GNSS/GPS/GLONASS Active Patch Antenna



APAGM2704A-C2G

ESD Sensitive

Pb

27.0 x 27.0 x 9.6mm

RoHS/RoHS II Compliant

MSL - N/A

FEATURES

- Right hand circular polarization
- High gain of 4.5 dBic
- Low VSWR
- Integrated high gain LNA
- U.FL connector and cable

APPLICATIONS

- Geotracking/Geolocation
- IoT
- Navigation
- Industrial monitors
- Smart agriculture
- Transportation
- Satellite synchronization

Electrical Specifications

Antenna

Parameters	Typ.	Units	Note
Frequency Range	1575.42 ± 1.023	MHz	(For GPS)
	1601.02 ± 1.15	MHz	(For GLONASS)
Bandwidth	>10	MHz	
VSWR at Center Frequency	≤ 2		
Polarization Model	RHCP		(Right Hand Circular Polarization)
Impedance	50	Ω	
Gain	4.5	dBic	(Based on 70×70mm ground plane)
Operating Temperature	-40 to +80	˚C	
Storage Temperature	-45 to +85	˚C	

Low Noise Amplifier (LNA)

Parameters	Typ.	Units	Note
Frequency Range	1575.42 ± 1.023	MHz	
	1601.02 ± 1.15	MHz	
DC Voltage	3.0 – 5.0	V	
Gain	28 ± 3	dB	
Output VSWR	≤2.0		
Noise Figure	≤1.5	dB	(+25°C ±10°C)
DC current	8.5 ± 3	mA	(At 3.0V)
Out-Band Rejection	≥ 30	dB	(fo+100MHz)
	≥ 30	dB	(fo-100MHz)

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Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
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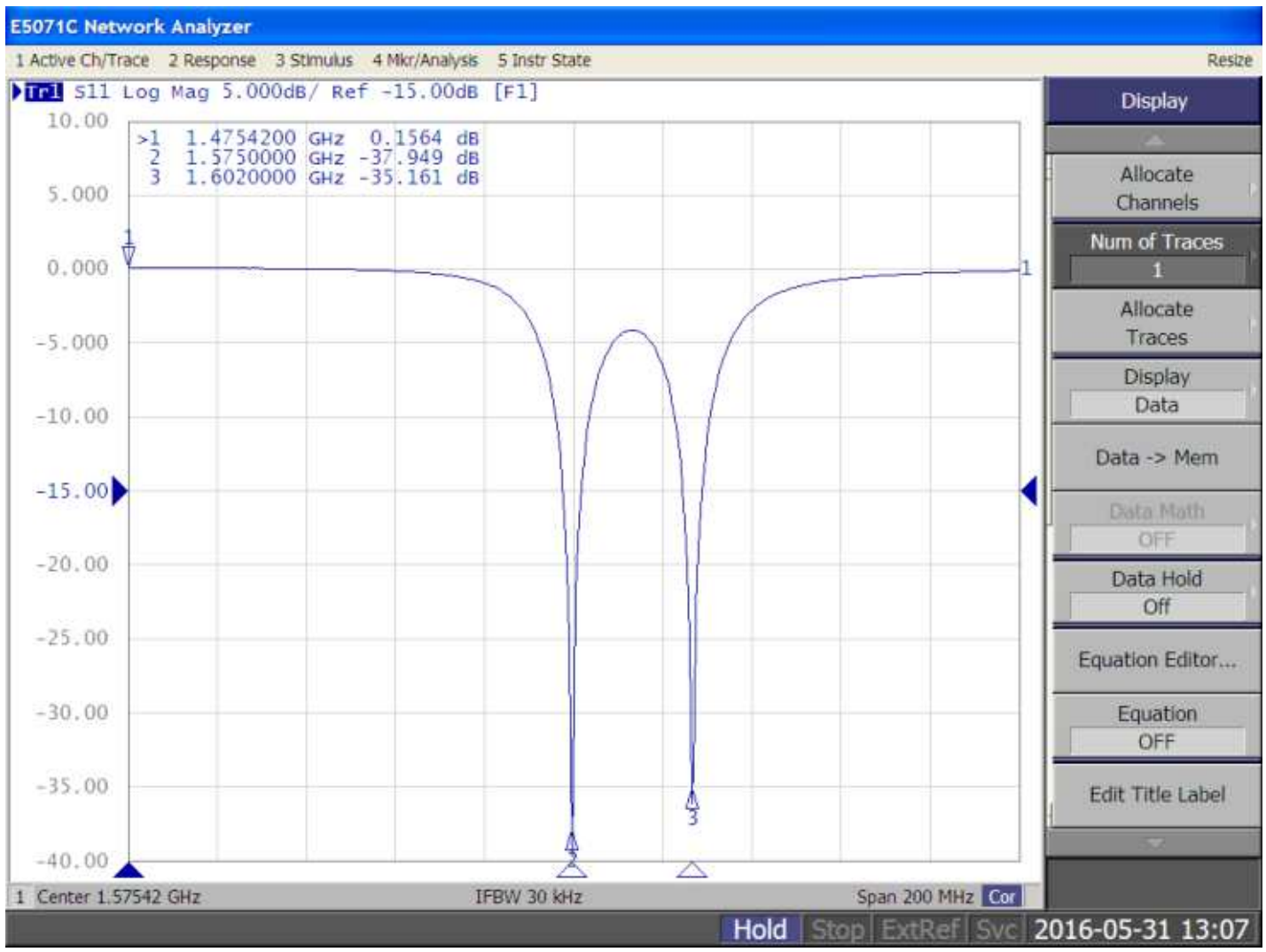
MSL - N/A

Electrical Specifications

Overall (Complete Module including RF Connector)

Parameters	Typ.	Units	Note
Frequency Range	1575.42 ± 1.023 1601.02 ± 1.15	MHz	
Output VSWR	≤2.0		
Impedance	50	Ω	

Returns-Loss Characteristics



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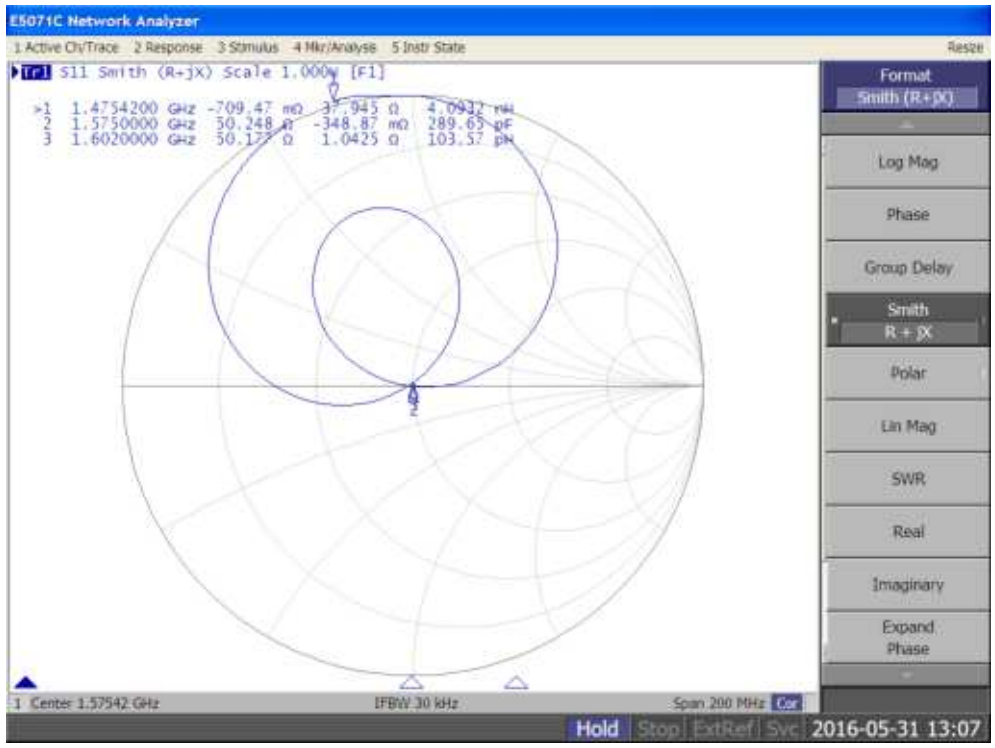
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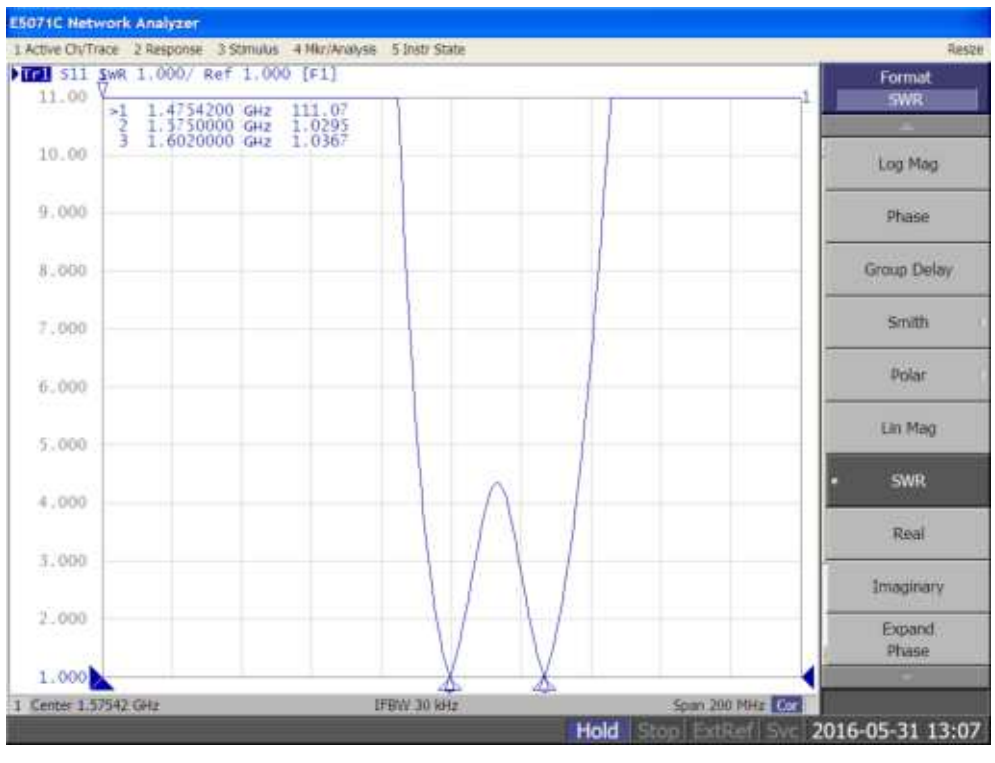
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MSL - N/A

Smith Chart



VSWR



Summary

Frequency	Return Loss	Impedance	VSWR
1575MHz	-37.9dB	50.2-j0.3Ω	1.02
1602MHz	-35.1dB	50.1+j1.0Ω	1.03

