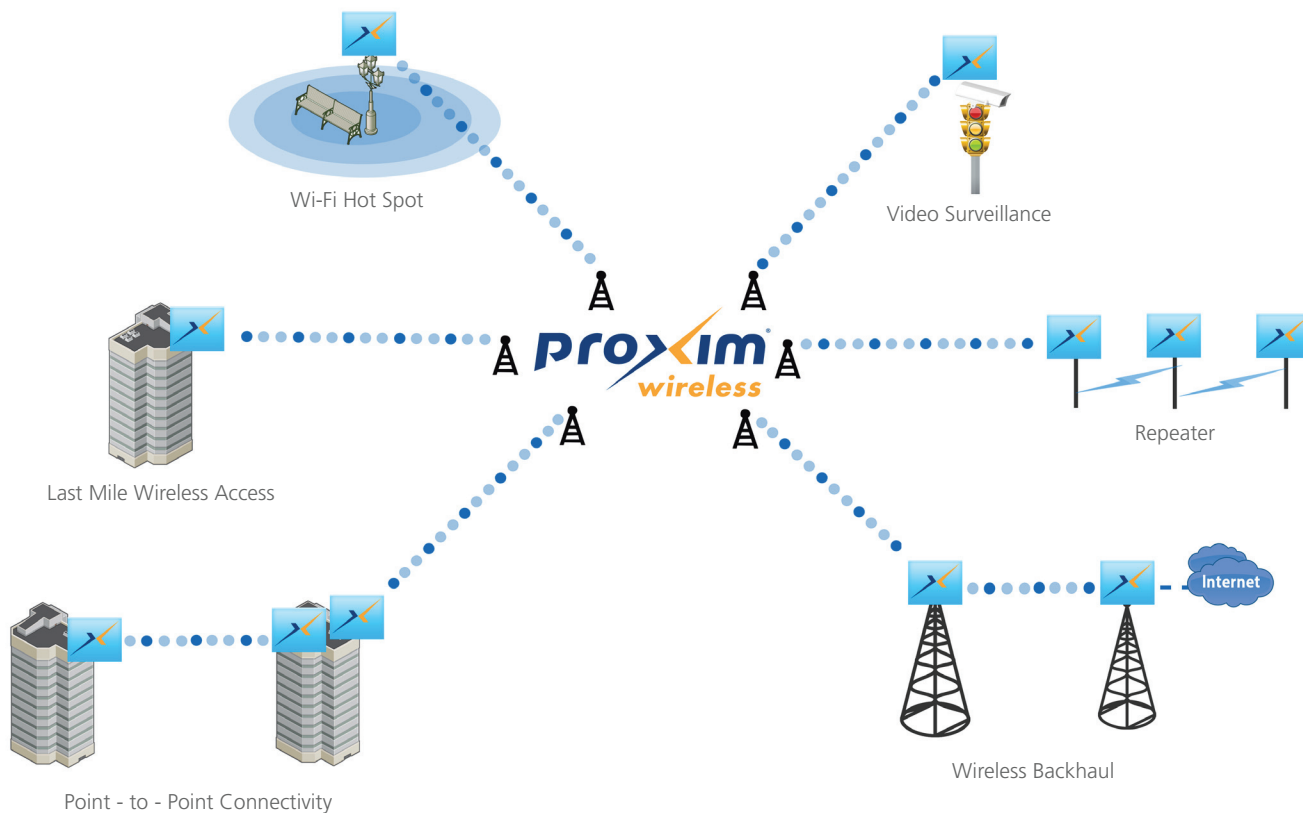


# Tsunami® 8100/8200 Series

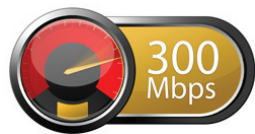
World Class Performance  
Centralized Management  
NLoS and Advanced Features  
Carrier Grade Advanced Security

The Tsunami® 8100/8200 Series delivers high performance (throughput in excess of 4G requirement) along with excellent channel capacity, incredible spectrum flexibility and a prioritization platform for delivering voice, video and data applications, while providing Non-Line-Of-Sight functionality.

By combining Proxim's proprietary Wireless Outdoor Routing Protocol (WORP), cutting edge technology of OFDM and (MIMO) Multiple Input Multiple Output radio innovations the Tsunami® series is an ideal choice for enterprises and offers a secure, scalable and cost-effective solution for organizations of all kind: ISP's, carriers, businesses, medical facilities spreading over multiple campuses in various geographical locations with requirements ranging from last mile Broadband Wireless Access (BWA) to wireless video surveillance and more.



## Features



### World Class Performance

With 300 Mbps Plus data rates, Tsunami® Series delivers wireless performance in excess of 4G products on the market today



### Carrier Grade Advanced Security

Advanced AES encryption for military-grade over-the-air communications, and radio mutual authentication to eliminate rogue units/man-in-the-middle attacks



### Centralized Management

ProximVision ES centralized network management system now supports Tsunami® products, providing rapid network deployment and mobile configuration



### nLoS and Advanced Features

Non-line-of-sight capable, utilizing OFDM and enhanced MIMO techniques to offer better RF interference mitigation and better non-line-of-sight (nLoS) support





## MATERIAL INFORMATION

Material used for Metal Enclosure: ADC12

Finish: Anodization + Powder Coating

## Benefits:

- ADC12 Die Cast material provides superior quality casting surface and longer lasting metallic luster
- Features Anti Corrosion rugged Enclosure.
- IP67 Ingress Protection Rating.
- Approved after stringent screening involving Vehicular movement Transport Vibration (ISTA-2A), Drop, Shock, Salt Spray, Thermal, and Reliability tests.
- Operating Temperature Range -40°C to 60°C.



