

DATA SHEET

CELONA OUTDOOR LTE ACCESS POINTS

Enabling LTE wireless connectivity for enterprise environments, within the CBRS spectrum

Celona outdoor access point (AP) hardware is part of Celona's Outdoor Private LTE subscription. They are optimized for outdoor environments in the enterprise where wireless connectivity with predictable reliability is required. With an enterprise friendly operational model – including plug and play deployment and centralized cloud-based management – Celona APs are designed to accelerate the adoption mission-critical devices and applications on wireless infrastructure.

Celona Outdoor AP is highly ruggedized Category B hardware with external antenna support and enables coverage across very large outdoor areas: between 0.3-1M SQFT coverage with omni-directional antennas, and between 2500-5000 FT range with directional antennas.

It is optimized for installation on rooftops, light poles, towers or other such outdoor installation options. It is designed to connect to an existing enterprise IT network using standard Ethernet or fiber connectivity.

Unlike traditional small cells that require configuration of various radio parameters and integration with a separate Evolved Packet Core (EPC), Celona APs auto-discover the Celona Edge and Celona Orchestrator over any enterprise IP network to enable a plug-n-play deployment model. Celona APs then leverage secure, standards-based interfaces (S1 and TR-069 over IPsec) to establish data and control plane communications with the Celona Edge software. They are configured and monitored via the cloud-hosted Celona Orchestrator.



KEY BENEFITS

Built tough

- Up to 5000 FT range for wireless coverage with directional antennas
- IP-66 rated and operating temperature range between -40°C to 55°C
- Ruggedized design for installation in challenging environments

Plug-and-play at scale

- Simplified deployment and operations to make LTE accessible for enterprise IT users
- Coordinated spectrum management algorithm to optimize system wide performance
- Adapts to existing enterprise IT network configuration across remote, branch and campus

Predictable reliability

- 150+ Mbps downlink and 15+ Mbps uplink application throughput per AP
- Highly reliable wireless connectivity by leveraging advanced LTE features
- Infrastructure control for traffic scheduling and mobility events for client devices

Application aware

- Support Celona's unique MicroSlicing™ technology to enforce service level objectives for minimum throughput, maximum latency/jitter/packet error rate
- Assign radio resources in real-time to MicroSlices on a per application basis

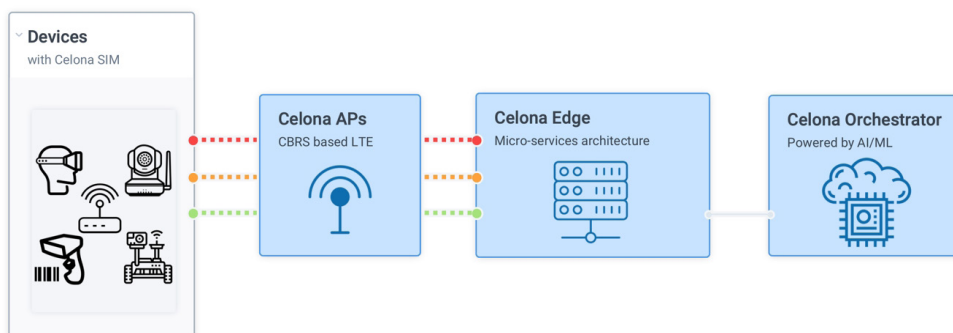


Figure 1: Private mobile network solution components



SPECIFICATIONS

HIGH LEVEL SPECIFICATIONS

Type	CBRS LTE Access Point (3GPP Rel 13. TDD)
Frequency/LTE Band	Band 48 (3550 - 3700 MHz)
TDD Configs Supported	TDD Config 1 and 2

PERFORMANCE SPECIFICATIONS

TDD Config 1 Peak Data Rates	Download: 130 Mbps, with carrier aggregation Upload: 27 Mbps per radio, 54 Mbps per AP
TDD Config 2 Peak Data Rates	Download: 188 Mbps, with carrier aggregation Upload: 14 Mbps per radio, 28 Mbps per AP
Simultaneously active user endpoints (UEs) / devices	Up to 128

