



Ka-Band Omnidirectional Amplified Antenna, 45° FWHM, 18 dBi Gain

Description:

Model SAO-2734031845-KF-C1-BL is a full band, Ka band Omnidirectional Receiving Antenna equipped with a Low Noise Amplifier. It covers the frequency range of 26.5 to 40 GHz. This vertically polarized antenna offers 360° azimuth coverage with 18 dBi typical gain, of which 3 dBi is from the Antenna and 15 dBi is from the integrated LNA. The antenna features a half power beamwidth of 45 degrees in its vertical direction. The power supply of the LNA can be provided via the USB Type-C port with Locking Screw for supply with a 5V battery pack. The LNA incorporates a DC regulator. The RF port of the antenna is equipped with a 2.92 mm female connector. The Amplified Antenna is built to resist indirect sprays of water.



Features:

- Amplified
- Vertically Polarized
- Full Band Operation
- Weather Resistance

Applications:

- 5G Systems
- Communication Links
- EW Systems
- Indoor Local Area Networks

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	26.5 GHz		40.0 GHz
Gain at Center Frequency		18 dBi	
Noise Figure		5 dB	
Azimuth Gain Variation		±1 dB	
Azimuth Beamwidth		360°	
3 dB Vertical Beamwidth		45°	
P _{1dB}		+11 dBm	
Return Loss		10 dB	
RF Input Power			-8 dBm
Damage RF Input Power			-3 dBm
Supply Voltage	+4.8 V _{DC}	+5 V _{DC}	+20 V _{DC}
Supply Current		150 mA	
Specification Temperature		+25 °C	
Operating Temperature	-20 °C		+65 °C



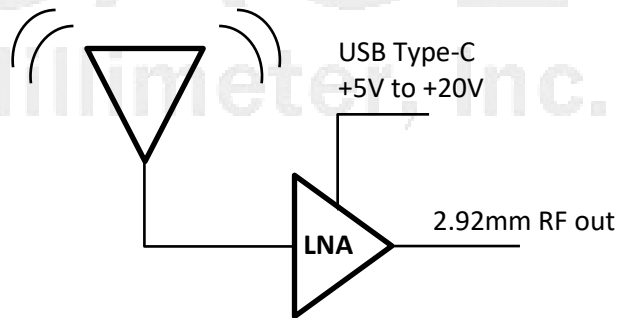


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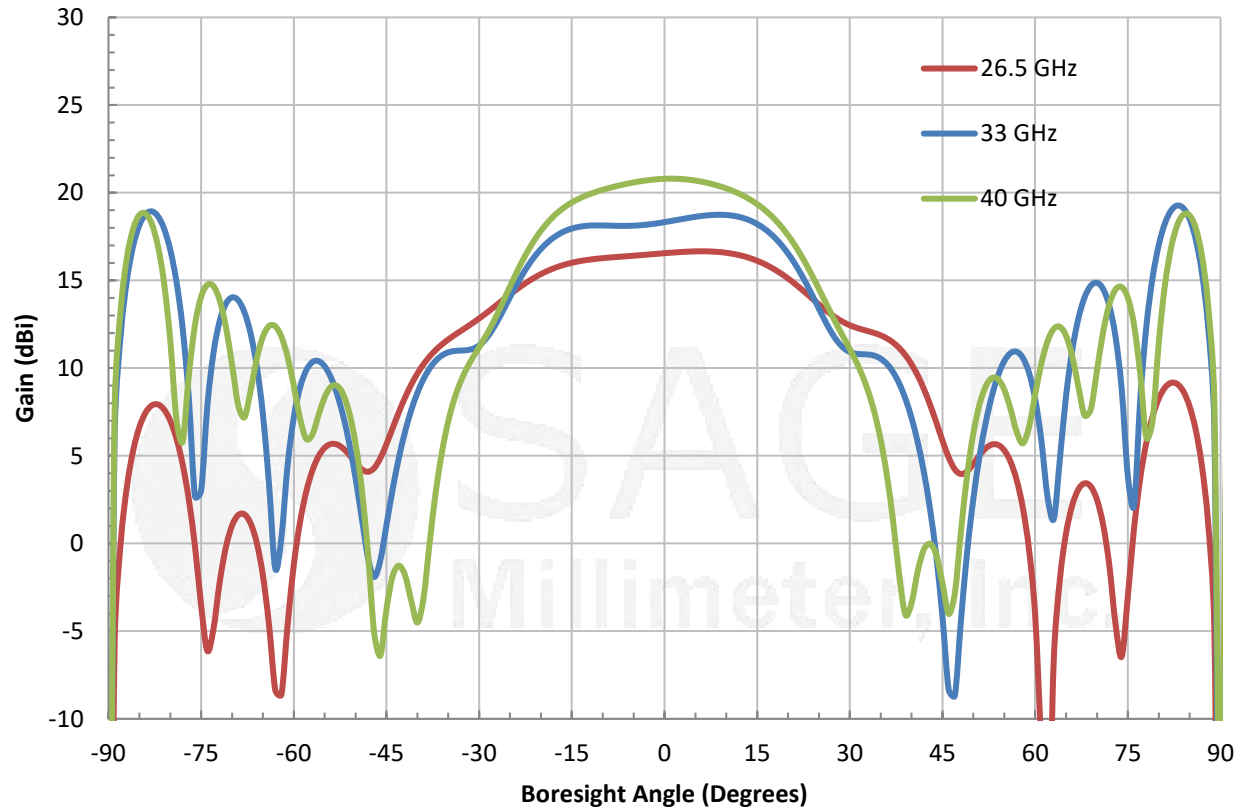
Mechanical Specifications:

