



Antenna Datasheet

Product OC: YE0012AA

Version: 4.4

Date: 2025-12-29

Status: Released

Product Name: 4G Adhesive Mount Low Profile Monopole External Antenna

Key Features:

Frequency Band: 698–2700 MHz

Dimensions: 116.5 mm × 21.7 mm × 5.6 mm

Efficiency: Up to 66.61 %

RoHS Compliant

Overview

YE0012AA is a 4G antenna measuring 116.5 mm × 21.7 mm × 5.6 mm. This ultra-wide-band antenna provides broad coverage from 698–2700 MHz whilst offering backward-compatibility to support 3G and 2G networks as well as LTE Cat-M and narrowband IoT (NB-IoT). The antenna is available with connection via cable lengths from 250 mm, terminated with SMA Male connector. This low profile, Adhesive mount omni-directional antenna, ideal for applications where the antenna is required to be discrete, is easy to install with maximum durability assured thanks to its PC+ABS enclosure. It is compatible with Quectel 's 4G Series modules.

It allows constant and reliable transmission and reception due to its omni-directional gain across all frequency bands. The YE0012AA is designed to offers high efficiency in all working bands. It is a perfect antenna product for customers that desire highest performance. This high efficiency, high-gain omni-directional antenna is ideally suited for smart metering, remote monitoring, vehicle tracking and telematics, and many other IoT devices It is suitable for outdoor and indoor applications due to its PC enclosure.

Typical applications include:

- Asset Tracking
- Smart Metering
- Fleet Management
- IoT Sensors and Modules

Quectel provides comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs. We have regional R & D centers to offer quick response to meet your requirements. Please contact our sales & FAEs if you have any requests.

Contents

Overview.....	2
Contents	3
1 Specification.....	4
1.1. Electrical.....	4
1.2. Mechanical & Environmental	5
2 Drawing	6
3 Detailed Performance	7
3.1. S-Parameter Test	7
3.1.1. VSWR	7
3.1.2. Return Loss.....	8
3.2. Radiation Performance Test.....	9
3.2.1. Efficiency.....	9
3.2.2. Average Gain	11
3.2.3. Peak Gain	13
3.2.4. 3D & 2D Radiation Pattern	15
3.2.4.1. Test Condition: Free Space	15
4 Packaging	19
Contact Us.....	21
Legal Notices	22
Revision History	24

1 Specification

Test Condition: Free Space

1.1. Electrical

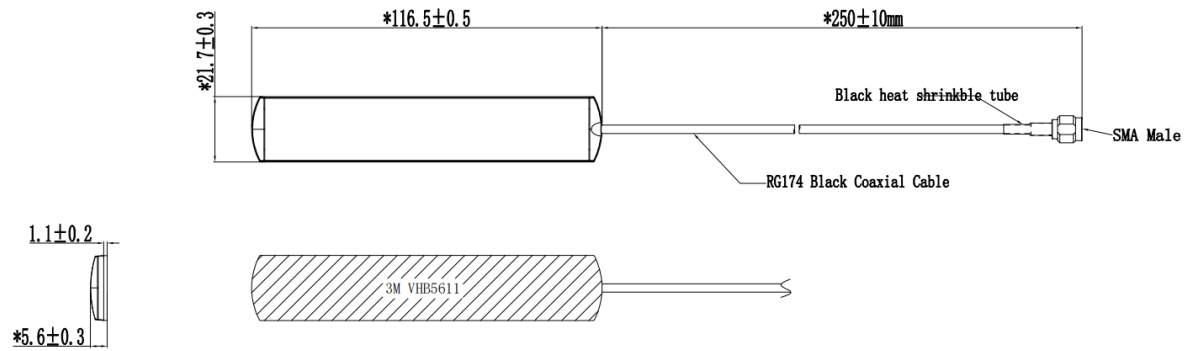
Electrical	
Frequency Range	698–2700 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

Electrical – Detail												
Band	Band	B71	B12 /B13 /B28	B5 /B8 /B26	n74 /n75 /n76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /n77	n79	Wi-Fi 5G
SPEC	Freq. (MHz)	600– 700	700– 810	820– 960	1420– 1520	1700– 2170	2300– 2400	2400– 2500	2500– 2690	3300– 4200	4400– 5000	5150– 5850
Max. VSWR		-	2.2	2.1	-	2.0	2.5	2.5	2.4	-	-	-
Max. Return Loss (dB)		-	-8.6	-9.2	-	-9.8	-7.4	-7.2	-7.7	-	-	-
AVG Eff. (%)		-	45.5	55.8	-	59.1	45.8	50.8	55.6	-	-	-
AVG AVG Gain (dB)		-	-3.4	-2.5	-	-2.3	-3.4	-2.9	-2.6	-	-	-
Max. Peak Gain (dBi)		-	0.6	2.0	-	4.4	2.1	1.9	1.3	-	-	-
VSWR	≤ 2.5											
Return Loss	≤ -7.2 dB											
Peak Gain	≤ 4.4 dBi											

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	116.5 mm × 21.7 mm × 5.6 mm
Material & Color	ABS + PC & Black
Cable Type & Color & Length	RG 174 & Black & 250 mm
Connector Type	SMA Male
Mounting Type	Adhesive
Weight	Typ. 16 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS Compliant	Yes

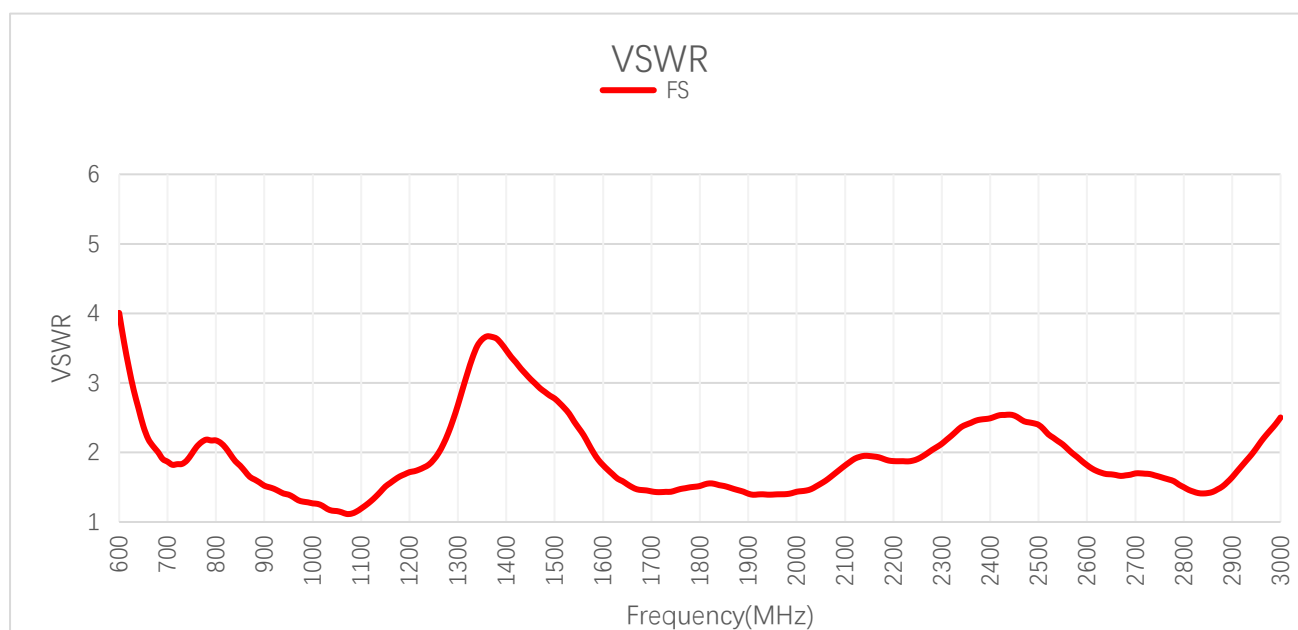
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

