



Tsunami MP.11 HS



## APPLICATIONS:

### • Highly Secure Video Surveillance

- Provides high throughput for bandwidth-intensive, high definition video for use in national security against intrusion and acts of violence along borders, within cities, and along transportation infrastructure such as airports, bridges, and trains

- Mobile vehicle solution to aid law enforcement with real-time viewing with handoff speeds up to 200 km per hour (120 mph)

### • Highly Secure Data Exchange

- Provides optimal data security for financial transactions and medical information privacy
- Meets government FIPS 140-2 level 2 requirements, enabling use by large range of agencies that require the highest security.

### • VoIP

- Secure VoIP with QoS prioritization enables high-speed mobile or static voice communications

- **Proxim Wireless** is a global provider of end-to-end broadband wireless systems that deliver the quadruple play. From Wi-Fi to wireless Gigabit Ethernet – our WLAN, mesh, WiMAX and point-to-point products are available through our extensive global channel networks.

## PART NUMBERS

### TSUNAMI MP.11 HS (UNITS WITHOUT INTEGRATED ANTENNAS OPERATE IN EITHER 2.4 OR 5 GHZ)

#### Outdoor Ruggedized units

245054-BSU-RC	Tsunami MP.11 HS Ruggedized Base Station with dual Type-N Connector – US PSU
245054-SU-RC	Tsunami MP.11 HS Ruggedized Subscriber Station with dual Type-N Connector – US PSU
245054-SUR	Tsunami MP.11 HS Ruggedized Subscriber Station with Integrated 5 GHz, single-polarity, 23-dBi Antenna – US PSU

#### Indoor or Mobile units

245054-BSU-S	Tsunami MP.11 HS Base Station with dual SMA Connectors – US PSU (AC to 48 VDC) <i>Unit may alternately be powered by a 12 VDC source</i>
245054-SU-S	Tsunami MP.11 HS Subscriber Station with dual SMA Connectors – US PSU (AC to 48 VDC) <i>Unit may alternately be powered by a 12 VDC source</i>

## ADDITIONAL ITEMS

#### Accessories

5054-SURGE	Surge Arrestor 5 GHz z - Standard-N Female to Female
848 274 171	20 ft Low Loss Antenna Cable St-N Male-Male LMR 200
848 332 789	20 ft Low Loss Antenna Cable St-N Male-Male LMR 400
5054-ULA400-50	50 ft Low Loss Antenna Cable St-N Male-Male LMR 400
848 274 205	75 ft Low Loss Antenna Cable St-N Male-Male LMR 400
69828	6 ft Low Loss Antenna Cable St-N Male-Male LMR 600
5054-LMR600-50	50 ft Low Loss Antenna Cable St-N Male-Male LMR 600
70251	PoE (Power over Ethernet) Surge Arrestor for Tsunami MP.11 HS and QuickBridge.11 HS

#### Outdoor Ethernet Cables

69819	25m outdoor, terminated CAT5 cable for Tsunami MP.11 or QB.11 with three RJ-45 and one weatherproof Ethernet port cap
69820	50m outdoor, terminated CAT5 cable for Tsunami MP.11 or QB.11 with three RJ-45 and one weatherproof Ethernet port cap
69821	75m outdoor, terminated CAT5 cable for Tsunami MP.11 or QB.11 with three RJ-45 and one weatherproof Ethernet port cap

#### Power Injector

69823	Spare Power DC Injector for Tsunami MP.11 HS or QB.11 HS
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#### 2.4 GHz Antennas

848 515 722	5 dBi Omni-Directional Vehicle Antenna w /Integrated 250 cm cable
848 312 591	7 dBi Omni-Directional Base Station Antenna - St-N Female
848 515 698	10 dBi Omni-Directional Base Station Antenna - St-N Female
848 515 706	12 dBi Directional Wide Angle Antenna (120 degrees) - St-N Female
848 515 714	24 dBi Directional Antenna (Parabolic Grid) - St-N Female
2400-SA60-14	14 dBi Directional Sector Antenna (60 degrees) 2.4GHz St-N Female
1086-PA24-14	14 dBi Panel Antenna - St-N Female

