



NetCloud Services for Branch



# AER1600 Series Spec Sheet



Cradlepoint AER1600 Series branch routers are sold as part of an all-inclusive branch networking package.

**NetCloud Branch Packages Include:**

- LTE routers, purpose built for branch applications
- A NetCloud Service Plan tailored for branch networking and set for a specific term
- 24x7 support and limited lifetime warranty

## What to Buy

Description	Part Numbers
<b>North America</b> (U.S., Canada)	
— NetCloud Branch Essentials Package with AER1600LP6	BAX-1600LP6-NNN
— NetCloud Branch Essentials Package with AER1600LP4	BAX-1600LP4-NNN
— NetCloud Branch Essentials Package with AER1600 (no modem)	BAX-1600NM-0NN
— NetCloud Branch Essentials Package with AER1650LP6	BAX-1650LP6I-N0N
— NetCloud Branch Essentials Package with AER1650LP4	BAX-1650LP4-N0N
— NetCloud Branch Essentials Package with AER1650 (no modem)	BAX-1650NM-00N
<b>Europe</b> (EU)	
— NetCloud Branch Essentials Package with AER1600LP6-EU	BAX-1600LP6I-EWM
— NetCloud Branch Essentials Package with AER1600-EU (no modem)	BAX-1600NM-0WM
— NetCloud Branch Essentials Package with AER1650LP6-EU	BAX-1650LP6I-E0M
— NetCloud Branch Essentials Package with AER1650-EU (no modem)	BAX-1650NM-00M
<b>Asia-Pacific</b> (Australia, New Zealand, Singapore)	
— NetCloud Branch Essentials Package with AER1600LP5-AP	BAX-1600LP5-PWM
— NetCloud Branch Essentials Package with AER1600-AP (no modem)	BAX-1600NM-0WM
— NetCloud Branch Essentials Package with AER1650LP5-AP	BAX-1650LP5-P0M
— NetCloud Branch Essentials Package with AER1650-AP (no modem)	BAX-1650NM-00M
<b>All Regions</b>	
— NetCloud Branch Advanced Plan	BAX-NCADV

*x = 1, 3, or 5 years*

**NetCloud Branch Essentials** packages and plans contain all the features and capabilities required for smaller site applications. Essentials packages include 24x7 support (phone support: 24 hour weekdays with emergency response on weekends, web: 24x7, chat: 24x5) and a limited lifetime warranty.

For additional capabilities, a **NetCloud Branch Advanced Plan** can be added to the NetCloud Branch Essentials Package at any time.

See additional details of what is included in the Essential and Advanced NetCloud software: [cradlepoint.com/branch-networks](https://cradlepoint.com/branch-networks)

For more details on the AER1600 Series branch router, included with the NetCloud Branch Packages, see below.

## What's in the Box

The Cradlepoint AER1600/AER1650 is available with different modem options:

- LPE and LP4 models include an embedded modem and a slot to add an MC400 modem
- LP6, LP5, and LP3 models include a bundled MC400 modem and do not include an embedded modem

Also included:

- Two (2) external 3G/4G LTE mobile broadband modem antennas‡ (SMA)
- 12 V 3A AC/DC power adapter
- Ethernet cable
- Mounting hardware
- Modem door screw
- Safety, Regulatory, and Warranty guide

\* Included with LP6, LP5, and LP3 models, optional for AER1600/AER1650, LPE, and LP4 models

‡ LPE and LP4 models only

† GPS not included on LP4 models

## Key Features

### WAN

- LP6 Modems: LTE Advanced LTE/HSPA+ for all North American carriers and European operators (SIM-based, auto-carrier selection)
- LP5 Modems: Cat 6 LTE Advanced for operators in Asia Pacific and Saudi Arabia (SIM-based, auto-carrier selection)
- LP4 Modems: LTE/HSPA+ for AT&T, Verizon, T-Mobile and Canadian carriers (SIM-based, auto-carrier selection, dual-modem capable)
- LPE Modems: 4G LTE/HSPA+/EVDO (multi-carrier, North America, dual-modem capable)
- LP3 Modems: 4G LTE/HSPA+ (Europe, Middle East, Africa, Australia, New Zealand)
- Dual integrated modem option (LPE and LP4 only)
- Dual SIM slot in each modem
- Most models include support for active GPS

- Five 10/100/1000 Ethernet ports (WAN/LAN switchable)
- WiFi as WAN (only on AER1600)
- Failover/Failback
- Load Balancing
- Advance Modem Failure Check
- WAN Port Speed Control
- WAN/LAN Affinity
- IP Passthrough
- Standby

