Antenna

YCGO011AA Datasheet

Antenna Services

Version: 1.1

Date: 2021-06-23

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

About the Document

Revision History

Version	Date	Author	Note
-	2021-06-04	Kenny YIN/ Aria CHU	Creation of the document
1.0	2021-06-04	Kenny YIN/ Aria CHU	First official release
1.1	2021-06-23	Aria CHU	Added the LNA electrical properties in Chapter 3.

Contents

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

- GNSS
- High efficiency
- Excellent performance

3 Product Specifications

Passive Electrical Specifications	
Frequency Range	1560–1601 MHz
Input Impendence	50 Ω
VSWR	≤ 3
Gain	≤ 2.0 dBi
Polarization Type	Linear
LNA Electrical Properties	
Center Frequency	1560–1601 MHz
Gain	16 ±3 dB
Noise Figure	Typ.1.5 dB (25 +5 °C)
Output VSWR	< 2.0
Input VSWR	< 2.0
Voltage	DC 3–5 V
Current	≤ 10 mA
Impedance	50 Ω
Mechanical Specifications	
Antenna Size	25 mm × 25 mm × 6.3 mm
Casing	Ceramic
Connector Type	IPEX MHF I
Working Temperature	-40 °C to +85 °C
Radome Color	-

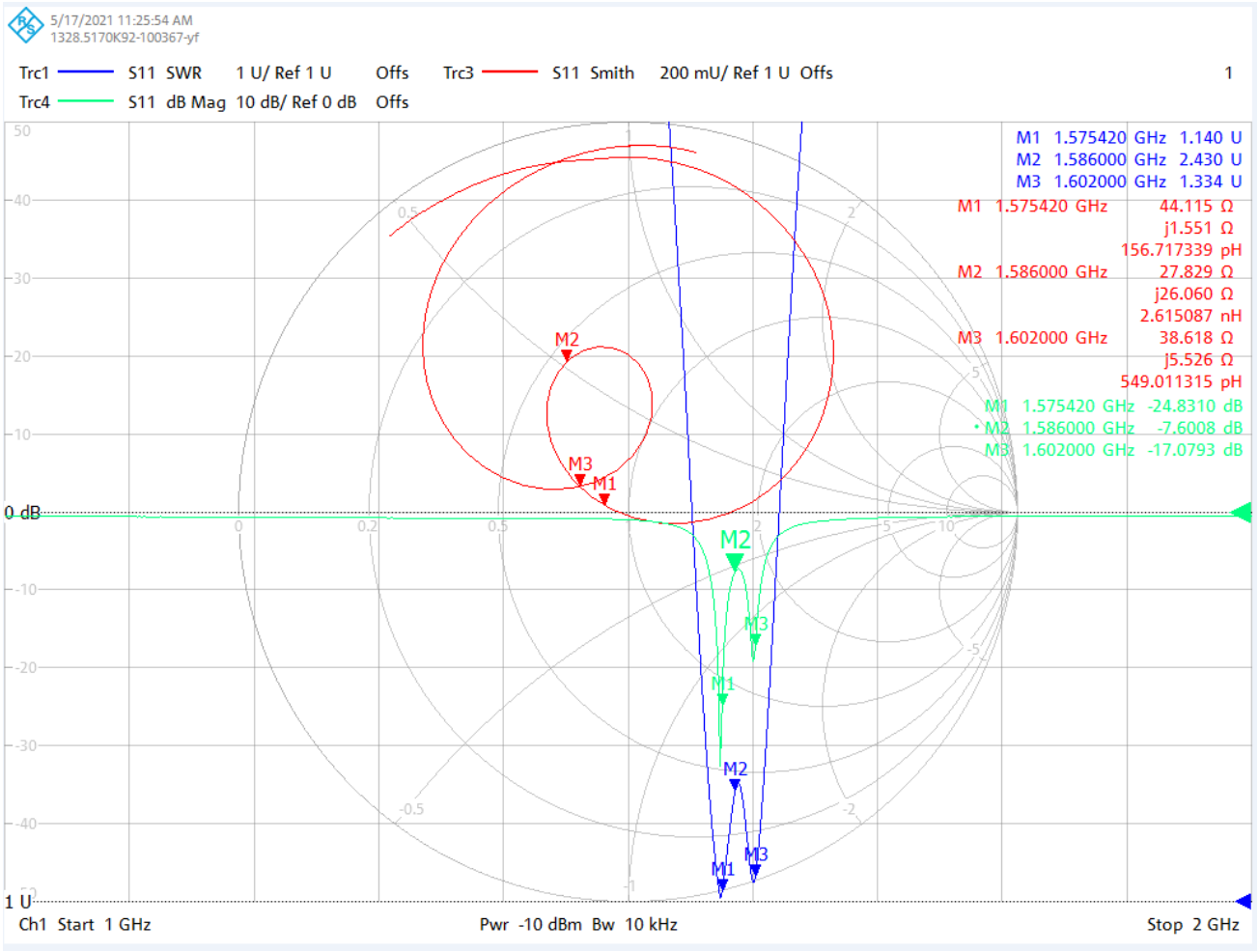
4 Overall Performance

4.1. Test Environment

- KEYSIGHT VNA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 400 MHz – 8.0 GHz

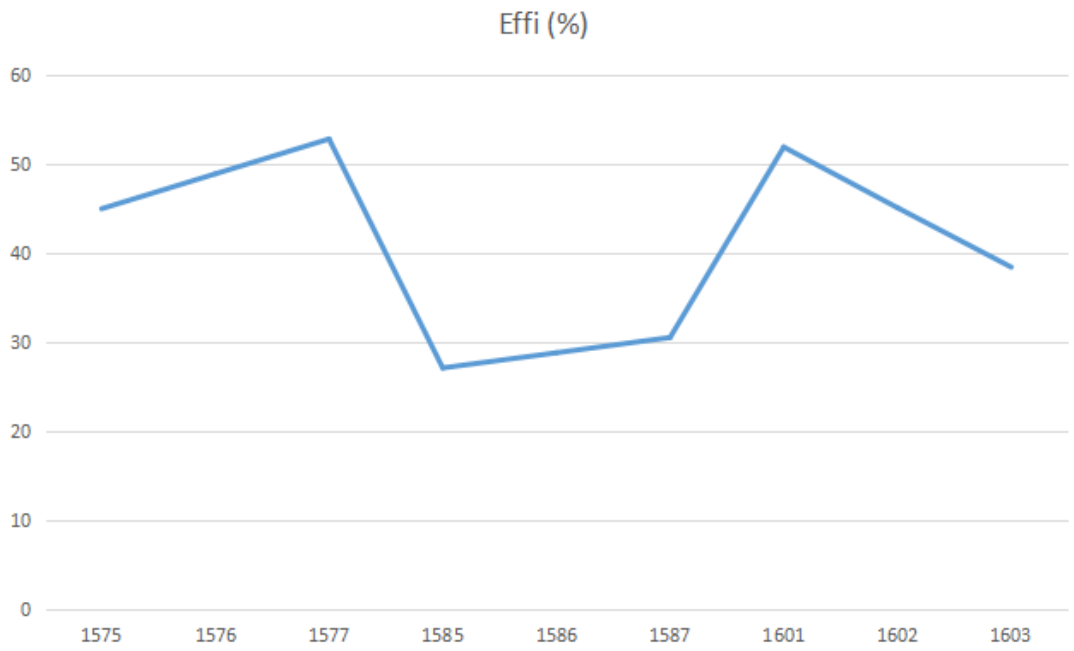
4.2. VSWR

- Note: 25 mm × 25 mm ground plane for grounding test and debugging.



