

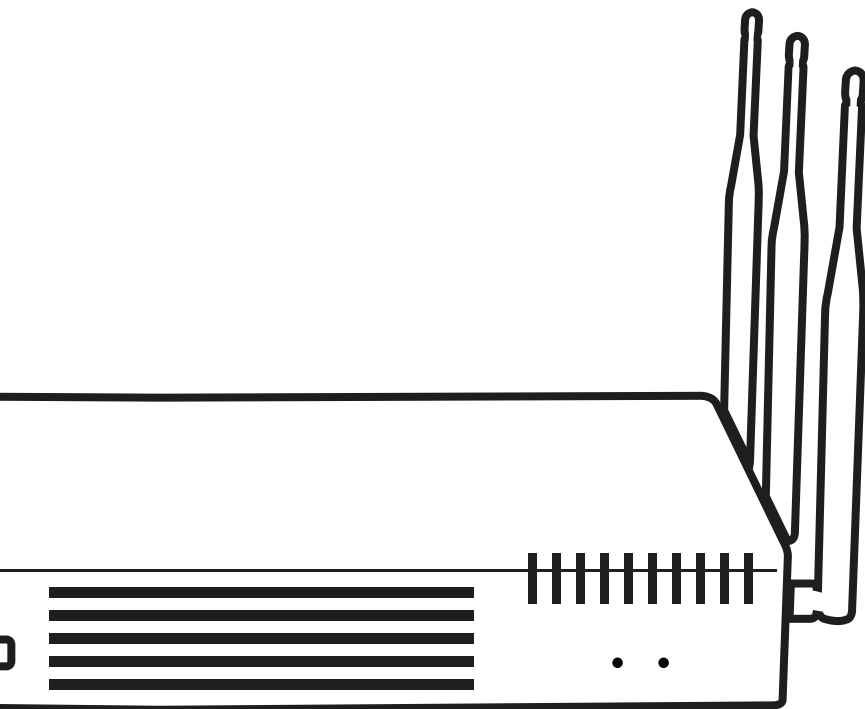


Global Leader in 4G LTE Network Solutions

# AER Series Router

**AER2100**

Spec Sheet



cradlepoint.com

# INTRODUCTION

## WHAT'S IN THE BOX

- AER 2100 with integrated MC400 4G LTE modem
- External 3G/4G mobile broadband modem antennas (2) (SMA) w/ multiplexing for GPS; finger tighten only
- External dual-band high-gain WiFi antennas (3) reverse SMA (5 dBi, 2.4 GHz, 5 dBi 5 GHz, VSWR 2); finger tighten only
- 12 V / 3 A AC/DC power adapter
- Multipurpose Retaining Tool
- Ethernet cable
- Quick Start Guide with warranty information

## KEY FEATURES

### WAN

- LP6: LTE Advanced LTE/HSPA+ (SIM-based Auto-Carrier Selection for all North American carriers and European operators)
- LP5: Cat 6 LTE Advanced for operators in Asia Pacific and Saudi Arabia (SIM-based Auto-Carrier selection)
- LP4 Modems (accessory option only): LTE/DC-HSPA+ for AT&T, Verizon, T-Mobile and Canadian carriers (SIM-based Auto-Carrier Selection, dual-modem capable)
- LPE: 4G LTE/HSPA+/EVDO (multi-carrier, North America)
- LP3: 4G LTE/HSPA+ (Europe, EMEA, and Australia/New Zealand)
- Dual integrated modem option
- Dual SIM slot in each modem
- Most models include support for active GPS
- WiFi as WAN
- Failover/Failback
- Load Balancing
- Advance Modem Failure Check
- WAN Port Speed Control
- WAN/LAN Affinity
- IP Passthrough
- Standby

### LAN

- VLAN 802.1Q
- DHCP Server, Client, Relay
- DNS and DNS Proxy
- DynDNS
- UPnP
- DMZ
- Multicast/Multicast Proxy
- Auto QoS
- QoS (DSCP and Priority Queuing)
- MAC Address Filtering

### WIFI

- Dual-Band Dual-Concurrent (3×3 MIMO)