## Products

- MP-8100-BSU
- MP-8100-SUA
- QB-8100-LNK

## Interface

Surge Protected N-Type Connectors  
(3) (with metal caps)



## Products

- MP-8200-BSU
- MP-8200-SUA
- QB-8200-LNK

## Interface

Surge Protected N-Type Connectors  
(2) (with Rubber Covers)



## Products

- MP-8150-SUR
- MP-8250-BS9
- MP-8250-SUR
- QB-8150-LNK
- QB-8250-LNK



## Products

- MP-8160-BSU
- MP-8160-SUA

## Interface

Normal N-Type Connector (2)  
(with rubber covers)



## MATERIAL INFORMATION

Material used for Plastic Enclosure: Lexan 943

### Benefits:

- Environmental conformance flame retardancy.
- IP65 Ingress Protection Rating
- Supports various features: Heat Resistant, Good Weather condition properties, UV stabilization
- Approved after stringent screening involving Vibration, Shock, Drop, Reliability, Wind load & Solar Test
- Operating Temperature Range -35°C to 55°C



### Products

- MP-8150-CPE
- QB-8150-LNK-12 / 50 Mbps



## MATERIAL INFORMATION

Material used for Metal Enclosure: ADC12

Finish: Surtec 650 + Powder Coating

Material used for Antenna Radome Cover: BASF 778T

Finish: MT11010

### Benefits:

- ADC12 Die Casting material provides enclosure high quality casting surface and longer lasting metallic luster.
- Features Anti Corrosion robust frame.
- IP67 Ingress Protection Rating
- Supports various features: Heat Resistance, UV stabilization.
- Approved after stringent screening Vibration as per MIL-STD-202A (Method 201A), Drop, and Wind Load – 200 Kmph, Thermal, and Reliability tests.
- Operating Temperature Range -40°C to 55°C.



### Products

- MP-8160-CPE

## Point-to-Multipoint ▶

Series	MP-8100					MP-8200		
Products	MP-8100-BSU/ SUA	MP-8150-SUR	MP8150-CPE	MP-8160-BSU/ SUA	MP-8160-CPE	MP-8200-BSU/ SUA	MP-8250-BS9	MP-8250-SUR
Antenna	Connectorized	Integrated 23dBi	Integrated 16dBi	Connectorized	Integrated 15dBi	Connectorized	Integrated 90° sector 16 dBi	Integrated 23 dBi
MIMO	3x3	2x2	2x2	2x2	2x2	2x2	2x2	2x2
Frequency	2.3 – 2.5 GHz 4.9 – 6.0 GHz	4.9 – 6.0 GHz	5.3 – 6.0 GHz	5.9 – 6.425 GHz	5.9 – 6.425 GHz	4.9 – 5.925 GHz	4.9 – 5.925 GHz	4.9 – 5.925 GHz
Protocol	WORP	WORP	WORP	WORP	WORP	WORP	WORP	WORP
Data Rate	300Mbps	300Mbps	300Mbps	300Mbps	300Mbps	300Mbps	300Mbps	300Mbps
QoS	WIMAX based	WIMAX based	WIMAX based	WIMAX based	WIMAX based	WIMAX based	WIMAX based	WIMAX based
T <sub>x</sub> Power	21dBm	21dBm	24dBm	25dBm	25dBm	27dBm	27dBm	27dBm

## Point-to-Point ▶

Series	QB-8100			QB-8200	
Products	QB-8100-LNK	QB-8150-LNK	QB-8150-LNK-12/50	QB-8200-LNK	QB-8250-LNK
Antenna	Connectorized	Integrated 23dBi	Integrated 16dBi	Connectorised	Integrated 23 dBi
MIMO	3x3	2x2	2x2	2x2	2x2
Frequency	2.3 – 2.5 GHz 4.9 – 6.0 GHz	4.9 – 6.0 GHz	5.3 – 6.0 GHz	4.9 – 5.925 GHz	4.9 – 5.925 GHz
Protocol	WORP	WORP	WORP	WORP	WORP
Data Rate	300Mbps	300Mbps	300 Mbps	300Mbps	300Mbps
QoS	WIMAX based	WIMAX based	WIMAX based	WIMAX based	WIMAX based
T <sub>x</sub> Power	21dBm	21dBm	24dBm	27dBm	27dBm

## Network Management Software ►

ProximVision ES provides rapid network deployment, mobile configuration and greater ease of use in a software-based Network Management System - giving you a complete view of your wireless network.

ProximVision ES currently supports the following Proxim products:

- Tsunami® MP 8100 high throughput point to multipoint series
- Tsunami® MP 8160 high throughput point to multipoint series
- Tsunami® QB 8100 high throughput point to point series
- Tsunami® MP 8200 and QB 8200 under development (Q4 2011)

### Rapid Network Deployment

ProximVision ES automates configuration processes for faster, more efficient deployment of Proxim Wireless networks.

- Automatic configuration capabilities enable network managers to quickly replicate existing network settings across new network nodes
- User-friendly interface enables you to group, manage and configure all devices available on your wireless network
- Auto discovery of network devices makes identifying devices for configuration a snap

### Mobile Configuration Capabilities

ProximVision ES gives network managers a mobile option for exhaustive device configuration with a software tool.