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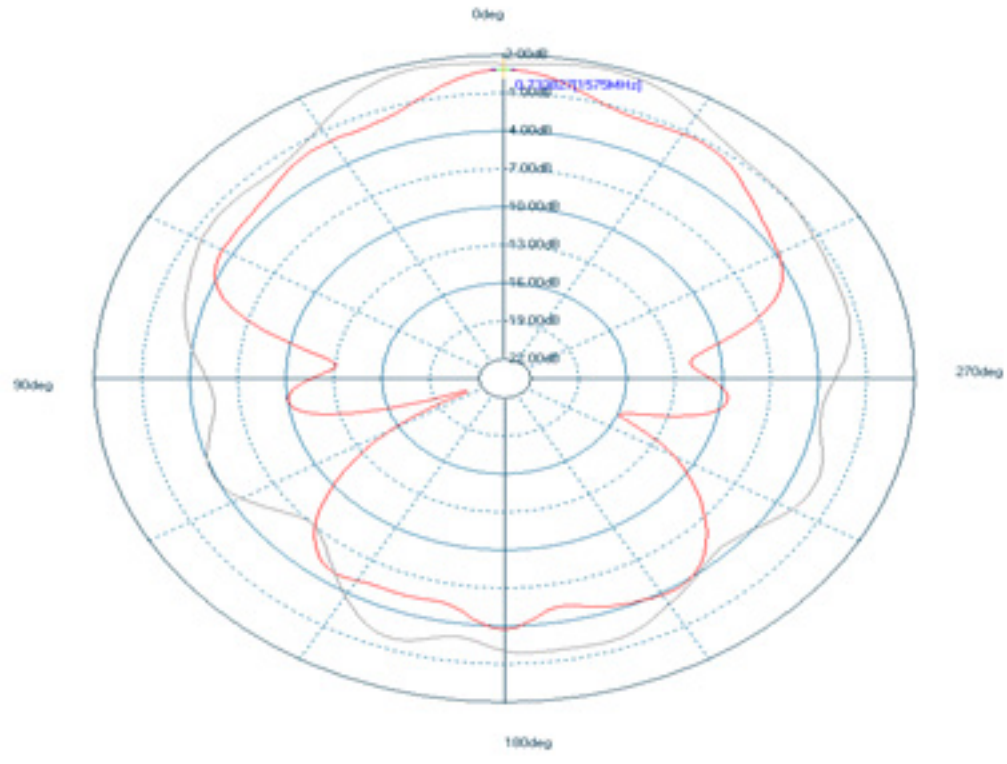
MSL - N/A

Radiation Patterns





Gain Patterns (1575MHz, 1602MHz)



XZ Plane (PHI=0^0)

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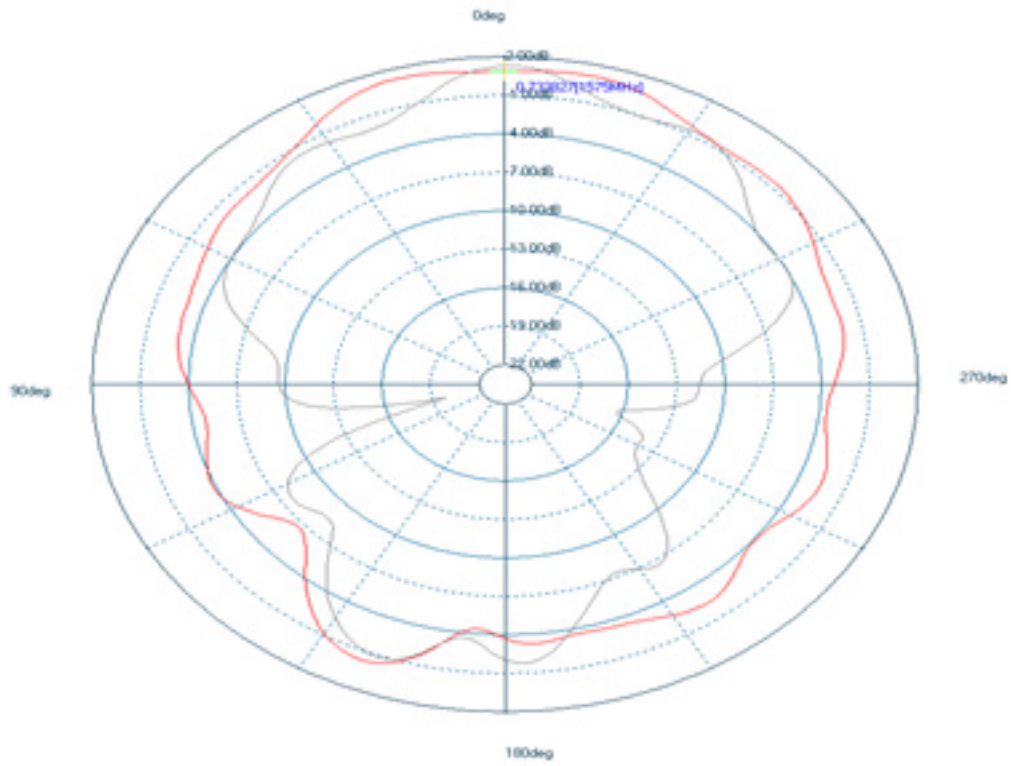
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MSL - N/A

