



WIRELESS ACCESS SERIES

**INSTALLATION INSTRUCTIONS**

**OPTIONAL**

**REMOTE ANTENNA**

**MODULES**

**(RAM)**

*Includes Installation Instructions for:*

*ANT-REM-IN, ANT-REM-I/O, & ANT-REM-I/O+6DB*

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# INSTALLATION INSTRUCTIONS

## Optional Remote Antenna Modules (RAM's)

**NOTE:** These instructions are for installing an optional Remote Antenna Module (RAM), an accessory of a Schlage Wireless Access System.

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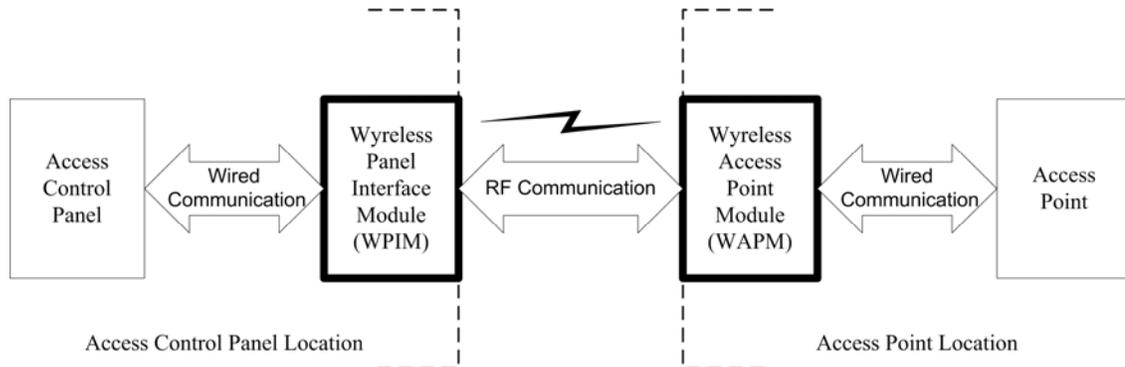
# 1. Schlage Wireless Access System Components

## 1.1 Overview

Every access control system that uses Schlage Wireless Access contains two different types of modules (Figure 1-1):

at least one Wireless Panel Interface Module (WPIM), and

at least one Wireless Access Point Module (WAPM)



**Figure 1-1 – Schlage Wireless™ Access System Block Diagram**

The Schlage Wireless Access™ product line contains several different expressions of each module.

The WPIM is wired to the access control panel and ideally is installed very close to the access control panel. The WPIMs installation location is determined by the location of the WAPMs with which it will communicate using RF.

The WAPM is installed at the access point where access will be controlled and/or monitored. Depending on the application and which WAPM is used, some wiring at the access control point may be required.

Regardless of which WPIM or WAPM module is used, the communication link between the WPIM and WAPM is always RF.

This manual describes the installation of three different optional Remote Antenna Modules which can be an accessory of either a WPIM or a WAPM.

## 1.2 Optional Remote Antenna Module (RAM) Components & Accessories

All Wireless Panel Interface Modules (WPIMs) and all Wireless Access Point Modules (WAPMs) contain either an internal or attached antenna.

There are two major reasons why an optional antenna might be used:

To remote the antenna from the Schlage Wireless Access™ Module location so that the Schlage Wireless Access™ Module can be located in more serviceable and/or secure area.

To increase the RF range by using a directional antenna that provides RF gain.

Several Schlage Wireless Access™ Modules have the option of using an optional antenna, see Table 1-5. Schlage Wireless Access™ offers three different optional antennae (Table 1-1). Any optional antenna can be used on any Schlage Wireless Access™ Module that will accept an optional antenna.

Various antenna accessories are also available (Table 1-2 through Table 1-4).

Antenna Type	Model Number	Picture	RF Gain (dB)	Beamwidth @ ½ Power	
				Horizontal	Vertical
Indoor Remote Panel	ANT-REM-IN		0	360°	360°
Indoor/Outdoor Remote Panel	ANT-REM-I/O		0	360°	360°
Indoor/Outdoor Remote Directional Panel	ANT-REM-I/O+6DB		6	72°	57°

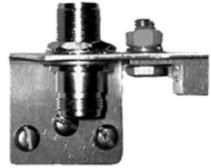
**Table 1-1 – Optional Antennae**

Accessory	Supplier	Model Number	Picture
Surge Protection Filter	PolyPhaser	DSXL-MA	

**Table 1-2 – ANT-REM-I/O Antenna Accessories**

Accessory	Supplier	Model Number	Picture
Adjustable Articulating Mounting Bracket for ANT-REM-I/O+6DB	Schlage Wireless Access™ or Maxrad	MPAB3	
Adjustable Mast Mounting Bracket for ANT-REM-I/O+6DB	Schlage Wireless Access™ or Maxrad	MPAB4	
Grounding Kit for ANT-REM-I/O+6DB	Schlage Wireless Access™	MGB+MCA5	

**Table 1-3 – ANT-REM-I/O+6DB Antenna Accessories**  
(For supplier contact information see section 8, page 32 below.)

Accessory	Supplier	Model Number	Picture
Grounding Block	Maxrad	MGB	
5', 50 ohm, low loss coax, type N male connectors on both ends	Maxrad	MCA195NMNM/5ft	
15', 50 ohm, low loss cable, type N male connector on one end, dressed bare wires on the other end	Schlage Wireless Access™	A771-008-001	
Coax-Seal	Universal Electronics	101	

**Table 1-4 – Replacement Remote Antenna Accessories**  
(For supplier contact information see section 8, page 32 below.)

	Schlage Wireless Access™ Product	Standard	Optional		
		Internal Antenna	ANT-REM-IN	ANT-REM-I/O	ANT-REM-I/O+6DB
PIM-TD2	√	√	√	√	
PIM-TD4	√	√	√	√	
PIM-EXP	√	√	√	√	
PIM-485-OTD	√	√	√	√	
WRI-OTD-12VDC	√	√	√	√	
WA-LOCK	√				
WPR2	√				
WRI-IN-12VDC	√				
WSM	√				

**Table 1-5 – Schlage Wireless Access™ Products Antenna Options**

## 2. Safety, Grounding, & Lightning Considerations

***WARNING: Make certain that the Coax installation conforms to all electrical codes (national and local) regarding grounding and lightning protection requirements.***

***PolyPhaser's Technical Information section of their web site ([www.polyphaser.com](http://www.polyphaser.com)) contains excellent information about grounding and lightning protection.***

### 2.1 Safety

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

### 2.2 Antenna Grounding

**Note: The ANT-REM-IN antenna cannot be grounded and is for indoor use only!**

The National Electrical Code (NEC) requires that every antenna installation be grounded. Also many areas have local antenna-grounding codes. Be sure that you are familiar with all of the grounding and other antenna regulations in your area.

Antenna grounding includes mast grounding and coax grounding.

Make sure the antenna is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No.70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

A grounding block kit compatible with all I/O versions of Schlage Wireless Access™ Remote Antennae is available as an accessory; see Table 1-2, Table 1-3, and Table 1-4, above. Note: The grounding block is not compatible with the ANT-REM-IN remote antenna.

PolyPhaser's Technical Information section of their web site ([www.polyphaser.com](http://www.polyphaser.com)) contains excellent information about grounding.

### 2.3 Lightning Protection Consideration

Where lightning protection is a concern, a lightning protection device must be installed in series with the coax and mounted at the antenna end of the coax cable.

**NOTE: The ANT-REM-I/O+6DB remote antenna is DC grounded and therefore the only lightning protection required is a grounding block as described in section 2.2 above.**

The ANT-REM-I/O is not DC grounded and requires a surge protection filter in addition to a grounding block (section 2.2, above) for the recommended lightning protection.

Install one of these devices at the ANT-REMOTE-I/O antenna per PolyPhaser's instructions including weatherization requirements.

PolyPhaser's Technical Information section of their web site ([www.polyphaser.com](http://www.polyphaser.com)) contains excellent information about lightning protection.

### 3. Installing the ANT-REM-IN

**WARNING:** You can be seriously or fatally injured if this antenna comes in contact with electric power lines or is brought in proximity with a high voltage electrical field. For your own safety, use extreme caution when installing this antenna. Keep away from power lines!

The ANT-REM-IN can be used with all versions of a Panel Interface Module (PIM-TD2, PIM-TD4, PIM-EXP, or PIM-485-OTD) or Wireless Reader Interface-Outdoor (WRI-OTD-12VDC) (Table 1-5).

