

Antenna specification

Doc No. IS-QR-PD-010

Rev. V1.0

Page 1/16

Antenna specification

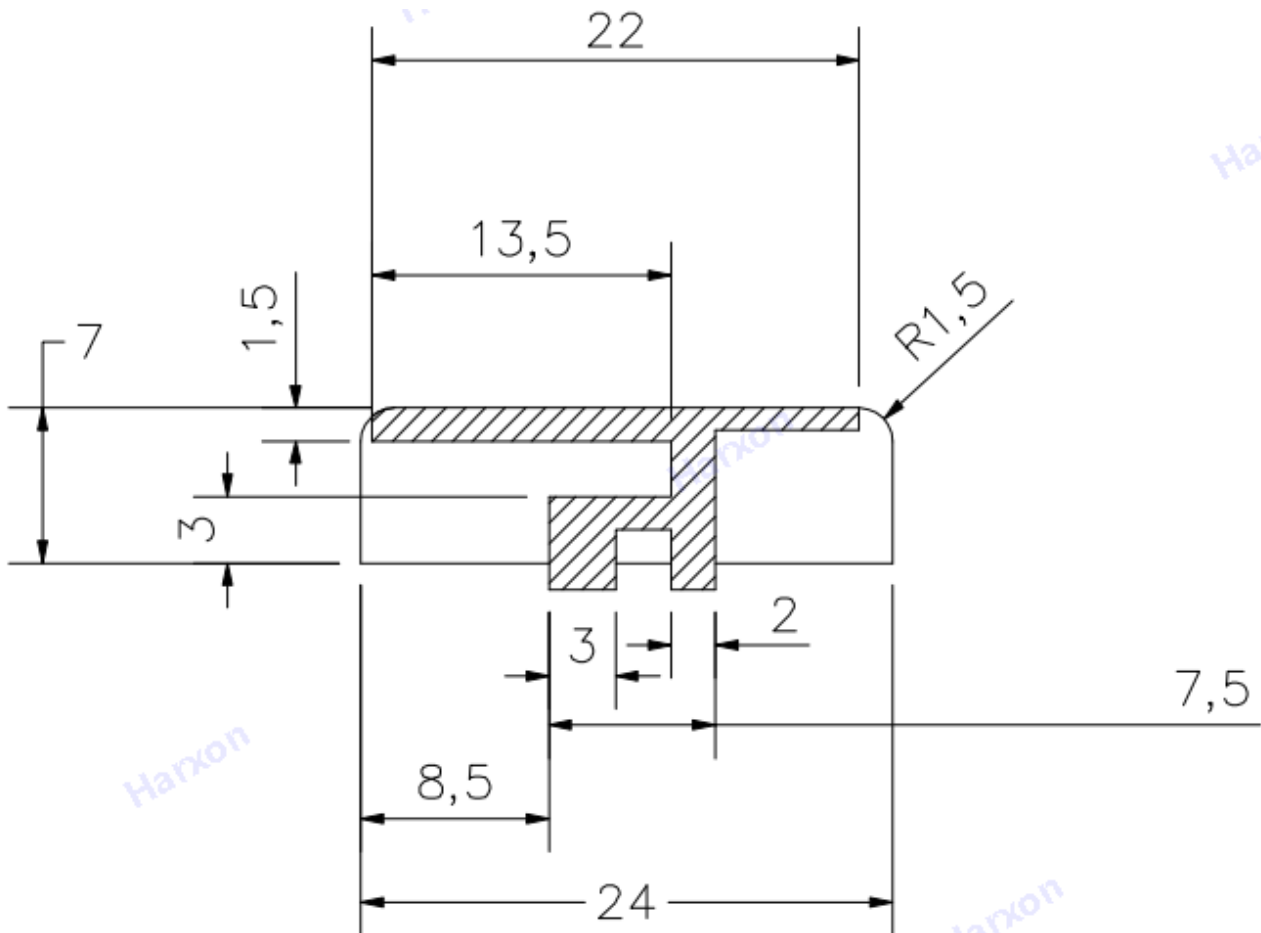
Antenna model: MARB AT V1.0

Applications

※WIFI/Bluetooth Home RF

※ISM band 2.4GHz/5.5GHz applications

1. Dimensions



2. Specifications

number	Item	Specifications
--------	------	----------------

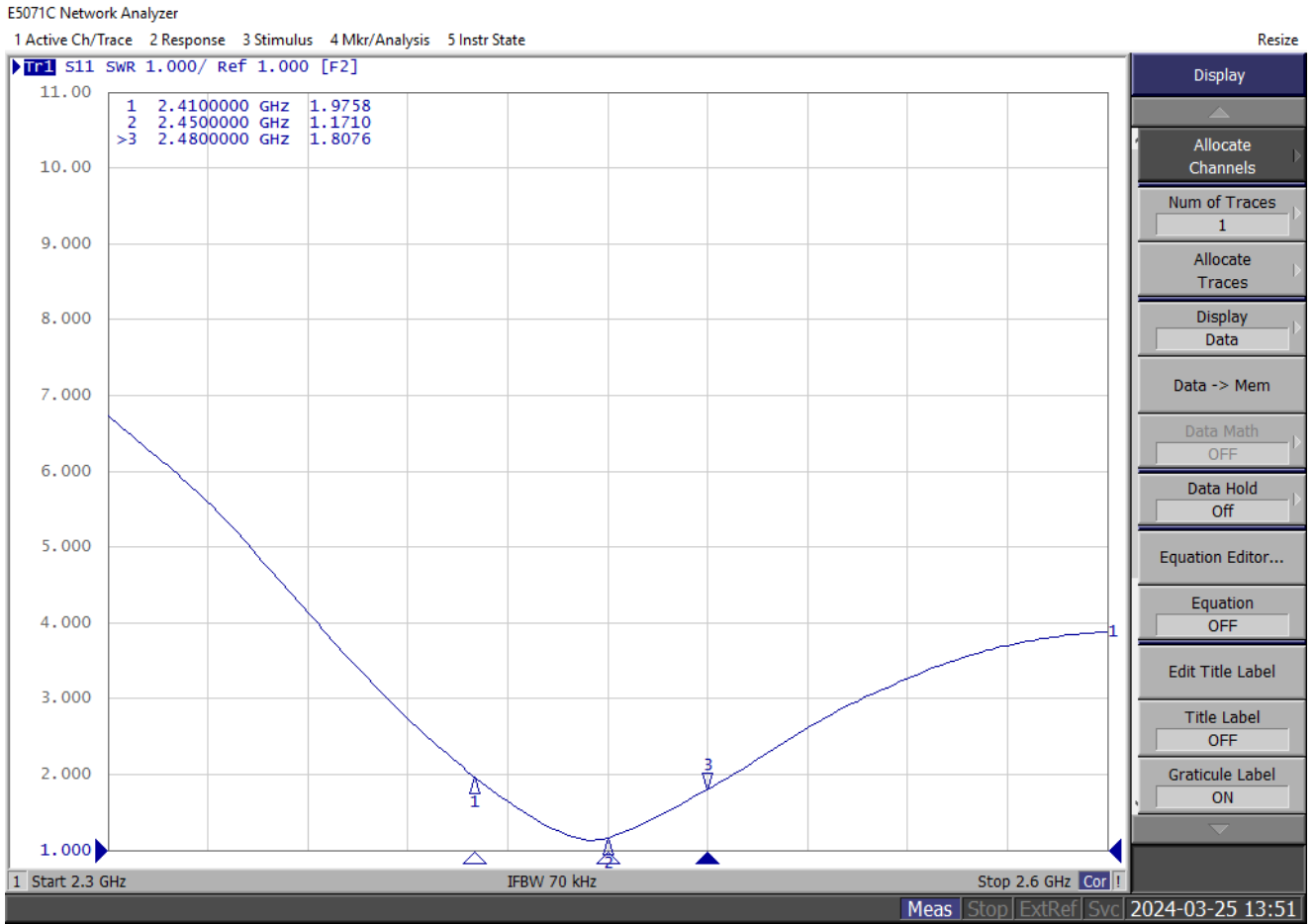
Antenna specification	Doc No.	IS-QR-PD-010
	Rev.	V1.0
	Page	3/16

1	Working Central Frequency	2441 MHz/5560MHz
2	Band Width	(2402-2480)MHz (5150-5850)MHz
3	Gain	0dBi
4	VSWR	Resonance point ≤ 2.0
