

Institute 54 broadband feed for use on fast on-axis dishes.

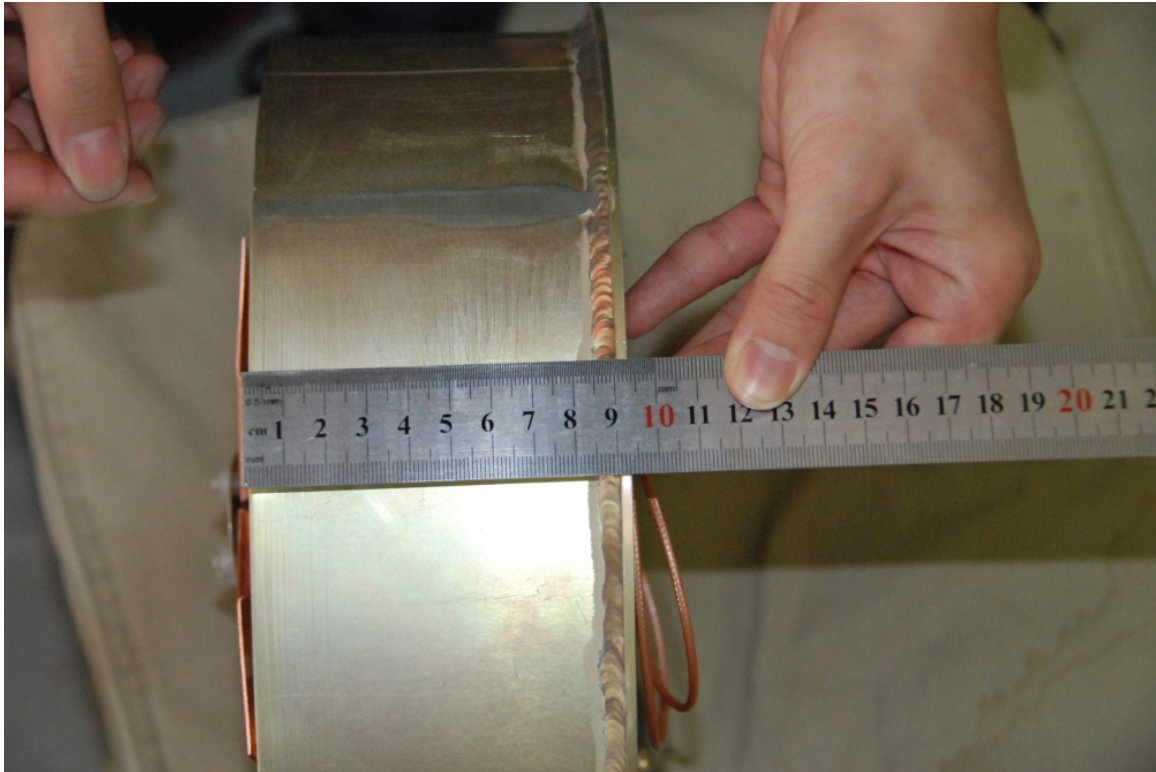
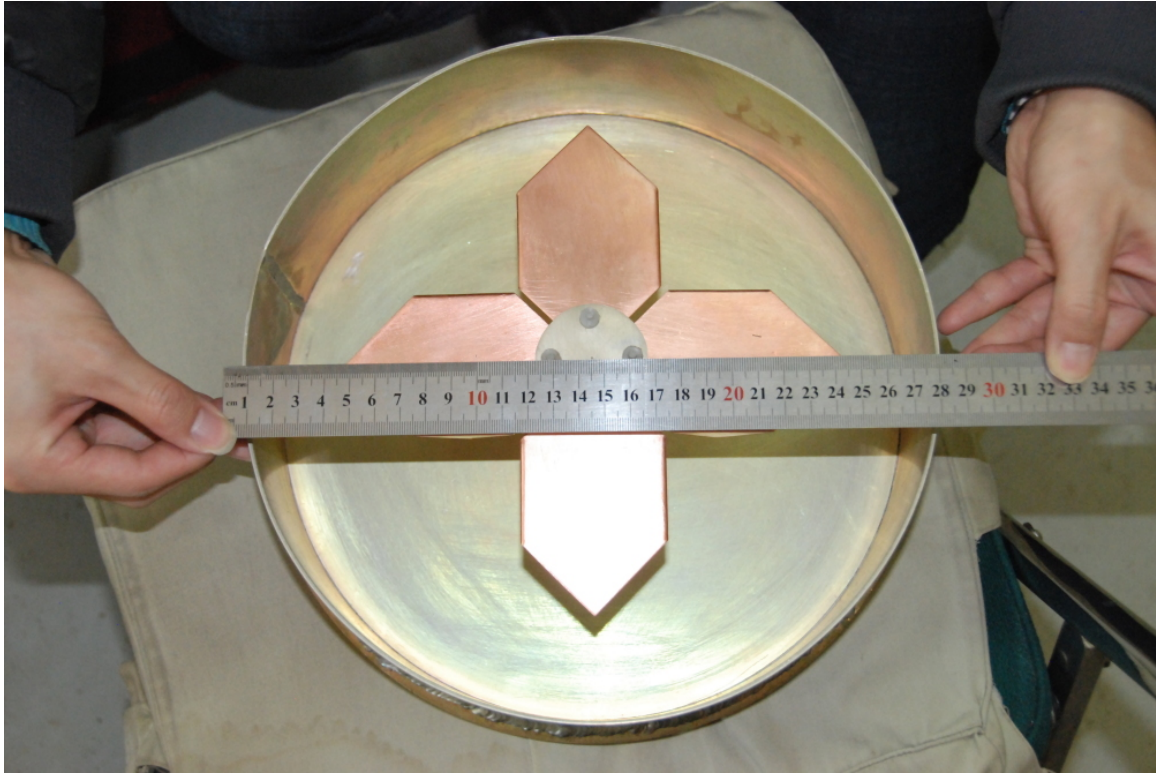
By Jeff Peterson, December 17, 2012, Xinglong

