Secure Boot Mode	<p>Permite modificar o comportamento da inicialização segura para avaliar e ativar as assinaturas do driver da UEFI.</p> <ul style="list-style-type: none"> Deployed Mode (Modo implementado) (padrão) Audit Mode (Modo auditoria)
Expert key Management	<p>Permite que você manipule os bancos de dados de chave de segurança somente se o sistema estiver em Custom Mode (Modo personalizado). A opção Enable Custom Mode (Ativar modo personalizado) está desativada por padrão. As opções são:</p> <ul style="list-style-type: none"> PK (padrão) KEK db dbx <p>Caso o Custom Mode (Modo personalizado) seja ativado, as opções relevantes para PK, KEK, db e dbx serão exibidas. As opções são:</p> <ul style="list-style-type: none"> Save to File (Salvar em arquivo) - Salva a chave em um arquivo selecionado pelo usuário Replace from File (Substituir do arquivo) - Substitui a chave atual por um chave de um arquivo selecionado pelo usuário Append from File (Adicionar do arquivo) - Adiciona uma chave ao banco de dados atual a partir de um arquivo selecionado pelo usuário Delete (Excluir) - Exclui a chave selecionada Reset All Keys (Restabelecer todas as chaves) - Restabelece as configurações padrão Delete All Keys (Excluir todas as chaves) - Exclui todas as chaves <p> NOTA: Se desativar o Custom Mode (Modo personalizado), todas as alterações feitas serão apagadas e as chaves serão restabelecidas nas configurações padrão.</p>

Opções do Intel Software Guard Extensions

Tabela 25. Intel Software Guard Extensions

Opção	Descrição
Intel SGX Enable (Ativar Intel SGX)	<p>Este campo especifica que você deve fornecer um ambiente seguro para a execução de código/armazenamento de informações confidenciais no contexto do sistema operacional principal.</p> <p>Clique em uma das opções a seguir:</p> <ul style="list-style-type: none"> Desativado Ativada Software controlled (Controlado por software) - padrão
Enclave Memory Size (Tamanho da memória reserva de enclave)	<p>Esta opção define o SGX Enclave Reserve Memory Size (Tamanho da memória reserva de enclave do SGX)</p> <p>Clique em uma das opções a seguir:</p> <ul style="list-style-type: none"> 32 MB 64 MB

Tabela 25. Intel Software Guard Extensions (continuação)

Opção	Descrição
	<ul style="list-style-type: none"> • 128 MB: padrão

Desempenho

Tabela 26. Desempenho

Opção	Descrição
Multi Core Support (Suporte Multi Core)	<p>Este campo especifica se o processo tem um ou todos os núcleos habilitados. A performance de alguns aplicativos aumenta com os núcleos adicionais.</p> <ul style="list-style-type: none"> • All (Todos) — Padrão • 1 • 2 • 3
Intel SpeedStep	<p>Permite habilitar ou desabilitar o modo Intel SpeedStep do processador.</p> <ul style="list-style-type: none"> • Enable Intel SpeedStep (Habilitar a tecnologia SpeedStep da Intel) <p>Esta opção está configurada por padrão.</p>
C-States Control (Controle dos estados de energia)	<p>Permite habilitar ou desabilitar os estados adicionais de suspensão do processador.</p> <ul style="list-style-type: none"> • C states (Estados de energia) <p>Esta opção está configurada por padrão.</p>
Intel TurboBoost	<p>Permite habilitar ou desabilitar o modo Intel TurboBoost do processador.</p> <ul style="list-style-type: none"> • Enable Intel TurboBoost (Habilitar a tecnologia TurboBoost da Intel) <p>Esta opção está configurada por padrão.</p>
Hyper-Thread Control (Controle da tecnologia Hyper-Thread)	<p>Permite habilitar ou desabilitar a tecnologia HyperThreading no processador.</p> <ul style="list-style-type: none"> • Desativado • Enabled (Ativada) — padrão

Gerenciamento de energia

Tabela 27. Power Management (Gerenciamento de energia)

Opção	Descrição
AC Recovery	<p>Determina como o sistema reage quando a alimentação CA retorna após uma queda de energia. Você pode definir a segurança de restauração de CA como:</p> <ul style="list-style-type: none"> • Power Off (Desligado) • Ligar • Last Power State (Último estado) <p>A opção Power Off (Desligado) está habilitada por padrão.</p>

Tabela 27. Power Management (Gerenciamento de energia) (continuação)

Opção	Descrição
Enable Intel Speed Shift Technology (Ativar tecnologia Intel de mudança de velocidade)	Permite ativar ou desativar a compatibilidade com a tecnologia Intel Speed Shift. A opção Enable Intel Speed Shift Technology (Ativar tecnologia Intel Speed Shift) está selecionada por padrão.
Auto On Time	Define a hora para o computador ligar automaticamente. O horário é mantido no formato padrão de 12 horas (horas:minutos:segundos). Altere o horário de inicialização digitando os valores nos campos de hora e AM/PM. NOTA: este recurso não funciona se você desligar o computador usando o interruptor do filtro de linha ou do protetor contra surtos de tensão ou se a opção Auto Power (Ativação automática) estiver desabilitada.
Deep Sleep Control	Permite definir os controles quando o modo de suspensão prolongado está habilitado. <ul style="list-style-type: none"> Desativado Enabled in S5 only (Habilitado somente em S5) Enabled in S4 and S5 (Habilitado em S4 e S5)
USB Wake Support	Permite habilitar dispositivos USB a ativarem o computador a partir do estado de espera. A opção "Enable USB Wake Support" (Habilitar o suporte a ativação por USB) está selecionada por padrão.
Wake on LAN/WWAN	Esta opção permite o ligamento do computador de um estado desligado quando é acionado por um sinal de LAN especial. Esse recurso funciona somente quando o computador está conectado a uma fonte de alimentação CA. <ul style="list-style-type: none"> Disabled (Desabilitado) - Não permite que o sistema seja ligado por meio de sinais especiais da rede ao receber um sinal de ativação enviado pela rede local (LAN) ou pela rede local sem fio (wireless LAN). LAN or WLAN (LAN ou WLAN) - Permite que o sistema seja ligado por sinais especiais da rede local (LAN) ou da rede local sem fio (WLAN). LAN Only (Somente LAN) - Permite que o sistema seja ligado por sinais especiais da rede local (LAN). LAN with PXE Boot (LAN com inicialização PXE) - Um pacote de ativação enviado para o sistema no estado S4 ou S5 fará com que o sistema seja ativado e faça imediatamente a inicialização PXE. WLAN Only (Somente WLAN) - Permite que o sistema seja ligado por sinais especiais da rede local sem fio (WLAN). Esta opção está desabilitada por padrão.
Block Sleep	Permite bloquear a entrada no modo de suspensão (estado S3) no ambiente do sistema operacional. Esta opção está desabilitada por padrão.

Comportamento do POST

Tabela 28. Comportamento do POST

Opção	Descrição
Adapter Warnings	Esta opção permite escolher se o sistema exibe mensagens de advertência quando você usa certos adaptadores de energia. Esta opção está habilitada por padrão.
Numlock LED (LED do NumLock)	Ativa ou desativa o recurso NumLock quando o computador é ligado. Esta opção está habilitada por padrão.
Keyboard Errors (Erros do teclado)	Permite ativar ou desativar o relatório de erros do teclado quando o computador é ligado. A opção Enable Keyboard Error Detection (Ativar detecção de erros do teclado) está ativada por padrão.
Fast Boot (Inicialização rápida)	Esta opção pode acelerar o processo de inicialização ao ignorar algumas etapas de compatibilidade: <ul style="list-style-type: none"> Minimal (Mínima) - O sistema inicializa rapidamente, a menos que o BIOS tenha sido atualizado, a memória tenha sido alterada ou o POST anterior não tenha sido concluído. Thorough (Completa) - O sistema não ignora nenhuma etapa do processo de inicialização.

Tabela 28. Comportamento do POST (continuação)

Opção	Descrição
	<ul style="list-style-type: none"> • Auto (Automática) - Permite que o sistema operacional controle essa configuração (esta opção só funciona se o sistema operacional oferecer suporte a Simple Boot Flag, sinalizador de inicialização simples). <p>Esta opção está configurada em Thorough (Completa) por padrão.</p>
Extend BIOS POST Time (Estender o tempo de POST do BIOS)	<p>Essa opção cria um atraso adicional antes da inicialização.</p> <ul style="list-style-type: none"> • 0 segundos (padrão) • 5 seconds (5 segundos) • 10 seconds (10 segundos)
Full Screen logo (Logotipo em tela cheia)	<p>Essa opção exibirá o logotipo em tela cheia se a imagem corresponder à resolução da tela. A opção Enable Full Screen Logo (Ativar logotipo em tela cheia) não está selecionada por padrão.</p>
Warnings and Errors (Advertências e erros)	<p>Essa opção fará com que o processo de inicialização só seja pausado quando um aviso ou erro for detectado. Escolha uma das seguintes opções:</p> <ul style="list-style-type: none"> • Alertar quando houver avisos e erros — (padrão) • Continue on Warnings (Continuar quando houver avisos) • Continue on Warnings and Errors (Continuar quando houver avisos e erros)

Suporte à virtualização

Tabela 29. Suporte à virtualização

Opção	Descrição
Virtualization (Virtualização)	<p>Esta opção especifica se um VMM (monitor de máquina virtual) pode usar os recursos adicionais de hardware fornecidos pela tecnologia de virtualização da Intel.</p> <ul style="list-style-type: none"> • Enable Intel Virtualization Technology (Ativar a tecnologia de virtualização da Intel) <p>Esta opção está configurada por padrão.</p>
VT for Direct I/O (Virtualização para E/S direta)	<p>Ativa ou desativa o VMM (monitor de máquina virtual) para a utilização dos recursos de hardware adicionais fornecidos pela tecnologia de virtualização da Intel para E/S direta.</p> <ul style="list-style-type: none"> • Enable VT for Direct I/O (Ativar VT para E/S direta) <p>Esta opção está configurada por padrão.</p>


Opções de rede sem fio

Tabela 30. Rede sem fio

Opção	Descrição
Wireless Device Enable (Ativar dispositivo sem fio)	<p>Permite habilitar ou desabilitar os dispositivos sem fio internos.</p> <p>As opções são:</p> <ul style="list-style-type: none"> • WLAN/WiGig • Bluetooth <p>Todas as opções estão habilitadas por padrão.</p>

Manutenção

Tabela 31. Manutenção

Opção	Descrição
Service Tag	Exibe a etiqueta de serviço do computador.
Asset Tag (Etiqueta de ativo)	Permite a criação de uma etiqueta de patrimônio do sistema, se ainda não tiver sido definida. Essa opção não está definida por padrão.
SERR Messages (Mensagens SERR)	Controla o mecanismo da mensagem SERR. Esta opção está configurada por padrão. Algumas placas gráficas exigem que o mecanismo de mensagem SERR seja desativado.
BIOS Downgrade (Desatualização do BIOS)	Permite que você atualize as revisões anteriores do firmware do sistema. <ul style="list-style-type: none">• Allow BIOS Downgrade (Permitir Downgrade do BIOS) Esta opção está configurada por padrão.
Data Wipe (Limpeza de dados)	Permite que você apague com segurança dados de todos os dispositivos internos de armazenamento. <ul style="list-style-type: none">• Wipe on Next Boot (Apagar na próxima inicialização) Essa opção não está definida por padrão.
BIOS Recovery	BIOS Recovery from Hard Drive (Recuperação do BIOS a partir do disco rígido): esta opção está definida por padrão. Permite recuperar o BIOS corrompido de um arquivo de recuperação no HDD ou em uma unidade USB externa.  NOTA: O campo Recuperação do BIOS a partir do disco rígido deve estar ativado. Always Perform Integrity Check (Sempre realizar a verificação de integridade): realiza a verificação de integridade em todas as inicializações.
First Power On Date	Permite definir a data de aquisição. A opção Set Ownership Date (Definir data de aquisição) não está definida por padrão.

Registros do sistema

Tabela 32. Registros do sistema

Opção	Descrição
BIOS events (Eventos do BIOS)	Permite exibir e apagar os eventos de POST da Configuração do sistema (BIOS).

Configurações avançadas

Tabela 33. Configurações avançadas

Opção	Descrição
ASPM	Permite que você defina o nível de ASPM. <ul style="list-style-type: none">• Auto (Automático) (padrão) — ocorre um handshake entre o dispositivo e o conector PCI Express hub para saber qual é o melhor modo de ASPM compatível com o dispositivo• Disabled (Desativado) — o ASPM fica sempre desligado• L1 Only (Somente L1) — o ASPM é definido como L1

Resolução do sistema SupportAssist


Opção	Descrição
Auto OS Recovery Threshold	Permite controlar a inicialização automática de fluxo para o sistema SupportAssist. As opções são: <ul style="list-style-type: none">• Apagado• 1• 2 (Ativado por padrão)• 3
Recuperação de SO SupportAssist	Permite recuperar a SupportAssist OS Recovery (Ativada por padrão)
BIOSConnect	Ativa ou desativa o sistema operacional de serviço de nuvem BIOSConnect na ausência de Recuperação de SO Local (ativado por padrão).

Como atualizar o BIOS no Windows

Pré-requisitos


É recomendável atualizar o BIOS (configuração do sistema) ao substituir a placa de sistema ou se uma atualização estiver disponível.

Sobre esta tarefa


 **NOTA:** Se o BitLocker estiver ativado, deverá ser suspenso antes da atualização do BIOS do sistema e, em seguida, reativado depois que a atualização do BIOS estiver concluída.

Etapas

1. Reinicialize o computador.
2. Visite **Dell.com/support**.
 - Digite a **etiqueta de serviço** ou o **código de serviço expresso** e clique em **Enviar**.
 - Clique em **Detect Product** (Detectar produto) e siga as instruções na tela.
3. Se você não conseguir detectar ou encontrar a etiqueta de serviço, clique em **Choose from all products** (Escolher de todos os produtos).
4. Escolha a categoria **Produtos** na lista.

 **NOTA:** Escolha a categoria adequada para ir até a página do produto.
5. Selecione o modelo de seu computador e a página de **Suporte ao produto** de seu computador será exibida.
6. Clique em **Obter drivers** e, em seguida, em **Drivers e downloads**.
A seção Drivers e downloads será aberta.
7. Clique em **Encontrar sozinho**.
8. Clique em **BIOS** para exibir as versões do BIOS.
9. Identifique o arquivo do BIOS mais recente e clique em **Download**.
10. Selecione o método de download de sua preferência na janela **Selecione seu método de download abaixo**, clique em **Fazer download do arquivo**.
A janela **Download de arquivo** é exibida.
11. Clique em **Salvar** para salvar o arquivo em seu computador.
12. Clique em **Executar** para instalar as configurações atualizadas do BIOS em seu computador.
Siga as instruções na tela.

Como atualizar o BIOS em sistemas com o BitLocker ativado

 **CUIDADO:** Se o BitLocker não estiver suspenso antes de atualizar o BIOS, na próxima vez em que você reinicializar o sistema, ele não reconhecerá a chave do BitLocker. Será solicitado que seja inserida a chave de recuperação para o

progresso e o sistema solicitará isso em cada reinicialização. Se a chave de recuperação não for reconhecida, isso pode resultar em perda de dados ou em uma reinstalação desnecessária do sistema operacional. Para mais informações sobre este assunto, consulte o Artigo de conhecimento: <https://www.dell.com/support/article/sln153694>

Como atualizar o BIOS de sistema usando uma unidade flash USB

Sobre esta tarefa

Se não for possível carregar o sistema no Windows, mas ainda for necessário atualizar o BIOS, faça download do arquivo de BIOS em um outro sistema e salve-o em uma unidade flash USB inicializável.

NOTA: Você precisará usar uma unidade flash USB inicializável. Consulte o artigo a seguir para obter mais informações: <https://www.dell.com/support/article/sln143196/>

Etapas

1. Faça download do arquivo .EXE de atualização do BIOS em outro sistema.
2. Copie o arquivo (por exemplo, S9010A12.exe) em uma unidade flash USB inicializável.
3. Insira a unidade flash USB no sistema que requer a atualização de BIOS.
4. Reinicie o sistema e pressione F12 quando o logotipo da Dell aparecer para exibir o menu de inicialização a ser executada uma única vez.
5. Usando as teclas de seta, selecione **USB Storage Device (Dispositivo de armazenamento USB)** e clique em Voltar.
6. O sistema será inicializado em um prompt de diálogo C:\>.
7. Digite o nome completo do arquivo (por exemplo, O9010A12.exe) para executá-lo e pressione Return.
8. O utilitário de atualização do BIOS será carregado. Siga as instruções exibidas na tela.

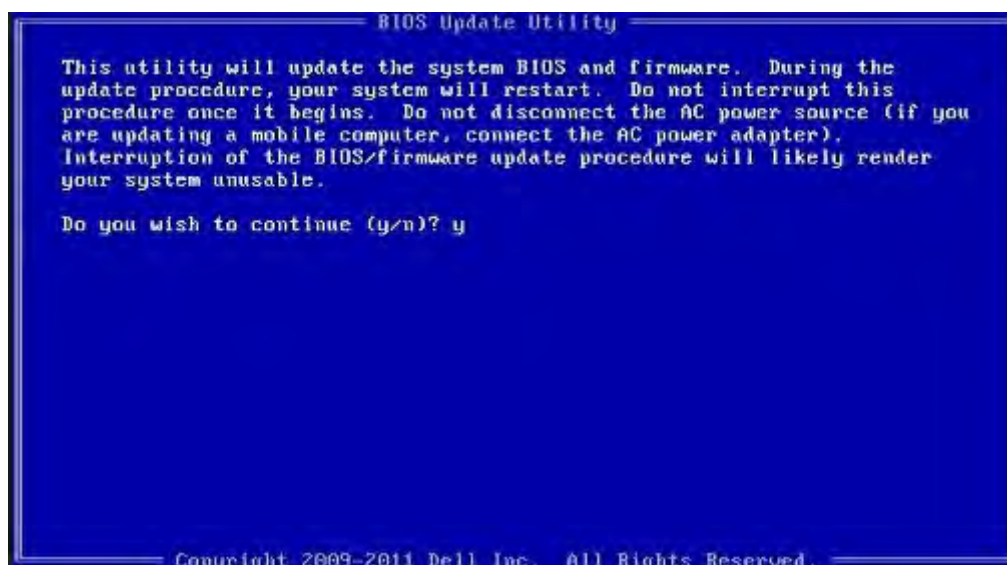


Figura 1. Tela de atualização do BIOS no DOS

Senhas do sistema e de configuração


Tabela 34. Senhas do sistema e de configuração

Tipo de senha	Descrição
System password	Senha que precisa ser informada para fazer login no sistema.
Senha de configuração	Senha que precisa ser informada para que se possa ter acesso e efetuar alterações nas configurações do BIOS do computador.

É possível criar uma senha do sistema e uma senha de configuração para proteger o computador.

 **CUIDADO:** Os recursos das senhas proporcionam um nível básico de segurança para os dados no computador.

 **CUIDADO:** Qualquer um pode acessar os dados armazenados em seu computador se este não estiver bloqueado e for deixado sem supervisão.

 **NOTA:** O recurso de senha do sistema e de configuração está desativado.

Como atribuir uma senha de configuração do sistema

Pré-requisitos

É possível atribuir uma nova **Senha do sistema** somente quando o status está em **Não definida**.

Sobre esta tarefa

Para entrar na configuração do sistema, pressione F2 imediatamente após uma ativação ou reinicialização.

Etapas

1. Na tela **BIOS de sistema** ou **Configuração do sistema**, selecione **Segurança** e pressione **Enter**.
A tela **Security (Segurança)** é exibida.
2. Selecione **Senha do sistema/administrador** e crie uma senha no campo **Digite a nova senha**.
Use as diretrizes a seguir para atribuir a senha do sistema:
 - Uma senha pode ter até 32 caracteres.
 - A senha pode conter os números de 0 a 9.
 - Somente letras minúsculas são válidas, letras maiúsculas não são permitidas.
 - Apenas os caracteres especiais a seguir são permitidos: espaço, ("), (+), (.), (-), (.), (/), (:), ([), (\), (]), (').
3. Digite a senha do sistema que foi digitada anteriormente no campo **Confirm new password (Confirmar a nova senha)** e clique em **OK**.
4. Pressione **Esc** e será exibida uma mensagem solicitando-o a salvar as alterações.
5. Pressione **Y** para salvar as alterações.
O computador reinicializa.

Como apagar ou alterar uma senha de configuração existente

Pré-requisitos


Certifique-se de que o **Status da senha** esteja desbloqueado (na Configuração do sistema) antes de tentar excluir ou alterar a senha do sistema e de configuração existente. Não é possível apagar ou alterar uma senha de sistema ou de configuração existente se a opção **Status da senha** estiver Bloqueada.

Sobre esta tarefa

Para entrar na configuração do sistema, pressione **F2** imediatamente após uma ativação ou reinicialização.

Etapas

1. Na tela **BIOS de sistema** ou **Configuração do sistema**, selecione **Segurança do sistema** e pressione **Enter**.
A tela **System Security (Segurança do sistema)** é exibida.
2. Na tela **System Security (Segurança do sistema)**, verifique se o **Password Status (Status da senha)** é **Unlocked (desbloqueada)**.
3. Selecione **System Password (Senha do sistema)**, altere ou apague a senha do sistema existente e pressione **Enter** ou **Tab**.
4. Selecione **Setup Password (Senha de configuração)**, altere ou apague a senha de configuração existente e pressione **Enter** ou **Tab**.

 **NOTA:** Se você alterar a senha do sistema e/ou de configuração, digite novamente a nova senha quando for solicitado. Se você excluir a senha do sistema e de configuração, confirme a exclusão quando for solicitado.

5. Pressione **Esc** e será exibida uma mensagem solicitando-o a salvar as alterações.
6. Pressione **Y** para salvar as alterações e saia da configuração do sistema.
O computador será reinicializado.


Como obter ajuda

Tópicos:

- [Como entrar em contato com a Dell](#)

Como entrar em contato com a Dell

Pré-requisitos

 **NOTA:** Se não tiver uma conexão Internet ativa, você pode encontrar as informações de contato na sua fatura, nota de expedição, nota de compra ou no catálogo de produtos Dell.

Sobre esta tarefa

A Dell fornece várias opções de suporte e serviço on-line ou através de telefone. A disponibilidade varia de acordo com o país e produto e alguns serviços podem não estar disponíveis na sua área. Para entrar em contacto com a Dell para tratar de assuntos de vendas, suporte técnico ou serviço de atendimento ao cliente:

Etapas

1. Vá até **Dell.com/support**.
2. Selecione a categoria de suporte.
3. Encontre o seu país ou região no menu suspenso **Choose a Country/Region (Escolha um país ou região)** na parte inferior da página.
4. Selecione o serviço ou link de suporte adequado, com base em sua necessidade.



Não desligue o computador nem o desconecte da fonte de energia durante a atualização do BIOS, pois isso pode prejudicar o computador. Durante a atualização, o computador será reiniciado e você pode ver uma tela preta por um momento.

Antes de atualizar, leia as instruções de instalação e as informações importantes mencionadas abaixo.

BIOS do sistema Dell OptiPlex 3080

REINICIALIZAÇÃO NECESSÁRIA

Este pacote contém a atualização do BIOS do sistema Dell. O BIOS é um firmware incorporado a um chip de memória pequeno na placa de sistema. Ele controla o teclado, o monitor, as unidades de disco e outros dispositivos. Esta atualização atende ao aviso de segurança INTEL-SA-00295 da Intel. Um aviso de segurança é uma declaração emitida quando um produto é impactado por uma vulnerabilidade de segurança e há uma solução disponível.

Correções e aprimoramentos

- Atualizações de firmware para atender ao aviso de segurança INTEL-SA-00295 (CVE-2020-0534, CVE-2020-0541 e CVE-2020-0542).

Versão

Versão 1.1.0, 1.1.0

Categoria

BIOS

Data da versão

03 set 2020

Última atualização

03 set 2020

Importância

[Urgente](#)

Formatos disponíveis 📘 [Ver informações importantes](#)

Formato do arquivo:	BIOS CPG executável para Windows/DOS						
Nome do arquivo:	OptiPlex_3080_1.1.0.exe						
Tipo de download:	HTTP						
Tamanho do arquivo:	24.14 MB						
Descrição de formato:	<p>Este formato de arquivo consiste em um arquivo executável do BIOS. O formato Universal (Windows/MS DOS) pode ser usado para instalação de qualquer ambiente Windows ou MS DOS.</p> <p>📄 Fazer download do arquivo</p> <p>To ensure the integrity of your download, please verify the checksum value.</p> <table><tr><td>MD5:</td><td>1e34575e4d7ddd28da87ec1e4d2bca3d</td></tr><tr><td>SHA1:</td><td>6c9182bac7d516ce1437ca0ad3c89837f28647ed</td></tr><tr><td>SHA-256:</td><td>b39da5691f25652cd8f4d445cd0ce287500c31719e17daf3539e262bfacd3dac</td></tr></table>	MD5:	1e34575e4d7ddd28da87ec1e4d2bca3d	SHA1:	6c9182bac7d516ce1437ca0ad3c89837f28647ed	SHA-256:	b39da5691f25652cd8f4d445cd0ce287500c31719e17daf3539e262bfacd3dac
MD5:	1e34575e4d7ddd28da87ec1e4d2bca3d						
SHA1:	6c9182bac7d516ce1437ca0ad3c89837f28647ed						
SHA-256:	b39da5691f25652cd8f4d445cd0ce287500c31719e17daf3539e262bfacd3dac						
Formato do arquivo:	BIOS Recovery Image File						
Nome do arquivo:	BIOS_IMG.rcv						
Tipo de download:	HTTP						
Tamanho do arquivo:	24.13 MB						
Descrição de formato:	<p>Este formato de arquivo representa um arquivo de recuperação do BIOS. Este arquivo é usado no processo de recuperação do BIOS de sistema para recuperar um sistema de um BIOS corrompido.</p> <p>📄 Fazer download do arquivo</p> <p>To ensure the integrity of your download, please verify the checksum value.</p>						

MD5:

edc60f2349245f926e157b131426e13c

SHA1:

c334527703342f723272d4aae586e6b95d65feb2

SHA-256:

201e4a0d736283ba6a14eccea0ecb69ca809d255a311a3c46659adc94e40b626

Ao fazer o download, você aceita os termos do [Contrato de Licença de Software da Dell](#) (em Inglês).

[Mostrar tudo](#) | [Ocultar tudo](#)

- > Versão
- > Sistemas compatíveis
- > Sistemas operacionais compatíveis
- > Aplica-se a
- > Instruções de instalação
- > Informações importantes

Ajuda e tutoriais para drivers

Para ver mais downloads, vá para [Drivers e downloads](#). Para obter ajuda sobre como usar as informações contidas nesta página, visite [Ajuda e tutoriais de driver](#).

Sobre a Dell Technologies

Carreiras profissionais

Comunidade

Eventos

Brasil ▼

Programa de parceria

Premier

Dell Technologies

© 2020 Dell

Termos e Condições

Declaração de Privacidade

Anúncios e e-mails

Informações Legais e Regulatórias

Políticas

Cumprimento dos Requisitos Regulatórios

Impacto social

Reciclagem de produto

Fale conosco

Avalie este site

Dell Command | Update for Windows 10

Version 3.0 User's Guide



Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

© 2009 2018 Dell Inc. or its subsidiaries. All rights reserved. Dell, EMC, and other trademarks are trademarks of Dell Inc. or its subsidiaries. Other trademarks may be trademarks of their respective owners.

1 About this document.....	4
What's new.....	4
2 Setup.....	5
Overview.....	5
Install Dell Command Update.....	5
Uninstall Dell Command Update.....	6
Upgrade Dell Command Update.....	6
Silent install.....	6
Activity log.....	6
View and export the Activity log.....	7
3 Getting started with Dell Command Update.....	8
Title bar.....	8
Left pane.....	9
Content area.....	9
Advanced driver restore.....	9
4 Using Dell Command Update.....	10
Download and install driver libraries.....	10
Check for and install updates.....	10
Select updates.....	11
Customize selection.....	12
Dependency installation.....	13
Update history.....	13
System Restore.....	14
View update history.....	14
View and export system information.....	14
5 Dell Command Update settings.....	15
Configure the general settings.....	15
Updating source location.....	16
Update settings.....	16
Configure the update filter settings.....	16
Import or export settings.....	17
BIOS settings.....	17
Configuring advanced driver restore settings.....	17
6 Accessing documents from the Dell EMC support site.....	18
7 Contacting Dell.....	19

About this document

You can use Dell Command | Update to update Dell client systems with the latest applications, drivers, BIOS, and firmware.

You can find the other product guides for your reference at dell.com/support/manuals.

- *Hardware Owner's Manual* provides information about the system, installing system components, and troubleshooting the system.

What's new

Dell Command | Update provides the following features and enhancements in this release:

- Support to improve Dell-specific products and services using the Dell Command | Update Improvement Program option
- Universal Windows Platform (UWP) compliance with the Windows 10 operating system which uses the Windows Notification Server
- No support for command line Interface(CLI)
- Enhanced security configuration

Setup

This section contains information about the requirements that are needed to use Dell Command | Update. It also provides an overview of the tool, lists installation and uninstallation steps.

Topics:

- [Overview](#)
- [Install Dell Command | Update](#)
- [Uninstall Dell Command | Update](#)
- [Upgrade Dell Command | Update](#)
- [Silent install](#)
- [Activity log](#)

Overview

Dell Command | Update is an easy-to-use graphical user interface (GUI) tool that you can use to update Dell client systems with the latest applications, drivers, BIOS, and firmware.

The advantages of using Dell Command | Update are:

- Simplification of system management and the update process for Dell client systems
- An easy-to-use GUI, which helps in identifying and applying appropriate drivers and updates for the system
- BIOS and firmware updates in addition to drivers and applications

NOTE: To install Dell Command | Update, you must ensure that the system is running on Microsoft Windows 10 Redstone 1 v1607 operating system and with the build number greater than or equal to 14393.

Install Dell Command | Update

Before you proceed, ensure that you are logged in with administrator privileges for the client system on which you want to install Dell Command | Update.

To download Dell Command | Update:

- 1 Go to **dell.com/support**.
- 2 Search for **Dell Command | Update 3.0 for Windows 10**.
- 3 Download `Sys-Man_Application_XXXXX_WN_y.y.y_A00.exe` where 'x' is the software build and 'y' is the version number.

To install Dell Command | Update:

- 1 Double-click the .EXE file that is downloaded from the Dell support site.
- 2 Click **Install**.
- 3 On the **Welcome** screen, click **Next**.
- 4 On the **License Agreement** screen, select **I accept the terms in the license agreement**, and then click **Next**.
- 5 On the **Begin Install** screen, click **Install**.
- 6 During the installation, you may click **Yes, I want to participate in the program** option available on the **Improvement Program Consent** screen to participate in the Dell Command | Update Improvement program.

- 7 Click **Install** on the **Ready to Install the Program** screen.
- 8 On the **Installation Wizard Completed** screen, click **Finish**.

Uninstall Dell Command | Update

Do the following:

- Click **Start**.
- Select **Control Panel**, and then click **Programs And Features**.
- Select **Dell Command | Update for Windows 10**, and then click **Uninstall**.

Upgrade Dell Command | Update

You can upgrade Dell Command | Update in the following ways:

- **Self-update:** Use the **Check** feature on the **Welcome** screen to check for updates. For more information, see [Check for and install updates](#).
- **Manual update:** Download and install Dell Command | Update 3.0 from dell.com/support.

If any newer versions of Dell Command | Update are available, then the latest version of Dell Command | Update is listed under **Recommended updates**. Select the update and install the newer version of the application.

NOTE: In case of minor upgrades, the preference settings and policies are retained.

NOTE: If there are major upgrades, the application is uninstalled and the settings and data are removed.

