

Dell Edge Gateway

5000 Series

Installation and Operation Manual

Computer Model: Dell Edge Gateway 5000
Regulatory Model: N01G
Regulatory Type: N01G001



Notes, cautions, and warnings



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



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.

Copyright © 2015 Dell Inc. All rights reserved. This product is protected by U.S. and international copyright and intellectual property laws. Dell™ and the Dell logo are trademarks of Dell Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

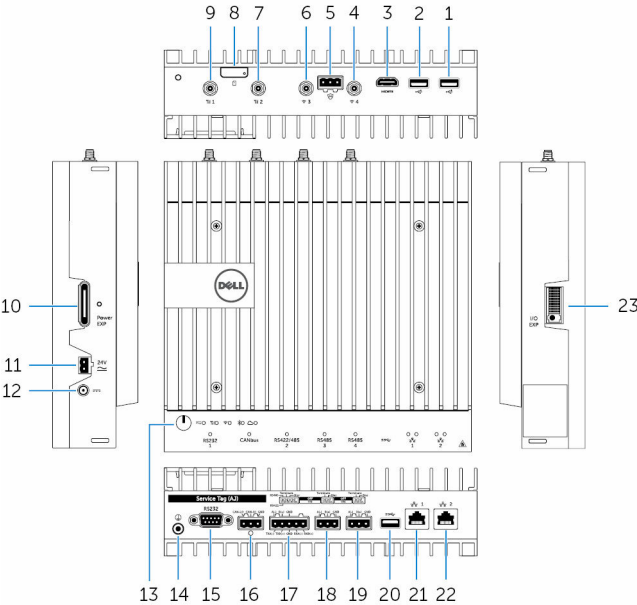
Contents

- Overview..... 4**
- System Features..... 5**
 - System LED Lights..... 7
- Setting up your Dell Edge Gateway.....9**
 - Professional installation instructions.....9
 - Instructions d'installation professionnelles.....10
 - Federal Communication Commission Interference Statement.....10
 - Industry Canada Statement.....11
 - Powering on the system..... 13
 - Inserting a micro-SIM card.....14
 - Removing the micro-SIM card..... 15
- Setting up your operating system..... 16**
 - Windows 10.....16
 - Ubuntu.....16
 - Wind River Linux.....16
- Specifications..... 17**
- Contacting Dell.....20**

Overview

The Dell Edge Gateway 5000 series allows you to connect (wired or wireless) to network enabled devices and manage them remotely in your existing network ecosystem. The system can be either mounted on the wall using the Dell approved VESA wall mount kit or mounted into your existing rack infrastructure using the Rail mount. The system is running on Windows 10, Ubuntu, and Wind River Linux operating systems.

System Features



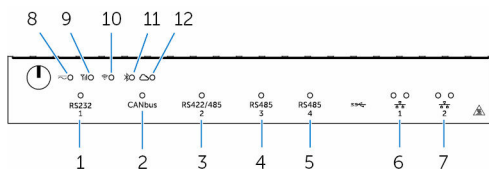
Feature

- | | |
|--------------------------|--|
| 1. USB 2.0 port | Connect peripherals such as storage devices, printers, displays and so on. Provides data transfer speeds up to 480 Mbps. |
| 2. USB 2.0 port | Connect peripherals such as storage devices, printers, displays and so on. Provides data transfer speeds up to 480 Mbps. |
| 3. HDMI port | Connect a Monitor or another HDMI-in enabled device. Provides video and audio output. |
| 4. Wireless antenna port | Connect a antenna to increase the range and strength of the wireless signals. |

