



## PRELIMINARY DATA SHEET

### TRI-BAND TELEMETRY ANTENNA - TRC-009-TRIBAND

Toyon's tri-band, GPS interference-reducing telemetry antenna provides transmit capability at lower L-band, upper L-band, and S-band telemetry frequencies simultaneously. The transmit pattern at lower L-band also features a pattern null that can be pointed in the direction of vulnerable GPS receivers to reduce interference caused by telemetry signals. The antenna is flight-ready, and has been certified by an independent testing lab for operation at airspeeds up to Mach 2.0, at an altitude of 5000 feet.

Frequencies: 1.435 - 1.535 GHz  
1.755 - 1.850 GHz  
2.200 - 2.400 GHz

Return Loss: < -10 dB at all of the above frequencies

Gain: See patterns

Polarization: Vertical

Power Handling: 20 Watts continuous

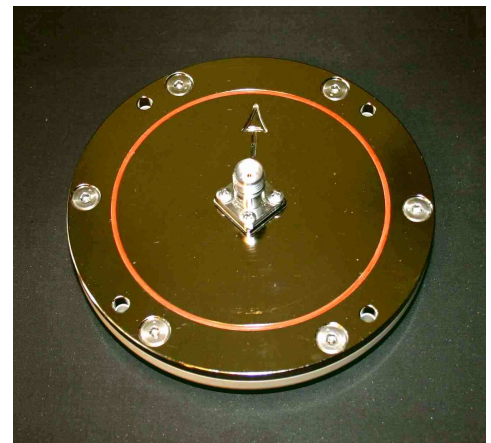
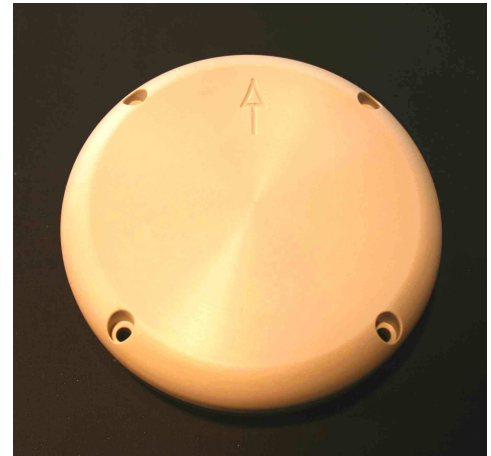
Diameter: 4.9 inches