- Network managers take configuration capabilities with them to address isolated networks
- Exhaustive device configuration capabilities
- ProximVision ES segments the overall network, enabling simpler mobile monitoring and management of the network and devices

### Geographical Network View and Statistical Plots

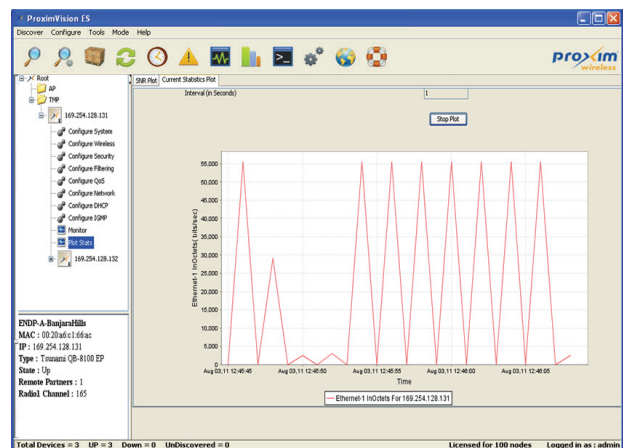
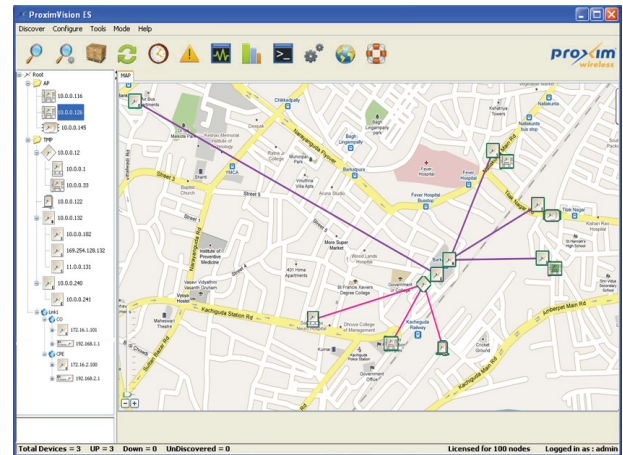
ProximVision ES provides a map overlay of your entire network with real-time, visual network status indicators.

- Use the built-in map location tool to create a geographic view of your network and placement of your wireless devices.
- Devices and link status can quickly be determined thanks to color coded icons.
- Network administrator can plot statistical information such as link SNR, traffic load and other metrics to evaluate network health and manage bottlenecks.
- Dynamic Map supports device placement at the configured GPS co-ordinates. Also extends support to change the existing device positions on the Dynamic Map by drag and drop
- Use Static map feature to place devices on a static map that are located in closed spaces such as buildings and offices; Also enables to edit and save existing static maps using PreConfigured Image Editor from within PVES

### Greater Ease of Use and Upgradability

ProximVision ES can support a greater number of devices than competitively priced solutions, and provides the simplest path to configuration and upgrade.

- Once networks are configured and deployed, ProximVision ES provides the ability to automatically reconfigure or perform firmware upgrades on an entire group of devices simultaneously
- Real-time monitoring of devices across the entire wireless network, providing diagnostics and alerts to quickly identify errors and troubleshoot them
- Integrated device inventory and per device diagnostic reports enables quick assessment of the network



PRODUCT MODELS					
MP-8200-BSU	Tsunami® MP 8200 Base Station Unit, 300 Mbps, MIMO 2x2, Type-N Connectors				
MP-8250-BS9	Tsunami® MP 8250 Base Station Unit, 300 Mbps, MIMO 2x2, 16 dBi, 90° sector antenna				
MP-8200-SUA	Tsunami® MP 8200 Subscriber Unit, 300 Mbps, MIMO 2x2, Type-N Connectors				
MP-8250-SUR	Tsunami® MP 8250 Subscriber Unit, 300 Mbps, MIMO 2x2, 23 dBi, panel antenna				
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				
FREQUENCY	4.900 – 5.925 GHz (Subject to Country Regulations)				
CHANNEL SIZE	40 MHz, 20 MHz, 10 MHz, 5MHz channel bandwidths with support for 1MHz channel spacing				
DATA RATE	MCS 0 to 15 for High Throughput mode (6.5 – 300 Mbps) with Dynamic Data Rate Selection BPSK, QPSK, 16-QAM and 64-QAM for legacy mode (6Mbps - 54Mbps)				
TX POWER	Up to 27 dBm (two Tx chain)				
TX POWER CONTROL	0 – 25 dB, in 0.5 dB steps. Automatic TPC with configurable EIRP limit				
RX SENSITIVITY (BER=10 <sup>-6</sup> )	Channel Size	40 MHZ	20 MHZ	10 MHZ	5 MHZ
	MCS 0	-87 dBm	-91 dBm	-93 dBm	-96 dBm
	MCS 7	-69 dBm	-72 dBm	-74 dBm	-76 dBm
	MCS 8	-86 dBm	-89 dBm	-91 dBm	-94 dBm
	MCS 15	-67 dBm	-69 dBm	-72 dBm	-74 dBm
ANTENNA					
	Model MP-8200-BSU and MP-8200-SUA include two N-type Connectors with built-in Surge Protection Model MP-8250-BS9 includes an integrated 2x2 MIMO 16 dBi Dual Polarized 90° sector Antenna Model MP-8250-SUR includes an integrated 2x2 MIMO 23 dBi Dual Polarized panel Antenna				
MANAGEMENT					
LOCAL	RS-232 serial (RJ11 to DB-9 dongle provided)				
REMOTE	Telnet and SSH, WebGUI 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				
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				
QoS	Asymmetric Bandwidth Control	Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink 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				
ENVIRONMENTAL SPECS					
OPERATING, STORAGE TEMPERATURE	HUMIDITY, IP RATING	WIND LOADING	POWER CONSUMPTION	SAFETY STANDARDS	
-40° to 60°C (-40° to 140° Fahrenheit) -55° to 80°C (-67° to 176° Fahrenheit)	Max 100% relative humidity (non-condensing) IP67	125 mph	8.1 Watt typical (18.1 Watt max)	UL 60950, CAN/CSA-C22.2 No. 60950, IEC 60950, EN 60950	
PHYSICAL SPECS					
DIMENSIONS (PACKAGED)	DIMENSIONS (UNPACKAGED)	WEIGHT (PACKAGED)	WEIGHT (UNPACKAGED)		
Model MP-8200-BSU or MP-8200-SUA: 14.56 x 13.69 x 8.18 in. (370 x 348 x 208 mm) Model MP-8250-BS9 or MP-8250-SUR: 15.94 x 15.94 x 9.21 in. (405 x 405 x 234 mm)	Model MP-8200-BSU or MP-8200-SUA: 10.5 x 10.5 x 3.38 in (267 x 267 x 86 mm) Model MP-8250-BS9 or MP-8250-SUR: 14.17 x 14.17 x 3.70 in (370 x 370 x 94 mm)	Model MP-8200-BSU or MP-8200-SUA: 16.75 lbs (7.6 kg) Model MP-8250-BS9 or MP-8250-SUR: 18.30 lbs (8.3 kg)	Model MP-8200-BSU or MP-8200-SUA: 7.27 lbs (3.3 kg) Model MP-8250-BS9 or MP-8250-SUR: 9.26 lbs (4.2 kg)		

