IMPORTANT!
Visit http://support.proxim.com for the latest safety and regulatory compliance information for this product.

Regulatory Compliance

Tsunami MP.11 Professional Installation Instructions

Model 954-R
Model 2454-R
Model 5054-R
Model 5054-R-LR
Model 5054 (MP.11a)

(May 2007)

Proxim wireless

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Tsunami MP.11 5054, 954-R, 2454-R, 5054-R, and 5054-R-LR Safety and Regulatory Guide
P/N 73081 May 2007

IMPORTANT!

Visit http://support.proxim.com for the latest safety and regulatory compliance information for this product.

Please read this document before installing and using your product, and save these instructions.

Safety and Regulatory Compliance Information

This document contains important safety and regulatory compliance information for the following products:

Product Family	Base Station SKUs	Subscriber Unit SKUs
Tsunami MP.11 Outdoor and Indoor Wireless Point-to-Multipoint System Model No. MP.11(-R)	954-BSUR-US 2411-BSU-AU 2411-BSU-BR 2411-BSU-EU 2411-BSU-JP 2411-BSU-UK 2411-BSU-US 5054-BSU-AU 5054-BSU-BR 5054-BSU-CN 5054-BSU-EU 5054-BSU-SK 5054-BSU-UK 5054-BSU-US(-WORLD) 2454-BSUR-AU 2454-BSUR-BR 2454-BSUR-CN 2454-BSUR-EU 2454-BSUR-SK 2454-BSUR-UK 2454-BSUR-US(-WORLD) 5054-BSUR-AU 5054-BSUR-BR 5054-BSUR-CN 5054-BSUR-EU 5054-BSUR-SK 5054-BSUR-UK 5054-BSUR-US(-WORLD) 5054-BSUR-LR-US	954-SUA-US 2411-SU-AU 2411-SU-BR 2411-SU-EU 2411-SU-JP 2411-SU-UK 2411-SU-US 5054-SU-AU 5054-SU-BR 5054-SU-CN 5054-SU-EU 5054-SU-SK 5054-SU-UK 5054-SU-US(-WORLD) 2454-SUA-AU 2454-SUA-BR 2454-SUA-CN 2454-SUA-EU 2454-SUA-SK 2454-SUA-UK 2454-SUA-US(-WORLD) 2454-SUR-AU 2454-SUR-BR 2454-SUR-CN 2454-SUR-EU 2454-SUR-SK 2454-SUR-UK 2454-SUR-US(-WORLD) 5054-SUR-LR-US 5054-SUA-AU 5054-SUA-BR 5054-SUA-CN 5054-SUA-EU 5054-SUA-SK 5054-SUA-UK 5054-SUA-US(-WORLD) 5054-SUR-AU 5054-SUR-BR 5054-SUR-CN 5054-SUR-EU 5054-SUR-SK 5054-SUR-UK 5054-SUR-US(-WORLD)

Please see the following sections for more information:

Safety Information (USA, Canada, & European Union)

These products have been evaluated to, and comply with, the U.S. and Canadian (Bi National) Standard for Safety of Information Technology Equipment, including Electrical Business Equipment, CANCSA C22.2, No. 60950-00 * UL 60950 3rd edition and IEC60950:1999, the Standard for the Safety of Information Technology Equipment.

All products are intended to be installed, used, and maintained by experienced telecommunications personnel only.

When using this device, basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and injury to persons, including the following:

WARNING: These units are intended for installation in accordance with Articles 110-18, 110-26, and 110-27, 725, 800, and 810 of the United States National Electric Code ANSINFPA 70, and per the applicable Articles in the Canadian National Electric Code.

- Operate and install these products as described in this manual. Equipment must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation provided.
- Installation of these products in the end use must conform to local regulations and codes.
- Products are to be used with and powered by only the power injector provided.
- A 15-amp circuit breaker is required at the power source.

WARNING: This equipment is intended to be grounded. A 10 AWG earthing conductor at a minimum is to be used for this purpose.

- Do not connect or disconnect the power cable to the equipment when the power injector is plugged into an AC power outlet.
- Servicing of these products should be performed only by trained personnel. Do not disassemble. By opening or removing any covers, you may expose yourself to hazardous energy parts. Incorrect reassembly of these products can cause a malfunction and/or electric shock when the units are subsequently used. No user serviceable parts; all repairs and service must be handled by a qualified service center.
- Do not insert any objects of any shape or size inside these products while powered on. Object may contact hazardous energy parts that could result in a risk of fire or personal injury.
- Do not remove or alter the Marking label provided on these products.
- To avoid the risk of electric shock from lightning, do not use these products during an electrical storm.
- When using these products with an external antenna, see the installation documentation provided with the antenna system.

