



# Tsunami MP.11 Model 2454-R and 5054-R

## Wireless Point-to-Multipoint System

### APPLICATIONS

- Emergency First Responders**  
 Critical information delivery such as medical data and video feeds during in-progress events
- Enterprise Campus Connectivity**  
 Extend main network to remote branch offices, warehouses or other out buildings without leased line
- Mobile Hot Spot**  
 On-demand entertainment and broadband access solutions for ferry, transit busses and railway system commuters

### The Next-Generation Broadband Wireless Access Solution

Like all Proxim products, the 2454-R and 5054-R continues to offer a comprehensive feature set to future-proof wireless networks.

- With a Peltier heating and cooling technology inside a ruggedized enclosure, the 5054-R can be deployed in extreme weather conditions
- Frequency support for 2.4 GHz with 13 total channels, three 5 GHz bands (5.25, 5.47 and 5.725) GHz with 20 non-overlapping channels and scalable performance from 6 to 36 Mbps - all selectable via simple user interfaces
- Advanced revenue-enhancing features are standard - including flexible bandwidth provisioning for DSL, T1 or Ethernet-like tiered services as well as NAT and DHCP for IP-based storage and e-mail hosting

### Paving the Path to WiMAX Today

Drawing on Proxim's leadership in the WiMAX arena, the 2454-R and 5054-R have been developed as platforms to enable WiMAX applications. By taking advantage of the readily available 2.4 and 5 GHz frequency spectrums, businesses can provision a service quickly, gain an early foothold on the market and be assured of a smooth transition to the WiMAX family of products.

- Equipped with software features to address the WiMAX markets such as: mobile hot-spot, MAN, cost-effective last mile access, security and surveillance

- Migration plan to support future WiMAX customers allowing business growth and network scalability
- Investment protection through common concept of network design and software feature sets, which includes mobile roaming, rich management capabilities, most advanced encryption with AES and authentication via RADIUS, antenna alignment utility, and revenue-enhancing services with bandwidth control, NAT/ DHCP

### Mobile Roaming Enables New Applications

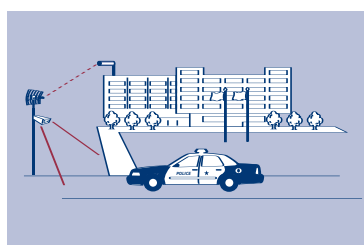
Proxim innovation delivers another wireless industry first - mobile roaming of Subscriber Units (SU) between Base Station Units (BSU). Public safety first responder networks, transportation system monitoring and telemetry and mobile security and surveillance are now all possible with a low cost, robust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

- Fast handoff at speeds up to 200 km per hour (120 miles per hour)
- Customizable roaming parameter maintains minimum bandwidth required for application performance

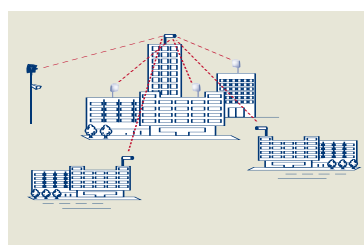
### Adaptive Wireless Network Optimizes Performance

Using advanced OFDM technology and Wireless Outdoor Routing Protocol (WORP), 2454-R and 5054-R networks dynamically adapt to the ever-changing network load for optimum performance.

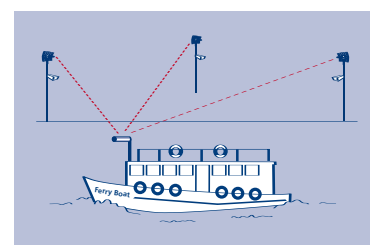
- WORP adapts to avoid collisions and maximizes data content with each transmission



Emergency First Responders



Enterprise Campus Connectivity



Mobile Hot Spots

## APPLICATIONS

### • Security and Surveillance

Wireless solutions for bandwidth-intensive and high-definition IP-surveillance cameras located at important city and transportation infrastructure such as airports, bridges and trains

### • Business and Residential Last Mile Access

Competitive broadband service alternative to DSL or cable modems for residences and T1 or Ethernet for businesses

### • Metropolitan Area Networks

Secure and reliable connectivity between city buildings

- Dynamic Data Rate Selection automatically compensates for temporary link degradation maintaining robust connectivity and mitigating service calls

#### Advanced Security Protects Privacy

Multiple security mechanisms protect operator, residential customer and enterprise privacy.

