

FAP-244K

Antenna Specification Report

(Option 2-B plus New, plate mold version)

23th Apr. , 2026

Production : 东莞劲天荣昌精密电子有限公司

Dongguan Gtan Grand-Tek Precision Technology Ltd.

Address : 中国广东省东莞市常平镇白石岗村

Bai Shi Gang, Chang Ping Town, DongGuan City, GuanDong Province, P.R.C. 523559, China

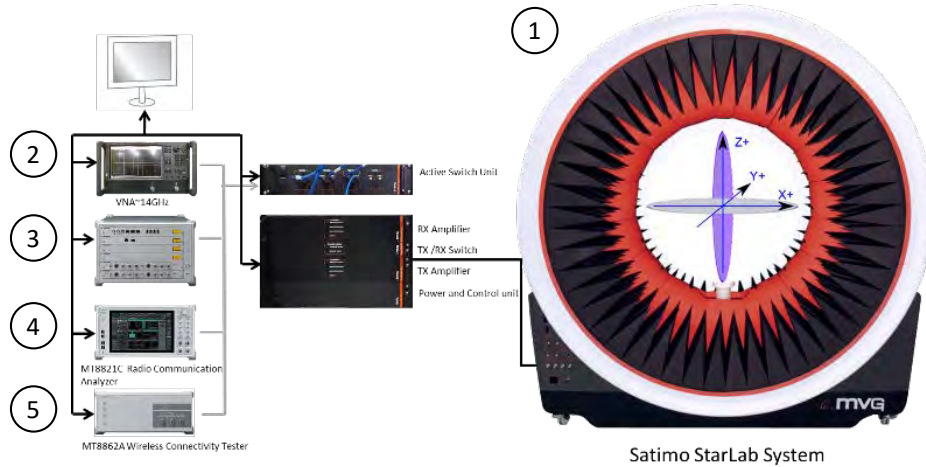


- Test Purpose and Test Item
- Antenna placement
- Return Loss
- Isolation
- Antenna 3D Radiation Pattern
- Antenna 2D Radiation Pattern
- Antenna Efficiency & Peak Gain

- Test Purpose: Passive testing for Efficiency / Peak Gain / Radiation Pattern
- Device Under Test: (DVT Unit)
 - Model: FAP-244K

Testing Environment

MVG 3D Chamber-SATIMO STARLAB Polarization diagram



ITEM	DESCRIPTION	BRAND / Part number	CALIBRATION DATE
1	StarLab System	MVG	12/Dec/2025
2	Vector Network Analyzer	Keysight 5080B	10/Mar/2025
3	5G Radio Communication Station	Anritsu MT8000A	16/Dec/2024
4	4G Radio Communication Analyzer	MT8821C	06/Dec/2024
5	Wireless Connectivity Tester	MT8862A	06/Dec/2024

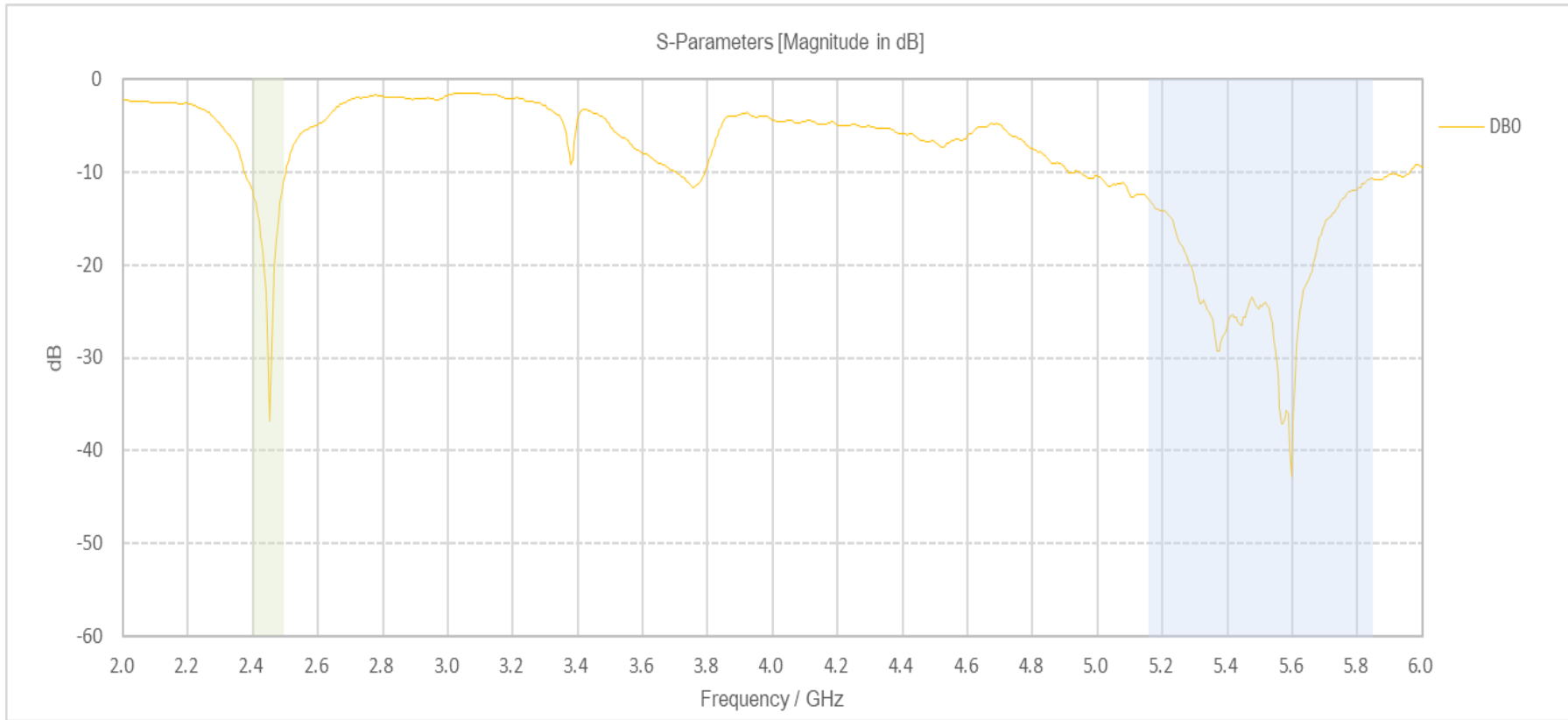
● Antenna Definition and Distribution Theoretically Peak gain after tuning

□ Antenna: 2x[2.4G/5G WiFi] + 2x[6G] + 2x[2.4G/5G/6G Scanning] + 1x[BLE/Zigbee] + 1x [GNSS]

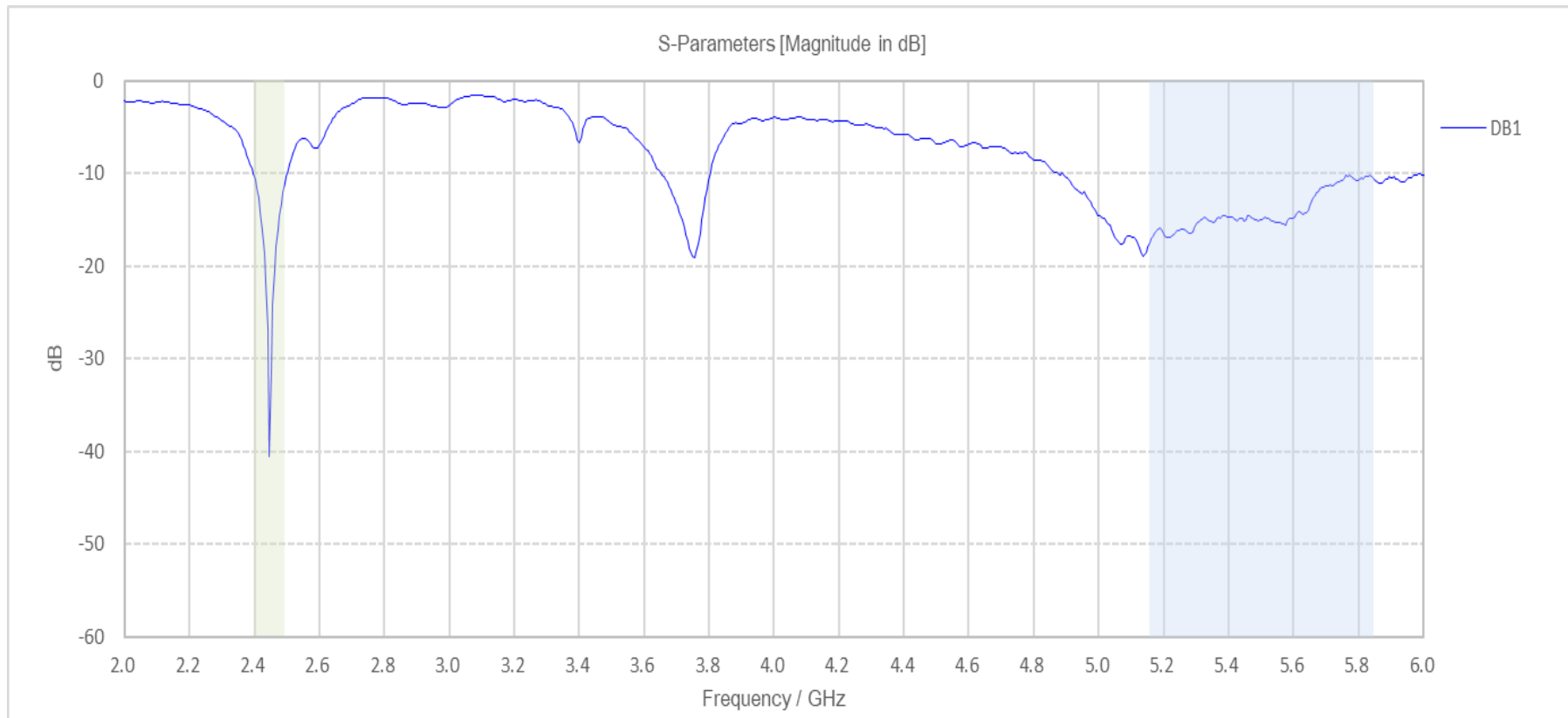
ANT	Frequency (MHz)	1.37 low loss cable length
DB0	2400~2500 5150~5850	219 mm, Black
DB1	2400~2500 5150~5850	128.5 mm, Yellow
6G0	5925~7125	173.5 mm, White
6G1	5925~7125	155 mm, Orange
BLE	2400~2500	282.5 mm, Blue
GNSS	1575~1602	90 mm, Green
SCAN 0	2400~2500 5150~7125	217 mm, Red
SCAN 1	2400~2500 5150~7125	383.5 mm, Gray

ANT position	Brand	P/N	Type	Connector
DB0	Grand-Tek	2034G00000370	Dipole	I-PEX
DB1	Grand-Tek	2034G00000380	Dipole	I-PEX
6G0	Grand-Tek	203CG00000150	Dipole	I-PEX
6G1	Grand-Tek	203CG00000160	Dipole	I-PEX
BLE/Zigbee	Grand-Tek	2039G00000090	Dipole	I-PEX
GNSS	Grand-Tek	2031G00000150	Ceramic	I-PEX
Scan0	Grand-Tek	203DG00000140	Dipole	I-PEX
Scan1	Grand-Tek	203DG00000150	Dipole	I-PEX