5	Antenna type	PCB antenna
6	Azimuth Beam width	Omni - directional
7	Impedance	50ohm
8	Modulation mode	GFSK

3. simulation parameter

① VSWR

Mkr1: 2410MHz 1.97 Mkr2: 2450MHz 1.17 Mkr3: 2480 MHz 1.8



Antenna specification	Doc No.	IS-QR-PD-010
	Rev.	V1.0
	Page	4/16

Mkr1: 5150MHz 2.7 Mkr2: 5550MHz 1.57 Mkr3: 5850 MHz 1.84



②Smith Chart

Mkr1: 2410MHz 95.1 Mkr2: 2450MHz 43.7 Mkr3: 2480MHz 31.9

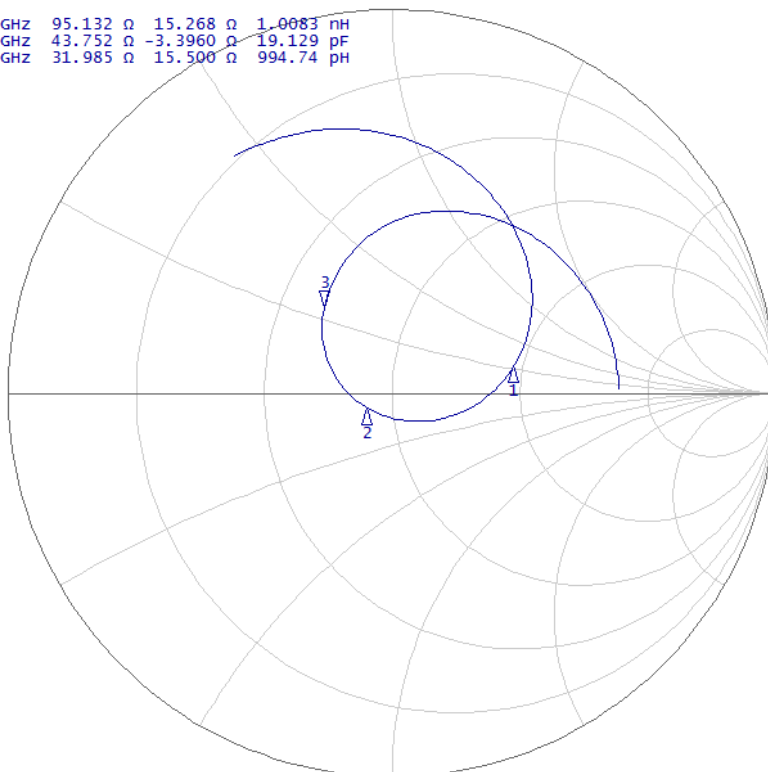
E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

Resize

► **tr1** S11 Smith (R+jX) Scale 1.000U [F2]