PRODUCT MODELS																														
MP-8100-BSU	Tsunami® MP 8100 Base Station Unit, 300 Mbps, 5.8 GHz, Type-N Connectors																													
MP-8100-SUA	Tsunami® MP 8100 Subscriber Unit, 5.8 GHz, Type-N Connectors																													
MP-8150-SUR	Tsunami® MP 8150 Subscriber Unit, 5.8 GHz, MIMO 2x2, 23 dBi Integrated antenna																													
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	3x3 MIMO																													
MODULATION	OFDM																													
FREQUENCY	2.3 – 2.5 GHz 4.9 – 6.0 GHz (Subject to Country Regulations)																													
CHANNEL SIZE	40 MHz, 20 MHz, 10 MHz, 5MHz channel bandwidths																													
DATA RATE	MCS 0 to 15 for High Throughput mode (6.5 – 300 Mbps) with Dynamic Data Rate Selection BPSK, QPSK, 16-QAM and 64-QAM for legacy mode (6Mbps - 54Mbps)																													
TX POWER	Up to 21 dBm (two Tx chain)																													
TX POWER CONTROL	0 – 25 dB, in 0.5 dB steps. Automatic TPC with configurable EIRP limit																													
RX SENSITIVITY (BER=10 <sup>-6</sup> )	<table><tr><th>Channel Size</th><th>40 MHz</th><th>20 MHz</th><th>10 MHz</th><th>5 MHz</th></tr><tr><td>MCS 0</td><td>-87dBm</td><td>-93dBm</td><td>-94 dBm</td><td>-96 dBm</td></tr><tr><td>MCS 7</td><td>-71dBm</td><td>-75dBm</td><td>-78 dBm</td><td>-81 dBm</td></tr><tr><td>MCS 8</td><td>-87 dBm</td><td>-93 dBm</td><td>-94 dBm</td><td>-95 dBm</td></tr><tr><td>MCS 15</td><td>-69 dBm</td><td>-71 dBm</td><td>-74 dBm</td><td>-77 dBm</td></tr></table>					Channel Size	40 MHz	20 MHz	10 MHz	5 MHz	MCS 0	-87dBm	-93dBm	-94 dBm	-96 dBm	MCS 7	-71dBm	-75dBm	-78 dBm	-81 dBm	MCS 8	-87 dBm	-93 dBm	-94 dBm	-95 dBm	MCS 15	-69 dBm	-71 dBm	-74 dBm	-77 dBm
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ANTENNA																														
	Model MP-8100-BSU and MP-8100-SUA include three N-type Connectors with built-in Surge Protection Model MP-8150-SUR includes an integrated 2x2 MIMO 23 dBi Dual Polarized panel Antenna																													
MANAGEMENT																														
LOCAL	RS-232 serial (RJ11 to DB-9 dongle provided)																													
REMOTE	Telnet and SSH, WebGUI 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																													
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																													
QoS	<table><tr><td>Asymmetric Bandwidth Control</td><td>Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink MIR Control “maximum information rate” per service flow</td></tr><tr><td>Packet Classification Capabilities</td><td>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</td></tr><tr><td>Scheduling</td><td>Best Effort, Real Time Polling Services</td></tr></table>					Asymmetric Bandwidth Control	Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink 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																			
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Scheduling	Best Effort, Real Time Polling Services																													
VLAN	802.1Q: Management VLAN. Transparent, Access, Trunk and Mixed mode. QinQ double tagging																													
ENVIRONMENTAL SPECS																														
OPERATING, STORAGE TEMPERATURE		HUMIDITY, IP RATING		SAFETY STANDARDS																										
-40° to 60°C (-40° to 140° Fahrenheit) -55° to 80°C (-67° to 176° Fahrenheit)		Max 100% relative humidity (non-condensing) IP67		UL 60950, CAN/CSA-C22.2 No. 60950, IEC 60950, EN 60950																										
POWER CONSUMPTION		7 Watt typical (17 Watt max)																												
PHYSICAL SPECS																														
DIMENSIONS (PACKAGED)		DIMENSIONS (UN PACKAGED)		WEIGHT (PACKAGED)																										
Model MP-8100-BSU or MP-8100-SUA: 14.56 x 13.69 x 8.18 in. (370 x 348 x 208 mm) MP-8150-SUR: 15.94 x 15.94 x 9.21 in. (405 x 405 x 234 mm)		Model MP-8100-BSU or MP-8100-SUA: 10.5 x 10.5 x 3.38 in (267 x 267 x 86 mm) MP-8150-SUR: 14.17 x 14.17 x 3.70 in (370 x 370 x 94 mm)		Model MP-8100-BSU or MP-8100-SUA: 15 lbs (6.8 kg) MP-8150-SUR: 16.31 lbs (7.4 kg)																										
				Model MP-8100-BSU or MP-8100-SUA: 7.7 lbs (3.5 kg) MP-8150-SUR: 9.0 lbs (4.1 kg)																										



