



Outdoor Base Station Installation Guide

ODB-3537

I. Introduction

Congratulations on the purchase of your Solectek SkyWay MAX Outdoor Base Station (BSU). This document has been supplied to guide and simplify the installation of the SkyWay MAX BSU.

The following Solectek Models are covered herein:

Outdoor Base Stations
ODB-3537

Base Station Antenna Kits
ANT-OMNI35
ANT-SECT35

Base Station Power Kit
PWR-ODB35

II. Disclaimers

Installation of the SkyWay MAX Outdoor Base Station should only proceed once careful consideration has been given to the Wireline and RF System design of the complete Network. Issues such as cell planning, network backhaul, tower siting and surge suppression all require careful, advanced planning. Please contact Solectek or your local representative for more information.

Solectek shall not be responsible for any operation of this product which is in violation of local law, creates interference harmful to other local devices, or results in a malfunction of this product caused by outside interference.

This device must be professionally installed and used in strict accordance with the manufacturer's instructions. However, there is no guarantee that interference to radio communications will not occur in a particular commercial installation. In case the device does cause harmful interference with an authorized radio service, the user/ operator shall promptly stop operating the device until harmful interference has been limited. Solectek Corporation is not responsible for any radio or television interference caused by unauthorized modification of this device or the substitution or attachment of connecting cables and equipment other than specified by Solectek Corporation. The correction of interference caused by such unauthorized modification, substitution, or attachment will be the responsibility of the user.

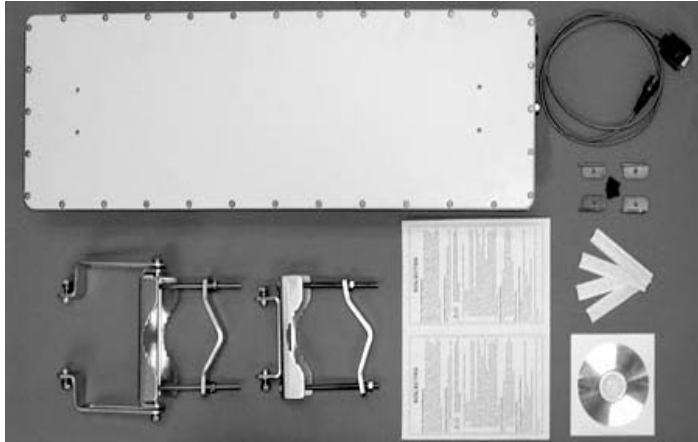
Solectek shall not be liable for damages associated with the installation and use of this product, including but not limited to personal or property damage, business losses or infringement of local or national laws.

III.Package Contents

A.Base Station Unit

Included in the SkyWay MAX BSU are the follow parts:

- BSU chassis, 1pc
- RS232 console cable, 1pc
- Pre-assembled, mast mounting kit, 1 set
- Angle bracket and screw, 4 sets
- Outdoor cable seals, 4 pcs
- Documentation CD, 1pc
- Reference Card, 1pc



B.Optional Kits

If purchased, the following parts are included in the SkyWay MAX Kits:

Adjustable Sectoral Antenna Kit

- 3.3-3.7 GHz, 45-120deg Adjustable Sectoral Antenna, 1pc
- Chassis Mounting Kit, 1 set
- RF Cable, 1 pc
- Outdoor cable seals, 2 pcs
- Mounting Instructions

Omni Antenna Kit

- 3.3-3.7 GHz, Omni Antenna, 1pc
- Mast Mounting Kit, 1 set
- 8 foot RF Cable, 1 pc
- Outdoor cable seals, 2 pcs
- Mounting Instructions

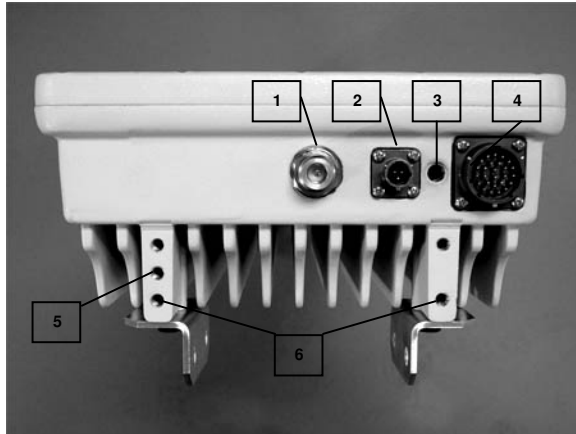
Single Base Station Power Kit

- 120W AC-DC, 48V Indoor Power Supply, 1pc
- AC Power Cord
- Indoor Power Injector, 1pc

IV. Access

A. Base Station Port Panel

The bottom face of the outdoor base station contains 3 access ports as described herein.



