

Antenna

YEGM007AA Datasheet

Antenna Services

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a)

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About the Document

Revision History

Version	Date	Author	Note
-	2022-01-18	Xiaodong YANG/ Toby WANG	Creation of the document
1.0	2022-01-18	Xiaodong YANG/ Toby WANG	First official release
1.1	2022-05-11	Xiaodong YANG/ Toby WANG	Updated the data (Chapter 3).

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1 Product Description

Quectel GNSS antenna adopts a diversity of forms to guarantee the most suitable polarization type. Quectel's positioning products support single-band or multi-band operation modes to meet various high-precision positioning requirements of customers' products. Quectel also provides both passive and active antennas to satisfy the customer demand for high gain. Such antenna supports different installation or connection methods such as pin mount, surface mount, magnetic mount, internal cable, and external SMA. Customized connector type and cable length are provided according to requirements.

2 Product Features

- GPS L1 & BeiDou B1I
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	1560–1580 MHz
Input Impedence	50 Ω
VSWR	≤ 2
Gain	≤ 4 dBi
Polarization Type	RHCP

LNA Electrical Specifications

Frequency Range	1550–1610 MHz
Gain	20 \pm 3 dB (without 3m cable loss)
Output Impedence	50 Ω
VSWR	≤ 2
Operating Voltage	3.0 \pm 0.3 V
Operating Current	16 \pm 3 mA
Out-of-Band Rejection	F0 \pm 50 MHz, 30 dB (F0 = 1561–1575.42 MHz)
	F0 \pm 100 MHz, 30 dB (F0 = 1561–1575.42 MHz))

Mechanical Specifications

Antenna Size	38.6 mm \times 50.9 mm \times 17 mm
Cable Type & Length	RG174 Blake & 3000 mm
Casing	ABS
Fixed Form	Foam Tape
Connector Type	SMA
Working Temperature	-40 $^{\circ}$ C to +85 $^{\circ}$ C
Weight	Typ. 57 g
Radome Color	Black