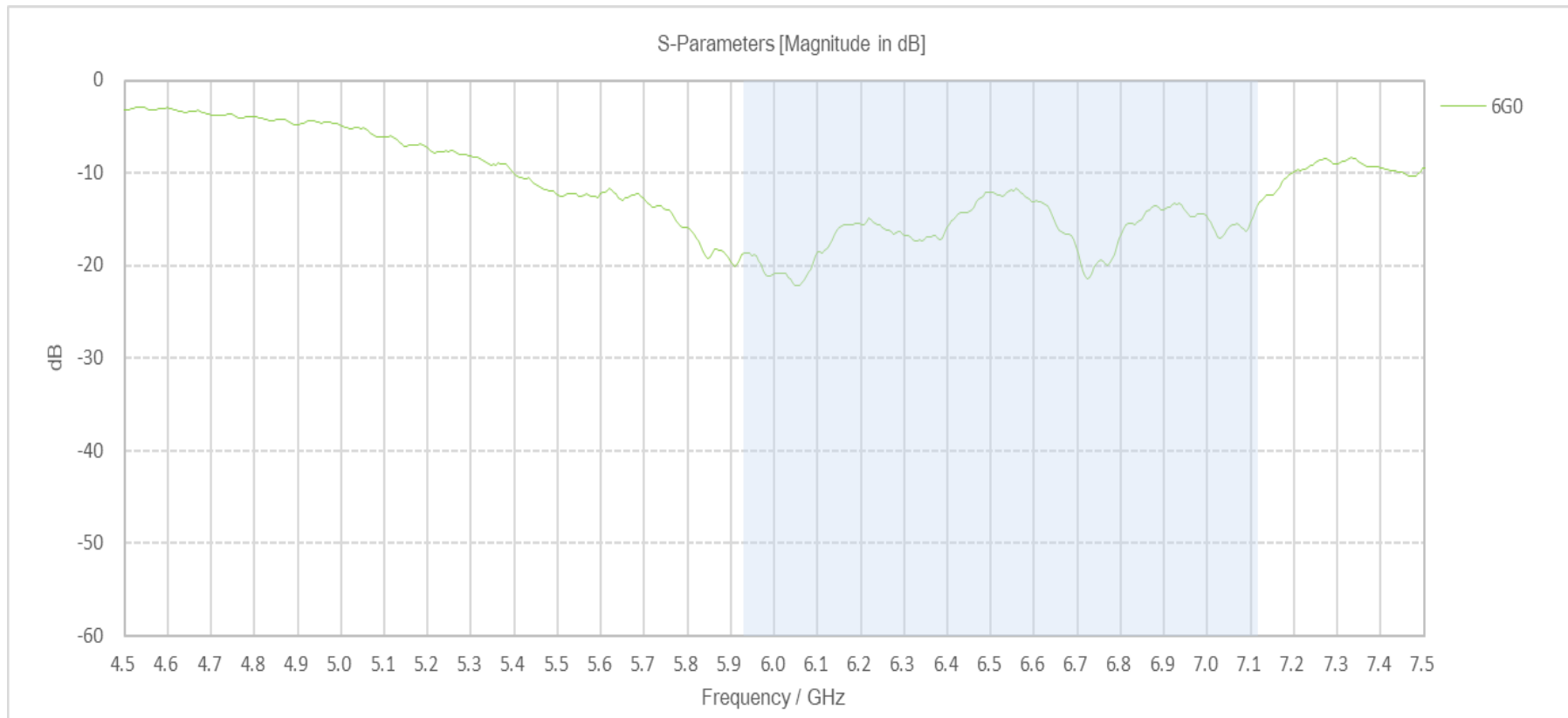
ARC ANTs design_return loss DB0



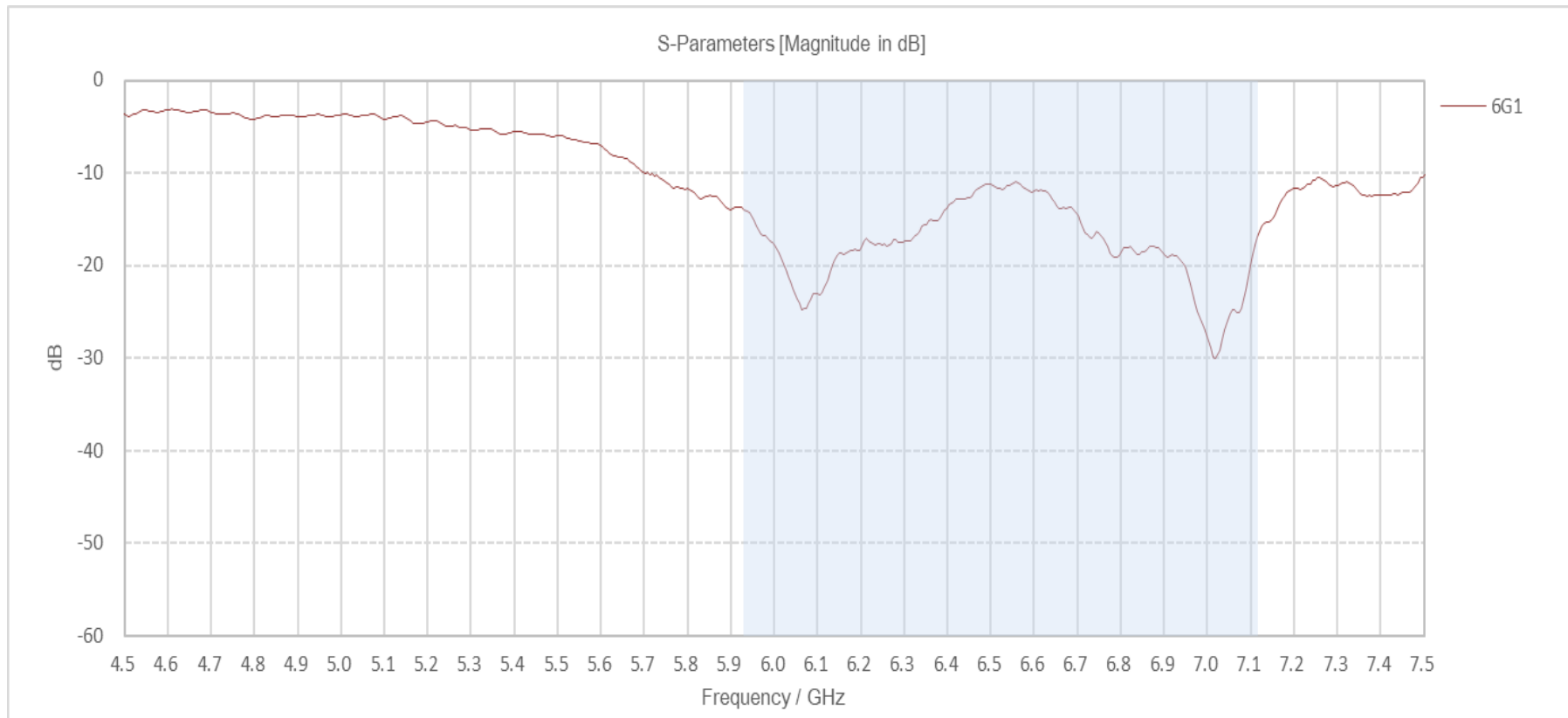
ARC ANTs design_return loss DB1

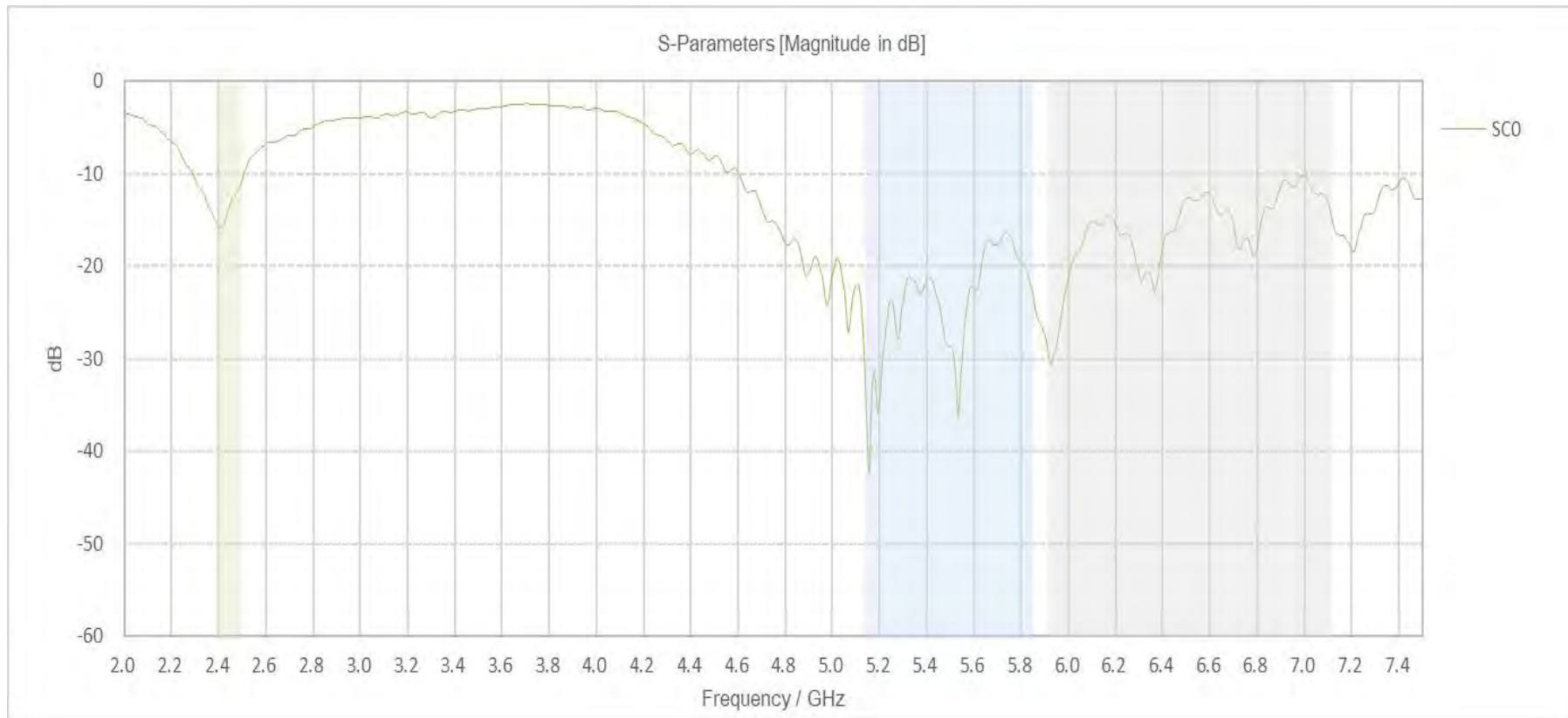


ARC ANTs design_return loss 6G0

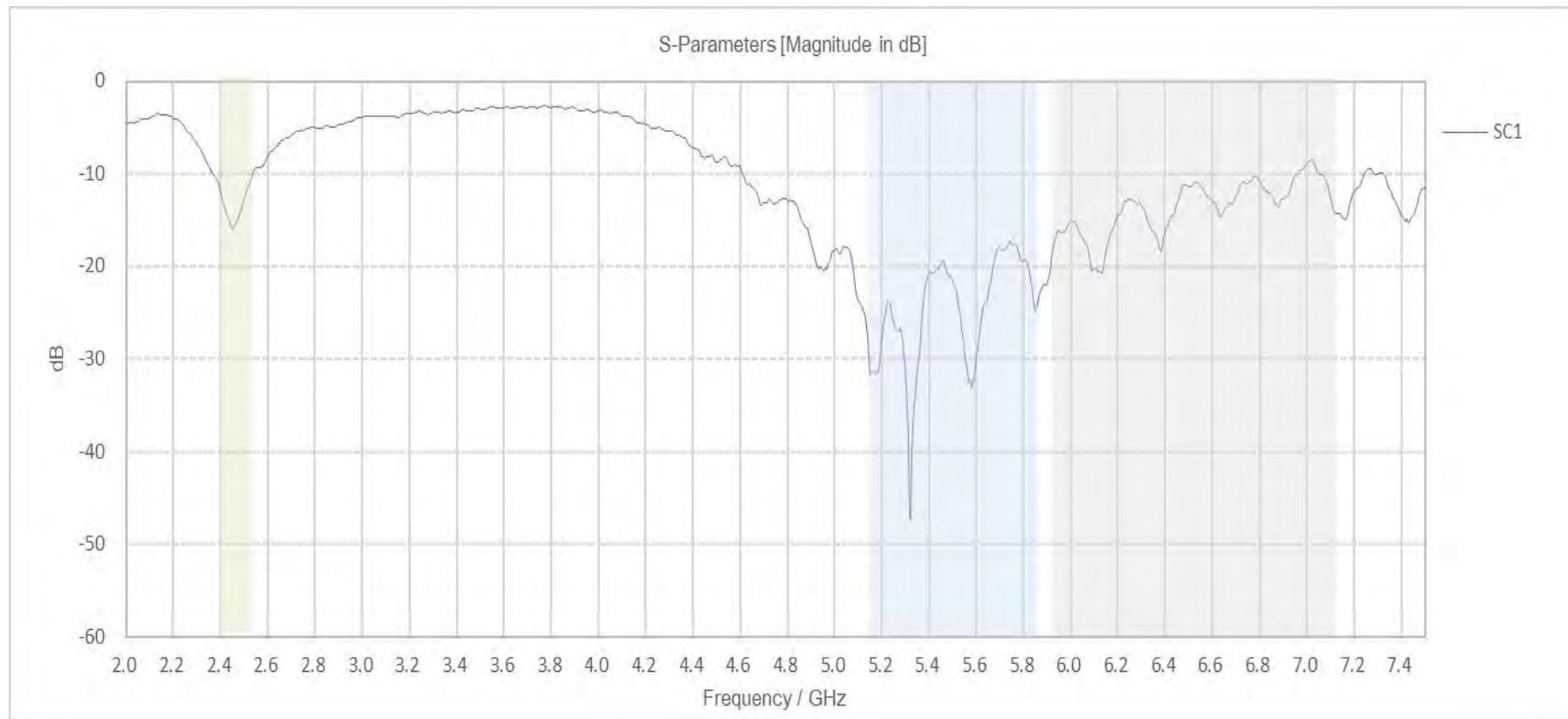


ARC ANTs design_return loss 6G1

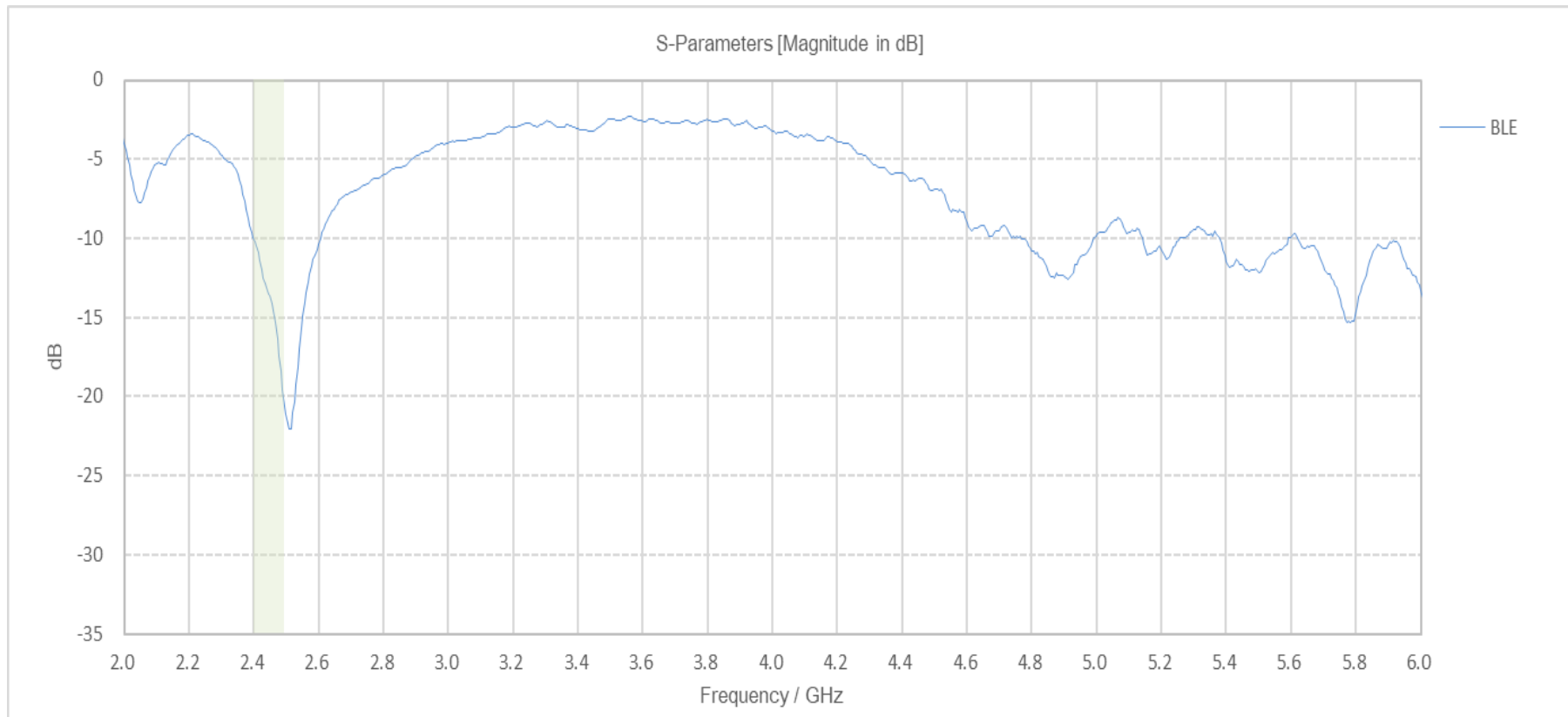