3.1.1. VSWR



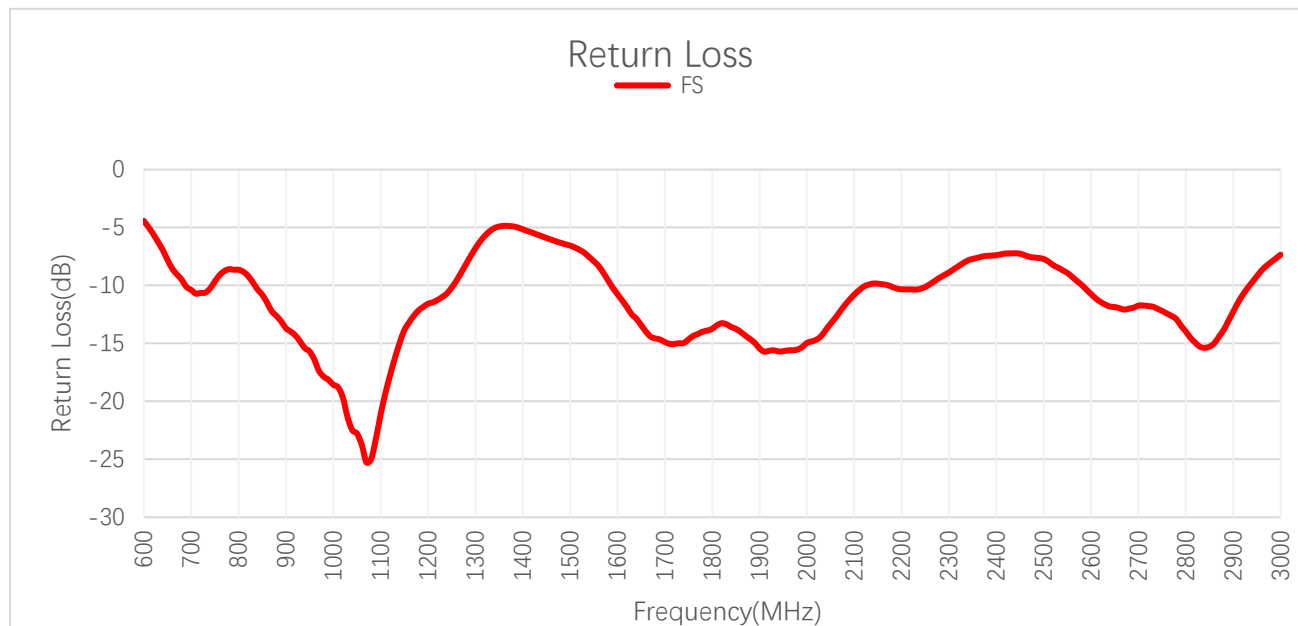
VSWR

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
VSWR	-	-	1.8	2.0	1.5	1.4	-	1.4	1.4	1.5
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
VSWR	1.4	2.0	2.4	2.5	1.8	1.7	-	-	-	-

VSWR – GNSS

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
VSWR	-	-	-	-	-	-	2.1	-

3.1.2. Return Loss



Return Loss (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Return Loss (dB)	-	-	-10.7	-9.7	-13.7	-16.4	-	-15.0	-15.0	-14.6

