

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory



64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A

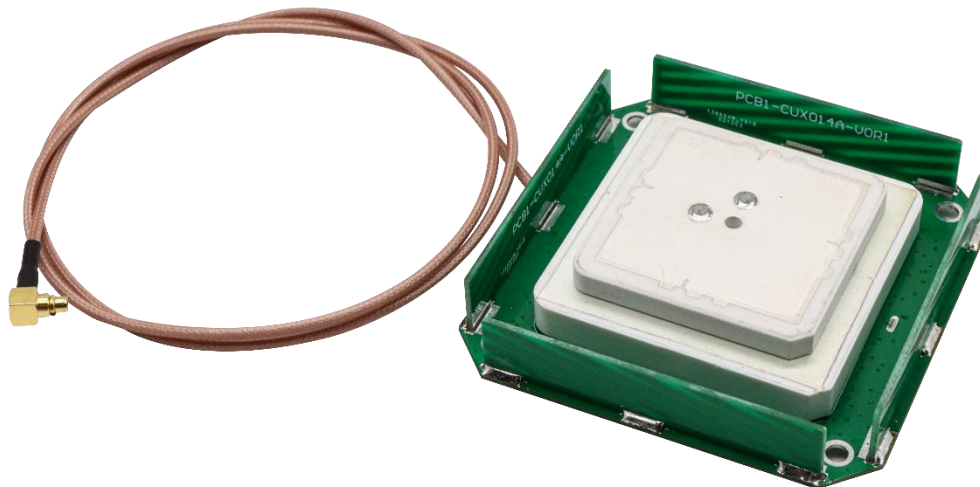
Features

- Multiband Active GNSS
GPS: L1/L2/L5
GLONASS: G1/G2/G3
Galileo: E1/E5a/E5b/E6
Beidou: B1/B2/B3
QZSS: L1/L2/L5/L6
SBAS: L1/E1/B1, L5/B2a/E5a
L-band correction service
- Active GNSS patch with LNA max gain of 33±2 dB
- Centimeter phase center repeatability
- Pre-filtered LNA to minimize de-sensing
- Strong anti-interference performance
- Low profile, light weight, low power Consumption

Applications

- Autonomous driving and UAVs
- Precision land survey positioning
- Surveying and mapping systems
- Precision agriculture
- Tri-band RTK and PPP receivers
- Mission-critical GNSS timing
- Geofencing

Product Image



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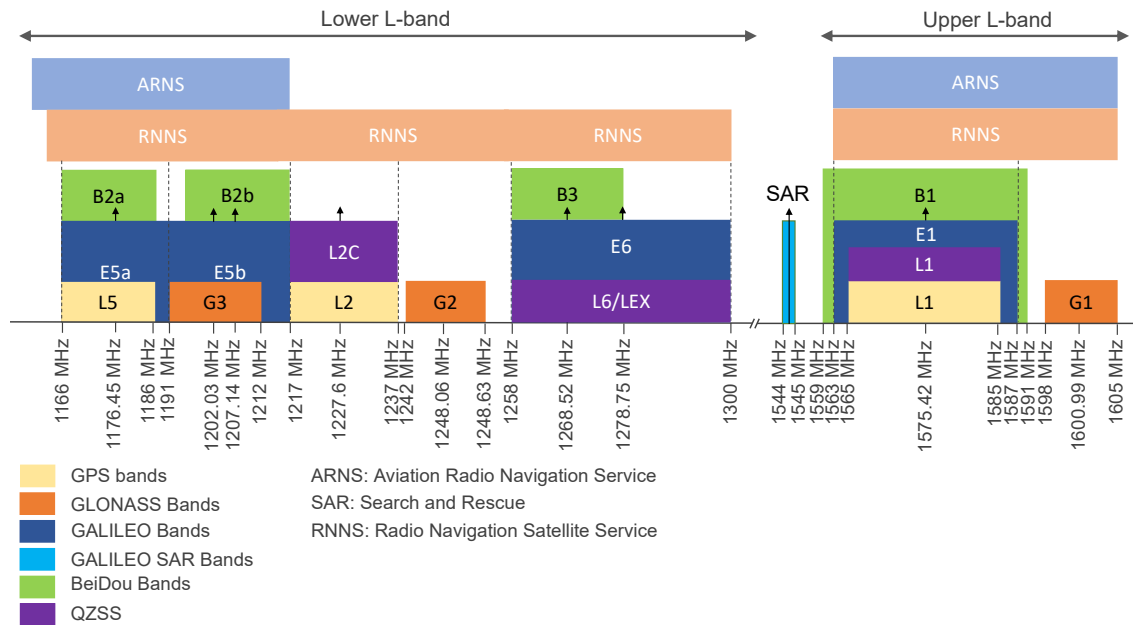
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GNSS Frequency Bands Covered

GPS	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	
	■	■	■	
GLONASS	G1 1598.06-1609.31MHz	G2 1242.93-1251.68MHz	G3 1202.025MHz	
	■	■	■	
Galileo	E1 1575.42MHz	E5a 1176.45MHz	E5b 1201.5MHz	E6 1278.75MHz
	■	■	■	■
BeiDou	B1 1561MHz	B2 1207.14MHz	B3 1268.52MHz	
	■	■	■	
QZSS	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	L6 1278.75MHz
	■	■	■	■
IRNSS/NAVIC			L5 1176.45MHz	
			■	
SBAS	L1/E1/B1 1575.42MHz		L5/B2a/E5a 1176.45MHz	
	■		■	



Frequency allocation: GNSS systems, upper L bands and lower L bands



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Electrical Specification

Parameters	Typ.	Units	Note
Antenna			
Frequency	GPS: L1/L2/L5 GLONASS: G1/G2/G3 Galileo: E1/E5a/E5b/E6 Beidou: B1/B2/B3 QZSS: L1/L2/L5/L6 IRNSS/NAVIC: L5 SBAS: L1/E1/B1 L5/B2a/E5a L band correction service		
Polarization	RHCP	-	(Right Hand Circular Polarization)
Nominal Impedance	50	Ω	
Gain RHCP (maximum)	4.7	dBic (@Zenith)	1565–1585 MHz (L1)
	4.6		1212-1242MHz (L2)
	1.0		1166-1186MHz (L5)
	1.9		1257-1299MHz (L6)
Axial Ratio	≤ 3	dB	
Group delay variation	≤ 5	ns	
LNA			
Noise Figure	≤ 2	dB	
Gain	33 ± 2	dB	
Output VSWR	≤ 2.0	-	
Operating Voltage	+3 to 5	V	
Current Consumption	≤ 50	mA	

The test data is based on a 120mm ground plane.