PRODUCT MODELS					
MP-8160-BSU	Tsunami® MP 8160 Base Station Unit, 300 Mbps, 5.900 – 6.425 GHz, Type-N Connectors				
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				
FREQUENCY	5.900 – 6.425 GHz (Subject to Country Regulations)				
CHANNEL SIZE	40 MHz, 20 MHz, 10 MHz, 5MHz channel bandwidths with support for 1MHz 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 (two Tx chain)				
TX POWER CONTROL	0 – 25 dB, in 0.5 dB steps. Automatic TPC with configurable EIRP limit				
RF-PORT PROTECTION	Built-in ESD & Lightning/Surge protection in the radio				
RX SENSITIVITY (BER=10 <sup>-6</sup> )	Channel Size	40 MHZ	20 MHZ	10 MHz	5 MHz
	MCS 0	-90 dBm	-92 dBm	-95 dBm	-98 dBm
	MCS 7	-72dBm	-73 dBm	-76 dBm	-80 dBm
	MCS 8	-88 dBm	-90dBm	-92 dBm	-96 dBm
	MCS 15	-69 dBm	-70 dBm	-73 dBm	-76 dBm
ANTENNA					
	Model MP-8160-BSU and MP-8160-SUA include two N-type Connectors				
MANAGEMENT					
LOCAL	RS-232 serial (RJ11 to DB-9 dongle provided)				
REMOTE	Telnet and SSH, WebGUI 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				
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				
QoS	Asymmetric Bandwidth Control	Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink 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 (17 Watt max)				
ENVIRONMENTAL SPECS					
OPERATING TEMPERATURE	STORAGE TEMPERATURE	HUMIDITY		IP RATING	
-40° to 60°C (-40° to 140° Fahrenheit)	-55° to 80°C (-67° to 176° Fahrenheit)	Max 100% relative humidity (non-condensing)		IP67	
PHYSICAL SPECS					
DIMENSIONS (PACKAGED)	DIMENSIONS (UNPACKAGED)	WEIGHT (PACKAGED)		WEIGHT (UNPACKAGED)	
Model MP-8160-BSU or MP-8160-SUA: 14.56 x 13.69 x 8.18 in. (370 x 348 x 208 mm)	Model MP-8160-BSU or MP-8160-SUA: 10.5 x 10.5 x 3.38 in (267 x 267 x 86 mm)	Model MP-8160-BSU or MP-8160-SUA: 14.66 lbs (6.65 kg)		Model MP-8160-BSU or MP-8160-SUA: 7.38 lbs (3.35 kg)	

PRODUCT MODELS											
MP-8150-CPE-100a	Tsunami® MP 8150 Customer Premises Equipment, 100 Mbps, MIMO 2x2, 16dBi integrated antenna										
INTERFACES											
WIRED ETHERNET	One auto MDI-X RJ45 10/100 Ethernet										
WIRELESS PROTOCOL	WORP (Wireless Outdoor Router Protocol)										
RADIO & TX SPECS											
MIMO	2x2										
MODULATION	OFDM										
OPERATING FREQUENCY	5.3 – 6.0 GHz (Subject to Country Regulations)										
CHANNEL SIZE	40 MHz, 20 MHz, 10 MHz, 5MHz channel bandwidths with support for 1MHz 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 24 dBm (two Tx chain)										
TX POWER CONTROL	0 – 25 dB, in 0.5 dB steps. Automatic TPC with configurable EIRP limit										
RX SENSITIVITY (BER=10 <sup>-6</sup> )	Channel Size	40 MHz	20 MHz	10 MHz	5 MHz						
	MCS 0	-89dBm	-93 dBm	-95 dBm	-96 dBm						
	MCS 7	-73 dBm	-76 dBm	-76 dBm	-78 dBm						
	MCS 8	-89 dBm	-93 dBm	-93 dBm	-94 dBm						
	MCS 15	-73 dBm	-76 dBm	-73 dBm	-75 dBm						
ANTENNA											
ANTENNA	Integrated 16dBi dual Polarized (H+V) panel antenna										
MANAGEMENT											
REMOTE	Telnet and SSH, WebGUI 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										
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)										
THROUGHPUT	Up to 100 Mbps (TCP)										
GATEWAY FEATURES	DHCP Server & relay, NAT with Std ALGs, PPPoE end point										
QoS	<table><tr><td>Asymmetric Bandwidth Control</td><td>Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink MIR Control “maximum information rate” per service flow</td></tr><tr><td>Packet Classification Capabilities</td><td>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</td></tr><tr><td>Scheduling</td><td>Best Effort, Real Time Polling Services</td></tr></table>					Asymmetric Bandwidth Control	Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink 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
Asymmetric Bandwidth Control	Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink 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										
WARRANTY											
	1-year on parts and labor; ServPak Extended Support available										
POWER CONSUMPTION											
	7 Watt typical (13.8 Watt max)										
ENVIRONMENTAL SPECS											
OPERATING TEMPERATURE	STORAGE TEMPERATURE		HUMIDITY		IP RATING						
-35° to 55°C (-31° to 131° Fahrenheit)	-40° to 70°C (-40° to 158° Fahrenheit)		Max 95% relative humidity (non-condensing)		IP65						
PHYSICAL SPECS											
DIMENSIONS (PACKAGED)		DIMENSIONS (UNPACKAGED)		WEIGHT (PACKAGED)	WEIGHT (UNPACKAGED)						
15.15 x 12.40 x 4.33 in. (385 x 315 x 110 mm)		7.77 x 7.55 x 3.93 in (197.5 x 192 x 100 mm)		5.18 lbs (2.35 kg)	1.6 lbs (0.73 kg)						

