

## TrackSat Antennas 3.0m

- **Professional X/Y Antennas for Low Earth Orbiting (LEO) Satellites.**
- **Applications - Ideal for Remote Sensing, Communications, and TT & C.**
- **Science Missions - EOS, NASA - ESSP, Disaster Monitoring Constellation.**
- **Fixed and Transportable Systems.**
- **Smooth Tracking to better than 0.1°.**
- **Low Slew Rates.**
- **Complete Hemispherical Coverage - No Cone of Silence or cable wrap.**
- **Antenna Sizes range from 1.8m to 7m.**
- **Antenna Control and Satellite Scheduling Software.**
- **Options include: Radomes, Anti - Ice Kits, Lightning Protection, Extended Temperature Range, and GPS Time Synchronisation.**
- **Custom Design of Antenna Pedestals and Support Structures.**
- **Site Installation, Civil Engineering, and Maintenance Contracts.**



## TrackSat Antennas 3.0m X-Band Specification

### Positioning System

Degrees of Freedom	Two (X/Y)
Velocity	4°/Sec
Acceleration	10°/Sec/Sec
Lost Motion	0.035°
Position Step Resolution	0.00004°
X/Y Drive Motors	DC Brushless Servo

### Reflector

Reflector	3.0m Solid Aluminium
Type	Prime Focus
Surface Accuracy	0.025"
Focal Length	45"
F/D	0.375

### Environmental (No Radome)

Humidity	0 to 100% RH
Rain	Driving, up to 10cm/hr
Temperature	Operating: -10° to +45° C Survival: -20° to +60° C
Wind	Operating: 60 km/hr Survival: 130 km/hr
Corrosion	Resistant to salt air and spray.

## TrackSat Antennas 3.0m X-Band Specification

### Radome

Type	Sandwich Foam Core
Outside Diameter	5.5m
Outside Height	4.7m
Panels	7
Weight	160 kg
Windspeed (Max Gust)	200 km/hr
Design Gust Factor	1.0

### Electromagnetic Performance

Transmission Loss	<0.4 dB
Noise Temperature (5°)	<10 K
Cross Polarization	<-25 dB
Wet Transmission Loss	<0.5 dB

### Environmental

Temperature Range	-40°C to +60°C
Solar Radiation Rejection	>90%
Relative Humidity	0 to 100% RH
Fungus Resistance	Fed Std 454
Salt Atmosphere	Mil - Std 810
Precipitation	1.92 kPa
Sand and Dust	Mil - Std 810E

## TrackSat Antennas 3.0m X-Band Specification

### X-Band Feed

Frequency Range	7.2 - 8.5GHz
Polarization	LHCP or RHCP
Axial Ratio	2 dB (max)
VSWR	1.45:1 (max)

### X-Band LNA

Frequency Range	7.70 - 8.50GHz
Gain	50.0 dB (min)
Noise Figure	45K (max)
Operating Temperature	-40°C to +60°C

### X-Band Downconverter

Frequency Range	8.02 - 8.42GHz
Conversion Gain	10 dB
Noise Figure	16 dB
IF Output	720MHz
Operating Temperature	-40°C to +60°C

## TrackSat Antennas 3.0m X-Band Specification

### Clinometer

Angular Range	+/-10 degrees
Resolution	0.002 degrees
Repeatability	0.01 degrees
Hysteresis	0.02 degrees
Time Constant	0.15 seconds
Natural Frequency	7Hz
Temperature Coefficient	10 arc seconds/°C
Output	RS232 NEMA
Operating Temperature	-40°C to +85°C

### GPS Time Synchronization

General	12 ch digital GPS Receiver
Output	RS232 NEMA messages
Update Rate	1 second
Synchronization	1PPS
Datum	WGS - 84
Acquisition Time	15 sec to 350 sec
Operating Temperature	-40°C to +85°C



**TrackSat Antennas  
3.0m X-Band Specification**