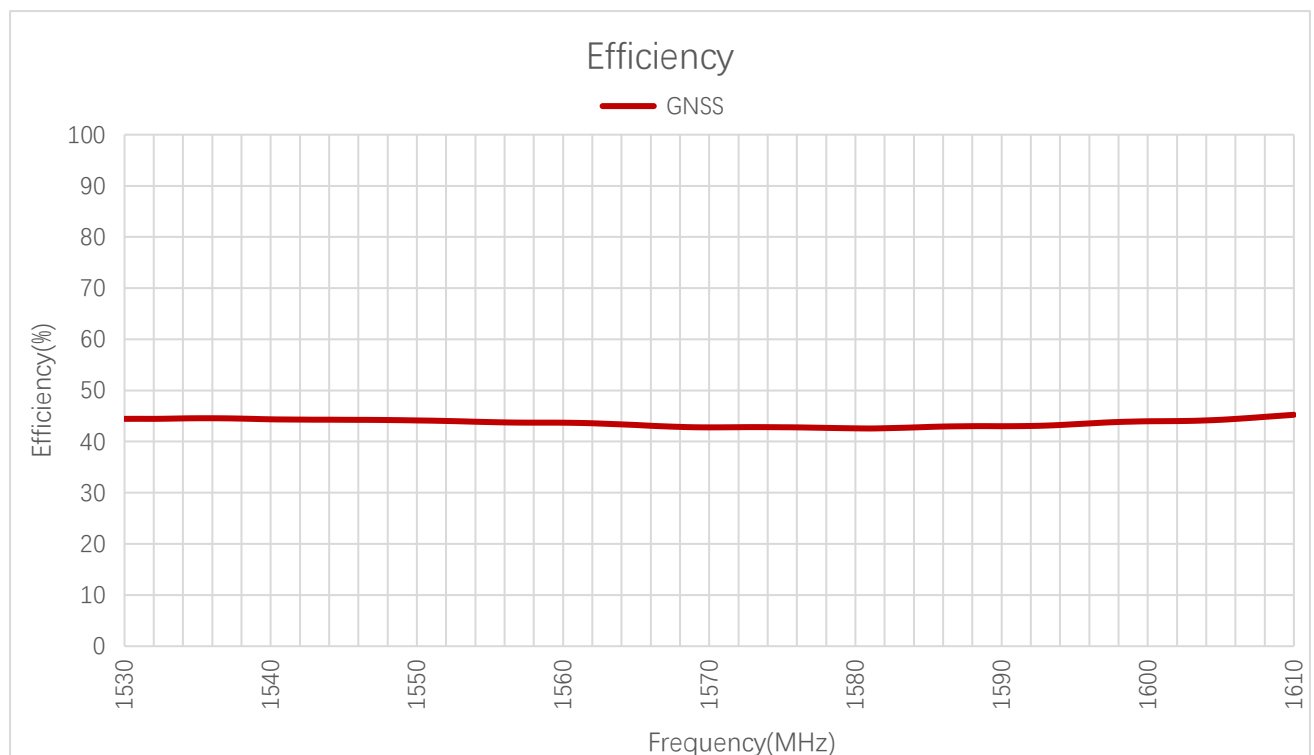
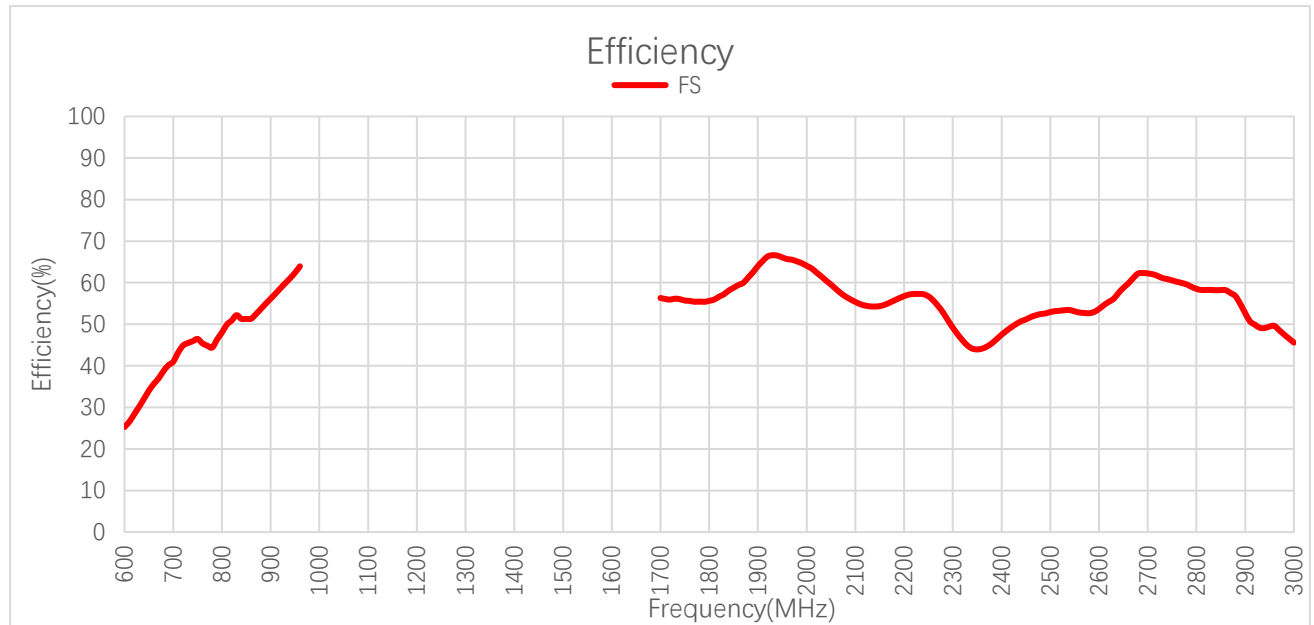
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Return Loss (dB)	-15.7	-9.8	-7.7	-7.3	-10.7	-11.9	-	-	-	-

Return Loss (dB) – GNSS

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Return Loss (dB)	-	-	-	-	-	-	-9.0	-

