

GSE Automotive 3 Band Antenna

Part Number: GSE-ANTAUTO-IRIDIUM-GPS-GSM

Iridium - GPS - GSM

Rev 1.1



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Overview

For best performance the antenna should be mounted on a ground plane of at least a 1m²

Model GSE-ANTAUTO-IRIDIUM-GPS-GSM

Overall Dimensions

Height: 15 mm

Width: 80 mm

Fastening Options

- 1) Integrated Magnetic Base Plate: For easy installation and easy to remove
- 2) 3M VHB: For semi permanent installations. Removal of VHB tape requires significant effort and or tools.

Technical Overview

Antenna Specs

	Iridium	GPS	GSM
Connector	SMA	SMA	SMA
Label	Iridium	GPS	GSM
Label Color	Black	Blue	Purple
Frequency	1616 - 1626.5 MHz	1575.42	698-960 Mhz 1710-2690 Mhz
LNA	No	Yes	No
Cable	RG-174/U	RG-174/U	RG-174/U
Cable Length	2 meters	2 meters	2 meters

Height Without Adhesive: 14.5 mm

Height With Adhesive: 16.2 mm

Width: 81.6 mm

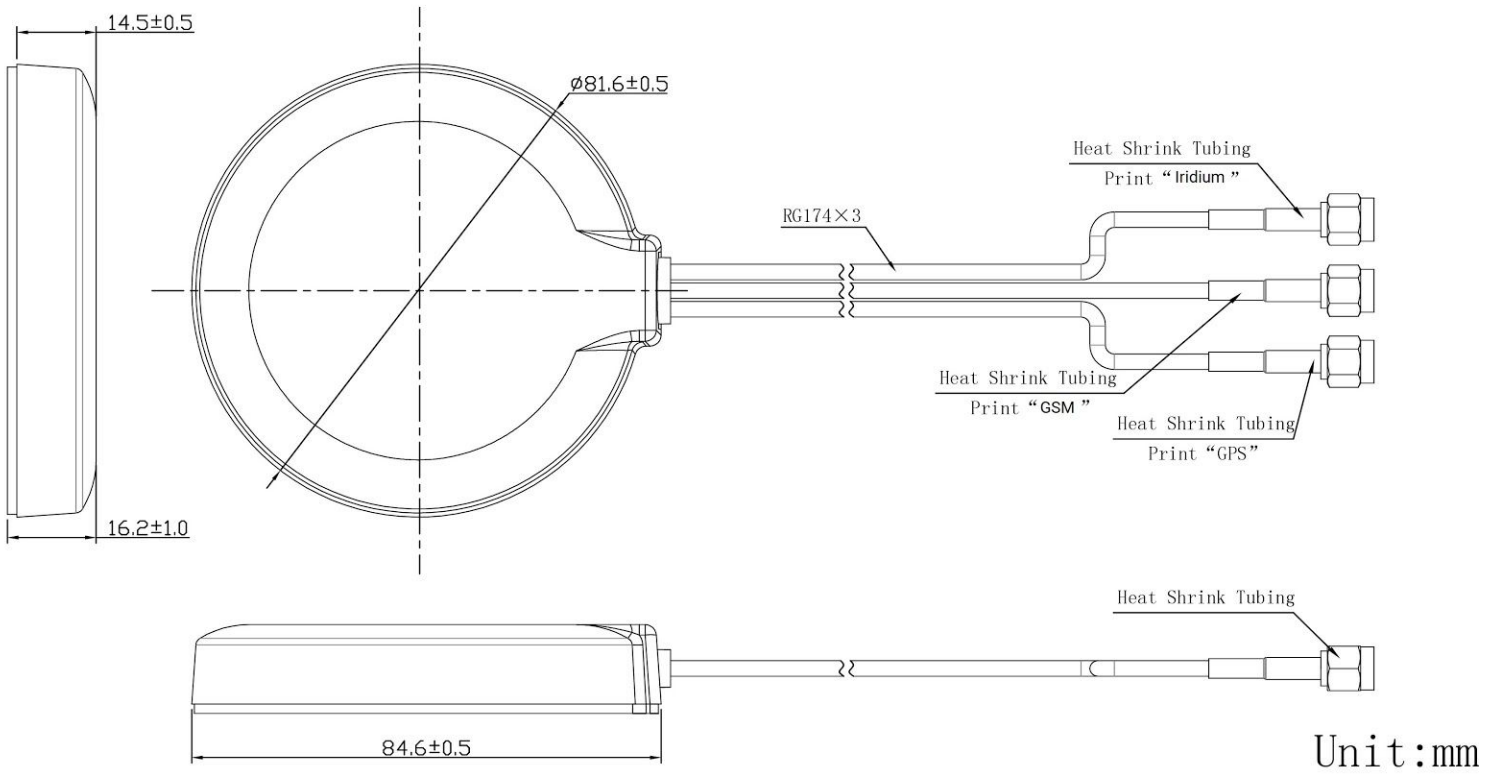
Cable Length: 2 meters

Ground Plane: 1 square meter minimum

GPS Specs

Antenna	Center Frequency	1575.42 ± 3 Mhz
	Bandwidth	± 5 Mhz
	Polarization	RHCP
	Gain	2dBic @ Zenith
	VSWR	< 1.5
	Impedance	50 ohm
	Axial Ratio	< 3dB
LNA	Gain	28 ± 2dB
	Noise Figure	< 1.5dB
	VSWR	< 2.0
	Supply Voltage	2.2 - 5V DC
	Current Consumption	< 15mA

