

SU-I

RedMAX[™] Subscriber Indoors



Quick Install Guide

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Software Versions

This user manual describes PTP operation using software release v4.xx, and PMP operation using software release v13.xx, and may include references or features that are different or unavailable in previous software releases (refer to product release notes).

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1 Safety Notices for SU-I Indoor Modem (SU-I)

- Do not exceed the described limits on product labels.
- Position power cords to avoid damage.
- Use only properly grounded power receptacles.
- A separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
- Do not overload wall outlets.
- Do not place equipment on or near a direct heat source or operate near water or in a wet location.
- Disconnect power before cleaning and use only a damp cloth for cleaning (no liquid / aerosol cleaners).
- Disconnect power when product is not in use.
- It is the user's responsibility to install this device in accordance with the local electrical and building codes.
- Refer to the subscriber User Manual for a complete description of safety notices and regulatory information for this product.
- Usage of this subscriber modem is subject to license within Canada. Operation is restricted to the 200 MHz band from 3.450-3.650 GHz. More information regarding licensing requirements is available from Industry Canada (www.ic.gc.ca).

Attention:

The SU-I front grill is used to dissipate heat and may feel quite warm during normal operation. Avoid direct contact with this feature when handling the SU-I.

2 Introduction

The RedMAX indoor wireless access subscriber modem is a fully integrated WiMAX Forum compliant device incorporating an Ethernet interface and wireless interface to a WiMAX base station. Mounting options are available to accommodate desktop, window, and wall mount.

The subscriber is pre-configured for easy self-install. Following proper installation, the local WiMAX base station will automatically contact the subscriber and configure subscribed services.



Figure 1: Indoor Wireless Modem System Features

3 Installation Summary

The following simple steps are needed to setup your RedMAX SU-I:

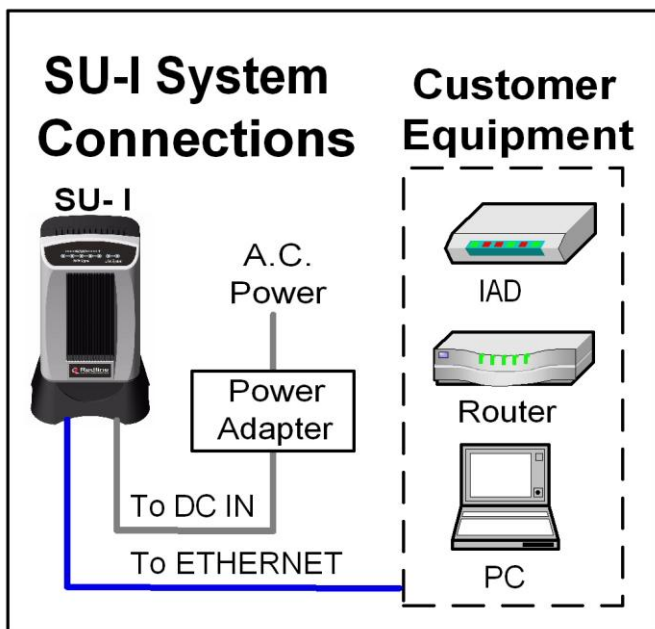


Figure 2: Subscriber Power and Network Connections

Step 1: Unpack SU-I Components

The following accessories are supplied in the SU-I package:

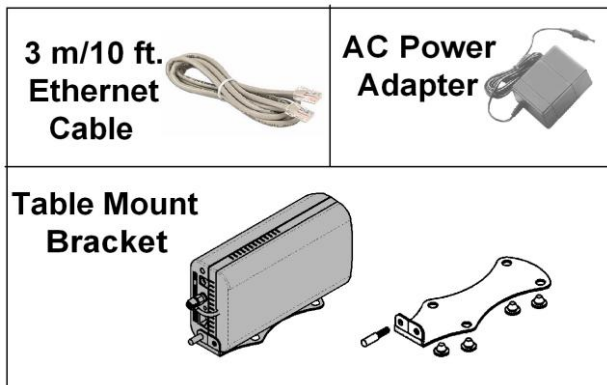


Figure 3: Subscriber Accessories

Step 2: Connect SU-I to PC or Other Network Device

Use the supplied CAT-5E Ethernet cable to connect the SU-I to your PC, router, or other network equipment.

