

Antenna 5m Gregorian for Earth Station

The antenna reflector has a steel hub and a backing structure of 16 steel trusses and 32 steel tie bars (backing angles). The trusses' curved ribs have the shape of the 16 aluminium reflector panels. The reflector panels are stretch-formed to shape, drilled in factory and supplied ready to rivet in position on the ribs.

The feed assembly (supplied on request) is aligned on dowels in the hub centre.

A small inner reflector panel, supplied in three parts, occupies the space between the feed and the outer reflector panels.

Three mounting plates are attached at the hub to support the de-ice system heaters. 16 insulating panels (plenum panels) are fixed to the outer surface of the reflector framework, creating a closed space to contain the heated air. Three of the plenum panels have sections that can be removed to give access to the heaters.

The steel components are galvanized and the aluminium reflector panels are coated with hard wearing matt white paint. Also the plenum panels have a white paint finish. Subreflector support brackets are fitted to four of the trusses. Pedestal and mechanical handling are produced in galvanized steel, motorization is water-proof.



Electrical Specification KU Band & C Band

	KU BAND	C BAND
Frequency Range	RX 10.70 -12.75 GHz TX 13.75 -14.5 GHz	RX 3.400 – 4,200 GHz TX 5.850 – 6.665 GHz
TX/RX Polarization	Linear orthogonal	Circular
Polarisation isolation @ -1 dB contour	>35 dB	>29 dB
Gain in TX band (13.83 GHz)	55.2 dBi	48.88 dBi
Gain in RX band (11.70 GHz)	53.8 dBi	44.10 dBi
Side-lobes mask	29-25 log(f) dBi for 2.5° < f = 7.0° 8dBi for 7.0° < f 9.2° 32-25 log(f) dBi for 9.2° < f = 48° -10 dBi for 48° < f	29 -25 log(f) dBi for 2.5° < f = 7.0° 8 dBi for 7.0° < f = 9.2° 32 -25 log(f) dBi for 9.2° < f = 48° -10 dBi for 48° < f
Feed type	2 ports/4 ports	2 ports /4 ports (on request)
Insertion loss	TX >0.5 dB RX >0.5 dB	TX less then 0.5 dB RX less then 0.5 dB
Axial Ratio	RX >39 dB TX >40 dB	RX less then 29 dB TX less then 29 dB
Isolation between TX // RX ports	>95 dB // >70 dB	> 95dB
Antenna noise temperature	45.0 dB/°K (@ 11.7GHz and 20° elevation)	45.0 dB/°K (@ 11.7GHz and 20° elevation)
G/T (with 60° K LNB)	33.4 dB/°K (@ 20° Elevation)	23.95 dB/°K (@ 20° elevation)
Surface accuracy (RMS)	<0.4 mm	<0.4 mm

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Mechanical Specification

GENERAL

Antenna diameter	5 m
Total Structure dimension	6300x6400x5000 mm
Antenna Optic	Gregorian
Azimuth coverage	+/-60 Deg.
Elevation coverage	5 to 90 Deg.
Azimuth speed	0,30 Deg./sec(Fast) 0,06 Deg./sec (Slow)
Elevation speed	0,20 Deg./sec(Fast) 0,04 Deg./sec (Slow)
Polarisation speed	0.04 Deg./sec (only on request)
Structure weight	3500 Kg

TRAVEL RANGES

Antenna pointing	Manually through ASC0005A
Antenna step-track	Automatic through ASC0005C
Antenna sensors	Trough resolvers (for elevation and azimuth axis)

OPERATIVE CONDITIONS

Max wind load	90 km/h
Environmental condition:	-20/+50 °C

ENVIRONMENTAL SPECIFICATIONS

Solar radiation	1000 W/mq
Rain	Operational and survival in heavy rainstorms
Relative humidity	0% to 100% with condensation

SURVIVAL CONDITIONS

Max wind load (stowed)	180 km/h
Environmental conditions	-40/+60 °C
Radial ice survival	2.5 cm on all surface



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