Mitigating Tomorrow's Interference Today[SM]

PTA1.5M-9 Micro-Miniature Ultra-Low Noise High IP3 GPS Active Antenna

9mm(L) x 9.175mm(W) x 1.3mm(H,Thickness)

GNSS

Embedded

Product Description

Parsec's PTA1.5M-9 is the world's smallest GPS L1 high radiated efficiency active antenna at 9 x 9.175 x 1.3 mm (L x W x H). The PTA1.5M integrates easily with the Telit Jupiter SE880 GPS 3D-SIP with only one direct connection required and is compatible with any GNSS receiver operating from 1560 to 1610 MHz. Ideal for embedded LBS receivers requiring good user experience that operate with obstructed view of orbiting satellites. The PTA1.5M-9 improves GPS L1 receiver sensitivity to offset high path loss, improves immunity to receiver desensing caused by close proximity radio transceivers, and mitigates the effects of interference from radio mixing products. Patents pending.

Key Benefits

- micro miniature size (9 x 9.175 x 1.3 mm, LxWxH)
- 50-MHz Bandwidth: covers GNSS systems from 1560-1610 MHz
- highest radiated efficiency, η, in class (50% at 1575.42 MHz)
- antenna gain, Ga = 0.8 dBi @ Fc = 1575.42 MHz, Linear Polarization
- Ideal for M2M GPS requirements

The PTA1.5M-9 high linearity active antenna is ideal for enhancing location based service (LBS) receivers to improve immunity to unintentional interference and receiver desensing caused by close proximity radio transmissions. The PTA1.5M-9's singular set of characteristics are essential to make LBS devices that operate in applications with high path loss, obstructed view to orbiting satellites, and/or high receiver site signal attenuation work with good user experience. Employ Parsec's PTA/PT Family of active antennas and front-end-modules (FEMs) in any commercial-class embedded LBS receiver; in particular high multipath indoor, urban canyon, wearables, container-based asset tracking, under vehicle dash OBD, and ultra-miniature module (e.g., M2/NGFF) applications.

PTA1.5M-9 Micro-Miniature Ultra-Low Noise High IP3 GNSS Active Antenna

Family Concept

The PTA1.5M-9 is one of Parsec's PTA/PT Family of active antenna and GNSS front end modules (FEMs). Add any PTA/PT active antenna or FEM to your GNSS/GPS 3D-SIP or SoC to improve the receiver's spurious free dynamic range (SFDR) up to 30-dB. Integrating the PTA1.5M-9 to your Telit Jupiter SE880 3D-SIP GPS receiver is as easy as RF gets and is your lowest cost method to mitigate the effects of unintentional interference and receiver desensing while guaranteeing a good user experience.

Product Features

- Ideal for any GNSS/GPS System operating from 1560 to 1610 MHz: GPS L1/L1C; EU/Canada Galileo E1; Russia GLONASS L1; People's Republic of China (PRC) Beidou-2 B1
- Enables Micro-Miniature Complete GPS L1 Receiver with Telit Jupiter SE880:
  - 10 x 4.9 x 10 mm (LxWxH) or
  - 20 x 10 x 2.4 mm (L x H x thickness), depending upon configuration
- Highest Radiated Efficiency, η, in Class, >50% from 1570 to 1580 MHz
- High Antenna-Only Gain: Ga = 1.4 dBi at Fc = 1575.42 MHz
- High Module Gain: 15dB delivered to GNSS/GPS receiver
- High OIP3: +18 dBm @ 5mA
- Low Noise Figure: 1.25 dB Typ.;1.75 dB with optional GPS L1 SAW filter; 2.2 dB with GNSS SAW
  - Order PN PTA1.5M-9-GPS for Fc = 1575.42 ± 1.023 MHz applications (with OPTIONAL SAW filter)
  - Order PN PTA1.5M-9-GNSS for F = 1560 to 1610 MHz applications (with OPTIONAL SAW filter)
  - Order PN PTA1.5M-9 when no SAW filter is required
- Any Voltage[SM] Operation from +1.4 to +6.0 Vdc
- 50 Ω Output
- Rated to 2000V ESD, Class 1C

Environmental

- SMD Package Dimensions: 9 x 1.3 x 9.175 mm (L x W x H)