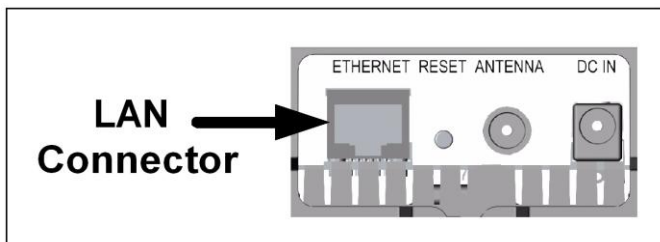


Figure 4: SU-I Ethernet Port (Under Base)

Step 3: Position SU-I with an Unobstructed View of Window.

The SU-I must be located near a window.

The SU-I can be located on any flat level surface such as a window sill, shelf or table. If this is not practical, you may order a wall mount bracket for the SU-I.

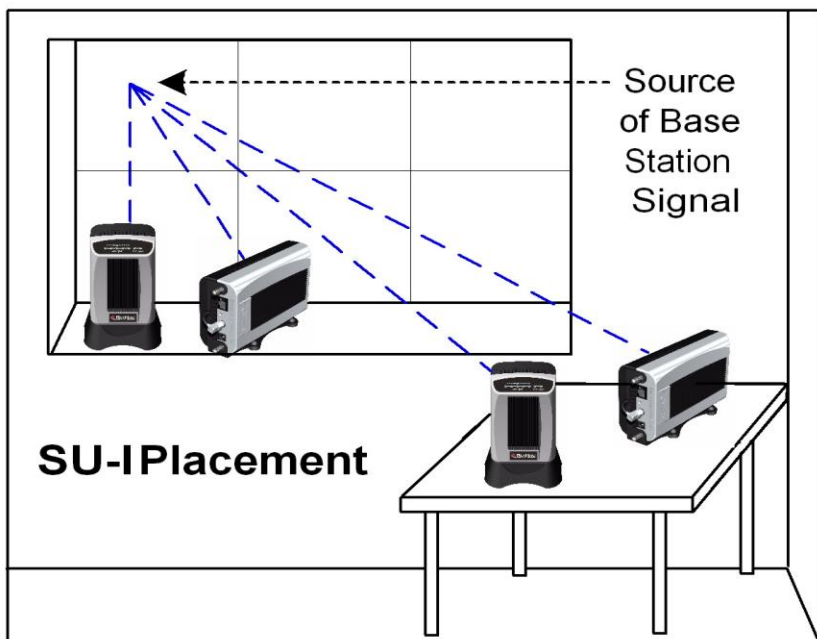


Figure 5: Subscriber LED Display

Step 4: Connect Power to SU-I

1. Connect the power adapter to the DC IN port (bottom of subscriber).
2. Connect the power adapter to a 110-240 VAC (nominal) grounded receptacle. The subscriber is not equipped with a power switch and activates immediately when connected to a power source.

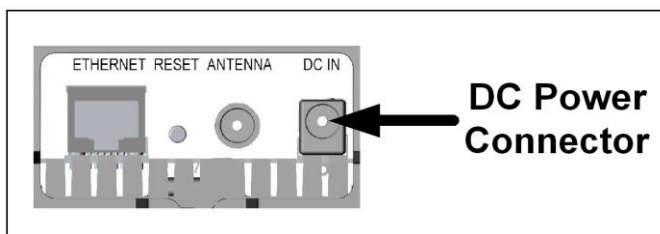


Figure 6: Subscriber System Connections - Power Connector

Search Mode

When powered-on, a walking LED pattern is displayed while the SU-I searches for WiMAX base stations. Note: Do not move the SU-I while the search is in-progress. When the search is completed, the walking pattern stops and the LEDs indicate received signal strength.

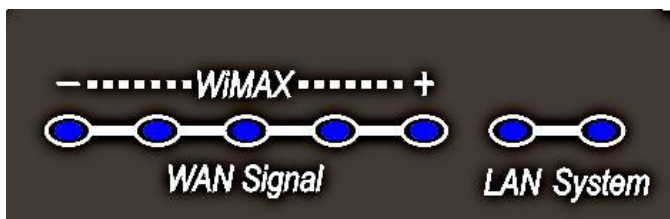


Figure 7: Subscriber LED Display

Signal Strength

When the SU-I has locked-in on its home base station, the WAN signal LEDs indicate signal strength. All LEDs are lit to indicate a strong signal, while a single LED indicates poor signal strength.

Important: A minimum of two LEDs must be lit for acceptable wireless operation.

4 Troubleshooting

4.1 Find Room Location with Best Signal Strength

The most important factor when installing the SU-I is to find the location where maximum signal strength is detected. Correct antenna alignment is essential in obtaining the maximum performance from the SU-I. A misaligned antenna will decrease the received signal and can result in a total loss of the connectivity with the base station.

