8-9-01

Status of Feed work for the EVLA:

L-Band 1-2 GHz
Type: Profile corrugated horn
Feed A - Max. Diameter =75.0 ": Length =192"
Feed B - Max. Diameter =85.0": Length =238"
Status: Design complete

	Feed A				Feed B			
Freq. (GHz)	Taper at 9 deg.(dB)	Eff.(%)	Tsys.	G/Tsys.	Taper at 9 deg.(dB)	Eff.(%)	Tsys	G/Tsys.
1.0	-7.1	48.5	34	0.25	-9.2	48.3	32	0.27
1.1	-8.4	52.8	31	0.31	-10.4	54.1	32	0.30
1.2	-10.0	50.3	30	0.29	-11.8	52.9	32	0.29
1.4	-10.8	56.9	31	0.33	-12.0	61.6	27	0.41
1.6	-10.7	61.0	28	0.39	-11.9	64.3	24	0.47
1.8	-10.2	61.7	25	0.44	-12.1	64.8	26	0.44
2.0	-11.1	64.3	25	0.46	-13.7	65.4	25	0.47
Average	-9.7				-11.6			

S-Band 2-4 GHz.
Type: Profile Corrugated horn
Max. Dia =46.5"; Length =132"
Average Taper -12.8 dB
Status: Design complete

C-Band 4-8 GHz
Type: Profile Corrugated horn
Max. Dia =23.2"; Length =66"
Average Taper -12.8 dB
Status: Scale of 2-4 GHz

X-Band 8-12 GHz
Type: Linear Taper Corrugated horn
Max. Dia =19.5"; Length=48"
Average Taper -13.0 dB
Status: To be scaled from K-Band

Ku-Band 12-18 GHz
Type: Linear Taper Corrugated horn
Max. Dia =13.0"; Length =32"
Average Taper -13.0 dB
Status: To be scaled from K-Band

K-Band 18-26.5 GHz
Type: Linear Taper Corrugated horn
Max. Dia =8.8"; Length =24.1"
Average Taper -13.0 dB
Status: Completed

Ka-Band 26-40 GHz
Type: Linear Taper Corrugated horn
Max. Dia =5.8"; Length =14.3"
Average Taper -13.0 dB
Status: To be scaled from K-Band

Q-Band 40-52 GHz
Type: Linear Taper Corrugated horn
Max. Dia =3.75"; Length =8.25"
Average Taper -13.0 dB
Status: Completed

Notes: 1. For the feeds where design is complete, details on the throat section needs to be worked out.

2. Where feeds are to be scaled for higher frequencies, if dimensions get too small to machine, a new design may be required.
3. For L-Band, the bigger feed is used in the layout dwg.
4. For X, Ku and Ka, the K-Band design is used. This resulted in smaller feeds than the designs used in the layout dwg.
5. Ka-Band is wider in bandwidth compared to K-Band and may result in a slightly bigger feed than the one given above.

S. Srikanth. May 14, 2001.