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Tsunami Multipoint Base Station

Quick Install Guide

Note: To order a printed version of this document, order Part Number 66189

Part Number 66650r1

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Second Edition, November 2003

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IMPORTANT SAFETY INSTRUCTIONS

Review the *Tsunami Multipoint Installation Manual* and *Reference Manual* for important installation instructions BEFORE you attempt to install this product.

This product is to be installed, used, and maintained by experienced telecommunications personnel only.

This product has been evaluated to the U.S. and Canadian (Bi-National) Standard for Safety of Information Technology Equipment, Including Electrical Business Equipment, CAN/CSA C22.2, No. 950-985 * UL 1950, Third Edition, including revisions through revision date March 1, 1998, which are based on the Fourth Amendment to IEC 950, Second Edition. In addition, this product was also evaluated to the applicable requirements in UL 1950, Annex NAE.

WARNING! This unit is intended for installation in accordance with Articles 110-18, 110-26, and 110-27 of the United States National Electric Code ANSI/NFPA 70; and per Articles of the Canadian National Electric Code.

This equipment should be installed in accordance with Article 810 of the United States National Electrical Code.

Equipment is to be used with, and powered by, the power supply provided only.

Lightning surge protection is provided by the power supply included with this product while powered. Objects may contact hazardous energy parts that could result in a risk of fire or personal injury.

A 15-Amp circuit breaker is required at the power source.

WARNING! This equipment is to be earthed. See the Installation Manual for the proper grounding method. Use the provided 10AWG copper earthing conductor, or equivalent, for this purpose.

Do not connect or disconnect the power cable to the equipment when the power supply is plugged in an AC outlet.

Only trained personnel should perform servicing of this product. Do not disassemble this product. By opening or removing any covers, you may expose yourself to hazardous energy parts. Incorrect re-assembly of this product can cause a malfunction and/or electrical shock when the unit is subsequently used.

Do not insert any objects of any shape or size inside this product while powered. Objects may contact hazardous energy parts that could result in a risk of fire or personal injury.

Do not spill any liquids of any kind on or inside this product.

The maximum room ambient temperature (Tmra) for this product is –33 to +65 degrees Centigrade. The ambient temperature range for the power supply is 0-55 degrees Centigrade. Consideration should be given to installing this equipment in an environment compatible with the Tmra.

Equipment is suitable for mounting on concrete or other noncombustible surface only.

Do not remove or alter the Marking label provided on this product.

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Introduction

The following documents comprise the Tsunami Multipoint documentation set.

- The *Tsunami Multipoint BSU Quick Install* provides just enough information for the experienced professional to install the Tsunami Multipoint BSU.
- The *Tsunami Multipoint SU Quick Install* provides just enough information for the experienced professional to install the Tsunami Multipoint SU.
- The *Tsunami Multipoint Installation Guide* provides detailed installation information for the less experienced professional to install and initially configure the Tsunami Multipoint system. If you are uncertain about any of the procedures in the Quick Install, refer to this document on the Tsunami Multipoint CD.
- The *Tsunami Multipoint Reference Manual* provides conceptual, advanced configuration, and command reference information about the Tsunami Multipoint system.

This device must be professionally installed!

Deploying the Base Station Unit (BSU)

Make sure to record the serial number and site at which the BSU is installed. The serial number is required to obtain support from Proxim and is available only from the label on the back of the BSU.

Unpack the following from the contents of the shipping box. You will also need an additional Cat 5 cross-over or straight-through cable and a BSU power adapter (the BSU's power supply is ordered and shipped separately; the power supply's CPN number is 58526).

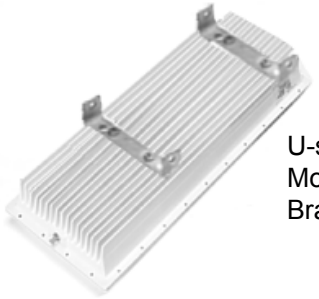


Make sure to record the serial number and site at which the BSU is installed. The serial number is required to obtain support from Proxim and is available only from the label on the back of the BSU.