3.2. Radiation Performance Test

3.2.1. Efficiency



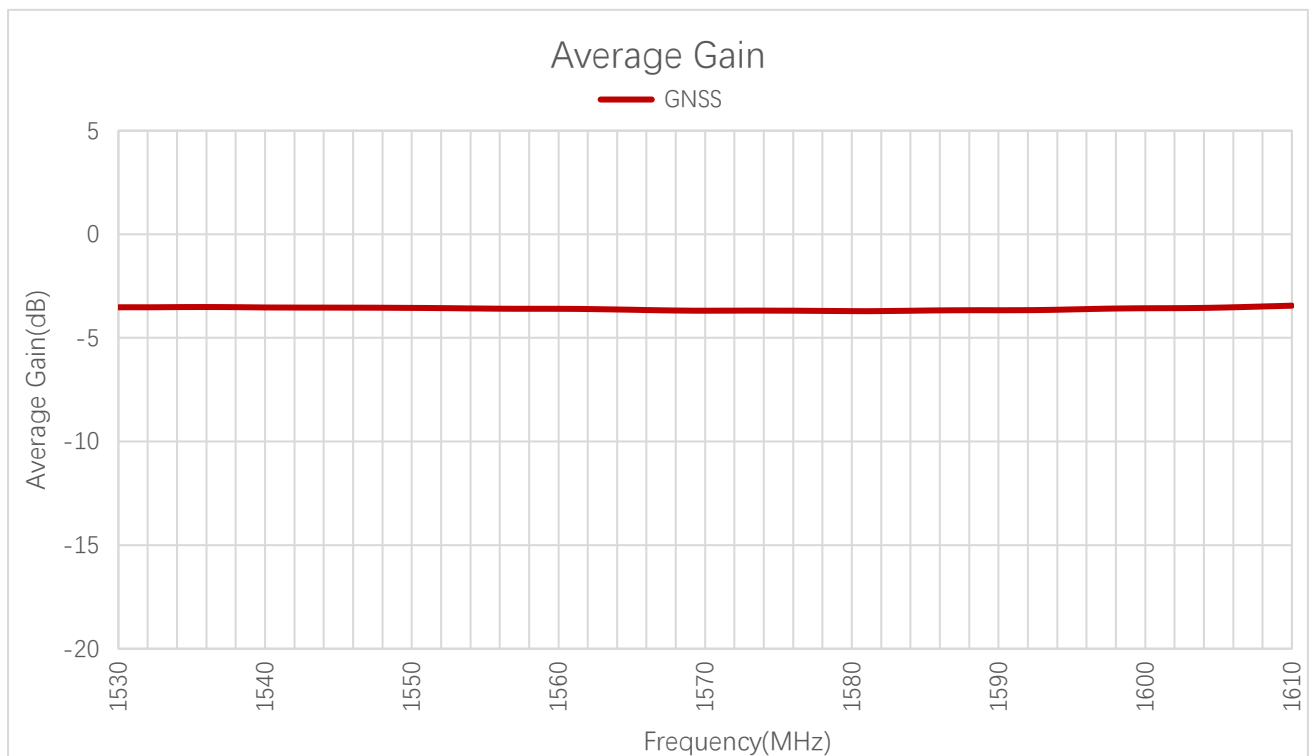
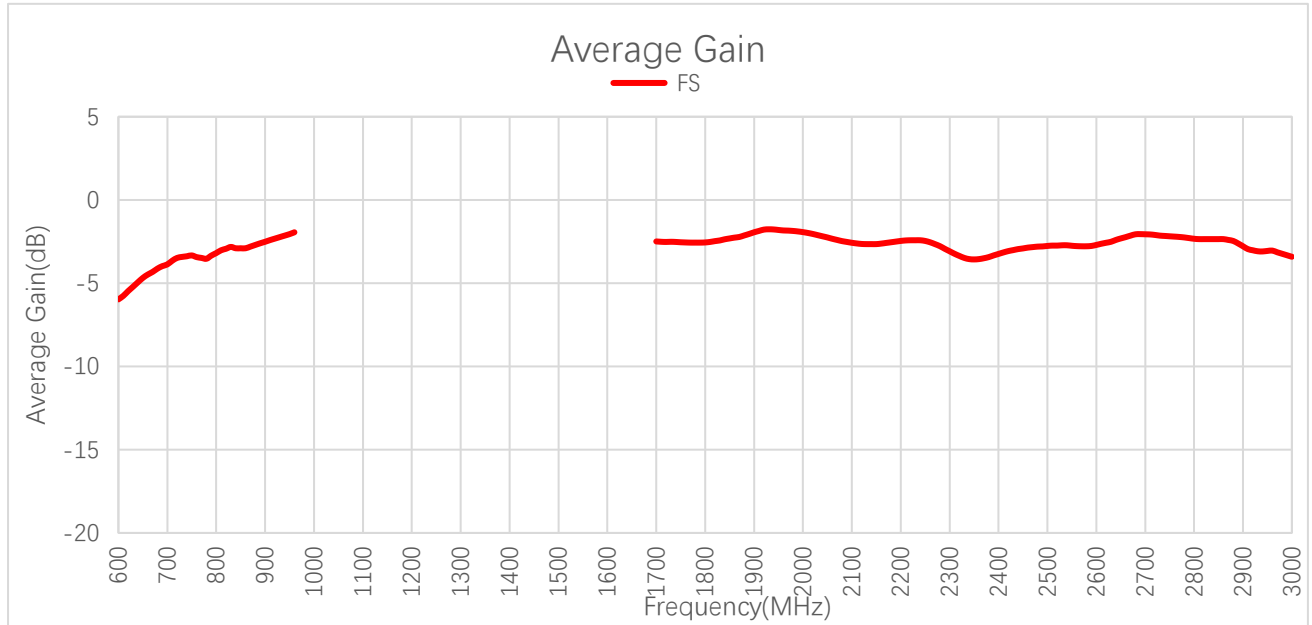
Efficiency (%)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Efficiency (%)	-	-	43.2	52.2	56.2	63.9	-	56.1	56.0	61.3
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Efficiency (%)	66.1	54.3	44.0	51.2	53.7	62.3	-	-	-	-

Efficiency (%) – GNSS

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Efficiency (%)	-	-	-	-	-	-	42.8	-

