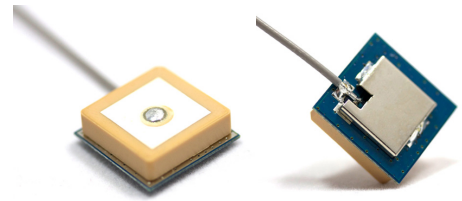


# MIA-GNSS-1500

ACTIVE GPS/GLONASS/BEIDOU MICROSTRIP ANTENNA

Part #: 189-00054-01

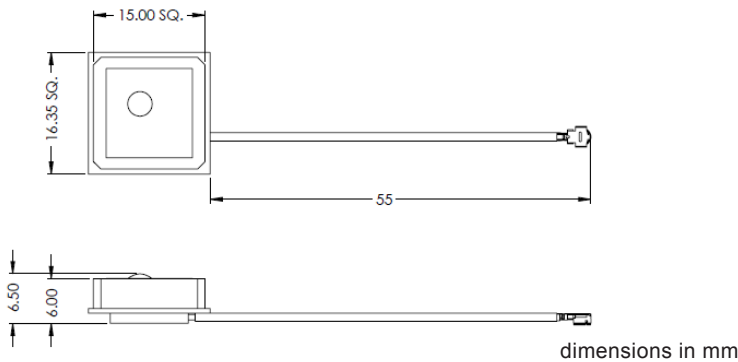


## Description

Our patch antenna offerings are perfect for projects with a smaller scope and budget for which high performance and lower weight is not a primary factor for consideration for the antenna. This antenna is designed for embedded applications such as GNSS handheld units, mobile devices, and tracking devices. It features a low noise figure and high-linearity LNA. The interface connector is available in U.FL or other. Cable length can also be customized. This antenna is designed to cover GPS, GLONASS and Beidou frequency bands.

## Mechanical Specifications

Parameter	Design Specifications
RF Connector	U.FL or other



## Electrical Specifications

76x76 mm ground plane

Parameter	Design Specifications
Frequency Range	1575.42 / 1602 / 1561 MHz
Polarization	RHCP
DC voltage	2.5 to 3.5 V
DC current	4 mA @ 2.5 V / 7 mA @ 3.5 V
Axial ratio	1.5 dB (typical) / 2.5 dB (max)
Bandwidth (-1 dB)	10 MHz
LNA network gain	16 dB @ 2.5 V / 16 dB @ 3.5 V
VSWR	1.3 (max)
Impedance	50 Ohm
Operating temp.	from -40°C to 85°C

## Features

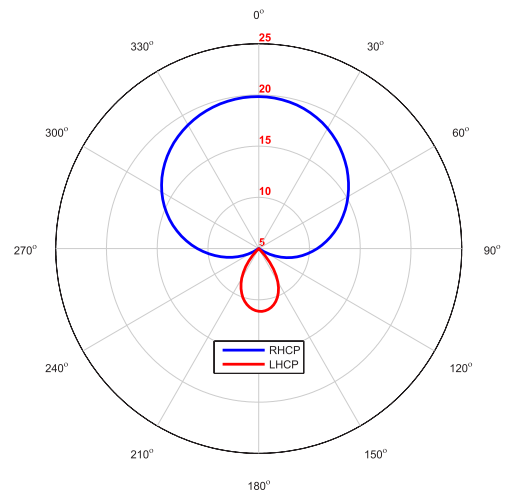
- GPS, GLONASS, Beidou frequencies
- Active LNA circuitry
- Compact size
- Custom tuning
- Custom connector/cable size

## Applications

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

## Realized gain plot

Measured at 1575.42 MHz on a 76x76 mm ground plane (E plane, 2.5 V)



### LNA network characteristics

Parameter	Design Specifications
Frequency	1575.42 MHz
DC voltage	2.5 to 3.5 V
DC current	4 mA @ 2.5 V / 7 mA @ 3.5 V
Noise figure	1.8 dB (max)
VSWR	1.3 (max)
Gain	16 dB @ 2.5 V / 16 dB @ 3.5 V
Input P1dB	-10 dBm @ 2.5 V / -12 dBm @ 3.5 V

### Antenna element characteristics

15x15 mm ground plane

Parameter	Design Specifications
Frequency	1575.42 MHz
Polarization	RHCP
Antenna element gain	-3 dBic
Efficiency	35 %
Bandwidth (-1dB)	5 MHz

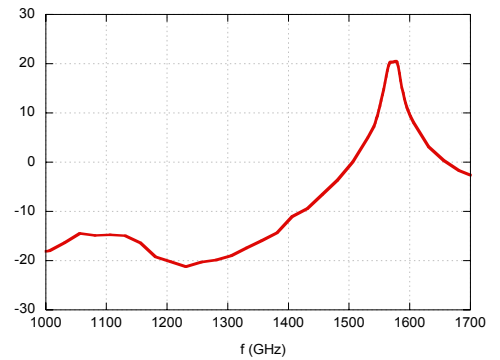
### Antenna element characteristics

76x76 mm ground plane

Parameter	Design Specifications
Frequency	1575.42 MHz
Polarization	RHCP
Antenna element gain	4 dBic
Efficiency	70%
Bandwidth (-1db)	10 MHz

