

191mm

cradlepoint

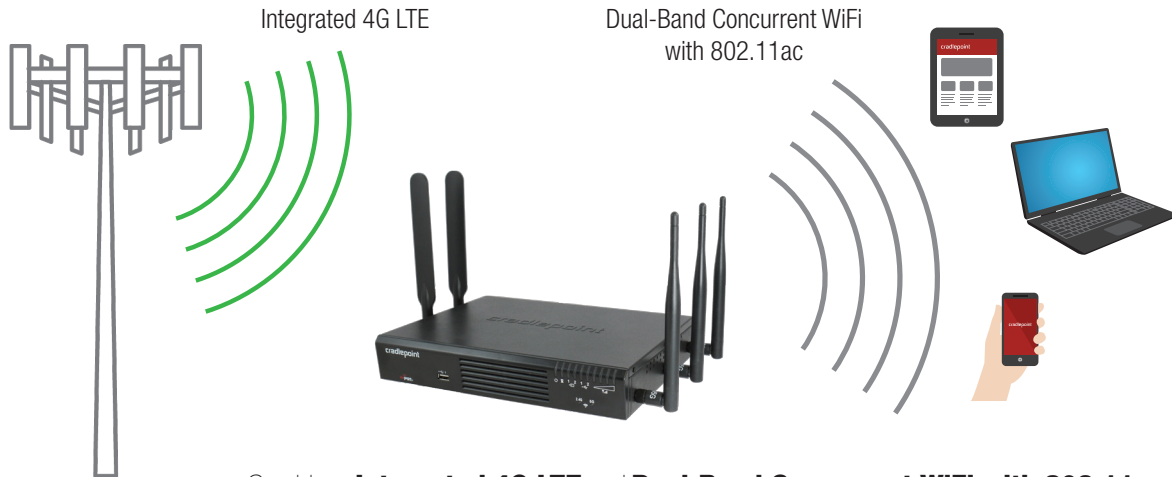
All-in-One, Cloud-Managed Networking Solution



Quick Start Guide

127mm

The best in **wireless WAN** ... meets the best in **wireless LAN**.



- Combines **Integrated 4G LTE** and **Dual-Band Concurrent WiFi with 802.11ac**
- Failover/failback and load balancing: 4G LTE + Ethernet + WiFi as WAN
- Enterprise-level security and features, including: VPN, VLAN, VRRP, BGP, OSPF, RIP, and more
- Dynamic Management with **CradlePoint Enterprise Cloud Manager**

## *What's In The Box*



CradlePoint AER 2100



Dual-Band 2.4/5 GHz  
WiFi Antennas



Integrated 3G/4G Modem  
with Antennas



12V 3A AC/DC  
Power Supply



Ethernet Cable



Multipurpose Retaining Tool  
with screws for securing



Quick Start Guide

## **Accessories**

- Power adapters and international power cords
- External modem antennas and cabling
- Rack mounting bracket

## **CradlePoint Enterprise Cloud Manager**

Use **CradlePoint Enterprise Cloud Manager** for rapid deployment, dynamic management, and enhanced intelligence of CradlePoint enterprise network solutions. Visit [www.cradlepoint.com/ecm](http://www.cradlepoint.com/ecm) to learn more.

## **Enterprise Support**

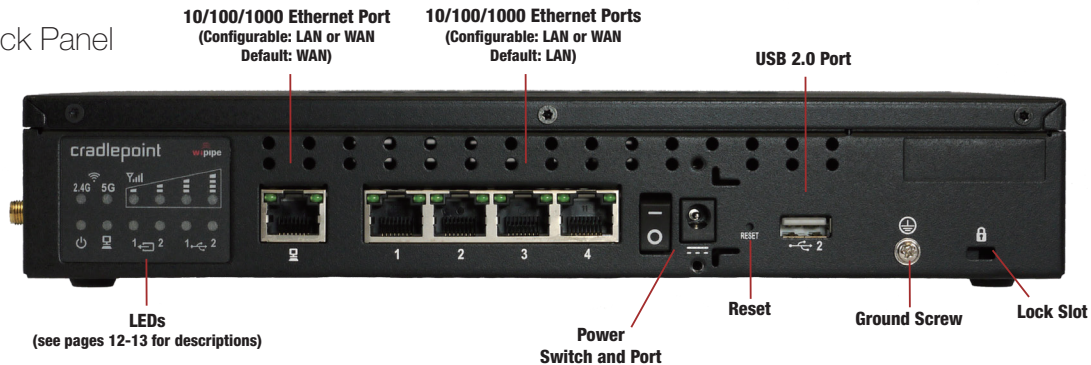
For enhanced services including enterprise-level support, extended warranties, site surveys, and expert installation, check out CradlePoint's **CradleCare** suite of services. Visit [www.cradlepoint.com/cradlecare](http://www.cradlepoint.com/cradlecare) to learn more.