- 802.11x (a, b, g, n, ac)
- Up to 256 connected devices (128 per channel – 2.4 GHz and 5 GHz)
- WPA2 Enterprise (WiFi)
- Hotspot/Captive Portal
- SSID-based Priority

## MANAGEMENT

- Cradlepoint NetCloud Manager<sup>2</sup>
- Web UI, API, CLI
- NetCloud Engine gateway support
- SDK support
- GPS Location
- Data Usage Alerts (router and per client)
- Advanced Troubleshooting (support)
- Auto APN Recovery
- Device Alerts
- SNMP
- SMS control
- Serial Redirector

## VPN AND ROUTING

- IPsec Tunnel – up to 20 concurrent sessions
- IKEv2 support (includes MOBIKE)
- OpenVPN (SSL VPN)<sup>1</sup>
- L2TP<sup>1</sup>
- GRE Tunnel
- VTI Tunnel support
- OSPF/BGP/RIP<sup>1</sup>
- Route Filters (Access Control Lists, Prefix Filters, Route Maps, Communities for BGP)
- Per-Interface Routing
- Routing Rules
- Policy-based Routing
- NAT-less Routing
- Virtual Server/Port Forwarding
- NEMO/DMNR<sup>1</sup>
- IPv6
- VRRP<sup>1</sup>
- STP<sup>1</sup>
- NHRP<sup>1</sup>
- CP Secure VPN compatible

## SECURITY

- RADIUS and TACACS+ support\*
- 802.1x authentication for Ethernet
- Zscaler integration<sup>1</sup>
- Certificate support
- ALGs
- MAC Address Filtering
- Advanced Security Mode (local user management only)
- Per-Client Web Filtering
- IP Filtering

- Content Filtering (basic)
- Website Filtering

\* - Native support for authentication. Authorization and accounting support through hotspot/captive portal services.

## CLOUD OPTIMIZED IP COMMUNICATIONS

- Automated WAN Failover/Failback support
- WAN Affinity and QoS allow prioritization of VoIP services
- Advanced VPN connectivity options to HQ
- SIP ALG and NAT to allow VoIP and UC communications to traverse firewall
- MAC Address Filtering
- 802.1p/q for LAN QoS segmentation and treatment of VoIP on LAN
- Private Network support (wired and 4G WAN)
- Cloud-based management<sup>2</sup>

1 – Requires an **NCM PRIME** subscription or an **Extended Enterprise License**

2 – **NetCloud Manager** requires a subscription

## SPECIFICATIONS

### WAN:

- Integrated LP6 Category 6 LTE Advanced LTE modem (with DC-HSPA+ failover), LP5 Category 6 LTE Advanced LTE modem (with DC-HSPA+ failover), LPE 4G LTE modem (with HSPA+/ EVDO/3G and 2G failover), or LP3 4G LTE modem (with HSPA+ and 2G failover)
- One modem included, dual-modem option
- Five 10/100/1000 Ethernet ports (cable/DSL/T1/satellite/Metro Ethernet; WAN/LAN switchable)
- WiFi (as WAN; Metro WiFi) 3x3 MIMO 2.4 GHz or 5 GHz (802.11 a/b/g/n/ac)

### LAN:

- Dual-band dual-concurrent WiFi (802.11 a/b/g/n/ac)
- Five 10/100/1000 Ethernet ports (WAN/LAN switchable)
- Serial console support w/ USB-to-serial adapter

### TEMPERATURE:

- 0 °C to 50 °C (32 °F to 122 °F) operating
- -20 °C to 70 °C (-4 °F to 158 °F) storage

### HUMIDITY (non-condensing):

- 10% to 85% operating
- 5% to 90% storage

**MEMORY:** 256 MB DRAM; 16 MB SPI Flash; 256 MB NAND Flash

### SIZE:

- 10.25 × 8.5 × 1.75 in (260 × 214 × 45 mm)

