cradlepoint AER 2100

All-in-One, Cloud-Managed Networking Solution

Quick Start Guide

What's In The Box

| CradlePoint AER 2100 | Dual-Band 2.4/5 GHz WiFi Antennas | Integrated MC400 3G/4G Modem with Antennas | 12V 3A AC/DC Power Supply | Ethernet Cable | Multipurpose Retaining Tool with screws for securing | Quick Start Guide |

Accessories

- Additional MC400 integrated 4G LTE modem*
- Rack mounting bracket
- Power adapters and international power cords
- External modem antennas and cabling

A CradlePoint MC400 integrated 4G LTE modem comes standard with the AER 2100. Add a second integrated MC400 modem for a complete "cut-the-wire" 4G LTE solution, fusing enterprise reliability with unparalleled agility.

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 **cradlepoint.com/cradlecare** to learn more.

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.
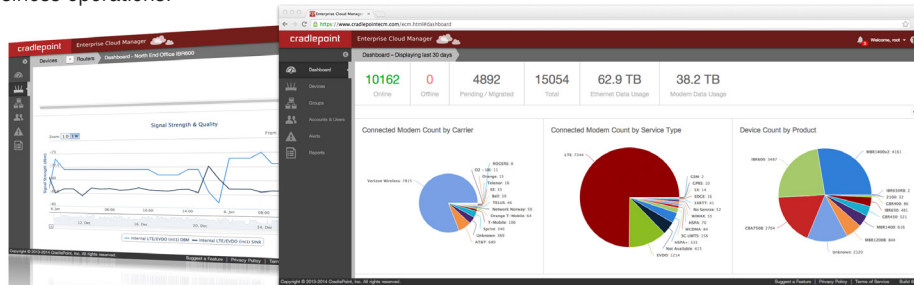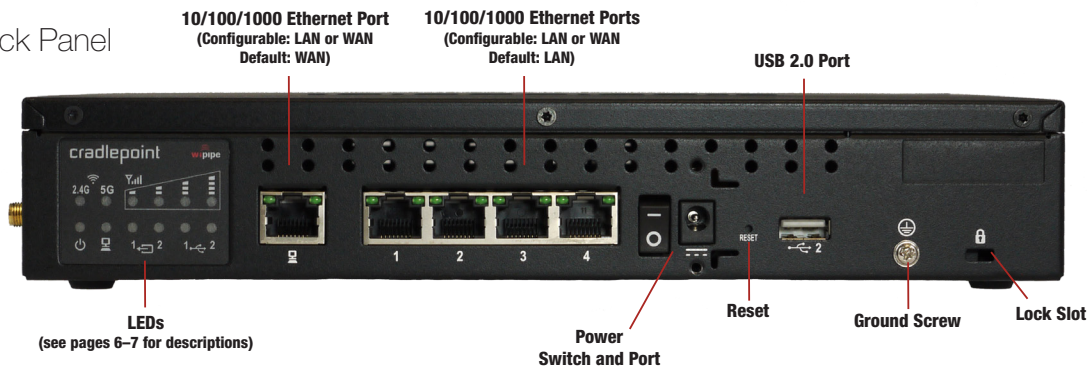

To learn more about **CradlePoint Enterprise Cloud Manager** and to begin a free 30-day trial, contact services@cradlepoint.com or visit **cradlepoint.com/ecm**.

Front Panel

USB 2.0 Port

LEDs
(see pages 6–7 for descriptions)

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wipipe

2.4G　5G

Back Panel

10/100/1000 Ethernet Port
(Configurable: LAN or WAN
Default: WAN)

10/100/1000 Ethernet Ports
(Configurable: LAN or WAN
Default: LAN)

USB 2.0 Port

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2.4G　5G

RESET

LEDs
(see pages 6–7 for descriptions)

**Power
Switch and Port**

Reset

Ground Screw

Lock Slot

Left Side

With Cover

Cover Removed

Modem Port 1 (USB 2.0)   **Reserved for future use**   **Modem Port 2 (USB 2.0)**
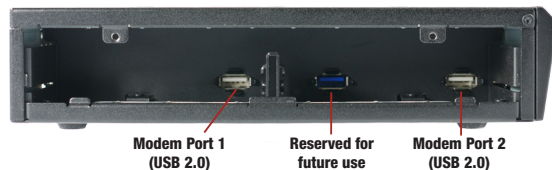
With Two MC400 Integrated Modems (one included)

3G/4G Antenna Connectors (SMA)   **GPS Connector (SMA)**   **3G/4G Antenna Connectors (SMA)**   **GPS Connector (SMA)**

Right Side

WiFi Antenna Connectors (Reverse SMA)
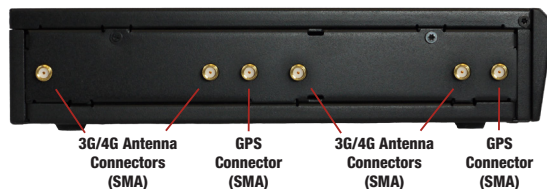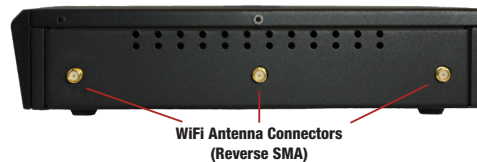
WiFi   ### Modem

When connecting the provided antennas, review the connection points.