RF SPECIFICATIONS

Channel Bandwidth	10, 20 MHz per carrier with carrier aggregation up to 40 MHz
Antennas	Omni-directional or directional (purchased separately) Two 2-port or one 4-port per AP
Max Transmission Power	30 dBm per antenna

PORTS AND INTERFACES

Network Interfaces	One 10/100/1000 Mbps Ethernet (RJ-45), or One Optical (SFP adapters are included)
Power	+/- 48V DC. AC adapter and power surge protector are included
Timing	GPS (antenna included) and IEEE 1588v2 PTP

OTHER SPECIFICATIONS

Dimensions	310mm x 239mm x 105mm
Weight	17.58 lbs (7.97 kg)
Environmental	Operating Temperature: -40°C to 55°C Storage Temperature: -45°C to 70°C Humidity: 5% to 95% non-condensing
Ingress protection rating	IP66
MTBF	> 17 years
Power Interface Lightning Protection	Differential mode: ±10 KA Common mode: ±20 KA
Mounting and installation	Pole or wall mount
Power Consumption	< 60 W

COMPLIANCE AND CERTIFICATIONS

The Celona Outdoor AP conforms to the following:

- FCC Part 96 Class B
- 3GPP Rel12 Technical Specifications 36.104 and 36.141



ORDERING INFO

Celona Outdoor CBRS LTE access points are included in the Celona Private LTE subscription, which scales with the number of access points in the network.

R7C40A	3 year cloud subscription to CBRS LTE service for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator software. Also includes CBRS LTE category B access point, Celona express technical support, limited lifetime warranty and 40 private LTE SIM cards. Separate external antenna purchase required.
R7C41A	5 year cloud subscription to CBRS LTE service for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator software. Also includes CBRS LTE category B access point, Celona express technical support, limited lifetime warranty and 40 private LTE SIM cards. Separate external antenna purchase required.
R7C47A	2-port Omni-Directional antenna with 3.3-3.8GHz frequency range, horizontal / vertical polarization type, 13 dBi gain, 7-degree vertical beamwidth, 360-degree horizontal beamwidth, 1-degree electrical downtilt, 30 dB port isolation, 2 x Type N Female connectors, 3-ft LMR200 cable and 1-year warranty.
R7C48A	2-port 33-degree sector antenna with 3.5-4.2GHz frequency range, polarization type of 45-degree slant, 18.8 dBi gain, 8-degree vertical beamwidth, 33 degree horizontal beamwidth, 4 degree electrical downtilt, 35 dB front to back ratio, 2 x Type N Female connectors, 3-ft LMR200 cable and 1-year warranty.
R7C49A	2-port 90-degree sector antenna with 3.3-3.8GHz frequency range, polarization type of 45-degree slant, 16.7 dBi gain, 6.5-degree vertical beamwidth, 45 degree horizontal beamwidth, 2 degree electrical downtilt, 31 dB front to back ratio, 2 x Type N Female connectors, 3-ft LMR200 cable and 1-year warranty.
R7C50A	2-port 120-degree sector antenna with 3.3-3.8GHz frequency range, polarization type of 45-degree slant, 14.5 dBi gain, 7-degree vertical beamwidth, 120 degree horizontal beamwidth, 3.5 degree electrical downtilt, 30 dB front to back ratio, 2 x Type N Female connectors, 3-ft LMR200 cable and 1-year warranty.



Celona, the enterprise 5G company, is focused on accelerating the adoption of business-critical apps on enterprise wireless and helping organizations implement new generation of digital business initiatives. Taking advantage of the Citizens Broadband Radio Service (CBRS) in the United States, Celona’s solution architecture is designed to automate deployment of cellular wireless technology by enterprise organizations and their technology partners. For more information, please visit [celona.io](https://www.celona.io) and follow Celona on Twitter [@celonaio](https://twitter.com/celonaio).

<https://www.celona.io/>



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