



JUNIPER AP37 ANTENNA REPORT

Brand: Juniper

Model: AP37



Contents

- Chamber Information
 - Setup Picture
 - Test Equipment
 - Test Procedure
- Name and Address of The Antenna Manufacture
- Summary
- Antenna Placement
- Peak Gain Table
- Antenna Test Results
 - VSWR
 - Isolation
 - Efficiency
 - Peak Gain
 - Radiation Pattern

Chamber Information

- Test Date : 2025/05/21
- Test Engineer : LiKai Kuo
- Measurement System : ETS-AMS-8500
- Software Name : EMQuest
- Software Version : V1.0.8



Test Equipment

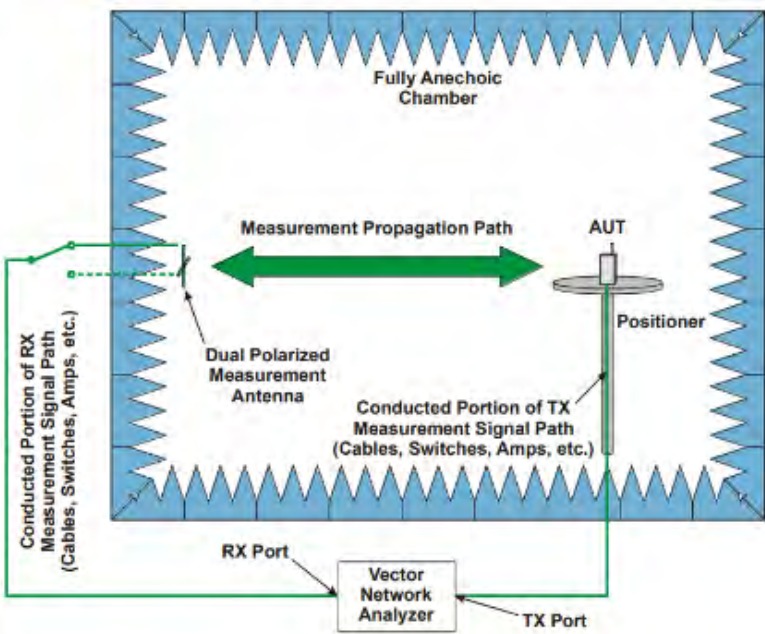
■ Measurement System : ETS-AMS-8500

■ Size:7.32(L)x3.66(W)x3.66(H)m

■ Measurement Setup

- pattern & gain measurement
 - ETS-Lindgren chamber (AMS-8500)
 - ETS-Lindgren program (EMQuest)
 - System overview
- Test item
 - antenna passive test 700MHz~10GHz

■ Calibration Information

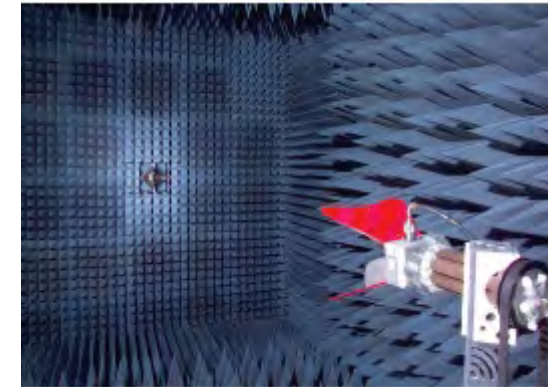
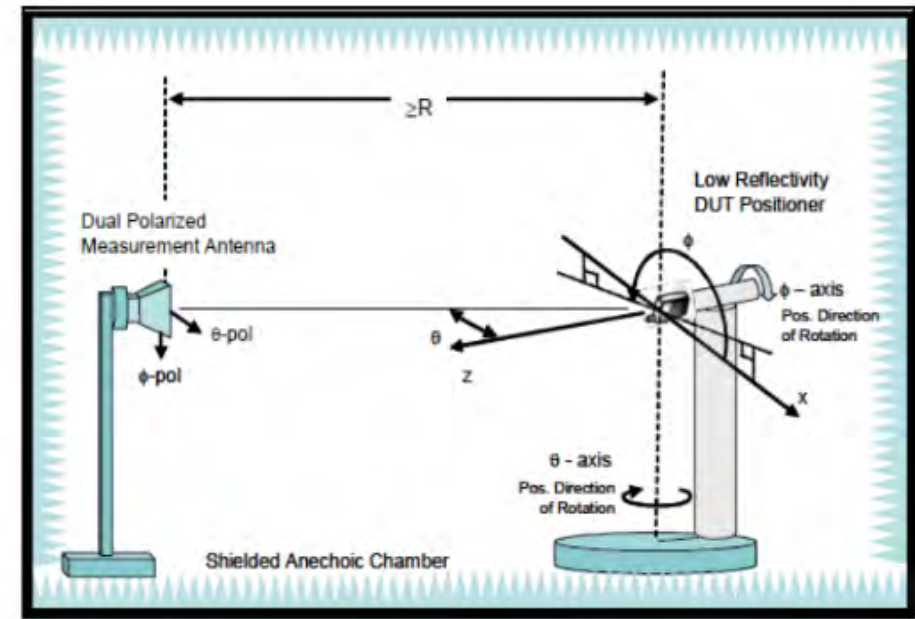


Device	Type / Model	Serial #	Manufacture	Cal. Date	Cal. Until
Full Anechoic Wireless Test chamber	ETS-Lindgren/AMS-8500	1380	ETS-Lindgren	N.C.R	N.C.R
Test Software	EMQuest™	98165	ETS-Lindgren	N.C.R	N.C.R
Dual Polarized Measurement Antenna	ETS-Lindgren/3164-08	920253	ETS-Lindgren	N.C.R	N.C.R
Vector Network Analyzer	Keysight– E5071C	MY46733006	Keysight	2024-09-12	2025-09-12
Positioner	EMCO – 2090	412HA	ETS-Lindgren	N.C.R	N.C.R

Note: N.C.R. = No Calibration Request.

Test Procedure

1. Place the device under test (DUT) on the fixture and align it with the center of the chamber.
2. Connect the antenna cable to the RF connector inside the chamber.
3. Use the software to configure parameters (such as antenna name, frequency points, and measurement angles), then launch the test software (EMQ).
4. Perform a scan with phi (Φ) from 0° to 360° and theta (θ) from 0° to 180° in 3-degree steps to obtain 3D data, including efficiency, peak gain, and 2D/3D radiation patterns.
5. This is a far-field test for antenna verification.
6. This is a passive measurement, meaning the device is powered off and not in operating mode.

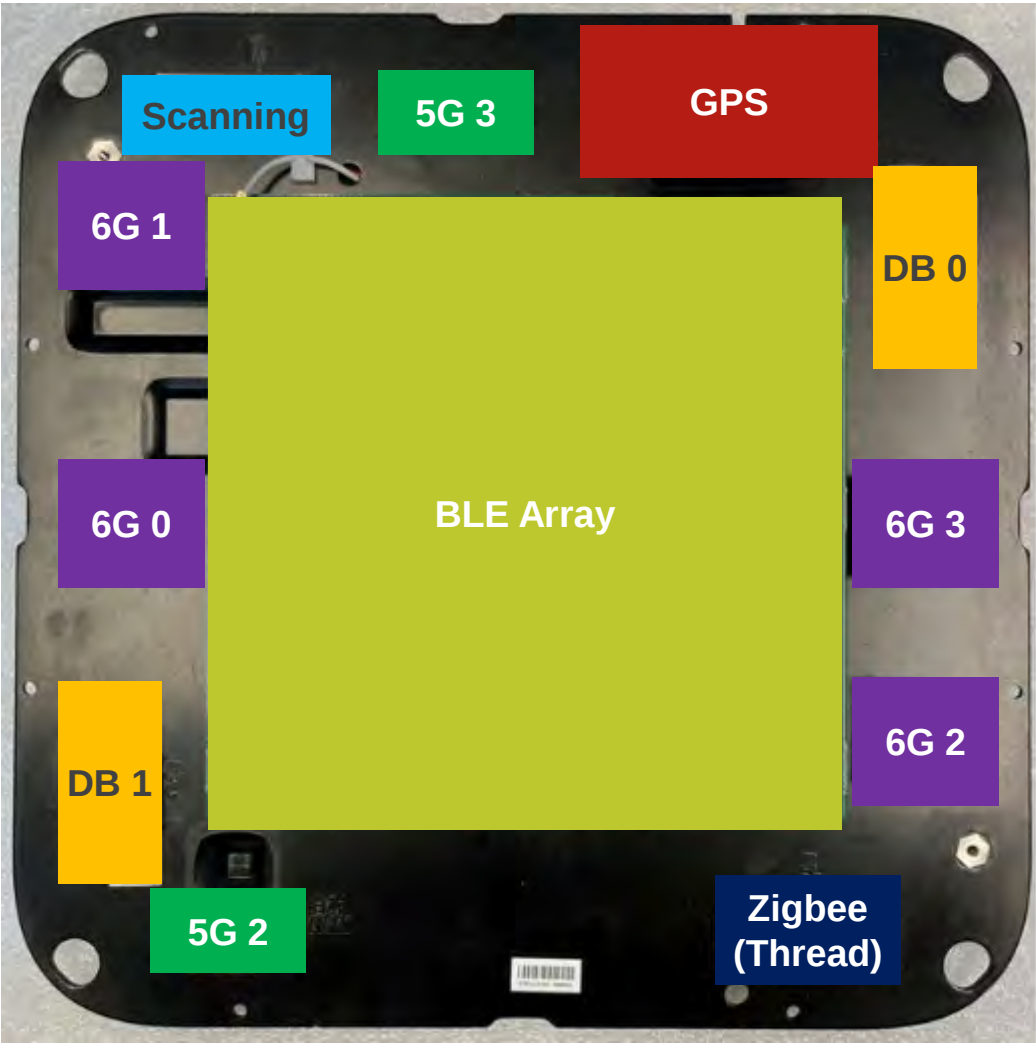


Summary

The summary of antenna performance are shown in below.

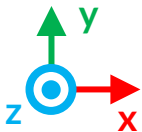
- Radiation efficiency
 - ~59% for 2.4GHz Wi-Fi 2G antennas [DB0, DB1]
 - ~67% for 5GHz Wi-Fi 5G antennas [DB0, DB1, 5G2, 5G3]
 - ~58% for 6GHz Wi-Fi 6G antennas [6G0, 6G1, 6G2, 6G3]
 - ~62% for 2.4GHz ~71% for 5GHz, ~66% for 6GHz Scanning antennas [Scanning]
 - ~61% for 2.4GHz Zigbee(Thread) antenna [Zigbee(Thread)]
 - ~65% for L1, ~54% for L5 GPS antenna [GPS]
 - ~16% for 2.4GHz BLE array [Beam1~Beam8]; ~25% for 2.4GHz BLE slot_directional antenna [Beam9]
 - ~22% for 2.4GHz BLE array [Omni]
- Peak gain
 - 4.0dBi for 2.4GHz Wi-Fi Dual-band antennas [DB0, DB1]
 - 5.7dBi for 5GHz Wi-Fi 5G antennas [DB0, DB1, 5G2, 5G3]
 - 5.9dBi for 6GHz Wi-Fi 6G antennas [6G0, 6G1, 6G2, 6G3]
 - 4.5dBi for 2.4GHz, 5.7dBi for 5GHz, 5.3dBi for 6GHz Scanning antennas [Scanning]
 - 3.5dBi for 2.4GHz Zigbee(Thread) antenna [Zigbee(Thread)]
 - 3.7dBi for L1, 2.9dBi for L5 GPS antenna [GPS]
 - 4.2dBi for 2.4GHz BLE array [Beam1~Beam8]; 2.7dBi for 2.4GHz BLE patch antenna [Beam9]
 - 0.7dBi for 2.4GHz BLE array [Omni]

Antenna Placement



Antenna Plate: 221x221mm

Brand	Antenna Type
DB(0-1)	PIFA
5G(2-3)	PIFA
6G(0-3)	Alford loop
Scanning	PIFA
Zigbee(Thread)	PIFA
GPS	PIFA
BLE [Beam1~Beam8/Omni]	PIFA
BLE [Beam9]	Patch

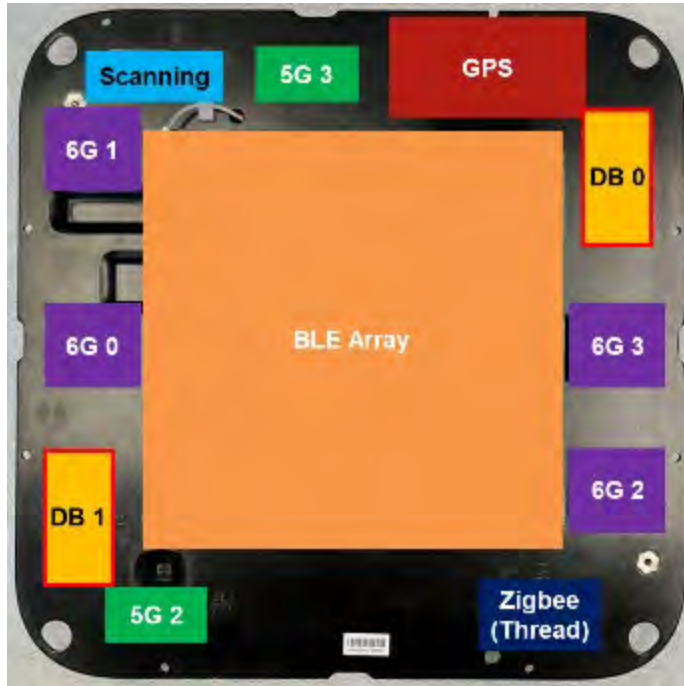


Peak Gain Table

Zigbee(Thread)	Peak Gain	Position of Peak Gain (θ , φ)
Zigbee(Thread)	3.5 dBi	$\theta = 5.6^\circ$, $\varphi = 45^\circ$

BLE	Peak Gain	Position of Peak Gain (θ , φ)
BLE	4.2 dBi	$\theta = 45^\circ$, $\varphi = 50.6^\circ$

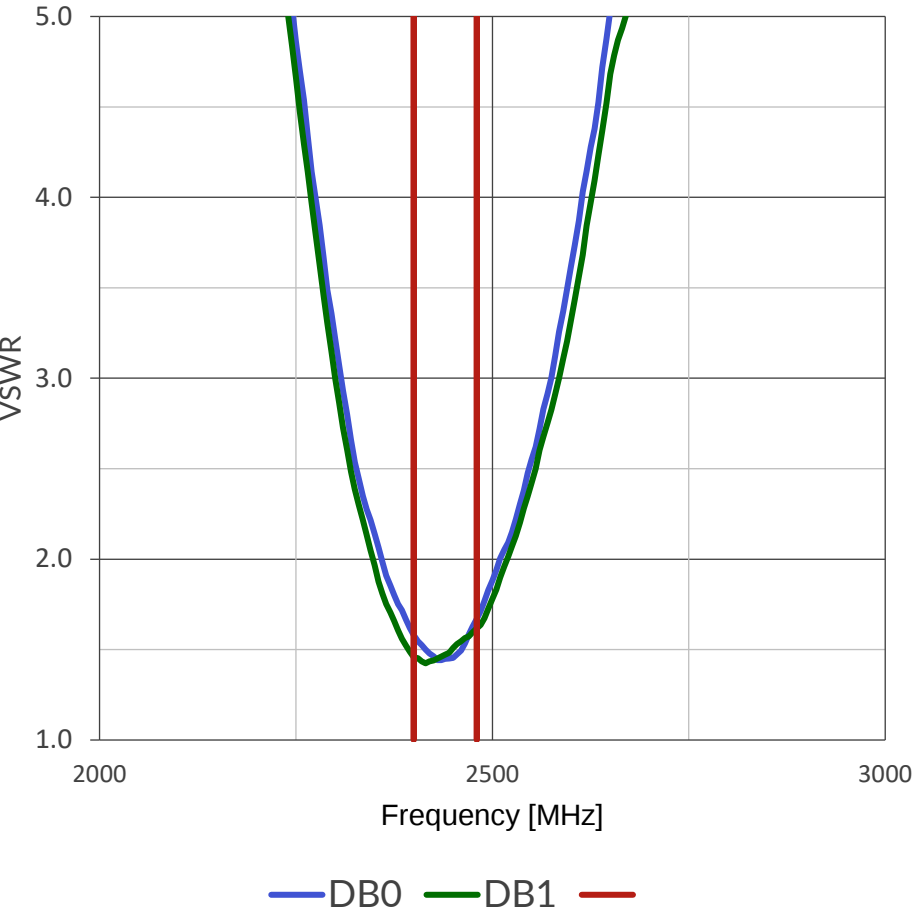
Wi-Fi 2G



- Maximum VSWR
 - 1.7:1 on 2.4GHz
- Minimum Isolation
 - 34.7dB on 2.4GHz
- Average Efficiency
 - ~59% on 2.4GHz
- Peak Gain
 - 4.0dBi on 2.4GHz

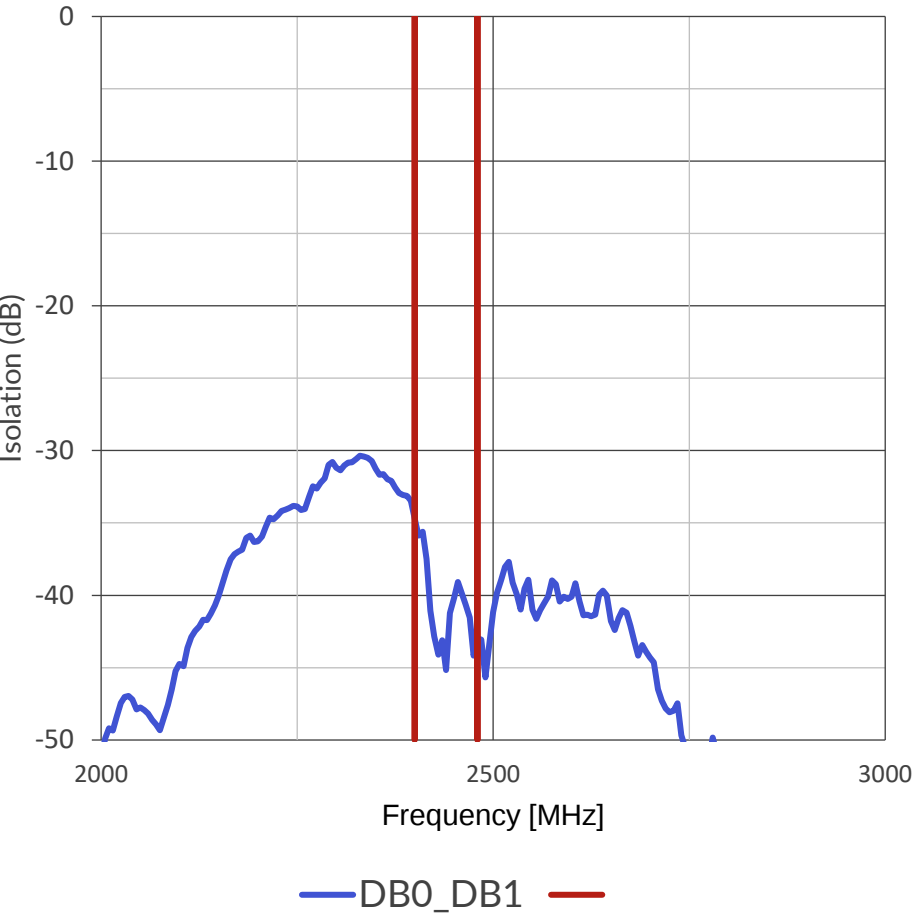
- Cable Length
 - DB0 : 131mm
 - DB1 : 258mm

VSWR Wi-Fi 2G



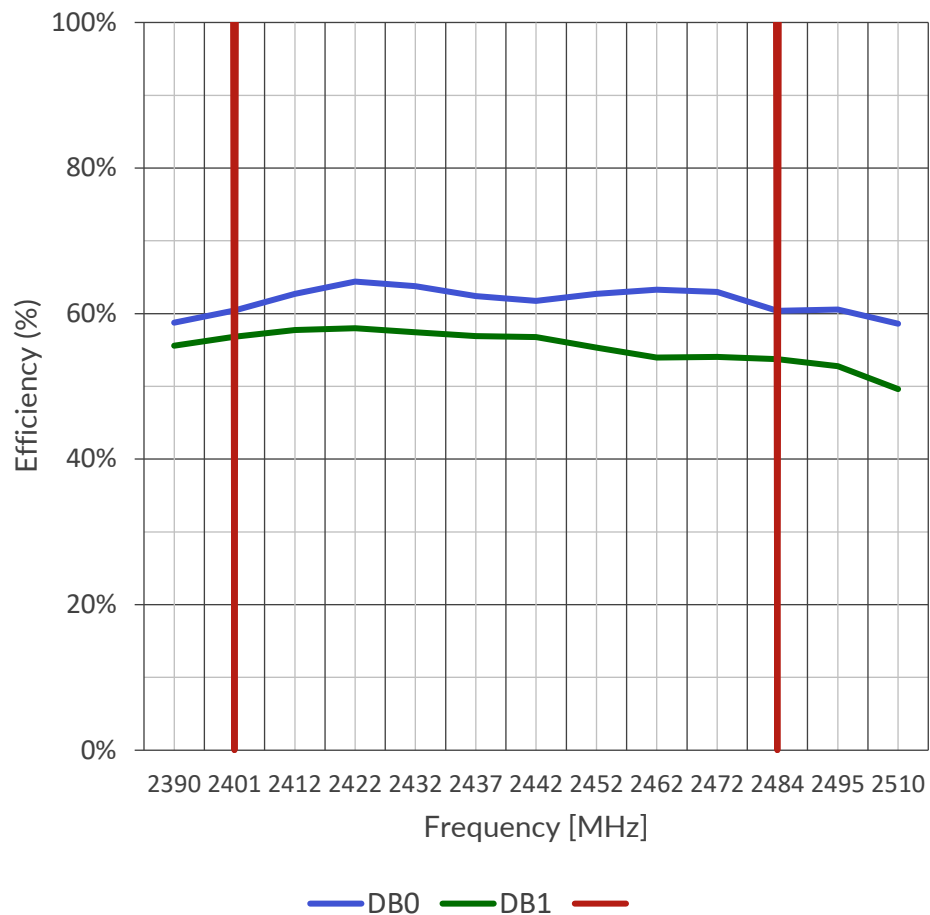
2.4GHz	Max	Mean	Min
DB0	1.7	1.5	1.4
DB1	1.6	1.5	1.4
Summary	1.7	1.5	1.4

Isolation Wi-Fi 2G



2.4GHz	Max	Mean	Min
DB0_DB1	-34.7	-40.6	-45.2

Efficiency Wi-Fi 2G



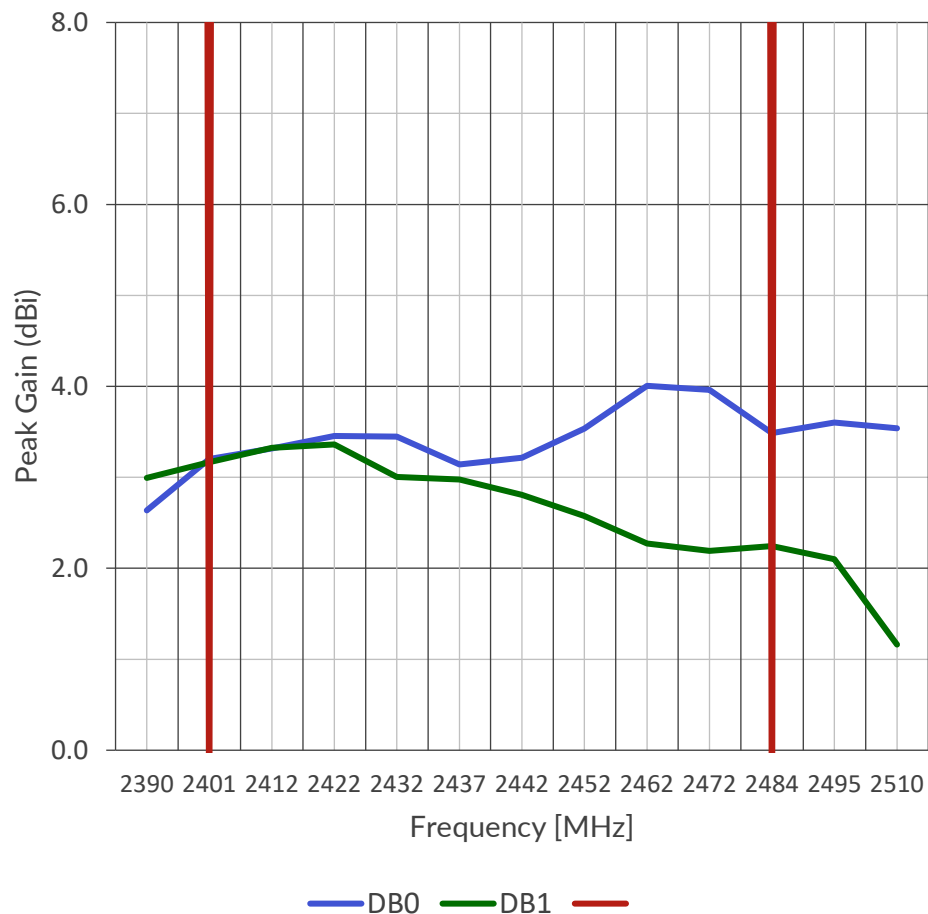
2.4GHz	Max	Mean	Min
DB0	64 %	62 %	60 %
DB1	58 %	56 %	54 %
Summary	64 %	59 %	54 %

