

Antenna

YB0014AA Datasheet

Antenna Services

Version: 1.1

Date: 2021-01-18

Status: Released



Our aim is to provide customers with timely and comprehensive service. For any assistance, please contact our company headquarters:

Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

Tel: +86 21 5108 6236

Email: info@quectel.com

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

<http://www.quectel.com/support/sales.htm>.

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

<http://www.quectel.com/support/technical.htm>

Or email to support@quectel.com.

General Notes

Quectel offers the information as a service to its customers. The information provided is based upon customers' requirements. Quectel makes every effort to ensure the quality of the information it makes available. Quectel does not make any warranty as to the information contained herein, and does not accept any liability for any injury, loss or damage of any kind incurred by use of or reliance upon the information. All information supplied herein is subject to change without prior notice.

Disclaimer

While Quectel has made efforts to ensure that the functions and features under development are free from errors, it is possible that these functions and features could contain errors, inaccuracies and omissions. Unless otherwise provided by valid agreement, Quectel makes no warranties of any kind, implied or express, with respect to the use of features and functions under development. To the maximum extent permitted by law, Quectel excludes all liability for any loss or damage suffered in connection with the use of the functions and features under development, regardless of whether such loss or damage may have been foreseeable.

Duty of Confidentiality

The Receiving Party shall keep confidential all documentation and information provided by Quectel, except when the specific permission has been granted by Quectel. The Receiving Party shall not access or use Quectel's documentation and information for any purpose except as expressly provided herein. Furthermore, the Receiving Party shall not disclose any of the Quectel's documentation and information to any third party without the prior written consent by Quectel. For any noncompliance to the above requirements, unauthorized use, or other illegal or malicious use of the documentation and information, Quectel will reserve the right to take legal action.

Copyright

The information contained here is proprietary technical information of Quectel. Transmitting, reproducing, disseminating and editing this document as well as using the content without permission are forbidden. Offenders will be held liable for payment of damages. All rights are reserved in the event of a patent grant or registration of a utility model or design.

Copyright © Quectel Wireless Solutions Co., Ltd. 2021. All rights reserved.

About the Document

Revision History

Version	Date	Author	Note
-	2020-09-11	Kenny YIN	Creation of the document
1.0	2020-09-11	Kenny YIN	Initial
1.1	2021-01-18	Kenny YIN	Updated the antenna image in Chapter 2.

Contents

About the Document	3
Contents	4
1 Product Description	5
2 Product Features	5
3 Product Specifications	6
4 Overall Performance	7
4.1. Test Environment	7
4.2. VSWR	8
4.3. Efficiency	10
4.4. Gain	12
4.5. Radiation Patterns	15
5 Product Size	19

1 Product Description

The antenna is designed for superior performance, and can be widely used for wireless applications.

We provide comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs.

2 Product Features

- Cellular LTE
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	LTE: 698–960 MHz; 1700–2700 MHz GNSS: 1561–1571 MHz; 1602–1606 MHz		
Input Impedence	50 Ω		
VSWR	≤ 4.0		
Gain	Main Antenna	698–960 MHz	< 3.0 dBi
		1700–2700 MHz	< 3.0 dBi
	DIV Antenna	698–960 MHz	< 2.5 dBi
		1700–2700 MHz	< 4.0 dBi
	GNSS	1561–1571 MHz 1602–1606 MHz	28 ±3 dBi
Polarization Type	4G Main/DIV	Linear	
	GNSS	RHCP	

Mechanical Specifications

Antenna Size	81 mm $\times$ 27.5 mm, RG174 L= 3000 mm
Casing	ABS + PC
Radiator	Cuprum
Connector Type	SMA Male (with center pin)
Working Temperature	-20 $^{\circ}$ C to +85 $^{\circ}$ C
Radome Color	Black
Waterproof Grade	IP66

4 Overall Performance

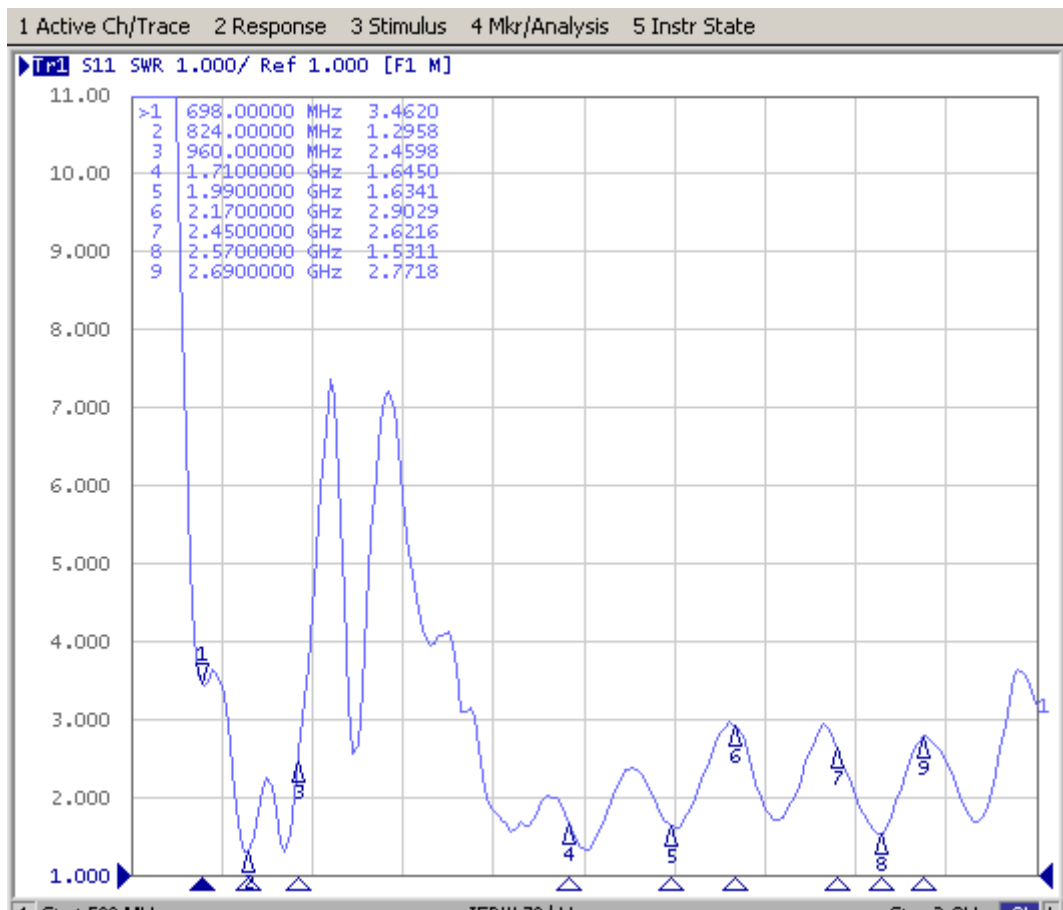
4.1. Test Environment

- KEYSIGHT VNA Network Analyzer E5063A, 100 kHz – 6.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 400 MHz – 6.0 GHz