### WEIGHT:

6 lb

**CERTIFICATIONS:** FCC, WiFi Alliance, CE, IC, carrier certifications

**LAN TO WAN:** 940 Mbps

**WAN TO LAN:** 940 Mbps

**STATEFUL THROUGHPUT:** 940 Mbps

### WIFI POWER (FCC):

- 2.4 GHz band: 24.47 dBm
- Lower 5 GHz band: 16.9 dBm
- Upper 5 GHz band: 27.77 dBm

**POWER CONSUMPTION (Typical)****AER2100**

- Idle: 8.0 W
- Single Modem: 13.2 W
- Dual Modem: 16.0 W

**ACCESSORIES**

- Second integrated 4G LTE modem
  - MC400LP6 (North America or EU)
  - MC400LP5 (Asia Pacific or Saudi Arabia)
  - MC400LP4 (AT&T, Verizon, T-Mobile and Canada)
  - MC400LPE-VZ (Verizon)
  - MC400LPE-AT (AT&T)
  - MC400LPE-SP (Sprint)
  - MC400LPE-GN (generic – for use on T-Mobile in the U.S. and Rogers, Bell, & TELUS in Canada)
  - MC400LP3-EU (Europe)
- Standard rack mount with modem and WiFi cables (Part # 170629-000)
- 12V 3A wall power adapter (Part # 170623-000)
- 12V 4A wall power adapter (Part # 170624-000)
- 700 MHz – 2700 MHz Wide Band Directional Antenna (Yagi/Log- Periodic) Part #: 170588-000
- 12" Mag-Mount Antenna with SMA Male Connector Part #: 170605-000
- 4" Mini Mag-Mount Antenna with SMA Male Connector Part #: 170606-000
- 2.4/5 GHz Dual-band Dual-concurrent WiFi Antenna Part #: 170628-000 (WiFi models only)
- Universal 3G/4G/LTE Modem Antenna Part #: 170649-000
- GPS Screw-Mount Antenna Part #: 170651-000
- GPS Mag-Mount Antenna Part #: 170652-000
- Multi-Band Omni-Directional Antenna Part #: 170668-000
- Indoor/Outdoor Panel Patch Part #: 170669-000

**BUSINESS-GRADE MODEM SPECIFICATIONS**

**AER2100 LP6 models** include an integrated LTE Advanced Category 6 4G LTE modem. The LP6 modems support SIM-Based Auto-Carrier selection so there is only one model for all of North America. Simply insert the SIM and wait for the router to automatically detect the SIM and establish a connection.

The LTE bands certified for each carrier are listed below.

**AER2100LP6-NA, AER2100LP6-EU, AER2100LP6-UK**

- **Technology:** LTE Advanced, DC-HSPA+
- **Downlink Rates:** LTE 300 Mbps, DC-HSPA+ 42.2 Mbps
- **Uplink Rates:** LTE 50 Mbps, DC-HSPA+ 5.76 Mbps
- **Frequency Bands:**
  - **LTE Bands 1–5, 7, 8, 12, 13, 20, 25, 26, 29, 30, 41**
    - **Verizon:** 2, 4, 5, 13 (XLTE support w/carrier aggregation)
    - **AT&T:** 2, 4, 5, 12, 29, 30
    - **Sprint:** 25, 26, 41 (LTE Plus Support)
    - **T-Mobile:** 2, 4, 12 (T-Mobile Wideband LTE Support)
    - **Generic:** all

- **Carrier Aggregation:**
  - 1+ 8
  - 2+ 2/5/12/13/29
  - 3+ 7/20
  - 4+ 4/5/12/13/29
  - 5+ 2/4/30
  - 7+ 3/7/20
  - 8+ 1
  - 12+ 2/4/30
  - 13+ 2/4
  - 20+ 3/7
  - 30+ 5/12
  - 41+ 41
- **Fallback:** WCDMA/DC-HSPA+ (42/5.76 Mbps): Bands 1, 2, 3, 4, 5, 8
- **Power:** LTE: 23 dBm  $\pm$  1; DC-HSPA+: 23 dBm  $\pm$  1
- **Antennas:** two SMA male (plug), finger tighten only (maximum torque spec is 7 kgf/cm<sup>2</sup>)
- **GPS:** active GPS support
- **SMS:** SMS support
- **Industry Standards & Certs:** CE, FCC, GCF-CC, IC, PTCRB, AT&T, Sprint, Verizon

**AER2100LP5 models** The LP5 modems support SIM-Based Auto-Carrier selection. Simply insert the SIM and wait for the router to automatically detect the SIM and establish a connection.

