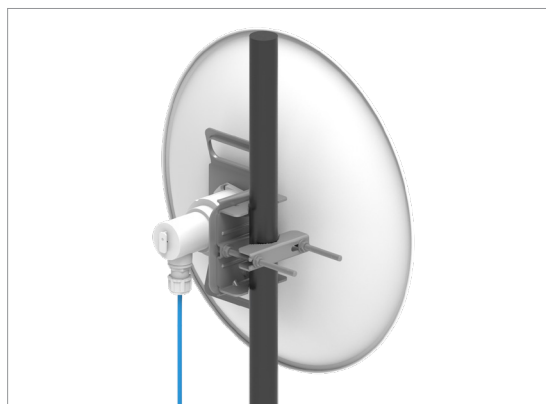


2 GHz and 3 GHz cnRanger Subscriber Modules

QUICK LOOK:

The cnRanger™ Fixed LTE wireless platform from Cambium Networks substantially increases range and coverage, while reducing the cost and complexity typically associated with LTE networks.

- **Category 4 Low Cost CPE in 2 GHz (Bands 38, 40 and 41)**
- **Category 6 High Gain CPE in both 2 GHz (Bands 38, 40 and 41)* and 3 GHz (Bands 42, 43 and 48)**



KEY FEATURES

- LTE Optimized for Fixed Wireless Broadband
- High power transmitter provides enhanced uplink for 2 GHz 101 SM
- High Gain integrated parabolic dish for extended range on 201 SMs
- Reliable yet cost effective subscriber modules for cnRanger system
- Easy installation, with “Point and Go” configuration and provisioning

2 GHz and 3 GHz cnRanger Subscriber Modules

Product			
Model	2 GHz cnRanger 101 SM	2 GHz cnRanger 201 SM*	3 GHz cnRanger 201 SM
LTE UE Type	LTE Category 4	LTE Category 6	LTE Category 6
Model Numbers	2LTE-SM-101	2LTE-SM-201	3LTE-SM-201
	2LTE-SM-101-US	2LTE-SM-201-US	3LTE-SM-201-US
	2LTE-SM-101-UK	2LTE-SM-201-UK	3LTE-SM-201-UK
	2LTE-SM-101-EU	2LTE-SM-201-EU	3LTE-SM-201-EU

Spectrum			
	2 GHz 101 SM	2 GHz 201 SM*	3 GHz 201 SM
Channel Spacing	1 MHz as specified in the BBU	1 MHz as specified in the BBU	1 MHz as specified in the BBU
Frequency Range	LTE Band 38: 2570 - 2620 MHz	LTE Band 38: 2570 - 2620 MHz	LTE Band 42: 3400-3600 MHz
	LTE Band 40: 2300 - 2400 MHz	LTE Band 40: 2300 - 2400 MHz	LTE Band 43: 3600-3800 MHz
	LTE Band 41: 2496 - 2690 MHz	LTE Band 41: 2496 - 2690 MHz	LTE Band 48: 3550-3700 MHz
Channel Width	5 MHz*, 10 MHz, 15 MHz, 20 MHz	5 MHz*, 10 MHz, 15 MHz, 20 MHz	5 MHz*, 10 MHz, 15 MHz, 20 MHz

* future release

Specifications

Interface	
MAC (Media Access Control) Layer	TDD-LTE Advanced Release 10
Protocols Used	IPv4, IPv6, UDP, TCP/IP, ICMP
Network Management	HTTP, HTTPS, SSH, Cambium Networks cnMaestro™
MTU	1516 bytes

Security	
Encryption	AES-128 and SNOW 3G
Authentication	SIM authentication via BBU, cnMaestro or Web GUI provisions BBU with SIM information

2 GHz and 3 GHz cnRanger Subscriber Modules

Performance

HARQ Yes

Ultimate Sensitivity -98 dBm

MCS = Adaptive Modulation Levels, SNR = Signal to Noise Required, in dB

MCS	SNR	MCS	SNR	MCS	SNR
0-QPSK	3	10-QPSK	11	20-QPSK	18
1-QPSK	3	11-QPSK	11	21-QPSK	18
2-QPSK	4	12-QPSK	11	22-QPSK	19
3-QPSK	5	13-QPSK	13	23-QPSK	21
4-QPSK	6	14-QPSK	14	24-QPSK	21
5-QPSK	7	15-QPSK	14	25-QPSK	22
6-QPSK	7	16-QPSK	15	26-QPSK	23
7-QPSK	8	17-QPSK	16	27-QPSK	24
8-QPSK	9	18-QPSK	16	28-QPSK	28
9-QPSK	10	19-QPSK	17		