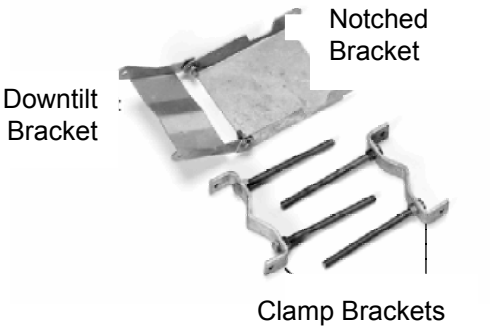
STEP 1: ASSEMBLE MOUNTING COMPONENTS

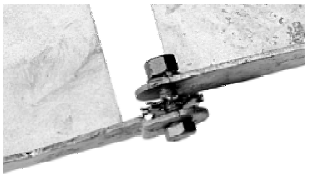
To assemble the BSU's mounting components:

1. Place the BSU face (transmitter side) down on a flat surface.
2. Attach the two (u-shaped) galvanized mounting brackets to the back of the BSU using the four stainless steel 3/8-16, hex head screws and four #3/8 split lock washers (see the following photo).



3. Insert two 1/2-13x7 1/2 screws through one of the clamp brackets (m-shaped) and secure the bolts using two 1/2-13 hex nuts. Repeat this step for the other set of 1/2-13x7 1/2 screws, clamp bracket, and 1/2-13 hex nuts.
4. Connect the down-tilt bracket to the notched bracket using two 3/8-16x1 1/4 hex head screws, #3/8 split lock washers, #3/8 (star) lock washers, and 3/8-16 hex nuts.



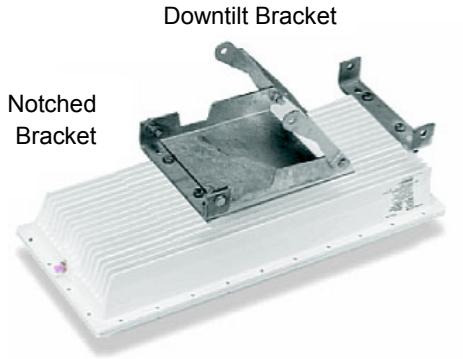


Bracket Assembly Detail

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5. Attach the down-tilt/notched bracket assembly to the U-shaped mounting bracket near the middle of the BSU using two sets of 3/8-16x1 1/4 hex head screws, #3/8 split lock washers, and 3/8-16 nuts.



This mounting method lets you point the BSU down when mounted on a pole; to point the BSU up, attach the down-tilt/notched bracket assembly to the u-shaped mounting bracket near the bottom of the BSU.

6. Attach one of the 1/2-13x7 1/2 screws/clamp bracket assemblies to the u-shaped mounting bracket near the end of the BSU using two sets of 3/8-16x1 1/4 hex head screws, #3/8 split lock washers, and 3/8-16 hex nuts. (In this configuration, the BSU points down when mounted on a pole.)
7. Attach the other 1/2-13x7 1/2 screws/clamp bracket assembly to the down-tilt bracket using two sets of 3/8-16x1 1/4 hex head screws, #3/8 split lock washers, and 3/8-16 hex nuts.

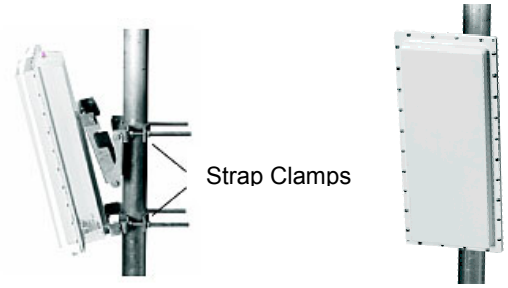


STEP 2: MOUNTING THE BSU TO A POLE

You can mount the outdoor component of your Tsunami Multipoint Base Station Unit directly to a pole with an outside diameter of 1-½ to 4-½ inches.