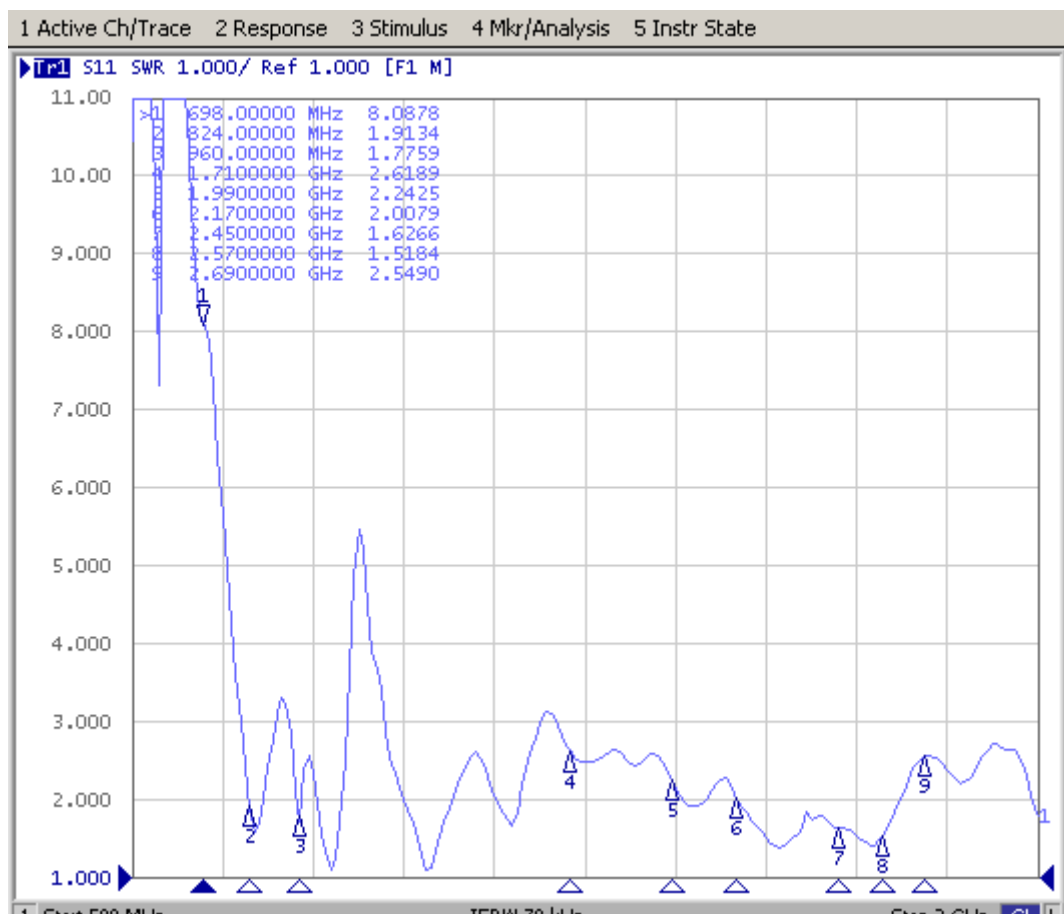
4.2. VSWR

4G



Frequency (MHz)	698	824	960	1710	1990	2170	2450	2570	2690
VSWR	3.46	1.30	2.46	1.65	1.63	2.90	2.62	1.53	2.77

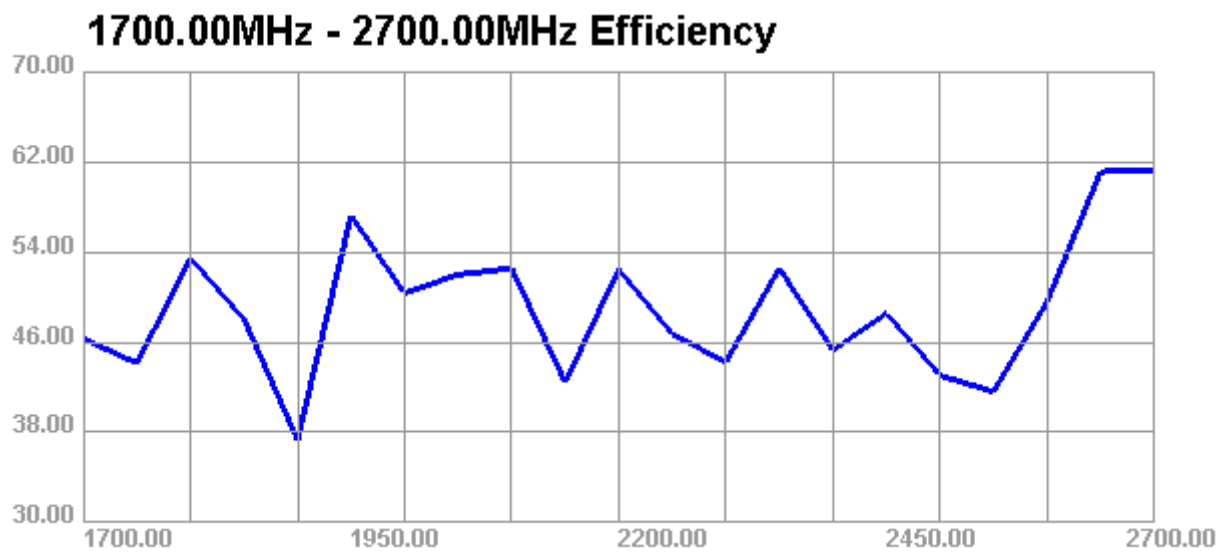
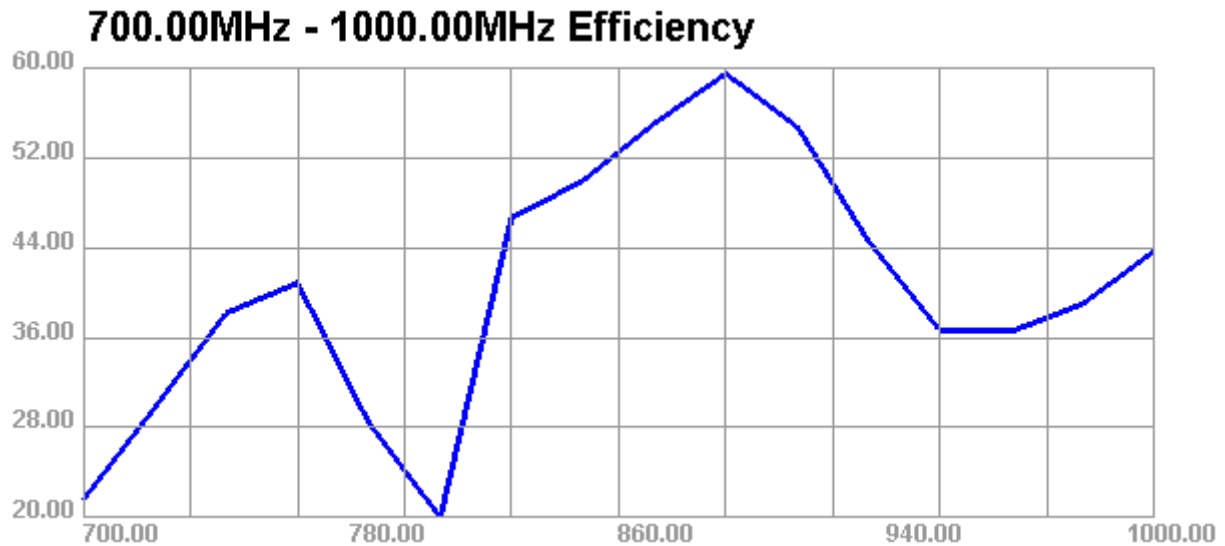
4G DIV



