STY-MAA-AZ-42KF-R1

WR-42 Standard Gain Horn Assembly, 24 dBi Directivity

STY-MAA-AZ-42KF-R1 is a K-band standard gain horn assembly that operates from 18 GHz to 26.5 GHz. The antenna offers 24 dBi nominal directivity, a typical half-power beamwidth of 9.7 degrees on the E-plane and 11 degrees on the H-plane at the center frequency, respectively. The antenna supports linear polarized waveforms. The RF port is a right angle (90°) 2.92mm (K) coax connector. The antenna is mounted on a universal mounting cage, which is constructed from sturdy black anodized aluminum plates and optical-grade stainless steel posts. The cage includes an integrated bubble level and a removable Velcro-fastened absorber shield. The standard gain horn assembly is offered for antenna range gain calibration purposes, but it can be also used for general-purpose system setups.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	18 GHz		26.5 GHz
Directivity		24 dBi	
Polarization		Linear	
3 dB Beamwidth, E-Plane @ 22.5 GHz		9.7°	
3 dB Beamwidth, H-Plane @ 22.5 GHz		11.0°	
Sidelobes, E-Plane		-13 dB	
Sidelobes, H-Plane		-36 dB	
Return Loss		15 dB	
Power Handling			50 W (CW)
Specification Temperature		+25 °C	
Operation Temperature	-40 °C		+85 °C

Mechanical Specifications:

Item	Specification
RF Port	2.92 mm (K) Female Coax Connector
Material	Brass, Aluminum, Stainless Steel
Finish	Gold Plated (Aluminum), Gold Plated (Brass), Black Anodized (Aluminum), Passivated (Stainless Steel),
Weight	11 lbs.
Outline	TY-MAA-AZ-KC-R

ECCN

EAR99

FEATURES

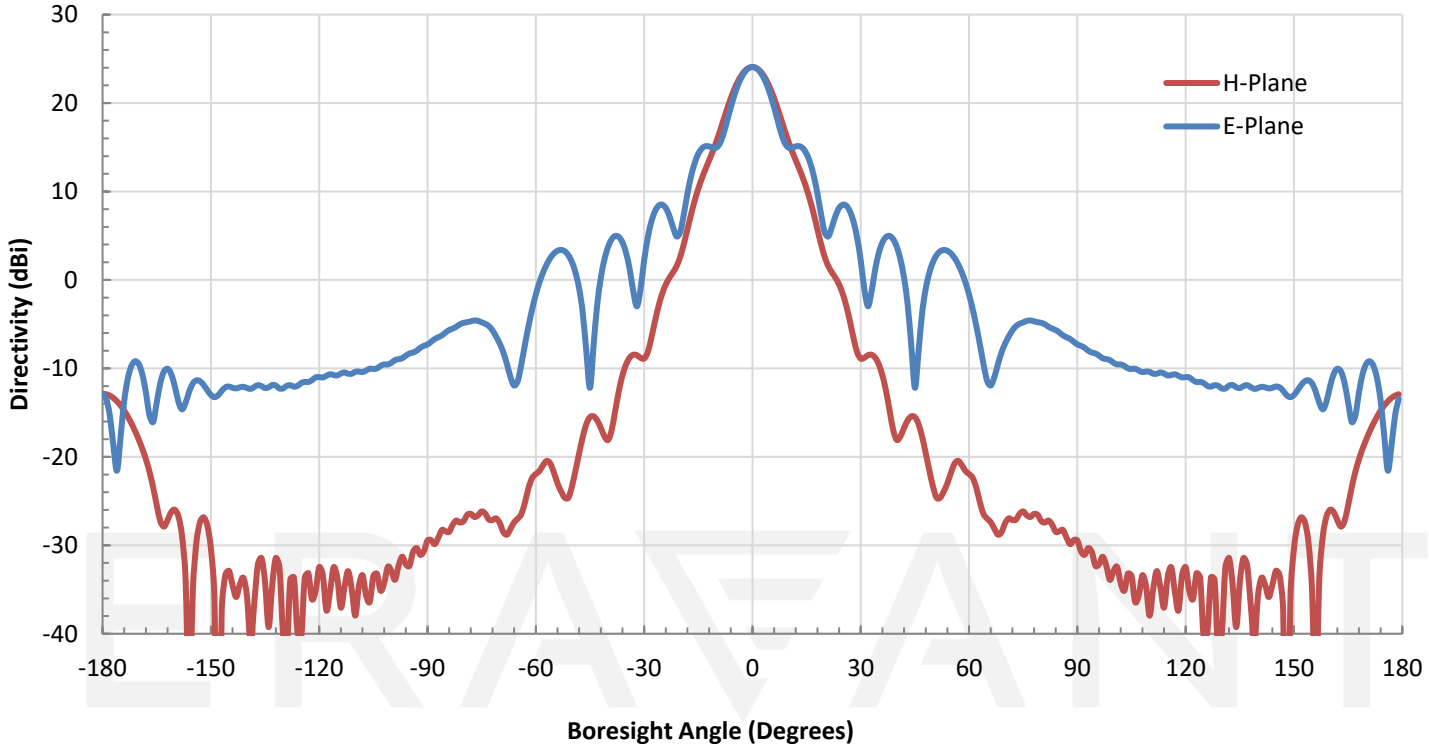
- Robust Universal Mounting Cage
- Bubble Level and Absorber Shield
- Right Angle Connector Configuration
- Linear Polarization
- High Return Loss
- DC Open Circuit