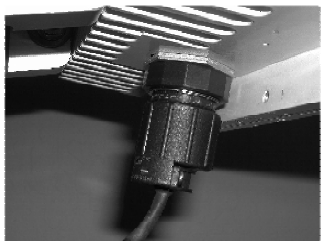
To mount the BSU to a pole using the attached mounting components:

1. Lash the unit to the pole or use a hoisting rope to keep the unit in place while you mount it. Slide the two strap clamps over the two sets of 1/2-13x7 1/2 screws and secure the strap clamps using four #1/2 split lock washers and four 1/2-13 hex nuts.



2. To adjust the up/down tilt (-10 to +5 degrees), move the top or bottom of the BSU (depending on how you installed the down-tilt/notched bracket assemblies) until the unit is roughly positioned at the correct angle.
3. Connect the supplied Cat 5 cable to the BSU's Power and Ethernet port as described in the following notes. Then screw on the outer ring to secure the cable in place.

   The Base Station Unit (BSU) is shipped with a dust cover over the large 18-pin connector. Keep this cover on until ready to mate with cable connector to avoid getting the connector wet.

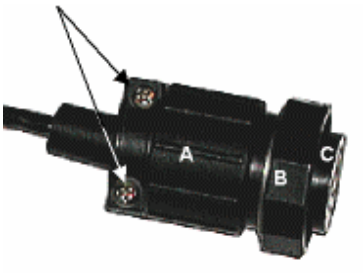


   To ensure proper weatherproofing, follow these procedures to connect the supplied Cat 5 cable to the BSU's Power and Ethernet port.

   A. Check the BSU connector. The only moving part should be the plastic nut ("B"), which screws onto the BSU housing.

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B. If there is any movement or play between parts A and C, you must tighten these parts before proceeding; otherwise you could cause connector pins to disconnect or break when you apply the weatherproofing tape.

   To tighten, first loosen (but do not remove) the connector's screws (indicated with arrows in the previous figure).

C. Then, while holding the pin connection portion (1), turn the bottom portion (2) clockwise until there is no more movement, making sure you do not over-tighten.

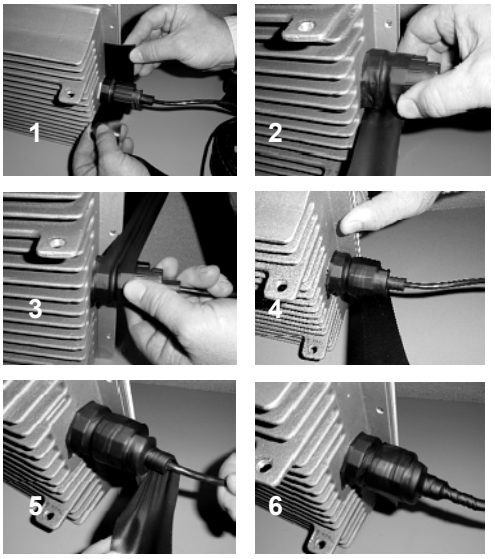


D. Re-tighten the screws.

E. When mating the BSU to the cable connector, first apply a bead of silicone grease or RTV to the 3mm-wide outward-most flange on the BSU connector (or in the outer ring of the cable-end mating connector).

F. Then tighten the plastic nut on the cable end to 16 inch-lbs (1.81 N-m). The cable connector must be tightened onto the BSU sufficiently to compress a small O-ring that resides inside the male BSU connector. If the O-ring is missing or insufficiently compressed, moisture can get through into the connector pins.

4. Once mated, over-wrap the connectors (as demonstrated in the following photos) with stretchy black self amalgamating tape (such as CTB-15 CATV TAPE-X5-BK-UN part #22150000 from DSG – CANUSA 173, Commerce Boulevard, Loveland, Ohio 45140, Tel. 1-800-422-6872) to ensure a better water seal.



