

GPS L1 + L2 and Iridium Combinational Active Stacked Patch Antenna

APRG2512F01

Request Samples



Check Inventory



25.0 x 25.0 x 12.4 mm
RoHS/RoHS II Compliant
MSL Level = N/A

Features

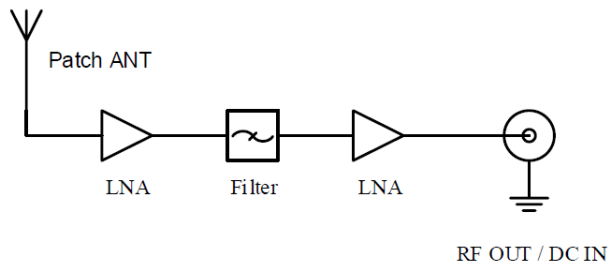
- Combo (GPS L1 + L2 + Iridium)
- Single Feed Stacked Patch
- Compact Form Factor
- High Gain LNA of 28 dB
- Circular Polarization (RHCP)
- Fully customizable cable and connector options for RF connection

Applications

- IoT
- M2M
- Satellite telephony
- Fleet and Asset Monitoring
- Transportation
- Precision Agriculture
- Geolocation and Tracking

Electrical Specification

Parameter	Specification				Unit	Note
	GPS L2	GPS L1	GLONASS G1	Iridium		
Operating Frequency	1227±10	1575.42±1.023	1602±8	1625	MHz	
VSWR	1.21	1.48		1.63		
Gain	1.5	0	-0.5	0.5	dBi	Zenith
Impedance	50				Ω	
Polarization	RHCP					
LNA						
Noise Figure	1.4	1.1	1.2	1.2	dB	(+25°C±5°C)
Gain	26±3	28±3	25±3	25±3	dB	(+25°C±5°C)
Impedance	50				Ω	
VSWR	2.0					Max
Operating Voltage	2.7				V	Min
	3.3					Typ
	5.0					Max
Current Consumption*	10				mA	Typical
	15				mA	Max



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Overall Specification

Parameter	Specification				Unit
	GPS L2	GPS L1	GLONASS G1	Iridium	
Operating Frequency	1227.6±10	1575.42±1.023	1602±8	1625	MHz
Gain	27.5	28	24.5	25.5	dBi
Impedance	50				Ω
Cable Loss	-1.6				dB/Meter

Mechanical Specification

Parameter	Specification
Antenna Dimension	25.0 x 25.0 x 12.4 mm
Cable Type	RF Φ1.13
Cable Length	100 ± 10 mm
Connector	I-PEX (F)

Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
RoHS Compliance	Yes
Relative Humidity	40 % ~ 95 %

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Part Number Builder

APR□2512F01-□□□□□

Antenna Sub-Type / Mounting Type		
Code	Sub-Type	Mounting Type
G (Standard)	Active Patch	Cable & connector
E	Passive Patch	Through Hole-Pin
F	Passive Patch	Cable & Connector

Cable length in 'mm'	
Cable length supported : Ø1.13 mm (50 mm to 500 mm)	
Code	Description
0100 (Standard)	100 mm
Other Examples :	
0050	50 mm
0200	200 mm

Cable Type & Connector Type		
Code	Cable Type	Connector Type
S (Standard)	RF Ø1.13 mm or others	IPEX-1 (F)
A		IPEX-4 (F)
B		MMCX (F)
C		MMCX (M)
D		MCX (F)
E		MCX (M)
F		SMA (F)
G		SMA (M)
H		RP-SMA (F)
I		RP-SMA (M)
J		SMB (F)
K	SMB (M)	

Example Configurations:

Part Number	Antenna Sub-Type / Mounting Type	Cable length	Cable Type / Connector Type
APRG2512F01-0100S	Active Patch with Cable & Connector	0100 mm	Ø1.13 mm with IPEX-1 (F) (Standard)
APRF2512F01-0100S	Passive Patch with Cable & Connector	0050 mm	Ø1.13 mm with IPEX-4 (F)

Note :

- For the standard part number (APRG2512F01-0100S), please refer to the packaging at the end of the document.
- For custom configurations (APR□2512F01-□□□□□), MOQs, pricing and packaging changes may be applicable.