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Mechanical Specifications

Parameter	Specification
Antenna Dimension	64 x 64 x 13.4 mm
Weight	≤ 90g
Mounting Type	Embedded Screw mount (4 x M2.5), adhesive available
RF Connector	MMCX-JW

Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +85°C
RoHS Compliance	Yes
Relative Humidity	Up to 95%



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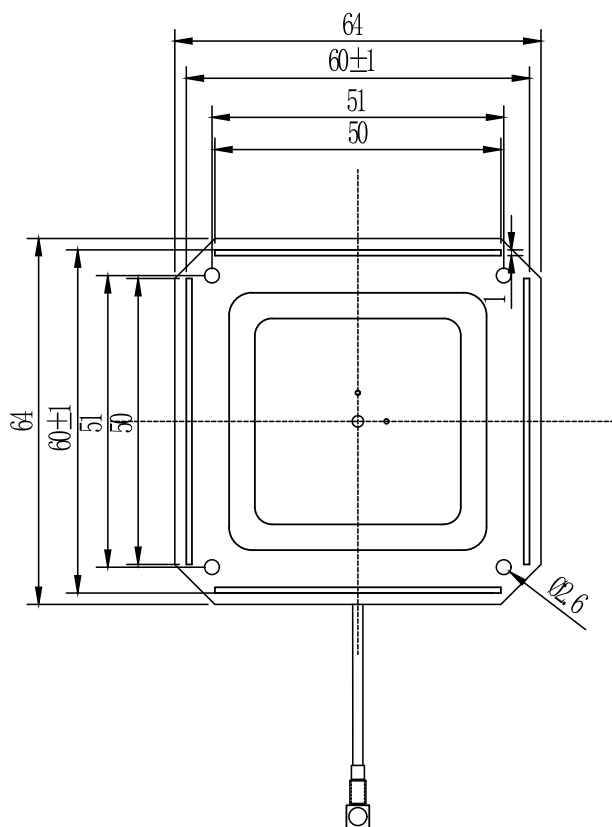


64 x 64 x 13.4 mm

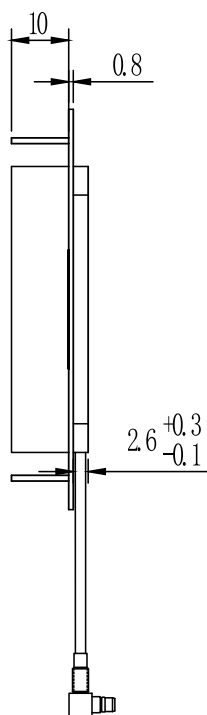
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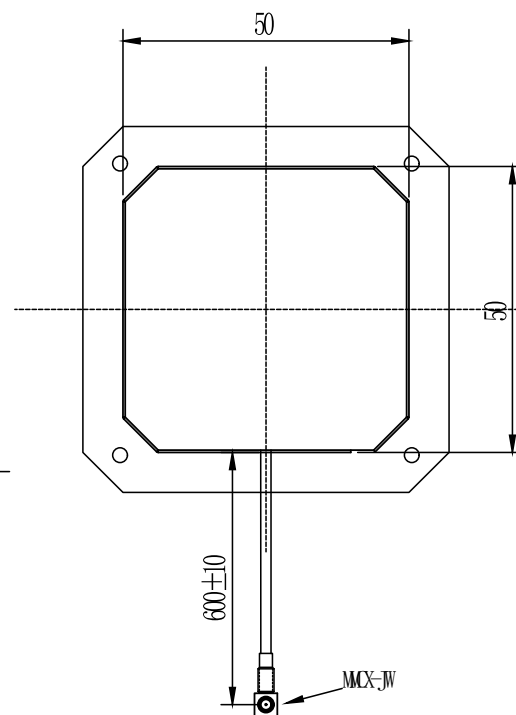
Product Dimension



