SAY-3735135302-22-S1-DP-WR

Q-V Band Cassegrain Antenna, 53 dBi Gain, 96” Dish

SAY-3735135302-22-S1-DP-WR is a dual polarized Cassegrain Weather Resistant antenna assembly for new space satellite communication system ground station applications. The antenna assembly offers a nominal gain of 53 dBi and a half power beamwidth of 0.2 degrees. The assembly features an integrated orthomode transducer (OMT) that provides high port isolation and cross-polarization cancellation between the transmitting and receiving ports. The H and V port of the OMT has an integrated band-pass filter with pass-band frequency ranges 46 to 51 GHz for TX and 37 to 42 GHz for RX respectively. The filters offer 40 dB typical rejection between the TX and RX frequencies. The main reflector is fabricated with fiber glass to offer a light weight and rugged mechanical structure. The corrugated horn is used to provide the best feed efficiency and the most uniform illumination. The antenna also features a linear to circular polarizer to transform linear waveforms to circularly polarized waveforms. The antenna can also support linear waveforms which are offered under a different model number. The TX and RX ports are WR-22 waveguide bulkheads with UG-383/U anti-cocking grooved flanges and removable O-rings.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
TX Frequency (H-Port)	46 GHz		51 GHz
RX Frequency (V-Port)	37 GHz		42 GHz
Gain (Reflector + Horn)		56 dBi	
Gain (Assembly)		53 dBi	
3 dB Beamwidth, E-plane		0.2°	
3 dB Beamwidth, H-plane		0.2°	
Sidelobes		-15 dB	
Rejection (TX/RX Frequency)		40 dB	
Port Isolation (V to H Port)		35 dB	
Polarization (TX Port)		LHCP	
Return Loss		12 dB	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

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FEATURES

- Rugged Configuration and Low Profile
- Weather Resistant
- Low Loss and High Gain

APPLICATIONS

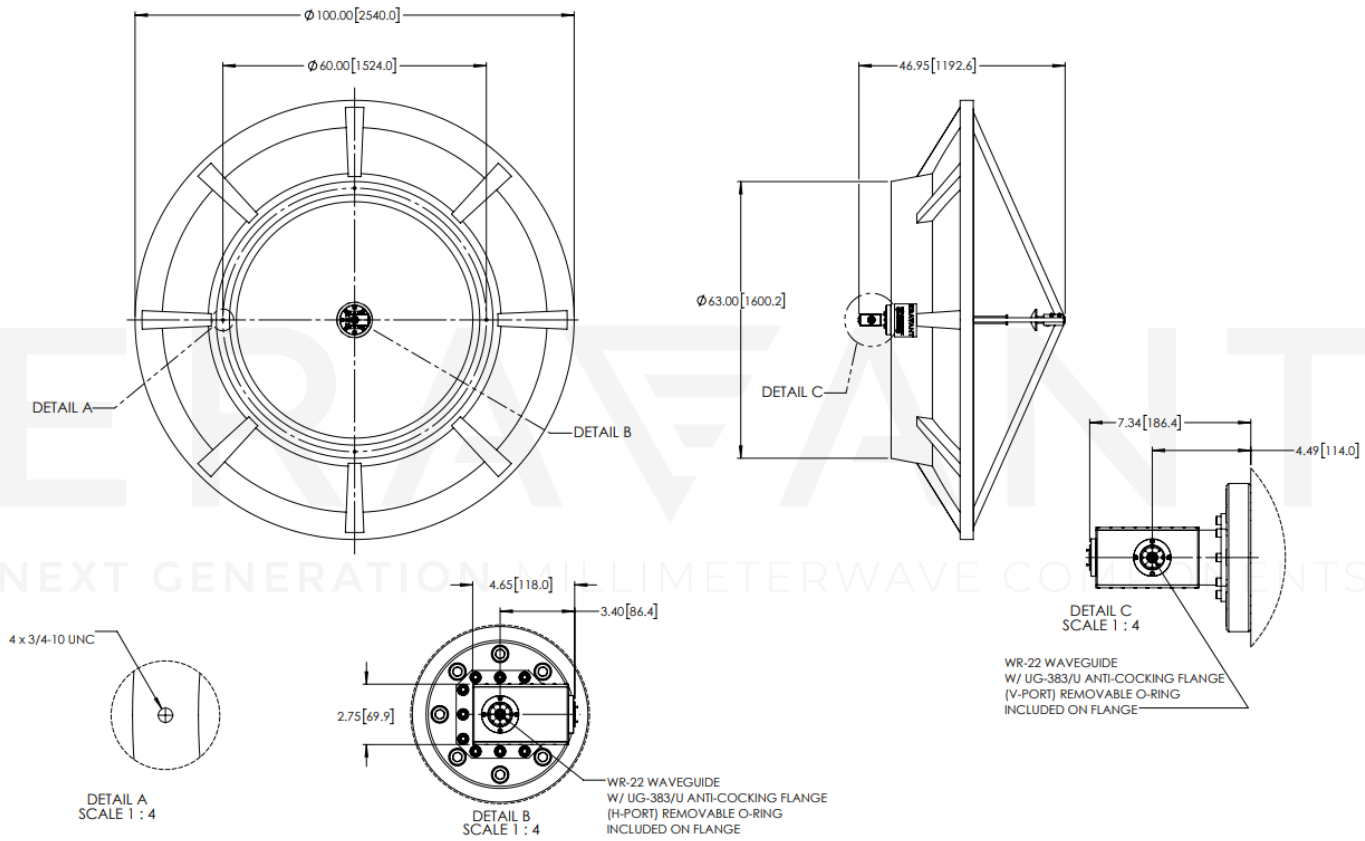
- Satellite Communication Ground Station