Silent install

You can perform a silent installation of Dell Command | Update in the following ways:

- Execute the command—`DCU_Setup_3.0.0.exe /s /v"/qn"` using the Command Line Interface (CLI).
- Run the executable file—`Sys-Man_Application_xxxx_WN_y.y_A00.exe /s` available in the Dell Update Packages (DUPs), where 'x' is the software build and 'y' is the version number.

NOTE: During silent installation of Dell Command | Update, the telemetry option is disabled by default.

Activity log

The activity log feature helps you to view the updates installed on the system and track any failures or issues. The activities generated in Dell Command | Update are classified as:

- Normal—Normal messages provide high-level details about the updates or errors.
- Debug—Debug messages provide detailed information about the updates or errors.

The **ActivityLog.xml** is stored as an .XML formatted text file at this location — `C:\ProgramData\Dell\UpdateService\Log`.

The root element of the log contains the name of the product and the version that is installed on the system. The child elements under the root element are listed as follows:

Table 1. Elements under root element



Element Name	Description
<level>	Activity log level.
<timestamp>	Timestamp when the activity was created.
<source>	The application operations which generated the activities.



Element Name	Description
<message>	Detailed information for the activity.
<data>	Indicates additional information for the activity.

View and export the Activity log

To view and export the activity log:

- 1 On the **Welcome** screen, click **Activity Log**.
The **Activity Log** screen is displayed.
By default, the list of activities performed during the last 7 days, 15 days, 30 days, 90 days, or the last year, is displayed. You can configure the period from the drop-down list.
- 2 From the drop-down list, select the number of days for which you want to view the update activities. For example, if you select **Last 15 Days**, you can view the update activities that Dell Command | Update has performed during the last 15 days.




 **NOTE:** You can click  to view more information about the message log entry, such as application error messages. This information is also available in the exported log file.

 **NOTE:** You can click **Caution** next to error or failure log entries to view information about how to avoid any potential damage or problem.
- 3 To reorder or sort the columns according to the date or message type, click  next to **Date** or **Message**.
- 4 Click **Export** to export the activity log in .XML format.
- 5 Click **Save** to save changes, or click **Cancel** to revert to the last saved settings.
- 6 Click **Close** to go back to the **Welcome** screen.


Getting started with Dell Command | Update

When Dell Command | Update launches for the first time, either manually or automatically, the Dell Command | Update – Setup screen displays the following options to discover, review, and install the updates:

Table 2. Setup options

Option	Description
Yes, run automatically with the default settings (Recommended)	<p>Automatically checks for updates on a regular basis using the default settings.</p> <p> NOTE: To view the default settings, click the Settings icon  and view the settings under Automatically check for updates in the Schedule tab.</p> <p> NOTE: This option is selected by default.</p>
No, I do not wish Dell Command Update to check for updates automatically at this time	Dell Command Update does not automatically check for updates.

If you have received your system from the Dell factory, Dell Command | Update autolaunches after the system boots the fourth time and scans for any available updates. In this case, the Welcome screen will not offer **Check for Updates** functionality, but instead display a list of available updates to install.

-  **NOTE:** Dell Command | Update autolaunches only if,
- Dell Command | Update is factory installed.
 - Dell Command | Update is not launched manually.



Topics:



- [Title bar](#)
- [Left pane](#)
- [Content area](#)

Title bar

The title bar contains the name and version number of the product, and icons for various activities.

Table 3. Title bar icons

ICON	Description
	Displays the Settings screen. On the Settings screen, you can customize the Dell Command Update options such as update the downloaded file location, scheduling updates, and customizing updates.
	Minimizes the application (located at the upper right corner of all screens).

ICON	Description
	Maximizes the application (located at the upper right corner of all screens).
	Closes the application (located at the upper right corner of all screens).

Left pane

The following table lists the options available on the left pane of the Welcome screen and their descriptions.

Table 4. Left Pane

Option	Description
System Model	Displays the image and model of the Dell system.
Service Tag	Displays the product ID provided by the manufacturer for the system.
Last Check	Provides information about the last time the system was checked for updates.
Last Update	Provides information about the last time the system was updated.
Update History	Displays the Update History screen. See Update history .
System Information	Displays the System Information screen. See Viewing And Exporting System Details
Activity Log	Displays the Activity Log screen. See Activity Log
Give us your feedback	Launches an online survey to provide feedback and satisfaction ratings for Dell Command Update.

Content area

From the **Content Area**, you can check for and install updates.

For more information, see [Checking For And Installing Updates](#). You can also download and install driver libraries. For more information, see **Advance driver restore**.

Advanced driver restore

Using the **Advanced Driver Restore for Windows Reinstallation** option, you can install drivers on a new or reimaged system with a new Windows image, a network adapter along with a compatible network adapter driver, and an installation of Dell Command | Update.

For more information, see **Downloading And Installing Driver Libraries**.


Using Dell Command | Update

Download and install driver libraries

To download and install a driver library on a Dell system:

- 1 On the **Welcome** screen, select the **click here to download and install a complete driver library** option.

 **NOTE:** The process of downloading the complete profile library for the system is automated.

 **NOTE:** This process might even cost you, if you are on a metered network connection.

The **Preparing for driver restore** screen is displayed and the driver is installed. Following are the various status messages that are displayed during installation:

- Checking for component updates—Checks for available driver libraries.
- Scanning system devices—Scans the system and gathers information about the devices that are present on the system.
- Locating system driver library—Locates the driver library on the system and checks the versions of the drivers and determines the available driver updates for the system.
- Starting download—Starts downloading the updates.
- Extracting drivers—After the updates are downloaded, these updates are extracted for installation on the system.
- Preparing for installation—Digital signature validation and creation of a restore point on the operating system.
- Installing drivers—Displays the installation status in the format x of y, where 'x' is the number of drivers being installed and 'y' is the total number of drivers available. Select the **Automatically restart system (when required)** check box to restart the system automatically after the drivers are installed.
- Installation complete—Denotes the completion of driver installation in the format x of y successful, where 'x' is the number of drivers installed and 'y' is the number of drivers available.

Click **Cancel** to exit this activity and return to the **Welcome** screen.

- 2 After installation of the drivers is complete, click **Close** to return to the **Welcome** screen.

For more information about updating the system drivers to their most current version, see **Checking And installing updates**.

Check for and install updates

To check for, and install updates on a Dell system:

- 1 On the **Welcome** screen, click **Check**.

The Inventory Collector, a self-contained application, is used to obtain the system hardware information. The Inventory Collector gathers the inventory status of the BIOS, firmware, and drivers for the system. The inventory status is provided in .XML format. The Inventory Collector copies the inventory modules to a temporary location on the local drive of the system, ensuring that the inventory status gathered is completed even if the network connection is lost.

- a Dell Command | Update connects to downloads.dell.com, or any other source location that you have configured, and checks for updates.
- b Click **Cancel** to return to the previous screen without checking for updates. For more information about changing the source location, see [General Settings](#).

The **Checking for Updates** task starts and the **Checking for Updates** screen is displayed.

The **Checking for Updates** task includes the following:

- Checking for component updates

- Scanning for system devices
- Determining available updates

The **Checking for Updates** screen provides the status of the system scan. When updates are found, Dell Command | Update prompts you to install the updates.

If no updates are found, the **No updates available** message is displayed indicating that the devices on the system are up-to-date. Click **Close** to exit Dell Command | Update.

Based on the availability of updates and preferences you have set, the **No updates available** message is displayed. This message is displayed in the following scenarios:

- When you retain the default **Download Filter** preferences and no updates are available.
- When all the available updates are selected for hiding.

NOTE: Click **View** to check for the updates on the **View Details** screen. Click **Close** to return to the **Selected Updates** screen.

The **No updates are available (Based on the current 'Download Filter' preference settings)** message is displayed when you modify the default **Download Filter** preferences and no updates are available.

If updates are found, the **Selected Updates** screen is displayed. For more information, see [Selecting Updates](#).

- 2 Click **View Details** to choose the updates you want to install on the system. The **Customize Selection** screen is displayed. For more information, see [Customizing Updates](#).
- 3 (Optional) If you want Dell Command | Update to automatically restart the system after installing updates, select **Automatically restart system (when required)**.
- 4 Click **Install** to install the selected updates on the system.

NOTE: If you click **Cancel** during installation, Dell Command | Update does not roll back the updates that are already applied and returns to **Welcome** screen.

For installing updates on a new or reimaged system, see [Configuring Advanced Driver Restore Settings](#).

Select updates

On the **Welcome** screen, when you click **Check**, the **checking for updates** task is run and if the updates are available for the system, then the **Selected Updates** screen is displayed. The update summary is displayed next to the heading in the format—update type <x of y, z MB>, where 'x' is the number of updates to be downloaded, 'y' is the total number of updates available, and 'z' is the size of the available updates, in megabytes(MB). Based on importance, the updates are classified as follows:

- **Critical Updates**—These updates are important for improving the reliability, security, and availability of the system.
- **Recommended Updates**—These updates are recommended for installation on the system.
- **Optional Updates**—These updates are optional updates.
- **Dell Docking Solution**—These updates are for Dell docking solution.

NOTE: If Dell Docking Solution option is selected, then:

- The updates for the Dell Docking Solution cannot be cleared from **Customize Selection** screen.
- The **Automatically restart the system (when required)** option is selected and cannot be cleared.
- The system may restart multiple times and continue the installation.
- One or more categories (Critical, Recommended, Optional) are selected and cannot be cleared if there are updates that are part of the Dell Docking Solution.
- The Dell Docking Solution option will not be displayed if there are no updates available for Dell Docking Solution.

NOTE: A warning is displayed if:





- An update that you must install requires an interim version of the update. If there are multiple intra-dependencies for an update, Dell Command | Update installs the latest possible version. However, this may not be the latest version. This task requires more than one update cycle for installing the latest version of the update. For more information, see [Dependency Installation](#).
- Some updates are blocked because the BitLocker is enabled on your system. From the control panel and suspend the BitLocker to proceed with the installation. Dell recommends to resume the BitLocker after the updates are installed.
- Some updates cannot be installed require a power adapter to be plugged into the system.

Customize selection

On the **Selected Updates** screen, click **View Details** to view the **Customize Selection** screen. This screen lists detailed information of all available updates such as name, size, and release date of the component along with other information, which helps you to choose the updates you want to apply to the system. The updates are grouped based on assigned criticality.







The following table lists the options available on this screen.

Table 5. Customize Selection options

User interface	Description
Critical Updates (x of y, size)	View the critical updates available for the system. You can also modify the selection of critical updates. The updates contain the following information: <ul style="list-style-type: none">• Name of the update.• Size of the update which displays the approximate number of bytes that are required to download the update.• The release date of the update.• If an intermediate update is required, then a warning message is displayed. For more information, hover over View Details. A tool tip  provides additional details of the update package.
Recommended Updates (x of y, size)	View the recommended updates available for the system. The updates contain the following information: <ul style="list-style-type: none">• Name of the update.• Size of the update which displays the approximate number of bytes that are required to download the update.• The release date of the update.• If an intermediate update is required, then a warning message is displayed. For more information, hover over View Details. A tool tip  provides additional details of the update package.
Optional Updates (x of y, size)	View the optional updates available for the system. The updates contain the following information: <ul style="list-style-type: none">• Name of the update.• Size of the update which displays the approximate number of bytes that are required to download the update.• The release date of the update.• If an intermediate update is required, then a warning message is displayed. For more information, hover over View Details. A tool tip  provides additional details of the update package.
Select All	Selects all critical, recommended, and optional updates for installation.  NOTE: Some updates require a power adapter to be plugged into the system.

Other available options on this screen are:

Table 6. Customize Selection Options

User interface	Description
	If this icon appears next to an update, connect a power adapter to the system to apply the update package. This is restricted to BIOS and firmware updates on notebook or tablet systems.
	If this icon appears next to an update, suspend BitLocker from the Control Panel of your system to apply the update package.  NOTE: Dell recommends to resume BitLocker after the updates are installed on your system.
	Click to view a tool tip window with some additional details about the update package.
	Click to open the dell.com/support web page to view the complete details about this update package.
	If this icon appears next to an update, it indicates that it is part of a docking solution update.


Use the check boxes next to the update to select the update packages. The check box at the top of the column toggles selection of all the updates on the **Customize Selection** screen.

Dependency installation

Dell Command | Update uses update packages to determine the latest updates for a system. An update package contains feature enhancements or changes in BIOS, firmware, drivers, and software. Usually, the update is self-sufficient and runs the preinstallation and applicable dependencies; however, the update may be dependent as described here:

- **Intradependencies:** These updates are of the same update type such as BIOS, and must be installed or updated in a particular order which may require multiple scans and updates.

For example, consider that your system has version A01 of BIOS installed and version A05 is an available update, and version A03 is a prerequisite of version A05. You must first update the system to version A03. Dell Command | Update updates the system to version A03 before allowing an update to version A05.

 | **NOTE: It takes more than one update cycle for the system to be completely updated to the latest available version(s), initiated by the user.**

- **Interdependencies:** If a component update requires an update of another dependent component of a different update type, then the dependent component has to be updated before the selected component can be updated to the recommended version.

For example, consider that your system needs a firmware update. To update system firmware, you must first update the system BIOS to a required minimum version. Dell Command | Update updates the system BIOS to the required version before updating the system firmware.

 | **NOTE: When the application initiates a system update, it takes more than one update cycle for the system to be updated to the latest available version(s).**

-  | **NOTE: If the update you want to install has a dependency, Dell Command | Update notifies you during the update process with an information alert**

-  | **NOTE: Nondependent and interdependent updates will be installed prior to intradependent updates.**

Update history

You can view the details of the previously installed updates on the system on the **Update History** screen. The details include the name of the component, type of the component, date when it was updated, and the current or latest version of the component available on the system. Whenever you install the updates, Dell Command | Update creates restore points that are named Dell Updates within the operating

system. Restore points are timestamps which you can use to revert updates to the system's files, installed applications, and Windows registry. You can view the list of restore points in the **System Restore** window.

System Restore

You can also use the **System Restore** window to revert any batch of updates that are made to the system.

NOTE: You cannot revert BIOS or firmware updates using the System Restore window as these updates are stored in the hardware.

NOTE: For more information, see the Microsoft documentation about System Restore.

View update history

To view the update history:

- 1 On the **Welcome** screen, click **Update History**.
The **Update History** screen is displayed.
If multiple updates exist, you can modify the length of each column to view the details.
- 2 Click **Close** to return to the **Welcome** screen.

View and export system information

To view and export the system information:

- 1 On the **Welcome** screen, click **System Information**.
The **System Information** screen is displayed with system details information.
- 2 Click **Export System Details** to save the system details in .XML format.
- 3 Click **Close** to go back to the **Welcome** screen.

Dell Command | Update settings

The **Settings** screen enables you to configure and customize settings for update download and storage locations, update filters, schedule for downloading updates, Internet proxy, import or export settings, and driver libraries download location. It has the following tabs:

- **General**—See [Configuring general settings](#) for information about configuring or modifying locations to download and store updates, and Internet proxy settings.
- **Update Settings**—See [Update settings](#) for information about configuring the schedule for system updates.
- **Update Filter**—See [Configuring the update filter settings](#) for information about modifying and saving filter options for scheduled updates.
- **Import/Export**—See [Importing or exporting settings](#) for information about importing and exporting settings.
- **Advance Driver Restore**—See [Configuring advanced driver restore settings](#) for information about configuring the location for downloading driver libraries.
- **BIOS**—See [BIOS settings](#) for information about how to save the BIOS password as an application setting.
- **Third Party Licenses**—You can view information and acknowledgment of the open source software that is used during the time of creation.

Click **Restore Defaults** to revert to the original default settings.


 **NOTE:** If a policy is applied by your administrator, the **Restore Defaults** option is disabled.

Topics:

- [Configure the general settings](#)
- [Update settings](#)
- [Configure the update filter settings](#)
- [Import or export settings](#)
- [BIOS settings](#)
- [Configuring advanced driver restore settings](#)

Configure the general settings

In the **General** tab, you can update the storage location, update the download location, and configure or modify Internet proxy settings. To configure the general settings:

- 1 On the title bar, click **Settings**.
The **Settings** screen is displayed.
- 2  **NOTE:** Dell Command | Update automatically deletes the update files from this location after installing the updates.
Under **Download File Location**, click **Browse** to set the default location or to change the default location for storing the downloaded updates.
- 3 Under **Update Source Location**, click **New** to add a location for downloading the updates. For more information, see [Updating Source Location](#).
- 4 Optionally, set the Internet proxy settings.
 - To use the current Internet proxy settings, select **Use current Internet proxy setting**.
 - To configure a proxy server and port, select **Custom proxy setting**. To enable proxy authentication, select the **Use Proxy Authentication** check box and provide proxy server, proxy port, user name, and password.

 **NOTE:** The user name and password credentials are encrypted and saved.

- 5 To opt in to Telemetry, select the **I agree to allow Dell to collect and use information gathered for the purpose of improving its products and services** option available under **User Consent** in the **General** section.

NOTE: Telemetry collects data about the operations performed in the application. If updates fail, the application notifies you and resolves real time issues, reducing customer call services. You can help Dell take proactive steps to improve Dell Command | Update by opting in to the Telemetry feature.

NOTE: Telemetry does not collect any Publicly Identifiable Information(PII).

- 6 Click **Ok** to save changes or click **Cancel** to discard the settings and return to the **Welcome** screen.

NOTE: If an interactive execution of Dell Command | Update is running, you must close Dell Command | Update for the scheduler to check for updates after the set time. This is because only one instance of the application can be running at a time and the scheduler instance is blocked by the interactive instance.

Updating source location

Update Source Location displays the list of all configured update source locations. The default location is downloads.dell.com. However, you can add multiple source locations for Dell Command | Update to attempt access and check for updates.

To add a source location, click **New**, navigate to the file location, and select the catalog.xml file. The selected catalog file is added to the list of source locations. Prioritize these locations by clicking the up and down arrows that are associated with the source location entry. Click **Delete** to remove the source location path from the list.

NOTE: Dell Command | Update uses the first source location or catalog it successfully loads. Dell Command | Update does not load each source location listed and aggregate the contents together. Dell Command | Update does not check for signatures on any source location that is not available in the Dell.com site.

Update settings

You can configure Dell Command | Update to automatically check for system updates.

Perform the following steps to configure the schedule for checking updates:

- 1 On the title bar, click **Settings**.
- 2 On the **Settings** screen, click **Update Settings**.
- 3 Under **Automatically check for updates > Check for updates**, select one of the following:
 - **Manual Updates Only**—If you select this option, Dell Command | Update does not run scheduled updates and all the other fields on this page are hidden. To check for updates manually, on the Welcome screen, click **Check**.
 - **Automatic Updates** —If you select this option, Dell Command | Update runs automatic updates.
- 4 If you select **Download and install updates (Notify after complete)** option, select the time interval you want the system to wait before restart automatically.
- 5 Click **Ok** to save changes, or click **Cancel** to revert the settings and return to the **Welcome** screen.
After you schedule the check for updates activity and if updates are available, the list of updates is displayed in the **Ready for install** screen.

NOTE: You must exit Dell Command | Update for update schedules to run.

Configure the update filter settings

In the **Update Filter** tab, you can configure the filters for downloading and displaying available updates. To configure the update filter settings:

- 1 On the title bar, click **Settings**.
- 2 On the **Settings** screen, click **Update Filter**.
- 3 Under **What To Download**, select one of the following options:

- **Updates For This System Configuration (Recommended)** — Select this option to download updates specific to the system's configuration.
 - **All Updates For System Model** — Select this option to download updates for all devices supported by the system model.
- 4 Under **Customize Updates**, select the update recommendation level, type of update, and its device category.
 - 5 Click **Ok** to save changes or click **Cancel** to revert to the last saved settings and return to the **Welcome** screen.

Import or export settings

The **Import/Export** tab allows you to save the configuration settings in the form of an .XML file. By using an .XML file, you can transfer the settings to another system and also import settings from another system. Using these .XML files you can create common configuration settings for all the installed instances of Dell Command | Update in the organization.

To import or export the configuration settings:

- 1 On the title bar, click **Settings**.
- 2 On the **Settings** screen, click **Import/Export**.
- 3 Click **Export Settings** to save the Dell Command | Update settings on the system in .XML format.
- 4 Click **Import Settings** to import the Dell Command | Update settings from a previously exported settings file.
- 5 Click **Ok** to save changes or click **Cancel** to revert the settings and return to the **Welcome** screen.

BIOS settings

- 1 On the title bar, click **Settings**.
- 2 On the **Settings** screen, click **BIOS**.
- 3 Enter a value in the **Password** field In the **System Password** window. You can click **Show Password** to view the password in the **Password** field.

 **NOTE:** The value in the Password field persists even when the Settings tab is closed and reopened.

 **NOTE:** If the System Password is configured in the BIOS, the password is needed to perform the BIOS updates.

- 4 Click **Restore Defaults** and check that the **Password** field is empty.

Configuring advanced driver restore settings

In the **Advanced Driver Restore** tab, you can configure the location to download the driver library for a new or reconditioned system. To configure the Advanced Driver Restore settings:

- 1 On the title bar, click **Settings**.
- 2 On the **Settings** screen, click **Advanced Driver Restore**.
- 3 Click **Enable** to toggle the **Advanced Driver Restore for Windows Reinstallation** option on the **Welcome** screen.

By default, the feature is:

- Enabled when you install Dell Command | Update on your system.
- Disabled if Dell Command | Update is factory installed.

After the drivers are installed on the system, the feature is disabled.

- 4 Select one of the following options:
 - Download driver library from the **dell.com/support** site (Recommended).
 - **Use the specified driver library:** To download the driver library from a local or network location. Click **Browse** to specify the location.
- 5 Click **Ok** to save changes, or click **Cancel** to revert to the last saved settings and return to the **Welcome** screen.

Accessing documents from the Dell EMC support site

You can access the required documents using the following links:

- For Dell EMC Enterprise Systems Management documents — www.dell.com/SoftwareSecurityManuals
- For Dell EMC OpenManage documents — www.dell.com/OpenManageManuals
- For Dell EMC Remote Enterprise Systems Management documents — www.dell.com/esmmanuals
- For iDRAC and Dell EMC Lifecycle Controller documents — www.dell.com/idracmanuals
- For Dell EMC OpenManage Connections Enterprise Systems Management documents — www.dell.com/OMConnectionsEnterpriseSystemsManagement
- For Dell EMC Serviceability Tools documents — www.dell.com/ServiceabilityTools
- a Go to www.dell.com/Support/Home.
- b Click **Choose from all products**.
- c From **All products** section, click **Software & Security**, and then click the required link from the following:
 - **Enterprise Systems Management**
 - **Remote Enterprise Systems Management**
 - **Serviceability Tools**
 - **Dell Client Command Suite**
 - **Connections Client Systems Management**
- d To view a document, click the required product version.
- Using search engines:
 - Type the name and version of the document in the search box.

Contacting Dell

 **NOTE:** If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

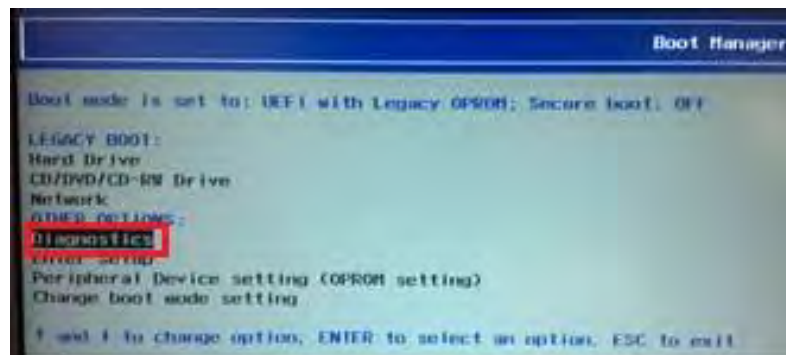
- 1 Go to **Dell.com/support**.
- 2 Select your support category.
- 3 Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
- 4 Select the appropriate service or support link based on your need.

Executando o diagnóstico ePSA

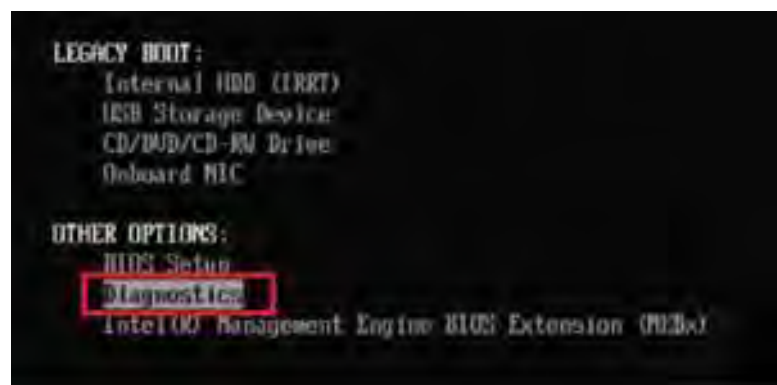
Segue o procedimento para executarmos o ePSA, embarcado em todos os Desktops, Notebooks e Workstations da Dell. Com ele é possível verificar se há erros no hardware no seu equipamento:

1- Assim que ligar o equipamento, durante o logotipo da Dell pressione repetidas vezes a tecla **F12**, até apresentar uma lista de opções. Selecione a opção **Diagnostics** e pressione **ENTER** para iniciar os testes, conforme as imagens abaixo:

OBS: Nos notebooks também é possível acessar o **ePSA** diretamente, pressionando **FN** e **POWER** na hora de ligar a máquina. Segurando ambos, o diagnóstico será iniciado automaticamente.

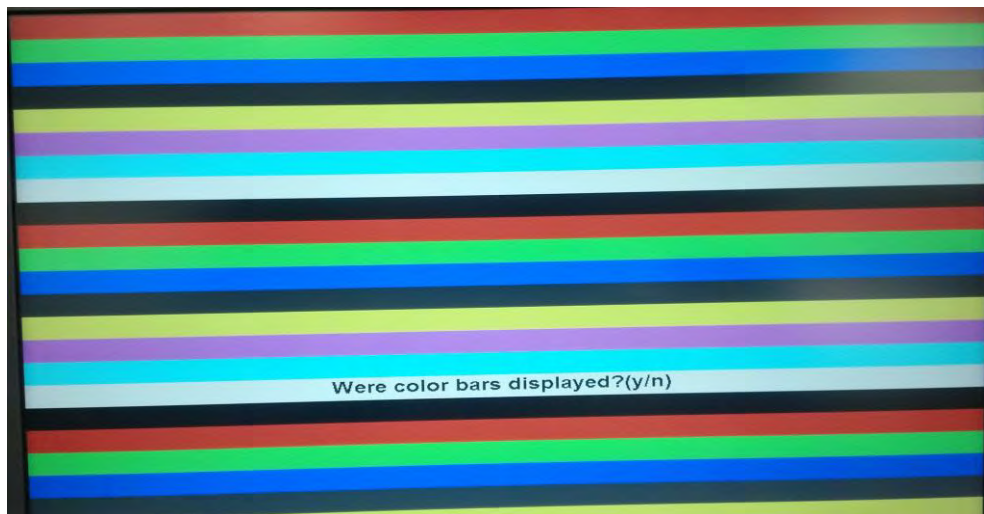


OU

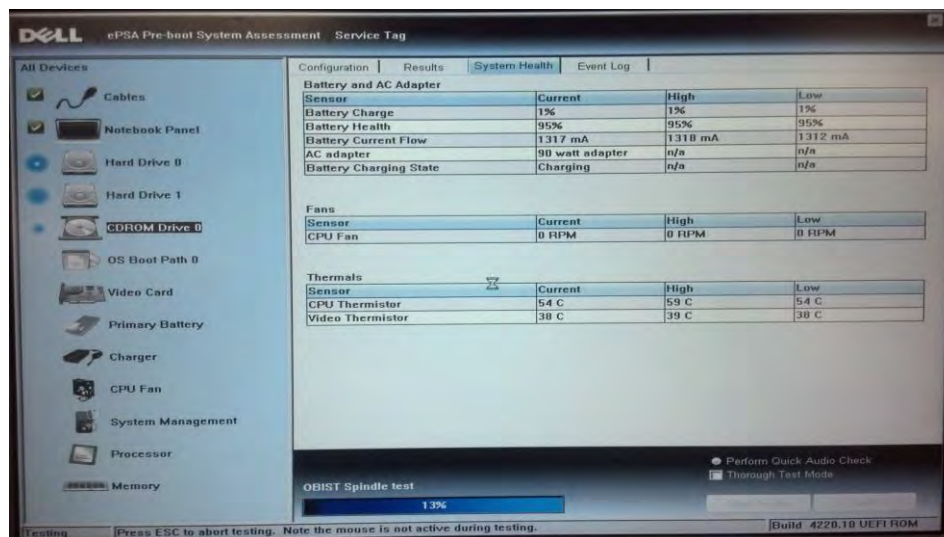


2- Durante o diagnóstico a seguinte imagem irá aparecer. Se você não identificar

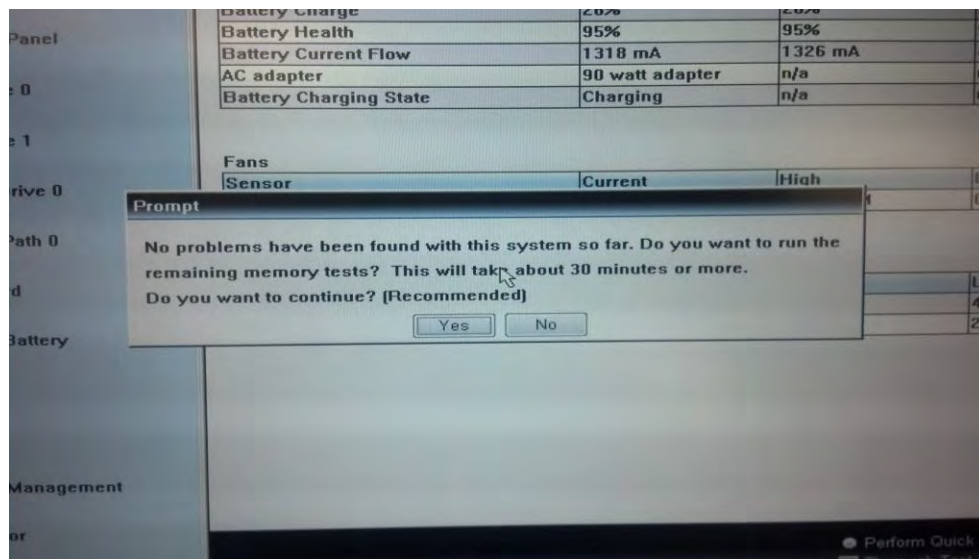
falhas na imagem, (chuviscos, manchas, listras, etc), pressione a tecla **Y**. Caso contrário pressione a tecla **N**.



Após passar do teste de vídeo, o diagnóstico continuará testando o restante dos componentes do equipamento. Isso deve levar de 5 à 10 minutos.



Caso não haja nenhuma falha, a seguinte tela será apresentada:



Caso seja apresentado algum de erro, entre em contato com nosso suporte e utilize este link para verificar qual o significado do código no teste:

<http://dell.to/18zvoZy>

[Suporte ao produto](#)
[Base de conhecimento](#)
[Garantia e contratos](#)
[Chamados e status de despacho](#)
[Suporte a pedidos](#)

Entre em contato com o suporte

[Suporte](#) > [Suporte a produtos](#)



OptiPlex 3080

[Insira a etiqueta de serviço para ver mais detalhes](#)
[Alterar produto](#)

[VISÃO GERAL](#)
[DIAGNÓSTICOS](#)
[DRIVERS E DOWNLOADS](#)
[DOCUMENTAÇÃO](#)
[EVENTOS DE SERVIÇO](#)
[PEÇAS E ACESSÓRIOS](#)

RECOMENDADO



Deixe-nos analisar seu sistema e encontrar as atualizações mais recentes.