- Operating Temperature: -40 to +85° C
- Storage Temperature: -40 to +85° C

Interfaces

DC: +1.4 to +6.0 Vdc; RF: 50-Ohm Output

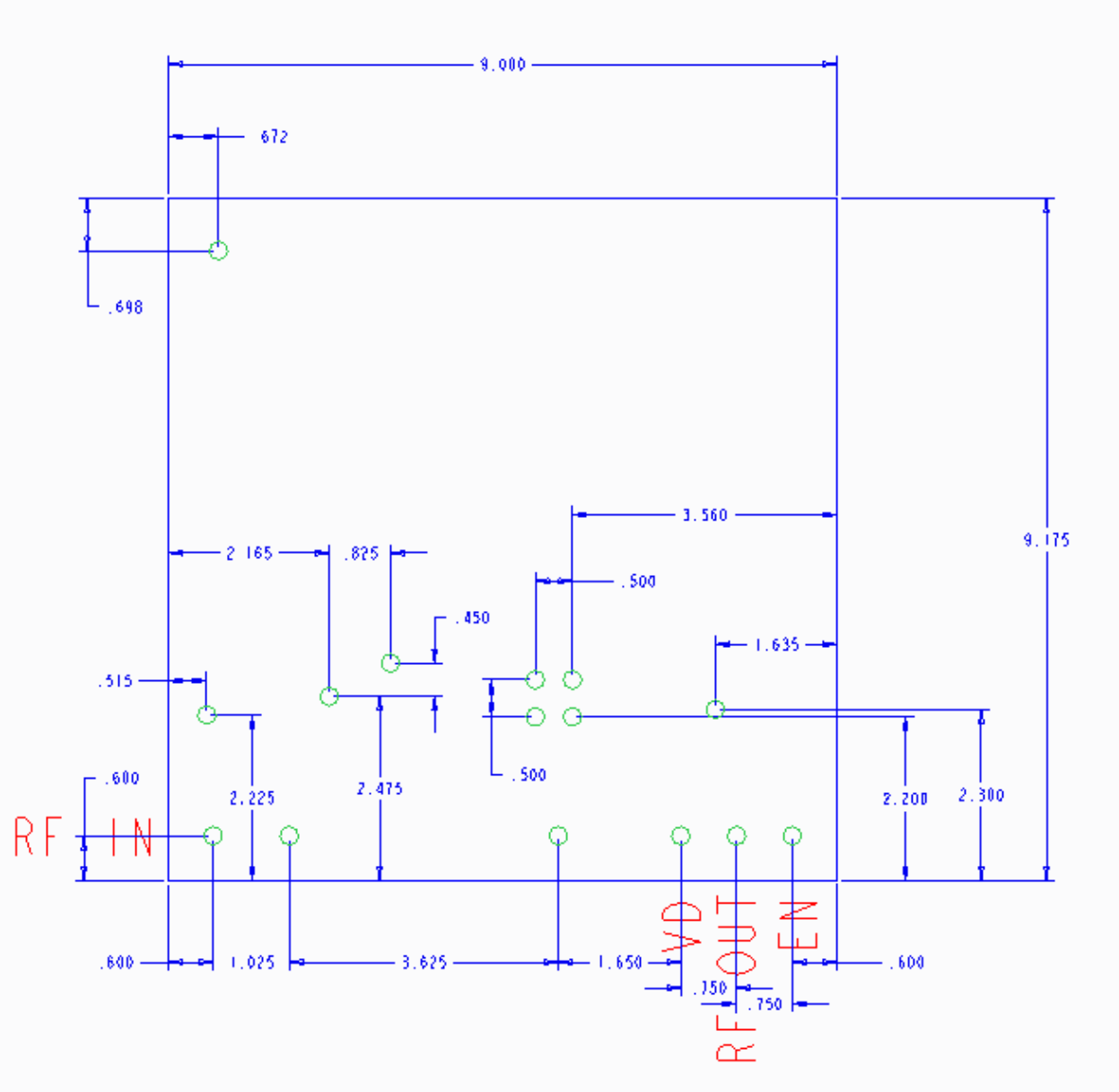
Electrical

- Current Consumption (@ Vdd = +1.8Vdc)
  - Current "ON" Mode: 4mA minimum, 5mA typical
  - Current "OFF" Mode: 0.6µA maximum

- Control On/Off
  133µA maximum

Current – “ON” Mode:

Mechanical Dimensions



Via dimensions:

All dimensions in millimetres
GPS9 thickness is 1.30mm nominal and 1.35mm with one (1) ounce copper (Cu) plating on both Top and Bottom sides
Copper (Cu) Plated Through-Hole
Radius, r =0.125mm
Diameter, d =0.250mm

Mechanical Dimensions: Bottom metal pad