TECHNICAL SPECIFICATIONS

	PTP 820S	PTP 820C + PTP 820C HP	PTP 820G	PTP 820F	PTP 820E	PTP 850E
Supported Frequency	6 - 38 GHz	6 - 38 GHz	6 - 38 GHz	6-38, 71-76, 81-86 GHz	71-76, 81-86 GHz	71-76, 81-86 GHz
Role in the Network	Compact all outdoor	Compact all outdoor w/ multi-core	Split Mount or all indoor, multi-carrier options	Split mount or all-indoor, multi-carrier options	Multiband with PTP 820C/S	Multiband with PTP 820C/S
Transport Technology	All packet	All packet	Hybrid and/or all packet	Hybrid and/or all packet	All packet	All packet
TDM Interface	None	None	16 x E1/T1	16 x E1/T1	None	None
Modulation	QPSK to 2048 QAM w/ACM	QPSK to 2048 QAM w/ACM	QPSK to 2048 QAM w/ACM	QPSK to 4096 QAM w/ACM	BPSK to 1024 QAM w/ACM	BPSK to 512 QAM w/ACM
Channel Size	3.5 to 80 MHz	3.5 to 80 MHz	3.5 to 60 MHz	6-38 GHz 14 to 112 MHz, 71-86 GHz : 62.5 to 500 MHz	62.5 - 500 MHz	250 MHz to 2 GHz
Capacity (Layer 2)	679 Mbps	1.36 Gbps	527 Mbps, 1.05 Gbps	542 Mbps, 1.08 Gbps	2.4 Gbps	10 Gbps
Capacity with Multi-Layer Compression	833 Mbps	1.67 Gbps	833 Mbps (1+0) 1.67 Gbps (2+0)	1.69 Gbps (1+0) 3.2 Gbps (2+0)	2.4 Gbps (1+0) 4.8 Gbps (2+0)	10 Gbps (1+0) 20 Gbps (2+0)
Configuration	1+0, 1+1 HSB, 2+0	1+0 to 4+0, 1+1/2+2 HSB, E/W, 1+0 SD, 2+2 SD	1+0, 1+1 HSB, 2+0 (E/W), 2+0 XPIC, 2+0 MC-ABC	1+0, 3 x 1+0, 2 x 2+0, 2 x 2+0 + 1+0, 1 +1 HSB*, 2+2 HSB*	1+0, 2+0	1+0, 2+0 (XPIC)
LOS MIMO	No	Yes, 4x4 or 2x2	No	No	No	No
XPIC	No	Yes	Yes	Yes	No	Yes
Ethernet Interface	1 x 10/100/1000Base-T and 2x1000base-X or 10/100/1000Base-T	1 x 10/100/1000Base-T and 1x1000base-X or 10/100/1000Base-T	4 x 10/100/1000Base-T and 2x1000base-X	4x 1 Gbe (RJ-45/SFP) 1x 2.5/1 Gbps SFP	1x 10/100/100Bate-T, PoE 1x 1Gbps SFP cage Optional: 1 x10/100/100 Base-T or 10 Gbps SFP cage	1x 2.5/1 Gbps SFP 1x 10 Gbps SFP 10 GE (SFP+) Optional: QSFP(4x1/10 GE or 1x40) or SFP+ (1x10 GE)
Management Interface	1 x 10/100 Base-T	1 x 10/100 Base-T	1 x 10/100 Base-T	1 x 10/100 Base-T	1 x10/100/100 Base-T for management	1 x 1 GE RJ-45 for management
External Alarm	None	None	1 x DB9	1 x DB9	None	None
Dimensions (HxWxD - mm)	230 x 233 x 98	PTP 820C: 230x233x98 PTP 820C HP: 315x284x107	IDU: 44x426x180 RFU-C: 200x200x85 RFU-A: 44x443x421	IDU: 44x482x165 RFU-D: 230x233x98 RFU-D-HP: 319x286x107 RFU-S: 217x210x85 RFU-E: 220x198x75	220x198x75 43 dBi integrated antenna: 280x280x110	322x227x86 43 dBi ingegrated antenna: 341x270x103
Environmental	-33ºC to +55ºC (-45ºC to +60ºC extended)	-33ºC to +55ºC (-45ºC to +60ºC extended)	IDU: -5ºC to +55ºC (-25ºC to +65ºC extended) RFU-C: -33ºC to +55ºC (-45ºC to +60ºC extended) RFU-A: -5ºC to +55ºC (-25ºC to +65ºC extended)	IDU: -5ºC to +55ºC (-15ºC to +60ºC extended); RFU: -33ºC to +55ºC (-45ºC to +60ºC extended)	-33ºC to +55ºC (-45ºC to +60ºC extended)	-33ºC to +55ºC (-45ºC to +60ºC extended)
Power Input	-48 VDC	-48 VDC	-48 VDC	-48 VDC	-48 VDC	-48 VDC
PoE Injector Power Input	-48 VDC or +24 VDC	PTP 820C ONLY: -48VDC or +24VDC	N/A	N/A	-48 VDC or +24 VDC	-48 VDC or +24 VDC
Maximum Power Consumption	6-11 GHz: 40W; 13-38 GHz: 35W	Multi-Core Operation: PTP 820C: 6 GHz: 65W; 7 GHz: 75W; 11 GHz: 65W; 13-15 GHz: 55W; 18-24 GHz:48W; 26-38 GHz: 55W PTP 820C HP: 135W	IDU Eth-only with single modem: 23.5W, addition for second modem, 2.9W, additional for 16 E1/DS1: 11W • RFU-C: 6-26 GHz; 1+0 22W; 1+1 39W; 28-38 GHz, 1+0 26W; 1+1 43W RFU-Ae / RFU-Aep • 1+0 High Level: 77W / 90W Medium Level: 53W / 73W Low Level: 43W / 47W Mute: 24W / 24W • 1+1 HSB/SD BBS: High Level: 101W / 114W Medium Level: 77W / 97W Low Level: 67W / 71W Mute: 48W / 48W	IDU: 48W maximum RFU-D: 75W RFU-D-HP: 130W/180W RFU-S: 43W RFU-E: 43W	43W Active 35W Standby	58W Active 47W Standby