[Detectar drivers](#)

Localizar um driver para seu OptiPlex 3080

Palavra-chave

Insira um nome ou uma palavra-chave do driver



Sistema operacional

[Não encontrou o que precisa?](#)

Windows 10, 64-bit

Categoria

Todas

Formato

Todas



Mostrar downloads somente para **ESTE PC**

Classificar por

Urgente

	NOME	CATEGORIA	DATA DO LANÇAMENTO	AÇÃO
<input type="checkbox"/>	Dell OptiPlex 3080 System BIOS POPULAR URGENTE	BIOS	03 Sep 2020	Download ⓘ ↕
<input type="checkbox"/>	Atualização ao comunicado de segurança da Dell – DSA-2020-059 URGENTE	Segurança	27 Apr 2020	Download ⓘ ↕
<input type="checkbox"/>	Intel UHD Graphics Driver POPULAR	Vídeo	13 Jul 2020	Download ↕
<input type="checkbox"/>	Software do dispositivo com chipset Intel POPULAR	Chipset	05 May 2020	Download ⓘ ↕
<input type="checkbox"/>	Intel Management Engine Components Installer POPULAR	Chipset	08 Jul 2020	Download ↕
<input type="checkbox"/>	Driver do controlador Ethernet PCIe Realtek POPULAR	Rede	29 Apr 2020	Download ⓘ ↕
<input type="checkbox"/>	Driver do Intel Rapid Storage Technology POPULAR	Serial ATA	05 Aug 2020	Download ⓘ ↕

<https://www.dell.com/support/home/pt-br/product-support/product/optiplex-3080-desktop/drivers>

Driver da placa gráfica Intel UHD

REINICIALIZAÇÃO NECESSÁRIA

Este pacote contém o driver da placa gráfica Intel UHD. Um driver de placa gráfica ou de vídeo é o software que permite comunicação entre a placa gráfica e o sistema operacional, os games e os aplicativos.

Correções e aprimoramentos

- Correção do problema em que o aplicativo de gerenciamento de tela da Dell não é iniciado nos sistemas Dell Precision e OptiPlex.

Versão	Categoria
Versão 26.20.100.8141, A01	Vídeo
Data da versão	Última atualização
13 jul 2020	08 set 2020

Importância

[Recomendada](#)

Formatos disponíveis

Formato do arquivo:	Pacote de atualização para MS Windows de 32 bits
Nome do arquivo:	Intel-UHD-Graphics-Driver_4TPGF_WIN_26.20.100.8141_A01.EXE
Tipo de download:	HTTP
Tamanho do arquivo:	358.93 MB
Descrição de formato:	Pacotes de atualização da Dell (DUP) no formato do Microsoft Windows de 32 bits foram projetados para execução em sistemas operacionais do Microsoft Windows de 64 bits. Pacotes de atualização da Dell (DUP) no formato do Microsoft Windows de 64 bits serão executados apenas nos sistemas operacionais Microsoft Windows de 64 bits. Ao selecionar uma atualização de driver de dispositivo, certifique-se de selecionar uma opção apropriada para seu sistema operacional.
	Faça download do arquivo
	To ensure the integrity of your download, please verify the checksum value.
MD5:	d292fc9d1781a4bcfaa2f47adc996799
SHA1:	d498393821feede7120d25ce8ad3c59a4180aee2
SHA-256:	7f006974f82d145a4132ddecdd11940fd075b8079b72ec287b58b5cf3c28b236

Ao fazer o download, você aceita os termos do [Contrato de Licença de Software da Dell](#) (em Inglês).

[Mostrar tudo](#) | [Ocultar tudo](#)

✓ Versão

[26.20.100.7810, A00](#) 27 mai 2020

✓ Sistemas compatíveis

- [OptiPlex 3080](#)
- [OptiPlex 5080](#)
- [OptiPlex 7080](#)
- [OptiPlex 7080 XE Micro Form Factor](#)
- [Precision 3240 Compact](#)
- [Precision 3440 Small Form Factor](#)
- [Precision 3440 XE Small Form Factor](#)
- [Vostro 5880](#)

▼ Sistemas operacionais compatíveis

Windows 10, 64-bit

Looking for a different OS? [View the list of Dell supported operating systems](#)

➤ [Aplica-se a](#)

➤ [Instruções de instalação](#)

Ajuda e tutoriais para drivers

Para ver mais downloads, vá para [Drivers e downloads](#). Para obter ajuda sobre como usar as informações contidas nesta página, visite [Ajuda e tutoriais de driver](#).

- Sobre a Dell Technologies
- Carreiras profissionais
- Comunidade
- Eventos
- Brasil ▼
- Programa de parceria
- Premier
- Dell Technologies

- © 2020 Dell
- Termos e Condições
- Declaração de Privacidade
- Anúncios e e-mails
- Informações Legais e Regulatórias
- Políticas
- Cumprimento dos Requisitos Regulatórios
- Impacto social
- Reciclagem de produto
- Fale conosco
- Avalie este site



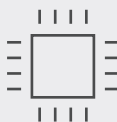
Comfortable, convenient and durable

DELL MULTIMEDIA KEYBOARD – KB216



COMPACT, COMFORTABLE DESIGN

Featuring a compact, full-sized keyboard, number pad, and quiet chiclet style keys, the Dell Multimedia Keyboard is excellent for everyday desktop use. The Dell Multimedia Keyboard also has a palm rest that is available for separate purchase.



CONVENIENT MULTIMEDIA KEYS

Multimedia keys offer quick actions and commands at your fingertips. Easily access functions such as play, pause, rewind, and fast-forward plus volume control.



DURABLE AND EASY TO USE

Durable and made of flexible materials, the Dell Multimedia Keyboard is also spill resistant. Installation is a snap. Simply connect the plug at the end of the included cable into any open USB port on your PC and start typing.

Features & Technical Specifications



Side view



Dell Multimedia Keyboard – KB216 (Gray)



Dell Multimedia Keyboard – KB216 (White)

Product	Dell Multimedia Keyboard – KB216	USB Hub/Ports	No
Color	Black/White/Gray	Dimensions (HxLxW mm)	24.32 x 441.7 x 127.3 mm
Interface	USB	Weight (grams)	400.5 +/- 20g
Hot Key Feature	Yes	Cable Length (mm)	1800 +/- 30 mm (Typical) 2100 +/- 30 mm (Japan)
Multimedia Keys	Yes	Adjustable Tilt	Yes
Palm Rest	Available for separate purchase	Spill-Resistant Design	Yes

For more information, please contact your Dell representative.



Dell Optical Mouse- MS116

Product Announcement



The Dell Optical Mouse – MS116 features optical LED tracking and wired connectivity providing a stellar performance day after day. Improve your productivity at the office or at home—the Dell Optical Mouse will help keep you on task with accurate 1000 DPI optical tracking.

Comfort that lasts

Designed for comfortable use over extended periods of time, the Dell Optical Mouse is your desktop partner. Shaped and sized to fit the contours of your hand with 2 buttons and a scroll wheel, the Dell Optical Mouse makes it easy to navigate through on-screen projects.

Compatible with practically any system

The Dell Optical Mouse is compatible with almost any system that has a USB port. Use one mouse in the office and keep another at home.

Plug and play convenience

Simply plug the Dell Optical Mouse into any available USB port and get to work—it's that easy.

At home or in the office

The Dell Optical Mouse is the perfect choice for either home or office use—wherever reliability, comfort and convenience are objectives.

Learn more at Dell.com



Specifications	
Colors	Black/White/Grey
Interface	Wired, USB
Buttons	2
Scroll Wheel	1
Tracking Sensor	Optical LED
Cursor Tracking Speed (dpi)	1000dpi
Dimensions (HxLxW)	36x113.6x61.1mm
Weight (grams)	87g (61g w/o cable)
Battery Life	NA
Cable Length	1800mm





Keyword Search

Search

[Dell Federal Contracts](#)[My Order Status](#)[Home](#) > [Federal Government](#) > [Accessories](#) > [PC Accessories](#) > [Keyboards & Mice](#) > [Mice](#)

Dell Mouse Pad



This mouse pad from Dell™ features a surface which enables excellent pointing accuracy, control and response. This makes a great accessory for your Dell™ system.

[Print-Friendly Version](#)[What's in the Box](#)[Add to Cart](#)

Estimated Ship Date: 10/26/2017

Manufacturer Part# : 9250R | Dell Part# : 310-0182

Overview**Tech Specs****Glossary And Resource****Highlights**

- Smoother, uninterrupted rolling
- Surface allows greater accuracy and control
- Durable material is less abrasive and extends roller ball life
- Great accessory for your Dell system

Overview

This mouse pad from Dell™ features a surface which enables excellent pointing accuracy, control and response. This makes a great accessory for your Dell™ system.

Manufacturer Part# : 9250R
Dell Part# : 310-0182

Compatibility**Do more with Dell**

[Employee and Student Discounts](#)
[Partner Program](#)
[Dell Outlet](#)
[TechCenter](#)
[Make a Payment](#)

About Dell

[Investors](#)
[Company Information](#)
[Corporate Social Responsibility](#)
[Customer Engagement](#)
[Careers](#)
[Dell Newsroom](#)
[Dell Technologies](#)

Legal

[Ads & Emails](#)
[Privacy Statement](#)
[Legal & Regulatory](#)
[Terms of Sale](#)
[Trademarks](#)

Community

[The Dell Community](#)
[Read Our Blog](#)
[Support Forums](#)
[Events](#)



United States ▼



Product Compliance Datasheet

MARKETING NAME.....: OptiPlex 3080 Micro

REGULATORY MODEL.....: D14U

REGULATORY TYPE.....: D14U002

EMC EMISSIONS CLASS.....: B

EFFECTIVE DATE.....: May 27, 2020

Table of contents

I.	Statement of Compliance	2
II.	Global Environmental Information	3
III.	NFPA 99 Conformity	3
IV.	Declaration of Similarity.....	3
V.	Power Cords and User Documentation.....	4
VI.	Trade (Import/Export) Compliance Data	4
VII.	Product Dimensions and Weight.....	4
VIII.	Performance Data	4
IX.	Product Materials Information	6
X.	Packaging.....	8
XI.	Batteries	8
XII.	Design for Environment.....	8
XIII.	Recycling / End-of-Life Service Information	8
XIV.	Helpful Links	9
	Appendix A: ErP Lot 3 Product Energy Consumption Information.....	10
	Appendix B: ErP Lot 26 Network Standby Energy Consumption Information	12

I. Statement of Compliance

This product has been determined to be compliant with the applicable standards, regulations, and directives for the countries where the product is marketed. The product is affixed with regulatory marking and text as necessary for the country/agency. Dell manufactures and markets Multimedia Equipment (MME), Information Technology Equipment (ITE), Audio Visual Equipment (A/V), Industrial, Scientific, Medical Equipment (ISM) or combinations of these. Generally, products Electromagnetic Compatibility (EMC) and Product Safety compliance is based on International IEC and CISPR standards and their national equivalent along with national standards for Radio (wireless), Telecommunications (Modem) and Energy. Dell products have been verified to comply with the Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU of the European Parliament and the Council. Dell product does not contain any of the restricted substances in concentrations and applications not permitted by the RoHS Directive.

EMC Emissions Class refers to one of the following use environments:

- EMC Class B product is intended for use in residential/domestic environments but may also be used in nonresidential/non-domestic environments.
- EMC Class A product is intended for use in non-residential/non-domestic environments. Class A product may also be utilized in residential/domestic environments but may cause interference and require the user to take adequate corrective measures.

For Product Safety and EMC compliance, this product has been assigned a unique regulatory model and regulatory type that is imprinted on the product regulatory labeling to provide traceability to the regulatory approvals noted on this datasheet. This datasheet applies to any product that utilizes the assigned regulatory model and type including marketing names other than those listed on this datasheet. Dell products with the CE marking have been verified to comply with Energy Related Products (ErP) Directive 2009/125/EC of the European Parliament and of the Council. https://www.dell.com/ErP_User_Information. REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), Regulation (EC) 1907/2006 of the European Parliament and of the Council is the European Union's (EU) chemical substances regulatory framework. Dell complies with the REACH regulation. For information on SVHC (Substances of Very High Concern), see www.dell.com/REACH. This products compliance documentation, such as this datasheet and the European Union Declaration of Conformity are available on the product support page, manuals tab <http://www.dell.com/support>. Additional compliance documentation for the product is available upon submitting a request at http://www.dell.com/regulatory_compliance. Please include product identifiers such as marketing name, regulatory model, regulatory type and country that compliance information is needed in the email request.

II. Global Environmental Information

Environmental (Voluntary Marks)		
Country	Approval	Compliance
Global	ENERGY STAR (Configuration Dependent)	<i>Spec Version 8.0</i>
Global	TCO Certified	<i>Generation 8</i>
China	CECP	Yes
China	CEC	Yes
Japan	Green PC Label	Yes
Taiwan	Greenmark	Yes
Varies by Country See EPEAT.net	EPEAT (Configuration Dependent)	Refer to EPEAT.net for specific registration levels and countries

Adapter Certification and Declarations	
Country	Authority/Mark
Australia/New Zealand	Australia/NZ MEPS
Canada	NRCan
US – California Energy Commission	Adapter & Battery Charger
European Union	Regulation EC No 278/2009
South Korea	South Korea MEPS

III. NFPA 99 Conformity

Select Dell systems have been tested and found to comply with the touch current requirements as defined in 10.3.5 of National Fire Protection Association standard NFPA 99:2012. The touch current does not exceed 100 μ A with ground wire intact (if a ground wire is provided) and 500 μ A with ground disconnected at 127 V AC, 60 Hz when tested in accordance with 10.3.5 of NFPA 99: 2012. To determine if this product complies with the above requirements, send a request to Product_Compliance@Dell.com. Please include product identifiers such as marketing name, regulatory type and country for which compliance information is needed.

IV. Declaration of Similarity

Object of the Declaration	
Product Type	Desktops
Regulatory Model Number	D14U
Regulatory Type Number	D14U002
Trade Name/ Trade Mark	DELL
Marketing Name(s)	OptiPlex 3080 Micro

Dell Inc. hereby declares that the products identified by the product designations listed in this declaration are strictly identical in design (shape, opening, etc.) components, materials,

manufacturing process, and markings except for product designation – Trade Name and/or Trade Mark as specified in this declaration.

The products may have very minor differences which do not impact the level of conformity. All products identified by the product designations in this declaration have the same level of conformity according to the certificate(s) provided.

The Trade Name / Trade Mark and/or Marketing Name(s) are the property of Dell Inc. Any differences in the product designation are for marketing purposes only.

Date of Issue	May 27, 2020	Signature on behalf of Dell Inc.	Dell Inc. Dell Global Product Compliance and Environmental Affairs
Title	Dell Global Product Compliance and Environmental Affairs		

V. Power Cords and User Documentation

Dell products are provided with the power cord and user documentation suitable for the intended country of delivery. Products that are relocated to other countries should use nationally certified power cords and plugs to ensure safe operation of the product. Contact Dell to determine if alternate power cords or user documentation in other languages is available for your market.

VI. Trade (Import/Export) Compliance Data

For any questions related to importing & exporting classification of Dell products, please obtain information from the following link: <http://www.dell.com/learn/us/en/uscorp1/import-export> or send email request to WW_Export_Compliance@dell.com. Please include product identifiers such as marketing name, regulatory model, regulatory type and country that compliance information is needed in the email request.

VII. Product Dimensions and Weight

Depth, mm/cm	Width, mm/cm	Height, mm/cm	Weight, kg
178 mm	36 mm	182 mm	1.4 Kg (depending upon installed options)

For Display products please refer to the user manual for weight and dimension information.

VIII. Performance Data

ErP Lot 3, Lot 26 and ErP Lot 9 information is in Appendices A, B and C respectively.

For additional information on how Dell's commitment to energy efficiency benefits you go to: [Reducing your Footprint](#)

For additional information on ENERGY STAR models refer to the following database: [ENERGY STAR Product Finder](#)

Computer:

Service Level	Energy Consumption (Wattage)	BTU Calculation	Description of Service Level
CPU stressed	48.80	156.64	The system is running programs to maximize the CPU utilization and/or running programs to maximize the power consumption
Short Idle	7.43	25.40	As specified per EPA ENERGY STAR
Long Idle	6.17	21.10	As specified EPA ENERGY STAR
S3 "Sleep" or Modern Standby	0.99	3.39	S3=Suspend-to-RAM, or Modern Standby
Off/Standby	0.39	1.34	System is turned off but still connected to its AC power source.

Energy Consumption¹

Energy efficiency benefits the environment and lowers the total cost of equipment ownership by reducing power consumption. Click [here](#) for Dell's Energy efficient products.

***Energy Consumption** results are based solely upon the laboratory testing of the **System Configuration** and in accordance to the described service level. Energy consumption is tested at 230 Volts / 50 Hz.

Declared noise emission values in accordance with ISO 9296. Testing performed in compliance with ISO 7779 with operating modes defined by ECMA-74.

OptiPlex Desktop:

Declared noise emission values in accordance with ISO 9296. Testing performed in compliance with ISO 7779 with operating modes defined by ECMA-74.

SSD/Integrated Graphics Configuration	
Component	Configuration
CPU	Intel i7-10700T
Memory	32G*2

¹ This document is informational only and reflects laboratory performance. Your product may perform differently, depending on the software, components and peripherals you ordered. Accordingly, the customer should not rely upon this information in making decisions about electrical tolerances or otherwise. No warranty as to accuracy or completeness is expressed or implied. For more details visit <https://www.dell.com/learn/us/en/uscorp1/dell-environment>

HDD/SSD (#, capacity)	M2.SSD + M2.SSD + 2.5" HDD	
RMSD (Removable Media Storage Device)	N/A	
Graphic Adapter	UMA	
Power Supply Output Wattage & Efficiency	65W	N/A

Operating Mode	Sound Power Declared mean A- weighted level	Sound Power Statistical adder for verification	Sound Pressure Declared mean A-weighted emission level L _{pA,m} (dB)	
	L _{WA,m} (bels)	K _V , (bels)	Operator	Bystander
Idle	2.6	0.4	17.0	16.4
HDD Operating	2.6	0.4	17.6	16.5
CPU Stressed	3.9	0.4	31.1	28.4
ODD Operating	N/A	N/A	N/A	N/A

OptiPlex Desktop: SSD/Integrated Graphics Configuration ¹			
Service Level	Energy Consumption (Wattage)	BTU Calculation	Description of Service Level
CPU stressed	45.80	156.64	System is running programs to maximize CPU utilization.
Short Idle	7.43	25.40	As specified EPA Energy Star Computers
Long Idle	6.17	21.10	
Sleep	0.99	3.39	Suspend-to-RAM (low-power/sleep mode) or Modern Standby
Off	0.39	1.34	System is turned off but still connected to its AC power source.
E-TEC	32.86	112.39	Calculated annual energy consumption in kWh using conventional duty cycle

¹ This document is informational only and reflects laboratory performance. Your product may perform differently, depending on the software, components and peripherals you ordered. Accordingly, the customer should not rely upon this information in making decisions about electrical tolerances or otherwise. No warranty as to accuracy or completeness is expressed or implied. For more details visit <https://www.dell.com/learn/us/en/uscorp1/dell-environment>

IX. Product Materials Information

Information on Dell's material use is available [here](#).

Dell's Restricted Material for Use guidance document is available at www.dell.com/restrictedsubstanceslist.

- The case material is SGCC.

- This product contains 41.1% post-consumer recycled plastic and /or closed loop recycled plastics (ITE-derived)*
(*Measured as a percentage of total amount of plastic (by weight) in the product as per guidance in EPEAT standard as applies to plastics parts)

Mechanical plastic parts ² > 25 g are BFR/PVC free	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Marking of plastics parts greater than 25 grams is in accordance with ISO 11469 (see below)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Printed circuit boards (without components) >25g are BFR PVC free ³	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Insulation materials of external electrical cables are PVC free	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Insulation materials of internal electrical cables are PVC free	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Product is BFR/PVC Free (Accessories & Options may not be BFR/PVC-Free, refer to spec ENV0199)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Flame Retardants Used in Motherboard

Part	Flame Retardant
Motherboard	Brominated Epoxy

Flame Retardants Used in Mechanical Plastic Parts > 25 grams

Resin Material Name	Plastic Part Marking per ISO 11469:2016	Flame Retardant Marking per ISO 1043-4 (i.e. FR(16), FR(40), etc.)	Flame Retardant (i.e. TBBPA, triaryl phosphate ester, etc.)	List applicable R-Phrase(s) or Hazard Statement(s) per EU Directive 67/548/EEG or 1272/2008
N/A	N/A	N/A	N/A	N/A

Mercury Information

Number of bulbs	Average per bulb
0	N/A

Additional information:

- Refer to Dell Technologies' [Chemical Use Policy](#) for more information on RoHS and REACH.
- Products MSDS (Material Safety Data Sheets):
 - Batteries: [Battery MSDS Documentation and Declaration](#)
 - Printer Toner and Ink: [MSDS Documentation](#)

² Mechanical plastic part: plastic parts that do not internally carry an electrical signal such as housings, brackets, bezels, latches, etc. that form the basic structure of the product and/or have mechanical functions. Plastic parts such as fans, connectors, printer fuser assemblies, etc. are not considered "mechanical plastic parts" in the context of this specification. Plastics parts do not contain no more than 0.1% weight (1000 ppm) bromine and 0.1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride (Per Dell Spec ENV0424)

³ Dell will adopt the BFR/CFR/PVC-free definition as set forth in the "INEMI Position Statement on the Definition of 'Low-Halogen' Electronics (BFR/CFR/PVC-Free)." Plastic parts contain <1000 ppm (0.1 percent) of bromine (if the Br source is from BFRs) and <1000 ppm (0.1 percent) of chlorine if the Cl source is from CFRs, PVC or PVC copolymers. All printed circuit board (PCB) and substrate laminates contain bromine/chlorine totaling less than 1,500 ppm (0.15 percent), with maximum chlorine of 900 ppm (0.09 percent) and maximum bromine of 900 ppm (0.09 percent)

X. Packaging

Information on Dell's sustainable packaging effort available [here](#). Additional materials restricted in Packaging as per Dell's Material Restricted for Use Standard document can be found at www.dell.com/restrictedsubstanceslist.

Packaging Materials	Total Weight, (g)	Sustainable Material Content[1] (e.g Recycled content *, bio-based, Sustainable Forested materials)	% Sustainable Material		
			APJ region	DAO region	EMEA region
Corrugated Fiberboard	761	Recycled Content	Min 35%	Min 35%	Min 35%
LDPE (Including EPE Foam)	9	Recycled Content	0-80%	0-80%	0%
Molded paper pulp	41	Recycled content	100%	100%	100%

XI. Batteries

Below is a listing of batteries that could be present in the product:

Battery Description – Batteries	Battery Type	Battery Weight (kg)	Rating
CR-2032 coin cell	Lithium Metal	0.0032	N/A

XII. Design for Environment

Dell systems are, when applicable, designed for easy assembly, disassembly, and servicing. For more information on Dell's Environmental product attributes please visit <https://www.dell.com/learn/is/en/is/corp1/dell-environment-greener-products>

XIII. Recycling / End-of-Life Service Information

Take back and recycling services are offered for this product in certain countries. If you want to dispose of system components, please visit www.dell.com/recyclingworldwide and select the relevant country.

XIV. Helpful Links

- **Environmental Policy**
https://i.dell.com/sites/csdocuments/Corporate_corp-Comm_Documents/en/dell-global-environmental-policy.pdf
- **Environment Website**
<https://www.dell.com/learn/ai/en/aicorp1/dell-environment>
- **Corporate Social Responsibility Report**
<http://www.dell.com/Learn/us/en/uscorp1/report?c=us&l=en&s=corp&delphi:gr=true>
- **ISO 14001 Certification**
<http://i.dell.com/sites/content/corporate/corp-comm/en/Documents/dell-iso14001-worldwide.pdf>
- **Materials Restricted for Use**
www.dell.com/restrictedsubstanceslist
- **Chemical Use Policy**
<http://i.dell.com/sites/doccontent/corporate/environment/en/Documents/chemical-use-policy.pdf>
- **Product Carbon Footprint**
https://www.dell.com/learn/us/en/uscorp1/corp-comm/environment_carbon_footprint_products
- **RoHS Compliance**
<https://www.dell.com/learn/us/en/uscorp1/envt-info-materials>
- **REACH Compliance**
www.dell.com/REACH
- **Recycling Information**
<http://www.dell.com/recycling>
- **Supplier Responsibility**
<https://www.dell.com/learn/gy/en/gycorp1/cr-social-responsibility>

Appendix A: ErP Lot 3 Product Energy Consumption Information

European Union (EU) ErP Lot 3 (Commission Regulation (EC) No. 617/2013)

The ErP Lot 3 regulation includes requirements for certain product specific information to be provided by the manufacturer. This is applicable to Desktops, Integrated Desktops (All-in-One), Notebooks, Tablets, Slates, Notebook Thin Clients, Desktop Thin Clients, Workstations, Mobile Workstations, and Small-Scale Servers.

ErP Lot 3 provides certain exclusions based upon product type, screen size, and/or the amount of power consumed in idle mode. Product energy and acoustic information might be reported for products that are out of scope of ErP Lot 3 for informational purposes only.

Additional information on ErP Lot 3, Lot 7 & Lot 26 available [here](#).

Category	Category B	Category D
Processor Speed in GHz	3.4	2
Number of Cores	2	8
Total Installed System Memory in GB	64	64
Graphics	Integrated	Integrated
WOL enabled in "Sleep" Mode	No	No
WOL enabled in "Off" Mode	No	No
<i>As Tested: Lowest Power State</i>	0.39	0.39
<i>As Tested: Poff(W) WOL Disabled</i>	0.39	0.39
<i>As Tested: Poff(W) WOL Enabled</i>		
<i>As Tested: Psleep(W) WOL Disabled</i>	1.00	0.99
<i>As Tested: Psleep(W) WOL Enabled</i>		
<i>As Tested: Pidle(W)</i>	5.54	6.17
Base TEC Limit (kWh)	112	150.00
TEC Adders Limit (kWh)	87.00	85.00
Base + Adders TEC Limit (kWh)	199.00	235.00
Results TEC	21.75	43.47

Power Supply Model #	Internal or External	Link to efficiency report
LA65NS2-01	External	http://oee.nrcan.gc.ca/pml-lmp/index.cfm?action=app.formHandler&operation=details-details&ref=5485275&appliance=EPS&nr=1
HA65NS5-00	External	http://oee.nrcan.gc.ca/pml-lmp/index.cfm?action=app.formHandler&operation=details-details&ref=5470487&appliance=EPS&nr=1
DA65NM199	External	http://oee.nrcan.gc.ca/pml-lmp/index.cfm?action=app.formHandler&operation=details-details&ref=34247978&appliance=EPS&nr=1
LA90PM111	External	http://oee.nrcan.gc.ca/pml-lmp/index.cfm?action=app.formHandler&operation=details-details&ref=34247978&appliance=EPS&nr=1

		Imp/index.cfm?action=app.formHandler&operation=details-details&ref=14419075&appliance=EPS&nr=1
HA90PM190	External	http://oee.nrcan.gc.ca/pml-Imp/index.cfm?action=app.formHandler&operation=details-details&ref=33610954&appliance=EPS&nr=1
DA90PM190	External	http://oee.nrcan.gc.ca/pml-Imp/index.cfm?action=app.formHandler&operation=details-details&ref=34247977&appliance=EPS&nr=1

* **Energy Consumption** results are based solely upon the laboratory testing of the **System Configuration** listed above. Energy consumption is tested at 230 Volts / 50 Hz.

Energy Consumption⁴

Energy efficiency benefits the environment and lowers the total cost of equipment ownership by reducing power consumption. Click [here](#) for Dell's Energy efficient products

Declared Noise Emissions in accordance with ISO 9296. Testing performed in accordance with ISO 7779 at operating modes defined by ECMA 74. Your product may perform differently, depending on the software, components and peripherals you ordered. No warranty as to accuracy or completeness is expressed or implied.

Computers Category B:

Service Level	Sound Power Declared mean A- weighted level	Statistical adder for verification	Sound Pressure Declared mean A- weighted emission level
	L _{WA,m} (B)	K _V (B)	L _{pA,m} (dB)
HDD Accessing	2.6	0.4	16.4
ODD Accessing	N/A	N/A	N/A
Idle	2.6	0.4	16.4

Computers Category D:

Service Level	Sound Power Declared mean A- weighted level	Statistical adder for verification	Sound Pressure Declared mean A- weighted emission level
	L _{WA,m} (B)	K _V (B)	L _{pA,m} (dB)
HDD Accessing	2.6	0.4	16.5
ODD Accessing	N/A	N/A	N/A
Idle	2.6	0.4	16.4

⁴ This document is informational only and reflects laboratory performance. Your product may perform differently, depending on the software, components and peripherals you ordered. Accordingly, the customer should not rely upon this information in making decisions about electrical tolerances or otherwise. No warranty as to accuracy or completeness is expressed or implied.

Appendix B: ErP Lot 26 Network Standby Energy Consumption Information

European Union (EU) ErP Lot 26 (Commission Regulation (EC) No 801/2013)

The ErP Lot 26 regulation includes Network Standby power requirements to be provided by the manufacturer. This is applicable to multiple product categories. If no information is reported, it's assumed it is out of scope of ErP Lot 26.



Transform how you work.

DELL 24 MONITOR | P2419H



OPTIMIZE YOUR WORKSPACE

Free up valuable desk space with this 23.8" FHD monitor featuring the smallest monitor base in its class.¹ Easily hide away cable clutter with the improved cable management design.



MAXIMIZE PRODUCTIVITY

The 3-sided ultrathin bezel delivers a seamless view across multiple monitors, while Easy Arrange in Dell Display Manager software helps you stay organized when multitasking.



WORK COMFORTABLY

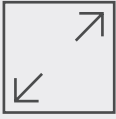
Pivot, tilt, swivel and adjust the height of your monitor to your exact preference. Stay focused longer with a flicker-free screen and ComfortView that optimize eye comfort.



TRUSTED RELIABILITY

Dell monitors — World's number 1 monitor brand²
Enjoy peace of mind with Dell Premium Panel Exchange, 3 year Advanced Exchange Service³ and optional ProSupport.⁴

Maximize productivity

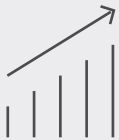


OPTIMIZED WORKSPACE

More room to work: Free up valuable desk space with a thin monitor profile and the smallest monitor base in its class.¹

Clutter-free: Focus on your work while hiding away cable clutter with an improved cable management design.

Consistent and rich colors: A wide viewing angle enabled by In-Plane Switching technology lets you see vibrant colors—no matter where you sit.



MAXIMIZE PRODUCTIVITY

Expand your efficiency: The three-sided ultrathin bezel design lets you enjoy an uninterrupted view of your content across multiple monitors. And, with a Dell dual monitor set up, you can increase your productivity by up to 21%.⁵

More ways to multitask: Work conveniently across multiple screens and select from predefined templates with the Easy Arrange feature on Dell Display Manager software. Quickly tile and arrange your applications and get back to work faster with Auto-restore, a feature that remembers where you left off.



WORK COMFORTABLY

Adjust to your comfort: Pivot, tilt, swivel and adjust the height of your monitor for a comfortable setup all day long. Or choose from a variety of mounts and stands, including VESA, for even more flexibility.

Easy on the eyes: This TÜV⁶ Certified monitor has a flicker-free screen with ComfortView, a feature that reduces harmful blue light emissions. It's designed to optimize eye comfort even over extended viewing.



TRUSTED RELIABILITY

DELL MONITORS – WORLD'S NUMBER 1 MONITOR BRAND²

Peace of mind: Dell Premium Panel Exchange allows a free panel replacement during the Limited Hardware Warranty⁷ period even if only one bright pixel is found.

