cnPulse™ Sync Generator

QUICK LOOK:

cnPulse is the latest GPS synchronization generation device designed specifically for Cambium Networks PMP and PTP radios. The cnPulse module is IP67 (weather proof and supports a wide temperature range for rugged environments. The GPS receiver is highly reliable and supports both GPS and GNSS signals. cnPulse gets it power from the ODU AUX port in mode 1 or from the CAT-5 drop cable in mode 2 so no external power supply is required. There are no configuration or software settings required.

TDD Synchronization is critical for deploying dense scalable wireless networks, whether in a PTP or PMP topology. One typical source for synchronization is the GPS satellite signal which carries a precise one pulse per second (1PPS) clock. Using this clock, PMP and PTP networks can synchronize the start and stop time of all transmissions. By synchronizing the transmit and receive signals, each AP or Access Point isn't transmitting while its neighbor is receiving, thereby reducing self-interference, increasing spectral efficiency and enabling much more dense network deployments.

cnPulse can be deployed in two alternative ways as shown in the table below. Note that a single cnPulse can provide synchronization to two AP's by leveraging mode 1 on the first ODU and mode 2 on the second ODU.

Specifications

Model Number	C000000L066A
cnPulse Operation	**Mode 1: AUX Serial mode (uses cnPulse port 1)** cnPulse derives power input from the radio or CMM port and returns the 1PPS signal and satellite statistics on port 1. Typically used on CMM5, cnReach and the AUX ports on PMP 450i, PMP450m or PTP 450i
	Mode 2: CambiumSYNC In-line mode (uses cnPulse port 2 and port 3) cnPulse is deployed in-line with the radio's CAT-5 drop cable. cnPulse receives power (and data) from the ODU's PoE power injector on port 3. cnPulse port 2 then outputs PoE+Data+CambiumSYNC to the main input on a radio. Typically used on PTP 550.
CambiumSYNC mode	PMP 450i, PTP 450i, PMP 450m, PTP 550, ePMP 2000, ePMP 3000
Aux Serial mode	CMM5, PMP 450m, PMP 450i, PTP 450i
Integrated Antenna	GPS L1, 1575.42 MHz, GLONASS L1, 1598.0625~1605.375 MHz
Tracking Channels	33 tracking/ 99 acquisition-channel GPS +GLONASS receiver
Update rate	1 Hz (NMEA)
Timing Accuracy	±20ns RMS
Position Accuracy	3 meters

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Acquisition - Cold Start	35 seconds (typical under open clear sky)
Sensitivity	**Acquisition:** -148 dBm **Tracking:** -165 dBm
Input Voltage	4.5 V to 6.0 VDC at AUX Port (port 1) 44-59 VDC on PoE Input Port (port 3)
Maximum Power Consumption	0.3 W Avg (0.5 W Max @ 6 V Aux) 2.4 W Avg. (4 W Max @ 59 V Poe)
Electrical Interface	**Port 1: AUX PORT** RJ-45 8-pin shielded; AUX output **Port 2: PoE + CambiumSYNC ODU** RJ-45 8-pin shielded; PoE + CambiumSYNC + Data output **Port 3: PoE+ CambiumSYNC PIDU** RJ-45 8-pin shielded; PoE + Data Input
Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	0% to 95% humidity, non-condensing
Water/Dust Ingress	IP67 - **Note:** *This product meets the UL/cUL 62368 / IEC 62368 edition 2 specification, and the radio housings are designed to be rain-tight.*
Dimensions	16.8 x 9 x 10 cm (6.6 x 3.5 x 4 in)
Weight	.42 kg (15 oz)
Mounting	cnPulse ships with a right angle bracket for pole mount applications.
Cabling* *(Not Included)*	**CMM5 to cnPulse** Optional: N000000L125A cnPulse to CMM5 20m shielded cable (8-pin RJ-45 to 6-pin RJ-12)
	AUX port to cnPulse Recommend to use an 8-pin shielded straight through CAT5 cable
	Radio to cnPulse Recommend to use an 8-pin shielded straight through CAT5 cable
	PoE injector to cnPulse Recommend to use an 8-pin shielded straight through CAT5 cable
	cnReach to cnPulse Refer to cnReach user guide for pinout.

***Note:** *All RJ45 Ethernet LAN cables used for providing power or are connected to power ports (PoE) must be UL certified with VW-1 markings. All cables used for outdoor installations must be suitable to be used for that environment and rated accordingly.*

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.

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