Use the following procedures to test signal strength at various locations in the room before deciding on the final location to install the SU-I unit.

Base Station Location

Each SU-I must communicate with a WiMAX base station located in your area. Identifying the tower or building where the base station antenna is located can assist in setting up the subscriber. To receive the best signal, the subscriber requires visual line-of-sight (LOS) and must be located as close as possible to a window facing the base station antenna. When the base station antenna is not visible from the SU-I location, it is still be possible to receive a strong signal reflected from nearby buildings.

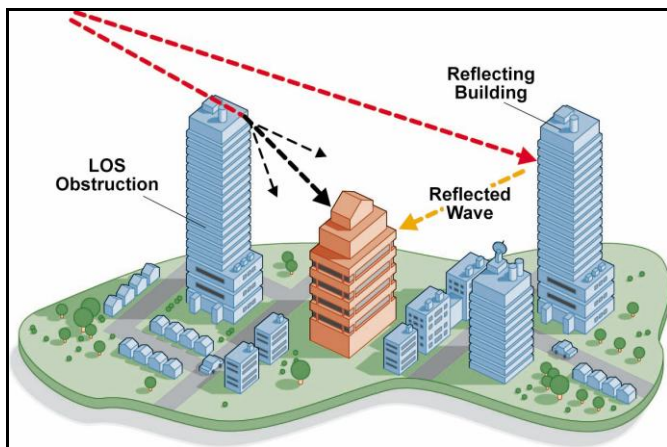


Figure 8: Non-Line of Sight Signal from Base Station

Aiming the SU-I Antenna

The antenna is located inside the black plastic cover on the back of the SU-I. The subscriber must be positioned with the antenna pointed straight out the window. The closer the SU-I is positioned to the window, the more likely it is to receive a strong signal.

Find the Best Antenna Position

The subscriber antenna is sensitive to horizontal and vertical orientation (polarized). For the best signal reception, the polarity of the subscriber antenna must match the base station antenna. Your service provider can recommend which orientation, is best suited for your coverage area.

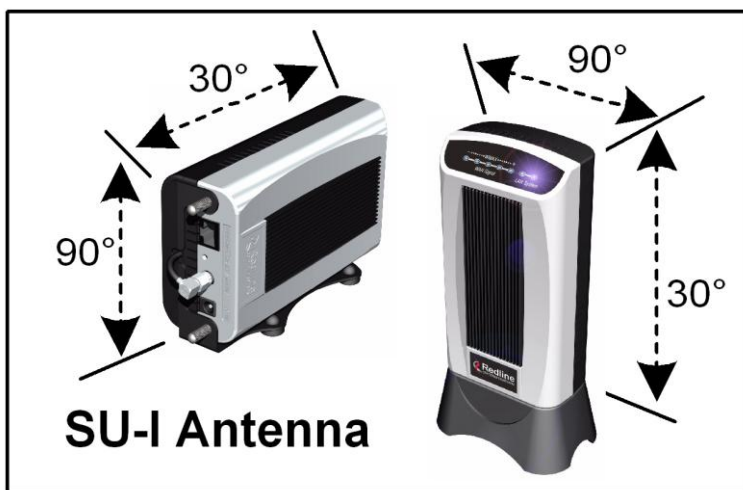


Figure 9: Antenna Direction

The SU-I must be located near a window. Find a suitable location for the SU-I and observe the signal strength (LEDs).

Important: The antenna is located on the back of the SU-I.

When you have located the SU-I position with the strongest signal, set the SU-I on its side and observe the effect (if any) on signal strength. If increased signal strength is detected in this position, you should use the horizontal mount option. The SU-I can be located on any flat level surface such as a windowsill, shelf, or table. If this is not practical, you may order a wall mount bracket for the SU-I.

Low Signal / No Connection to Base Station

- a) The subscriber requires visual line-of-sight (LOS) to receive the best signal, and must typically be located as close as possible to a window.
- b) Some office buildings use tinted windows to reduce heat. If the tinting uses metal embedded in the glass, this may act as an RF shield and greatly reduce the available signal level.
- c) For the best signal reception, the polarity of the subscriber antenna must match the base station antenna. Test the signal strength with the subscriber standing upright and also on its side.
- d) The subscriber is self-install and cannot be configured by the user. Verify with your service provider that your subscriber is correctly registered. The subscriber serial number is located inside the factory-installed desktop mounting foot.

Notes:

