GPS L1 + L5 Stacked Patch Antenna

APAKM2507S-SGL5

25.0 x 25.0 x 7.5 mm
RoHS/RoHS II Compliant
MSL = 1

Features

- Dual stacked patch for GPS L1 and L5
- Low VSWR
- RHCP polarization
- Gain of 4.0 dBi (L1), -3.0 dBi (L5)

Applications

- GPS L1 and L5 applications
- IoT
- M2M
- Remote technology monitoring
- Geofencing
- Navigation
- Surveying and mapping systems
- Logistics
- Precision transportation

Electrical Characteristics

Parameters	L1			L5			Units
	Min	Typical	Max	Min	Typical	Max	
Operating Frequency	1575.42 ± 1.023			1176.45 ± 1.023			MHz
Return Loss			-20			-20	dB
Gain		4.0			-3.0		dBi
Polarization Model	RHCP			RHCP			
Impedance	50			50			Ω
Frequency Temperature Coefficient			20			20	ppm/°C

Note:

- Ground plane size: 70 x 70 mm
- Application environment, including size of the ground plane, proximity to adjacent components, etc., will affect stated performance. Antenna fine tuning might be essential to optimize the end solution performance. Please contact Abracon sales team for optimization services.

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5101 Hidden Creek Ln Spicewood TX 78669
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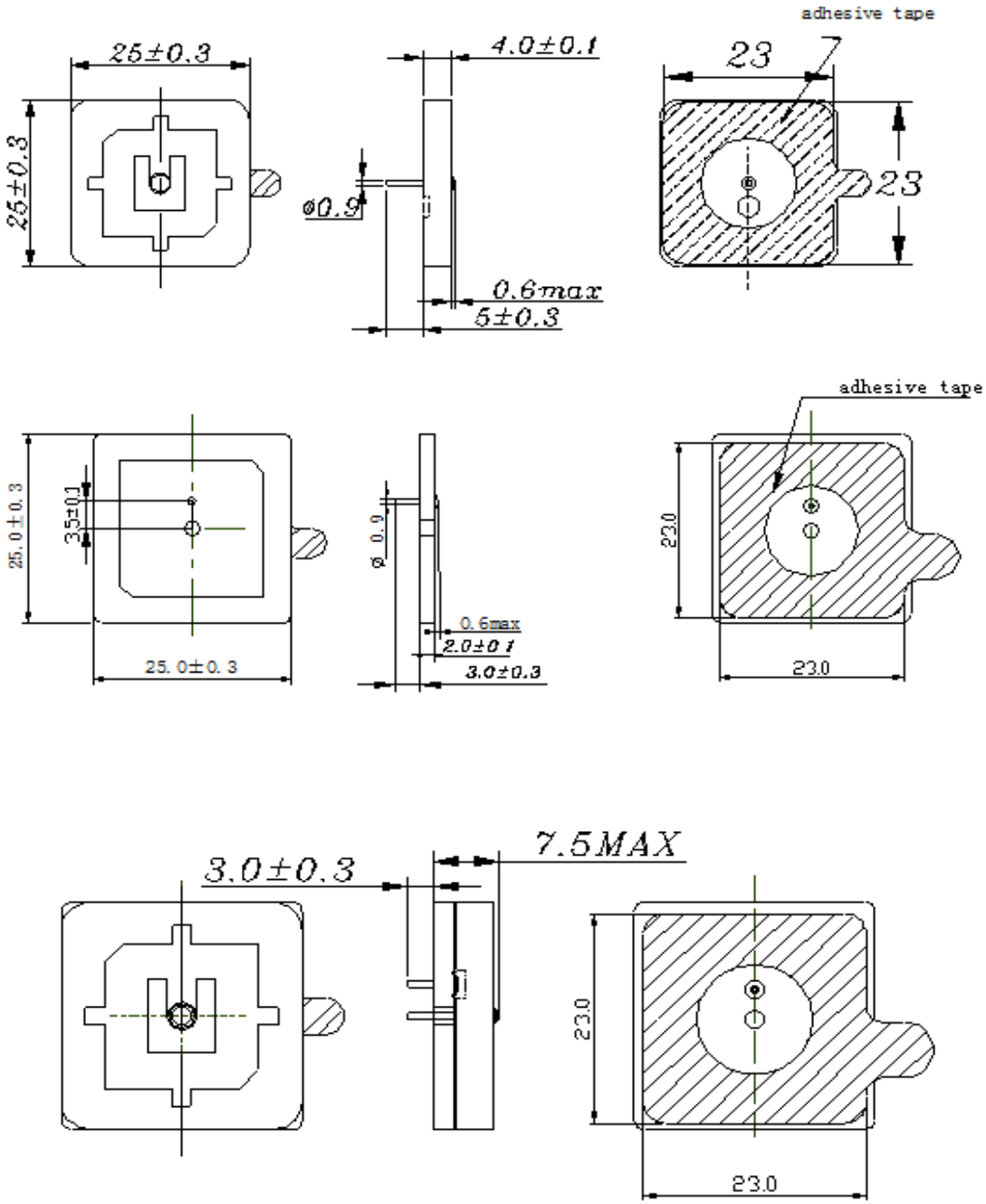
Outline Drawing and Dimensions (Unit: mm)