# Hardware

Front Panel



Back Panel

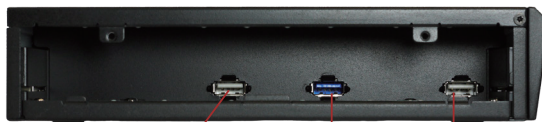


## Left Side

With Cover



Cover Removed



Modem Port  
(USB 2.0)

Modem Port  
(USB 3.0)

Modem Port  
(USB 2.0)

With Integrated Modem



3G/4G Antenna Connectors  
(SMA)

## Right Side



WiFi Antenna Connectors  
(Reverse SMA)

**WiFi**



**Modem**



When connecting the provided antennas, review the connection points.

- WiFi antennas have flat circular bases (RSMA).
- Modem antennas have protruding pins (SMA).

Integrated modem antennas include symbols to indicate the cellular technology:

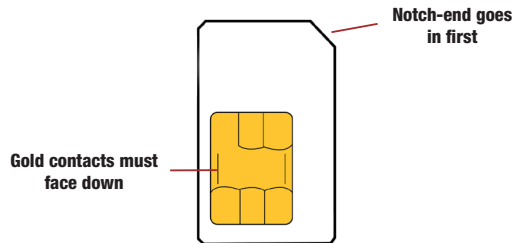
- = LTE/EVDO for Verizon
- = LTE/HSPA+ for AT&T/Canada
- = LTE/HSPA+ for Europe

### 1. Insert an activated SIM.

A wireless broadband data plan must be added to your CradlePoint AER 2100. Wireless broadband data plans are available from wireless carriers such as Verizon, AT&T, Sprint, EE, and Vodafone. The SIM must be provisioned with the carrier. Contact your carrier for details about selecting a data plan and about the process for provisioning your SIM.

Once you have an activated SIM, insert it into the integrated modem. Be sure to insert the card with the notch-end first and the gold contacts facing down—it will click into place.

#### Sample SIM card



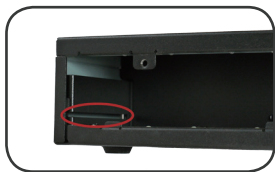
### 2. Attach the integrated modem.

Follow these steps to attach the integrated modem:

1. Remove the left side panel cover from the router. Use a Phillips screwdriver to remove the screws, and use the Multipurpose Retaining Tool (included in the router package) to remove the cover.



2. Slide the modem into the side of the router. The protruding section of the green board fits into the groove.



3. Reattach the panel cover and screw it back on. (When necessary, remove the cover and modem using the Multipurpose Retaining Tool.)



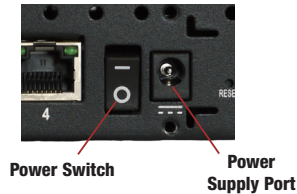


### 4. Connect the power source.

Plug the provided power supply (12V DC wall adapter) into an electrical outlet. Then connect the power supply to the router.

Ensure power is switched on:

- O = OFF
- I = ON



When you set the power switch to the ON ( I ) position, watch for the power LED to illuminate.

If you would like to secure the power supply cord, attach the Multipurpose Retaining Tool as shown. Secure with included screws.



### 5. Connect to a computer or other network equipment.

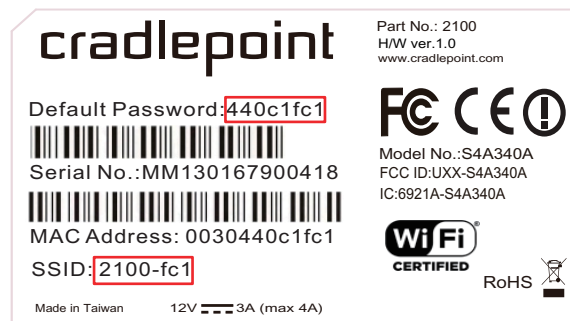
In order to access the CradlePoint AER 2100, establish a connection to the router. Connect wirelessly to the WiFi broadcast or with an Ethernet cable connected to your computer and then plugged into one of the Ethernet LAN ports (numbered 1–4).

