



#### **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 buses and railway system commuters

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

## Wireless Point-to-Multipoint System

#### The Next-Generation Broadband Wireless Access Solution

Like all Proxim products, the 2454-R and 5054-R continue 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, four 5 GHz bands (5.15, 5.25, 5.47 and and 5.725) GHz with 80+ 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**

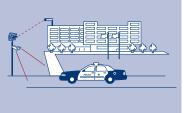
Proxim innovation delivers another wireless industry first - mobile roaming of Subscriber Units (SU) between Base Station Units (BSU). Public safety first responder networks, transportation system monitoring and telemetry, and mobile security and surveillance are now all possible with a low cost, robust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

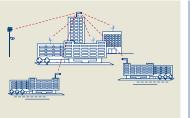
#### Adaptive Wireless Network Optimizes Performance

Using advanced OFDM technology and Wireless Outdoor Routing Protocol (WORP), 2454-R and 5054-R networks dynamically adapt to the everchanging 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 IPsurveillance 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

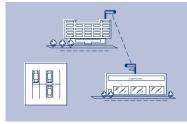
The 2454-R and 5054-R incorporate hardware and software features that reduce labor costs associated with initial deployment and post-sales maintenance.

- 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

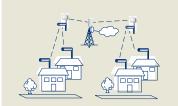
#### Investment Protection for Current Tsunami MP.11 Model 5054 (MP.11a) customers

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-topoint digital radios.