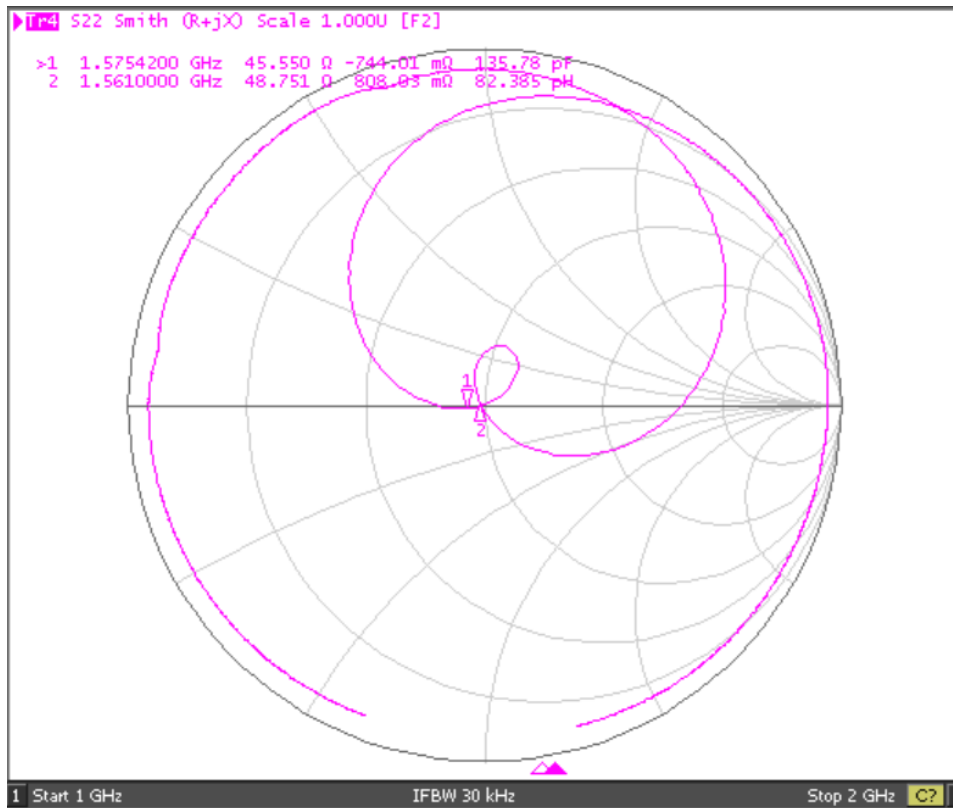
4 Overall Performance

4.1. Test Environment

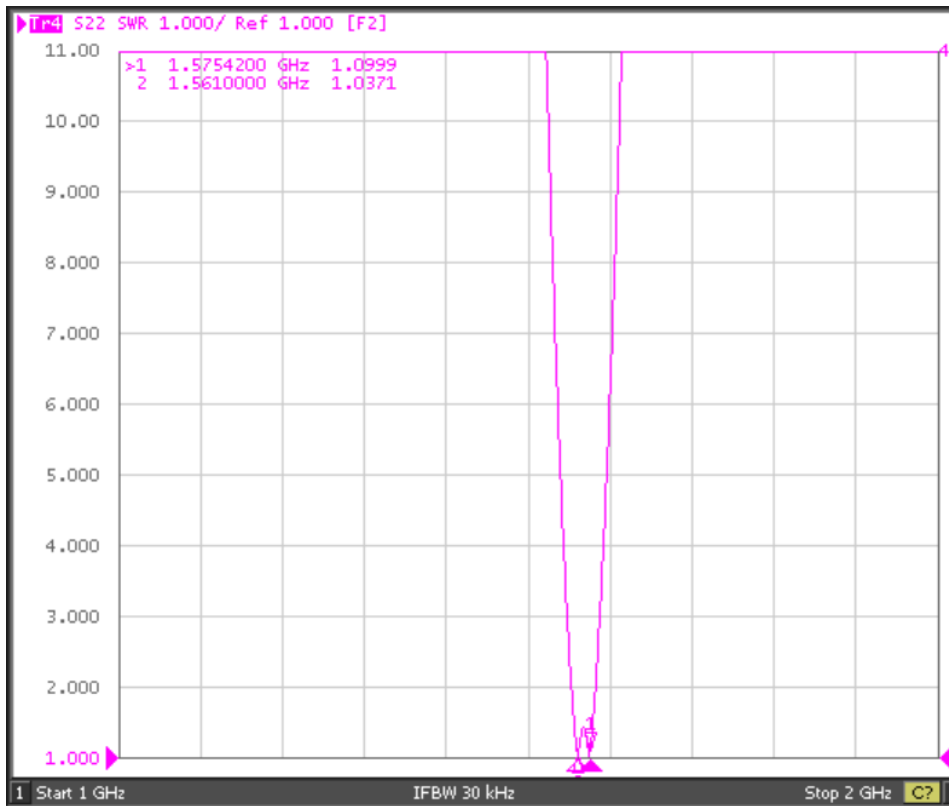
- KEYSIGHT ENA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 600 MHz – 8.5 GHz