#### **AER2100LP5-AU, AER2100LP5-UK**

- **Technology:** FDD/TDD (Category 6) LTE Advanced, DC-HSPA+
- **Downlink Rates:** LTE 300 Mbps, DC-HSPA+ 42.2 Mbps
- **Uplink Rates:** LTE 50 Mbps, DC-HSPA+ 5.76 Mbps
- **Frequency Bands:**
  - LTE Bands: 1, 3, 5, 7, 8, 11, 18, 19, 21, 28, 38, 39, 40, 41
  - TD-SCDMA 39
- **Carrier Aggregation:**
  - 1+ (8, 18, 19, 21)
  - 3+ (5, 7, 19, 28)
  - 7+ (5, 7, 28)
  - 19+ 21
  - 38+ 38
  - 39+ 39
  - 40+ 40
  - 41+ 41
- **Fallback:** WCDMA/DC-HSPA+ (42/5.76 Mbps): Bands 1, 5, 6, 8, 9, 19
- **Power:** LTE: 23 dBm  $\pm$  1; DC-HSPA+: 23 dBm  $\pm$  1
- **Antennas:** two SMA male (plug), finger tighten only (maximum torque spec is 7 kgf/cm<sup>2</sup>)
- **GPS:** active GPS support
- **SMS:** SMS support
- **Industry Standards & Certs:** CE, GCF-CC, RC Australia, others pending
- **Modem Part Number:** MC400LP5

**AER2100 LPE/LP3 models** include an integrated 4G LTE modem (MC400); specific model names include a specific modem (e.g., the AER 2100LPE-VZ includes an MC400LPE-VZ modem for Verizon).

Please note that LPE models are flexible and support bands for multiple cellular providers; however, only the

frequency bands in **bold** below are supported by the listed provider.

#### **AER 2100LPE-VZ – 4G LTE/HSPA+/EVDO for Verizon**

- **Technology:** LTE, HSPA+, EVDO Rev A
- **Downlink Rates:** LTE 100 Mbps, HSPA+ 21.1 Mbps, EVDO 3.1 Mbps (theoretical)
- **Uplink Rates:** LTE 50 Mbps, HSPA+ 5.76 Mbps, EVDO 1.8 Mbps (theoretical)
- **Frequency Bands:**
  - **LTE Band 2 (1900 MHz), Band 4 – AWS (1700/2100 MHz), Band 5 (850 MHz), Band 13 (700 MHz), Band 17 (700 MHz), Band 25 (1900 MHz)**
  - HSPA+/UMTS (850/900/1900/2100 MHz, AWS)
  - GSM/GPRS/EDGE (850/900/1800/1900 MHz)
  - **CDMA EVDO Rev A/1xRTT (800/1900 MHz)**
- **Power:** LTE: 23 dBm ± 1; HSPA+: 23 dBm ± 1; EVDO: 24 dBm +0.5/-1 (typical conducted)
- **Antennas:** two SMA male (plug), 1 dBi (LTE), 2 dBi (Cellular/PCS) gain; finger tighten only (maximum torque spec is 7 kgf/cm<sup>2</sup>)
- **GPS:** active GPS support
- **Industry Standards & Certs:** FCC, Verizon
- **Modem Part Number:** MC400LPE

