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# RRK-88

## Roof Radial System for DX 88 Vertical Antenna

# INSTRUCTION MANUAL

### General Information

This radial kit consists of four sets of resonant radial wire assemblies totalling 14 radials for 7 bands, 40 through 10 meters. The DX-88 antenna will also work on the 80 meter band using this radial kit. Each radial is made from 7/23 Copperweld®, and is attached to the antenna base with solder lugs.

### Installation

The OMNI DX-88 vertical, when mounted on a roof or mast, should be mounted in the clear away from trees and power lines.

Do not install this antenna near any power line. Not only is it dangerous to put up and take down, the power lines could cause excessive noise to be received by the radio connected to this antenna.

Also, do not attach other antennas or antenna supports to this antenna or to its resonant radial system.

### WARNING

Installation of this product near power lines is dangerous!! For your safety, follow the installation directions.

First, obtain a short sturdy tripod, such as a Radio Shack® 3 foot tripod, and attach it to your roof using 1/4 inch or 5/16 inch lag screws (not supplied). The lag screws should be screwed into the roof joist where possible, or you should add a reinforcing board under the roofing plywood for greater strength.

Second, install the support mast within the tripod. The support mast should be 15/8 inch O.D. by approximately 3 feet long (41mm x 1m) steel or heavy-wall aluminum.

Install your OMNI DX-88 vertical antenna to your support mast. Tune the antenna to the desired frequencies before installation by following the example or graphs in your DX-88 manual. Attach a ground wire as shown in Figure 1, Detail A, and tighten the two U-bolts securely.

Attach the insulators to each free end of the radial wires. Fold back the free end of the radial wire and lightly twist together. **DO NOT CUT OFF EXCESS WIRE UNTIL YOU ARE SURE ALL BANDS ARE WORKING PROPERLY.** Adjust the wire lengths to those shown in Table 1.

Cut the 5/32 inch polyethylene rope into lengths appropriate for your installation. The supplied length of 100 feet will make 14 sections each 7 feet long. Insert these rope sections through the insulators and tie.

Attach each of the 4 wire assemblies to the bottom of the antenna base, using the No. 10 bolts installed on the base. Tighten securely.

Copperweld® is a registered trademark of Copperweld Bimetallic Group  
Radio Shack® is a registered trademark of the Tandy corporation

RESONANT RADIAL LENGTHS					
AMATEUR BAND (METERS)	WIRE LENGTH		SWL BAND (METERS)	WIRE LENGTH	
	U.S.	METRIC		U.S.	METRIC
41/40	34' 2"	10.41 m	31	25' 1"	7.65 m
30	23' 9"	7.24 m	22	17' 10"	5.43 m
20	17' 1"	5.21 m	19	16' 0"	4.87 m
17	13' 8"	4.17 m	16	13' 10"	4.23 m
15	11' 11"	3.63 m	13	11' 5"	3.47 m
12	10' 3"	3.12 m	11	9' 7"	2.92 m
10	9' 1"	2.77 m			