■ Cable Length

DB0 : 131mm

DB1 : 258mm

Peak Gain Wi-Fi 2G



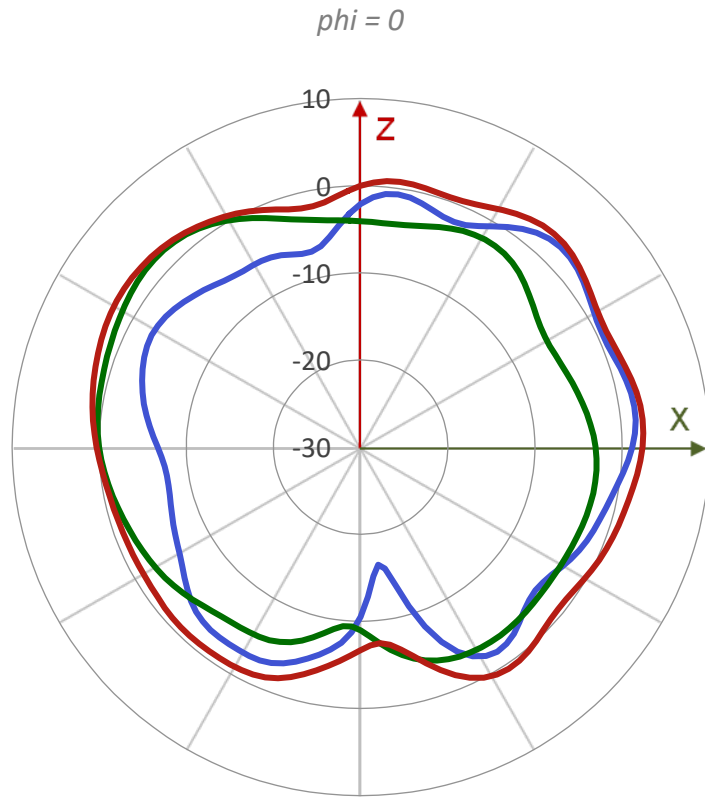
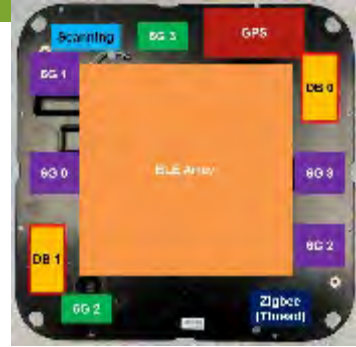
2.4GHz	Max	Mean	Min
DB0	4.0 dBi	3.5 dBi	3.1 dBi
DB1	3.4 dBi	2.8 dBi	2.2 dBi
Summary	4.0 dBi	3.1 dBi	2.2 dBi

■ Cable Length

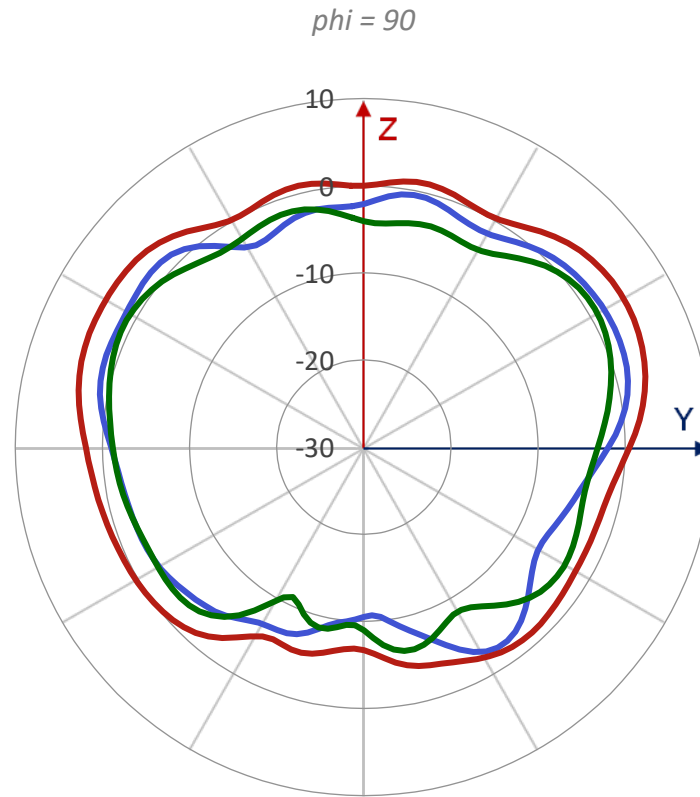
DB0 : 131mm

DB1 : 258mm

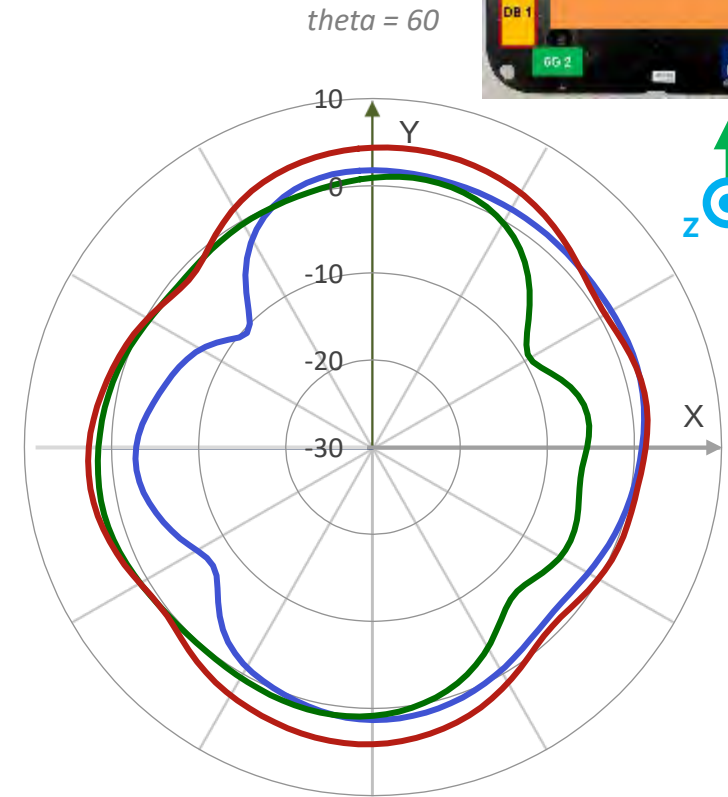
Realized Gain Pattern Wi-Fi 2G @2450MHz_V+H



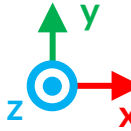
— DB0 — DB1 — Composite



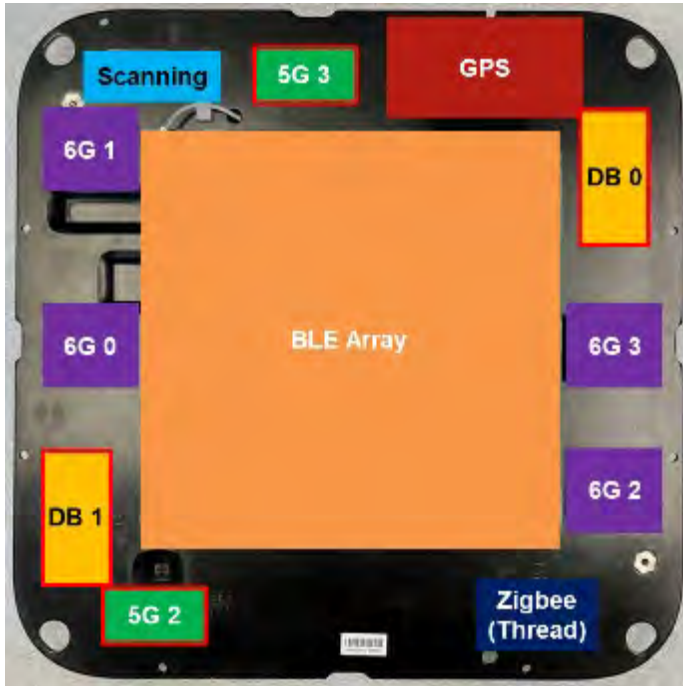
— DB0 — DB1 — Composite



— DB0 — DB1 — Composite

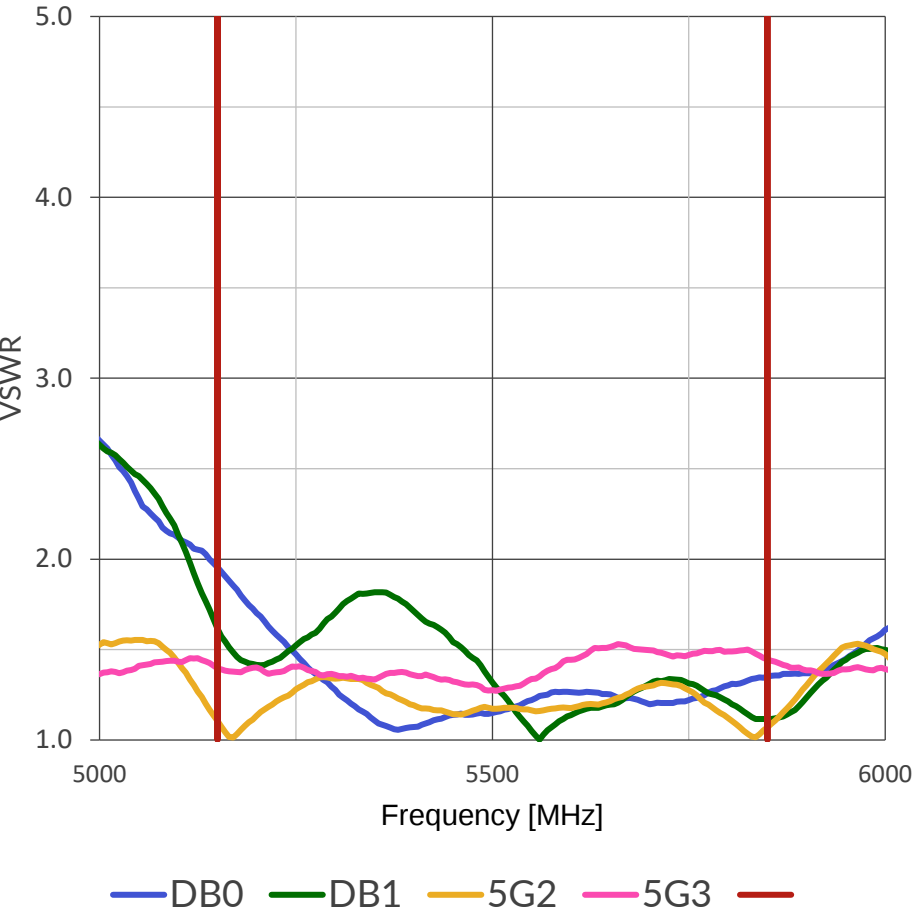


Wi-Fi 5G



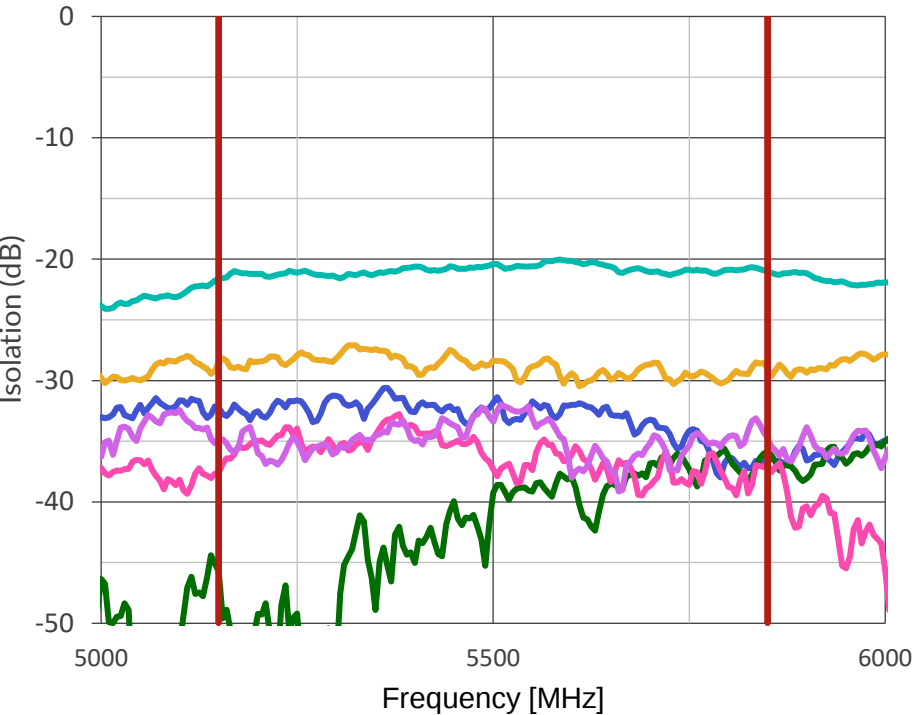
- Maximum VSWR
 - 2.0:1 on 5GHz
 - Minimum Isolation
 - 20.0dB on 5GHz
 - Average Efficiency
 - ~67% on 5GHz
 - Peak Gain
 - 5.3dBi on 5GHz
- Cable Length
 - DB0 : 131mm
 - DB1 : 258mm
 - 5G2 : 379mm
 - 5G3 : 101mm

VSWR Wi-Fi 5G



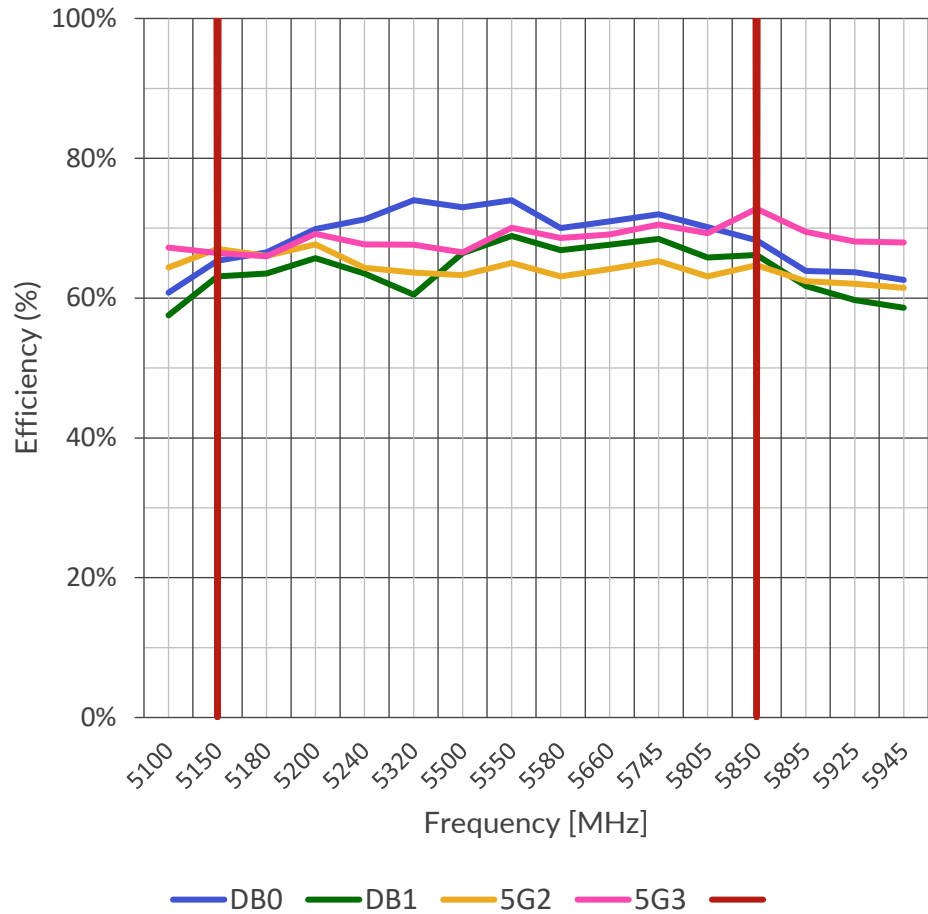
5GHz	Max	Mean	Min
DB0	2.0	1.4	1.1
DB1	1.8	1.4	1.0
5G2	1.3	1.2	1.0
5G3	1.5	1.4	1.3
Summary	2.0	1.3	1.0

Isolation Wi-Fi 5G



5GHz	Max	Mean	Min
5G2_5G3	-30.6	-33.1	-38.0
DB0_5G2	-35.6	-42.6	-62.9
DB0_5G3	-27.1	-28.8	-30.5
DB0_DB1	-32.8	-36.2	-39.5
DB1_5G2	-20.0	-20.9	-21.6
DB1_5G3	-32.0	-34.9	-39.2
Summary	-20.0	-32.7	-62.9

Efficiency Wi-Fi 5G



5GHz	Max	Mean	Min
DB0	74 %	69 %	61 %
DB1	69 %	66 %	61 %
5G2	68 %	65 %	63 %
5G3	73 %	69 %	66 %
Summary	74 %	67 %	61 %

■ Cable Length

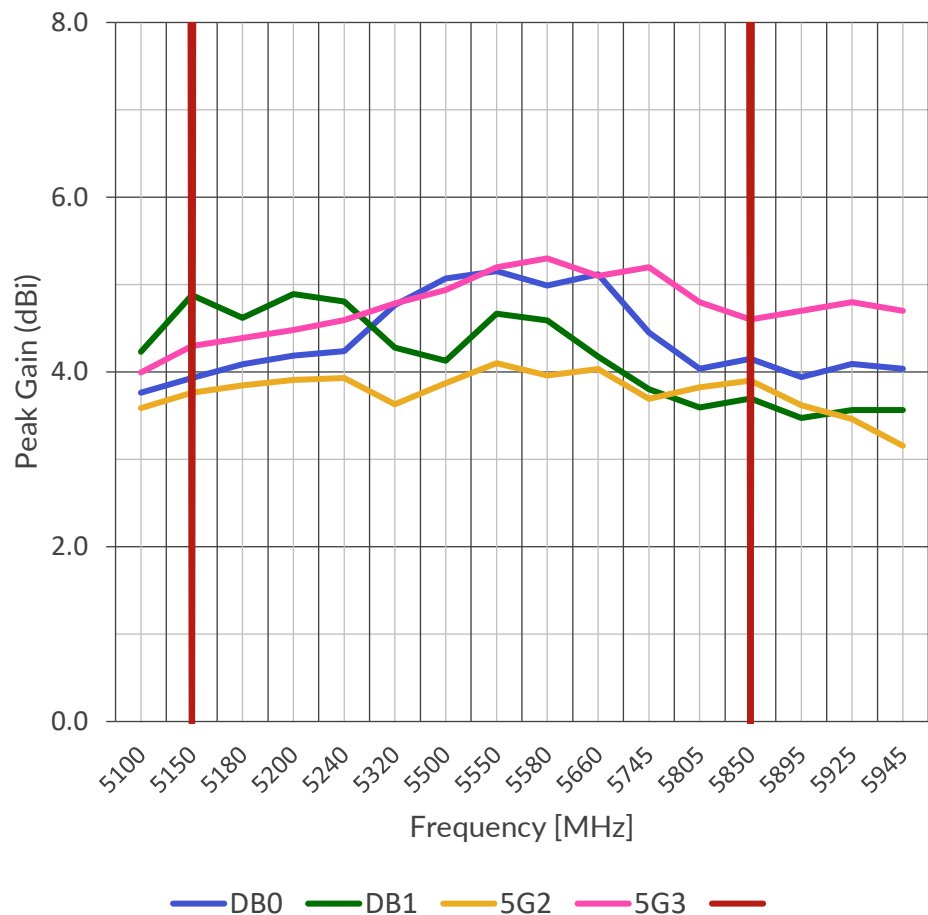
DB0 : 131mm

DB1 : 258mm

5G2 : 379mm

5G3 : 101mm

Peak Gain Wi-Fi 5G



5GHz	Max	Mean	Min
DB0	5.2 dBi	4.5 dBi	3.9 dBi
DB1	4.9 dBi	4.3 dBi	3.6 dBi
5G2	4.1 dBi	3.9 dBi	3.6 dBi
5G3	5.3 dBi	4.8 dBi	4.3 dBi
Summary	5.3 dBi	4.4 dBi	3.0 dBi

■ Cable Length

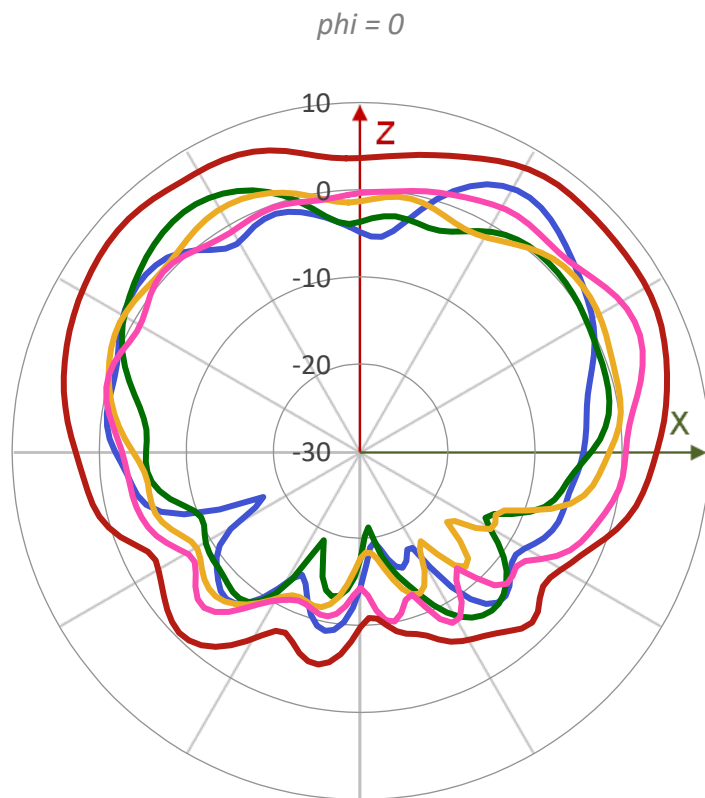
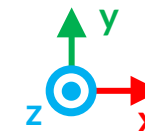
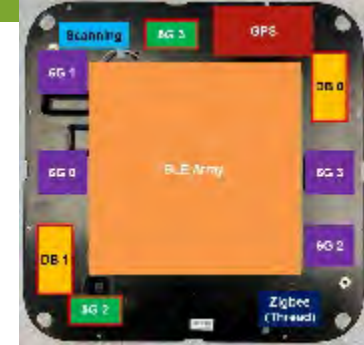
DB0 : 131mm

DB1 : 258mm

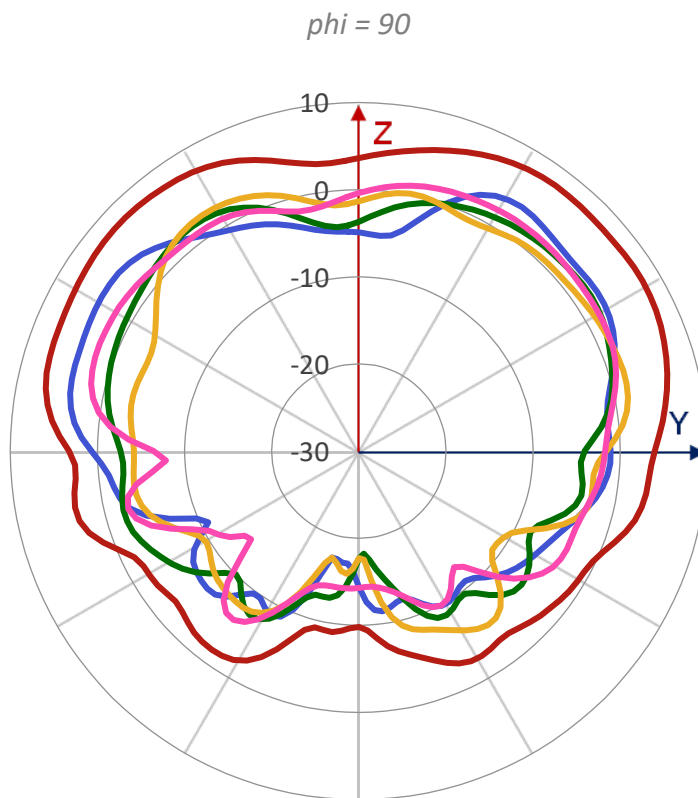
5G2 : 379mm

5G3 : 101mm

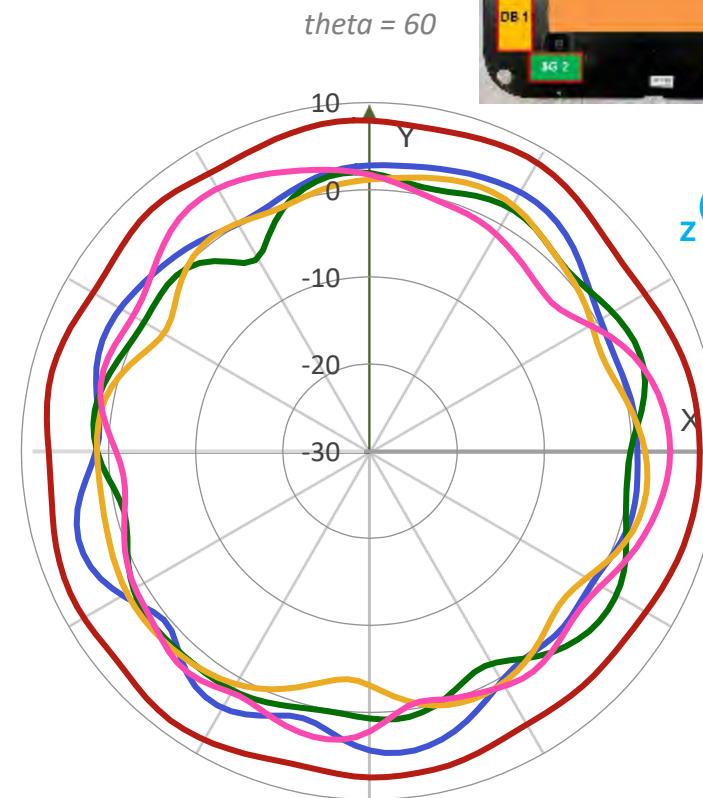
Realized Gain Pattern Wi-Fi 5G @5550MHz_V+H



