

DATA SHEET

Celona Outdoor Access Point AP 11

Enabling cellular wireless connectivity for enterprise environments, within private spectrum options

Celona outdoor AP 11 hardware is part of Celona's private mobile network subscription. It is optimized for outdoor environments where predictable performance and low latency for wireless connectivity is required. With an enterprise friendly operational model, Celona access points are designed to accelerate the adoption of mission-critical devices and applications on enterprise wireless. They support plug and play deployment, remote provisioning, dynamic spectrum management and centralized cloud-based management.

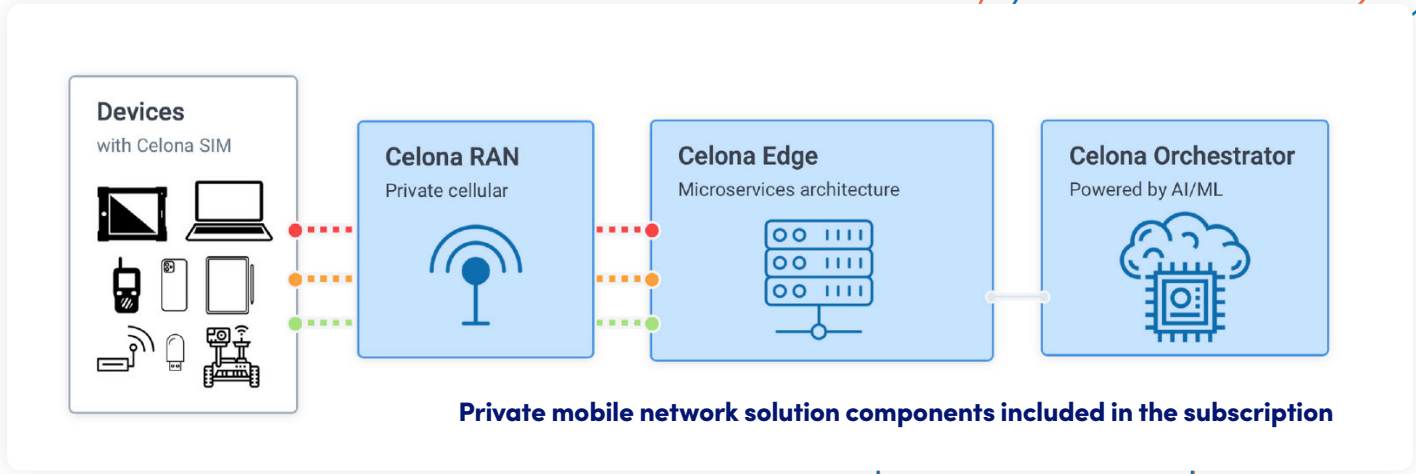


celona

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Celona Outdoor AP 11 is a highly ruggedized hardware for use within private cellular spectrum (e.g. Category B for CBRS in the US) with external antenna support. It 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.



Key Benefits

Unlike traditional small cells that require configuration of various radio parameters and integration with a separate Evolved Packet Core (EPC), Celona access points 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.

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-n-play at scale

- Simplified operations to make private cellular wireless 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

Predicable reliability

- Interference free operation with self-organizing wireless on private spectrum
- Highly reliable connectivity by leveraging advanced cellular wireless 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 MicroSlicing policies on a per application basis and device group basis

AP 11 Specifications

High Level Specifications

Type	4G LTE Access Point 3GPP Release 13, TDD
Frequency	3550 - 3700 MHz
Simultaneously Active Devices	Up to 96

RF Specifications

Channel Bandwidth	10, 20 MHz per carrier With Carrier Aggregation up to 40MHz
Antennas	Omnidirectional or directional Two (2)2-port, or one (1)4-port per AP
Max Transmission Power	30dBm per port

Ports and Interfaces

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

Performance Specifications

TDD Config 1 Peak Data Rates	Download: 150 Mbps, with Carrier Aggregation Upload: 25 Mbps per radio, 50 Mbps per AP
TDD Config 2 Peak Data Rates	Download: 200 Mbps,with Carrier Aggregation Upload: 12 Mbps per radio, 24 Mbps per AP

