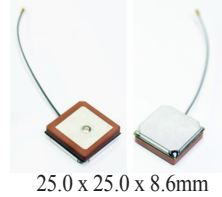


# GPS / GLONASS Active Internal Patch

## APAMPGJ-141

RoHS/RoHS II Compliant



25.0 x 25.0 x 8.6mm

MSL level: Not Applicable

### FEATURES:

- Active GPS and GLONASS Module (1575.42 and 1592 - 1610 MHz)
- Internal Module with Pre-Filter and LNA Gain block
- Patch Gain 2dBic (min) 3dBic (max),
- LNA Gain 23dB (3V), 24dB (5V)
- Wide Supply range (2.7V ~ 5.5V)
- VSWR 1.5:1
- Compact size (25mm x 8.6mm x 25mm)
- RHCP
- U.FL connector and 100mm micro-coax (1.13mm)
- RoHS/RoHS II compliant

### TYPICAL APPLICATIONS:

- Automotive Navigation
- Tracking Systems
- GPS Navigation in urban canyons

### STANDARD SPECIFICATIONS:

#### Antenna

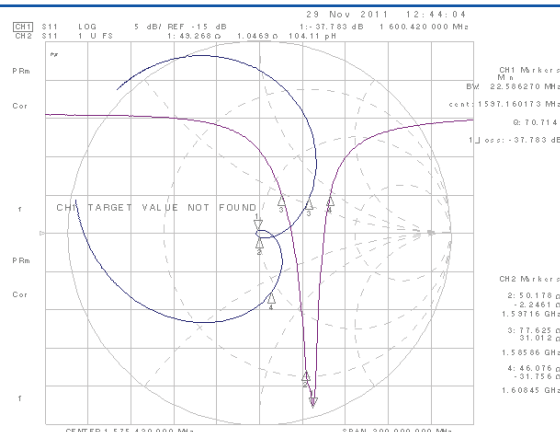
| Parameters            | Min. | Typ.    | Max.  | Units              | Note                             |
|-----------------------|------|---------|-------|--------------------|----------------------------------|
| Center Frequency      |      | 1575.42 |       | MHz                | GPS (In free Space)              |
|                       | 1592 |         | 1610  | MHz                | GLONASS                          |
| Bandwidth             | 10   |         |       | MHz                | GPS                              |
|                       | 18   |         |       | MHz                | GLONASS                          |
| VSWR                  |      |         | 1.5:1 |                    | (In free Space)                  |
| Polarization Model    | RHCP |         |       |                    |                                  |
| Impedance             |      | 50      |       | $\Omega$           |                                  |
| Gain                  | 2    |         | 3     | dBic               | (Based on 70x 70mm ground plane) |
| Operating Temperature | -40  |         | +85   | $^{\circ}\text{C}$ |                                  |

#### Low Noise Amplifier (LNA)

| Parameters       | Min. | Typ.    | Max. | Units | Note                                |
|------------------|------|---------|------|-------|-------------------------------------|
| Center Frequency |      | 1575.42 |      | MHz   | GPS                                 |
|                  | 1592 |         | 1610 | MHz   | GLONASS                             |
| DC Voltage       | 2.7  |         | 5.5  | V     |                                     |
| Gain             | 21   | 23      | 25   | dB    | (at 3.0V)                           |
|                  | 22   | 24      | 26   | dB    | (at 5.0V)                           |
| Output VSWR      |      |         | 2:1  |       |                                     |
| Noise Figure     |      |         | 2.5  | dB    | (Filter is placed before amplifier) |
| DC current       | 15   | 22      | 25   | mA    | (At 3.0V)                           |
| Power            |      |         | 138  | mW    |                                     |

### Antenna's Impedance and Return-Loss Characteristics

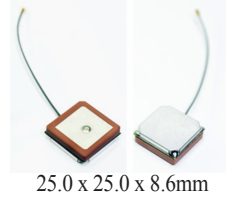
#### (S11 and Impedance Smith Chart)



ABRACON IS  
ISO9001:2008  
CERTIFIED

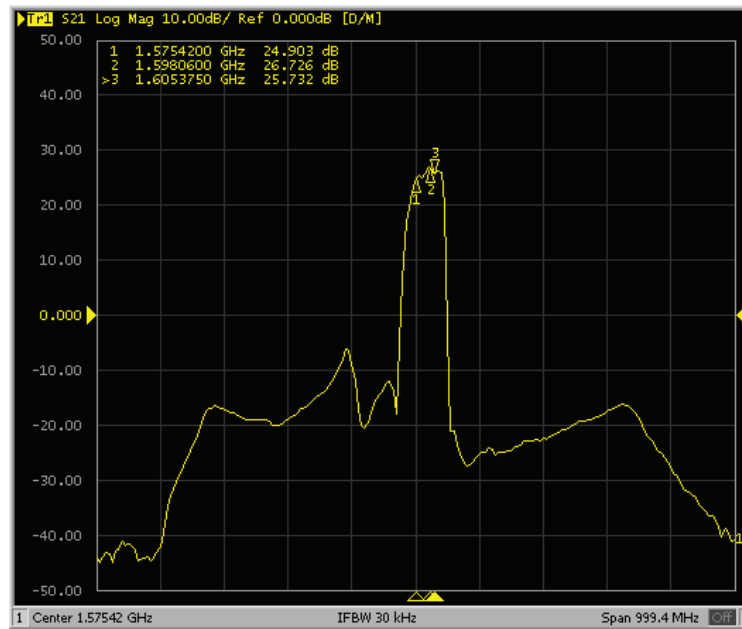
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The Power of Linking Together