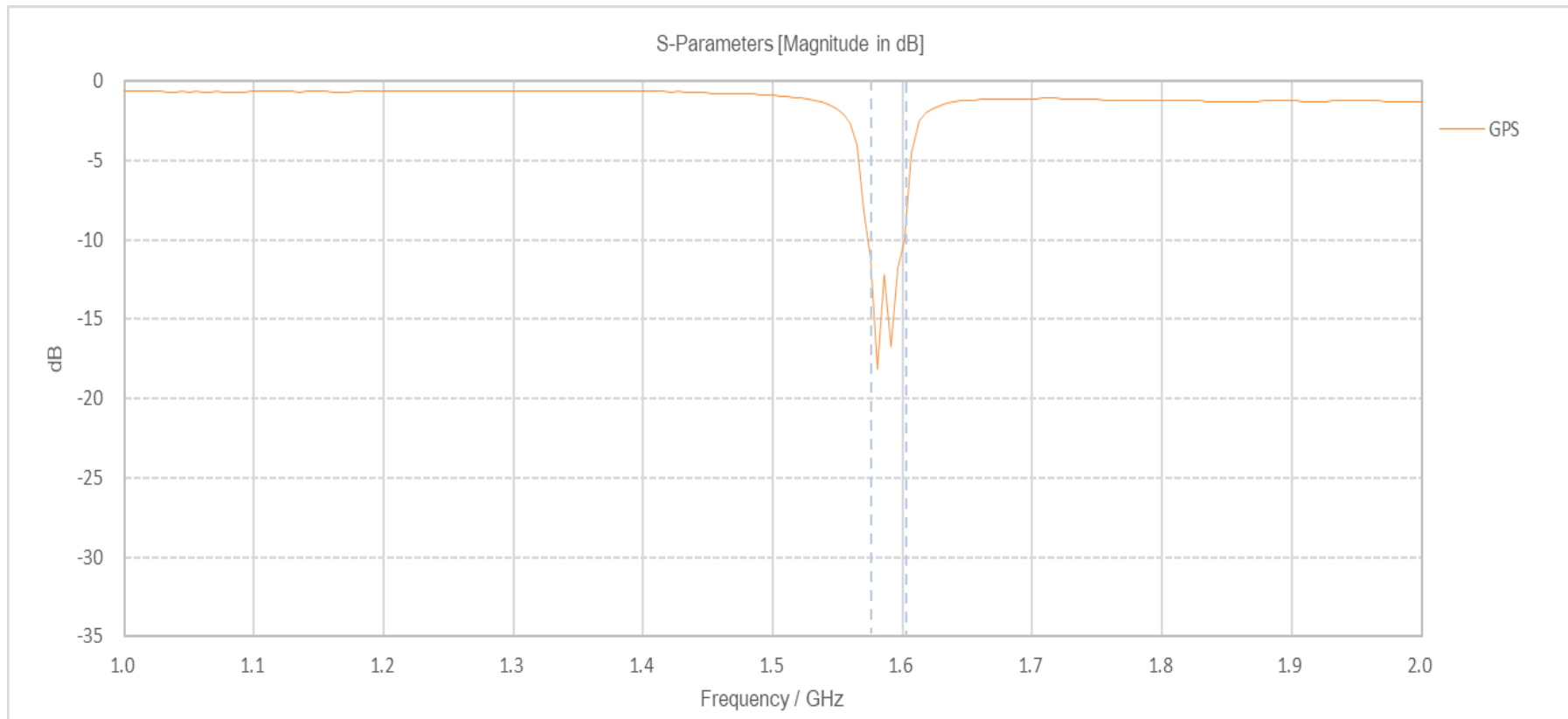


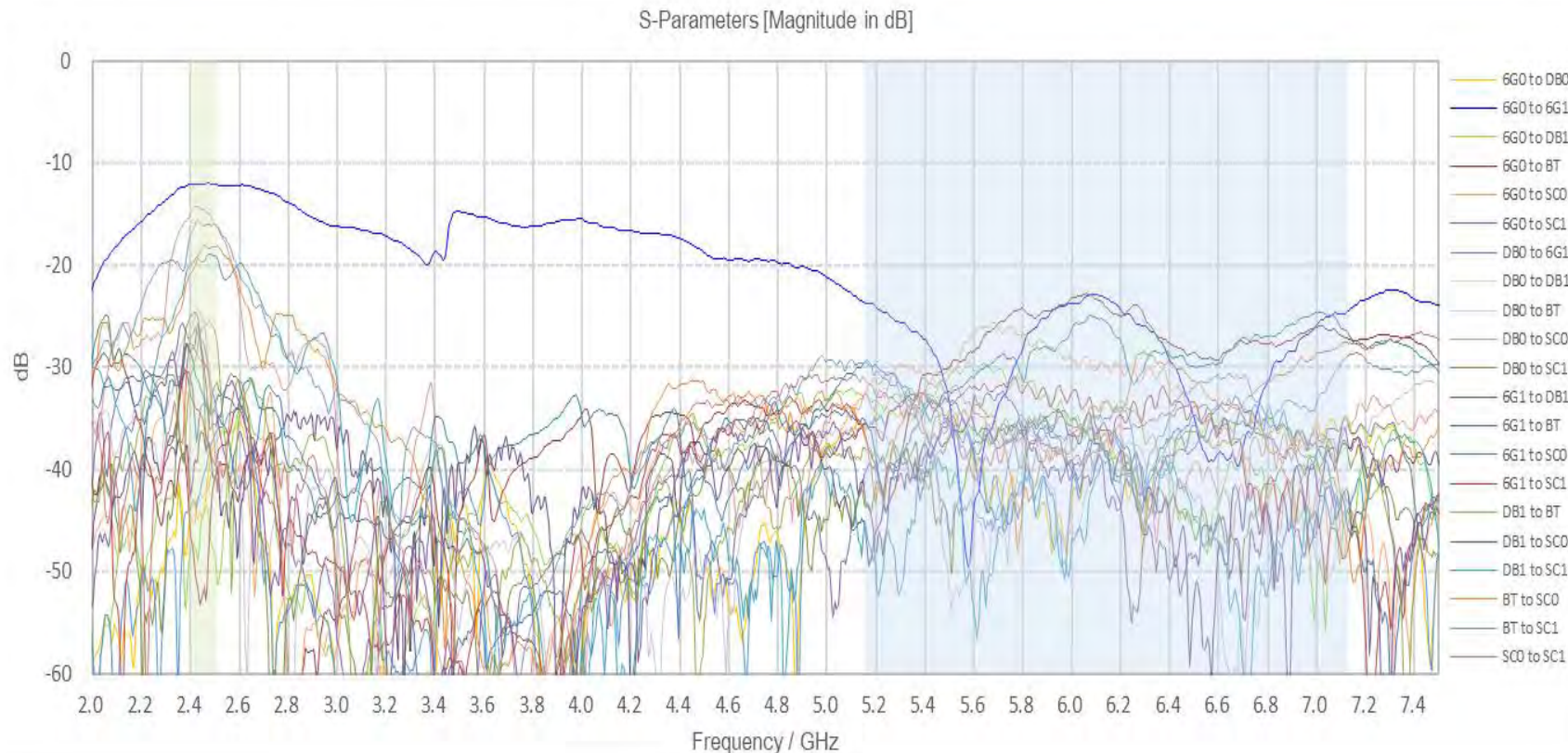
ARC ANTs design_return loss Scan 1



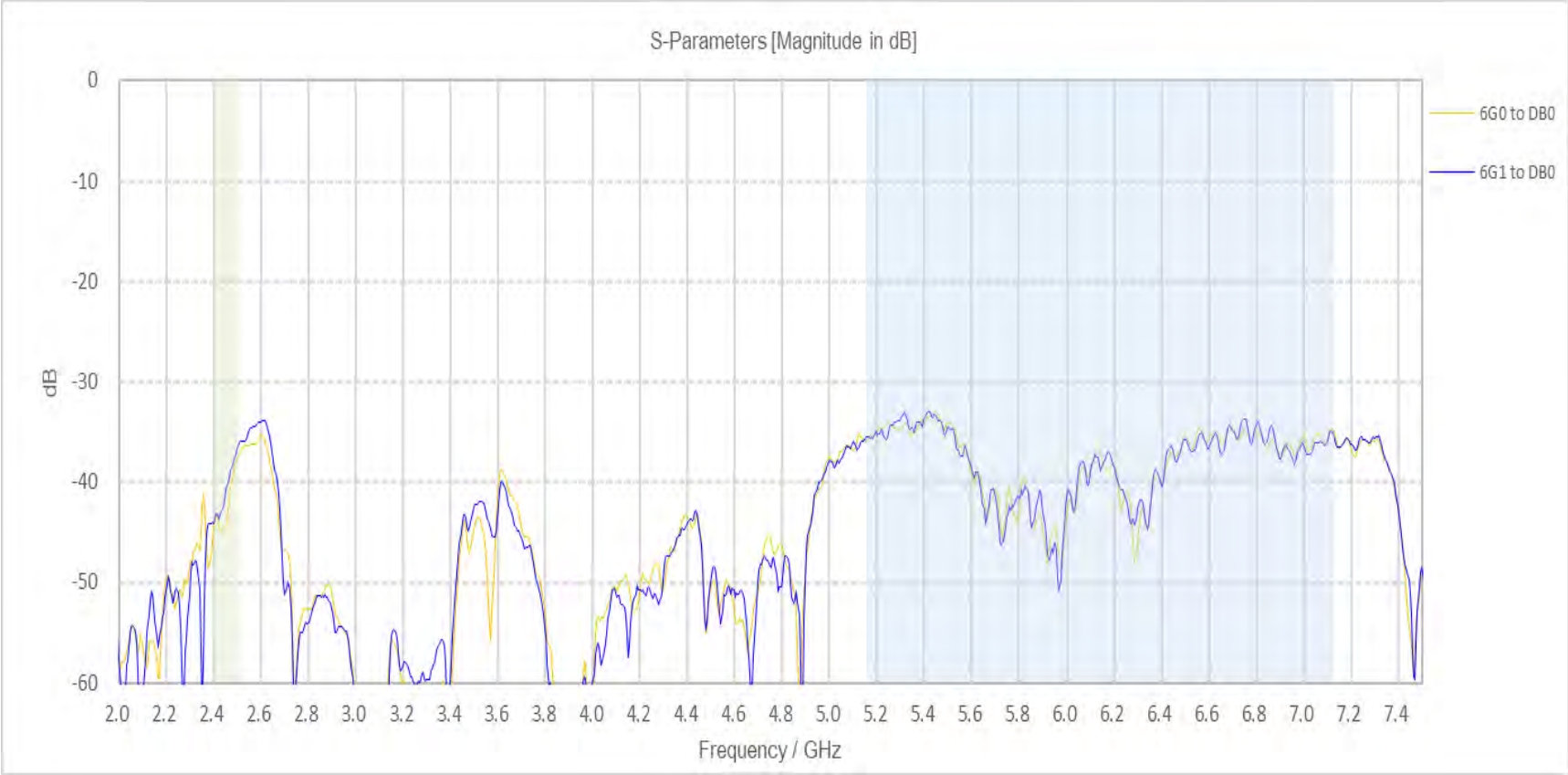
ARC ANTs design_return loss BLE





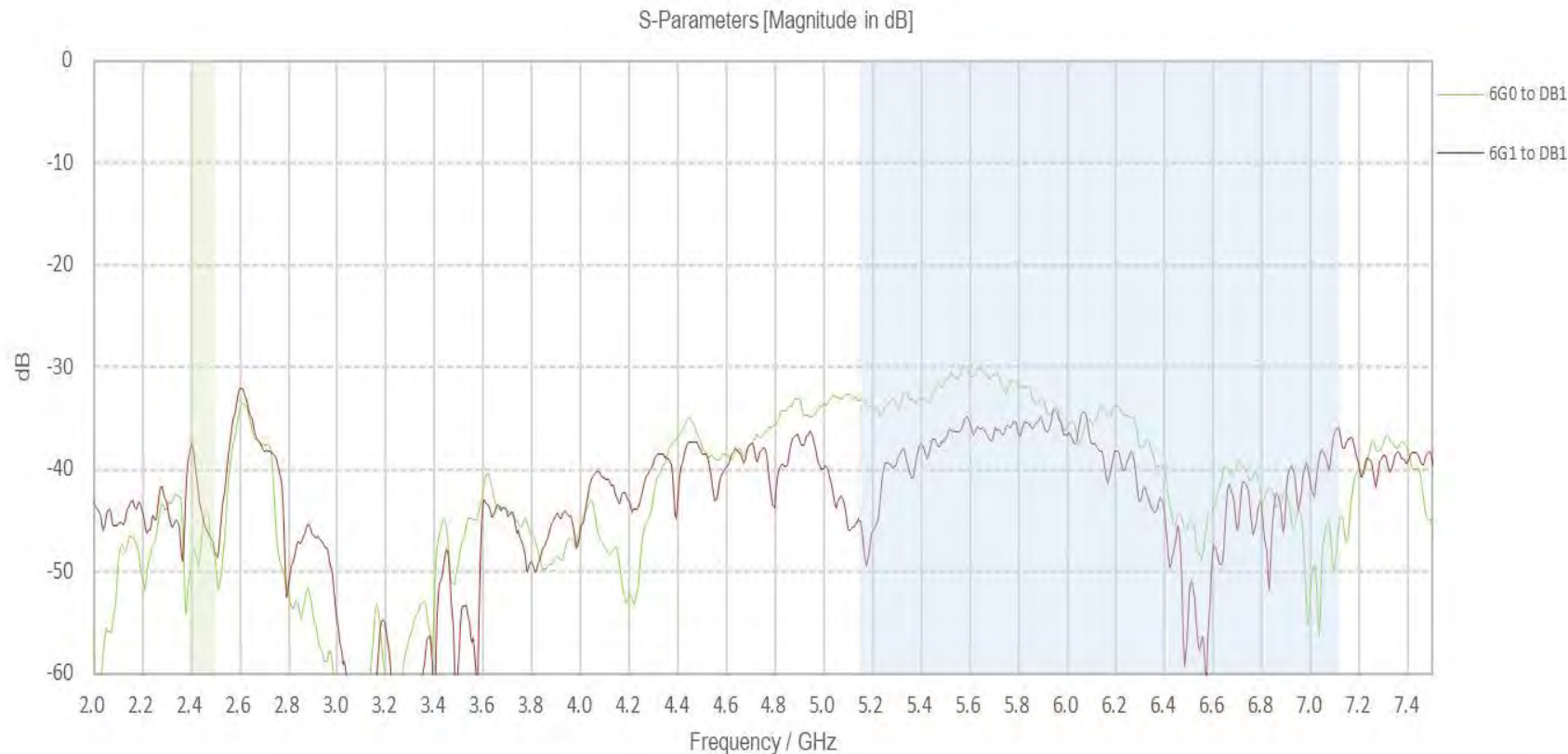


ANT	NO
DB0	2
DB1	4
6G0	1
6G1	3
BLE	5
GNSS	
SCAN 0	6
SCAN 1	7