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

⏻ **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 12) 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.

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. Insert the SIM card into the slot marked **SIM 1** (use the other slot, **SIM 2**, for a secondary/backup SIM). 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

Notch-end goes in first

Gold contacts must face down
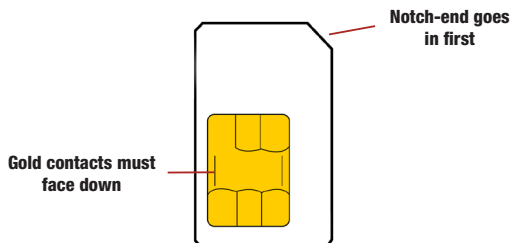
2. Attach the integrated modem.
Follow these steps to attach the integrated modem:

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 (left slot first). The protruding section of the modem 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.)

3. Attach the WiFi and modem antennas.

Attach the three included WiFi antennas and two included modem antennas to the connectors. Antennas are jointed, which enables you to position them for optimal signal. To attach, hold the antenna straight and twist the base of the antenna to connect, folding the joint if needed.

Examples of suggested antenna orientations:
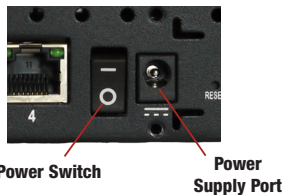
Desk Mount　　　　　　　　　　　　　　　　　　　　　　　　　Wall Mount

Care should be taken to ensure that the router antennas are not near metal or other RF reflective surfaces.

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

Power Switch   **Power Supply Port**

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.

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 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 (local GUI)

Once you are connected, open the CradlePoint AER 2100's GUI-based local 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**.

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Part No.: 2100
H/W ver.1.0
www.cradlepoint.com

Default Password: 440c1fc1

Serial No.:MM130167900418

MAC Address: 0030440c1fc1

SSID: 2100-fc1

Made in Taiwan   12V ⎓ 3A (max 4A)

Model No.:S4A340A
FCC ID:UXX-S4A340A
IC:6921A-S4A340A

WiFi CERTIFIED

RoHS

2. When prompted for your password, type the eight character **DEFAULT PASSWORD** found on the product label.

NOTE: All configuration changes can be made remotely through CradlePoint Enterprise Cloud Manager. See page 14 for information about connecting to Enterprise Cloud Manager.
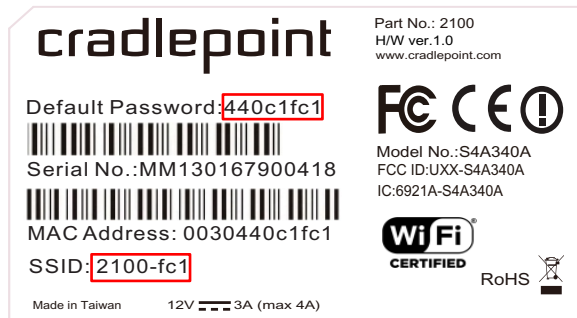
When you log in to the local administration pages for the first time, you will be automatically directed to the **FIRST TIME SETUP WIZARD**, which will walk you through basic steps to customize your CradlePoint AER 2100. You have the ability to configure any of the following:

Administrator Password
Time Zone
WiFi Network Name
Security Mode
Access Point Name (APN)
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.

Depending on your ordering process, your devices may have already been bulk-loaded into Enterprise Cloud Manager (ECM). Simply log in at **cradlepointecm.com** using your ECM credentials and begin managing your devices seamlessly from the cloud.

If your device has not yet been loaded into your ECM account, you need to register. Log into the local administration pages (see page 12) and go to **GETTING STARTED ➡ ENTERPRISE CLOUD MANAGER REGISTRATION**. Enter your ECM username and password, and click on "Register".

Once you are logged into **cradlepointecm.com**, begin managing your devices individually or by group. For example…

• View the **Dashboard** for a visual analytics overview of your devices, including a data usage chart.
• Make a configuration change and apply it to all the devices a **Group**.
• Set up emailed **Alerts** for when a modem reaches its Data Cap Threshold, for a Configuration Change, etc.

For more information about how to use CradlePoint Enterprise Cloud Manager, see the following Knowledge Base articles:

• knowledgebase.cradlepoint.com/articles/Support/CradlePoint-Enterprise-Cloud Manager
• knowledgebase.cradlepoint.com/articles/Support/Getting-Started-with-Enterprise-Cloud-Manager

To learn more about **CradlePoint Enterprise Cloud Manager** and to begin a free 30-day trial, contact services@cradlepoint.com or visit **cradlepoint.com/ecm**.

HOW TO UPDATE FIRMWARE (through Enterprise Cloud Manager)

1) Log in at **cradlepointcm.com** using your Enterprise Cloud Manager credentials.

2) Navigate to the **Groups** page. (This can also be done for an individual device on the **Devices** page.)