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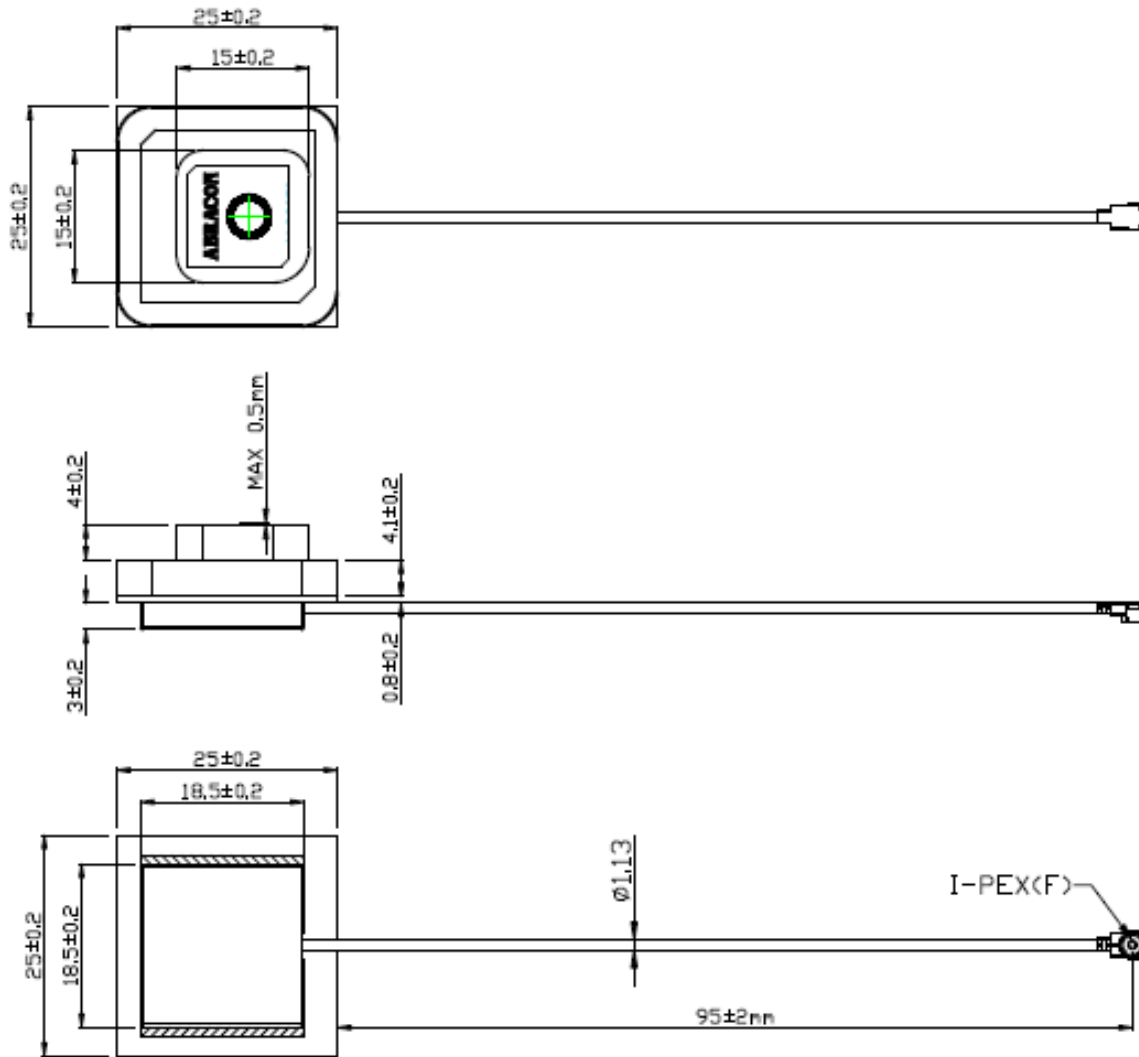


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Product Dimension



Unit: mm

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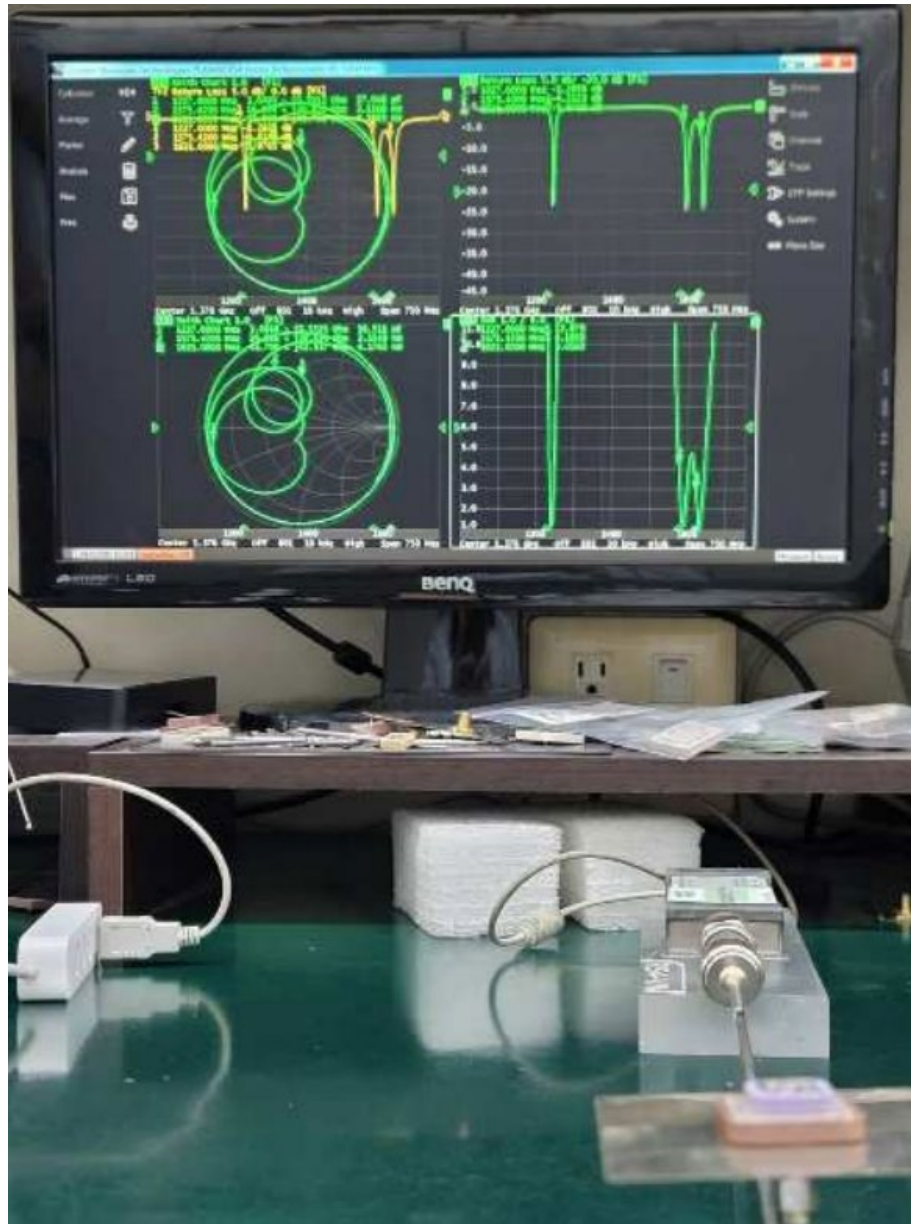


