

DATA SHEET

# Celona Ruggedized Access Point AP 21

Enabling 5G NR cellular wireless connectivity for enterprise environments, within a wide range of International 5G NR bands.

AP 21 is a ruggedized 5G NR access point as a part of Celona's 5G LAN solution portfolio. It supports most sub-6 GHz frequency bands (3.3 GHz – 4.9 GHz). AP 21 offers highly deterministic performance over the air including up to 1 Gbps aggregate throughput, less than 10ms latency and exceptional outdoor range. With an enterprise-ready operational model, the Celona AP 21 access point is designed for mission-critical use cases in tough industrial, semi-industrial and outdoor environments. Like all Celona access points the AP 21 supports plug-and-play deployment, remote provisioning, centralized cloud-based management and seamlessly integrates into the enterprise network.



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## Celona Outdoor AP 21

**Celona Outdoor AP 21 is a ruggedized and fully integrated 5G NR outdoor access point designed for enterprise private wireless environments**

Bringing the speed, security, and reliability of 5G NR technology to enterprises and organizations across industries, Celona's AP 21 was purposely engineered to deliver pervasive cellular coverage across massive and critical industrial and outdoor areas such as oil refineries, shipping ports, manufacturing yards and large-scale industrial campus environments. Ultra-low latency of <10 msec can enable applications like Wireless Programmable Logic Controllers (PLC), PROFINET

### Key benefits of AP 21:

#### Support for global private wireless spectrums

- Operates in 3.3 GHz- 4.9 GHz frequency bands, supporting global enterprises
- Transmit power configurability to comply with local regulatory and compliance requirements

#### Secure wireless communication

- Certificate based mutual authentication secures connection between AP and cloud
- Data at rest and in-transit secured by comprehensive encryption mechanisms
- Regular penetration tests of system components are conducted by 3rd party security labs

#### Enterprise friendly management and operations

- Zero-touch provisioning out-of-the-box makes AP operational in minutes
- Self-organizing spectrum management enables the selection of the best bands for interference-free operation

#### Built for tough environments

- IP-66 rated and built for tough environments with extended operating temperature, shock, vibration, and noise immunity
- C1D2 certified for work in hazardous environments such as chemical plants, Oil & Gas, where gasses, vapors and dust could be present

#### Deterministic performance for mission-critical applications

- Delivers predictable performance for mission-critical apps via 5QI MicroSlicing™ with QoS enforcements on a per application flow
- Delivers up to 1 Gbps aggregate throughput (2x2 MIMO, up to 256 QAM modulation, sub-carrier space of 30 KHz) and supports various uplink/downlink slot configurations
- Operates in channel bandwidth of up to 100 MHz
- Outdoor range of greater than 1km with a transmit power of up to 37 dBm per port with directional antennas
- One-way application latency of less than 10ms (device to edge)
- Engineered for predictable high-speed mobility (>25 mph) of devices between access points

## Celona 5G LAN

Unlike traditional small cells that require configuration of various radio parameters and integration with 5G mobile core from a third party vendor, AP 21 is included as a part of Celona's 5G LAN platform that integrates the essential elements including access points, LTE/5G core network edge hardware/software, radio resource management software and cloud-based orchestration tools specifically designed and developed for enterprise network use-cases.