1	2.4100000	GHZ	95.132	Ω	15.268	Ω	1.0083	nH
2	2.4500000	GHZ	43.752	Ω	-3.3960	Ω	19.129	pF
>3	2.4800000	GHZ	31.985	Ω	15.500	Ω	994.74	pH



1 Start 2.3 GHz

IFBW 70 kHz

Stop 2.6 GHz Cor |

Meas Stop ExtRef Svc 2024-03-25 13:51

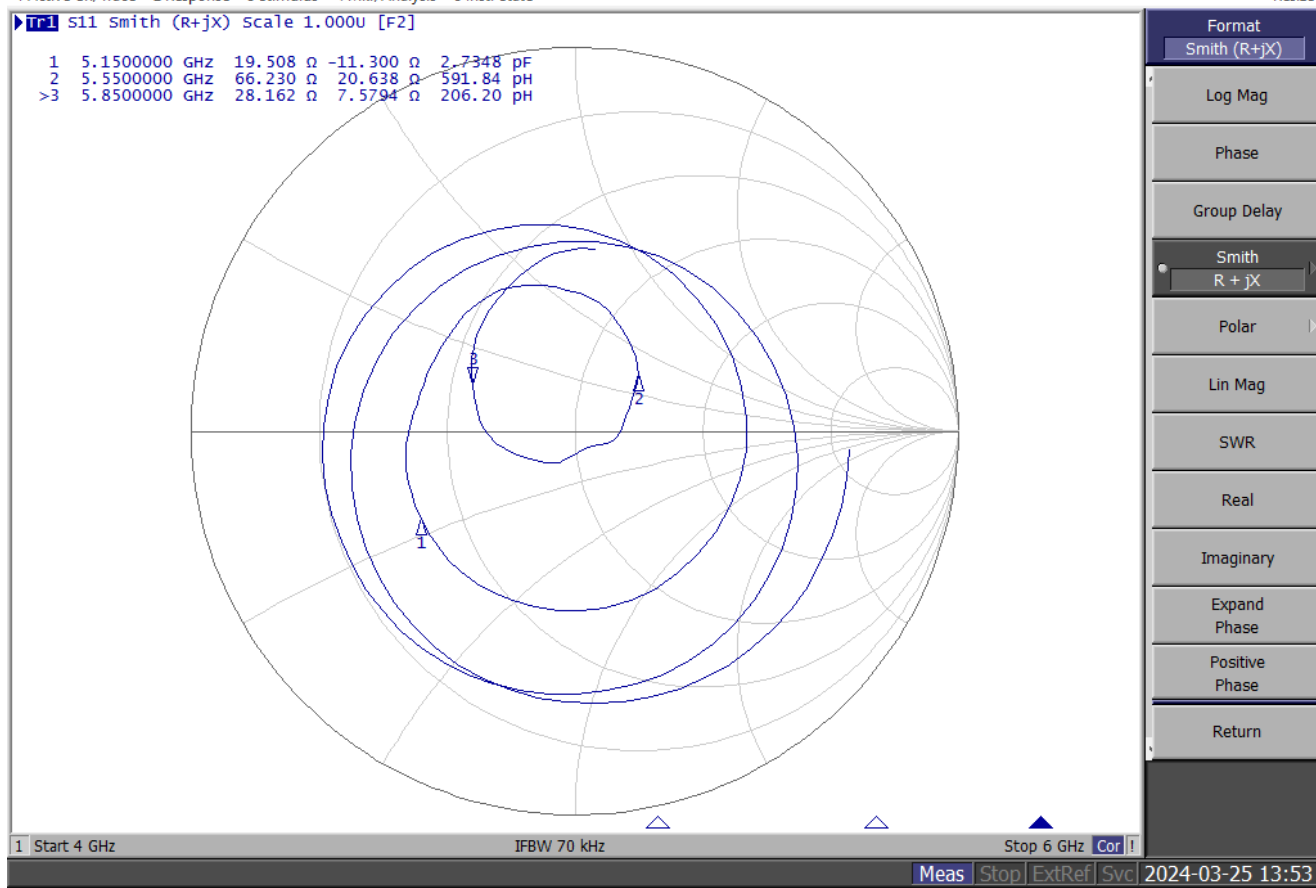
Format
Smith (R+jX)
Log Mag
Phase
Group Delay
Smith
R + jX
Polar
Lin Mag
SWR
Real
Imaginary
Expand Phase
Positive Phase
Return