**NOTES:** The ANT-REM-IN must always be located indoors where grounding and lightning protection are not required.

The ANT-REM-IN can only be installed on a PIM-TD2, PIM-TD4, PIM-EXP, PIM-485-OTD, or WRI-OTD-12VDC.

#### 3.1 Tools Required

Hammer

9/32" drill bit & drill

Flat and Phillips head screwdrivers (1/8" wide flat blade for screw terminals)

Pencil

A mounting kit is provided which includes four zinc, pan head Phillips, 8-18 X 1 1/2" sheet metal screws, four #8 flat washers, and four heavy-duty anchors

#### 3.2 Determining the Best ANT-REM-IN Location

The ANT-REM-IN must always be located indoors where grounding and lightning protection are not required.

The ANT-REM-IN must be mounted within 15 cable feet of the PIM or WRI-OTD-12VDC.

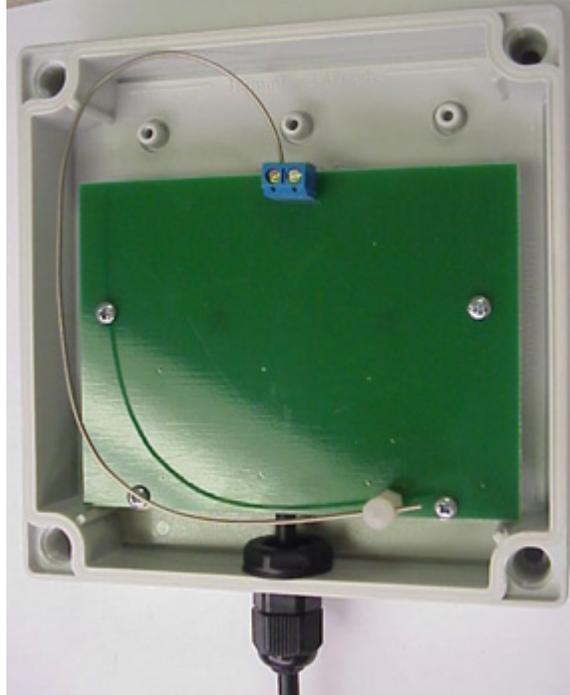
If the ANT-REM-IN is used with a PIM-TD2, PIM-TD4, PIM-EXP, or PIM-485-OTD, then the ANT-REM-IN should be located so that it has the best "RF line of sight" path with all the WAPM's that will be linked to the PIM.

If the ANT-REM-IN is used with a WRI-OTD-12VDC, the ANT-REM-IN should be located so that it has the best "RF line of sight" path with the PIM to which it will be linked.

### 3.3 Mounting the ANT-REM-IN

**NOTE:** Since the ANT-REM-IN coax cannot be disconnected from the ANT-REM-IN, the coax must be routed from the ANT-REM-IN location back to the PIM or WRI-OTD-12VDC. This must be considered before mounting the ANT-REM-IN.

- 3.3.1 Remove the ANT-REM-IN enclosure cover (Figure 3-1).



**Figure 3-1 – ANT-REM-IN with Cover Removed**

- 3.3.2 Place the ANT-REM-IN (cover removed) against the surface where it is to be mounted.
- 3.3.3 Using ANT-REM-IN enclosure as a template, mark the four corner mounting holes.
- 3.3.4 Drill a 9/32" hole in the surface at each mounting mark, 1 3/4" deep.
- 3.3.5 Insert the four anchors provided firmly into the holes so they are flush with the surface.
- 3.3.6 Fasten the ANT-REM-IN enclosure to the mounting surface using the screws & washers provided.
- 3.3.7 Replace the ANT-REM-IN enclosure cover.

### 3.4 Connecting the ANT-REM-IN Coax

For instructions on how to connect the ANT-REM-IN Coax to the PIM or WRI-OTD-12VDC, proceed to section 6, page 19.

## 4. Installing the ANT-REM-I/O

**WARNING:** You can be seriously or fatally injured if this antenna comes in contact with electric power lines or is brought in proximity with a high voltage electrical field. For your own safety, use extreme caution when installing this antenna. Keep away from power lines!

The ANT-REM-I/O can be used with all versions of a Panel Interface Module (PIM-TD2, PIM-TD4, PIM-EXP, or PIM-485-OTD) or Wireless Reader Interface - Outdoor (WRI-OTD-12VDC) (Table 1-5).

**NOTES:** The ANT-REM-I/O can only be installed on a PIM-TD2, PIM-TD4, PIM-EXP, PIM-485-OTD, or WRI-OTD-12VDC.

### 4.1 Tools Required

Hammer

9/32" drill bit & drill

Flat and Phillips head screwdrivers (1/8" wide flat blade for screw terminals)

Pencil

A mounting kit is provided which includes four zinc, pan head Phillips, 8-18 X 1 1/2" sheet metal screws, four #8 flat washers, and four heavy-duty anchors

### 4.2 Determining the Best ANT-REM-I/O Location

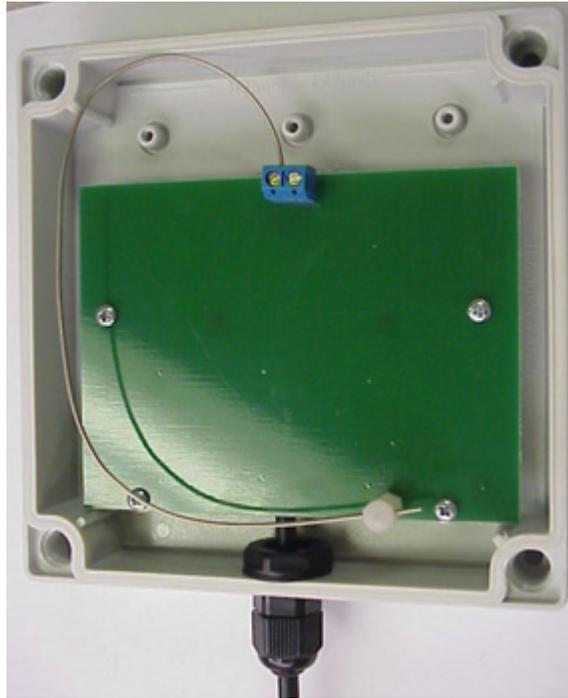
The ANT-REM-I/O must be mounted within 15 cable feet of the PIM or WRI-OTD-12VDC.

If the ANT-REM-I/O is used with a PIM-TD2, PIM-TD4, PIM-EXP, or PIM-485-OTD, then the ANT-REM-I/O should be located so that it has the best "RF line of sight" path with all the WAPM's that will be linked to the PIM.

If the ANT-REM-I/O is used with a WRI-OTD-12VDC, the ANT-REM-I/O should be located so that it has the best "RF line of sight" path with the PIM to which it will be linked.

### 4.3 Mounting the ANT-REM-I/O

4.3.1 Remove the ANT-REM-I/O enclosure cover (Figure 3-1).



**Figure 4-1 – ANT-REM-I/O with Cover Removed**

- 4.3.2 Place the ANT-REM-I/O (cover removed) against the surface where it is to be mounted.
- 4.3.3 Using ANT-REM-I/O enclosure as a template, mark the four corner mounting holes.
- 4.3.4 Drill a 9/32" hole in the surface at each mounting mark, 1 3/4" deep.
- 4.3.5 Insert the four anchors provided firmly into the holes so they are flush with the surface.
- 4.3.6 Fasten the ANT-REM-I/O enclosure to the mounting surface using the screws & washers provided.
- 4.3.7 Replace the ANT-REM-I/O enclosure cover.

### 4.4 Connecting the ANT-REM-I/O Coax

For instructions on how to connect the ANT-REM-I/O Coax to the PIM or WRI-OTD-12VDC, proceed to section 6, page 19.

## 5. Installing the ANT-REM-I/O+6DB

**WARNING:** *You can be seriously or fatally injured if this antenna comes in contact with electric power lines or is brought in proximity with a high voltage electrical field. For your own safety, use extreme caution when installing this antenna. Keep away from power lines!*

The ANT-REM-I/O+6DB can be used with on all versions of a Panel Interface Module (PIM-TD2, PIM-TD4 PIM-EXP, or PIM-485-OTD) or Wireless Reader Interface - Outdoor (WRI-OTD-12VDC) (Table 1-5).