4.2. Smith Chart

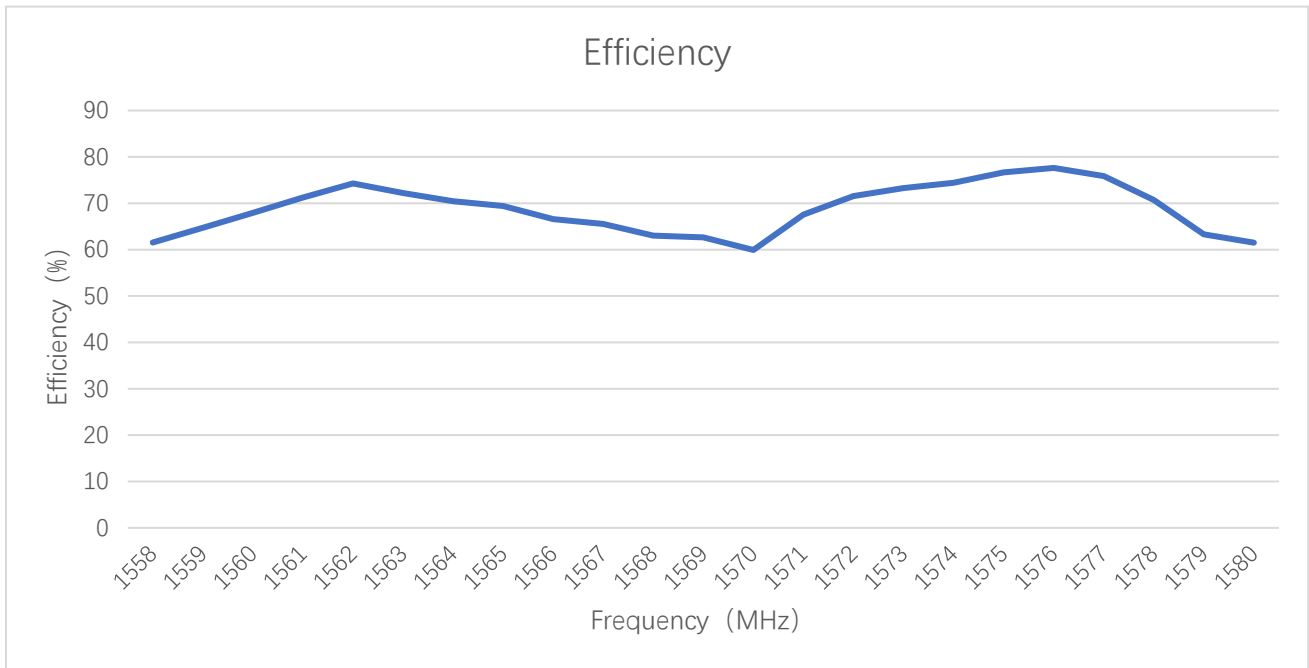


4.3. VSWR



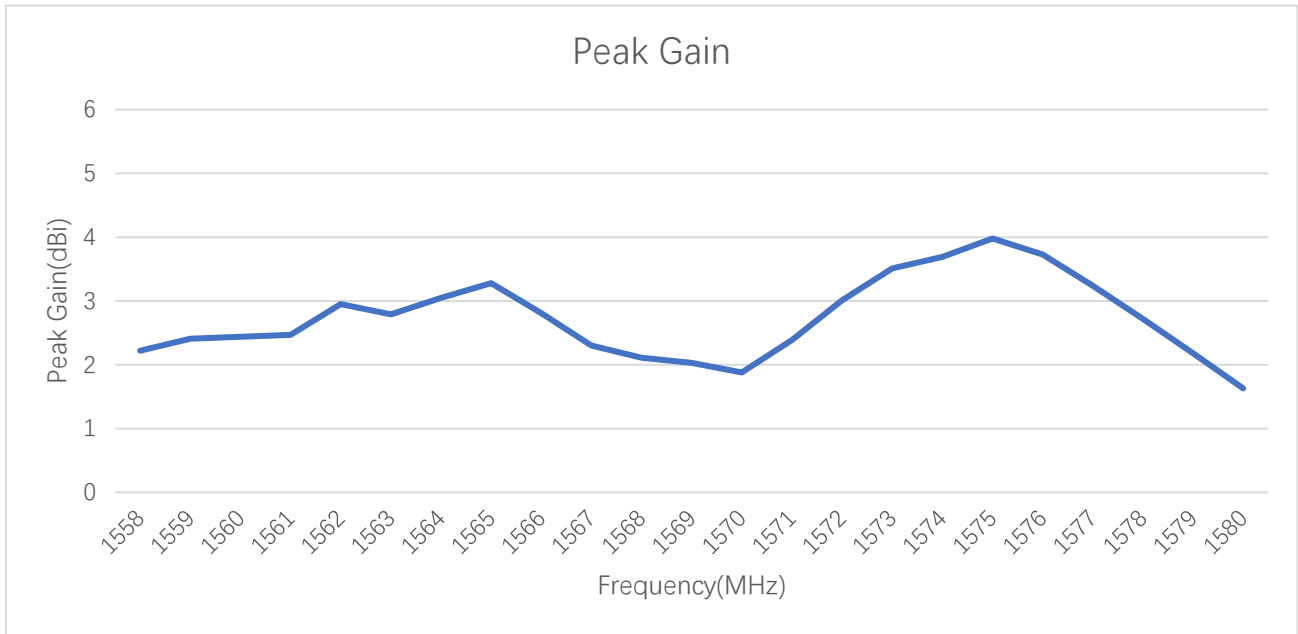
Frequency (MHz)	1575	1561
VSWR	1.09	1.03