Mkr1: 5150MHz 19.5 Mkr2: 5550MHz 66.2 Mkr3: 5850 MHz 28.1

E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

Resize



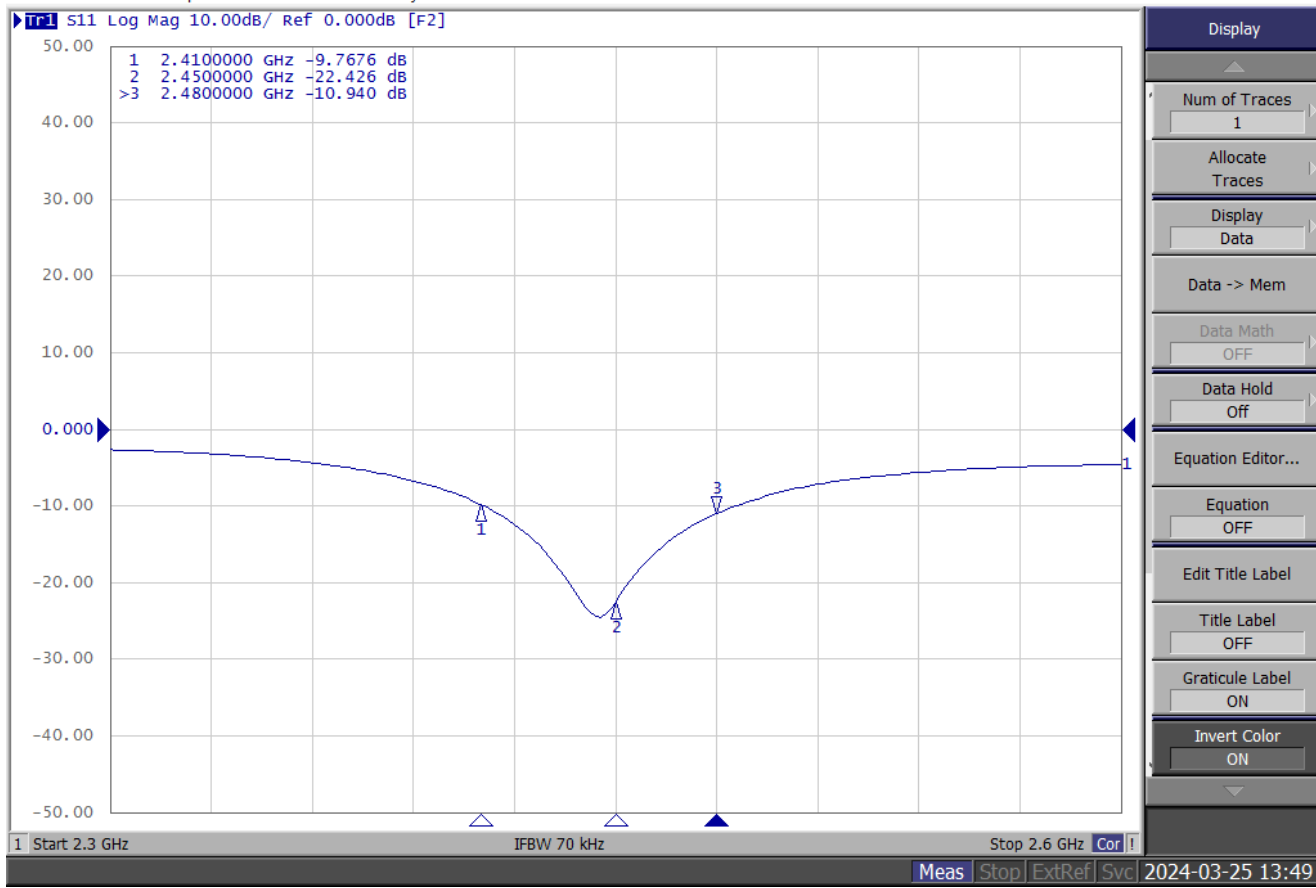
③Return Loss

Mkr1: 2410MHz -9.7 Mkr2: 2450MHz -22.4 Mkr3: 2480 MHz -10.9

E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

Resize



Mkr1: 5150MHz -6.7 Mkr2: 5550MHz -13 Mkr3: 5850 MHz -10.6

Antenna specification	Doc No.	IS-QR-PD-010
	Rev.	V1.0
	Page	8/16



④Smith Chart

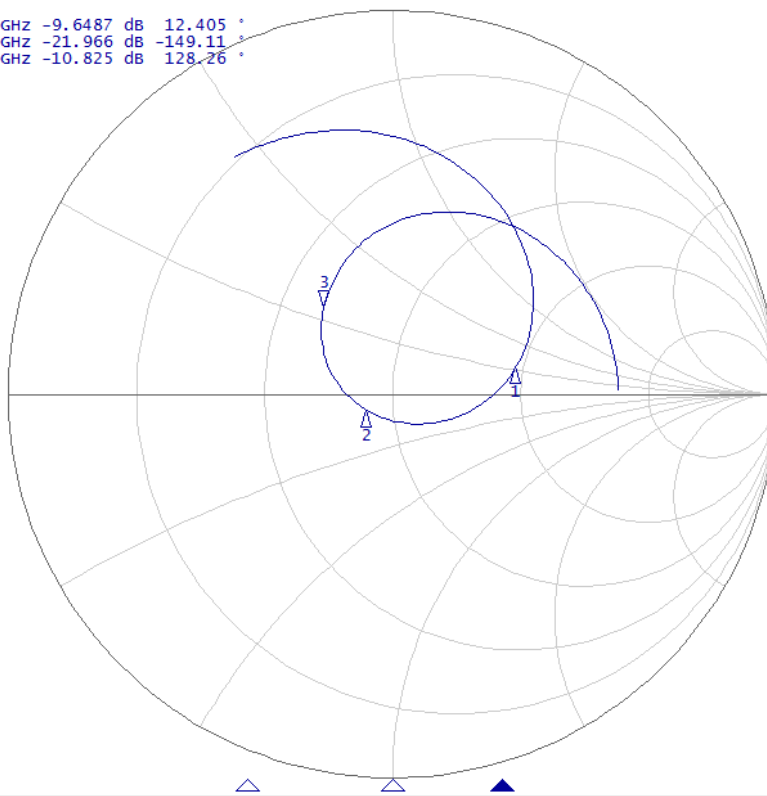
Mkr1: 2410MHz -9.6 Mkr2: 2450MHz -21.9 Mkr3: 2480 MHz -10.8

E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

▶ **Tr1** S11 Smith (Log/Phase) scale 1.000U [F2]

1 2.4100000 GHz -9.6487 dB 12.405 °
2 2.4500000 GHz -21.966 dB -149.11 °
>3 2.4800000 GHz -10.825 dB 128.26 °