5. Connect the other end of the Cat 5 cable to the BSU's power supply. (The BSU's power supply is ordered and shipped separately. The power supply's CPN number is 58526.)

6. Plug the power supply into an electrical outlet.

To ensure proper grounding, use the hole on the back of the BSU and the provided grounding screw to attach a ground wire to the BSU. Use wire grounding techniques in accordance with your local electrical codes.

STEP 3: INSTALLING THE GPS ANTENNA

If you plan to install multiple BSUs in the same geographical area, you must install the supplied GPS antenna (a small metal plate with a black 2"x 2" antenna and thin cable) on each BSU. See the *Tsunami Multipoint Installation Guide* for complete information.

Note: Be sure to apply weatherproofing to the GPS connection; the plastic water protection cap is not sufficient. You should weatherproof the GPS connector even when not installing a GPS antenna.

STEP 4: INSTALLING BASE STATION CONFIGURATION SOFTWARE

To install the BSU/SU Console:

1. From your server's Windows Explorer root directory, double-click on the BSU folder; then double-click on the Install icon (or **install.exe**).

2. Two windows open simultaneously: **InstallAnywhere Web Installer — Microsoft Internet Explorer** (in disabled mode) superimposed by **Security Warning** (in enabled mode).

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Click the **Yes** button on the **Security Warning** window to close this window and view the **Base Station Configuration Software** window.

Note: For the remainder of this procedure, only default settings are used. Select the applicable installer for your network environment when performing these steps.

3. Click **Download 15.7M** to download the Tsunami Multipoint Base Station configuration software and Java VM; click **Download 2.7M** to download the Tsunami Multipoint Base Station configuration software without Java VM.
4. After the download completes, double-click on **BS.exe** to begin installation.
5. When the Tsunami Multipoint Base Station Configuration Software **Introduction** window is displayed; click **Next**.
6. Follow the on-screen instructions to install the software.
7. When the **Install Complete** window is displayed, click on **Done** to return to the Web Installer window; then close the Web Installer window.

STEP 5: CONFIGURING THE BASE STATION

To configure the Base Station:

1. On the computer that has the Base Station Configuration Software installed, change the IP address for its Ethernet card to **192.168.20.xx** with a **255.255.255.0** subnet mask (**xx** can be any number between 1 and 254; Proxim recommends using **10** to avoid using the same IP address as the BSU or SU).

   The computer and BSU must be members of the same IP subnet to communicate.

   Note: The BSU's default IP address is 192.168.20.253 with a subnet mask of 255.255.255.0.

   The Multi-BSU Configuration Software displays the IP address of the BSU in the tab. This can be used if you are unsure of the IP address of the BSU.
2. Run the Base Station Configuration Software on the computer. To do this, from the Windows **Start** menu, select **Programs → Tsunami Multipoint Base Station Configuration Software**.
3. Configure the BSU's IP settings:

   Enter **setIP <IP address>**, where **<IP address>** is the new IP address you want to assign to the unit. For example, enter **setIP 192.168.20.20** to assign this IP address to the BSU.

   A. Close the Base Station Configuration Software and change the IP address of the computer's Ethernet card so that it is in the same IP network as the BSU's new IP address; restart the computer if necessary.

   B. Open the Base Station Configuration Software and use the **dspconf** command to verify that the BSU and computer can communicate.

      - Enter **setSubnet <subnet mask>** where <subnet mask> designates a subnet mask. Proxim recommends using a subnet mask no wider than 255.255.248.0.
      - If desired enter **gateway <gateway address>** where <gateway address> designates the IP address of the network's gateway.
4. To set the BSU's Terminal ID, enter **setID <Terminal ID>** where <Terminal ID> is a number between 1 and 2048). For example, **setID 1** sets the unit's Terminal ID to 1.