SUPPLEMENTAL DETAILS

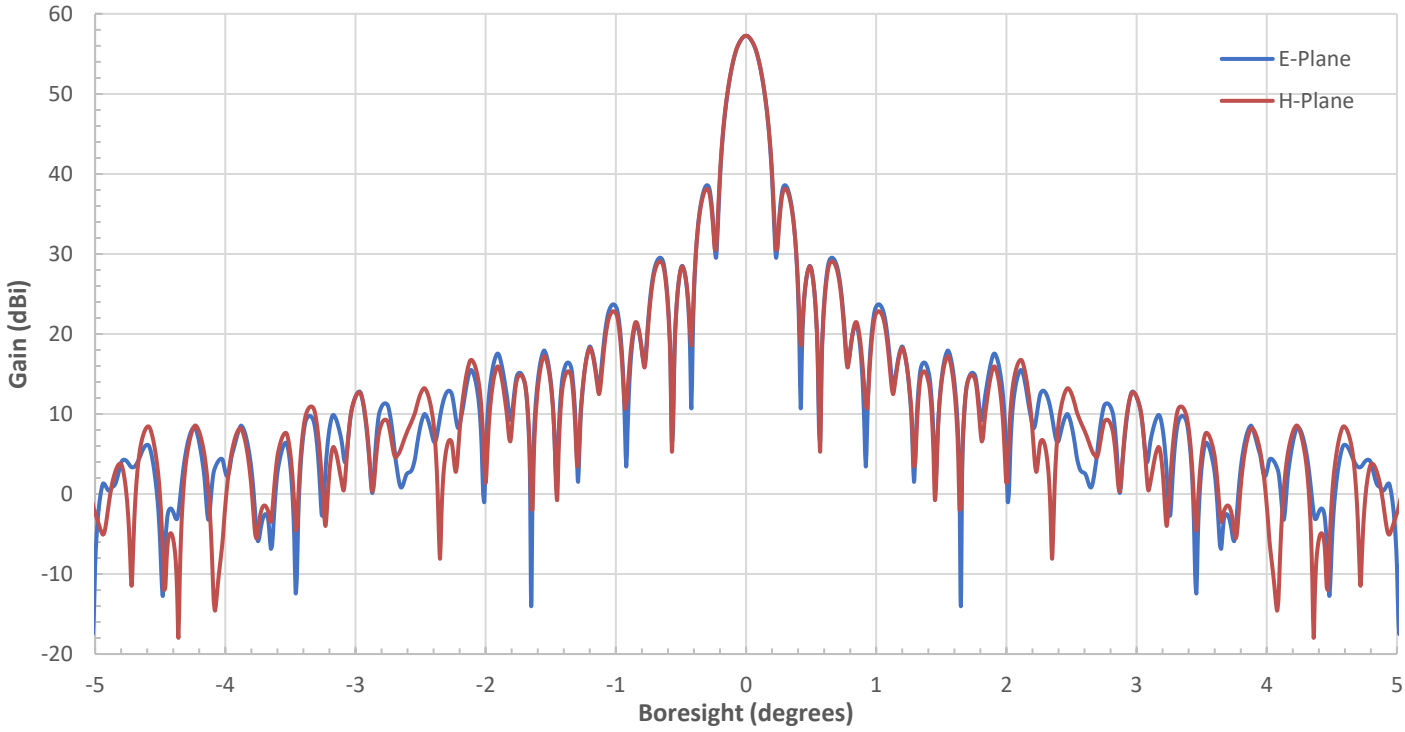
Mechanical Specifications:

Item	Specification
H and V Ports	WR-22 Waveguide with UG-383/U-M Anti-Cocking Grooved Flange
Material (Feed Horn, OMT, Filter)	Aluminum and Brass
Surface Finish (Feed Horn, OMT, Filter)	Gold Plated
Reflector Material	Fiberglass
Reflector Diameter	96”
Outline	AY-RQ53-96-22-SVS

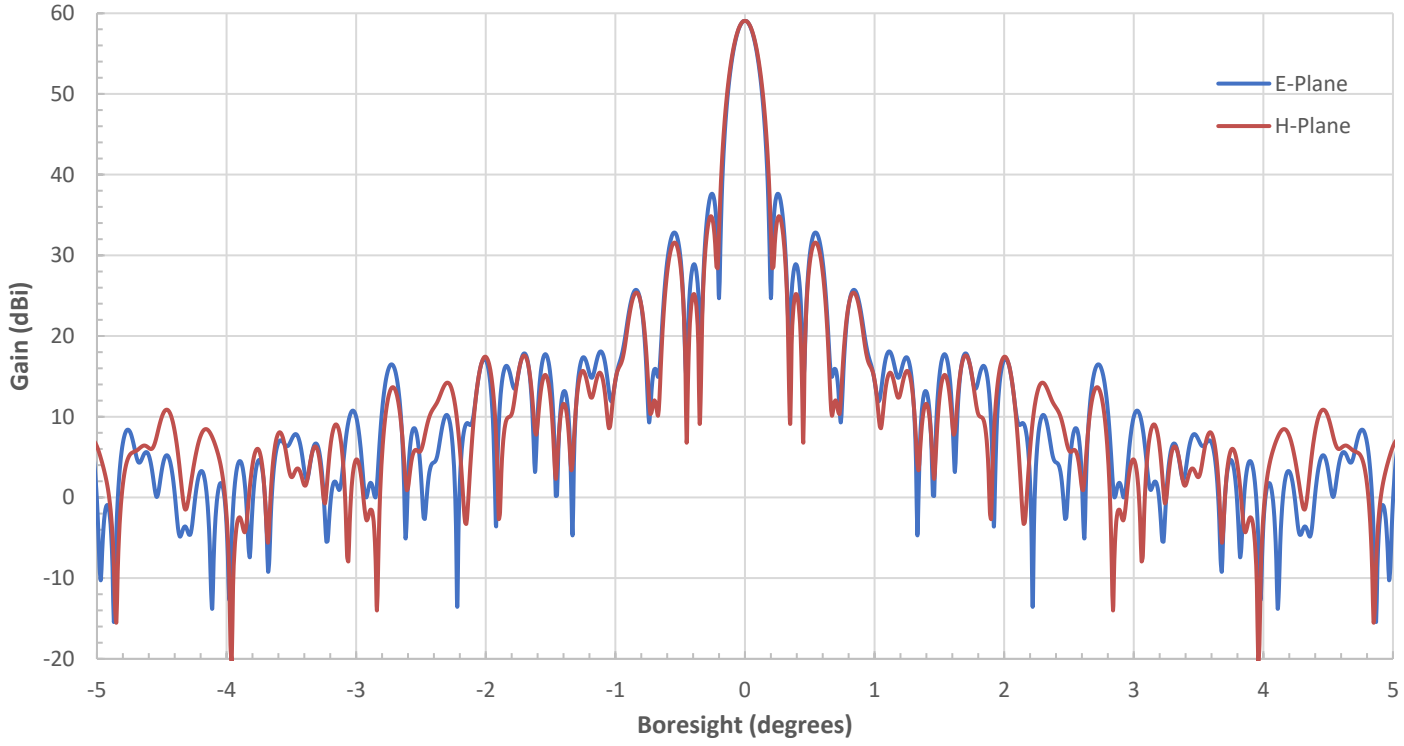
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



