SERCOMM

Antenna Data Sheet

Jan. 23, 2025

Prepared by Johnson Yu

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- Test Infomation
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Antenna Structure & Placement

Ant No.	Operating Band	P/N	Polarization	Type	Material	Feeding	Dimension
Ant 1	ZigBee	6172005YWA	V-Polarization	PIFA	FPCB	Cable	30(L) x 17.5(W) x 0.15(T) mm^3
Ant 2	WiFi 2/5G /BT	6172005XWA	V-Polarization	PIFA	FPCB	Cable	30(L) x 15(W) x 0.15(T) mm^3

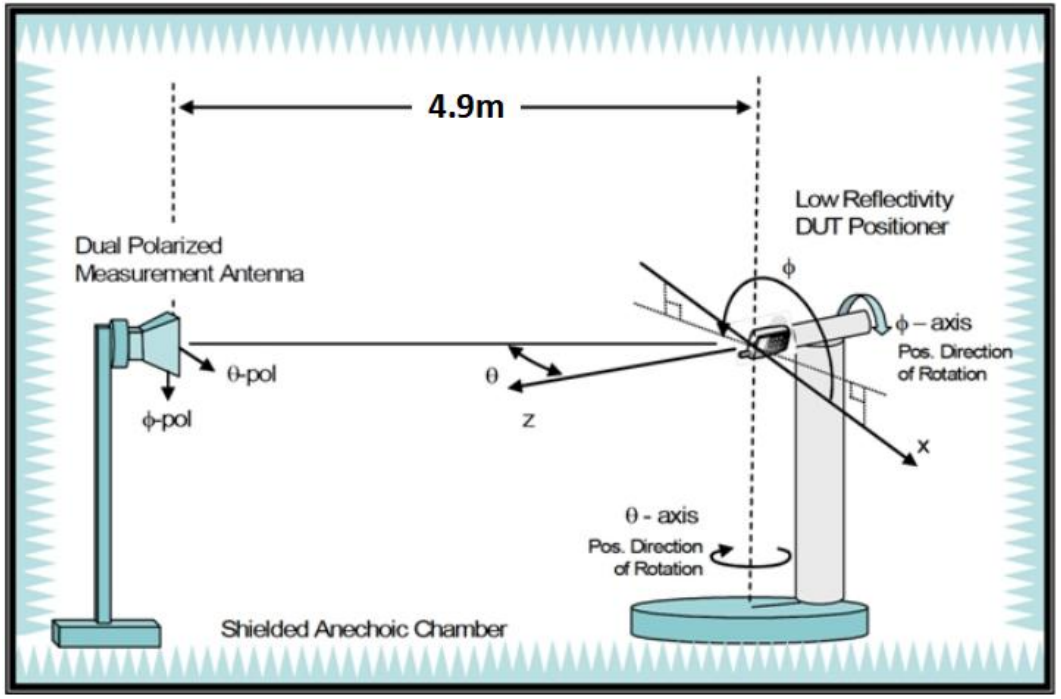
Sercomm Corporation
8F,No.3-1,YuanQu St.,NanKang,Taipei 115,Taiwan,R.O.C

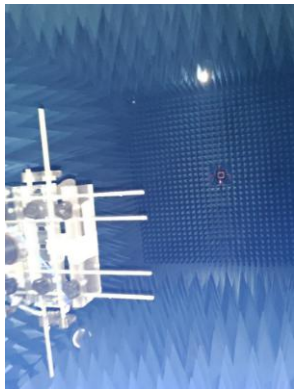
Test Infomation

Iteam	Description
Brand Name	Sercomm
Equipment	Digital Device
Test Location	8F, No. 3-1, YuanQu St. Taipei, Taiwan 115 R.O.C.
Test Condition	Radiation
Test Engineer	Johnson Yu
Test Environment	ETS-8500 Antenna Measurement Chamber
Test Date	Jul. 1, 2024~ Jul. 10, 2024

Test Configuration

ETS AMS-8500 antenna measurement system with a size of 7.32(L) × 3.66(W) × 3.66(H) m^3 is used for antenna performance test, which is based on the great-circle test method defined by CTIA. The multi-axis positioning system (MAPS) rotates the DUT around two orthogonal axes for full spherical coverage.