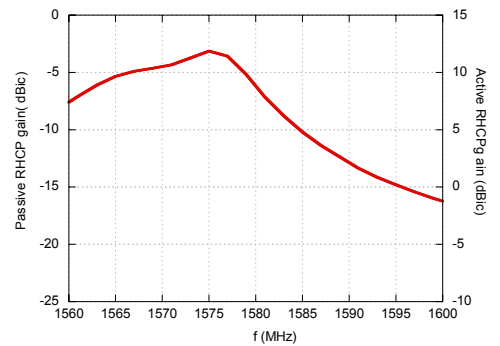
### System wide band response @ 2.5 V

76x76 mm ground plane



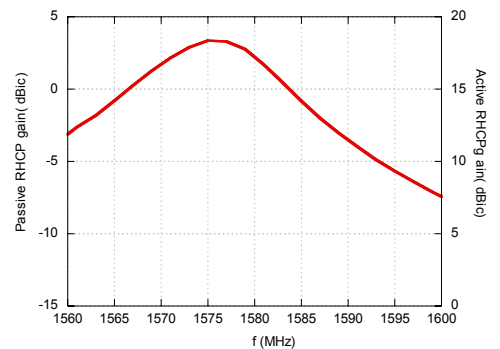
### Active/Passive gain vs. frequency

15x15 mm ground plane



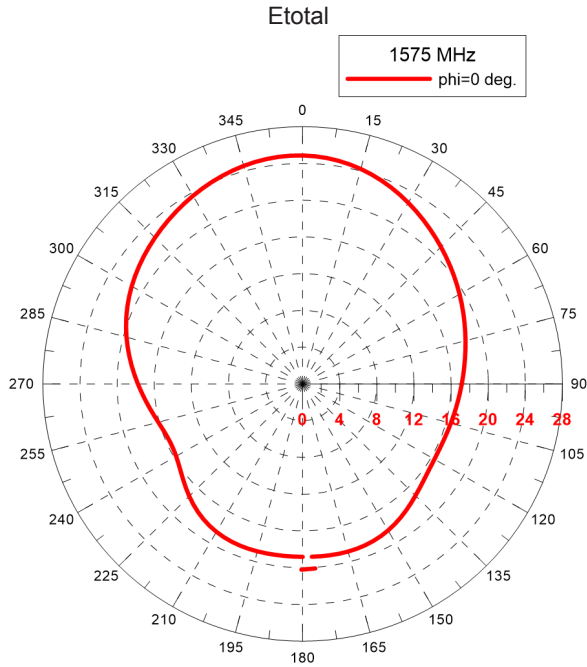
### Active/Passive gain vs. frequency

76x76 mm ground plane

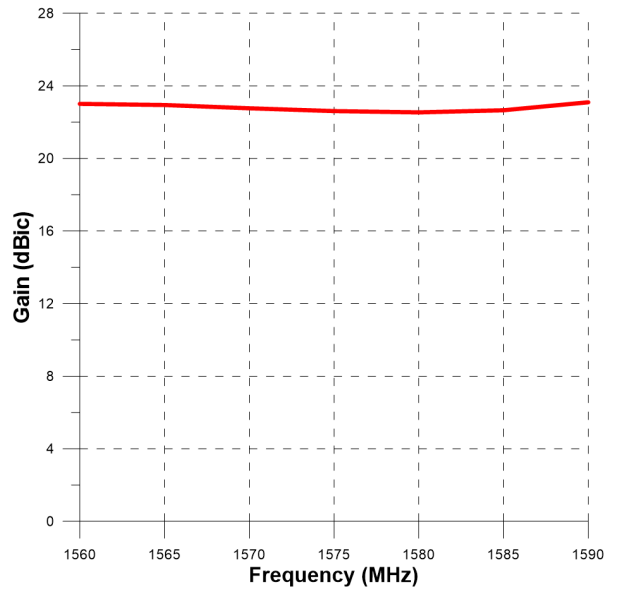


Radiation Performance

1575.42 GPS

