Tsunami® Multipoint 8160 Series

6.4 GHz Wireless Point to Multipoint Delivering 300 Mbps Data Rate

Presenting a Wireless Solution that exceeds 4G Speed Requirements with 300 Mbps data rate in 5.900 – 6.425 GHz Frequency Range!

With over 20 years of wireless innovation, Proxim has been providing Point-to-Multipoint (PtMP) solutions to carriers of all sizes for many years. Leveraging the advantages of OFDM, MIMO radio innovations and Proxim’s proprietary Wireless Outdoor Routing Protocol (WORP®), Tsunami® MP-8100 series exceeds the ITU requirements for 4G throughput while providing Non-Line-Of Sight functionality with the widest range of frequencies available. With incredible channel capacity, excellent spectrum flexibility and a prioritization platform for delivering voice, video and data applications, the Tsunami® MP-8160 satisfies service providers and government organizations with requirements for fast and worry-free wireless connectivity.

With data rates of 300 Mbps, Tsunami® MP-8160 is an ideal solution for everything from last mile broadband wireless access (BWA) to wireless video surveillance. As the industry’s first Point to MultiPoint product to provide dual Gigabit Ethernet ports with PoE out, Tsunami® MP-8160 becomes the first solution capable of powering IP video cameras or additional radios for even greater ease of deployment operating in extended frequencies from 5.900 to 6.425 GHz.

Supreme Performance
- Point to Multipoint solution that can deliver 300 Mbps data rates
- Provides reliable high performance under all traffic loads using Proxim’s Wireless Outdoor Routing Protocol (WORP®)
- Dual IPv4 and IPv6 stack for transparent evolution to tomorrow networks
- Create tiered QoS service classes with ease
- Comes packaged in a compact form factor with a set of accessories for even greater ease of installation
- BSU redundancy (500 milliseconds switch over time) and Dynamic Channel Selection to ensure continuity of services whatever the condition
- Spectrum analysis feature helps to study frequency bands for interference, and select a relatively low interference channel

Non-Line-of-Sight and Advanced Features
- Non-line-of-sight capable, utilizing OFDM and 2x2 MIMO techniques to improve link performance and penetrate through or around obstructions better
- Features dual Gigabit Ethernet ports with PoE in/out to power other devices like surveillance cameras and wireless access points
- Fast handoff at speeds up to 295 km per hour (185 miles per hour).
- Customizable roaming parameter maintains minimum bandwidth required for application performance

Mobile Roaming Enables New Applications
Proxim innovation delivers mobile roaming of Subscriber Units (SU) between Base Station Units (BSU). Public safety first responder networks, transportation system monitoring and telemetry, and mobile security and surveillance are now all possible with a low cost, robust system.

Carrier-Grade Security
- Implements tiered security layers for the most secure outdoor wireless communications in the unlicensed frequency spectrum
- Uses radio module with on board surge protection
- Utilizes Proxim’s Wireless Outdoor Routing Protocol (WORP®), which prevents snooping, and features highly-secure remote management via SSL, SSH and SNMPv3
- Provides military-grade security with AES encryption technology, prevents unsecure client-to-client communications and leverages MAC, Ethertype and IP address packet filtering for granular network security
**PRODUCT MODELS**

- **MP-8160-BSU**: Tsunami® MP 8160 Base Station Unit, 300 Mbps, 5.900 – 6.425 GHz, Type-N Connectors
- **MP-8160-BSS**: Tsunami® MP 8160 Base Station Unit, 300 Mbps, 5.900 – 6.425 GHz, 16 dB, 90° sector antenna
- **MP-8160-SUA**: Tsunami® MP 8160 Subscriber Unit, 300 Mbps, 5.900 – 6.425 GHz, Type-N Connectors

**INTERFACES**

**WIRED ETHERNET**

Two auto MDI-X RJ45 10/100/1000Mbps Ethernet, Port #1 with PoE in & Data, Port #2 with PoE out (802.3af pin out) & Data

**WIRELESS PROTOCOL**

WORP® (Wireless Outdoor Router Protocol)

