

4281 FULL MOTION EARTH STATION ANTENNA

4.2 Meter X/Ku/Ka Band Gregorian



- **Meets ITU / Intelsat / Eutelsat / WGS Specifications**
- **Multi-Band X, Ku, and Ka band Frequencies**
- **Integrated Biased Drive Antenna Control System with Tracking Receiver**
- **Precision Carbon Fiber Panels and Carbon Fiber Radials**
- **135 MPH Stowed Survival / 125 MPH any position**
- **Drive to Stow 80 mph**

Options

- **Antenna & Hub mounted Integration**
- **Multi-band feeds**
- **Integrated Rainblower**
- **Higher Speed Drives**
- **Multi-Carrier X Band**

The Sat-Lite Technologies Model 4281 X/Ku/Ka Band Antenna is a high performance full motion fixed earth station antenna. This antenna features a precision aligned carbon fiber reflector and a biased drive servo control system. The reflector has been factory aligned and measured using a precision laser tracking system to ensure high surface accuracy. The antenna is designed for X, Ku, and Ka band frequencies. The galvanized steel pedestal offers full motion azimuth drive (180° continuous), and a 0 to 90 Deg elevation drive. The servo system offers dual biased drives for azimuth and elevation axes along with multiple tracking options and an integrated tracking receiver.

The antenna is designed to meet international performance specifications for commercial off-the-shelf applications. Multiple integration packages can be accommodated.



<i>Electrical Specifications</i>	2 Port X Band Circular		4 Port Cross-Pol Ku Band Linear		4 Port Ka Band Circular	
	Rx	Tx	Rx	Tx	Rx	Tx
Frequency (GHz)	7.25-7.75	7.9-8.4	10.7 - 12.75	13.75 - 14.5	17.7 - 21.2	27.5 - 31
Gain (midband, dBi)	48.4	49.0	52.6	54.2	56.5	59.5
Typical G/T dB/K (20 deg El)						
60 deg LNA	26.9					
70 deg LNA			30.9			
110 deg LNA					33.2	
Cross Pol						
On Axis	-18.7 dB	-18.7 dB	-35 dB	-35 dB	-30 dB	-30 dB
in 1 dB BW	-18.7 dB	-18.7 dB	-35 dB	-35 dB	-30 dB	-30 dB
Axial Ratio	<2.0 dB	<2.0 dB			0.5 dB	0.5 dB
Sidelobe Compliances	ITU / Mil Std 188-164		Meets ITU, FCC 25.209, Eutelsat		ITU	
VSWR	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
Optional Multicarrier Performance (Low Pim)	-135 dBm with up to 2 x 200W Carriers					
Isolation						
Tx/Rx	-110 dB	0 dB input	-85 dB	0 dB input	-85 dB	0 dB input
Tx/Tx				35 dB		18 dB
Rx/Rx			35 dB		18 dB	
Rx/Tx	0 dB input	-110 dB	0 dB input	-85 dB	0 dB input	-85 dB
Max Power Handling (Continuous)		1.0 kW		1.0 kW		400 W
WG Interface	CPR112G	CPR112G	WR75-Cover	WR75-Cover	WR42	WR28

<i>Mechanical / Environmental Specifications</i>	
Reflector	4.2 meters Carbon Fiber 12 Panels
Reflector Configuration	Axi-Symmetric / Gregorian
Antenna Travel	
Azimuth	180° Continuous (350° optional)
Elevation	0 - 90° Continuous
Polarization	± 90° (Linear Feeds)
Standard Drive Rates	
Azimuth	Up to 0.75°/sec Typical
Elevation	Up to 0.75°/sec Typical
Foundation	11.5 x 11.5 x 1.5 Ft (3.5 x 3.5 x .46 m) Typical
Concrete	7.35 yds ³ (5.62 m ³)
Shipping Container	Fits in 1 - 20 ft Container
Temperature	
Operational	-20 to 50°C (-4 to 122°F)
Survival	-30 to 60°C (-22 to 140°F)
Antenna Control System (Typical)	
Outdoor Servo Drive Cabinet - Variable Speed	Servo Drive / 5 KVA / 208 3Ph 50/60 Hz (optional 380 3Ph)
Rack Mount ACU	Inclined Orbit Tracking / Integrated L Band Beacon Receiver GUI Ethernet Web Browser Interface 120/230 VAC, 1 Ph, 50/60 Hz, 200 VA
Winds	
Operational	45 mph (72 kmh) Gusting to 60 mph (96 kph)
Survival	125 mph (200 kph) Any Position / 135 mph (217 kph) Stowed
Drive to Stow	80 mph (128 kph)
Relative Humidity	0 - 100% (condensing)
Rain	
Operational	2 in/h (5 cm/h)
Survival	4 in/h (10 cm/h)
Solar Radiation	360 btu/h/ft ² (1000 Kcal/h/m ²)
Radial Ice (survival)	1/2 in (12.7 mm)
Corrosive Atmosphere	As encountered in coastal and/or industrial areas

Performance dependent on proper installation
 Note: Specifications subject to change without notice