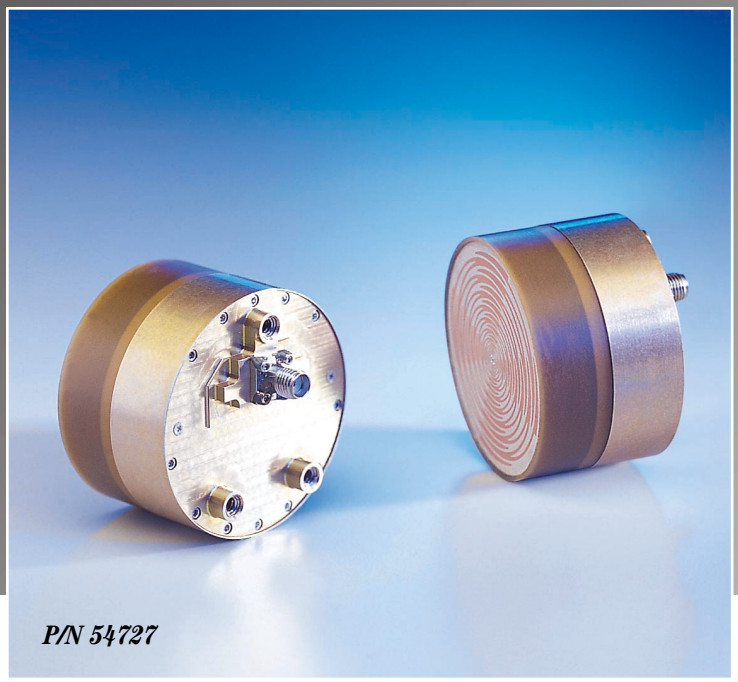

P/N 54727

Sinuous Antennas

2.0" DIAMETER SWITCH SELECTED POLARIZATION E/J BAND SINUOUS ANTENNA

- *2-18 GHz Frequency Operation*
- *Dual Circular Polarization*
- *Designed for RWR Application*
- *Qualified for Military Airborne Environment*

To meet the challenge posed by hostile signals that can be arbitrarily polarized, Randtron Antenna Systems has developed a common aperture element capable of receiving or transmitting radio frequencies of any two orthogonal polarized signals at a single port via a control signal applied to the connector.

The model 54727 antenna derives its dual circular polarization from the natural dual linear polarization of the sinuous antenna via an internal fully integrated quadrature hybrid and solid state switch. The result is low ellipticity over wide spatial angles verifying that the *E*- and *H-plane* patterns are produced from collocated phase centers. The cavity of the 54727 antenna is partially dielectric to increase low frequency gain. To realize this enhanced gain, metallic structures must be displaced away from the upper area of the cavity.

