SAY-3735135302-22-S1-DP-WR

Q/V-Band Cassegrain Antenna, 58 dBi, 96” (2.4 m) Dish, Dual Circular Polarized

SAY-3735135302-22-S1-DP-WR is a high performance, dual circular polarized, Cassegrain antenna assembly for Q/V-band satellite communication ground station applications. The antenna is designed to operate in the popular Q/V-band frequency spectrum with a Rx frequency range from 37.5 to 42.5 GHz and a Tx frequency range from 47.2 to 52.4 GHz.

The antenna features a 2.4 m (96”) diameter reflector with honeycomb structure with carbon fiber skin reflector, a corrugated feedhorn, and a 4-port backend feed network that consists of an integrated linear-to-circular polarizer, orthomode transducer (OMT), and two diplexers. The feed network allows the antenna to support both left and right-handed circular polarizations (LHCP/RHCP) for both the Tx and Rx channels at the same time. The antenna is designed for outdoor operation and incorporates multiple weather-protection features. The main reflector is finished with a weather-resistant polyamide epoxy paint coating. The feedhorn is protected by a sealed radome cap, and the entire feed network is sealed using O-rings to prevent moisture ingress. The sub-reflector and external aluminum enclosures are treated with a corrosion-resistant chem-film surface finish. In addition, the feed components and sub-reflector are painted to further enhance long-term environmental durability.

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FEATURES

- Full Coverage of Q/V-Band
- Weather Resistant
- High Antenna Efficiency
- High Port Isolation
- Dual Circular Polarization
- Integrated Polarizer, OMT, Diplexers

APPLICATIONS

- Q/V-Band Satellite Communication Ground Station

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Electrical Specifications:

Parameter		Receive			Transmit		
		Minimum	Typical	Maximum	Minimum	Typical	Maximum
Frequency		37.5 GHz	40 GHz	42.5 GHz	47.2 GHz	50 GHz	52.4 GHz
Gain		56.5 dBi @ 40 GHz (Typ)			58.1 dBi @ 50 GHz (Typ)		
3 dB Beamwidth		0.20° @ 40 GHz (Typ)			0.17° @ 50 GHz (Typ)		
Sidelobes		-15 dB (Typ)					
Polarization		Dual Circular Polarized (LHCP and RHCP)					
Port to Port Isolation	Rx-LHCP to Tx-LHCP Rx-RHCP to Tx-RHCP	50 dB (Typ)					
	Rx-LHCP to Tx-RHCP Rx-RHCP to Tx-LHCP	85 dB (Typ)					
	Tx-LHCP to Tx-RHCP Rx-LHCP to Rx-RHCP	20 dB (Typ)					
Return Loss		15 dB (Typ)					
Specification Temperature		+25 °C					
Operating Temperature		-40 °C to +85 °C					

Mechanical Specifications:

Item	Specification
Aperture Size	Ø 96” (2.4 m)
Antenna Ports	WR-22 Waveguide with UG-383/U-M Anti-Cocking Flanges
Enclosure Material	Aluminum
Enclosure Surface Finish	White Polyurethane enamel paint
Radome Material	PTFE
Reflector Material	Honeycomb structure with Carbon fiber skin
Reflector Surface Finish	White Polyamide Epoxy Paint
Weight	Approx. 115 lbs.
Outline	AY-RQ53-96-22-SVS-3