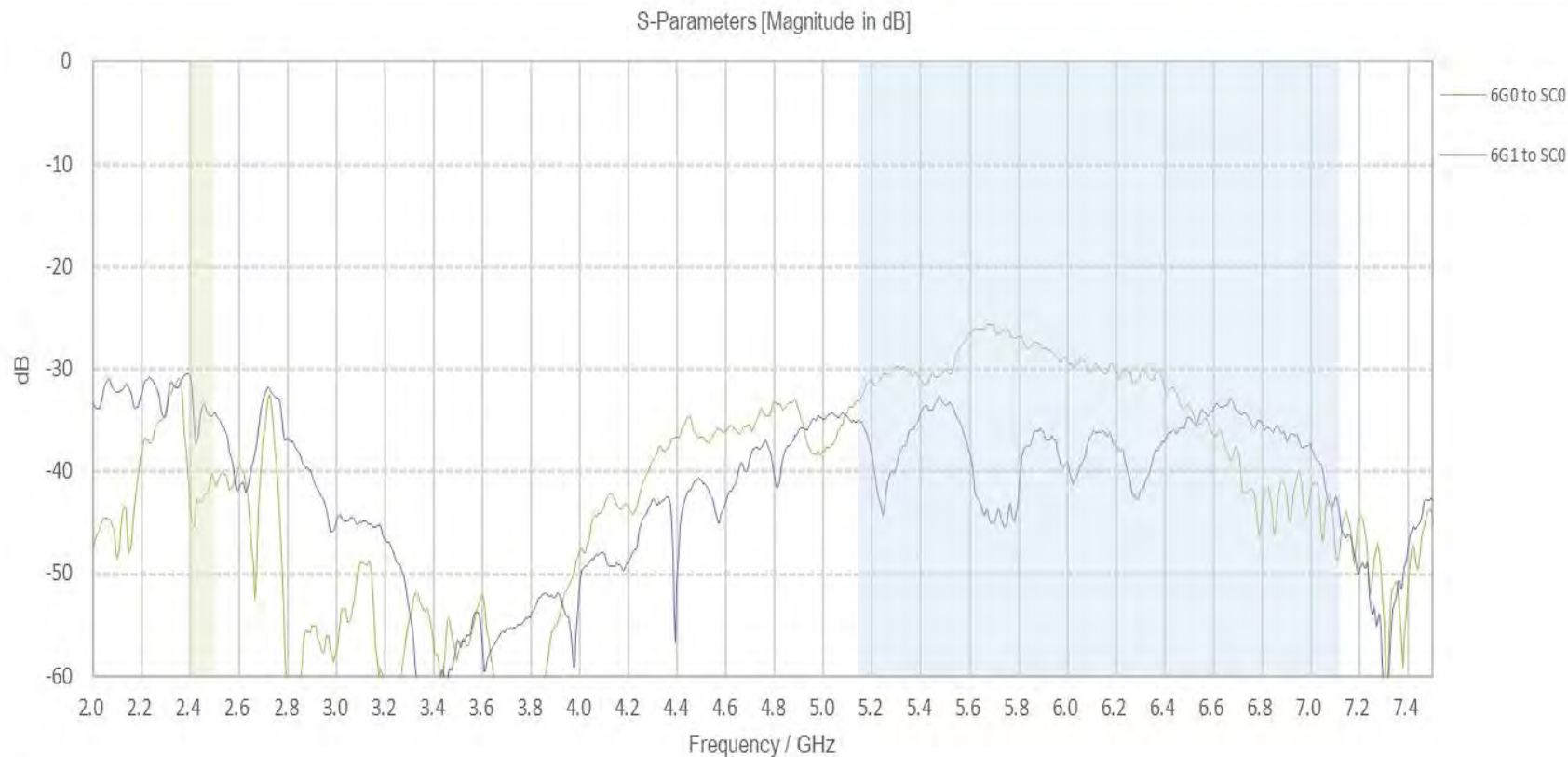
ANT	NO
DB0	2
DB1	4
6G0	1
6G1	3
BLE	5
GNSS	
SCAN 0	6
SCAN 1	7

ARC ANTs design_isolation_DB1 to 6G



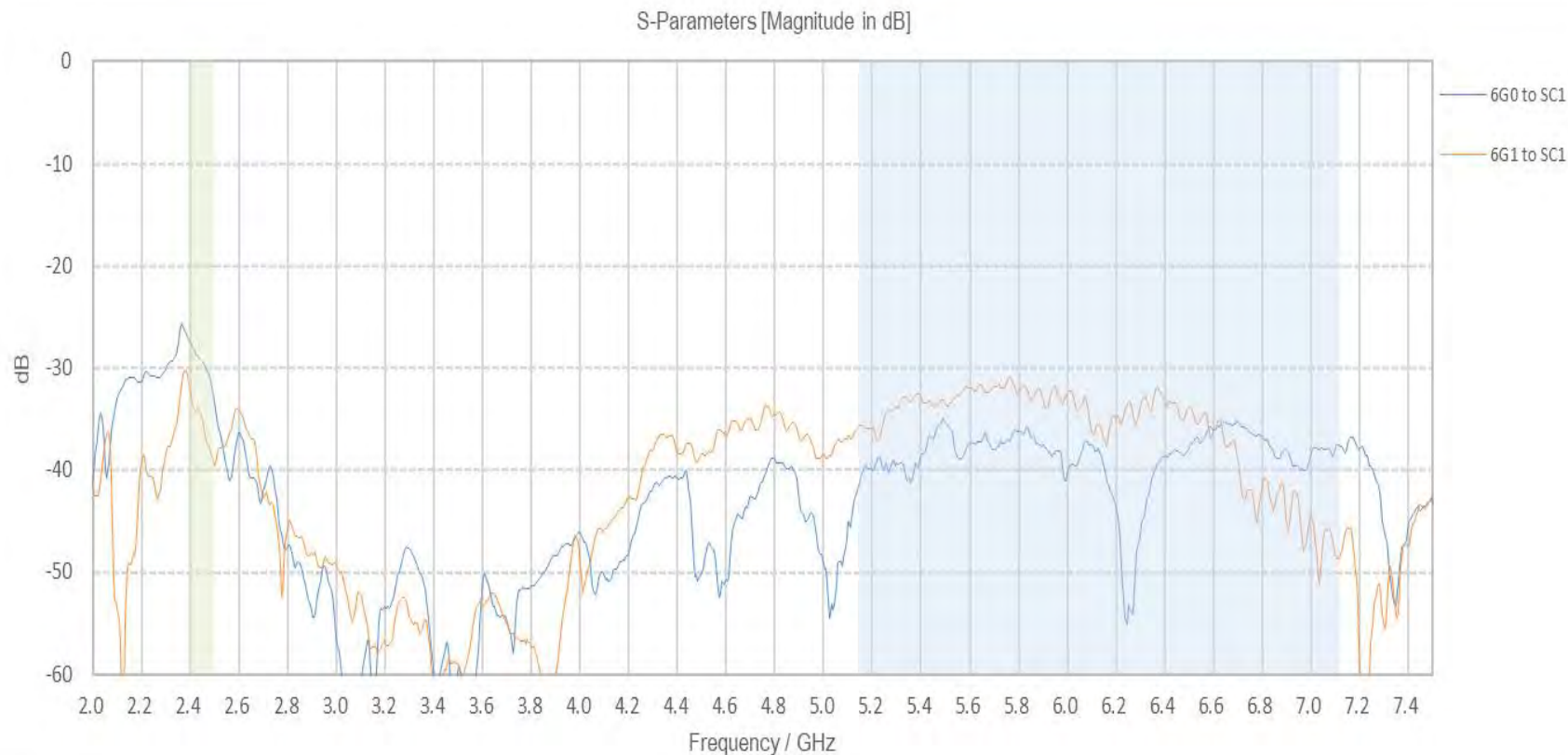
ANT	NO
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DB1	4
6G0	1
6G1	3
BLE	5
GNSS	
SCAN 0	6
SCAN 1	7

ARC ANTs design_isolation_SC0 to 6G



