



# R.F. Specification

for

## VertexRSI 4.70 Meter Parabolic Antenna With Four Port Receive Only Linearly Polarized Feed Preliminary Spec

	Receive	Receive	Receive
Frequency in GHz-----	3.400-4.200	3.400-4.200	10.700-12.750
Port Type-----	Rx1	Rx2	Rx3
Polarization-----	Linear	Linear	Linear
Feed Port Polarizations-----	VLP	HLP	VLP
Antenna Gain (+/- 0.2 dB)			
3.400 / 3.400 , 10.700 / 10.700 GHz-----	42.50 dBi	42.50 dBi	51.10 dBi
4.000 / 4.000 , 11.725 / 11.725 GHz-----	43.80 dBi	43.80 dBi	51.60 dBi
4.200 / 4.200 , 12.750 / 12.750 GHz-----	44.10 dBi	44.10 dBi	52.20 dBi
Antenna Noise Temperature			
5 degree Elevation-----	59 K	59 K	73 K
10 degree Elevation-----	52 K	52 K	67 K
20 degree Elevation-----	48 K	48 K	62 K
40 degree Elevation-----	45 K	45 K	56 K
Typical G/T at 20 deg Elevation 4.000, 11.725 GHz , clear horizon			
35 degree K LNA-----	24.6 dB/K	24.6 dB/K	30.4 dB/K
50 degree K LNA-----	23.9 dB/K	23.9 dB/K	29.8 dB/K
70 degree K LNA-----			
90 degree K LNA-----			
Pattern Beamwidth in degrees at 4.000 / 4.000 , 11.725 / 11.725 GHz			
-3 dB Beamwidth-----	1.09	1.09	0.44
-15 dB Beamwidth-----	2.29	2.29	0.92
Sidelobes			
For Angle A from 1 to 48 Degrees-----	32 - 25 log A	32 - 25 log A	32 - 25 log A
For Angles from 48 to 180 Degrees-----	-10 dBi	-10 dBi	-10 dBi
For Angle A from 1 to 48 Degrees-----			
For Angles from 48 to 180 Degrees-----			
Cross Polarization Isolation			
On Axis-----	25.0 dB	25.0 dB	25.0 dB
Within 1.0 dB Beamwidth-----	25.0 dB	25.0 dB	25.0 dB



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	Receive	Receive	Receive
VSWR (Return Loss)-----	1.50:1(14.0dB)	1.50:1(14.0dB)	1.50:1(14.0dB)
Feed Insertion or Ohmic Loss-----	0.20 dB	0.20 dB	0.20 dB
Port to Port Isolation (Rx to Rx Same Band)-----	30.0 dB	30.0 dB	30.0 dB
Port to Port Isolation-----	0.0 dB (Input)	-30.0 dB	-30.0 dB
Port to Port Isolation-----	-30.0 dB	0.0 dB (Input)	0.0 dB (Input)
Port to Port Isolation-----			
Output Waveguide Flange Interface-----	CPR-229G	CPR-229G	WR-75 Flat

Notes - Other operational frequencies available

- 10% of sidelobes may exceed the sidelobe specifications where applicable.

-G/T is calculated by bolting single LNA directly to the feed.It does not allow for any post LNA effects.

All values are at the rear feed output flange.