Feature	
5. Intrusion detection connector	Connect a TPB based security device to detect any intrusion into the system.
6. Wireless antenna port	Connect a wireless antenna to increase the range and strength of the wireless signals.
7. Mobile broadband antenna port	Connect a antenna to increase the range and strength of the mobile broadband signals.
8. Micro-SIM card slot	Insert a micro-SIM card to connect to a mobile broadband network.
9. Mobile broadband antenna port	Connect a antenna to increase the range and strength of the mobile broadband signals.
10. Power module expansion port	Connect an external power module for increased power options.
11. +24V AC/DC power Phoenix connector	Connect a +24V AC/DC power Phoenix connector to provide power to your system
12. +19.5 VDC power adapter port	Connect a +19.5 VDC power adapter connector to provide power to your system
13. Power button	Press and hold for 2 seconds to turn on the system if it is turned off.
14. Earth ground	Connect the grounding cable to the system
15. Serial port	Connect to a serial port enabled device like printers and so on.
16. CANbus port	Connect to a CANbus port enabled device or dongles.
17. RS422/485 port	Connect a RS422/485 cable to configure the system.
18. RS485 port	Connect a RS422 cable to configure the system.
19. RS485 port	Connect a RS485 cable to configure the system.

Feature	
20. USB 3.0 port	Connect peripherals such as storage devices, printers, displays and so on. Provides data transfer speeds up to 5 Gbps.
21. Network port	Connect an Ethernet (RJ45) cable from a router or a broadband modem for network or internet access.
22. Network port	Connect an Ethernet (RJ45) cable from a router or a broadband modem for network or internet access.
23. I/O expansion port	Connect an external expansion module for additional I/O ports.

System LED Lights



Feature	
1. Serial port status light	Provide the status of the serial port connection
2. CANbus port status light	Provide the status of the CANbus port connection
3. RS422/485 port status light	Provide the status of the RS422/485 port connections
4. RS485 port status light	Provide the status of the RS485 port connections
5. RS485 port status light	Provide the status of the RS485 port connections
6. Network status light	Indicates the connectivity status and network activity.

Feature

- | | |
|-----------------------------------|--|
| 7. Network status light | Indicates the connectivity status and network activity. |
| 8. Power status light | Indicates the power-state of the system. |
| 9. Mobile broadband status light | Indicates the mobile broadband status and network activity. |
| 10. Wireless status light | Indicates the wireless connectivity status and network activity. |
| 11. Bluetooth status light | Indicates the bluetooth status and activity. |
| 12. Cloud connection status light | Indicates the cloud connection status. |

Setting up your Dell Edge Gateway



WARNING: Before you begin any of the procedures in this section, read the safety information that shipped with your system. For additional best practices information, go to www.dell.com/regulatory_compliance.



WARNING: To ensure the protection provided by Dell Edge Gateway is not impaired, do not use or install the system in any manner other than that which is specified in this manual.



WARNING: Use cable appropriate for the load currents: 3-core cable rated 5 A at 90 °C (194 °F) minimum, which conform to either IEC 60227 or IEC 60245. The system accepts cables from 0.8 to 2.5 mm (18 to 14 AWG).



WARNING: Use only the power adapter provided with DELL. The system should be operated only with power source of the same kind as indicated on the Power adapter rating plate. The power adapter provided is a limited power source or SELV/limited energy circuit or class 2 power source, rated output +19.5 VDC 65W, maximum operating temperature 50 °C, and it is compliant to national standards of the specific country where the system is used. Do not use different type of power source.

Professional installation instructions

Installation personnel

This product is designed for specific applications and needs to be installed by qualified personnel with RF and regulatory related knowledge. The general user shall not attempt to install or change the setting.

Installation location

The product shall be installed at a location where the radiating antenna is kept 20 cm from nearby persons in its normal operation condition in order to meet regulatory RF exposure requirements.

External antenna

Use only the antenna(s) which have been approved by the applicant. Non-approved antenna(s) may produce unwanted spurious or excessive RF transmitting power which may lead to a violation of FCC/IC limits and is prohibited.

Installation procedure

Please refer to user's manual for the detail.



WARNING: Please carefully select the installation position and make sure that the final output power does not exceed the limits set forth in relevant rules. The violation of these rules could possibly lead to serious federal penalties.

Instructions d'installation professionnelles

Le personnel d'installation

Ce produit est conçu pour des applications spécifiques et doit être installé par un personnel qualifié avec RF et connaissances connexes réglementaire . L'utilisateur ne doit pas tenter générale d'installer ou de modifier le réglage.