Height: 0.91 inches as installed

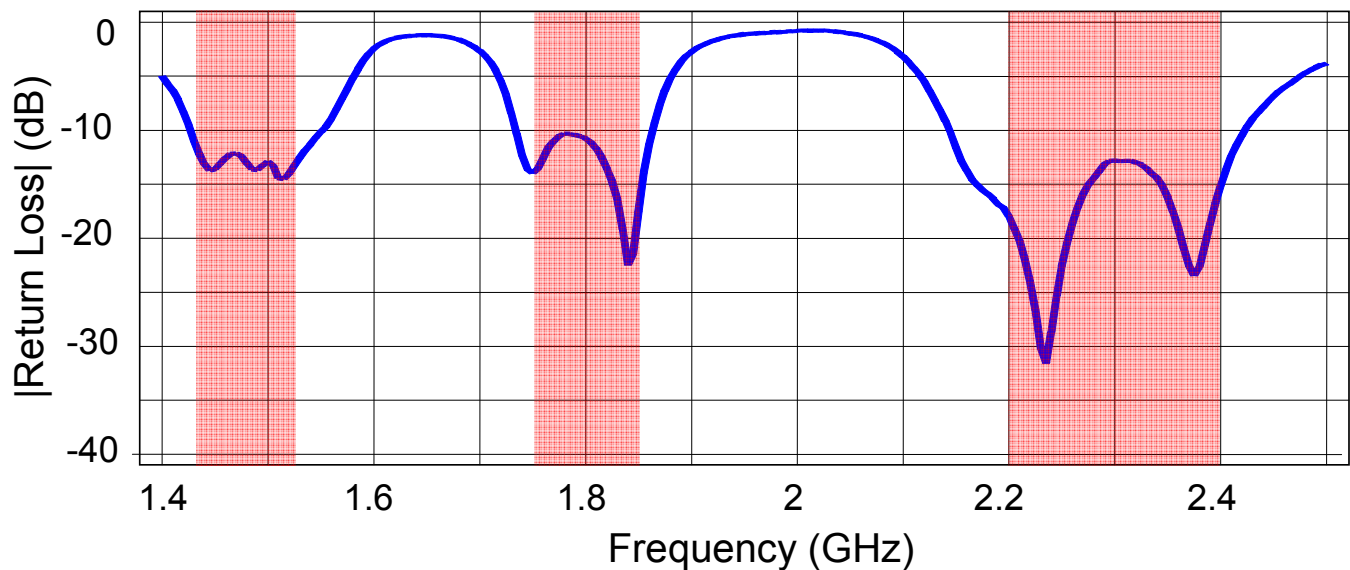
Weight: 1.25 lb

RF Connector: TNC female

Flight certified per DO-160D and MIL-STD-810F to Mach 2.0, @ altitude 5000 feet



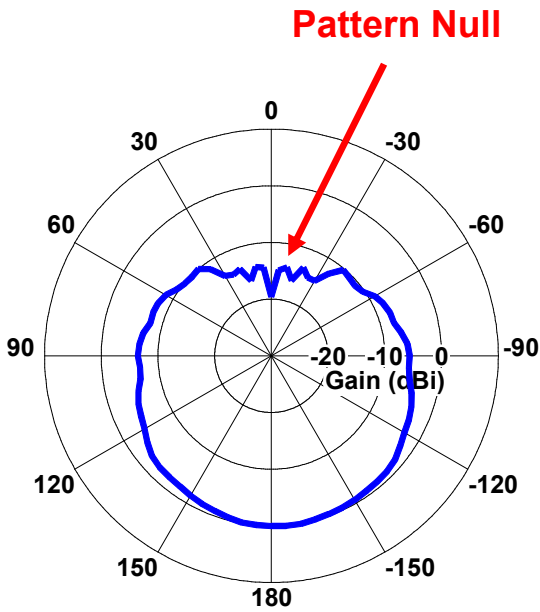
Measured Return Loss  
(Telemetry bands are shaded)



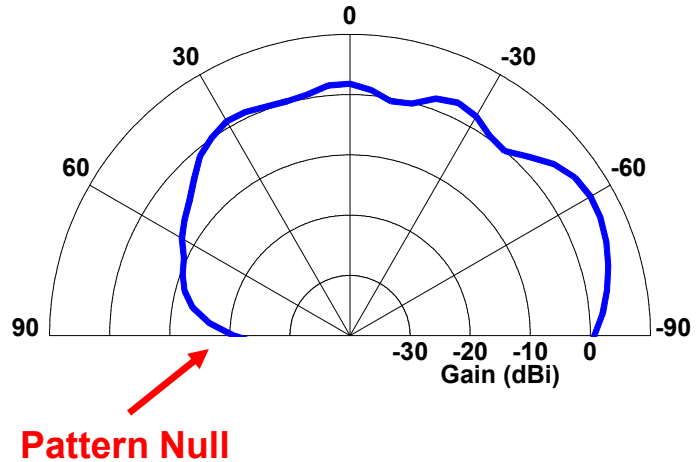
# TRI-BAND TELEMETRY ANTENNA - TRC-009-TRIBAND

At lower L-band frequencies, the antenna's transmit pattern is shaped to form a sectoral null, shown by red arrows in two of the patterns below. The antenna should be installed so that this null points in the direction of the most vulnerable GPS receive antenna. The direction of the pattern null is indicated on the top and bottom of the antenna with an engraved arrow.

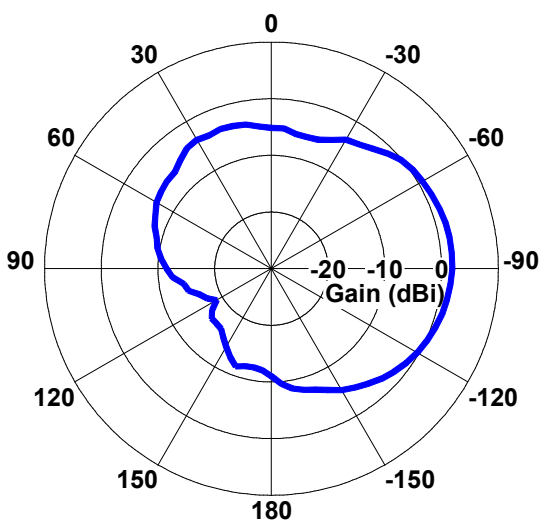
Measured Pattern at 1.485 GHz  
Azimuth Cut, Vertical Polarization



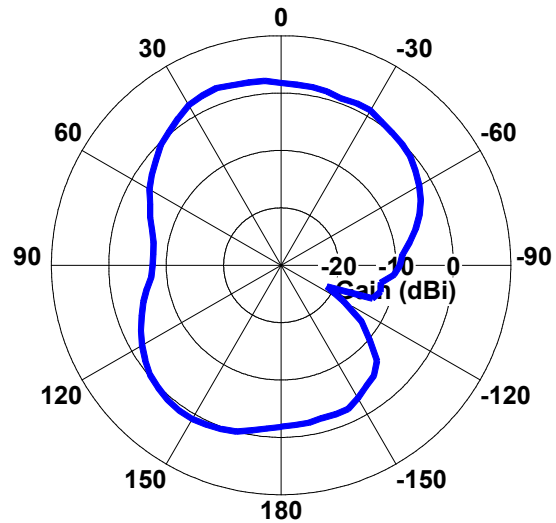
Measured Pattern at 1.485 GHz  
Elevation Cut, Vertical Polarization



Measured Pattern at 1.8 GHz  
Azimuth Cut, Vertical Polarization



Measured Pattern at 2.3 GHz  
Azimuth Cut, Vertical Polarization



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