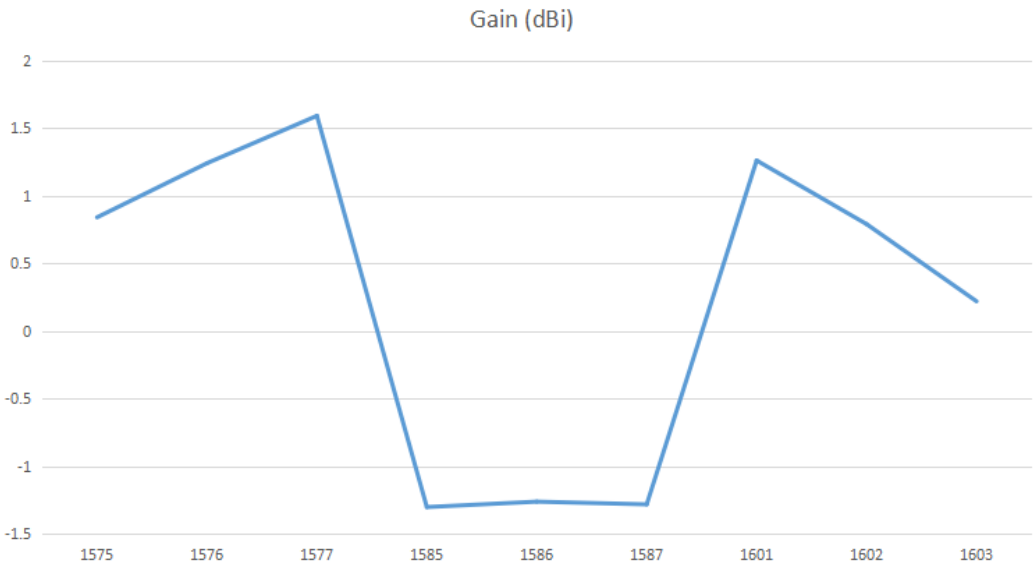
Frequency (MHz)	1575.42	1586	1602
VSWR	1.14	2.43	1.33