#### **AER 2100LPE-AT – 4G LTE/HSPA+/EVDO for AT&T**

- **Technology:** LTE, HSPA+, EVDO Rev A
- **Downlink Rates:** LTE 100 Mbps, HSPA+ 21.1 Mbps, EVDO 3.1 Mbps (theoretical)
- **Uplink Rates:** LTE 50 Mbps, HSPA+ 5.76 Mbps, EVDO 1.8 Mbps (theoretical)
- **Frequency Bands:**
  - **LTE Band 2 (1900 MHz), Band 4 – AWS (1700/2100 MHz), Band 5 (850 MHz), Band 13 (700 MHz), Band 17 (700 MHz), Band 25 (1900 MHz)**
  - **HSPA+/UMTS (850/900/1900/2100 MHz, AWS)**
  - **GSM/GPRS/EDGE (850/900/1800/1900 MHz)**
  - CDMA EVDO Rev A/1xRTT (800/1900 MHz)
- **Power:** LTE: 23 dBm ± 1; HSPA+: 23 dBm ± 1; EVDO: 24 dBm +0.5/-1 (typical conducted)
- **Antennas:** two SMA male (plug), 1 dBi (LTE), 2 dBi (Cellular/PCS) gain; finger tighten only (maximum torque spec is 7 kgf/cm<sup>2</sup>)
- **GPS:** active GPS support
- **Industry Standards & Certs:** PTCRB, FCC, IC, AT&T
- **Modem Part Number:** MC400LPE

#### **AER 2100LPE-SP – 4G LTE/HSPA+/EVDO for Sprint**

- **Technology:** LTE, HSPA+, EVDO Rev A
- **Downlink Rates:** LTE 100 Mbps, HSPA+ 21.1 Mbps, EVDO 3.1 Mbps (theoretical)
- **Uplink Rates:** LTE 50 Mbps, HSPA+ 5.76 Mbps, EVDO 1.8 Mbps (theoretical)
- **Frequency Bands:**
  - **LTE Band 2 (1900 MHz), Band 4 – AWS (1700/2100 MHz), Band 5 (850 MHz), Band 13 (700 MHz), Band 17 (700 MHz), Band 25 (1900 MHz)**
  - HSPA+/UMTS (850/900/1900/2100 MHz, AWS)
  - GSM/GPRS/EDGE (850/900/1800/1900 MHz)
  - **CDMA EVDO Rev A/1xRTT (800/1900 MHz)**
- **Power:** LTE: 23 dBm ± 1; HSPA+: 23 dBm ± 1; EVDO: 24 dBm +0.5/-1 (typical conducted)
- **Antennas:** two SMA male (plug), 1 dBi (LTE), 2 dBi (Cellular/PCS) gain; finger tighten only (maximum torque spec is 7 kgf/cm<sup>2</sup>)
- **GPS:** active GPS support
- **Industry Standards & Certs:** FCC, Sprint
- **Modem Part Number:** MC400LPE

**AER 2100LP3-EU (2100LP3-UK\*) – 4G LTE/HSPA+ for Europe (United Kingdom)**

- Technology: LTE, HSPA+
- Downlink Rates: LTE 100 Mbps, HSPA+ 21.1 Mbps (theoretical)
- Uplink Rates: LTE 50 Mbps, HSPA+ 5.76 Mbps (theoretical)
- Frequency Bands:
  - **LTE Band 1 (2100 MHz), Band 3 (1800 MHz), Band 7 (2600 MHz), Band 8 (900 MHz), Band 20 (800 MHz)**
  - **HSPA+/UMTS (800/850/900/1900/2100 MHz)**
  - **GSM/GPRS/EDGE Quad-Band (850/900/1800/1900 MHz)**
- Power: LTE Band 1/3/8/20: 23 dBm  $\pm$  1; LTE Band 7–22: dBm  $\pm$  1; HSPA+: 23 dBm  $\pm$  1 (typical conducted)
- Antennas: two SMA male (plug), 1 dBi (LTE), 2 dBi (Cellular/PCS) gain; finger tighten only (maximum torque spec is 7 kgf/cm<sup>2</sup>)
- GPS: active GPS support
- Industry Standards & Certs: CE, GCF-CC
- Modem Part Number: MC400LP3