**NOTE:** The ANT-REM-I/O+6DB can only be installed on a PIM-TD2, PIM-TD4, PIM-EXP, PIM-485-OTD, or WRI-OTD-12VDC.

### 5.1 Tools Required

Hammer

9/32" drill bit & drill

Flat and Phillips head screwdrivers (1/8" wide flat blade for screw terminals)

Pencil

7/16" wrench: adjustable, box, or open end

RAM Mounting Kit, provided, including four zinc, pan head Phillips, 8-18 X 1 1/2" sheet metal screws, four #8 flat washers, and four heavy-duty anchors

## 5.2 Determining the Best ANT-REM-I/O+6DB Location

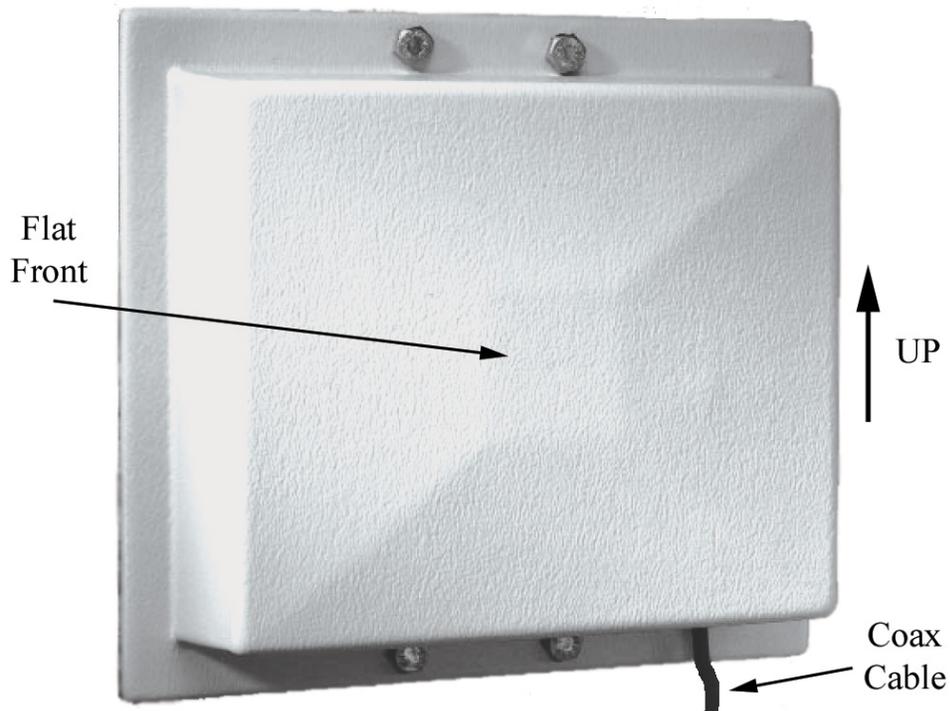
The ANT-REM-I/O+6DB must be mounted within 15 cable feet of the PIM or WRI-OTD-12VDC.

If the ANT-REM-I/O+6DB is used with a PIM-TD2, PIM-TD4, PIM-EXP, or PIM-485-OTD, then ANT-REM-I/O+6DB should be located so that it has the best “line of sight” path with all the WAPM’s that will be linked to the PIM.

If the ANT-REM-I/O+6DB is used with a WRI-OTD-12VDC, the ANT-REM-I/O+6DB should be located so that it has the best “line of sight” path with the WPIM to which it will be linked.

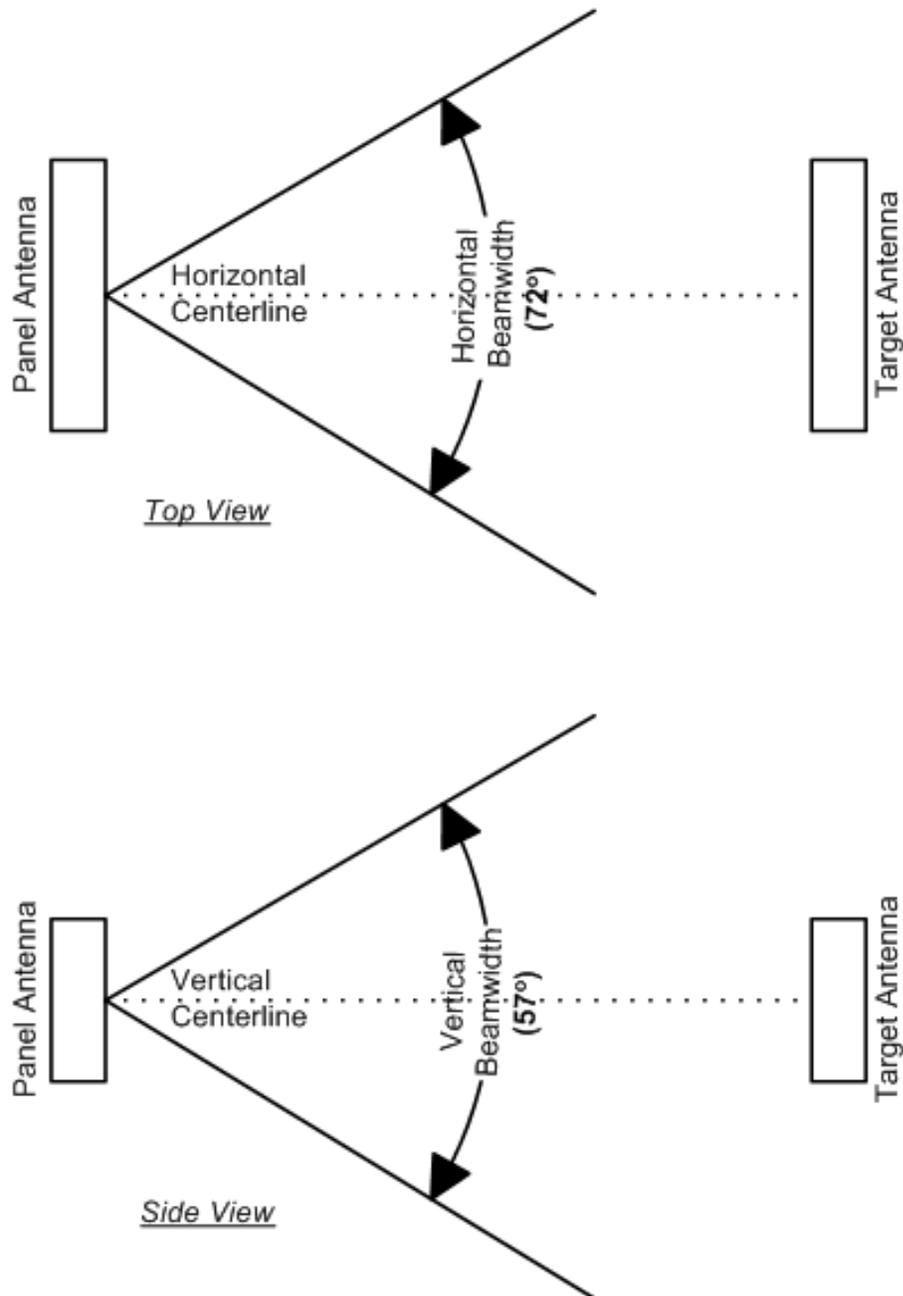
Since the ANT-REM-I/O+6DB is a directional antenna, the mounting location and orientation are very important:

The ANT-REM-I/O+6DB should be mounted and oriented so that the Flat Front is perpendicular to the target antenna and that the Coax Cable exits at the bottom (a vertical polarization arrow is on the back). (Figure 5-1 & Figure 5-2).



**Figure 5-1 – ANT-REM-I/O+6DB Mounting Orientation**

For optimum performance the ANT-REM-I/O+6DB should be oriented so that its vertical and horizontal centerlines intersect the target antenna (Figure 5-2). The ANT-REM-I/O+6DB has a 3 dB horizontal beamwidth of 72° and a 3 dB vertical beamwidth of 57°.