TOP VIEW



SIDE VIEW



BOTTOM VIEW

Unit : mm



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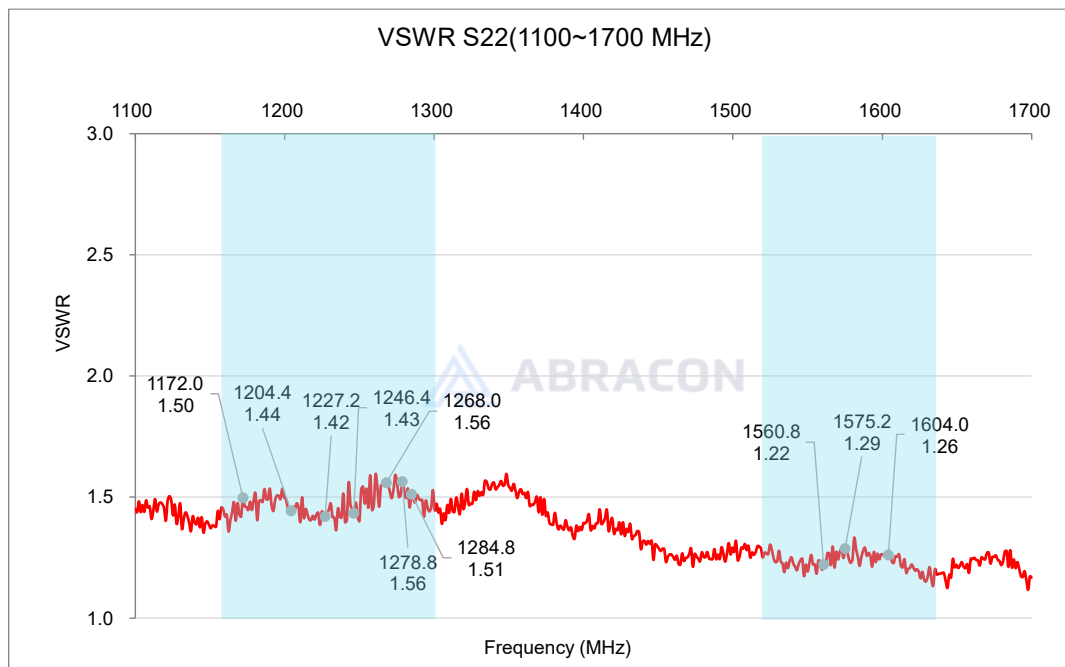
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Test Measurement – S-Parameter Characteristics

LNA output VSWR:



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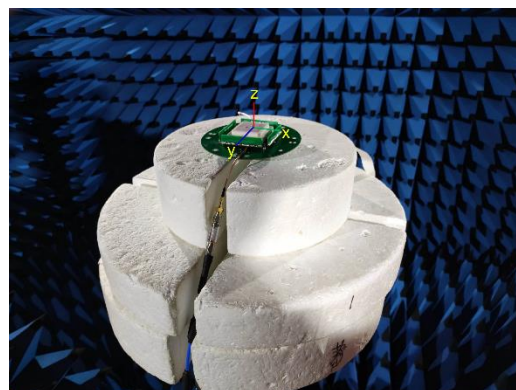
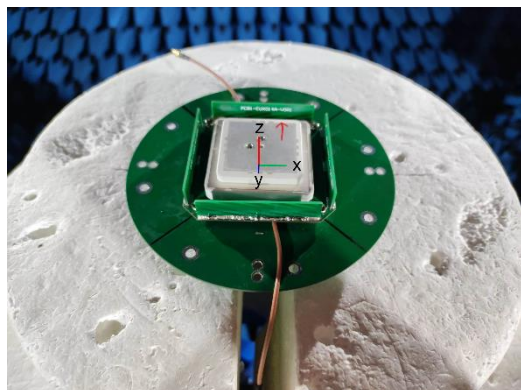
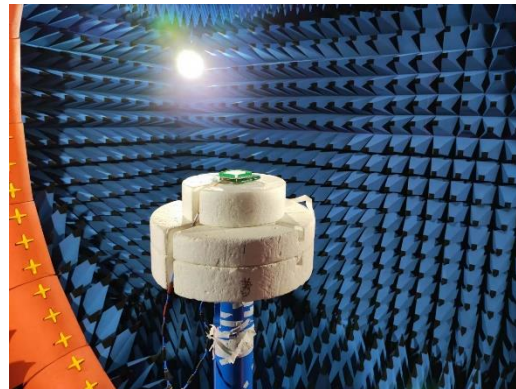
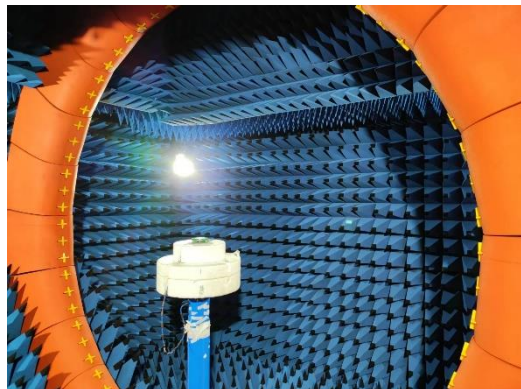