— DB0 — DB1 — 5G2
— 5G3 — Composite

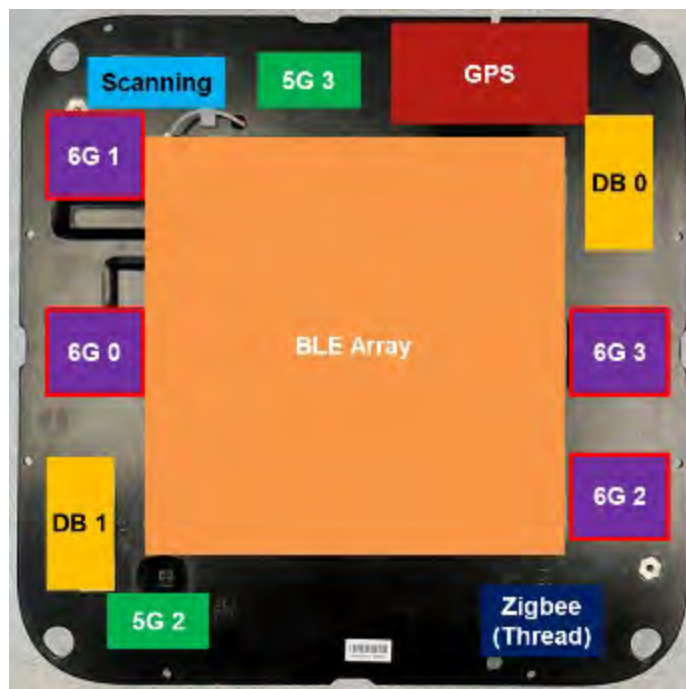


— DB0 — DB1 — 5G2
— 5G3 — Composite



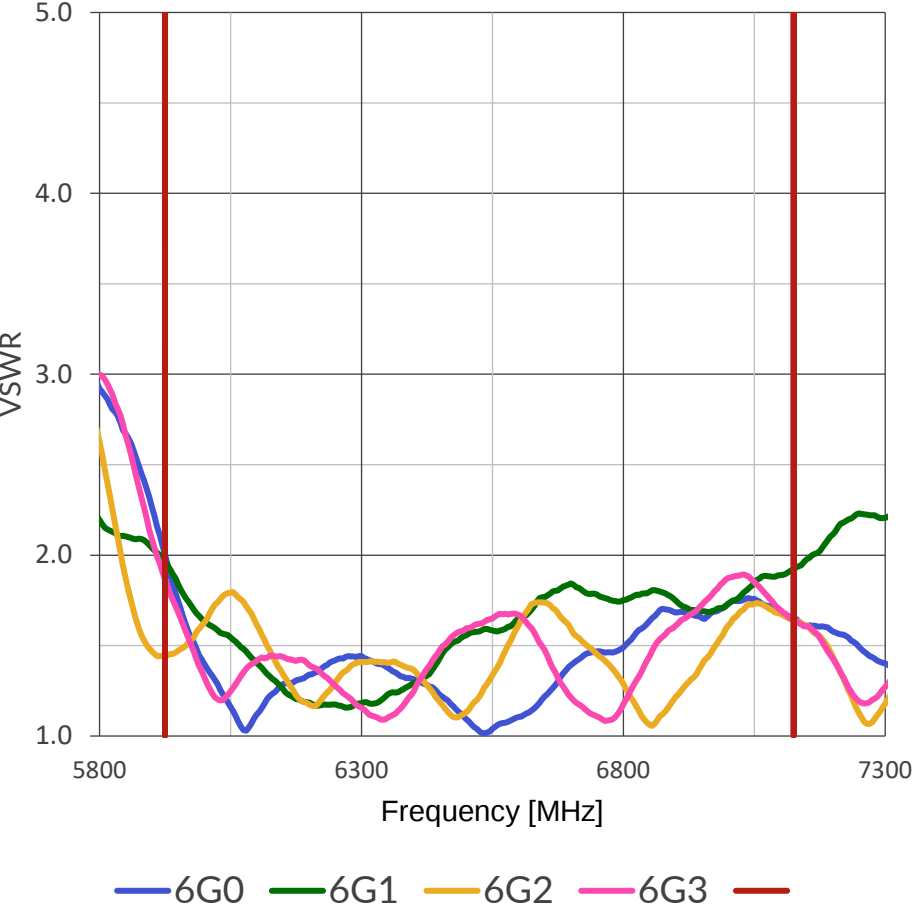
— DB0 — DB1 — 5G2
— 5G3 — Composite

Wi-Fi 6G



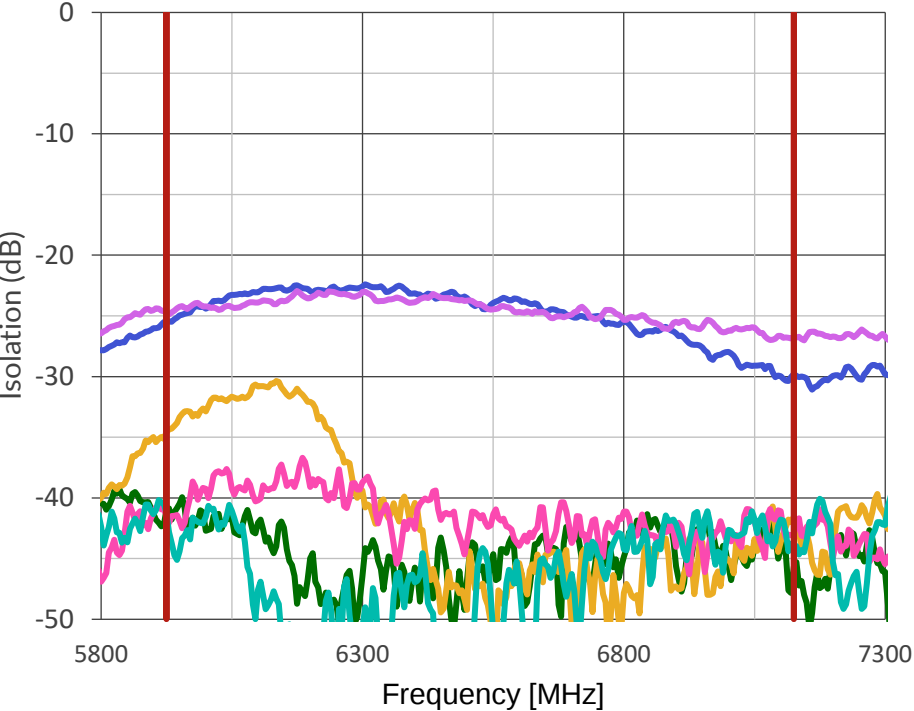
- Maximum VSWR
 - 2.0:1 on 6GHz
 - Minimum Isolation
 - 22.4dB on 6GHz
 - Average Efficiency
 - ~58% on 6GHz
 - Peak Gain
 - 5.9dBi on 6GHz
- Cable Length
 - 6G0 : 133mm
 - 6G1 : 57mm
 - 6G2 : 267mm
 - 6G3 : 207mm

VSWR Wi-Fi 6G



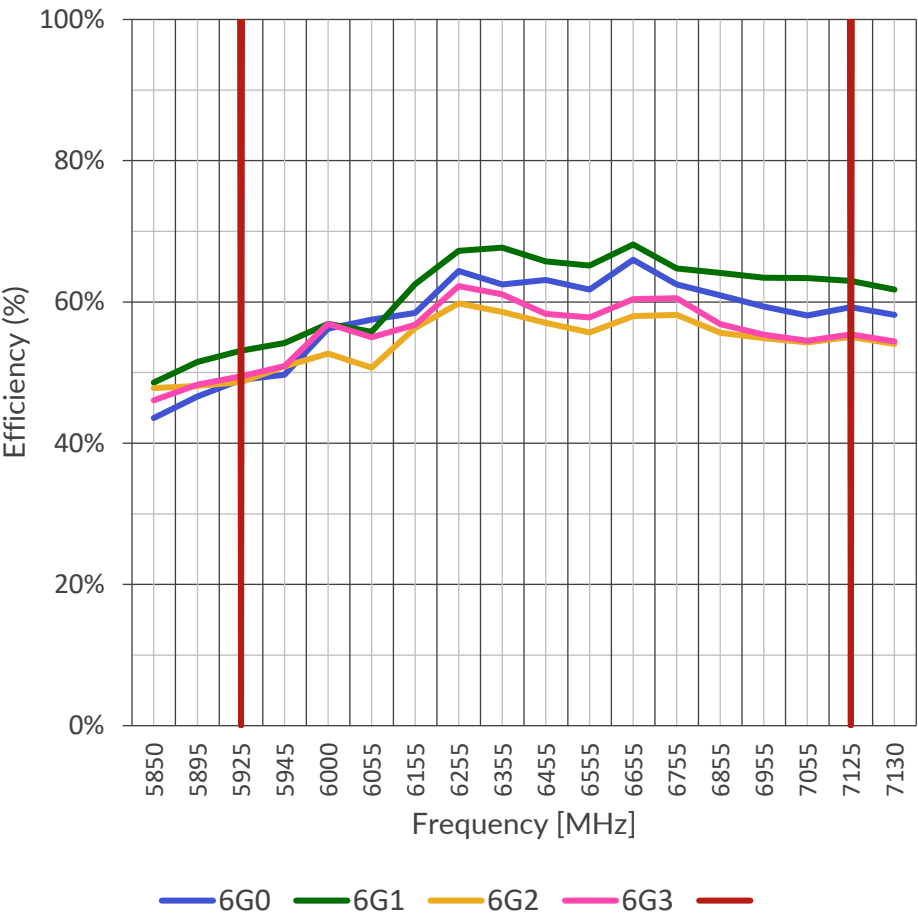
6GHz	Max	Mean	Min
6G0	2.0	1.4	1.0
6G1	2.0	1.6	1.2
6G2	1.8	1.4	1.1
6G3	1.9	1.5	1.1
Summary	2.0	1.5	1.0

Isolation Wi-Fi 6G



6GHz	Max	Mean	Min
6G0_6G1	-22.4	-24.8	-30.4
6G0_6G2	-39.9	-44.7	-50.8
6G0_6G3	-30.4	-41.6	-52.6
6G1_6G2	-36.7	-41.4	-46.3
6G1_6G3	-40.6	-46.9	-69.6
6G2_6G3	-23.0	-24.6	-27.0
Summary	-22.4	-37.3	-69.6

Efficiency Wi-Fi 6G



6GHz	Max	Mean	Min
6G0	66 %	59 %	49 %
6G1	68 %	62 %	53 %
6G2	60 %	55 %	49 %
6G3	62 %	57 %	49 %
Summary	68 %	58 %	49 %

■ Cable Length

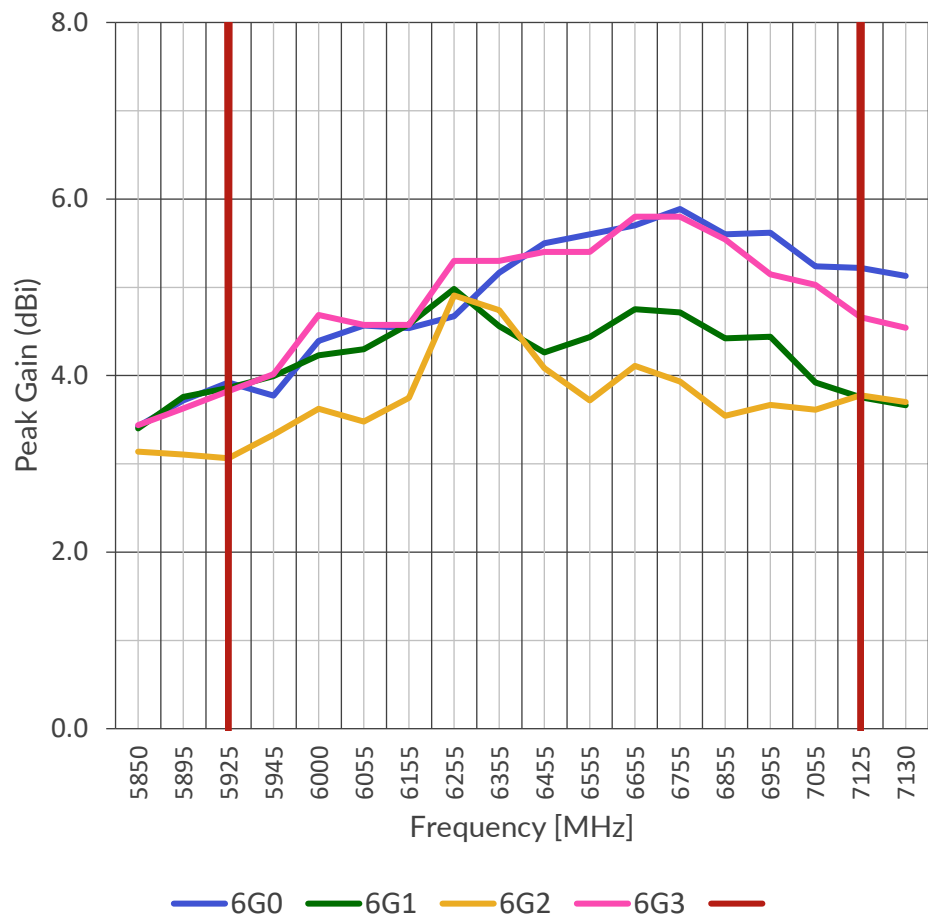
6G0 : 133mm

6G1 : 57mm

6G2 : 267mm

6G3 : 207mm

Peak Gain Wi-Fi 6G



6GHz	Max	Mean	Min
6G0	5.9 dBi	5.0 dBi	3.8 dBi
6G1	5.0 dBi	4.3 dBi	3.8 dBi
6G2	4.9 dBi	3.8 dBi	3.1 dBi
6G3	5.8 dBi	5.0 dBi	3.8 dBi
Summary	5.9 dBi	4.5 dBi	3.1 dBi

■ Cable Length

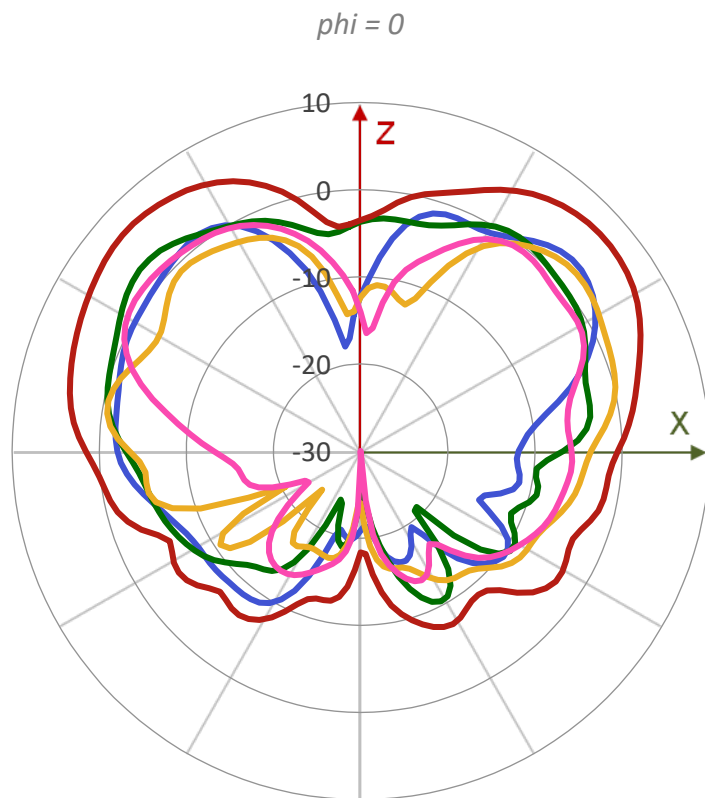
6G0 : 133mm

6G1 : 57mm

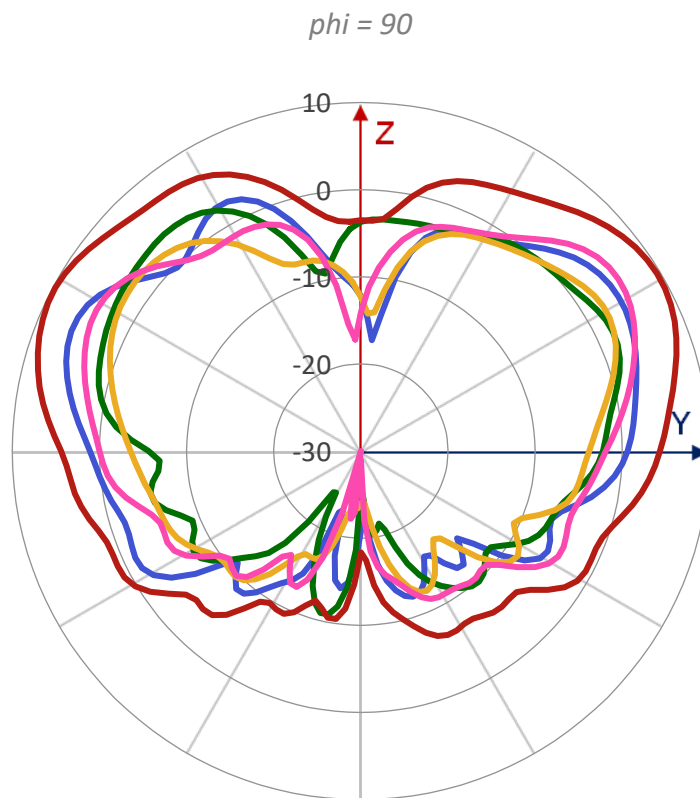
6G2 : 267mm

6G3 : 207mm

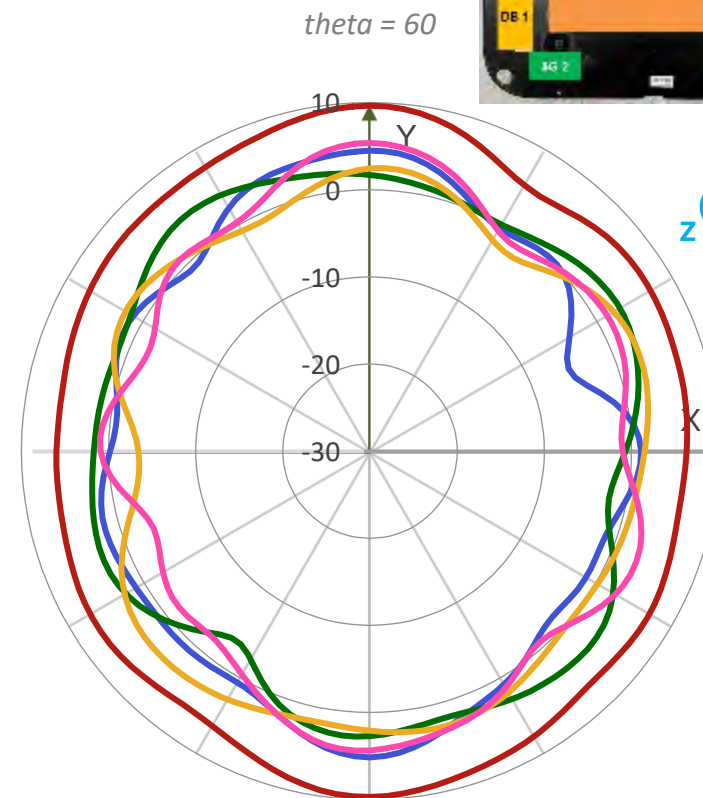
Realized Gain Pattern Wi-Fi 6G @6565MHz_V+H



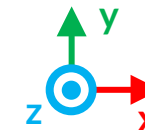
— 6G0 — 6G1 — 6G2
— 6G3 — Composite



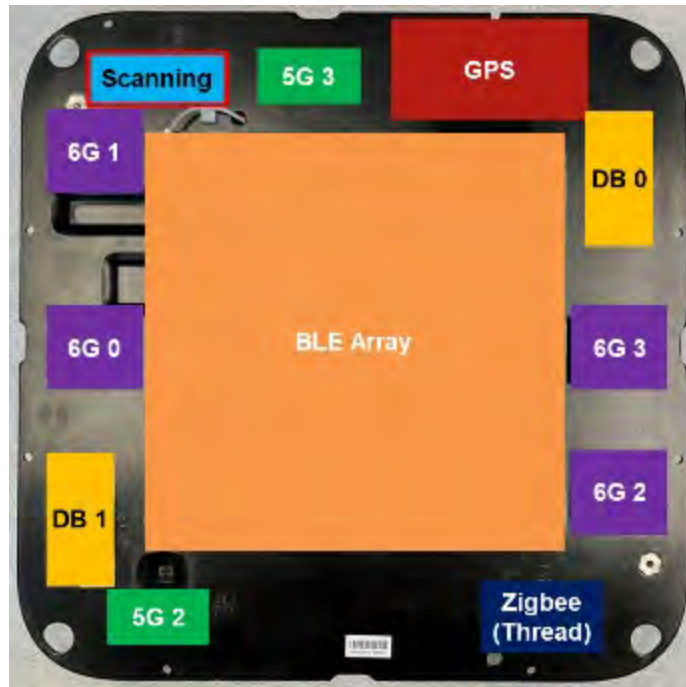
— 6G0 — 6G1 — 6G2
— 6G3 — Composite



— 6G0 — 6G1 — 6G2
— 6G3 — Composite

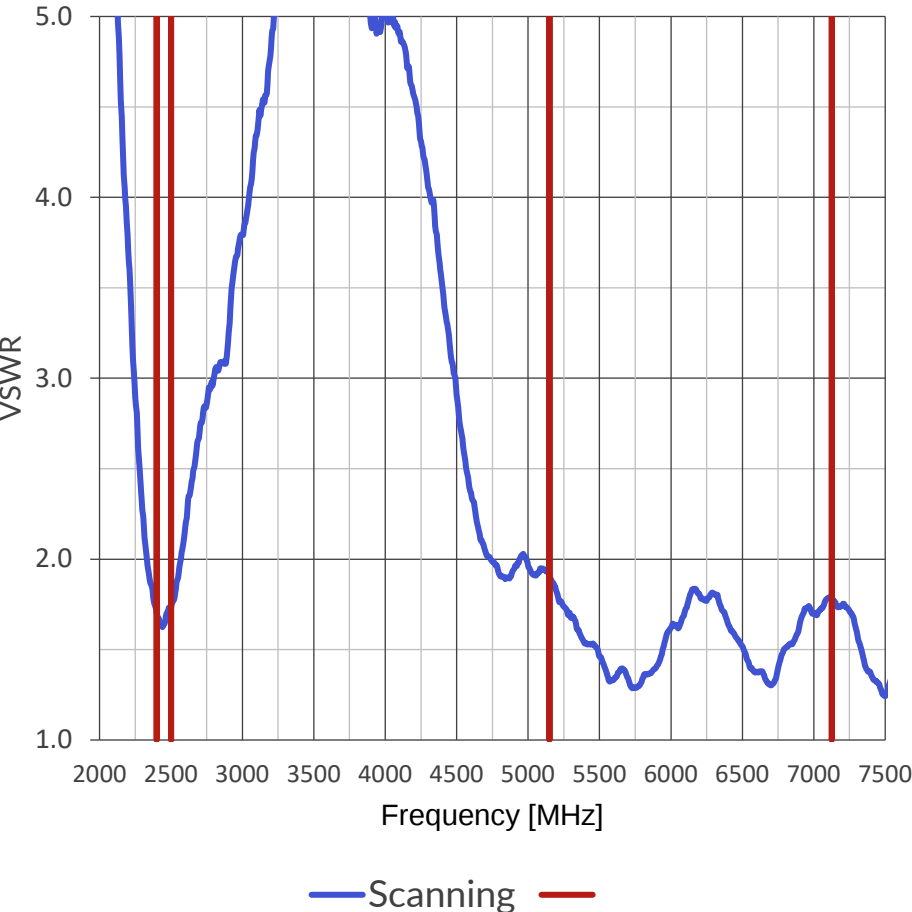


Scanning Radio



- Maximum VSWR
 - 1.7:1 on 2.4GHz / 1.9:1 on 5/6GHz
 - Average Efficiency
 - ~62% on 2.4GHz / ~71% on 5GHz / ~66% on 6GHz
 - Peak Gain
 - 4.5dBi on 2.4GHz / 5.7dBi on 5GHz / 5.3dBi on 6GHz
- Cable Length
Scanning : 104mm