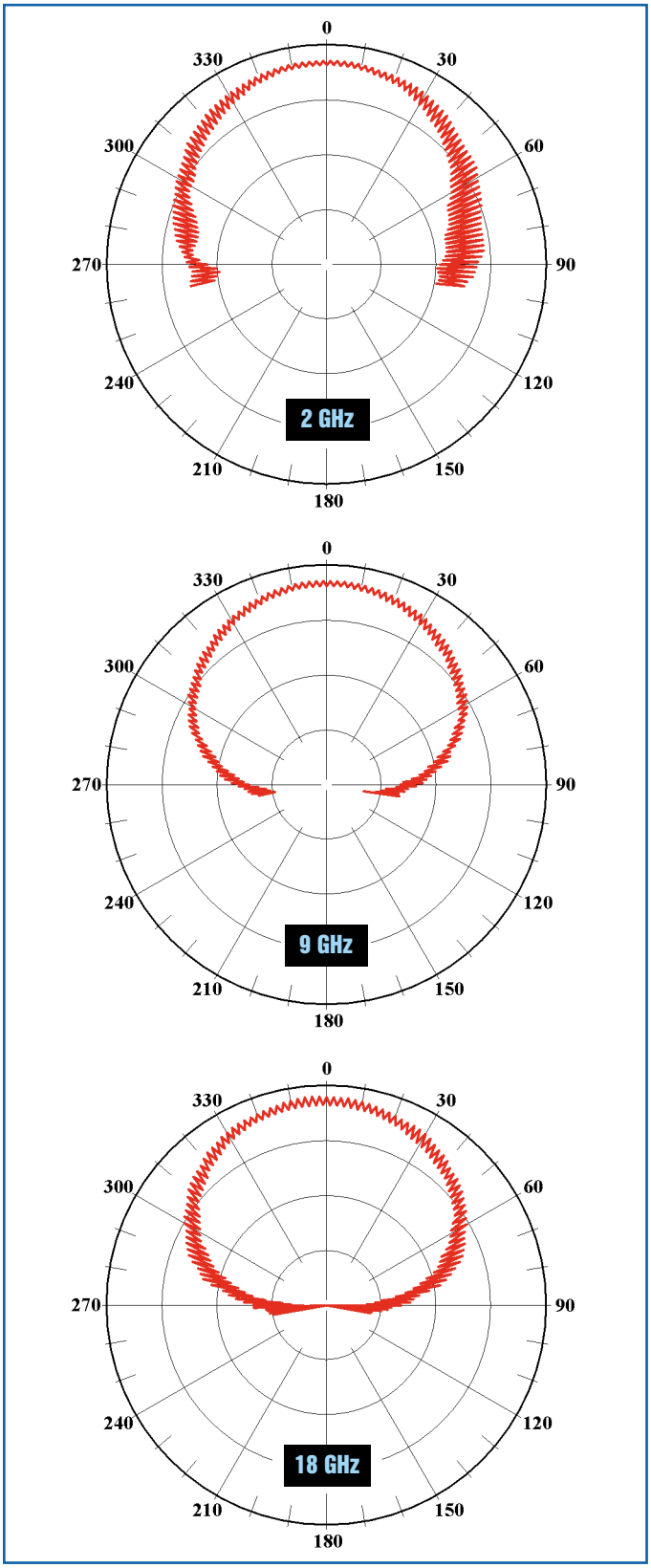
Originally designed for RWR Direction Finding applications, the characteristics of this antenna make it an ideal choice for an ESM interferometer, SIGINT and any application requiring stable phase centers with frequency independent performance.

The performance of the antenna is similar to the cavity backed spiral antenna with exception that pattern performance is superior at broader angles from boresite. The VSWR is generally better than 1.5:1. The antenna can handle input power up to 1 Watt average and 20 Watts peak.