- Weatherized enclosure allows colocation on rooftops – limiting physical access
- Proxim's Wireless Outdoor Routing Protocol (WORP) prevents snooping common to Wi-Fi systems
- Advanced encryption protects over-the-air transmission
- Intracell blocking forbids direct communication between Subscriber Units
- BSU and SU mutual authentication eliminates unauthorized use of system by rogue SUs and man-in-the-middle attacks
- Password protection of all remote management methods

#### Designed for Fast Installation and Lower Maintenance Cost

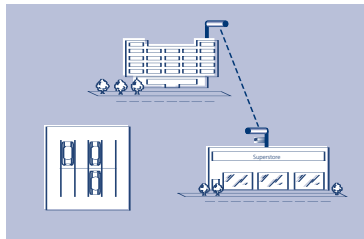
The 2454-R and 5054-R incorporates hardware and software features that reduce labor costs associated with initial deployment and post-sales maintenance.

- Decrease Subscriber Unit configuration time with integrated and vertical/ horizontal polarized antennas
- Eliminate guess work in locating the remote antennas with audible tone and real-time signal strength measurements
- Support for both local and remote management, removing the need for expensive on-site supports

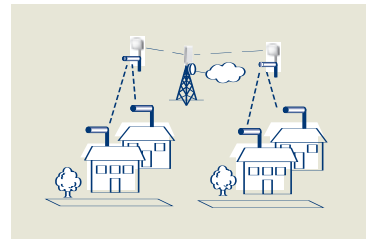
#### Investment Protection for Current Tsunami MP.11 Model 5054 (MP.11a) customers

Both the 5054 and the 5054-R can be deployed together with full interoperability and backward compatibility.

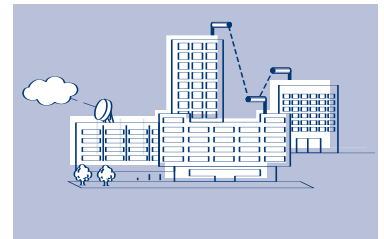
- No new training required with identical software and user interfaces
- Common accessories such as antennas, cables and surge arrestors reduce spare inventory
- Expanding a 5054 network by adding new 5054-Rs can be done incrementally and non-disruptively



Security and Surveillance



Last Mile Access



Metropolitan Area Networking

# Tsunami MP.11 Model 2454-R and 5054-R Specifications

## About Proxim

Proxim Corporation is a global leader in wireless networking equipment for Wi-Fi and broadband wireless networks. Proxim provides solutions for mobile enterprise applications, security and surveillance, last mile access, voice and data backhaul, public hot spots, and metropolitan area networks. Product families include ORINOCO Wi-Fi products, Tsunami Ethernet bridges, and Lynx point-to-point digital radios.

## PERFORMANCE AND SCALABILITY

Best-in-class performance with WORP	By eliminating in-the-air collisions and maximizing data content for each transmission, WORP (Wireless Outdoor Router Protocol) significantly improves performance
Near line of sight capable	Line of sight and near line of sight connectivity extends deployment flexibility in rural as well as high-density urban areas
Highest performance per cell	Supports 6 sectors per cell with an aggregate data rate of 216 Mbps and throughput of 144 Mbps
Dense subscriber support per cell	Supports up to 1,500 subscribers with 6 sectors
Guaranteed data rate while roaming	Allows bandwidth-intensive applications, such as high-definition video streaming, in mobile environments

## SECURITY

Unicast, multicast and broadcast storm control	User definable threshold levels prevent excessive bandwidth consumptions from degrading network performance
Packet filtering	MAC, Ethertype, IP address filtering provides very granular networks security
Intracell blocking	Allows the BSU to act as the central policy enforcer for SU to SU communications, further enhancing subscriber units' privacy
WORP as a secure protocol	Unsnootable by wireless decryptors, WORP provides critical feature support for secure long-range wireless deployments in unlicensed frequency spectrum
Secure encryption and authentication	Supports for WEP, WEP+ and AES for "over the air" encryptions and Radius for user authentication
Interference mitigation tool	Variable Receive Threshold, Transmit Power Control and Dynamic Frequency Selection