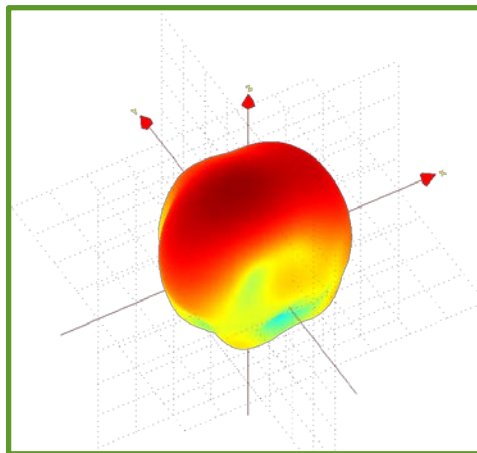
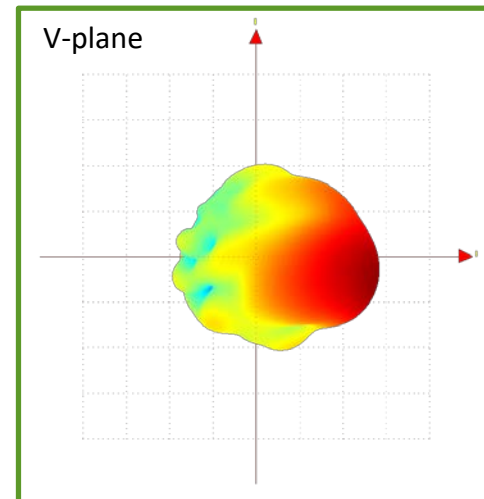
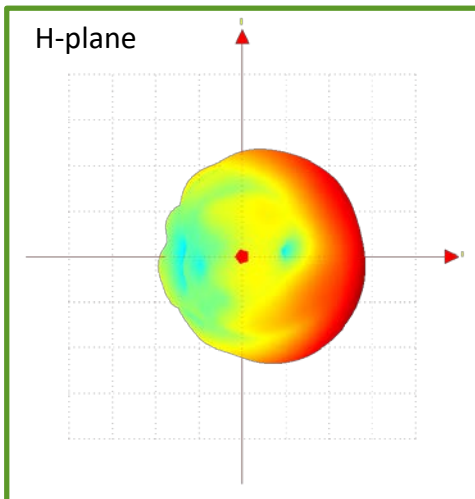
ANT	NO
DB0	2
DB1	4
6G0	1
6G1	3
BLE	5
GNSS	
SCAN 0	6
SCAN 1	7

ARC ANTs design_isolation_SC1 to 6G

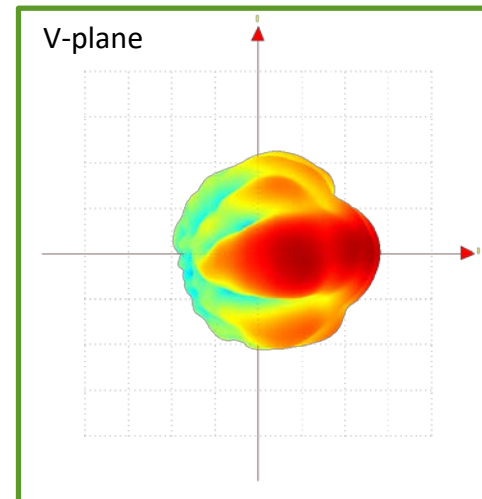
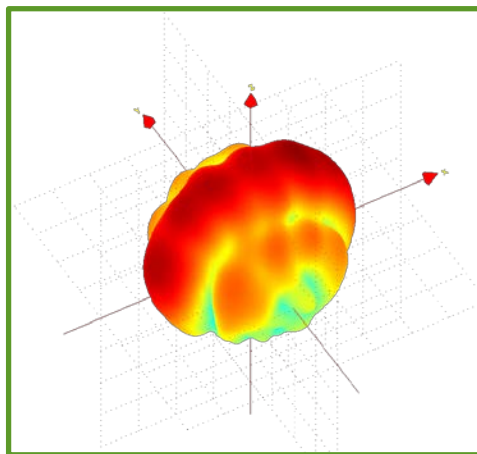
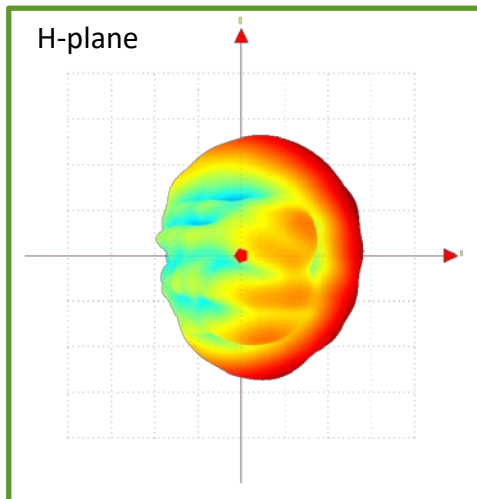