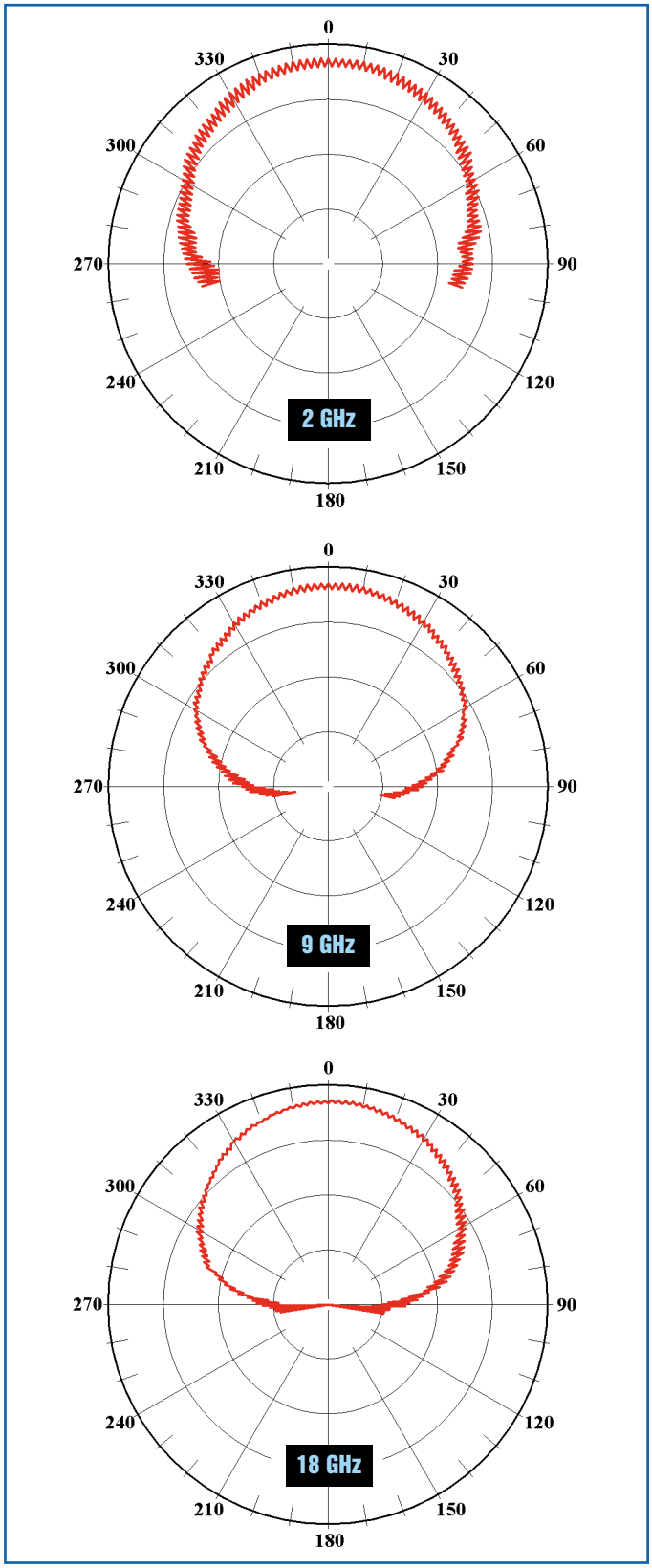
L3 communications

TYPICAL MEASURED PERFORMANCE

Data shown following is for the antenna without radome since the radome is dependent on the application.



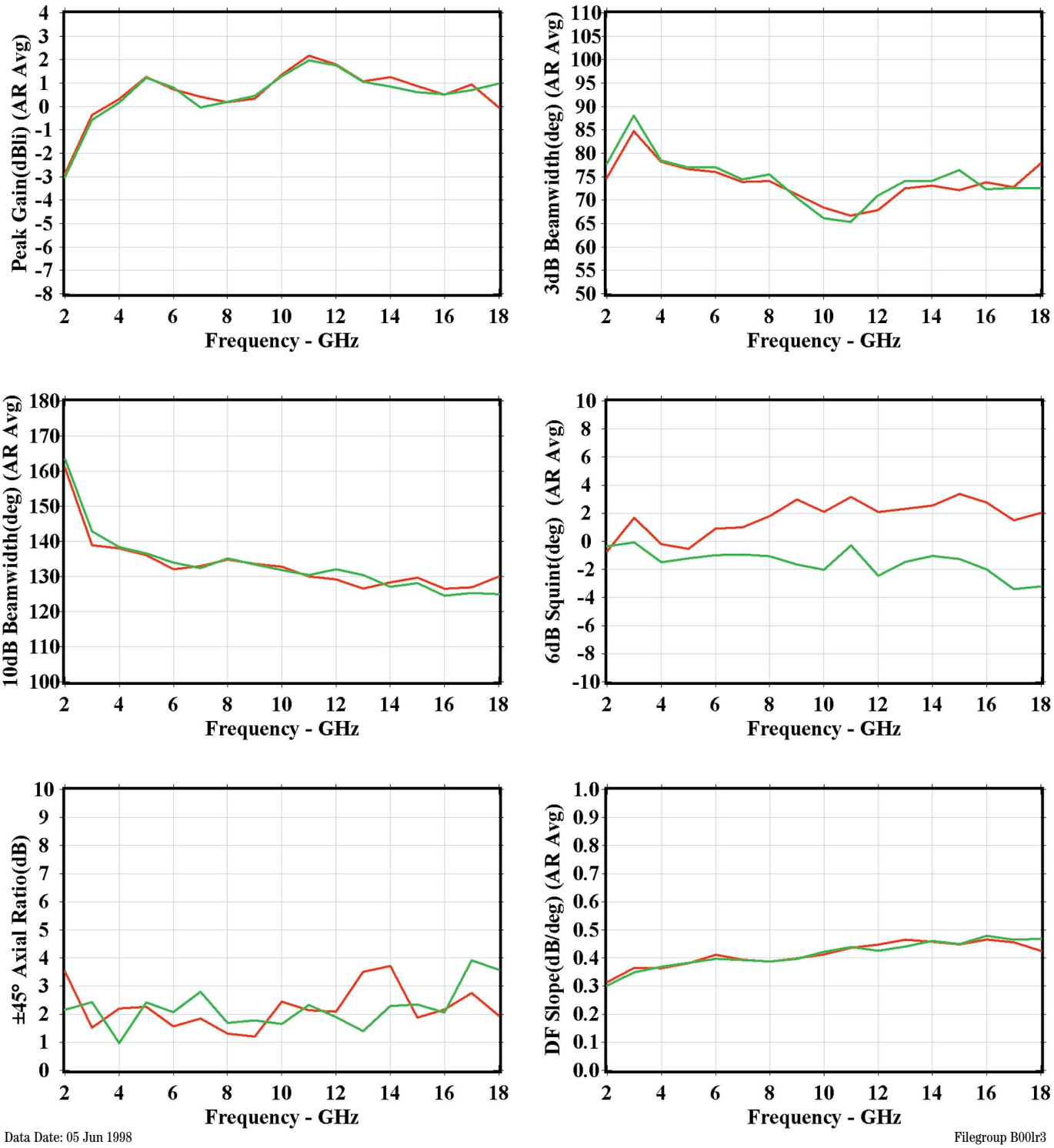
Azimuth Radiation Pattern Response to Rotating Linear Polarization at RHCP Output (10 dB Rings)



