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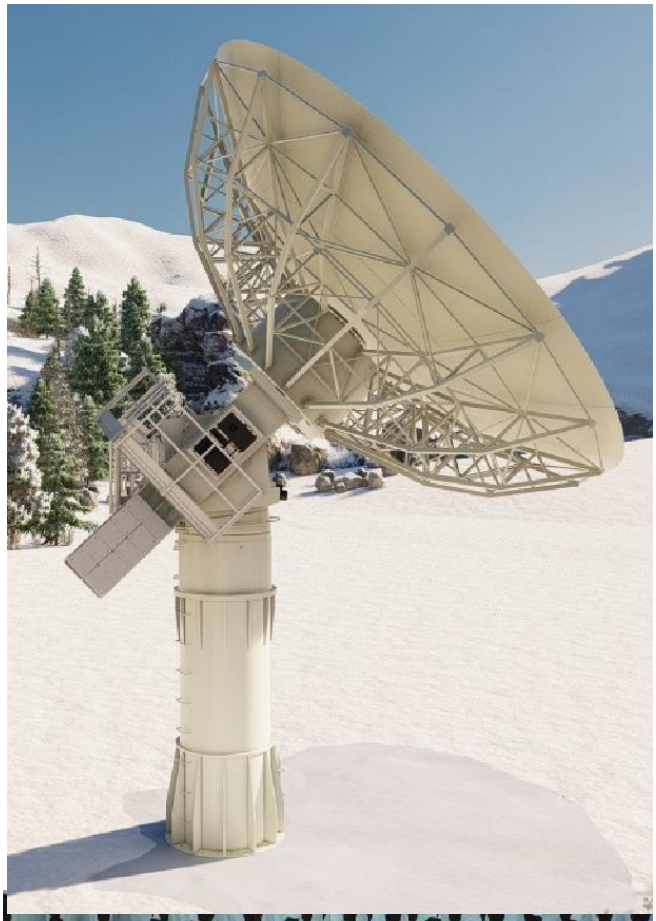
S/X/Ka band 11.5m ANTENNA SYSTEM



PRODUCT OVERVIEW

The antenna system described here is a tri-band full motion antenna with tilt. The antenna system contains a main reflector of 11.5m diameter and a sub-reflector. The system consists in an azimuth over elevation mechanism and includes an additional tils movement.

The antenna optical design is a ring focus, developed to achieve the maximum efficiency, reliability, and structure stability of antenna system.

The main reflector is composed by aluminum precision formed panels, in single row, used to maintain light weight for the entire structure while guaranteeing high reliability of RF performances. The surface accuracy presents a low RMS value (better than of 0.4mm), that is mandatory for mission critical applications.

The feed system is a tri band coaxial optimized for the S, X and Ka frequency bands. The antenna design is also available with other frequencies.

The antenna system is equipped with its own multi functions Antenna Control Unit and Monitor & Control System

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Antenna	11.5m S/X/Ka band Antenna System		
	Rx	Tx	
Antenna Diameter	11.5 m		
Antenna Type	Ring Focus		
Surface Accuracy	RMS ≤ 0.4mm Main reflector; ≤ 0.3mm Sub reflector		
Frequency (GHz)* S/X/Ka Monopulse capabilities	S band: 2.2 – 2.3 X band: 7.9 – 8.5 Ka band: 25.5 - 27	S band: 2.025 – 2.120	
Feed	S band: 4 ports (2 Rx and 2 Tx) RHCP/LHCP X band: 2 port Rx (RHCP/LHCP) Ka band 2 port Rx (RHCP/LHCP)		
VSWR	≤ 1.3:1		
G/T S-band @5° El (dB/K)	≥ 22.5		
G/T X-band @5° El (dB/K)	≥ 35.7		
G/T Ka-band @5° El (dB/K)	≥ 41.2		
EIRP @2120Mhz (dBW)	≥ 68.4		
Power Handing	==	500W per port	
Feed interface	S band: Coax X band: WR-112 Ka band: WR-34	S band: Coax	
Feed Insertion Loss	≥ 0.7 dB for all bandwidth		
Cross Pol Isolation @ 1 dB contour (dB)	25	25	
Isolation (dB)	S/X/Ka-band: Tx/Tx or Rx/Rx ≥ 18; S-band: Tx/Rx ≥ 120		
Radiation Pattern	ITU-R S.465-6		
Mechanical			
Mount Type	Elevation over Azimuth and TILT		
Antenna Travel	Azimuth: ±270°	Elevation: -5° to 100°	TILT: 0° to 180° Inclination: 6° max
Drive Mode	Motorized with brushless motors		
Speed	AZ: 10°/s max.	EL: 5°/s max.	TILT: 5°/s max.
Acceleration	AZ: 7.25°/s^2 max.	EL: 2.5°/s^2 max.	TILT: 1°/s^2 max.
Environmental			
Wind Speed	75 km/h operational, 100 km/h gusting 200 km/h survival (stow position)		
Ambient Temperature	-40° C to +60° C		
Relative humidity	0 to 100% with condensation		
Rain fall	100 mm/hour continuos		
Solar Radiation	1135 Kcal/h/mq		

*Available for different frequencies

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