The default WiFi network name broadcast is “2100-xxx”, where “xxx” is the last three characters of your router’s MAC address (this is the **SSID** on the product label). To connect to the WiFi, you will need to input the **DEFAULT PASSWORD** when prompted. The **DEFAULT PASSWORD** is provided on the product label found on the bottom of your router.

#### Accessing the Administration Pages

Once you are connected, open the CradlePoint AER 2100’s GUI-based administration pages to make configuration changes to your router.

1. Open a browser window and type “cp/” or “**192.168.0.1**” in the address bar. Press **ENTER/RETURN**.
2. When prompted for your password, type the eight character **DEFAULT PASSWORD** found on the product label.



## First Time Setup Wizard

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When you log in for the first time, you will be automatically directed to the **FIRST TIME SETUP WIZARD**, which will walk you through the steps to customize your CradlePoint AER 2100. You have the ability to configure any of the following:

- Administrator Password
- Time Zone
- WiFi Network Name
- Security Mode
- Access Point Name (APN) for SIM-based modems
- Modem Authentication
- Failure Check

If you are currently using the router's WiFi network, you will need to reconnect your devices to the network using the newly established wireless network name and password.

*NOTE: To return to the First Time Setup Wizard after your initial login, select GETTING STARTED on the top navigation bar and FIRST TIME SETUP in the dropdown menu.*



**POWER** The CradlePoint AER 2100 must be powered using an approved 12V DC power source.

- Green = Powered ON.
- No Light = Not receiving power. Check the power switch and the power source connection.
- Flashing Amber = Attention. Open the administration pages (see page 10) and check the router status.



**ETHERNET WAN** Indicates information about a data source connected to the Ethernet WAN port.

- Blue = Connected to an active Ethernet WAN interface.



**WiFi BROADCAST** These two LEDs indicate activity on the WiFi broadcast for both the 2.4 GHz and 5 GHz bands.

- **2.4G** (green) = 2.4 GHz WiFi is on and operating normally.
- **5G** (blue) = 5 GHz WiFi is on and operating normally.



**SIGNAL STRENGTH** Blue LED bars indicate the active modem's signal strength.

- 4 Solid Bars = Strongest signal.
- 1 Blinking Bar = Weakest signal. (A blinking bar indicates half of a bar.)



**INTEGRATED MODEM** Indicates the status of integrated modems.



**EXTERNAL USB MODEM** Indicates the status of external USB modems.

Both integrated and external USB modems have the following LED indicators:

- Green = Modem has established an active connection.
- Blinking Green = Modem is connecting.
- Amber = Modem is not active.
- Blinking Amber = Data connection error. No modem connection possible.
- Blinking Red = Modem is in the process of resetting.

### **ADDITIONAL LED INDICATIONS**

- Several different LEDs flash when the factory reset button is detected.
- Two of the modem LEDs blink red in unison for 10 seconds when there is an error during firmware upgrade.

You may need to update the CradlePoint AER 2100 firmware to get our latest features or to connect to new modems. For more information, visit: **knowledgebase.cradlepoint.com**

### HOW TO UPDATE FIRMWARE (AUTOMATIC)

- 1) Log in to the administration pages (see page 10). You may have changed the **ADMINISTRATOR PASSWORD**.
- 2) Select **SYSTEM SETTINGS → SYSTEM SOFTWARE**.
- 3) If new firmware is available, select **AUTOMATIC (Internet)**. (This process requires an active data source.)
- 4) Wait a moment while firmware is updated and the router reboots (do not close the browser window when updating).

### HOW TO UPDATE FIRMWARE (MANUAL)

Downloading firmware manually is only necessary when your router is offline. This could occur if your modem won't connect because of outdated firmware.

