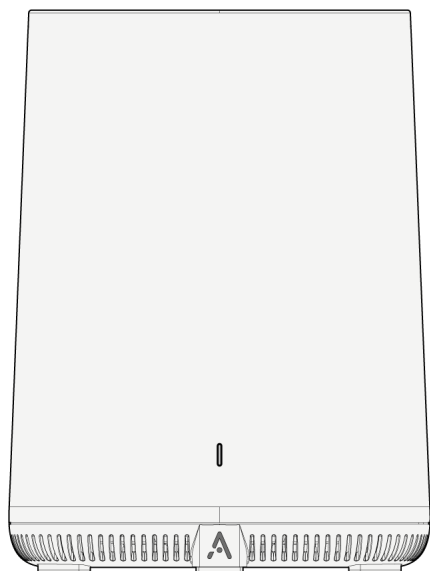


## Overview

The SDG-8712 and SDG-8712v are carrier-class, dual-band routers that support Wi-Fi 7, provide 2.5 GbE throughput, and enable advanced service delivery capabilities to homes and small business enterprises.

Figure 1: SDG-8712v Front View



The SDG-8712 and SDG-8712v come with pre-loaded software packages.

Table 1: SDG-8712 and SDG-8712v Variants

| Description | Software      | P/N         |
|-------------|---------------|-------------|
| SDG-8712    | SmartOS       | 17600086FxS |
|             | PlumeOS DHCP  | 17600086FxP |
|             | PlumeOS PPPoE | 17600086FGP |
| SDG-8712v   | SmartOS       | 17600085FxS |
|             | PlumeOS DHCP  | 17600085FxP |
|             | PlumeOS PPPoE | 17600085FGP |



### WARNING

A warning indicates a hazard that, if not avoided, could result in death, injury, or serious property damage.



### CAUTION

A caution indicates a hazard that, if not avoided, could result in service interruption, damage to the equipment, or minor property damage.



### NOTE

A note highlights additional, but important, information or features.

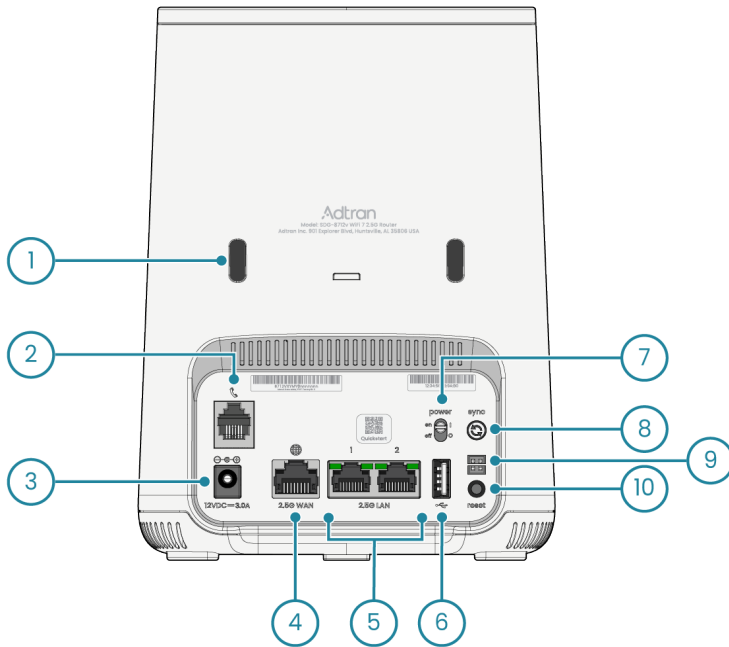


#### NOTE

In Table 1, x represents the country code:

- 1 = North America
- 2 = United Kingdom
- 3 = European Union
- 4 = Australia/New Zealand

Figure 2: SDG-8712v Back View



| Callout | Description                 |
|---------|-----------------------------|
| 1       | Mounting holes              |
| 2       | Voice port (SDG-8712v only) |
| 3       | Power input                 |
| 4       | 2.5 GbE WAN port            |
| 5       | 2.5 GbE LAN ports and LEDs  |
| 6       | USB 2.0 Type-A port         |
| 7       | Power on/off                |
| 8       | Sync button                 |
| 9       | Console port                |
| 10      | Reset button                |

DRAFT

# Installation

After you unpack the unit, inspect it for damage. If you notice any damage, file a claim with the carrier and then contact Adtran. For more information, see [Warranty](#).

|                                                     |   |
|-----------------------------------------------------|---|
| Installation Guidelines .....                       | 3 |
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| Step 4: Setting Up .....                            | 7 |
| Step 5: Logging In .....                            | 7 |

## Installation Guidelines



### NOTE

See the national, state, and local electrical codes for the requirements for power, grounding, wiring, and installation methods.