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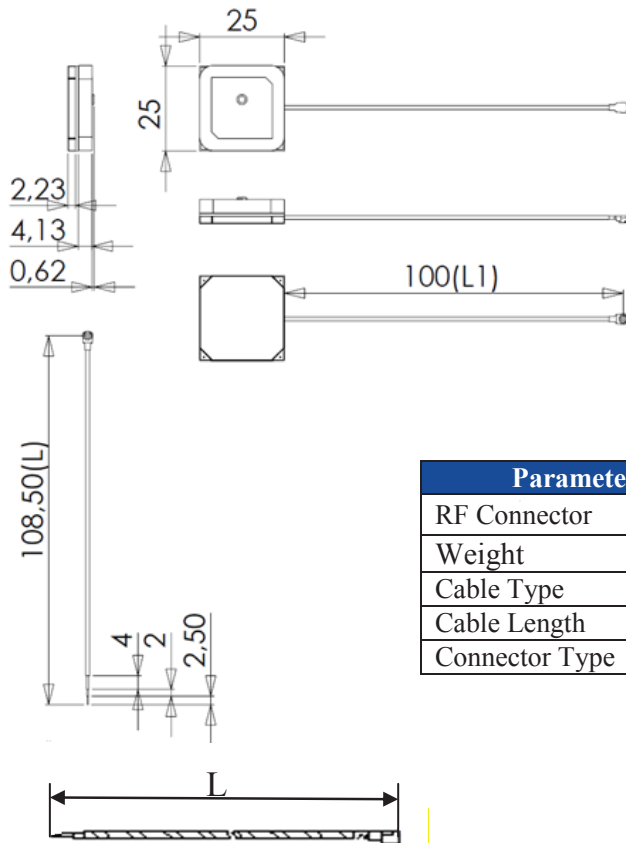
25.0 x 25.0 x 8.6mm

### Antenna Gain (S21)

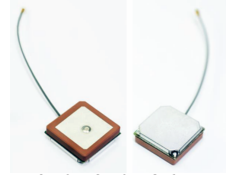


Antenna gain at 3V

### OUTLINE DRAWING:



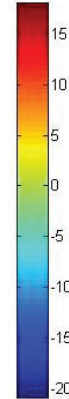
| Parameters     | Description                       |
|----------------|-----------------------------------|
| RF Connector   | U.FL                              |
| Weight         | 14 g                              |
| Cable Type     | Micro-coax, $\Phi 1.13$ mm        |
| Cable Length   | $L1=100 \pm 1.5$ mm, $L=108.5$ mm |
| Connector Type | UFL                               |



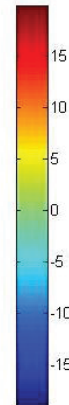
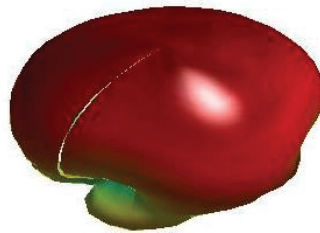
25.0 x 25.0 x 8.6mm

### RADIATION PATTERN

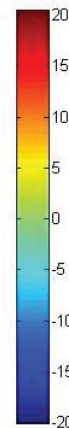
3D Radiation Pattern at 1.5754GHz, AZ=45, EL=45

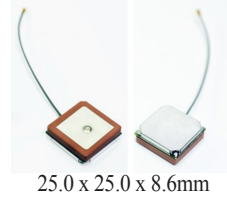


3D Radiation Pattern at 1.5979GHz, AZ=45, EL=45



3D Radiation Pattern at 1.6054GHz, AZ=45, EL=45

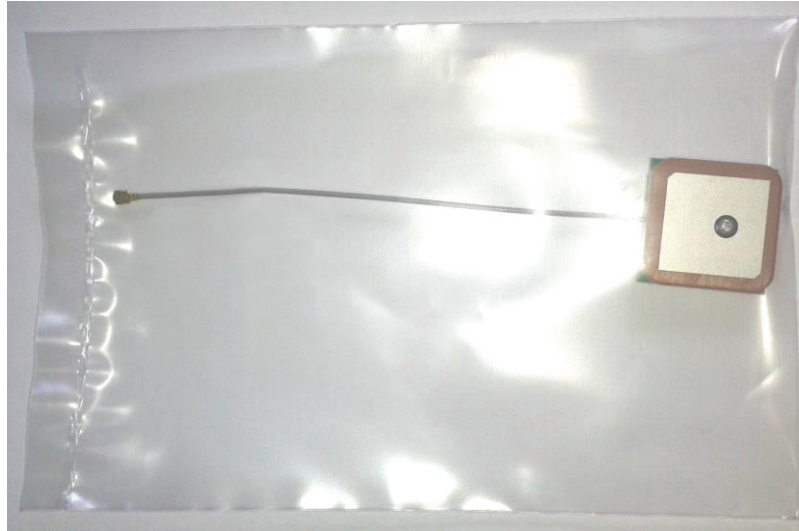




25.0 x 25.0 x 8.6mm

## PACKAGING:

Each antenna is packed individually in a poly bag. 1000pcs is the suggested quantity per 465x310x250mm Box.



## 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.

## NOTE:

- 1) The parts are manufactured in accordance with this specification. If other conditions and specifications which are required for this specification, please contact ABRACON for more information.
- 2) ABRACON will supply the parts in accordance with this specification unless we receive a written request to modify prior to an order placement.
- 3) In no case shall ABRACON be liable for any product failure from in appropriate handling or operation of the item beyond the scope of this specification.
- 4) When changing your production process, please notify ABRACON immediately.
- 5) ABRACON Corporation's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. ABRACON's products are not specifically designed for Military, Aviation, Aerospace, Life-dependant Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from ABRACON Corporation is required. Please contact ABRACON Corporation for more information.
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