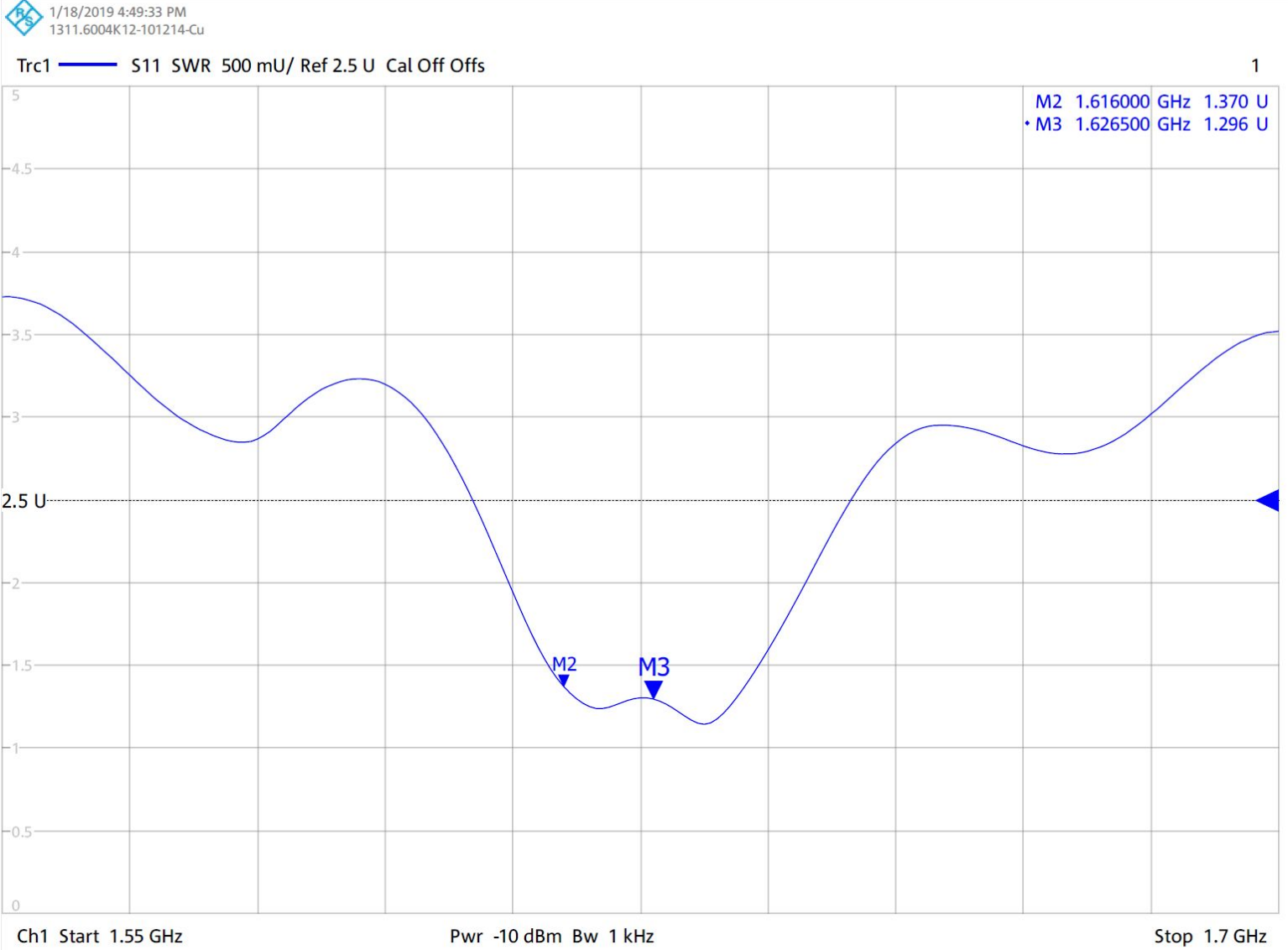
Dimensions



Side View



Iridium SWR

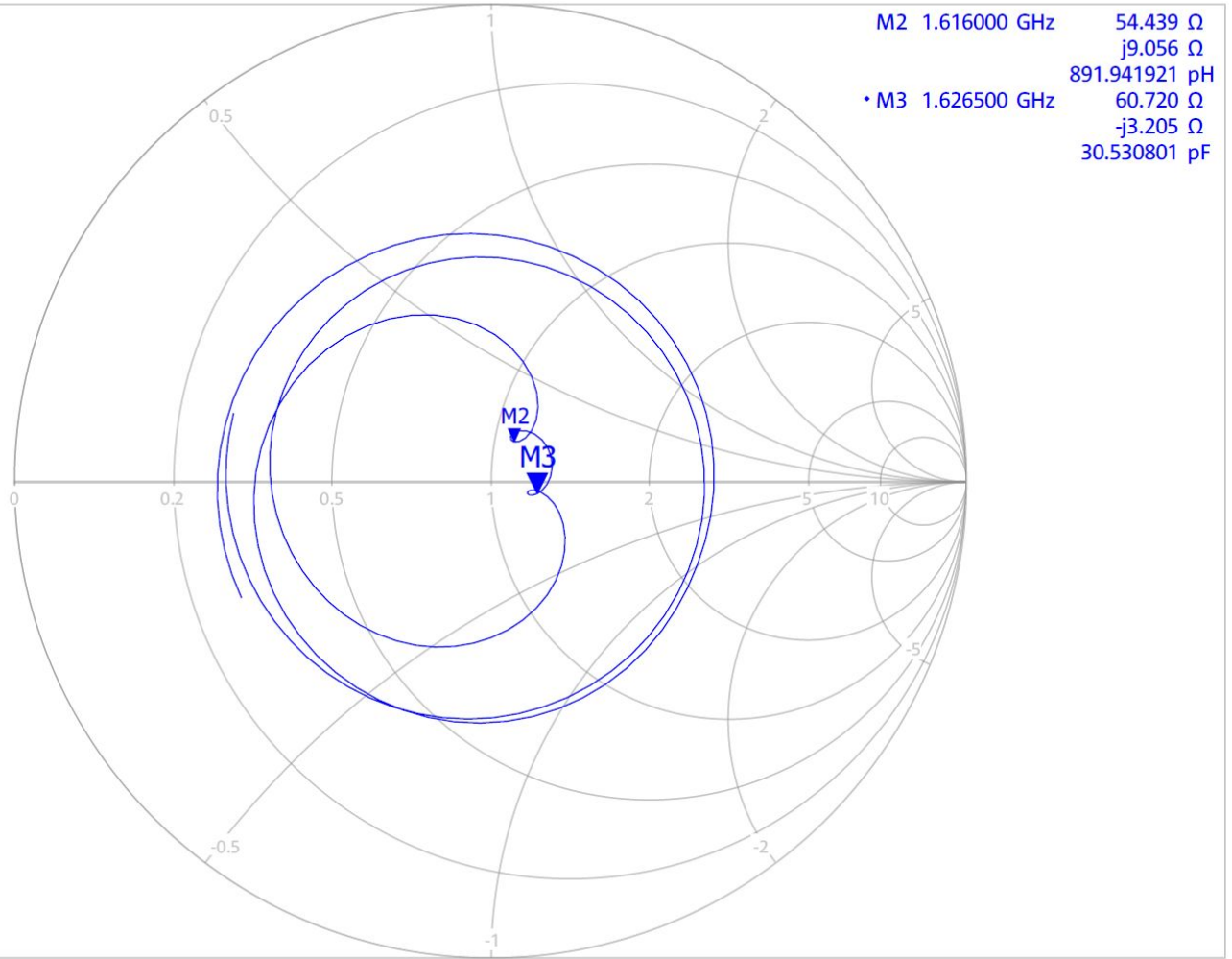


Iridium Smith

1/18/2019 4:51:52 PM
1311.6004K12-101214-Cu

Trc1 — S11 Smith 200 mU/ Ref 1 U Cal Off Offs

1



Ch1 Start 1.55 GHz

Pwr -10 dBm Bw 1 kHz

Stop 1.7 GHz

Installation Instructions

Selection of mounting location

- The antenna **MUST** be mounted on a flat metal surface at least 1 square meter to provide a proper ground plane
- The antenna should be vertical to the ground and have a clear unobstructed view of the sky
- Mount on a flat metal or carbon fiber surface
- Can be mounted under thin fiberglass or plastic
- Take into consideration mounting locations in regards to ice buildup over the antenna if operating in cold climates
- Take into consideration moving parts which may move over the antenna, such as self loading trucks, garbage trucks, moving arms, etc.
- Do not mount within 4 feet of other L Band satellite antennas, IE, Thuraya, Globalstar, Inmarsat, Lightsquared, etc.