1 Start 2.3 GHz

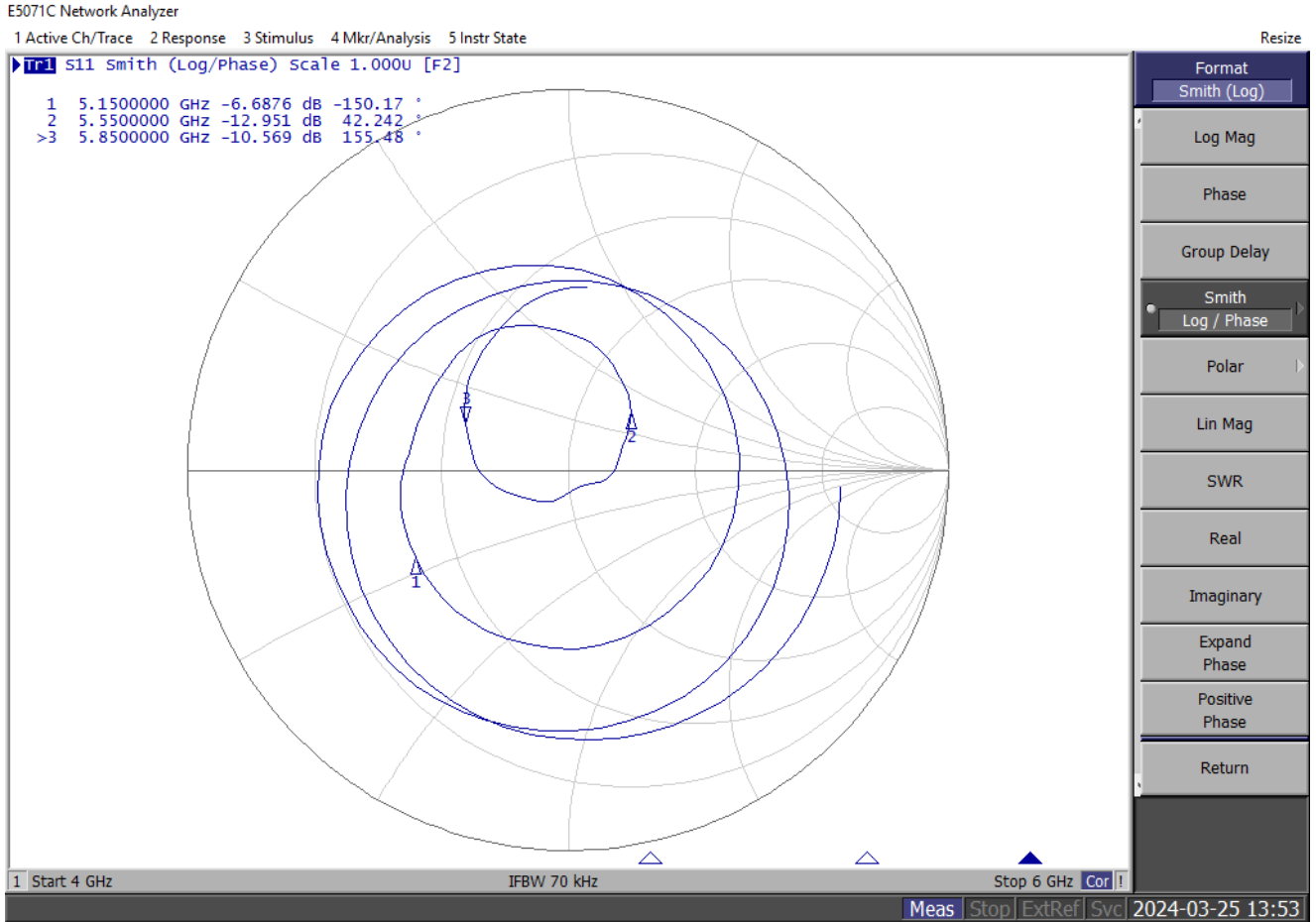
IFBW 70 kHz

Stop 2.6 GHz Cor I

Meas Stop ExtRef Svc 2024-03-25 13:52

Format
Smith (Log)
Log Mag
Phase
Group Delay
Smith
Log / Phase
Polar
Lin Mag
SWR
Real
Imaginary
Expand Phase
Positive Phase
Return