4.4. Efficiency



Frequency (MHz)	1561	1575
Efficiency (%)	70	73

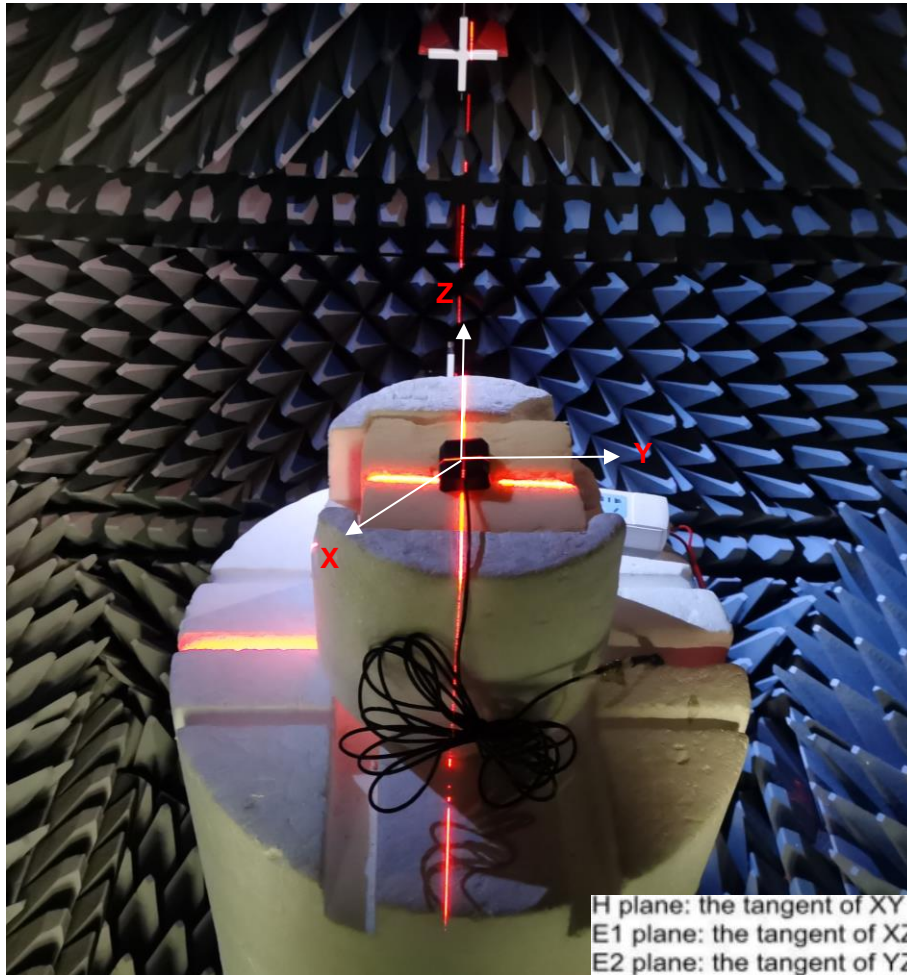
4.5. Gain



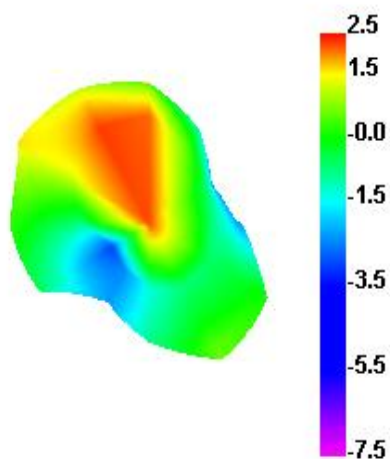
Frequency (MHz)	1561	1575
Gain (dBi)	2.4	3.8

4.6. Radiation Pattern

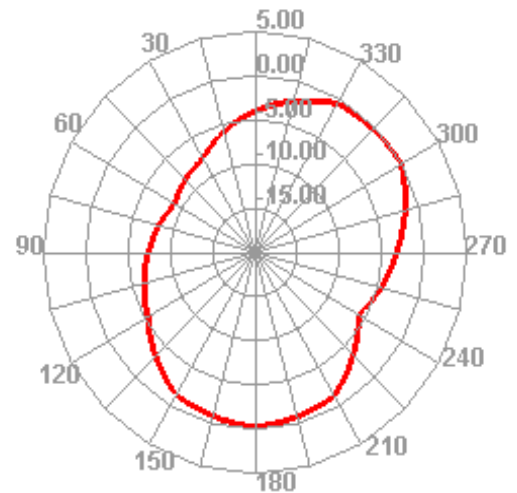
- Test condition: free space.