**Figure 5-2 - ANT-REM-I/O+6DB RF Radiation Pattern**

### **5.3 Mounting the ANT-REM-I/O+6DB**

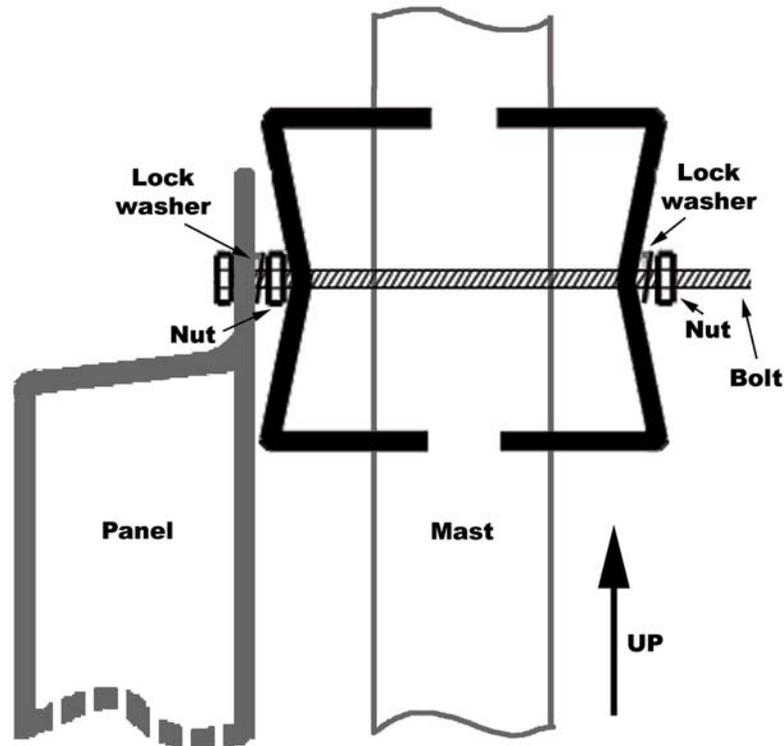
The ANT-REM-I/O+6DB comes with two mounting kits: a clamp set for mounting to masts up to 1-1/2" in diameter and a screw and anchor kit for flat surface mounting.

Two other mounting options, an articulating mounting kit and an adjustable mast mounting kit are available as accessories; see Table 1-3, on page 7 above.

**5.3.1 Mast Mount (using mast clamp supplied with ANT-REM-I/O+6DB)**

- 5.3.1.1 Install the 3” bolts in the top mounting holes from the front side of the ANT-REM-I/O+6DB. Secure the bolts using lock washers and nuts. Install half of a clamp over the bolts from the back side of the ANT-REM-I/O+6DB. Making certain that the “V” portion of the half clamp is pointing away from the ANT-REM-I/O+6DB. (Figure 5-3)

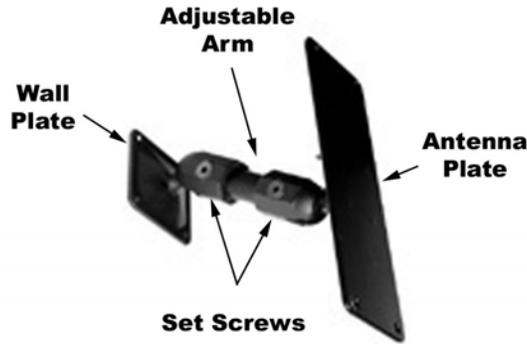
**NOTE: Only tighten the nuts enough to firmly fasten the bolts to the ANT-REM-I/O+6DB. Over tightening will deform the ANT-REM-I/O+6DB and may affect performance.**



**Figure 5-3 – Mast Mounting Clamp Installation**

- 5.3.1.2 Repeat step 5.3.1.1 to install half of a clamp to the bottom mounting holes of the ANT-REM-I/O+6DB.
- 5.3.1.3 Position the ANT-REM-I/O+6DB on the mast. (Figure 5-3)
- 5.3.1.4 Install the other half of a clamp on the back side of the mast at the top mounting position lock washers and nuts. Make certain that the “V” portion of the half clamp is pointing toward the mast. (Figure 5-3)
- 5.3.1.5 Repeat step 5.3.1.4 to install half of a clamp to the bottom mounting position of the ANT-REM-I/O+6DB.
- 5.3.2 Flat Surface Mount (using screws/washers/anchors supplied with ANT-REM-I/O+6DB)**
- 5.3.2.1 Place the ANT-REM-I/O+6DB against the surface where it is to be mounted.
- 5.3.2.2 Using ANT-REM-I/O+6DB enclosure as a template, mark the four mounting holes.
- 5.3.2.3 Drill a 9/32” hole in the surface at each mounting mark, 1 3/4” deep.
- 5.3.2.4 Insert the four anchors provided firmly into the holes so they are flush with the surface.
- 5.3.2.5 Fasten the ANT-REM-I/O+6DB enclosure to the mounting surface using the screws & washers provided.

### 5.3.3 Flat Surface Mount with Adjustable Wall Mounting Bracket (using optional MPAB3)



**Figure 5-4 – Adjustable/Articulating Wall Mounting Bracket Installation**

- 5.3.3.1 Loosen both Set Screws on the Adjustable Arm. Loosen the Set Screw on the end of the Adjustable Arm closest to the Wall Plate end far enough so that the Wall Plate end can be removed from the Adjustable Arm (Figure 5-4)
- 5.3.3.2 Place the Wall Plate against the surface where it is to be mounted.
- 5.3.3.3 Using the Wall Plate as a template, mark the four mounting holes.
- 5.3.3.4 Drill a 9/32" hole in the surface at each mounting mark, 1 3/4" deep.
- 5.3.3.5 Insert the four anchors provided firmly into the holes so they are flush with the surface.
- 5.3.3.6 Fasten the Wall Plate to the mounting surface using the screws & washers provided.
- 5.3.3.7 Attach the ANT-REMOTE-I/O+6DB antenna to the Antenna Plate using the four hex head bolts, lock washers, and nuts that are provided. For esthetics, install with the hex head bolt on the ANT-REM-I/O+6DB side and the lock washer/nut on the Antenna Plate side (Figure 5-4).  
**NOTE: Only tighten the nuts enough to firmly fasten the ANT-REM-I/O+6DB to the Antenna Plate. Over tightening will deform the ANT-REM-I/O+6DB and may affect performance.**
- 5.3.3.8 Attach the Adjustable Arm to the Antenna Plate using the remaining lock washers and nuts (Figure 5-4).
- 5.3.3.9 Attach the Adjustable Arm/Antenna Plate/ANT-REM-I/O+6DB to the mounted Wall Plate. Tighten the Set Screw enough to hold the total assembly together but not so tight that it cannot be moved.
- 5.3.3.10 Orient the ANT-REM-I/O+6DB in the desired direction (refer to section 5.2, above for how to optimally aim the antenna). Tighten both Set Screws so that the mounting is rigid and holds the ANT-REM-I/O+6DB in the desired direction.

### 5.3.4 Mast Mount with Adjustable Mast Mounting Bracket (using optional MPAB4)

Use the installation instructions provided with the MPAB4 kit.

## 5.4 Connecting the ANT-REM-I/O+6DB Coax

For instructions on how to connect the ANT-REM-I/O+6DB Coax to the PIM or WRI-OTD-12VDC, proceed to section 6, page 19.

## 6. Connecting the Coax

The ANT-REM-IN, ANT-REM-I/O and ANT-REM-I/O+6DB come with a 15' coax. One end of the coax is terminated with a male N connector, the other end is terminated as shown in Figure 6-7.

### 6.1 Grounding & Lightning Protection Consideration

**WARNING:** Make certain that the Coax installation conforms to all electrical codes (national and local) regarding grounding and lightning protection requirements.

*PolyPhaser's Technical Information section of their web site ([www.polyphaser.com](http://www.polyphaser.com)) contains excellent information about grounding and lightning protection.*

***Refer to section 2, page 9, above***

If the remote antenna will be used indoors then grounding and lightning protection may not be needed, consult local codes.

Grounding and lightning protection components compatible with Schlage Wireless Access Remote Antennae are available accessories, see Table 1-2 through Table 1-4, on pages 7-8 above.

Figure 6-1 and Figure 6-4 show the recommended connections for each antenna when no grounding and no lightning protection are required.

Figure 6-2, Figure 6-5 & Figure 6-6 show the recommended connections for each antenna when grounding and lightning protection are required.

**NOTE:** When using a Grounding Block, it must be electrically connected to an earth ground that meets local code requirements. Refer to the grounding block manufacturer's instructions for further information.