### 5G LAN Value Prop

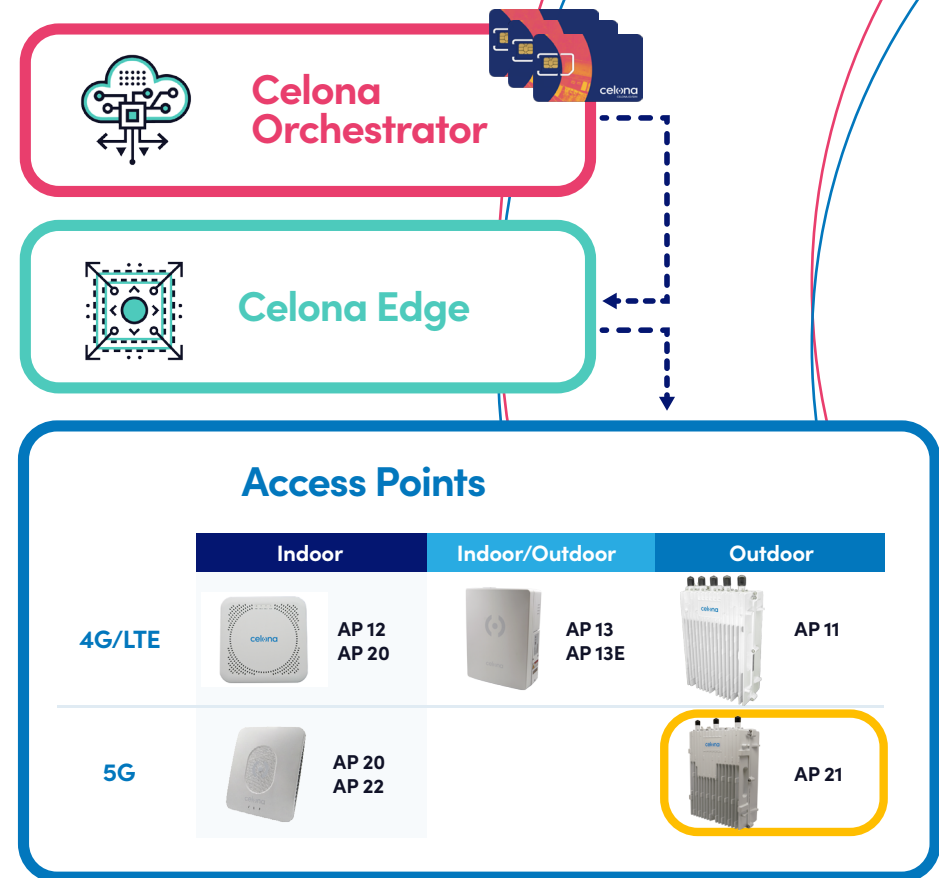
- Turn-key solution, designed for the enterprise
- Deterministic performance for mission-critical applications
- Enterprise friendly management and operations
- Support for global private wireless spectrums

## Celona's Access Point Portfolio

### Key benefits of Celona's 5G LAN Access Points

- Plug-and-play deployment
- Supports variety of global private 5G spectrums
- Deploy anywhere: Indoor/Outdoors, ceiling, wall, roof, poles
- Built for tough environments – Ruggedized , IP66 rated, C1D2 certified
- Built for critical communications - Microslicing, < 10ms latency, RAN mobility > 25 mph, Up to 1 Gbps
- Built-in PTP Grandmaster, eliminates external components
- End-End secure wireless communication

## Celona's 5G LAN



# Specifications

## High Level Specifications

<b>Type</b>	5G Ruggedized Access Point (3GPP Rel. 15 TDD)
<b>RF Specifications</b>	2x2 MIMO UL/DL , up to 256 QAM Modulation
<b>Power (Rx/Tx)</b>	Up to 37 dBm per port, Celona provides and supports external antennas
<b>Latency</b>	<10ms one-way (between Device and Celona Edge)
<b>Connected Devices</b>	Active: 128 (concurrent)
<b>Dimensions (WxDxH)</b>	13.1 x 9.4 x 4.3 (inches) 333 x 240 x 109 (millimeters)
<b>Weight</b>	18.7 lbs   8.5 kg
<b>Environmental</b>	Operating Temperature: -30° to 55°C Storage Temperature: -40° to 65°C Humidity: 2% to 95% RH
<b>IP (Ingress Protection) Rating</b>	IP66
<b>Power interface lightning protection</b>	Differential mode: ±10 KA Common mode: ±20 KA
<b>Surge Protection</b>	Yes
<b>Installation</b>	Pole or wall mount
<b>Power Consumption</b>	100 W (maximum)
<b>MTBF</b>	>150K hours

## Ports and Interfaces

<b>Network Interfaces</b>	1 optical (SFP+) and 1 RJ-45 Ethernet interface (1 GE)
<b>Antenna Interfaces</b>	2x N-Type antenna connectors
<b>Power Supply</b>	+/- 48V DC (AC adapter and power surge protector included)
<b>Timing</b>	GPS (antenna included)
<b>LED Indicators</b>	4 x status LEDs Power / Active / Running / Alarm

