L3HARRIS™
FAST. FORWARD.

P/N 54727

2” E-/J-Band Sinuous Antenna

To meet the challenge posed by hostile signals that can be arbitrarily polarized, L3Harris has developed a common aperture element capable of simultaneously receiving or transmitting radio frequencies of any two orthogonal polarized signals on two isolated ports.

The model 54727 antenna derives its dual circular polarization from the natural dual linear polarization of the sinuous antenna via an internal quadrature hybrid. The result is low ellipticity over wide spatial angles verifying that the E- and H-plane patterns are produced from collocated phase centers.

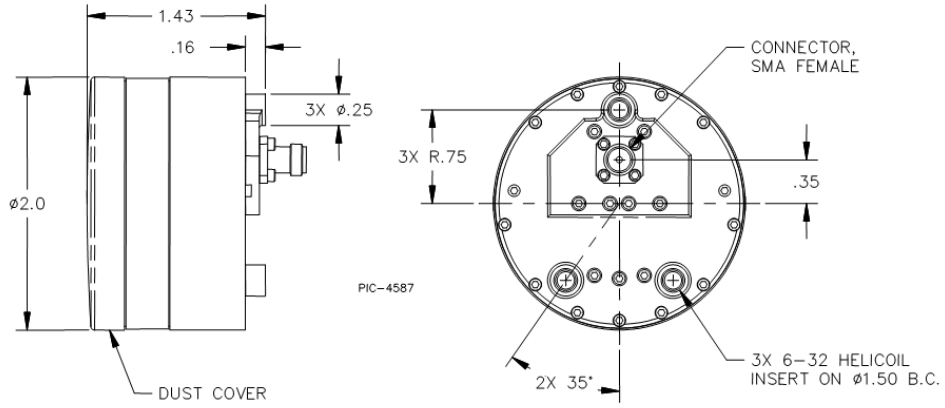
Originally designed for RWR Direction Finding (DF) applications, the characteristics of this antenna make it an ideal choice for an ESM interferometer, SIGINT, polarimeter or any application requiring stable phase centers with frequency independent performance.

The performance of the antenna is similar to a cavity-backed spiral antenna with the exception that pattern performance is superior at broader angles from boresite. The VSWR is typically less than 1.5:1. Power handling is typically 7 Watts CW. Actual performance depends on installation and environmental conditions. The antenna can be provided with or without an aperture environmental radome cover.

KEY FEATURES

- 2–18 GHz Frequency Operation
- Dual Circular Polarization
- Enhanced Gain Cavity
- Internal Polarization Switching
- Designed for RWR Application
- Designed for Military Airborne Environment

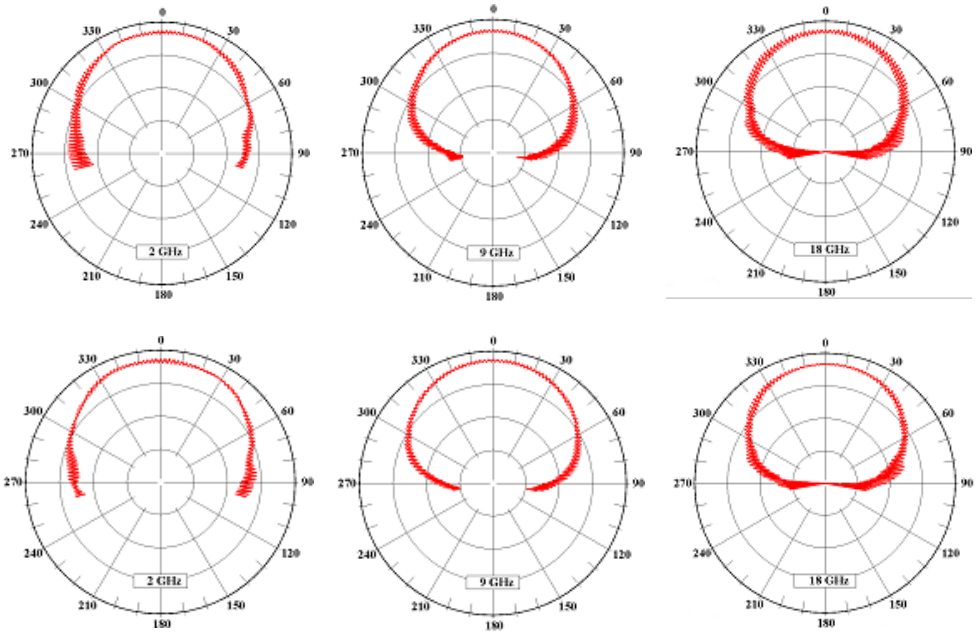
PHYSICAL DIMENSIONS (TYPICAL UNIT)



WEIGHT: 4.0 oz.

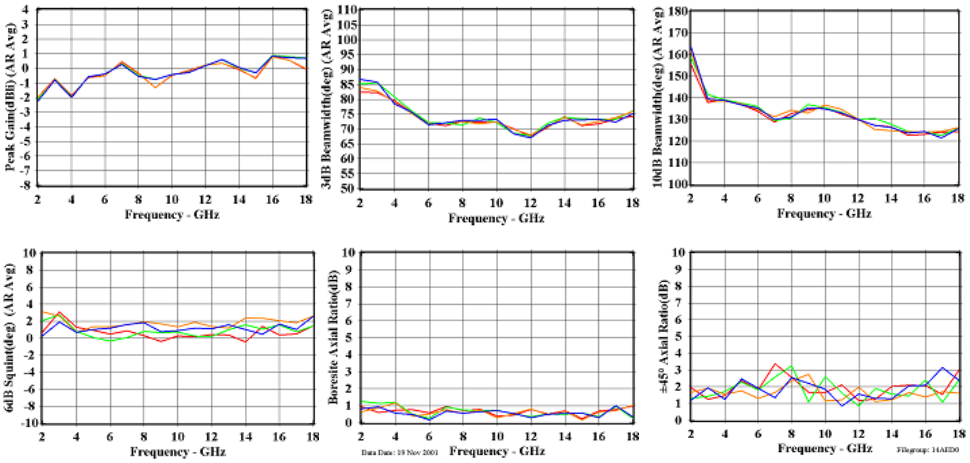
TYPICAL MEASURED PERFORMANCE

Performance varies with radome design, manufacturing tolerances, installation, and environmental conditions. Data shown is typical for the antenna without radome.



Azimuth Radiation Pattern Response to Rotating Linear Polarization (10 dB Rings)

LHCP Polarization (above) compared to RHCP Polarization (below)



Antenna Performance Summary

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1025 W. NASA Boulevard
Melbourne, FL 32919
t 866 900 7270 | f 650 326 1033
Antennas@L3Harris.com