Frequency (MHz)	698	824	960	1710	1990	2170	2450	2570	2690
VSWR	8.09	1.91	1.78	2.62	2.24	2.01	1.63	1.52	2.55

4.3. Efficiency

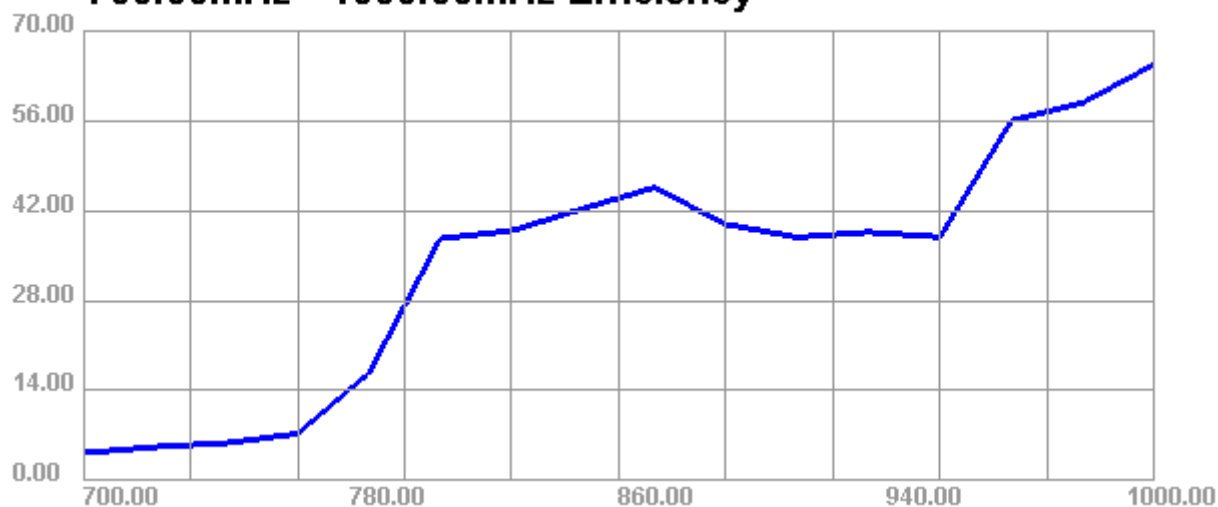
4G



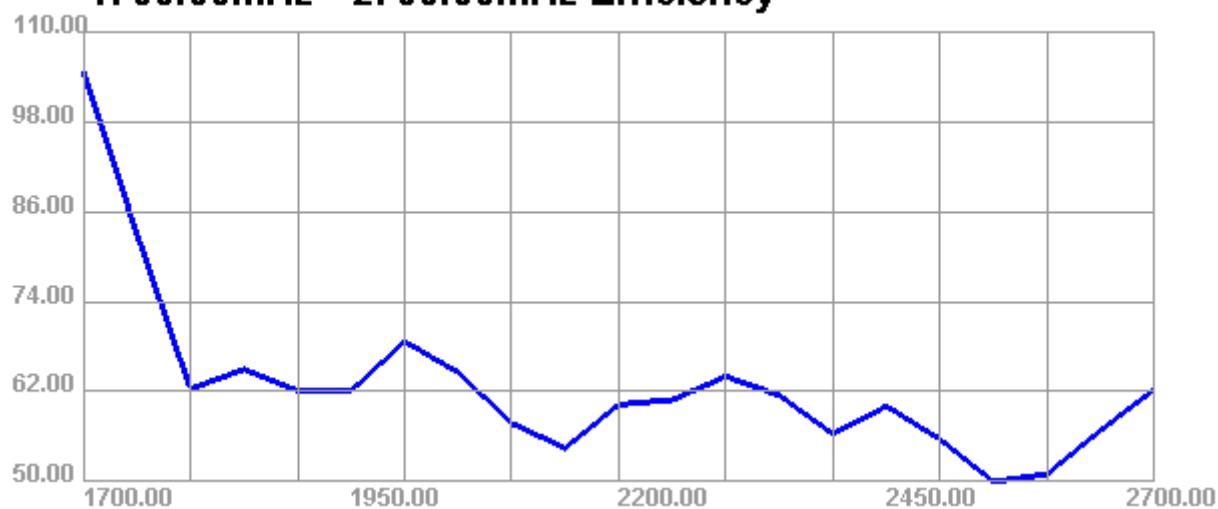
Frequency (MHz)	760	860	960	1700	1950	2200	2450	2650
Efficiency (%)	40.86	55.04	36.56	46.33	57.24	52.47	48.58	61.14