Mkr1: 5150MHz -17.3 Mkr2: 5550MHz -11.4 Mkr3: 5850 MHz -11.6



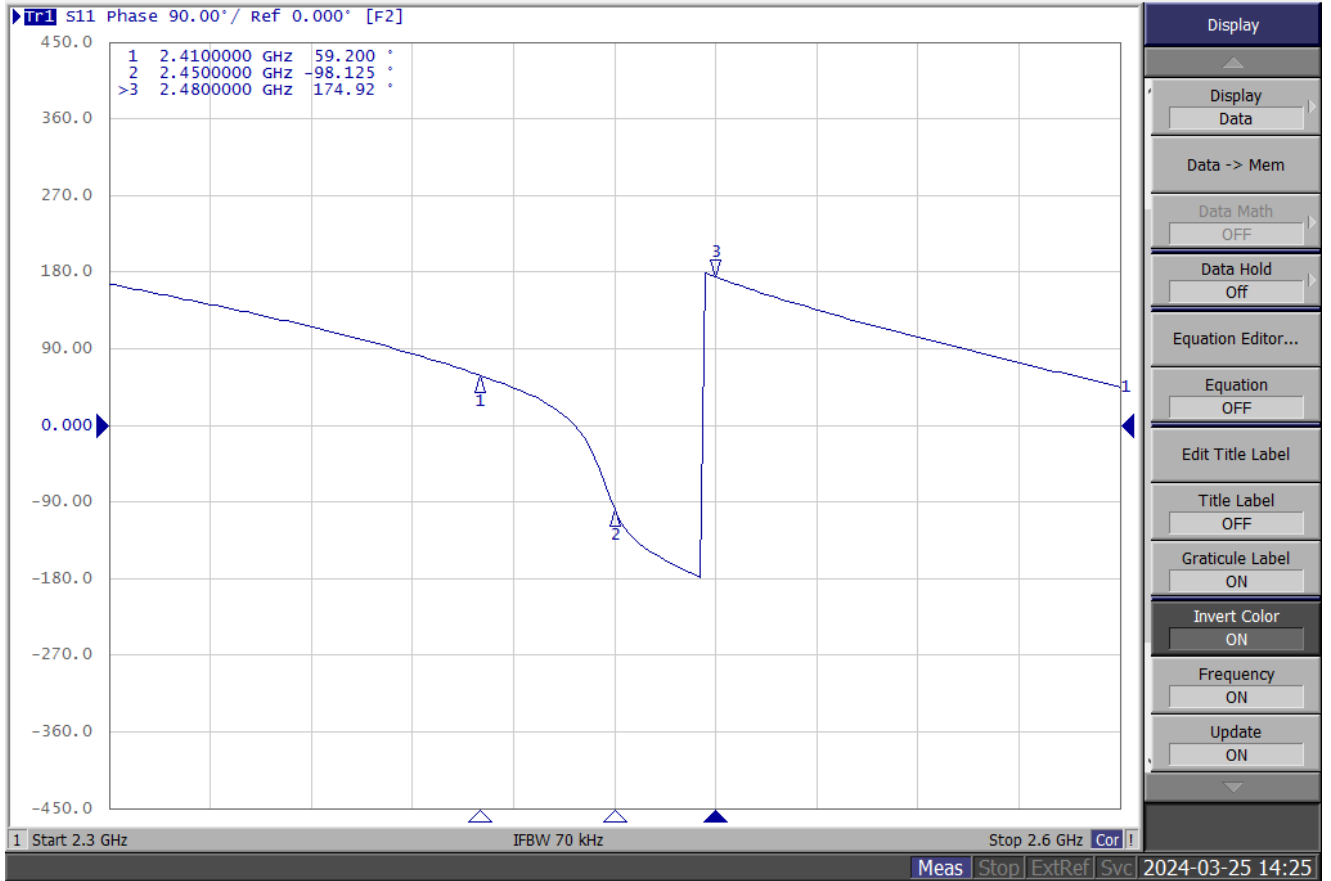
⑤Phase

Mkr1: 2410MHz 59 Mkr2: 2450MHz -98 Mkr3: 2480MHz 174

E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

Resize



Mkr1: 5180MHz -69.1 Mkr2: 5560MHz 128.6 Mkr3: 5825 MHz -115.2