Legend

- | | |
|---|--|
| 1 | N-type RF port |
| 2 | RS232 Header |
| 3 | Seal port (not used by customer functions) |
| 4 | Uplink Header |
| 5 | Tapped Chassis Ground Point |
| 6 | Tapped Accessory Mounting Points |

B. RF Port

The N-type RF Port connects the BSU chassis to the desired antenna, including Solectek's integrated, adjustable sectoral kit, external omni kit or any appropriate 3rd party product.

The RF Port may be connected to an RF Cavity Filter and/or Surge Suppressor, if desired. Please contact Solectek Technical Support for configuration support and options.

C. RS232 Port

An RS232 management port is available for benchtesting and on-tower debugging. It is not designed, however for access during normal BSU operation.



D. Seal Port

This sealed access port is used during the manufacturing process to ensure each Base Station is completely dust and watertight. Customers should not access this Port.

E. Uplink Port

The Uplink Cable is the single umbilical cord connecting the BSU to the indoor source of power and data. Functions within the cable include the transport of: 10/100 Ethernet signals, GPS strobe, diagnostic channels and -48V DC power.



Pre-built Uplink Cables to 80m are available directly from Solectek or your local Solectek representative.

F. Grounding Point

Tapped hole used for attachment of grounding wire/strap, critical for proper surge suppression.

G. Accessory Mounting Point

Taped hole used for the optional attachment of external antenna surge suppressors and/or RF cavity filters. Please contact Solectek Technical Support for configuration support and options.

V. Preparation

A. Tools

The following tools are required for the proper installation of the SkyWay MAX BSU:

- Gin pole / hoist with clamp



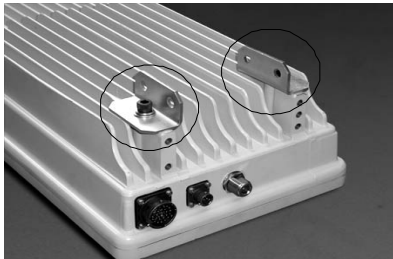
- 1/2" ratchet-action box-end wrench
- 7/16" box-end wrench
- 1/4" Allen wrench
- Slip Joint Pliers
- Utility knife
- Cable seals

B. BSU and Cables

The BSU and both Uplink and RF Cable should be fully prepared and pretested prior to installation.

C. Angle Bracket Installation

All four (4) angle brackets should be attached and tightened to the rear of the BSU with the supplied screws and washers.



D. Mast Mounting Kit

The two part BSU Mast Mounting kit is designed to accommodate pipe diameters from 1" to 4 1/2 inches



and provide up to 10 degrees of vertical tilt. Note that the two Mounting Kit assemblies can be swapped (upper for lower) on the BSU, to provide tilt in the opposite direction.

The BSU mast mounting kit should be securely attached to the BSU angle brackets, installed in the previous step.

E. Antenna Options

The BSU Antenna and mounting kit should be prepared in advance of Installation. When using Solectek's Integrated, Adjustable Sectoral Antenna, the antenna should be mounted to the BSU and adjusted to the desired beamwidth while still on the ground.

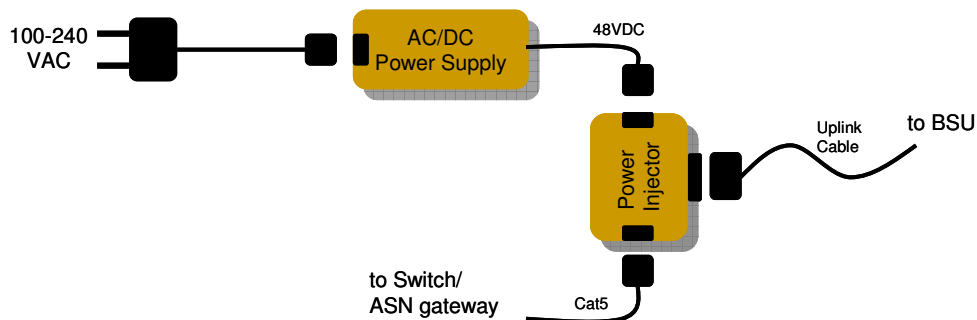
F. RF Cavity Filters / Surge Suppressors

All Filters and Surge Suppressors should be prepared in advance of the installation. In the case of Solectek provided filters or suppressors, the devices can be mounted directly to the BSU simplifying cabling and minimizing RF losses.