4G DIV

700.00MHz - 1000.00MHz Efficiency



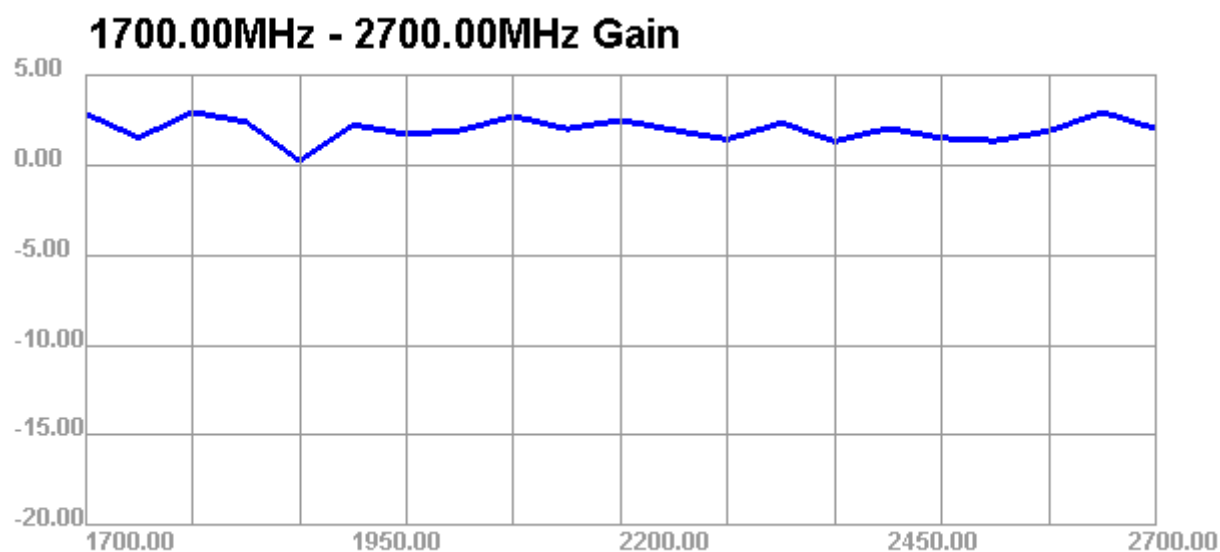
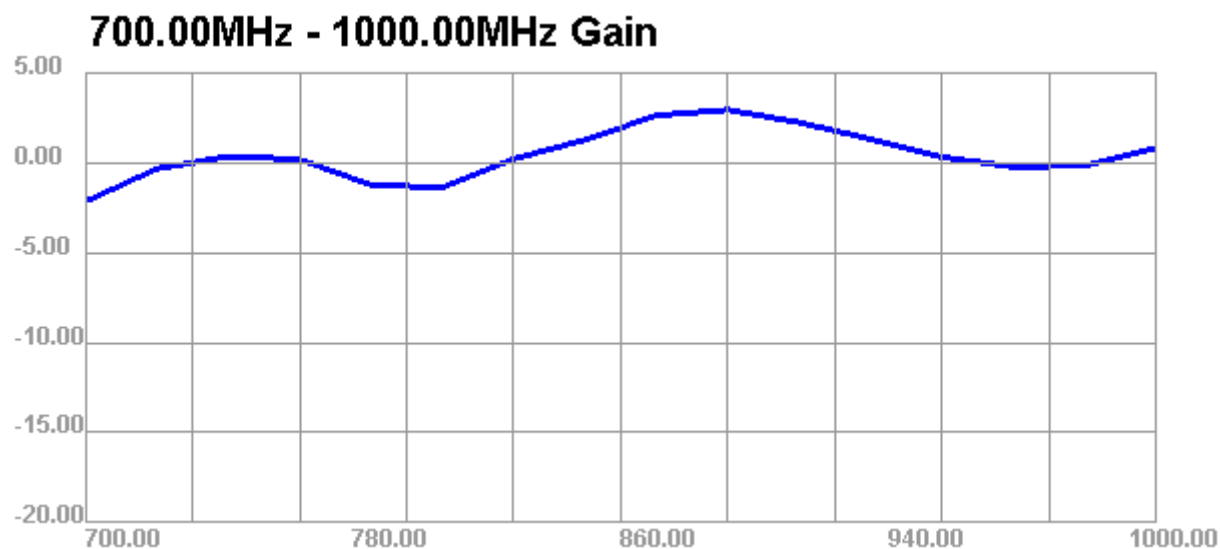
1700.00MHz - 2700.00MHz Efficiency



Frequency (MHz)	760	860	960	1700	1950	2200	2450	2650
Efficiency (%)	7.3	45.62	55.99	104.74	62.14	60.29	60.08	56.85

