

Direcstar SF Series Small Footprint VSAT Antennas

Direcstar SF Series antennas are the toughest, highest quality, lowest cost, auto-deploy satellite antennas in the market today. **Direcstar SF Series** antennas offer a very small vertical stow footprint and are capable of pointing at any satellite with an accuracy of 0.1 degrees in less than 2 mins. The antennas stow into a folded vertical position for easy travel, on top of trailers, emergency response units, oil rigs and for many other applications. Made with the strongest, most rugged actuators in the industry, the **SF Series** antennas are built for maximum reliability. The **SF Series** antennas are available in 0.75M, 0.84M, 0.98M and 1.2M versions and are integrated and tested with all common satellite modems offering flexibility and scalability for the emergency, energy and enterprise markets.



SF750 antenna



Stowed SF980 with Custom Skid Mount



Deployed SF980 with Custom Skid Mount

SF Series Benefits

- Heavy duty construction to withstand extreme environments (humidity, temperature, dust)
- 2-way communication capability for simultaneous data, video and voice
- Simple single button operation requiring no external PC
- Little or no periodic maintenance
- Rack-mountable controller included
- FCC part 25.209 compliant
- Built in DVB receiver, GPS, compass and tilt sensors
- Perfect for oil rigs and other enterprise applications
- Auto acquisition and peaking of target satellite
- Easy field repair
- Quick deployment
- Low cost spares kit
- Fastest satellite acquisition in the industry
- Integrated and tested with multiple BUCs

When terrestrial methods of communication are not available due to location or other circumstances, or when high data rates are required in short notice, the **Direcstar SF Series** VSAT systems can deliver reliable and cost effective data, voice and video connectivity. From mobile banking applications, oil and gas platform installations, telemedicine applications, first response teams, military deployments to just plain mobile internet access, the **SF series** antennas can outperform competition in quality, durability and price.



SF Control Unit



Direcstar SF Series

	SF750	SF840	SF980	SF1200
General Information				
Reflector type	0.75 M Elliptical Glass Fiber Reinforced Polyester SMC	0.84 M Glass Fiber Reinforced Polyester SMC	0.98 M Glass Fiber Reinforced Polyester SMC	1.2 M 0.8 F/D Glass Fiber Reinforced Polyester SMC
Optics offset	Prime Focus Offset Feed	Prime Focus Offset Feed	Prime Focus Offset Feed	Prime Focus Offset Feed
Buc supported*	2.27Kg / 17.78cm L x 12.7cm W x 5.08cm H	2.27Kg / 17.78cm L x 12.7cm W x 5.08cm H	6.8Kg / 30.48cm L x 19.7cm W x 14cm H	6.8Kg / 30.48cm L x 19.7cm W x 14cm H
Polarization*	Cross-Pol	Cross-Pol	Cross-Pol	Cross-Pol
Mount Geometry	Elevation over Azimuth	Elevation over Azimuth	Elevation over Azimuth	Elevation over Azimuth
Dimensions				
Stowed Dimensions	127cm H x 94cm L x 90.8cm W	127cm H x 94cm L x 101cm W	86.4cm H x 114.3cm L x 100.3cm W	91.4cm H x 152.4cm L x 124.5cm W
Max Deployed Height	127cm	132.1cm	152.4cm	177.8cm
Mount Rail Width	33cm	33cm	33cm	33cm
Weight	45.4Kg Approx	47.6Kg Approx	49.9Kg Approx	59Kg Approx
Mechanical				
Range of motion: Azimuth	375° (+/- 187.5°)	375° (+/- 187.5°)	375° (+/- 187.5°)	375° (+/- 187.5°)
Elevation	5° to 90° Operational	5° to 90° Operational	11.6° to 118° Operational	11.6° to 118° Operational
Polarization	+/- 90°	+/- 90°	+/- 90°	+/- 90°
Speed: Deploying Elevation	4.6° Per Second	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	5.0° Per Second
Deploying Azimuth	7.5° Per Second	7.5° Per Second	7.5° Per Second	7.5° Per Second
Time to Acquisition	< 2 minutes (Typical)	< 2 minutes (Typical)	< 2 minutes (Typical)	< 2 minutes (Typical)
Motors: Elevation	36V HD Linear Actuator (0.1° Resolution)	36V HD Linear Actuator (0.1° Resolution)	36V 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)	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)	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	Electrical Elevation, Manual for AZ and SK
RF				
Tx Interface	WR75 Flange	WR75 Flange	Waveguide - 3' WR75 Flange Flexible and Twistable Waveguide	Waveguide - 3' WR75 Flange Flexible and Twistable Waveguide
Rx Interface	WR75 Flange	WR75 Flange	WR75 Flange	WR75 Flange
Frequency Range: Rx	10.95 - 12.75 Ghz	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	13.75 - 14.50 Ghz
Gain (Midband): Rx	37.8 dBi @ 11.95 Ghz	38.8 dBi	39.8 dBi	41.5 dBi
Tx	39.3 dBi @ 14.25 Ghz	40.3 dBi	41.3 dBi	43 dBi
VSWR Rx & Tx	1.3:1	1.3:1	1.3:1	1.3:1
Beamwidth: Rx	2.0° @ 12.0 GHz	1.9° (-3 dB)	1.8° (-3 dB), 3.3° (-10 dB)	1.4° (-3 dB), 2.4° (-10 dB)
Tx	1.6° @ 14.3 GHz	1.5° (-3 dB)	1.5° (-3 dB), 2.8° (-10 dB)	1.2° (-3 dB), 2.1° (-10 dB)
Radiation Pattern Compliance	FCC § 25.209	FCC § 25.209	FCC § 25.209	FCC § 25.209
Antenna Noise Temperature	50°K (30° EL)	48°K (30° EL)	47°K (20° EL), 46°K (30° EL)	46°K (20° EL), 43°K (30° EL)
Cross Pol Isolation on Axis Rx & Tx (Minimum)	30 dB	30 dB	30 dB	30 dB
Isolation Port to Port (Minimum): Rx	35 dB	35 dB	35 dB	35 dB
Tx	80 dB	80 dB	80 dB	80 dB
Environmental				
Wind: Operational Deployed	80+ Km/h	80+ Km/h	56 Km/h	56 Km/h
Survival Deployed	121 Km/h	121 Km/h	121 Km/h	121 Km/h
Survival Stowed	241 Km/h	241 Km/h	241 Km/h	241 Km/h
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)	-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)	-58°F to 176°F (-50°C to +80°C)
Snow Load	20.3cm deep (@16Kg/cu. mt)	20.3cm deep (@16Kg/cu. mt)	20.3cm deep (@16Kg/cu. mt)	20.3cm deep (@16Kg/cu. mt)
Electrical				
Controller Dimensions	2U 19" Rack Mountable	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	100-250V 3A Max
Running Load	47-63Hz 300W Max	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	48V 6.7A Max
Electrical Data Interface*	RG6 60' (18.25 m)	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	RG6 Compression F Connector
Receive (Rx)*	RG6 Compression F Connector	RG6 Compression F Connector	RG6 Compression F Connector	RG6 Compression F Connector
Sensors	GPS Compass +/- 15° Tilt +/- 0.5°	GPS Compass +/- 15° Tilt +/- 0.5°	GPS Compass +/- 15° Tilt +/- 0.5°	GPS Compass +/- 15° Tilt +/- 0.5°

*Options
Larger BUCs supported using High power BUC mounting kit and waveguide • Co-Pol • RG11 Cables • Reflector Sizes 0.75M, 0.84M, 0.98M, 1.2M

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