   Note: Each BSU in a network must have a unique Terminal ID.
5. Use the **setFrameSync** command to set the proper GPS operating mode. When performing indoor tests (or if synchronization is not required), **FrameSync** must be set to **Independent** mode (**setFrameSync 1**).
6. The Range Security feature is used to warn the BSU when an SU has moved. If **Range Security** is enabled (set to 1), enter **rangeSecurity 0** (zero) to disable this feature. You can enable it later once the SUs have been installed in the field.
7. Set the desired data rate using the **modulation** command (**modulation <0 (60Mbps) | 1 (40 Mbps) | 2 (30 Mbps) | 3 (20 Mbps**)>)**.** This step does not apply for BSUs that support 20 Mbps operation only.

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8. Set the desired frequency plan using the **freqPlan** command.

   ```
   freqPlan < 4(channel)|5(channel)|6(channel)>
   ```

   Tsunami Multipoint offers several frequency plans and operating frequencies to provide a means for overcoming interference.

   If one part of the 5.8 GHz spectrum is occupied when you deploy the product, you can select a different frequency plan to bypass the interfering frequency.

   Once you have selected a frequency plan, you can set the desired frequency using the **frequency** command. (**frequency < a | b | c | d | e| f** >; with **e** being available for the 5- and 6-channel plans and **f** being available for the 6-channel plans only.

9. Set the BSU's desired transmit power level using the **txPowerLevel** command.

   Typically the power level is set to 17 dBm in the field (maximum setting) and 6 dBm for indoor range testing (minimum level).

10. Set the desired transmit power auto-enable mode with the **txPowerAutoEnable** command (**txPowerAutoEnable < 0 (off) | 1 (on)>**). When auto-enable is set to **On**, the BSU automatically starts transmitting after any power cycle.

11. Set the desired routing mode with the **routingMode** command. (**routingMode < 0 (IP routing | 1 (Bridging)>**). Proxim recommends using Bridging mode as this mode lets you pass traffic without reconfiguring your network.

    Note: After you issue the **routingMode** command, you may need to clear the PC's arp table; restarting the PC used to configure the BSU will do this.

12. Turn on the BSU using the **txPower** command (**txPower <0 (off) | 1 (on)>**).

At this point the BSU is configured, transmitting, and ready to operate. Also, see "Advanced Configuration Options" in the *Tsunami Multipoint Reference Manual* for information about the other commands used to configure the BSU (such as setting proxy, RIP, static IPs, and so on).

STEP 6: ADD SUBSCRIBERS TO THE BSU DATABASE

Add a Subscriber Unit to the BSU's database before installing or turning on the SU; SUs cannot enter the network until they are added to the BSU database.

To add an SU to the BSU database:

1. Identify the Subscriber Units (SUs) you intend to use with this BSU and write down each device's MAC address (printed on the product label).
2. Add the first SU to the BSU's database by entering

   ```
   addSU <MAC address> <Terminal ID>
   ```

   - When entering the MAC address, separate each pair of digits with a colon or a blank space.
   - The Terminal IDs range from 1 to 1023; assign a unique ID to each BSU and SU in a cell. For example, of the SU's MAC address is 00-04-44-12-34-56, and you want to assign Terminal ID 2 to this SU, enter:

     ```
     addSU 00:04:44:12:34:56 2
     ```

   Note: Add an SU to the BSU's database before installing or turning on the SU.

3. Configure the SU's IP settings:
   - Enter **setSUIP <Terminal ID> <IP** address**>** to set the SU's IP address. Proxim suggests that you configure each SU with a unique IP address in the same IP subnet as the BSU in Bridging mode and configure each SU with a specific subnet in IP routing mode.
   - Enter **setSUSubnet <Terminal ID> <subnet mask>** to set the SU's subnet mask.
4. Repeat Steps 2 and 3 for each SU that you want to add to the Tsunami Multipoint system.
5. Enter **dspSU** to view the list of SUs that have been added to the BSU's database.

Install the SUs are described in the *Tsunami Multipoint Installation Manual* or in the *Tsunami Multipoint Subscriber Unit Quick Install Guide*.