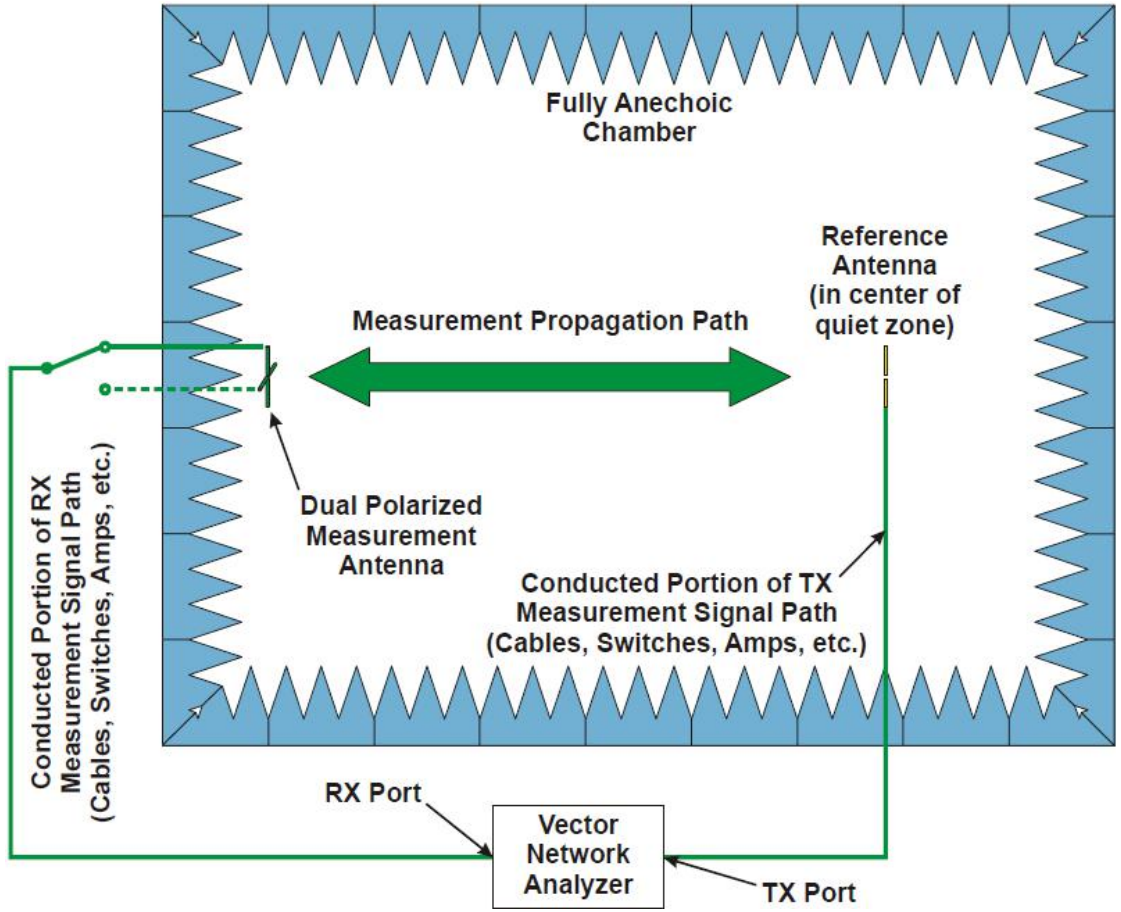


Test Setup & Procedure

1. Fix the DUT on the dielectric support structure and connect the feeding cable to the antenna used for test
2. Set measurement parameters such as frequency range and sampling angle
3. Perform 3D test and then get far-field data (radiation pattern, gain, efficiency)

Equipment Used Information (With Calibration)

Network analyzer and reference antennas (Precision Sleeve Dipole) are used for calibration. Path loss for each band can be checked and calculated.