4.4. Gain

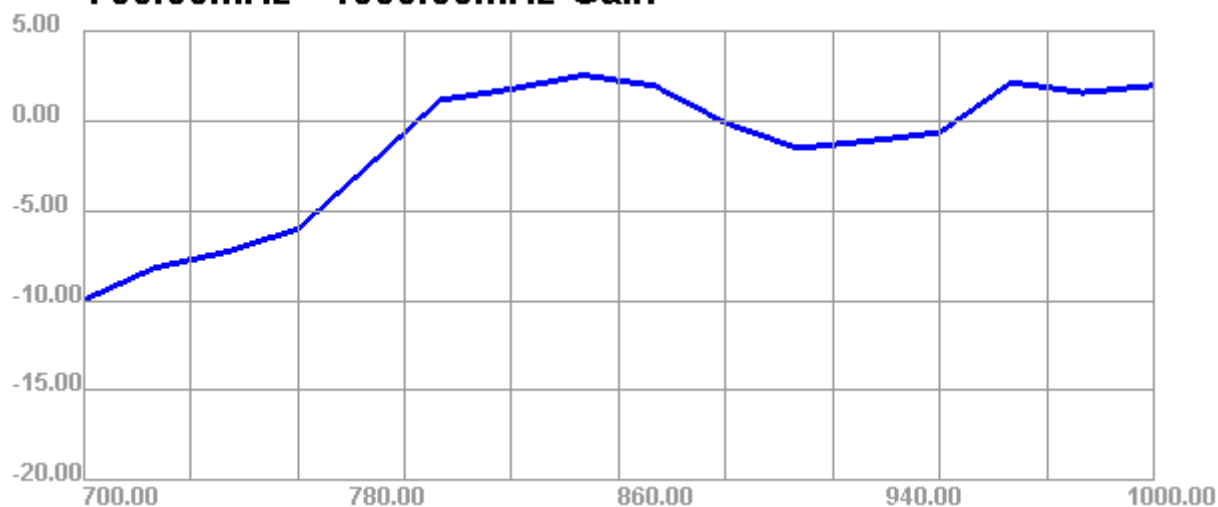
4G



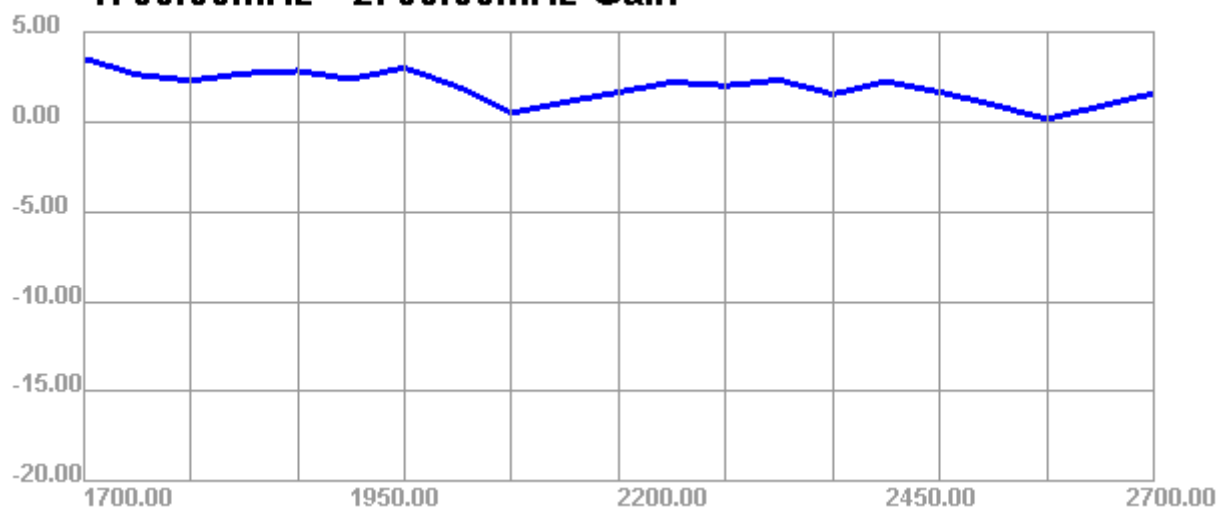
Frequency (MHz)	760	860	960	1700	1950	2200	2450	2650
Gain (dBi)	0.19	2.63	-0.23	2.85	2.22	2.48	2.04	2.93

4G DIV

700.00MHz - 1000.00MHz Gain

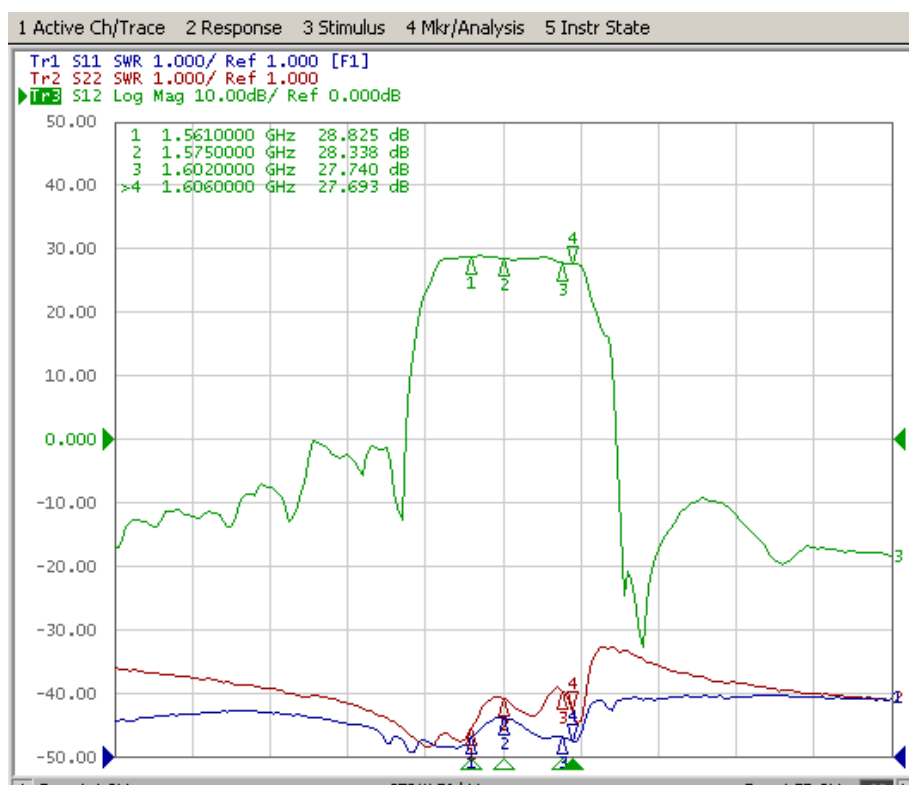


1700.00MHz - 2700.00MHz Gain



Frequency (MHz)	760	860	960	1700	1950	2200	2450	2650
Gain (dBi)	-6.02	1.95	2.12	3.52	2.37	1.63	2.24	0.87