PRODUCT MODELS					
MP-8160-CPE-A100	Tsunami® MP 8160 Customer Premises Equipment, 100 Mbps, MIMO 2x2, 15dBi integrated antenna				
INTERFACES					
WIRED ETHERNET	One auto MDI-X RJ45 10/100Ethernet				
WIRELESS PROTOCOL	WORP (Wireless Outdoor Router Protocol)				
RADIO & TX SPECS					
MIMO	2x2				
MODULATION	OFDM				
OPERATING FREQUENCY	5.900 – 6.425 GHz (Subject to Country Regulations)				
CHANNEL SIZE	40 MHz, 20 MHz, 10 MHz, 5MHz channel bandwidths with support for 1MHz 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 (two Tx chain)				
TX POWER CONTROL	0 – 25 dB, in 0.5 dB steps. Automatic TPC with configurable EIRP limit				
RX SENSITIVITY BER=10 <sup>-6</sup> )	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					
ANTENNA	Integrated 15dBi dual Polarized (H+V) panel antenna				
MANAGEMENT					
REMOTE	Telnet and SSH, WebGUI 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				
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)				
THROUGHPUT	Up to 100 Mbps (TCP)				
GATEWAY FEATURES	DHCP Server & relay, NAT with Std ALGs, PPPoE end point				
QoS	Asymmetric Bandwidth Control	Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink 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					
	5 Watt typical (18 Watt max)				
ENVIRONMENTAL SPECS					
OPERATING TEMPERATURE		STORAGE TEMPERATURE	IP RATING	HUMIDITY	
-40° to 55°C (-40° to 131° Fahrenheit)		-45° to 70°C (-49° to 158° Fahrenheit)	IP67	Max 100% relative humidity (non-condensing)	
PHYSICAL SPECS					
DIMENSIONS (PACKAGED)		DIMENSIONS (UNPACKAGED)		WEIGHT (PACKAGED)	WEIGHT (UNPACKAGED)
13.58 x 7.17 x 3.43 in. (345 x 182 x 87 mm)		8.46 x 4.78 x 2.56 in (215 x 121.5 x 65 mm)		3.75 lbs (1.70 kg)	1.93 lbs (0.88 kg)

PRODUCT MODELS					
QB-8200-LNK	Tsunami QB 8200 Link, 300 Mbps, MIMO 2x2, Type-N Connectors (Two QB-8200-EPA)				
QB-8250-LNK	Tsunami QB 8250 Link, 300 Mbps, MIMO 2x2, 23 dBi panel antenna (Two QB-8250-EPR)				
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				
FREQUENCY	4.900 – 5.925 GHz (Subject to Country Regulations)				
CHANNEL SIZE	40 MHz, 20 MHz, 10 MHz, 5 MHz channel bandwidths with support for 1MHz 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 27dBm (two Tx chain)				
TX POWER CONTROL	0 – 25 dB, in 0.5 dB steps. Automatic TPC with configurable EIRP limit				
RX SENSITIVITY (BER=10 <sup>-6</sup> )	Channel Size	40 MHZ	20 MHZ	10 MHZ	5 MHZ
	MCS 0	-87 dBm	-91 dBm	-93 dBm	-96 dBm
	MCS 7	-69 dBm	-72 dBm	-74 dBm	-76 dBm
	MCS 8	-86 dBm	-89 dBm	-91 dBm	-94 dBm
	MCS 15	-67 dBm	-69 dBm	-72 dBm	-74 dBm
LATENCY					
	< 3 msec				
ANTENNA					
	Model QB-8200-EPA includes two N-Type Antenna Connectors with built in Surge Protection Model QB-8250-EPR includes an Integrated 2x2 MIMO 23dBi Dual Polarized Antenna				
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				
SECURITY					
ENCRYPTION	AES-CCM 128 bits				
AUTHENTICATION	Internal MAC Address Control List, Radius based Authentication				
NETWORK					
MODES	Bridging(support LACP through external switches), Routing (RIP v2 and IP tunneling)				
GATEWAY FEATURES	DHCP Server & relay, NAT with Std ALGs				
QoS	Asymmetric Bandwidth Control	Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink 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				
ENVIRONMENTAL SPECS					
OPERATING, STORAGE TEMPERATURE	HUMIDITY	WIND LOADING	IP RATING	SAFETY STANDARDS	
-40° to 60°C (-40° to 140° Fahrenheit) -55° to 80°C (-67° to 176° Fahrenheit)	Max 100% relative humidity (non-condensing)	125 mph	IP67	UL 60950, CAN/CSA-C22.2 No. 60950, IEC 60950, EN 60950	
PHYSICAL SPECS					
DIMENSIONS (PACKAGED)	DIMENSIONS (UNPACKAGED)	WEIGHT (PACKAGED)	WEIGHT (UNPACKAGED)		
Model QB-8200-EPA: 14.56 x 13.69 x 8.18 in. (370 x 348 x 208 mm) Model QB-8250-EPR: 15.94 x 15.94 x 9.21 in. (405 x 405 x 234 mm)	Model QB-8200-EPA: 10.5 x 10.5 x 3.38 in (267 x 267 x 86 mm) Model QB-8250-EPR: 14.17 x 14.17 x 3.70 in (370 x 370 x 94 mm)	Model QB-8200-EPA: 16.75 lbs (7.6 kg) Model QB-8250-EPR: 18.30 lbs (8.3 kg)	Model QB-8200-EPA: 7.27 lbs (3.3 kg) Model QB-8250-EPR: 9.26 lbs (4.2 kg)		