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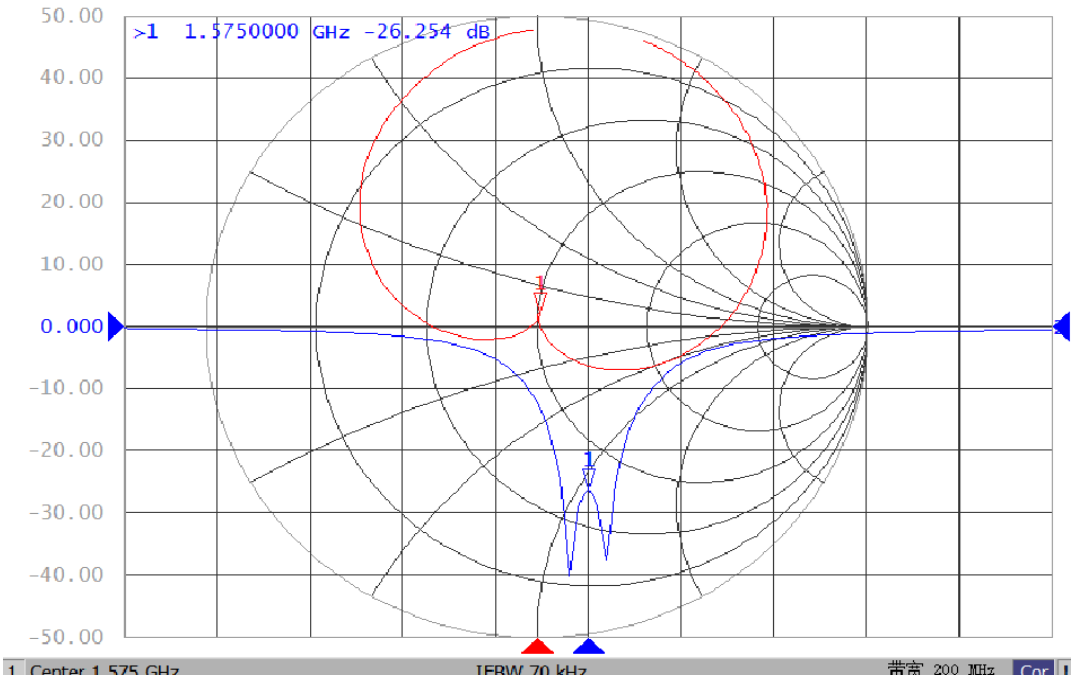
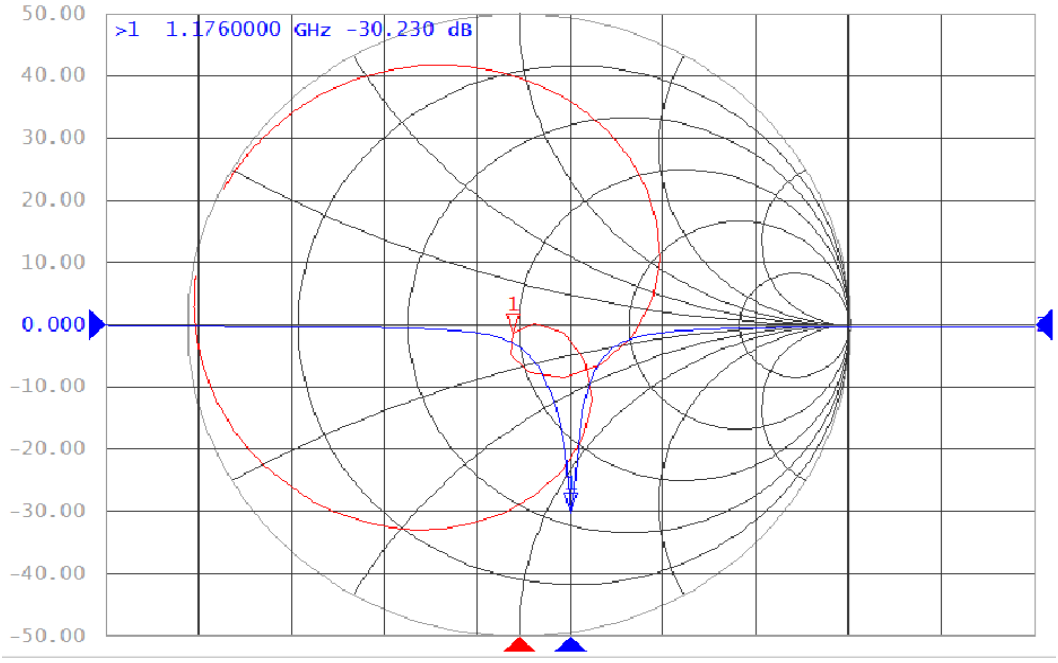
Impedance Characteristic





