

Direcstar SPA Series Autoacquiring/Tracking Antennas

The **Direcstar SPA Series** Antenna is a motorized, auto-acquiring and inclined orbit satellite tracking antenna (Ku or C band) that can be mounted on a portable or fixed base. The state of the art **Direcstar SPA Series** Antenna is a rugged and slightly simplified version of **WX Series** vehicle-mount antennas that have been in production for more than 8 years.

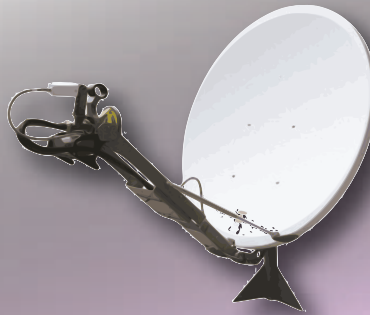
This multi-platform antenna, integrated and tested with all commonly used satellite modems, is a superior and more cost efficient solution to their antennas in the market and is designed to operate in the harshest environments. The **Direcstar SPA Series** Antennas have multiple deployment sensors, a built-in compass and GPS receiver for fast satellite acquisition. This lightweight antenna runs on universal AC power and can be easily assembled and installed in less than 30 mins. It is available with a 0.96M, 1.2M or 1.8M reflector for Ku or C band.



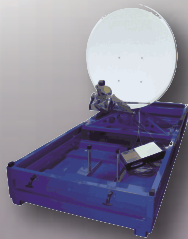
SPA Control Unit



SPA1800 Antenna



SPA1200 Antenna



SPA1200 with Custom
Skid Mount



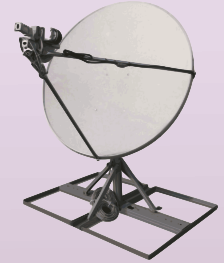
SPA980 Antenna

SPA Series Benefits

- Heavy duty construction to withstand extreme environments (Off-shore platforms, desert)
- Simple single button operation requiring no external PC
- Little or no periodic maintenance
- Cost effective; Less costly than vehicle mount antennas and less costly than other auto-acquiring antennas in the market today.
- FCC part 25.209 compliant
- Built in DVB receiver, GPS, compass and tilt sensors
- Auto acquisition and peaking of target satellite
- Can track Inclined Orbit Satellites; significantly lowering the TCO of VSAT service. Ideal for moving ocean platforms
- Easy field repair
- Low cost spares kit
- Fastest satellite acquisition in the industry
- Integrated & tested with multiple BUCs ranging from 1 to 200Watts

When terrestrial methods of communication are not available due to location or other circumstances or when high data rates are required in short notice VSAT systems can deliver reliable and cost effective data voice and video connectivity. From oil and gas exploration applications to military deployments, the **Direcstar SPA Series** antennas can outperform competition in quality, durability and price.





Direcstar SPA Series

SPA980

SPA1200

SPA1800

General Information

Reflector type	0.98 M Glass Fiber Reinforced Polyester SMC Prime Focus Offset Feed	1.2 M Glass Fiber Reinforced Polyester SMC Prime Focus Offset Feed	1.8 M Glass Fiber Reinforced Polyester SMC Prime Focus Offset Feed
Optics offset			
Buc supported*	6.8Kg / 30.48cm L x 19.7cm W x 14cm H	6.8Kg / 30.48cm L x 19.7cm W x 14cm H	2.72Kg / 18.67cm L x 19.7cm W x 7.62cm H
Polarization*	Cross-Pol	Cross-Pol	Cross-Pol
Mount Geometry	Elevation over Azimuth	Elevation over Azimuth	Elevation over Azimuth

Dimensions

Stowed Dimensions	N/A	N/A	N/A
Max Deployed Height	152.4cm on 76.2cm tall post	223.5cm on 76.2cm tall post	233.68cm on 76.2cm tall post
Mount Rail Width	N/A	N/A	N/A
Weight	39Kg Approx	43Kg Approx	90.7Kg Approx