PRODUCT MODELS																														
QB-8100-LNK	Tsunami QB 8100 Link, 300 Mbps, MIMO 3x3, Type-N Connectors (Two QB-8100-EPA)																													
QB-8150-LNK	Tsunami QB 8150 Link, 300 Mbps, MIMO 2x2, 23 dBi panel antenna (Two QB-8150-EPR)																													
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	3x3 MIMO																													
MODULATION	OFDM																													
FREQUENCY	2.3 – 2.5 GHz 4.9 – 6.0 GHz (Subject to Country Regulations)																													
CHANNEL SIZE	40 MHz, 20 MHz, 10 MHz, 5 MHz																													
DATA RATE	MCS 0 to 15 for High Throughput mode (6.5 – 300 Mbps) with Dynamic Data Rate Selection																													
TX POWER	Up to 21dBm (two Tx chain)																													
TX POWER CONTROL	0 – 25 dB, in 0.5 dB steps. Automatic TPC with configurable EIRP limit																													
RX SENSITIVITY (BER=10 <sup>-6</sup> )	<table><tr><th>Channel Size</th><th>40 MHz</th><th>20 MHz</th><th>10 MHz</th><th>5 MHz</th></tr><tr><td>MCS 0</td><td>-87dBm</td><td>-93dBm</td><td>-94 dBm</td><td>-96 dBm</td></tr><tr><td>MCS 7</td><td>-71dBm</td><td>-75dBm</td><td>-78 dBm</td><td>-81 dBm</td></tr><tr><td>MCS 8</td><td>-87 dBm</td><td>-93 dBm</td><td>-94 dBm</td><td>-95 dBm</td></tr><tr><td>MCS 15</td><td>-69 dBm</td><td>-71 dBm</td><td>-74 dBm</td><td>-77 dBm</td></tr></table>					Channel Size	40 MHz	20 MHz	10 MHz	5 MHz	MCS 0	-87dBm	-93dBm	-94 dBm	-96 dBm	MCS 7	-71dBm	-75dBm	-78 dBm	-81 dBm	MCS 8	-87 dBm	-93 dBm	-94 dBm	-95 dBm	MCS 15	-69 dBm	-71 dBm	-74 dBm	-77 dBm
Channel Size	40 MHz	20 MHz	10 MHz	5 MHz																										
MCS 0	-87dBm	-93dBm	-94 dBm	-96 dBm																										
MCS 7	-71dBm	-75dBm	-78 dBm	-81 dBm																										
MCS 8	-87 dBm	-93 dBm	-94 dBm	-95 dBm																										
MCS 15	-69 dBm	-71 dBm	-74 dBm	-77 dBm																										
LATENCY																														
	< 3 msec																													
ANTENNA																														
	Model QB-8150-LNK and QB-8150-EPR includes an Integrated 2x2 MIMO 23dBi Dual Polarized Antenna Model QB-8100-LNK includes three N-Type Antenna Connectors with built in Surge Protection																													
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																													
SECURITY																														
ENCRYPTION	AES-CCM 128 bits																													
AUTHENTICATION	Internal MAC Address Control List, Radius based Authentication																													
NETWORK																														
MODES	Bridging(support LACP through external switches), Routing (RIP v2 and IP tunneling)																													
GATEWAY FEATURES	DHCP Server & relay, NAT with Std ALGs																													
QoS	<table><tr><td>Asymmetric Bandwidth Control</td><td>Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink MIR Control “maximum information rate” per service flow</td></tr><tr><td>Packet Classification Capabilities</td><td>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</td></tr><tr><td>Scheduling</td><td>Best Effort, Real Time Polling Services</td></tr></table>					Asymmetric Bandwidth Control	Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink 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																			
Asymmetric Bandwidth Control	Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink 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																													
ENVIRONMENTAL SPECS																														
OPERATING, STORAGE TEMPERATURE		HUMIDITY	WIND LOADING	IP RATING	SAFETY STANDARDS																									
-40° to 60°C (-40° to 140° Fahrenheit) -55° to 80°C (-67° to 176° Fahrenheit)		Max 100% relative humidity (non-condensing)	125 mph	IP67	UL 60950, CAN/CSA-C22.2 No. 60950, IEC 60950, EN 60950																									
PHYSICAL SPECS																														
CONNECTORIZED (LXWXH) :		INTEGRATED ANTENNA (LXWXH) :	CONNECTORIZED :		INTEGRATED ANTENNA :																									
PACKAGED 14.56 x 13.7 x 8.19 in (370 x 348 x 208 mm) UNPACKAGED 10.79 x 11.14 x 3.38 in (274 x 283 x 86 mm)		PACKAGED 15.94 x 15.94 x 8.46 in (405 x 405 x 215 mm) UNPACKAGED 14.57 x 14.57 x 4.47 in (370 x 370 x 113.5 mm)	PACKAGED 15 lbs (6.8 kg) UNPACKAGED 7.7 lbs (3.5 kg)		PACKAGED 16.31 lbs (7.4 kg) UNPACKAGED 9.0 lbs (4.1 kg)																									