This feed starts with a 4-square at the aperture of a “coffee can”. The design then borrows from the sleeve dipole by adding a disk at the center. A further tweak bends the corners of the 4-square. Behind the copper 4-square is a standard quarter wave balun. This provides a DC short which is useful for static protection, but probably reduces the bandwidth. The balun tubes are also the supports for the 4-square elements.

The last image shows the swr from 600 MHz to 1200 MHz, which stays below 2.3:1. So, the feed is better than 75% efficient into a 50 ohm amplifier for an full octave. Patterns are provided in a separate document.

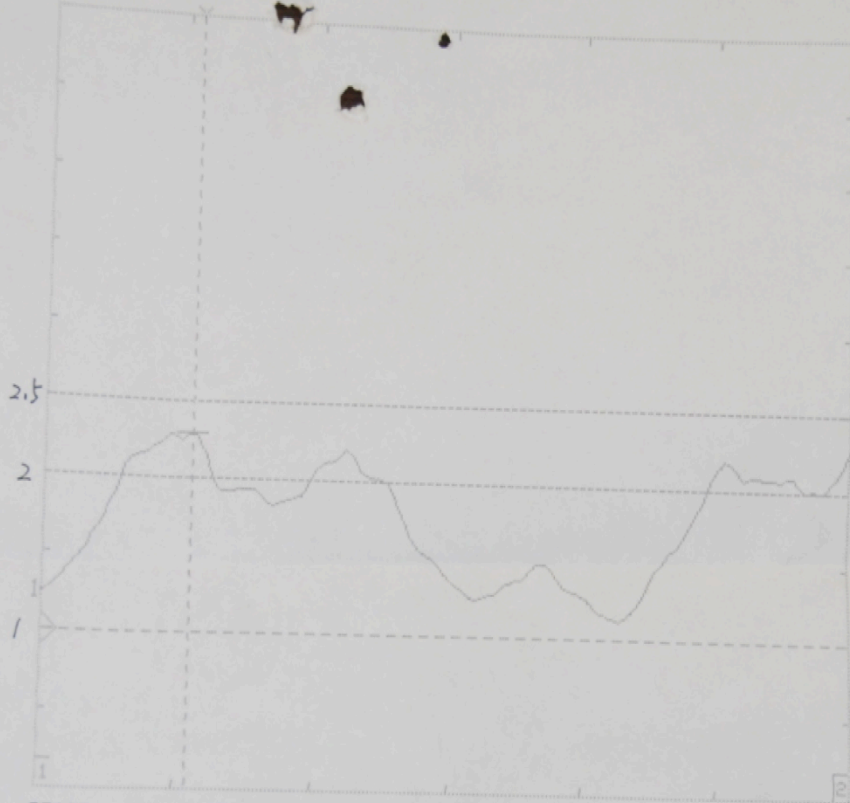
The feed needs a plastic radome cover to keep birds and insects out.





Identify : ANRITSU 54147A Scalar Measurement System
 Test Device : Date :
 1: SWR (A)
 2: OFF

0.50 /DIV OFFSET 1.00 SWR



START: 0.6000 GHz STOP: 1.2000 GHz 401pts
 100 MHz/DIV LEVEL: 0.0 dBm

		System Conditions			
		Channel 1	Channel 2		
High Limit	:	2.50 SWR	-- off --	Smoothing	: off off
Low Limit	:	2.00 SWR	-- off --	Averaging	: off off
Limit Testing	:	fail	-- off --	Apps Hold	: off off

Cursor	:	+2.292 SWR	-- off --		
at	:	0.7080 GHz	-- off --	(-- off --) Bandwidth	
Delta Readout	:	-- off --	-- off --	F(min)	: -- off --
at	:	-- off --	-- off --	F(max)	: -- off --

Detector offsets: A: 0.00 dB B: 0.00 dB R: 0.00 dB

M1:	0.6000 GHz	M2:	1.2000 GHz	M3:	0.1100 GHz	M4:	0.1050 GHz
1:	+1.234 SWR	1:	+2.260 SWR				
M5:	-- off --	M6:	-- off --	M7:	-- off --	M8:	-- off --