- Read all warnings and cautions before you install or service the SDG-8712 and SDG-8712v.
- Ensure that the SDG-8712 and SDG-8712v are not located in direct sunlight or next to any thermal obstructions.
- Ensure that the SDG-8712 and SDG-8712v do not come in contact with water or other liquids.
- For wall-mounting, the screws and anchors are intended for drywall mounting only. For mounting on other surfaces, obtain the appropriate mounting hardware and follow the provided instructions.



### CAUTION

This product is intended for indoor use only. Use the Ethernet cables, Voice cables, USB cables, and attached equipment within the same building with equipotential bonding. Do not place them in separate buildings or structures. You can safely connect the Voice and Ethernet cables to network wiring that is distributed within the building (Building Wiring per IEC 62368-1). The USB interfaces are not intended for distribution on Building Wiring. If you fail to deploy as described, it could result in permanent damage from lightning or other electrical events and voids the warranty.

Table 2 shows the recommended minimum distance between the device and household appliances to reduce interference.

**Table 2: Recommended Distance Between the Device and Household Appliances**

| Household Appliance      | Minimum Distance  |
|--------------------------|-------------------|
| Microwave ovens          | 30 feet/9 meters  |
| Baby monitor — analog    | 20 feet/6 meters  |
| Baby monitor — digital   | 40 feet/12 meters |
| Cordless phone — analog  | 20 feet/6 meters  |
| Cordless phone — digital | 30 feet/9 meters  |
| Bluetooth devices        | 20 feet/6 meters  |
| ZigBee                   | 20 feet/6 meters  |

Shipment Contents

- SDG-8712 or SDG-8712v Wi-Fi 7 router
- 12 VDC power adapter (barrel jack)
- EMM-1 wall-mount adapter
- Wall-mounting hardware
  - Two #6 x 1" (M3.5 x 25 mm) screws for wall-mounting to drywall
  - Two 1/4" x 1" (6 mm x 25 mm) anchors for wall-mounting to drywall
- Cat 6a Ethernet cable

Required Equipment

In addition to standard technician tools, use this equipment to install the SDG-8712 and SDG-8712v:

- RJ11 modular telephone cable for voice services
- #2 Phillips screwdriver
- Drill
- 6-mm drill bit — for wall mounting to drywall
- Hammer — for wall mounting to drywall
- Appropriate size drill bit and screws — for wall mounting to other surfaces

Step 1: Installing the SDG-8712 and SDG-8712v

Follow one of these procedures to install the SDG-8712 and SDG-8712v:

|                               |   |
|-------------------------------|---|
| Desktop Installation .....    | 4 |
| Wall-Mount Installation ..... | 4 |



NOTE

Route and secure the cables in a manner that prevents damage.

Desktop Installation

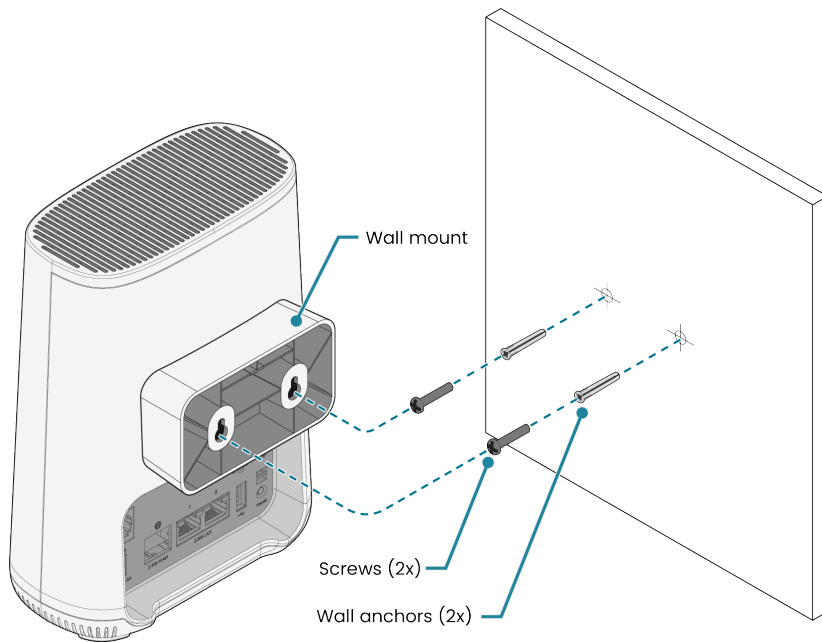
You can locate the SDG-8712 and SDG-8712v on a desktop or table, but first ensure that the location meets the requirements listed in [Installation Guidelines](#).