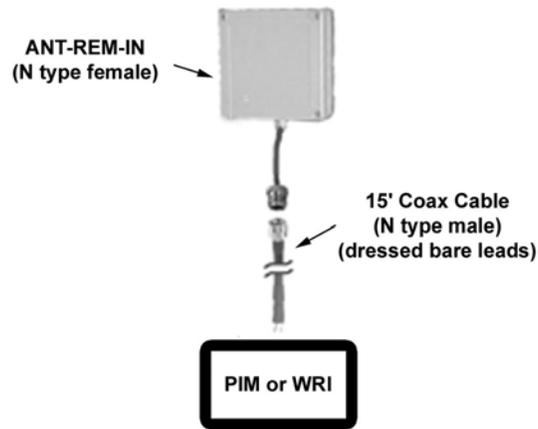


Figure 6-1 - ANT-REM-IN

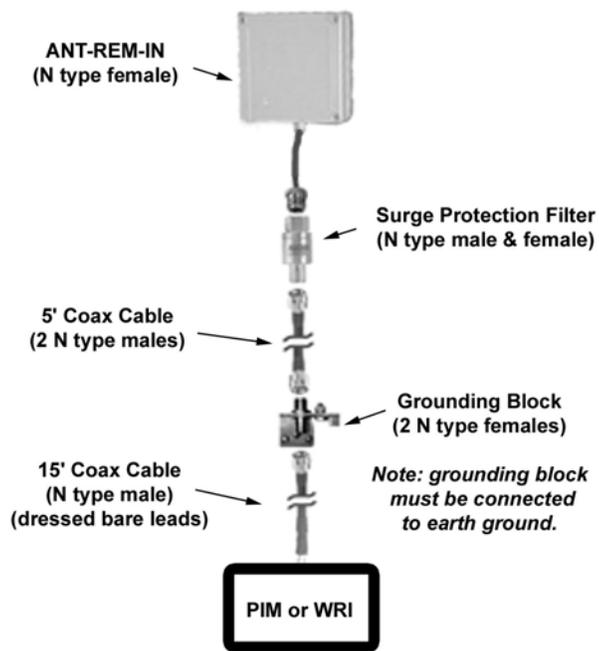


Figure 6-2 - ANT-REM-IN Recommended Protection

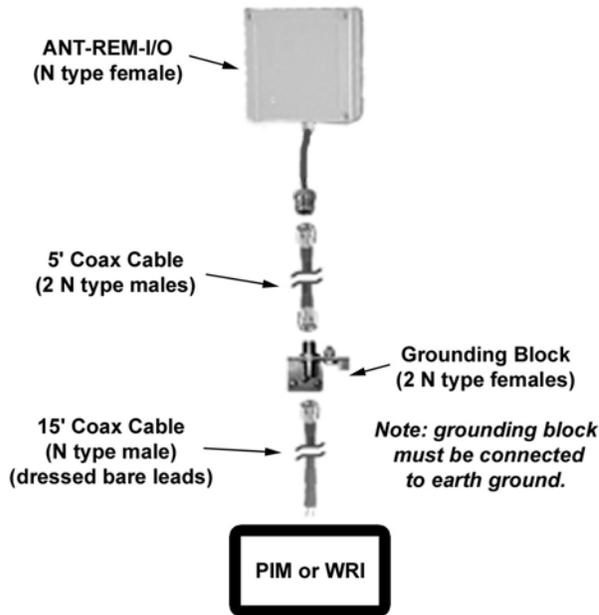


Figure 6-3 - ANT-REM-I/O

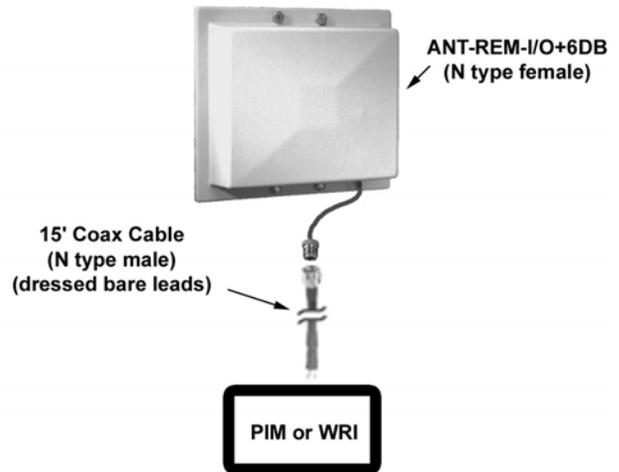


Figure 6-4 - ANT-REM-I/O+6DB

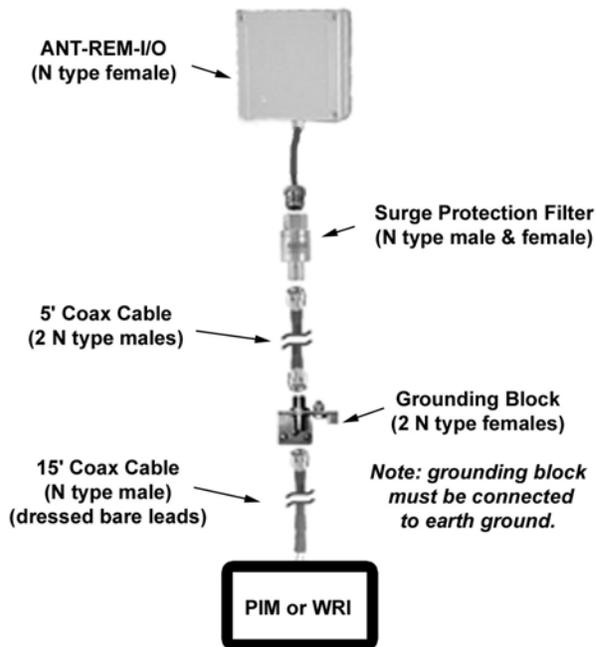


Figure 6-5 - ANT-REM-I/O Recommended Protection

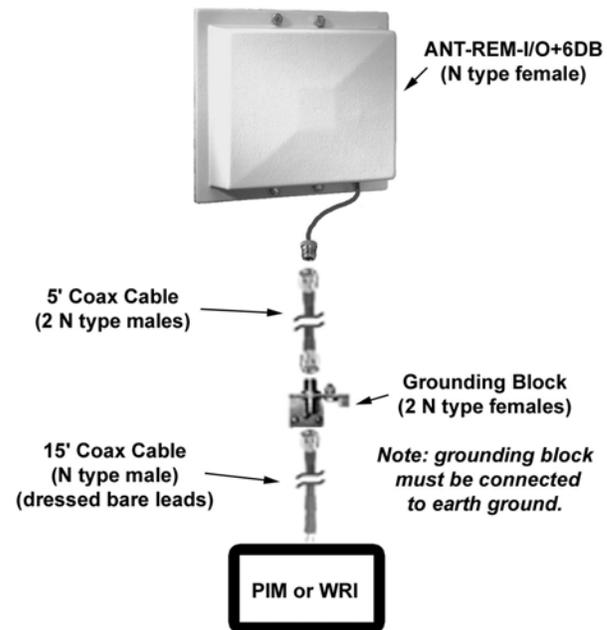


Figure 6-6 - ANT-REM-I/O+6DB Recommended Protection

## 6.2 Routing the Coax

The RAM's Coax is suitable for outdoor and aerial installations. Route the RAM's Coax so that there are a minimum number of bends. When the RAM's Coax must bend, make certain that the bend's radius is greater than 2".

## 6.3 Dressing the Coax

**NOTE: The RAM is supplied with a proper termination at the end of the 15' Coax (Figure 6-7). Use the Coax as supplied. DO NOT CUT COAX TO LENGTH!**

Dress excess coax in a coil no less than 8" in diameter.

**NOTE: Do not place the excess coax inside or near the RAM, inside the PIM, or inside the WRI-OTD-12VDC enclosure.**

## 6.4 Terminating the Coax at the RAM

- 6.4.1 If used, at the RAM install the appropriate lightning protection devices as shown in Figure 6-2 (ANT-REM-IN) or Figure 6-5 (ANT-REM-I/O) or Figure 6-6 (ANT-REM-I/O+6DB).
- 6.4.2 Connect the male N connector end of the coax going to the PIM or WRI-OTD-12VDC to the female N connector of the lightning protection device (if used) or antenna.
- 6.4.3 Make certain that all the N connectors are tightly fastened. Loose connections will affect performance.