Item	Specification
Port	2.92 mm - K (F) Connector
Supply port	USB Type-C with Locking Screw
Body Material	Aluminum
Radome Material	HDPE
Finish	Gold Plated and Black Anodized
Weight	5 Oz
Outline	AO-AC18-045-BL

Block Diagram



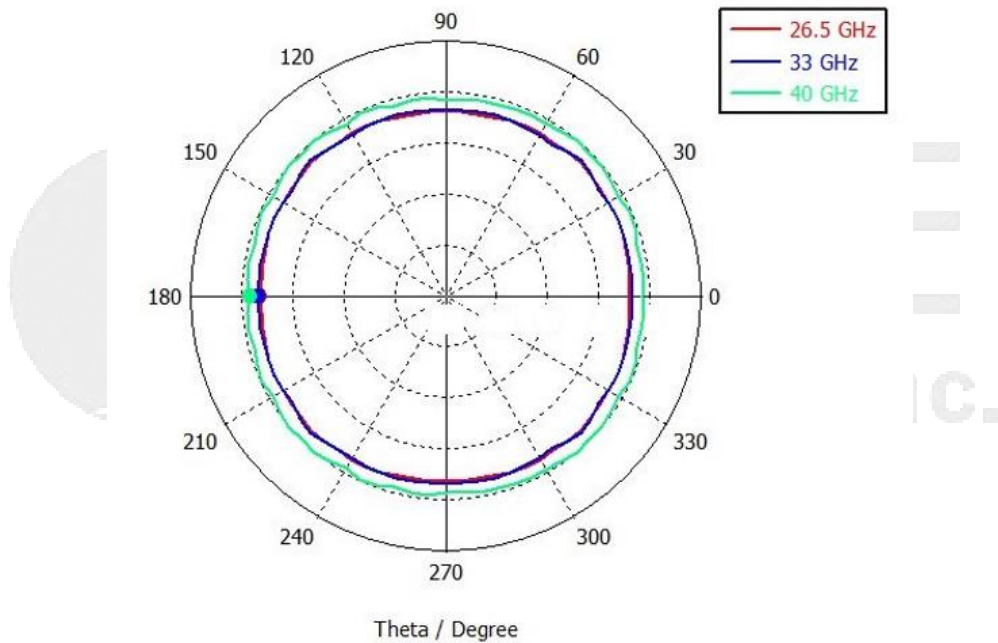
Simulated E-Plane Amplified Antenna Pattern vs. Frequency