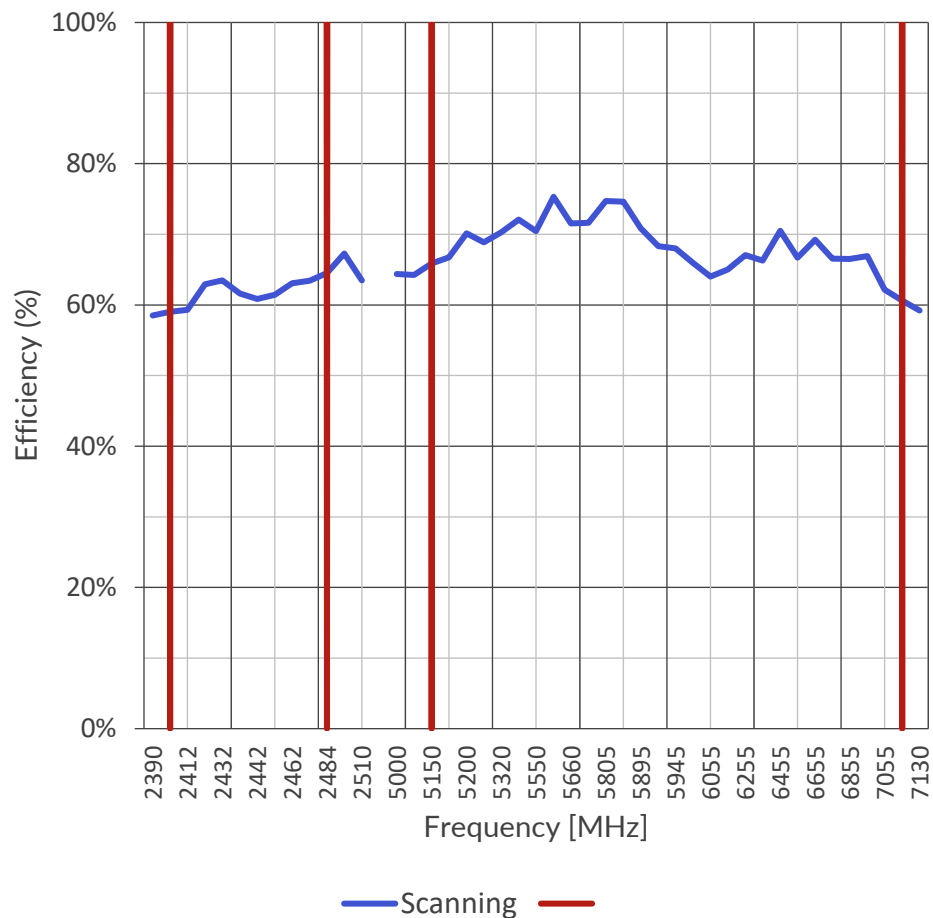
VSWR Scanning Radio



2.4GHz	Max	Mean	Min
Scanning	1.7	1.7	1.6

5/6GHz	Max	Mean	Min
Scanning	1.9	1.6	1.3

Efficiency Scanning Radio



2.4GHz	Max	Mean	Min
Scanning	67 %	62 %	59 %

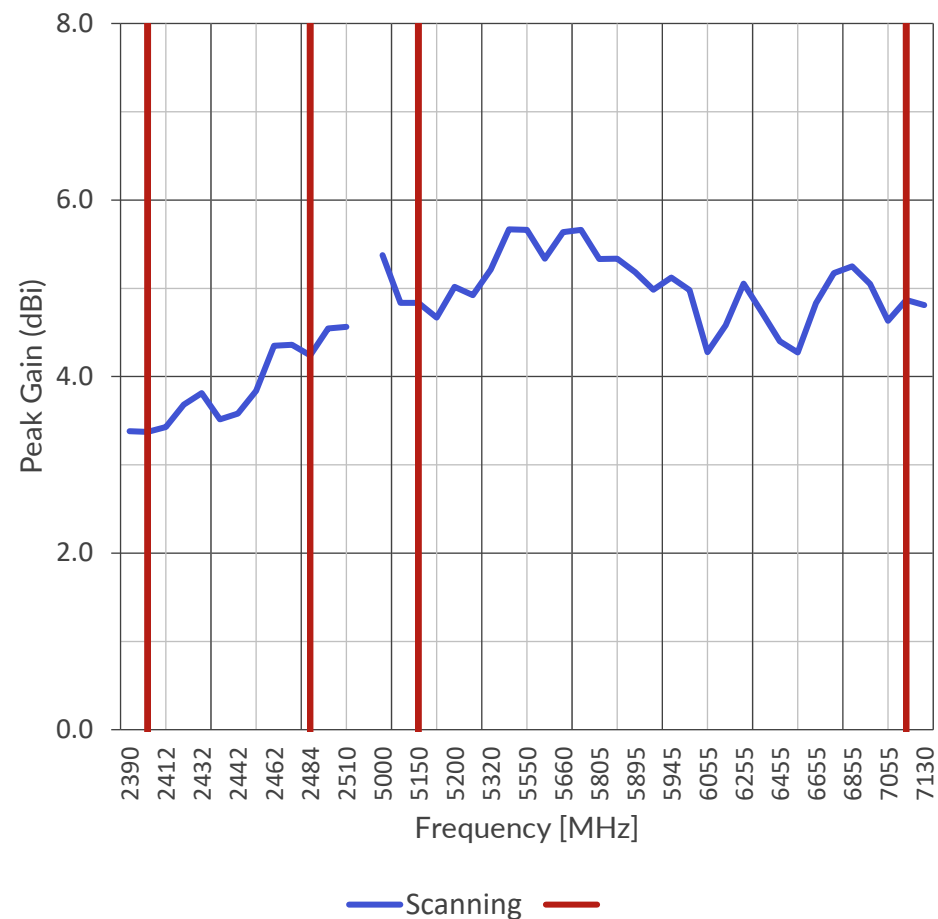
5GHz	Max	Mean	Min
Scanning	75 %	71 %	66 %

6GHz	Max	Mean	Min
Scanning	70 %	66 %	61 %

■ Cable Length

Scanning : 104mm

Peak Gain Scanning Radio



2.4GHz	Max	Mean	Min
Scanning	4.5 dBi	3.9 dBi	3.4 dBi

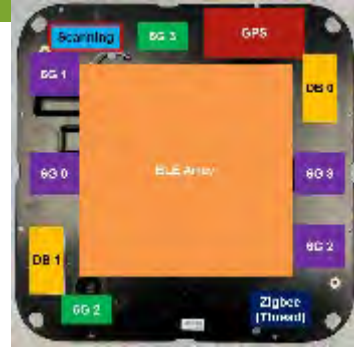
5GHz	Max	Mean	Min
Scanning	5.7 dBi	5.3 dBi	4.7 dBi

6GHz	Max	Mean	Min
Scanning	5.3 dBi	4.8 dBi	4.3 dBi

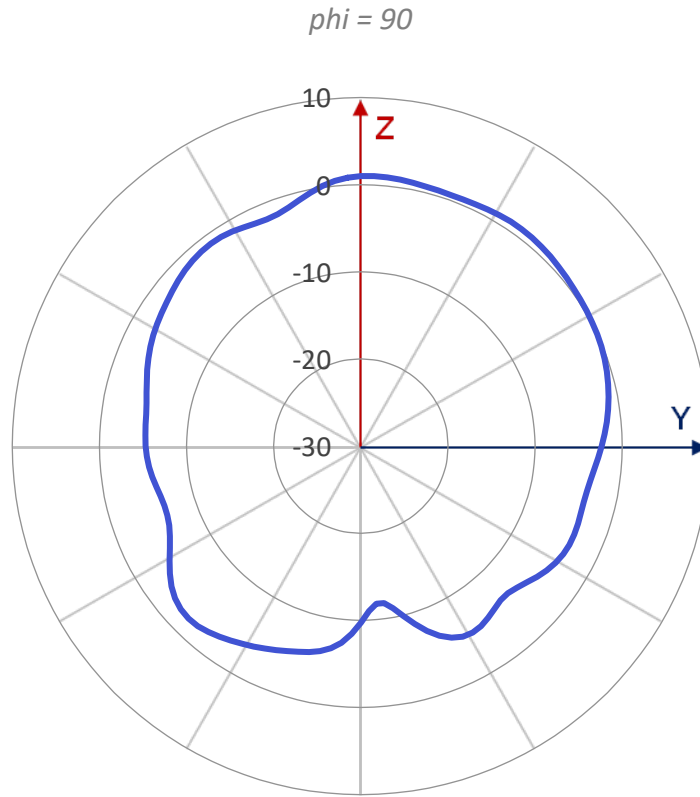
■ Cable Length

Scanning : 104mm

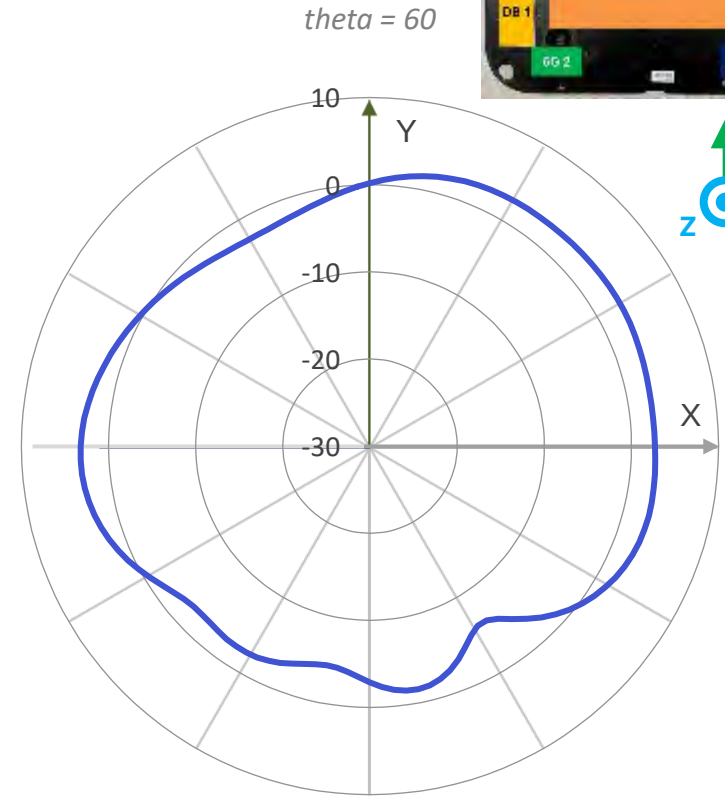
Realized Gain Pattern Scanning Radio @2450MHz_V+H



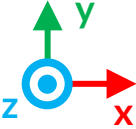
— Scanning



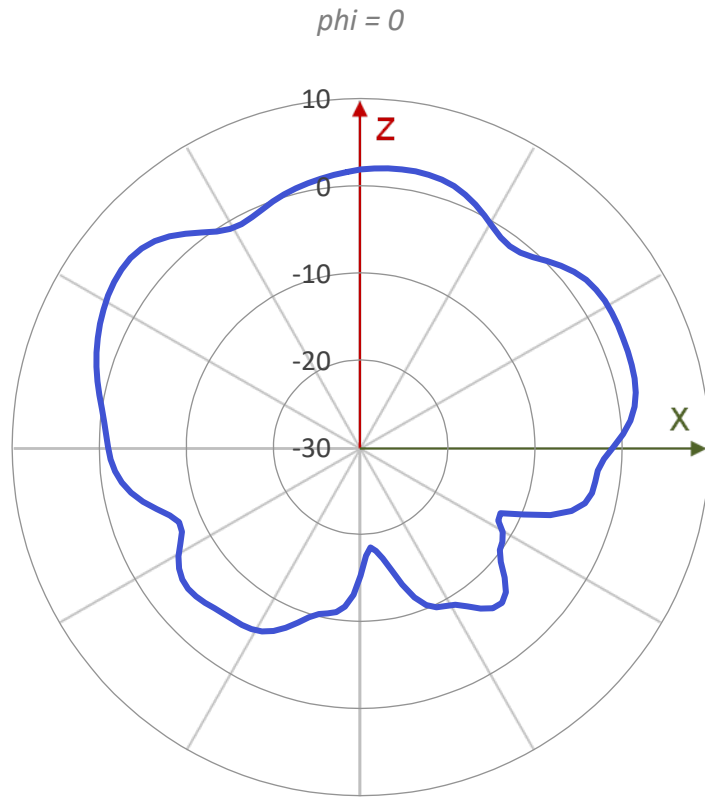
— Scanning



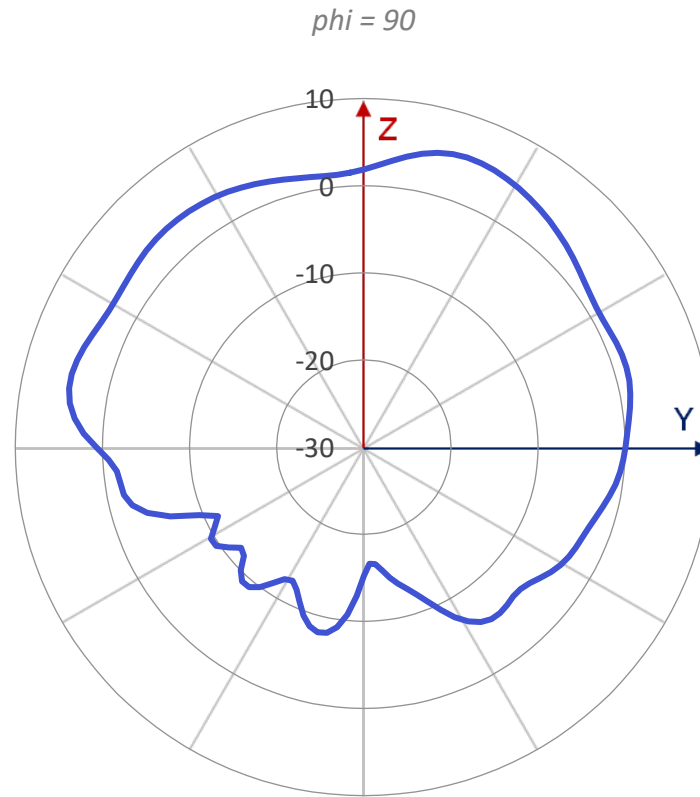
— Scanning



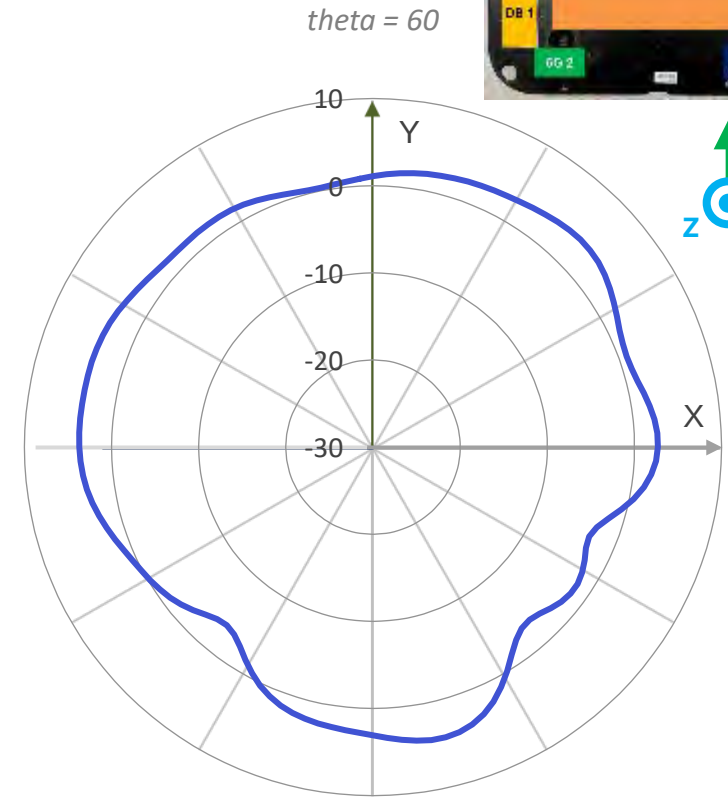
Realized Gain Pattern Scanning Radio @5550MHz_V+H



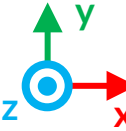
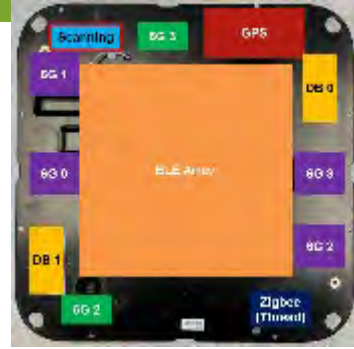
— Scanning



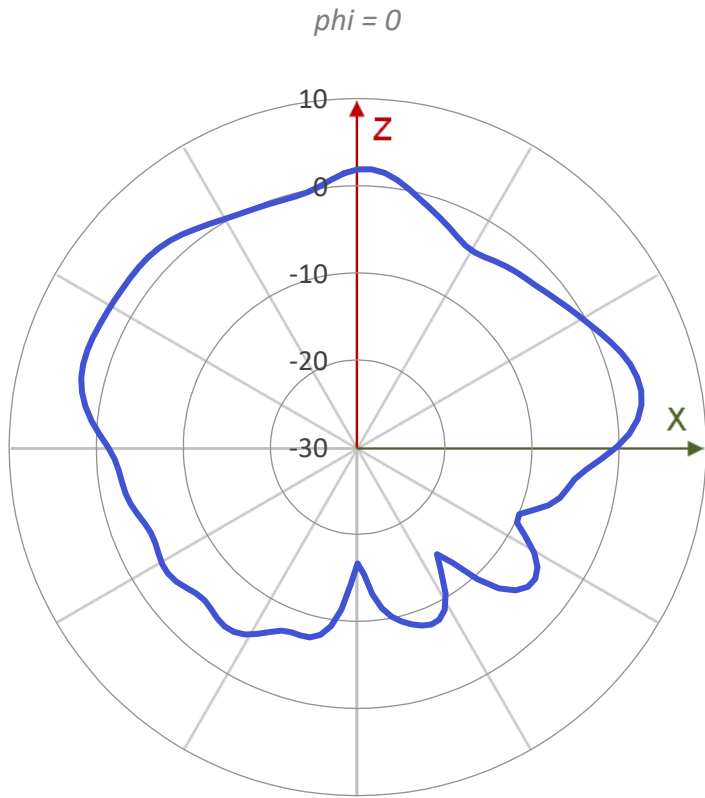
— Scanning



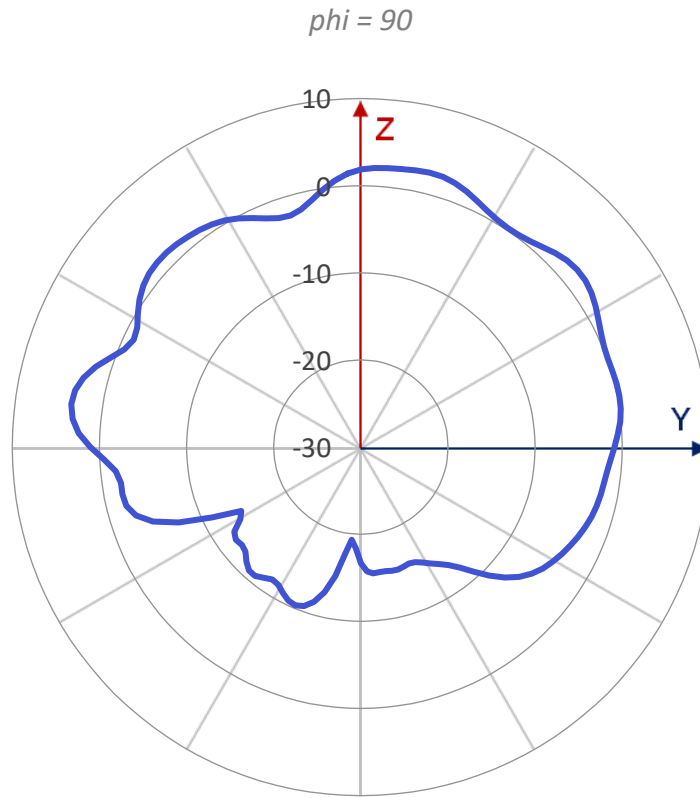
— Scanning



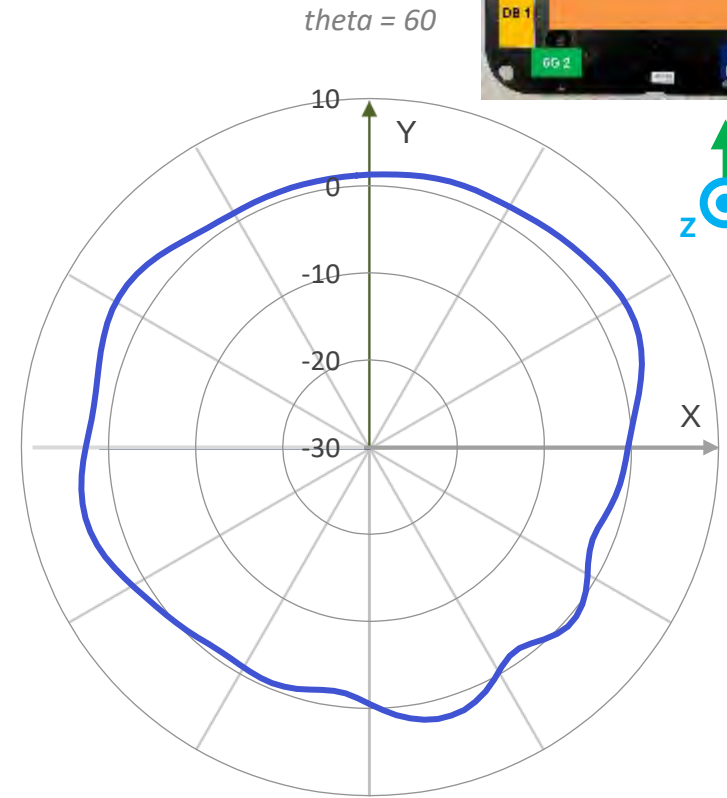
Realized Gain Pattern Scanning Radio @6565MHz_V+H



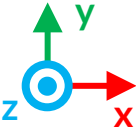
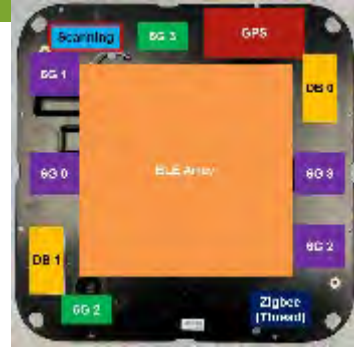
— Scanning



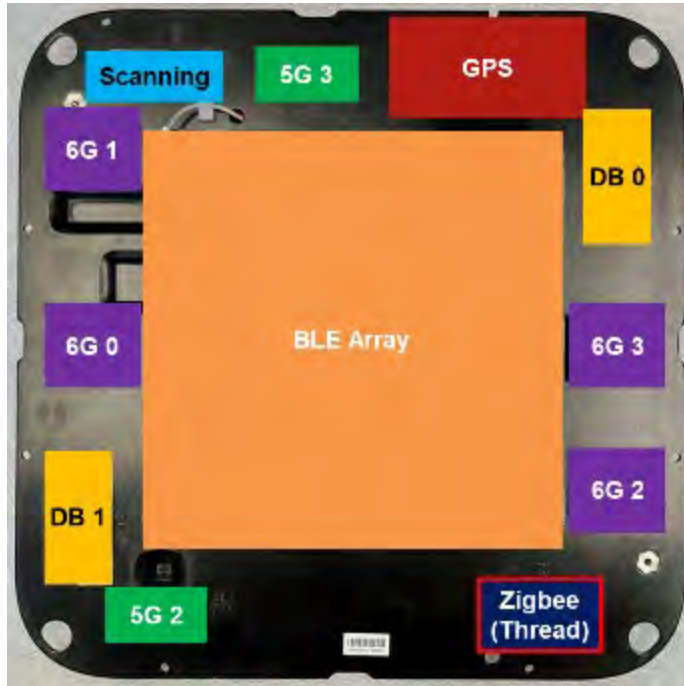
— Scanning



— Scanning



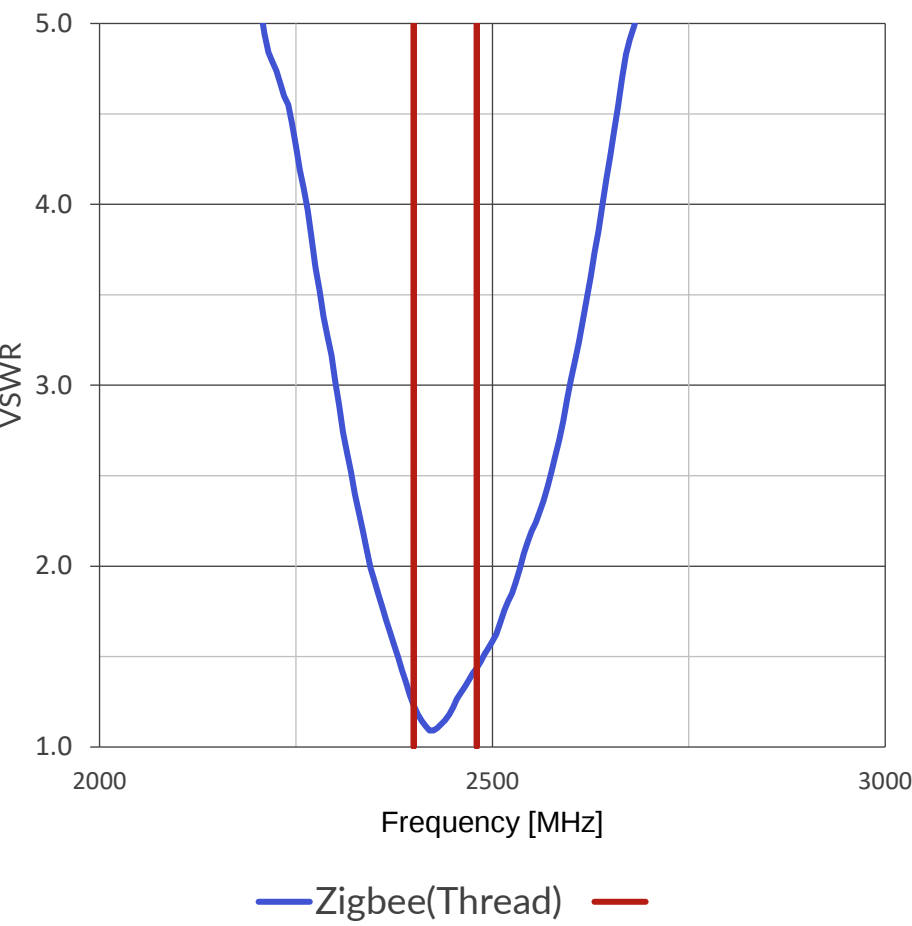
Zigbee(Thread)



- Maximum VSWR
 - 1.4:1 on 2.4GHz
- Average Efficiency
 - ~61% on 2.4GHz
- Peak Gain
 - 3.5dBi on 2.4GHz

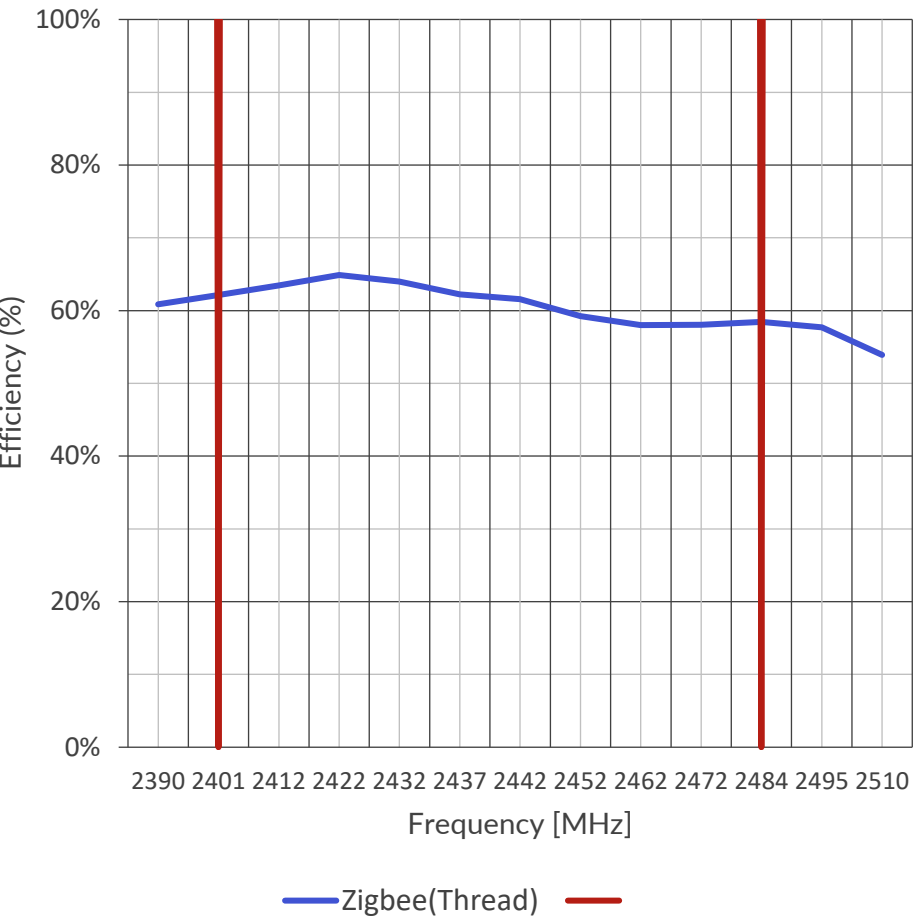
- Cable Length
Zigbee(Thread) : 254mm

VSWR Zigbee(Thread)