# Tsunami™ MP.11 HS 245054 Technical Specifications

	<p><b>5 GHz Antennas</b></p> <table border="1"> <tr> <td>5054-PA-18</td> <td>18 dBi Panel Antenna - St-N Female - 5.25 - 5.875 Ghz</td> </tr> <tr> <td>5054-PA-23</td> <td>23 dBi Panel Antenna - St-N Female - 5.725 - 5.875 Ghz</td> </tr> <tr> <td>5054-OA-8</td> <td>8 dBi Omni-Directional Antenna - St-N Female - 5.47- 5.850 Ghz</td> </tr> <tr> <td>5054-OA-10</td> <td>10 dBi Omni-Directional Antenna -St-N Female - 5.47- 5.850 Ghz</td> </tr> <tr> <td>5054-SA120-14</td> <td>14 dBi Sector Antenna - St-N Female - 5.25-5.850 GHz - 120 degrees</td> </tr> <tr> <td>5054-SA60-17</td> <td>17 dBi Sector Antenna - St-N Female - 5.25 -5.850 GHz - 60 degrees</td> </tr> </table>	5054-PA-18	18 dBi Panel Antenna - St-N Female - 5.25 - 5.875 Ghz	5054-PA-23	23 dBi Panel Antenna - St-N Female - 5.725 - 5.875 Ghz	5054-OA-8	8 dBi Omni-Directional Antenna - St-N Female - 5.47- 5.850 Ghz	5054-OA-10	10 dBi Omni-Directional Antenna -St-N Female - 5.47- 5.850 Ghz	5054-SA120-14	14 dBi Sector Antenna - St-N Female - 5.25-5.850 GHz - 120 degrees	5054-SA60-17	17 dBi Sector Antenna - St-N Female - 5.25 -5.850 GHz - 60 degrees																																																																																			
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<p><b>Integrated Antenna Specifications</b></p>	<p><b>SUBSCRIBER UNIT WITH INTEGRATED 23-DBI ANTENNA</b></p> <ul style="list-style-type: none"> <li>• Frequency range 5250 - 5875 MHz</li> <li>• Nominal Impedance 50 ohms</li> <li>• Gain 23 dBi</li> <li>• Front-to-Back Ratio 35 dB</li> <li>• HP BW / horizontal 9 degrees</li> <li>• Cross Polarization 23 dB</li> <li>• Power handling 1 W (cw)</li> <li>• VSWR 2.0:1 Max</li> </ul>																																																																																															
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<p><b>Device Interface</b></p>	<p><b>ETHERNET</b> Auto-sensing 10/100Base-Tx Ethernet</p> <p><b>ANTENNA CONNECTOR FOR BSU AND SU WITH TYPE-N CONNECTOR</b> Standard Type-N Female</p>																																																																																															
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# Tsunami™ MP.11 HS 245054 Technical Specifications

Maximum Throughput	Data rate	40 MHz Channels Turbo Mode	20 MHz Channels Standard Mode	10 MHz Channels Standard Mode	5 MHz Channels Standard Mode
	<b>2.4 GHz</b>				
54Mbps		18 Mbps			
48Mbps		18 Mbps			
36Mbps		18 Mbps			
24Mbps		14 Mbps			
18Mbps		12 Mbps	12 Mbps		
12Mbps		9 Mbps	9 Mbps		
9Mbps		7 Mbps	7 Mbps	6.8 Mbps	
6Mbps		5 Mbps	5 Mbps	5 Mbps	
4.5Mbps			4 Mbps	4 Mbps	
3Mbps			2 Mbps	2.7 Mbps	
2.25Mbps				2 Mbps	
1Mbps				1.4 Mbps	
<b>5 GHz</b>					
108Mbps Turbo 54	18 Mbps				
96Mbps Turbo 48	18 Mbps				
72Mbps Turbo 36	18 Mbps				
48Mbps Turbo 24	18 Mbps				
36Mbps Turbo 18	18 Mbps				
24Mbps Turbo 12	16 Mbps				
54Mbps		18 Mbps			
48Mbps		18 Mbps			
36Mbps		18 Mbps			
24Mbps		16 Mbps	16 Mbps		
18Mbps		13 Mbps	13 Mbps		
12Mbps		9 Mbps	9 Mbps		
9Mbps		7 Mbps	7 Mbps	7 Mbps	
6Mbps		5 Mbps	5 Mbps	4.7 Mbps	
4.5Mbps			3.6 Mbps	3.8 Mbps	
3Mbps			2.4 Mbps	2.7 Mbps	
2.25Mbps				2.7 Mbps	
1Mbps				1.2 Mbps	
*Maximum throughput data with release 1.0, as mentioned with test equipment under controlled lab conditions and best performance packet size. In some instances, data compression yields throughput equal to configured data rate.					
Actual throughput performance in the field may vary.					
<b>Network Architecture Type</b>	<b>INFRASTRUCTURE</b>				
<b>Latency</b>	<b>&lt; 10 MS TYPICAL AT MAXIMUM THROUGHPUT</b> *under throughput test conditions indicated above				
<b>Transmit Power Settings</b>		<b>6-24 Mbps @ 20 MHz</b> 16QAM½, QPSK¾, QPSK½ BPSK¾, BPSK½	<b>36 Mbps @ 20 MHz</b> 16QAM½	<b>48 Mbps @ 20 MHz</b> 64QAM½	<b>54 Mbps @ 20 MHz</b> 64QAM½
	2.400-2.483 Ghz	16 dBm	16 dBm	14 dBm	13 dBm
	5.15-5.35 Ghz	15 dBm	13 dBm	12 dBm	11 dBm
	5.47-5.725 Ghz	16 dBm	13 dBm		
	5.725-5.850 GHz	16 dBm			
Output Power Attenuation: 0 – 16 dB, in 3 dB steps Output Power Values will have a tolerance of ± 1.5 dB					
<b>Range Information<sup>2</sup></b> <i>Ruggedized Models</i>	<b>LINE OF SIGHT</b>				
	Integrated Antenna	54 Mbps – Line of Sight		36 Mbps – Line of Sight	
	5.15-5.35 Ghz	3mi/4.8km		6mi/9.6 km	
	5.72-5.850 GHz	3mi/4.8km		6mi/9.6 km	
	External Antenna				
	2.4-2.435 Ghz	5mi/8.05km		7mi/11.2km	
	5.15-5.35 Ghz	5mi/8.05km		10mi/16.1 km	
	5.72-5.850 GHz	5mi/8.05km		10mi/16.1 km	
	<b>NEAR LINE OF SIGHT</b>				
	Integrated Antenna	6 Mbps – Near Line of Sight			
	5.15-5.35 Ghz	3mi/4.8km			
	5.72-5.850 GHz	3mi/4.8km			
	External Antenna				
	2.4-2.435 Ghz	3.1mi/5km			
	5.15-5.35 Ghz	2.1mi/3.8 km			
	5.72-5.850 GHz	2.1mi/3.8 km			
Minimum fade margin, 99.995% or better availability; average terrain/climate; no unusual multipath; proper path clearance (0.6F1).					