## LAN

- Five 10/100/1000 Ethernet ports (WAN/LAN switchable)
- LLDP support
- VLAN 802.1Q
- DHCP Server, Client, Relay
- DNS and DNS Proxy
- DynDNS
- Split DNS
- UPnP
- DMZ
- Multicast/Multicast Proxy
- Auto QoS
- QoS (DSCP and Priority Queuing)
- MAC Address Filtering

## WiFi (Only on AER1600)

- Dual-Band Dual-Concurrent (2x2 MIMO; internal antennas)
- 802.11 (a/b/g/n/ac)
- Up to 128 connected devices (64 per channel – 2.4 GHz and 5 GHz)
- WEP Auto, WPA/WPA2 Personal, WPA2 Enterprise (WiFi)
- Hotspot/Captive Portal
- SSID-based Priority

## Management

- OOBM (Out-of-Band Management) via USB to Serial
- Cradlepoint NetCloud Manager (NCM)
- NetCloud Perimeter gateway support
- SDK support

- Web UI, API, CLI
- GPS Location
- Data Usage Alerts (router and per client)
- Advanced Troubleshooting (support)
- Device Alerts
- SNMP
- SMS control

## VPN & Routing

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

## Security

- RADIUS and TACACS+ support\*
- 802.1x authentication for Wireless and Wired Networks
- Zscaler Internet Security<sup>1</sup>
- Certificate support
- ALGs
- MAC Address Filtering
- CP Secure Threat Management<sup>2</sup>
- Advanced Security Mode (local user management only)
- Per-Client Web Filtering

- IP Filtering
- Content Filtering (basic)
- Website Filtering

## 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>1</sup>

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

<sup>1</sup> Requires **Zscaler** Internet Security License

<sup>2</sup> Requires an active Branch Advanced Plan

## Specifications

The following features are delivered through the hardware.

### WAN:

- Embedded Modem Options:
  - LP6 Category 6 LTE Advanced LTE modem (with DC-HSPA+ failover)
  - LP5 Category 6 LTE Advanced LTE modem (with DC-HSPA+ failover)
  - LP4 Category 4 LTE modem (one modem included; dual-modem option) multi-carrier, software-defined radio (includes DC-HSPA+ failover)
  - LPE 4G LTE (one modem included; dual-modem option) modem with multi-carrier, software-defined radio (includes HSPA+/ EVDO/3G and 2G failover)
  - LP3 4G LTE modem (with HSPA+ and 2G failover)
- 5 10/100/1000 ethernet ports (cable/DSL/T1/satellite/Metro Ethernet; WAN/LAN switchable)
- WiFi\* (as WAN; Metro WiFi) 2x2 MIMO 2.4 GHz or 5 GHz (802.11 a/b/g/n/ac; internal antennas)

### LAN:

- Dual-band, dual-concurrent WiFi\* (802.11 a/b/g/n/ac)
- 5 10/100/1000 ethernet ports (WAN/LAN switchable)

*\*only on AER1600*

**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:**

- 8.3 × 6.6 × 1.7 in (210 × 167 × 44 mm)
- 1U height for rack mount

**Weight:** 1 lb 4.4 oz (.58 kg)

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

**WiFi Power (FCC):**

- 2402-2483.5 MHz (2.4 GHz band): 28.51 dBm conducted
- 5150-5250 MHz (5 GHz band 1): 26.66 dBm conducted
- 5725-5850 MHz (5 GHz band 3): 23.54 dBm conducted

**WiFi Power (Europe/Rest of World):**

- 2.4 GHz band: 19.95 dBm EIRP
- 5150-5250 MHz: 22.98 dBm EIRP

**Power Consumption(Typical)**

**AER1600**

- Idle: 9.5 W
- Single Modem: 13.1 W
- Dual Modem: 15.2 W

**AER1650**

- Idle: 7.3 W
- Single Modem: 8.6 W
- Dual Modem: 10.6 W

**WARNING:** Using a power adapter other than the one provided may damage the device and will void the warranty.

## Accessories

- Second modular 4G LTE modem (Refer to the [Cradlepoint MC400 Modular Modem](#) webpage for additional details)
  - MC400-1200M-B
  - 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)
- 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

## Enterprise-Class Modem Specifications

**AER1600/AER1650 LP6 and LP5 models** do not include an embedded 4G LTE modem and do not support dual-modem capability.

**AER1600/AER1650 LP6 models** include an embedded LTE Advanced Category 6 4G LTE modem. The LP6 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.