ANT	NO
DB0	2
DB1	4
6G0	1
6G1	3
BLE	5
GNSS	
SCAN 0	6
SCAN 1	7

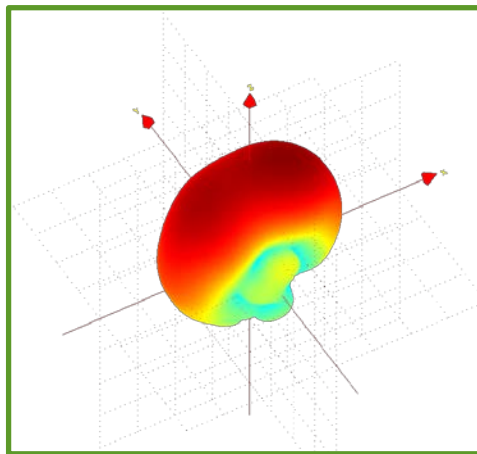
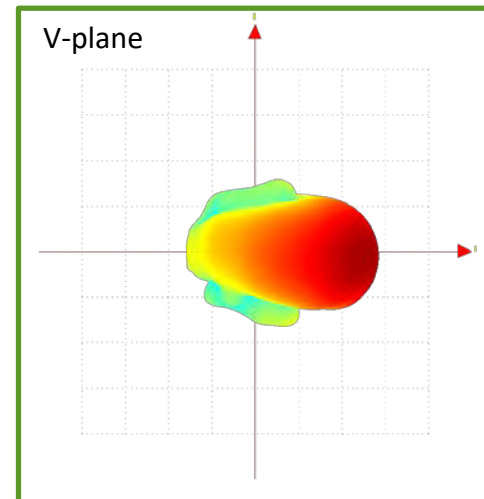
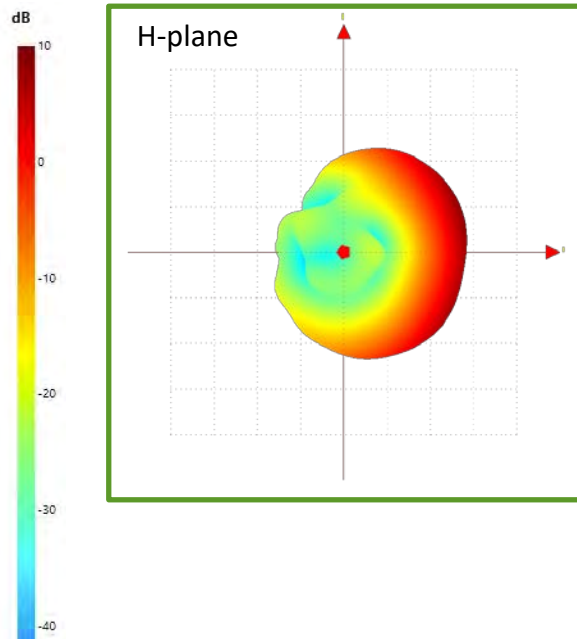
DB0_3D Radiation Pattern of 2.45 GHz



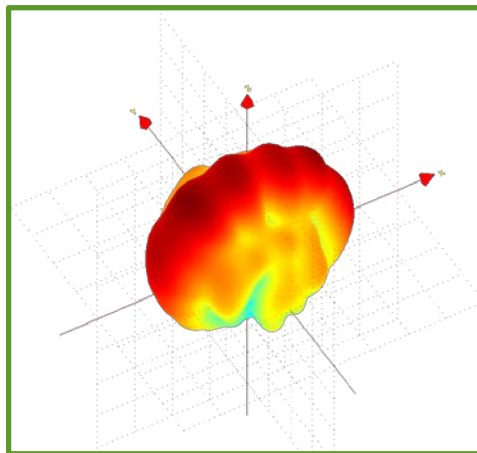
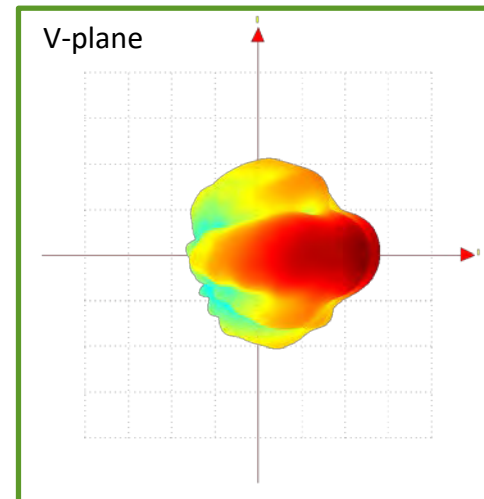
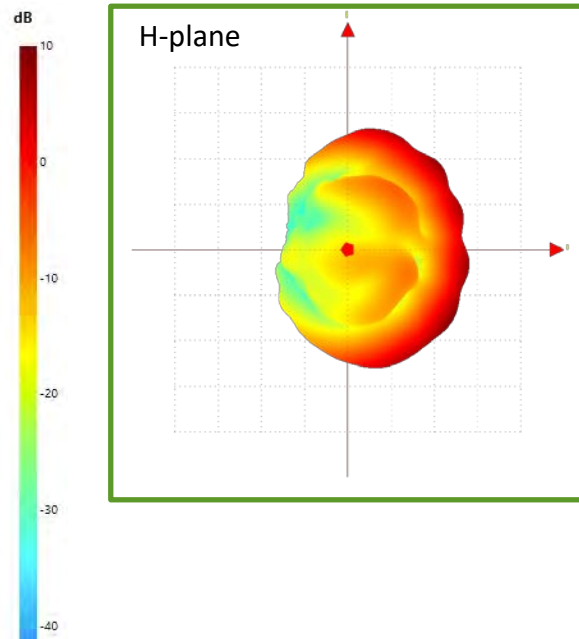
DB0_3D Radiation Pattern of 5.15 GHz



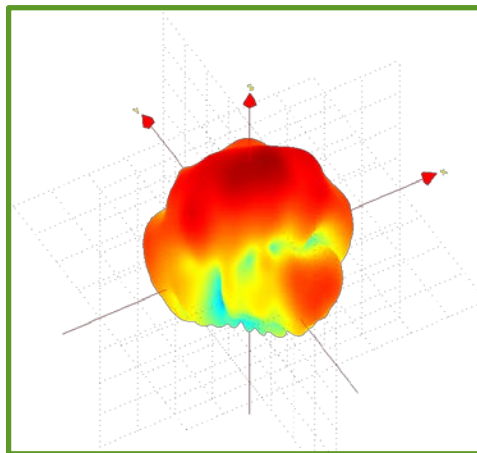
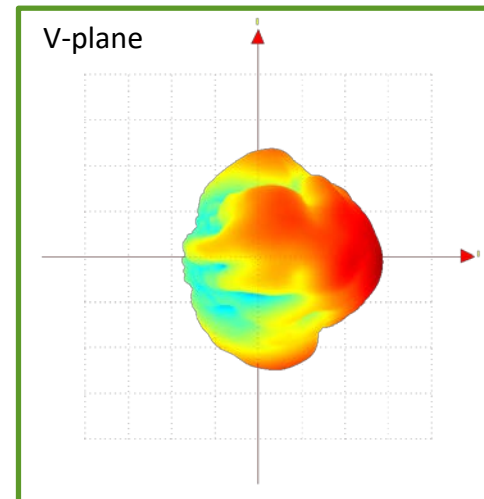
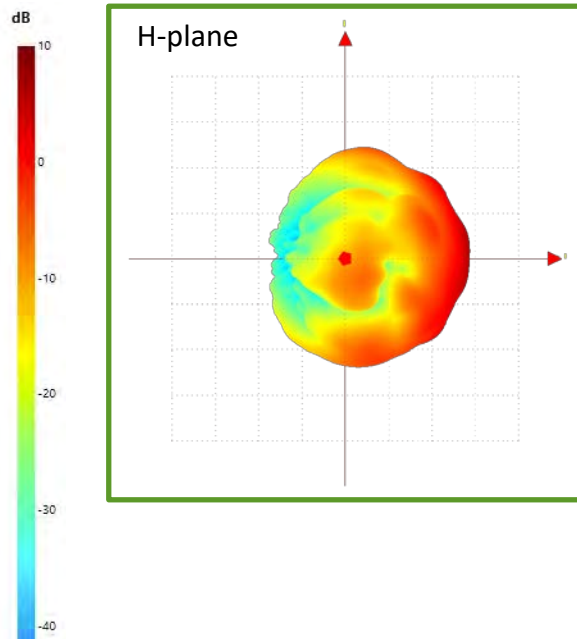
DB1_3D Radiation Pattern of 2.45 GHz



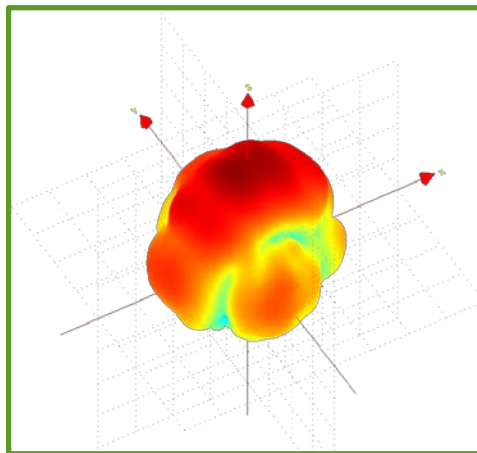
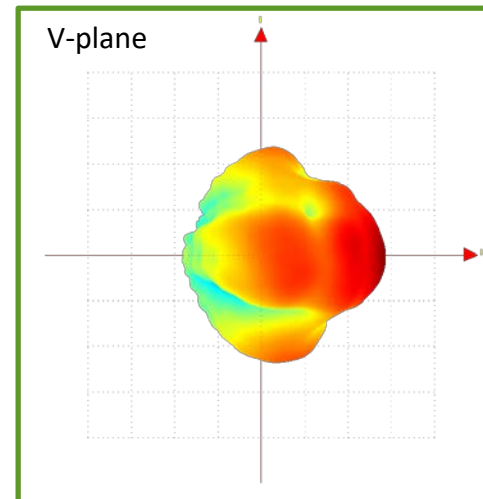
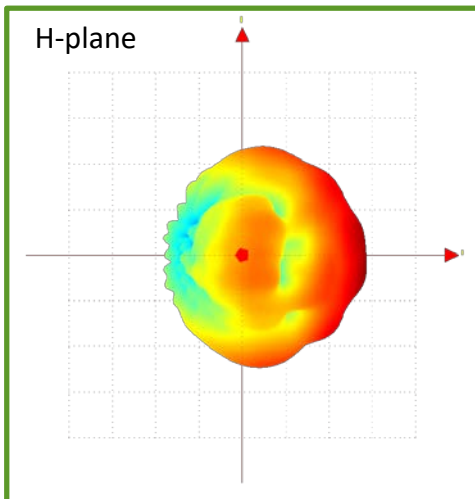
DB1_3D Radiation Pattern of 5.15 GHz