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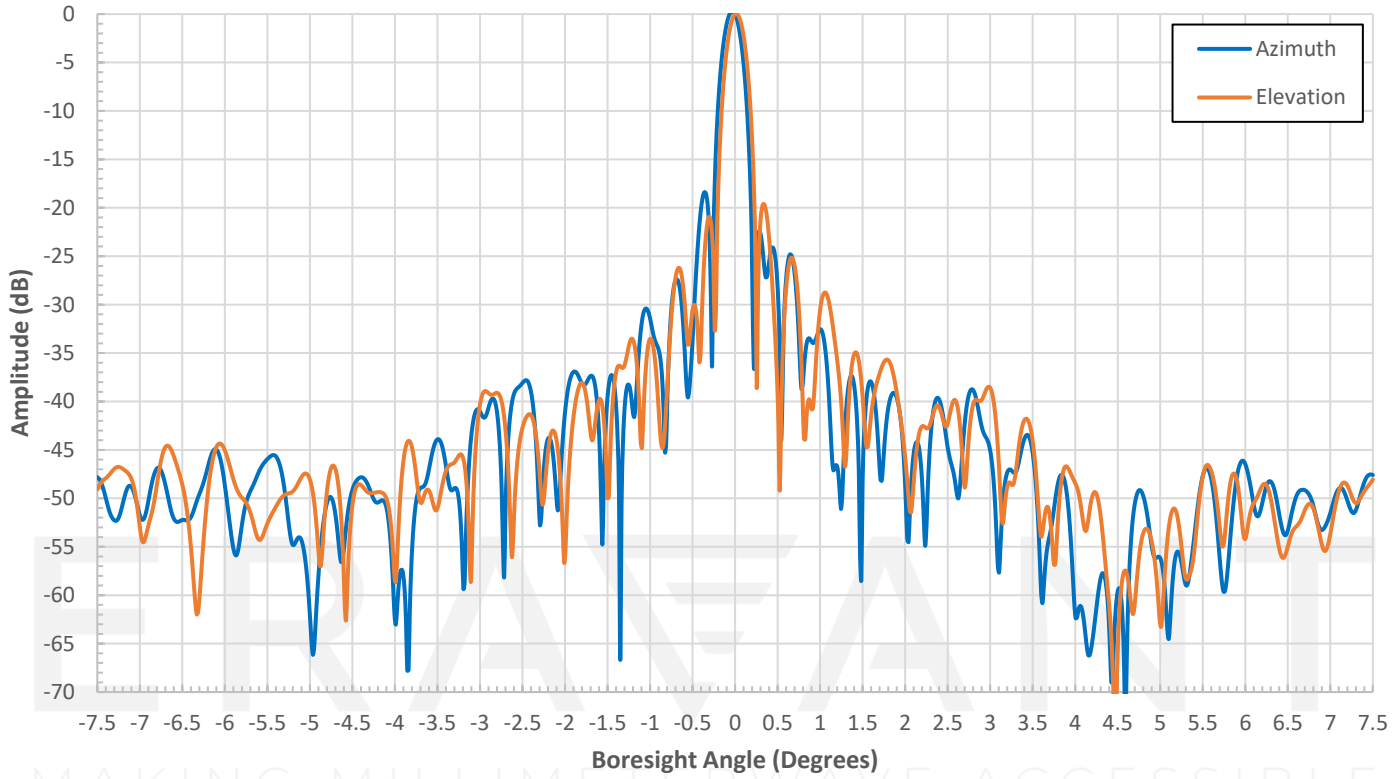
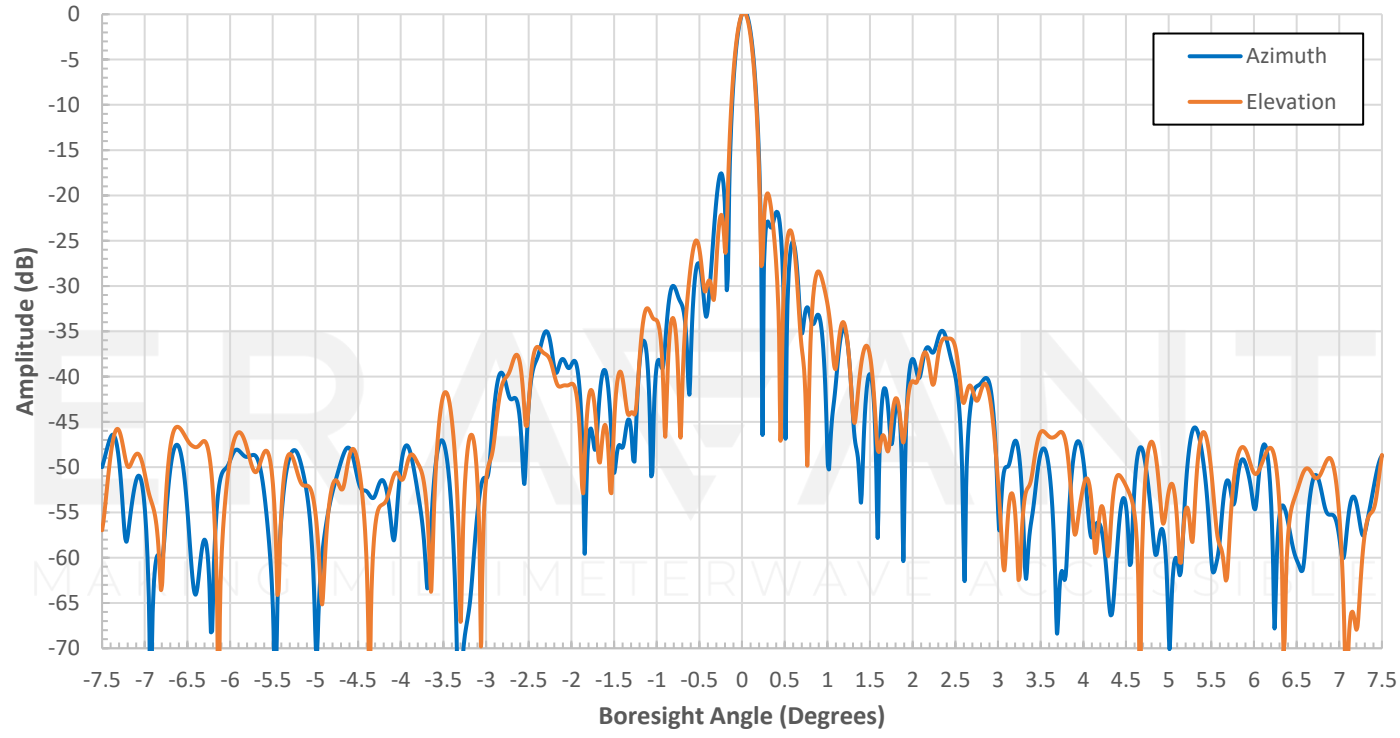
Measured Patterns at 40 GHz