Minimize downtime: Your monitor comes with a 3-year Advanced Exchange Service³ so that if a replacement becomes necessary, it will be shipped to you the next business day during your 3-year Limited Hardware Warranty.⁷

Get a higher level of support: Upgrade to 24x7, in-region technical phone support from qualified engineers with Dell ProSupport option.⁴

Features & Technical Specifications

Monitor

Diagonal Viewing Size	Dell 24 Monitor - P2419H 60.45 cm (23.8 inches)
Active Display Area	
Height	527.04 mm (20.75")
Width	296.46 mm (11.67")
Maximum Preset Resolution	1920 x 1080 at 60 Hz
Aspect Ratio	16:9
Pixel Pitch	0.275 mm x 0.275 mm
Pixel Per Inch (PPI)	92
Brightness	250 cd/m ² (typical)
Color Support	Color Gamut (typical): 72% (CIE1931) ⁸ Color Depth: 16.7 Million colors
Contrast Ratio	1000: 1 (typical)
Viewing Angle	178°/178°
Response Time	8 ms (Normal); 5 ms (Fast) - (gray to gray)
Panel Type	In-Plane Switching Technology
Backlight Technology	LED Edgelight System
ComfortView with Flicker-free screen	Yes
Dell Display Manager Compatibility	Yes
Remote Asset Management	Yes, via Dell Command Monitor
Display Screen Coating	Antiglare with 3H hardness

Connectivity

Connectors	1 x DisplayPort version 1.2, 1 x HDMI port version 1.4, 1 x VGA port, 1 x USB 3.0 upstream port (bottom), 2 x USB 3.0 downstream ports (side), 2 x USB 2.0 downstream ports (bottom)
Built-in Devices	USB 3.0 super-speed hub (with 1 x USB 3.0 upstream port), 2 x USB 3.0 downstream ports, 2 x USB 2.0 downstream ports

Design Features

Adjustability	Height-adjustable stand (130 mm), Tilt (-5° to 21°) Swivel (-45° to 45°), Pivot (-90° to 90°)
Security	Security lock slot (cable lock sold separately)
Flat Panel Mount Interface	VESA (100 mm x 100 mm)

Power

AC input voltage/frequency/current	100 VAC to 240 VAC / 50 Hz or 60 Hz ± 3 Hz / 1.5 A (typical)
Power Consumption (Operational)	18W (typical) / 42W (maximum) ⁹
Power Consumption Stand by / Sleep	Less than 0.3W

Dimensions (with stand)

Height (Compressed ~ Extended)	356.1 mm ~486.1 mm; 14.02" ~19.14"
Width	537.8 mm (21.27")
Depth	166.0 mm (6.54")
Weight	
Weight (panel only - for VESA mount)	3.26 kg (7.19 lb)
Weight (with stand)	5.25 kg (11.57 lb)
Weight (with packaging)	7.10 kg (15.65 lb)

Standard Service Plan

Premium Panel Exchange, 3 Years Advanced Exchange Service² & Limited Hardware Warranty⁷

Optional Service Plan

Dell ProSupport⁴

Environmental Compliance

ENERGY STAR[®], EPEAT[®] registered where applicable¹⁰, RoHS Compliant, TCO-Certified Display, BFR/PVC free monitor (excluding external cables), Arsenic-Free glass and Mercury-Free for the panel only

What's in the box?

Components

- Monitor with stand

Cables

- DisplayPort cable
- USB 3.0 upstream cable
- Power cable

Documentation

- Quick Setup Guide
- Safety and regulatory information

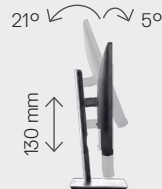
Adjustability and connectivity

DELL 24 MONITOR | P2419H

Easily adjust the panel to your preferred viewing position.



Back view -
Cable management slot



Tilt and height adjustable

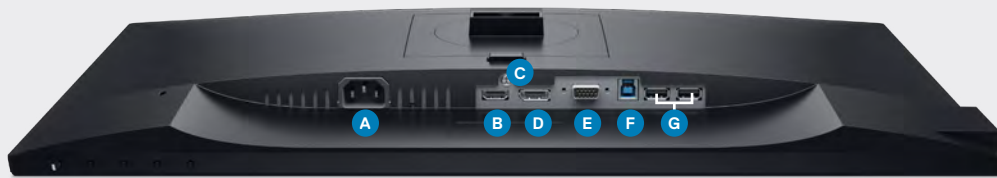


Pivot



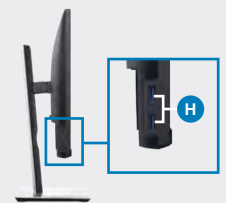
Swivel

Connectivity



- A Power connector
- B HDMI port
- C Stand lock feature
- D DisplayPort

- E VGA connector
- F USB upstream port
- G USB downstream ports (x2)
- H USB downstream ports (x2)



RECOMMENDED ACCESSORIES



DELL DUAL MONITOR
STAND | MDS19

Enjoy toolless monitor installation with Quick Release and the flexibility to pivot, tilt, swivel and adjust the height of each monitor independently. Features a small footprint and neat cable management.



DELL PRO STEREO
SOUNDBAR | AE515M

Optimize conference calls and multimedia streaming with exceptional audio clarity. Minimize background noise with the dual mic array and echo-cancelling feature.



DELL WIRELESS KEYBOARD
AND MOUSE | KM636

Elevated and spacious chiclet keys with muted typing sound. Pair up to 6 devices with Dell Universal Pairing.

1 Based on Dell internal analysis comparing the area of the monitor base in competitive 23.8" size monitors as of March 2018.

2 Dell monitors are #1 Worldwide for 6 consecutive years (2013 to 2018)! Source: IDC Worldwide Quarterly PC Monitor Tracker, Q4 2018.

3 Advanced Exchange: Dell will send you a replacement monitor the next business day in most cases, if deemed necessary after phone/online diagnosis. Shipping times may vary by location and for monitors 55" and above. Fee charged for failure to return defective unit. See dell.com/servicecontracts/global.

4 Availability varies, please visit www.dell.com/support for details.

5 Source: Based on Principled Technologies Report commissioned by Dell, "Improve productivity with the new Dell P Series monitors in a dual-display configuration", November 2018, comparing Dell 24 USB-C Monitor - P2419H/HC and Dell 24 Monitor - P2414H/HC. Actual results will vary. Full report: https://www.principledtechnologies.com/Dell/P2419H_monitor_productivity_1118.pdf

6 TÜV Certified (ID0000051369 - Flicker Free / ID0000051370 - Low Blue Light Content). For more details, visit www.tuv.com.

7 For a copy of the Limited Hardware Warranty, write to Dell USA LP, Attn: Warranties, One Dell Way, Round Rock, TX 78682 or see dell.com/warranty.

8 Color gamut (typical) is based on CIE1976 (82%) and CIE1931 (72%) test standards.

9 Maximum power consumption with max luminance and contrast.

10 EPEAT registered where applicable. EPEAT registration varies by country. See www.epeat.net for registration status by country.

Dell.com/monitors Product availability varies by country. Please contact your Dell representative for more information.

© 2019 Dell All rights reserved.

Trademarks or trade names may be used in this document to refer to either the entities claiming the marks and names of their products. Dell disclaims proprietary interest in the marks and names of others. Reproduction in any manner whatsoever without express written permission from Dell is strictly forbidden.





DELL - P2419H : P2419Hc

Specifications

Brand Name:	DELL
Model Name:	P2419H
Model Number:	P2419Hc
Product Type:	Monitor
Panel Type:	IPS LCD
Screen Size (inches):	23.8
Screen Area (square inches):	242.18
Native Resolution (pixels):	1080 x 1920
Maximum Luminance (candelas per square meter):	250.0
Total Native Resolution (megapixels):	2.1
Model Features:	None
Signal or Data Interfaces:	VGA,Display,HDMI,USB
Power Source:	Ac to dc internal power supply
Monitor Total Energy Consumption at 115 Volts (kWh/yr):	44.63
On Mode Power (watts):	13.52
Markets:	United States, Taiwan, Japan, Canada
Sleep Mode Power (watts):	0.12
Off Mode Power (watts):	0.11
ENERGY STAR Certified:	Yes

Additional Model Information

Captured On:
10/22/2020

[RETURN TO SEARCH](#)

P2419H

Product Summary:

Product Type:	Monitors
Registered In:	Brazil
Manufacturer:	DELL
EPEAT Tier:	Silver
Registration Date:	2019-01-17
Product Status:	Active

COMPUTERS &
DISPLAYS

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria. [Click here](#) to see a list of the required criteria for this product category.

This product has met the necessary **required criteria**.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at

EPEAT Bronze

Products that meet all required criteria and achieve 50 - 74% of the optional points are rated at

EPEAT Silver

Products that meet all required criteria and achieve 75 - 100% of the optional points are rated at

EPEAT Gold

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
4.1 Substance Management	9 / 16
4.2 Materials Selection	2 / 3
4.4 Product longevity/life-cycle extension	0 / 2
4.5 Energy Conservation	0 / 2
4.7 Packaging	1 / 2
4.8 Life cycle assessment and carbon footprint	6 / 6
4.9 Corporate Environmental Performance	6 / 9
4.10 Corporate social responsibility	6 / 6
TOTAL OPTIONAL CRITERIA SCORE:	30 / 46

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please [contact us](#).

EPEAT PROGRAM POLICY MANUAL SUPPORT

Fornecedor / Supplier
(100120-728)

DELL COMPUTADORES DO BRASIL LTDA
Av. Emancipação, 5000
13184-654 – Hortolândia – SP – Brasil
CNPJ: 72.381.189/0006-25

Produto Certificado / Certified Product

MONITOR PLANO PANEL / FLAT PANEL MONITOR

Família de Produto / Product's Family

N/A

Modelo - Tipo / Model - Type

P2319Hc, **P2419Hc** (refer to Appendix A)
P2018Hc (refer to Appendix B)
P1917Sc (refer to Appendix C)

Código de barras / Barcode

Descrição (Nome comercial) / Description (Brand Name)

DELL

Marca Comercial / Trademark

DELL

Quantidade Importada / Quantity Imported

N/A

Unidade de medida / Measurement Unit

N/A

Lote ou No. de Série / Lot or Serial Number

N/A

Número e Data da Licença de Importação / Number and Import License Date

N/A

Normas Aplicáveis / Applicable standards

Refer to Appendix page

Programa de Certificação ou Portaria /
Certification Program or Decree

PORTARIA NO. 170/2012 / DECREE NO. 170/2012
PORTARIA NO. 407/2015 / DECREE NO. 407/2015

Relatório de Avaliação e Ensaios /
Assessment and Test Report #

BR2263, Vol. 23, Sec. 09, 10, 11, **16**

Concessão Para / Consession for

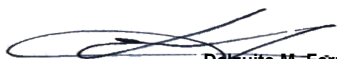
Ostentar o Selo de Identificação da Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado.
Bearing the Conformity Identification Seal of the Brazilian System of Evaluation of Conformity (SBAC) on the product covered by this certificate.

Revisão / Revision date

27 de março de 2020 / March 27, 2020

Validade / Expire date

16 de abril de 2021 / April 16, 2021



Deizuite M. Ferreira Jr.
Gerente de Operações /
Operations Manager

UL do Brasil Certificações, organismo acreditado pela Coordenação Geral de Acreditação do INMETRO – CGCRE, segundo o registro N° OCP-0029 confirma que o produto está em conformidade com a(s) Norma(s) e programas ou Portarias acima descritas.

UL do Brasil Certificações, Certification Body accredited by Coordenação Geral de Acreditação do INMETRO - CGCRE according to the register Nr OCP-0029 confirms that the product is in compliance with the standards and certification Programs or Decrees above mentioned.



Solicitante / Applicant
(654965-006) **Dell Inc.**
One Dell Way
Mail Stop PS4-30
Round Rock, TX 78682-0001

Fabricante / Manufacture
(107277-001) **ENVISION INDUSTRIA DE PRODUTOS ELETRONICOS LTDA**
AV TORQUATO TAPAJOS 2236.FLORES AM. MANAUS.69058-830.BRAZIL

POTÊNCIA SONORA (dBA) E CLASSIFICAÇÃO / NOISE POWER AND CLASSIFICATION: N/A

MARCAÇÃO / MARKING: Marca do fabricante, modelo e características elétricas.

LISTA DE ACESSÓRIOS / LIST OF ACCESSORIES: N/A

MODELO DE CERTIFICAÇÃO / CERTIFICATION MODEL: 5

VERSÃO DO PROJETO DO PRODUTO / PRODUCT DESIGN VERSION: N/A

DOCUMENTOS / DOCUMENTS:

Título / Title	Número / Number	Revisão / Revision	Data emissão / Issuing Date	Data Realização de / Performance Date
<<Dados da Auditoria / Audit data >> Factory: ENVISION INDUSTRIA DE PRODUTOS ELETRONICOS LTDA	BR2263	0	2020-01-17	N/A
<<Dados da Auditoria / Audit data >> Importer: DELL COMPUTADORES DO BRASIL LTDA	BR2263	0	2019-02-22	N/A

MARKETING NAME: P2419H
REGULATORY MODEL: P2419Hc
REGULATORY TYPE: NA
EFFECTIVE DATE: June 25, 2018
EMC EMISSIONS CLASS: B

Dell Inc.
www.dell.com

TABLE OF CONTENTS

I.	GLOBAL ENVIRONMENTAL INFORMATION	2
II.	NFPA 99 CONFORMITY	2
III.	POWER CORDS AND USER DOCUMENTATION	2
IV.	DATASHEET RESPONSIBLE PARTY NAME AND ADDRESS.....	3
V.	TRADE (IMPORT/EXPORT) COMPLIANCE DATA.....	3
VI.	SYSTEM DIMENSION AND WEIGHT	3
VII.	PERFORMANCE DATA.....	3
VIII.	PRODUCT MATERIALS INFORMATION.....	4
IX.	PACKAGING	5
X.	BATTERIES	5
XI.	DESIGN FOR ENVIRONMENT.....	5
XII.	RECYCLING/ END-OF-LIFE SERVICE INFORMATION	6
XIII.	HELPFUL LINKS.....	6

STATEMENT OF COMPLIANCE

This equipment has been determined to be compliant with the applicable standards, regulations, and directives for the countries where the equipment is marketed. The equipment is affixed with regulatory marking and text as necessary for the country/agency. Dell manufacturers and markets Multimedia Equipment (MME), Information Technology Equipment (ITE), Audio Visual Equipment (A/V), Industrial, Scientific, Medical Equipment (ISM) or combinations of these. Generally, equipment Safety and EMC compliance is based on International IEC and CISPR standards and their national equivalent along with national standards for Radio (wireless), and Energy. Dell products have been verified to comply with the EU RoHS Directive 2011/65/EU. Dell equipment does not contain any of the restricted substances in concentrations and applications not permitted by the RoHS Directive. EMC Emissions Class refers to one of the following use environments:

- EMC Class B equipment is intended for use in residential/domestic environments but may also be used in nonresidential/non-domestic environments.
- EMC Class A equipment is intended for use in non-residential/non-domestic environments. Class A equipment may also be utilized in residential/domestic environments but may cause interference and require the user to take adequate corrective measures.

For Safety and EMC compliance, this equipment has been assigned a unique regulatory model and regulatory type that is imprinted on the equipment regulatory labeling to provide traceability to the regulatory approvals noted on this datasheet. This datasheet applies to any equipment that utilizes the assigned regulatory model and type including marketing names other than those listed on this datasheet. ErP compliance is tied to the CE mark. REACH (Registration, Evaluation, Authorization and Restriction of Chemicals, 1907/2006) is the European Union's (EU) chemical substances regulatory framework.

Dell complies with the REACH directive. For information on SVHC (Substances of Very High Concern), see www.dell.com/REACH.

Compliance documentation, such as certification or Declaration of Compliance for the equipment is available upon request to product_compliance@dell.com. Please include equipment identifiers such as marketing name, regulatory module, regulatory type and country that compliance information is needed in request.

I. GLOBAL ENVIRONMENTAL INFORMATION

Environmental		
Country	Approval	Compliance
Global	Energy Star	Certified
US & Canada (varies by country)	EPEAT	Gold
China	CECP	Certified
China	CEC	Certified
Global	TCO Certified Display	Certified
Germany –Display with HDMI only	Energy Label	For specific product energy class and value refer technical product spec at http://accessories.euro.dell.com/sna/category.aspx?c=de&category_id=4009&cs=dedhs1&l=de&ref=bkt&s=dhs

Adapter Certification and Declaration (Applicable only if product uses an external adapter)

Country	Authority/Mark
Australia/NZ	Australia/NZ MEPS
South Korea	South Korea MEPS
United States	US DOE
Canada	NRCan
California Energy Commission	Adapter & Battery Charger
EU	Regulation EC No 278/2009

For more details concerning environmental information, click www.dell.com/environmental_information

II. NFPA 99 CONFORMITY

Select Dell systems have been tested and found to comply with the touch current requirements as defined in 10.3.5 of National Fire Protection Association standard NFPA 99:2012. The touch current does not exceed 100 μ A with ground wire intact (if a ground wire is provided) and 500 μ A with ground disconnected at 127 V AC, 60 Hz when tested in accordance with 10.3.5 of NFPA 99: 2012. To determine if this product complies with the above requirements, send a request to regulatory_compliance@dell.com. Please include product identifiers such as marketing name, regulatory type and country for which compliance information is needed.

III. POWER CORDS AND USER DOCUMENTATION

Dell products are provided with the power cord and user documentation suitable for the intended country of delivery. Products that are relocated to other countries should use nationally certified power cords and plugs to ensure safe operation of the product. Contact Dell to determine if alternate power cords or user documentation in other languages is available for your market.

IV. DATASHEET RESPONSIBLE PARTY NAME AND ADDRESS

Dell Inc.
Department: Global Regulations and Standards
MS: PS4-30
Round Rock, Texas 78682, USA
Regulatory_Compliance@Dell.com

V. TRADE (IMPORT/EXPORT) COMPLIANCE DATA

For any questions related to importing & exporting classification of Dell products, please obtain information from the following link: www.dell.com/import_export_compliance or send request to WW_Export_Compliance@dell.com

VI. SYSTEM DIMENSION AND WEIGHT

For product dimension and weight, please refer to product specification/userguide/usermanual at www.dell.com

VII. PERFORMANCE DATA

Energy Consumption¹

Service Level	Energy Consumption (Wattage)	BTU Calculation	Description of Service Level
*Maximum	42	143.64	The system is running programs to maximize the power consumption.
On Mode	17	58.14	The product is connected to a power source and produces an image.
Sleep Mode	0.3	1.026	The reduced power state the display enters after receiving instructions from a content source (e.g. computer, game console, or set-top box), or via other functions (e.g. timers or sensors). A blank screen and reduction in power consumption characterize this mode. The display returns to On Mode with full operational capability upon sensing a signal from a source or function that can initiate that can initiate the reduced power state.
Off	0.3	1.026	The system is turned off but is still connected to its AC power source.
Power Supply	NA	NA	Portables only! AC adapter is tested with no load attached
Power Supply	NA	NA	Portables only! AC adapter is tested with active load attached

* **Energy Consumption** results are based solely upon the laboratory testing of the **System Configuration** listed above. Energy consumption is tested at 230 Volts / 50 Hz.

¹ This document is informational only and reflects laboratory performance. Your product may perform differently, depending on the software, components and peripherals you ordered. Accordingly, the customer should not rely upon this information in making decisions about electrical tolerances or otherwise. No warranty as to accuracy or completeness is expressed or implied.

Energy Consumption*

Energy efficiency benefits the environment and lowers the total cost of equipment ownership by reducing power consumption. Dell offers energy calculators that help estimate power needs, potential emissions avoidance and potential cost savings. Click [here](#) for Dell's Client Energy Savings Calculator, Data Center Capacity Planner, and Monitor Power Savings Calculator. Information on Energy Efficiency is available [here](#)

* This document is informational only and reflects laboratory performance. Your product may perform differently, depending on the software, components and peripherals you ordered. Accordingly, the customer should not rely upon this information in making decisions about electrical tolerances or otherwise. No warranty as to accuracy or completeness is expressed or implied.

For more details visit www.dell.com/environmental_information

VIII. PRODUCT MATERIALS INFORMATION²

Information on Dell's material use is available [here](#).

To review Dell's Restricted Material Guidance document click [here](#).

- The case material is ABS-HB
- This product contains 25% post-consumer recycled plastic
- Marking of plastic parts greater than 25 grams are done in accordance with ISO 11469 (see below)

Flame Retardants Used in Motherboard

Part	Flame Retardant
Motherboard	Halogen-free Organic Phosphates Compounds

Flame Retardants Used in Mechanical Plastic Parts > 25 grams

Resin Material Name	Marking per ISO 11469:2000, 11469:1996	Flame Retardant Marking per ISO 1043-4 (i.e. FR(16), FR(40), etc.)	Flame Retardant (i.e. TBBPA, triaryl phosphate ester, etc.)	List applicable R-Phrase(s) or Hazard Statement(s) per EU Directive 67/548/EEG or 1272/2008
ABS-HB	>ABS<	94HB	NA	None

Mercury Information

Number of bulbs	Average per bulb
0	0 mg

For more information Dell's compliance to various materials restrictions regulations and list of substance prohibited from use please click www.dell.com/environmental_information

² **Waste Handling.** Local regulations should be observed when disposing of this product due to the presence of the materials and substances as listed above.

For additional information please visit:

- Restricted Material Compliance www.dell.com/environmental_information
- Products MSDS (Material Safety Data Sheets):

Batteries:

http://www.dell.com/content/topics/topic.aspx/global/shared/about_dell/values/regulatory_compliance/en/dell_battery_declaration_january2011?c=us&l=en&s=corp&~ck=anavml

Printer Toner and Ink:

http://www.dell.com/downloads/global/corporate/environ/comply/MSDS_doc.pdf

IX. PACKAGING

Information on Dell's sustainable packaging effort available [here](#).

Additional materials restricted in Packaging as per Dell's Restricted Material Guidance document found [here](#).

Packaging Materials (Carton Box, Plastic Bags, Screen Protector, Cushion etc)	Total Weight of each Material type, (kg)	% of Post-Consumer Recycled Content (PCR)
Carton box (Corrugated Fibred Board)	0.73	90%
Paper cushion (Corrugated Fibred Board)	0.56	90%
Molded paper pulp	0.45	100%
Plastic Bags – EPE	0.036	0%

For more details on packaging please click www.dell.com/environmental_information

X. BATTERIES

Below is a listing of batteries that could be present in the product:

Battery Description – Batteries	Battery Type	Battery Weight (kg)
CR-2032 coin cell	Lithium	NA
AA or AAA Remote Control Battery	Alkaline	NA
AA or AAA Wireless Mouse and/or Keyboard	Alkaline	NA
Rechargeable Battery x cell	Lithium Ion	NA

For more details on batteries including MSDS please click www.dell.com/environmental_information

XI. DESIGN FOR ENVIRONMENT

Dell systems are, when applicable, designed for easy assembly, disassembly, and servicing.

For more information on product Recyclability please visit www.dell.com/environmental_information

XII. RECYCLING/ END-OF-LIFE SERVICE INFORMATION

Take back and recycling services are offered for this product in certain countries. If you want to dispose of system components, contact Dell for instructions by emailing recycling_emea@dell.com or visit www.dell.com/recyclingworldwide and select the relevant country.

XIII. HELPFUL LINKS

- **Environmental Policy**
<http://i.dell.com/sites/content/corporate/corp-comm/en/Documents/dell-global-environmental-policy.pdf>
- **Environment Website**
www.dell.com/earth
- **Corporate Sustainability Report**
<http://www.dell.com/Learn/us/en/uscorp1/report?c=us&l=en&s=corp&delphi:gr=true>
- **ISO 14001 Certification**
<http://i.dell.com/sites/content/corporate/corp-comm/en/Documents/dell-iso14001-worldwide.pdf>
- **Materials Restricted for Use**
http://www.dell.com/downloads/global/corporate/enviro/restricted_materials_guid.pdf
- **Chemical Use Policy**
<http://i.dell.com/sites/doccontent/corporate/environment/en/Documents/chemical-use-policy.pdf>
- **Client Energy Calculator**
<http://www.dell.com/content/topics/topic.aspx/global/products/landing/en/client-energy-calculator?c=us&l=en>
- **Product Carbon Footprint**
http://content.dell.com/us/en/corp/d/corp-comm/environment_carbon_footprint_products
- **RoHS Compliance**
www.dell.com/rohsinfo
- **REACH Compliance**
www.dell.com/REACH
- **Recycling Information**
www.dell.com/recycling
- **Supplier Responsibility**
<http://content.dell.com/us/en/corp/d/corp-comm/standards-for-suppliers.aspx>
- Dell is a member of the Electronic Industry Citizenship Coalition (www.eicc.info)

Date : 03/14/2018

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City, Fujian Province
China
Attn: Winter Feng

Re. : CU US + Canada Certificate

Type of Equipment : Flat Panel Monitor
Model Designation : See Certificate
Certificate No. : CU 72180592 0001
File No. : 17061045 001
Engineer/Contact : Sven-Olaf Steinke
Standard(s) : UL 60950-1:2007 R10.14
CAN/CSA-C22.2 NO.60950-1-07+A1:2011+A2:2014

Dear Madame or Sir,

The above referenced technical equipment has been tested and was found to be in compliance with the listed test requirement(s). Enclosed, please find the TUV Rheinland approval document No. CU 72180592 0001. It authorizes you to label the listed product(s) with the TUV Rheinland Mark identified in the approval document. For compliance, the Test Mark must be on the approved unit.

Your product is subject to regular factory follow-up inspections as well as annual certificate and factory registration fees.

In using the TUV Rheinland Mark you are obligated to comply with the TUV Rheinland of North America Service Agreement.

If we can be of any further assistance to you, please do not hesitate to contact us.

Sincerely yours,
Certification Body

Dipl.-Ing. Univ. S. O. Steinke
QA Certification Officer

Enclosure

Certificate



Certificate no.

CU 72180592 01

License Holder:

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City, Fujian Province
China

Manufacturing Plant:

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City, Fujian Province
China

Test report no.: USA-SS 17061045 001

Client Reference: Winter Feng

Tested to:

UL 60950-1:2007 R10.14

CAN/CSA-C22.2 NO.60950-1-07+A1:2011+A2:2014

Certified Product: Flat Panel Monitor

License Fee - Units

Model Designation: DELL P2319Hc, DELL P2319H;
DELL P2419Hc, DELL P2419H

7

Rated Voltage: AC 100-240V; 50/60Hz

Rated Current: 1.5A

Protection Class: I

Max. Ambient Temperature: 40°C

7

Appendix: 1, 1-24

Licensed Test mark:



**Date of Issue
(day/mo/yr)**

14/03/2018

Certificate



Certificate no.

CU 72180592 02

License Holder:

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuding City, Fujian Province
China

Manufacturing Plant:

Envision Indústria de Produtos
Eletrônicos Ltda.
Av. Torquato Tapajós, 2236
CEP 69058-830 - Manaus/AM
Brazil

Test report no.: USA-SS 17061045 001

Client Reference: Winter Feng

Tested to:

UL 60950-1:2007 R10.14
CAN/CSA-C22.2 NO.60950-1-07+A1:2011+A2:2014

Certified Product: Flat Panel Monitor

License Fee - Units

Additional Manufacturing Plant : see above (K756156)

Licensed Test mark:



Date of Issue

(day/mo/yr)

14/03/2018

Dell

P2219H/P2319H/P2419H/P2719H

Guia do usuário

Modelo: P2219H/P2319H/P2419H/P2719H

Modelo regulatório: P2219Hb/P2319Ht/P2319Hc/P2419Hb/P2419Hc/P2719Ht





NOTA: Uma NOTA indica uma informação importante que o orienta como melhor usar o computador.



CUIDADO: Um CUIDADO indica dano potencial ao hardware ou perda de dados se as instruções não forem seguidas.



ALERTA: Uma ALERTA indica dano de propriedade, ferimento pessoal ou morte em potencial.

Copyright © 2018-2019 Dell Inc. ou suas subsidiárias. Todos os direitos reservados. Dell, EMC e outras marcas comerciais são marcas registradas da Dell Inc. ou suas subsidiárias. Outras marcas comerciais podem ser marcas registradas de seus respectivos proprietários.

Índice

Sobre o monitor	6
Conteúdo da Embalagem	6
Características do produto	8
Identificação das peças e dos controles.	9
Vista Frontal	9
Vista Posterior	10
Vista lateral	11
Visão inferior.	12
Especificações do Monitor	13
Especificações da Resolução	16
Modos de vídeo suportados	17
Modos de Visualização Pré-ajustadas.	17
Especificações elétricas	18
Características Físicas	18
Características de ambiente	21
Modos de Gerenciamento de Energia	22
Atribuição de Pinos	26
Capacidade Plug and Play	29
Interface Bus Serial Universal (USB)	29
USB 3.0	29
USB 2.0	29
Conector USB 3.0 a montante	30
Conector USB 3.0 a jusante	30
Conector USB 2.0 a jusante	31
Portas USB	31
Qualidade do monitor de LCD e política de pixel	31



Diretrizes de manutenção	32
Limpando Seu Monitor	32
Ajuste do monitor	33
Fixação do suporte	33
Conectando seu monitor	35
Conectando o cabo DisplayPort (DisplayPort a DisplayPort)	35
Conectando o cabo VGA azul (opcional)	35
Conectando o cabo HDMI (opcional)	36
Conectando o cabo USB 3.0	36
Organizando seus cabos	37
Remoção do suporte do monitor	37
Suporte de parede VESA (opcional)	38
Operação do monitor	40
Ligação do monitor	40
Uso dos controles do painel frontal	40
Botão do painel frontal	41
Uso do Menu de Visualização na Tela (OSD)	42
Acesso ao Sistema do Menu	42
Mensagem de Advertência OSD	54
Configuração da Resolução Máxima	56
Usando a extensão vertical, articulação e inclinação	57
Inclinação, Giro	57
Extensão Vertical	58
Girando o monitor	58
Gire no sentido horário	59
Gire no sentido anti-horário	59
Ajustando as configurações de exibição de rotação do seu sistema	60





Solução de Problemas	61
Autoteste	61
Diagnósticos integrados	62
Problemas comuns	63
Problemas específicos do produto	68
Problemas específicos do barramento serial universal (USB)	69
Apêndice	70
Avisos da FCC (somente Estados Unidos) e outras informações regulamentares	70
Entre em contato com a Dell	70





Sobre o monitor

Conteúdo da Embalagem

O monitor é fornecido com os componentes mostrados na tabela abaixo. Se algum componente estiver faltando, entre em contato com o suporte técnico da Dell. Para obter mais informações, consulte [Entre em contato com a Dell](#).