Lieu d'installation

Le produit doit être installé à un endroit où l'antenne de rayonnement est maintenue à 20 cm de personnes à proximité dans son état de fonctionnement normal , afin de répondre aux exigences réglementaires d'exposition aux radiofréquences .

Antenne externe

Utilisez uniquement l'antenne (s) qui ont été approuvés par le demandeur . Antenne (s) peuvent produire de l'énergie RF parasite indésirable ou excessive transmission qui peut conduire à une violation des normes de la FCC / IC est interdite et non - approuvé.

Procédure d'installation

Please refer to user's manual for the detail.

ATTENTION: S'il vous plaît choisir avec soin la position d'installation et assurez-vous que la puissance de sortie final ne dépasse pas les limites fixées dans les règles pertinentes . La violation de ces règles pourrait conduire à des sanctions fédérales graves .

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.



NOTE: Note: The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all WiFi product marketed in US must fixed to US operation channels only.

Industry Canada Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- 1 this device may not cause interference, and
- 2 this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- 1 l'appareil ne doit pas produire de brouillage, et
- 2 l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This device complies with RSS-310 of Industry Canada. Operation is subject to the condition that this device does not cause harmful interference.

Cet appareil est conforme à la norme RSS-310 d'Industrie Canada. L'opération est soumise à la condition que cet appareil ne provoque aucune interférence nuisible.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter, except tested built-in radios.

Cet appareil et son antenne ne doivent pas être situés ou fonctionner en conjonction avec une autre antenne ou un autre émetteur, exception faites des radios intégrées qui ont été testées.

The Country Code Selection feature is disabled for products marketed in the US/ Canada.

La fonction de sélection de l'indicatif du pays est désactivée pour les produits commercialisés aux États-Unis et au Canada.

Radiation Exposure Statement: This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations: Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Caution:

- 1 The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

- 2 The maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall comply with the eirp limit; and
- 3 The maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the eirp limits specified for point-to-point and non point-to-point operation as appropriate.
- 4 The worst-case tilt angle(s) necessary to remain compliant with the eirp elevation mask requirement set forth in Section 6.2.2(3) shall be clearly indicated.
- 5 Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Avertissement:

- 1 les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
- 2 le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5250-5350 MHz et 5470-5725 MHz doit se conformer à la limite de p.i.r.e.;
- 3 le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5725-5825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.
- 4 les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, et énoncée à la section 6.2.2 3), doivent être clairement indiqués.
- 5 De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5650-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

Powering on the system

- 1 Install the Dell Edge Gateway on the wall mount using the Dell approved VESA mounting kit.
or
Install the Dell Edge Gateway on the rack infrastructure using the Dell approved rail mounting kit.

- 2 Connect the network cable.
or
Install the wireless antenna to enable the wireless connections
- 3 Connect a display to the system.
- 4 Connect a keyboard and mouse if accessing the system directly.
- 5 Connect a SELV/limited energy circuit power source to the Dell Edge Gateway.
- 6 Connect a grounding cable to the system if required.
- 7 Press the power button to power on the computer.
- 8 Is setting up the system for the first time, complete the operating system setup.



NOTE: The Dell Edge Gateway is shipped with either Windows 10, Ubuntu, or Wind River Linux operating systems.

- 9 Connect and configure to devices using the RS422/RS485 ports.



NOTE: Turn on the corresponding dip switches to enable the corresponding RS422/R485 ports.

Inserting a micro-SIM card



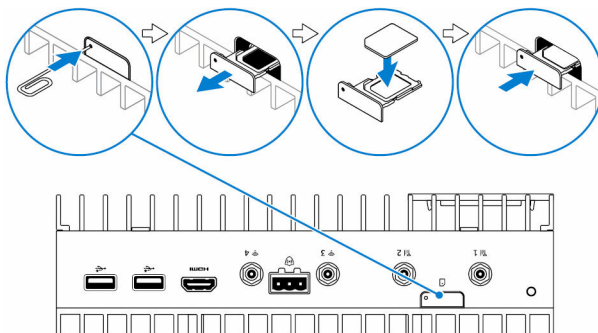
CAUTION: It is recommended to insert the micro-SIM card before powering on the Dell Edge Gateway.