64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A

Antenna Gain Test – Chamber Setup



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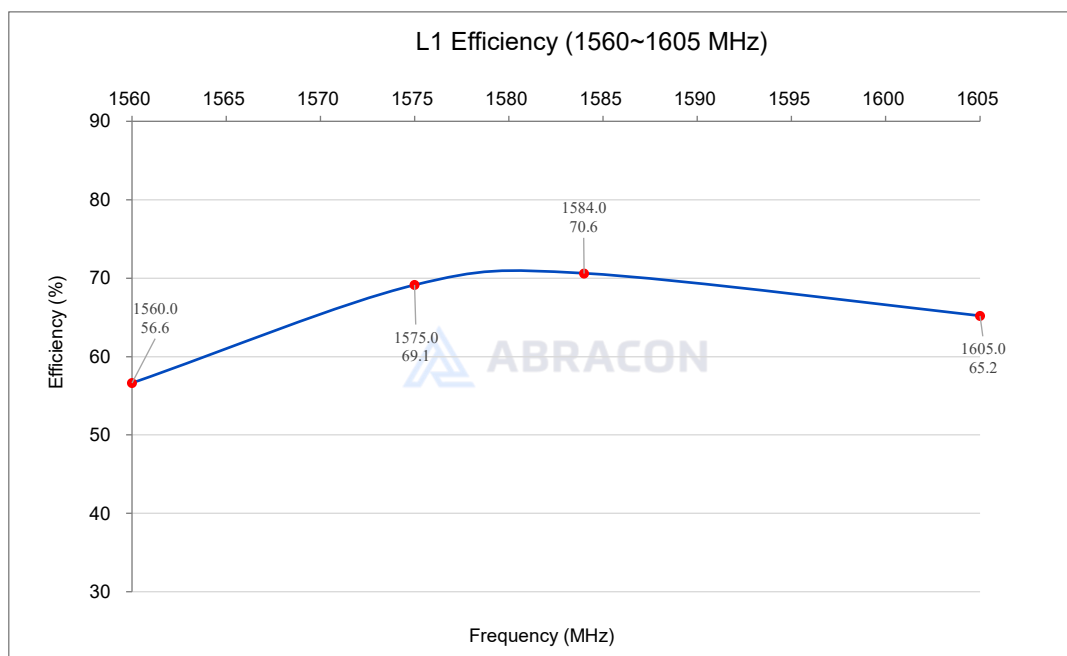
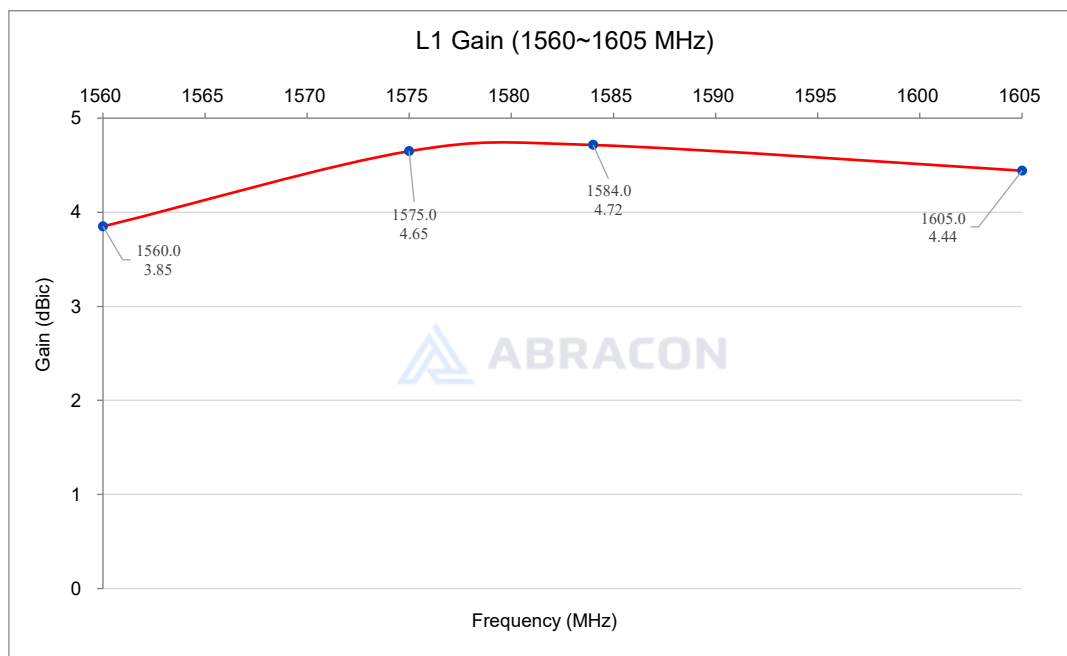


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Radiation Characteristics –Passive Gain



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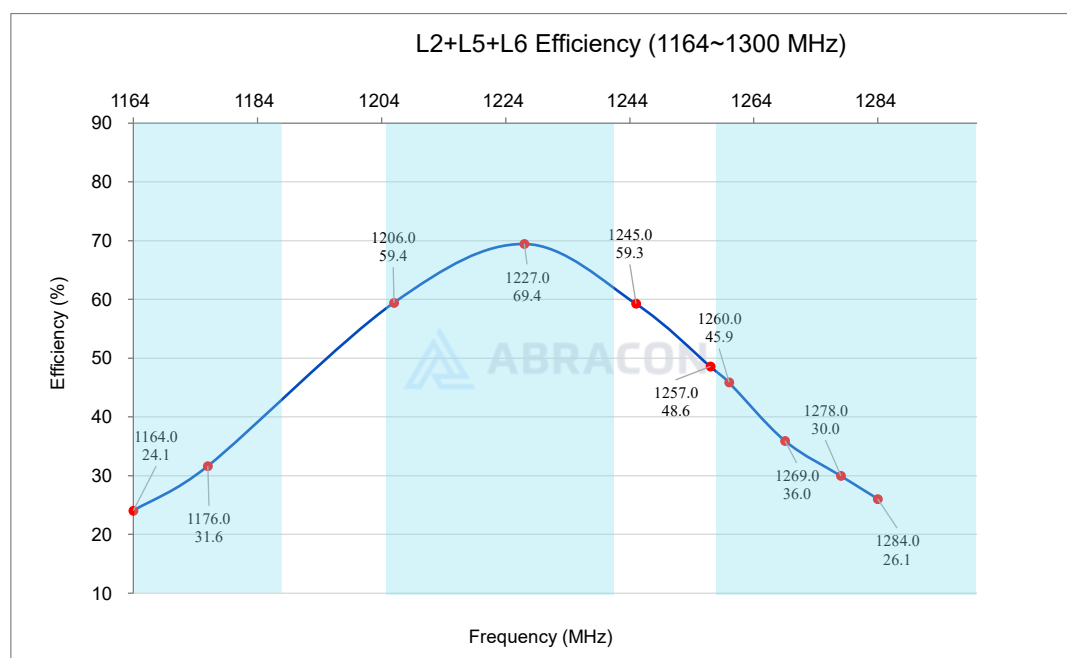
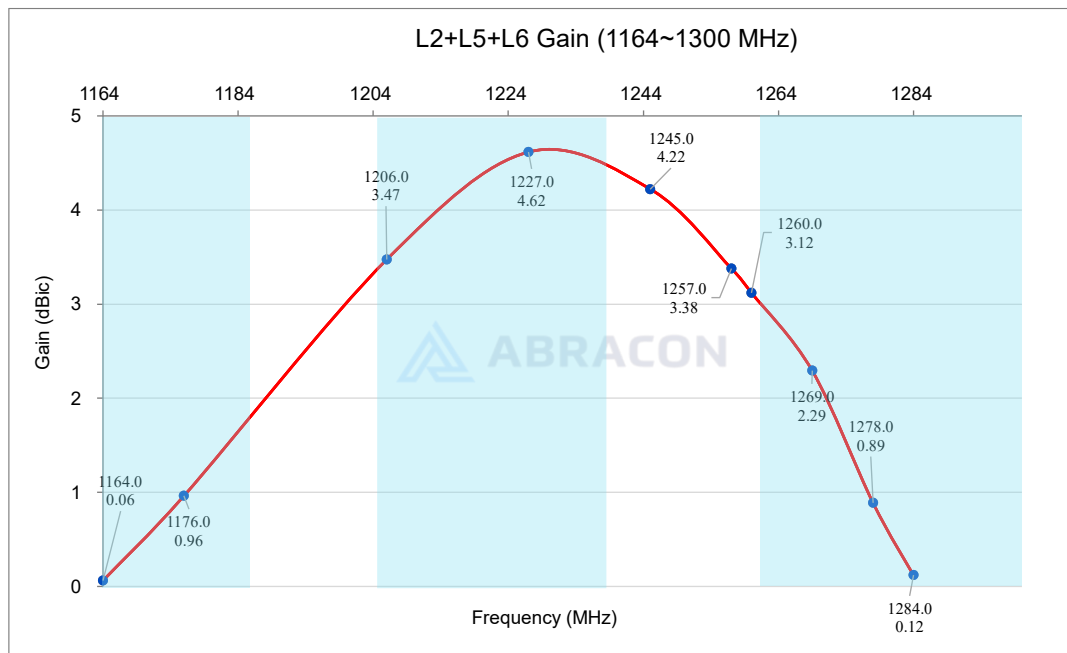
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64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A



