

Data Sheet

A2415 Outdoor Cellular Access Point

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The NetCloud Private Network solution includes plug-and-play Cellular Access Points (CAPs) that support the 4G LTE CBRS spectrum band 48. Sometimes referred to as small cells, these CAPs form the private Radio Access Network (RAN) that cellular endpoints and clients connect to and are authenticated through the Mobility Gateway. All indoor and outdoor CAPs work together to create contiguous private network connectivity across the entire customer landscape.

Coverage Measured in Miles

Cellular Access Points offer significant coverage advantages over Wi-Fi outdoors and public cellular services indoors. These CAPs extend far beyond the limited range of Wi-Fi, providing reliable connectivity for extensive outdoor industrial, agricultural, and operational areas. Indoors, they surpass public cellular services in coverage and capacity, tailored to the specific requirements of the facility. Unlike public cellular, which can suffer from signal degradation and congestion, NCPN CAPs ensure robust signal penetration and dedicated bandwidth, facilitating advanced applications such as automation, secure communications, and real-time data analytics in environments like warehouse yards and industrial manufacturing facilities.

Reliability You Can Count On

NetCloud Private Networks excels in network determinism, client mobility, and overall reliability, markedly outperforming Wi-Fi. PCNs ensure predictable network behavior with guaranteed bandwidth, essential for critical applications. Unlike Wi-Fi, where client devices determine handoffs, potentially leading to connectivity gaps, NCPN manages client mobility seamlessly across multiple CAPs, ensuring devices maintain stable connections. This system-wide approach to managing connections enhances the reliability of the LAN, reducing downtime and maintaining consistent network performance.

Notable benefits

- Plug and play CAPs with automated provisioning and quick boot up.
- Fit for function coverage options with internal or external antenna options.
- Flexible backhaul options with ethernet or fiber.
- Utilizes dedicated spectrum and advanced interference management, significantly reducing the risk of connection drops and ensuring superior connectivity.
- Carrier Aggregation, Dual Carrier, and Time Division Duplex (TDD) modes 1, 2, and 6 enable customizable uplink and downlink throughputs.



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Cellular Access Point Specifications

The CAP is a TDD-LTE small cell with external antennas that provides connectivity to the SIM-authenticated devices in the private network.

INTERFACES	
Ethernet:	<ul style="list-style-type: none"> — 1 x GbE RJ45 — 1 x GbE SFP†
Cellular:	4 external, N-type female antenna connectors
GNSS/GPS:	External GPS antenna, N-type connector
ENVIRONMENTAL	
Temperature:	<ul style="list-style-type: none"> — Operating: -40 °C to 55 °C (-40 °F to 131 °F) — Storage: -45 °C to 70 °C (-49 °F to 158 °F)
Humidity:	<ul style="list-style-type: none"> — Operating: 5% to 90% non-condensing — Storage: 5% to 95% non-condensing
Ingress Protection:	IP66
POWER	
Input:	-40 VDC to -57 VDC, nominal -48 VDC
Consumption:	<ul style="list-style-type: none"> — Typical: 60 W — Maximum: 100 W
PHYSICAL	
Size:	333 mm x 240 mm x 105 mm (13.1 in x 9.4 in x 4.1 in)
Weight:	7.5 kg (16.5 lbs)
CERTIFICATIONS	
Safety:	UL/cUL
Radio:	FCC
Cellular:	OnGo Alliance ^{††}
RADIO SPECIFICATIONS	
Operating Modes:	<ul style="list-style-type: none"> — Single Carrier (SC): Requires one 2-port antenna. — Dual Carrier (DC): Requires two 2-port antennas that create distinct sectors that operate independent from each other. — Carrier Aggregation (CA): Requires one 4-port antenna or two 2-port antennas.
Active Clients:	<ul style="list-style-type: none"> — Single Carrier mode: Up to 128 — Dual Carrier mode: Up to 256 — Carrier Aggregation mode: Up to 128