VI. Indoor Provisioning

A. Single Sector BSU Site

Provisioning a single sector BSU involves preparing and installation of the PWR-ODB35 power supply kit. Components of this kit should be located in a network/power closet and at the location of the ASN switch/gateway. Connection of the kit is as follows:



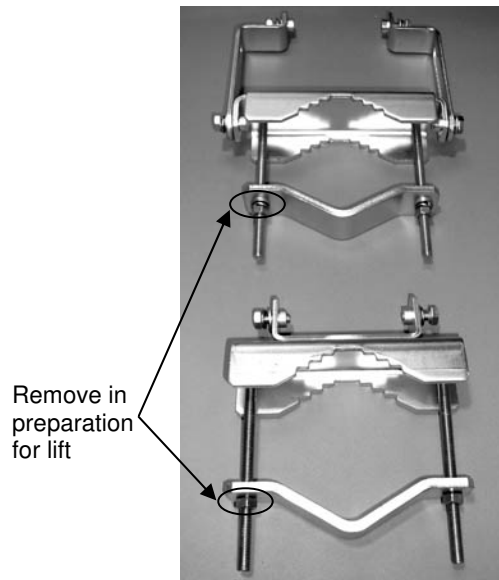
B. Multi-Sector BSU Site

Provisioning the network and power connections of a multi-sector BSU site involves the use of Solectek's IDU Controller System. Please refer to Solectek document DOCS-1025, "SkyWay MAX Indoor Base Station Controller - Installation Guide" for detailed provisioning instructions

VII. Outdoor Installation

A. Staging

It is recommended to stage and verify presence of all necessary gear at an indoor location prior to installation. At this point, one of the mast clamp nuts should be removed from both the upper and lower mounting bracket. This will allow the clamping jaw to rotate and to clear the mast during positioning.



B. Lifting

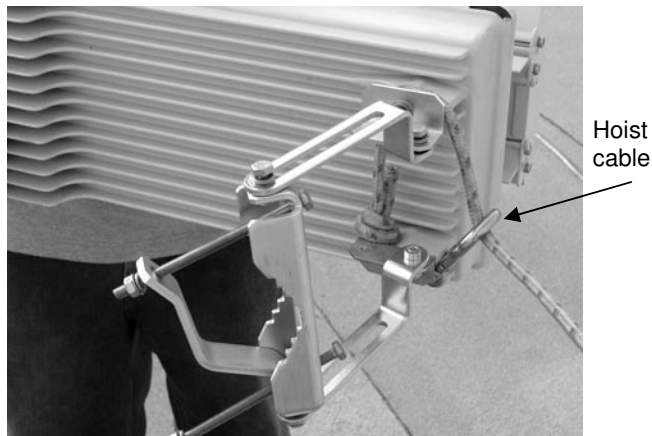


Warning: The SkyWay MAX BSU shall be installed by tower and radio professionals ONLY. All appropriate safety equipment should be utilized during installation.

Route the lower end of the hoist cable around the top legs of the BSU, behind the Angle Brackets, attaching the clamp to the cable.



Caution: Damage to the RF Cable may occur if the BSU is rested on its bottom face.



Using a gin pole or alternate hoist arrangement, the BSU should be carefully lifted to the desired tower or rooftop location and position.



The BSU Mast Mounting kit should then be fastened and secured to the designated mast pole. It is generally easiest to secure the fixed (non-tilting) bracket first.



C. Alignment

At this point, the BSU can be rotated into suitable horizontal and vertical alignment. Once adjusted, the mast clamps should be fully tightened and the hoist cable removed.



D. Antenna Mounting

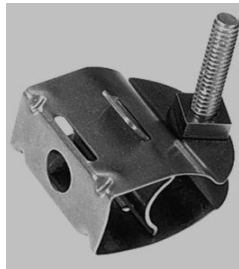
For installations using Solectek's omni antenna kit or when using a 3rd party antenna, the antennas should be mounted in a suitable location following the manufacturers mounting guidelines

E. Cable Runs

Cabling connections should now be made. To avoid directing water at the BSU interconnects, drip loops should be utilized for all cable connections routed above the BSU.

The uplink cable, raised from ground level using the hoist cable, or other suitable means, should be connected to the BSU, locked into place and further sealed with the supplied seal tape. Note that the uplink cable connector is keyed and should be inserted and locked without the use of tools.

Cable hangers, such as the 3/8" butterfly clamp pictured below, should be used to secure and strain-relieve the uplink cable to the tower/mast.



*Wireless Solutions 33950
(Available from Tescoco)*

Next, the RF Coaxial Cable should be attached, wrench tightened and sealed with the included seal tape.



Caution: Failure to follow the RF Coaxial manufacturer's minimum bend radius guidelines may result in a loss of performance or cable failure.

F. Grounding Straps and Surge Suppression

A grounding strap should be attached between the BSU Chassis and the Tower/Rooftop grounding point. Additional cable and system surge suppression installation steps should also be completed at this point. Please refer to Solectek document *SkyWay MAX Outdoor Base Station - Surge Suppression Guidelines* DOCS-1033, or contact Solectek Technical Support for more information.

VIII. Regulatory Information

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning: *Changes or modifications not expressly approved by Solectek could void the user's authority to operate the equipment.*

Warning: *This product contains no user servicable parts and must be professionally installed.*

RF Exposure Requirements: *To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.*

The antenna used for this transmitter must not be co-located in conjunction with any other antenna or transmitter