

## Dual Iridium/GPS Antenna Model SAF4070-IG

### General Description

Model SAF4070-IG is a low-profile dual Iridium/GPS antenna designed to operate with the NAL Research satellite modems and tracking modems. It provides continuous coverage from 1610.0 to 1626.5 MHz specifically for the Iridium network and 1575.42±13 MHz (L1) for the GPS. The SAF4070-IG is suitable for harsh environment and long term operations. It is impact, UV, chemical and jet fuel resistance.



### Specifications

#### Mechanical

Dimensions: 5.03" L x 2.08" W x 0.69" H  
(12.77 cm x 5.28 cm x 1.75 cm)

Weight: 8.0 oz. (226 g)

Finish: Skydrol Resistant Polyurethane  
Enamel and Base Iridite Per  
MIL-C-5441

Color: Gloss White #17925  
Lusterless Gray #36320  
Olive Drab Green #34031  
Lusterless Black #37038

Connector: Iridium-TNC Female Connector  
GPS-SMA Female Connector  
(Option: SMA, TNC, TNC  
Bulkhead, N, N Bulkhead, MCX,  
MMCX or Cable)

Material: 6061-T6 Aluminum Alloy Base  
Composite Radome

#### Environmental

Operating Temperature: -67°F to +185°F  
(-55°C to +85°C)

Operating Altitude: 70,000 ft (21 km)

Vibration: > 30 G's

Leakage: Hermetically Seal

#### Designed To

FAA TSO-C144, DO-160D, D0-228, MIL-C-5541, MIL-E-5400, MIL-I-45208A, MIL-STD-810 and SAE J1455

### Electrical for Iridium Antenna

Frequency:	1610.0 to 1626.5 MHz	
Radiation Pattern:	Hemispherical	
Polarization:	Right Hand Circular	
VSWR:	Less than 1.5 : 1	
Gain (dB):	With 4-Foot Ground Plane	Free Space
	90° Zenith +4.9	90° Zenith +5.0
	10° Elevation -1.0	10° Elevation -2.5
	20° Elevation +1.5	20° Elevation -0.5
	30° Elevation +2.4	30° Elevation +1.0
	60° to 90° Elevation > +3.3	60° to 90° Elevation > +2.7
Beam Width (3dB):	129°	98° – 106°
Axial Ratio:	2 dB	
Power Handling:	30 Watts	
Lightning Protection:	DC Grounded	
Cable loss between antenna and modem:	Must be kept < 3dB	

### Electrical for GPS Antenna

Frequency:	1575.42±13 MHz (L1)	
Radiation Pattern:	Hemispherical	
Polarization:	Right Hand Circular	
VSWR:	Less than 1.5 : 1	
Gain (dB):	With 4-Foot Ground Plane	Free Space
	90° Zenith +2.9	90° Zenith +4.6
	10° Elevation -1.8	10° Elevation -2.5
	20° Elevation +0.7	20° Elevation -1.1
	30° Elevation +1.7	30° Elevation +0.5
	60° to 90° Elevation > +2.1	60° to 90° Elevation > +3.6
Beam Width (3dB):	146°	103°
Axial Ratio at Zenith:	2 dB	
Power Handling:	1 Watts	
Lightning Protection:	DC Grounded	
Filter (Rej.@16161Mz):	Greater than 60 dB	
LNA Gain:	33.0±1 dB	
LNA P 1 dB Out:	+16 dBm	
LNA Noise Figure:	2.8 dB (Filter loss is included)	
Voltage/Current:	+2.8 to +28 VDC/30 to 50 mA	

NOTE: All dimensions are in inches [mm]