<b>System Processor and Memory</b>	<ul style="list-style-type: none"> <li>• 166MHz Motorola 8241 processor</li> <li>• 16 Mbytes RAM</li> <li>• 8 Mbytes FLASH</li> </ul>
<b>Software Specification</b>	<p><b>BASE STATION AND SUBSCRIBER UNITS</b></p> <hr/> <p>Key Features</p> <hr/> <ul style="list-style-type: none"> <li>• WOPR Protocol</li> <li>• Dynamic Data Rate Selection</li> <li>• Transmit Power Control</li> <li>• Antenna Alignment</li> <li>• Integrity Check for Software Upload</li> <li>• 5, 10, 20MHz channels</li> <li>• Mobility with auto-scanning, 40 ms handoff times</li> <li>• QoS Support; up to 8 classes of service, up to 8 services flows per class</li> <li>• Adjustable Satellite Density</li> <li>• Dynamic Frequency Selection</li> </ul> <hr/> <p>Bridging and Routing</p> <hr/> <ul style="list-style-type: none"> <li>• Bridge (802.1D)</li> <li>• Spanning Tree (802.1D)</li> <li>• IP/RIPv1(RFC 1058)</li> <li>• IP/RIPv2(RFC 1388)</li> <li>• CIDR (RFC 1519)</li> <li>• ICMP(RFC 792)</li> <li>• IP(RFC 791)</li> <li>• ARP(RFC 826)</li> </ul> <hr/> <p>Filtering</p> <hr/> <ul style="list-style-type: none"> <li>• Ethernet protocol (Ethertype)</li> <li>• Static MAC</li> <li>• Storm threshold</li> <li>• IP address</li> <li>• Broadcast protoco</li> </ul> <hr/> <p>Services</p> <hr/> <ul style="list-style-type: none"> <li>• DHCP Server (RFC 2131)</li> <li>• DHCP Client (RFC 2131)</li> <li>• Bi-Directional Bandwidth Control</li> <li>• VLAN</li> <li>• 802.1Q</li> </ul> <hr/> <p>Security Features</p> <hr/> <ul style="list-style-type: none"> <li>• MAC Authentication</li> <li>• Radios MAC Access Control</li> <li>• WEP/AES-OCB encryption</li> <li>• RADIUS (RFC 2138)</li> </ul> <hr/> <p>Mobility</p> <hr/> <ul style="list-style-type: none"> <li>• Subscriber Unit Roaming</li> </ul> <hr/> <p><b>BASE STATION UNIT</b></p> <hr/> <p>Filtering</p> <hr/> <ul style="list-style-type: none"> <li>• Intra Cell Blocking</li> </ul> <hr/> <p><b>SUBSCRIBER UNIT</b></p> <hr/> <p>Services</p> <hr/> <ul style="list-style-type: none"> <li>• NAT (RFC 3022)</li> <li>• DHCP Relay (RFC 2131)</li> </ul>