Wall-Mount Installation

1. Determine the location for the router, and ensure that the LEDs are visible.
2. Use the keyholes on the wall-mount adapter as a template and mark the wall accordingly.

DRAFT

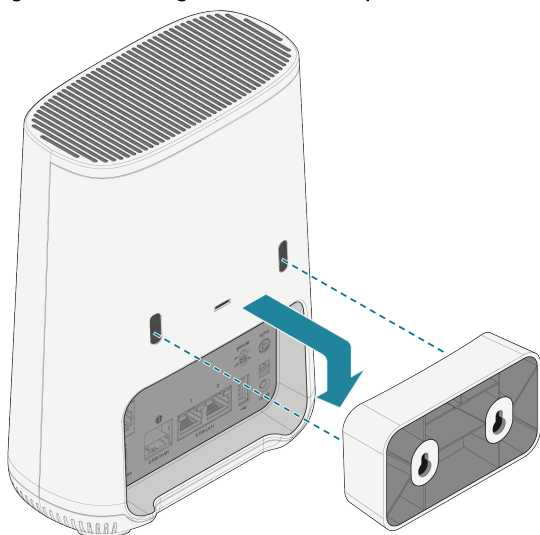
Figure 3: Attaching Wall Mount for SDG-8712v Example



2. To fasten the wall-mount adapter to drywall:
  - a. Use a 6-mm drill bit to drill the mounting holes into the wall.
  - b. Use a hammer to lightly tap the included wall anchors into the drilled holes until they are flush with the wall.
  - c. Align the holes in the wall mount with the anchors in the wall.
  - d. Use the screwdriver to install two screws (included) into the anchors. Do not overtighten.
3. To fasten the wall-mount adapter to other surfaces:
  - a. Obtain screws designed for your desired surface.
  - b. Use an appropriate size drill bit to drill pilot holes, if applicable.
  - c. Use the screwdriver and two appropriate screws to secure the wall mount to the wall.

Snap the router into the wall mount, by inserting the wall mount tabs into the mounting holes and pushing down on the router.

Figure 4: Mounting SDG-8712v Example



## Step 2: Connecting the Power

The SDG-8712 and SDG-8712v both ship with a 12 VDC power adapter. You connect the power adapter to the power input connector located on the back of the router.

1. Attach the correct plug adapter for your region. See [Table 3](#).
2. Plug the provided 12 VDC power adapter into the power connection on the back of the router.



### NOTE

Only a qualified technician can use the console port located on the back of the router to troubleshoot and repair the device.

3. Verify that the power switch is in the On position. The device ships from Adtran with the power switch in the On position.
4. Ensure that the Multifunction Status LED is lit on the front of the device, as described in [LEDs](#).



### NOTE

Adtran recommends only using the DC power adapter that is provided with the unit.

## Step 3: Connecting the Subscriber Services

These subscriber connections are available on the SDG-8712 and SDG-8712v and are shown in [Figure 2](#):

- 2.5 GbE WAN port (RJ45 connector)
- Two 2.5 GbE LAN ports (RJ45 connector)
- USB 2.0 host port (Type-A connector)
- Voice port (RJ11 connector) (SDG-8712v only)



### NOTE

Route and secure the cables in a manner that prevents damage.



### NOTE

Ensure that the premises wiring is disconnected at the outdoor service providers connection point when connecting the voice cables to existing premises jacks or wiring.

### Connecting the Ethernet Ports

1. Insert the Category 5e (or higher) Ethernet cable coming from the service provider Ethernet port into the 2.5G WAN port until you hear an audible click.
2. Insert one end of a Category 5e (or higher) Ethernet cable into the appropriate LAN port until you hear an audible click. The port you choose should be compatible with your local device.
3. Connect the other end to any local device requiring wired Ethernet service.

### Connecting the USB Port

The USB 2.0 host port is used for the direct connection of an Adtran-approved LTE communication module.

### Connecting the Voice Port (SDG-8712v only)

1. Insert an RJ11 cable into the voice port until you hear an audible click. See [Figure 2](#) for the port location.
2. Connect the other end to any local device requiring voice service.

