Richardson Electronics
Engineered Solutions

P/N: 826421-901-TG

Passive TX / RX Globalstar Quadrafilar Helix (QFH) Antenna

Description:

This high performance antenna provides active gain in the receive path and a direct feed for the transmit path.

Both the transmit and receive use SMA jacks located on the bottom the unit. DC voltage is supplied via the receive connector.

The antenna is mounted using fixed mounted screws.

Key Features:

Globalstar SDVM Compatibly
RX High Gain
High Performance quadrafilar helix antenna elements
RoHs compliant
FCC Certified
Screw mounting configuration
DC supplied via RX coax

Absolute Maximum Ratings:

Parameters	Symbol	Value	Units
DC Voltage	Vdc	3.0	Volts
DC Current	Amps	50	mA
Tx RF Input	TX max	40	dBm

1.0 Electrical Specifications: (room temperature)

Parameter	Symbol	Comments	Min	Nom	Max	Unit
Receive path						
Frequency			2483.5		2500	MHz
Polarization		LHCP				
Isolation (TX-RX)			40			dB
VSWR					2	: 1
LNA Gain			25	28	30	dB
LNA Noise Figure				1.8	2.0	dB
Antenna Element Gain		See note 1 and 2 below	-2.3	-0.8		dB

Note 1: Minimum Gain (Min) shall be defined as the minimum of azimuth cuts at 10° elevation.

Note 2: Average Gain (Nom) shall be defined as spatial average from 10° to 90° elevations and azimuth cuts every 45°.

Transmit path	Symbol	Comments	Min	Nom	Max	Unit
Frequency			1610		1626.5	MHz
Polarization		LHCP				
Isolation (TX-RX)			40			dB
VSWR					2:1	
Antenna element gain		See note 1 and 2 above	-2.0	+0.5	+4.5	dB
RF Input drive					40	dBm
Power Supply						
DC Supply Voltage					3.0	V
DC Supply Current		+3VDc Supply Voltage		25	50	mA

2.0 Environmental Specifications:

2.1 Non-Operational Condition

Parameter	Min	Nom	Max	Unit	Condition		
Temperature	-40		+ 85	^{e}C			
Humidity	5%		95%		Non-condensing.		
Altitude			4500	m			
Vibration					Freq (Hz) all axes	PSD (G^2/Hz)	GRMS
					5	0.01500	1.0
					40	0.01500	
					500	0.00010	
Shock					Impact from a 5 cm diameter, 254 grams dart falls 4.1 meters with one dart fall per face of antenna (6 total drops).		
Transportation Vibration					Freq (Hz) all axes	PSD (G^2/Hz)	GRMS
					10	0.01500	1.0
					40	0.01500	
					500	0.00015	
Fungus					All antennas, packaging elements and installation components shall be manufactured of non-nutrient material with respect to fungal growth.		
Solar Radiation			0.6	mW/mm^2			
Rain			5	Cm/h			
Average Wind			250	Km/h			
Wind Gusts			250	Km/h			
Blowing Dust and Sand			0.175	g/m^3	Consisting of particles ≤150 micrometers in size, driven by 65 km/hour winds.		
Snow Load			50	Kg/m^2	Snow will be removed prior to operation.		
Blowing Snow			16	g/m^2s	Consisting of particles ≤400 micrometers in size, driven by 50 km/hour winds. Snow will be removed prior to operation.		
Electrostatic Discharge			12	KV	Contact discharge.		

2.2 Operational Condition

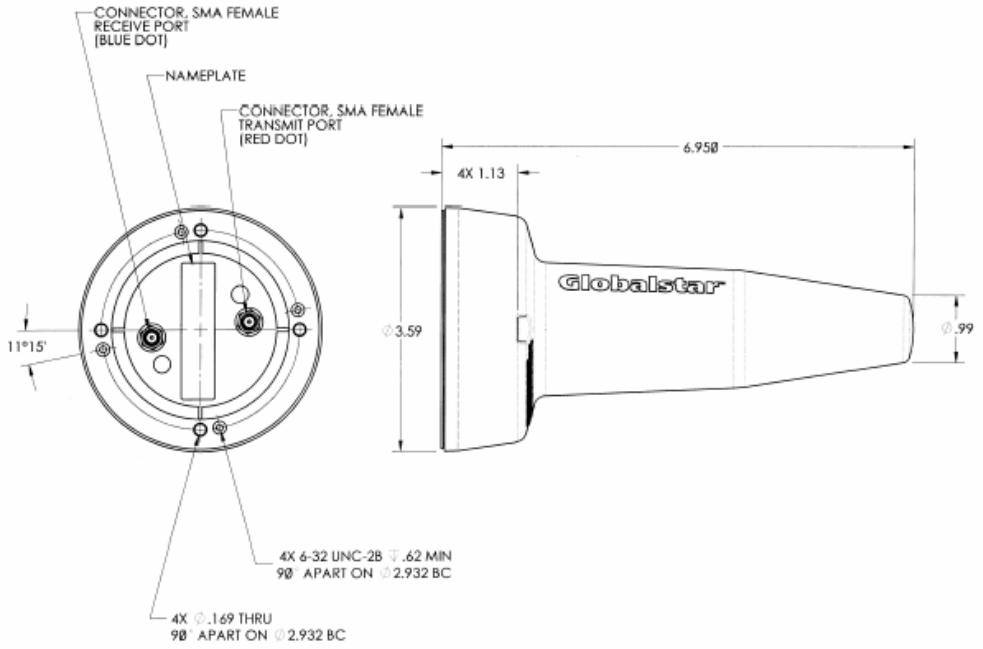
Parameter	Min	Nom	Max	Unit	Condition		
Temperature	-30		+60	^{e}C			
Humidity	5%		95%		Non-condensing.		
Altitude			3000	m			
Vibration					Frequency (Hz) all axes	PSD (G^2/Hz)	GRMS
					5	0.01500	1.0
					40	0.01500	
					500	0.00010	
Solar Radiation			0.6	mW/mm^2			
Electrostatic Discharge			12	KV	Contact discharge.		
MTBF	7			Years	Assuming an operating time of 12 hours per day		
Maritime Environment					Complies with the International Standard CEI/IEC 945.		

3.0 Mechanical Specifications:

Parameter	Comments
Mounting	Screw mounting
TX Connector	SMA Jack
RX Connector	SMA Jack
DC Connector	See note 3 below
Dimensions	3.5” diameter x 1.5” height
Weight	0.88 lbs

Note 3: DC feed through the RX coax cable. Positive to the center of the coax, Negative to the RF ground.

Mechanical Outline:



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