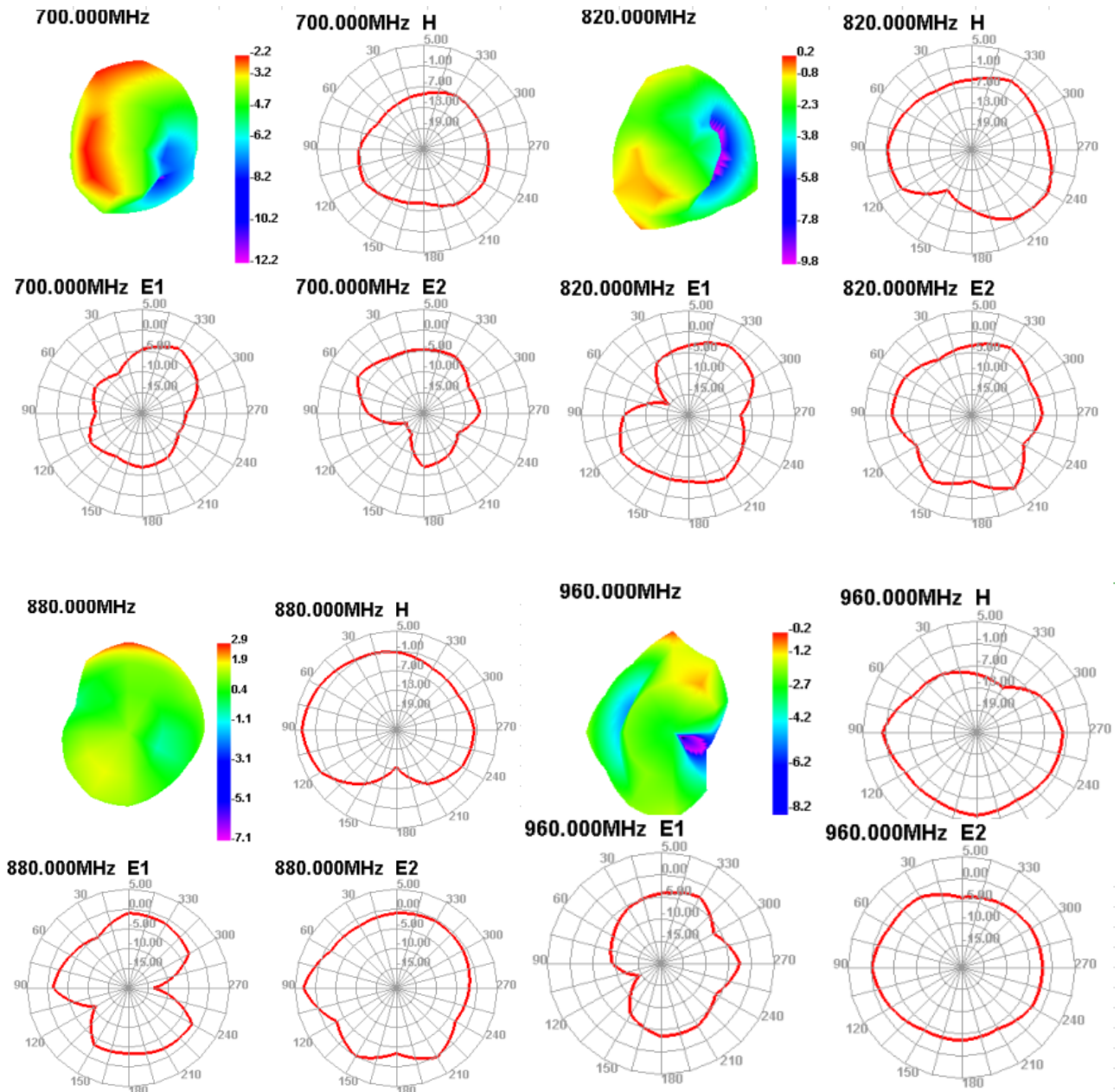
GNSS



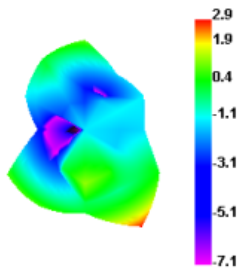
Frequency (MHz)	1561	1575	1602	1606
Gain (dBi)	28.82	28.34	27.74	27.69