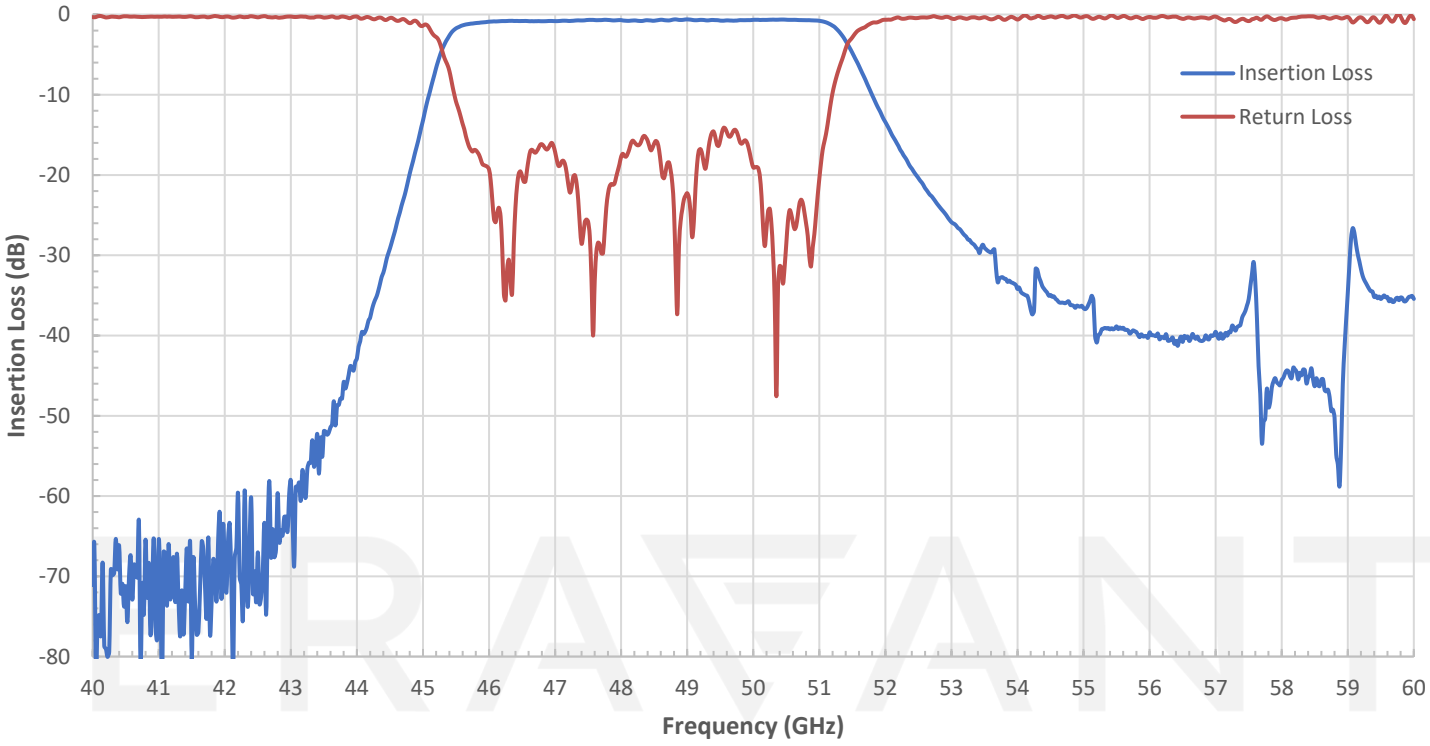
Simulated Antenna Patterns @ 39.5 GHz



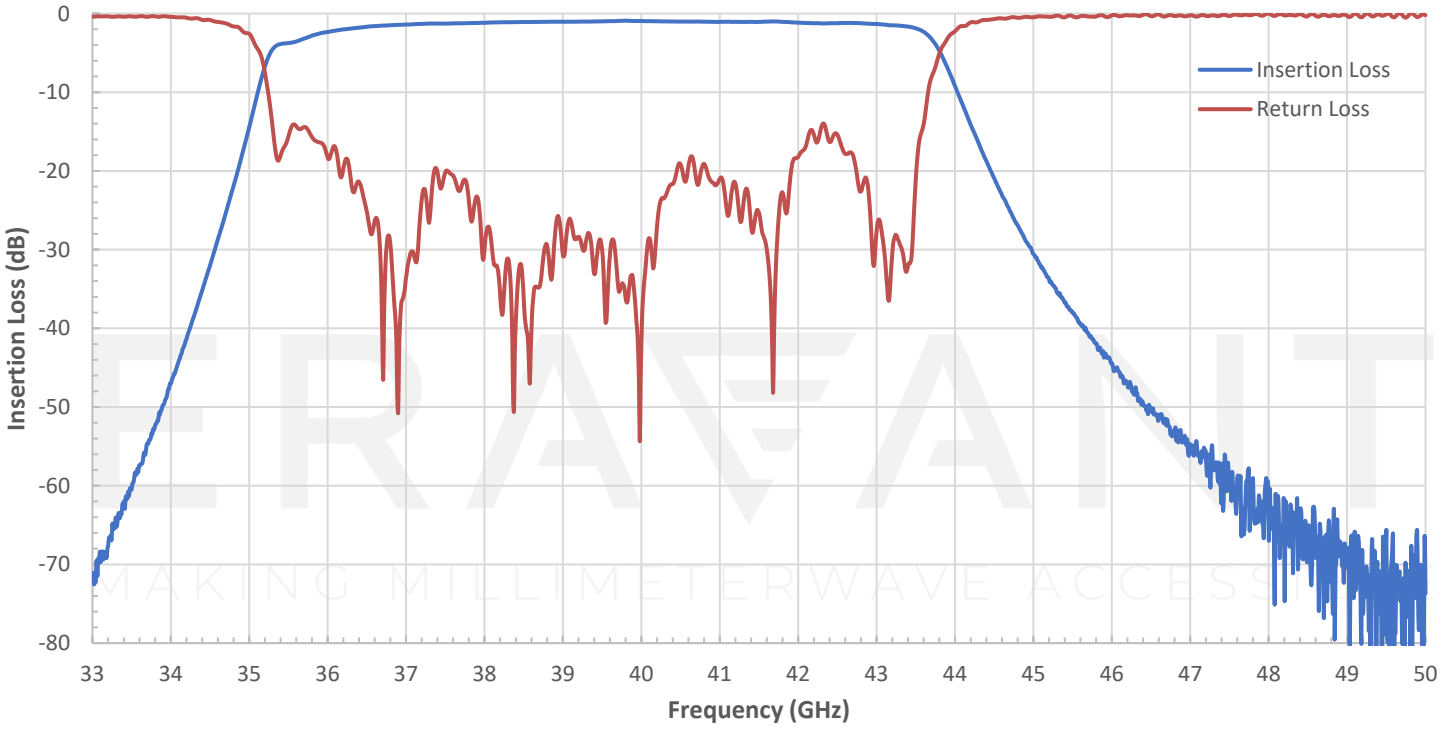
Simulated Antenna Patterns @ 48.5 GHz



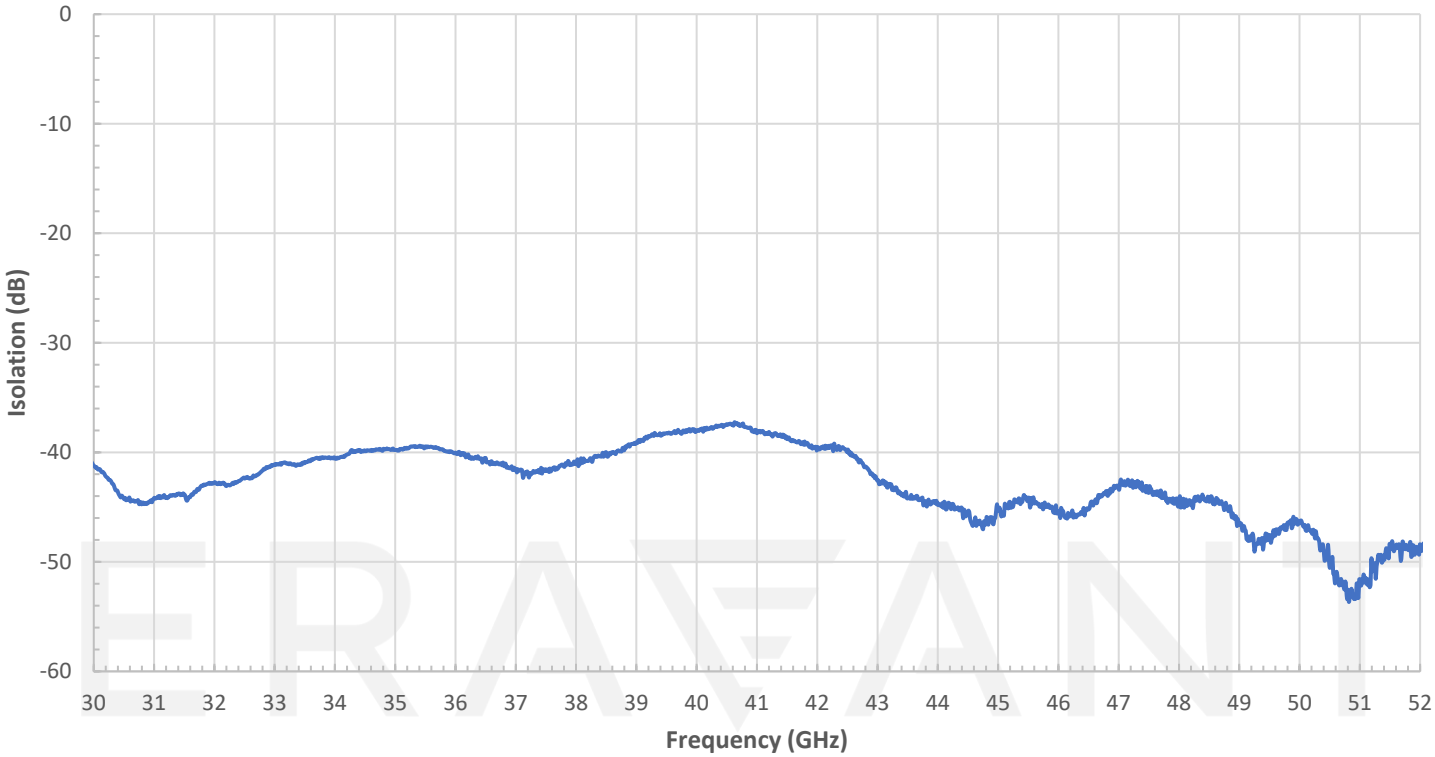
Typical Measured Bandpass Filter Performance vs Frequency (TX)



Typical Measured Bandpass Filter Performance vs Frequency (RX)



Typical Measured Port Isolation vs Frequency



NOTE:

- On condition that test data is provided it is collected from a sample lot. Actual data may vary slightly from unit to unit. All testing is performed under +25 °C room temperature.
- On condition that simulated test data is provided, actual measured data may slightly vary.
- Either H-port or V-port can be used for transmitting or receiving application. Polarization direction specified in electrical specification table is with respect to H-port transmit direction. If V-port is used as TX port, it will transmit RHCP waveform and operating frequency will be limited to V-port frequency range indicated in specification table.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Any foreign objects in the waveguide or antenna will cause performance degradation and may damage or destroy the unit.
- Any foreign objects in the antenna will cause performance degradation and possible device damage.