- 1) Go to **www.cradlepoint.com/firmware**. Select the AER 2100 from the dropdown list.
- 2) Download the most current version of the router firmware to your desktop.
- 3) Follow steps 1–2 above: log in to the administration pages and navigate to **SYSTEM SETTINGS → SYSTEM SOFTWARE**.
- 4) Select **MANUAL FIRMWARE UPLOAD** and click the **BROWSE** button.
- 5) Select the firmware file you saved to your desktop and click **OPEN** and then **BEGIN FIRMWARE UPGRADE**.
- 6) Wait a moment while firmware is updated and the router reboots (do not close the browser window when updating).

Depending on your modem, you may need to specify the **APN** (Access Point Name).

### **SELECT THE APN**

- 1) Log in to the administration pages (see page 10).
- 2) Select **INTERNET → CONNECTION MANAGER**.
- 3) Select the modem you would like to manage. Click **EDIT** to open the WAN Configuration editor.
- 4) Select the **SIM/APN/AUTH SETTINGS** tab. In the **ACCESS POINT CONFIGURATION** field, either select the desired APN from the options displayed or enter it manually.
- 5) Input the username and password for authentication if required by your carrier.
- 6) Click **SUBMIT**.

The CradlePoint AER 2100 is a business-grade router specifically designed to meet the needs of distributed enterprise: retail locations, branch offices, restaurants, and convenience stores. Optimized for performance, reliability, and maximum WiFi range, the CradlePoint AER has access to a cloud-enabled management and application platform called CradlePoint Enterprise Cloud Manager for rapid deployment, dynamic management, and enhanced intelligence of CradlePoint enterprise edge solutions.



### Secure Access

The CradlePoint AER 2100 supports WEP, WPA, and WPA2 encryption modes to create secure Internet connections for up to 128 connected devices per WiFi channel (2.4 GHz and 5 GHz). 253 users can connect via Ethernet (with default DHCP settings). Prevent unwanted access to computers connected to your networks with an SPI Firewall and NAT (Network Address Translation). Features like URL Filtering, Traffic Filtering, DMZ, Virtual Server, Port Forwarding, and FTP pass-through (passive and active) are also available to enable safe Internet access for all connected users.

HOW TO CONFIGURE: Select **NETWORK SETTINGS → FIREWALL** for firewall options. Select **NETWORK SETTINGS → WIFI / LOCAL NETWORKS** for WiFi security settings, IPv6 configuration, and more.

### VPN (Virtual Private Networking), GRE (Generic Route Encapsulation)

Create, manage, and terminate secure VPN tunnels between remote computers and secure corporate networks with IPsec. With up to 20 concurrent sessions, the CradlePoint AER 2100 supports both VPN and GRE, including multiple routes in a single tunnel. Provide end-to-end protection of secure company communications with Hash and Cipher encryption algorithm protocols.

HOW TO CONFIGURE: Select **INTERNET → VPN Tunnels** or **INTERNET → GRE Tunnels**. Click **ADD** to create a new tunnel.



### Load Balancing

When multiple data sources are connected to the router (4G, Ethernet, WiFi), it can be configured to distribute all connected users or device traffic across active data connections. This feature distributes each connected user to the best data source available, relieving congestion and pressure on any single data source. *If you are using more than two LTE modems, a special 12V 4A (48W) power supply is required.*

**HOW TO CONFIGURE:** Select **INTERNET → CONNECTION MANAGER**. In the WAN Interfaces table, select **LOAD BALANCE** for the WAN devices you want configured for load balancing.

### Failover

When multiple Internet sources (4G, Ethernet, WiFi) are connected to the CradlePoint AER 2100, the router can automatically detect an Internet outage and “fail over” to a secondary connection and “fail back” when the primary data service returns. Redundant connection keeps your business going.

**HOW TO CONFIGURE:** Select **INTERNET → CONNECTION MANAGER**. Order your connections by failover priority.

### Dual-Band Concurrent WiFi Networks

The CradlePoint AER 2100 can broadcast up to four WiFi networks on both the 2.4 GHz and 5 GHz bands. Secured SSIDs are used for your trusted workgroup members. Guest (public) SSIDs can provide full, secure access to the Internet, but users are restricted from accessing the router administration console or any connected devices on the private network. Each network can be configured with its own security, QoS, and VLAN Settings. You also have the ability to “Hide” network names (SSIDs) from broadcast.

**HOW TO CONFIGURE:** Enable the Guest Network in Step 2 of the First Time Setup Wizard. It will appear by default as “Guest-XXX” in your available networks list (XXX = the last three characters of your routers MAC Address). For more WiFi configuration options, go to **NETWORK SETTINGS → WIFI / LOCAL NETWORKS**.