3.2.2. Average Gain



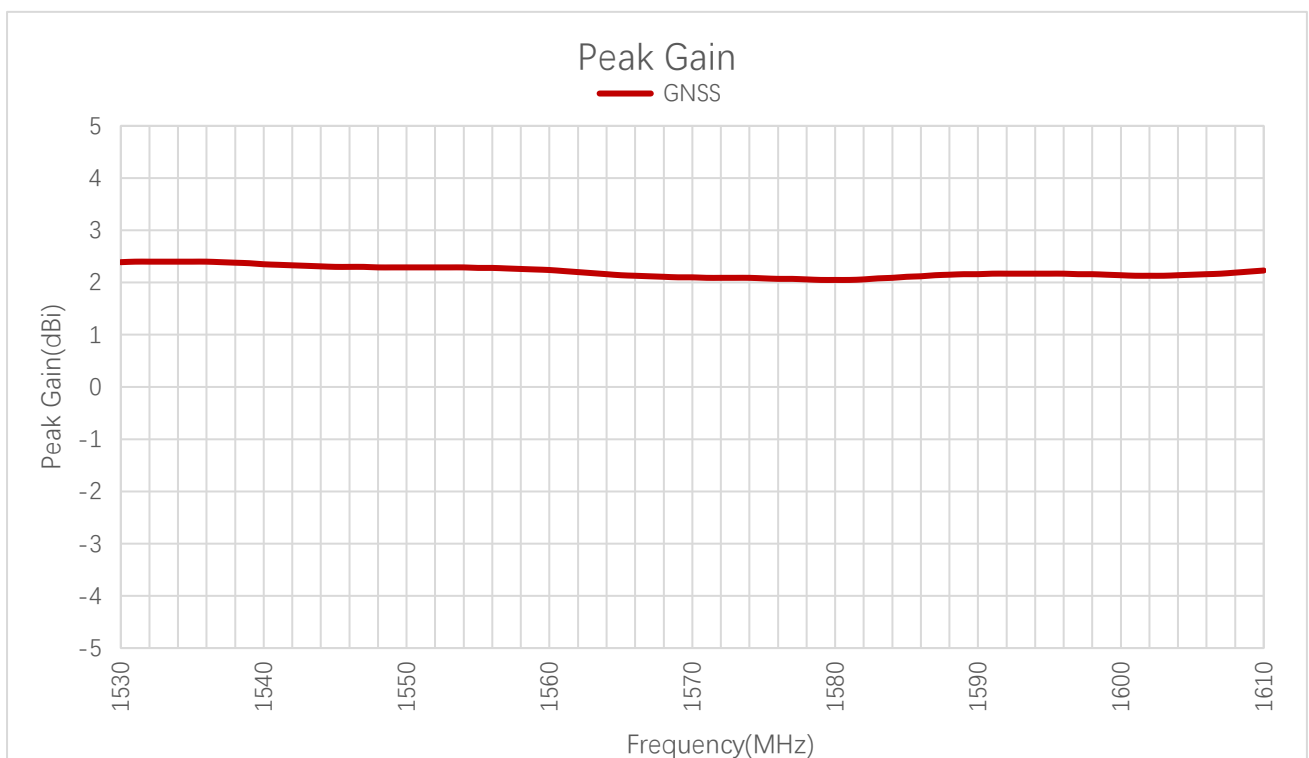
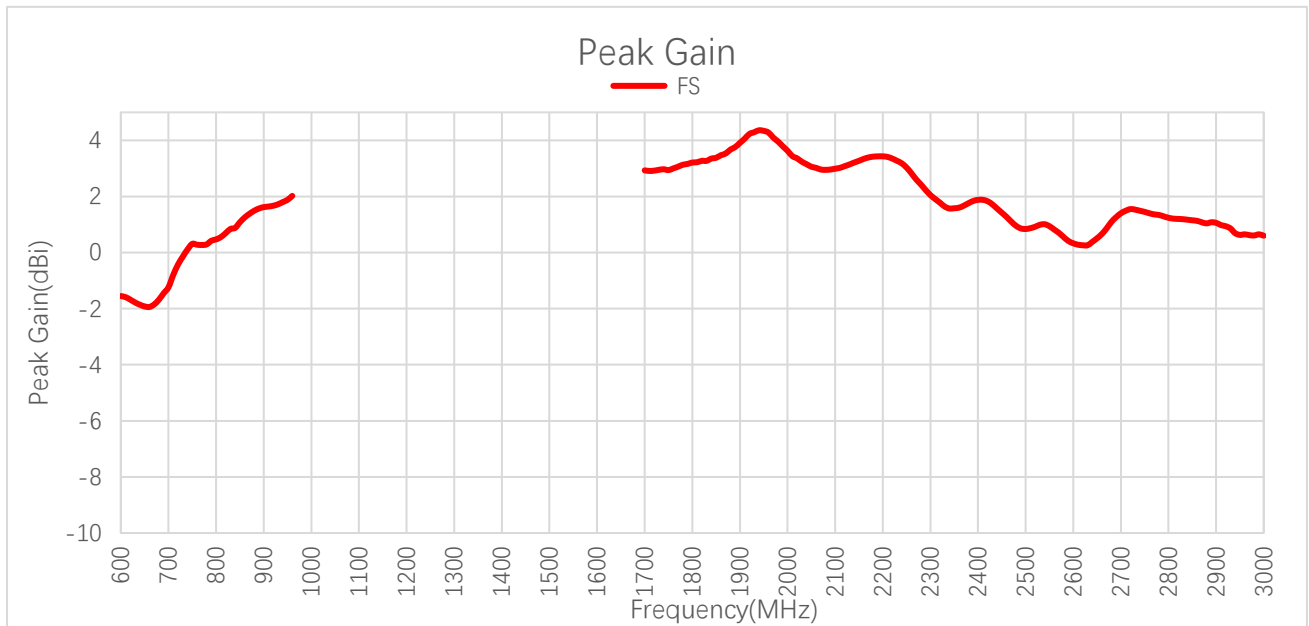
Average Gain (dB)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Average Gain (dB)	-	-	-3.7	-2.8	-2.5	-1.9	-	-2.5	-2.5	-2.1
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Average Gain (dB)	-1.8	-2.7	-3.6	-2.9	-2.7	-2.1	-	-	-	-

Average Gain (dB) – GNSS

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Average Gain (dB)	-	-	-	-	-	-	-3.7	-

3.2.3. Peak Gain



Peak Gain (dBi)

Frequency (MHz)	600	630	710	830	900	960	1440	1710	1740	1880
Peak Gain (dBi)	-	-	-0.8	0.8	1.6	2.0	-	2.9	3.0	3.7
Frequency (MHz)	1950	2140	2350	2450	2600	2690	4700	5000	5500	6000
Peak Gain (dBi)	4.3	3.2	1.6	1.4	0.3	1.3	-	-	-	-

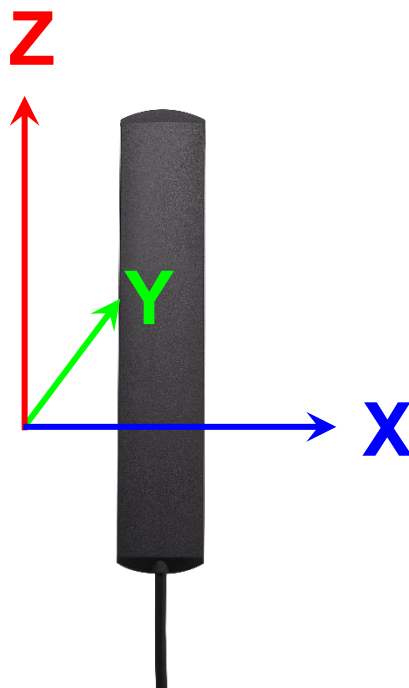
Peak Gain (dBi) – GNSS

Frequency (MHz)	1176	1207	1227	1248	1268	1561	1575	1602
Peak Gain (dBi)	-	-	-	-	-	-	2.1	-