E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State



Display

Data Hold Off

Equation Editor... OFF

Edit Title Label OFF

Graticule Label ON

Invert Color ON

Frequency ON

Update ON

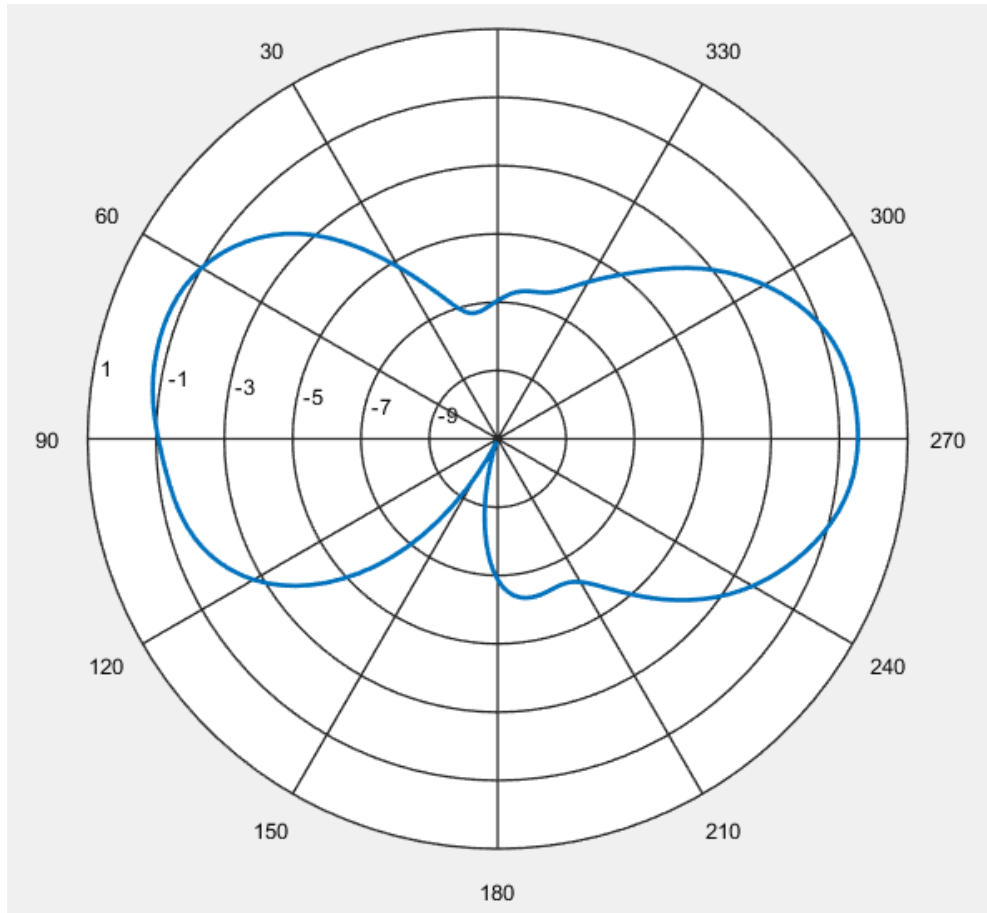
Minimize E5071C

E5071C Title bar ON