## 6.5 Weatherproofing Coax Connections

**NOTE: Skip this section if using a ANT-REM-IN.**

Coax-Seal tape must be used on all coax connectors that are exposed to weather. Appropriate amounts of Coax-Seal tape are provided with the ANT-REM-I/O and ANT-REM-I/O+6DB antenna models.

## 6.6 Terminating the Coax at the PIM or WRI-OTD-12VDC

**NOTE: The RAM is supplied with a proper termination at the end of the 15' Coax (Figure 6-7). Use the Coax as supplied. DO NOT CUT COAX TO LENGTH!**

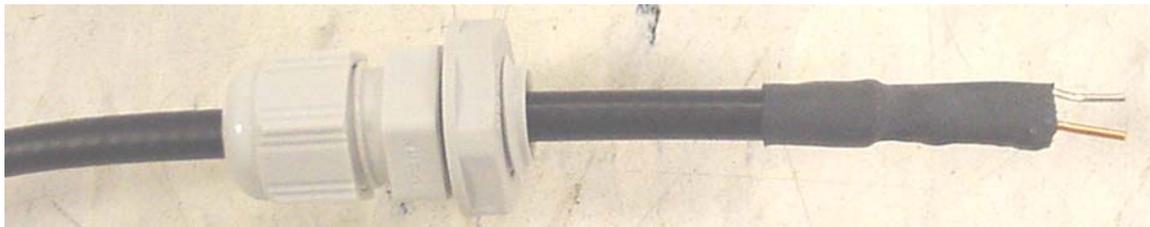
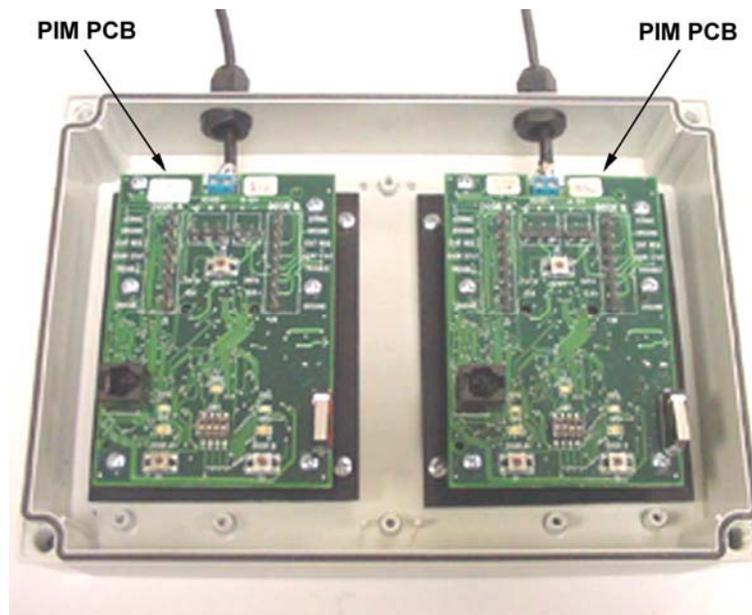


Figure 6-7 – Factory Supplied Coax Termination at PIM or WRI-OTD-12VDC

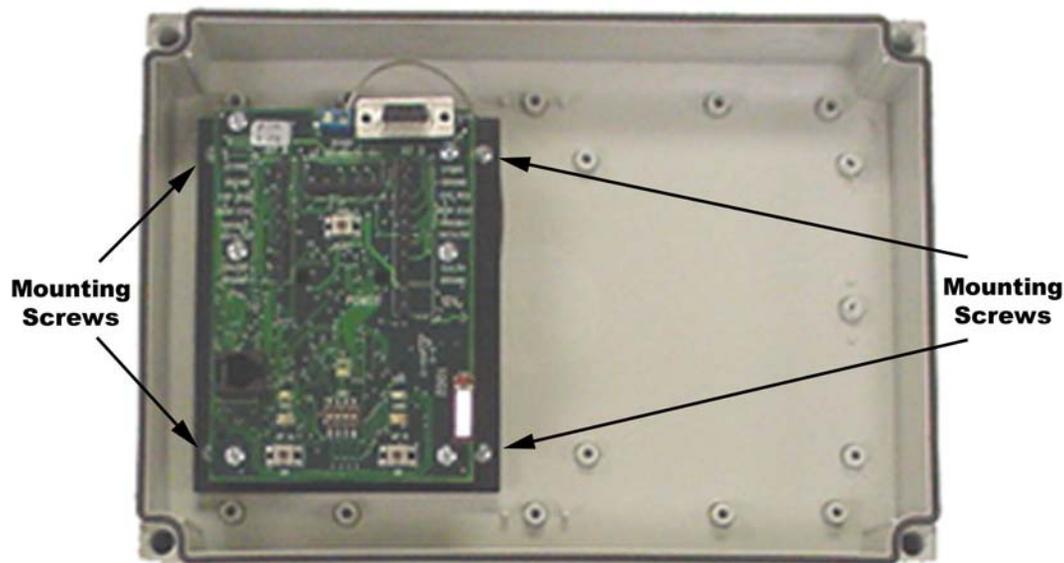
## 6.7 Connecting Coax to a PIM or PIM-EXP

The following basic installation procedure applies to installing a RAM on a PIM or a PIM-EXP. The PIM PCB is located on the left side of the PIM enclosure and the PIM-EXP PCB is located on the right side of the PIM enclosure.



**Figure 6-8 – PIM-TD4 with RAMs Installed**

- 6.7.1 Remove the PIM PCB from the PIM enclosure by removing the four screws, one in each corner of the PIM PCB back plate (Figure 6-9).



**Figure 6-9 – Removing PIM PCB**

- 6.7.2 Remove the PIM's internal "C" antenna by loosening the screw on the Antenna Terminal Block and gently pulling the antenna out of the Antenna Retainer (Figure 6-10).

**Note: Some PIM internal "C" antennae may also be secured with RTV adhesive. This adhesive can be easily broken free from the back plate with a little twisting.**