2.4GHz	Max	Mean	Min
Zigbee(Thread)	1.4	1.2	1.1

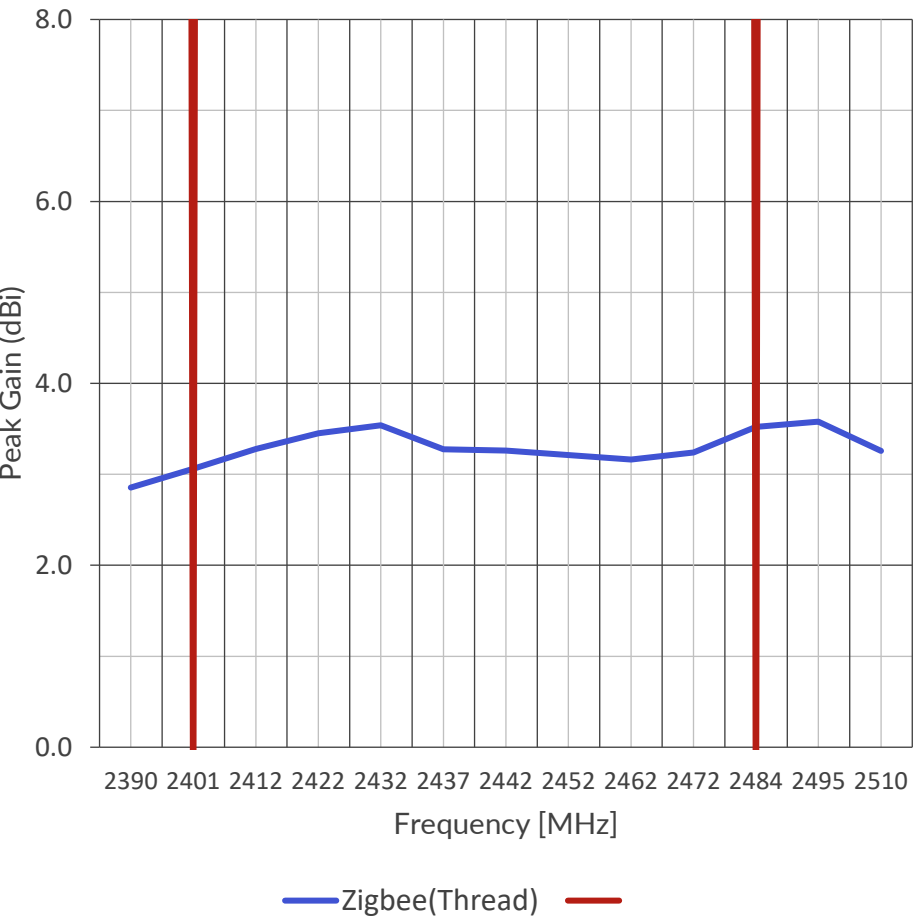
Efficiency Zigbee(Thread)



2.4GHz	Max	Mean	Min
Zigbee(Thread)	65 %	61 %	58 %

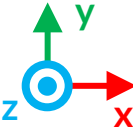
■ Cable Length
Zigbee(Thread) : 254mm

Peak Gain Zigbee(Thread)

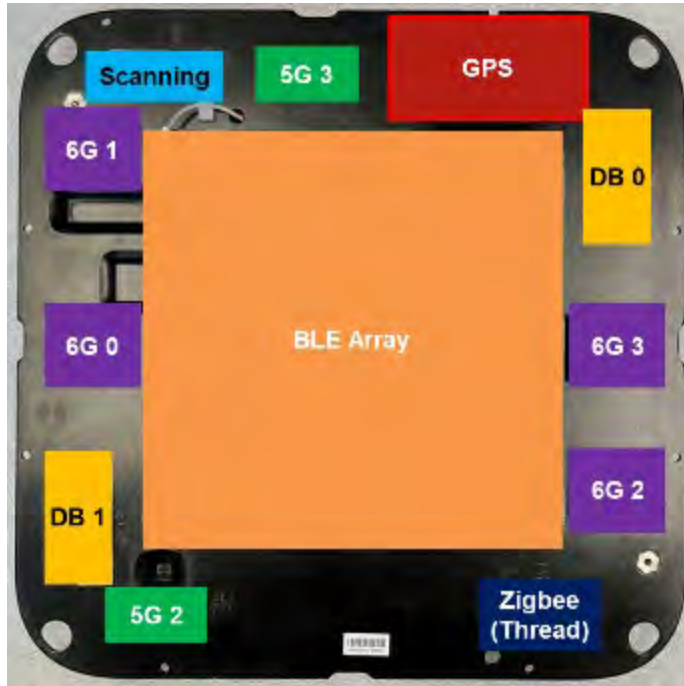


2.4GHz	Max	Mean	Min
Zigbee(Thread)	3.5 dBi	3.3 dBi	3.1 dBi

■ Cable Length
Zigbee(Thread) : 254mm

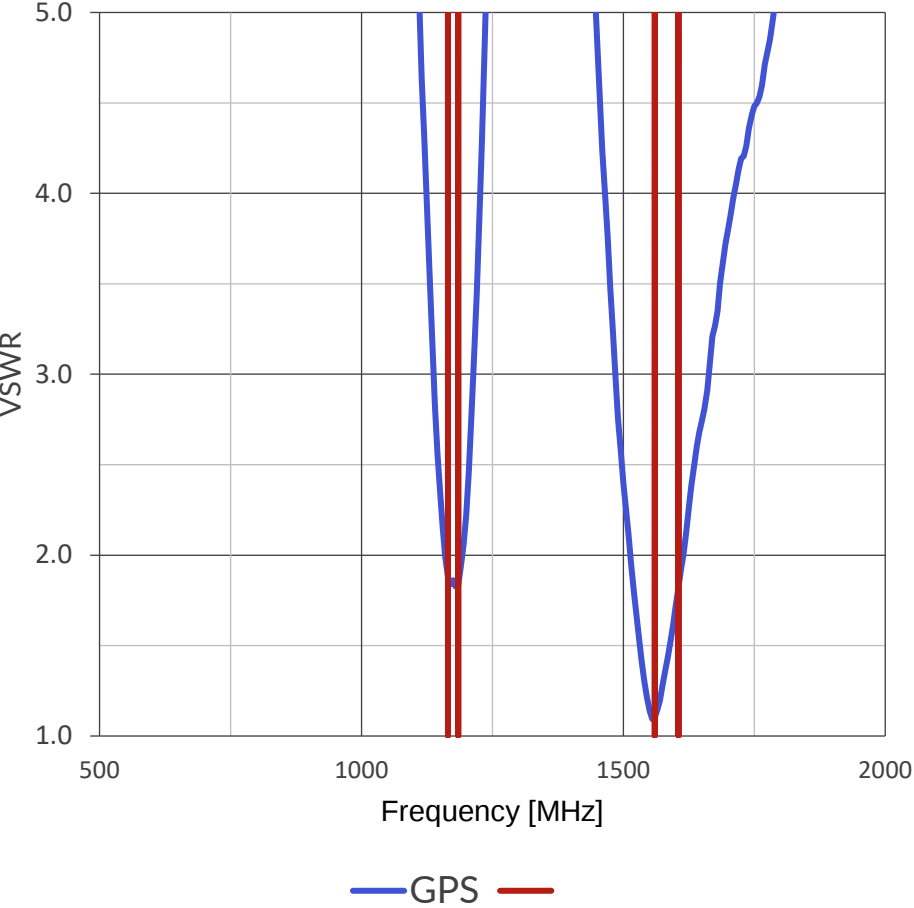


GPS



- **Maximum VSWR**
 - 1.9:1 on L1 / 1.9:1 on L5
 - **Minimum Isolation**
 - 35.4dB on L1 / 39.2dB on L5 / 23.8dB on 2.4G
 - **Average Efficiency**
 - ~65% on L1 / ~54% on L5
 - **Peak Gain**
 - 3.7dBi on L1 / 2.9dBi on L5
- **Cable Length**
GPS : 118mm

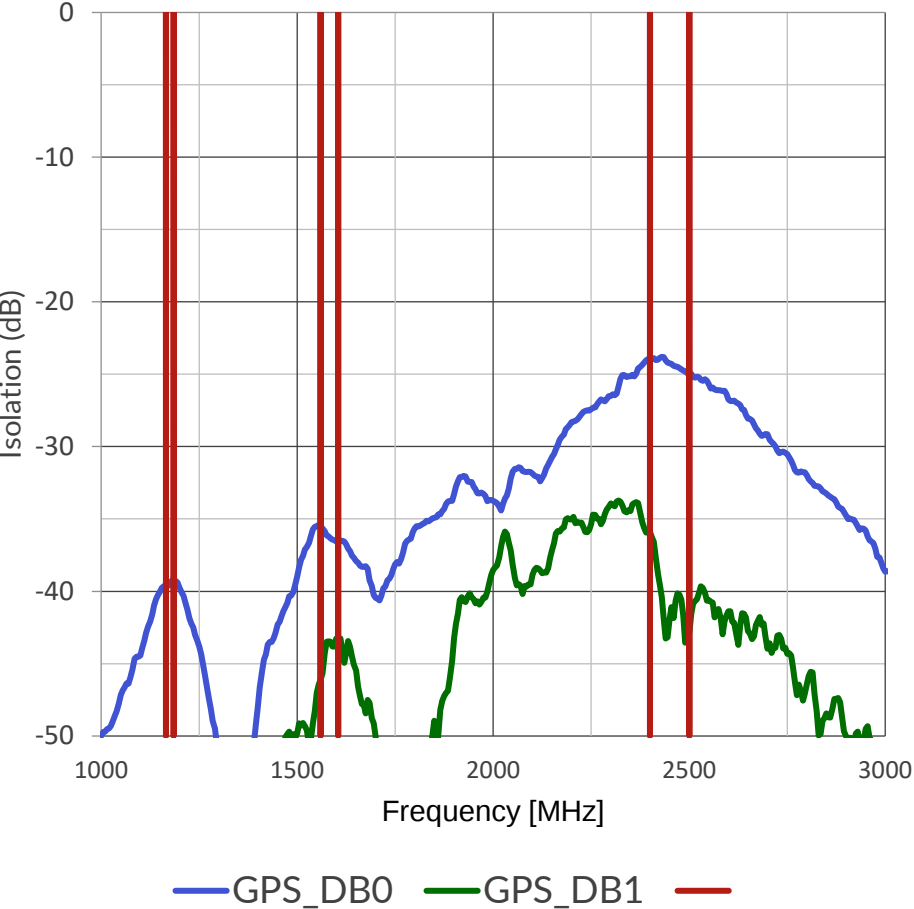
VSWR GPS



L1	Max	Mean	Min
GPS	1.9	1.5	1.1

L5	Max	Mean	Min
GPS	1.9	1.8	1.8

Isolation GPS

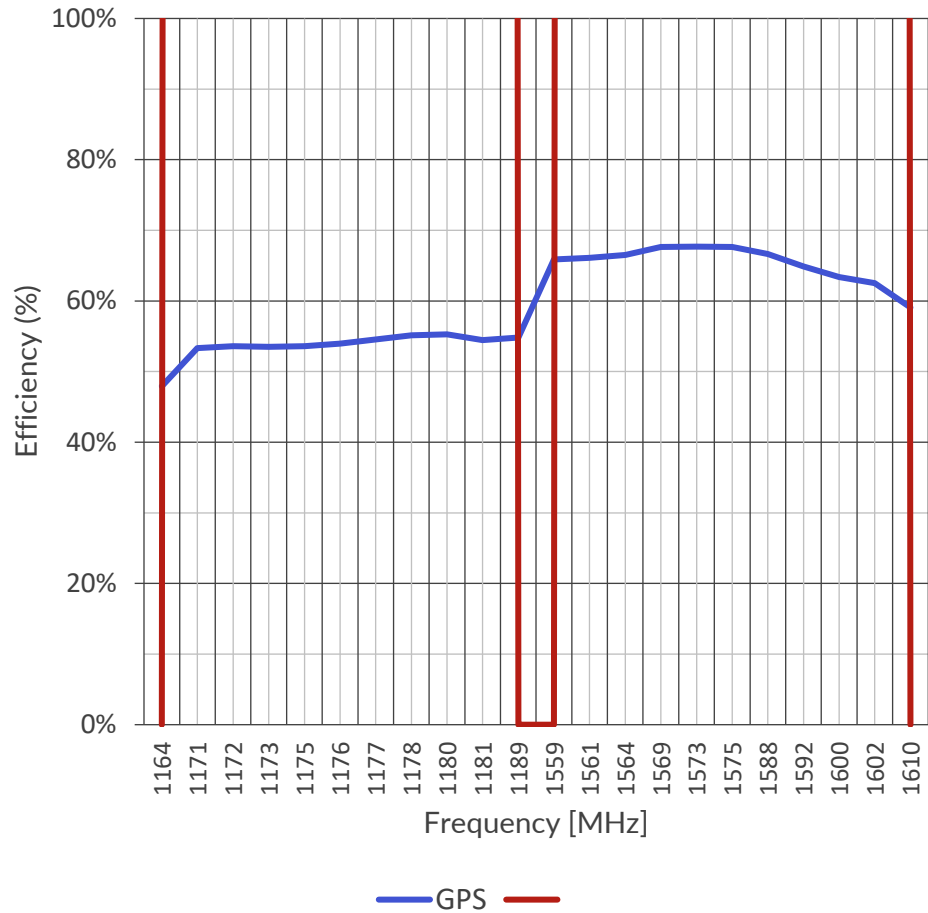


L1	Max	Mean	Min
GPS_DB0	-35.4	-44.2	-62.0
GPS_DB1	-43.3	-55.8	-69.0
Summary	-35.4	-50.0	-69.0

L5	Max	Mean	Min
GPS_DB0	-39.2	-39.4	-39.6
GPS_DB1	-54.9	-59.2	-65.7
Summary	-39.2	-49.3	-65.7

2.4GHz	Max	Mean	Min
GPS_DB0	-23.8	-24.3	-24.9
GPS_DB1	-35.9	-40.5	-43.5
Summary	-23.8	-32.4	-43.5

Efficiency GPS



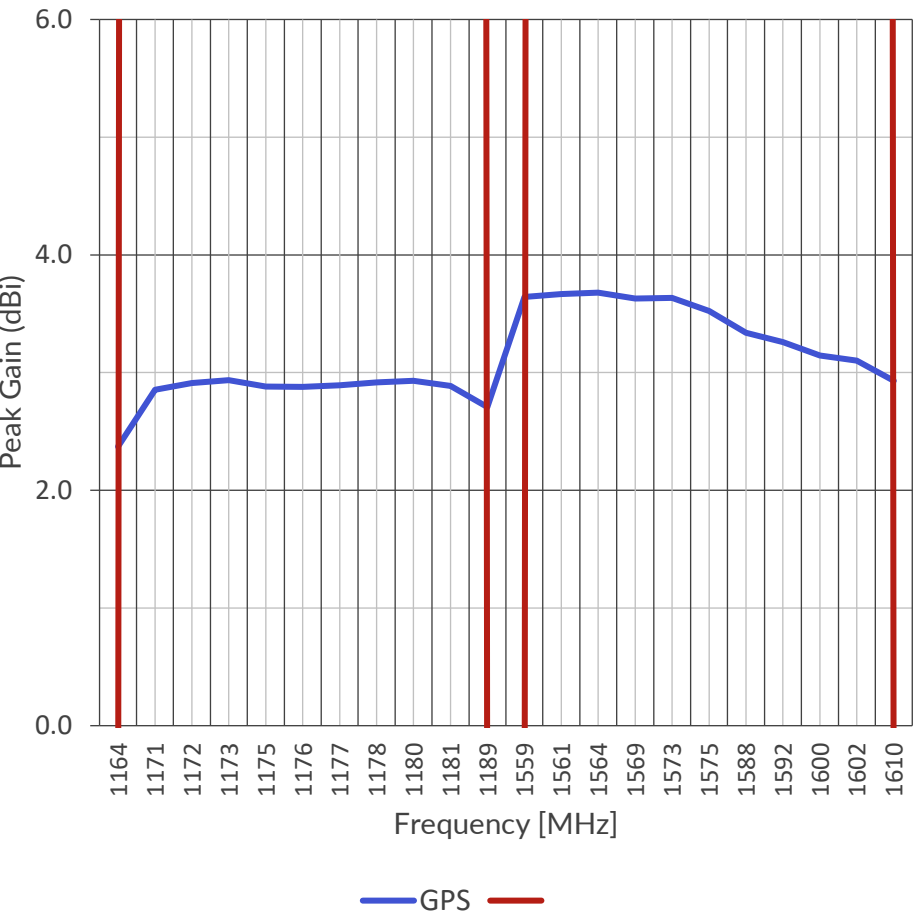
L1	Max	Mean	Min
GPS	68 %	65 %	59 %

L5	Max	Mean	Min
GPS	55 %	54 %	48 %

■ Cable Length

GPS : 137mm

Peak Gain GPS



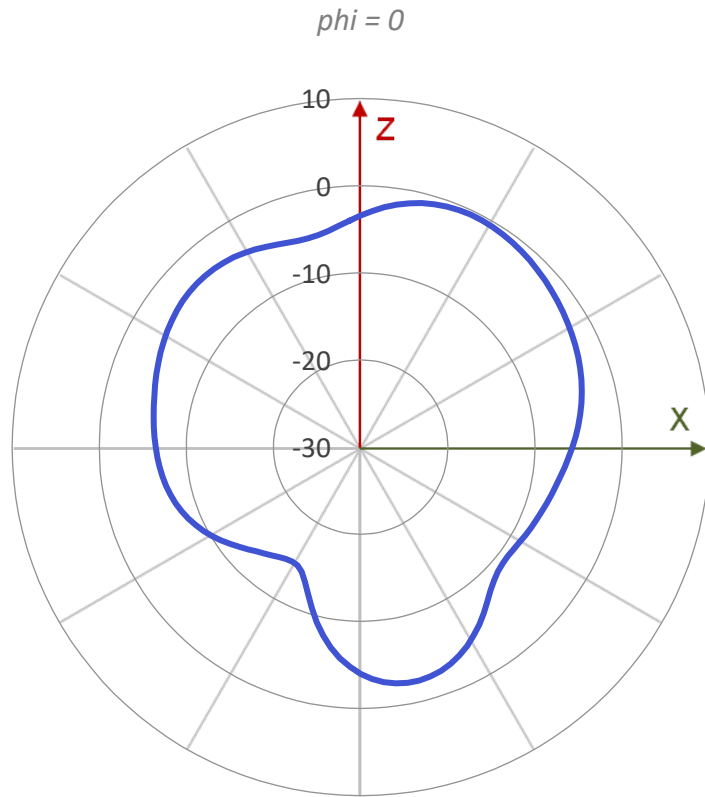
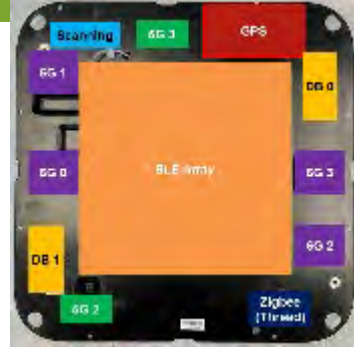
L1	Max	Mean	Min
GPS	3.7 dBi	3.4 dBi	2.9 dBi