4.3. Efficiency



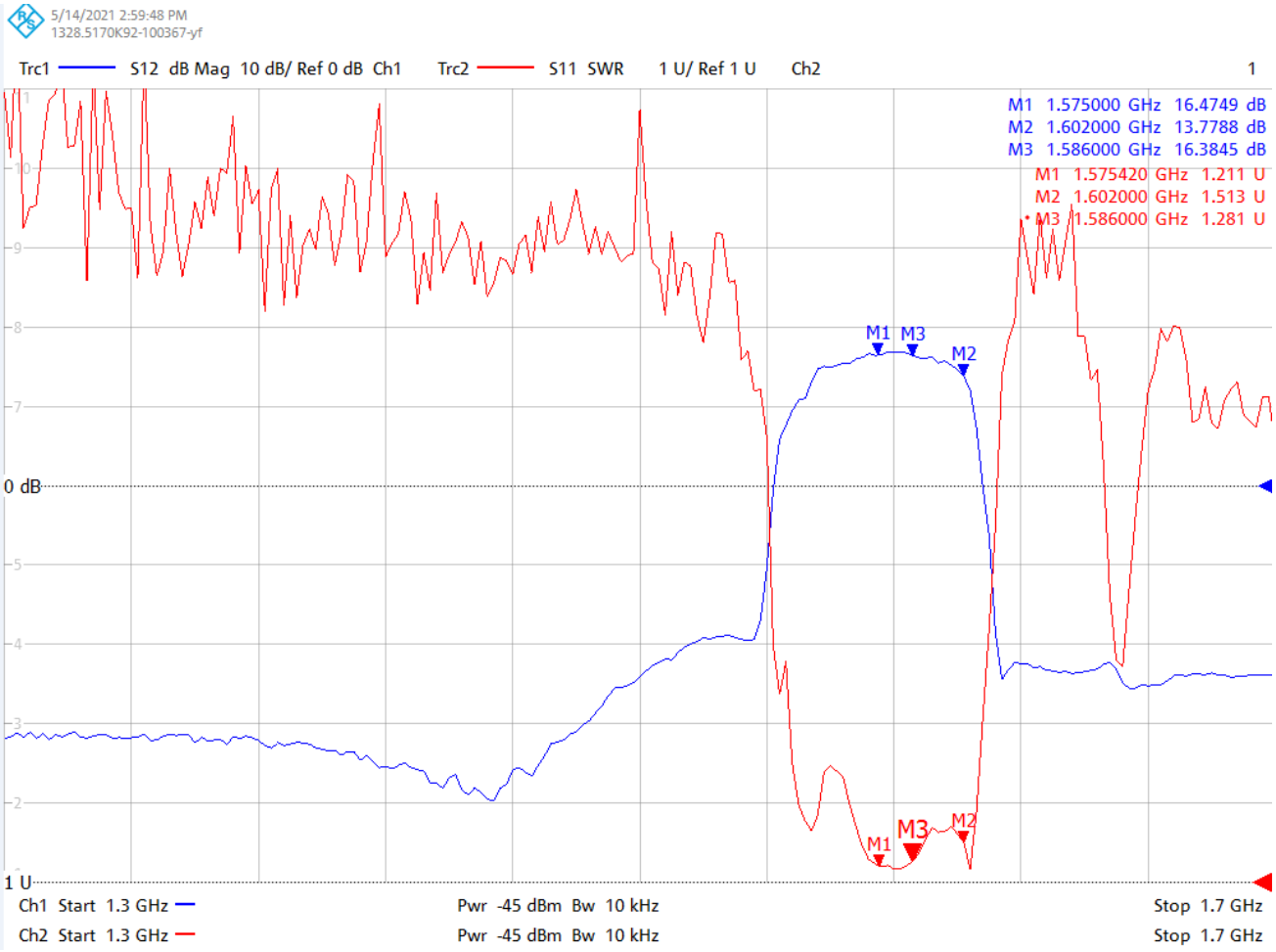
Frequency (MHz)	1575	1586	1602
Efficiency (%)	44.96	28.77	45.07