Measured Patterns at 48.5 GHz



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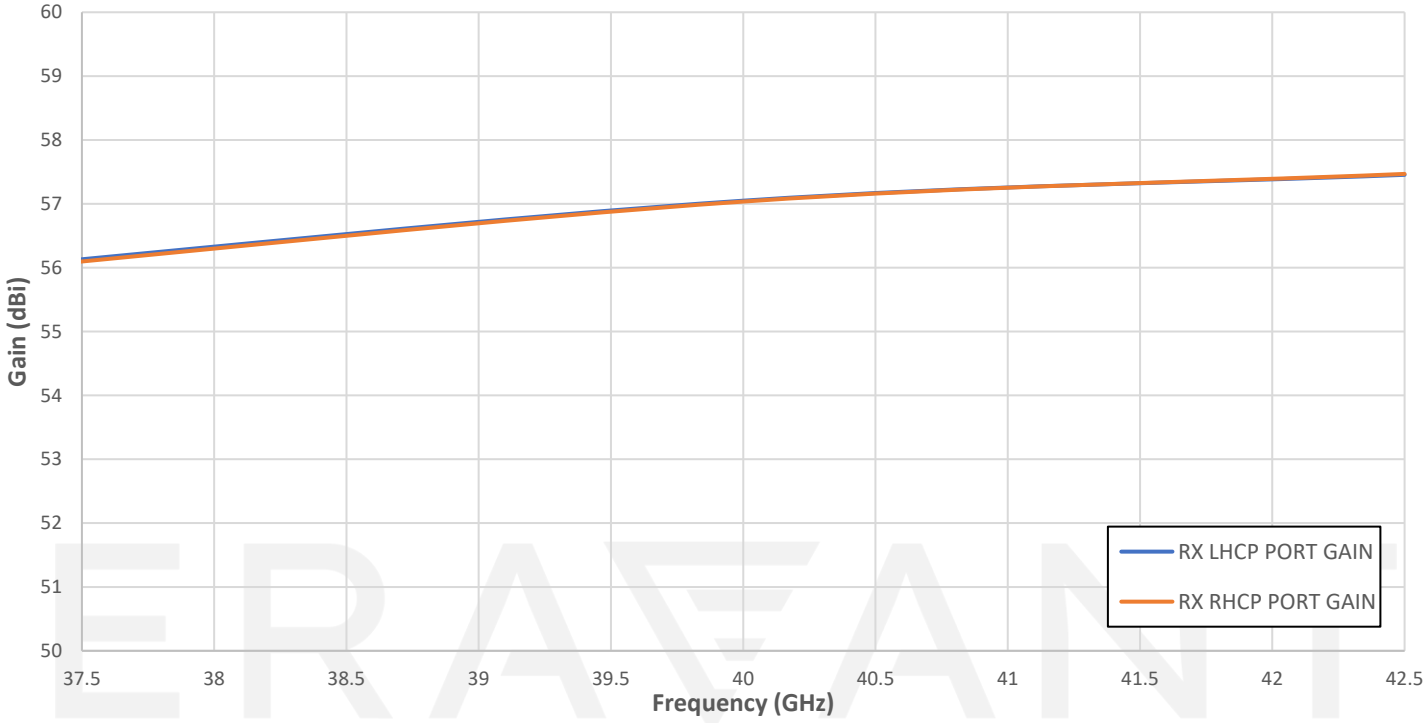
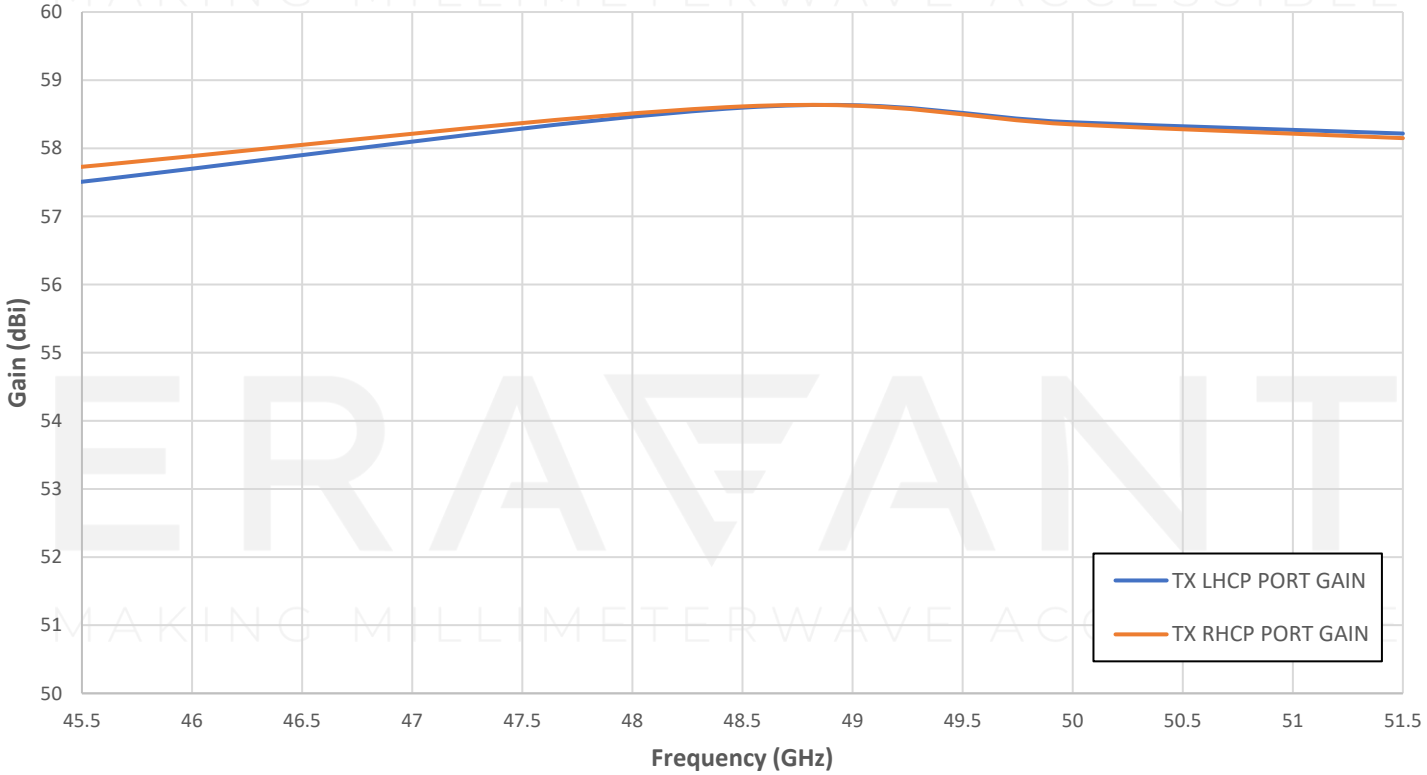
Measured Gain vs Frequency (RX Ports)