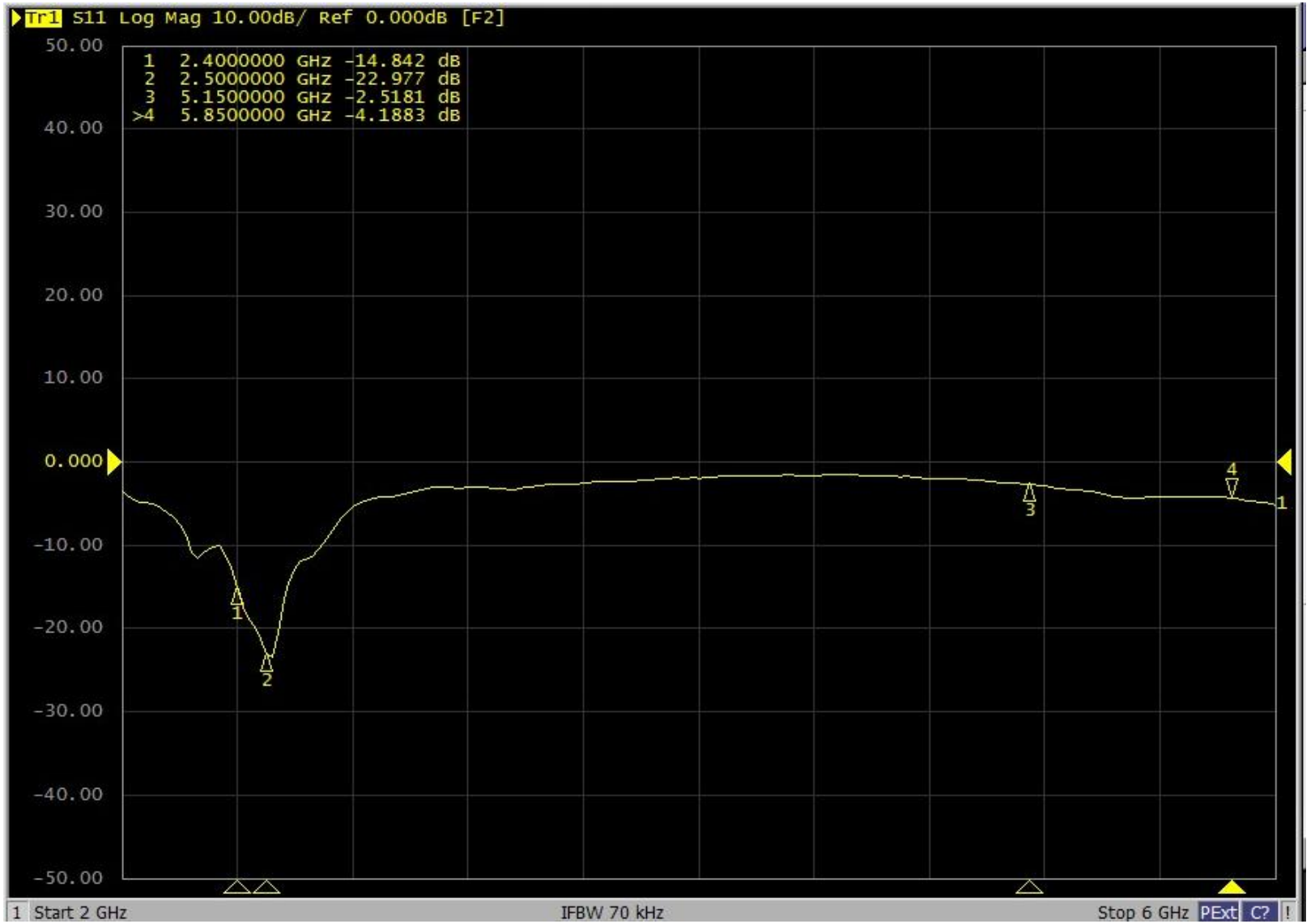
Equipment Used Information

Instrument	Brand	Characteristics	Model No.	Serial No.	Calibration Due Date
Precision Sleeve Dipole	ETS-Lindgren	700 MHz ~ 900 MHz	3126-700	00169715	Feb 13, 2023
Precision Sleeve Dipole	ETS-Lindgren	900 MHz ~ 1000 MHz	3126-900	00169592	Feb 13, 2023
Precision Sleeve Dipole	ETS-Lindgren	1400 MHz ~ 1700 MHz	3126-1550	00164599	Feb 13, 2023
Precision Sleeve Dipole	ETS-Lindgren	1700 MHz ~ 2000 MHz	3126-1850	00169588	Feb 13, 2023
Precision Sleeve Dipole	ETS-Lindgren	2000 MHz ~ 2300 MHz	3126-2150	00169593	Feb 13, 2023
Precision Sleeve Dipole	ETS-Lindgren	2300 MHz ~ 2700 MHz	3126-2500	00169597	Feb 13, 2023
Precision Sleeve Dipole	ETS-Lindgren	5000 MHz ~ 6000 MHz	3126-5500	00169728	Feb 13, 2023
Horn Antenna	SCHWARZBECK	1 GHz ~ 18 GHz	BBHA 9120D	BBHA 9120D-1294	Feb 13, 2023
EMQuest Antenna Measurement Software	ETS-Lindgren	Control chamber system	EMQ-100	1437	Non-Calibration Required

