INSTALLATION GUIDE – CLAW REFLECTOR

Part # RCL-3

Thank you for your recent purchase of WB's Claw Reflector. Follow the instructions below for proper installation of the reflector.

*Note: The size of the Claw Reflector you are using may affect the installation process.

Step 1: Remove the reflector and its parts from the packaging. Check the contents to ensure that all components are included

Contents:

Reflector (1)

Bracket (1)

Claw Arm (1)

Base (1)

Bolt A (2)

Nut A (3)

Bolt B (4)

Nut B (4)

Bolt C (1)

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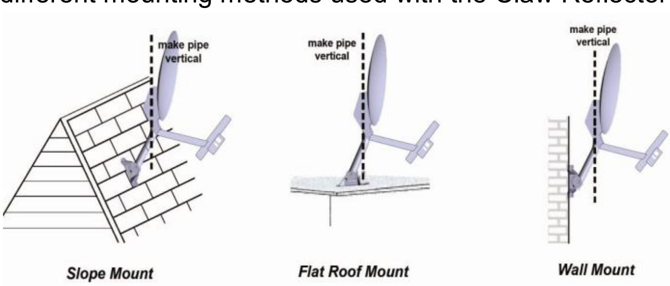
Step 2: Attach the claw arm to the bracket using bolt A (2) and nut A (2). The nut should be facing away from where the dish would be. Once the claw arm and bracket are assembled, use nut B (4) and bolt B (4) to attach the bracket to the reflector.

Step 3: Mount the reflector in the desired location on the customer's premise. The following pictures show the different mounting methods used with the Claw Reflector.



Step 4: Make sure the pipe on the base is plumb. The pipe from the bend to the top of the pipe should be vertical (shown in the previous picture). Tighten the bolts at the base of the mount.

Step 5: Attach included WB FCC ID label to back of SM.

Step 6: Snap the SM into the Claw mount.

*Note: Press the tab on the claw mount to release the SM.

Step 6a: Slide the reflector over the mount. Once the azimuth adjustment has been made, tighten the bolts on the bracket.

Step 6b: Maximize the signal by adjusting the elevation using the AccuAim feature. After you have made the adjustment, tighten the elevation bolts on the bracket.

The installation is now complete.

To purchase more Claw Reflectors call us at (435) 837-6200.

Exposure Separation Distances

To protect from overexposure to RF energy, install PMP450SM radios so as to provide and maintain the minimum separation distances from all persons.

Exposure Separation Distances

Module Type	Separation Distance from Persons
PMP450SM	At least 20 cm (approx 8 in)

Details of Exposure Separation Distances Calculations and Power Compliance Margins

Limits and guidelines for RF exposure come from:

- US FCC limits for the general population. See the FCC web site at http://www.fcc.gov, and the policies, guidelines, and requirements in Part 1 of Title 47 of the Code of Federal Regulations, as well as the guidelines and suggestions for evaluating compliance in FCC OET Bulletin 65.
- Health Canada limits for the general population. See Safety Code 6 on the Health Canada web site at http://www.hc-sc.gc.ca/.
- ICNIRP (International Commission on Non-Ionizing Radiation Protection) guidelines for the general public. See the ICNIRP web site at http://www.icnirp.de/ and Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields.

The applicable power density exposure limits from the documents referenced above are

- 10 W/m2 for RF energy in the 5.7-GHz frequency band.

Peak power density in the far field of a radio frequency point source is calculated as follows:

$$S = \frac{P \cdot G}{4 \pi d^2}$$

where
S = power density in W/m^2
P = RMS transmit power capability of the radio, in W
G = total Tx gain as a factor, converted from dB
d = distance from point source, in m

Rearranging terms to solve for distance yields

$$d = \sqrt{\frac{P \cdot G}{4 \pi S}}$$

The table shows calculated minimum separation distances d, recommended distances and resulting power compliance margins for each frequency band and antenna combination.

Calculated Exposure Distances and Power Compliance Margins

Freq. Band	**Antenna**	**Variable**			***d*** **(calcu-lated)**	**Recom-mended Separation Distance**	**Power Compliance Margin**
		P	**G**	**S**			
5.7 GHz OFDM	Integrated, 9 dBi patch	0.079 W (19 dBm)	.08 W (9 dBi)	10 W/m² or 1 mW/cm²	8 cm	20 cm (8 in)	8
	Integrated, 9 dBi patch with 12 dBi Stinger	0.079 W (19 dBm)	.126 W (21 dBi)	10 W/m² or 1 mW/cm²	28 cm	50 cm (20 in)	3.1
	Integrated, 9 dBi patch with 22 dBi Reflector Dish w/COP	0.079 W (19 dBm)	1.26 W (31 dBi)	10 W/m² or 1 mW/cm²	89 cm	150 cm (60 in)	2.8

The "Recommended Distances" are chosen to give significant compliance margin in all cases. They are also chosen so that an OFDM module has the same exposure distance as a Canopy module, to simplify communicating and heeding exposure distances in the field.

These are conservative distances:

- They are along the beam direction (the direction of greatest energy). Exposure to the sides and back of the module will be significantly less.
- They meet sustained exposure limits for the general population (not just short term occupational exposure limits), with considerable margin.
- The calculated compliance distance d is overestimated because the far-field equation models the antenna as a point source and neglects the physical dimension of the antenna.