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VNA Test Setup



Frequency (MHz)	Return Loss (dB)	Impedance (Ohm)	VSWR
1227	-20.56	60.49+j1.71	1.21
1575	-13.22	34.44+j5.75	1.48
1625	-12.42	77.74-j13.64	1.63

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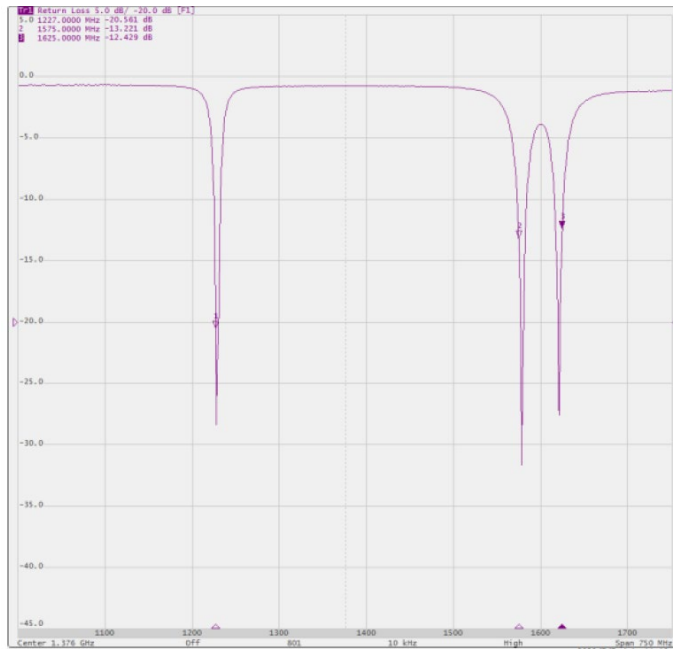


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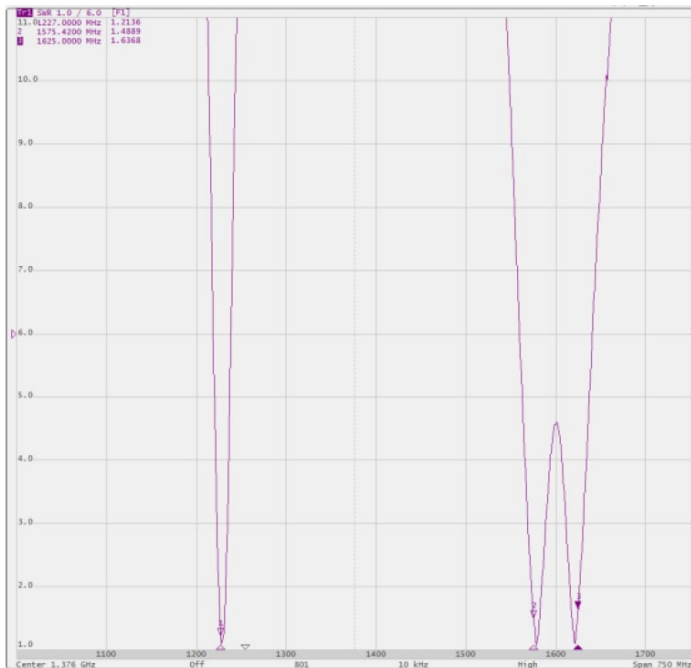


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Test Measurement – Return Loss