Cambium Networks™

PTP 820/850

LICENSED ETHERNET MICROWAVE FOR MULTI-SERVICE NETWORKS

Cambium
PTP 820/850

PTP 820S   PTP 820C   PTP 820E   PTP 850E

PTP 820G
Split-Mount / All-Indoor, Multi-Carrier

PTP 820F
Split-Mount / All-Indoor, Multi-Carrier

A single platform serving all radio transport requirements.

PUBLIC SAFETY

ENTERPRISE

WIRELESS CARRIER

WIRELESS INTERNET SERVICE PROVIDER

PTP 820/850 is a point-to-point licensed microwave backhaul platform that integrates leading networking functionality with the industry's most advanced microwave technologies, creating a superior microwave transport solution.

Supporting licensed frequency bands ranging from 6 to 86 GHz, the PTP 820/850 series delivers a wide range of configurations to offer a tailored solution for any deployment scenario.

Composed of high-density multi-technology nodes and integrated radio units, the PTP 820/850 series offers flexibility in choosing all-indoor, split-mount, and all-outdoor configuration options. Exploiting unique Line of Sight (LOS) Multiple Input Multiple Output (MIMO) technology, modulation up to 4096 QAM and wider channel bandwidths ensures industry-leading throughput and spectral efficiency.

The PTP 820E/850E operate in E-Band radio providing throughput up to 20Gbps, this eliminates the need for future forklift upgrades, or major system overhaul by the network operator to deliver multi gigabit-plus capacity.

PTP 820/850 also offers both Synchronous Ethernet (SyncE) and IEEEv2 synchronization protocols required for large ISP and MPLS networks.

Operations, Administration and Maintenance (OA&M) tools coupled with a full suite of network and element management systems (NMS and EMS) simplify network provisioning and monitoring, reducing operators' total cost of ownership and enabling them to meet the most stringent service level agreements.

Combining technologies, equipment and services, PTP 820/850 enables network operators to meet accelerating demand for capacity cost-effectively under rapidly evolving conditions.

PTP 820/850 Product Series Highlights

- Licensed frequency bands 6-86 GHz

- Up to 4096 QAM, with 12-step hitless and errorless Adaptive Coding & Modulation (ACM) for high reliability

- Up to 20 Gbps bandwidth supported

- Multi-gigabit radio capacity with high spectral efficiency

- TDM and/or packet supporting legacy services and evolution to all-packet

- Integrated Ethernet Switch, MEF Carrier Ethernet 2.0 compliant, MPLS-TP-ready

- Header de-duplication for additional capacity boost

- Intelligent service-centric management utilizing QoS and advanced OA&M capabilities

- Carrier-grade service resiliency (G.8032, MSTP)

- ITU-T Y.1731 Performance Management – MEF 35

- Integrated synchronization solution: Native/SyncE/IEEE 1588v2

- Lowest power consumption with adaptive green mode

- Low latency with unique frame cut through for latency sensitive services

- Industry-leading system gain

LINKPlanner

LINKPlanner is a free, easy-to-use link design tool that allows network operators to easily and quickly design networks. Microsoft® Windows® and Intel®-based Mac® versions of LINKPlanner can be downloaded from Cambium Networks' support pages.
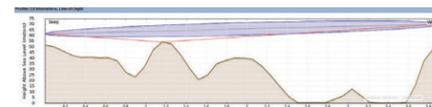
Key LINKPlanner features:

- Design a five-nines-reliable wireless link

- Plan and optimize a single link or multiple links simultaneously

- Perform calculations for both licensed and unlicensed products

- Automatically load path terrain profiles and environmental factors such as rain fade

- Display a comprehensive overview of your entire point-to-point wireless network via Google™ Earth

- Generate reports that validate projected performance and serve as time-saving deployment guidelines

- Create bills of material for point-to-mulitpoint and point-to-point networks including accessories

About Cambium Networks

Cambium Networks is a leading global provider of wireless connectivity solutions that strengthen connections between people, places and things. Specializing in providing an end-to-end wireless fabric of reliable, scalable, secure, cloud-managed platforms that perform under demanding conditions, Cambium Networks empowers service providers and enterprise, industrial and government network operators to build intelligent edge connectivity. Cambium Networks' commitment to continuous innovation in wireless access is demonstrated in the millions of radios deployed in thousands of networks that benefit communities around the world. Team members also contribute to social responsibility activities to serve the communities in which they live. Headquartered outside Chicago and with R&D centers in the U.S., U.K. and India, Cambium Networks sells through a range of trusted global distributors.
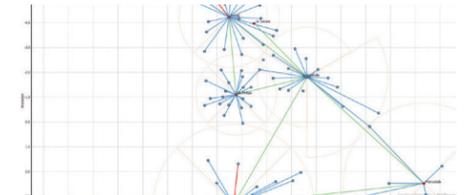
www.cambiumnetworks.com

PATH PROFILE WITH OBSTRUCTIONS

GOOGLE EARTH NETWORK VIEW

MAP OF THE SITES AND LINKS IN THE PROJECT

NOTES: The highlight feature may not apply to all PTP 820/850 platform.

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