- Do not mount next to other antennas sensitive to high transmit power in the L Band range

Passenger Vehicle



Trucking



Installation Options

Magnetic

- Select a location to magnetically attach the antenna to a ferrous metal surface, IE vehicle roof
- Choose a protection layer if necessary to protect paint from scratches or damage. Suggested method for easy protection is to apply a small layer of electrical tape over the magnets before attaching. This will lower the holding force of the antenna slightly.
- Attach cables in a fashion to limit the movement of the antenna should wind or rapid motion cause the antenna to release.
- Route cables through gaskets or other soft, non abrasive channels
- Keep cables away from heat sources such as a combustion engine, exhaust, batteries, radiators, and electrical motors

VHB Installation Instructions

Best Practices for Surface Cleaning

Most substrates are best prepared by cleaning with a 50:50 mixture of isopropyl alcohol (IPA) and water* prior to applying 3M™ VHB™ Tapes.

General Procedure

To obtain optimum adhesion, the bonding surfaces must be well unified, clean and dry. Typical surface cleaning solvents are IPA/ water mixture (rubbing alcohol) or heptane.

Bond strength is dependent upon the amount of adhesive-to- surface contact developed. Firm application pressure develops better adhesive contact and helps improve bond strength. Generally, this means that the tape should experience at least 15 psi (100 kPa) in roll down or platen pressure.



After application, the bond strength will increase as the adhesive flows onto the surface. At room temperature, approximately 50% of the ultimate strength will be achieved after 20 minutes, 90% after 24 hours and 100% after 72 hours. In some cases, bond strength can be increased and ultimate bond strength can be achieved more quickly by exposure of the bond to elevated temperatures (e.g. 150°F [66°C] for 1 hour).



Step A:
Solvent wipe



Step B:
Wipe dry



Step C:
Apply tape to surface



Step D:
Roll finished joint

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