## LOWER COST OF OWNERSHIP

Dynamic Data Rate Selection (DDRS)	Automatically optimizes throughput as link conditions change or as subscribers roam. Connectivity is automatically maintained when link quality degrades
Flexible and secure remote management	Supports remote management via Telnet, SNMP and web interfaces with password protections
Antenna alignment tool	Audible tone and CLI with running statistics displaying real-time signal strength ease antenna system installation
Comprehensive station statistics	Unit and group statistics are available for monitoring, planning and management of a wireless network
Lower recurring lease cost	Co-locating unit on rooftops with plenty of available space, lowers lease cost
Options for subscriber units with type-N or integrated antenna	Subscriber unit with type-N connector supports a broad selection of standard-based external antennas and subscriber unit with integrated antennas supports dual polarizations, vertical and horizontal, to minimize installation time
Extreme Operating Temperature	Rated for -33° to 60° Celcius, the 2454-R and 5054-R can be deployed in hot or cold outdoor climates
Remote Reboot	System reboot or reset to factory default can be performed remotely via a power injector button

## PRODUCT MODELS

5054-BSUR	Tsunami MP.11 Model 5054-R Base Station Unit with Type-N Connector
5054-SUA	Tsunami MP.11 Model 5054-R Subscriber Unit with Type-N Connector
5054-SUR	Tsunami MP.11 Model 5054-R Subscriber Unit with Integrated 23-dBi Antenna
2454-BSUR	Tsunami MP.11 Model 2454-R Base Station Unit with Type-N Connector
2454-SUA	Tsunami MP.11 Model 2454-R Subscriber Unit with Type-N Connector
2454-SUR	Tsunami MP.11 Model 2454-R Subscriber Unit with Integrated 16-dBi Antenna

## INTERFACES

Wired Ethernet	10/100Base-TX Ethernet (RJ-45)
Wireless Protocol	WORP
Antenna Connector	Standard-N female (only for BSU and SU with Type-N connector)

## RADIO AND TRANSMISSION SPECIFICATIONS

Modulation Method	OFDM
Unlicensed Frequencies	
Model 5054-R	Americas (FCC): 5.25-5.35 GHz (3 channels); 5.725-5.850 GHz (5 channels) Europe (ETSI): 5.47-5.725 GHz (11 channels)
Model 2454-R	Americas (FCC): 2.4-2.4835 GHz (11 channels) Europe (ETSI): 2.4-2.4835 GHz (13 channels) France: 2.4465-2.4835GHz (4 channels) Japan: 2.4-2.497 GHz (14 channels)
Licensed Frequency	UK: 5.725 - 5.850 GHz (4 channels)
Data Rate	36, 24, 18, 12, 9, 6, 4.5, 3, 2.25, 1.5 Mbps

## UNIT PHYSICAL SPECIFICATIONS

Dimension	
Packaged :	14.57 x 13.70 x 8.19 in (370 x 348 x 208 mm)
Unpackaged: (BSUR and SUA)	10.5 x 10.5 x 3.25 in (267 x 267 x 83 mm)
Unpackaged (SUR):	12.60 x 12.60 x 3.50 in (320 x 320 x 89 mm)

## Weight

Packaged (BSUR and SUA):	9.2 lbs (4.2 kg)
Unpackaged weight (BSUR and SUA):	5.5 lbs (2.49 kg)
Packaged weight (SUR):	10.1 lbs (4.6 kg)
Unpackaged weight (SUR):	6.0 lbs (2.72 kg)

## ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating:	-33° to 60°C (-27.5° to 140° Fahrenheit)
Storage:	-55° to 80°C (-41° to 176° Fahrenheit)
Humidity	
Operating:	Max 95% relative humidity (non-condensing)
Storage:	Max 95% relative humidity (non-condensing)
Water and Dust Proof	IP65

## ELECTRICAL

Power Injector	
Radio Input:	Voltage 110 to 250 VAC
Radio Output:	Current 420mA at 48V
Power Consumption:	Maximum 20 Watt

## MANAGEMENT

Local Management	RS-232 serial (RJ11 and DB-9)
Remote Management	Telnet, Web GUI, TFTP
SNMP	SNMPv1/v2; MIB-II ; Ethernet-like MIB; Bridge MIB; 802.3MAU; 802.11 MIB; Private MIB; ORINOCO MIB; RFC 1157; RFC 1213; RFC 1643; RFC 1493; RFC 2668

## MTBF AND WARRANTY

100,000 hours; 1-year on parts and labor

## PACKAGE CONTENTS

Tsunami MP.11 Model 2454-R and 5054-R Base Station or Subscriber Unit, wall/ pole mounting bracket, power injector for 2454-R and 5054-R, country specific power cord, Ethernet cable weather-proof plug, Documentation and Software CD-ROM

For detailed technical specifications, please go to <http://www.proxim.com/products/bwa/multipoint/mp11-R/techspecs.html>

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