Single Carrier Peak Rates (based on 20 MHz BW):	TDD Config 1
	<ul style="list-style-type: none"> — Downlink: 105 Mbps — Uplink: 28 Mbps
	TDD Config 2
	<ul style="list-style-type: none"> — Downlink: 145 Mbps — Uplink: 14 Mbps
	TDD Config 6
	<ul style="list-style-type: none"> — Downlink: 85 Mbps — Uplink: 35 Mbps
Dual Carrier Peak Rates (based on 40 MHz BW):	TDD Config 1
	<ul style="list-style-type: none"> — Downlink: 2x105 Mbps — Uplink: 2x28 Mbps
	TDD Config 2
	<ul style="list-style-type: none"> — Downlink: 2x145 Mbps — Uplink: 2x14 Mbps
	TDD Config 6
	<ul style="list-style-type: none"> — Downlink: 2x85 Mbps — Uplink: 2x35 Mbps
Carrier Aggregation Peak Rates (based on 40 MHz BW):	TDD Config 1
	<ul style="list-style-type: none"> — Downlink: 210 Mbps — Uplink: 56 Mbps
	TDD Config 2
	<ul style="list-style-type: none"> — Downlink: 290 Mbps — Uplink: 28 Mbps
	TDD Config 6
	<ul style="list-style-type: none"> — Downlink: 170 Mbps — Uplink: 70 Mbps
Carrier Aggregation:	<ul style="list-style-type: none"> — Downlink: Up to 2 CA — Uplink: Up to 2 CA
MIMO:	2x2
Modulation:	<ul style="list-style-type: none"> — Up to 256 QAM DL — Up to 64 QAM UL
4G/LTE Bands:	B48

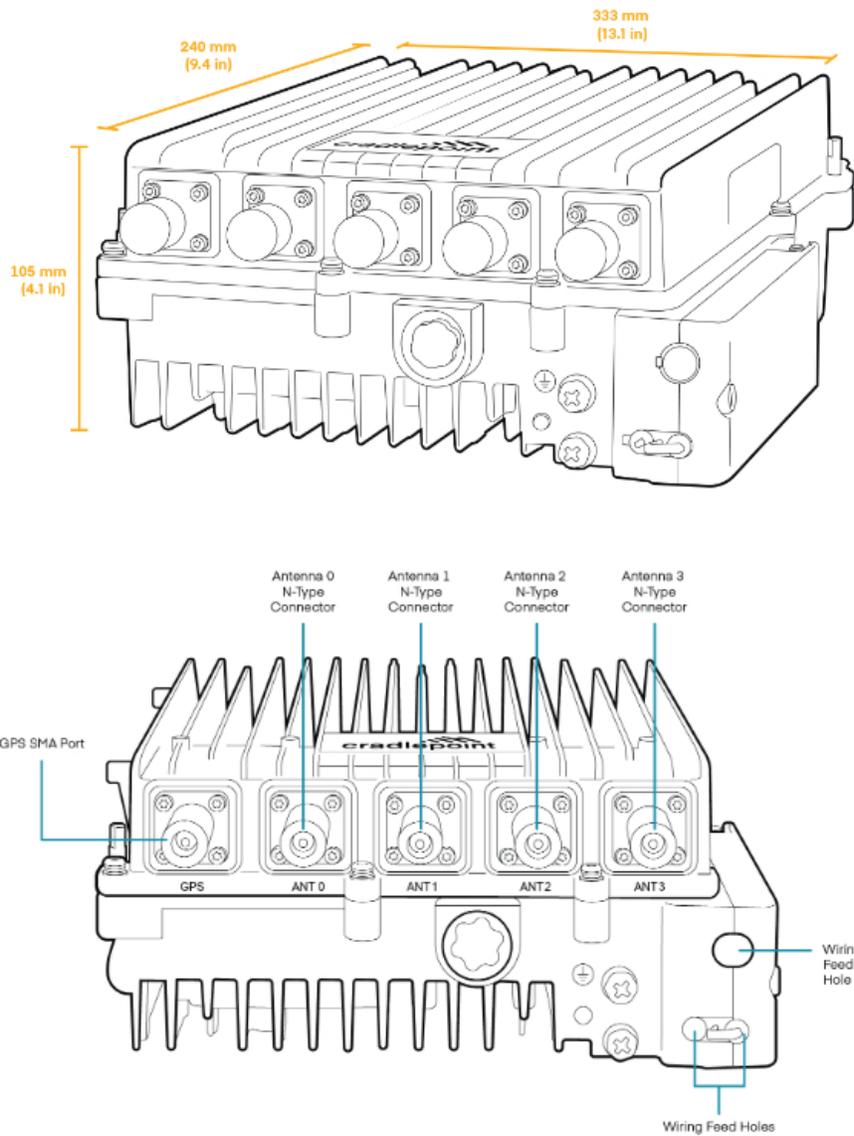
Cellular Power:	<ul style="list-style-type: none"> — Maximum 47 dBm EIRP — Maximum 30 dBm Tx power/port
Cellular Antennas:	N-type male connectors, external (not included)
Channel Bandwidth:	10 and 20 MHz