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

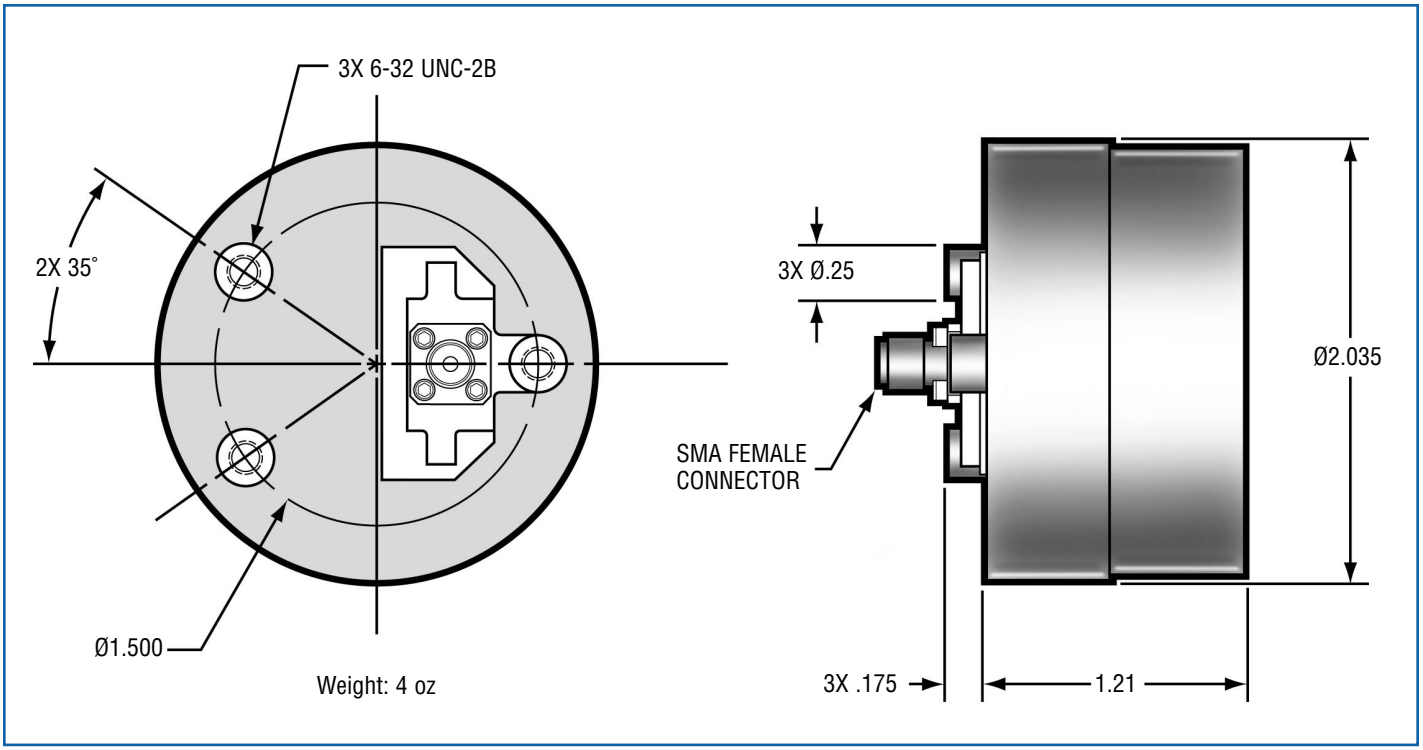
TYPICAL MEASURED PERFORMANCE

Data shown following is for the antenna without radome since the radome is dependent on the application.



Antenna Performance for Azimuth Patterns
at LHCP and RHCP Ports

PHYSICAL DIMENSIONS



*Please visit our website at **www.L-3com.com** for more applications.*

communications

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