<b>Security</b>	<ul style="list-style-type: none"> <li>• WORP provides critical feature support for secure long-range wireless deployments in unlicensed frequency spectrum MD5 (embedded in WORP) authentication between BSU and SU</li> <li>• Filter based on packet information such as unicast/multicast/broadcast MAC or IP.</li> <li>• Secure "over the air encryption" with WEP, WEP+, AES, and AES-CCB.</li> <li>• Authentication via RADIUS Intracell blocking allows the BSU to act as the central policy enforcer for SU to SU communications</li> </ul>																						
<b>Management</b>	<ul style="list-style-type: none"> <li>• SU/BSU statistics</li> <li>• Link Test</li> <li>• Temperature logging</li> </ul> <table border="1" data-bbox="792 598 1513 758"> <tr><td>SNMPv1/v2</td><td>(RFC 1157)</td></tr> <tr><td>SNMP v2c</td><td>(RFC 1907)</td></tr> <tr><td>HTTP Server</td><td>(RFC 2616)</td></tr> <tr><td>Telnet</td><td>(RFC 855)</td></tr> <tr><td>TFTP client</td><td>(RFC 783)</td></tr> <tr><td>CLI</td><td></td></tr> </table> <table border="1" data-bbox="792 783 1513 915"> <tr><td>MIB-II</td><td>(RFC 1213)</td></tr> <tr><td>Ethernet-like MIB</td><td>(RFC 1643)</td></tr> <tr><td>Bridge MIB</td><td>(RFC 1493)</td></tr> <tr><td>802.3MAU</td><td>(RFC 1493)</td></tr> <tr><td>802.11MIB</td><td>(RFC 783)</td></tr> </table> <ul style="list-style-type: none"> <li>• Remote reboot (reload) or reset to factory default via power injector</li> <li>• Private MIB</li> <li>• Orinoco MIB</li> </ul>	SNMPv1/v2	(RFC 1157)	SNMP v2c	(RFC 1907)	HTTP Server	(RFC 2616)	Telnet	(RFC 855)	TFTP client	(RFC 783)	CLI		MIB-II	(RFC 1213)	Ethernet-like MIB	(RFC 1643)	Bridge MIB	(RFC 1493)	802.3MAU	(RFC 1493)	802.11MIB	(RFC 783)
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<b>Status LEDs</b>	<ul style="list-style-type: none"> <li>• Two indicators on the RJ-45 connector to indicate             <ul style="list-style-type: none"> <li>• Wireless Traffic</li> <li>• Ethernet Traffic</li> </ul> </li> </ul>																						
<b>Status LEDs</b>	<b>RS-232 SERIAL PORT</b> <ul style="list-style-type: none"> <li>• Rj11 port built-into the unit</li> <li>• DB9 Female via a converter (included)</li> </ul>																						
<b>Compliance and Standards</b>	<b>SAFETY</b> <table border="1" data-bbox="792 1335 1513 1446"> <tr><td>• UL</td><td>60950, UI50</td></tr> <tr><td>• CSA</td><td>22.2 No. 60950-00</td></tr> <tr><td>• IEC</td><td>60950 3<sup>rd</sup> Ed (1999)</td></tr> </table> <b>RADIO APPROVALS</b> <table border="1" data-bbox="792 1503 1513 1635"> <tr><td>• USA</td><td>FCC 15.107, 15-109, 15-203-15-205, 15-207, 15-209; 15.401-15.407</td></tr> <tr><td>• Canada</td><td>RSS-102; RSS-210; ICES-003</td></tr> <tr><td>• IEC</td><td>60950 3<sup>rd</sup> Ed (1999)</td></tr> </table> <b>REMI AND SUSCEPTIBILITY (CLASS B)</b> <table border="1" data-bbox="792 1692 1513 1761"> <tr><td>• USA</td><td>FCC Part 15.107</td></tr> <tr><td>• Canada</td><td>ICES-003</td></tr> </table> <b>WATER AND DUST PROOF</b> <ul style="list-style-type: none"> <li>• NEMA4/IP66</li> </ul>	• UL	60950, UI50	• CSA	22.2 No. 60950-00	• IEC	60950 3 <sup>rd</sup> Ed (1999)	• USA	FCC 15.107, 15-109, 15-203-15-205, 15-207, 15-209; 15.401-15.407	• Canada	RSS-102; RSS-210; ICES-003	• IEC	60950 3 <sup>rd</sup> Ed (1999)	• USA	FCC Part 15.107	• Canada	ICES-003						
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<b>Electrical</b>	<p><b>POE POWER INJECTOR</b></p> <ul style="list-style-type: none"> <li>Custom Power over Ethernet (802.3af compatible)</li> </ul> <table border="1"> <tr> <td>Input</td> <td>Voltage 110 to 250 VAC (47-63Hz)</td> </tr> <tr> <td>Output:</td> <td>48 VDC @ 420mA MAX (Injected into the Cat-5 Cable)</td> </tr> </table> <ul style="list-style-type: none"> <li>Pin for Remote reboot (reload) or reset to factory default</li> </ul> <p><b>OUTDOOR RADIO UNIT</b></p> <ul style="list-style-type: none"> <li>Power Consumption 7.5W typical. Up to 20 Watts across full operating temperature range</li> <li>Input Voltage: 48 to 60 VDC</li> </ul>	Input	Voltage 110 to 250 VAC (47-63Hz)	Output:	48 VDC @ 420mA MAX (Injected into the Cat-5 Cable)																
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<b>Environmental</b>	<p><b>OPERATING</b></p> <ul style="list-style-type: none"> <li>-33° to 60° C (-27.5° to 140° Fahrenheit)</li> <li>100% humidity</li> <li>Wind loading: 125mph</li> </ul> <p><b>STORAGE</b></p> <ul style="list-style-type: none"> <li>-55° to 80° C (-41° to 176° Fahrenheit)</li> <li>100% humidity</li> </ul>																				
<b>Packaging Contents</b>	<p><b>BASE STATION OR SUBSCRIBER UNIT</b></p> <ul style="list-style-type: none"> <li>One Tsunami MP.11 HS Model 245054</li> <li>One wall/pole mounting bracket</li> <li>One Power-Over-Ethernet injector</li> <li>One Country Specific Power Cord</li> <li>One PoE Surge protector for use near outdoor installed radio</li> <li>One Ethernet cable weather-proof kit</li> <li>Two Antenna Surge Protectors</li> <li>One 6 foot grounding cable</li> <li>One CD with Documentation and Software</li> <li>One Quick Start Guide printed documentation</li> <li>One registration card</li> </ul>																				
<b>MTBF</b>	<ul style="list-style-type: none"> <li>-100,000 hrs</li> </ul>																				