Physical

	2 GHz 101 SM	2 GHz 201 SM	3 GHz 201 SM
Surge Suppression	IEC/EN 61000-4-5, 4 kV @ (1.2/50us(8/20us), 10/700us)	IEC/EN 61000-4-5, 4kV @ (1.2/50us(8/20us), 10/700us)	IEC/EN 61000-4-5, 4kV @ (1.2/50us(8/20us), 10/700us)
Environmental	IP55	IP67	IP67
Temperature / Humidity	-40°C to 55°C (-40°F to 131°F), 0-95% non-condensing	-40°C to 55°C (-40°F to 131°F), 0-95% non-condensing	-40°C to 55°C (-40°F to 131°F), 0-95% non-condensing
Weight	2 kg (4.4 lbs)	3.2 kg (7 lbs)	3.2 kg (7 lbs)
Wind Survival	190 kph (118 mph)	200 kph (124 mph)	200 kph (124 mph)
Dimensions (H x W x Depth)	260 mm x 260 mm x 92 mm (10.2 in x 10.2 in x 3.6 in)	450 mm dia x 300 mm (17.7 in. dia x 11.8 in.)	450 mm dia x 300 mm (17.7 in. dia x 11.8 in.)
Pole Diameter Range (w/ included mount)	38 mm to 76 mm (1.5 in to 3 in)	38 mm to 76 mm (1.5 in to 3 in)	38 mm to 76 mm (1.5 in to 3 in)
Power Consumption	7.5 W max	9 W max	9 W max
Input Voltage	30 V PoE	30 V PoE	30 V PoE

Antenna

Integrated Antenna Peak Gain	15 dBi	17.5 dBi	21 dBi
3 dB Beamwidth - Azimuth	30°	18°	12°
3 dB Beamwidth - Elevation	30°	16°	12°
Polarization	Slant, +/- 45 Degrees	Slant, +/- 45 Degrees	Slant, +/- 45 Degrees
Front-To-Back Isolation	> 25 dB	> 30 dB	> 30 dB
Cross Polarization	> 23 dB	> 20 dB	> 20 dB

2 GHz and 3 GHz cnRanger Subscriber Modules

Antenna

	2 GHz 101 SM	2 GHz 201 SM	3 GHz 201 SM
Transmit Power Range (to EIRP limit by region)	66 dB dynamic range	66 dB dynamic range	66 dB dynamic range
Maximum Transmit Power	26 dBm	23 dBm	23 dBm

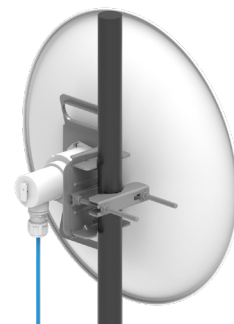
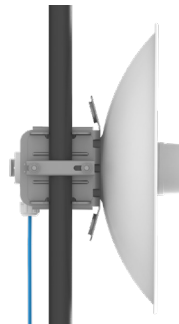
Certifications