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LOWER COST OF OWNERSI           Dynamic Data Rate Selection (DDF           Previble and secure remote manag           Antenna alignment tool           Comprehensive station statistics           Lower recurring lease cost           Options for subscriber units with ty           integrated antenna           Extreme Operating Temperature           Remote Reboot           PRODUCT MODELS           5054-SUR         Tsunan           Unit w           5054-SUR         Tsunan           Unit w           2454-SUR         Tsunan           Unit w         Wired Ethernet           Wired Ethernet         10/100           Wireless Protocol         WORP           Antenna Connector         Standa           Type-N         RADIO AND TRANSMISSION SPE           Modulation Method         OFDM	RS) ement pe-N or ni MP.11 Mc ith Type-N C ni MP.11 Mc	Automatically optimizes thr is automatically maintained Supports remote managem Audible tone and CLI with a installation Unit and group statistics are Co-locating unit on rooftops Subscriber unit with type-No subscriber unit with integrat minimize installation time Rated for –33° to 60° Celciu System reboot or reset to far odel 5054-R Base Station Connector	roughput as link condition: when link quality degrade ent via Telnet, SNMP and running statistics displayin available for monitoring, p s with plenty of available sp connector supports a broac ed antennas supports dual is, the 2454-R and 5054-R ctory default can be perforr Weight Packaged (BSUR and Unpackaged weight (	s change or as subscribers ro es web interfaces with passwor g real-time signal strength et anning and management of ace lowers lease cost I selection of standard-based polarizations, vertical and hor can be deployed in hot or col med remotely via a power inje SUA): 9 BSUA and SUA): 5	pam. Connectivity rd protections ase antenna system a wireless network external antennas; izontal, to d outdoor climates ector button .2 lbs (4.2 kg) .5 lbs (2.49 kg)	
Dynamic Data Rate Selection (DDF Flexible and secure remote manag Antenna alignment tool Comprehensive station statistics Lower recurring lease cost Options for subscriber units with ty integrated antenna Extreme Operating Temperature Remote Reboot PRODUCT MODELS 5054-SUR Tsunan Unit w 5054-SUR Tsunan Unit w 2454-SUR Tsunan Unit w NTERFACES Wired Ethernet 10/10C Wireless Protocol WORP Antenna Connector Standa Type-N RADIO AND TRANSMISSION SPE Modulation Method OFDM	RS) ement pe-N or ni MP.11 Mc ith Type-N C ni MP.11 Mc	is automatically maintained Supports remote managem Audible tone and CLI with n installation Unit and group statistics are Co-locating unit on rooftops Subscriber unit with oregrat minimize installation time Rated for –33° to 60° Celciu System reboot or reset to fac odel 5054-R Base Station Connector	I when link quality degrade eent via Telnet, SNMP and running statistics displayin available for monitoring, p s with plenty of available sp connector supports a broad ed antennas supports dual is, the 2454-R and 5054-R ctory default can be perforr Weight Packaged (BSUR and Unpackaged weight (	es web interfaces with passwor g real-time signal strength en anning and management of ace lowers lease cost I selection of standard-based polarizations, vertical and hor can be deployed in hot or col med remotely via a power inje SUA): 9 BSUA and SUA): 5	a wireless network external antennas; izontal, to d outdoor climates ector button .2 lbs (4.2 kg) .5 lbs (2.49 kg)	
Flexible and secure remote manag Antenna alignment tool Comprehensive station statistics Lower recurring lease cost Options for subscriber units with ty integrated antenna Extreme Operating Temperature Remote Reboot PRODUCT MODELS 5054-BSUR Tsunan Unit w 5054-SUR Tsunan Unit w 2454-SUR Tsunan Unit w	pe-N or pe-N or ni MP.11 Mc ith Type-N C ni MP.11 Mc	is automatically maintained Supports remote managem Audible tone and CLI with n installation Unit and group statistics are Co-locating unit on rooftops Subscriber unit with oregrat minimize installation time Rated for –33° to 60° Celciu System reboot or reset to fac odel 5054-R Base Station Connector	I when link quality degrade eent via Telnet, SNMP and running statistics displayin available for monitoring, p s with plenty of available sp connector supports a broad ed antennas supports dual is, the 2454-R and 5054-R ctory default can be perforr Weight Packaged (BSUR and Unpackaged weight (	es web interfaces with passwor g real-time signal strength en anning and management of ace lowers lease cost I selection of standard-based polarizations, vertical and hor can be deployed in hot or col med remotely via a power inje SUA): 9 BSUA and SUA): 5	a wireless network external antennas; izontal, to d outdoor climates ector button .2 lbs (4.2 kg) .5 lbs (2.49 kg)	