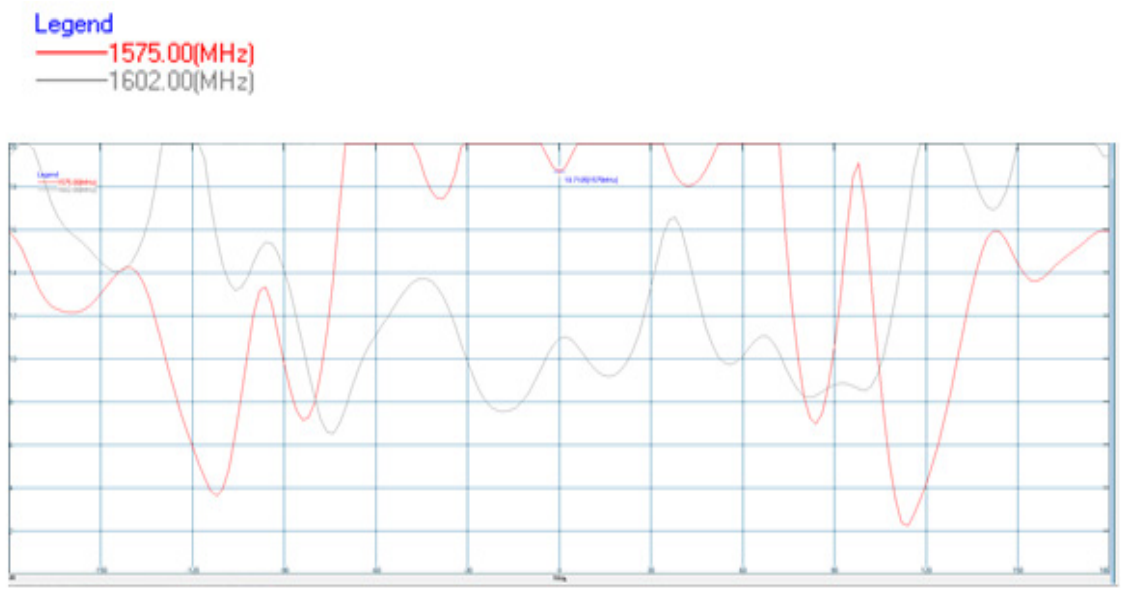
Gain Patterns

YZ Plane (PHI=90^0)



Frequency	Direction	Peak Gain (dBic)	Zenith Gain (dBic)
1575MHz	XZ	0.73	0.73
	YZ	1.08	0.73
1602MHz	XZ	1.55	1.19
	YZ	1.19	1.19

Axial Ratio Patterns (1575 MHz, 1602 MHz)



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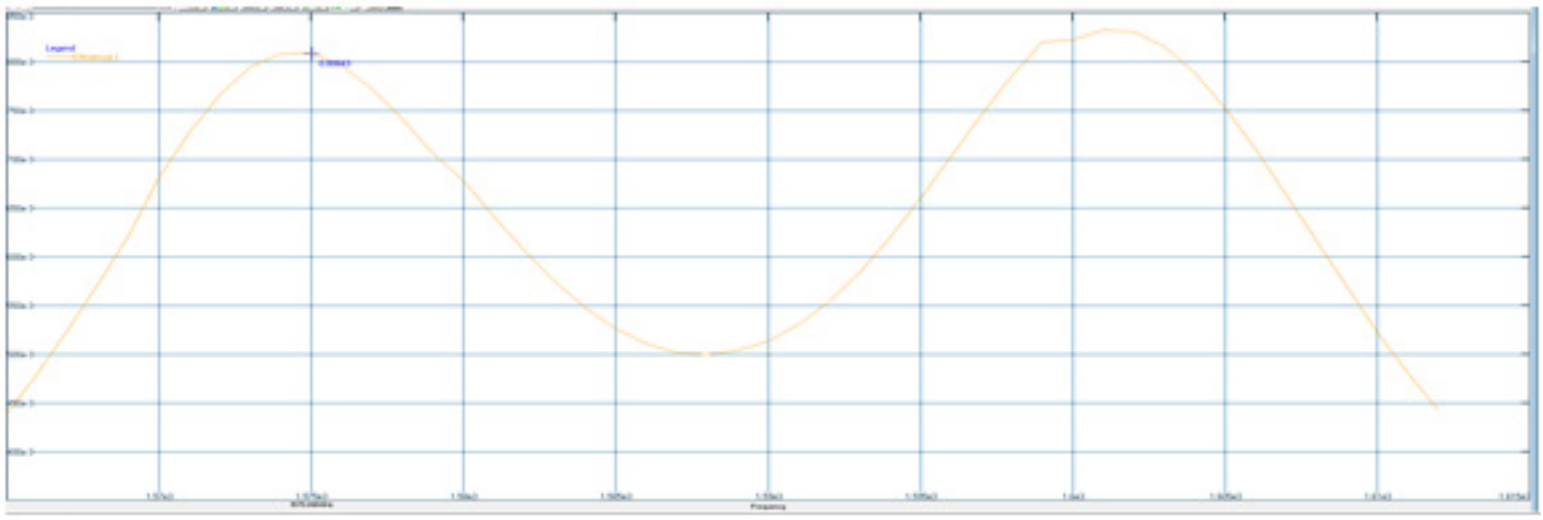
RoHS/RoHS II Compliant