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LOCAL DOWNLOAD TO THE BSU

Use this download method to upgrade BSUs after the SUs have been upgraded to Version 2.0. The BSU is upgraded through its Ethernet/Power cable using the BSU Console.

To locally download to the BSU:

1. From the BSU Console, select the **Download** menu.
2. Select **Local Firmware**.
3. From the **Look In** search field, choose the binary file to be downloaded (PMP_BSU_release2-0.mot) from the appropriate directory and click **Select**.
4. Once the upgrade is successful, if there were SUs connected to the BSU, they will re-acquire net entry.

   For each SU connection, two messages are displayed:

   120 Received NetEntry Request from Eth<SU's Ethernet address>

   121 NetEntry completed: Assigned terminal ID<ID#>, VLAN ID 1, IP<SU's IP address>

   It normally takes less than a minute and a half for the SUs to re-acquire NetEntry with the BSU from the time the local download started.
5. If there were no SUs connected to the BSU, after the upgrade succeeds, the version banner is displayed with version 20032000, following by three messages:

   114 Completed flash sector verification
   103 DB check completed
   107 Save NV configuration Parameters

   Once the SUs are re-connected to the BSU, expect the same behavior as specified in step 4.

System Requirements for Version 2.0

Hardware	Multimedia PC with a Pentium 200 MHz or higher processor (300 MHz recommended).
Operating System	Microsoft Windows® 98, NT 4.0, Me, 2000, XP.
Java 2 VM	SDK or runtime (1.2.2_12 or later, 1.3.1_03 is provided)
Memory	64 MB for Windows® 95/98 or Windows® Me; 128 MB for Windows® NT 4.0 workstation, Windows® 2000 Professional, or Windows® XP Professional (256 MB RAM is recommended).
Hard Drive	2 GB hard disk with up to 250 MB of available hard-disk space.
ROM Drive	Double speed (2x) or faster CD-ROM / DVD-ROM.
NIC	10/100 Mbps NIC with RJ-45 input.
Input Devices	Standard IBM-PC compatible 101-key style keyboard, PS2 or USB compatible mouse, or a compatible pointing device.
Monitor	Super VGA 16-bit or higher monitor supporting 800 x 600 screen resolution; coordinated video driver for installed video card; VGA not supported.
Graphics Card	PCI, AGP, or on-board graphics card supporting 16-bit 640 x 480 video resolution or higher.
Video Driver	Must support 16-bit color.
Browser	Microsoft Internet Explorer 5.0 software or later (6.0 recommended); other browsers also supported.
Optional Hardware	16-bit sound card with speakers or headphones for audible alarm; 6 foot power strip with power surge protection.
Optional Software	Microsoft Personal Web Server, Internet Information Server (IIS), or Apache 1.3.x can be served by VAR for over the Internet console installation.

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Technical Support

If you are having a problem using a Tsunami Multipoint and cannot resolve it with the information in "Appendix A. Troubleshooting" in the *Tsunami Multipoint Reference Manual*, gather the following information and contact Proxim Technical Support:

- What kind of network are you using?
- What were you doing when the error occurred?
- What error message did you see?
- Can you reproduce the problem?

Be sure to:

- Note the serial number of the product before installation. Keep this information in a safe place. The serial number is required to obtain support and can be found only on the back of the unit.
- Obtain an RMA number before sending any equipment to Proxim for repair.

Have the following logs from the affected equipment before calling Technical Support:

- SUlog1
- SUlog2
- BSUlog (for each affected SU)
- uplber, berlog (for each affected SU)

Access Knowledgebase:

Ask a Wireless WAN Product question and get an express response: **WANsupport@proxim.com**

E-mail Technical Support:
WANtechnicalsupport@proxim.com

To receive E-mail technical support, be sure to include the serial number of the product or products in question. We will be unable to respond to your inquiry without this information.

Call Technical Support:

Toll Free +1-866-674-6626 or +1-408-542-5390
Hours: 6:00 a.m. to 5:00 p.m. M-F Pacific Time

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