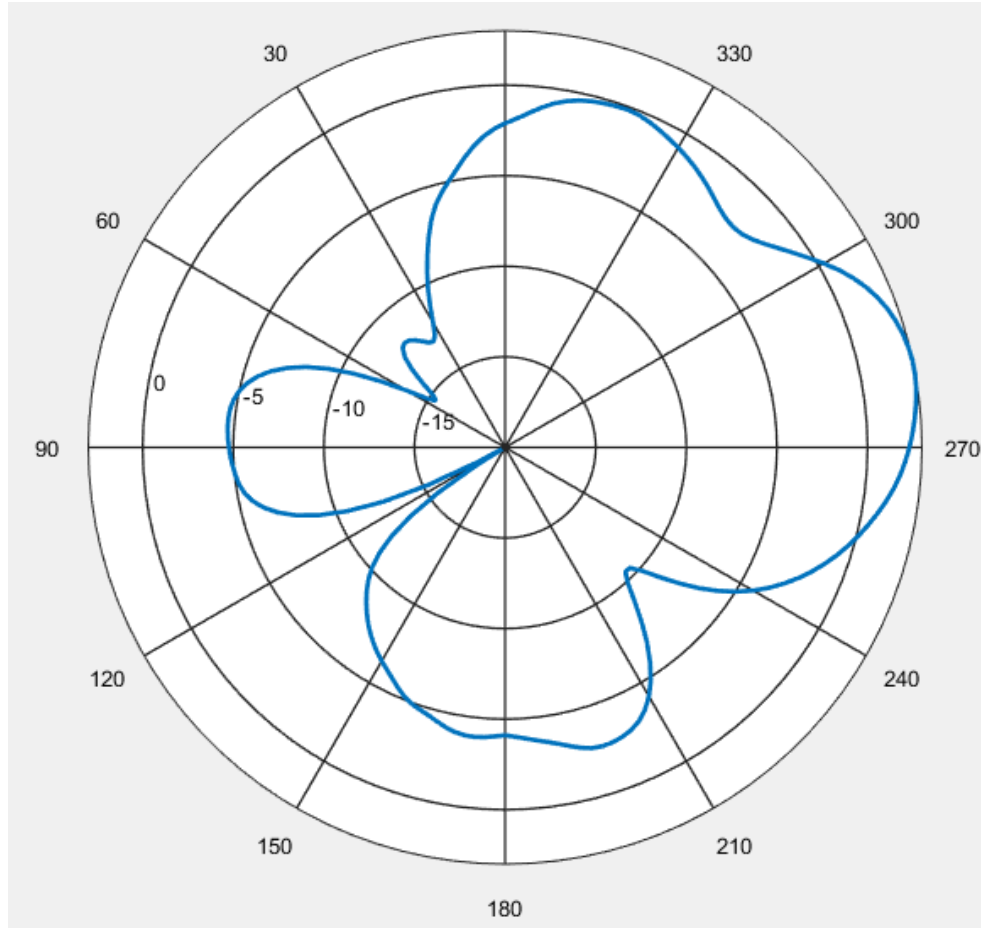
Return

1 Start 4 GHz IFBW 70 kHz Stop 6 GHz Cor I Meas Stop ExtRef Svc 2024-03-25 14:27

4. Radiation Patterns

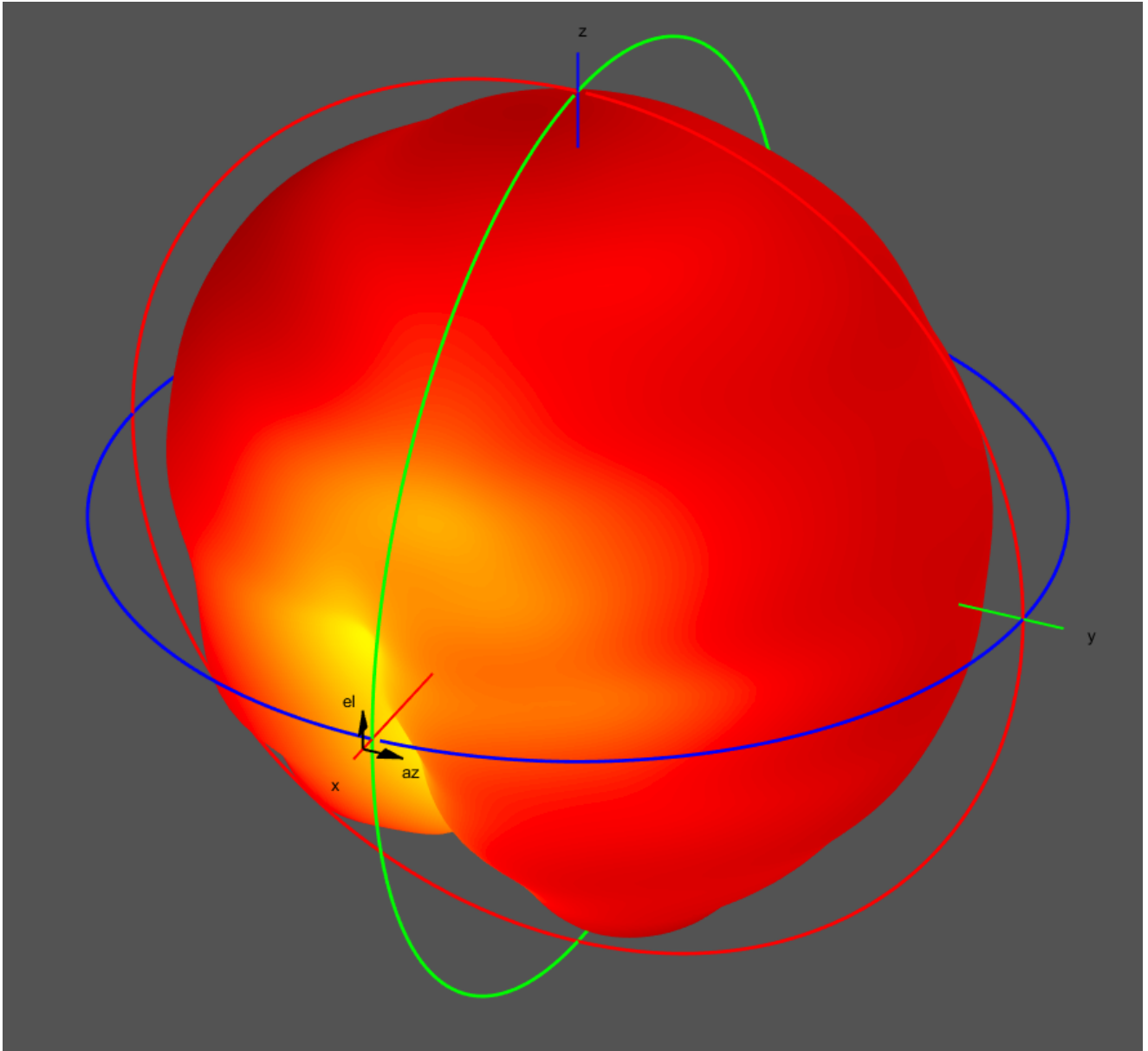


2450MHz

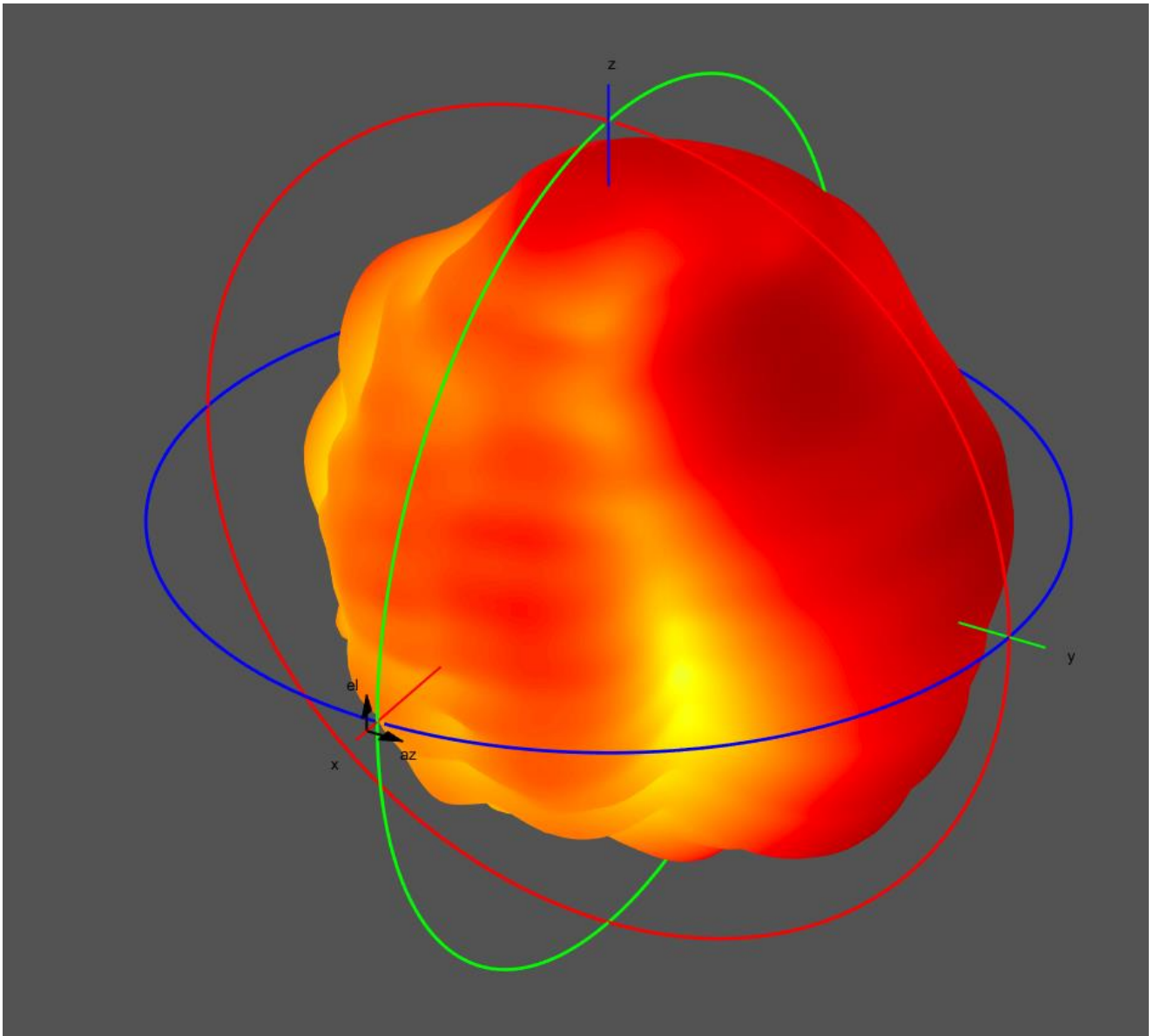


5550MHz

- 3D Radiation patterns



2450MHz



5550MHz