4.4. Gain

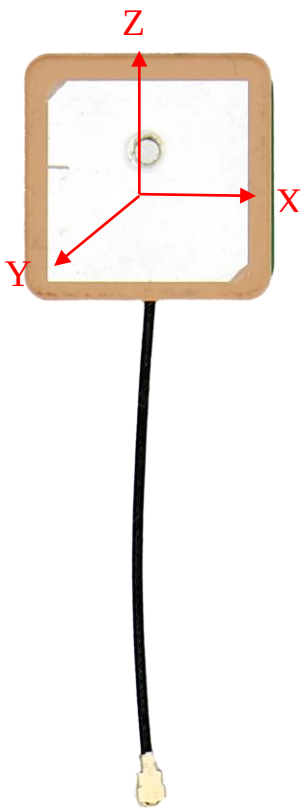


Frequency (MHz)	1575	1586	1602
Gain (dBi)	0.84	-1.26	0.79

4.5. LNA data

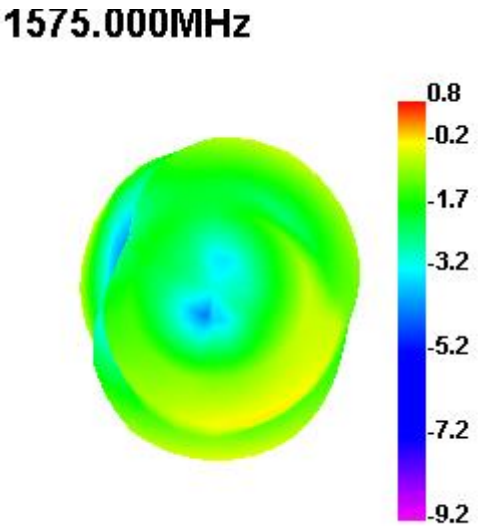

5/14/2021 2:59:48 PM
1328.5170K92-100367-yf
Trc1 S12 dB Mag 10 dB/ Ref 0 dB Ch1
Trc2 S11 SWR 1 U/ Ref 1 U Ch2
M1 1.575000 GHz 16.4749 dB
M2 1.602000 GHz 13.7788 dB
M3 1.586000 GHz 16.3845 dB
M1 1.575420 GHz 1.211 U
M2 1.602000 GHz 1.513 U
M3 1.586000 GHz 1.281 U
0 dB
1 U
Ch1 Start 1.3 GHz
Pwr -45 dBm Bw 10 kHz
Stop 1.7 GHz
Ch2 Start 1.3 GHz
Pwr -45 dBm Bw 10 kHz
Stop 1.7 GHz

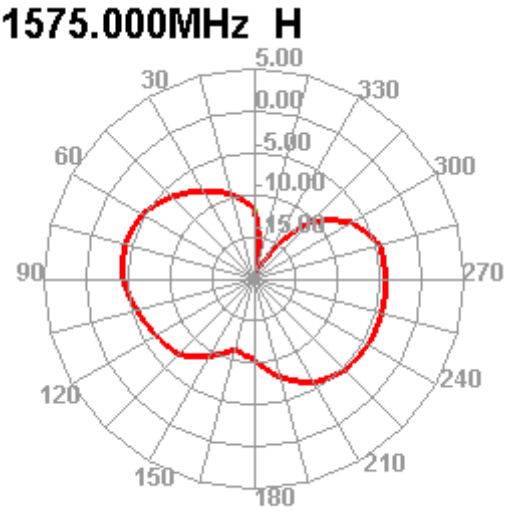
4.6. Radiation Pattern

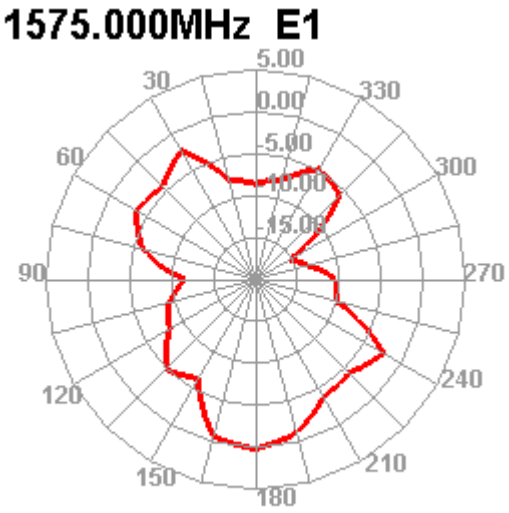


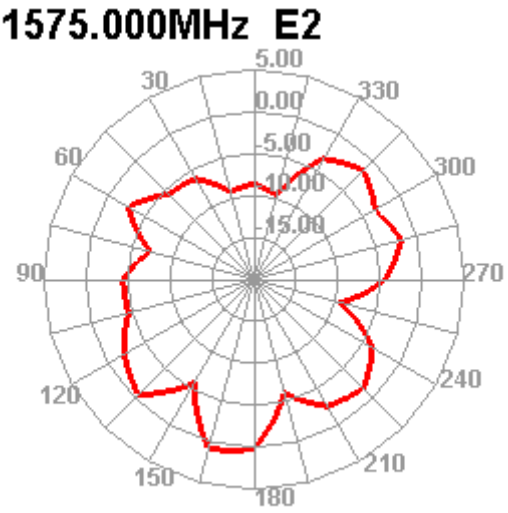
H plane: the tangent of XY
E1 plane: the tangent of XZ
E2 plane: the tangent of YZ