APPLICATIONS

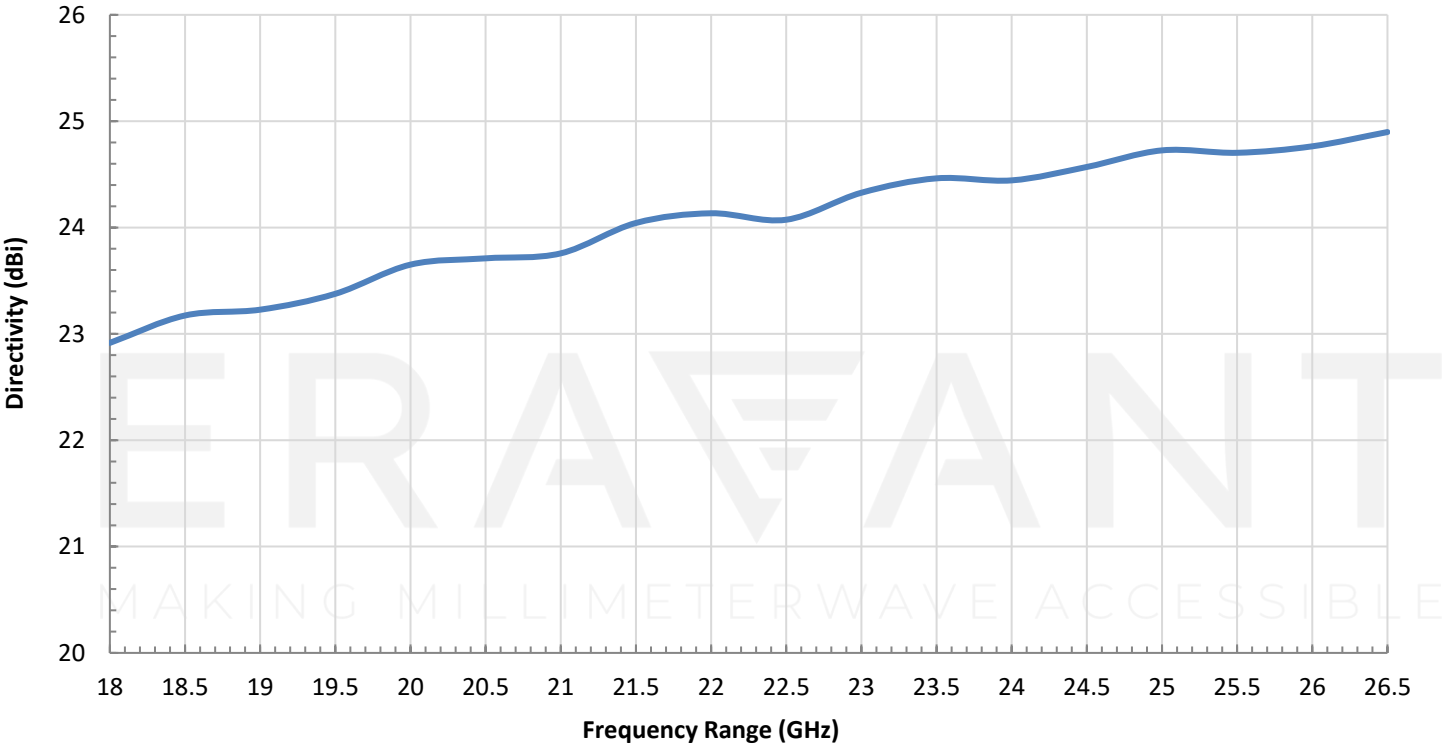
- Antenna Range Measurements
- Antenna Directivity Calibration
- General System Setups