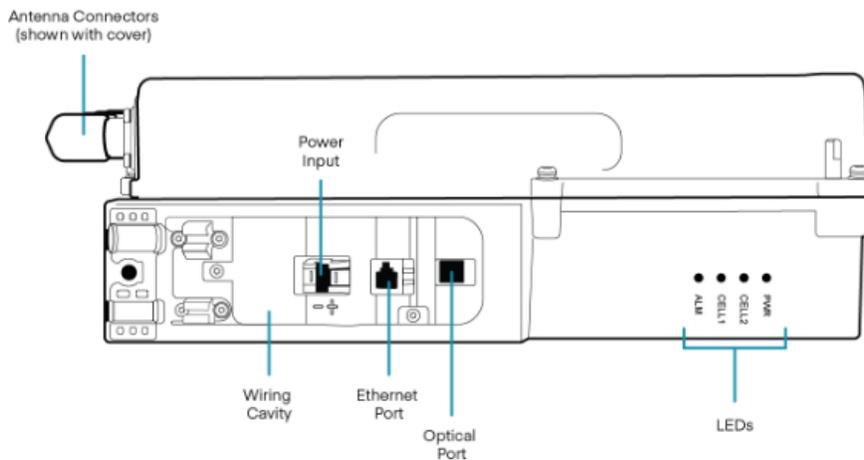
[†]1000baseLX, 1310nm, 10km optical SFP included (Qty 2)

^{††}Certification in progress; availability coming soon.

Physical Measurements & Features

A2415





External Antennas

One or two external antennas are required for the A2415 CAP to function properly. Cradlepoint does not sell or support any external antennas. The antennas listed below are compatible with the A2415 and may be ordered at the same time with the CAP. If ordered in this way, the antennas are shipped and supported by a third party. Additional compatible antennas may be available from other vendors.

DESCRIPTION	KP PERFORMANCE PART NUMBER
KP Performance Antennas: 33 degree sector antenna, 18.8 dBi, 2 port, ±45 slant	KP-3DP33S-45
KP Performance Antennas: 65 degree sector antenna, 18.1 dBi, 2 port, ±45 slant	KPP-3DP65S-45
KP Performance Antennas: 65 degree sector antenna, 18.1 dBi, 4 port, ±45 slant	KPP-3SX4-65
KP Performance Antennas: 90 degree sector antenna, 16.7 dBi, 2 port, dual pol. ±45 slant	KPPA-3GHZDP90S-45
KP Performance Antennas: 90 degree sector antenna, 17 dBi, 4 port, 45 slant polarized	KP-3SX4-90-V2
KP Performance Antennas: 120 degree sector antenna, 14.5 dBi, 2 port, ±45 slant	KP-3DP120S-45
KP Performance Antennas: Omni antenna, 8.5 dBi, 4 port, ±45 slant polarization	KP-3QOMNI-8

For detailed product or performance information for these antennas, see <https://www.kpperformance.com/>.

Ordering Guide

NetCloud Private Networks (NCPN) is comprised of a Mobility Gateway, Cellular Access Point(s), and Private SIMs, which all have corresponding NetCloud Service plans. For a complete end-to-end management solution, Cradlepoint routers and adapters should be added to the system. For details on NCPN features, refer to the summary on the [NetCloud Service](#) webpage and the detail in the NetCloud Service Features document. For more details and ordering information for the complete NCPN solution, see [NetCloud Private Networks Data Sheet](#).

Step 1: Select NCPN **Cellular Access Point(s)** (selection of one or more indoor/outdoor models)

Step 2: Select compatible external antennas

For details on other available cellular access points, see the following:

— [A2400 Indoor Cellular Access Point Data Sheet](#)

— [A2405 Outdoor Cellular Access Point Data Sheet](#)

STEPS	COMPONENT	DESCRIPTION
1	Cellular Access Point(s)	<ul style="list-style-type: none"> — A2400 Indoor Cellular Access Point — A2405 Outdoor Cellular Access Point — A2415 Outdoor Cellular Access Point
2	External antenna	Select one or more compatible external antennas

NetCloud Service Plans

REGION	NCPN PACKAGE PLAN	DESCRIPTION†	PART NUMBER
US only:	CBRS Cellular Access Points — Essentials	PROMO — Outdoor A2415 CAP with AC power supply and line cord, no antennas included.	PE0x-2415NM-CN
	Renewal — Cellular Access Point	Outdoor A2415 — 1 year	PE01-NCESS-R

x = 4 or 6 years

†PROMO SKUs (promotional SKUs) are available for a limited time and add an extra year to the standard 3- or 5-year NetCloud Service Plan. Starting 07/01/2024, new subscriptions revert to the standard 3- or 5-year NetCloud Service Plan. All renewals have a 1-year duration.

Support & Warranty

All NCPN hardware and software are sold as part of a NetCloud Service package, which includes:

- Cradlepoint Global Support for the full subscription term.
- Hardware limited lifetime warranty for as long as they have a subscription license to an active NetCloud Service Plan.

More Information

[Learn more at cradlepoint.com/netcloud-private-networks](https://www.cradlepoint.com/netcloud-private-networks)