

# *DX-611 Yagi Antenna for Radio Astronomy*

*MTM Scientific, Inc 2008*

## Introduction

The DX-611 antenna is designed for radio astronomy observation in the frequency range of 608-614 MHz. The antenna is a traditional YAGI design with a receiver element, reflector element and 8 director elements. The DX-611 is useful for making total power radio astronomy observations in drift scan mode using the CATV Tuner.

## Assembly

The antenna consists of 1/8 inch diameter aluminum rods cut to length, and inserted into a drilled PVC tube which acts as the mast. The reflector element and 8 director elements are all single pieces of aluminum rod. Cut them according to the dimensions given and insert them into the pre-drilled plastic mast. Note that the elements are arranged progressively from largest to smallest. The elements should be installed such that they are centered on the mast. A ruler is useful for making sure the elements are centered.

The receiving element is different from the reflector and directors. It is made of 1/8 inch brass rod, and is actually made of 2 pieces. The 2 pieces should be supported in the mast such that they halves don't touch each other. A solid piece of small diameter plastic rod can be end-drilled to hold the 2 halves, which is subsequently mounted in a larger hole drilled in the PVC mast. The ends of the coaxial cable are soldered to the receiving element, as shown. The soldered connection should be covered with silicone sealant to prevent problems with the weather.

## Antenna Specifications

Frequency Range	608-614 MHZ
Gain	13.5 dB
Front to Back Ratio	34.6 dB
Impedance	32 Ohms

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