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MSL Level = N/A

L1 Band

Frequency (MHz)	Axial ratio (dB)	Gain (dBic)	Efficiency (%)
1560	0.64	3.85	56.62
1575	0.65	4.65	69.12
1584	0.53	4.72	70.61
1605	0.08	4.44	65.19

The test data is based on a 120mm ground plane.

L2+L5+L6 Band

Frequency (MHz)	Axial ratio (dB)	Gain (dBic)	Efficiency (%)
1164	0.23	0.06	24.06
1176	0.47	0.96	31.64
1206	1.10	3.47	59.44
1227	1.29	4.62	69.44
1245	1.27	4.22	59.27
1257	1.25	3.38	48.58
1260	1.25	3.12	45.88
1269	1.23	2.29	35.96
1278	1.21	0.89	30.00
1284	1.19	0.12	26.06

The test data is based on a 120mm ground plane.

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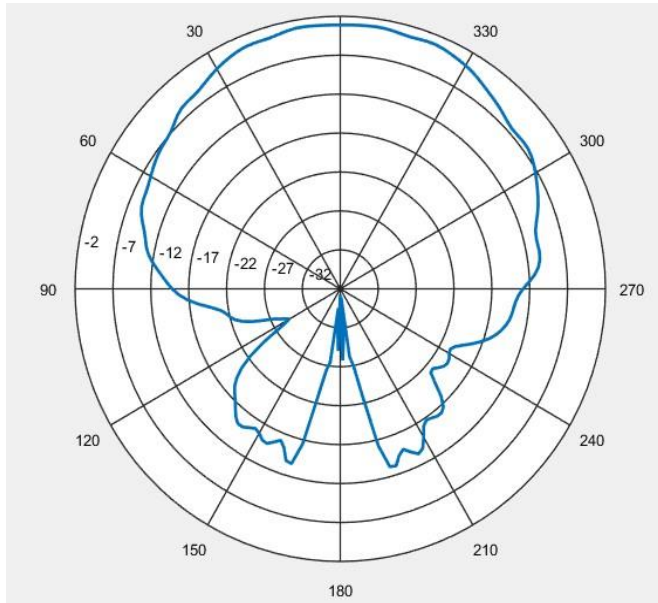


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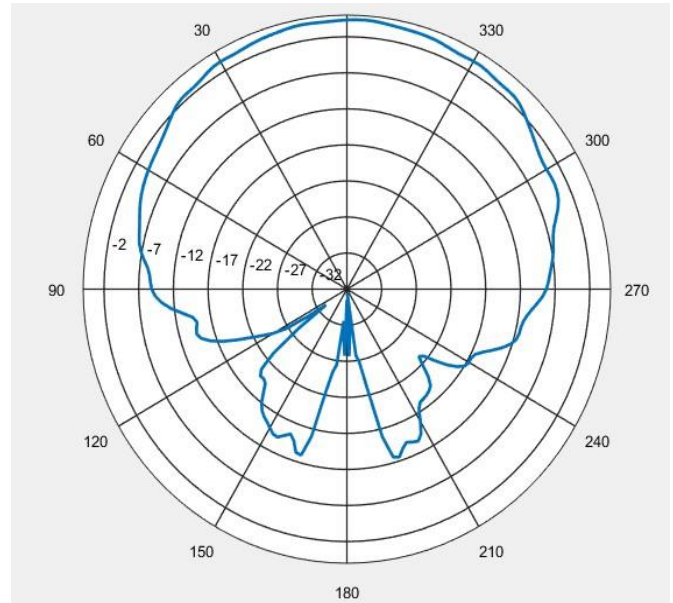


64 x 64 x 13.4 mm
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MSL Level = N/A