4.5. Radiation Patterns

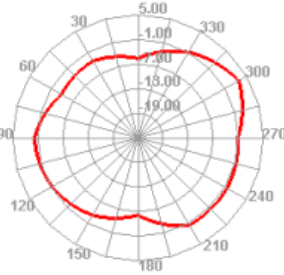
4G



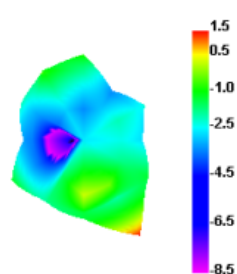
1700.000MHz



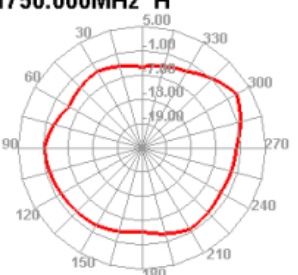
1700.000MHz H



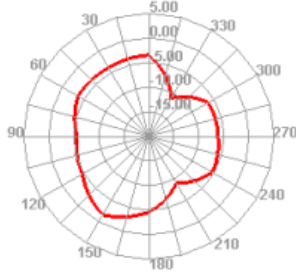
1750.000MHz



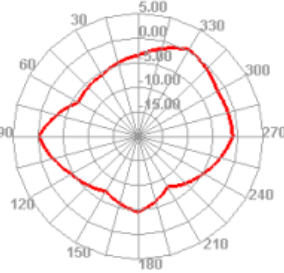
1750.000MHz H



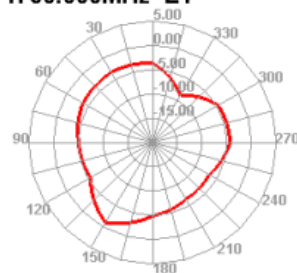
1700.000MHz E1



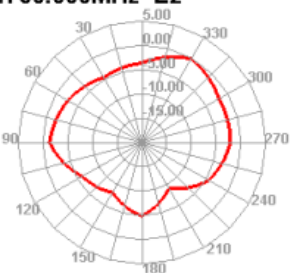
1700.000MHz E2



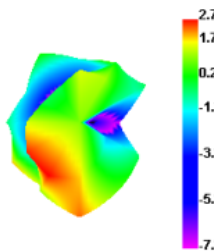
1750.000MHz E1



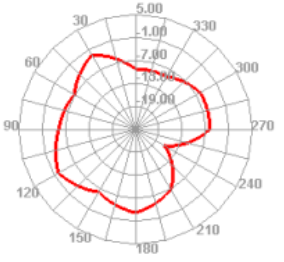
1750.000MHz E2



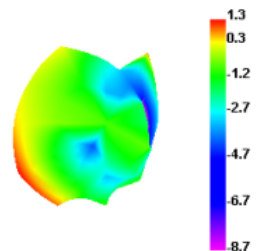
2100.000MHz



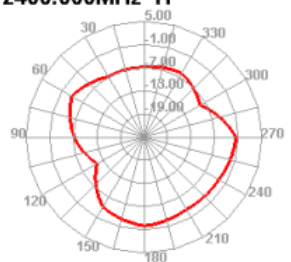
2100.000MHz H



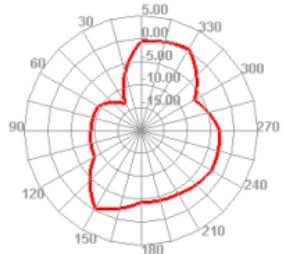