4.6.1. 1575 MHz

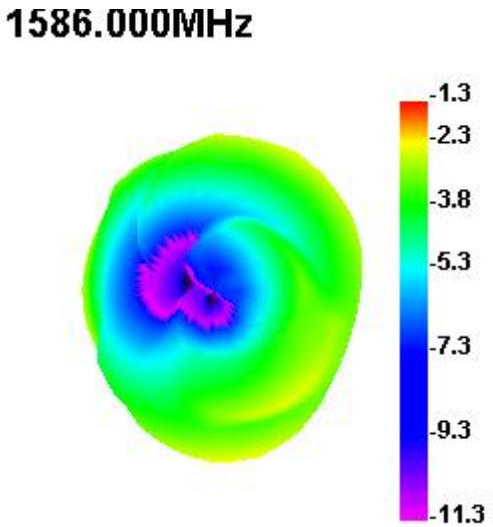

1575.000MHz
0.8
-0.2
-1.7
-3.2
-5.2
-7.2
-9.2

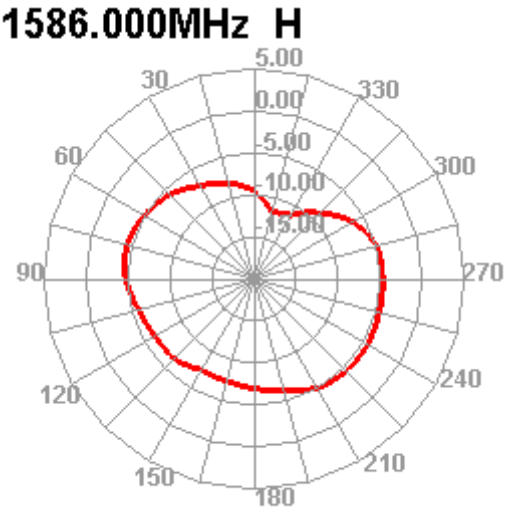

1575.000MHz H
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180

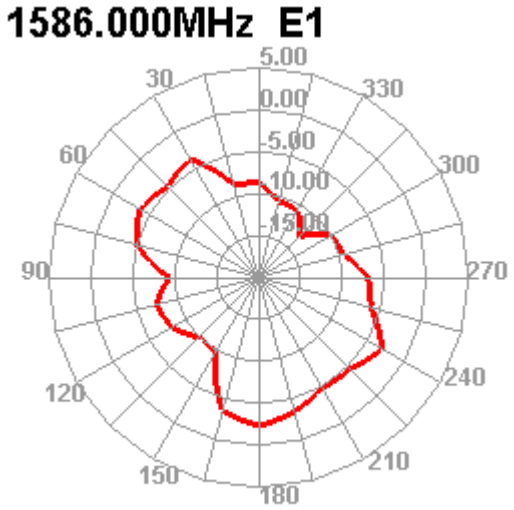

1575.000MHz E1
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180

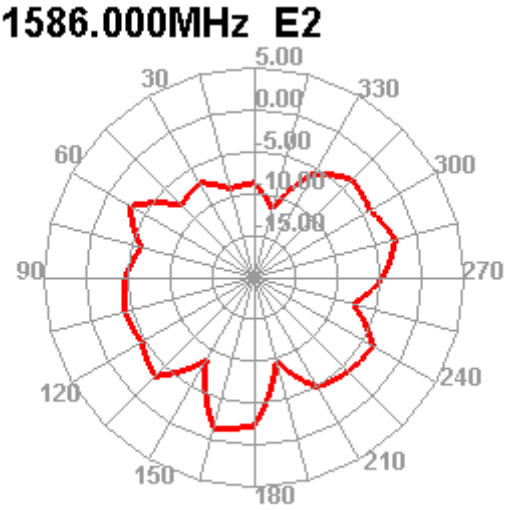

1575.000MHz E2
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180

4.6.2. 1586 MHz

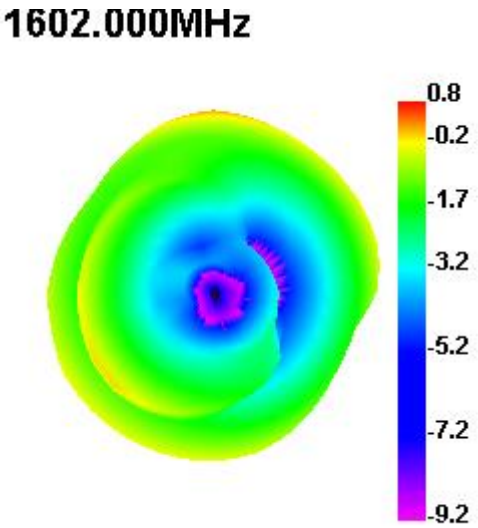

1586.000MHz
-1.3
-2.3
-3.8
-5.3
-7.3
-9.3
-11.3

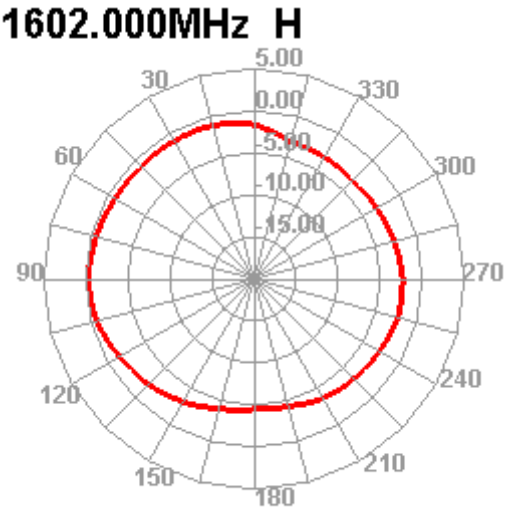