Antenna alignment tool Comprehensive station statistics Lower recurring lease cost Options for subscriber units with ty integrated antenna Extreme Operating Temperature Remote Reboot PRODUCT MODELS 5054-SUR Tsunan Unit w 5054-SUR Tsunan Unit w 2454-BSUR Tsunan Unit w 2454-SUR Tsunan Tsunan Type-N RADIO AND TRANSMISSION SPE Modulation Method OFDM	pe-N or ni MP.11 Mo ith Type-N C ni MP.11 Mo	Audible tone and CLI with I installation Unit and group statistics are Co-locating unit on rooftops Subscriber unit with type-N subscriber unit with integrat minimize installation time Rated for –33° to 60° Celciu System reboot or reset to far odel 5054-R Base Station Connector odel 5054-R Subscriber	running statistics displayin available for monitoring, p s with plenty of available sp connector supports a broac ed antennas supports dual s, the 2454-R and 5054-R - ctory default can be perforr Weight Packaged (BSUR and Unpackaged weight (	g real-time signal strength en anning and management of ace lowers lease cost I selection of standard-based polarizations, vertical and hor can be deployed in hot or col med remotely via a power inje SUA): 9 BSUR and SUA): 5	a wireless network external antennas; rizontal, to d outdoor climates ector button .2 lbs (4.2 kg) .5 lbs (2.49 kg)	
Comprehensive station statistics Lower recurring lease cost Options for subscriber units with ty integrated antenna Extreme Operating Temperature Remote Reboot PRODUCT MODELS 5054-BSUR Tsunan Unit w 5054-SUR Tsunan Unit w 2054-SUR Tsunan Unit w 2454-BSUR Tsunan Unit w 2454-SUR Tsunan Unit w	ni MP.11 Mo ith Type-N C ni MP.11 Mo	installation Unit and group statistics are Co-locating unit on rooftops Subscriber unit with type-N ( subscriber unit with integrate minimize installation time Rated for -33° to 60° Celciu System reboot or reset to far odel 5054-R Base Station Connector odel 5054-R Subscriber	available for monitoring, p s with plenty of available sp connector supports a broac ed antennas supports dual is, the 2454-R and 5054-R ctory default can be perforr Weight Packaged (BSUR and Unpackaged weight (	anning and management of ace lowers lease cost I selection of standard-based polarizations, vertical and hor can be deployed in hot or col med remotely via a power inje SUA): 9 BSUR and SUA): 5	a wireless network external antennas; rizontal, to d outdoor climates ector button .2 lbs (4.2 kg) .5 lbs (2.49 kg)	
Lower recurring lease cost Options for subscriber units with ty integrated antenna Extreme Operating Temperature Remote Reboot PRODUCT MODELS 5054-BSUR Tsunan Unit w 5054-SUR Tsunan Unit w 5054-SUR Tsunan Unit w 2454-BSUR Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUR Tsunan Mathemation Of DM	ni MP.11 Mo ith Type-N C ni MP.11 Mo	Co-locating unit on rooftops Subscriber unit with type-N ( subscriber unit with integrate minimize installation time Rated for33° to 60° Celciu System reboot or reset to fact codel 5054-R Base Station Connector codel 5054-R Subscriber	s with plenty of available sp connector supports a broac ed antennas supports dual is, the 2454-R and 5054-R ctory default can be perfor Weight Packaged (BSUR and Unpackaged weight (	ace lowers lease cost I selection of standard-based polarizations, vertical and hor can be deployed in hot or col ned remotely via a power inje SUA): 9 BSUR and SUA): 5	external antennas; izontal, to d outdoor climates ector button .2 lbs (4.2 kg) .5 lbs (2.49 kg)	