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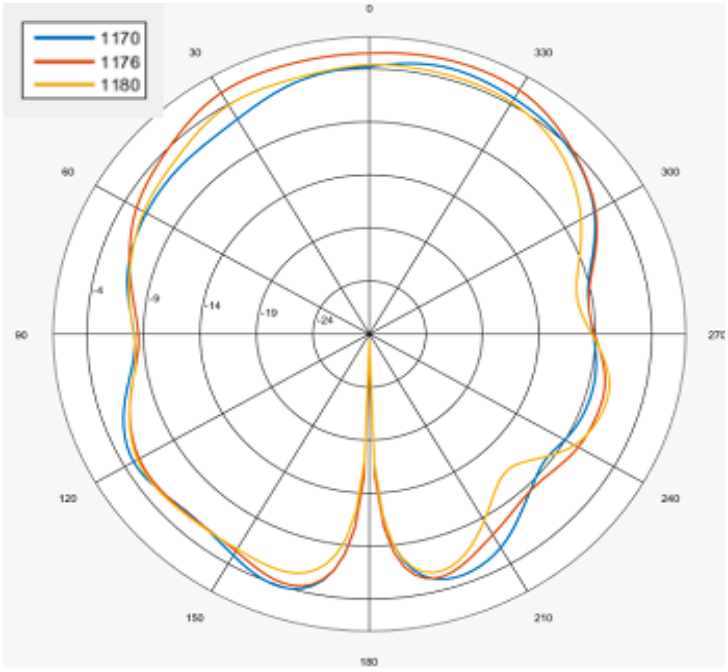
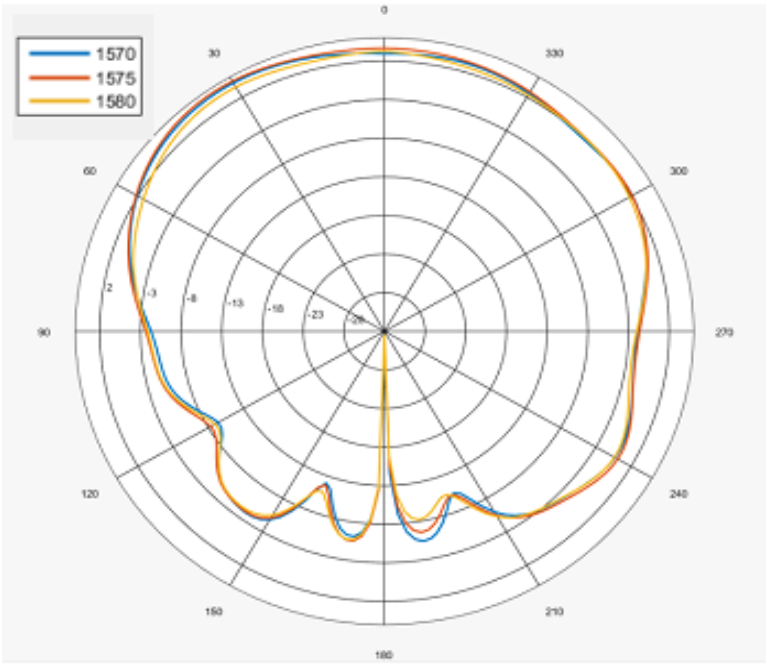
Gain





