

# GPS Active Antenna Module- Magnet Mount

## APAMP-122

RoHS/RoHS II compliant

Lead in copper alloy exemption (6c); and Lead in glass exemption (7c-I)



48.6 X 39.2 X 15.2mm

MSL level: Not Applicable

### FEATURES:

- High Reliability/Sensitivity
- Compact Size
- Easy to install (magnet base)
- ROHS Compliant

### TYPICAL APPLICATIONS:

- Automotive Navigation
- Automotive Monitoring
- Personal Tracking

### STANDARD SPECIFICATIONS:

#### Antenna

| Parameters               | Min.    | Typ.    | Max.    | Units    | Note                               |
|--------------------------|---------|---------|---------|----------|------------------------------------|
| Center Frequency         | 1574.40 | 1575.42 | 1576.44 | MHz      |                                    |
| Bandwidth                | 10.0    |         |         | MHz      |                                    |
| VSWR at Center Frequency |         |         | 1.5:1   |          |                                    |
| Polarization Model       | RHCP    |         |         |          | (Right Hand Circular Polarization) |
| Impedance                |         | 50      |         | $\Omega$ |                                    |
| Gain                     |         | 5       |         | dBic     | (Based on 70× 70mm ground plane)   |
| Operating Temperature    | -40     |         | +80     | °C       |                                    |
| Storage Temperature      | -45     |         | +85     | °C       |                                    |

#### Low Noise Amplifier (LNA)

| Parameters                             | Min.    | Typ.    | Max.    | Units | Note                      |
|----------------------------------------|---------|---------|---------|-------|---------------------------|
| Center Frequency                       | 1574.40 | 1575.42 | 1576.44 | MHz   |                           |
| DC Voltage                             | 3.0     |         | 5.0     | V     |                           |
| Gain                                   | 25      | 27      | 29      | dB    | (Without cable +25 ± 10 ) |
| Out-of-band Rejection (Absolute Value) | 25      |         |         | dB    | (fo+100MHz)               |
|                                        | 40      |         |         | dB    | (fo-100MHz)               |
| Output VSWR                            |         |         | 2.0     |       |                           |
| Noise Figure                           |         |         | 1.5     |       |                           |
| DC current                             |         | 13.5    | 15.5    | mA    | (At 5.0V)                 |

#### Overall (complete module including RF connector)

| Parameters       | Min.    | Typ.    | Max.    | Units    | Note                             |
|------------------|---------|---------|---------|----------|----------------------------------|
| Center Frequency | 1574.40 | 1575.42 | 1576.44 | MHz      |                                  |
| Gain             | 25      | 27      | 29      | dBic     | (Based on 70x70mm ground plane.) |
| Output VSWR      |         |         | 2.0     |          |                                  |
| Impedance        |         | 50      |         | $\Omega$ |                                  |

# GPS Active Antenna Module- Magnet Mount

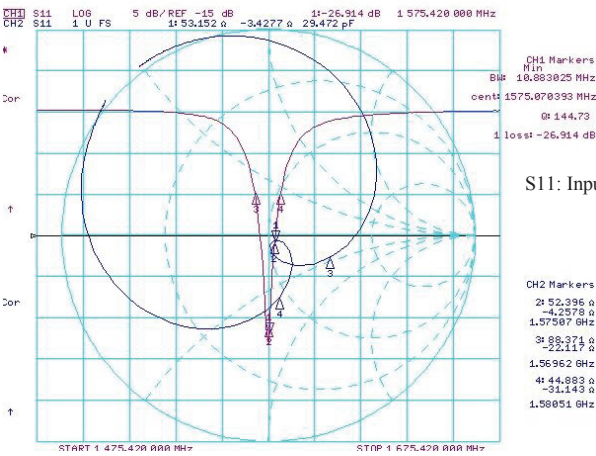
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48.6 X 39.2 X 15.2mm

## ANTENNA'S IMPEDANCE AND RETURN-LOSS CHARACTERISTICS



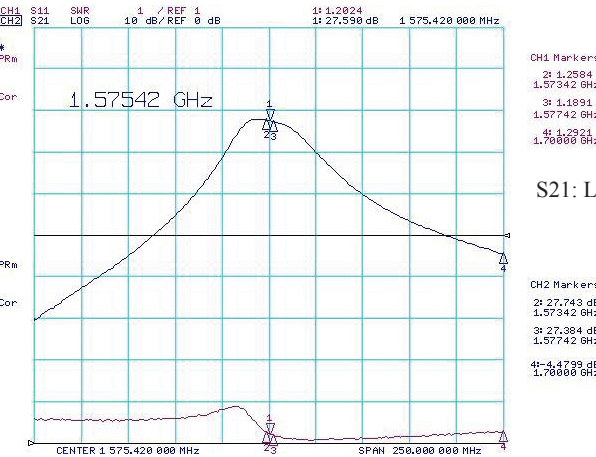
S11: Input VSWR

CH1 Markers  
1: 10.883025 MHz  
2: 1575.070393 MHz  
3: 144.73  
4: -26.914 dB

CH2 Markers  
1: 52.396  
2: -4.2578  
3: 1.57507 GHz  
4: 88.371  
5: -22.117  
6: 1.56962 GHz  
7: 44.883  
8: -31.143  
9: 1.58051 GHz

Test condition: 27x27mm ground

## LNA REFLECTION PROFILE



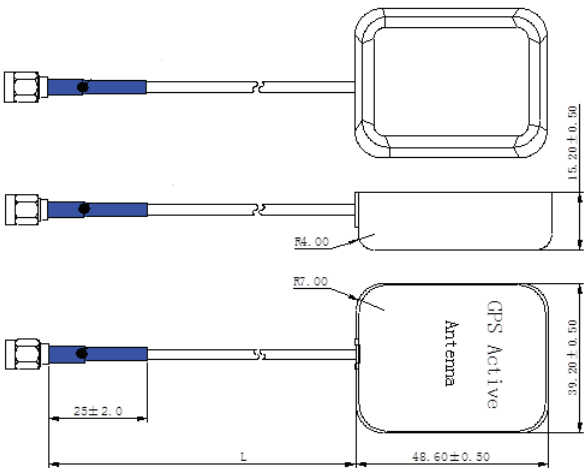
S21: LNA Gain

CH1 Markers  
1: 1.2584  
2: 1.57342 GHz  
3: 1.1891  
4: 1.57742 GHz  
5: 1.2921  
6: 1.70000 GHz

CH2 Markers  
1: 27.743 dB  
2: 1.57342 GHz  
3: 27.384 dB  
4: 1.57742 GHz  
5: 4.4799 dB  
6: 1.70000 GHz

Test condition: DC 3.0V

## OUTLINE DRAWING:



Top View

Side View

Bottom View

| Parameters           | Description        |
|----------------------|--------------------|
| L (Cable Length)     | 300±10cm           |
| Antenna              | Dielectric Ceramic |
| RF Cable Attenuation | 1.3 dB/m           |
| PCB                  | FR4                |
| RF Connector         | SMA-J3             |
| Shielding            | Tinfoil            |
| Thickness            | 15.0mm             |
| Mounting Type        | Magnet Base        |

Unit:mm

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## PRODUCT IMAGE:



## PACKAGING:

Each 475 x 215 x 215 mm size carton includes 100 pieces of antenna.



### CAUTION:

- (1) Do not apply excess mechanical stress to the component body or terminations. Do not attempt to re-form or bend the components as this will cause damage to the component.
- (2) Do not expose the component to open flame.
- (3) This specification applies to the functionality of the component as a single unit. Please insure the component is thoroughly evaluated in the application circuit.

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