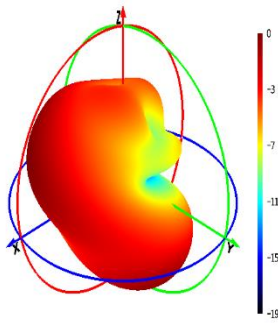
3.2.4. 3D & 2D Radiation Pattern

3.2.4.1. Test Condition: Free Space

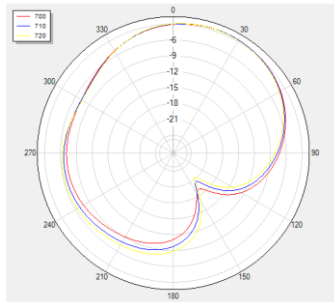
- Test Chamber: GL-S-1



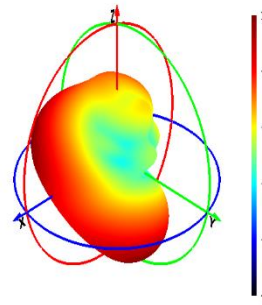
710 MHz



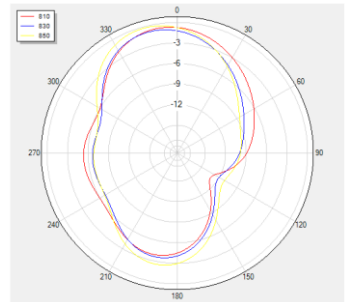
Theta=90



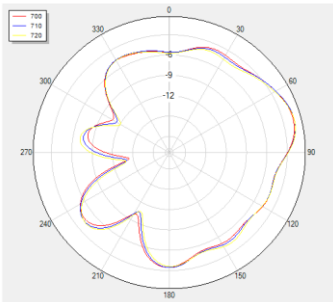
830 MHz



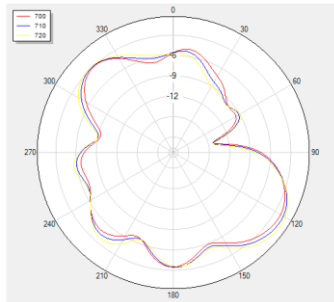
Theta=90



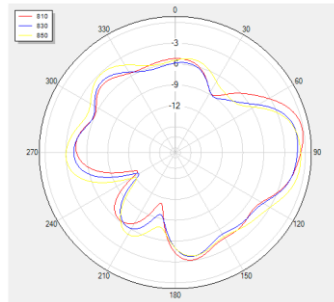
Phi=0



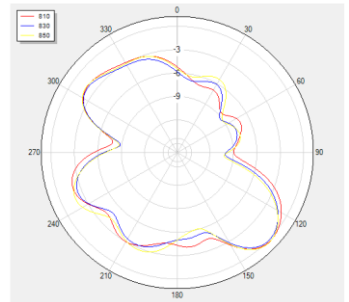
Phi=90



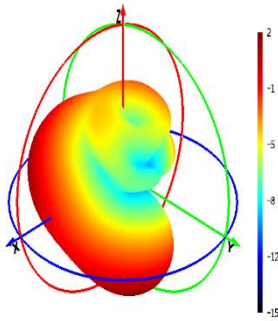
Phi=0



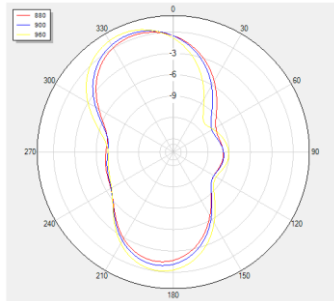
Phi=90



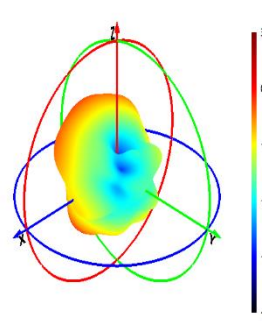
900 MHz



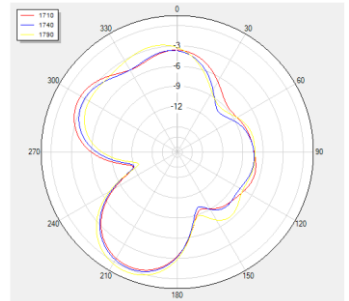
Theta=90



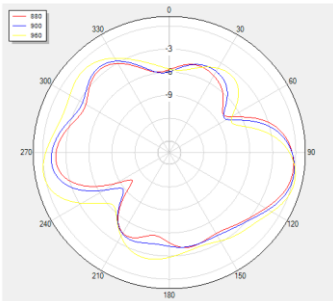
1740 MHz



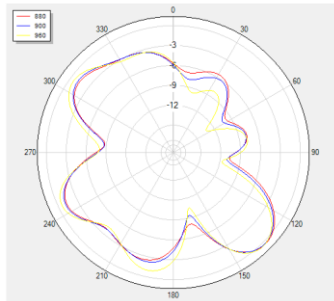
Theta=90



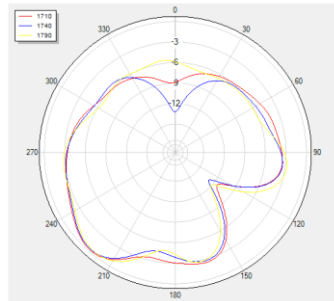
Phi=0



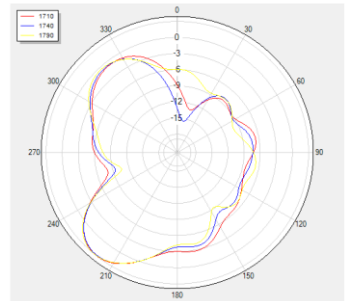
Phi=90

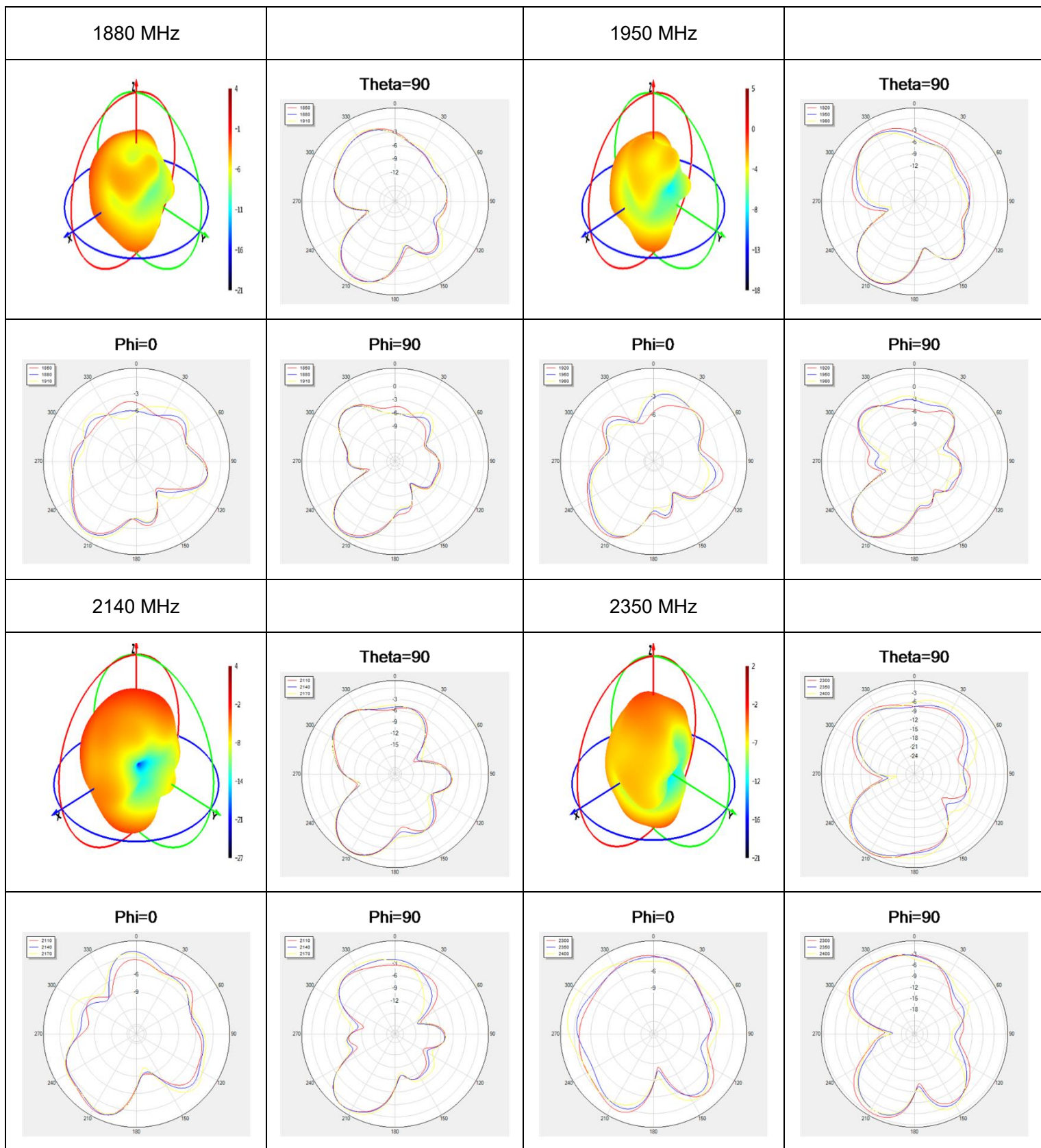


Phi=0

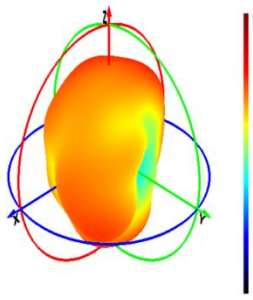


Phi=90

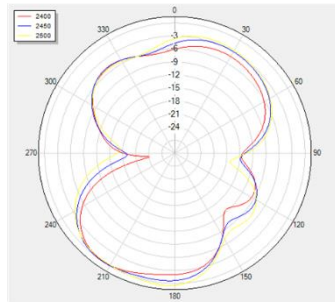




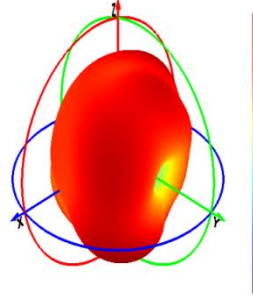
2450 MHz



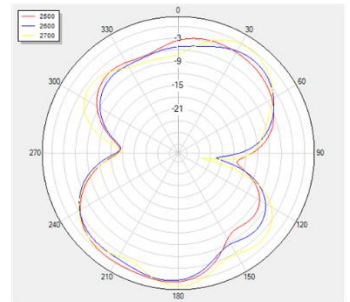