## Compliance and Certifications

- AP 21-48: FCC Cat A/B
- OnGo Alliance in the United States
- AP 21-78H: CE, UK-CA
- AP 21 -77: CE, UK-CA
- AP 21 -79: TELEC, KCC (Korea Certification)
- Hazardous location, Class 1 Div 2

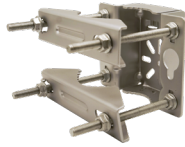
## Frequency Band Support (seperate SKUs)

<b>AP21-48</b>	3.55-3.7 GHz
<b>AP21-78H</b>	3.6-3.8 GHz
<b>AP21-77</b>	3.8-4.2 GHz
<b>AP21-79</b>	4.6-4.9 GHz

## What's in the box?



**AP 21**



**Mount bracket for pole and wall mount**



**GPS antenna**



**Power adapter with regional plugs**



**SFP optical module**

## Ordering Information

Celona Outdoor AP 21 is included in the Celona private mobile network subscription, which scales with the number of access points in the network.

<b>C-S-5G-48-TX-X-3</b>	3 year outdoor 5G private wireless service subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 5G category B n48 (3550-3700 MHz) access point, Celona express technical support, limited lifetime warranty and 40 private SIM cards. Separate external antenna purchase required.
<b>C-S-5G-78H-TX-X-3</b>	3 year outdoor 5G private wireless service subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 5G outdoor n78H (3600-3800 MHz) access point, Celona express technical support, limited lifetime warranty and 40 private SIM cards. Separate external antenna purchase required.
<b>C-S-5G-77-TX-X-3</b>	3 year outdoor 5G private wireless service subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 5G outdoor n77 (3800-4200 MHz) access point, Celona express technical support, limited lifetime warranty and 40 private SIM cards. Separate external antenna purchase required.
<b>C-S-5G-79-TX-X-3</b>	3 year outdoor 5G private wireless service subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 5G outdoor n79 (4600-4900 MHz) access point, Celona express technical support, limited lifetime warranty and 40 private SIM cards. Separate external antenna purchase required.
<b>C-S-5G-48-TX-X-5</b>	5 year outdoor 5G private wireless service subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 5G category B n48 (3550-3700 MHz) access point, Celona express technical support, limited lifetime warranty and 40 private SIM cards. Separate external antenna purchase required.
<b>C-S-5G-78H-TX-X-5</b>	5 year outdoor 5G private wireless service subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 5G outdoor n78H (3600-3800 MHz) access point, Celona express technical support, limited lifetime warranty and 40 private SIM cards. Separate external antenna purchase required.

<b>C-S-5G-77-TX-X-5</b>	5 year outdoor 5G private wireless service subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 5G outdoor n77 (3800–4200 MHz) access point, Celona express technical support, limited lifetime warranty and 40 private SIM cards. Separate external antenna purchase required.
<b>C-S-5G-79-TX-X-5</b>	5 year outdoor 5G private wireless service subscription for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge software and Celona Orchestrator cloud service. Includes 5G outdoor n79 (4600–4900 MHz) access point, Celona express technical support, limited lifetime warranty and 40 private SIM cards. Separate external antenna purchase required.
<b>CN-ANT-OMNI-KIT</b>	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 5G outdoor AP has two connectors and requires one external antenna.
<b>CN-ANT-33D-KIT</b>	33-degree sector antenna with 3.5–4.2 GHz 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 5G outdoor AP has two connectors and requires one external antenna.
<b>CN-ANT-90D-KIT</b>	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 5G outdoor AP has two connectors and requires one external antenna.
<b>CN-ANT-120D-KIT</b>	120-degree sector antenna with 3.3–3.8 GHz 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 5G outdoor AP has two connectors and requires one external antenna.
<b>CN-ANT-65D-KIT</b>	65-degree sector antenna with 3.3–3.8 GHz frequency range, polarization type of 45 degree slant, 17 dBi gain, 6 degree vertical beamwidth, 62 degree horizontal beamwidth, 38 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 5G outdoor AP has two connectors and requires one external antenna.

## Warranty

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