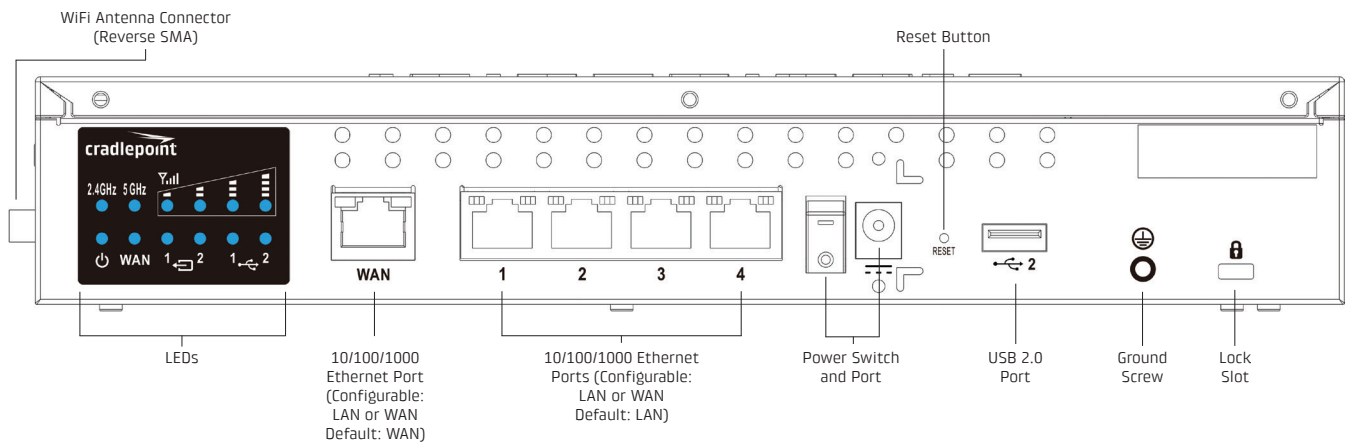
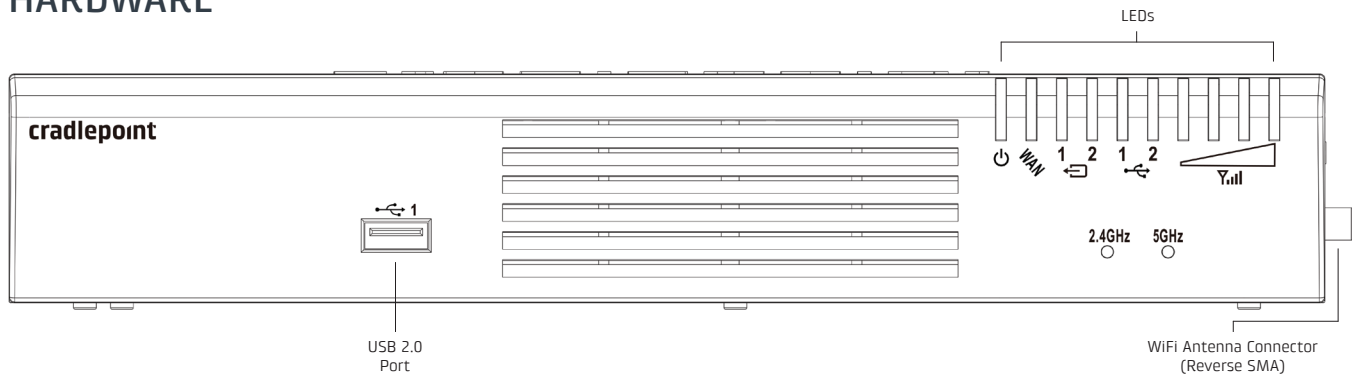
*\*The 2100LP3-EU and 2100LP3-UK models are equivalent except for the line cord.*

**AER 2100LPE-GN – 4G LTE/HSPA+/EVDO (generic – for use on T-Mobile and US Cellular in the U.S. and Rogers, Bell, & TELUS in Canada)**





