

# MIA-12

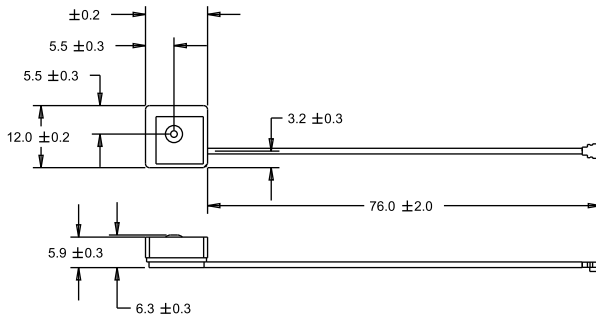
## Embedded Active GPS Antenna 12 mm

### 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

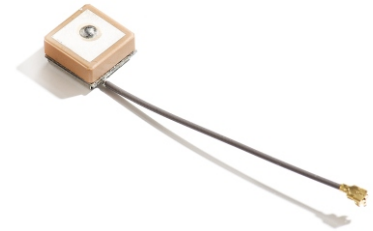


Image does not reflect the actual size of the antenna

### Features

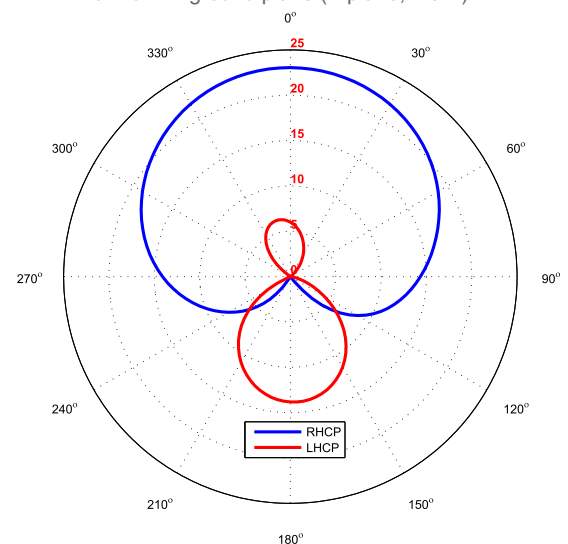
- GPS L1 frequency
- Active LNA circuitry
- Custom connector options
- Low current

### 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

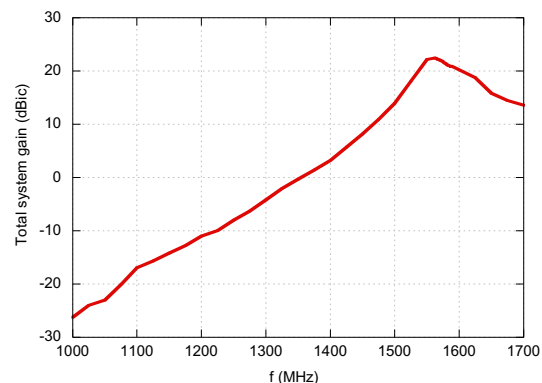
Parameter	Design Specifications
Frequency	1575.42 MHz
Polarization	RHCP
Antenna element gain	-4 dBic
Efficiency	30%
Bandwidth (-1dB)	10 MHz

### Antenna element characteristics

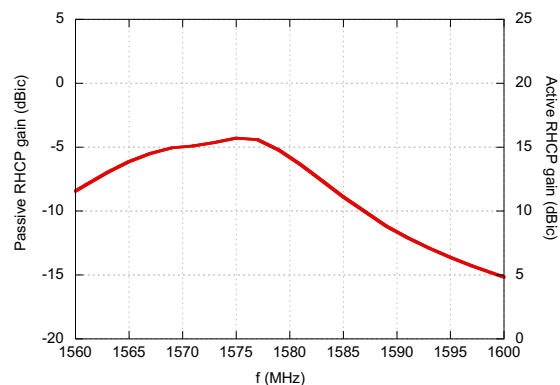
76X76 mm ground plane

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