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Reliability Tests

Item	Test Condition	Remark
Humidity Test	The device is subjected to 90~95% relative humidity 60 °C ± 3 °C for 96 hours, then dry out at 25°C ± 5°C and less than 65% relative humidity for 2~4 hours. After dry out the device shall satisfy the table.1 specification.	It shall fulfill the table.1 specifications.
High Temperature Exposure	The device shall satisfy the table.1 specification after leaving at 105°C for 96 hours, provided it would be measured after 2~4 hours leaving in 25°C ± 5°C and less than 65% relative humidity.	It shall fulfill the table.1 specifications.
Low Temperature Exposure	The device shall satisfy the table.1 specification after leaving at -40°C for 96 hours, provided it would be measured after 2~4 hours leaving in 25°C ±5°C and less than 65% relative humidity.	It shall fulfill the table.1 specifications.
Temperature Cycle	Subject the device to -40°C for 30 min. followed by a high temperature of 105°C for 30 min cycling shall be repeated 5 times. At the room temperature for 1 hour prior to the measurement.	It shall fulfill the table.1 specifications.
Vibration	Subject the device to vibration for 2 hours each in x, y and z axis with the amplitude of 1.5 mm, the frequency shall be varied uniformly between the limits of 10~55 Hz.	It shall fulfill the table.1 specifications.
Soldering Test	Lead terminals are heated up to 350°C ± 10°C for 5±0.5 s with brand iron and then element shall be measured after being placed in natural conditions for 1 hour. No visible damage and it shall fulfill the table specifications in 1.0.	It shall fulfill the table.1 specifications.
Solderability	Lead terminals are immersed in soldering bath of 260°C ~ 290°C for 3±0.5 s. More than 95% of the terminal surface of the device shall be covered with fresh solder.	The terminals shall be at least 95% covered by solder.
Terminal Pressure Strength	Force of 2 kg is applied to each lead in axial direction for 10±1 s (see drawing). No visible damage and it shall fulfill the specifications in Fig.1.	Mechanical damage such as breaks shall not occur.

Fig. 1

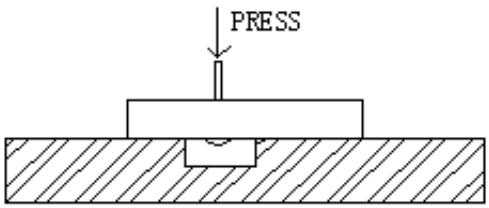

Table 1

Item	Post Environmental Tolerance	Unit
Center Frequency Change	±2.0	MHz

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Packaging

The carton of dimension 365.0 x 356.0 x 160.0 mm encloses 800 pieces and weighs 14 Kg.

Per package base	50 elements
Per vacuum bag	4 package bases
Per inner box	1 vacuum bag
Per package	4 inner boxes

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