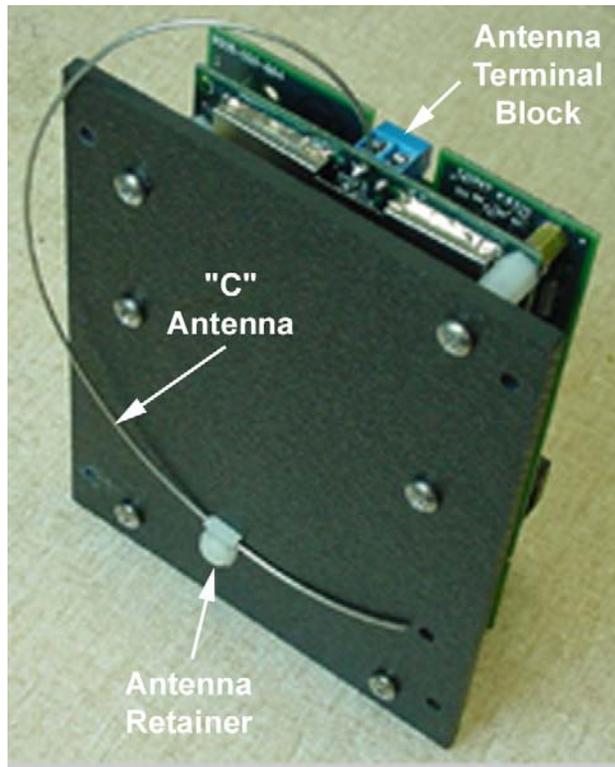


Figure 6-10 – Removing the PIM's Internal "C" Antenna

6.7.3 Drill a ½" hole in the top of the PIM enclosure (Figure 6-11).

**NOTE: Drill hole #1 for a PIM, hole #2 for a PIM-EXP.**

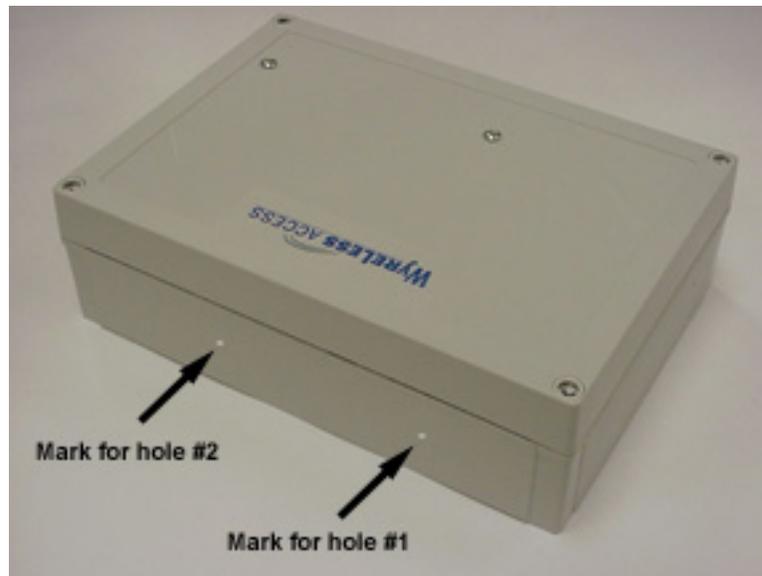
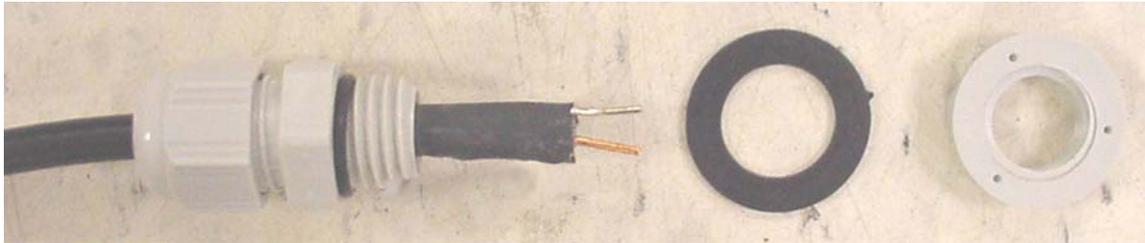


Figure 6-11 – PIM Antenna Hole Locations

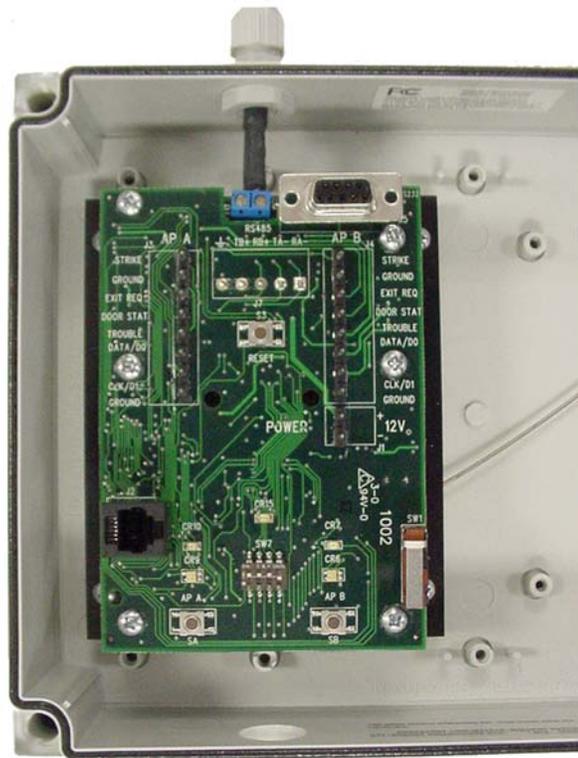
6.7.4 Replace the PIM PCB in the PIM enclosure (Figure 6-9).

6.7.5 Remove the nut and washer (if provided) from the NEMA gland (Figure 6-13). Discard the washer.



**Figure 6-12 – NEMA Gland with Nut & Washer Removed**

6.7.6 Install the NEMA gland in the hole drilled in step 6.7.3. Tighten the gland by turning the nut inside the enclosure. Do not tighten the gland by turning the gland while holding the nut. There is an “O” ring on the gland that will not seat properly if the gland is rotated (Figure 6-13).

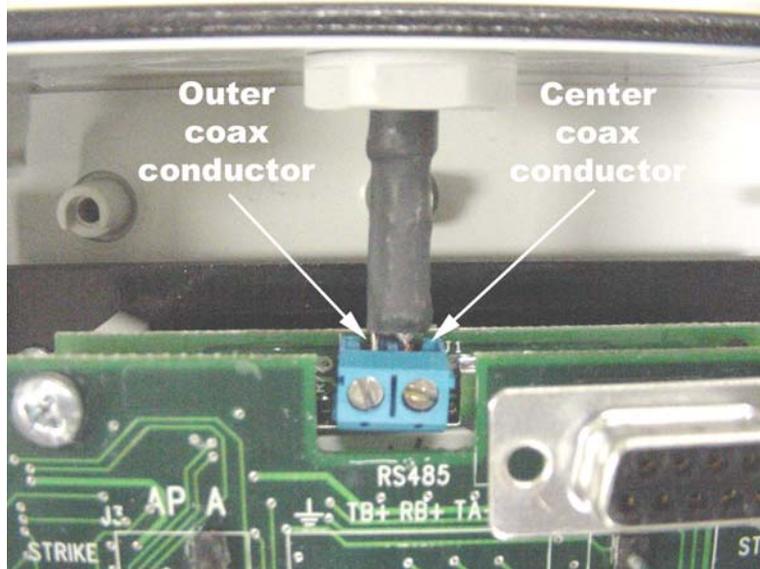


**Figure 6-13 – Installing the RAM Coax in the PIM**

6.7.7 Attach the Remote Antenna Coax to the PIM PCB Antenna Terminal Block (Figure 6-14).

**NOTE:** Make certain that the Outer Coax Conductor (silver color) goes in the leftmost terminal of PIM PCB Antenna Terminal Block and that the Center Coax Conductor (copper color) goes in the rightmost terminal.

**NOTE:** If installing RAMs on a PIM PCB and a WRI-OTD-12VDC, the Coax connects to the WRI-OTD-12VDC just the opposite of how it connects to the PIM PCB, see Figure 6-14 & Figure 6-22.



**Figure 6-14 – PIM PCB Antenna Terminal Block Connections**

6.7.8 Secure the Remote Antenna Coax in the NEMA gland (Figure 6-15).



**Figure 6-15 – Securing the PIM's Antenna NEMA Gland**

## 6.8 Connecting Coax to a WRI-OTD-12VDC

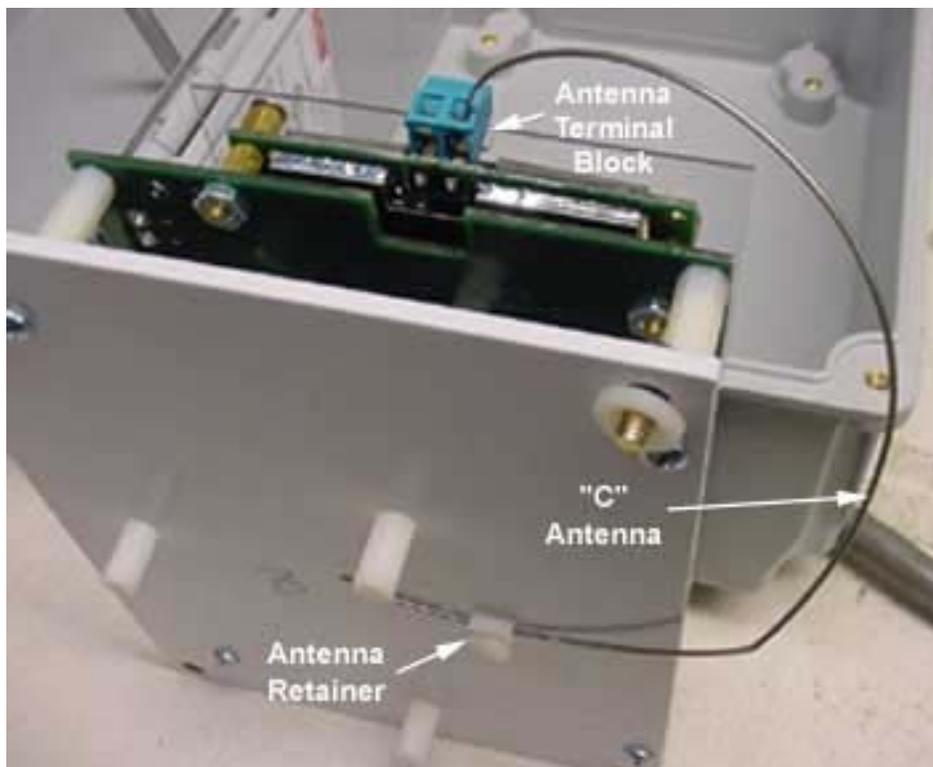
- 6.8.1 Remove the WRI-OTD-12VDC PCB from the WRI-OTD-12VDC enclosure by removing the four screws, one in each corner of the PIM PCB back plate (Figure 6-16).