Mechanical

Range of motion: Azimuth	342° (+/- 171°)	342° (+/- 171°)	342° (+/- 171°)
Elevation	12° to 93° Operational	12° to 93° Operational	12° to 93° Operational
Polarization	+/- 90°	+/- 90°	+/- 90°
Speed: Deploying Elevation	4.6° Per Second	4.6° Per Second	4.6° Per Second
Stowing Elevation	5.0° Per Second	5.0° Per Second	5.0° Per Second
Deploying Azimuth	0.4° Per Second	0.4° Per Second	0.4° Per Second
Time to Acquisition	< 2 minutes (Typical)	< 2 minutes (Typical)	< 2 minutes (Typical)
Motors: Elevation	24V HD Linear Actuator (0.1° Resolution)	24V HD Linear Actuator (0.1° Resolution)	36V HD Linear Actuator (0.1° Resolution)
Azimuth	24V HD Brushless Motor (0.1° Resolution)	24V HD Brushless Motor (0.1° Resolution)	24V HD Brushless Motor (0.1° Resolution)
Polarization	24V HD Brushless Motor (0.1° Resolution)	24V HD Brushless Motor (0.1° Resolution)	24V HD Brushless Motor (0.1° Resolution)
Drive Override	Electrical Elevation, Manual for AZ and SK	Electrical Elevation, Manual for AZ and SK	Electrical Elevation, Manual for AZ and SK

RF

Tx Interface	Waveguide - 3' WR75	Waveguide - 3' WR75	Waveguide - 3' WR75
Rx Interface	Flange Flexible and Twistable Waveguide WR75 Flange	Flange Flexible and Twistable Waveguide WR75 Flange	Flange Flexible and Twistable Waveguide WR75 Flange
Frequency Range: Rx	10.95 - 12.75 Ghz	10.95 - 12.75 Ghz	10.95 - 12.75 Ghz
Tx	13.75 - 14.50 Ghz	13.75 - 14.50 Ghz	13.75 - 14.50 Ghz
Gain (Midband): Rx	39.8 dBi	41.5 dBi	45.3 dBi
Tx	41.3 dBi	43 dBi	46.8 dBi
VSWR Rx & Tx	1.3:1	1.3:1	1.3:1 tx / 1.5:1
Rx Beamwidth: Rx	1.8° (-3 dB), 3.3° (-10 dB)	1.4° (-3 dB), 2.4° (-10 dB)	1.0° (-3 dB), 2.4° (-10 dB)
Tx	1.5° (-3 dB), 2.8° (-10 dB)	1.2° (-3 dB), 2.1° (-10 dB)	0.8° (-3 dB), 2.1° (-10 dB)
Radiation Pattern Compliance	FCC § 25.209	FCC § 25.209	FCC § 25.209
Antenna Noise Temperature	47K (20° EL), 46K (30° EL)	46K (20° EL), 43K (30° EL)	28K (20° EL), 23K (30° EL)
Cross Pol Isolation on Axis Rx & Tx (Minimum)	30 dB	30 dB	30 dB
Isolation Port to Port (Minimum): Rx	35 dB	35 dB	35 dB
Tx	80 dB	80 dB	80 dB

Environmental

Wind: Operational Deployed	80+ Km/h	80+ Km/h	80+ Km/h
Survival Deployed	120 Km/h	120 Km/h	120 Km/h
Survival Stowed	N/A	N/A	N/A
Temperature: Operational	-40°F to 127°F (-40°C to +50°C)	-40°F to 127°F (-40°C to +50°C)	-40°F to 127°F (-40°C to +50°C)
Survival	-58°F to 176°F (-50°C to +80°C)	-58°F to 176°F (-50°C to +80°C)	-58°F to 176°F (-50°C to +80°C)
Snow Load	N/A	N/A	N/A

Electrical

Controller Dimensions	2U 19" Rack Mountable	2U 19" Rack Mountable	2U 19" Rack Mountable
Power Supply: Input	100-250V 3A Max	100-250V 3A Max	100-250V 3A Max
Running Load	47-63Hz 300W Max	47-63Hz 300W Max	47-63Hz 300W Max
Output	48V 6.7A Max	48V 6.7A Max	48V 6.7A Max
Electrical Data Interface*	RG6 60' (18.25 m)	RG6 60' (18.25 m)	RG6 60' (18.25 m)
Transmit (Tx)*	RG6 Compression F Connector	RG6 Compression F Connector	RG6 Compression F Connector
Receive (Rx)*	RG6 Compression F Connector	RG6 Compression F Connector	RG6 Compression F Connector
Sensors	GPS	GPS	GPS
	Compass +/- 15°	Compass +/- 15°	Compass +/- 15°
	Tilt +/- 0.5°	Tilt +/- 0.5°	Tilt +/- 0.5°

*Options

Larger BUCs supported using High power BUC mounting kit and waveguide • Co-Pol • RG11 Cables

Servicesat LTD - Servicesat is the trading name for Data Transmission Corporation LTD, Guernsey