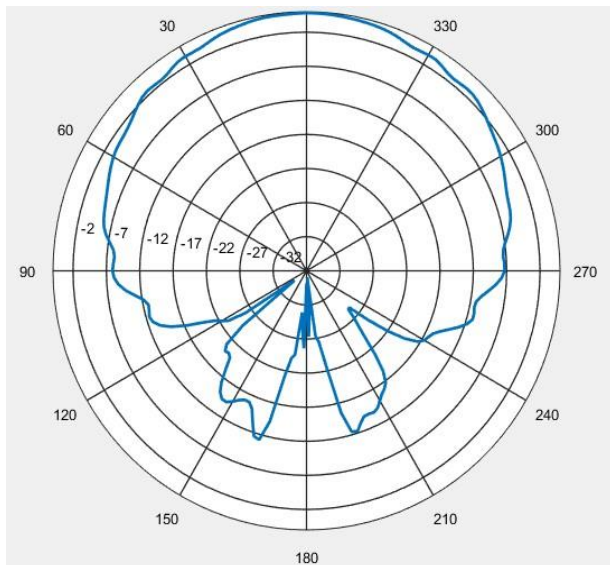
Test Measurement – 2D radiation pattern



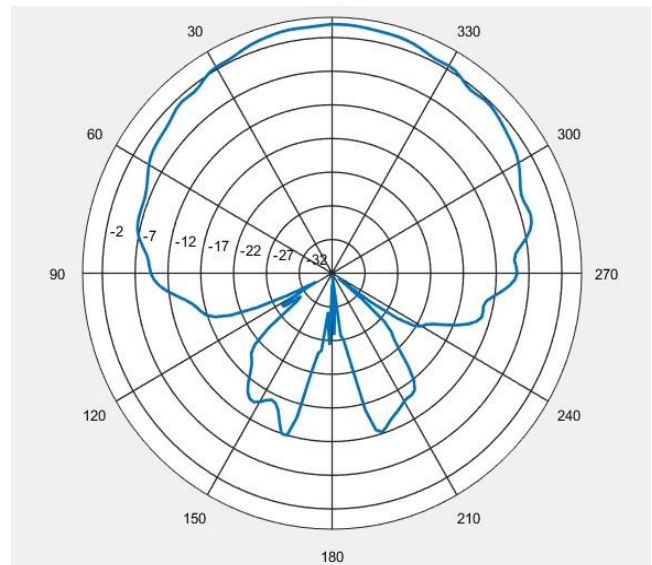
1164MHz



1176MHz



1207MHz



1227MHz



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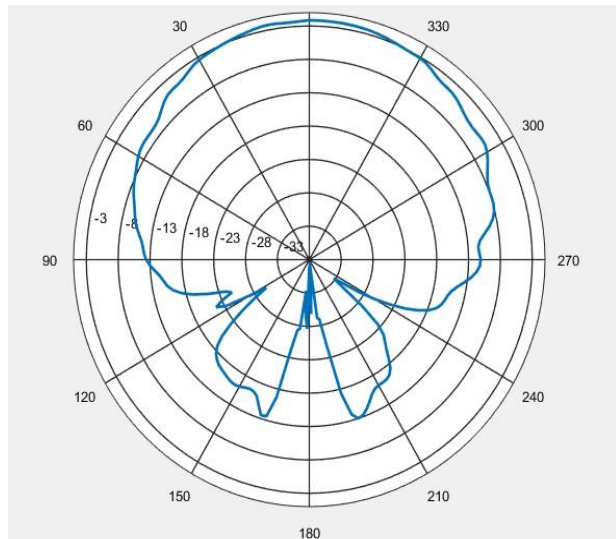
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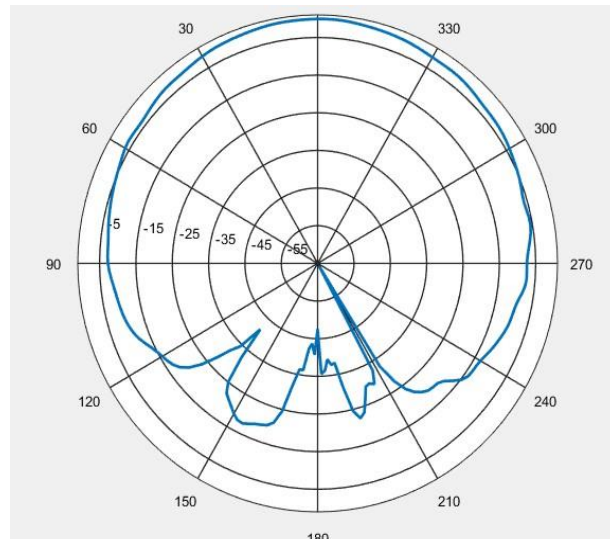
64 x 64 x 13.4 mm