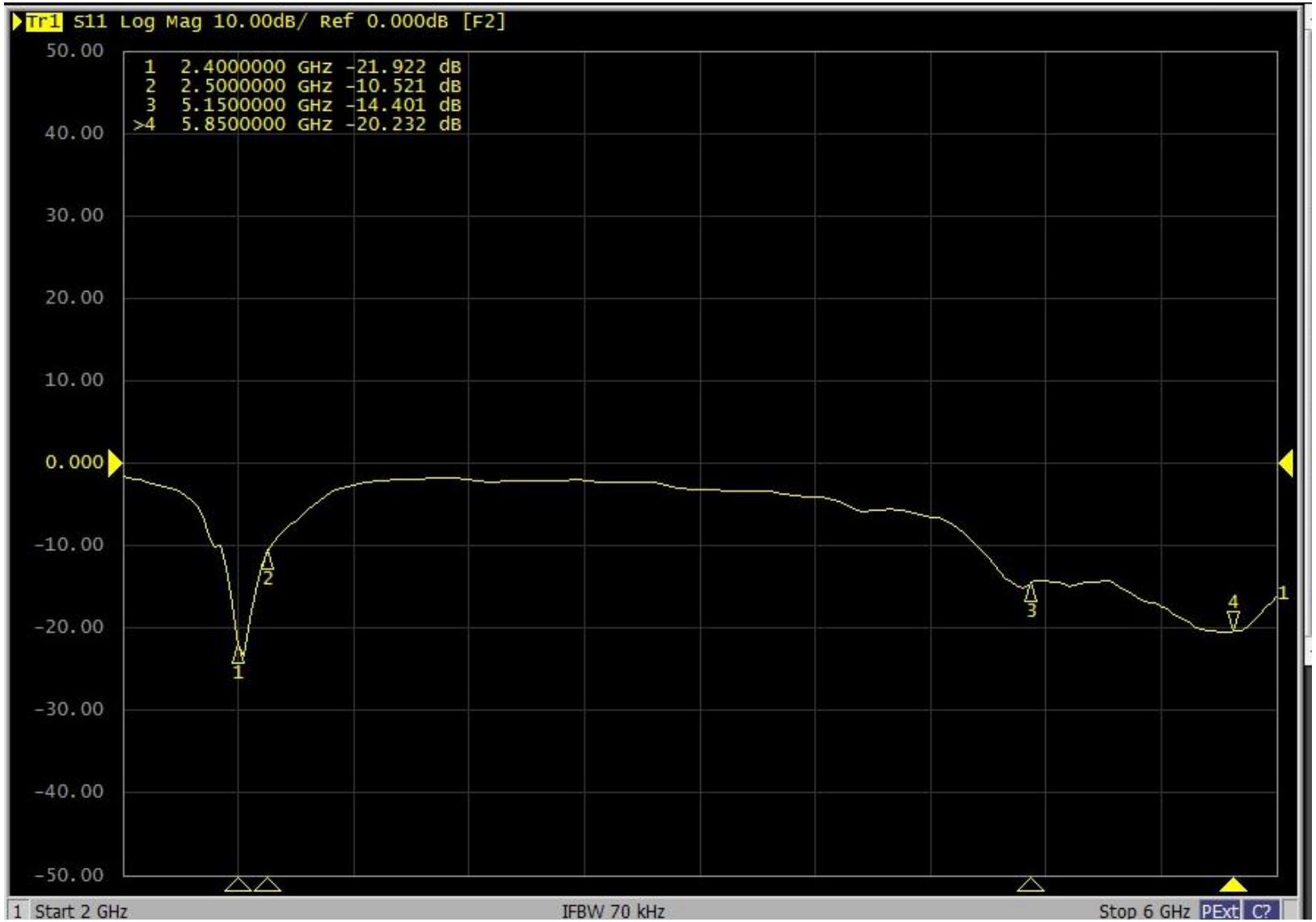
Antenna Specification

Antenna Specification	Comply	Note
Return Loss: > 10dB (WiFi & ZigBee & BT)	Yes	
Isolation : > 20dB (WiFi & ZigBee & BT)	Yes	
Efficiency : > 40% (WiFi & ZigBee & BT)	Yes	