-  **NOTA: Alguns itens podem ser opcionais e não serão enviados com seu Monitor. Alguns recursos podem não estar disponíveis em certos países.**
-  **NOTA: Se estiver fixando um suporte comprado de outra fonte, siga as instruções de configuração incluídas com o suporte.**

	Monitorar
	Suporte elevatório




	<p>Base do suporte</p>
	<p>Cabo de energia (varia de acordo com o país)</p>
	<p>Cabo DisplayPort</p>
	<p>Cabo VGA (somente Japão)</p>
	<p>Cabo HDMI (enviado com P2219H/P2319H/P2719H, somente para o Brasil)</p>
	<p>Cabo USB 3.0 a montante (habilita as portas USB no monitor)</p>
	<ul style="list-style-type: none"> • Guia de configuração rápida • Informações de Segurança, Ambientais e Regulatórias



Características do produto

O monitor de painel plano **Dell P2219H/P2319H/P2419H/P2719H** tem matriz ativa, Transistor de filme fino (TFT), Mostrador de cristal líquido (LCD) e luz de fundo de LED. As características do motor são as seguintes:

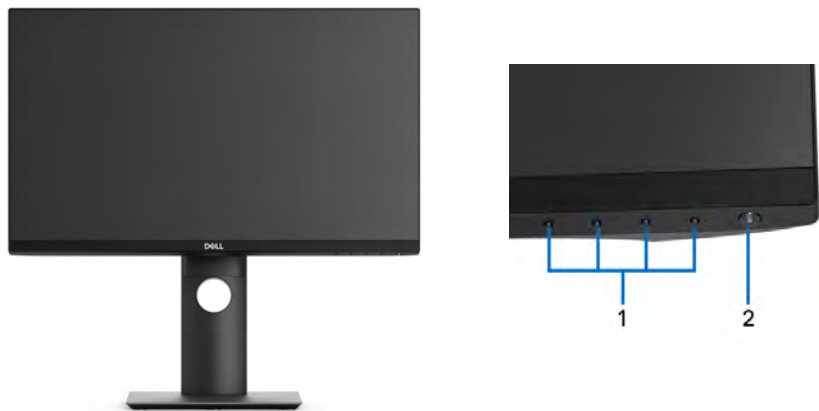
- **P2219H:** Área visível de 54,6 cm (21,5 polegadas) (medida diagonalmente). Resolução: Até 1920 x 1080 através do VGA, DisplayPort e HDMI, com suporte para tela cheia ou resoluções inferiores.
- **P2319H:** Área visível de 58,4 cm (23,0 polegadas) (medida diagonalmente). Resolução: Até 1920 x 1080 através do VGA, DisplayPort e HDMI, com suporte para tela cheia ou resoluções inferiores.
- **P2419H:** Área visível de 60,5 cm (23,8 polegadas) (medida diagonalmente). Resolução: Até 1920 x 1080 através do VGA, DisplayPort e HDMI, com suporte para tela cheia ou resoluções inferiores.
- **P2719H:** Área visível de 68,6 cm (27,0 polegadas) (medida diagonalmente). Resolução: Até 1920 x 1080 através do VGA, DisplayPort e HDMI, com suporte para tela cheia ou resoluções inferiores.
- Gama de cores de 72% NTSC.
- Recursos de ajuste de inclinação, giro, altura e rotação.
- Suporte removível e furos de fixação de 100 mm padrão VESA™ (Video Electronics Standards Association) para soluções de montagem flexíveis.
- Conectividade digital com DisplayPort e HDMI.
- Equipado com 1 porta USB a montante e 4 portas USB a jusante.
- Recurso plug and play, se suportado pelo seu sistema.
- Ajuste por sistema de exibição em tela (OSD) para fácil configuração e otimização da tela.
- Ranhura de trava de segurança.
- Trava do suporte.
- Potência em espera de 0,3 W quando no modo de suspensão.
- Otimize o conforto para os olhos com uma tela sem cintilação.

 **ALERTA: Os possíveis efeitos de longo prazo da emissão de luz azul do monitor podem ser danos aos olhos, incluindo fadiga ocular, cansaço visual digital, etc. O recurso ComfortView foi projetado para reduzir a quantidade de luz azul emitida do monitor para otimizar o conforto ocular.**



Identificação das peças e dos controles

Vista Frontal



Controles do painel frontal

Etiqueta	Descrição
1	Botões de função (Para obter mais informações, consulte Operação do monitor)
2	Botão liga/desliga (com LED indicador)



Vista Posterior

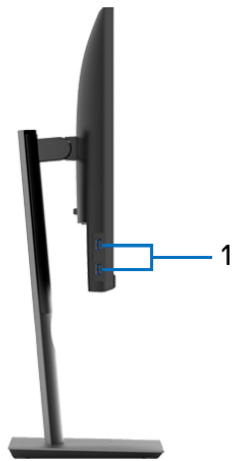


Vista posterior com o suporte para monitor

Etiqueta	Descrição	Use
1	Furos de montagem VESA (100 mm x 100 mm – atrás da tampa VESA fixada)	Monitor de montagem na parede usando o kit de montagem para parede compatível VESA (100 mm x 100 mm).
2	Etiqueta de regulamentos	Lista as aprovações de regulamentos.
3	Botão de liberação do suporte	Libera o suporte do monitor.
4	Ranhura de trava de segurança	Segura o monitor com trava de segurança (trava de segurança não inclusa).
5	Código de barra, número de série e etiqueta de serviço	Para entrar em contato com a Dell para suporte técnico.
6	Fenda para passagem dos cabos	Use para organizar os cabos inserindo-os através da fenda.



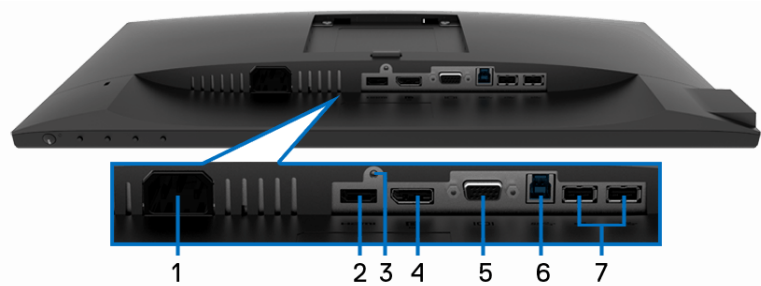
Vista lateral



Etiqueta	Descrição	Use
1	Portas USB a jusante (2)	Conecte seus dispositivos USB. NOTA: Para usar essas portas, é necessário conectar o cabo USB (enviado com seu monitor) na porta USB a montante do monitor e em seu computador.



Visão inferior



Vista de baixo sem o suporte do monitor

Etiqueta	Descrição	Use
1	Conector de energia	Conecte o cabo de energia (enviado com seu monitor).
2	Porta HDMI	Conecte seu computador com o cabo HDMI (enviado com P2219H/P2319H/ P2719H, somente para o Brasil).
3	Recurso de Trava do suporte	Para travar o suporte no monitor usando o parafuso M3 x 6 mm (o parafuso não é fornecido).
4	DisplayPort	Conecte seu computador com o cabo DisplayPort (enviado com seu monitor).
5	Conector VGA	Conecte seu computador com o cabo VGA (enviado com seu monitor, somente para o Japão).
6	Porta a montante USB	Conecte o cabo USB (enviado com seu monitor) nessa porta e em seu computador para habilitar as portas USB em seu monitor.
7	Portas USB a jusante (2)	Conecte seus dispositivos USB. NOTA: Para usar essa porta, é necessário conectar o cabo USB (enviado com seu monitor) na porta USB a montante do monitor e em seu computador.



Especificações do Monitor

Modelo	P2219H	P2319H
Tipo de tela	Matriz ativa - LCD TFT	
Tecnologia de painel	Tecnologia tipo In-Plane Switching	
Formato de imagem	16:9	
Imagem visível		
Diagonal	546,10 mm (21,5 polegadas)	584,20 mm (23,0 polegadas)
Largura (área ativa)	476,06 mm (18,74 polegadas)	509,18 mm (20,05 polegadas)
Altura (área ativa)	267,79 mm (10,54 polegadas)	286,42 mm (11,28 polegadas)
Área total	127484,10 mm ² (197,60 polegadas ²)	145839,33 mm ² (226,05 polegadas ²)
Pontos Pixel	0,248 mm x 0,248 mm	0,265 mm x 0,265 mm
Pixels por polegada (PPI)	102	96
Ângulo de visualização	178° (vertical) típico 178° (horizontal) típico	
Saída de iluminação	250 cd/m ² (típico)	
Taxa de contraste	1000 a 1 (típico)	
Cobertura da superfície da placa	Antirreflexo com dureza 3H	
Luz de fundo	Sistema de luz da borda de LED	
Tempo de resposta	8 ms (Normal) 5 ms (Rápido)	
Profundidade da cor	16,7 milhões de cores	
Gama de cores	72% (CIE1931) NOTA: A gama de cores (típica) é baseada nos padrões de teste CIE1976 (82%) e CIE1931 (72%).	



Dispositivos integrados	<ul style="list-style-type: none"> • Hub USB 3.0 super-speed (com 1 x porta USB 3.0 a montante) • 2 x portas USB 3.0 a jusante • 2 x portas USB 2.0 a jusante 	
Portas e conectores	<ul style="list-style-type: none"> • 1 x DisplayPort versão 1.2 • 1 x porta HDMI versão 1.4 • 1 x porta VGA • 1 x porta USB 3.0 a montante (parte inferior) • 2 x portas USB 3.0 a jusante (lateral) • 2 x portas USB 2.0 a jusante (parte inferior) 	
Largura da borda (borda do monitor para a área ativa)	5,62 mm (Superior/ Esquerda/Direita) 19,99 mm (Parte inferior)	5,40 mm (Superior/ Esquerda/Direita) 19,86 mm (Parte inferior)
Ajustabilidade		
Suporte de altura ajustável	130 mm	
Inclinação	-5° a 21°	
Giro	-45° a 45°	
Pivô	-90° a 90°	
Compatibilidade do Dell Display Manager	Sim	
Segurança	Ranhura de trava de segurança (trava para cabo vendida separadamente)	

Modelo	P2419H	P2719H
Tipo de tela	Matriz ativa - LCD TFT	
Tecnologia de painel	Tecnologia tipo In-Plane Switching	
Formato de imagem	16:9	
Imagem visível		



Diagonal	604,52 mm (23,8 polegadas)	685,99 mm (27,0 polegadas)
Largura (área ativa)	527,04 mm (20,75 polegadas)	597,88 mm (23,54 polegadas)
Altura (área ativa)	296,46 mm (11,67 polegadas)	336,31 mm (13,24 polegadas)
Área total	156246,27 mm ² (242,16 polegadas ²)	201073,02 mm ² (311,67 polegadas ²)
Pontos Pixel	0,275 mm x 0,275 mm	0,311 mm x 0,311 mm
Pixels por polegada (PPI)	92	82
Ângulo de visualização	178° (vertical) típico 178° (horizontal) típico	
Saída de iluminação	250 cd/m ² (típico)	300 cd/m ² (típico)
Taxa de contraste	1000 a 1 (típico)	
Cobertura da superfície da placa	Antirreflexo com dureza 3H	
Luz de fundo	Sistema de luz da borda de LED	
Tempo de resposta	8 ms (Normal) 5 ms (Rápido)	
Profundidade da cor	16,7 milhões de cores	
Gama de cores	72% (CIE1931) NOTA: A gama de cores (típica) é baseada nos padrões de teste CIE1976 (82%) e CIE1931 (72%).	
Dispositivos integrados	<ul style="list-style-type: none"> • Hub USB 3.0 super-speed (com 1 x porta USB 3.0 a montante) • 2 x portas USB 3.0 a jusante • 2 x portas USB 2.0 a jusante 	



Portas e conectores	<ul style="list-style-type: none"> • 1 x DisplayPort versão 1.2 • 1 x porta HDMI versão 1.4 • 1 x porta VGA • 1 x porta USB 3.0 a montante (parte inferior) • 2 x portas USB 3.0 a jusante (lateral) • 2 x portas USB 2.0 a jusante (parte inferior) 	
Largura da borda (borda do monitor para a área ativa)	5,38 mm (Superior/ Esquerda/Direita) 20,31 mm (Parte inferior)	6,00 mm (Superior/ Esquerda/Direita) 20,70 mm (Parte inferior)
Ajustabilidade		
Suporte de altura ajustável	130 mm	
Inclinação	-5° a 21°	
Giro	-45° a 45°	
Pivô	-90° a 90°	
Compatibilidade do Dell Display Manager	Sim	
Segurança	Ranhura de trava de segurança (trava para cabo vendida separadamente)	

Especificações da Resolução

Modelo	P2219H/P2319H/P2419H/P2719H
Taxa de escaneamento horizontal	30 kHz a 83 kHz (automático)
Taxa de escaneamento vertical	56 Hz a 76 Hz (automático)
Mais alta resolução de pré-ajuste	1920 x 1080 a 60 Hz



Modos de vídeo suportados

Modelo	P2219H/P2319H/P2419H/P2719H
Recursos de exibição de vídeo (Reprodução VGA, HDMI & DP)	480i, 480p, 576i, 576p, 720p, 1080i, 1080p

Modos de Visualização Pré-ajustadas

Modo de Visualização	Frequência Horizontal (kHz)	Frequência Vertical (Hz)	Clock de Pixel (MHz)	Polaridade Sincronizada (Horizontal/ Vertical)
VESA, 640 x 480	31,5	60,0	25,2	-/-
VESA, 640 x 480	37,5	75,0	31,5	-/-
IBM, 720 x 400	31,5	70,0	28,3	-/+
VESA, 800 x 600	37,9	60,0	40,0	+/+
VESA, 800 x 600	46,9	75,0	49,5	+/+
VESA, 1024 x 768	48,4	60,0	65,0	-/-
VESA, 1024 x 768	60,0	75,0	78,8	+/+
VESA, 1152 x 864	67,5	75,0	108,0	+/+
VESA, 1280 x 1024	64,0	60,0	108,0	+/+
VESA, 1280 x 1024	80,0	75,0	135,0	+/+
VESA, 1600 x 900	60,0	60,0	108,0	+/+
VESA, 1920 x 1080	67,5	60,0	148,5	+/+



Especificações elétricas

Modelo	P2219H/P2319H/P2419H/P2719H
Sinais de entrada de vídeo	<ul style="list-style-type: none">• RGB analógico, 0,7 V +/- 5%, polaridade positiva a uma impedância de entrada de 75 ohms• HDMI 1.4, 600 mV para cada linha diferencial, 100 ohms de impedância de entrada por par diferencial• DisplayPort 1.2, 600 mV para cada linha diferencial, 100 ohms de impedância de entrada por par diferencial
Voltagem/frequência/corrente de entrada CA	100 VCA a 240 VCA / 50 Hz ou 60 Hz \pm 3 Hz / 1,5 A (típico)
Corrente de entrada	<ul style="list-style-type: none">• 120 V: 30 A (Máximo) a 0°C (inicialização a frio)• 240 V: 60 A (Máximo) a 0°C (inicialização a frio)

Características Físicas

Modelo	P2219H	P2319H
Tipo de cabo de sinal	<ul style="list-style-type: none">• Digital: DisplayPort, 20 pinos• Digital: HDMI, 19 pinos (cabo não incluído, exceto para o Brasil)• Analógico: D-Sub, 15 pinos (cabo não incluído, exceto para o Japão)• Barramento serial universal: USB, 9 pinos	
Dimensões (com o suporte)		
Altura (estendida)	472,0 mm (18,58 polegadas)	481,1 mm (18,94 polegadas)
Altura (comprimida)	353,4 mm (13,91 polegadas)	351,1 mm (13,82 polegadas)
Largura	487,3 mm (19,19 polegadas)	520,0 mm (20,47 polegadas)
Profundidade	166,0 mm (6,54 polegadas)	166,0 mm (6,54 polegadas)



Dimensões (sem o suporte)		
Altura	293,4 mm (11,55 polegadas)	311,7 mm (12,27 polegadas)
Largura	487,3 mm (19,19 polegadas)	520,0 mm (20,47 polegadas)
Profundidade	41,3 mm (1,63 polegadas)	41,3 mm (1,63 polegadas)
Dimensões do suporte		
Altura (estendida)	400,8 mm (15,78 polegadas)	400,8 mm (15,78 polegadas)
Altura (comprimida)	353,4 mm (13,91 polegadas)	353,4 mm (13,91 polegadas)
Largura	206,0 mm (8,11 polegadas)	206,0 mm (8,11 polegadas)
Profundidade	166,0 mm (6,54 polegadas)	166,0 mm (6,54 polegadas)
Base	206,0 mm x 166,0 mm (8,11 polegadas x 6,54 polegadas)	206,0 mm x 166,0 mm (8,11 polegadas x 6,54 polegadas)
Peso		
Peso com a embalagem	6,26 kg (13,80 lb)	7,00 kg (15,43 lb)
Peso com montagem do suporte e cabos	4,72 kg (10,41 lb)	5,11 kg (11,27 lb)
Peso sem montagem do suporte (Para fixação na parede, ou considerações para fixação VESA - sem os cabos)	2,75 kg (6,06 lb)	3,11 kg (6,86 lb)
Peso com montagem do suporte	1,62 kg (3,57 lb)	1,67 kg (3,68 lb)
Brilho da estrutura dianteira	2-4 (somente parte dianteira)	



Modelo	P2419H	P2719H
Tipo de cabo de sinal	<ul style="list-style-type: none"> Digital: DisplayPort, 20 pinos Digital: HDMI, 19 pinos (cabo não incluído) Analógico: D-Sub, 15 pinos (cabo não incluído, exceto para o Japão) Barramento serial universal: USB, 9 pinos 	<ul style="list-style-type: none"> Digital: DisplayPort, 20 pinos Digital: HDMI, 19 pinos (cabo não incluído, exceto para o Brasil) Analógico: D-Sub, 15 pinos (cabo não incluído, exceto para o Japão) Barramento serial universal: USB, 9 pinos
Dimensões (com o suporte)		
Altura (estendida)	486,1 mm (19,14 polegadas)	524,3 mm (20,64 polegadas)
Altura (comprimida)	356,1 mm (14,02 polegadas)	394,3 mm (15,52 polegadas)
Largura	537,8 mm (21,27 polegadas)	609,9 mm (24,01 polegadas)
Profundidade	166,0 mm (6,54 polegadas)	185,0 mm (7,28 polegadas)
Dimensões (sem o suporte)		
Altura	322,2 mm (12,68 polegadas)	363,0 mm (14,29 polegadas)
Largura	537,8 mm (21,17 polegadas)	609,9 mm (24,01 polegadas)
Profundidade	42,8 mm (1,69 polegadas)	42,8 mm (1,69 polegadas)
Dimensões do suporte		
Altura (estendida)	400,8 mm (15,78 polegadas)	418,4 mm (16,47 polegadas)
Altura (comprimida)	353,4 mm (13,91 polegadas)	371,0 mm (14,61 polegadas)
Largura	206,0 mm (8,11 polegadas)	245,0 mm (9,65 polegadas)
Profundidade	166,0 mm (6,54 polegadas)	185,0 mm (7,28 polegadas)
Base	206,0 mm x 166,0 mm (8,11 polegadas x 6,54 polegadas)	245,0 mm x 185,0 mm (9,65 polegadas x 7,28 polegadas)
Peso		
Peso com a embalagem	7,10 kg (15,65 lb)	9,05 kg (19,95 lb)



Peso com montagem do suporte e cabos	5,25 kg (11,57 lb)	6,67 kg (14,70 lb)
Peso sem montagem do suporte (Para fixação na parede, ou considerações para fixação VESA - sem os cabos)	3,26 kg (7,19 lb)	4,35 kg (9,59 lb)
Peso com montagem do suporte	1,67 kg (3,68 lb)	1,93 kg (4,25 lb)
Brilho da estrutura dianteira	2-4 (somente parte dianteira)	

Características de ambiente

Modelo	P2219H/P2319H/P2419H/P2719H
Compatível com as normas	
<ul style="list-style-type: none"> • Monitor certificado pela ENERGY STAR • EPEAT cadastrado onde aplicável. O registro EPEAT varia de acordo com o país. Consulte www.epeat.net para obter o status do registro por país. • Compatível com RoHS • Monitores com certificação TCO • Monitor livre de BFR/PVC (excluindo os cabos externos) • Vidro sem arsênico e sem mercúrio apenas para o painel 	
Temperatura	
Operação	0°C a 40°C (32°F a 104°F)
Fora de funcionamento	<ul style="list-style-type: none"> • Armazenamento: -20°C a 60°C (-4°F a 140°F) • Transporte: -20°C a 60°C (-4°F a 140°F)



Umidade	
Operação	20% a 80% (sem condensação)
Fora de funcionamento	<ul style="list-style-type: none"> • Armazenamento: 10% a 90% (sem condensação) • Transporte: 10% a 90% (sem condensação)
Altitude	
Operação	5000 m (16404 pés) (máximo)
Fora de funcionamento	12192 m (40000 pés) (máximo)
Dissipação térmica	
P2219H	<ul style="list-style-type: none"> • 126,24 BTU/hora (máxima) • 58,00 BTU/hora (típica)
P2319H	<ul style="list-style-type: none"> • 136,58 BTU/hora (máxima) • 54,63 BTU/hora (típica)
P2419H	<ul style="list-style-type: none"> • 143,40 BTU/hora (máxima) • 61,46 BTU/hora (típica)
P2719H	<ul style="list-style-type: none"> • 197,95 BTU/hora (máxima) • 64,85 BTU/hora (típica)

Modos de Gerenciamento de Energia

Se você possui uma cartão de vídeo ou software compatível com o padrão DPM™ da VESA instalado no computador, o monitor pode reduzir automaticamente o consumo de energia quando não estiver em uso. Chama-se **Modo de Economia de Energia***. Se o computador detectar algum sinal do teclado, mouse ou de outros dispositivos de entrada, o monitor voltará a funcionar automaticamente. A tabela seguinte mostra o consumo de energia e sinaliza esta característica de economia de energia automática.



P2219H

Modos VESA	Sincroni-zação Horizontal	Sincroni-zação Vertical	Vídeo	Indicador de Energia	Consumo de Energia
Operação normal	Ativo	Ativo	Ativo	Branco	36 W (máximo)** 14 W (típico)
Modo ativo desligado	Inativo	Inativo	Vazio	Branco (piscando)	Menos que 0,3 W
Desligar	-	-	-	Desligado	Menos que 0,3 W

Consumo de energia P_{on}	12,5 W
Consumo total de energia (TEC)	39,75 kWh

P2319H

Modos VESA	Sincroni-zação Horizontal	Sincroni-zação Vertical	Vídeo	Indicador de Energia	Consumo de Energia
Operação normal	Ativo	Ativo	Ativo	Branco	38,5 W (máximo) ** 15,2 W (típico)
Modo ativo desligado	Inativo	Inativo	Vazio	Branco (piscando)	Menos que 0,3 W
Desligar	-	-	-	Desligado	Menos que 0,3 W

Consumo de energia P_{on}	13,31 W
Consumo total de energia (TEC)	41,78 kWh



P2419H

Modos VESA	Sincroni-zação Horizontal	Sincroni-zação Vertical	Vídeo	Indicador de Energia	Consumo de Energia
Operação normal	Ativo	Ativo	Ativo	Branco	42 W (máximo)** 18 W (típico)
Modo ativo desligado	Inativo	Inativo	Vazio	Branco (piscando)	Menos que 0,3 W
Desligar	-	-	-	Desligado	Menos que 0,3 W

Consumo de energia P _{on}	13,34 W
Consumo total de energia (TEC)	41,92 kWh

P2719H

Modos VESA	Sincroni-zação Horizontal	Sincroni-zação Vertical	Vídeo	Indicador de Energia	Consumo de Energia
Operação normal	Ativo	Ativo	Ativo	Branco	54 W (máximo)** 16,3 W (típico)
Modo ativo desligado	Inativo	Inativo	Vazio	Branco (piscando)	Menos que 0,3 W
Desligar	-	-	-	Desligado	Menos que 0,3 W

Consumo de energia P _{on}	15 W
Consumo total de energia (TEC)	47,2 kWh

* Consumo de energia zero em modo DESLIGADO só pode ser alcançado desconectando o cabo principal do monitor.

** Máximo consumo de energia é medido em estado de luminância max, USB e ativo.



Este documento é apenas informativo e reflete o desempenho em laboratório. Seu produto pode ter desempenho diferente, dependendo do software, componentes e periféricos que você encomendou e a empresa não tem nenhuma obrigação de atualizar tais informações. Consequentemente, o cliente não deve contar com essas informações ao tomar decisões sobre tolerâncias elétricas ou de outro modo. Não há nenhuma garantia expressa ou implícita quanto à precisão ou integralidade.



NOTA: Este monitor é certificado pela ENERGY STAR.

Este produto se qualifica para o ENERGY STAR nas configurações padrão de fábrica que podem ser restauradas pela função "Restaurar Config. de Fábrica" do menu OSD. A alteração das configurações padrão de fábrica ou a habilitação de outras funções podem aumentar o consumo de energia que pode ultrapassar o limite especificado pelo ENERGY STAR.



NOTA:

P_{on}: Consumo de energia do modo Ligado como definido na versão 8.0 do ENERGY STAR.

TEC: Consumo total de energia em kWh conforme definido na versão 8.0 do ENERGY STAR.



Atribuição de Pinos

Conector VGA



Número de pinos	Lado de 15 pinos do Cabo de Sinal Conectado
1	Vídeo-Vermelho
2	Vídeo-Verde
3	Vídeo-Azul
4	GND
5	Autoteste
6	GND-R
7	GND-G
8	GND-B
9	Computador 5 V/3,3 V
10	Sincronização GND
11	GND
12	Dados DDC
13	Sincronização horizontal
14	Sincronização vertical
15	Relógio DDC



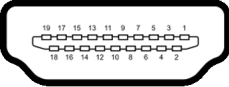
Conector DisplayPort



Número de pinos	Lado de 20 pinos do Cabo de Sinal Conectado
1	ML3(n)
2	GND
3	ML3(p)
4	ML2(n)
5	GND
6	ML2(p)
7	ML1(n)
8	GND
9	ML1(p)
10	ML0(n)
11	GND
12	ML0(p)
13	GND
14	GND
15	AUX(p)
16	GND
17	AUX(n)
18	Detecção de Tomada Quente
19	Re-PWR
20	+3,3 V DP_PWR



Conector HDMI



Número de pinos	Lado de 19 pinos do Cabo de Sinal Conectado
1	DADOS TMDS 2+
2	BLINDAGEM DADOS TMDS 2
3	DADOS TMDS 2-
4	DADOS TMDS 1+
5	BLINDAGEM DADOS TMDS 1
6	DADOS TMDS 1-
7	DADOS TMDS 0+
8	BLINDAGEM DADOS TMDS 0
9	DADOS TMDS 0-
10	CLOCK TMDS+
11	BLINDAGEM CLOCK TMDS
12	CLOCK TMDS-
13	CEC
14	Reservado (N.C. no dispositivo)
15	CLOCK DDC (SCL)
16	DADOS DDC (SDA)
17	Aterramento DDC/CEC
18	ALIMENTAÇÃO +5 V
19	DETECÇÃO DE TOMADA QUENTE



Capacidade Plug and Play

Você pode instalar o monitor em qualquer sistema compatível Plug and Play. O monitor fornece automaticamente o sistema do computador com seu Dado de Identificação de Visualização Estendida (EDID) utilizando os protocolos de Canal de Dados de Visualização (DDC) para que o sistema possa se configurar e melhorar os ajustes do monitor. A maioria das instalações de monitor é automática; se desejar, é possível selecionar configurações diferentes. Para mais informações sobre como alterar as configurações do monitor, consulte [Operação do monitor](#).

Interface Bus Serial Universal (USB)

Esta seção lhe dá informações sobre as portas USB que estão disponíveis no monitor.

 **NOTA: Este monitor é compatível com USB 3.0 Super-Speed e USB 2.0 de alta velocidade.**

USB 3.0

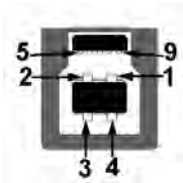
Velocidade de transferência	Taxa de dados	Consumo de Energia
Super-speed	5 Gbps	4,5 W (Máx., cada porta)
Alta Velocidade	480 Mbps	4,5 W (Máx., cada porta)
Velocidade total	12 Mbps	4,5 W (Máx., cada porta)

USB 2.0

Velocidade de transferência	Taxa de dados	Consumo de Energia
Alta Velocidade	480 Mbps	2,5 W (Máx., cada porta)
Velocidade total	12 Mbps	2,5 W (Máx., cada porta)
Velocidade baixa	1,5 Mbps	2,5 W (Máx., cada porta)



Conector USB 3.0 a montante



Número de pinos	9 pinos na lateral do conector
1	VCC
2	D-
3	D+
4	GND
5	SSTX-
6	SSTX+
7	GND
8	SSRX-
9	SSRX+

Conector USB 3.0 a jusante

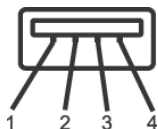


Número de pinos	9 pinos na lateral do conector
1	VCC
2	D-
3	D+
4	GND
5	SSRX-



6	SSRX+
7	GND
8	SSTX-
9	SSTX+


Conector USB 2.0 a jusante



Número de pinos	4 pinos na lateral do conector
1	VCC
2	DMD
3	DPD
4	GND

Portas USB

- 1 a montante - parte inferior
- 2 a jusante - parte inferior
- 2 a jusante - lateral

 **NOTA: A funcionalidade do USB 3.0 necessita de um computador com capacidade para USB 3.0.**

 **NOTA: As portas USB do monitor funcionam apenas quando o monitor está Ligado ou em modo de economia de energia. Se você desligar o monitor e depois ligá-lo, os periféricos anexados podem levar alguns segundos para voltar ao funcionamento normal.**

Qualidade do monitor de LCD e política de pixel

Durante o processo de fabricação do Monitor LCD, é comum que um ou mais pixels se tornem fixos em um estado imutável, que é difícil de ver e não afeta a qualidade de visualização ou capacidade de uso. Para mais informações sobre os Pixels e Qualidade do Monitor, consulte www.dell.com/support/monitors.



Diretrizes de manutenção

Limpando Seu Monitor

 **CUIDADO:** Leia e siga as [Instruções de segurança](#) antes de limpar o monitor.

 **ALERTA:** Antes de limpar o monitor, retire o cabo de energia do monitor da saída elétrica.



Para as melhores práticas, siga as instruções na lista abaixo ao desembalar, limpar, ou manusear o monitor:

- Para limpar sua tela antiestática, passe gentilmente com um pano limpo e macio com água. Se possível, utilize um tecido de limpar telas especiais ou solução apropriada para cobertura antiestática. Não utilize benzina, tiner, amônia, limpadores abrasivos ou ar comprimido.
- Use um pano levemente umedecido com água morna para limpar o monitor. Evite usar detergente porque alguns tipos deixam um filme esbranquiçado no monitor.
- Se observar a presença de um pó branco ao desembalar o monitor, limpe-o com um pano.
- Manuseie o monitor com cuidado porque o monitor de cor escura pode ser arranhado e mostrar marcas de riscos brancos mais que um monitor de cor clara.
- Para manter a melhor qualidade de imagem do monitor, use um protetor de tela que se altere dinamicamente e desligue o monitor quando não estiver em uso.



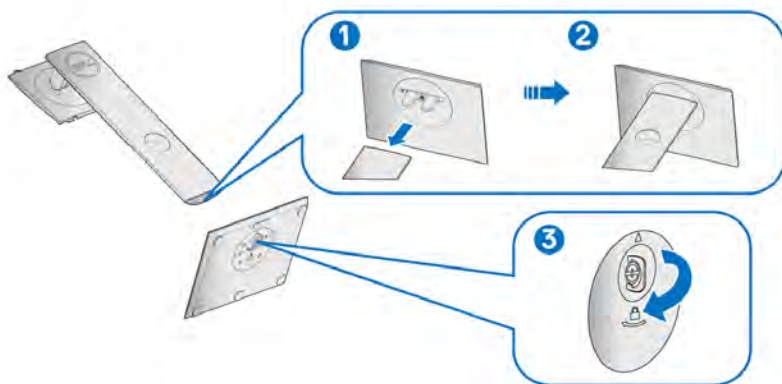
Ajuste do monitor

Fixação do suporte

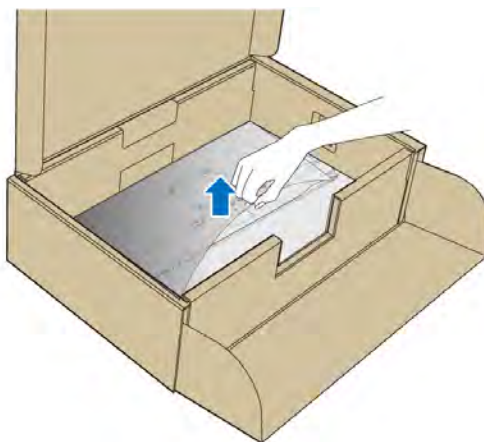
-  **NOTA:** Quando enviado, o suporte não é instalado em fábrica.
-  **NOTA:** As instruções a seguir são aplicáveis apenas para a fixação do suporte enviado com seu monitor. Se estiver fixando um suporte comprado de outra fonte, siga as instruções de configuração incluídas com o suporte.