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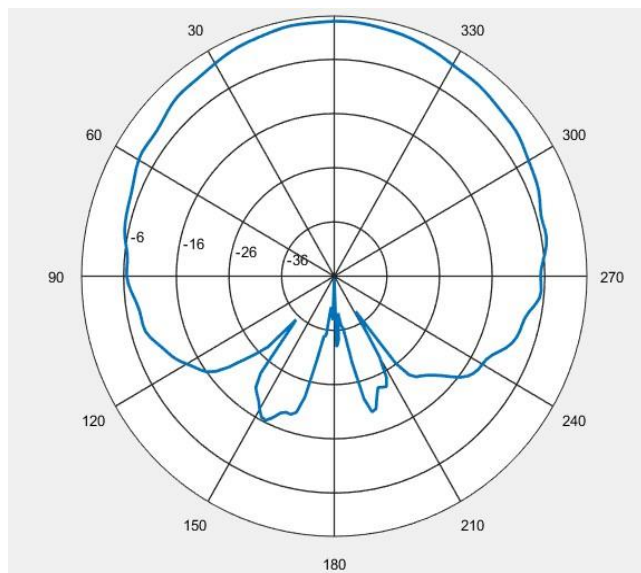
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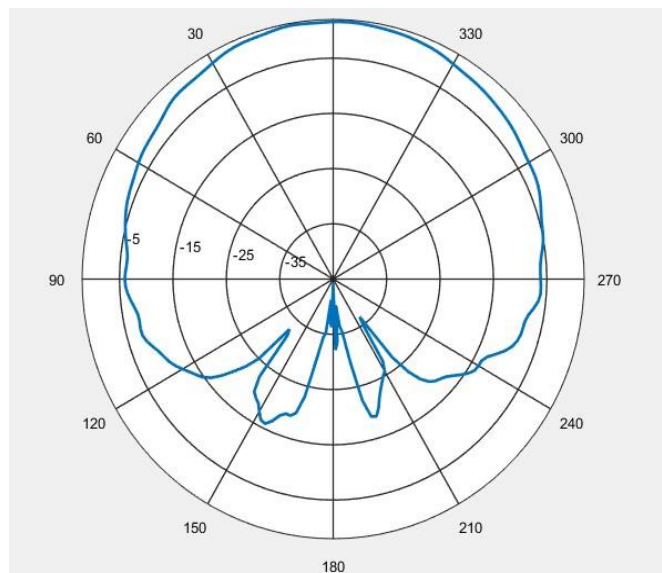
1246MHz



1258MHz



1561MHz



1575MHz



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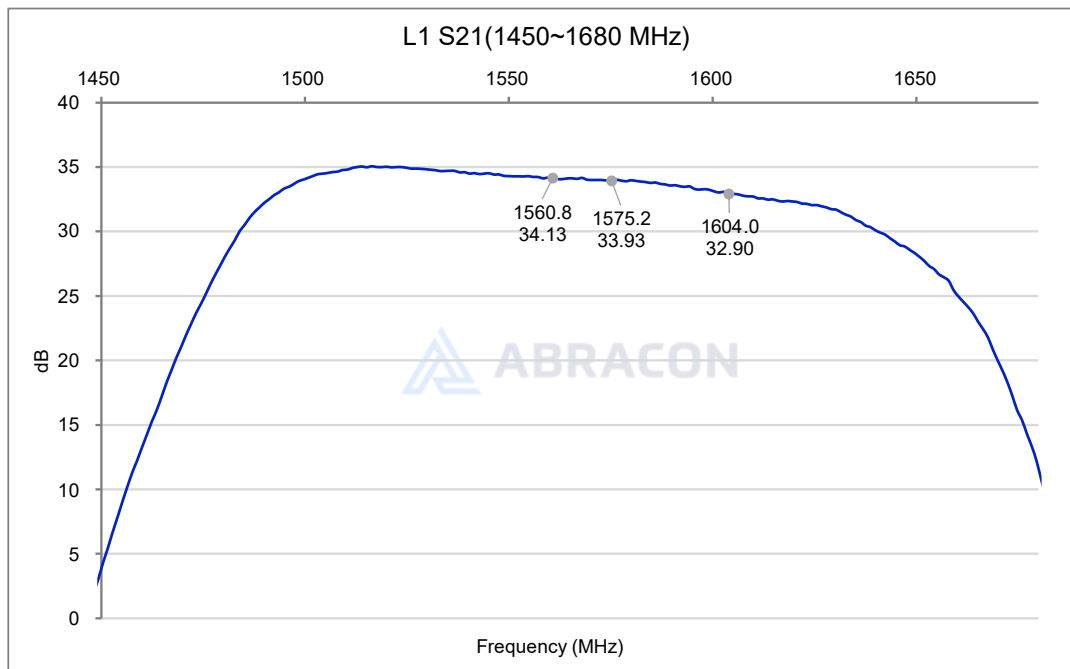


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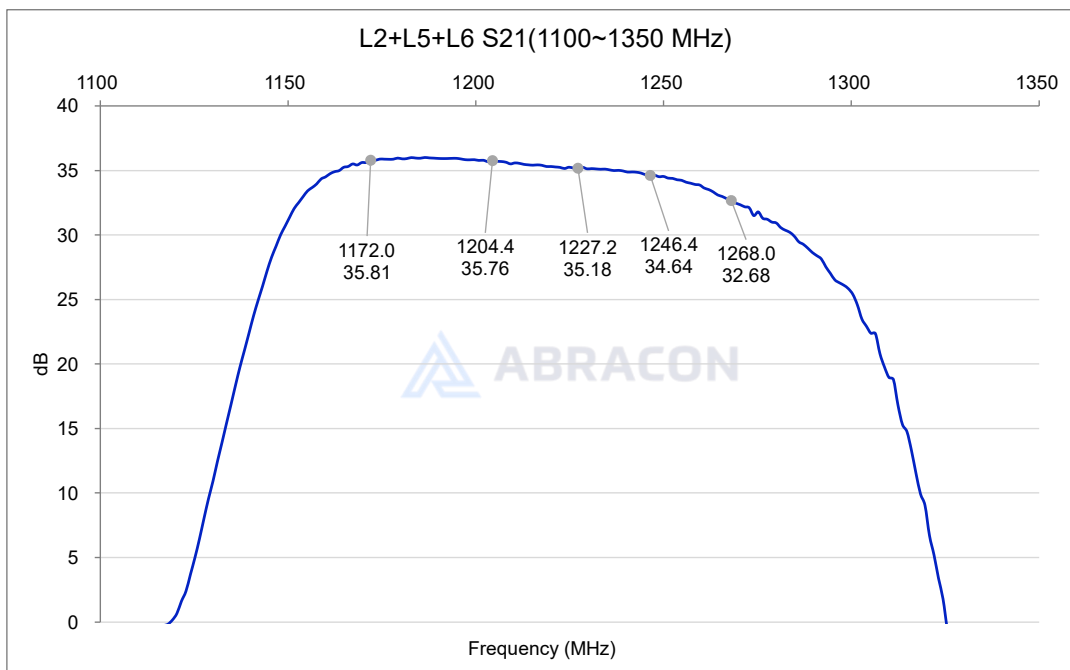