Federal Communications Commission (FCC) Compliance

These products operate at the following frequencies in compliance with Part 15 of the FCC rules:

- **Model 954-R**: 902 MHz - 928 MHz
- **Model 2454-R**: 2.4 GHz
- **Model 5054, 5054-R, 5054-R-LR**: 5.25 GHz - 5.35 GHz and 5.75 - 5.85 GHz
- **Model 5054-R only:** 5.47-5.725GHz

Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

To comply with the FCC radio frequency exposure requirements, the following antenna installation and device operating configurations must be satisfied:

- Product models using external antennas require professional installation. The antennas used for professional installation must be fixed-mounted on indoor/outdoor permanent structures with a separation distance from all persons of at least 20 cm (approximately 8 inches) for the 954-R, 46 cm (approximately 18 inches) for 2454-R models, and 112 cm (approximately 44 inches) for 5054-R/-LR models.
- Model 5054 must be used indoors only and must be installed to provide a separation distance of at least 20 cm (8 inches) from all persons.
- Antennas must not be co-located and must not operate in conjunction with any other antenna or transmitter.

Modifications

The FCC requires the user to be notified that any changes or modifications to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The correction of interference caused by unauthorized modification, substitution or attachment will be the responsibility of the user. The manufacturer and its authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from failing to comply with these guidelines.

Warnings

This equipment generates, uses, and can radiate radio frequency energy; and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the distance between the equipment and the receiver
- Connect the equipment to an AC outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

In some situations or environments, the use of wireless devices may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may, for example, include the use of wireless equipment on board airplanes, or in any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies on the use of wireless equipment in a specific organization or environment (such as airports), you are encouraged to ask for authorization to use this device prior to turning on the equipment.

Information for Professional Installers

All products must be professionally installed, and the transmit power of the system must be adjusted by the professional installers to ensure that the system EIRP is in compliance with the limit specified by the regulatory authority of the country of application.

See the following sections for more information:

- Adjusting Tx Output Power
- Antenna Types and Maximum Gain

Adjusting Tx Output Power

NOTE: *When the system is set to transmit at the maximum power, professional installers must ensure that the maximum EIRP limit is not exceeded. To achieve this, they may have to add attenuation between the device and the antenna when a high gain antenna is used.*

Use the following formula in combination with the table of EIRP limits in US and EU countries to calculate system transmit power (based on EIRP limits) of these countries:

Tx Power (dBm) = *EIRP Limit (dBm) + FL (dB) – G (dB)*

where:

Tx Power = Output power measured at the antenna input

EIRP Limit = EIRP limits specified below

FL = Feeder loss including loss of connectors

G = Antenna Gain

Transmit output power can be reduced by using the **Transmit Power Control (TPC)** field on the **Configure > Interfaces > Wireless** screen. Refer to the *Installation and Management Guide* for more information.

Band	EIRP Limit (dBm)	
	USA and Canada	**EU**
902 - 928 MHz	36	NA
2.4 - 2.4835 GHz (Point-to-Multipoint)	36	20
2.4 - 2.4835 GHz (Point-to-Point)	When G < 6: 36 When G ≥ 6, use the following equation: $36 - \frac{G-6}{3}$	20
5.15 - 5.25 GHz	23	23
5.25 - 5.35 GHz	30	23
5.47 - 5.725 GHz	30	30
5.725 - 5.850 GHz (Point-to-Multipoint)	36	14
5.725 - 5.850 GHz (Point-to-Point)	No limit	14

Antenna Types and Maximum Gain

Professional installers should select only the antenna types listed in the following table, with gain not exceeding the listed maximum gain for each type.

Frequency Band	Antenna Type	Maximum Gain (dBi)
900 MHz	Omni	10
	Panel	12.5
	Sector	17
2.4 GHz	Omni	10
	Panel	17
	Yagi	14
	Parabolic	24
5 GHz	Omni	10
	Panel	28.2
	Sector	17
	Parabolic	33.4

Regulatory Compliance Certifications Summary

Model 954-R

Country	Certification/Reference No.
USA	In Process

Model 2454-R, 5054-R, and 5054

Country	Certification/Reference No.
Australia & New Zealand	N11394
Brazil	ANATEL Cert. No.:0267-05-1641
Canada	IC Cert. No.: 1856A-MP11RABG Safety: UL File No.: E243498
China	CMII ID: 2005AJ0190
European Union	CE 1313!
Japan	Radio Cert. Nos.: 003NY04140 0000
Mexico	COFETEL Cert. Nos.: RCPPR2405-077, TCPPR5005-040
Philippines	Radio Cert. Nos.: ESD-05021571, ESD-0502158C
Safety - CB Report	CB Lic. No.: US/8788/UL
South Korea	Radio Cert. No.: R-LARN-05-0042
Taiwan	DGT Cert. No: ETC094LPD0074
USA	FCC ID: HZB-MP11R-ABG Safety: UL File No.: E243498

Model 5054-R-LR

Country	Certification/Reference No.
Canada	IC Cert. No.: 1856A-5054LR
USA	FCC ID: HZB-5054-LR