Test Measurement – VSWR



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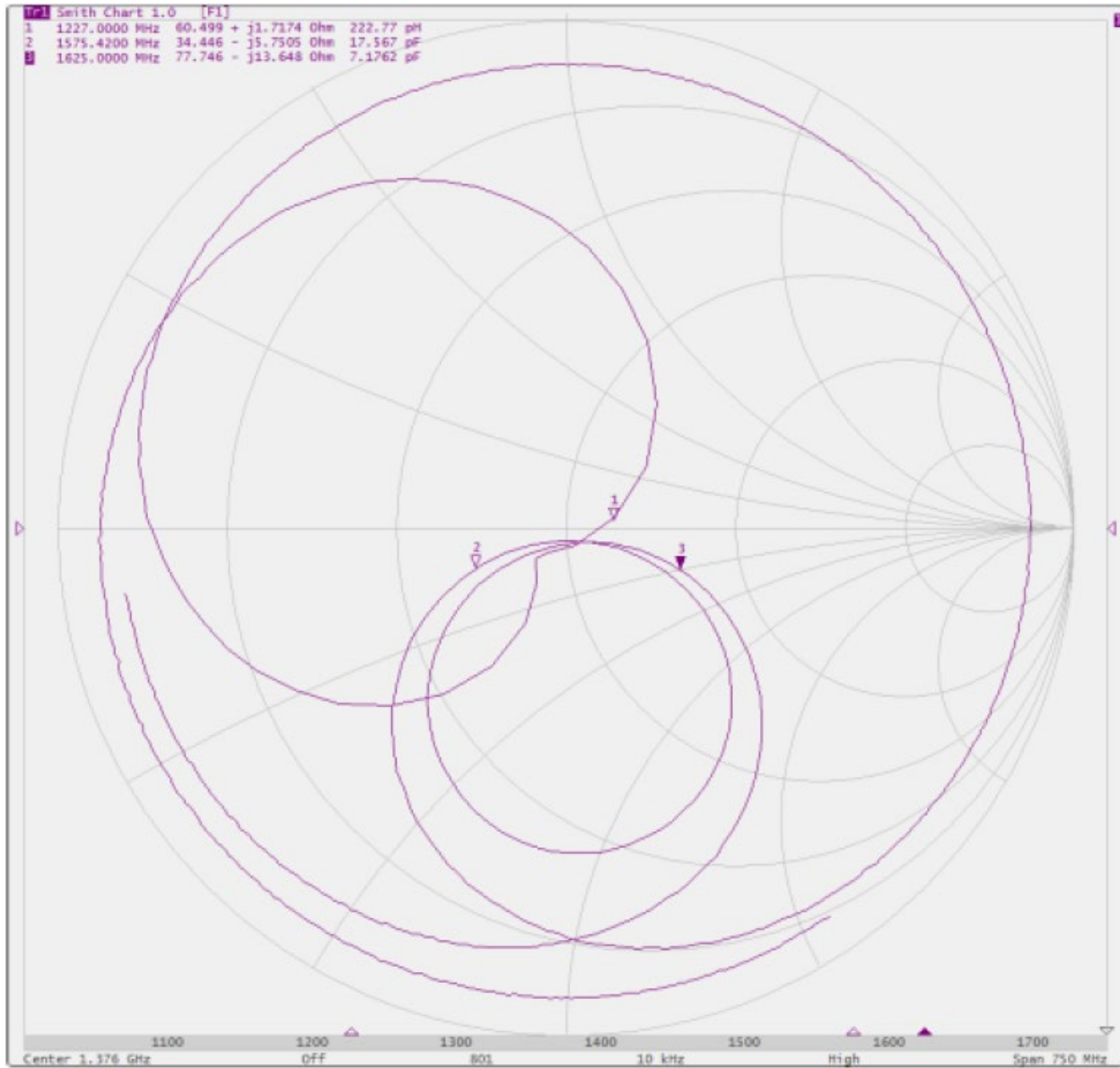


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Test Measurement – Smith Chart



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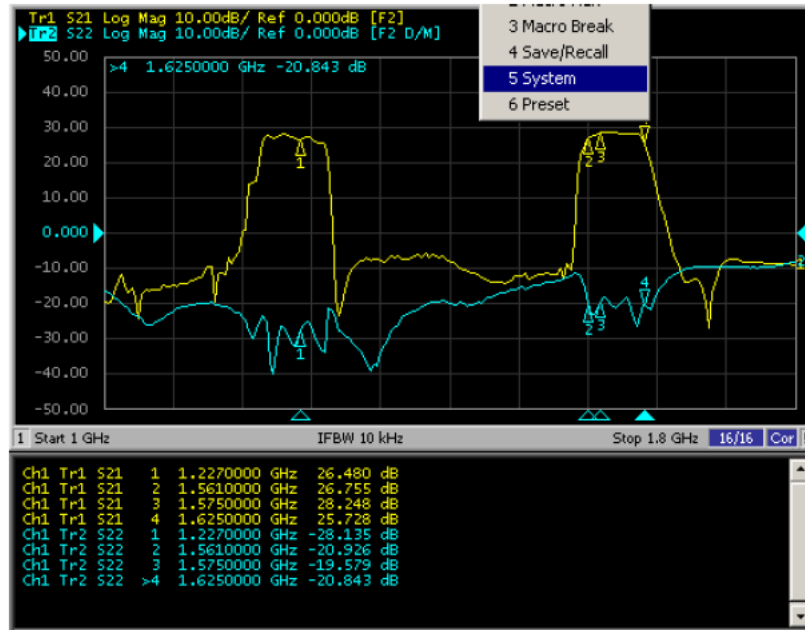


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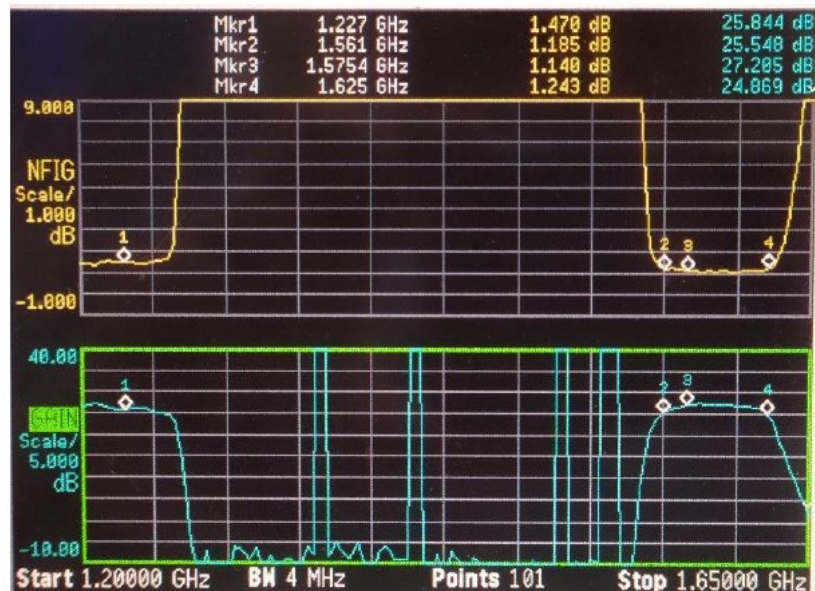


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Test Measurement- LNA Gain at 3.3V