ISED Canada	109W-0053	TBD	TBD
FCC ID	Z8H89FT0053	TBD	Z8H89FT0060
ETSI	EN 302 326-2	TBD	TBD

2 GHz 101 SM

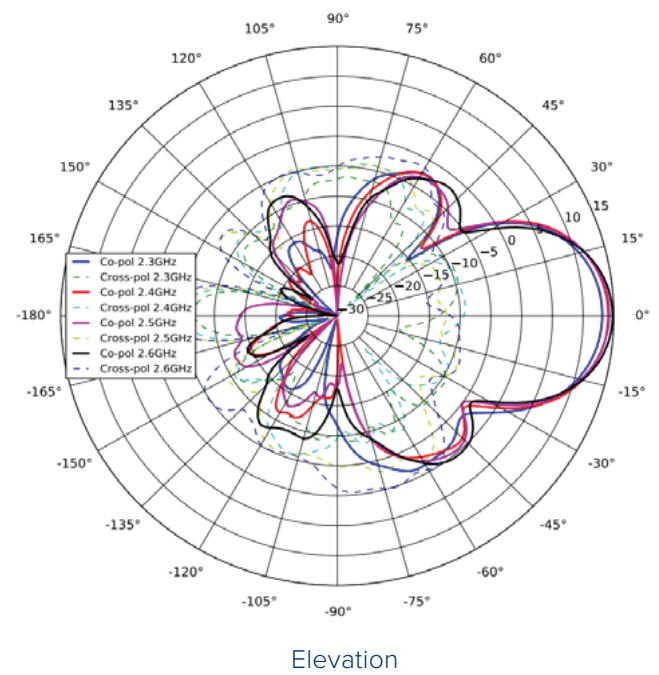
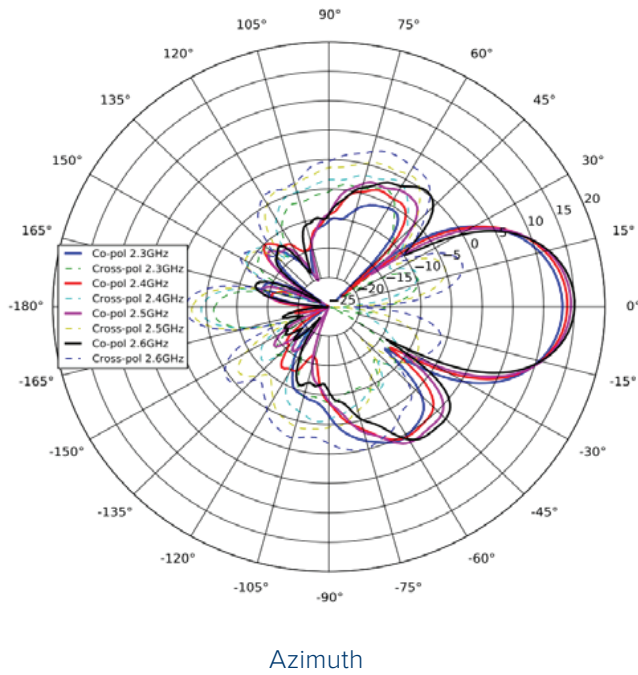


**2 GHz and 3 GHz
201 SM**

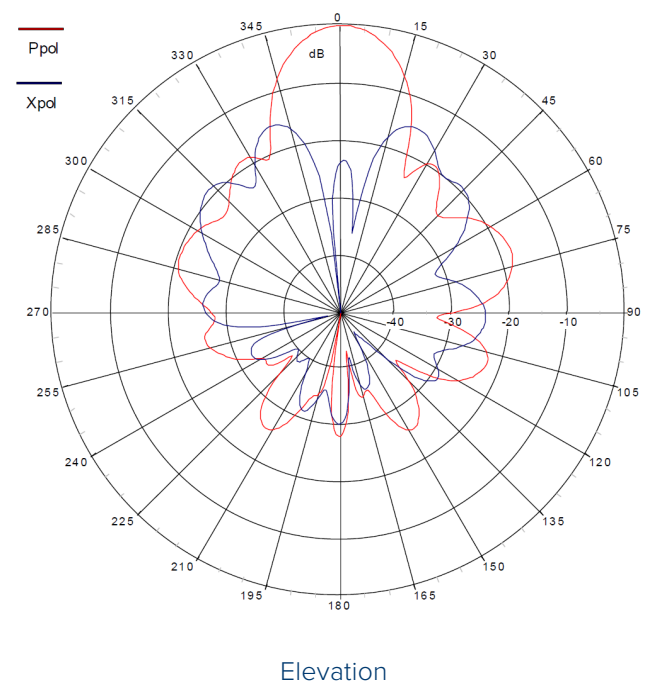
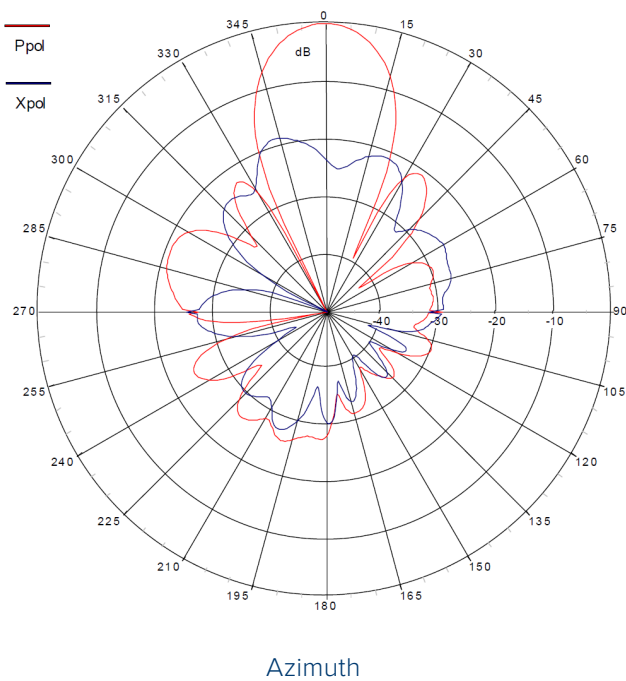