### VLAN Support

Create and manage virtual LANs to segregate and secure your network.

**HOW TO CONFIGURE:** Select **NETWORK SETTINGS → WIFI / LOCAL NETWORKS**. Select the “VLAN Interfaces” tab under **LOCAL NETWORK INTERFACES**.

### WiFi as WAN

The CradlePoint AER 2100 can receive an existing WiFi signal and use it to create secure Internet access, allowing you to connect devices using the CradlePoint AER 2100’s security features. The WiFi as WAN feature can be used as a WiFi repeater or as a WiFi-to-Ethernet adapter for non-WiFi devices.

**HOW TO CONFIGURE:** Select **INTERNET → WIFI AS WAN / BRIDGE**. Enable **WIFI AS WAN** or **WIFI BRIDGE** by clicking on the appropriate button. The router automatically detects nearby WiFi networks: import the desired network.

### VRRP (Virtual Router Redundancy Protocol)

VRRP provides hardware redundancy for increased reliability. Configure master and backup routers for you network.

**HOW TO CONFIGURE:** Select **NETWORK SETTINGS → WIFI / LOCAL NETWORKS**. Select the desired network and click **EDIT**. Select the **VRRP** tab for configuration options.

### Advanced Routing Protocols (BGP/OSPF/RIP)

Border Gateway Protocol (BGP), Open Shortest Path First (OSPF), and Routing Information Protocol (RIP) are enterprise routing protocols that improve router communication and understanding of the network topology.

**HOW TO CONFIGURE:** Select **NETWORK SETTINGS → ROUTING PROTOCOLS**. Select the desired routing protocol to view configuration options.

### CradlePoint Enterprise Cloud Manager: Deploy and Manage the Intelligent Network

Rapidly deploy and dynamically manage networks at geographically distributed stores and branch locations with Enterprise Cloud Manager, CradlePoint's next generation management and application platform. Enterprise Cloud Manager integrates cloud management with your CradlePoint devices to improve productivity, increase reliability, reduce costs, and enhance the intelligence of your network and business operations.

- Deployment – configure devices by groups or individually, and update firmware easily with a few clicks.
- Management – monitor device statuses in real time and set proactive alerts for optimized 3G/4G data usage and network uptime.
- Intelligence – manage network security and track network interference information.

To learn more about **CradlePoint Enterprise Cloud Manager**, contact [services@cradlepoint.com](mailto:services@cradlepoint.com) or visit [www.cradlepoint.com/ecm](http://www.cradlepoint.com/ecm).

### **Federal Communication Commission Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against such 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 provided by CradlePoint, may cause harmful interference to radio communications. This device must accept any interference received, including interference that may cause undesired operations. 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 using one or more 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 or television technician for help.

Changes or modifications not expressly approved by CradlePoint, Inc. could void the user's authority to operate the product.

### **IMPORTANT NOTE: 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 37cm between the radiator and your body.

#### **Caution:**

- 1) The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.
- 2) The maximum antenna gain permitted (for devices in the band 5725-5825 MHz) to comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operations as appropriate, as stated in section A9.2(3).

This device has been designed to operate with an antenna having a maximum gain of 5 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

### **Déclaration d'Industrie Canada**

Ce dispositif est conforme à la norme CNR-210, CNR-102, et CNR-Gen d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

### **NOTE IMPORTANTE (Pour l'utilisation de dispositifs mobiles): 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 37 cm de distance entre la source de rayonnement et votre corps.

#### **Précaution**

- 1) Le dispositif fonctionnant dans la bande 5150-5250 MHz est réservé 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 d'antenne maximal autorisé (pour les appareils dans la bande 5725-5825 MHz) pour se conformer à la pire limites fixées pour les opérations de point à point et non point à point et non le cas échéant, comme indiqué dans la section A9.2 (3).

Ce dispositif a été conçu pour fonctionner avec une antenne ayant un gain maximal de 5 dBi. Une antenne à gain plus élevé est strictement interdite par les règlements d'Industrie Canada. L'impédance d'antenne requise est de 50 ohms.