- Technology: LTE, HSPA+, EVDO Rev A
- Downlink Rates: LTE 100 Mbps, HSPA+ 21.1 Mbps, EVDO 3.1 Mbps (theoretical)
- Uplink Rates: LTE 50 Mbps, HSPA+ 5.76 Mbps, EVDO 1.8 Mbps (theoretical)
- Frequency Bands:
  - **LTE Band 2 (1900 MHz), Band 4 (AWS), Band 5 (850 MHz), Band 13 (700 MHz), Band 17 (700 MHz), Band 25 (1900 MHz)**
  - **HSPA+/UMTS (850/900/1900/2100 MHz, AWS)**
  - **GSM/GPRS/EDGE (850/900/1800/1900 MHz)**
  - CDMA EVDO Rev A/1xRTT (800/1900 MHz)
- Power: LTE: 23 dBm  $\pm$  1; HSPA+: 23 dBm  $\pm$  1; EVDO: 24 dBm +0.5/-1 (typical conducted)
- Antennas: two SMA male (plug), 1 dBi (LTE), 2 dBi (Cellular/PCS) gain; finger tighten only (maximum torque spec is 7 kgf/cm<sup>2</sup>)
- GPS: active GPS support
- Industry Standards & Certs: PTCRB, FCC, IC
- Modem Part Number: MC400LPE



# HARDWARE



## LEDS

INDICATOR	BEHAVIOR
	<p><b>POWER</b> The Cradlepoint AER2100 must be powered using an approved 12 V DC power source.</p> <ul style="list-style-type: none"> <li>• Green = Powered ON.</li> <li>• No Light = Not receiving power. Check the power switch and the power source connection.</li> <li>• Amber = Attention. Open the administration pages and check the router status.</li> </ul>
<b>WAN</b>	<p><b>ETHERNET WAN</b> Indicates status of WAN connection.</p> <ul style="list-style-type: none"> <li>• Blue = Connected to an active Ethernet WAN interface.</li> </ul>
	<p><b>REMOVABLE MODEM</b> Indicates the status of removable modem(s).</p> <ul style="list-style-type: none"> <li>• Green = Modem has established an active connection.</li> <li>• Blinking Green = Modem is connecting.</li> <li>• Blinking Amber = Data connection error. No modem connection possible.</li> <li>• Blinking Red = Modem is in the process of resetting.</li> </ul>
	<p><b>EXTERNAL USB MODEM</b> Indicates the status of external USB modem. Both internal and external USB modems have the following LED indicators:</p> <ul style="list-style-type: none"> <li>• Green = Modem has established an active connection.</li> <li>• Blinking Green = Modem is connecting.</li> <li>• Blinking Amber = Data connection error. No modem connection possible.</li> <li>• Blinking Red = Modem is in the process of resetting.</li> </ul>
	<p><b>SIGNAL STRENGTH</b> Blue LED bars indicate the active modem's signal strength (only for integrated and removable modems).</p> <ul style="list-style-type: none"> <li>• 4 Solid Bars = Strongest signal.</li> <li>• 1 Blinking Bar = Weakest signal. (A blinking bar indicates half of a bar.)</li> </ul>
<b>2.4GHz 5GHz</b>	<p><b>WiFi BROADCAST</b> These two LEDs indicate activity on the WiFi broadcast for both the 2.4 GHz and 5 GHz bands.</p> <ul style="list-style-type: none"> <li>• 2.4 GHz (green) = 2.4 GHz WiFi is on and operating normally.</li> <li>• 5 GHz (blue) = 5 GHz WiFi is on and operating normally.</li> </ul>
<b>Other</b>	<p><b>ADDITIONAL LED INDICATIONS</b></p> <ul style="list-style-type: none"> <li>• Several different LEDs blink when the factory reset button is detected.</li> <li>• Two of the modem LEDs blink red in unison for 10 seconds when there is an error during NCOS upgrade.</li> <li>• Rear power LED: Blinks amber/green when more than two modems are plugged in.</li> </ul>

## SUPPORT AND WARRANTY

CradleCare Support available with technical support, software upgrades, and advanced hardware exchange – 1-, 3-, and 5-year options.

One-year limited hardware warranty available in the US and Canada; two-year limited hardware warranty for integrated EU products when purchased from an authorized EU distributor – extend warranty to 2, 3, or 5 years.