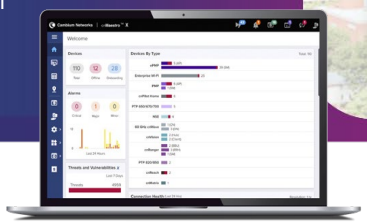
PTP 850EX Millimeter Wave Radio

PTP 850EX Quick Look

- Capable of 1024 QAM with ACM
- Supports 71–76 GHz, 81–86 GHz
- Supports 1+0, 2+0*, 1+1 HSB* configuration
- Includes built-in frequency scanner to determine the current interference level for each channel





cnMaestro

Radio

Radio	71-76 GHz, 81-86 GHz
Features	BPSK to 1024 QAM with hitless ACMB (Adaptive Coding Modulation and Bandwidth)
	1+0, 2+0* , 1+1 XPIC*
	Built-in frequency scanner to determine the current interference level for each channel
	Multiband with PTP 820C, PTP 820C HP, PTP 820S, or third-party microwave radio
	ATPC*
	Adaptive bandwidth notification (EOAM)*

*Roadmap feature

Ethernet

Interfaces	Port 1: DC port Port 2: RJ45, 1 GE/management/PoE Port 3: SFP28 - 1/2.5/10/25GbE	Port 4: SFP28 - 1/2.5/10/25GbE) Port 5: QSFP
MTU	9,612 bytes	
Quality of Service	Multiple classification criteria (VLAN ID, p-bits, IPv4 DSCP, IPv6 TC, MPLS EXP) 8 CoS queues per port Deep buffering (configurable up to 64 Mbit per queue) WRED P-bit marking/remarking	
VLAN	4K VLAN add/remove/translate	
Network Protocols	MSTP, ERP (ITU-T G.8032) Y.1731 Ethernet OAM Y.1731 Ethernet bandwidth notification (ETH-BN)	

©2024 Cambium Networks, Inc.

PTP 850EX Millimeter Wave Radio

Management

Management Protocols	SNMP
	REST
	SDN Support: NETCONF/YANG

Synchronization

Enhanced Ethernet equipment clock (eEEC) Specification (G.8262.1)
PTP telecom boundary clock (T-BC) and Time Save Clock (T-TSC) specification (G.8273.2)
PTP telecom transparent clock (T-TC) specification (G.8273.3)
Enhanced SyncE network limits (G.8261, clause 9.2.1)
Enhanced PTP network limits (G.8271.1)
Ethernet synchronization messaging channel (ESMC) (G.8264, clause 11)
PTP telecom profile for time (full timing support) (G.8275.1)
Precision time protocol (version 2, IEEE1588-2008)

Security

Secured protocols (HTTPS, SNMPV3, SSH, SFTP)
RADIUS authentication and authorization
TACACS+ authentication and authorization (session based)

Standard

MEF	Carrier Ethernet 2.0
Supported Ethernet Standards:	10/100/1000base-T/X (IEEE 802.3)
	Optical 10Gbase-LR (IEEE 802.3ae)
	Ethernet VLANs (IEEE 802.3ac)
	Virtual LAN (VLAN, IEEE 802.1Q)
	Class of service (IEEE 802.1p)
	Provider bridges (Q-in-Q – IEEE 802.1ad)
	Link aggregation (IEEE 802.1ax)
	Auto MDI/MDIX for 1000baseT
	RFC 1349: IPv4 TOS
	RFC 2474: IPv4 DSCP
	RFC 2460: IPv6 Traffic Classes

©2024 Cambium Networks, Inc.