**Figure 6-16 – Removing the WRI-OTD-12VDC PCB**

- 6.8.2 Remove the WRI-OTD-12VDC's internal "C" antenna by loosening the screw on the Antenna Terminal Block and gently pulling the antenna out of the Antenna Retainer (Figure 6-17).

**Note: Some PIM internal "C" antennae may also be secured with RTV adhesive. This adhesive can be easily broken free from the back plate with a little twisting.**



**Figure 6-17 – Removing the WRI-OTD-12VDC's Internal "C" Antenna**

6.8.3 Drill a ½” hole in the top of the WRI-OTD-12VDC enclosure (Figure 6-18).



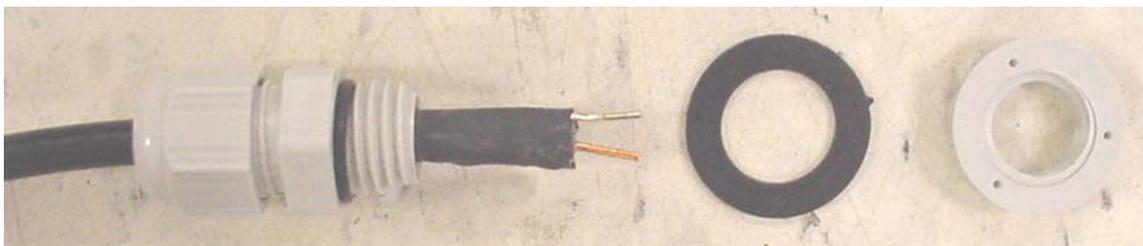
**Figure 6-18 – WRI –OTD-12VDC Antenna Hole Locations**

6.8.4 Replace the WRI PCB in the WRI-OTD-12VDC enclosure (Figure 6-19).



**Figure 6-19 – Replacing the WRI-OTD-12VDC’s PCB**

6.8.5 Remove the nut and washer (if provided) from the NEMA gland (Figure 6-20). Discard the washer.



**Figure 6-20 – NEMA Gland with Nut & Washer Removed**

- 6.8.6 Install the NEMA gland in the hole drilled in step 6.8.3. Tighten the gland by turning the nut inside the enclosure. Do not tighten the gland by turning the gland while holding the nut. There is an “O” ring on the gland that will not seat properly if the gland is rotated (Figure 6-21).

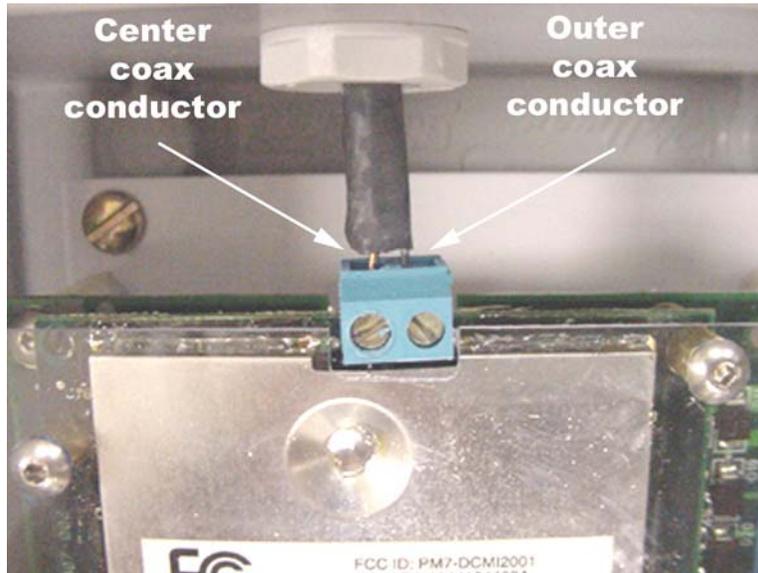


**Figure 6-21 – Installing the RAM Coax in the WRI-OTD-12VDC**

- 6.8.7 Attach the Remote Antenna Coax to the WRI-OTD-12VDC PCB Antenna Terminal Block (Figure 6-22).

**NOTE:** Make certain that the Center Coax Conductor (copper color) goes in the leftmost terminal of WRI-OTD-12VDC PCB Antenna Terminal Block and that the Outer Coax Conductor (silver color) goes in the rightmost terminal.

**NOTE:** If installing RAMs on a PIM PCB and a WRI-OTD-12VDC, the Coax connects to the WRI-OTD-12VDC just the opposite of how it connects to the PIM PCB, see Figure 6-14 & Figure 6-22.



**Figure 6-22 – WRI-OTD-12VDC PCB Antenna Terminal Block Connections**

- 6.8.8 Secure the Remote Antenna Coax in the NEMA gland (Figure 6-23).



**Figure 6-23 – Securing the WRI-OTD-12VDC's Antenna NEMA Gland**

**This completes the Remote Antenna Module Installation.**

**Refer to the “Configuring & Operating a Wireless Access System” manual to test the installation.**

## **7. FCC Compliance & Warnings**

### **7.1 FCC Compliance**

This device has been authorized by the FCC Rules and Industry Canada.

This device complies with the limits for a Class B digital device and a Class B intentional radiator, pursuant to Part 15 of the FCC Rules and with RSS-210 of Industry Canada. 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.

The Wireless Access System Component must be installed by qualified professionals or contractors in accordance with FCC part 15.203, Antenna Requirements.

Do not use any antenna other than the one provided with the unit.

### **7.2 Warnings**

RF Exposure - To comply with FCC RF exposure requirements for mobile transmitting devices this transmitter should only be used or installed at locations where there is normally at least a 20 cm separation between the antenna and all persons.

Do not co-locate and operate in conjunction with any other antenna or transmitter.

Changes or modifications not expressly approved by IR Security Technologies could void the user's authority to operate the equipment.

## 8. Supplier Contact Information

**Maxrad Inc.**

4350 Chandler Drive  
Hanover Park, IL 60133  
Voice: (800) 323-9122 or (630) 372-6800  
Fax: (630) 372-8077  
Web: [www.maxrad.com](http://www.maxrad.com)

**PolyPhaser Corporation**

2225 Park Place  
Minden, NY 89423  
Voice: (800) 325-7170 or (775) 782-2511  
Fax: (775) 782-4476  
Web: [www.polyphaser.com](http://www.polyphaser.com)

**Universal Electronics, Inc.**

Coax-Seal  
Voice: (800) 241-8171  
Web: [www.coaxseal.com](http://www.coaxseal.com)

## 9. Contacting Schlage Wireless Access™

For questions regarding Schlage Wireless Access™:

[www.ir-swa.com](http://www.ir-swa.com)

(800) 313-2962  
(630) 293-4257 fax

## 10. Revision History

Version	Date	Changes
X001.0	02/14/02	preliminary in house release for comments
X001.1	02/15/02	grammar corrections, updated/added figures
X001.2	02/19/02	pagination reformatting, updated figures
001	02/20/02	released for publication
002	04/10/02	removed "preliminary" from footer, changed PIM to WRI in section 2.6.7
x003	12/11/02	added ANT-6DB-YAGI & ANT-6DB-FLAT sections, added grounding and lightning verbiage
x003.1	01/10/03	added copyright page, removed field termination of coax section, updated figures for new type of coax termination, modified grounding and lightning sections
003	01/14/03	minor edits, released for publication
004	12/05/03	deleted ANT-6DB-YAGI section & references, added Lightning Protection Kit information and diagrams, added accessory table
005	02/23/04	added ANT-REM-IN model, added ANT-REM-I/O-MAST model, added MMK4, MMK6, MPAB3, & MPAB4 mounting kits, added MGB+MCA5 grounding kits, changed ANT-REMOTE to ANT-REM-I/O, changed ANT-6DB-FLAT to ANT-REM-I/O+6DB, removed ANT-LPK (lightning protection kit), added PIM-TD4, changed PIM-OTD to PIM-TD2, changed PIME-OTD to PIM-EXP, changed PIM-OTD-485 to PIM-485-16-TD, modified and added accessory tables
B	5/17/05	Changed various nomenclature and contact info throughout the manual.
C	1/31/07	Rebranded to Schlage Wireless Access