Warranty	ONE YEAR
1	Check with local regulatory agency for certain restrictions
2	<p>PMP configuration (1BS to 4 SU) using USA regulations for L and U bands, ETSI regulations for M bands</p> <ul style="list-style-type: none"> <li>• Base Station Antenna (60° Sector, 17 dBi) with short 1dB jumper cable</li> <li>• Subscriber Antenna, external 5GHz (23dB Directional Patch antenna) with short 1dB jumper cable</li> <li>• Subscriber Antenna, external 2.4GHz (12dB Directional Patch antenna) with short 1dB jumper cable</li> </ul> <p>PTP configuration (1BS to 1 SU) using USA regulations for L and U bands, ETSI regulations for M bands</p> <ul style="list-style-type: none"> <li>• Base Station External Antenna (Parabolic Grid, 29dB) with short 1dB jumper cable</li> <li>• Subscriber Antenna, external 5GHz (29dB Parabolic Grid antenna) with short 1dB jumper cable</li> <li>• Subscriber Antenna, external 2.4GHz (24dB Parabolic Grid antenna) with short 1dB jumper cable</li> </ul> <p>Clear LOS (Line of Sight)</p> <ul style="list-style-type: none"> <li>• 99.995 availability</li> <li>• Fade margin minimum of 10dB to 2 miles, 0.2dB additional fade margin for every 0.1 mile to 15 dB</li> <li>• Predicted availability &gt; 99.000% (one-way) for all configurations</li> <li>• Distance calculations for 5 and 10 MHz channels are comparable for ETSI regulatory domains. Proper TPC settings (3 and 6 dB) respectively, should be set to meet power density rules. Increased distances are possible in the US with proper link engineering</li> </ul> <p>Near LOS (Line of Sight)</p> <ul style="list-style-type: none"> <li>• 40-50% visibility</li> <li>• Distance, Typically &lt; 2.5miles</li> </ul>



Proxim Wireless Corporation  
[www.proxim.com](http://www.proxim.com)

For detailed technical specifications, please go to [http://www.proxim.com/products/mp11\\_hs](http://www.proxim.com/products/mp11_hs)

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