Theta=90



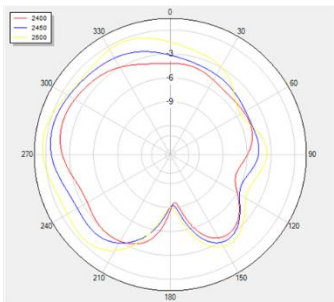
2600 MHz



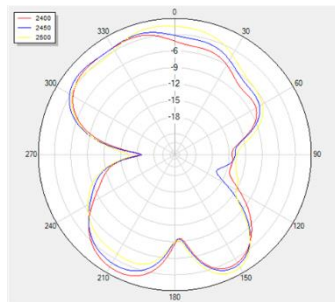
Theta=90



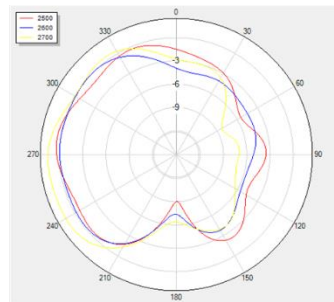
Phi=0



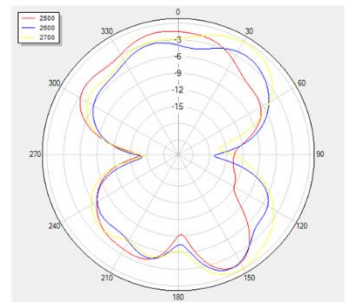
Phi=90



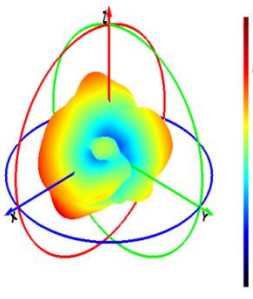
Phi=0



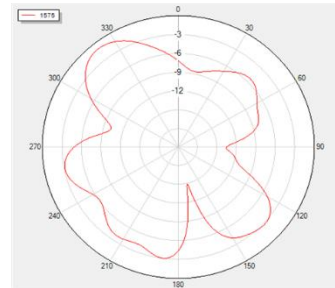
Phi=90



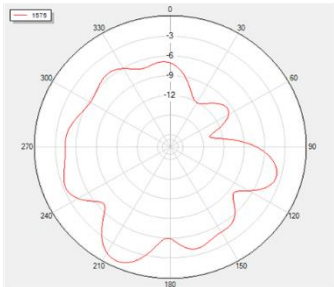
1575 MHz



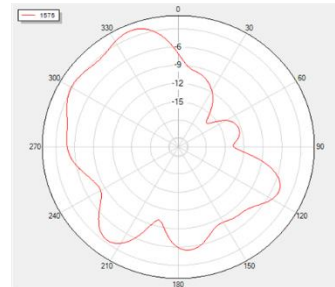
Theta=90



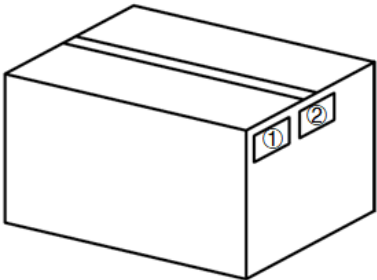
Phi=0

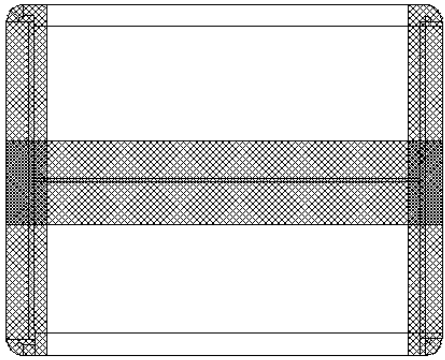


Phi=90



4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		2 antenna products in a PE bag. (2 Antennas / PE Bag)
2		30 antenna products in a big PE bag. (30 Antennas / Big PE Bag)
3		Put cardboard on top of the product. (12 PE Bags / Carton Box) (360 Antennas / Carton Box) <u>Carton Size:</u> <u>L × W × H = 405 × 293 × 185 mm</u>
4		Position for Attaching Labels ① Carton Label ② Quality Label

5		Sealing Cartons H-shaped sealing cartons
Note	The initial packaging method described above is for reference only, and the final actual packaging method shall be subject to the actual shipping packaging.	