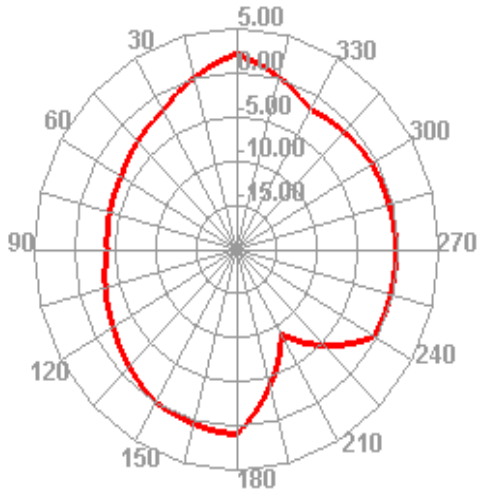
1561.000MHz



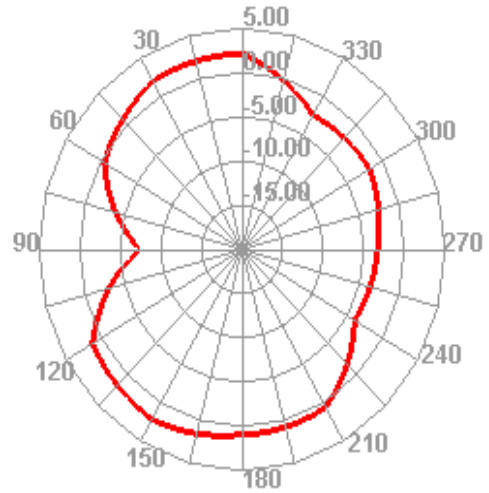
1561.000MHz H



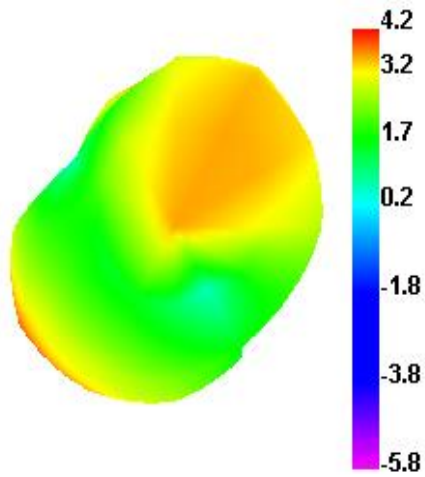
1561.000MHz E1



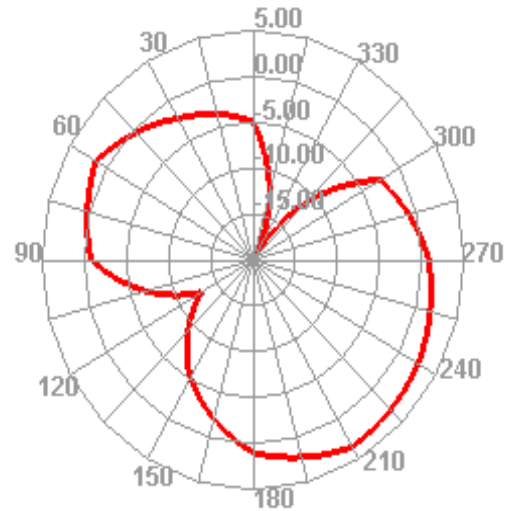
1561.000MHz E2



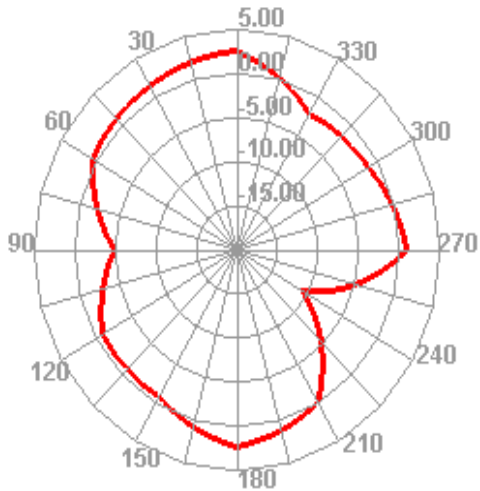