L5	Max	Mean	Min
GPS	2.9 dBi	2.8 dBi	2.4 dBi

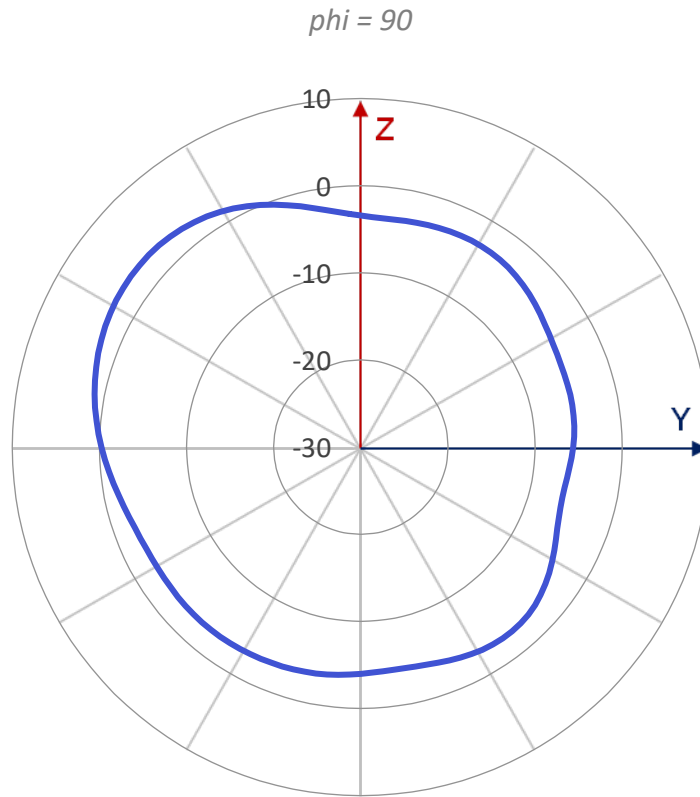
■ Cable Length

GPS : 137mm

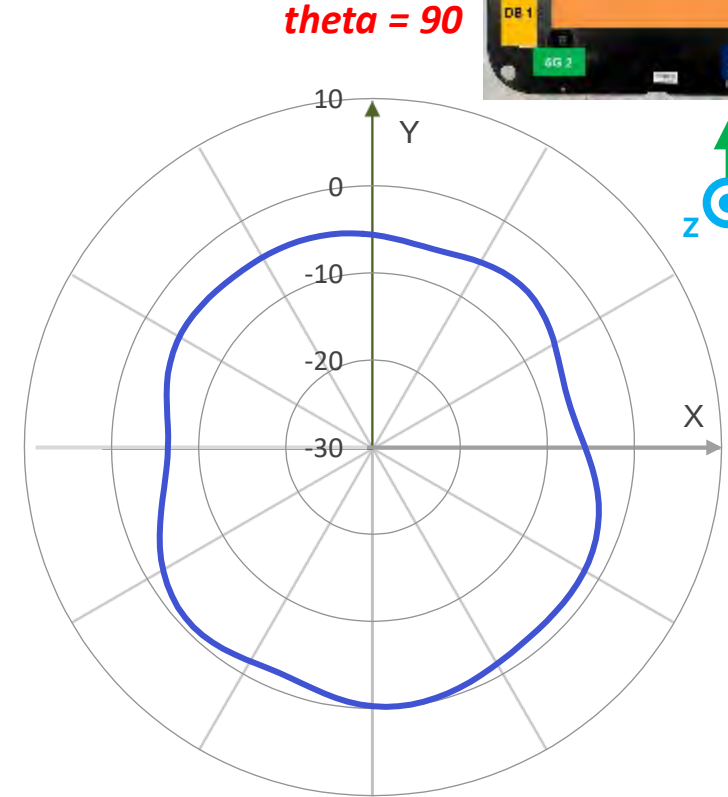
Realized Gain Pattern GPS @1176MHz_V+H



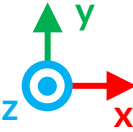
— GPS



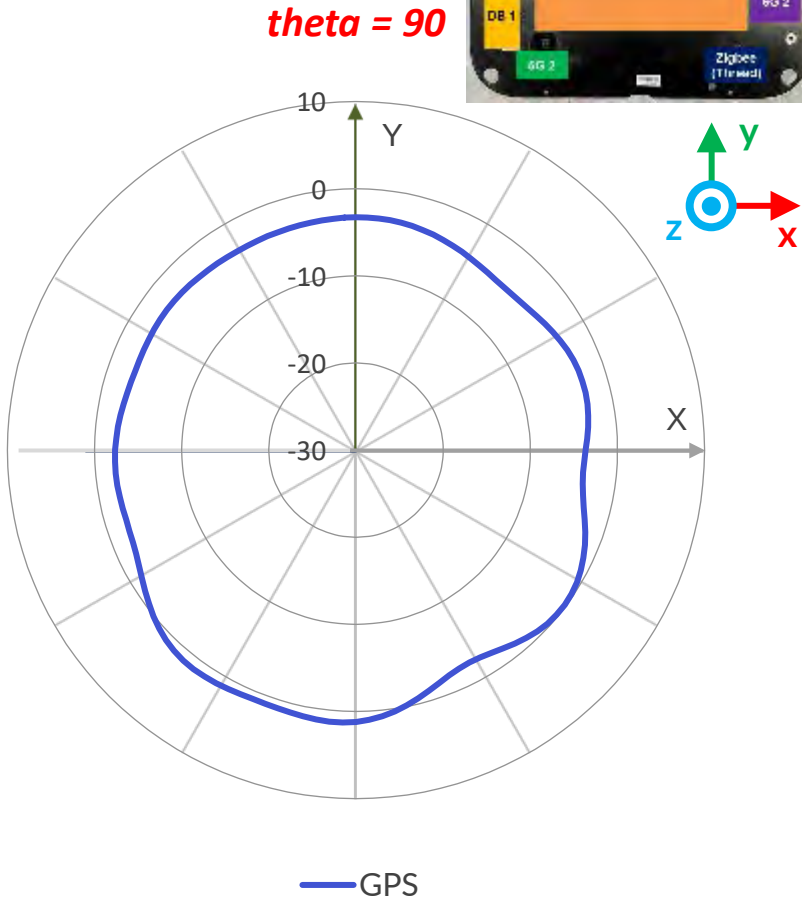
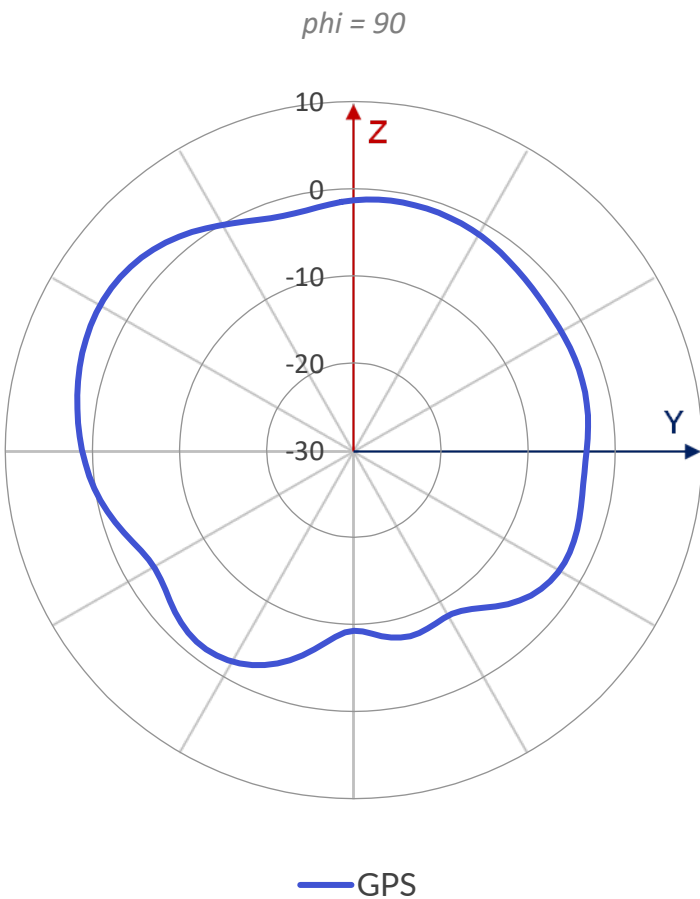
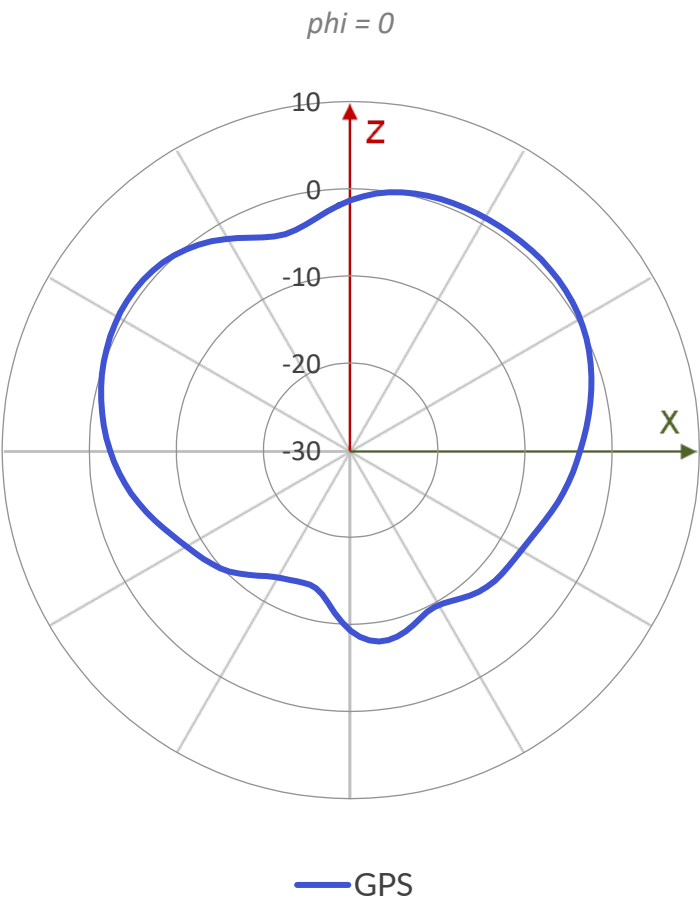
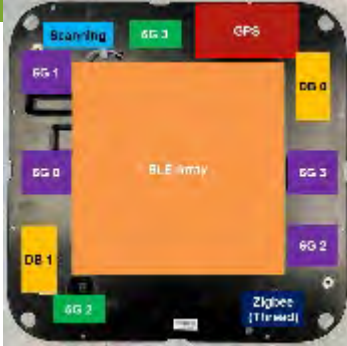
— GPS



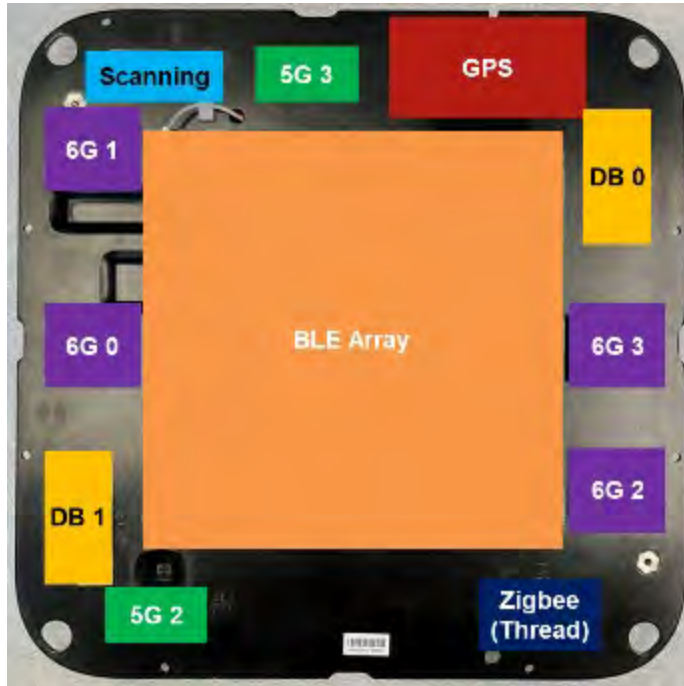
— GPS



Realized Gain Pattern GPS @1575MHz_V+H

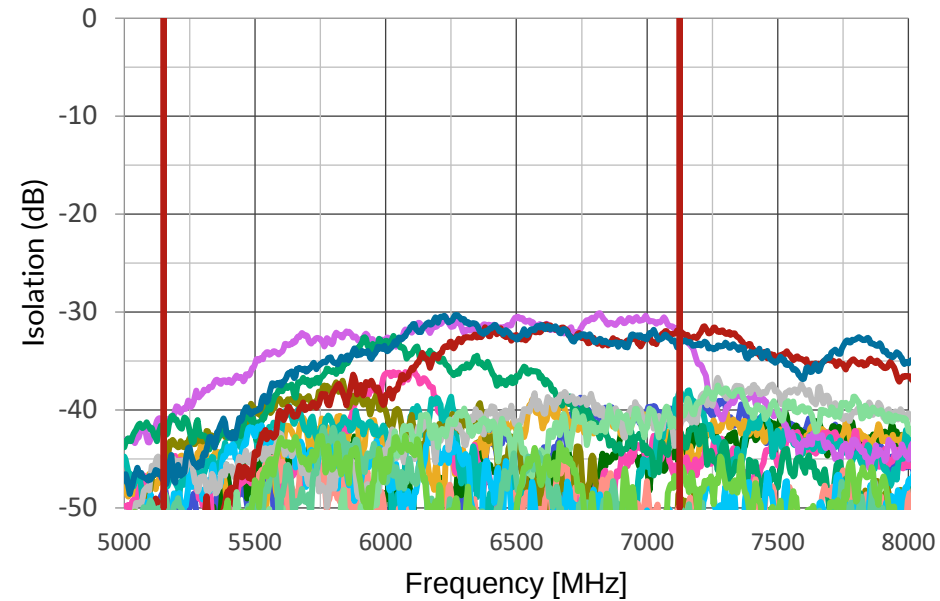


Isolation among Radio



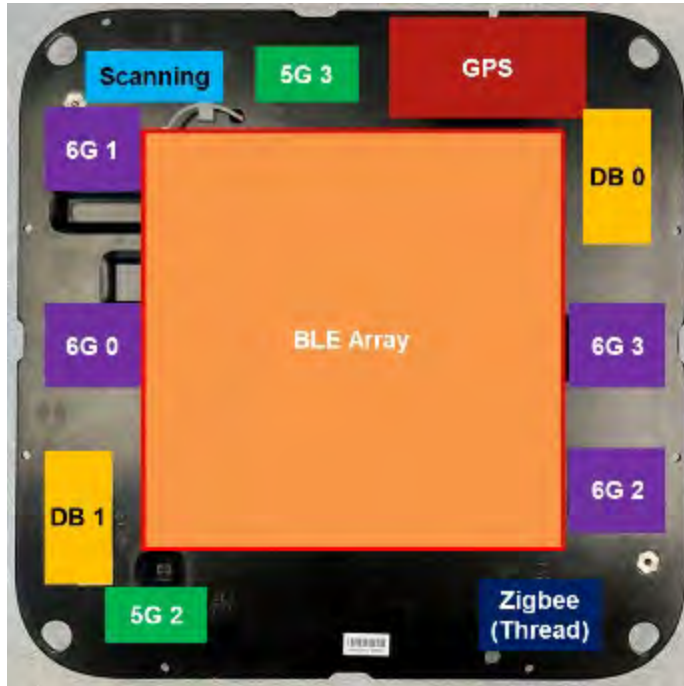
- Wi-Fi 6G to Wi-Fi 5G
 - 30.1dB on 5-7GHz

Isolation Wi-Fi 5G to Wi-Fi 6G



— 5G2_6G0 — 5G2_6G1 — 5G2_6G2
— 5G2_6G3 — 5G3_6G0 — 5G3_6G1
— 5G3_6G2 — 5G3_6G3 — DB0_6G0
— DB0_6G1 — DB0_6G2 — DB0_6G3
— DB1_6G0 — DB1_6G1 — DB1_6G2
— DB1_6G3 —

BLE Array – Directional Beam



■ Efficiency

- ~16% on 2.4GHz [Beam1~Beam8]
- ~25% on 2.4GHz [Beam9]

■ Peak Gain

- 4.2dBi on 2.4GHz [Beam1~Beam8]
- 2.7dBi on 2.4GHz [Beam9]

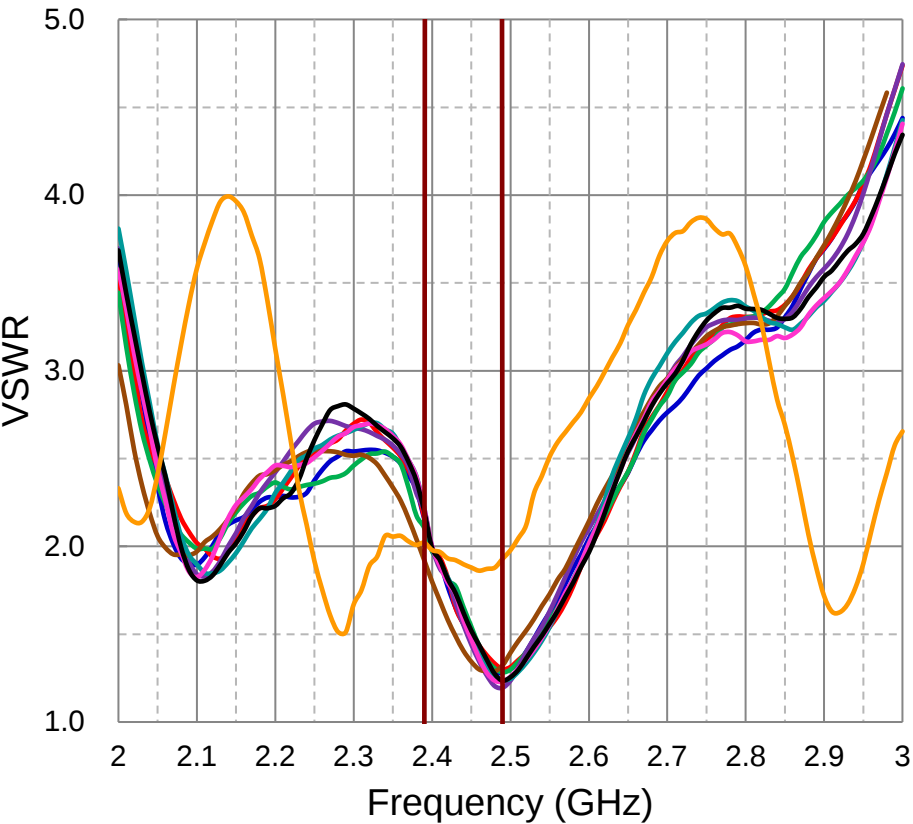
■ Beam Width

- ~49° on 2.4GHz [Beam1~Beam8]

■ Front to Back Ratio

- ~9.6dB on 2.4GHz [Beam1~Beam8]

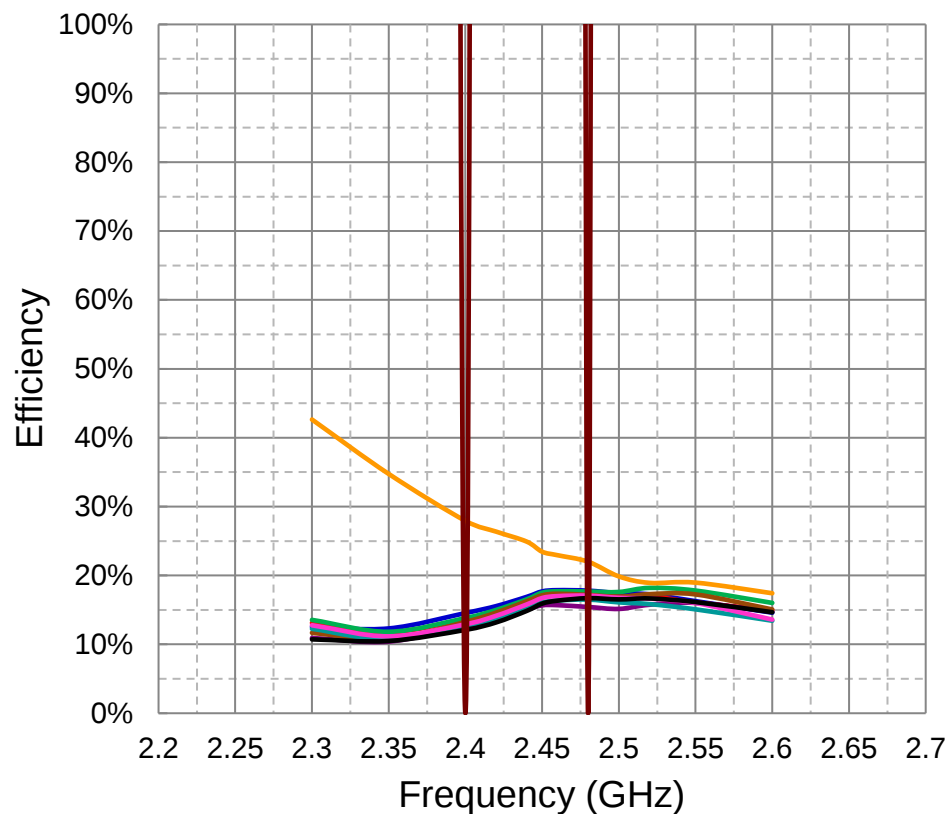
VSWR Directional Beam



Beam1 Beam2 Beam3 Beam4 Beam5
Beam6 Beam7 Beam8 Beam9

2.4GHz	Max	Mean	Min
Beam 1	2.0	1.6	1.3
Beam 2	2.0	1.6	1.3
Beam 3	2.0	1.6	1.3
Beam 4	2.0	1.6	1.2
Beam 5	1.8	1.5	1.3
Beam 6	2.0	1.6	1.3
Beam 7	2.0	1.6	1.2
Beam 8	2.0	1.6	1.3
Beam 9	2.0	1.9	1.9

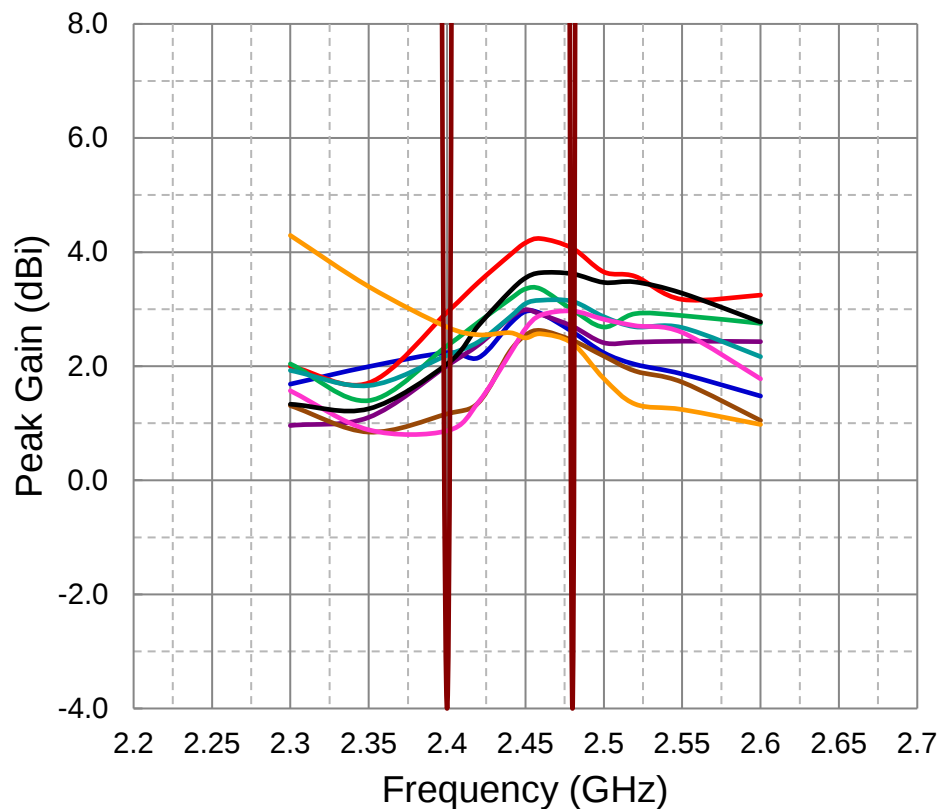
Efficiency Directional Beam



2.4GHz	Max	Mean	Min
Beam 1	18 %	17 %	15 %
Beam 2	18 %	16 %	14 %
Beam 3	18 %	16 %	14 %
Beam 4	16 %	15 %	13 %
Beam 5	17 %	16 %	13 %
Beam 6	16 %	15 %	13 %
Beam 7	17 %	16 %	13 %
Beam 8	17 %	15 %	12 %
Beam 9	28 %	25 %	22 %

— Beam1 — Beam2 — Beam3 — Beam4 — Beam5
— Beam6 — Beam7 — Beam8 — Beam9 —

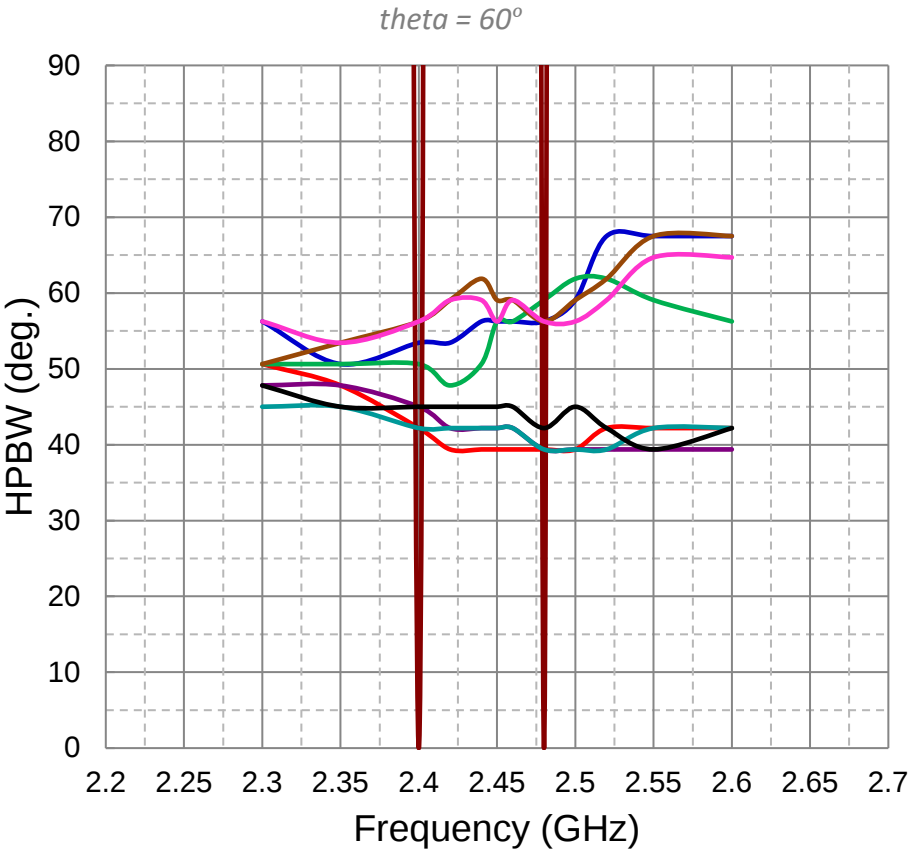
Peak Gain Directional Beam



2.4GHz	Max	Mean	Min
Beam 1	3.0 dBi	2.6 dBi	2.1 dBi
Beam 2	4.2 dBi	3.8 dBi	2.9 dBi
Beam 3	3.4 dBi	3.0 dBi	2.4 dBi
Beam 4	3.0 dBi	2.6 dBi	2.0 dBi
Beam 5	2.6 dBi	2.1 dBi	1.2 dBi
Beam 6	3.2 dBi	2.8 dBi	2.2 dBi
Beam 7	3.0 dBi	2.2 dBi	0.9 dBi
Beam 8	3.6 dBi	3.1 dBi	2.0 dBi
Beam 9	2.7 dBi	2.5 dBi	2.4 dBi

— Beam1 — Beam2 — Beam3 — Beam4 — Beam5
— Beam6 — Beam7 — Beam8 — Beam9 —

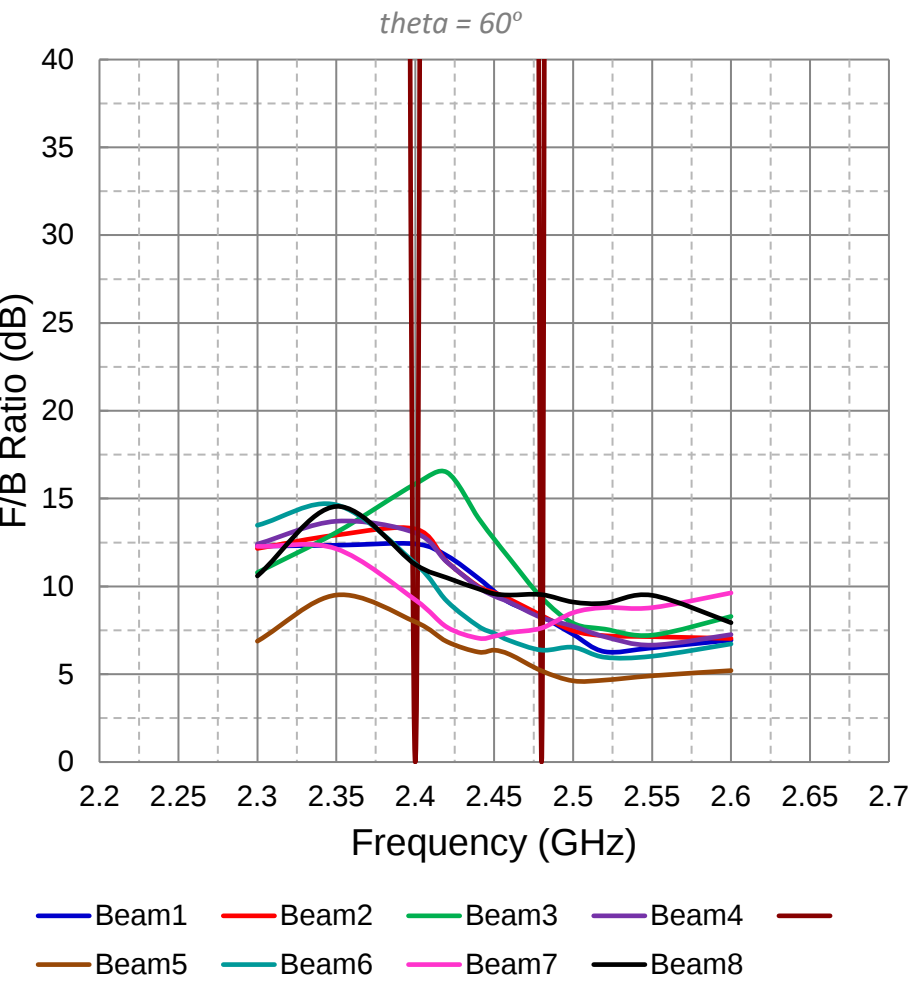
3dB Beam Width Directional Beam



2.4GHz	Max	Mean	Min
Beam 1	56	55	53
Beam 2	42	40	39
Beam 3	59	53	48
Beam 4	45	42	39
Beam 5	62	59	56
Beam 6	42	42	39
Beam 7	59	58	56
Beam 8	45	45	42
Summary	62	49	39