Table 1 Resonant Radial Lengths

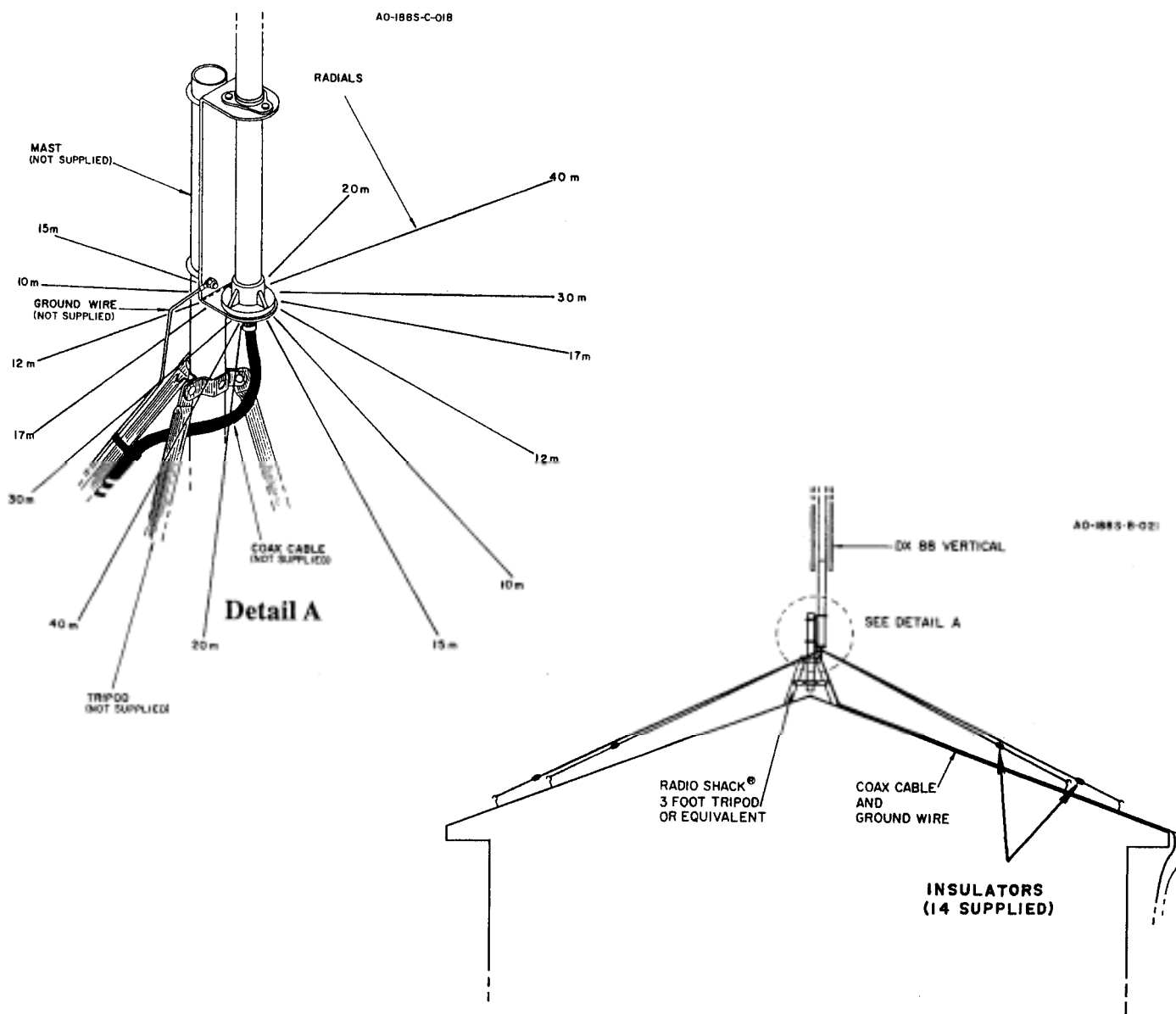


Figure 1 Roof Mounted Radial System

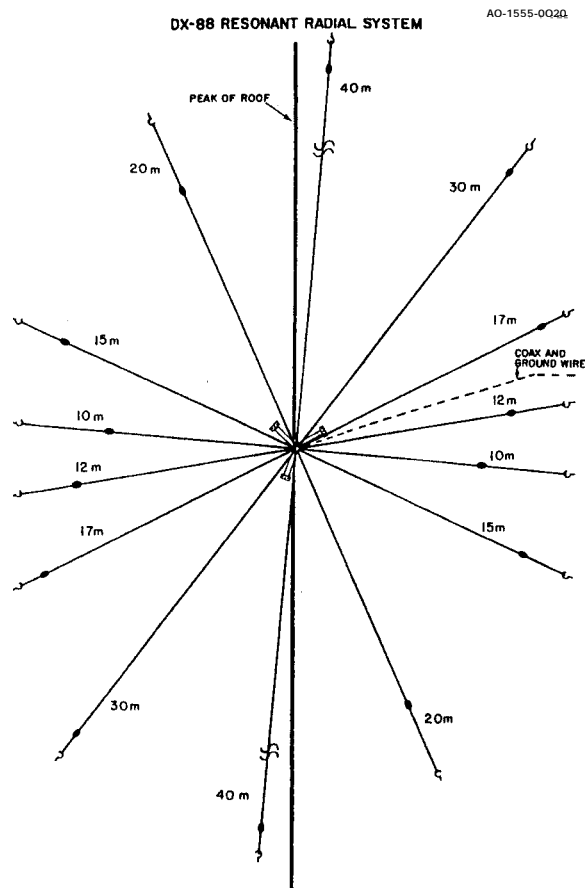


Figure 2 DX-88 Resonant Radial System

Arrange the radials as shown in Figure 2. Attach the hook screws to your roof and tie each rope section to each hook loosely. Allow extra rope at each location for fine-tuning of each radial wire length. Waterproof the point where each hook screw and lag screw enters the roof with RTV.

### WARNING

Keep this antenna away from the reach of children or pets. When transmitting, the antenna and antenna radials are hot with RF proportional to the operating power.

If you mount your antenna on a roof and find the roof space is too small for the radial system, you can droop the radials over the edge of the roof at almost any angle without seriously changing the performance of the antenna. The radial system must be insulated from the roof and connected to a good ground for lightning protection.

The resonant radials must be at least 10 feet from tower guy wires, mast guy wires or any other wires or metal objects. Use the shortest path possible between the antenna and an 8 foot ground rod for the earth ground, using #6 or #8 copper wire. Mast mounting is identical to roof mounting.

In any installation, use a good quality 50 ohm coaxial transmission line such as Times RG-213/u (solid), Belden 8214 (foam) or Belden 8237, 8267, or 9251 (solid).

Take extra care when soldering connectors to foam dielectric coaxial cable. Weatherproof all connectors which will be exposed to rain or ice with Coax-Seal® or another similar substance.

Attach the transmission line to the bottom of the base assembly and tighten securely. Tape the coax to the tripod for strain relief when roof mounting.

Coax-Seal® is a registered trademark of Universal Electronics,

## Operation

Connect the other end of your transmission line to a good quality SWR meter and then to your transmitter. While using low power (less than 200 watts output) check the VSWR across each band from 3.5 to 29.7 MHz.

If the frequency of lowest VSWR is within approximately 300 KHz of where it should be, (according to the tuning graphs), you may fine-tune your antenna by adjusting the lengths of the appropriate radial wires. Shorten the two radial wires on each band to raise the resonant frequency, or lengthen the two radial wires to lower the resonant frequency. When each band has been adjusted, tightly attach the rope sections to the hook screws.

Radial wires for the 80 meter band may be added if you have enough room.

Refer to the OMNI-DX-88 vertical antenna instruction manual for information on tuning and operating this antenna system.

## Parts List

Item No.	Part No.	Description	Qty
1	878571	Radial Assembly, 40/30/17 Meter	
2	878572	Radial Assembly, 20/15/12/10 Meter	
3	691136	Rope, 5/32" Poly x 100	
	878573	Parts Pack, RRK-88	
4	460318	Radial	
5	547275	Screw	