Para fixar o suporte do monitor:

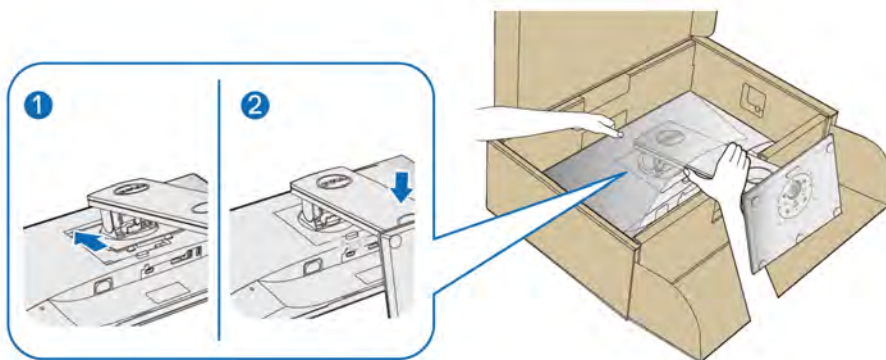
1. Siga as instruções das abas da caixa para remover o suporte da almofada superior que o fixa.
2. Insira os blocos da base do suporte totalmente no slot do suporte.
3. Levante o manípulo do parafuso e gire o parafuso no sentido horário.
4. Após apertar totalmente o parafuso, dobre o manípulo do parafuso para dentro do rebaixo.




5. Levante a tampa, conforme exibido, para expor a área VESA para a montagem do suporte.



6. Fixe o conjunto do suporte no monitor.
- a. Instale as duas linguetas na parte superior do suporte na ranhura da parte traseira do monitor.
 - b. Pressione o suporte até que ele fique encaixado no lugar.



7. Coloque o monitor na vertical.

 **NOTA: Levante o monitor cuidadosamente para impedir que ele escorregue ou caia.**



Conectando seu monitor

⚠ ALERTA: Antes de iniciar qualquer procedimento desta seção, siga as [Instruções de segurança](#).

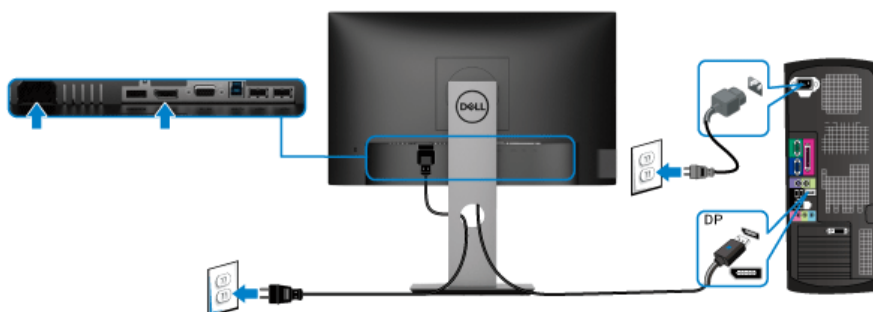
✍ NOTA: Passe os cabos através da fenda de passagem do cabo antes de conectá-los.

✍ NOTA: Não conecte todos os cabos no computador ao mesmo tempo.

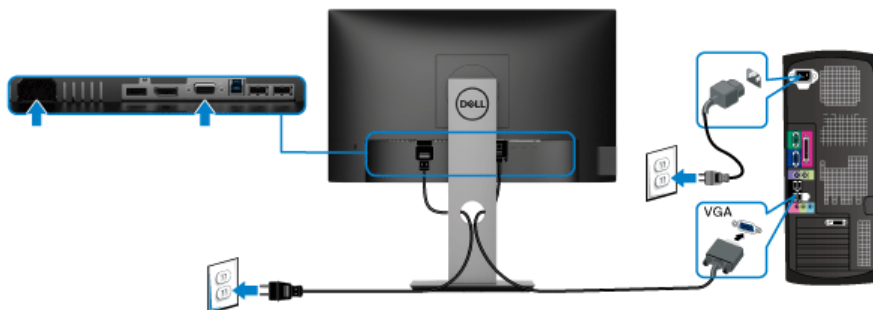
Para conectar seu monitor ao computador:

1. Desligue seu computador e desconecte o cabo de energia.
2. Conecte o cabo VGA, DisplayPort ou HDMI do seu monitor no computador.

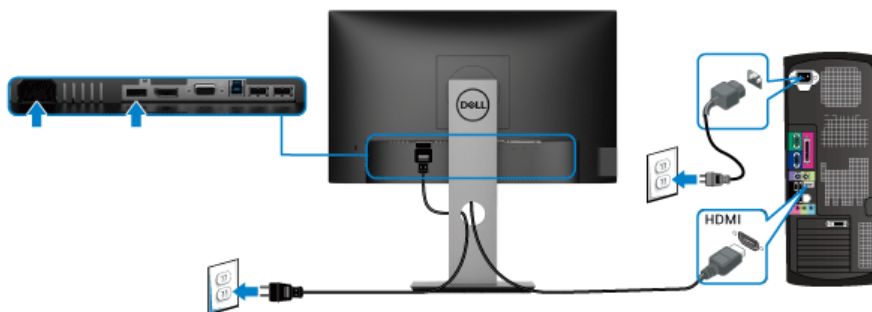
Conectando o cabo DisplayPort (DisplayPort a DisplayPort)



Conectando o cabo VGA azul (opcional)



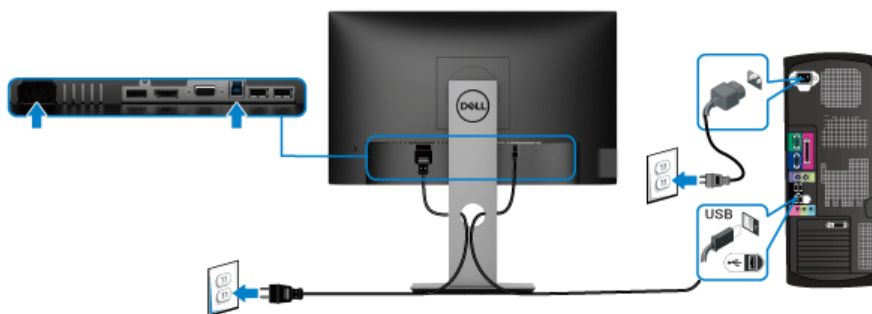
Conectando o cabo HDMI (opcional)



NOTA: Os Gráficos são utilizados apenas para propósito de ilustração. A aparência do computador pode variar.

Conectando o cabo USB 3.0

Depois de você terminar a conexão do cabo VGA/DisplayPort/HDMI, siga os procedimentos abaixo para conectar o cabo USB 3.0 no computador e completar o ajuste do seu monitor:



1. Conecte o cabo USB 3.0 a montante (cabo fornecido) à porta a jusante do monitor e depois a porta USB 3.0 apropriada em seu computador. (Veja [Visão inferior](#) para detalhes.)
2. Conecte os periféricos USB 3.0 às portas a jusante USB 3.0 do monitor.
3. Conecte os cabos de energia para seu computador e monitor em uma saída próxima.

NOTA: Utilize um suporte para cabos no suporte do monitor para organizar os cabos.



4. Ligue seu monitor e computador.


Se o seu monitor visualiza uma imagem, a instalação está completa. Se não visualizar nenhuma imagem, veja [Problemas específicos do barramento serial universal \(USB\)](#).


Organizando seus cabos



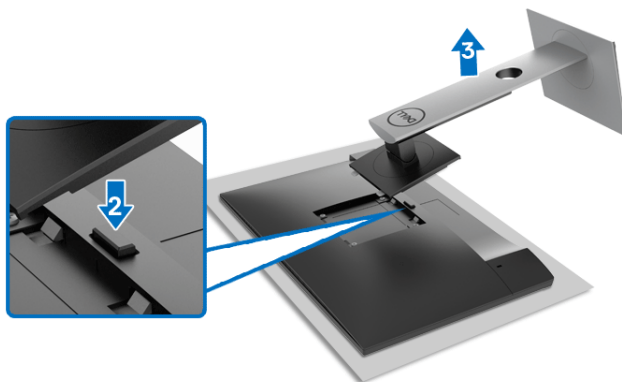
Depois de anexar todos os cabos necessários ao seu monitor e computador, (Veja [Conectando seu monitor](#) para anexar um cabo,) utilize o slot de gerenciamento de cabos para organizar todos os cabos como mostrado acima.

Remoção do suporte do monitor

 **NOTA:** Para prevenir arranhões na tela LCD ao remover o suporte, certifique-se que o monitor fique posicionado em uma superfície macia e limpa.

 **NOTA:** As instruções a seguir são aplicáveis apenas para a fixação do suporte enviado com seu monitor. Se estiver fixando um suporte comprado de outra fonte, siga as instruções de configuração incluídas com o suporte.





Pare remover o suporte:

1. Coloque o monitor sobre uma almofada ou pano macio.
2. Pressione e segure o botão de liberação do Suporte.
3. Levante o suporte afastando-o do monitor.

Suporte de parede VESA (opcional)



(Dimensão do Parafuso: M4 x 10 mm).

Consultar as instruções que vêm com o kit de montagem de parede compatível com o padrão VESA.

1. Colocar o painel do monitor sobre um pano macio ou almofada em uma mesa plana estável.
2. Remover o suporte. (Veja [Remoção do suporte do monitor](#))



3. Usar uma chave Phillips para remover os quatro parafusos que fixam a tampa plástica.
4. Fixar o suporte de montagem do kit de montagem de parede no monitor.
5. Monte o monitor na parede. Para obter mais informações, consulte a documentação enviada com o kit de montagem em parede.



NOTA: Para uso apenas com suporte de montagem em parede listado no UL, CSA ou GS com capacidade mínima de peso ou carga de 11,00 kg (P2219H) / 12,44 kg (P2319H) / 13,04 kg (P2419H) / 17,40 kg (P2719H).



Operação do monitor

Ligação do monitor

Pressione o botão liga/desliga para ligar o monitor.



Uso dos controles do painel frontal




Use os botões de controle na frente do monitor para ajustar as configurações.



A tabela a seguir descreve os botões do painel frontal:

Botão do painel frontal		Descrição
1		Usar este botão para selecionar a partir de uma lista de modos de cor predefinidos.
Tecla de atalho/ Modos predefinidos		
2		Use esse botão para escolher de uma lista de sinais de vídeo que podem ser conectados ao seu monitor.
Tecla de atalho/ Origem de entrada		







3		Usar o botão MENU para abrir a exibição na tela (OSD). Ver Acesso ao Sistema do Menu .
4		Use esse botão para sair do menu principal da OSD.
5		Usar o botão liga/desliga para ligar e desligar o monitor. A luz branca indica que o monitor está ligado e totalmente funcional. A luz branca intermitente indica o modo de economia de energia.

Botão do painel frontal

Use os botões da frente do monitor para ajustar as configurações da imagem.





Botão do painel frontal		Descrição
1	 Cima	Use o botão para Cima para ajustar (aumentar as faixas) os itens no menu OSD.
2	 Baixo	Use o botão para Baixo para ajustar (diminuir as faixas) os itens no menu OSD.
3	 OK	Use o botão OK para confirmar sua seleção.
4	 Voltar	Use o botão Voltar para voltar ao menu anterior.



Uso do Menu de Visualização na Tela (OSD)










Acesso ao Sistema do Menu

 **NOTA: Se você mudar os ajustes e depois também continuar com outro menu ou sair do menu OSD, o monitor automaticamente salva estas mudanças. As mudanças também são salvas, se você mudar os ajustes e depois esperar que o menu OSD desapareça.**

1. Pressionar o botão  para lançar o menu OSD e visualizar o menu principal.



 **NOTA: O Ajuste automático está disponível apenas quando você usa o conector (VGA) analógico.**

2. Pressionar os botões  e  para se mover entre as opções de ajuste. Se você se mover de um ícone para outro, o nome da opção é evidenciado. Ver a seguinte tabela para uma lista completa de todas as opções disponíveis para o monitor.
3. Pressionar o botão  ou  ou  uma vez para ativar a opção destacada.
4. Pressionar os botões  e  para selecionar o parâmetro desejado.
5. Pressione  para entrar no submenu e depois use os botões direcionais, de acordo com os indicadores no menu, para fazer suas mudanças.
6. Selecionar a botão  para retornar ao menu principal.



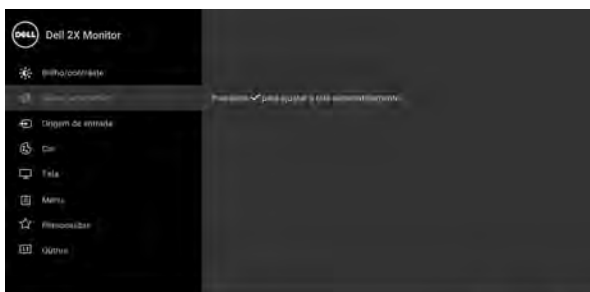
ícone	Nome de menu e submenu	Descrição
	Brilho/contraste	Use este menu para ativar os ajustes de Brilho/contraste .
		
Brilho	<p>Brilho ajusta a luminosidade da luz de fundo.</p> <p>Pressionar o botão  para aumentar o brilho e pressionar o botão  para diminuir o brilho (mín 0 / máx 100).</p> <p>NOTA: O ajuste manual do Brilho é desabilitado quando o recurso o Contraste dinâmico está ligado.</p>	
Contraste	<p>Ajustar primeiro o Brilho e depois o Contraste, apenas se for necessário um ajuste posterior.</p> <p>Pressionar o botão  para aumentar o contraste e pressionar o botão  para diminuir o contraste (mín 0 / máx 100).</p> <p>A função de Contraste ajusta o grau de diferença entre a escuridão e a claridade na tela do monitor.</p>	



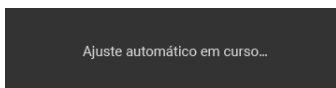


Ajuste automático

Use esse menu para ativar o menu de ajuste e configuração automática.



O **Ajuste automático** permite que o monitor se ajuste automaticamente com o sinal de vídeo em entrada. Após usar o **Ajuste automático**, você pode também sintonizar seu monitor usando os controles de **Clock de pixel** (Bruto) e **Fase** (Fino), nos configurações de **Tela**.



NOTA: Em muitos casos, o **Ajuste automático** produz a melhor imagem para a sua configuração.

NOTA: A opção **Ajuste automático** só está disponível quando você estiver usando o conector analógico (VGA).





Origem de entrada

Use o menu **Origem de entrada** para seleccionar entre diferentes sinais de vídeo que podem ser conectados ao seu monitor.



VGA

Selecione a entrada **VGA** quando estiver usando o conector analógico (VGA).

DP

Selecione a entrada da **DP** quando estiver usando o conector da DisplayPort (DP).

HDMI

Selecione a entrada **HDMI** quando estiver usando o conector HDMI.

Seleção automática

Ligar a função permite que você verifique as fontes de entrada disponíveis.

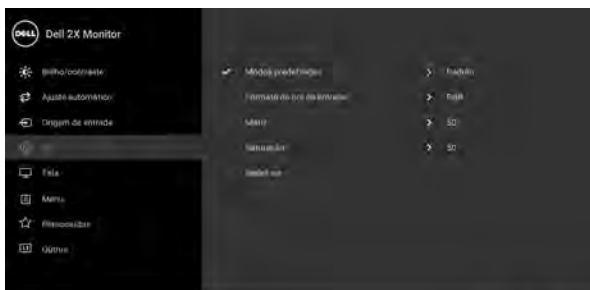
Redef origem de entrada

Redefine as configurações de entrada do monitor para as configurações de fábrica.



Cor

Use **Cor** para ajustar o modo de ajuste de cor.



**Modos
predefinidos**

Permite que você escolha de uma lista de modos de cor predefinidos.

- **Padrão:** Carrega os ajustes de cor padrão do monitor. Este é o modo de pré-ajuste padrão.
- **ComfortView:** Diminui o nível de luz azul emitida da tela para tornar a visualização mais confortável para os olhos.

ALERTA: Os possíveis efeitos de longo prazo da emissão de luz azul do monitor podem ser lesões pessoais como cansaço visual digital, fadiga ocular e danos aos olhos. O uso do monitor por períodos extensos pode causar dor em partes do corpo como pescoço, braço, costas e ombros.



Para reduzir o risco de cansaço visual e dor no pescoço/braço/costas/ombros por usar o monitor por períodos prolongados, sugerimos que você:

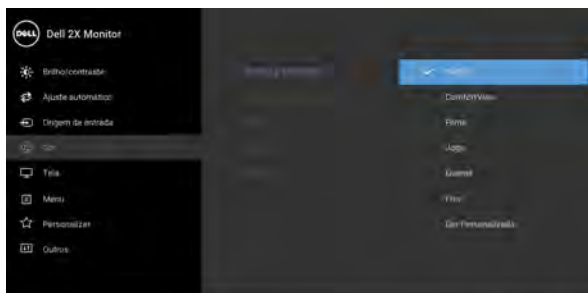
1. Ajuste a distância da tela de 50 a 70 cm (20 a 28 polegadas) de seus olhos.
 2. Pisque frequentemente para umedecer os olhos ou umedeça os olhos com água após uso prolongado do monitor.
 3. Faça intervalos regulares e frequentes por 20 minutos a cada duas horas.
 4. Olhe para longe do monitor e foque em um objeto a cerca de 20 pés de distância por pelo menos 20 segundos durante os intervalos.
 5. Execute alongamentos para aliviar a tensão no pescoço, braço, costas e ombros durante os descansos.
- **Filme:** Carrega as funções de cor ideais para os filmes.
 - **Jogo:** Carrega os ajustes de cor ideais para a maioria das aplicações de jogos.
 - **Quente:** Aumenta a temperatura da cor. A tela parece mais quente com tinta vermelha/amarela.
-



Modos predefinidos

- **Frio:** Diminui a temperatura da cor. A tela parece mais frio com uma tinta azul.
- **Cor Personalizada:** Permite que você ajuste manualmente os ajustes de cor.

Use os botões  e  para ajustar aos valores das três cores (R, G, B) e criar seu próprio modo de pré-ajuste de cor.

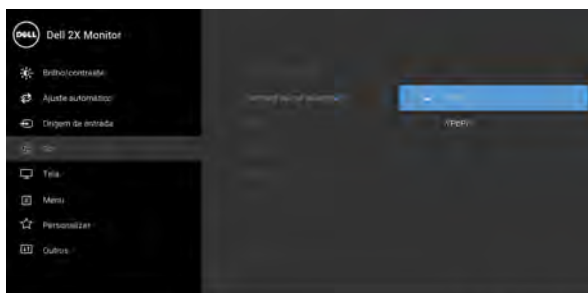


Formato de cor de entrada

Permite que você configure o modo de entrada de vídeo para:

RGB: Selecione essa opção se o seu monitor estiver conectado a um computador (ou reprodutor de DVD) usando um cabo DisplayPort ou HDMI.

YPbPr: Selecione essa opção se seu reprodutor de DVD suportar apenas saída YPbPr.



Matiz

Esta função pode mudar a cor da imagem de vídeo para verde ou roxo. Ela é usada para ajustar a cor do tom de pele desejado. Use ▲ ou ▼ para ajustar a matiz de '0' a '100'.

NOTA: O ajuste de **Matiz** está disponível apenas quando se seleciona o modo predefinido **Filme** ou **Jogo**.

Saturação

Esta função pode ajustar a saturação de cor da imagem de vídeo. Use ▲ ou ▼ para ajustar a saturação de '0' a '100'.

NOTA: O ajuste de **Saturação** está disponível apenas quando se seleciona o modo predefinido **Filme** ou **Jogo**.

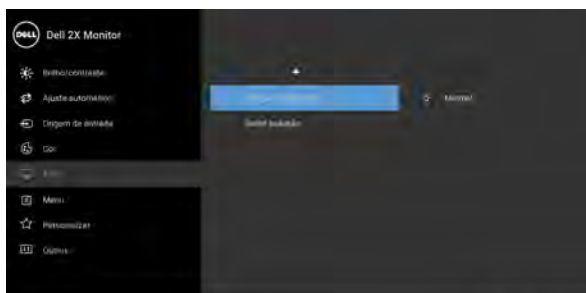
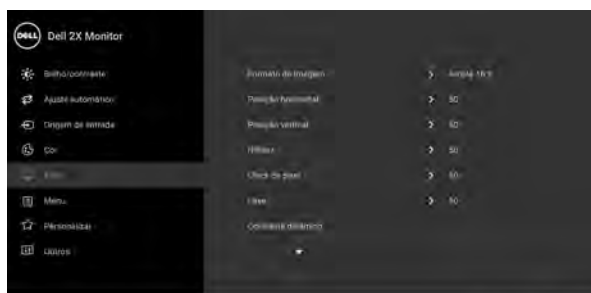
Redef cor











Restabelecer os ajustes de cor de seu monitor com os ajustes de fábrica.



Tela

Use **Tela** para ajustar a imagem.



Formato de imagem	Ajuste a proporção de imagem para Ampla 16:9, 4:3 , ou 5:4 .
Posição horizontal	Use  ou  para ajustar a imagem à esquerda ou direita. O mínimo é '0' (-). O máximo é '100' (+).
Posição vertical	Use  ou  para ajustar a imagem para cima ou para baixo. O mínimo é '0' (-). O máximo é '100' (+). NOTA: Os ajustes Posição horizontal e Posição vertical estão disponíveis apenas para a entrada VGA.
Nitidez	Esta função pode fazer a imagem parecer mais nítida ou mais suave. Use  ou  para ajustar a nitidez de '0' a '100'.
Clock de pixel	Os ajustes de Fase e de Clock de pixel permitem que você ajuste seu monitor às suas preferências. Use  ou  para ajustar uma melhor qualidade de imagem.
Fase	Se resultados satisfatórios não forem obtidos usando o ajuste de Fase , usar o ajuste do Clock de pixel (bruto) e depois usar Fase (fino), novamente. NOTA: O Clock de pixel e os ajustes de Fase estão disponíveis apenas para a entrada VGA.
Contraste dinâmico	Permite que você aumente o nível de contraste para obter imagens mais detalhadas e nítidas. Pressione  para entrar no submenu. Em seguida use  para ligar ou desligar a função Contraste dinâmico . NOTA: O Contraste dinâmico fornece um contraste maior se você selecionar o modo predefinido Jogo ou Filme .

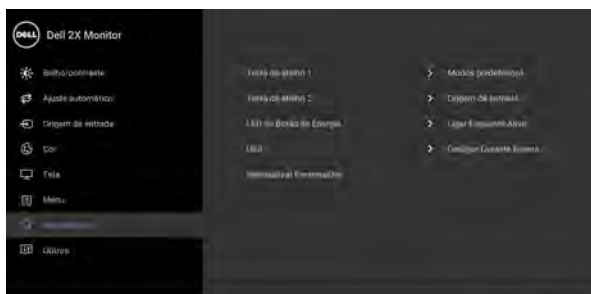


	Tempo de Resposta	Permite a configuração do Tempo de Resposta para Normal ou Rápido .
	Redef exibição	Selecionar esta opção para restaurar os ajustes de visualização padrão.
	Menu	Selecionar esta opção para ajustar os ajustes do OSD, tais como, as línguas do OSD, a quantidade de tempo que o menu permanece na tela e assim por diante.
		 
	Idioma	Ajusta a exibição OSD para um dos oito idiomas (Inglês, Espanhol, Francês, Alemão, Português do Brasil, Russo, Chinês Simplificado ou Japonês).
	Rotação	Gira o OSD em 90 graus no sentido anti-horário. Você pode ajustar o menu de acordo com sua Rotação do Monitor .
	Transparência	Selecione esta opção para mudar a transparência do menu pressionando os botões  e  (mín 0 / máx 100).
	Cronômetro	<p>Ajusta a quantidade de tempo que o OSD permanecerá ativo, depois da última vez que tiver pressionado o botão.</p> <p>Use  ou  para ajustar o cursor em aumentos de 1 segundo, de 5 a 60 segundos.</p>
	Redef menu	Reinicializar todos os ajustes OSD nos valores de pré-ajuste de fábrica.





Personalizar



Tecla de atalho 1

Tecla de atalho 2

LED do Botão de Energia

USB

Reinicializar Personalizar

Permite que você escolha um recurso dos **Modos predefinidos, Brilho/Contraste, Ajuste automático, Origem de entrada, Formato de imagem** ou **Rotação** e defini-lo como uma tecla de atalho.

Permite definir o indicador LED de energia como ligado ou desligado para economizar energia.

Permite ativar ou desativar a função USB durante o modo de espera do monitor.

NOTA: USB LIGADO/DESLIGADO em modo de espera só estará disponível quando o cabo a montante USB estiver desconectado. Esta opção será desativada quando o cabo a montante USB for conectado.

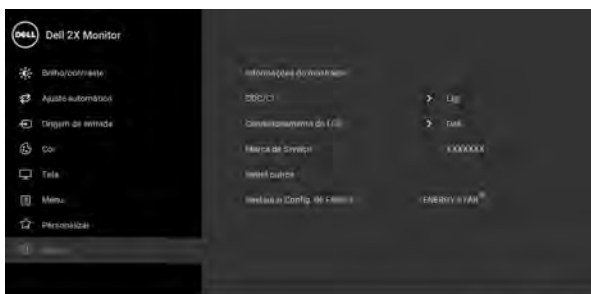
Redefinir todas as configurações do menu **Personalizar** com os valores predefinidos de fábrica.





Outros

Selecione essa opção para ajustar as configurações OSD tais como **DDC/CI**, **Condicionamento do LCD**, etc.

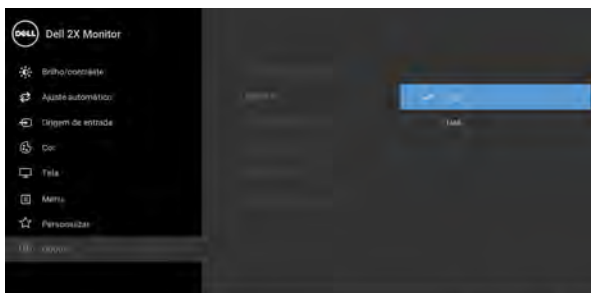


Informações do mostrador

Exibe as configurações atuais do monitor.

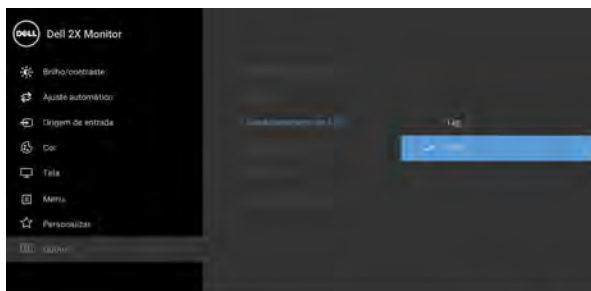
DDC/CI

O **DDC/CI** (Canal de Dados de Visualização/Interface de Comando) permite que os parâmetros de seu monitor (brilho, equilíbrio de cor, etc) sejam ajustáveis através do software no seu computador. Você pode desabilitar esse recurso selecionando **Des.** Habilitar esta função para uma melhor experiência do usuário e um ótimo desempenho de seu monitor.



Condição- mento do LCD

As ajudas diminuem os casos menores de retenção de imagem. Dependendo do grau de retenção de imagem, o programa pode levar algum tempo para funcionar. Você pode habilitar esse recurso selecionando **Lig.**



Marca de Serviço

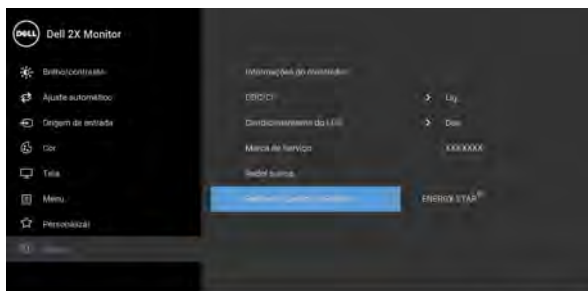
Exibe a marca de serviço de seu monitor. Essa sequência é necessária quando você buscar suporte por telefone, verificar o status de sua garantia, atualizar drivers no site da Dell, etc.

Redef outros

Restabelece todas as configurações do menu **Outros** para os valores predefinidos em fábrica.

Restaurar Config. de Fábrica

Restaura todos os valores predefinidos para as configurações padrão de fábrica. Essas também são as configurações para os testes do ENERGY STAR®.

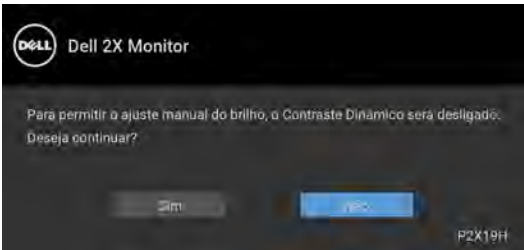


NOTA: Esse monitor tem um recurso integrado para calibrar automaticamente o brilho para compensar o envelhecimento dos LEDs.

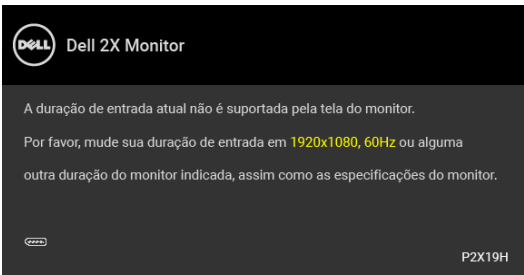


Mensagem de Advertência OSD

Quando o recurso **Contraste dinâmico** está habilitado (nesses modos predefinidos: **Jogo** ou **Filme**), o ajuste manual do brilho é desabilitado.



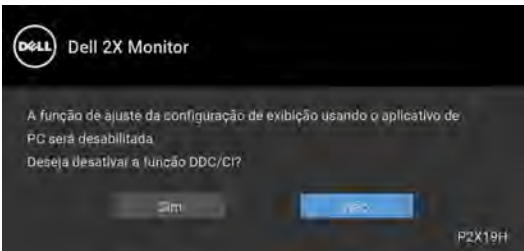
Quando o monitor não suporta um modo de resolução em particular, você verá a seguinte mensagem:



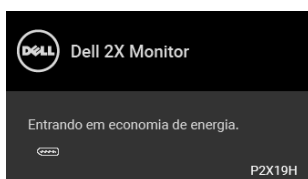
Isto significa que o monitor não pode sincronizar com o sinal que está sendo recebido no seu computador. Veja as [Especificações do Monitor](#) para os intervalos de frequência Horizontal e Vertical dirigidos a este monitor. O modo recomendado é 1920 x 1080.

 **NOTA: A mensagem pode ser ligeiramente diferente dependendo do sinal de entrada conectado.**

Você verá a seguinte mensagem, antes que a função DDC/CI seja desativada:



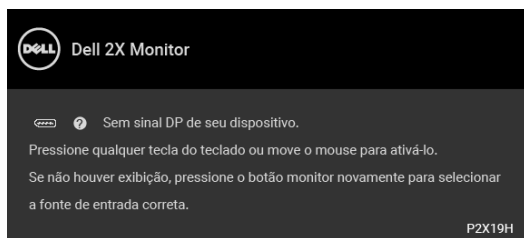
Quando o monitor entra no modo de economia de energia, aparece a seguinte mensagem:



NOTA: A mensagem pode ser ligeiramente diferente dependendo do sinal de entrada conectado.

Ativa o computador e o monitor para permitir o acesso a [OSD](#).