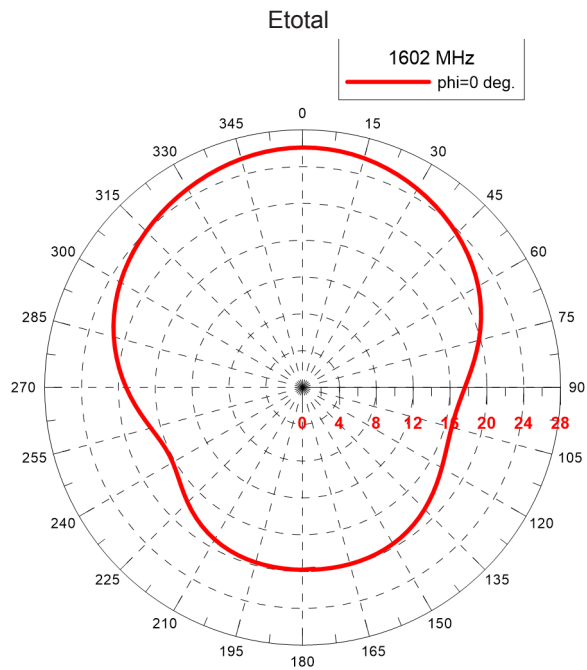


Gain vs. Frequency

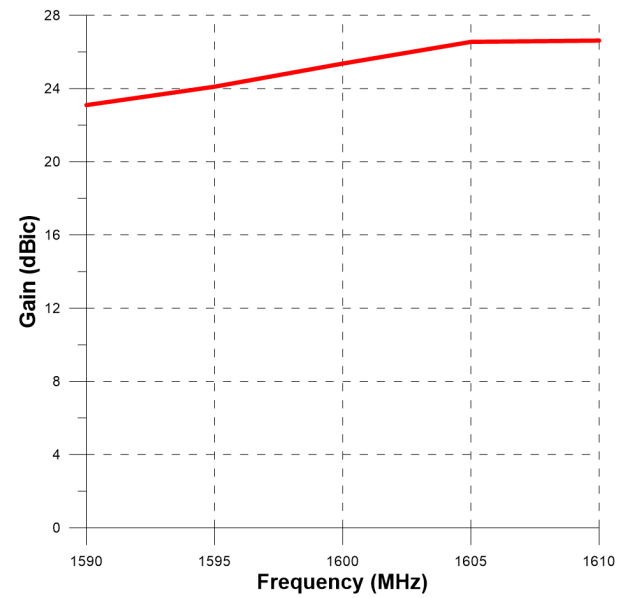


Radiation Performance

1602 GLONASS



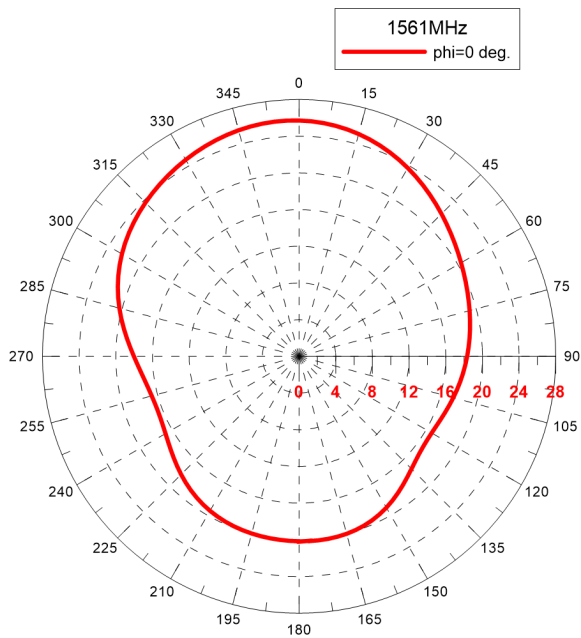
Gain vs. Frequency



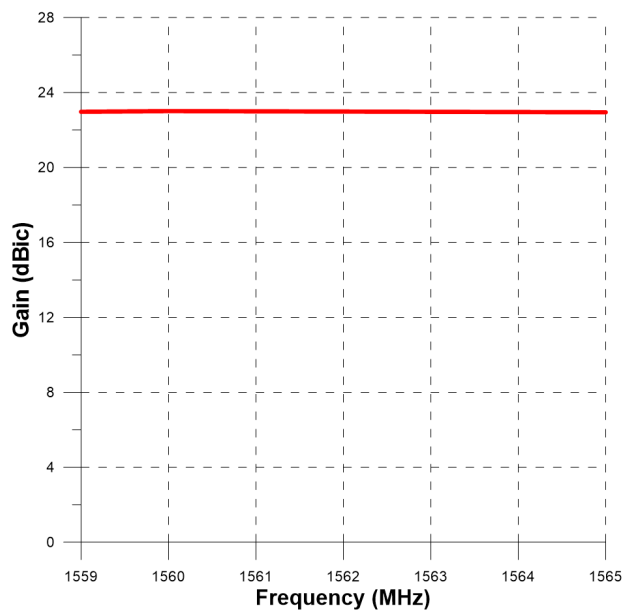
# Radiation Performance

1561 Beidou

### Etotal



### Gain vs. Frequency



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