**RADIO & TX SPECS**

**MIMO**
2x2 MIMO

**MODULATION**
OFDM with BPSK, QPSK, QAM16, QAM64

**FREQUENCY**
5.900 – 6.425 GHz (Subject to Country Regulations)

**CHANNEL SIZE**
40 MHz, 20 MHz, 10 MHz, 5 MHz channel bandwidths with support for 1 MHz channel spacing

**DATA RATE**
MCS 0 to 15 for High Throughput mode (6.5 – 300 Mbps) with Dynamic Data Rate Selection

**TX POWER**
Up to 25 dBm (dual chain)

**POWER CONTROL**
0 – 25 dB, in 0.5 dB steps. Automatic TPC with configurable EIRP limit

**RX SENSITIVITY (BER=10^-6)**

<table>
<thead>
<tr>
<th>Channel Size</th>
<th>40 MHz</th>
<th>20 MHz</th>
<th>10 MHz</th>
<th>5 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS 0</td>
<td>-95 dBm</td>
<td>-92 dBm</td>
<td>-95 dBm</td>
<td>-98 dBm</td>
</tr>
<tr>
<td>MCS 7</td>
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<td>-73 dBm</td>
<td>-76 dBm</td>
<td>-80 dBm</td>
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<td>MCS 8</td>
<td>-88 dBm</td>
<td>-90 dBm</td>
<td>-92 dBm</td>
<td>-96 dBm</td>
</tr>
<tr>
<td>MCS 15</td>
<td>-69 dBm</td>
<td>-70 dBm</td>
<td>-73 dBm</td>
<td>-76 dBm</td>
</tr>
</tbody>
</table>

**ANTENNA**

MP-8160-BSU or MP-8160-SUA: Two N-type Connectors

MP-8160-BSS: Integrated 2x2 MIMO 16dBi, 90°, Dual Polarized Sector Antenna

**RF SURGE**

On board quarter wave stud

**MANAGEMENT**

**LOCAL**
RS-232 serial (RJ11 to DB-9 dongle provided)

**REMOTE**
Telnet and SSH, Web GUI and SSL, TFTP, SNMPv3

**SNMP**
SNMPv1, v2c, v3, RFC-1213, RFC-1215, RFC-2790, RFC-2571, RFC-3412, RFC-3414, Private MIB

**OTHER**
Syslog, sFlow™ agent, SNTP and local time, Spectrum analyzer

**SECURITY**

**ENCRYPTION**
AES-CCM 128 bits

**AUTHENTICATION**
Internal MAC Address Control List, Radius based Authentication (with VLAN and QoS provisioning)

**NETWORK**

**MODES**
Bridging, Routing (RIP v2 and IP tunneling)

**GATEWAY FEATURES**
DHCP Server & relay, NAT with Std ALGs, PPPoE end point with Proxy DNS

**IP STACK**
IPv4 and IPv6 simultaneously

**THROUGHPUT**
Up to 240 Mbps

**QoS**
Asymmetric Bandwidth Control
UL and DL CIR Control “committed information rate” per service flow, UL and DL MIR Control “maximum information rate” per service flow

**Packet Classification Capabilities**
802.1Q/802.1Q/802.1p priority, IPTOS, VLAN ID, IP source/destination address, source/destination port, Ethernet source/destination address, IP protocol, and Ethertype

**Scheduling**
Best Effort, Real Time Polling Services

**VLAN**
802.1Q: Management VLAN. Transparent, Access, Trunk and Mixed mode. QoS double tagging

**POWER CONSUMPTION**

10 Watt typical (13.8 Watt max)

**ENVIRONMENTAL SPECS**

**OPERATING TEMPERATURE**
-40 to 60ºC (-40 to 140º Fahrenheit) Will continue operating if temperature temporarily drop down to -50 ºC (-58 º Fahrenheit)

**STORAGE TEMPERATURE**
-55º to 80ºC (-67º to 176º Fahrenheit)

**HUMIDITY, WATER & DUST PROOF, WIND LOADING**
100% relative humidity - IP67, 200 km/h (125 mph)

**PHYSICAL SPECS**

**DIMENSIONS (PACKAGED)**
- MP-8160-BSU or MP-8160-SUA: 14.56 x 13.69 x 8.18 in. (370 x 348 x 208 mm)
- MP-8160-BSS: 15.94 x 15.94 x 9.21 in. (405 x 405 x 234 mm)

**DIMENSIONS (UNPACKAGED)**
- MP-8160-BSU or MP-8160-SUA: 10.79 x 11.14 x 3.38 in. (274 x 283 x 86 mm)
- MP-8160-BSS: 14.17 x 14.17 x 3.70 in. (370 x 370 x 94 mm)

**WEIGHT (PACKAGED)**
- MP-8160-BSU or MP-8160-SUA: 15 lbs (6.85 kg)
- MP-8160-BSS: 16.31 lbs (7.4 kg)

**WEIGHT (UNPACKAGED)**
- MP-8160-BSU or MP-8160-SUA: 7.7 lbs (3.35 kg)
- MP-8160-BSS: 9.0 lbs (4.1 kg)

**PACKAGE CONTENTS**

- One Tsunami® MP-8160-BSU with two N-type connectors Or One Tsunami® MP-8160-BSS with integrated 16 dB, 90°, dual polarized sector antenna Or One Tsunami® MP-8160-SUA with two N-type connectors
- One power injector and country specific power cord
- One Wall / Pole mounting kit
- One Connector weatherproofing kit (Includes all recommended weatherproofing material)
- One Gigabit PoE Surge Arrestor

- One Serial (RJ-11 to DB9) dongle
- One Grounding kit
- ServPak Extended Support available

**MTBF & WARRANTY**

80,000 hours & 1-year on parts and labor; ServPak Extended Support available