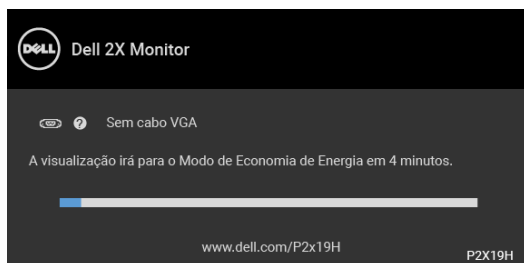
O OSD será a única função no modo de operação normal. Se você pressionar qualquer botão que não o liga/desliga durante o Modo ativo desligado, a seguinte mensagem será exibida dependendo da entrada selecionada:



Ativar o computador e o monitor para obter o acesso ao OSD.

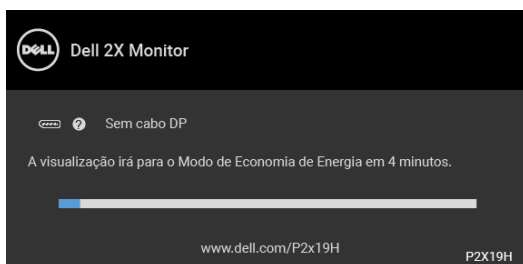
NOTA: A mensagem pode ser ligeiramente diferente dependendo do sinal de entrada conectado.

Se a entrada VGA, HDMI ou DisplayPort estiver selecionada e os cabos correspondentes não estiverem ligados, aparece uma caixa de diálogo flutuante, como a que é mostrada abaixo.

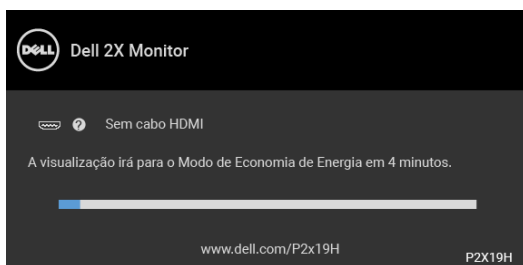


OU





OU



Veja [Solução de Problemas](#) para mais informações.

Configuração da Resolução Máxima

Para configurar a resolução Máxima para o monitor:

No Windows® 7, Windows® 8 e Windows® 8.1:

1. Apenas para Windows® 8 e Windows® 8.1, selecione o ladrilho Área de trabalho para mudar para a área de trabalho clássica.
2. Clique com o botão direito na área de trabalho e selecione **Resolução de Tela**.
3. Clique na lista suspensa de **Resolução de tela** e selecione **1920 x 1080**.
4. Clique em **OK**.

No Windows® 10:

1. Clique com o botão direito do mouse na área de trabalho e clique em **Configurações de Vídeo**.
2. Clique em **Configurações de vídeo avançadas**.
3. Clique na lista suspensa de **Resolução** e selecione **1920 x 1080**.
4. Clique em **Aplicar**.



Se não existir a opção 1920 x 1080, poderá ser preciso atualizar o driver da placa de vídeo. Dependendo do seu computador, complete um dos seguintes procedimentos:

Se você possui um computador de mesa Dell ou portátil:

- Acesse <http://www.dell.com/support>, digite a etiqueta de serviço e faça o download da versão mais recente da placa de vídeo.

Se você estiver usando um computador não Dell (portátil ou de mesa):

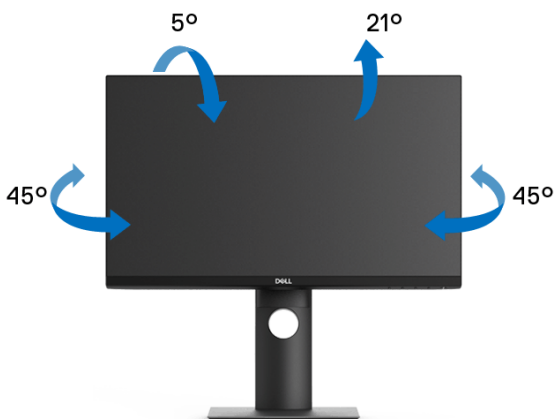
- Vá para o site de suporte do seu computador e faça o download dos mais recentes drivers de gráficos.
- Vá para o website da placa gráfica e faça o download dos mais recentes drivers gráficos.

Usando a extensão vertical, articulação e inclinação

NOTA: As instruções a seguir são aplicáveis apenas para a fixação do suporte enviado com seu monitor. Se estiver fixando um suporte comprado de outra fonte, siga as instruções de configuração incluídas com o suporte.

Inclinação, Giro


Com o suporte fixado no monitor, você pode girar e inclinar o monitor para obter um ângulo de visualização mais confortável.



NOTA: Quando enviado, o suporte não é instalado em fábrica.



Extensão Vertical

 **NOTA:** O suporte se estende verticalmente até 130 mm. As figuras abaixo mostram como estender o suporte verticalmente.



Girando o monitor

Antes de girar o monitor, ele deverá ser estendido no sentido vertical totalmente ([Extensão Vertical](#)) e completamente inclinado para cima para evitar que ele bata no canto inferior do monitor.




Gire no sentido horário



Gire no sentido anti-horário




 **NOTA:** Para usar a função de Rotação do Monitor (Vista Paisagem x Retrato) com seu computador Dell, você irá precisar do driver de gráficos atualizado, que não está incluído com este monitor. Para o download do driver de gráficos, vá para www.dell.com/support e veja a seção de Download para os Drivers de Vídeo para as mais recentes atualizações do driver.



 **NOTA:** Quando no Modo de Visualização Paisagem, você pode ter uma diminuição da performance nas aplicações intensivas de gráficos (Jogos 3D, etc.).


Ajustando as configurações de exibição de rotação do seu sistema

Se você girou seu monitor, precisará completar o procedimento abaixo, para ajustar as Configurações de Exibição de Rotação de seu sistema.

 **NOTA:** Se você está usando o monitor com um computador não Dell, precisará ir para o website do driver de gráficos ou website do fabricante de seu computador para informações sobre a rotação de seu sistema operativo.

Para ajustar as Configurações de Exibição de Rotação

1. Faça um clique direito na área de trabalho e selecione **Propriedades**.
2. Selecione a guia **Configurações** e clique em **Avançado**.
3. Se você possui uma placa gráfica ATI, selecione a guia **Rotação** e ajuste a rotação preferida.
4. Se você possui uma placa gráfica nVidia, clique na guia **nVidia**, na coluna esquerda selecione **NVRotate** e depois selecione a rotação preferida.
5. Se você possui uma placa gráfica Intel[®], selecione a guia de gráficos **Intel**, clique em **Propriedades dos Gráficos**, selecione a etiqueta **Rotação** e depois ajuste a rotação preferida.

 **NOTA:** Se você não vê a opção de rotação ou ele não estiver funcionando corretamente, vá para www.dell.com/support e faça o download do mais recente driver para a sua placa gráfica.



Solução de Problemas

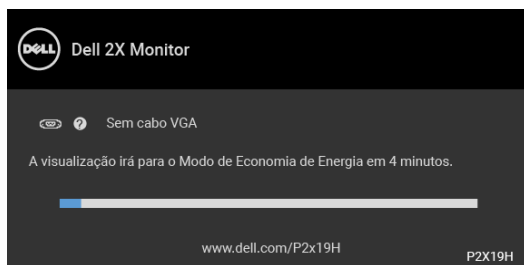
⚠ ALERTA: Antes de iniciar qualquer procedimento desta seção, siga as [Instruções de segurança](#).

Autoteste

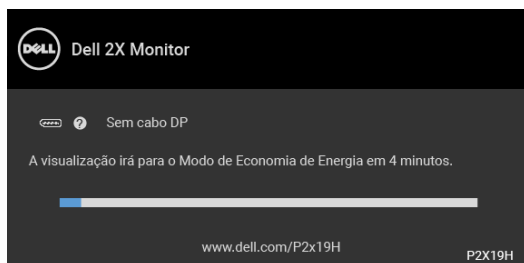
Seu monitor fornece uma característica de teste automático que permite você verificar quando seu monitor está trabalhando apropriadamente. Se o seu monitor e computador estão apropriadamente conectados, mas a tela do monitor continua escura, execute o teste automático do monitor desempenhando os seguintes passos:

1. Desligue seu computador e monitor.
2. Desconecte o cabo de vídeo da parte traseira do computador.
3. Ligue o monitor.

A caixa de diálogo flutuante aparecerá na tela (sobre um fundo preto) se o monitor não conseguir detectar um sinal de vídeo e estiver funcionando corretamente. Enquanto estiver em modo de teste automático, o LED de energia continua branco. Além disto, dependendo da entrada selecionada, um dos diálogos abaixo mostrados irão continuar a passar pela tela.

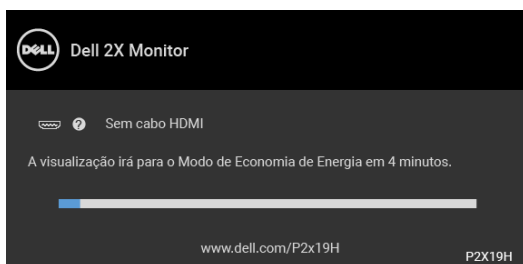


OU



OU






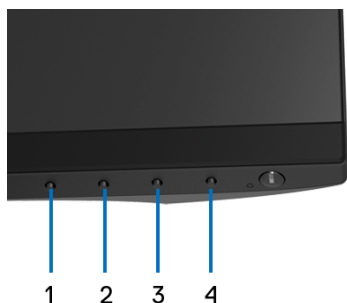
4. Esta caixa também aparecerá durante a operação normal do sistema se o cabo de vídeo estiver desconectado ou danificado.
5. Desligue seu monitor e reconecte o cabo de vídeo; depois ligue o seu computador e monitor.

Se a tela do monitor permanecer sem imagem após o procedimento anterior, verifique o controlador de vídeo e o computador, porque o monitor está funcionando normalmente.

Diagnósticos integrados

O monitor tem uma ferramenta de diagnóstico integrado que ajuda a determinar se a anormalidade da tela que você está tendo um problema inerente do monitor ou do computador e da placa de vídeo.

 **NOTA: É possível executar o diagnóstico integrado apenas quando o cabo de vídeo está desconectado e o monitor está no modo de autoteste.**



Para executar o diagnóstico integrado:

1. Certifique-se de que a tela esteja limpa (sem partículas de poeira na superfície da tela).



2. Desconecte o(s) cabo(s) de vídeo da parte traseira do computador ou do monitor. O monitor entrará no modo de autoteste.
3. Pressione e segure o **Botão 1** no painel frontal por 5 segundos. Aparecerá uma tela cinza.
4. Inspecione cuidadosamente a tela quanto a anormalidades.
5. Pressione o **Botão 1** no painel frontal novamente. A cor da tela muda para vermelho.
6. Inspecione a tela quanto a anormalidades.
7. Repita os passos 5 e 6 para inspecionar a exibição em verde, azul, preto e branco e as telas de texto.

O teste estará concluído quando aparecer a tela de texto. Para sair, pressione o **Botão 1** novamente.

Se você não detectar nenhuma anormalidade na tela depois de usar a ferramenta de diagnóstico integrada, significa que o monitor está funcionando normalmente. Verifique a placa de vídeo e o computador.

Problemas comuns

A tabela a seguir contém informações gerais sobre problemas comuns que o monitor pode apresentar e as possíveis soluções:

Sintomas comuns	O que você passou	Possíveis soluções
Sem vídeo/LED liga/desliga desligado	Sem imagem	<ul style="list-style-type: none">• Certifique-se de que o cabo de vídeo que conecta o monitor e o computador esteja acoplado corretamente e firme.• Verifique se a tomada elétrica está funcionando corretamente usando qualquer equipamento elétrico.• Certifique-se de que o botão liga/desliga esteja totalmente pressionado.• Certifique-se que a fonte de entrada correta esteja selecionada através do menu Origem de entrada.



Sem vídeo/LED liga/desliga ligado	Sem imagem ou sem brilho	<ul style="list-style-type: none"> • Aumente os controles de brilho e contraste através do OSD. • Desempenhe a verificação de teste automático do monitor. • Verifique se há pinos tortos ou quebrados no conector de vídeo. • Execute o diagnóstico integrado. • Certifique-se que a fonte de entrada correta esteja selecionada através do menu Origem de entrada.
Foco Ruim	A imagem está vaga, borrada ou com fantasmas	<ul style="list-style-type: none"> • Realize o Ajuste automático através do OSD. • Ajuste os controles de Fase e Clock de pixel através do OSD. • Elimine os cabos de extensão de vídeo. • Redefina o monitor para as configurações de fábrica. • Mudar a resolução de vídeo para a proporção de aspecto correto.
Vídeo Oscilante/ Jittery	Imagem com ondas ou movimentos finos	<ul style="list-style-type: none"> • Realize o Ajuste automático através do OSD. • Ajuste os controles de Fase e Clock de pixel através do OSD. • Redefina o monitor para as configurações de fábrica. • Verifique os fatores ambientais. • Coloque e teste o monitor em outro local.



Faltando Pixels	Tela LCD com manchas	<ul style="list-style-type: none"> • Ciclo Liga/Desliga. • Pixel permanentemente Desligado é um defeito natural que ocorre na tecnologia de LCD. • Para obter mais informações sobre a Política de Pixels e Qualidade do Monitor, consulte o site de Suporte da Dell em: http://www.dell.com/support/monitors.
Pixels presos	Tela LCD com manchas claras	<ul style="list-style-type: none"> • Ciclo Liga/Desliga. • Pixel permanentemente desligado é um defeito natural que ocorre na tecnologia de LCD. • Para obter mais informações sobre a Política de Pixels e Qualidade do Monitor, consulte o site de Suporte da Dell em: http://www.dell.com/support/monitors.
Problemas no Brilho	Imagem muito escura ou muito clara	<ul style="list-style-type: none"> • Redefina o monitor para as configurações de fábrica. • Realize o Ajuste automático através do OSD. • Ajuste os controles de brilho e contraste através do OSD.
Distorção Geométrica	A imagem não está centralizada corretamente	<ul style="list-style-type: none"> • Redefina o monitor para as configurações de fábrica. • Realize o Ajuste automático através do OSD. • Ajuste a posição horizontal e vertical, através do OSD. • Ao usar HDMI/DisplayPort, os ajustes de posicionamento não estão disponíveis.



Linhas Horizontais/Verticais	A tela possui uma ou mais linhas	<ul style="list-style-type: none"> • Redefina o monitor para as configurações de fábrica. • Realize o Ajuste automático através do OSD. • Ajuste os controles de Fase e Clock de pixel através do OSD. • Realize a verificação do recurso de autoteste do monitor e verifique se estas linhas também aparecem no modo de autoteste. • Verifique se há pinos tortos ou quebrados no conector de vídeo. • Execute o diagnóstico integrado. • Ao usar a entrada HDMI/DisplayPort, os ajustes de Clock de pixel e Fase não estão disponíveis.
Problemas de sincronismo	A tela está embaralhada ou aparece torta	<ul style="list-style-type: none"> • Redefina o monitor para as configurações de fábrica. • Realize o Ajuste automático através do OSD. • Ajuste os controles de Fase e Clock de pixel através do OSD. • Realize a verificação do recurso de autoteste do monitor e verifique se a tela embaralhada também aparece no modo de autoteste. • Verifique se há pinos tortos ou quebrados no conector de vídeo. • Reinicie o computador no modo seguro.
Assuntos Relacionados à Segurança	Sinais visíveis de fumaça ou faíscas	<ul style="list-style-type: none"> • Não desempenhe qualquer passo de resolução de problemas. • Entre em contato com a Dell imediatamente.



Problemas Intermitentes	Mau funcionamento em ligar/desligar o monitor	<ul style="list-style-type: none"> • Certifique-se de que o cabo de vídeo que conecta o monitor ao computador esteja acoplado corretamente e firme. • Redefina o monitor para as configurações de fábrica. • Realize a verificação do recurso de autoteste do monitor e verifique se o problema intermitente também aparece no modo de autoteste.
Faltando Cores	Está faltando cores na imagem	<ul style="list-style-type: none"> • Desempenhe a verificação de teste automático do monitor. • Certifique-se de que o cabo de vídeo que conecta o monitor ao computador esteja acoplado corretamente e firme. • Verifique se há pinos tortos ou quebrados no conector de vídeo.
Cor Errada	A cor da imagem não é boa	<ul style="list-style-type: none"> • Altere as configurações dos Modos Predefinidos no menu OSD Cor dependendo do aplicativo. • Ajuste o valor R/G/B em Cor Personalizada no menu OSD Cor. • Execute o diagnóstico integrado.
Retenção de uma imagem estática no monitor por um longo período	Sombra fraca da imagem estática exibida aparece na tela	<ul style="list-style-type: none"> • Use o recurso de Gerenciamento de energia para desligar o monitor sempre que não for usado (para mais informações, consulte Modos de Gerenciamento de Energia). • Ou então, use um protetor de tela de imagem dinâmica.



Problemas específicos do produto

Sintomas comuns	O que você passou	Possíveis soluções
A imagem da tela está muito pequena	A imagem está centralizada na tela, mas não preenche a área de visualização inteira	<ul style="list-style-type: none">• Verifique a configuração de Formato de imagem no menu Tela OSD.• Redefina o monitor para as configurações de fábrica.
Sem sinal de entrada ao pressionar os controles do usuário	Sem imagem, o LED fica branco	<ul style="list-style-type: none">• Verifique a origem do sinal. Certifique-se de que o computador não esteja no modo de economia de energia movendo o mouse ou pressionando qualquer tecla no teclado.• Verifique se o cabo de sinal está conectado devidamente. Se for necessário, reconecte o cabo de sinal.• Reinicie o computador ou o reproduutor de vídeo.
A imagem não preenche a tela	A imagem não preenche a altura ou a largura da tela	<ul style="list-style-type: none">• Devido a diferentes formatos de vídeo (proporção) de DVDs, o monitor pode exibir em tela cheia.• Execute o diagnóstico integrado.

 **NOTA: Ao escolher o modo HDMI/DisplayPort, a função Ajuste automático não está disponível.**




Problemas específicos do barramento serial universal (USB)

Sintomas comuns	O que você passou	Possíveis soluções
A interface USB não está funcionando	Os periféricos USB não estão funcionando	<ul style="list-style-type: none"> • Verifique se o seu monitor está Ligado. • Reconecte o cabo a montante em seu computador. • Reconecte os periféricos USB (conector a jusante). • Desligue e religue o monitor. • Reinicialize o computador. • Alguns aparelhos USB como HDD portáteis externos necessitam de maior corrente elétrica; conecte o aparelho diretamente ao sistema do computador.
A interface USB 3.0 super-speed está lenta	Os periféricos do USB 3.0 super-speed estão funcionando devagar ou não estão funcionando	<ul style="list-style-type: none"> • Verifique se o seu computador é compatível com USB 3.0. • Alguns computadores possuem ambas as portas USB 3.0, USB 2.0 e USB 1.1. Certifique-se que a porta USB correta é utilizada. • Reconecte o cabo a montante em seu computador. • Reconecte os periféricos USB (conector a jusante). • Reinicialize o computador.
Os periféricos USB sem fio param de funcionar quando um dispositivo USB 3.0 é conectado	Periféricos USB sem fio respondendo lentamente ou funcionando apenas conforme a distância entre eles e seus receptores diminui	<ul style="list-style-type: none"> • Aumente a distância entre os periféricos USB 3.0 e o receptor USB sem fio. • Posicione seu receptor USB sem fio o mais próximo possível dos periféricos USB sem fio. • Use um cabo extensor USB para posicionar o receptor USB sem fio o mais distante possível da porta USB 3.0.



Apêndice

ALERTA: Instruções de segurança

 **ALERTA: O uso de controles, ajustes ou procedimentos não especificados neste documento pode resultar em choque elétrico e outros riscos de natureza mecânica e elétrica.**


Para obter informações sobre instruções de segurança, consulte Informações de Segurança, Ambientais e Reguladoras (SERI).

Avisos da FCC (somente Estados Unidos) e outras informações regulamentares

Para o Aviso FCC e outras informações reguladoras, consulte o website de conformidade reguladora localizado em www.dell.com/regulatory_compliance.

Entre em contato com a Dell

Nos E.U.A.: 800-WWW-DELL (800-999-3355).

 **NOTA: Se não tiver conexão com a Internet, poderá encontrar informação sobre como entrar em contato a Dell na fatura, na embalagem do produto, no recibo de compra ou no catálogo de produtos Dell.**

A Dell dispõe de vários serviços de assistência técnica tanto online como por telefone. A disponibilidade destes varia conforme o país e o produto e alguns serviços podem não estar disponíveis na sua área.

- Assistência técnica on-line — www.dell.com/support/monitors
- Contato com a Dell — www.dell.com/contactdell



Buscar notebooks, desktops, monitores e muito mais!

Buscar

- Produtos

Suporte ao produto

Suporte a pedidos
- Soluções

Base de conhecimento

Entre em contato com o suporte
- Serviços

Garantia e contratos
- Suporte

Chamados e status de despacho
- Comunidade

Dell P2419H



[Insira a etiqueta de serviço para ver mais detalhes](#)

[< Alterar produto](#)

- [VISÃO GERAL](#)
- [DRIVERS E DOWNLOADS](#)
- [DOCUMENTAÇÃO](#)
- [EVENTOS DE SERVIÇO](#)
- [PEÇAS E ACESSÓRIOS](#)

Localizar um driver para seu Dell P2419H

Palavra-chave

Insira um nome ou uma palavra-chave do driver

Sistema operacional

[Não encontrou o que precisa?](#)

Windows 10, 64-bit

Categoria

Todas

Formato

Todas

Classificar por

Popular

NOME		CATEGORIA	AÇÃO	
<input type="checkbox"/>	Driver do monitor Dell P2419H POPULAR	Drivers para implantação de sistema operacional	Download	▼
<input type="checkbox"/>	Dell Display Manager Application POPULAR	Aplicativo	Download	▼
<input type="checkbox"/>	Aplicativo Dell Display Manager POPULAR	Drivers para implantação de sistema operacional	Download	▼

Trava Teletronic



Compatível com Optiplex 3080 Micro Form Factor

Cabo de Aço de 1,5m de comprimento

Desenvolvido exclusivamente para criar um conjunto perfeito entre os monitores DELL series PXX19//PXX19H e DELL Optiplex 30X0M/70X0M - MFF

Projeto de características unicas:

- Desenvolvido para não obstruir o display, tanto na movimentação vertical e rotação.
- Projeto ultra resistente e compacto (- 1Lt³).
- Visor para "service tag" DELL.
- Furação Vesa 75/100.
- Dimensões: A 70,00mm L 182,00mm C 187,00mm
- Peso: 0,472kg
- Material: aço carbono, com tratamento protetivo de zinco.
- Acabamento: (pode ser customizado)
Pintura a pó eletrostatica, preto m-txt, semi-brilho.



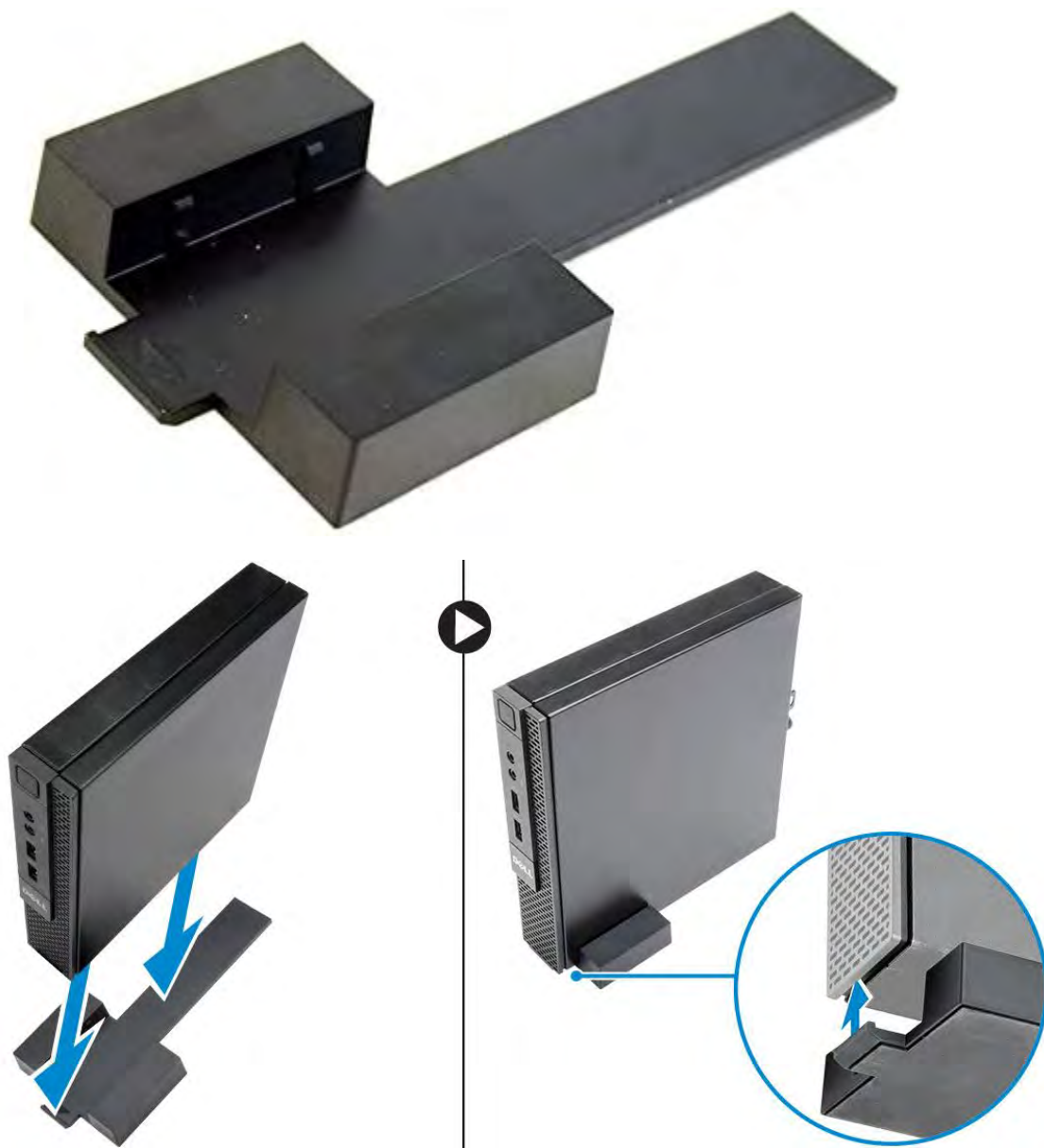
EAN 7898623850325



A Naxos Tecnologia se orgulha de a 23 anos, fabricar seus produtos no Brasil, sempre com projetos propios e inovadores, onde seus clientes tem a certeza de qualidade, garantia, continuidade e customização dos produtos em seus propios projetos.

Abrace e passe adiante esta ideia, produtos fabricados no Brasil, geram empregos, renda, crescimento economico e tecnologico para o Pais, e ajudam a diminuir a desigualdade social.

Dell Optiplex Vertical Stand



Compatível com Optiplex 3080 Micro Form Factor



Ministério do Meio Ambiente
Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis



CADASTRO TÉCNICO FEDERAL
CONSULTA PÚBLICA A CERTIFICADO DE REGULARIDADE - CR

Registro n.º: Data da consulta: CR emitido em: CR válido até:

Dados básicos

CNPJ:
Razão social:
Nome fantasia:
Data de abertura:

Endereço

Logradouro: Complemento:
N.º: Município:
Bairro: UF:
CEP:

Cadastro Técnico Federal de Atividades Potencialmente Poluidoras e Utilizadoras de Recursos Ambientais – CTF/APP

Categoria	Detalhe
5 - Indústria de material Elétrico, Eletrônico e Comunicações	2 - Fabricação de material elétrico, eletrônico e equipamentos para telecomunicação e informática


Conforme dados disponíveis na presente data, a pessoa jurídica acima possui Certificado de Regularidade em conformidade com as obrigações cadastrais e de prestação de informações ambientais sobre as atividades desenvolvidas sob controle e fiscalização do Ibama, por meio do CTF/APP.

O certificado de regularidade emitido pelo CTF/APP não desobriga a pessoa inscrita de obter licenças, autorizações, permissões, concessões, alvarás e demais documentos exigíveis por instituições federais, estaduais, distritais ou municipais para o exercício de suas atividades.

O Certificado de Regularidade do CTF/APP não habilita o transporte e produtos e subprodutos florestais e faunísticos.

Fechar

TEST REPORT Energy Efficiency Regulations Energy Efficiency of Single-Voltage External AC/DC and AC/AC Power Supplies	
Report Reference No.	50318670 005
Compiled by (+ signature)	Vivien Hsu <i>Vivien Hsu</i>
Approved by (+ signature)	Andy Chen <i>Andy Chen</i>
Date of issue	09 December, 2019
Testing Laboratory	TUV Rheinland Taiwan Ltd Taichung Branch Office
Address	No. 9, Lane 36, Minsheng Rd Sec. 3, Daya District, Taichung City 428 Taiwan
Testing location/procedure	TÜV Rheinland Taiwan Ltd. <input type="checkbox"/> Applicant Facility <input checked="" type="checkbox"/>
Address	Delta Electronics, Inc. 3, Tungyuan Road, Chungli Industrial Zone, Taoyuan City 32063, Taiwan, R.O.C.
Applicant's Name	Delta Electronics, Inc.
Address	3, Tungyuan Road, Chungli Industrial Zone, Taoyuan City 32063, Taiwan, R.O.C.
Test specification	
Standard	<input checked="" type="checkbox"/> Canada's Energy Efficiency Regulations (External Power Supplies); amendment 14 as published in the Canada Gazette, October 2018 <input checked="" type="checkbox"/> Quebec's Energy Efficiency Regulations as published in the Quebec Gazette Part 2 No. 20, May 2017 (amended, O.C. 875-2017 and O.C. 1394-2018) Act respecting energy efficiency and energy conservation standards for certain electrical or hydrocarbon-fuelled appliances (Schedule 2, External Power Supply) <input checked="" type="checkbox"/> U.S. CEC California Appliance Efficiency Regulations California Code of Regulations, Title 20, Division 2, Chapter 4. Energy Conservation, Article 4. Appliance Efficiency Regulations, item (u) Power Supplies <input checked="" type="checkbox"/> U.S. EISA 2007, section 301(c) – Class A external power supply <input checked="" type="checkbox"/> U.S. DOE 10 CFR Part 430.32(w) Final Rule, published on Feb. 10, 2014 (Level VI) <input checked="" type="checkbox"/> Australian Greenhouse and Energy Minimum Standards (External Power Supplies) Determination 2014 (GEMS Act)

Test procedure	<input checked="" type="checkbox"/> EU Energy-related Products (ErP) directive COMMISSION REGULATION (EC) No 278/2009 – 6 April 2009 implementing Directive 2005/32/EC (2009/125/EC, recast) of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies <input checked="" type="checkbox"/> NRCan: CSA-C381.1-17 “Energy performance of external ac-dc and ac-ac power supplies.” <input checked="" type="checkbox"/> Quebec: CSA-C381.1-08 “ Test method for calculating the energy efficiency of single-voltage external ac-dc and ac-ac power supplies will be the reference test procedure for this product.” <input checked="" type="checkbox"/> CEC: US EPA “Test Method for Calculating the Energy Efficiency of Single-Voltage External AC-DC and AC-AC Power Supplies” dated August 11, 2004. <input checked="" type="checkbox"/> US DOE: Appendix Z to Subpart B of 10 CFR Part 430 <input checked="" type="checkbox"/> Australian and New Zealand MEPS (Minimum Energy Performance Standards) - AS/NZS 4665.1:2005 + A1:2009 - AS/NZS 4665.2:2005 + A1:2009 <input checked="" type="checkbox"/> CE ErP: External AC -DC and AC-AC power supplies. Determination of no-load power and average efficiency of active modes in accordance with EN 50563:2011+A1 <input checked="" type="checkbox"/> Generic: Measurement of low power modes in accordance with IEC 62301:2011 and EN 50564: 2011
Test Report Form	TUVRNA OEE EPS
TRF originator.	TUVRNA
Master TRF (date)	Dated 2019-02
Test item description	Single-voltage external AC to DC power supply (AC/DC ADAPTER)
Trade Mark	
Manufacturer	Same as applicant
Model /Type reference	DA65NM191
Serial number reference.....	Pre-production engineering samples without serial numbers
Ratings	Nameplate Input: AC 100-240V~, 50-60Hz, 1.6A Nameplate Output: DC 19.5V, 3.34A

Copy of marking plate and summary of test results (information/comments):



Test items particulars :

Classification of installation and use: ☒ Class I
☐ Class II
☐ Class II with functional earth

Supply Connection.....: ☐ Direct plug in
☒ Detachable power supply cord
☐ Non-detachable power supply cord

Category.....: ☒ Basic Voltage EPS
☐ Low Voltage EPS

Output cord length.....: 180cm ± 1cm

Output cord cross-sectional areas: 20AWG (for Vo), 20AWG (for GND), 24AWG (for signal)

Built-in switch: Not present

UUT supplied product.....: Information technology equipment including electrical business equipment

UUT as service part.....: ☒ No ☐ Yes
(end use equipment brand:_____, Model _____)

Photo: See Appendix 1 (Photographs of UUT)

Country of manufacture.....: See copy of marking plate

Name of Testing Laboratory.....: See cover page

Name of technician.....: See cover page

Ambient temperature.....: See item 3 of test report

Date and location of test: See item 3 of test report and cover page

Test equipment.....: See Appendix 2 (List of Calibrated Measurement Equipment)

Definition of Load: ☒ Electronic Load ☐ Resistive Load

TÜV Rheinland Energy Efficiency: ☒ Yes ☐ No

Verification Mark.....:

Possible test case verdicts :

Test case does not apply to the test object...: N/A

Test item does meet the requirement:: P(ass)

Test item does not meet the requirement:: F(ail)

Testing

Date of receipt of test item: 31 October, 2019

Date(s) of performance of test: See clause 3 for details

Test sample identification

Sample receipt number.: NBBU-102A-201910022-1, NBBU-102A-201910022-2,
NBBU-102A-201910022-3

Test specimen: 1, 2, 3

1. General Description of Equipment

The UUT (Unit Under Test) is a Single-voltage external AC to DC power supply (AC/DC ADAPTER), desk-top type employs appliance inlet used with non-detachable output cord for supplying power to Information technology equipment including electrical business equipment.