MSL - N/A

Axial Ratio Patterns (1575 MHz, 1602 MHz)

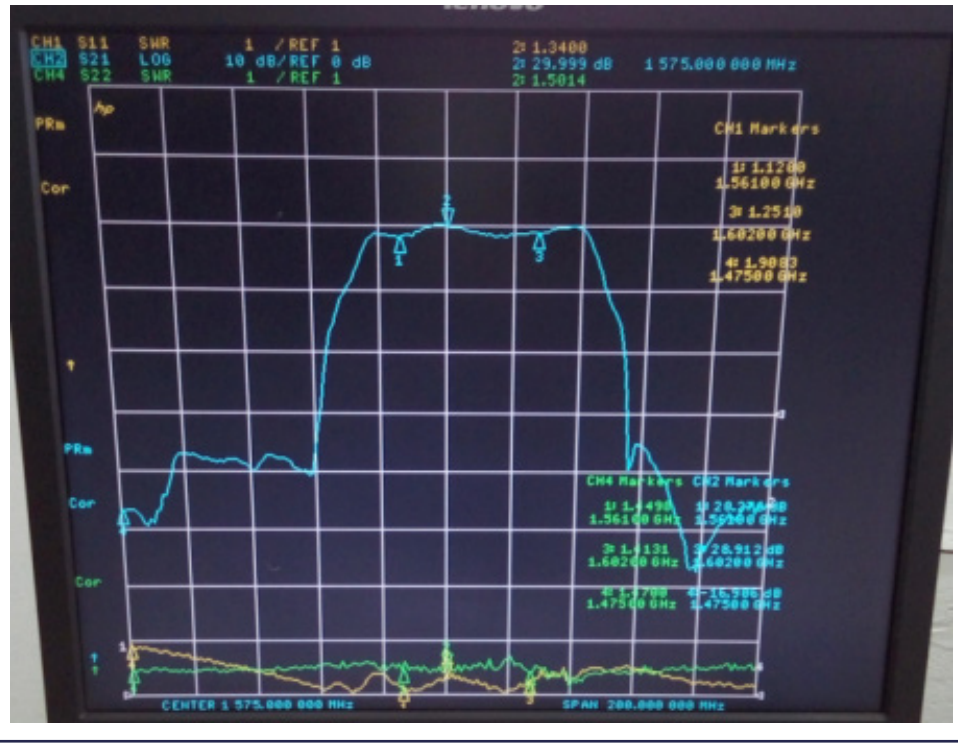
Frequency	Direction	Axial Ratio (dB)
1575MHz	XZ	18.7
1602MHz	XZ	10.9

Efficiency (1575 MHz, 1602 MHz)



