GPS / GLONASS Active Internal Patch

**APAMPGJ-141**

**STANDARD SPECIFICATIONS:**

### Antenna

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Units</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center Frequency</td>
<td>1575.42</td>
<td>MHz</td>
<td>GPS (In free Space)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bandwidth</td>
<td>1592</td>
<td>1610</td>
<td>MHz</td>
<td>GLONASS</td>
<td></td>
</tr>
<tr>
<td>VSWR</td>
<td>10</td>
<td>MHz</td>
<td>GPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polarization Model</td>
<td>RHCP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impedance</td>
<td>1.5:1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain</td>
<td>2</td>
<td>3</td>
<td>dBi</td>
<td>(Based on 70 x 70 mm ground plane)</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40</td>
<td>+85</td>
<td>°C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Low Noise Amplifier (LNA)

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Units</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center Frequency</td>
<td>1575.42</td>
<td>MHz</td>
<td>GPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC Voltage</td>
<td>1592</td>
<td>1610</td>
<td>MHz</td>
<td>GLONASS</td>
<td></td>
</tr>
<tr>
<td>Gain</td>
<td>2.7</td>
<td>5.5</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output VSWR</td>
<td>21</td>
<td>23</td>
<td>25</td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>Noise Figure</td>
<td>22</td>
<td>24</td>
<td>26</td>
<td>dB</td>
<td>(Filter is placed before amplifier)</td>
</tr>
<tr>
<td>DC current</td>
<td>21</td>
<td>23</td>
<td>25</td>
<td>mA</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>15</td>
<td>22</td>
<td>25</td>
<td>mW</td>
<td>(At 3.0V)</td>
</tr>
</tbody>
</table>

**FEATURES:**

- Active GPS and GLONASS Module (1575.42 and 1592 - 1610 MHz)
- Internal Module with Pre-Filter and LNA Gain block
- Patch Gain 2dBc (min) 3dBc (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

**Antenna’s Impedance and Return-Loss Characteristics**

(S11 and Impedance Smith Chart)
GPS / GLONASS Active Internal Patch

APAMPGJ-141

RoHS/RoHS II Compliant

25.0 x 25.0 x 8.6mm

Antenna Gain (S21)

Antenna gain at 3V

OUTLINE DRAWING:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Connector</td>
<td>U.FL</td>
</tr>
<tr>
<td>Weight</td>
<td>14 g</td>
</tr>
<tr>
<td>Cable Type</td>
<td>Micro-coax, Φ1.13mm</td>
</tr>
<tr>
<td>Cable Length</td>
<td>L1=100±1.5mm, L=108.5mm</td>
</tr>
<tr>
<td>Connector Type</td>
<td>UFL</td>
</tr>
</tbody>
</table>
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RoHS/RoHS II Compliant

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

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

3D Radiation Pattern at 1.6054GHz, AZ=45, EL=45
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.
6) All specifications and Marking will be subject to change without notice.