### **AER1600LP6-NA-M, AER1650LP6-NA-M, AER1600LP6-EU-M, AER1650LP6-EU-M:**

- 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 ± 1; DC-HSPA+ 23 dBm ± 1
- Antennas: Two SMA male (plug), maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support
- SMS: SMS support
- Industry Standards & Certs: CE, FCC, GCF-CC, IC, PTCRB, AT&T, Sprint, Verizon
- Modem Part # MC400LP6

**AER1600/AER1650LP5 Models** include an embedded LTE Advanced Category 6 4G LTE modem, and support Asia Pacific and Saudi Arabia. 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.

**AER1600LP5-AU, AER1650LP5-AU, AER1600LP5-AP-M:**

- 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 ± 1; DC-HSPA+: 23 dBm ± 1
- Antennas: Two SMA male (plug), maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support
- SMS: SMS support
- Industry Standards & Certs: CE, GCF-CC, RC Australia, others pending
- Modem Part # MC400LP5

**AER1600/AER1650 LP4 Models** include an embedded LTE Advanced Category 4, 4G LTE modem. The LP4 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.

**AER1600LP4, AER1650LP4:**

- Technology: Category 4 LTE, DC-HSPA+
- Downlink Rates: LTE 150 Mbps, DC-HSPA+ 42.2 Mbps
- Uplink Rates: LTE 50 Mbps, DC-HSPA+ 5.76 Mbps
- 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)
  - DC-HSPA+/UMTS Rel. 9, Cat 24: Bands 5 and 2 (850/1900 MHz)
- Power: LTE 23 dBm ± 1, DC-HSPA+ 23 dBm ± 1
- Antennas: Two SMA male (plug), maximum torque not to exceed 4 in-lbs
- Industry Standards & Certs: FCC, WiFi Alliance (AER1600 only), Verizon, AT&T, PTCRB, carrier Private Networks, IC
- SIM: Two 2FF slots (secured)
- Modem Part # MC400LP4

**AER1600LPE-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, maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support
- Industry Standards & Certs: FCC, Verizon

**AER1650LPE-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, maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support
- Industry Standards & Certs: FCC, Verizon

**AER1600LPE-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, maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support
- Industry Standards & Certs: PTCRB, FCC, IC, AT&T

**AER1650LPE-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, maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support
- Industry Standards & Certs: PTCRB, FCC, IC, AT&T

**AER1600LPE-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  $\pm$  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, maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support
- Industry Standards & Certs: FCC, Sprint

**AER1650LPE-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  $\pm$  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, maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support
- Industry Standards & Certs: FCC, Sprint

**AER1600LP3-EU – 4G LTE/HSPA+ for Europe:**

- 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, maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support

- Industry Standards & Certs: CE, GCF-CC
- Modem Part # MC400LP3

**AER1650LP3-EU – 4G LTE/HSPA+ for Europe:**

- 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 ± 1; LTE Band 7 – 22 dBm ± 1, HSPA+ 23 dBm ± 1 (typical conducted)
- Antennas: Two SMA male (plug), 1 dBi (LTE), 2 dBi (Cellular/PCS) gain, maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support
- Industry Standards & Certs: CE, GCF-CC
- Modem Part # MC400LP3

**AER1600LPE-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 ± 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, maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support
- Industry Standards & Certs: PTCRB, FCC, IC

**AER1650LPE-GN – 4G LTE/HSPA+/EVDO (generic – for use on T-Mobile and US Cellular in the U.S. and Rogers, Bell, and 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 ± 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, maximum torque not to exceed 4 in-lbs
- GPS: Active GPS support
- Industry Standards & Certs: PTCRB, FCC, IC

