Model 2.4m DMVO/MVO Transportable Antenna

Transportable Antennas

Vertex RSI™

ISO 9001 Registered

The Strength to Perform

Description

The 2.4m DMVO/MVO antenna is a multiband communications earth terminal capable of providing quick reaction for worldwide communications via satellite. This high efficiency antenna provides excellent gain and low sidelobe pattern characteristics which meet all FCC, Intelsat and Eutelsat requirements.

The 2.4m DMVO/MVO uses a 2.4-meter single reflector Multiband Vehicle-mounted Offset-fed (MVO) or Dual Reflector Multiband Vehicle-mounted Offset-fed (DMVO) antenna system. The interchangeable feeds are palletized for quick, easy removal and replacement, allowing the end-user to effectively change frequency bands in the field within minutes.

Features

- Multiband antenna system with rapid interchangeability
- Optional dual reflector meets INTELSAT and EUTELSAT requirements
- Operational within 15 minutes
- Automatic deploy and stow

Options

- Antenna Control System including tracking of geostationary satellites with inclinations up to 10°
- Dual reflector configuration available for Ku and Ka-band for improved cross polarization performance
- Global Positioning System (GPS)
- Steptrack and beacon receiver
- Tilt sensor
- Electronic flux compass
- Reflector and feed pad deicing
- Waveguide integration

GENERAL DYNAMICS
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Technical Specifications

	C-Band 2-Port Linear/Circular Polarized**		X-Band 2-Port Circular Polarized**		Ku-Band* 2-Port Linear Polarized**		Ka-Band* 2-Port Circular Polarized	
Electrical	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency (GHz)	3.625 - 4.200	5.850 - 6.425	7.250 - 7.750	7.900 - 8.400	10.700 - 12.750	13.750-14.500	20.200 - 21.200	30.000 - 31.000
Antenna Gain at Midband, dBi	37.2	41.1	43.1	43.1	46.4	48.1	51.1	53.6
Sidelobe Compliant with	Intelsat and CCIR 580		DSCS requirements		Intelsat Std E1, Eutelsat and CCIR 580		ITU 580 and 47 CFR 25.209	
Axial Ratio	3.01 dB	2.28 dB	1.50 dB	1.50 dB			2.00 dB	2.00 dB
VSWR	1.40:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
Antenna Noise Temperature								
5° Elevation	69 K		83 K		75 K		205 K	
10° Elevation	58 K		74 K		61 K		163 K	
20° Elevation	53 K		70 K		52 K		129 K	
40° Elevation	54 K		70 K		48 K		103 K	
Cross Polarization Isolation								
On Axis	15.3 dB	17.7 dB	21.3 dB	21.3 dB	35.0 dB	35.0 dB	18.8 dB	18.8 dB
Within 1.0 dB BW	15.3 dB	17.7 dB	21.3 dB	21.3 dB	35.0 dB	35.0 dB	18.8 dB	18.8 dB
On Axis (LP mode)	30.0 dB	30.0 dB						
Within 1.0 dB BW (LP mode)	23.0 dB	23.0 dB						
Pattern Beamwidth (in degrees at midband)								
-3 dB	2.30	1.44	1.13	1.04	0.79	0.62	0.41	0.32
-15 dB	4.83	3.02	2.37	2.18	1.66	1.30	0.86	0.67
Power Handling		1.00 kW CW		3.00 kW CW		2.00 kW CW		400 W CW
Port to Port Isolation								
Rx/Tx (Rx frequency)	0 dB	-97 dB	0 dB	-110 dB	0 dB	-110 dB	0 dB	-30 dB
Tx/Rx (Tx frequency)	-85 dB	0 dB	-110 dB	0 dB	-85 dB	0 dB	-85 dB	0 dB
RF Specification	975-3233		975-3148		975-3234		975-3109	

Mechanical	
Reflector Diameter	96 in (86.5 in trimmed optional)
Antenna Type	Single reflector, offset paraboloid (dual offset optional)
Reflector Construction	Aluminum, monocoque
Azimuth Travel	±130°
Elevation Travel	9° to 85° operational
Polarization Travel	±90° effective
Drive Speed	Variable to 1.5°/second

Environmental	
Wind Loading***	
Operational	45 mph (72 km/h) gusting to 60 mph (97 km/h); 2 dB peak Rx loss @ Ku-band
Survival (deployed)	60 mph (97 km/h)
Survival (stowed)	100 mph (161 km/h)
Temperature	-22° to +122° F (-30° to +50° C)
Shock and Vibration	As encountered in over-the-road and shipping environments (when properly mounted on appropriate vehicle)
Ice	1/2 in (non-operational)
Humidity	0% to 100% with condensation
Rain	4 in/hour
Sand	Blowing typical of desert environments
Salt	As normally encountered in coastal and industrial environments

* Dual reflector configuration optional for Ku-band, baseline for Ka-band.

** Includes transmit reject filter, receive reject filter and harmonic filter within antenna RF specifications.

*** Depending on vehicle capabilities.

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1104 Energy Drive • Kilgore, TX 75662 USA • Tel: (903) 984-7811 • Fax: (903) 984-7597 • Email: kilgore-sales@gdsatcom.com
Website: www.gdsatcom.com

655-0036A, 04/06