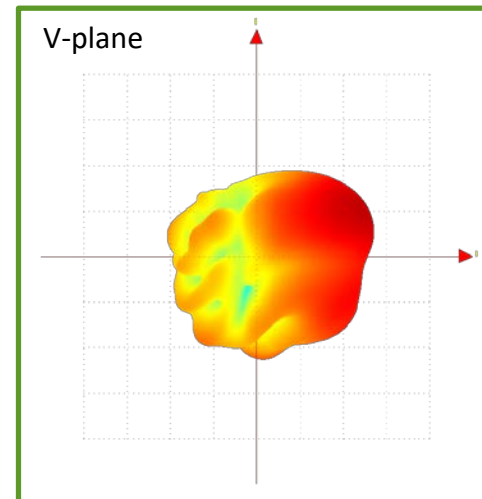
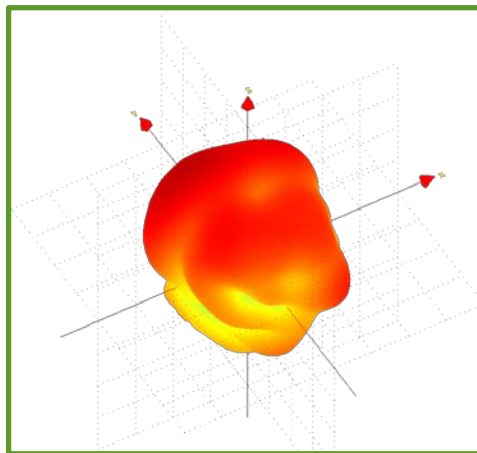
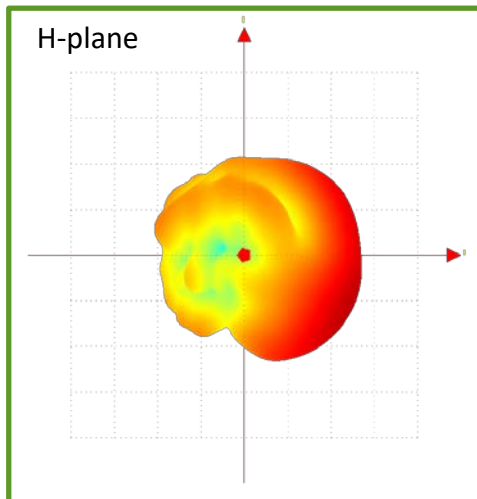
6G0_3D Radiation Pattern of 6.55 GHz



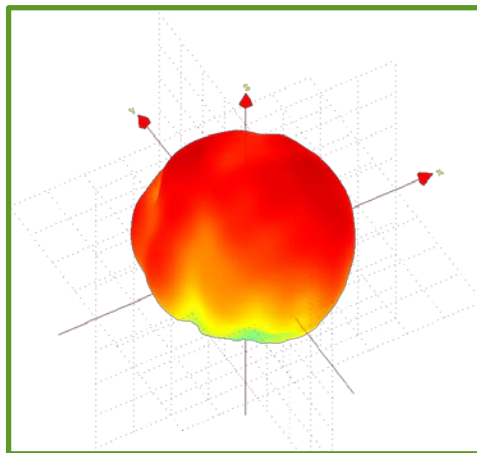
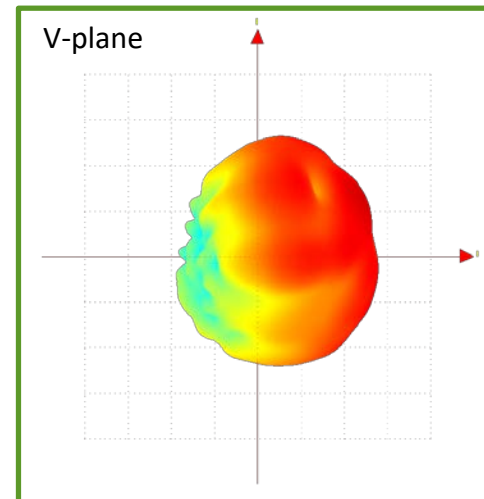
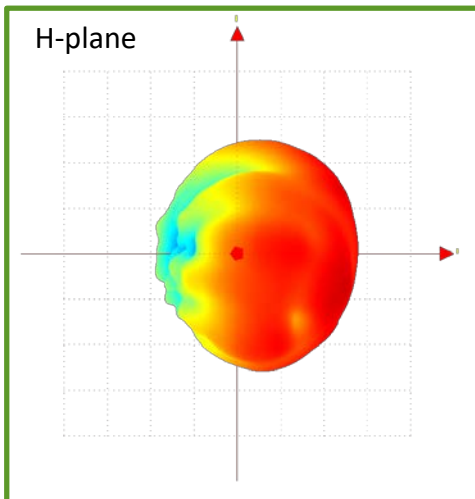
6G1_3D Radiation Pattern of 6.55 GHz



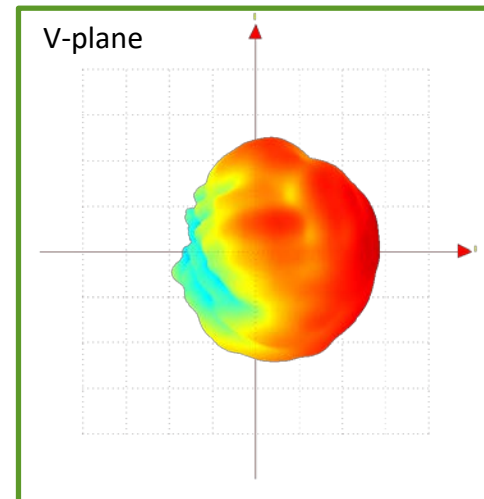
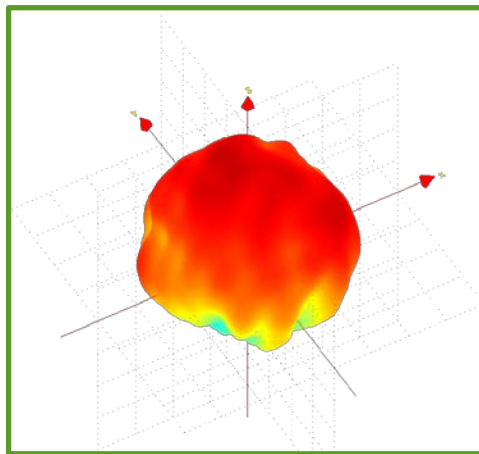
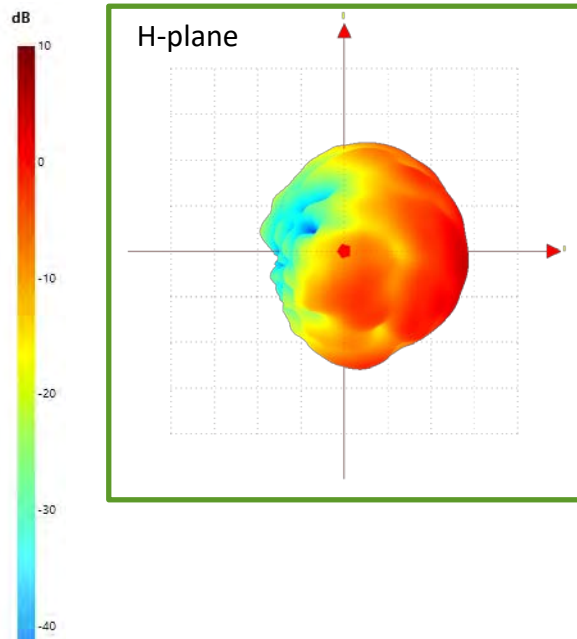
SC0_3D Radiation Pattern of 2.45 GHz



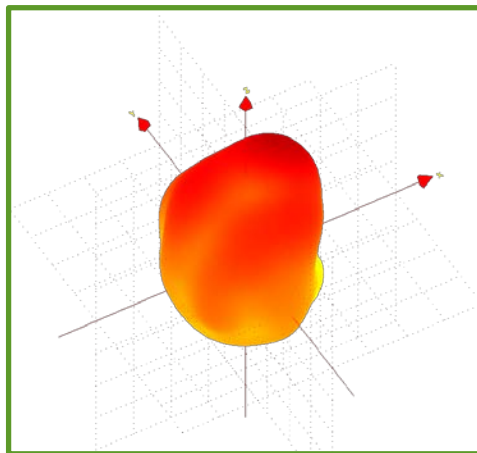
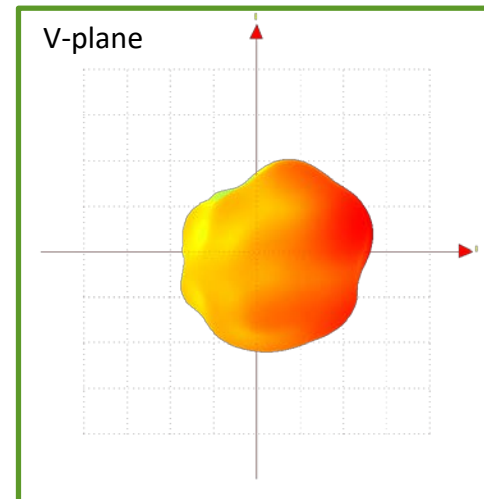
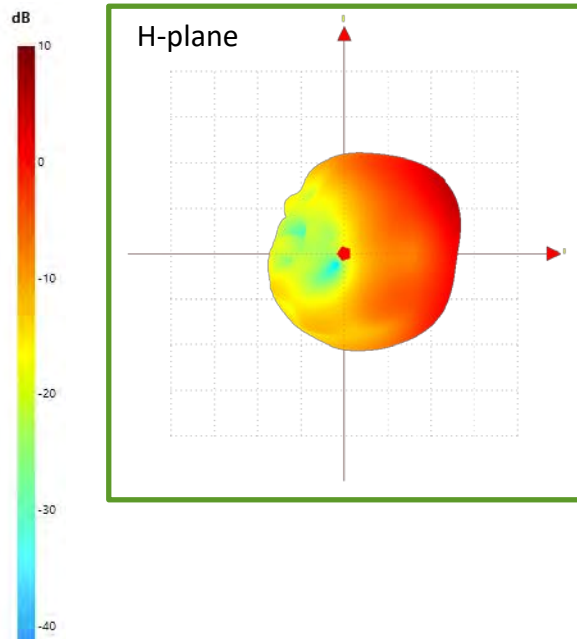
SC0_3D Radiation Pattern of 5.15 GHz