## Step 4: Setting Up

### Setting Up with PlumeOS

For devices with PlumeOS installed, you need to download and install the HomePass Smartphone application by Plume. You can find it in the Google Play Store or the Apple App Store. The workflow for initializing an Adtran SDG device differs slightly from other Plume enabled devices. See the PlumeOS User Guide or the HomePass app for quick setup instructions.

### Setting Up with SmartOS

For devices with SmartOS installed, scan the QR code labeled *QuickStart* located on the back of the unit. You will see a series of self-guided steps to choose your account password, select the gateway or access point mode, and configure the Wi-Fi SSID and passphrase. The specified account password is used when you initially log into the GUI on the router.

## Step 5: Logging In

### Logging In Using PlumeOS

When running PlumeOS, all settings are configured through either the HomePass Smartphone application (customers) or the Frontline application in the Plume portal (ISPs). You can find HomePass in the Google Play Store or the Apple App Store. Frontline is located in the Plume portal at <https://portal.plume.com/home>.

### Logging In Using SmartOS

You use a browser-based user interface (GUI) to manually configure the SDG-8712 or SDG-8712v.

To connect and log in to the device using SmartOS:

1. Ensure your computer is connected to the router either using Wi-Fi or the Ethernet connection to one of the LAN ports.
2. Configure your computer network interface to acquire an IP address automatically using DHCP.
3. Open a web browser and enter **http://router** or **http://setup**. A sign-in page appears. If you are unable to connect to the router using either of these shortcuts, you can also enter the IP address of the unit. The default IP address is **192.168.1.1**.
4. Enter the default username (**admin**) and password. The password is the account password that you specified during the quick setup.



#### NOTE

If you forgot the password for this device, select **Forgot password?** and follow the instructions to reset the gateway configuration to the factory defaults.

5. Select **Sign In**. The Dashboard page appears, showing data about the system.



#### NOTE

If you use the Intellifi MeshView solution, use the set up procedures in the Intellifi Mobile Application.

## LEDs

When the SDG-8712 and SDG-8712v first power up, they perform self-tests. When the tests are complete, the LEDs display the device status.

### Multifunction Status LED for SmartOS

The Multifunction Status LED on the front indicates the status of the device while running SmartOS. The LEDs appear in order of operation.

| Color            | LED State | Indication                                      |
|------------------|-----------|-------------------------------------------------|
| Initial Set Up   |           |                                                 |
| Blue             | Solid     | Cold boot                                       |
| Red              | Pulsing   | Reboot and system upgrade (persists over uboot) |
| Green            | Pulsing   | Linux booting up                                |
| Light blue       | Pulsing   | Quick start                                     |
| White            | Solid     | Controller WAN up, Internet                     |
| Amber            | Solid     | Controller WAN down, no Internet                |
| Satellite Set Up |           |                                                 |
| Purple           | Pulsing   | Satellite set up                                |
| White            | Solid     | Satellite up                                    |
| Red              | Pulsing   | Satellite up, fair signal                       |
| Amber            | Pulsing   | Satellite up, poor signal                       |
| White            | Pulsing   | Reverting                                       |

### Multifunction Status LED for PlumeOS

The Multifunction Status LED on the front indicates the status of the device while running PlumeOS.

| Color | LED State   | Indication                    |
|-------|-------------|-------------------------------|
| Red   | Short pulse | Plume error or hardware error |
| Green | Long pulse  | Connecting                    |
| White | Long pulse  | Connection failure            |
| Blue  | Short pulse | WPS/Bluetooth connecting      |
| Green | Blinking    | Locating a device             |
| Green | Blinking    | Optimizing                    |
| Off   | Off         | Connected                     |

## Ethernet Status LEDs

The Ethernet Status LEDs indicate the status of the Ethernet interfaces.

| Port     | Color       | Indication                |
|----------|-------------|---------------------------|
| 2.5G LAN | Green/Right | Speed is 2.5 Gbps         |
|          | Green/Left  | Speed is 1 Gbps           |
|          | Amber/Left  | Speed is 100 Mbps or less |

## Reset Button

If you need to reboot the SDG-8712 and SDG-8712v, press **Reset** for less than 5 seconds.



### WARNING

If you press **Reset** for longer than 5 seconds, the SDG-8712 and SDG-8712v reset to factory defaults.