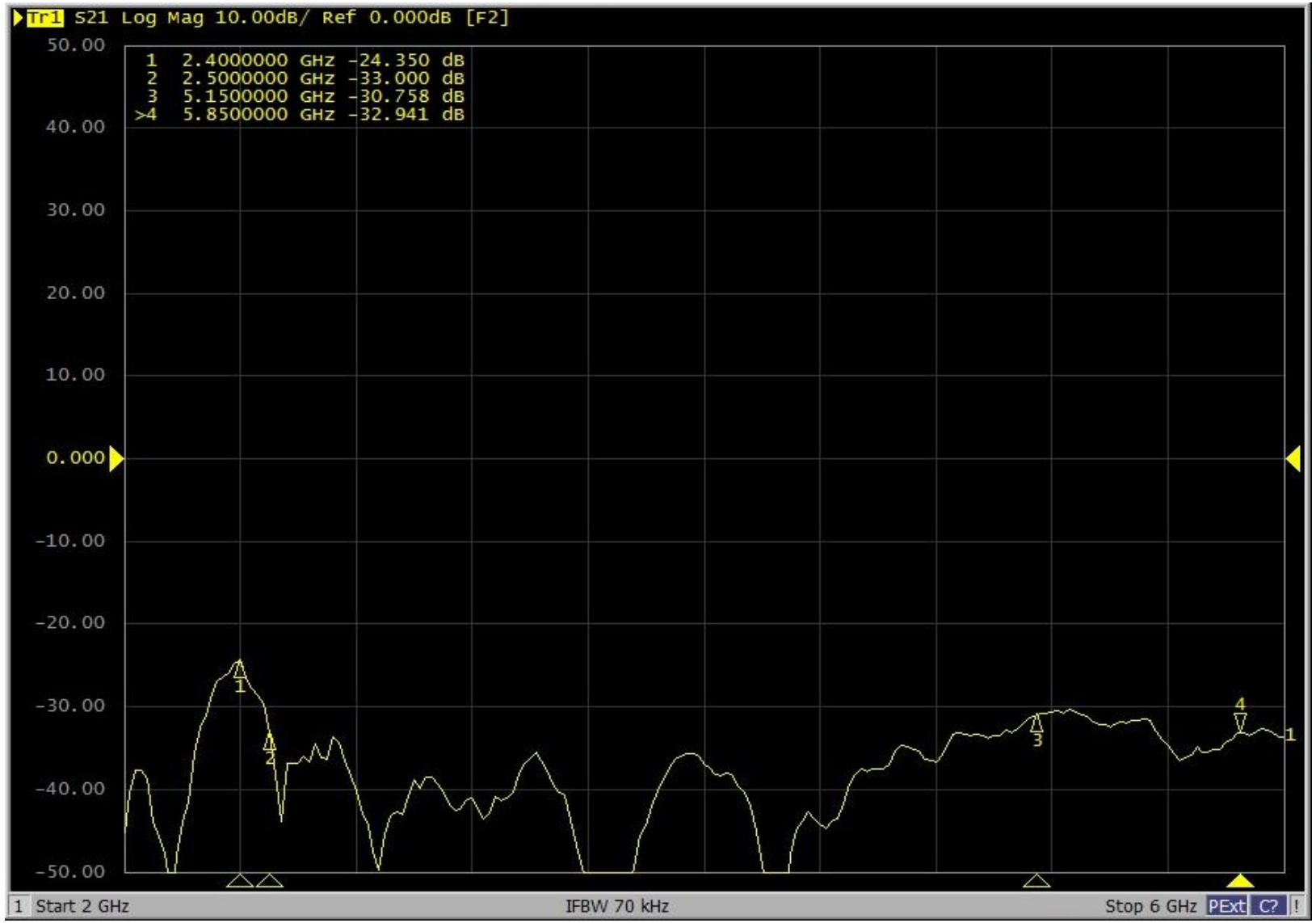
Return Loss @ Ant 1 ZigBee



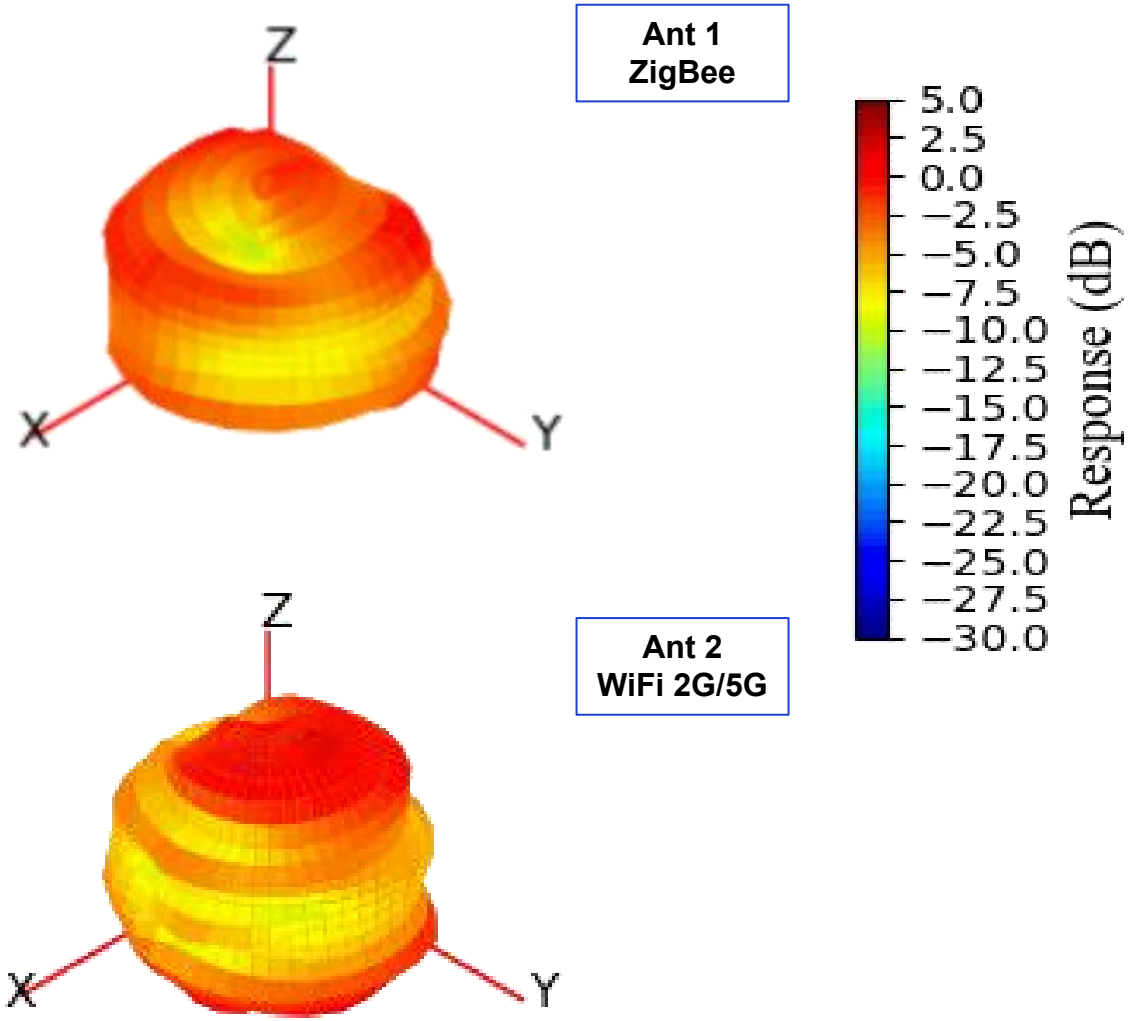
Return Loss @ Ant 2 WiFi 2/5G /BT



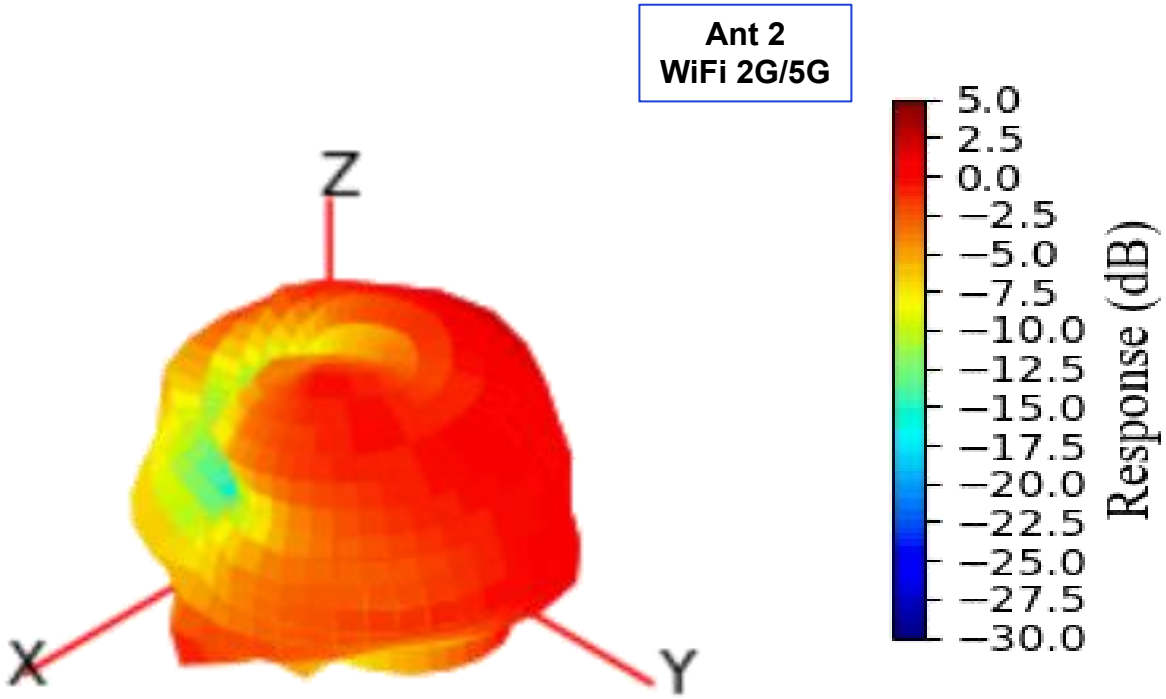
Isolation @ Ant 1&Ant2



3D Radiation Pattern – Ant 1 ZigBee & Ant 2 WiFi 2G/5G @ 2.45GHz



3D Radiation Pattern – Ant 2 WiFi 2G/5G @ 5.47GHz



Return Loss & Isolation & Peak Gain & Efficiency

	Ant1 ZigBee	Ant2 WiFi 2G/5G
Peak Gain (dBi)	1.4 ~ 2	2G : 2.1 ~ 2.6 5G : 3.3 ~ 4.4
Efficiency (%)	42% ~ 45%	2G : 40% ~ 44% 5G : 51% ~ 63%
Return Loss	> 10	
Isolation	> 20	

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