Beam1 Beam2 Beam3 Beam4
Beam5 Beam6 Beam7 Beam8

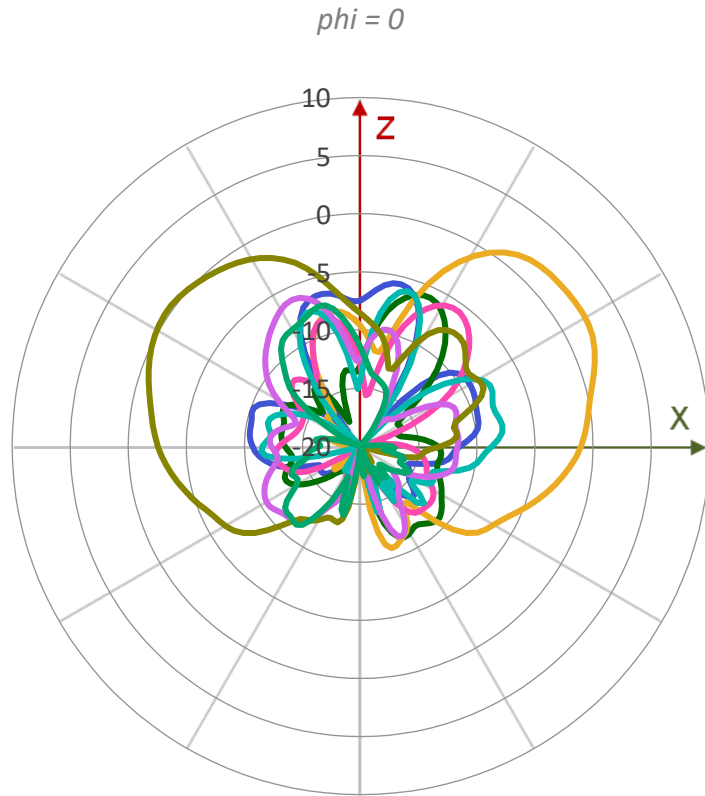
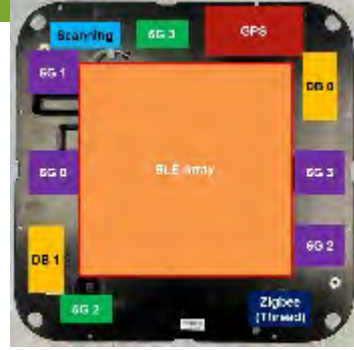
Front to Back Ratio Directional Beam



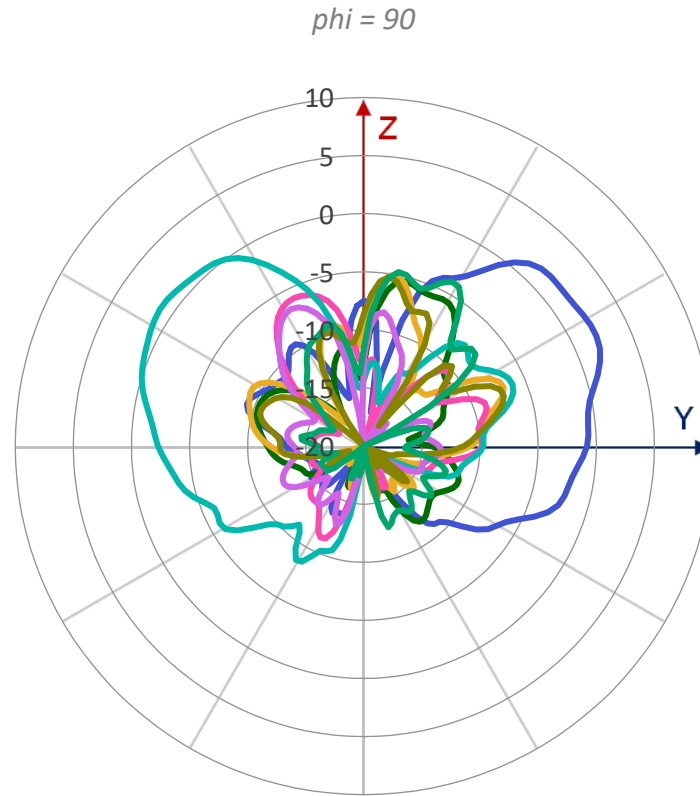
2.4GHz	Max	Mean	Min
Beam 1	12.4	10.3	8.3
Beam 2	13.3	10.3	8.3
Beam 3	16.5	13.3	9.4
Beam 4	13.0	10.2	8.2
Beam 5	8.0	6.5	5.2
Beam 6	11.3	8.1	6.4
Beam 7	9.2	7.7	7.1
Beam 8	11.3	10.0	9.5
Summary	16.5	9.6	5.2

Realized Gain Pattern

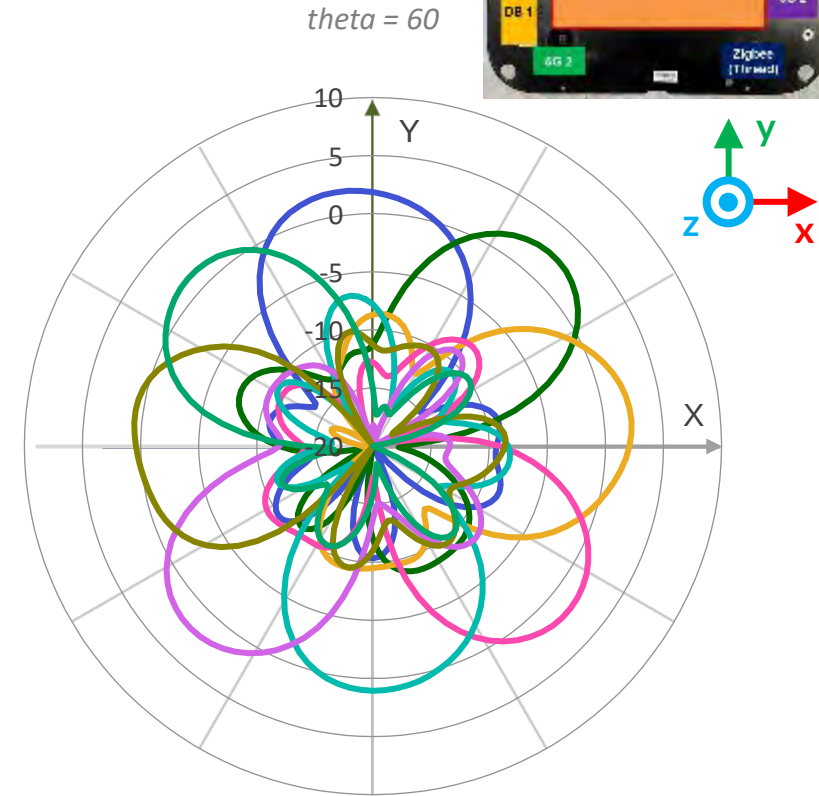
Directional Beam 1-8 @2400MHz_V+H



— Beam1 — Beam2 — Beam3 — Beam4
— Beam5 — Beam6 — Beam7 — Beam8



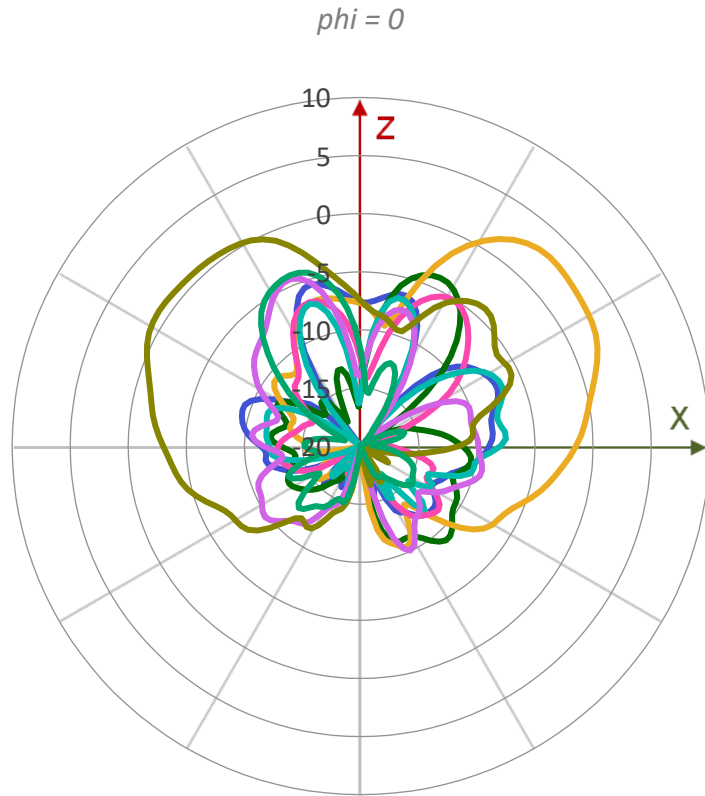
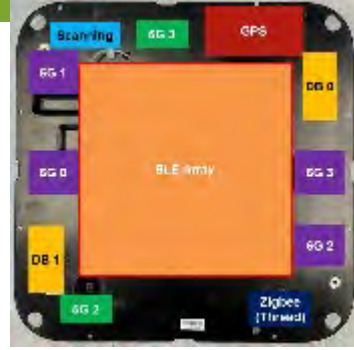
— Beam1 — Beam2 — Beam3 — Beam4
— Beam5 — Beam6 — Beam7 — Beam8



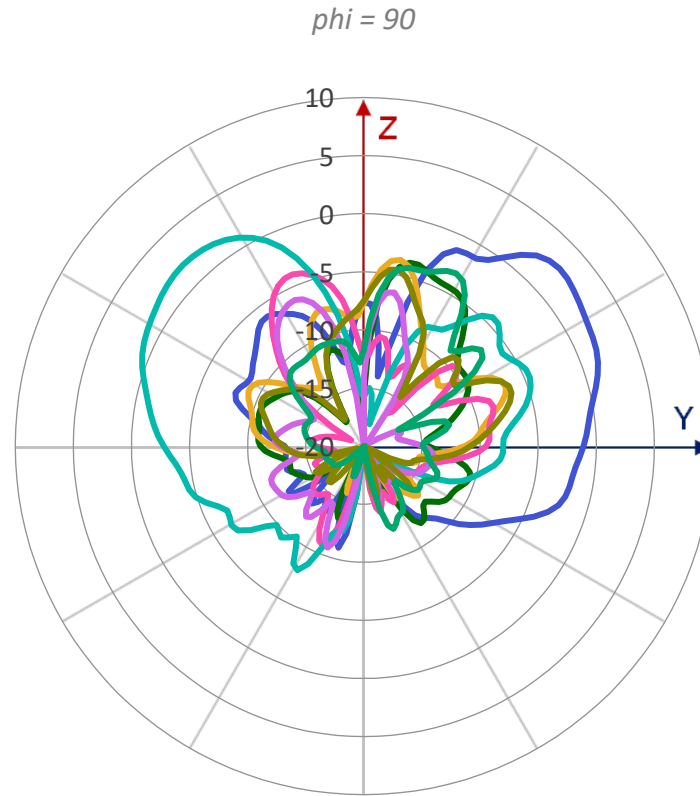
— Beam1 — Beam2 — Beam3 — Beam4
— Beam5 — Beam6 — Beam7 — Beam8

Realized Gain Pattern

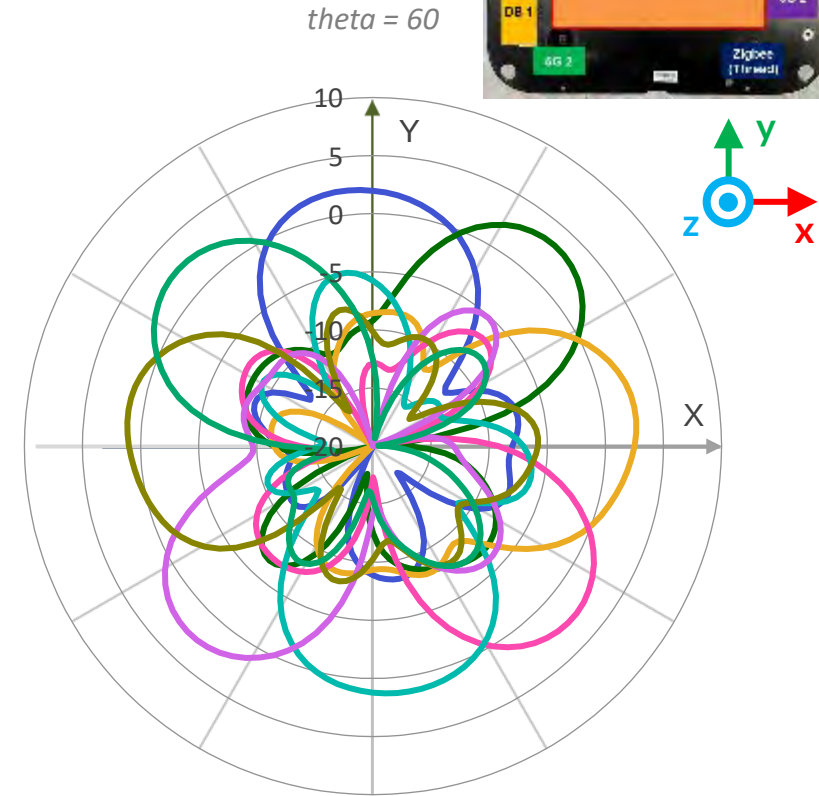
Directional Beam 1-8 @2440MHz_V+H



— Beam1 — Beam2 — Beam3 — Beam4
— Beam5 — Beam6 — Beam7 — Beam8



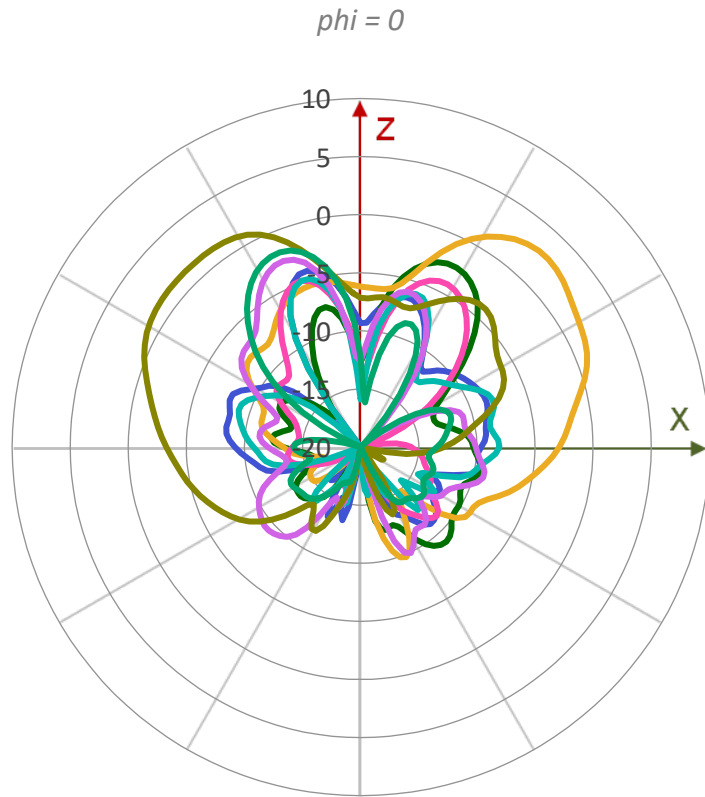
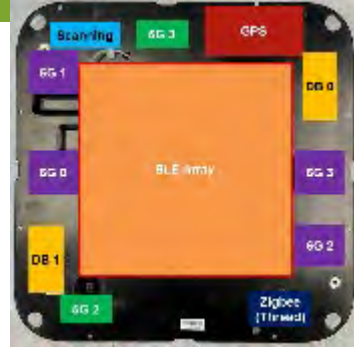
— Beam1 — Beam2 — Beam3 — Beam4
— Beam5 — Beam6 — Beam7 — Beam8



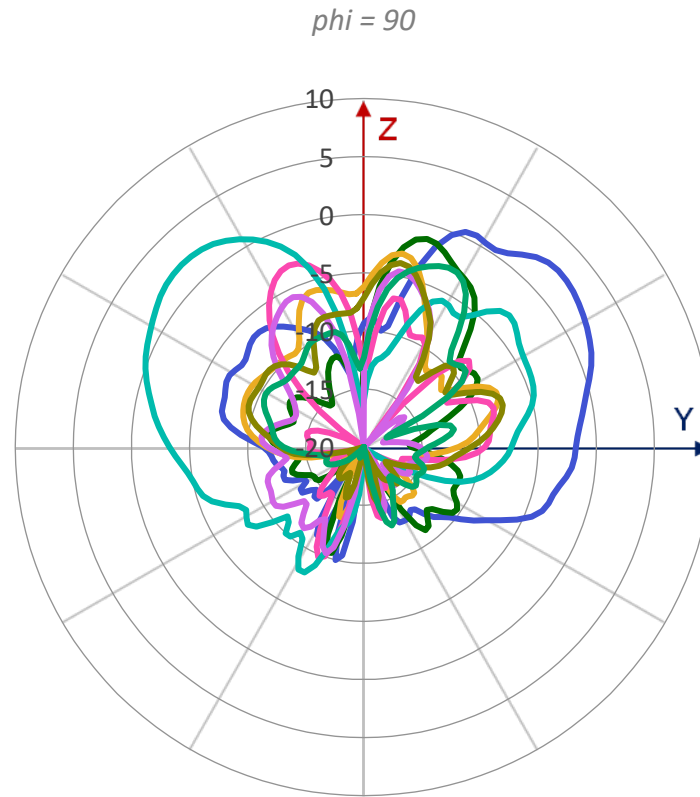
— Beam1 — Beam2 — Beam3 — Beam4
— Beam5 — Beam6 — Beam7 — Beam8

Realized Gain Pattern

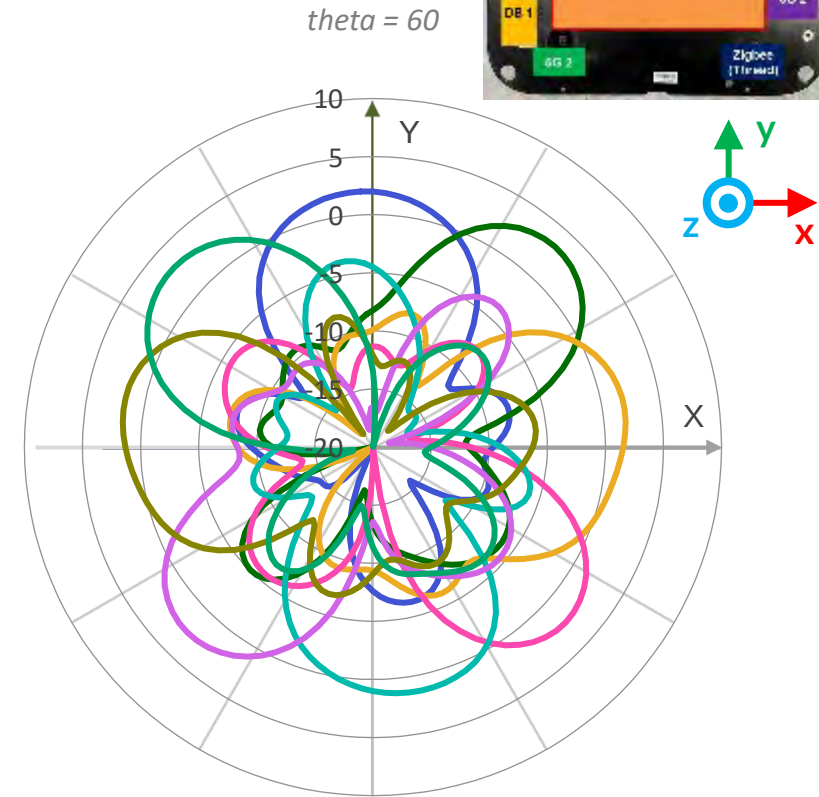
Directional Beam 1-8 @2480MHz_V+H



— Beam1 — Beam2 — Beam3 — Beam4
— Beam5 — Beam6 — Beam7 — Beam8



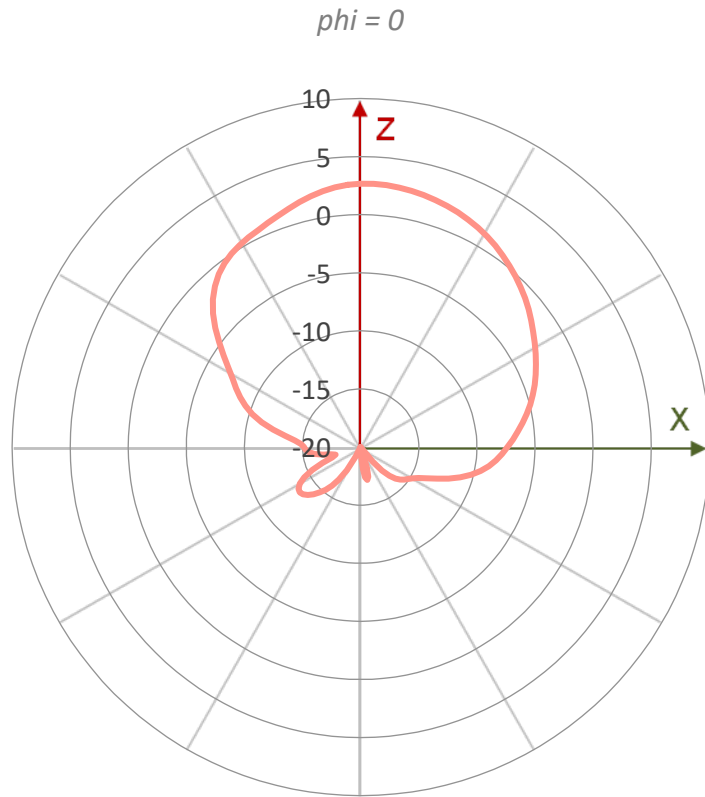
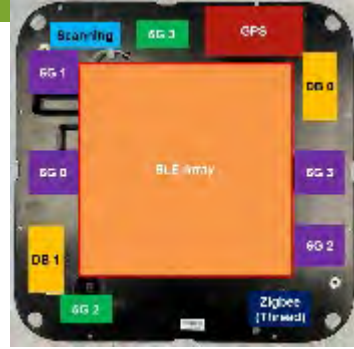
— Beam1 — Beam2 — Beam3 — Beam4
— Beam5 — Beam6 — Beam7 — Beam8



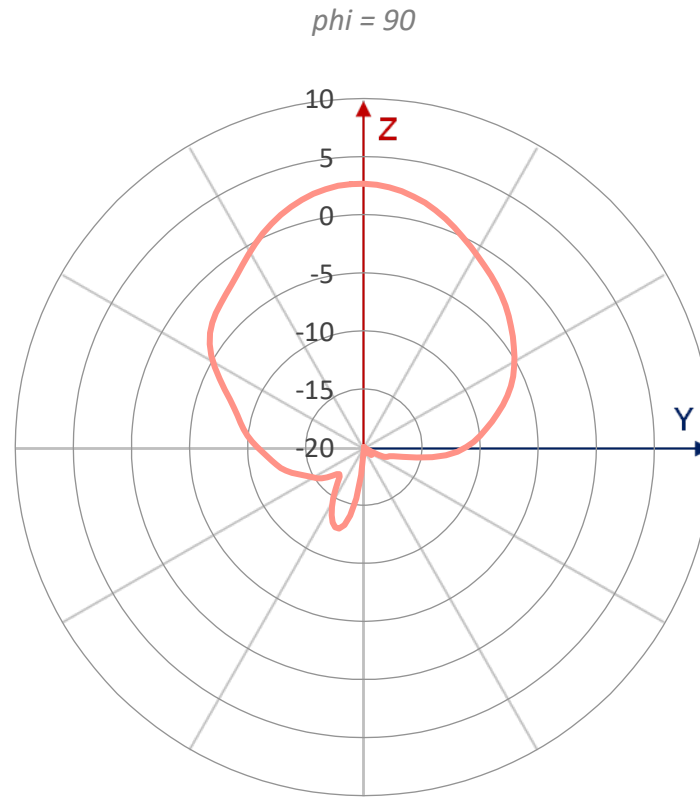
— Beam1 — Beam2 — Beam3 — Beam4
— Beam5 — Beam6 — Beam7 — Beam8