1575.000MHz



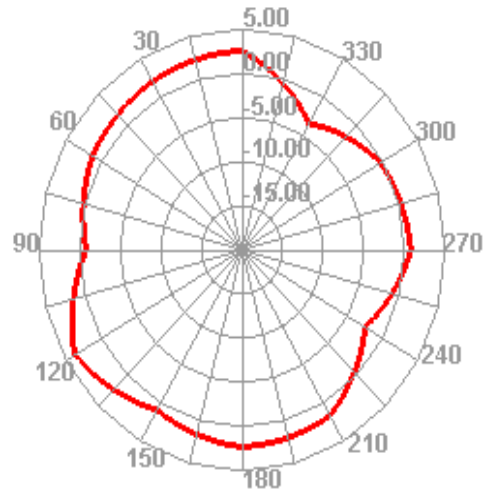
1575.000MHz H



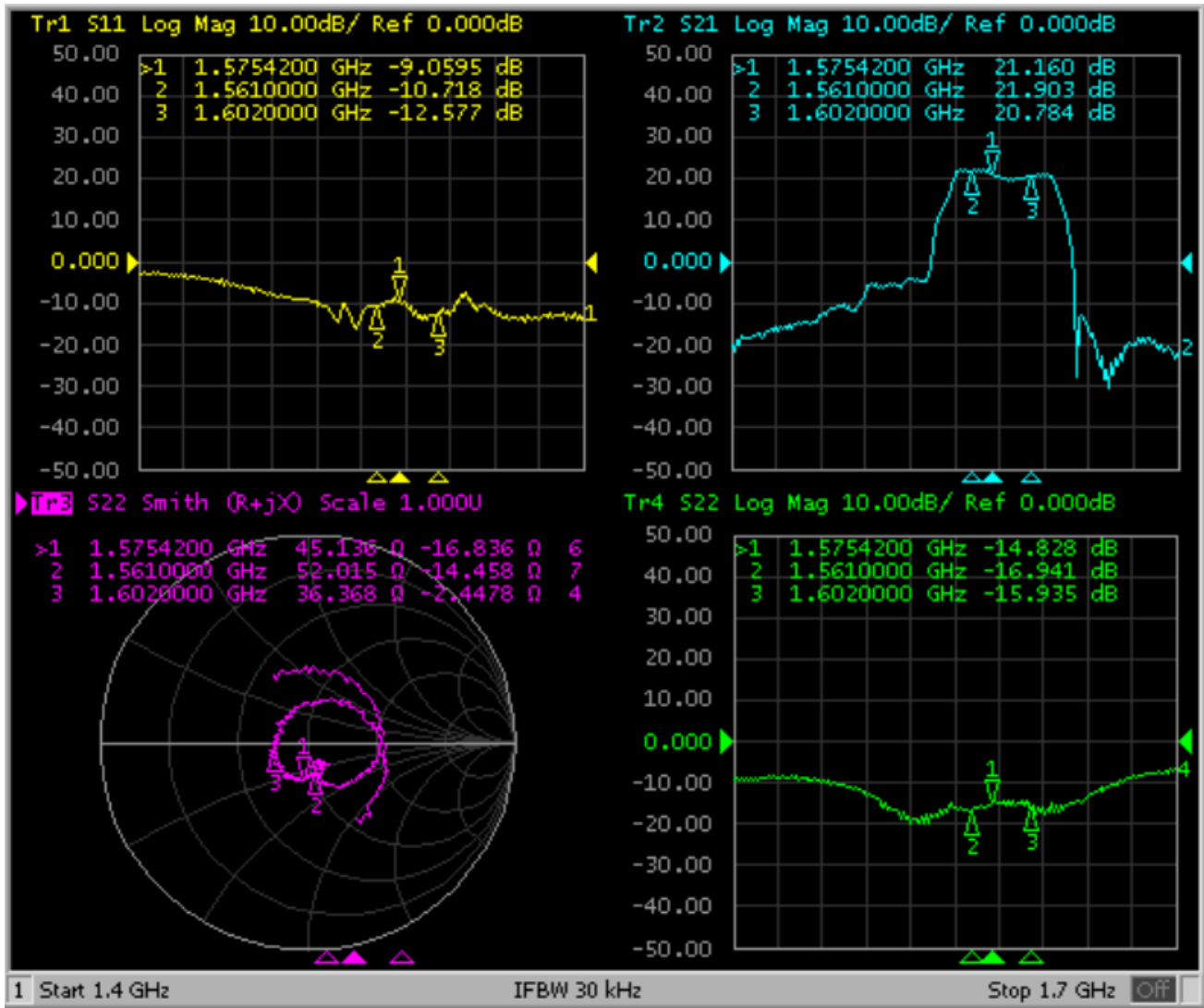
1575.000MHz E1



1575.000MHz E2



4.7. LNA Performance



Frequency (MHz)	1561	1575	1602
LNA (dB)	21.9	21.1	20.7
S22 (dB)	-16.9	-14.8	-15.9

5 Product Size

ROHS