Measured Gain vs Frequency (TX Ports)



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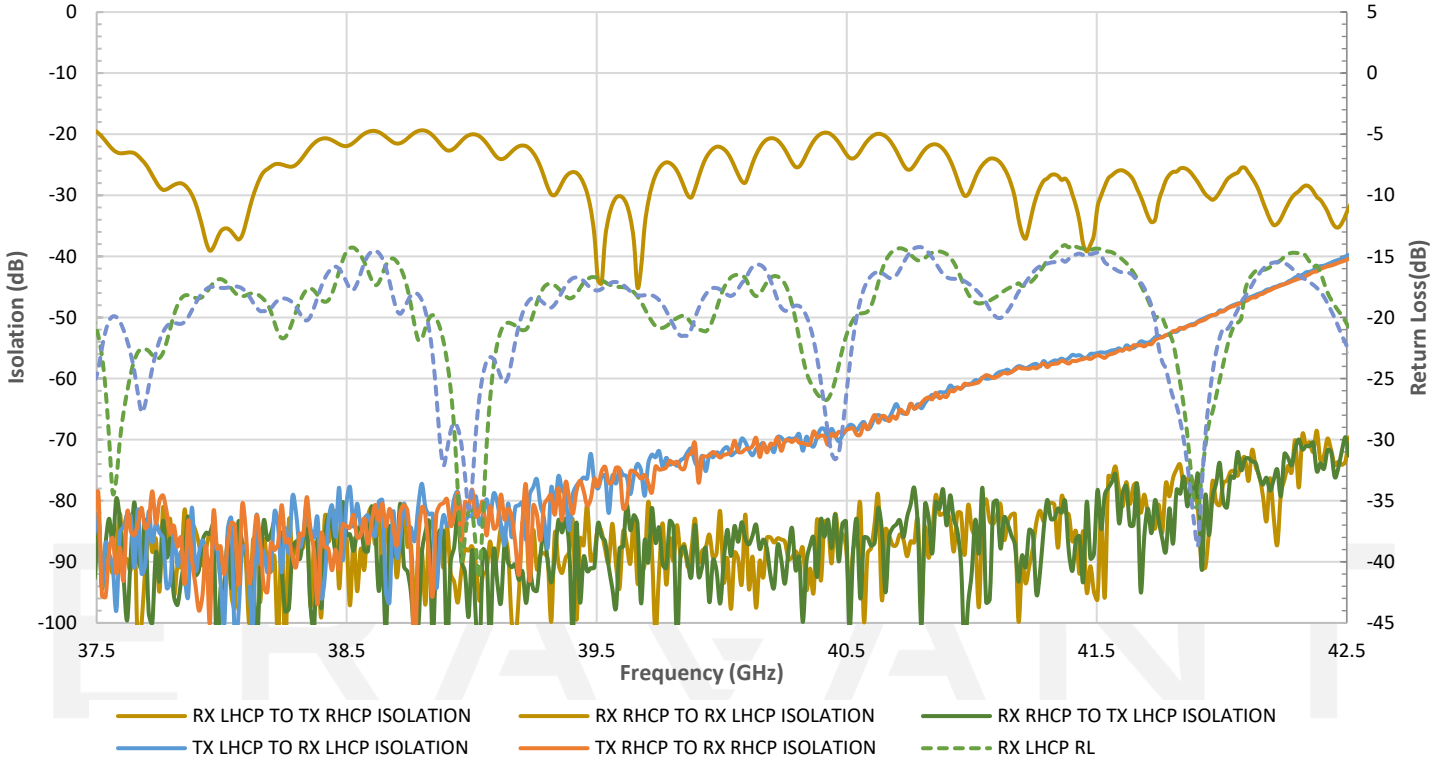
Measured Return loss/Isolation vs Frequency (Rx)