Test Measurement- LNA Noise Figure at 3.3V



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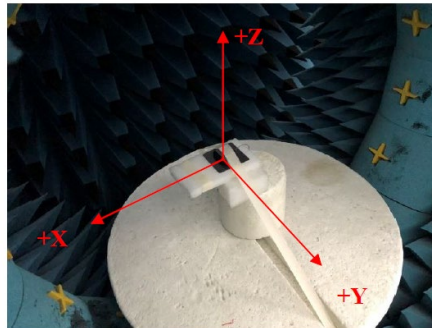


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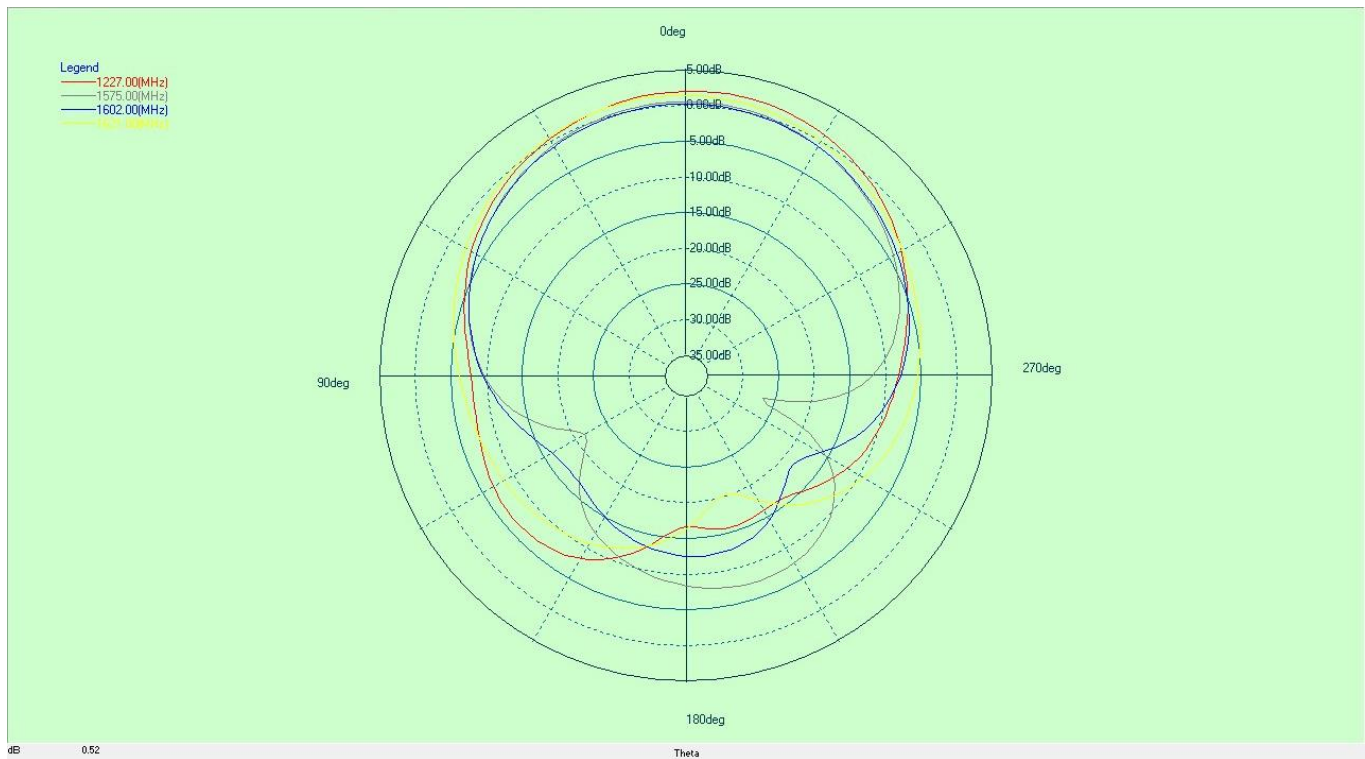


25.0 x 25.0 x 12.4 mm
RoHS/RoHS II Compliant
 MSL Level = N/A

Radiation Characteristics



2-D Pattern XZ- Plane



Frequency (MHz)	Peak Gain (dBi)	Zenith Gain (dBi)
1227	1.91	1.86
1575	0.41	0.41
1602	0.09	0.09
1625	0.96	0.92