## Sync Button

To enable WPS on the SDG, press **Sync**. This enables a WPS broadcast capable of onboarding a nearby satellite or other WPS client devices. If you use WPS to onboard multiple satellites, you should press **Sync** for each satellite until they are all claimed.

The Sync button enables WPS on the 5G radio. To enable WPS on the 2.4G radio, press and hold down the button for 5 seconds.



### NOTE

Adtran recommends that you use the GUI or Intellifi Mobile Application to pair satellites.

## Specifications

### Electrical

Power is provided by an AC to 12 VDC power adapter that is included with the SDG-8712 and SDG-8712v. The nominal output is 12 VDC  $\pm 5\%$  with a maximum current rating of 3.0 Amps.



### NOTE

Adtran strongly suggests that the power supply included with the SDG-8712 and SDG-8712v be connected to a surge suppressor device which can have its own extension cable. The surge protection device should provide L-N, L-G, and N-G protection. Adtran also recommends that the device contains a visual 'GOOD' indicator.

Table 3: Regional Plug Adapter Specifications

| Region                | Power                        | Connector Type                                                                               | Certifications                                         |
|-----------------------|------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Global                | 100 to 240 VAC @ 50 to 60 Hz | NEMA 1-15 Type A, right-angle orientation, Type G, Type C/F, Type I, right-angle orientation | cULus Listed, CE compliant, RCM Tick Mark              |
| North America         | 120 VAC @ 60 Hz              | NEMA 1-15 Type A, right-angle orientation                                                    | cULus Listed                                           |
| United Kingdom        | 230 VAC @ 50 Hz              | Type G                                                                                       | BS 1363 and I.S. 401 compliant, CE compliant           |
| European Union        | 220 to 240 VAC @ 50 Hz       | Type C/F                                                                                     | CE compliant with NB code                              |
| Australia/New Zealand | 220 to 240 VAC @ 50 Hz       | Type I, right-angle orientation                                                              | RCM Tick Mark, ERAC Listed, GEMS and EESS registration |

## Environmental

- Operating temperature: 41°F to 104°F (5°C to 40°C)
- Storage temperature: -13°F to 158°F (-25°C to 70°C)
- Transportation temperature: -40°F to 158°F (-40°C to 70°C), any humidity
- Operating humidity: 5 to 85 percent, non-condensing

## Compliance

This product meets these compliance requirements:

- US and Canada NRTL Listed
- FCC Part 15, Class B
- FCC Part 2J, 2.1091 (MPE)
- ICES-003 (Class B)
- ACMA/RCM
- IEC/EN/AS/NZS 62368-1
- CE Mark
- ErP
- RoHS Compliant



### NOTE

Changes or modifications not expressly approved by Adtran voids the warranty.

## Documentation

You can view and download the Adtran product documentation from our documentation portal. To access our documentation portal, click one of these options:

- [docs.adtran.com](https://docs.adtran.com)
- [My Adtran](#) > **Support Community** > **Technical Documentation**

These online documents and resources provide additional information for this product:

- *SDG SmartOS User Guide*
- *PlumeOS User Guide*
- Applicable release notes based on firmware

## Training

Adtran offers training courses for our products, including customized training and courses taught at our facilities or at customer sites. For inquiries, see <https://adtran.com/training>.

## Warranty

Adtran will replace or repair this product within the warranty period if it does not meet its published specifications or fails while in service. Warranty information can be found online at <https://www.adtran.com/warranty>.

# Safety and Regulatory



## CAUTION

- Connect the DC power input to an approved Limited Power Source (LPS) power supply only.
- This product is intended to operate in ambient temperatures up to 40°C.



## NOTE

This product meets these compliance requirements:

- This equipment contains no parts that can be serviced by the user.
- This product meets EU RoHS Directive. See [www.adtran.com/environmental](http://www.adtran.com/environmental) for further information on RoHS/WEEE.
- This product is NRTL Safety Listed to the applicable UL/CSA Standards.
- This product has also been evaluated to applicable international standards as indicated by CE and RCM marking.
- The AC branch circuit socket-outlet must be installed near the equipment and must be easily accessible.
- The RJ45 jacks are not used for Voice connections.

## Regulatory Compliance

This section includes user requirements for operating this product in accordance with national laws for usage of radio spectrum and operation of radio devices. Your failure to comply with the applicable requirements can result in unlawful operation and adverse action against you by the applicable national regulatory authority.

This product's firmware limits operation to only the channels allowed in a particular region or country. Therefore, all options described in this guide might not be available in your version of the product.