- 1 Locate the micro-SIM card slot.
- 2 Using a paper clip or SIM eject tool eject the micro-SIM card tray.
- 3 Place the micro-SIM card on the tray.



CAUTION: Ensure that the micro-SIM card is aligned as shown in the image.

- 4 Close the micro-SIM card tray.



Removing the micro-SIM card

CAUTION: Removing the micro-SIM card while it is in use may cause data loss or result in application errors.

- 1 Using a paper clip or SIM eject tool eject the micro-SIM card tray.
- 2 Remove the micro-SIM card out of the micro-SIM card tray.
- 3 Replace the micro-SIM card tray into the system.

Setting up your operating system

Windows 10

 **NOTE:** For more information on setting up your Windows 10 operating system, see www.dell.com/support/windows.

- 1 Power on the system.
The Windows configuration screen appears.
- 2 Setup the wireless connection for your system.
- 3 Create a local or Microsoft account.
The Windows 10 setup is complete.

Ubuntu

 **NOTE:** For more information on setting up your Ubuntu operating system, see www.ubuntu.com/support.

- 1 Power on the system.
The Ubuntu configuration screen appears.
- 2 Setup the wireless connection for your system.
- 3 Enter your login and password.
The Ubuntu operating system is setup.

Wind River Linux

 **NOTE:** For more information on setting up your Wind River operating system, see <http://www.windriver.com/support>.

- 1 Power on the system.
The Wind River splash screen is displayed after the Dell Edge Gateway boots completes POST.
- 2 The operating system will take around twenty seconds to complete the loading process. Enter the login information.
- 3 Activate your Wind River operating system installation.
The Wind River operating system is setup.

Specifications

System information

Product Name	Industrial control equipment
Processor	6th Generation Intel Core i7
Operating system	• Windows 10 • Ubuntu • Wind river linux with Moon Island 3.0 stack
RAM	LPDDR3
Storage	• 32 GB SSD • 64 GB SSD

Memory

Type	LPDDR3
Speed	1600 MHz
Configurations supported	2 GB, 4 GB, and 8 GB

Ports and connectors

Audio/video	One HDMI port
microSD card	One microSD-card slot
Network	• Two RJ45 ports • Two wireless antenna ports • Two mobile broadband antenna ports • One CANbus port • One RS422/485 combo port • Two RS485 port
USB	• One USB 3.0 port

Ports and connectors

	• Two USB 2.0 ports
Serial port	One Serial port

Communications

Wi-Fi	Dual-band 802.11b/g/n/ac
Bluetooth	Bluetooth 4.1 LE

Power requirements

Phoenix connector input voltage/ current	24 VAC or 24 VDC / 4A
Power adapter input voltage/current	19.5 VDC / 3.33A
Phoenix connector Input frequency	50 Hz–60 Hz
Temperature range:	
Operating	0°C to 50°C (32°F to 122°F)
Storage	–40°C to 70 °C (–40°F to 158°F)

Environmental requirements

Temperature range:	
Operating	0°C to 50°C (32°F to 122°F)
Non-operating	–40°C to 65 °C (–40°F to 149 °F)
Relative humidity (maximum):	
Operating	10% to 90% (non-condensing)
Non-operating	5% to 95% (non-condensing)
Altitude (maximum, unpressurized):	
Operating	–15.20 m to 3048 m (–50 ft to 10,000 ft)
Storage	–15.20 m to 10,668 m (–50 ft to 35,000 ft)

Contacting Dell

To contact Dell for sales, technical assistance, or customer service issues:

- 1 Go to **www.dell.com/contactdell**.
- 2 Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
- 3 Select the appropriate service or support link based on your requirement or choose the method of contacting Dell that is convenient for you.

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.



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.