Options for subscriber units with typintegrated antenna         Extreme Operating Temperature         Remote Reboot         PRODUCT MODELS         5054-BSUR       Tsunan         5054-SUA       Tsunan         Unit w         5054-SUR       Tsunan         Unit w         5054-SUR       Tsunan         Unit w         5054-SUR       Tsunan         Unit w         2454-SUR       Tsunan         Unit w         2454-SUA       Tsunan         Unit w         2454-SUR       Tsunan         Unit w         2454-SUR       Tsunan         Unit w         2454-SUR       Tsunan         Unit w         Vired Ethernet       10/10C         Wired Ethernet       10/10C         Wireless Protocol       WORP         Antenna Connector       Standa         Type-N       RADIO AND TRANSMISSION SPE         Modulation Method       OFDM	ni MP.11 Mo ith Type-N C ni MP.11 Mo	Subscriber unit with type-N ( subscriber unit with integration minimize installation time Rated for -33° to 60° Celciu System reboot or reset to factor System reboot or reset to factor codel 5054-R Base Station Connector codel 5054-R Subscriber	connector supports a broad ed antennas supports dual is, the 2454-R and 5054-R ctory default can be perfore Weight Packaged (BSUR and Unpackaged weight (	I selection of standard-based polarizations, vertical and hor can be deployed in hot or col med remotely via a power inje SUA): 9 BSUR and SUA): 5	d outdoor climates ector button .2 lbs (4.2 kg) .5 lbs (2.49 kg)	
integrated antenna Extreme Operating Temperature Remote Reboot PRODUCT MODELS 5054-BSUR Tsunan Unit w 5054-SUR Tsunan Unit w 5054-SUR Tsunan Unit w 2454-BSUR Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUR Tsunan Unit w NTERFACES Wired Ethernet 10/10C Wireless Protocol WORP Antenna Connector Standa Type-N RADIO AND TRANSMISSION SPE Modulation Method OFDM	ni MP.11 Mo ith Type-N C ni MP.11 Mo	subscriber unit with integrat minimize installation time Rated for33° to 60° Celciu System reboot or reset to fac odel 5054-R Base Station Connector odel 5054-R Subscriber	ed antennas supports dual is, the 2454-R and 5054-R ctory default can be perforn Weight Packaged (BSUR and Unpackaged weight (	polarizations, vertical and hor can be deployed in hot or col med remotely via a power inje SUA): 9 BSUA and SUA): 5	d outdoor climates ector button .2 lbs (4.2 kg) .5 lbs (2.49 kg)	
Remote Reboot PRODUCT MODELS 5054-BSUR Tsunan Unit w 5054-SUA Tsunan Unit w 5054-SUR Tsunan Unit w 2454-BSUR Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUR Tsunan Unit w 2454-SUR Tsunan Unit w PAther 10/100 Wireless Protocol WORP Antenna Connector Standa Type-N RADIO AND TRANSMISSION SPE Modulation Method OFDM	ith Type-N C ni MP.11 Mo	System reboot or reset to far odel 5054-R Base Station Connector odel 5054-R Subscriber	ctory default can be perforr Weight Packaged (BSUR and Unpackaged weight (	ned remotely via a power inje SUA): 9 BSUR and SUA): 5	ector button .2 lbs (4.2 kg) .5 lbs (2.49 kg)	
PRODUCT MODELS 5054-BSUR Tsunan 5054-SUA Tsunan Unit w 5054-SUR Tsunan Unit w 2454-BSUR Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUR Tsunan 2454-SUR Tsunan	ith Type-N C ni MP.11 Mo	odel 5054-R Base Station Connector odel 5054-R Subscriber	Weight Packaged (BSUR and Unpackaged weight (	SUA): 9 BSUR and SUA): 5	.2 lbs (4.2 kg) .5 lbs (2.49 kg)	
5054-BSUR     Tsunan Unit w       5054-SUA     Tsunan Unit w       5054-SUR     Tsunan Unit w       2054-SUR     Tsunan Unit w       2454-BSUR     Tsunan Unit w       2454-SUA     Tsunan Unit w       2454-SUR     Tsunan Unit w       2454-SUR     Tsunan Unit w       NTERFACES     WoRP       Antenna Connector     Standa Type-N       RADIO AND TRANSMISSION SPE     Wodulation Method	ith Type-N C ni MP.11 Mo	Connector odel 5054-R Subscriber	Packaged (BSUR and Unpackaged weight (	BSUR and SUA): 5	.5 lbs (2.49 kg)	
Unit w 5054-SUA Tsunan Unit w 5054-SUR Tsunan Unit w 2454-BSUR Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUR Tsunan Unit w NTERFACES Wired Ethernet 10/10C Wireless Protocol WORP Antenna Connector Standa Type-N RADIO AND TRANSMISSION SPEC Viodulation Method OFDM	ith Type-N C ni MP.11 Mo	Connector odel 5054-R Subscriber	Packaged (BSUR and Unpackaged weight (	BSUR and SUA): 5	.5 lbs (2.49 kg)	
5054-SUA     Tsunan       5054-SUR     Tsunan       2454-BSUR     Tsunan       Unit w     2454-SUA       2454-SUA     Tsunan       Unit w     2454-SUA       2454-SUR     Tsunan       Unit w     2454-SUA       2454-SUR     Tsunan       Unit w     2454-SUR       Wired Ethernet     10/10C       Wireless Protocol     WORP       Antenna Connector     Standa       Type-N     RADIO AND TRANSMISSION SPE       Modulation Method     OFDM	ni MP.11 Mo	odel 5054-R Subscriber				