AP 11 Other Specifications

Dimensions (WxDxH)	12.2 x 9.41 x 4.13 (inches) 31 x 23.9 x 10.5 (cm)
Weight	17.6 lbs 8 kg
Environmental	Operating Temperature: -40° to 55°C Storage Temperature: -45° to 70° C Humidity: 5% to 95% non-condensing
Ingress Protection Rating	IP66
Power Interface Lighting Protection	Differential mode: ±10 KA Common mode: ±20 KA
Mounting and Installation	Pole or wall mount
Power Consumption	< 60 W
MTBF	> 17 years
Hazardous Locations	AP 11H has UL Class 1 Division 2 certification

Ordering Information

Celona Outdoor AP 11 is included in the Celona private mobile network subscription, which scales with the number of access points in the network.

CN-SUB-OUTE-3	3 year cloud subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator software. Also includes the outdoor access point hardware, Celona express technical support, limited lifetime warranty and 40 SIM cards. Separate external antenna purchase required.
CN-SUB-OUTE-5	5 year cloud subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator software. Also includes the outdoor access point hardware, Celona express technical support, limited lifetime warranty and 40 SIM cards. Separate external antenna purchase required.
CN-ANT-OMNI	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 and 1-year warranty. Each antenna comes with an accessory kit of two surge protectors and two 10-ft LMR400 antenna cables. Each Celona outdoor AP has four connectors and requires two external antennas.
CN-ANT-33D	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 and 1-year warranty. Each antenna comes with an accessory kit of two surge protectors and two 10-ft LMR400 antenna cables. Each Celona outdoor AP has four connectors and requires two external antennas.
CN-ANT-90D	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 and 1-year warranty. Each antenna comes with an accessory kit of two surge protectors and two 10-ft LMR400 antenna cables. Each Celona outdoor AP has four connectors and requires two external antennas.
CN-ANT-120D	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 and 1-year warranty. Each antenna comes with an accessory kit of two surge protectors and two 10-ft LMR400 antenna cables. Each Celona outdoor AP has four connectors and requires two external antennas.

<p>CN-SUB-OUTE-1-R 1 year outdoor CBRS LTE cloud service subscription renewal</p>	<p>1 year cloud subscription renewal of CBRS LTE service for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator cloud service. Includes Celona Express technical support, hardware warranty, and 40 private LTE SIM cards.</p>
<p>CN-SUB-SIM-10-1-R 1 year subscription renewal for 10 SIM cards</p>	<p>1 year subscription renewal for a pack of 10 private LTE SIM cards to be used on a Celona network with an active cloud subscription.</p>
<p>CN-SUB-OUTE-2-R 2 year outdoor CBRS LTE cloud service subscription renewal</p>	<p>2 year cloud subscription renewal of CBRS LTE service for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator cloud service. Includes Celona Express technical support, hardware warranty, and 40 private LTE SIM cards.</p>
<p>CN-SUB-SIM-10-2-R 2 year subscription renewal for 10 SIM cards</p>	<p>2 year renewal for a pack of 10 private LTE SIM cards to be used on a Celona network with an active cloud subscription.</p>
<p>CN-SUB-OUTEH-3</p>	<p>3 year cloud subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator software. Also includes the outdoor access point hardware certified for hazardous locations, Celona express technical support, limited lifetime warranty and 40 SIM cards. Separate external antenna purchase required.</p>
<p>CN-SUB-OUTEH-5</p>	<p>5 year cloud subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator software. Also includes the outdoor access point hardware certified for hazardous locations, Celona express technical support, limited lifetime warranty and 40 SIM cards. Separate external antenna purchase required.</p>

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

Warranty

Limited lifetime warranty coverage for Celona Outdoor access points is included as part of an active Celona Private Mobile Network subscription.