Realized Gain Pattern

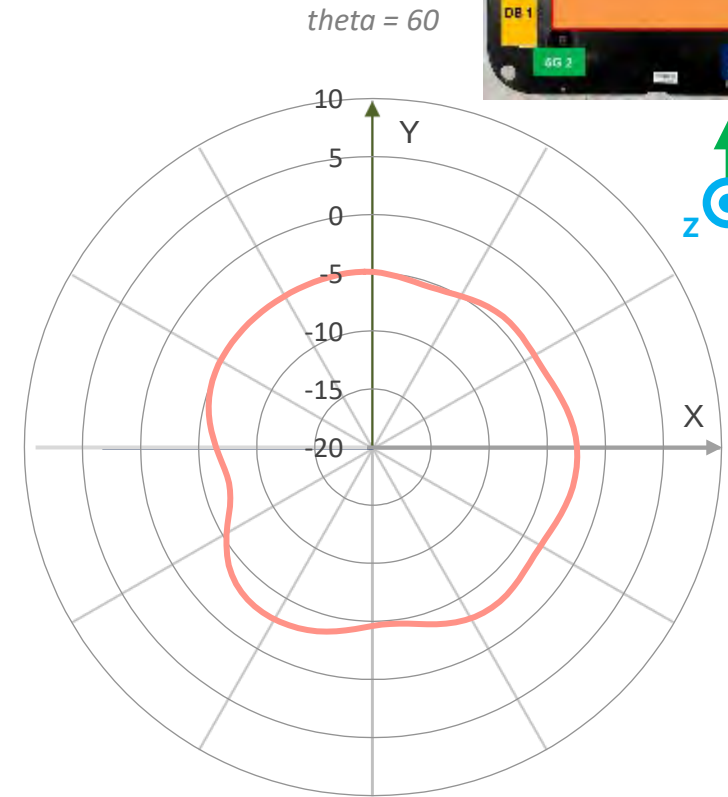
Directional Beam 9 @2400MHz_V+H



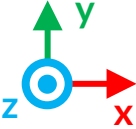
— Beam9



— Beam9

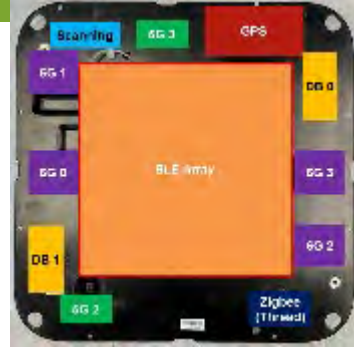


— Beam9

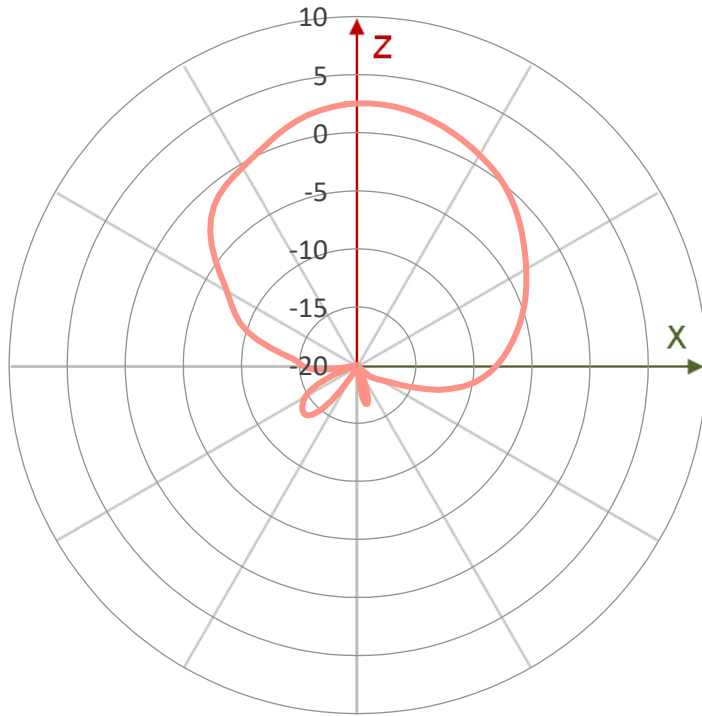


Realized Gain Pattern

Directional Beam 9 @2440MHz_V+H

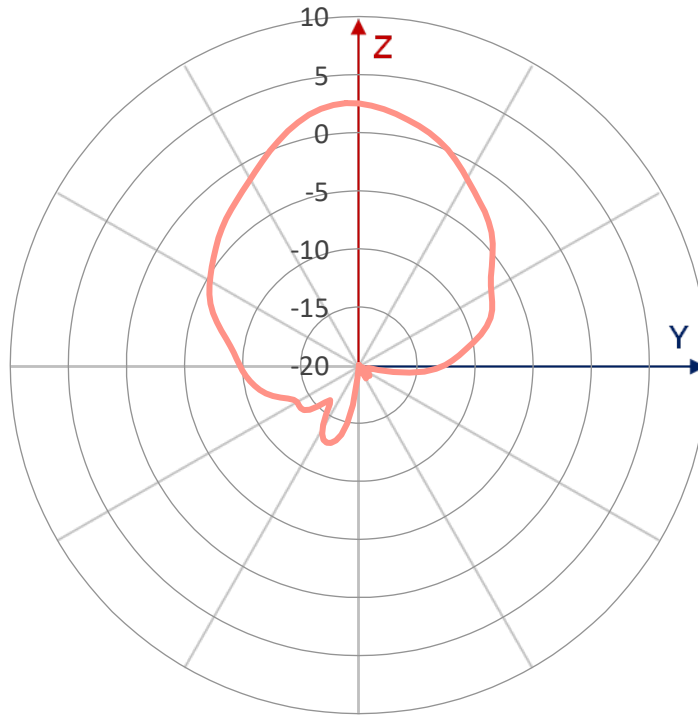


$\phi = 0$



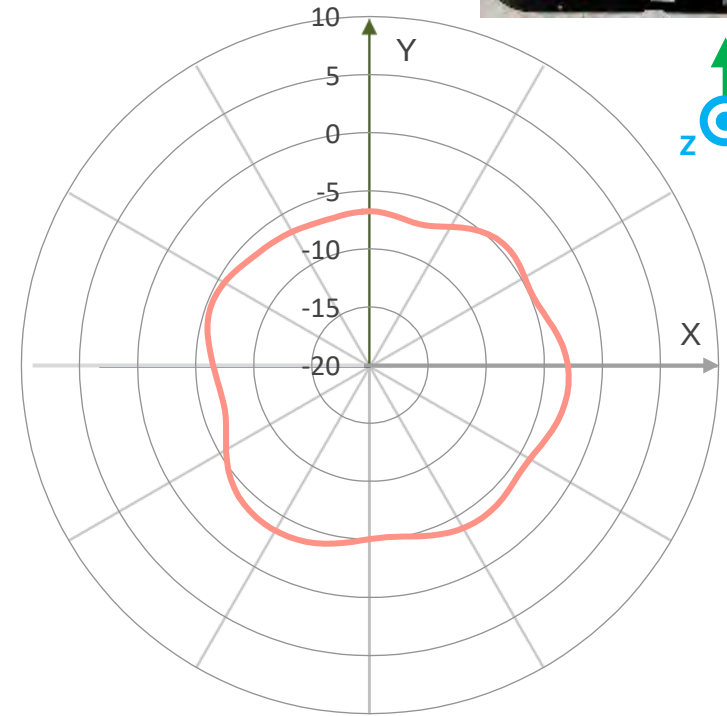
— Beam9

$\phi = 90$

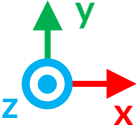


— Beam9

$\theta = 60$

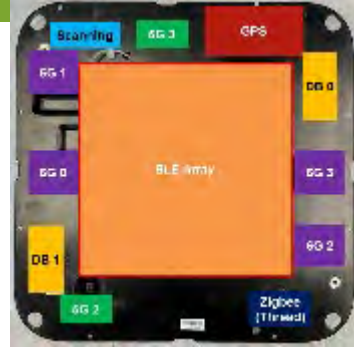


— Beam9

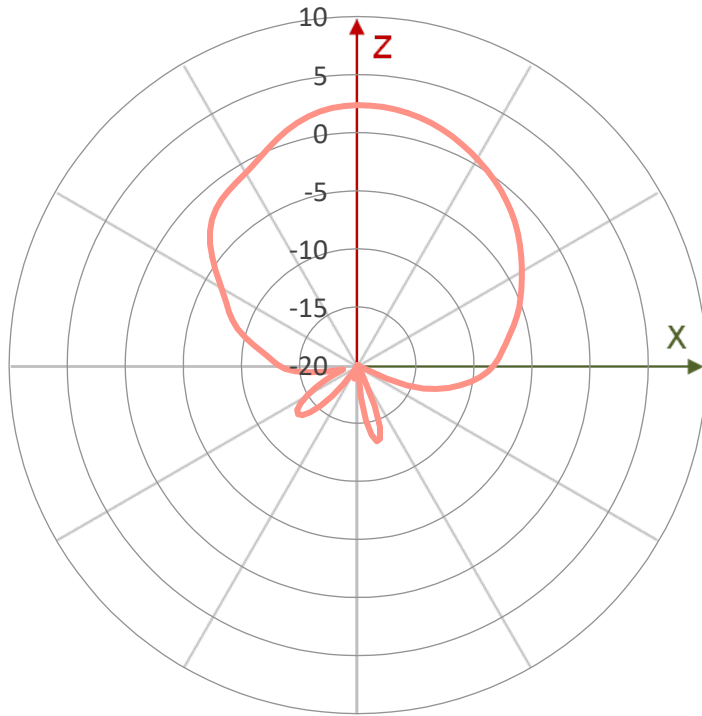


Realized Gain Pattern

Directional Beam 9 @2480MHz_V+H

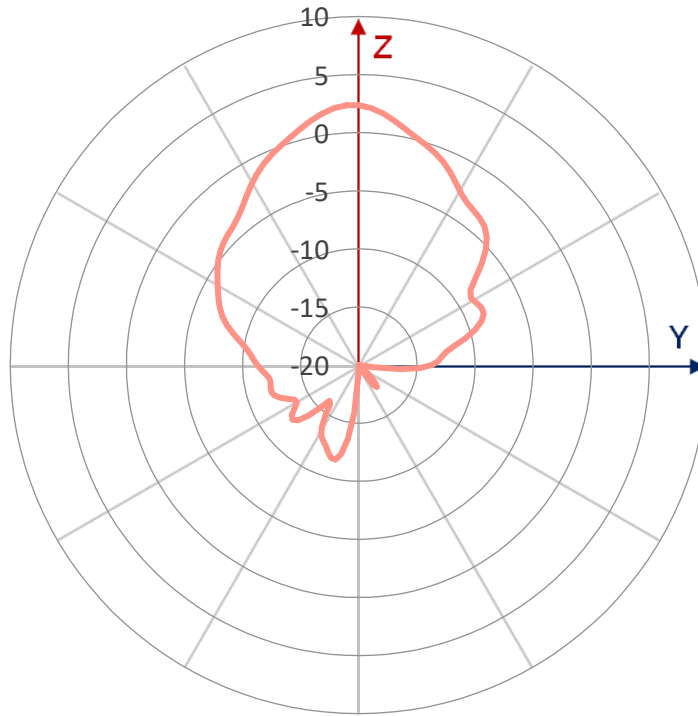


$\phi = 0$



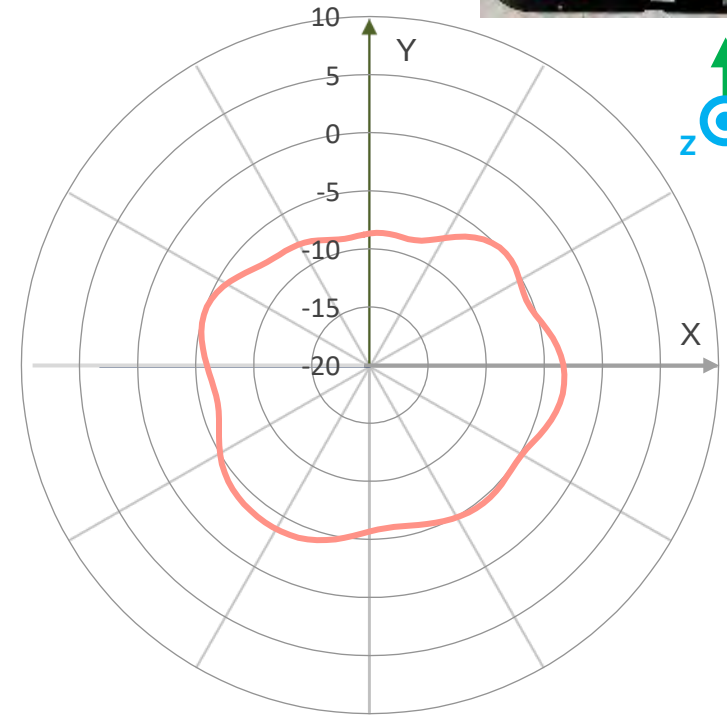
— Beam9

$\phi = 90$

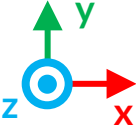


— Beam9

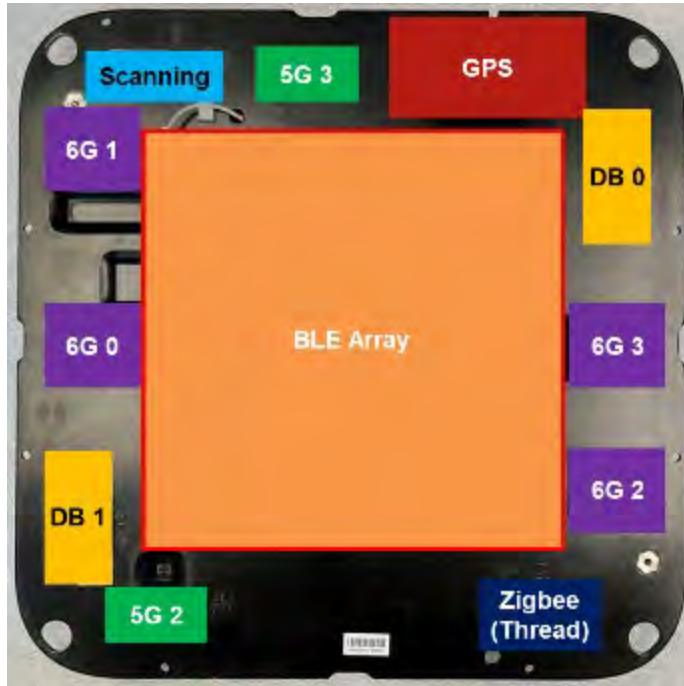
$\theta = 60$



— Beam9

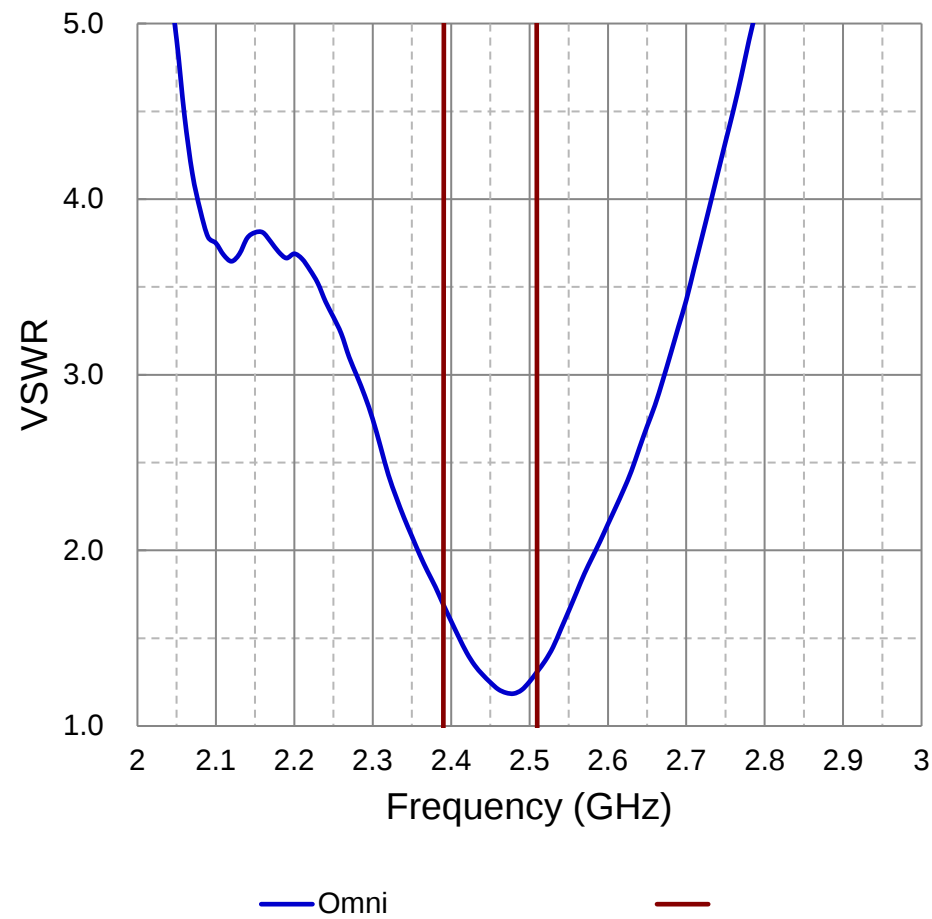


BLE Array – Omni Beam



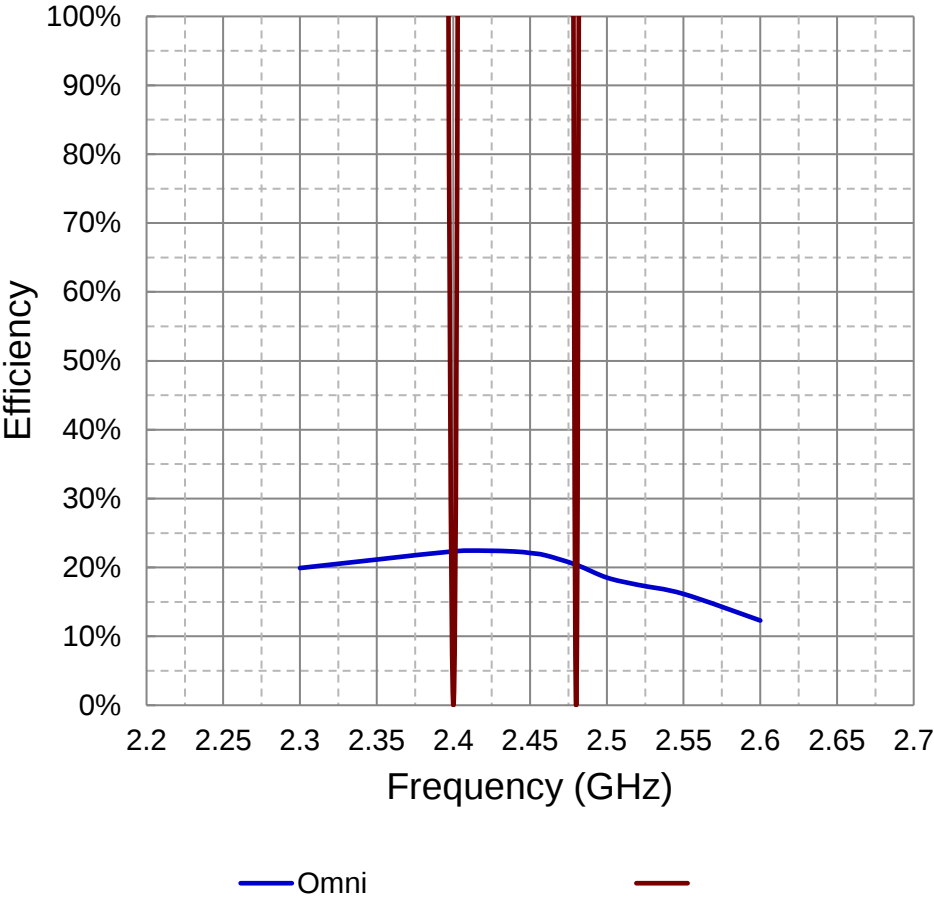
- **Maximum VSWR**
 - 1.6:1 on 2.4GHz
- **Efficiency**
 - ~22% on 2.4GHz
- **Peak Gain**
 - 0.7dBi on 2.4GHz

VSWR Omni Beam



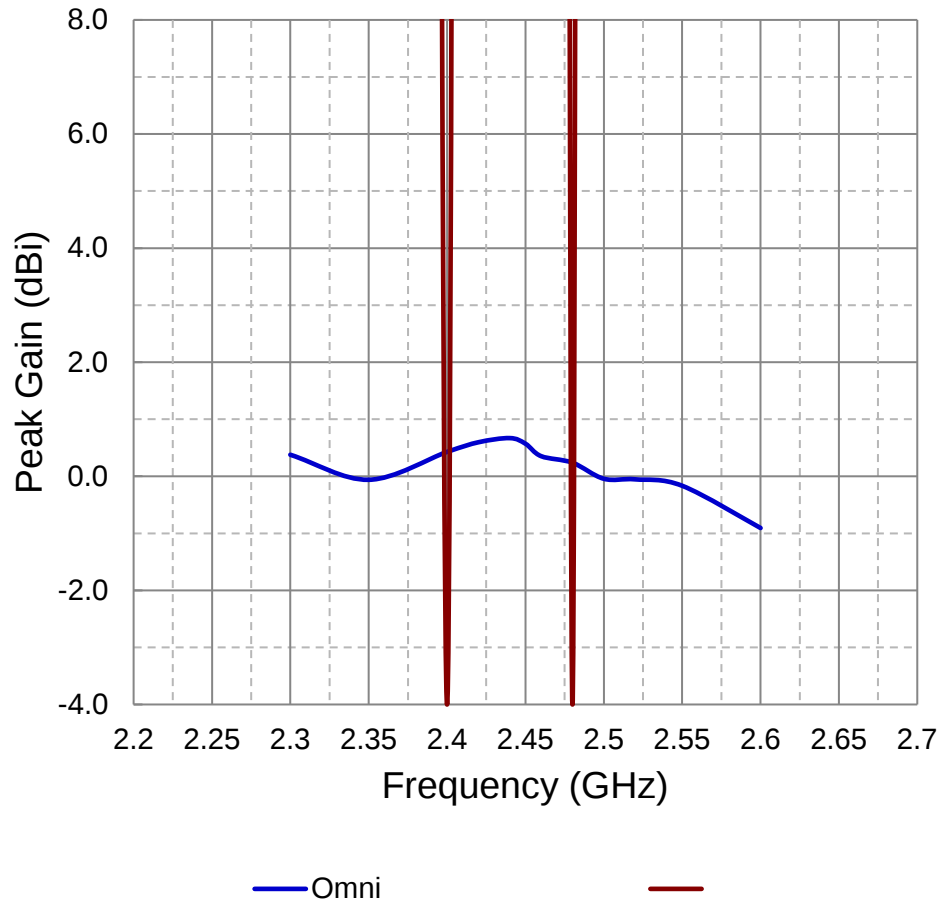
2.4GHz	Max	Mean	Min
Omni	1.6	1.3	1.2

Efficiency Omni Beam



2.4GHz	Max	Mean	Min
Omni	22 %	22 %	20 %

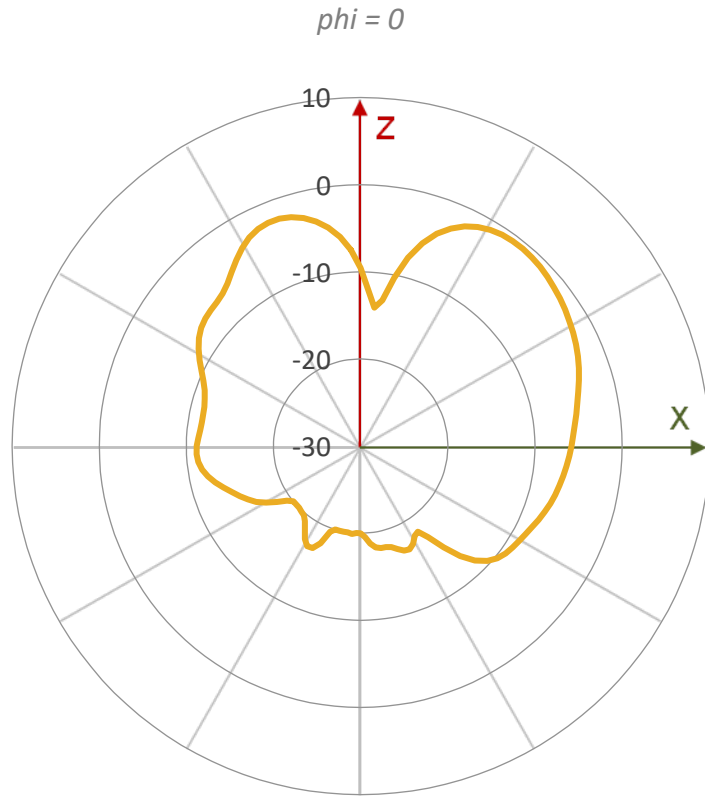
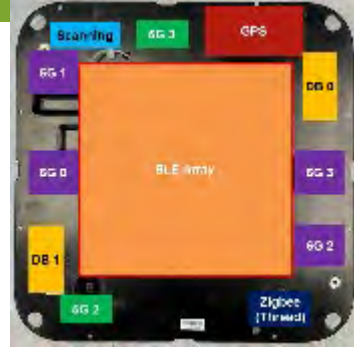
Peak Gain Omni Beam



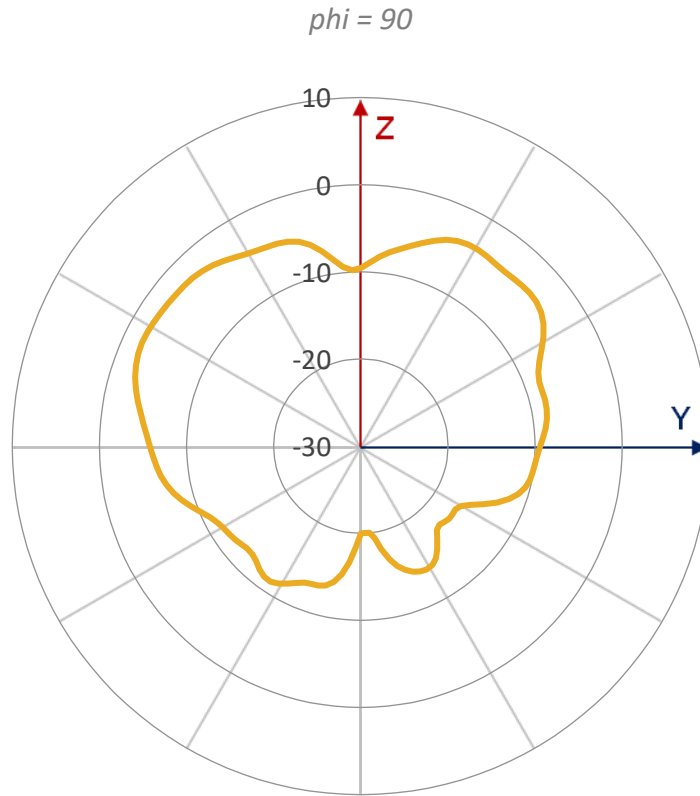
2.4GHz	Max	Mean	Min
Omni	0.7 dBi	0.5 dBi	0.2 dBi

Realized Gain Pattern

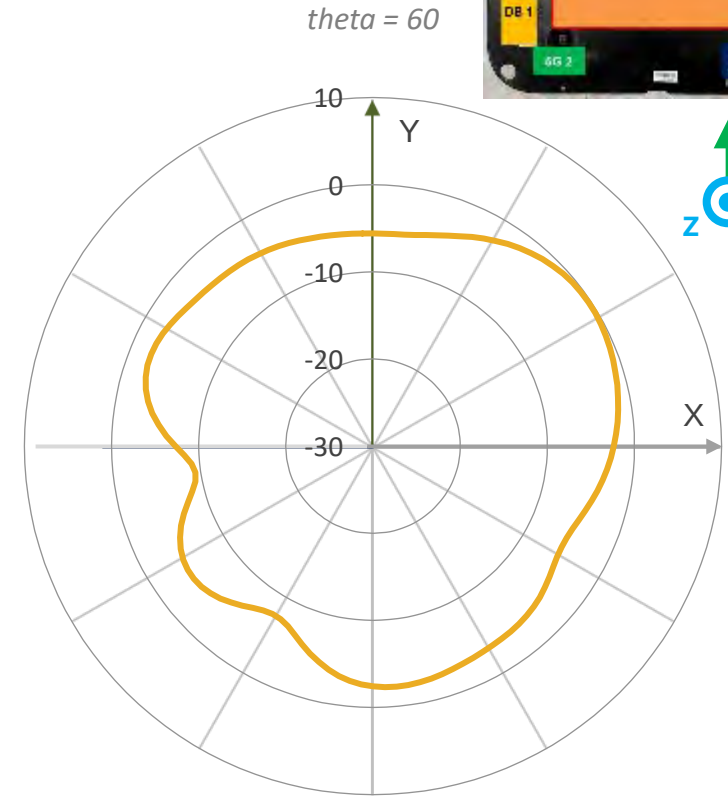
Omni Beam @2440MHz for_V+H



— Omni



— Omni



— Omni

