SUNCOM 16M ANTENNA

The model 1600FC/K 16M antenna system, designed and manufactured by SUNCOM with CAD, can be applied to the newly updated INTELSAT (IESS) standard A earth station.

The antenna system consists of dual shaped Cassegrain reflectors, a frequency reuse feed network with corrugated horn, a turning head for full motion. The backup structure for the reflector, the hub connecting the main reflector with mount and the pedestal provides the guaranteed pointing accuracy required in normal operation.

The main reflector diameter consists of precision stretch formed aluminum panels riveted with the rings and radials in three rings.

Antenna system is characteristic of high gain, low sidelobes, low cross polarization, capable for frequency reuse both in transmit and receive bands, high driving/control accuracy with angle position display in high resolution.

The radiation patterns meet the associated requirements of INTELSAT (IESS), FCC and CCIR for 2 degree spacing location of geostationary satellites.

ELECTRICAL SPECIFICATION

Type	1600FC	
Frequency in GHz	Receive	Transmit
	3.4-4.200	5.850-6.725
Gain	$55+20lg[f(GHz)/4]$	$58.2+20lg[f(GHz)/6]$
Antenna Noise Temp.	2/4 port	
5°Elevation	48/45k with TRF	
10°Elevation	35/42k with TRF	
20°Elevation	26/36k with TRF	
40°Elevation	24/33k with TRF	
Antenna Sidelobe Pattern	First sidelobe level≤-14dB. Wide sidelobes meets IESS, Eutelsat and CCIR 580-5.	
Cross Pol. on Axis	35dB	35dB
Within 1dB Beamwidth	30dB	30dB
VSWR	1.30:1(LP)	1.30:1(LP)
3dB Beamwidth	0.30°	0.20°
Axial Ratio (CP only)	1.06:1	1.06:1
Feed Insertion or Ohmic Loss	0.30 dB	0.30dB
Power Handling Capability	5kw cw per port	
Port to Port Isolation	Tx - Rx ≥85dB(with TRF) Tx - Tx ≥30dB (LP)	
Feed Interfaces	CPR-229G	CPR-137G

MECHANICAL SPECIFICATIONS

Azimuth Travel	± 170° Continuous
Travel Rate for Az and El	0.02-0.15°/second
Elevation Travel	5°to 90°Continuous
Polarization Travel	±90°
Polarization Travel Rate	1.0°/second
Tracking accuracy	1/8-1/10 beam width

ENVIRONMENTAL SPECIFICATION

Operational Wind	72km/h Gusting to 97km/h
Survival Wind	216km/h
Temperature	-40°C ～ + 60°C
Relative Humidity	100%
Solar Radiation	1135Kcal/ h/ m²
Seismic (Survival)	0.3g (H), 0.15g (V)
Ice Loading	13mm Operational; 25mm Survival

ELECTRICAL SPECIFICATION

Type	1600FK	
Frequency in GHz	Receive	Transmit
	10.95-12.75	13.75-14.5
Gain	64.2+20lg[f(GHz)/4]	65.5+20lg[f(GHz)/6]
Antenna Noise Temp.	2/4 port	
10°Elevation	60/66k with TRF	
20°Elevation	50/56k with TRF	
40°Elevation	46/52k with TRF	
Antenna Sidelobe Pattern	First sidelobe level≤-14dB. Wide sidelobes meets IESS, Eutelsat and CCIR 580-5.	
Cross Pol. on Axis	35dB	35dB
Within 1dB Beamwidth	30dB	30dB
VSWR	1.25:1(LP)	1.25:1(LP)
3dB Beamwidth	0.11°	0.09°
Feed Insertion or Ohmic Loss	0.11 dB	0.09dB
Power Handling Capability	2kw cw per port	
Port to Port Isolation	Tx - Rx ≥85dB(with TRF) Tx - Tx ≥30dB (LP)	
Feed Interfaces	WR75	WR75

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