Contact Us

At Quectel, our aim is to provide timely and comprehensive services to our customers. If you require any assistance, please contact our headquarters:

Quectel Wireless Solutions Co., Ltd.

No. 8 Waipojing Road, Sijing Town, Songjiang District, Shanghai 201601, China

Tel: +86 21 5108 6236

Email: info@quectel.com

Or our local offices. For more information, please visit:

<https://www.quectel.com/contact/>.

For technical support, or to report documentation errors, please visit:

<https://www.quectel.com/tech-support/>.

Or email us at: support@quectel.com.

Legal Notices

We provide this document to support your product design. You are required to design your products based on the specifications and parameters set forth herein. You agree that you are responsible for using independent analysis and evaluation in designing intended products, and we provide reference designs for illustrative purposes only. Before using any hardware, software or service guided by this document, please read this notice carefully. Even though we employ commercially reasonable efforts to provide the best possible experience, you hereby acknowledge and agree that this document and related services hereunder are provided to you on an “as available” basis. You acknowledge and agree that we may add to, amend, or restate this document at any time at our sole discretion without any prior notice to you, and such additions, amendments, or restatements shall be binding upon you.

Use and Disclosure Restrictions

License Agreements

The recipient of any hardware, software, materials, or documentation provided by us shall keep such content confidential, unless expressly authorized by us. The recipient shall not disclose, access, or use any part of the received content for any purpose other than the execution and implementation of the intended project.

Copyright

Our and third-party products hereunder may contain copyrighted materials, including but not limited to protected content, hardware, software, and documentation owned by us or applicable third parties. Unless prior written consent is obtained, you shall not access, use, or disclose any documents or information provided by us, nor shall you copy, reproduce, republish, display, translate, distribute, merge, modify, or create derivative works from any such copyrighted materials. We and the applicable third party retain exclusive rights to all copyrighted materials. No license to any patents, copyrights, trademarks, or service marks shall be granted or transferred. For the avoidance of doubt, no form of purchase shall be construed as granting any license beyond a normal, non-exclusive, royalty-free license to use the product. We reserve the right to pursue legal action against any violation of confidentiality obligations, unauthorized use, or any other unlawful or malicious use of the aforementioned documents and information.

Trademarks

Unless otherwise expressly provided, nothing in this document shall be construed as conferring any rights to use any trademark, trade name, name, abbreviation, or counterfeit thereof owned by us or any third party in advertising, publicity, or any other contexts.

Third-Party Rights

You understand that this document may refer to hardware, software, and/or documentation owned by one or more third parties (“third-party materials”). Use of such third-party materials is subject to all applicable restrictions and obligations set forth herein.

We make no warranty or representation, either express or implied, regarding the third-party materials, including but not limited to any implied or statutory, warranties of merchantability or fitness for a particular purpose, quiet enjoyment, system integration, information accuracy, and non-infringement of any third-party intellectual property rights with regard to the licensed technology or use thereof. Nothing herein constitutes a representation or warranty by us to either develop, enhance, modify, distribute, market, sell, offer for sale, or otherwise maintain production of any our products or any other hardware, software, device, tool, information, or product. We moreover disclaim any and all warranties arising from the course of dealing, course of performance, or usage of trade.

Privacy Policy

To enable product functionality, certain device data may be uploaded to our or third-party servers, including those operated by carriers, chipset suppliers, or servers designated by you. We strictly comply with applicable laws and regulations and will retain, use, disclose, or otherwise process relevant data solely for the purpose of enabling product functionality, or as permitted by applicable laws. Before interacting with any third party regarding data exchange, please be informed of and understand their privacy and data security policies.

Disclaimer

- a) We shall not be liable for any damages resulting from failure to comply with applicable operational or design specifications.
- b) We shall bear no liability for any inaccuracies or omissions in this document, nor for any damages arising from the use of the information contained herein.
- c) While we make every effort to ensure the integrity, accuracy, and timeliness of the features and functions under development, errors or omissions may nevertheless occur. Unless otherwise provided in a valid written agreement, we make no warranties of any kind, express, implied, or statutory, and disclaim all liability for any loss or damage arising from the use of any features or functions under development, to the maximum extent permitted by law, regardless of whether such loss or damage is foreseeable.
- d) We assume no legal responsibility for the accessibility, safety, accuracy, availability, legality, or completeness of any information, content, advertising, commercial offers, products, services, or materials on third-party websites or third-party resources.

Copyright © Quectel Wireless Solutions Co., Ltd. 2025. All rights reserved.

Revision History

Version	Date	Author	Note
-	2020-06-30	Kenny YIN	Creation of the document
1.0	2020-06-30	Kenny YIN	First official release
2.0	2020-07-03	Kenny YIN	Updated the specifications (Chapter 3).
2.1	2020-12-16	Kenny YIN	Updated the antenna image (Chapter 2).
2.2	2021-01-27	Kenny YIN	Added IP rating description and installation method (Chapter 3).
3.0	2021-03-29	Kenny YIN/ Aria CHU	Updated all test data in the datasheet and some other data.
3.1	2021-07-05	Kenny YIN	1. Updated product specifications (Chapter 3) 2. Added test condition (Chapter 4).
3.2	2021-07-25	Kenny YIN Aria CHU	1. Updated working temperature (Chapter 3). 2. Added detailed passive electrical specifications (Chapter 3).
3.3	2021-12-01	Kenny YIN/ Aria CHU	Updated the product description (Chapter 1).
4.0	2023-05-11	Joyful HUANG/ Lucky FENG/ David LIU/ Aria CHU	Updated all data and datasheet template.
4.1	2023-10-19	Lucky FENG	1. Updated the overview. 2. Updated the mechanical and environmental data (Chapter 1.2). 3. Updated the drawing (Chapter 2).
4.2	2024-02-07	Rhone WEI/ Rainey LIAO	Added GPS L1 frequency performance.
4.3	2025-03-06	Allow XU	Updated the packaging (Chapter 4).
4.4	2025-12-29	Blake Xiang	1. Updated the Overview. 2. Deleted the water resistance rating (Chapter 1.2).



www.quectel.com