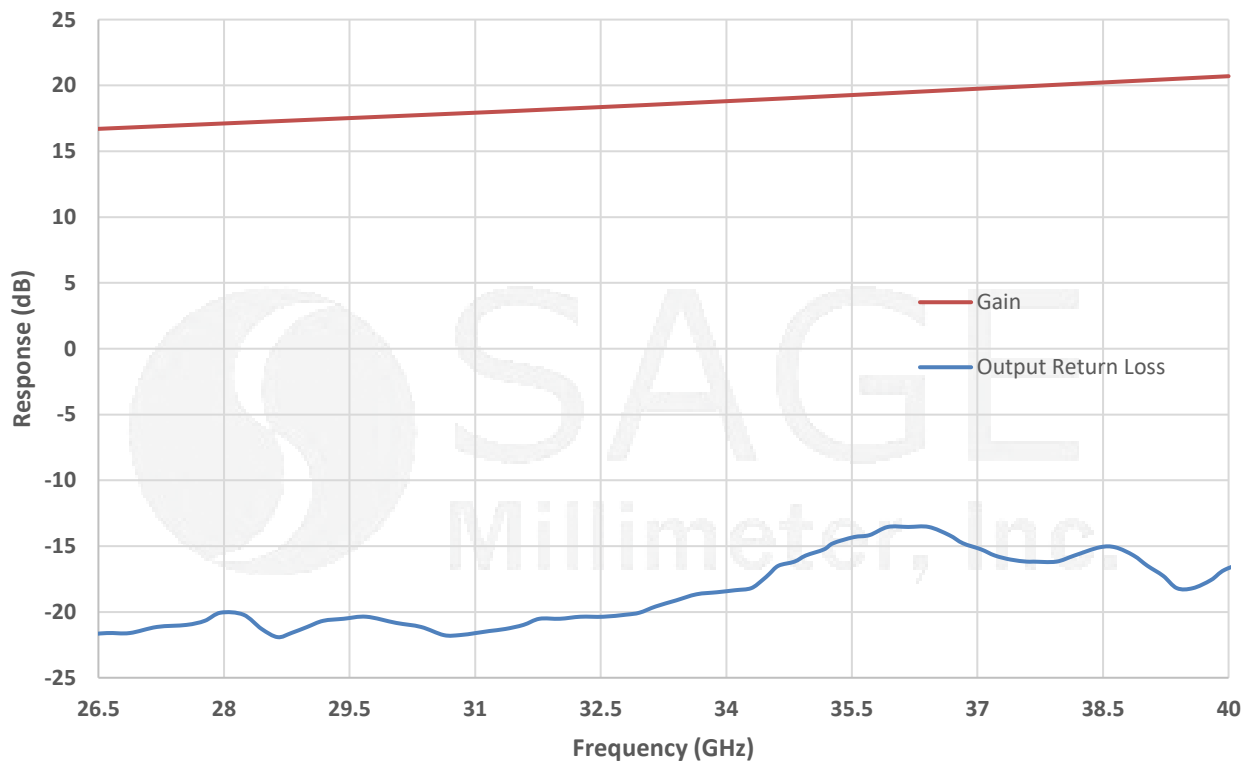


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Simulated H-Plane Amplified Antenna Patterns vs. Frequency



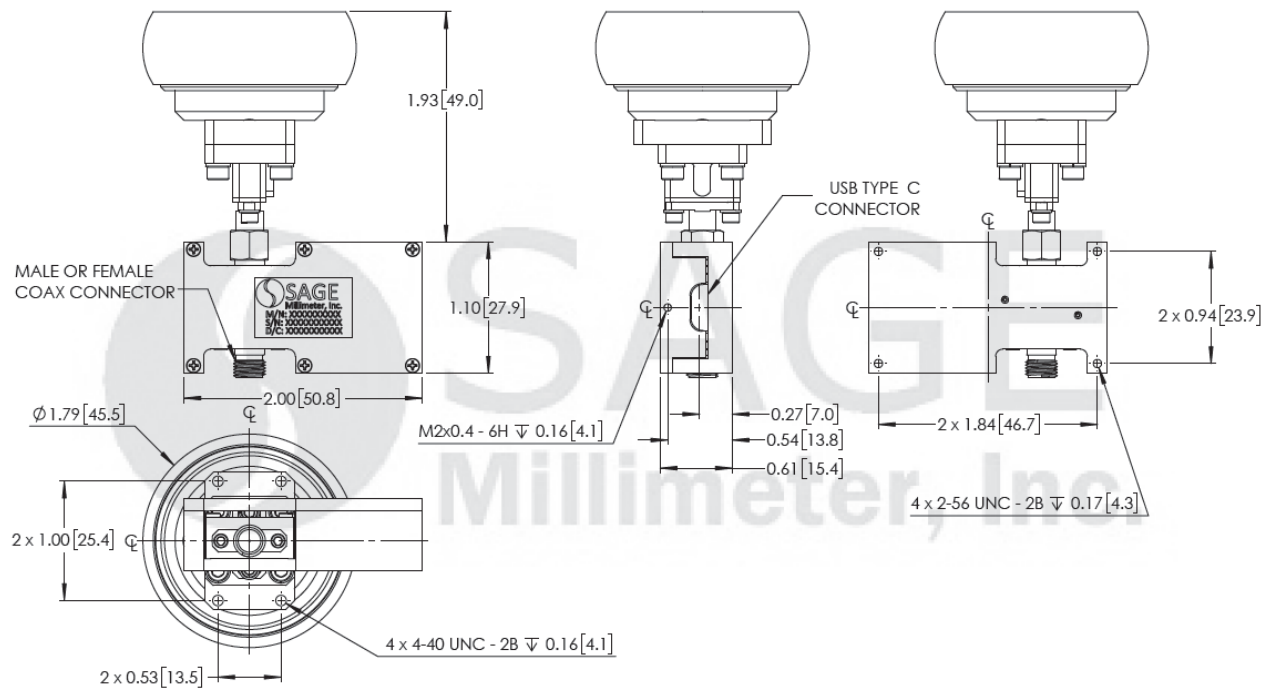
Typical Measured Return Loss and Gain





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



Note:

- Antenna patterns are simulated.
- Gain data presented is collected from a sample lot, actual data may vary unit to unit, slightly.
- The use of a battery pack with $+5 V_{DC}$ to power the device is recommended.
- All testing was performed under $+25^{\circ}C$ room temperature.
- All other data presented is simulated. Actual data may vary, slightly.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Water or condensation on the antenna will change its electrical performance. All specifications and collected data apply only to indoor use and dry environment.
- Exceeding absolute maximum ratings shown will damage the device.
- **Reverse bias or over bias the device will damage the amplifier.**
- The device is static sensitive. Always follow ESD rules when working with the device.
- The case temperature of the device shall never exceed $+65^{\circ}C$ under operation. Use proper heatsink or fan if necessary.
- Proper torque, 8.0 ± 0.15 inch-pounds (0.92 ± 0.05 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

