



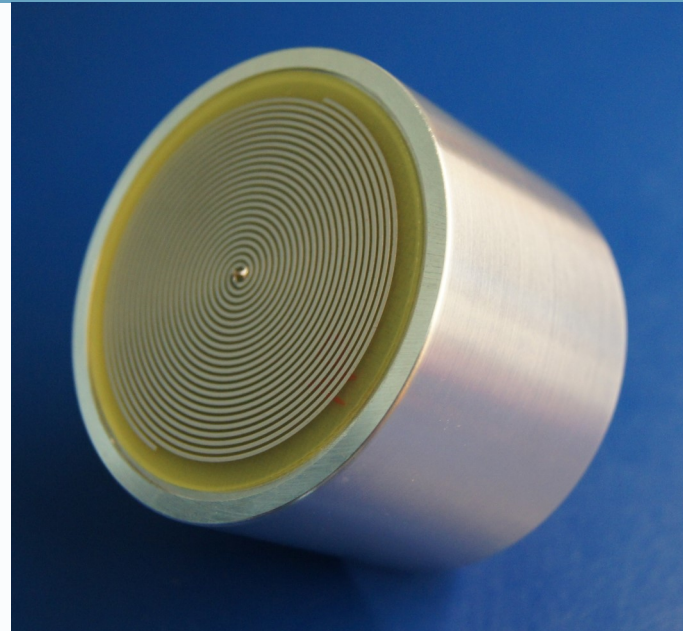
FLEXITECH
AEROSPACE

2-15 GHz Cavity Backed Spiral Antenna

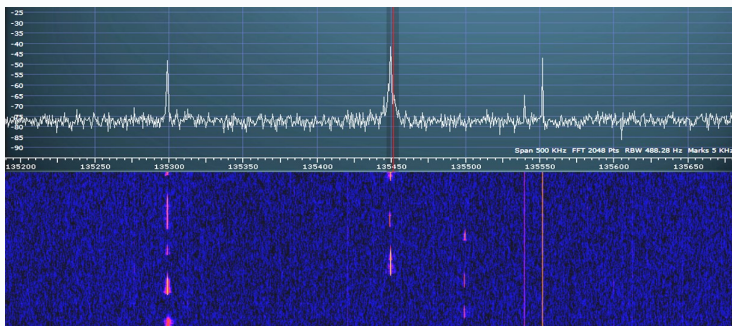
“Wideband reception of instantaneous bandwidth from 2 to 15GHz”

Applications:

- Wideband ground stations
- Satellite wideband in-orbit receivers
- Spectrum surveys
- Antenna lab and range testing



The demand for access to spectrum has been driven by the need to observe wideband sections of spectrum instantaneously. To meet this need Flexitech Aerospace has developed a Cavity Backed Spiral (CBS) antenna providing a wideband matched solution that covers 2 to 15GHz in one antenna. This design enables a receiver to have access to continuous spectrum without the need to switch across a range of antennas with the associated losses. It provides a 50 Ohm match at the antenna input across the entire spectrum.



Antenna Pattern

This antenna pattern is a hemispheric 120° cone ($\pm 60^\circ$) with peak gain at the center of the coverage envelope and slow roll off to the -3dB point. This performance is packaged into a small, low mass housing for a wide range of applications including ground receivers and CubeSats.