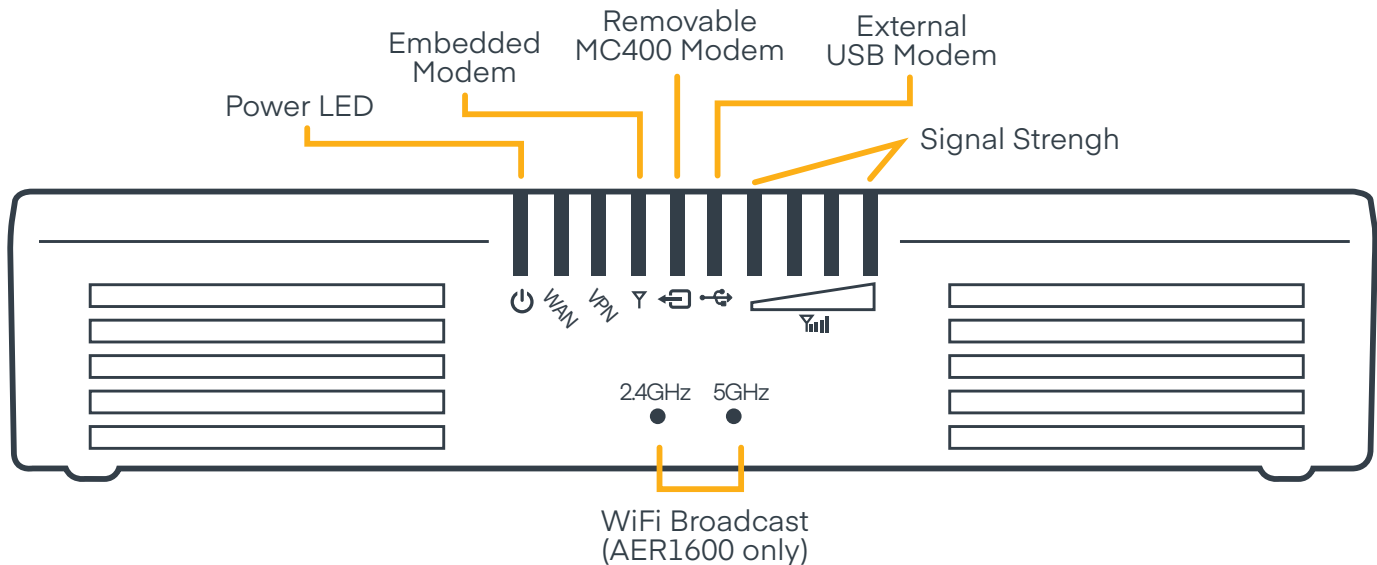
## Support & Warranty

The AER1600 series endpoints are only sold as components of NetCloud Packages.

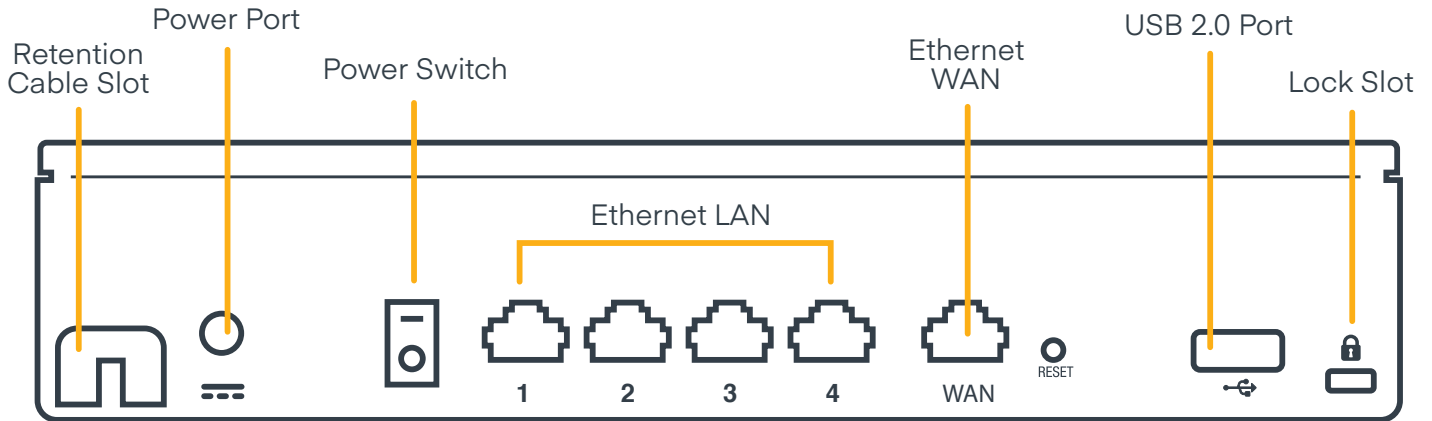
- NetCloud Packages include support for the full subscription term.
- All Cradlepoint hardware products are covered by a limited lifetime warranty for as long as they have a subscription license to an active NetCloud Service Plan.

## Hardware

Front





Back



LEDs

Indicator	Behavior
	<p><b>Power:</b> The Cradlepoint AER1600/AER1650 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>
<b>VPN</b>	<p><b>VPN:</b> Indicates status of VPN connection.</p> <ul style="list-style-type: none"> <li>Blue = Connected to an active VPN</li> </ul>
	<p><b>Embedded Modem:</b> Indicates information about the embedded modem.</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>Removable MC400 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>

Indicator	Behavior
	<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 embedded and removable modular 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>
<p><b>2.4GHz 5GHz</b></p>	<p><b>WiFi Broadcast:</b> Indicates activity on the WiFi broadcast for both the 2.4 GHz and 5 GHz bands (AER1600 only).</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>
<p><b>Other</b></p>	<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 modem LEDs blink red in unison for 10 seconds when there is an error during NCOS upgrade.</li> <li>— WAN Ethernet LED: Only right LED will light up and/or blink with data.</li> </ul>