### Europe — EU Declaration of Conformity

Products bearing the marking comply with these EU Directives:

- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- ErP Directive reference: 2009/125/EC
- RoHS Directive 2015/863/EU
- WEEE Directive reference: 2012/19/EU
- RED 2014/53/EU
- RED Cybersecurity EN 18031

Compliance with these directives implies conformity to harmonized European standards that are noted in the EU Declaration of Conformity.

For indoor use only. Valid in all EU member states, EFTA states, and Switzerland.

5150 to 5350 MHz is limited to indoor used in these countries:

|    |    |    |    |    |        |    |    |    |    |    |
|----|----|----|----|----|--------|----|----|----|----|----|
| BE | BG | CZ | DK | DE | EE     | IE | EL | ES | FR | HR |
| IT | CY | LV | LT | LU | UK     | MT | NL | AT | PL | PT |
| RO | SI | SK | FI | SE | UK(NI) | LI | IS | NO | TR | CH |

### FCC Requirements for Operation in the United States

#### FCC Information to User

This product does not contain any user serviceable components and is to be used with approved antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals.

### **FCC Guidelines for Human Exposure**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 23 cm between the radiator and your body.

This device must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

This radio transmitter (FCC ID: HDC-17600085) has been approved by the FCC.

### **FCC Declaration of Conformity**

This device complies with Part 15 of the FCC rules. Operation is subject to these two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

### **FCC Radio Frequency Interference Warnings and Instructions**

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, you are encouraged to try to correct the interference by one or more of these 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.

The specification for this product also lists FCC CFR Part 2, 2.1091 (MPE).

The operation of this device is prohibited on oil platforms, cars, trains, boats, and aircraft, except that operation of this device is permitted in large aircraft while flying above 10,000 feet.

## **CAN ICES-3(B)/NMB-3(B)**

### **Canadian Department of Communications Radio Interference Regulations**

This digital apparatus (Wi-Fi 7 Router Model SDG-8712 and SDG-8712v) does not exceed the Class B limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

### **Industry Canada**

This device complies with RSS-247 of the Industry Canada Rules.

Operation is subject to these 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.



#### **ATTENTION**

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 23 cm de distance entre la source de rayonnement et votre corps.



#### **CAUTION**

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 of 23 cm between the radiator and your body.

This radio transmitter (IC: 2250A-17600085) has been approved by Industry Canada to operate with these antenna types. Antenna types not included in this list are strictly prohibited for use with this device.

- RSS-102 (MPE)



**ATTENTION**

- i. les dispositifs fonctionnant dans la bande 5150–5250MHz 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;
- ii. le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5250 à 5350 MHz et de 5470 à 5725 MHz doit être conforme à la limite de la p.i.r.e.;
- iii. le gain maximal d'antenne permis (pour les dispositifs utilisant la bande de 5725 à 5850 MHz) doit être conforme à la limite de la p.i.r.e. spécifiée pour l'exploitation point à point et l'exploitation non point à point, selon le cas;
- iv. 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.



**CAUTION**

- i. The device for operation in the band 5150 to 5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- ii. The maximum antenna gain permitted for devices in the band 5725 to 5850 MHz shall be such that the equipment still complies with the EIRP limits specified for point-to-point and non-point-to-point operation as appropriate.
- iii. 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.
- iv. Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250 to 5350 MHz and 5650 to 5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

**Australia/New Zealand – ACMA/RCM**

AS/NZS CSPR 32, Class B (EMC), AS/NZS 4268 (RF), RCM mark with R-NZ

|                                                                                                |                                                                                                                               |                                                                                                                         |                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>North America</b></p> <p>Adtran, Inc.<br/>901 Explorer Blvd<br/>Huntsville, AL 35806</p> | <p><b>United Kingdom</b></p> <p>ADVantage House<br/>Tribune Way<br/>Clifton Moor<br/>York<br/>YO30 4RY<br/>United Kingdom</p> | <p><b>European Union</b></p> <p>Campus Martinsried<br/>Fraunhoferstraße 9a<br/>82152 Martinsried/Munich<br/>Germany</p> | <p><b>Adtran Customer Care</b></p> <p><b>From within the U.S.</b><br/>1.888.423.8726</p> <p><b>From outside the U.S.</b><br/>+1 256.963.8716</p> <p><b>Pricing and Availability</b><br/>1.800.827.0807</p> |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



**CAUTION!**

SUBJECT TO ELECTROSTATIC DAMAGE  
OR DECREASE IN RELIABILITY  
HANDLING PRECAUTIONS REQUIRED

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