1586.000MHz H
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180

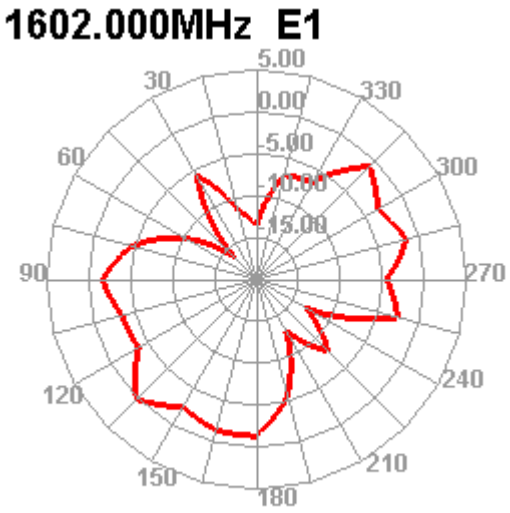

1586.000MHz E1
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180

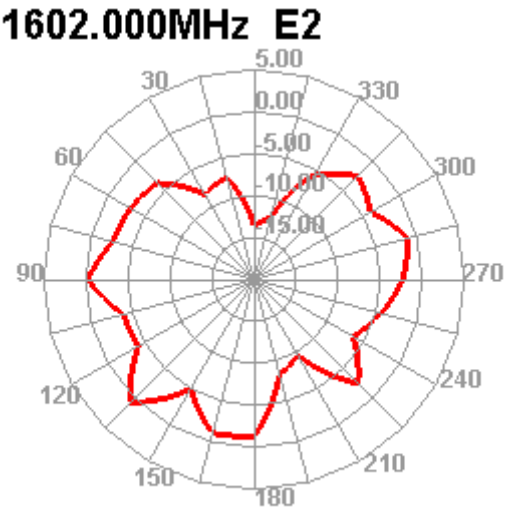

1586.000MHz E2
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180

4.6.3. 1602 MHz


1602.000MHz
0.8
-0.2
-1.7
-3.2
-5.2
-7.2
-9.2


1602.000MHz H
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180


1602.000MHz E1
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180


1602.000MHz E2
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180

5 Product Size