SUPPLEMENTAL DETAILS

Simulated Antenna Patterns @ 22.5 GHz



Simulated Directivity vs. Frequency

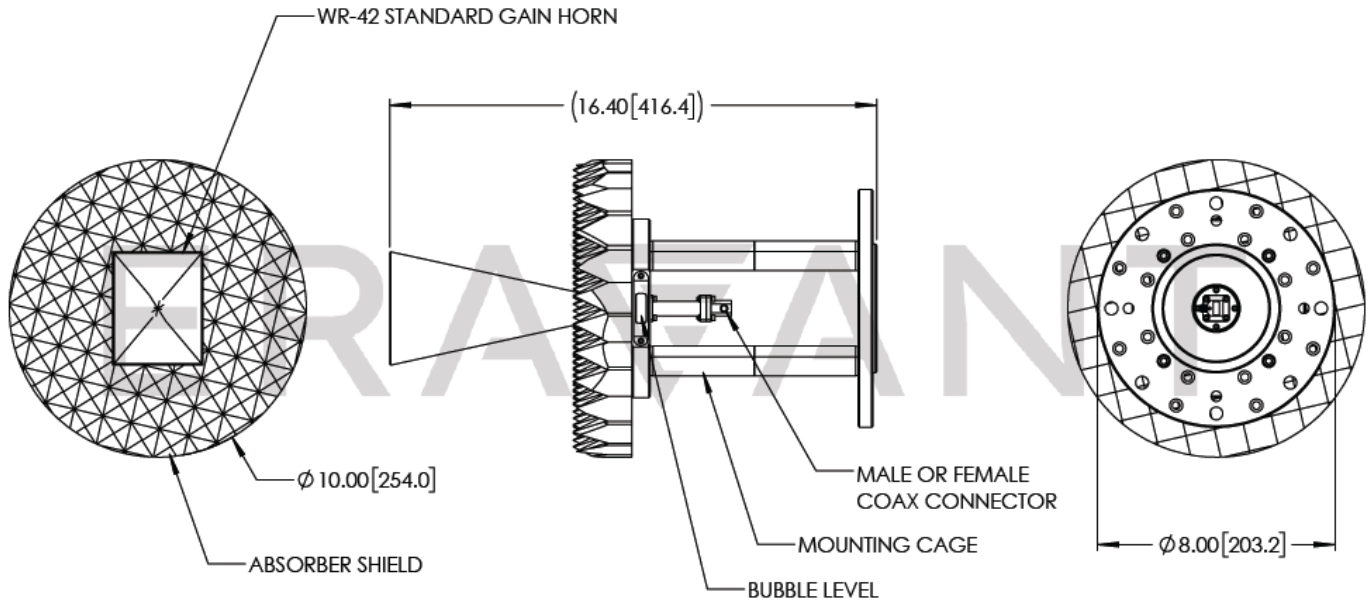


Simulated Directivity vs. Frequency in Tabular Format

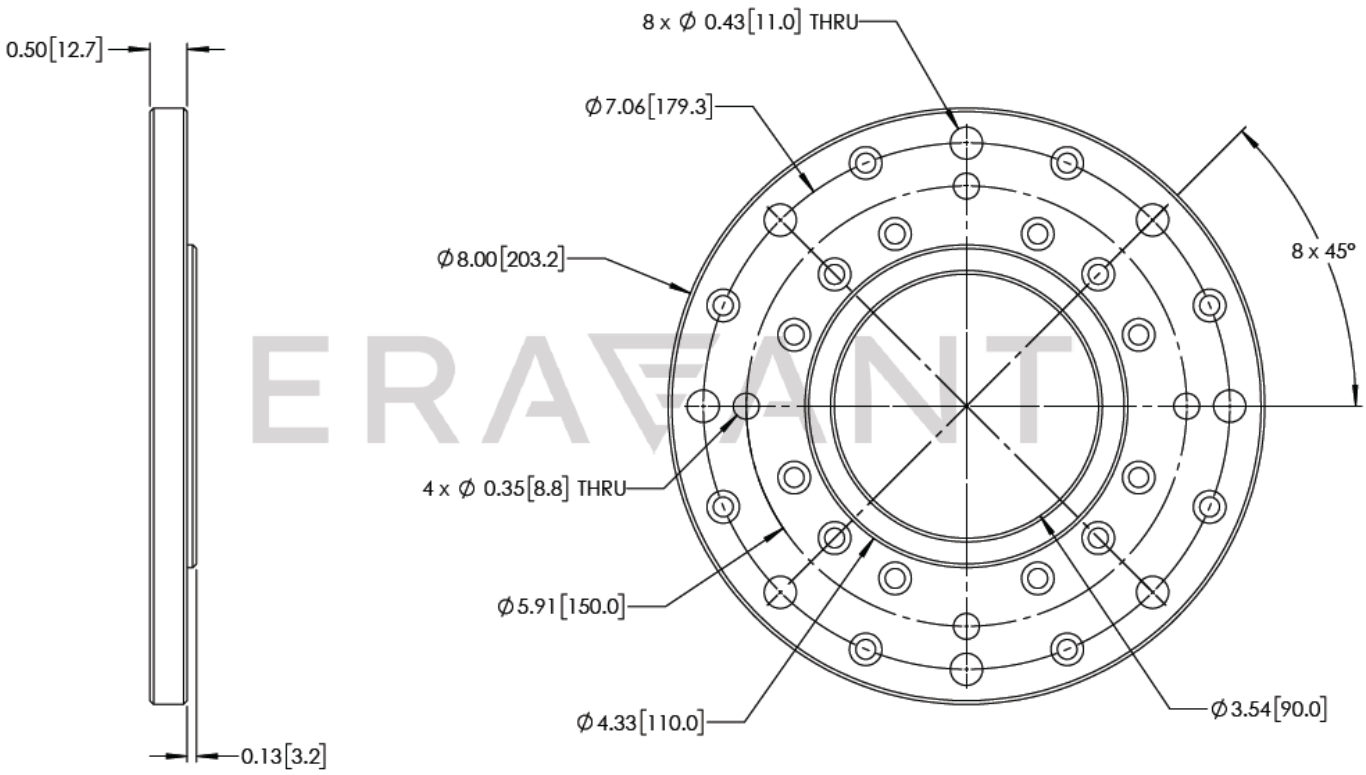
Frequency (GHz)	Directivity (dBi)	Frequency (GHz)	Directivity (dBi)
18	22.9	22.5	24.1
18.5	23.2	23	24.3
19	23.2	23.5	24.5
19.5	23.4	24	24.4
20	23.7	24.5	24.6
20.5	23.7	25	24.7
21	23.8	25.5	24.7
21.5	24.0	26	24.8
22	24.1	26.5	24.9

Mechanical Outline:

Unless otherwise specified, all dimensions are in inches [millimeters])



MOUNTING INTERFACE



NOTE:

- All data presented is simulated. Actual data may vary slightly.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Any foreign objects in the antenna will cause performance degradation and possible device damage.
- For 1.35 mm, 1.85 mm, 2.4 mm, 2.92 mm, and SMA connectors proper torque should be applied: 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm). Torque wrench model SCH-08008-S1 is highly recommended.