

DIY Build Instructions

Tiger Tail Antenna DIY assembly instructions

Coastal and SLV ARES Amateur Radio Emergency Service

The Tiger Tail is a 1/4 wave + 5 percent counterpoise wire antenna terminated at the ground side of the SMA connector on the handheld radio antenna.

The Tiger Tail antenna is a good starter DIY project to develop soldering skills and is easily manufactured from a ring lug and stranded insulated wire.

The completed antenna will look like the picture below.



Examples of radio frequencies that this antenna can resonate at once trimmed to specific lengths for a particular band.

Frequency	Band	Cut Length - inches
146 Mhz	2-meter	19.3 -inches
152 Mhz	MURS	18.473
222 Mhz	1.25-meter	12.7-inches
445 MHz	70 cm	6.35-inches
902 Mhz	33 cm	3.1-inches
1250 MHz	23 cm	2.25-inches

DIY Build Instructions
Tiger Tail Antenna DIY assembly instructions
Coastal and SLV ARES Amateur Radio Emergency Service

Tiger Tail Antenna DIY Materials, Tools and Consumables

Parts List	
Part Description	Quantity
¼ "diameter Rig Lug	1 each
14 - 12 awg stranded wire. Ensure the ring lug accepts the stranded wire diameter.	25-inches
Note: The antenna wire length will be trimmed after soldering the appropriate length.	



Tiger Tail antenna wire and ring lug components

DIY Build Instructions
Tiger Tail Antenna DIY assembly instructions
Coastal and SLV ARES Amateur Radio Emergency Service

Tools	
Tool Description	Quantity
Soldering Iron 60 watt / 440 degrees C	1 each
Side cutting pliers / Wire Strippers	1 each
Needle Nose pliers	1 each

Consumables	
Consumables Description	Quantity
Solder (Rosin Core)	AR

Assembling the ring lug on to the antenna wire

Remove the insulation from the ring lug (If there is no insulation this step can be skipped) illustrated in Figure 1.



Figure 1

DIY Build Instructions

Tiger Tail Antenna DIY assembly instructions

Coastal and SLV ARES Amateur Radio Emergency Service

Place the ring lug in proximity to the end of the antenna wire. The overlapping distance will determine the insulation strip length.

Strip a length of the insulation off the red wire, that length should approximately match the length of the Ring lug wire terminal illustrated in Figure 2.



Figure 2

Install the ring Lug on stripped wire end.

Solder wire and ring lug termination in place illustrated in Figure 3.



Figure 3

DIY Build Instructions

Tiger Tail Antenna DIY assembly instructions

Coastal and SLV ARES Amateur Radio Emergency Service

Determining antenna length for selected operating frequency

The assembled wire and ring lug assembly needs to be trimmed to the appropriate length which will enable the antenna to resonate at the frequency you wish to operate.

Examples of radio frequencies that this antenna can resonate at once trimmed to specific lengths for a particular band. The table below shows the typical bands and the antenna cut length for the frequency.

Frequency	Band	Cut Length - inches
146 Mhz	2-meter	19.3 -inches
152 Mhz	MURS	18.473
222 Mhz	1.25-meter	12.7-inches
445 MHz	70 cm	6.35-inches
902 Mhz	33 cm	3.1-inches
1250 MHz	23 cm	2.25-inches

If you would like to determine the length of your antenna or if you have a specific frequency a link to an online Antenna Calculator can be used to calculate the frequency and length of antenna lines.

Antenna Calculator Link: KM4FMK.com

Trimming the antenna wire to length

Once you have your antenna resonance length determined, start the length measurement approximately halfway between the ring lug thru hole and the wire termination where the wire is soldered as illustrated in Figure 4.



Figure 4

DIY Build Instructions

Tiger Tail Antenna DIY assembly instructions

Coastal and SLV ARES Amateur Radio Emergency Service

Installing the Tiger Tail antenna to your handheld radio

Remove the vertical antenna from your radio. Place the ring lug over the RF connector of your radio. Tighten the vertical antenna to the point that the vertical antenna is snug against the Tiger Tail antenna ring lug. Note; when tightened the Tiger Tail antenna should be in contact with the vertical antenna and does not rotate.

The completed installation of the Tiger Tail is illustrated in Figure 5 picture sequence.



Figure 5