Frequency	Direction	Efficiency
1575MHz	XZ	80.8%
1602MHz	XZ	83.0%

LNA Test Curve



Test condition: DC 3.0V

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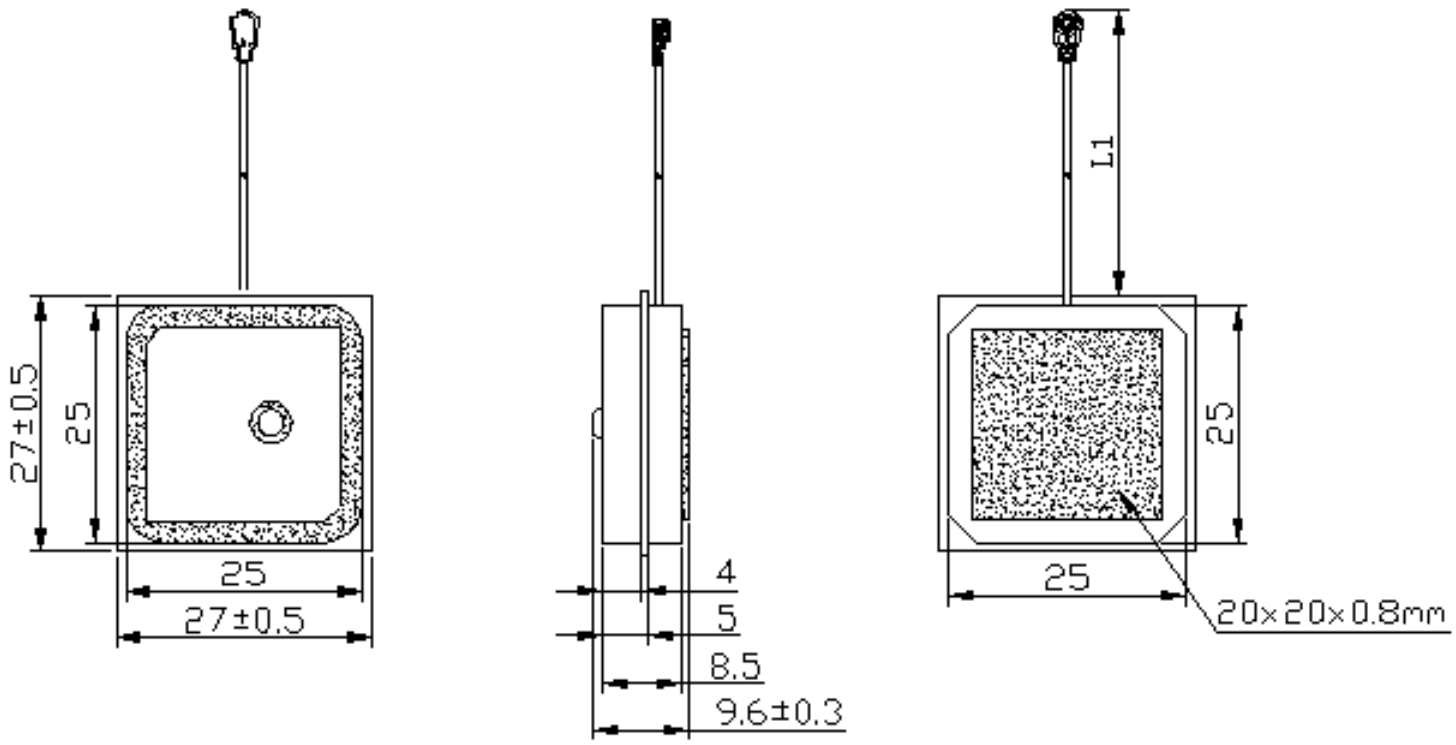
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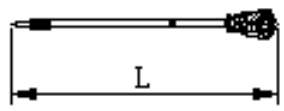
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RoHS/RoHS II Compliant

MSL - N/A

Outline Dimensions





Unit: mm

L=30±2mm, L1=23±2mm

Parameters	Description
Antenna	Dielectric Ceramics
PCB	FR4
Shielding	Tinplate
RF Cable	Φ 1.13 ±0.1 mm
RF Connector	U.FL -1

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Packaging

Description	Quantity
Per tray	30 Pcs
Per vacuum bag	5 Trays
Per carton	4 Vacuum bag
Total No of piece/carton	600 Pcs
Carton dimensions	345 x 210 x 275 mm

Note: 3M tape will be added to the antenna during production



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