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Test Measurement – LNA Gain and Noise Figure



LNA gain (Band L1)



LNA gain (Band L2+L5+L6)

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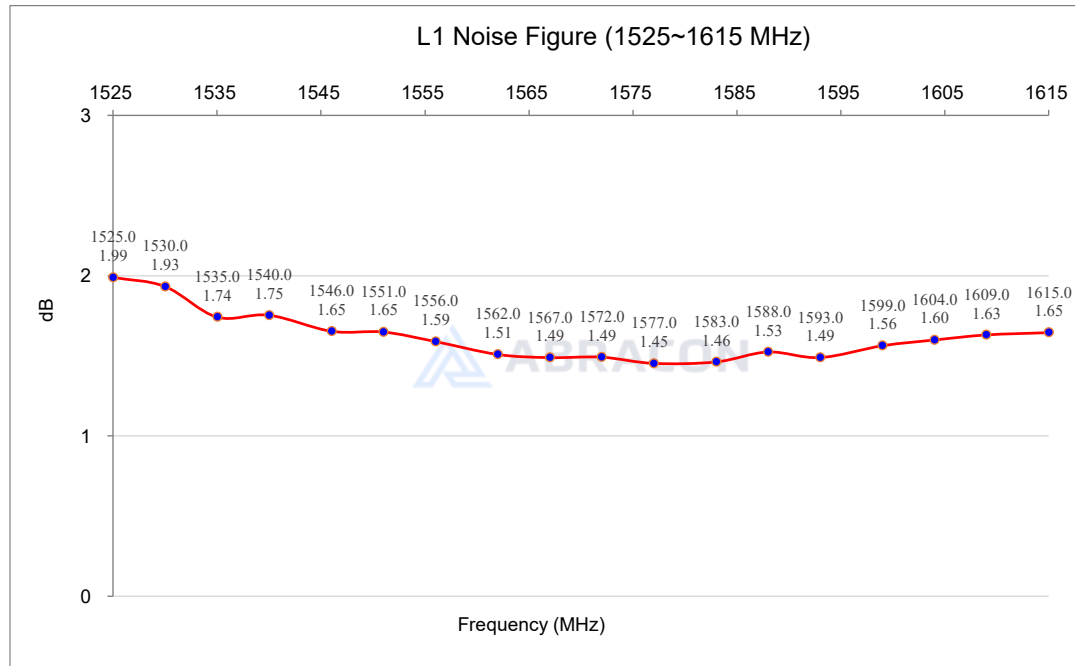


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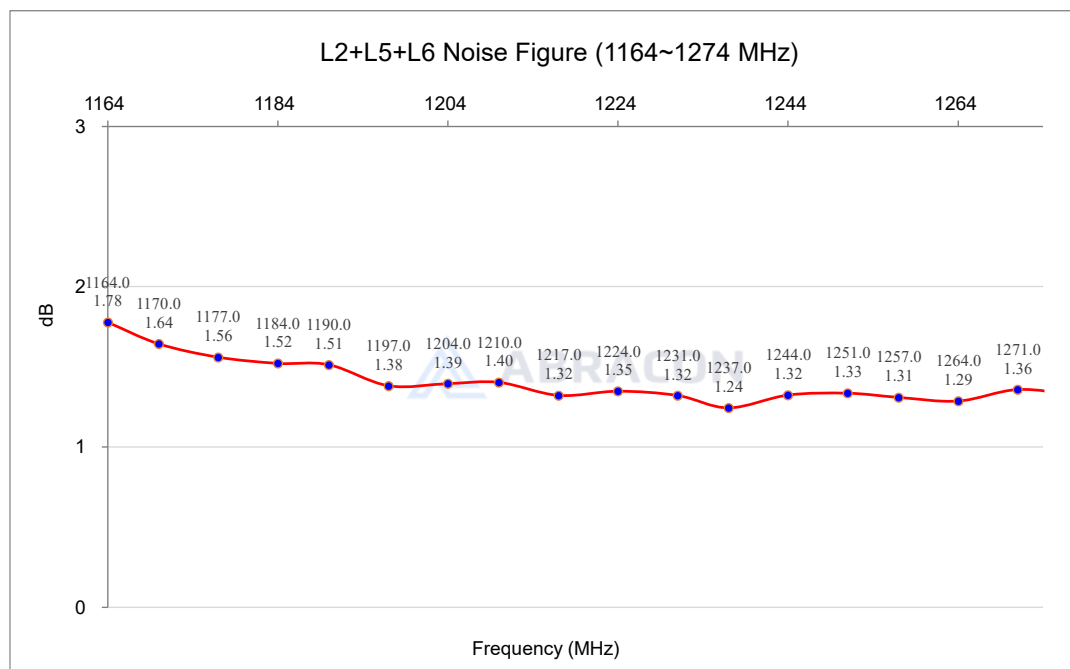
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Noise Figure



L1 Band



L2+L5+L6 Band



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LNA Test Data

Frequency (MHz)	Circuit Gain (dB)	VSWR
1172	34.4	1.6
1204	34.5	1.6
1227	34.1	1.6
1246	33.7	1.6
1268	32.7	1.6
1561	34.2	1.2
1575	34.0	1.1
1604	33.1	1.1

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Packaging Information

40pcs APXG6413GH antennas per tray

Dimensions: 610 x 560 x 100mm

120pcs APXG6413GH antennas per carton (3 trays)

Dimensions: L x W x H: 610 x 560 x 310mm

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