2 GHz and 3 GHz cnRanger Subscriber Modules

2 GHz 101 SM Antenna Patterns

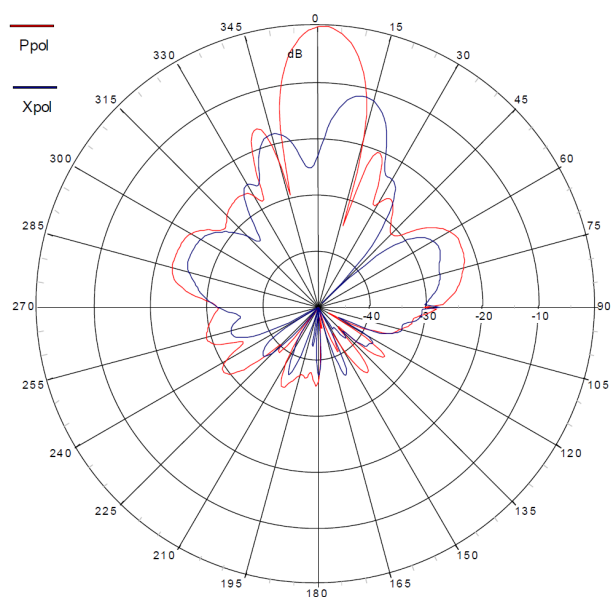


2 GHz 201 SM Antenna Patterns

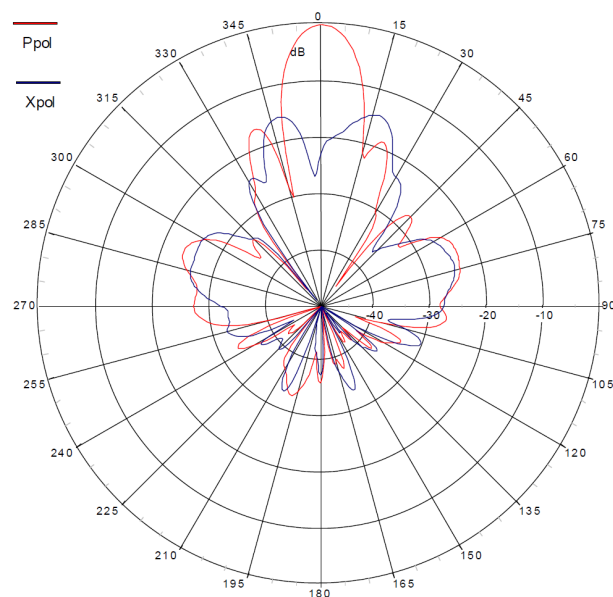


2 GHz and 3 GHz cnRanger Subscriber Modules

3 GHz 201 SM Antenna Patterns



Azimuth



Elevation

ABOUT CAMBIUM NETWORKS

Cambium Networks empowers millions of people with wireless connectivity worldwide. Its wireless portfolio is used by commercial and government network operators as well as broadband service providers to connect people, places and things. With a single network architecture spanning fixed wireless and Wi-Fi, Cambium Networks enables operators to achieve maximum performance with minimal spectrum. End-to-end cloud management transforms networks into dynamic environments that evolve to meet changing needs with minimal physical human intervention. Cambium Networks empowers a growing ecosystem of partners who design and deliver gigabit wireless solutions that just work.