2400.000MHz



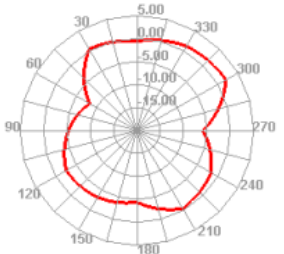
2400.000MHz H



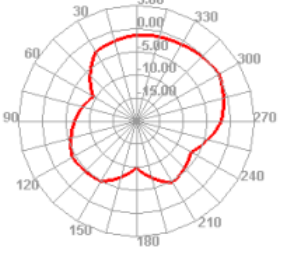
2100.000MHz E1



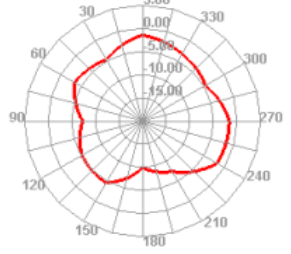
2100.000MHz E2



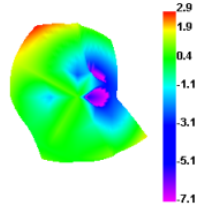
2400.000MHz E1



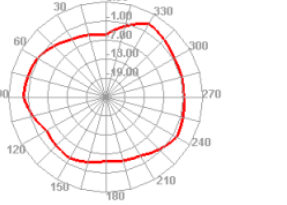
2400.000MHz E2



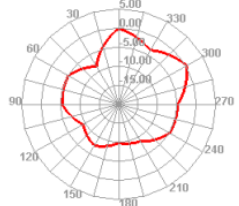
2650.000MHz



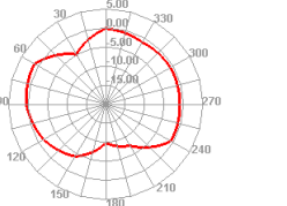
2650.000MHz H



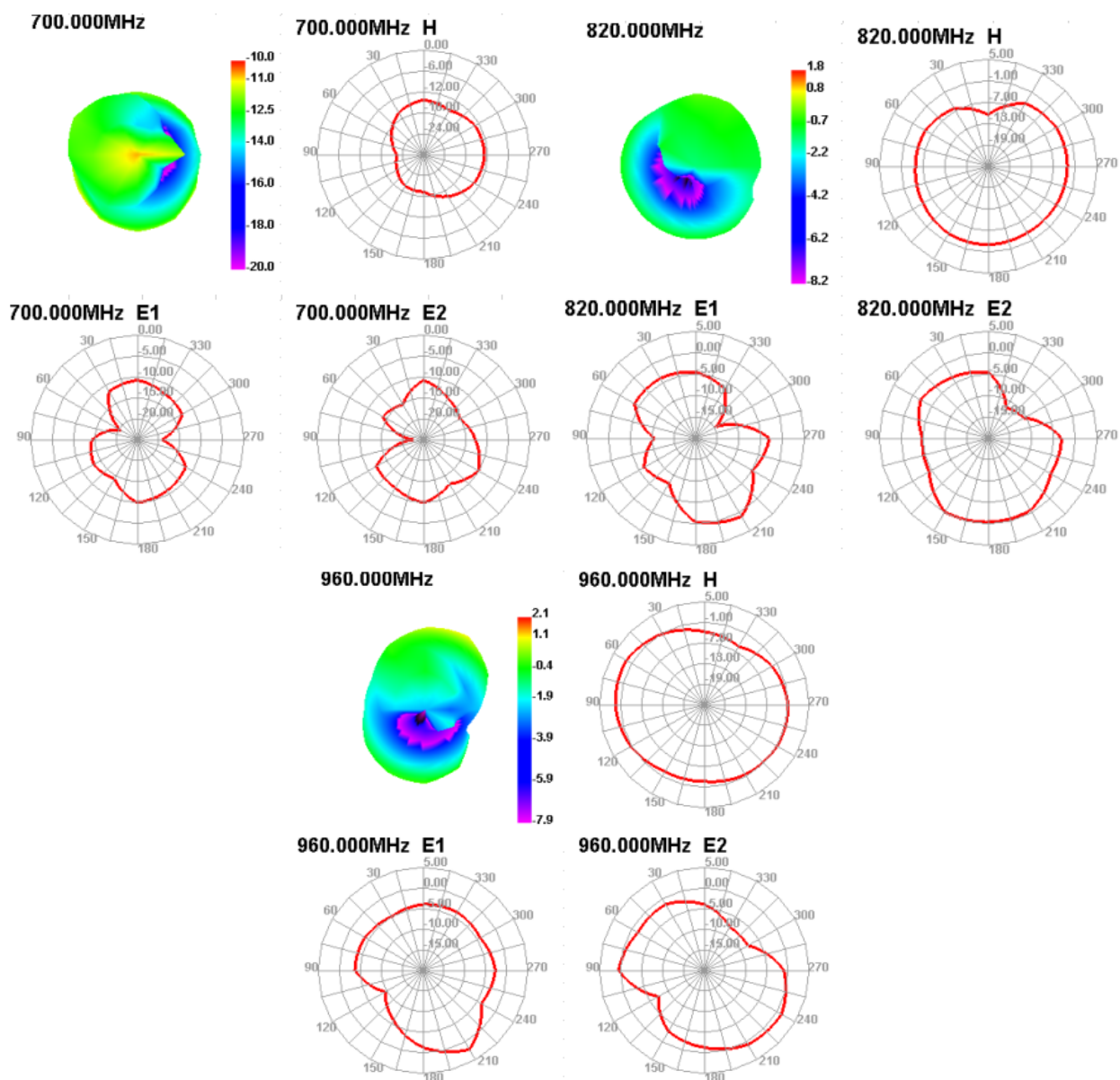
2650.000MHz E1

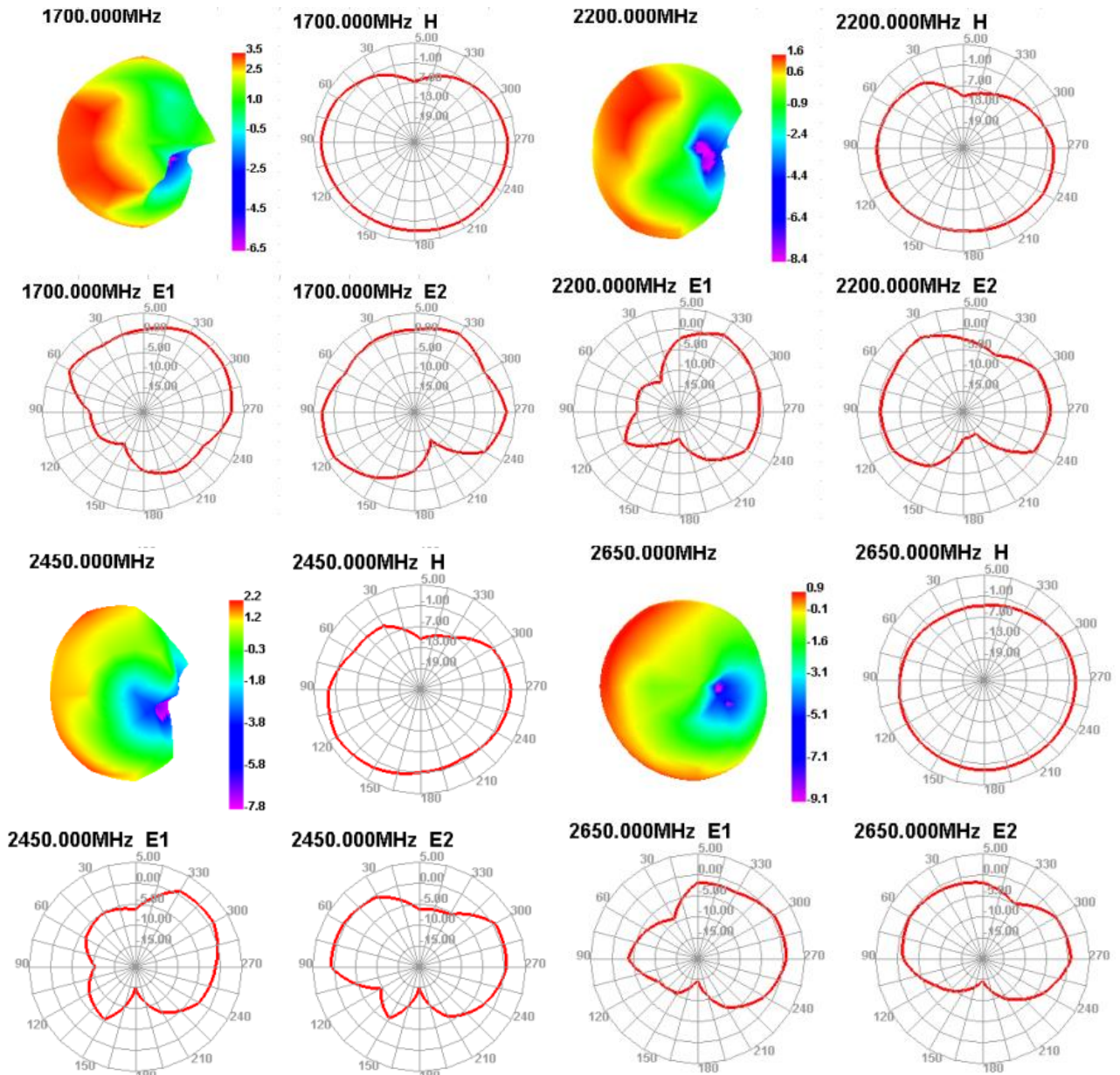


2650.000MHz E2

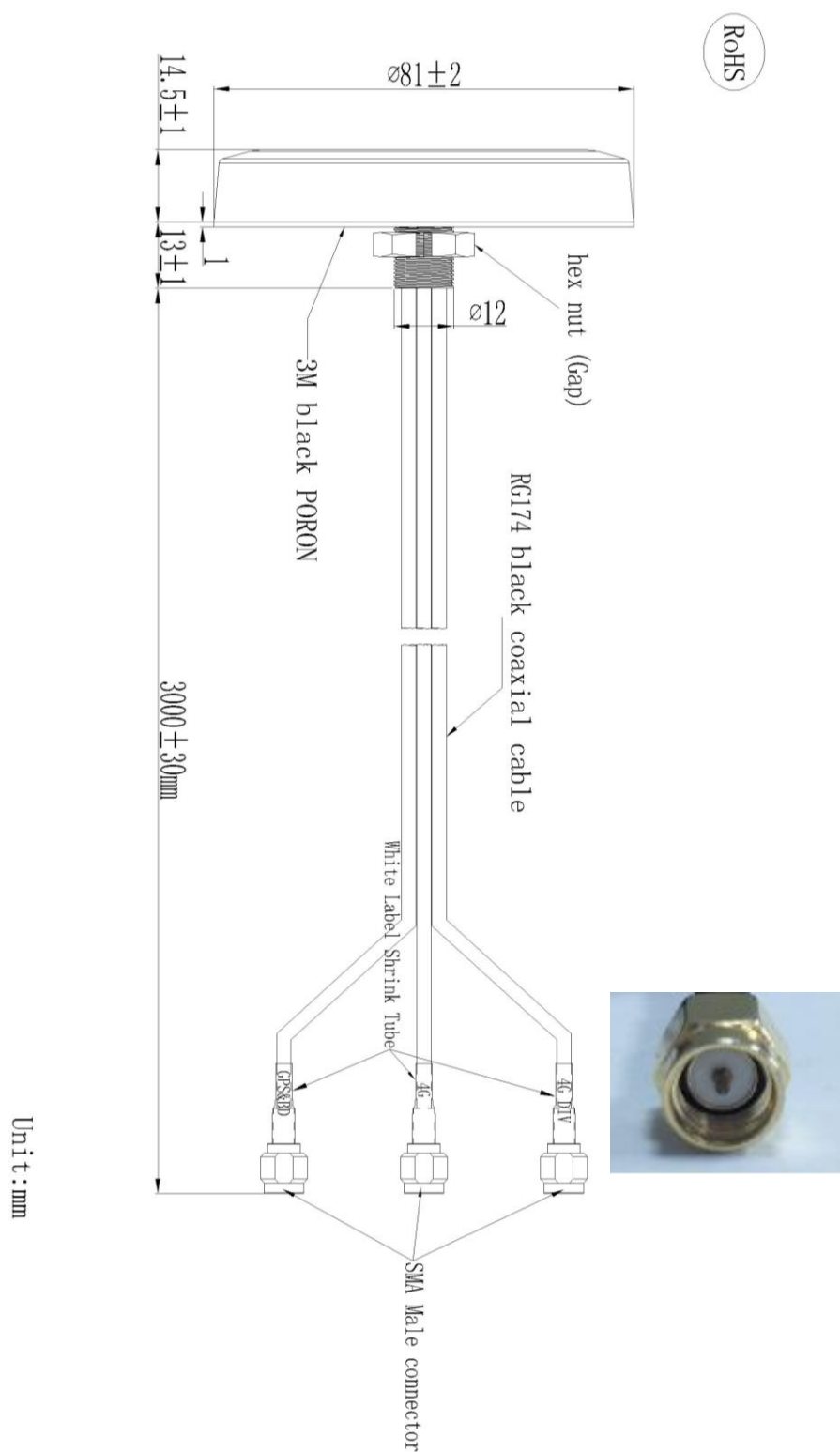


4G DIV





5 Product Size



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Quectel:](#)
[YB0014AA](#)