Performance Matters. Proxim Delivers.™

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

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

- 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

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.

- Fast handoff at speeds up to 295 km per hour (185 miles per hour).
- Customizable roaming parameter maintains minimum bandwidth required for application performance

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-BS9	Tsunami® MP 8160 Base Station Unit, 300 Mbps, 5.900 – 6.425 GHz, 16 dBi, 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)
TX POWER CONTROL	0 – 25 dB, in 0.5 dB steps. Automatic TPC with configurable EIRP limit
OTHER	Dynamic Channel Selection (DCS) based on interference detection. Automatic Transmit Power Control (ATPC) with EIRP limit support

RX SENSITIVITY (BER=10^{-6})

Channel Size	40 MHZ	20 MHZ	10 MHz	5 MHz
MCS 0	-90 dBm	-92 dBm	-95 dBm	-98 dBm
MCS 7	-72 dBm	-73 dBm	-76 dBm	-80 dBm
MCS 8	-88 dBm	-90 dBm	-92 dBm	-96 dBm
MCS 15	-69 dBm	-70 dBm	-73 dBm	-76 dBm

ANTENNA

MP-8160-BSU or MP-8160-SUA: Two N-type Connectors
MP-8160-BS9: 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	SNMP v1-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	802.1D/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. QinQ double tagging

POWER CONSUMPTION

10 Watt typical (13.8 Watt max)

ENVIRONMENTAL SPECS

OPERATING TEMPERATURE	STORAGE TEMPERATURE	HUMIDITY, WATER & DUST PROOF, WIND LOADING
-40º to 60ºC (-40º to 140º Fahrenheit) Will continue operating if temperature temporarily drop down to -50 ºC (-58 º Fahrenheit)	-55º to 80ºC (-67º to 176º Fahrenheit)	100% relative humidity - IP67, 200 km/h (125 mph)

PHYSICAL SPECS

DIMENSIONS (PACKAGED)	DIMENSIONS (UNPACKAGED)	WEIGHT (PACKAGED)	WEIGHT (UNPACKAGED)
• MP-8160-BSU or MP-8160-SUA: 14.56 x 13.69 x 8.18 in. (370 x 348 x 208 mm) • MP-8160-BS9: 15.94 x 15.94 x 9.21 in. (405 x 405 x 234 mm)	• MP-8160-BSU or MP-8160-SUA: 10.79 x 11.14 x 3.38 in. (274 x 283 x 86 mm) • MP-8160-BS9: 14.17 x 14.17 x 3.70 in (370 x 370 x 94 mm)	• MP-8160-BSU or MP-8160-SUA: 15 lbs (6.65 kg) • MP-8160-BS9: 16.31 lbs (7.4 kg)	• MP-8160-BSU or MP-8160-SUA: 7.7 lbs (3.35 kg) • MP-8160-BS9: 9.0 lbs (4.1 kg)

PACKAGE CONTENTS

- One Tsunami® MP-8160-BSU with two N-type connectors Or
  One Tsunami® MP-8160-BS9 with integrated 16 dBi, 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 Quick Installation Guide

- One Serial (RJ-11 to DB9) dongle
- One Grounding kit
- One Gigabit PoE Surge Arrestor

MTBF & WARRANTY

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