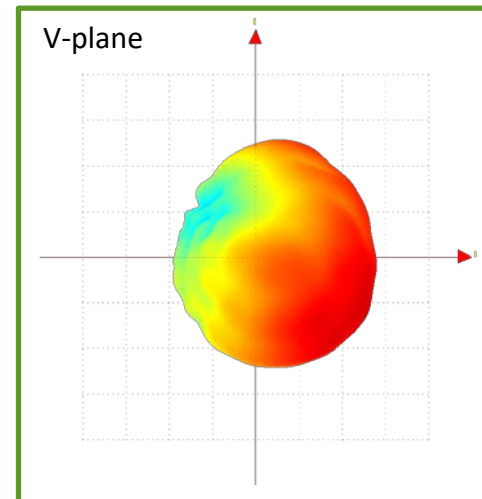
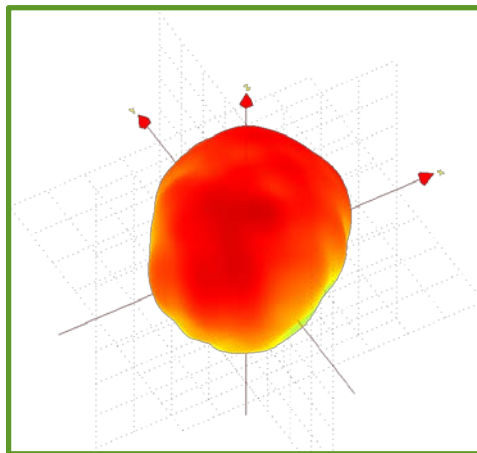
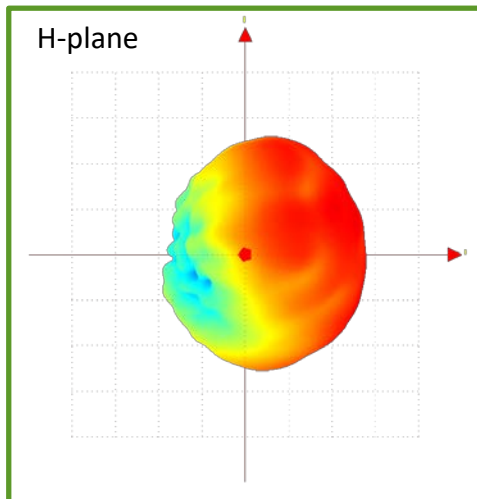
SC0_3D Radiation Pattern of 6.55 GHz



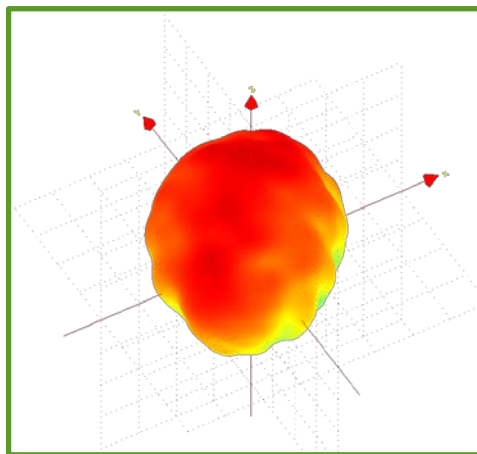
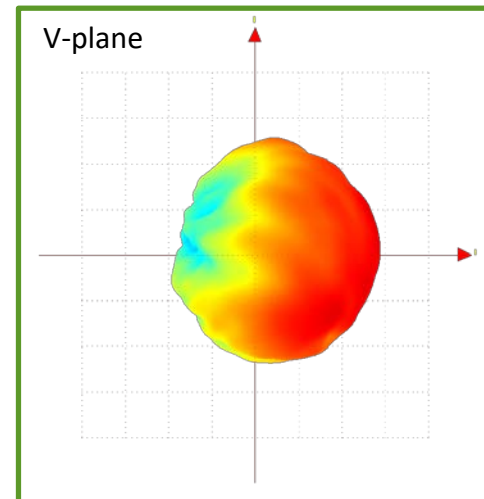
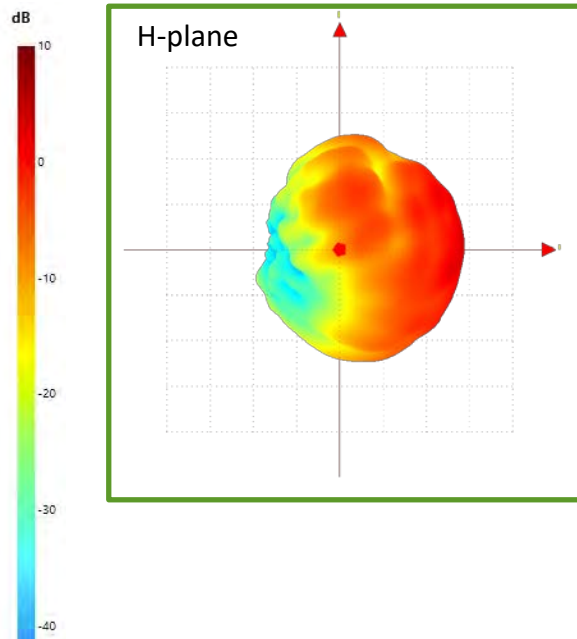
SC1_3D Radiation Pattern of 2.45 GHz



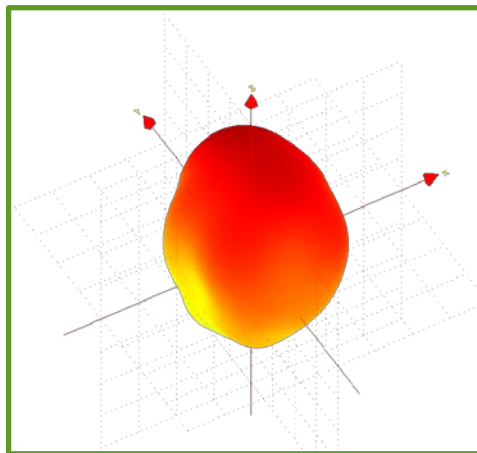
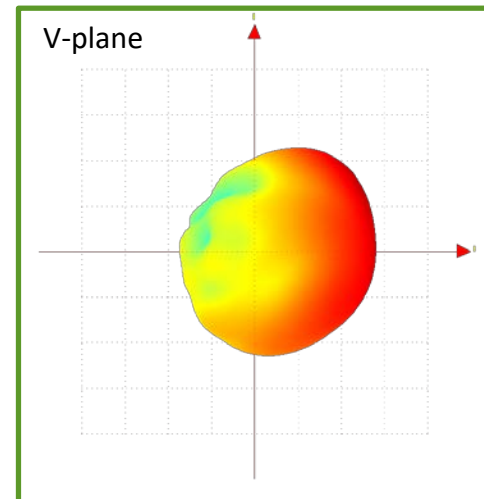
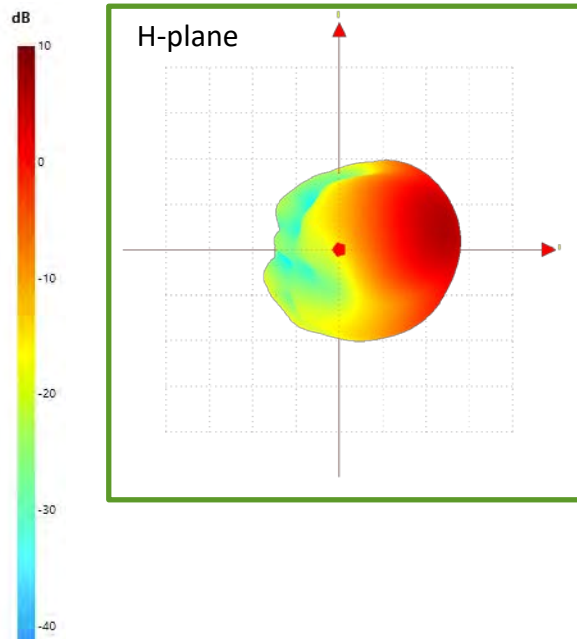
SC1_3D Radiation Pattern of 5.15 GHz



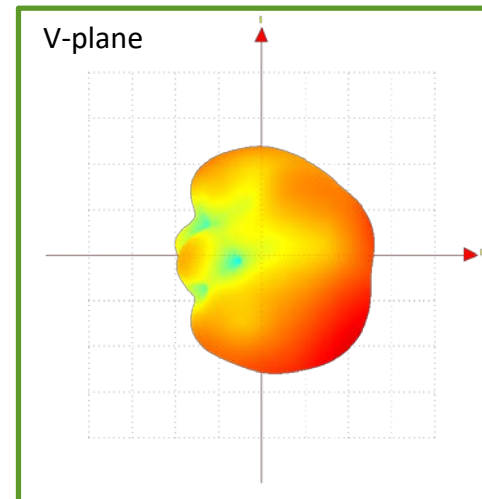
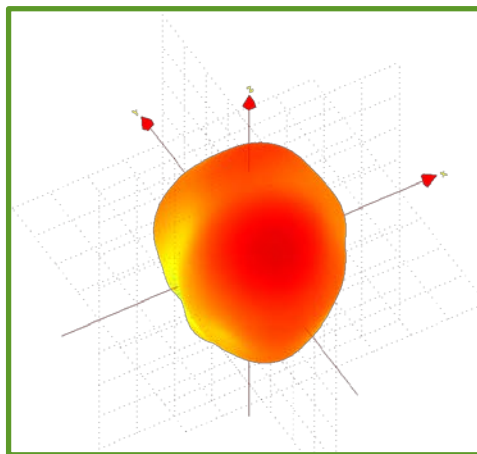
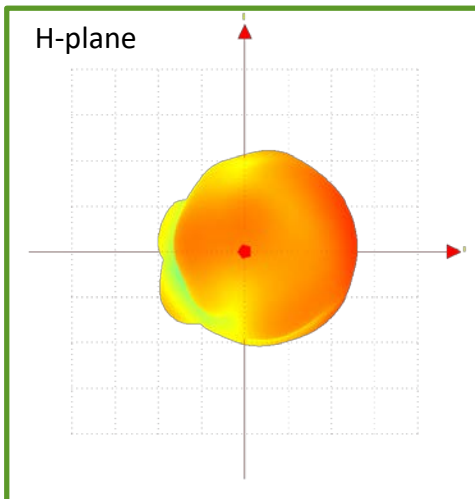
SC1_3D Radiation Pattern of 6.55 GHz



BLE_3D Radiation Pattern of 2.45 GHz



GNSS_3D Radiation Pattern of 1.575 GHz



Antenna Efficiency & Peak Gain

	2.4G						5G												
Frequency	2400		2450		2500		5100		5350		5500		5650		5785		5900		MHz
DB0	66%	8.8	71%	9.2	61%	8.0	71%	9.5	74%	9.4	74%	9.2	76%	9.3	69%	9.1	65%	9.1	Eff./ Peak Gain(dBi)
DB1	66%	8.8	77%	9.8	65%	8.3	80%	10.1	79%	10.8	73%	10.0	76%	9.0	70%	8.5	67%	9.0	
BLE	66%	7.3	75%	7.9	77%	7.2													
Scan0	73%	7.3	70%	7.0	64%	6.1	84%	6.4	83%	6.4	79%	6.5	84%	7.0	84%	7.3	83%	7.5	
Scan1	61%	6.2	63%	7.0	66%	6.3	74%	6.0	73%	5.8	71%	5.5	74%	6.0	72%	6.5	73%	6.6	

	6G										
Frequency	5925		6475		6550		6950		7125		MHz
6G0	66%	8.3	54%	8.6	54%	8.5	53%	8.2	46%	7.4	Eff./ Peak Gain(dBi)
6G1	66%	8.5	58%	9.2	58%	9.4	61%	9.0	56%	8.9	
Scan0	85%	8.0	74%	7.1	73%	6.8	70%	6.8	62%	5.6	
Scan1	73%	6.8	61%	6.0	60%	5.9	54%	5.7	55%	5.0	

	GNSS(Ceramic)				
Frequency	1575		1602		MHz
GNSS	52%	5.2	47%	3.7	Eff./ Peak Gain(dBi)



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