PRODUCT MODELS					
QB-8150-LNK-12	Tsunami QB 8150 Link, 12 Mbps, MIMO 2x2, 16 dBi integrated antenna				
QB-8150-LNK-50	Tsunami QB 8150 Link, 50 Mbps, MIMO 2x2, 16 dBi integrated antenna				
RADIO & TX SPECS					
MIMO	2x2				
MODULATION	OFDM				
OPERATING FREQUENCY	5.3 ~ 6.0 GHz (Subject to Country Regulations)				
CHANNEL SIZE	40 MHz, 20 MHz, 10 MHz, 5 MHz channel bandwidths with support for 1MHz 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 24dBm (two Tx chain)				
TX POWER CONTROL	0 – 25 dB, in 0.5 dB steps. Automatic TPC with configurable EIRP limit				
RX SENSITIVITY (BER=10 <sup>-6</sup> )	Channel Size	40 MHz	20 MHz	10 MHz	5 MHz
	MCS 0	-89 dBm	-93 dBm	-95 dBm	-96 dBm
	MCS 7	-73 dBm	-76 dBm	-76 dBm	-78 dBm
	MCS 8	-89 dBm	-93 dBm	-93 dBm	-94 dBm
	MCS 15	-73 dBm	-76 dBm	-73 dBm	-75 dBm
LATENCY					
	5 msec (typical)				
ANTENNA					
	Integrated 16dBi dual Polarized (H+V) panel antenna				
INTERFACES					
WIRED ETHERNET	One auto MDI-X RJ45 10/100Mbps Ethernet				
WIRELESS PROTOCOL	WORP (Wireless Outdoor Router Protocol)				
MANAGEMENT					
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				
SECURITY					
ENCRYPTION	AES-CCM 128 bits				
AUTHENTICATION	Internal MAC Address Control List, Radius based Authentication				
NETWORK					
MODES	Bridging, Routing (RIP v2 and IP tunneling)				
THROUGHPUT	Model QB 8150-LNK-12: Up to 12Mbps (TCP) Model QB 8150-LNK-50: Up to 50Mbps (TCP)				
GATEWAY FEATURES	DHCP Server & relay, NAT with Std ALGs				
QoS	Asymmetric Bandwidth Control		Uplink and Downlink CIR Control “committed information rate” per service flow Uplink and Downlink 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				
WARRANTY					
	1-year on parts and labor; ServPak Extended Support available				
ENVIRONMENTAL SPECS					
OPERATING, STORAGE TEMPERATURE	HUMIDITY	WIND LOADING	IP RATING	SAFETY STANDARDS	
-35° to 55° C (-31° to 131° F) -40° to 70° C (-40° to 158° F)	Max 95% relative humidity (non-condensing)	125 mph	IP65	UL 60950, CAN/CSA-C22.2 No. 60950, IEC 60950, EN 60950	
PHYSICAL SPECS					
DIMENSIONS (PACKAGED)	DIMENSIONS (UNPACKAGED)	WEIGHT (PACKAGED)		WEIGHT (UNPACKAGED)	
15.15 x 12.40 x 4.33 in. (385 x 315 x 110 mm)	7.77 x 7.55 x 3.93 in (197.5 x 192 x 100 mm)	2.35 kg (5.18 lbs) (each unit)		0.73 kg (1.6 lbs) (each unit)	

Package Contents				
Tsunami® MP 8200	One Tsunami® MP 8200-BSU with two N-type surge protected connectors,  or One Tsunami® MP-8250-BS9 with an integrated 16 dBi dual polarized 90° sector Antenna  or One Tsunami® MP 8200-SUA with two N-type surge protected connectors,  or One Tsunami® MP-8250-SUR with an integrated 23dBi dual polarized panel antenna	One Connector weatherproofing kit (Includes all recommended weatherproofing material)	One Serial (RJ-11 to DB9) dongle	One Gigabit PoE Surge Arrestor
Tsunami® MP 8100	One Tsunami® MP 8100-BSU with three N-type surge protected connectors  or One Tsunami® MP 8150-SUR with 5 GHz dual polarity 23 dBi Integrated antenna  or One Tsunami® MP 8100-SUA with three N-type surge protected connectors	Three N-connector weather proofing caps installed at factory (for connectorized Version Only)  One Connector weatherproofing kit (Includes all recommended weatherproofing material)	One Serial (RJ-11 to DB9) dongle	One Gigabit PoE Surge Arrestor
Tsunami® MP 8160	One Tsunami® MP 8160-BSU or MP 8160-SUA with two N-type connectors	One Connector weatherproofing kit (Includes all recommended weatherproofing material)	One Serial (RJ-11 to DB9) dongle	One Gigabit PoE Surge Arrestor
Tsunami® MP 8150 CPE	One CPE unit with 16 dBi integrated antenna	One Connector weatherproofing kit		
Tsunami® MP 8160 CPE	One CPE unit with 15 dBi integrated antenna	One Connector Weather proofing Kit		
Tsunami® QB 8200 Series	One Tsunami® QB-8200-LNK based on two QB-8200-EPA with two N-type surge protected connectors  or One Tsunami® QB-8250-LNK based on two QB-8250-EPR with an integrated 23dBi dual polarized panel antenna	Two Connector weatherproofing kit (Includes all recommended weatherproofing material)	Two Serial (RJ-11 to DB9) dongle	Two Gigabit PoE Surge Arrestor
Tsunami® QB 8100 Series	One Tsunami® QB 8100-EPA with three N-type surge protected connectors  or One Tsunami® QB 8150-EPR with 5 GHz dual polarity 23 dBi Integrated antenna	Three N-connector weather proofing caps installed at factory (for connectorized Version Only)  or Two Connector weatherproofing kit (Includes all recommended weatherproofing material)	One Serial (RJ-11 to DB9) dongle	One Gigabit PoE Surge Arrestor
Tsunami® QB-8150-LNK-12	Two QB End Point units with 16dBi integrated antenna	Two Connector Weather Proofing kit		
Tsunami® QB-8150-LNK-50	Two QB End Point units with 16dBi integrated antenna	Two Connector Weather Proofing kits		
Also includes:				
<ul style="list-style-type: none"> <li>• One(Two for QB link) power injector and country specific power cord</li> <li>• One (Two for QB link) Wall/Pole mounting kit</li> <li>• One (Two for QB link) Grounding kit</li> <li>• One Printed Quick Install Guide / Documentation</li> </ul>				

Proxim Wireless Corporation (OTC Markets: PRXM) provides Wi-Fi®, Point-to-Point and Point-to-Multipoint 4G wireless network technologies for wireless internet, video surveillance and backhaul applications. Our ORiNOCO® and Tsunami® product lines are sold to service providers, governments and enterprises with over 2 million devices shipped to over 250,000 customers in over 65 countries worldwide. Proxim is ISO 9001-2008 certified. For more information, visit [www.proxim.com](http://www.proxim.com). For investor relations information, e-mail [ir@proxim.com](mailto:ir@proxim.com) or call +1 413-584-1425.



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