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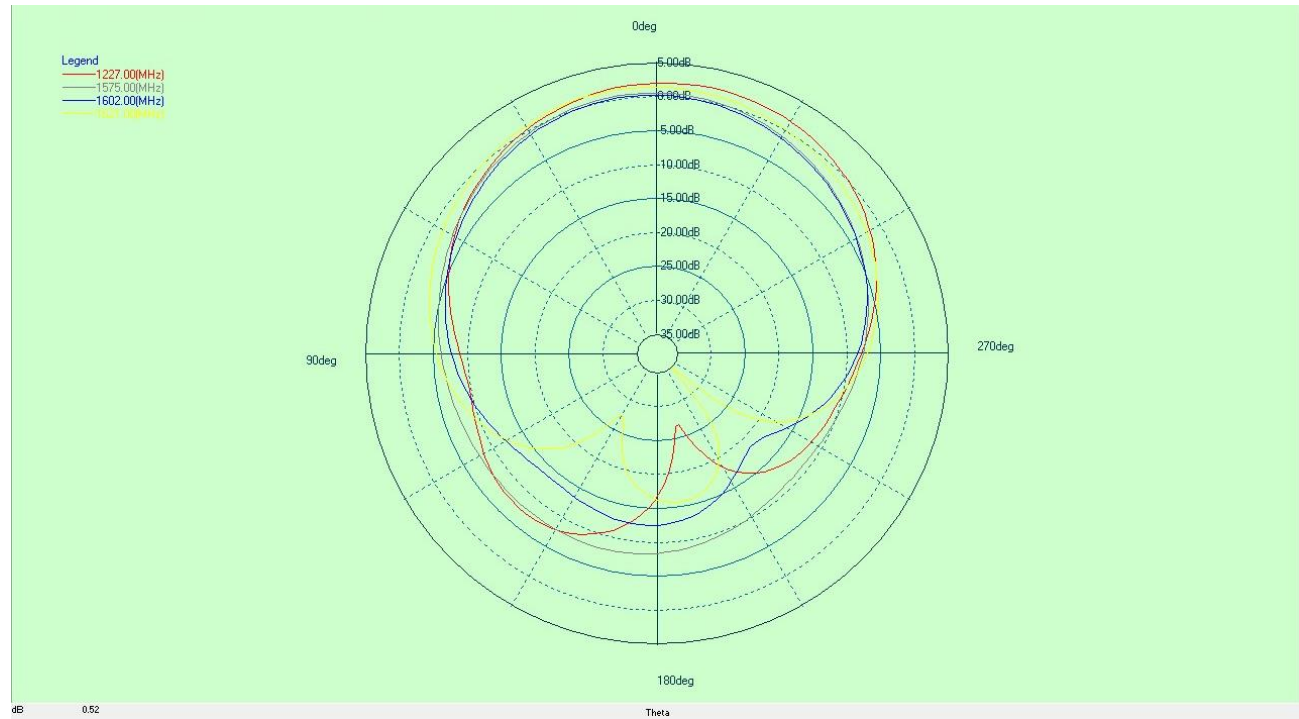


Check Inventory



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RoHS/RoHS II Compliant
 MSL Level = N/A

YZ- Plane



Frequency (MHz)	Peak Gain (dBi)	Zenith Gain (dBi)
1227	1.95	1.86
1575	0.43	0.41
1602	0.12	0.09
1625	0.99	0.92

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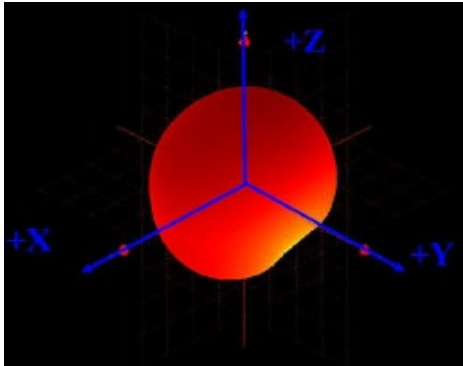
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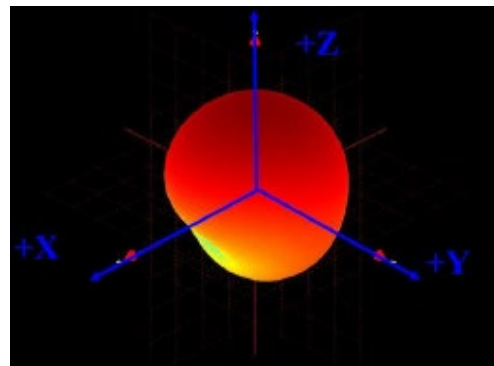
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RoHS/RoHS II Compliant
MSL Level = N/A