PTP 850EX Millimeter Wave Radio

Standards Compliance

Radio Spectral Efficiency	EN 302 217-2
Compliance	EMC: EN 301 489-1, EN 301 489-4, Class A(Europe) FCC 47 CFR, part 15, subpart B, class A(US) ICES-003, Class A(Canada) TEC/SD/DD/EMC-221/05 TEC/SD/DD/EMC-221/05/OCT-16, Class A (India) IEC 61000-4-29
Surge	EN61000-4-5, Class 4 (for PWR and ETH1/PoE ports)
Safety:	EN 60950-1, EN 62368-1, IEC 60950-1, IEC 62368-1, UL60950-1, UL 62368-1, CAN/CSA C22.2 NO 60950-1, CAN/CSA C22.2 NO 62368-1, EN60950-22, IEC 60950-22, UL 60950-22, CAN/CSA C22.2 NO 60950-22
Storage	ETSI EN 300 019-1-1 Class 1.2
Transportation	ETSI EN 300 019-1-2 Class 2
Ingress Protection:	IP67

Technical

Dimensions: Direct Mount (H x W x D)	228 mm x 233 mm x 76 mm, 2.77 kg 8.9 in x 9.5 in x 2.95 in, 4.4 lb
Specifications	-40°C to +55° (-40°F to +131°F)
Standard Input	-48 VDC
DC Input Range	-40.5 to -60 VDC
Redundancy	Power redundancy option by using both a DC power input and a passive PoE injector simultaneously
Active	50W
Max Power	55W

Transmit Power (dBm)

Channel Size	250 MHz	500 MHz	1000 MHz	2000 MHz
¼ BPSK	21	21	21	21
½ BPSK	21	21	21	21
BPSK	21	21	21	21
4 QAM	21	21	21	21
8 QAM	20	20	20	20
16 QAM	19	19	19	19
32 QAM	18	18	18	18
64 QAM	17	17	17	17
128 QAM	16	16	16	16
256 QAM	15	15	15	–
512 QAM	15	15	15	–
1024 QAM	14	14	–	–

©2024 Cambium Networks, Inc.

PTP 850EX Millimeter Wave Radio

Receive Sensitivity (dBm @10E-6)				
Channel Size	250 MHz	500 MHz	1000 MHz	2000 MHz
BPSK	-77.2	-74.2	-71	-68.9
4 QAM	-74.9	-71.6	-68.5	-65.9
8 QAM	-69.8	-66.4	-63.3	-60.5
16 QAM	-68.4	-65.2	-61.9	-59.1
32 QAM	-64.3	-61.2	-58.1	-56.2
64 QAM	-62.5	-59.2	-56	-53.4
128 QAM	-59.6	-56.3	-53	-49.8
256 QAM	-56.7	-53.4	-50.1	–
512 QAM	-53.5	-50.3	-47	–
1024 QAM	-49.5	-47.1	–	–

Throughput Sensitivity (Mbps)				
Channel Size	250 MHz	500 MHz	1000 MHz	2000 MHz
BPSK – ¼ channel spacing	48–59	98–121	190–234	330–407
BPSK – ½ channel spacing	95–117	197–243	379–467	660–814
BPSK – full channel spacing	190–235	394–485	758–935	1319–1627
QPSK	382–471	788–972	1517–1871	2640–3256
8 PSK	574–707	1183–1459	2276–2807	4108–5067
16 QAM	765–944	1578–1946	3036–3744	5478–6756
32 QAM	957–1180	1973–2433	3795–4680	6848–8446
64 QAM	1148–1416	2367–2920	4554–5616	8218–10000
128 QAM	1340–1652	2762–3406	5313–6553	9931–10000
256 QAM	1532–1889	3157–3893	6073–7489	–
512 QAM	1723–2125	3552–4380	6832–8425	–
1024 QAM	1915–2361	3946–4867	–	–

ABOUT CAMBIUM NETWORKS

Cambium Networks enables service providers, enterprises, industrial organizations, and governments to deliver exceptional digital experiences and device connectivity with compelling economics. Our ONE Network platform simplifies management of Cambium Networks' wired and wireless broadband and network edge technologies. Our customers can focus more resources on managing their business rather than the network. We make connectivity that just works.

cambiumnetworks.com

05102024

©2024 Cambium Networks, Inc.