3) Select a group and click on the **Firmware** option in the top toolbar. In the dropdown menu that opens, select the desired firmware version.

4) Wait a moment while firmware is updated and the router reboots.

HOW TO UPDATE FIRMWARE (through the local administration pages)

1) Log into the local administration pages (see page 12). You may have changed the **ADMINISTRATOR PASSWORD**.

2) Select **SYSTEM SETTINGS ➡ SYSTEM SOFTWARE**.

3) If new firmware is available, select **AUTOMATIC (Internet)**.

4) Wait a moment while firmware is updated and the router reboots (do not close the browser window when updating).

If you do not have an active Internet connection, you may need to use the **MANUAL FIRMWARE UPLOAD** option. To use this option, download new firmware to a local device and then upload it to the router on the **SYSTEM SETTINGS ➡ SYSTEM SOFTWARE** page.

NOTE: Access to firmware upgrades requires a CradleCare Support Agreement.

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

SELECT THE APN

1) Log into the administration pages (see page 12).

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, retaurants, and convenience stores. Optimized for performance, reliability, and maximum WiFi range, the AER 2100 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: Initial WiFi settings are available in the First Time Setup Wizard. 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 CradePoint 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**. In the "WiFi Client Mode" field, select **WIRELESS AS WAN**. 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. *Requires a feature license.*

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. *Requires a feature license.*

Federal Communication Commission 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.

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.

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. 20 cm minimum when the product is operated alone without co-transmitting from a 3G/4G modem.
2. 37 cm minimum when the product is operated with a 3G/4G modem which has maximum of 7 W ERP output power.
3. For co-transmission scenarios not covered above, please consult the RF technician or device supplier.

Avertissement De Securite Concernant Les Expositions Aux Frequences Radio

Pour etre conforme aux limites d'exposition aux frequences radio FCC/IC etablies pour un environnement non controle (utilisation par le grand public), l'equipement doit etre installe et utilise en laissant une distance de separation de securite (entre la ou les personnes presentes dans le perimetre et l'antenne d'emission) selon les cas suivants:

1. 20 cm au minimum quand le produit est utilisé seul sans co-transmettre a l'aide d'un modem 3G/4G.
2. 37 cm au minimum quand le produit est utilisé avec un modem 3G/4G ayant une puissance de sortie maximale de 7W ERP.
3. Dans des cas de co-transmission non mentionnes ci-dessus, merci de bien vouloir consulter un technicien radio qualifie ou directement le fabricant de l'appareil.

Industry Canada Statement

This device complies with RSS-210, RSS-102, and RSS-Gen of the Industry Canada 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.

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.

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 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
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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: cradlepoint.com/privacy.

Other Binding Documents; Trademarks; Copyright
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The best in **wireless WAN**…meets the best in **wireless LAN**.

Integrated 4G LTE

Dual-Band Dual-Concurrent WiFi
with 802.11ac
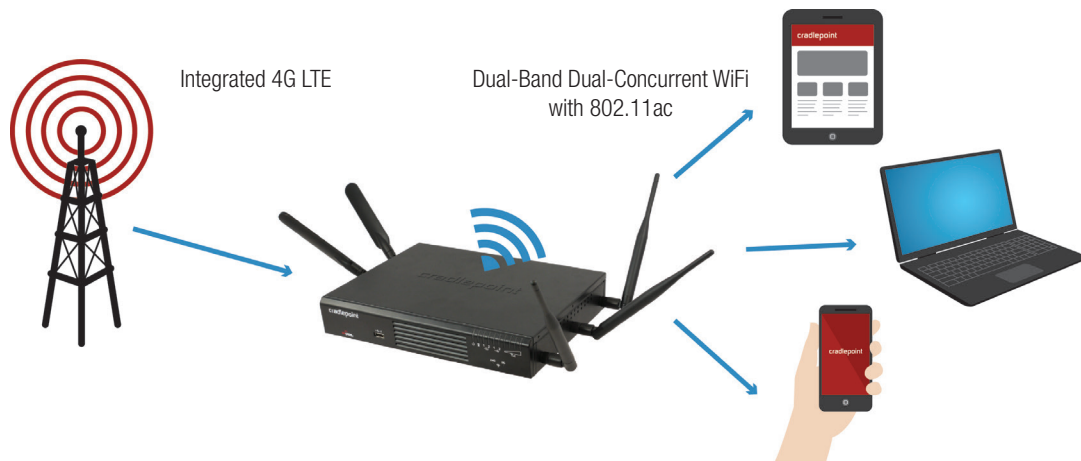
- Combines **Integrated 4G LTE** and **Dual-Band Dual-Concurrent WiFi with 802.11ac**
- Ultimate **WAN Diversity™**: Use 4G LTE with dual-modem, dual-SIM, and multi-carrier functionality; Ethernet; and/or WiFi as WAN
- Failover/failback and load balancing: 4G LTE + Ethernet + WiFi as WAN
- Enterprise-level security and features, including VPN, VLAN, VRRP, BGP, OSPF, RIP, and more (some features require license)
- Dynamic management with **CradlePoint Enterprise Cloud Manager**

P/N 170626-004