3-D Pattern

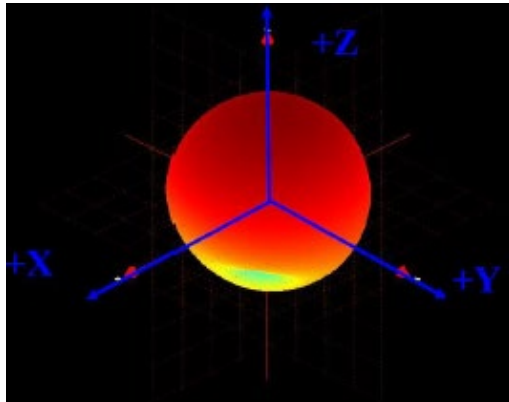
1227MHz



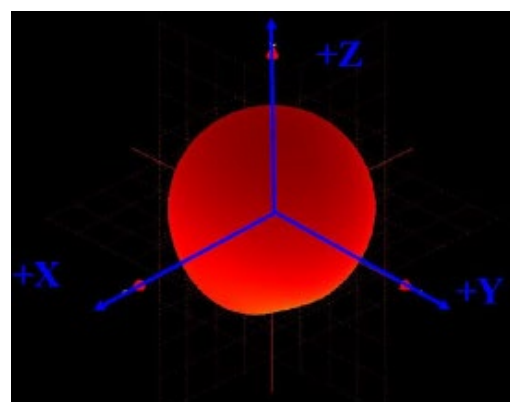
1575MHz



1602MHz



1625MHz



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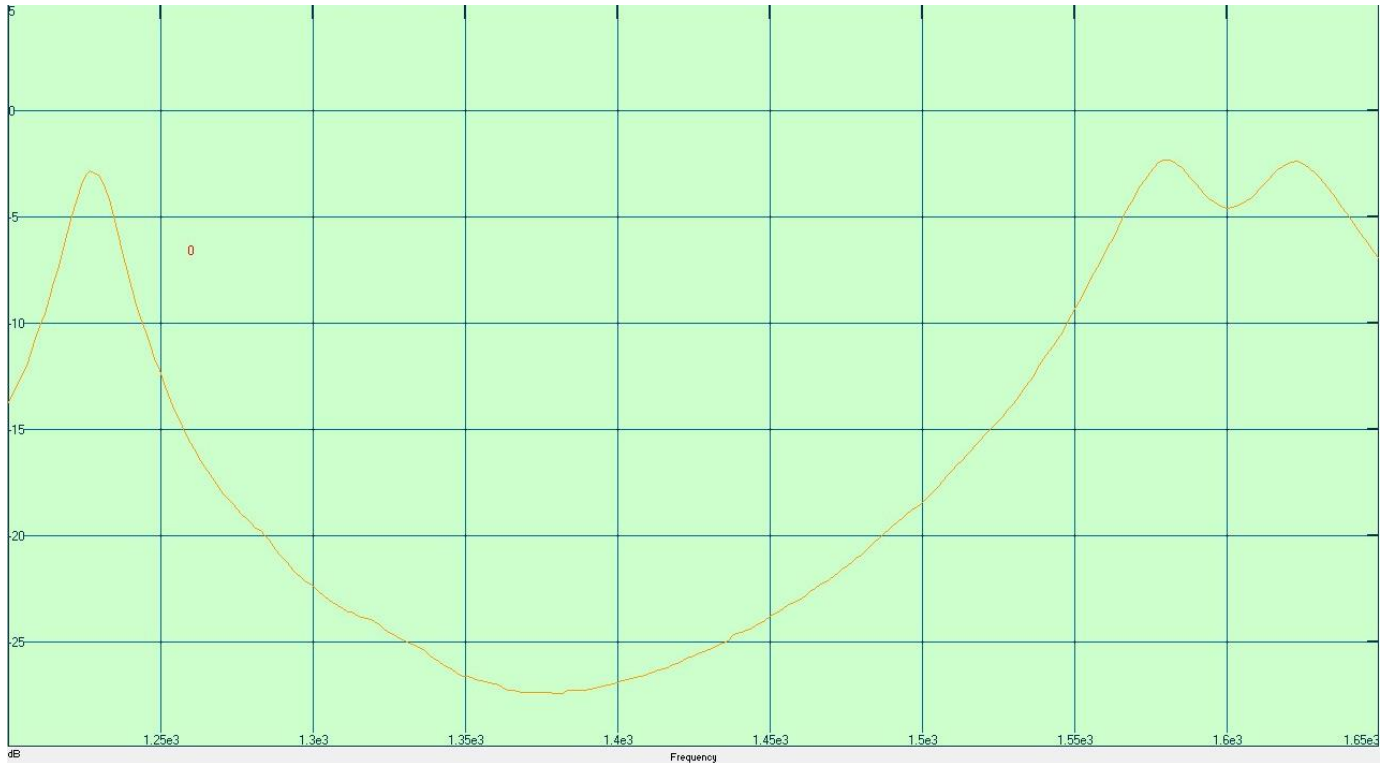


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MSL Level = N/A

Test Measurement – Average Gain



Frequency (MHz)	Average Gain (dBi)
1227	-2.80
1575	-2.86
1602	-4.53
1625	-2.48

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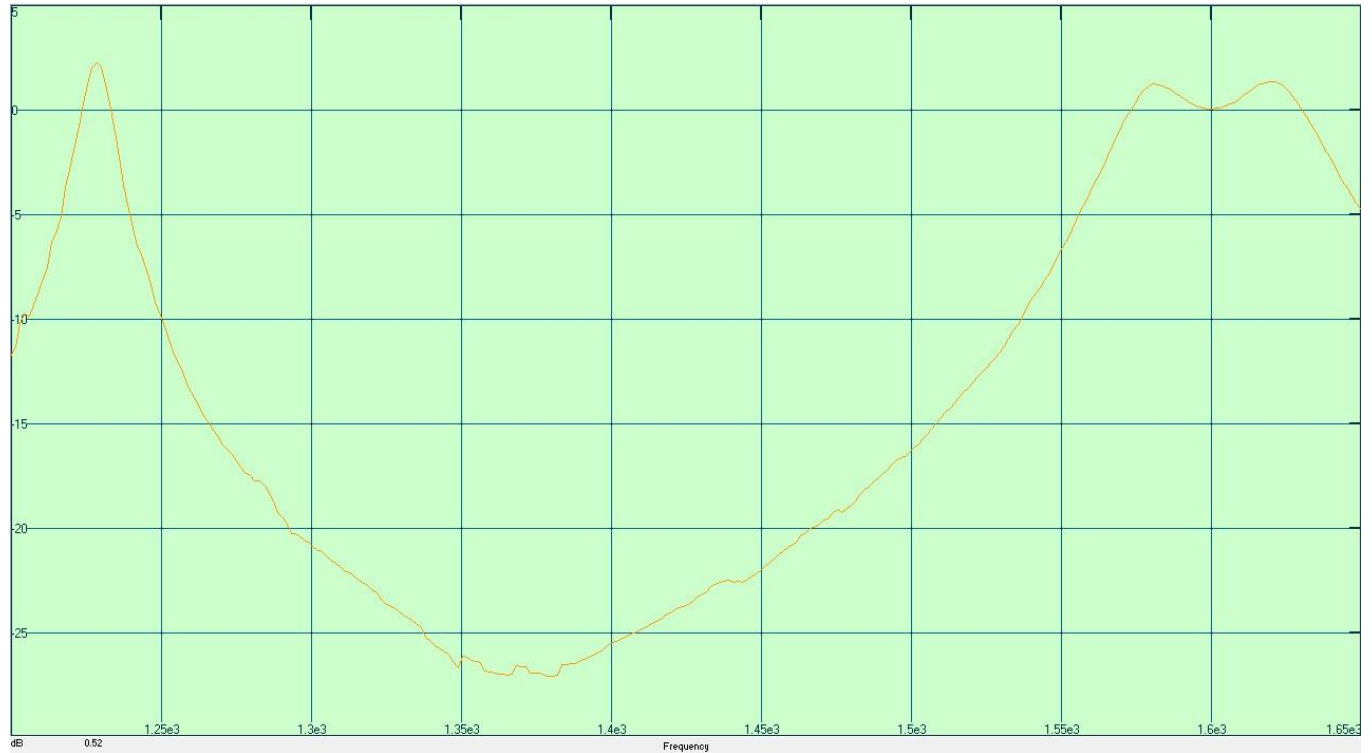


