

MIA-12

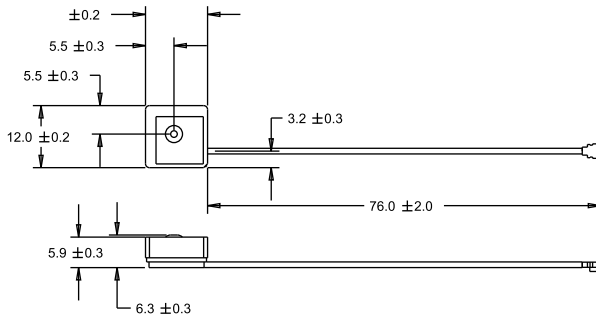
Embedded Active GPS Antenna 12 mm

Description

This is a high performance antenna designed for embedded applications. It is ideal for GPS handhelds, PDAs and tracking devices. The compact size and lightweight features make it perfect for various commercial and industrial applications. With a low noise figure and high-linearity LNA, this antenna is the ideal solution for the most extreme and demanding applications where reliable satellite reception and high accuracy are required. The interface connector is available in U.FL or other.

Mechanical Specifications

| Parameter | Design Specifications |
|--------------|-----------------------|
| RF connector | U.FL or other |



dimensions are in mm

Electrical Specifications

76X76 mm ground plane

| Parameter | Design Specifications |
|---------------------------|---------------------------------|
| Frequency | 1575.42 MHz |
| Polarization | RHCP |
| Antenna element peak gain | 3.5 dBic |
| DC voltage | 2.5 to 3.5 V |
| DC current | 4 mA @ 2.5 V / 7 mA @ 3.5 V |
| Bandwidth (-1dB) | 10 MHz |
| LNA network gain | 20 dB @ 2.5 V / 24 dB @ 3.5 V |
| Axial ratio | 1.5 dB (typical) / 2.5 dB (max) |
| VSWR | 1.3 (max) |
| Impedance | 50 Ohm |
| Operating temp. | from -40°C to 85°C |

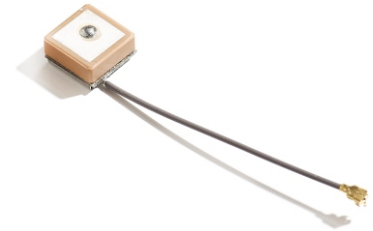


Image does not reflect the actual size of the antenna

Features

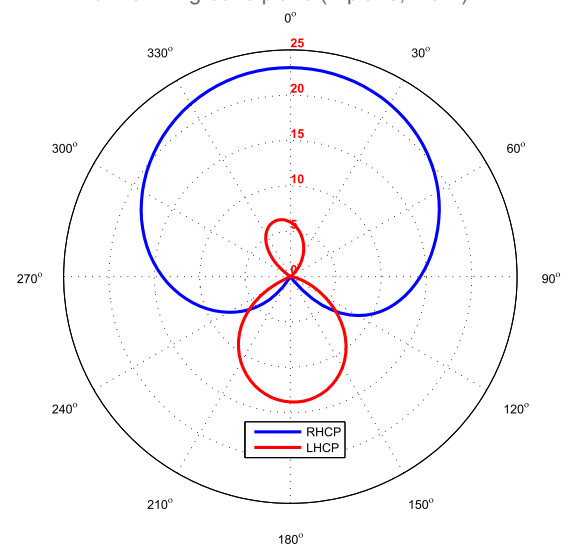
- GPS L1 frequency
- Active LNA circuitry
- Custom connector options
- Low current

Applications

- Vehicle & fleet tracking
- Embedded applications
- Military & security
- Asset tracking
- PDAs and laptops
- Oil & gas industries
- Navigation devices
- Law enforcement
- LBS & M2M applications

Realized gain plot

Measured at 1575.42 MHz on a 76X76mm ground plane (E plane, 2.5 V)



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LNA network characteristics

| Parameter | Design Specifications |
|--------------|-----------------------------------|
| Frequency | 1575.42 MHz |
| DC voltage | 2.5 V to 3.5 V |
| DC current | 4 mA @ 3 V / 7 mA @ 3.5 V |
| Noise figure | 1.8 dB (max) |
| VSWR | 1.3 (max) |
| Gain | 20 dB @ 2.5 V / 24 dB @ 3.5 V |
| Input P1dB | -33 dBm @ 2.5 V / -35 dBm @ 3.5 V |

Antenna element characteristics

12X12 mm ground plane

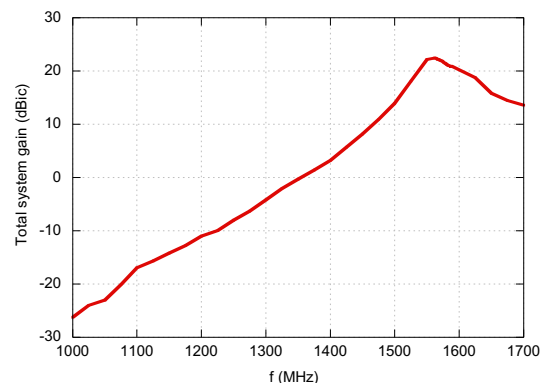
| Parameter | Design Specifications |
|----------------------|-----------------------|
| Frequency | 1575.42 MHz |
| Polarization | RHCP |
| Antenna element gain | -4 dBic |
| Efficiency | 30% |
| Bandwidth (-1dB) | 10 MHz |

Antenna element characteristics

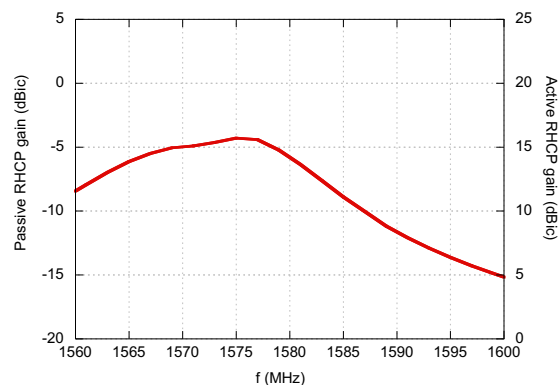
76X76 mm ground plane

| Parameter | Design Specifications |
|----------------------|-----------------------|
| Frequency | 1575.42 MHz |
| Polarization | RHCP |
| Antenna element gain | 3.5 dBic |
| Efficiency | 60% |
| Bandwidth (-1dB) | 10 MHz |

total system wide band response @ 2.5 V
76X76 mm ground plane



Active/Passive gain vs. frequency
12X12 mm ground plane



Active/Passive gain vs. frequency
76X76 mm ground plane