Summary of testing:

All tests were performed at 115V/60Hz and 230V/50Hz by using a standard detachable power cord set of 180cm, 0.75mm², type C5 if not otherwise specified.

Factory(ies):

1. Delta Electronics (Jiangsu) Ltd.
215200, No.1688, Jiangxing East Road, Wujiang Economic and Technological Development Zone, Suzhou City, Jiangsu Province, P.R. China
2. Delta Electronics Power (Dongguan) Co., Ltd.
Delta Industrial Estate, Xincheng District, Shijie Town, Dongguan, Guangdong 523308, China
3. Delta Electronics (Thailand) Public Co., Ltd.
909 Soi 9 Moo 4, Bangpoo Industrial Estate, (E.P.Z.), Pattana 1 Road, Tambol Phraksa, Amphur Muang, Samutprakarn 10280, Thailand

2. General Measurement Conditions

2.1 Test Room

The testing was carried out in a room that has an air speed close to the UUT of ≤ 0.5 m/s, and the ambient temperature was maintained at:

- ☐ 20°C \pm 5 °C for all regulations except Quebec
- ☐ 23°C \pm 5 °C for Quebec's regulation
- ☒ 22°C \pm 3 °C for all regulations

2.2 Test Voltage

The input voltage was within the specified voltage $\pm 1\%$ and the specified frequency $\pm 1\%$. The UUT was tested at rated supply as mentioned in Summary of testing. The input power source is capable of delivering at least 10 times the nameplate input power of the UUT. The THD of the supply voltage when supplying the UUT in the specified mode was not exceeding 2%, up to and including the 13th harmonic.

2.3 Test Setup

The samples were operated at 100% of nameplate current output for at least 30 minutes immediately before conducting efficiency measurements.

All testing leads used in the test set-up were of large gauge and shortest possible length in order to avoid the introduction of errors in the testing process.

A total of 3 test specimens were tested as required by the regulations.

2.4 Load Conditions

The UUT was tested at four active mode load conditions and the no load condition according to Table 1 below by using electronic loads.

Table 1 – Load Conditions for UUT

Percentage of Nameplate Output Current	
Load Condition 1	100 % ± 2%
Load Condition 2	75% ± 2%
Load Condition 3	50% ± 2%
Load Condition 4	25% ± 2%
Load Condition 5	0%

The 2% allowance is of nameplate output current, not of the calculated current value. For example, a UUT at Load Condition 3 may be tested in a range from 48% to 52% of rated output current.

3. Test Details

All results were taken after warm-up of 0.5 hr immediately.

The ambient temperature at the beginning of the test sequence (surrounding of the UUT): $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$

The relative humidity at the beginning of the test sequence (surrounding of the UUT): $\text{RH } 60 \pm 5\%$

Date of test: 01 November, 2019

Tested model:	DA65NM191			Test specimen 1		at 115V/60Hz
Nameplate Output:	DC 19.5V, 3.34A					
Percent of Nameplate Current	0%	25%	50%	75%	100%	Remark
RMS Input Voltage (V)	115.1	115.1	115.1	115.1	115.0	
Input Frequency (Hz)	60.01	60.01	60.01	60.01	60.01	
Input Power (Wh) ¹⁾	0.006	1.501	2.997	4.516	6.107	
Avg. Power (W)	0.035	18.02	35.96	54.20	73.28	Input Power (Pin)
Total Harmonic Distortion (THDv, %)	0.290	0.640	0.890	1.100	1.360	
True Power Factor	0.023	0.473	0.495	0.509	0.517	
Output Voltage (Vdc)	--	19.54	19.44	19.34	19.23	
Output Current (A)	--	0.840	1.670	2.510	3.340	
Output Power (Wh) ¹⁾	--	1.362	2.710	4.043	5.364	
Avg. Power (W)	--	16.34	32.52	48.52	64.37	Output Power (Pout)
Power Consumed by UUT (W)	0.035	1.672	3.447	5.679	8.912	<0.21W at no load *)
Efficiency (%)	--	90.72	90.41	89.52	87.84	(Pout/Pin)*100%
Average Efficiency (%)	--	89.62				>88,0% at active mode *)
Note: *) see item 4 of test report for details						
1)Wh interval is 10 min for no load and 5 min for others.						

Tested model:	DA65NM191			Test specimen 2		at 115V/60Hz	
Nameplate Output:	DC 19.5V, 3.34A						
Percent of Nameplate	0%	25%	50%	75%	100%	Remark	

Current						
RMS Input Voltage (V)	115.1	115.1	115.1	115.1	115.0	
Input Frequency (Hz)	60.01	60.01	60.01	60.01	60.01	
Input Power (Wh) ¹⁾	0.005	1.503	3.001	4.522	6.110	
Avg. Power (W)	0.032	18.04	36.01	54.26	73.32	Input Power (Pin)
Total Harmonic Distortion (THDv, %)	0.290	0.570	0.760	0.960	1.220	
True Power Factor	0.021	0.465	0.500	0.522	0.531	
Output Voltage (Vdc)	--	19.58	19.47	19.36	19.25	
Output Current (A)	--	0.840	1.670	2.510	3.340	
Output Power (Wh) ¹⁾	--	1.365	2.714	4.049	5.370	
Avg. Power (W)	--	16.38	32.57	48.59	64.44	Output Power (Pout)
Power Consumed by UUT (W)	0.032	1.659	3.441	5.674	8.877	<0.21W at no load *)
Efficiency (%)	--	90.80	90.44	89.54	87.89	(Pout/Pin)*100%
Average Efficiency (%)	--	89.67				>88.0% at active mode *)
Note: *) see item 4 of test report for details						
1)Wh interval is 10 min for no load and 5 min for others.						

Tested model:	DA65NM191			Test specimen 3		at 115V/60Hz
Nameplate Output:	DC 19.5V, 3.34A					
Percent of Nameplate Current	0%	25%	50%	75%	100%	Remark
RMS Input Voltage (V)	115.2	115.1	115.1	115.1	115.0	
Input Frequency (Hz)	60.01	60.01	60.01	60.01	60.01	
Input Power (Wh) ¹⁾	0.006	1.510	3.012	4.533	6.123	
Avg. Power (W)	0.034	18.12	36.14	54.39	73.47	Input Power (Pin)
Total Harmonic Distortion (THDv, %)	0.280	0.520	0.680	0.880	1.120	
True Power Factor	0.023	0.463	0.512	0.539	0.548	
Output Voltage (Vdc)	--	19.67	19.57	19.46	19.35	
Output Current (A)	--	0.840	1.670	2.510	3.340	
Output Power (Wh) ¹⁾	--	1.371	2.728	4.070	5.394	

Avg. Power (W)	--	16.46	32.74	48.84	64.73	Output Power (Pout)
Power Consumed by UUT (W)	0.034	1.666	3.404	5.550	8.739	<0.21W at no load *)
Efficiency (%)	--	90.81	90.58	89.80	88.11	(Pout/Pin)*100%
Average Efficiency (%)	--	89.82				>88.0% at active mode *)
Note: *) see item 4 of test report for details 1)Wh interval is 10 min for no load and 5 min for others.						

Tested model:	DA65NM191			Test specimen 1		at 230V/50Hz
Nameplate Output:	DC 19.5V, 3.34A					
Percent of Nameplate Current	0%	25%	50%	75%	100%	Remark
RMS Input Voltage (V)	230.3	230.3	230.3	230.3	230.3	
Input Frequency (Hz)	50.00	50.00	50.01	50.00	50.00	
Input Power (Wh) ¹⁾	0.011	1.524	2.992	4.472	5.958	
Avg. Power (W)	0.068	18.28	35.91	53.66	71.50	Input Power (Pin)
Total Harmonic Distortion (THDv, %)	0.290	0.660	0.870	1.060	1.250	
True Power Factor	0.013	0.464	0.492	0.508	0.520	
Output Voltage (Vdc)	--	19.54	19.44	19.34	19.24	
Output Current (A)	--	0.840	1.670	2.510	3.340	
Output Power (Wh) ¹⁾	--	1.362	2.710	4.044	5.365	
Avg. Power (W)	--	16.34	32.52	48.53	64.38	Output Power (Pout)
Power Consumed by UUT (W)	0.068	1.938	3.390	5.130	7.117	<0.21W at no load *)
Efficiency (%)	--	89.40	90.56	90.44	90.05	(Pout/Pin)*100%
Average Efficiency (%)	--	90.11				>88.0% at active mode *)
Note: *) see item 4 of test report for details						
1)Wh interval is 10 min for no load and 5 min for others.						

Tested model:	DA65NM191				Test specimen 2	at 230V/50Hz
Nameplate Output:	DC 19.5V, 3.34A					

Percent of Nameplate Current	0%	25%	50%	75%	100%	Remark
RMS Input Voltage (V)	230.4	230.3	230.3	230.3	230.3	
Input Frequency (Hz)	50.01	50.01	50.00	50.01	50.01	
Input Power (Wh) ¹⁾	0.010	1.524	2.995	4.475	5.962	
Avg. Power (W)	0.063	18.28	35.94	53.70	71.55	Input Power (Pin)
Total Harmonic Distortion (THDv, %)	0.300	0.580	0.790	0.980	1.170	
True Power Factor	0.012	0.455	0.489	0.515	0.528	
Output Voltage (Vdc)	--	19.59	19.48	19.36	19.27	
Output Current (A)	--	0.840	1.670	2.510	3.340	
Output Power (Wh) ¹⁾	--	1.366	2.715	4.049	5.373	
Avg. Power (W)	--	16.39	32.58	48.58	64.48	Output Power (Pout)
Power Consumed by UUT (W)	0.063	1.899	3.361	5.118	7.071	<0.21W at no load *)
Efficiency (%)	--	89.62	90.65	90.47	90.12	(Pout/Pin)*100%
Average Efficiency (%)	--	90.21				>88.0% at active mode *)
Note: *) see item 4 of test report for details						
1)Wh interval is 10 min for no load and 5 min for others.						

Tested model:	DA65NM191			Test specimen 3		at 230V/50Hz
Nameplate Output:	DC 19.5V, 3.34A					
Percent of Nameplate Current	0%	25%	50%	75%	100%	Remark
RMS Input Voltage (V)	230.4	230.3	230.2	230.3	230.3	
Input Frequency (Hz)	50.01	50.00	50.00	50.01	50.01	
Input Power (Wh) ¹⁾	0.011	1.532	3.009	4.493	5.985	
Avg. Power (W)	0.067	18.38	36.11	53.91	71.82	Input Power (Pin)
Total Harmonic Distortion (THDv, %)	0.290	0.530	0.710	0.910	1.100	
True Power Factor	0.013	0.446	0.487	0.527	0.544	
Output Voltage (Vdc)	--	19.67	19.57	19.47	19.36	
Output Current (A)	--	0.840	1.670	2.510	3.340	
Output Power (Wh) ¹⁾	--	1.371	2.728	4.071	5.400	

Avg. Power (W)	--	16.46	32.74	48.85	64.80	Output Power (Pout)
Power Consumed by UUT (W)	0.067	1.922	3.367	5.061	7.021	<0.21W at no load *)
Efficiency (%)	--	89.54	90.67	90.61	90.22	(Pout/Pin)*100%
Average Efficiency (%)	--	90.26				>88.0% at active mode *)
Note: *) see item 4 of test report for details 1)Wh interval is 10 min for no load and 5 min for others.						

4. Test Result

The samples submitted were tested and comply with the efficiency in the active mode and the energy consumption in the no-load mode at the corresponding national AC mains supply voltage according to following regulations:

<input checked="" type="checkbox"/>	Canada's Energy Efficiency Regulations for External Power Supplies
<input checked="" type="checkbox"/>	Quebec's Energy Efficiency Regulations as published in the Quebec Gazette Part 2 No. 20, May 2017 (amended, O.C. 875-2017 and O.C. 1394-2018) Act respecting energy efficiency and energy conservation standards for certain electrical or hydrocarbon-fuelled appliances (Schedule 2, External Power Supply)
<input checked="" type="checkbox"/>	U.S. CEC California Appliance Efficiency Regulations California Code of Regulations, Title 20, Division 2, Chapter 4. Energy Conservation, Article 4. Appliance Efficiency Regulations, item (u) Power Supplies (Table U-4)
<input checked="" type="checkbox"/>	U.S. EISA 2007, section 301(c) – Class A external power supply
<input checked="" type="checkbox"/>	Australian Greenhouse and Energy Minimum Standards (External Power Supplies) Determination 2014 (GEMS Act) Australian and New Zealand MEPS (Minimum Energy Performance Standards)
<input checked="" type="checkbox"/>	EU Energy-related Products (ErP) directive COMMISSION REGULATION (EC) No 278/2009 – 6 April 2009
<input checked="" type="checkbox"/>	U.S. DOE 10 CFR Part 430.32(w) <i>Final Rule, published on Feb. 10, 2014 (Level VI)</i>

And the use of an efficiency mark, according to the international efficiency marking protocol, qualified with efficiency marking:

☐ IV ☐ V ☒ VI

Details of Minimum Efficiency Performance Standard (MEPS) refer to following tables.

**Energy Efficiency Regulations
for External Power Supplies of
Canada Quebec, US CEC (Table U-4), US EISA 2007 (Class A EPS) and Australian and
New Zealand MEPS**

Nameplate Output	Minimum Efficiency in Active Mode	Verdict
<1 watt	$0.5 * \text{Nameplate Output}$	N/A
≥ 1 and ≤ 51 watts	$0.09 * \ln(\text{Nameplate Output}) + 0.5$	N/A
> 51 watts	0.85	P
Nameplate Output	Maximum Energy Consumption in No-Load Mode	Verdict
Any output	0.5 watts	P
Note(s): 1. Required Minimum Efficiency in Active Mode is superseded by level VI. 2. Where $\ln(\text{Nameplate Output})$ = Natural Logarithm of the nameplate output expressed in Watts. 3. An efficiency of 0.85 in decimal form corresponds to the more familiar value of 85%.		

Supplementary information to Quebec's test method CSA-C381.1-08:

While Canada new NRCan's test method CAN/CSA C381.1-17 is aligning with US DOE since 2019 April 30, Quebec is still stayed in previous version of NRCan's test method CAN/CSA C381.1-08. The major difference between these two versions is the warm up period:

- Warm up period - the previous Canadian method CAN/CSA C381.1-08 requires 30 minutes warm up period at each load (i.e. 100%, 75%, 50%, 25%, 0% of loading) whereas the latest Canadian method CAN/CSA C381.1-17 requires 30 minutes warm up period for only 100% of loading and 5 minutes warm up periods for subsequent loading.

The original intent of the Canadian regulation (CAN/CSA C381.1-08) is not to burden dealers with testing the same product twice when in most cases a similar or equivalent result would be yielded. NRCan has been evaluated the differences in results for a group of products and provides the following guidance:

No load:

- values obtained using the US DOE test method (equivalent to latest Canadian method CAN/CSA C381.1-17) are in NRCan's view equivalent to the results using CSA-C381.1-08

Active mode:

- for products where results obtained using the US DOE test method (equivalent to latest Canadian method CAN/CSA C381.1-17) are more than .8 (>), above the minimum efficiency standard they are considered equivalent to the results using CSA-C381.1-08
- for products where results obtained using the US DOE test method (equivalent to latest Canadian method CAN/CSA C381.1-17) are within .8 (\leq) of the minimum efficiency standard, they are not considered equivalent.

According to this guidance the discrepancy is 0.8% at active mode efficiency, which is considered smaller than the discrepancy of efficiency requirement between level IV and level VI for Quebec and NRcan respectively. Therefore EPS which in compliance with level VI is deemed to comply with Quebec level IV when the discrepancy of 0.8% is taken into account.

EU Energy-related Products (ErP) directive

Ecodesign requirements

set out in Annex I, 1 b) of COMMISSION REGULATION (EC) No 278/2009
for no-load electric power consumption and average active efficiency of external power
supplies

Nameplate Output Power (P _{no})	Minimum Average Efficiency in Active Mode		Verdict
0 to ≤ 1 W	Standard models: $\geq 0.480 * P_{no} + 0.140$		N/A
	Low Voltage models: $\geq 0.497 * P_{no} + 0.067$		N/A
>1 to ≤ 51 W	Other: $0.063 * \ln(P_o) + 0.622$		N/A
	Low voltage: $0.075 * \ln(P_o) + 0.561$		N/A
> 51 W	Other: 0.870		P
	Low voltage: 0.860		N/A
Nameplate Output Power (P _{no})	Maximum Power in No-Load Mode		Verdict
	<input type="checkbox"/> Ac-Ac EPS	<input checked="" type="checkbox"/> Ac-Dc EPS	
0 to ≤ 51 W	≤ 0.5 W	≤ 0.3 W	N/A
> 51 W to ≤ 250 W	≤ 0.5 W	≤ 0.5 W	P
Note(s): 1. Required Minimum Efficiency in Active Mode is superseded by level VI. 2. Where \ln (Nameplate Output) = Natural Logarithm of the nameplate output expressed in Watts. 3. An efficiency of 0.85 in decimal form corresponds to the more familiar value of 85%. 4. A low voltage model is an EPS with a nameplate output voltage of less than 6 volts and a nameplate output current greater than or equal to 550 milliamps.			

U.S. DOE 10 CFR Part 430.32(w) Final Rule, published on Feb. 10, 2014 (Level VI) for no-load electric power consumption and average active efficiency of external power supplies

**Table I-1: Energy Conservation Standards for Direct Operation EPSs
(Compliance Starting Feb. 10, 2016)**

Canada's Energy Efficiency Regulations (External Power Supplies); amendment 14 as published in the Canada Gazette, October 2018

**CSA C381.1-17 Energy performance of external ac-dc and ac-ac power supplies
Table D.1: Direct operation EPS MEPS (Level VI)
(Compliance Starting July 01, 2017)**

Single-Voltage External AC-DC or AC-AC Power Supply, Basic-Voltage			
Nameplate Output Power (Pno)	Minimum Average Efficiency in Active Mode		Verdict
≤ 1W	≥ 0.5 ×Pno + 0.16		N/A
1 W < to ≤ 49 W	≥ 0.071 × ln(Pno) – 0.0014 ×Pno +0.67		N/A
49W < to ≤ 250W	≥ 0.880		P
> 250W	≥ 0.875		N/A
Nameplate Output Power (Pno)	Maximum Power in No-Load Mode		Verdict
	<input type="checkbox"/> Ac-Ac EPS	<input checked="" type="checkbox"/> Ac-Dc EPS	
≤ 1W	≤ 0.21W	≤ 0.10W	N/A
1 W < to ≤ 49 W	≤ 0.21W	≤ 0.10W	N/A
49W < to ≤ 250W	≤ 0.21W		P
> 250W	≤ 0.50W		N/A
Note(s):			
Required Minimum Efficiency in Active Mode is 0.880.			

Single-Voltage External AC-DC or AC-AC Power Supply, Low-Voltage			
Nameplate Output Power (Pno)	Minimum Average Efficiency in Active Mode		Verdict
≤ 1W	≥ 0.517 × Pout + 0.087		N/A
1 W < to ≤ 49 W	≥ 0.0834 × ln(Pno) – 0.0014 × Pno + 0.609		N/A
49W < to ≤ 250W	≥ 0.870		N/A
> 250W	≥ 0.875		N/A
Nameplate Output Power (Pno)	Maximum Power in No-Load Mode		Verdict
	<input type="checkbox"/> Ac-Ac EPS	<input type="checkbox"/> Ac-Dc EPS	
≤ 1W	≤ 0.21W	≤ 0.10W	N/A
1 W < to ≤ 49 W	≤ 0.21W	≤ 0.10W	N/A
49W < to ≤ 250W	≤ 0.21W		N/A
> 250W	≤ 0.50W		N/A
Note(s):			

External power supplies must carry a verification mark indicating that the energy performance of the product has been verified. The verification mark is the mark of a Standards Council of Canada accredited certification organization that administers an energy performance verification program for this product. NRCAN will also accept the use of the Roman Numeral as an alternative to the energy efficiency verification mark if the Roman Numeral is clearly indicated on the product according to the international efficiency marking protocol (see table below) and if the product performance is initially verified by an Standards Council of Canada accredited certification organization with a relevant energy efficiency scope (i.e. offering an EPS energy efficiency verification program.)

International Efficiency Marking Protocol for External Power Supplies Version 3.0, September 2013

Mark	Performance Requirements				
	Nameplate Output Power (P _{no}) ²	No-Load Mode Power ³	Nameplate Output Power (P _{no})	Average Efficiency in Active Mode ⁴	Power Factor
I	Used if none of the other criteria are met.				
II	0 to ≤ 10 watts	≤ 0.75	0 to < 1 watt	≥ 0.39 * P _{no}	Not applicable
	> 10 to 250 watts	≤ 1.0	1 to < 49 watts	≥ 0.107 x Ln(P _{no}) + 0.39	
			> 49 watts	≥ 0.82	
III	0 to < 10 watts	≤ 0.5	0 to 1 watt	≥ 0.49 * P _{no}	Not applicable
	10 to 250 watts	≤ 0.75	> 1 to < 49 watts	≥ 0.09 * Ln(P _{no}) + 0.49	
			> 49 to 250 watts	≥ 0.84	
IV	0 to 250 watts	≤ 0.5	0 to 1 watt	≥ 0.5 * P _{no}	Not applicable
			1 to 51 watts	≥ 0.09 * Ln(P _{no}) + 0.5	
			> 51 to 250 watts	≥ 0.85	
V	0 to < 50 watts	≤ 0.5 for ac-ac; ≤ 0.3 for ac-dc	0 to ≤ 1 watt	Standard: ≥ 0.480 * P _{no} + 0.140 Low Voltage: ≥ 0.497 * P _{no} + 0.067	EPSs with ≥ 100 watts input power must have a true power factor ≥ 0.9 at 100% of rated load when tested at 115 volts/60Hz.
	≥ 50 to ≤ 250 watts	≤ 0.5	> 1 to 49 watts	Standard: ≥ [0.0626 * Ln(P _{no})] + 0.622 Low Voltage: ≥ [0.0750 * Ln(P _{no})] + 0.561	
			> 49 to 250 watts	Standard: ≥ 0.870 Low Voltage: ≥ 0.860	
VI	Single-Voltage				Not Applicable
	0 to ≤ 49 W	AC-DC: ≤ 0.100 AC-AC: ≤ 0.210	0 to ≤ 1 W	Basic Voltage: ≥ 0.5 * P _{no} + 0.16 Low Voltage: ≥ 0.517 * P _{no} + 0.087	
			1 to ≤ 49 W	Basic Voltage: ≥ 0.071* ln(P _{no}) – 0.0014*P _{no} + 0.67 Low Voltage: ≥ 0.0834 * ln(P _{no}) – 0.0014 * P _{no} + 0.609	
	>49 to ≤ 250 W	≤ 0.210	>49 to ≤ 250 W	Basic Voltage: ≥ 0.880 Low Voltage: ≥ 0.870	
	> 250 W	≤ 0.500	>250 W	≥ 0.875	
	Multiple-Voltage				
	Any	≤ 0.300	0 to ≤ 1 W	≥ 0.497 * P _{no} + 0.067	

			1 to ≤ 49 W	≥ 0.075 * ln(P _{no}) + 0.561	
			49 W	≥ 0.860	
VII	Reserved for future use				

² P_{no} is the Nameplate Output Power of the unit under test.

³ In Australia and New Zealand, AC-AC external power supplies are not required to meet the no-load mode power requirements.

⁴ “ln” refers to the natural logarithm.

⁵ A low-voltage model is an EPS with nameplate output voltage of less than 6 volts and nameplate output current greater than or equal to 550 milliamperes. A basic-voltage model is an EPS that is not a low-voltage model.

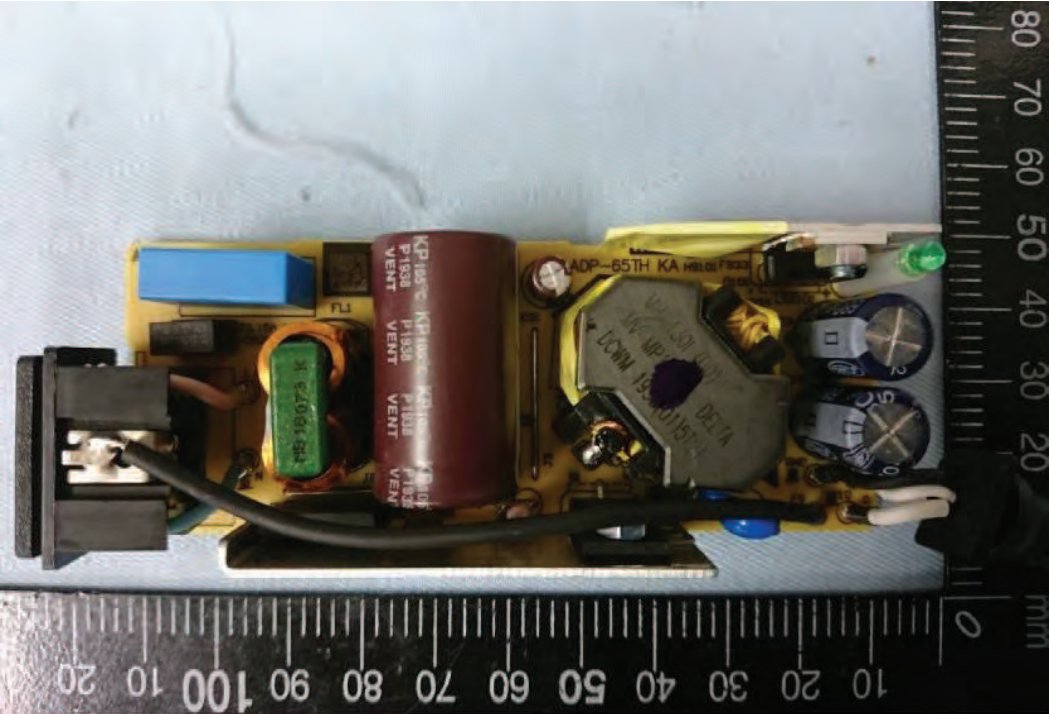
Appendix 1 – Photographs



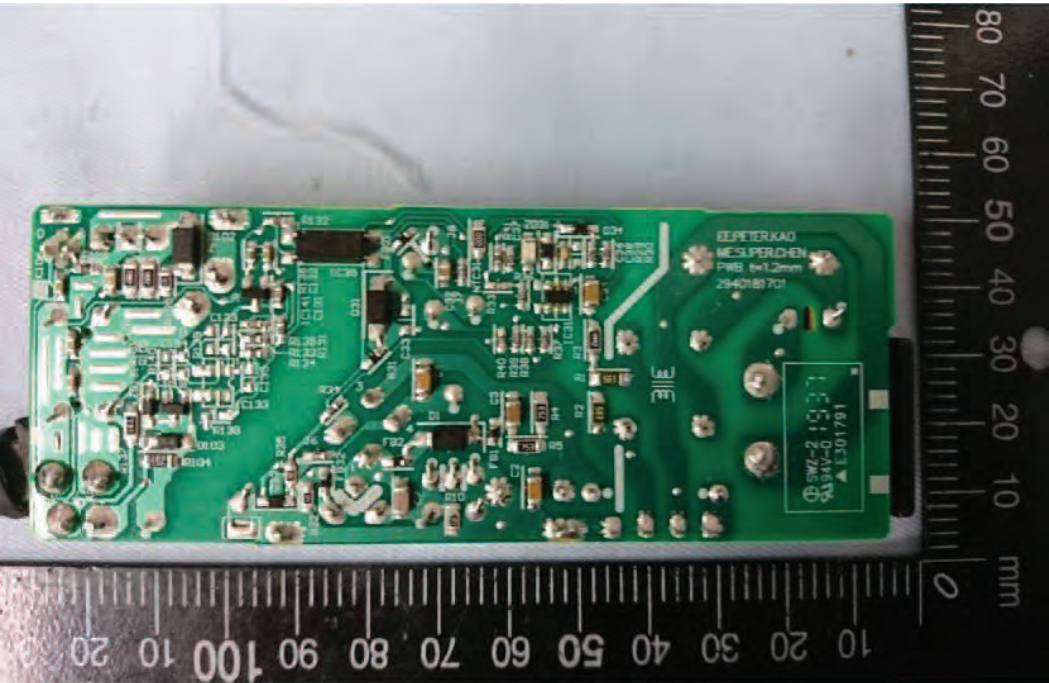
Picture 1



Picture 2



Picture 3



Picture 4

Appendix 2 – Test Equipment List

Instr. Code	Instrument I.D.	Instrument Type	Range and/or Function Used ***	Make and Model **	Calibration Date	
					Last	Due
112	E08-087	Timer	0-99 Min	Timer	2019-07-04	2020-07-03
109	E24-715	THERMO- HYGROMETE R	30-90%RH/ ~ 15-50°C	DICKSON,TM320	2019-03-08	2020-03-07
38	E18-2561	DC Load	250V/12A	Prodigit,3300F(3312F*4)	2019-09-04	2020-09-03
47	E18-2562	AC Source	300V/25A 45Hz~450Hz	IDRC CIF-3000EP	2019-10-16	2020-10-15
79	E09-337	Digital Power Meter	600V/20A	Yokogawa, WT210	2019-03-07	2020-03-06
J	TF-08	Relay control board	N/A	DELTA	N.C	N.C
127	E22-921	Measuring tape	0-5.5M	TY	2018-01-05	2021-01-04
138	E27-104	Anemograph	0 to 1 m/s	Testo,400	2018-12-26	2019-12-25
--	--	--	--	--	--	--

End of Test Report