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Test Measurement- Peak Gain



Frequency (MHz)	Peak Gain (dBi)
1227	2.00
1575	0.43
1602	0.12
1625	1.05

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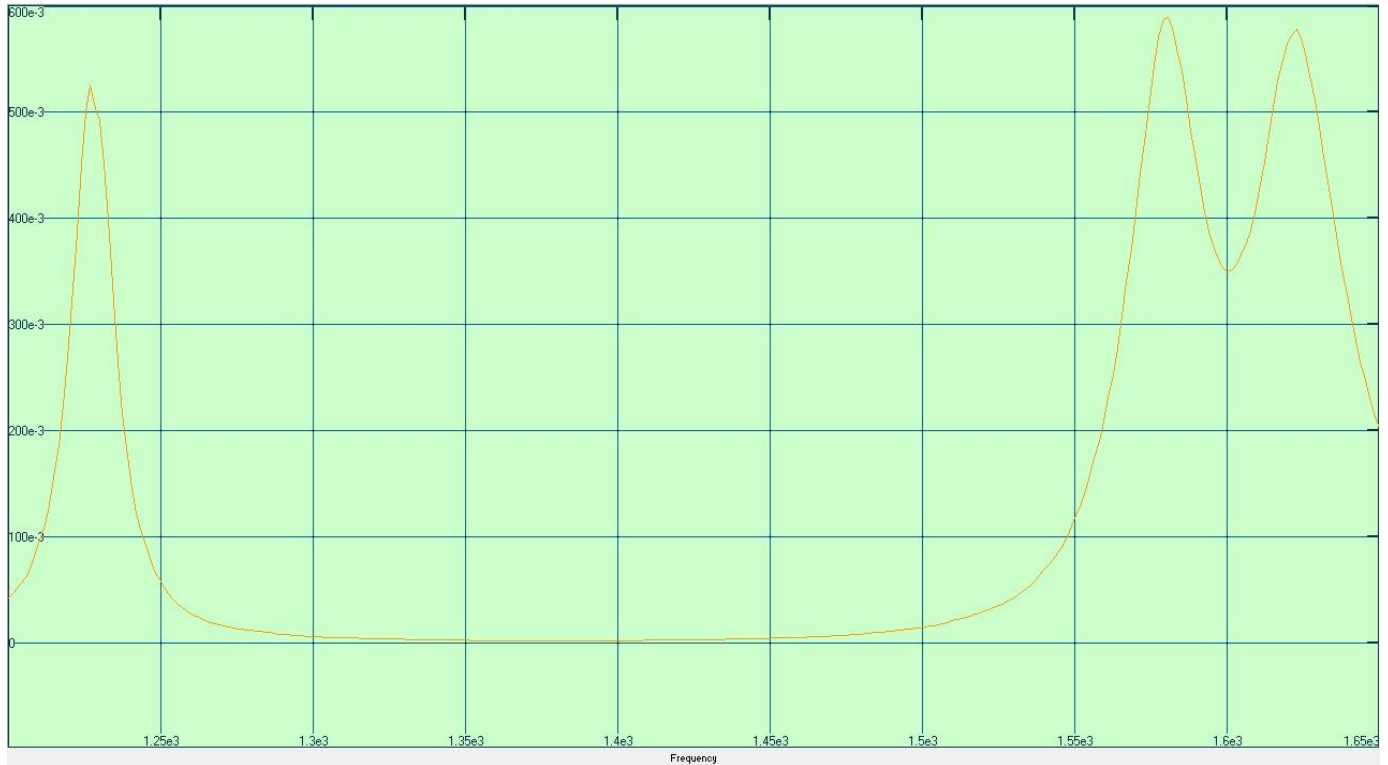


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MSL Level = N/A

Test Measurement - Efficiency



Frequency (MHz)	Efficiency (%)
1227	52
1575	51
1602	35
1625	56

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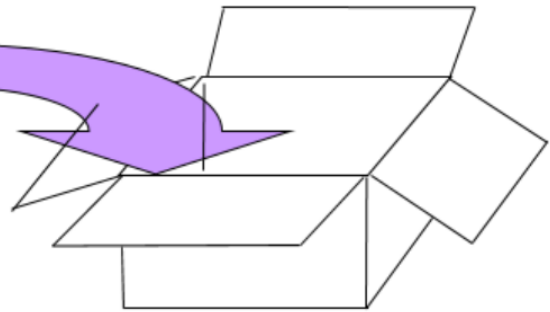
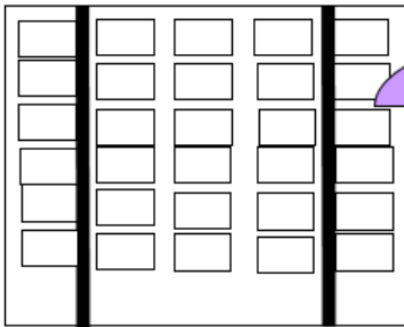


25.0 x 25.0 x 12.4 mm
RoHS/RoHS II Compliant
MSL Level = N/A

Packaging Information

Number of Antenna/ Carton: 360 pcs

30pcs/Vacuum *4 = 120pcs/Batch



120pcs/Batch*3=360 Units / Carton

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