

# 3 GHz 450b Subscriber and Backhaul



Cambium Networks 450 platform increases performance with the addition of the 450b Subscriber and Backhaul Module.

## KEY FEATURES:

- Ultra-wide band radios support the entire band, from 3.3 to 3.9 GHz.
- Gigabit Ethernet Interface provides the maximum transfer rates to the device.
- 3.5 mm audio jack allows direct connection of headphones without any adapters.
- CBRS CBSD Category B device
- New System on a Chip (SoC) enhances Packet Processing Power more than 4x that of the 450 SM.
- Capable of up to 300 Mbps aggregate in a 40 MHz channel.
- Backhaul radios can function as a Point-to-Point (PTP) link or as a Subscriber Module (SM), except for Global models.

## SPECIFICATIONS

| PRODUCT                          |                                                                                               | HIGH GAIN (19 dBi) |
|----------------------------------|-----------------------------------------------------------------------------------------------|--------------------|
| Model Numbers                    | Global                                                                                        | C030045B021A       |
|                                  | No Encryption                                                                                 | C030045B025A       |
|                                  | 4-pack Antenna Assembly                                                                       | N030045D001A       |
| SPECTRUM                         |                                                                                               |                    |
| Channel Spacing                  | Configurable to 500 KHz increments                                                            |                    |
| Frequency Range                  | 3300 - 3900 MHz                                                                               |                    |
| Channel Width                    | 5 MHz, 7 MHz, 10 MHz, 15 MHz, 20 MHz, 30 MHz, or 40 MHz                                       |                    |
| INTERFACE                        |                                                                                               |                    |
| MAC (Media Access Control) Layer | Cambium Networks proprietary                                                                  |                    |
| Physical Layer                   | 2x2 MIMO OFDM                                                                                 |                    |
| Ethernet Interface               | 100/1000BaseT, full duplex, rate auto negotiated, 802.3 compliant                             |                    |
| Protocols Used                   | IPv4, IPv6, UDP, TCP/IP, ICMP, Telnet, SNMP, HTTP, FTP                                        |                    |
| Network Management               | IPv4/IPv6 (dual stack), HTTP, HTTPS, Telnet, FTP, SNMPv2c and v3, Cambium Networks cnMaestro™ |                    |
| MTU                              | 1700 bytes                                                                                    |                    |
| VLAN                             | 802.1ad (DVLAN Q-inQ), 802.1Q with 802.1p priority, dynamic port VID                          |                    |

## SPECIFICATIONS

## SECURITY

|            |                                              |
|------------|----------------------------------------------|
| Encryption | FIPS-197 128-bit AES, 256-bit AES (optional) |
|------------|----------------------------------------------|

## PERFORMANCE

|     |        |
|-----|--------|
| PPS | 50,000 |
|-----|--------|

|     |     |
|-----|-----|
| ARQ | Yes |
|-----|-----|

| Modulation Levels (Adaptive) | MCS     | Signal to Noise Required (SNR, in dB) |
|------------------------------|---------|---------------------------------------|
| 2X                           | QPSK    | 10                                    |
| 4X                           | 16-QAM  | 17                                    |
| 6X                           | 64-QAM  | 24                                    |
| 8X                           | 256-QAM | 32                                    |

|                      |         |
|----------------------|---------|
| Ultimate Sensitivity | -94 dBm |
|----------------------|---------|

|                          |                        |
|--------------------------|------------------------|
| Maximum Deployment Range | Up to 40 miles (64 km) |
|--------------------------|------------------------|

|         |                   |
|---------|-------------------|
| Latency | 3 - 5 ms, typical |
|---------|-------------------|

|                     |                                   |
|---------------------|-----------------------------------|
| GPS Synchronization | Yes, synchronized by Access Point |
|---------------------|-----------------------------------|

|                    |               |
|--------------------|---------------|
| Quality of Service | Diffserve QoS |
|--------------------|---------------|

## LINK BUDGET

|                      |                                                           |
|----------------------|-----------------------------------------------------------|
| Transmit Power Range | 22 dB dynamic range (to EIRP limit by region) (1 dB step) |
|----------------------|-----------------------------------------------------------|

|                        |                                                 |
|------------------------|-------------------------------------------------|
| Maximum Transmit Power | +25 dBm (MIMO, combined V+H) (+23 dBm @ 256QAM) |
|------------------------|-------------------------------------------------|

## ANTENNA

|                              |        |
|------------------------------|--------|
| Integrated Antenna Peak Gain | 20 dBi |
|------------------------------|--------|

|                          |    |
|--------------------------|----|
| 3 dB Beamwidth - Azimuth | 7° |
|--------------------------|----|

|                            |    |
|----------------------------|----|
| 3 dB Beamwidth - Elevation | 7° |
|----------------------------|----|

|              |                   |
|--------------|-------------------|
| Polarization | Dual slant, +- 45 |
|--------------|-------------------|

|                         |        |
|-------------------------|--------|
| Front-To-Back Isolation | >25 dB |
|-------------------------|--------|

|                    |       |
|--------------------|-------|
| Cross Polarization | 15 dB |
|--------------------|-------|

## PHYSICAL

|                     |                               |
|---------------------|-------------------------------|
| Antenna Accessories | Optional Radome: N000900L021A |
|---------------------|-------------------------------|

|                   |                                                                          |
|-------------------|--------------------------------------------------------------------------|
| Surge Suppression | EN 61000-4-5: 10x700us, 4Kv<br>EN 61000-4-2: ESD 30kV contact / 30kV air |
|-------------------|--------------------------------------------------------------------------|

|                           |            |
|---------------------------|------------|
| Mean Time Between Failure | > 40 Years |
|---------------------------|------------|

|               |       |
|---------------|-------|
| Environmental | IP 55 |
|---------------|-------|

|                        |                                                        |
|------------------------|--------------------------------------------------------|
| Temperature / Humidity | -40°C to +60°C (-40°F to +140°F), 0-95% non-condensing |
|------------------------|--------------------------------------------------------|

|        |                                            |
|--------|--------------------------------------------|
| Weight | 3.1 kg (7 lb.) (includes mounting bracket) |
|--------|--------------------------------------------|

|               |                           |
|---------------|---------------------------|
| Wind Survival | 200 km/hour (124 mi/hour) |
|---------------|---------------------------|

|                                      |                                                 |
|--------------------------------------|-------------------------------------------------|
| Dimensions (HxWxD) (including mount) | 45 cm diameter x 28 cm (17.8" diameter x 11.2") |
|--------------------------------------|-------------------------------------------------|

|                                                              |  |
|--------------------------------------------------------------|--|
| Pole Diameter Range / Mechanical Tilt<br>(w/ included mount) |  |
|--------------------------------------------------------------|--|

|                   |                         |
|-------------------|-------------------------|
| Power Consumption | 12 W nominal, 15 W peak |
|-------------------|-------------------------|

|               |              |
|---------------|--------------|
| Input Voltage | 20 - 32 V DC |
|---------------|--------------|

## CERTIFICATIONS

|               |           |
|---------------|-----------|
| Canada (ISED) | 109W-0053 |
|---------------|-----------|

|        |             |
|--------|-------------|
| FCC ID | Z8H89FT0053 |
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|      |    |
|------|----|
| ETSI | EN |
|------|----|

3 GHz 450b HIGH GAIN ANTENNA PATTERNS