5054-SUR     Tsunan Unit w       2454-BSUR     Tsunan Unit w       2454-SUA     Tsunan Unit w       2454-SUR     Tsunan Unit w       2454-SUR     Tsunan Unit w       2454-SUR     Tsunan Unit w       Wired Ethernet     10/10C       Wireless Protocol     WORP       Antenna Connector     Standa Type-N       RADIO AND TRANSMISSION SPE     Modulation Method     OFDM	ith Type_N C	Connector			0.1 lbs (4.6 kg)	
Unit w 2454-BSUR Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUR Tsunan Unit w NTERFACES Wired Ethernet 10/10C Wireless Protocol WORP Antenna Connector Standa Type-N RADIO AND TRANSMISSION SPE Modulation Method OFDM	Unit with Type-N Connector Tsunami MP.11 Model 5054-R Subscriber		Unpackaged weight (		.0 lbs (2.72 kg)	
2454-BSUR Tsunan Unit w 2454-SUA Tsunan Unit w 2454-SUR Tsunan Unit w 2454-SUR Unit w INTERFACES Wired Ethernet 10/10C Wireless Protocol WORP Antenna Connector Standa Type-N RADIO AND TRANSMISSION SPE Modulation Method OFDM		odel 5054-R Subscriber ed 23-dBi Antenna	ENVIRONMENTAL SE Temperature	PECIFICATIONS		
2454-SUA Tsunan Unit w 2454-SUR Tsunan Unit w NTERFACES Wired Ethernet 10/10C Wireless Protocol WORP Antenna Connector Standa Type-N RADIO AND TRANSIMISSION SPE Modulation Method OFDM		odel 2454-R Base Station	Operating: Storage:	-33° to 60°C (-27.5° to 140° Fahrenheit) -55° to 80°C (-41° to 176° Fahrenheit)		
2454-SUR Tsunan Unit w INTERFACES Wired Ethernet 10/10C Wireless Protocol WORP Antenna Connector Standa Type-N RADIO AND TRANSMISSION SPET Modulation Method OFDM	ni MP.11 Mo	odel 2454-R Subscriber	Humidity	55 10 60 C (41 10		
INTERFACES Wired Ethernet 10/10C Wireless Protocol WORP Antenna Connector Standa Type-N RADIO AND TRANSMISSION SPE Modulation Method OFDM	ni MP.11 Mo	odel 2454-R Subscriber	Operating: Storage:	Max 100% relative hu Max 100% relative hu		
Wired Ethernet     10/100       Wireless Protocol     WORP       Antenna Connector     Standa       Type-N     Type-N       RADIO AND TRANSMISSION SPEC     Modulation Method     OFDM	Infinitegrate	ed 18-dBi Antenna	Water and Dust Proof	IP65		
Wireless Protocol         WORP           Antenna Connector         Standa           Type-N         Type-N           RADIO AND TRANSMISSION SPEC         Vodulation Method         OFDM	Baso-TX Eth	hernet (RJ-45)	ELECTRICAL			
Antenna Connector Standa Type-N RADIO AND TRANSMISSION SPE Modulation Method OFDM	Dase-IA Eu	lieinet (10-43)	Power Injector			
Type-N RADIO AND TRANSMISSION SPE Modulation Method OFDM	rd-N female	e (only for BSU and SU with	Input: Output:	Voltage 110 to 250 VA Current 420mA at 48		
Modulation Method OFDM	connector)		Power Consumption:	Maximum 20 Watt	v	
	CIFICATION	IS	Power over Ethernet:	Via RJ-45 Ethernet inte	erface port	
Inlicensed Frequencies			MANAGEMENT			
Unlicensed Frequencies			Local Management	RS-232 serial (RJ11 and	d DB-9)	
		5.25-5.35 GHz (15 channels)	Remote Management	Telnet, Web GUI, TFTP		
Europe (ETSI): 5.4 Europe (Russia): 5.		725-5.850 GHz (21 channels) 7-5.725 GHz (46 channels) .15-5.850 GHz (82 channels) n the UK): 5.725- 5.850 GHz	SNMP	SNMPv1/v2; MIB-II ; Et MIB; 802.3MAU; 802. ORiNOCO MIB; RFC 1 RFC 1643; RFC 1493;	11 MIB; Private MIB; 157; RFC 1213;	
Model 2454-R Americ Europe	(21 Channels) Americas (FCC): 2.4-2.4835 GHz (13 channels) Europe (ETSI): 2.4-2.4835 GHz (13 channels) Japan (MKK): 2.4-2.497 GHz (14 channels)		MTBF AND WARRAN 100,000 hours; 1-year PACKAGE CONTENT	on parts and labor		
		6, 4.5, 3, 2.25, 1.5 Mbps	Tsunami MP.11 Model	2454-R and 5054-R Base Sta	ation or Subscriber Ur	
UNIT PHYSICAL SPECIFICATIONS		and the second	wall/ pole mounting b country specific powe	racket, power injector for 24 <sup>r</sup> cord, Ethernet cable weathe	54-R and 5054-R,	
Dimension		10 - (270 - 240 - 200 - )	Documentation and S			
5	. 12 70 5	19 in (370 x 348 x 208 mm) 5 in (267 x 267 x 83 mm)	RELATED PRODUCTS			
Unpackaged: 10.5 x (BSUR and SUA) Unpackaged (SUR): 12.60 :			Devices Over Ethernet /	PoE) Surge Arrestor (P/N #: 7 IP.11 or QB.11 (-R model ONI	0251); Spare Power E	

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

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