### Open Source Software

This product contains software distributed under one or more of the following open source licenses: GNU General Public License Version 2, BSD License, Net-SNMP License, and PSF License Agreement for Python 3.3. For more information on this software, including licensing terms and your rights to access source code, contact CradlePoint at [www.CradlePoint.com](http://www.CradlePoint.com).

### Warranty Information

CradlePoint, Inc. warrants this product against defects in materials and workmanship to the original purchaser (or the first purchaser in the case of resale by an authorized distributor) for a period of one (1) year from the date of shipment. This warranty is limited to a repair or replacement of the product, at CradlePoint's discretion. CradlePoint does not warrant that the operation of the device will meet your requirements or be error free. Within thirty (30) days of receipt should the product fail for any reason other than damage due to customer negligence, purchaser may return the product to the point of purchase for a full refund of the purchase price. If the purchaser wishes to upgrade or convert to another CradlePoint, Inc. product within the thirty (30) day period, purchaser may return the product and apply the full purchase price toward the purchase of another CradlePoint product. Any other return will be subject to CradlePoint, Inc.'s existing return policy.

### Limitation of CradlePoint Liability

The information contained in this Quick Start Guide is subject to change without notice and does not represent any commitment on the part of CradlePoint or its affiliates. CRADLEPOINT AND ITS AFFILIATES HEREBY SPECIFICALLY DISCLAIM LIABILITY FOR ANY AND ALL: (A) DIRECT, INDIRECT, SPECIAL, GENERAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES, INCLUDING WITHOUT LIMITATION FOR

LOSS OF PROFITS OR REVENUE OR OF ANTICIPATED PROFITS OR REVENUE ARISING OUT OF THE USE OR INABILITY TO USE THE DEVICE, EVEN IF CRADLEPOINT AND/OR ITS AFFILIATES HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND EVEN IF SUCH DAMAGES ARE FORESEEABLE; OR (B) CLAIMS BY ANY THIRD PARTY.

Notwithstanding the foregoing, in no event shall the aggregate liability of CradlePoint and/or its affiliates arising under or in connection with the device or integrated modems, regardless of the number of events, occurrences, or claims giving rise to liability, exceed the price paid by the original purchaser of the device or integrated modems.

### Privacy

CradlePoint collects general data pertaining to the use of CradlePoint products via the Internet including, by way of example, IP address, device ID, operating system, browser type and version number, etc. To review CradlePoint's privacy policy, please visit: <http://www.cradlepoint.com/privacy>.

### Other Binding Documents; Trademarks; Copyright

By using your CradlePoint device, you agree to be bound by CradlePoint's Terms of Use, User License and other Legal Policies, all as posted at [www.cradlepoint.com/legal](http://www.cradlepoint.com/legal). Please read these documents carefully. CradlePoint and the CradlePoint logo are trademarks of CradlePoint, Inc. © 2013 CradlePoint, Inc. All rights reserved.

## Regulatory, Warranty, Safety, and Privacy Information

### RF EXPOSURE SAFETY NOTICE:

To comply with FCC/IC RF Exposure Limits set forth for an uncontrolled environment, the product must be installed and operated with a minimum separation distance (between nearby person(s) and radiating antenna) according to the following scenarios:

1. 20cm minimum when the product is operated alone without co-transmitting with a plug-in 3G USB dongle device.
2. 37cm minimum when the product is operated with a plug-in 3G USB device which has maximum of 7W ERP output power.
3. For co-transmission scenario which is not covered above, please consult the RF technician or device supplier.

### **AVERTISSEMENT DE SECURITE CONCERNANT LES EXPOSITIONS AUX FREQUENCES RADIO**

Pour être conforme aux limites d'exposition aux fréquences radio FCC/IC établies pour un environnement non contrôlé (utilisation par le grand public), l'équipement doit être installé et utilisé en laissant une distance de séparation de sécurité (entre la ou les personnes présentes dans le périmètre et l'antenne d'émission) selon les cas suivants :

1. 20cm au minimum quand le produit est utilisé seul sans co-transmettre à l'aide d'un appareil 3G USB enfichable.
2. 37cm au minimum quand le produit est utilisé avec un appareil 3G USB enfichable ayant une puissance de sortie maximale de 7W ERP.
3. Dans des cas de co-transmission non mentionnés ci-dessus, merci de bien vouloir consulter un technicien radio qualifié ou directement le fabricant de l'appareil.