Measured Return loss/Isolation vs Frequency (Tx)

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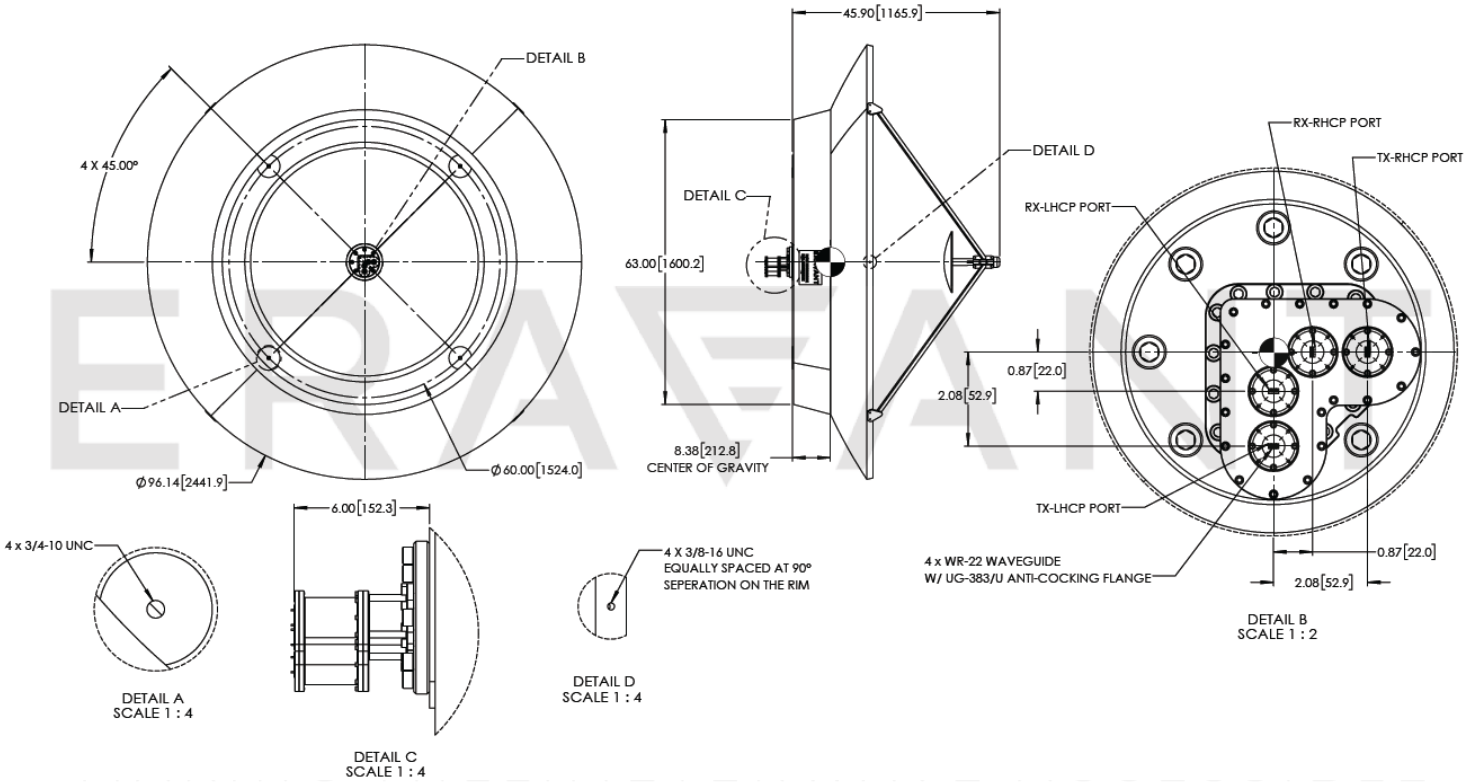
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



NOTE:

- All test data provided is collected from a sample lot. Actual data may vary slightly from unit to unit. All testing is performed under +25 °C room temperature.
- 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.

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