

X Band 13 m ANTENNA SYSTEM



PRODUCT OVERVIEW

The antenna system described here is a single-band turning head antenna. The antenna consists of a main reflector with a diameter of 13 meters and a sub-reflector. The pointing mechanism is azimuth over elevation.

The antenna's optical properties are based on a ring focus design, developed to achieve the maximum efficiency, reliability, and structural stability.

The main reflector consists of a single row of precision-formed aluminum panels (RMS values better than 0.4 mm), which are used to maintain the light weight of the entire structure while ensuring high reliability of RF performance.

The RF feed is a single-band system optimized for X band.

The antenna is compliant to STANAG AComP-5648 and is equipped with its own multi-function Antenna Control Unit and Monitor & Control System.



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Antenna	X Band 13 m Low-PIM Antenna System	
	Rx	Tx
Antenna Diameter	13 m	
Antenna Type	Ring Focus	
Surface Accuracy	RMS ≤ 0.4 mm Main Reflector RMS ≤ 0.15 mm Sub-Reflector	
Frequency (GHz)	X Band: 7.25 – 7.75	X Band: 7.9 – 8.4
Gain	X Band: ≥ 56.8	X Band: ≥ 57.7
Feed	X Band Low-PIM Feed System: X-Rx: LHCP & RHCP – X-Tx: LHCP & RHCP X-TRK: LHCP & RHCP	
VSWR	≤ 1.3:1	
G/T @ 20° El, Clear Sky (X Band)	Better than 35.1 dB/K	
EIRP @ X Band (Single Carrier)	Better than 89.1 dBW	
PIM	Compliant to STANAG AComp-5648 at 3 dB Output Backoff	
Tx Power Handling	2000 W per Port in X Band	
Feed Interface	WR-112 WR-42	WR-112 WR-34
Feed Insertion Loss	X Band: ≤ 0.6 dB	X Band: ≤ 0.6 dB
Axial Ratio on Axis	≤ 0.5 dB	≤ 0.5 dB
Isolation (dB)	X Band: Tx/Tx or Rx/Rx ≥ 20 X Band: Tx/Rx ≥ 120	
Radiation Pattern	ITU-R S.465-6 / ITU R S.580-6	
Mechanical		
Mount Type	Elevation over Azimuth	
Antenna Travel	Azimuth: ±95°	Elevation: -1° to 90°
Drive Mode	Motorized with Brushless Motors	
Speed	AZ: 1°/s max.	EL: 1°/s max.
Acceleration	AZ: 1°/s² max.	EL: 1°/s² max.
Environmental		
Wind Speed	72 km/h Operational, 97 km/h Gusting 200 km/h Survival (Stow Position)	
Ambient Temperature	-30°C to +50°C (Operational) -40°C to +60°C (Survival)	
Relative Humidity	0 to 100% with Condensation	
Rain Fall	100 mm/hour Continuous	
Solar Radiation	1031 Kcal/h/sqm	
Atmospheric Conditions	Salt, Pollutants, and Corrosive Contaminants as Conditions Found in Coastal and Industrial Areas	



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