Applications

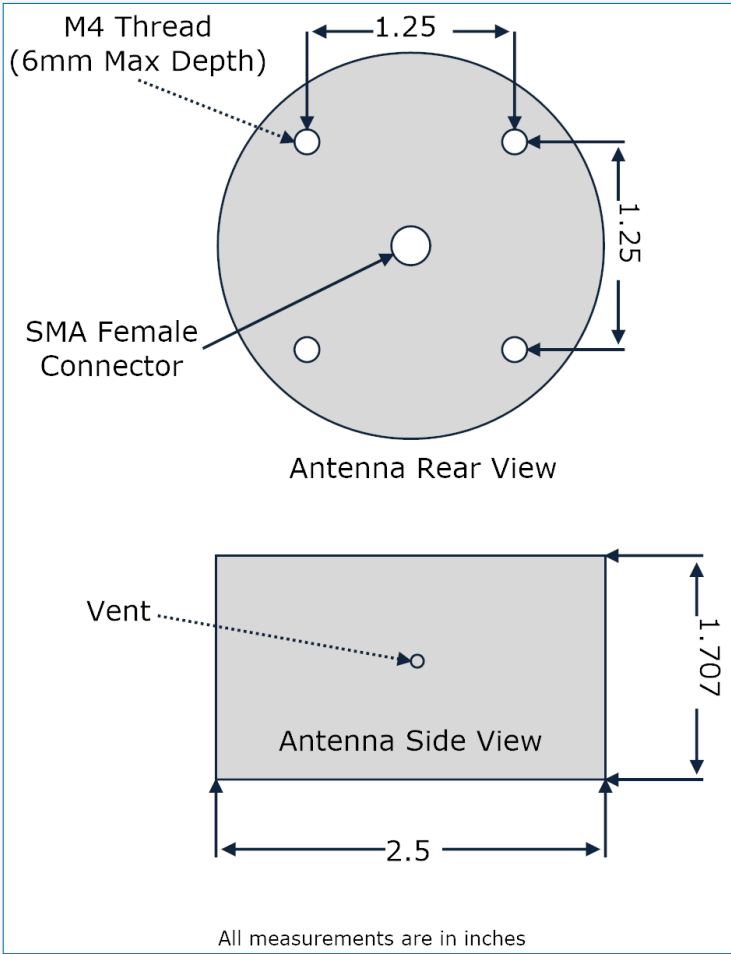
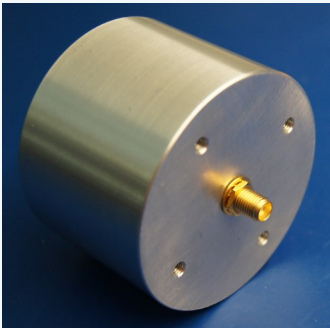
The antenna was designed for space applications and is available in both a space qualified and ground version. The antenna does not require a ground plane to meet its performance specification. It is connected to the receiver via a single SMA (female) connector. Packaged with a Software Defined Radio (SDR) this CBS antenna provides a powerful combination for very wideband spectrum surveys in terrestrial, ground station and space applications.

“Connecting Spacecraft to Spectrum”

Mechanical Arrangement

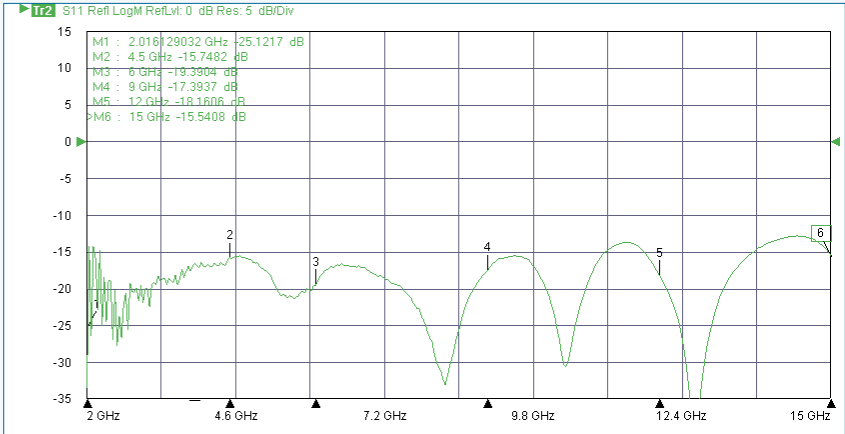
Specification

- Frequency: 2-15GHz
- Return Loss:
 - $\geq 12\text{dB}$ 2-10GHz
 - $\geq 10\text{dB}$ 10-15GHz
- Polarization:
 - RHCP or LHCP available
- Gain 3dBi at Boresight
- Connector: SMA Female
- Temperature Range:
 - Operational -20 to $+85^\circ\text{C}$
 - Storage -40 to $+100^\circ\text{C}$
- Surface Finish: Electroless Nickel
- Mass: 6.1 oz (172.93gm)

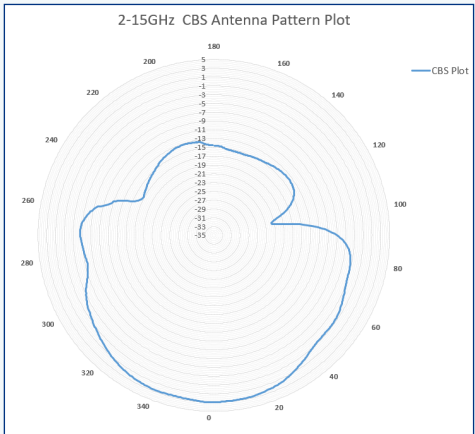


2-15GHz Performance Plots

Return Loss 2-15GHz



Antenna Pattern



“Antenna Design for a New Space Era”