**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>PTP 820S</th>
<th>PTP 820C +</th>
<th>PTP 820G</th>
<th>PTP 820F</th>
<th>PTP 820E</th>
<th>PTP 850E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported Frequency</td>
<td>6 - 36 GHz</td>
<td>6 - 36 GHz</td>
<td>6 - 36 GHz</td>
<td>6 - 36 GHz</td>
<td>6 - 36 GHz</td>
<td>6 - 36 GHz</td>
</tr>
<tr>
<td>Role in the Network</td>
<td>Compact all outdoor</td>
<td>Compact all outdoor</td>
<td>Split mount or all indoor, multi-carrier options</td>
<td>Split mount or all indoor, multi-carrier options</td>
<td>Multi Indoor with PTP 820C/S</td>
<td>Multi Indoor with PTP 820C/S</td>
</tr>
<tr>
<td>Transport Technology</td>
<td>All packet</td>
<td>All packet</td>
<td>Hybrid and/or all packet</td>
<td>Hybrid and/or all packet</td>
<td>All packet</td>
<td>All packet</td>
</tr>
<tr>
<td>TDM Interface</td>
<td>None</td>
<td>None</td>
<td>16 x E1/T1</td>
<td>16 x E1/T1</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Modulation</td>
<td>QPSK to 2048 QAM w/ACM</td>
<td>QPSK to 2048 QAM w/ACM</td>
<td>QPSK to 2048 QAM w/ACM</td>
<td>QPSK to 2048 QAM w/ACM</td>
<td>BPSK to 1024 QAM w/ACM</td>
<td>BPSK to 1024 QAM w/ACM</td>
</tr>
<tr>
<td>Transport</td>
<td>All packet</td>
<td>All packet</td>
<td>Hybrid and/or all packet</td>
<td>Hybrid and/or all packet</td>
<td>All packet</td>
<td>All packet</td>
</tr>
<tr>
<td>Capacity (Layer 2)</td>
<td>679 Mbps</td>
<td>1.36 Gbps</td>
<td>527 Mbps, 1.05 Gbps</td>
<td>542 Mbps, 1.08 Gbps</td>
<td>2.4 Gbps</td>
<td>10 Gbps</td>
</tr>
<tr>
<td>Capacity with Multi-Layer Compression</td>
<td>833 Mbps</td>
<td>1.67 Gbps</td>
<td>833 Mbps (1+0)</td>
<td>1.67 Gbps (2+0)</td>
<td>1.69 Gbps (1+0)</td>
<td>3.2 Gbps (2+0)</td>
</tr>
<tr>
<td>Configuration</td>
<td>1+0, 1+1 HSB, 2+0</td>
<td>1+0 to 4+0, 1+1/2+2 HSB, E/W, 1+0 SD, 2+2 SD</td>
<td>1+0, 3 x 1+0, 2 x 2+0, 2 x 2+0 + 1+0, 1+1 HSB*, 2+2 HSB*</td>
<td>1+0, 2+0</td>
<td>1+0, 2+0 (XPIC)</td>
<td>1+0, 2+0 (XPIC)</td>
</tr>
<tr>
<td>Ethernet Interface</td>
<td>1 x 10/100/1000Base-T and 2x1000base-X or 10/100/1000Base-T</td>
<td>1 x 10/100/1000Base-T and 1x1000base-X or 10/100/1000Base-T</td>
<td>4 x 10/100/1000Base-T and 2x1000base-X</td>
<td>1x 2.5/1 Gbps SFP</td>
<td>1x 10/100/100Bate-T, PoE</td>
<td>1x 10/100/1000Base-T, PoE</td>
</tr>
<tr>
<td>Management Interface</td>
<td>1 x 10/100 Base-T</td>
<td>1 x 10/100 Base-T</td>
<td>1 x 10/100 Base-T</td>
<td>1 x 10/100 Base-T</td>
<td>1 x 10/100/100 Base-T for management</td>
<td>1 x 1 GE RJ-45 for management</td>
</tr>
<tr>
<td>External Alarm</td>
<td>None</td>
<td>None</td>
<td>1 x DB9</td>
<td>1 x DB9</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Dimensions (HxWxD - mm)</td>
<td>230 x 233 x 98</td>
<td>PTP 820C: 230x233x98</td>
<td>IDU: 44x426x180</td>
<td>IDU: 44x482x165</td>
<td>220x198x75</td>
<td>220x198x75</td>
</tr>
<tr>
<td>Environmental</td>
<td>-33°C to +55°C (-45°C to +60°C extended)</td>
<td>-33°C to +55°C (-45°C to +60°C extended)</td>
<td>-5°C to +55°C (-25°C to +65°C extended)</td>
<td>-33°C to +55°C (-45°C to +60°C extended)</td>
<td>-33°C to +55°C (-45°C to +60°C extended)</td>
<td>-33°C to +55°C (-45°C to +60°C extended)</td>
</tr>
<tr>
<td>Maximum Power Consumption</td>
<td>675W (400W)</td>
<td>598W (390W)</td>
<td>675W (400W)</td>
<td>725W (505W)</td>
<td>1100W (700W)</td>
<td>1100W (700W)</td>
</tr>
</tbody>
</table>

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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 (OAM) 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 OAM 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-multipoint 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