

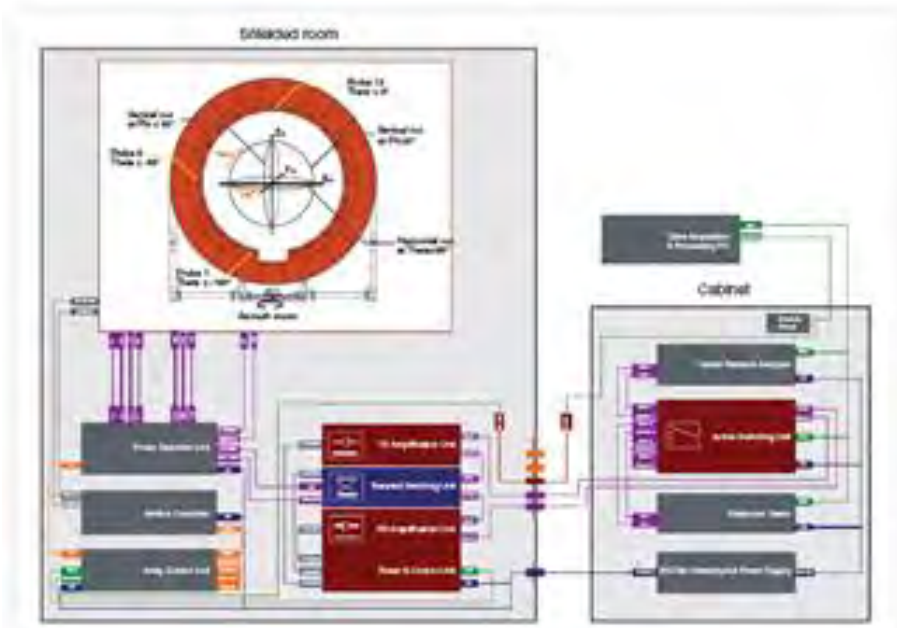


DB10 P2B Measurement Report

Jan 2025
v04

Test Chamber General Information

- Antenna Vendor : WNC
- Test Date : Dec. 2024
- Test Engineer : Joe / Ceci
- Measurement System : SATIMO SG24
- Software Name : Wave Studio
- Software Version : 22.5.6



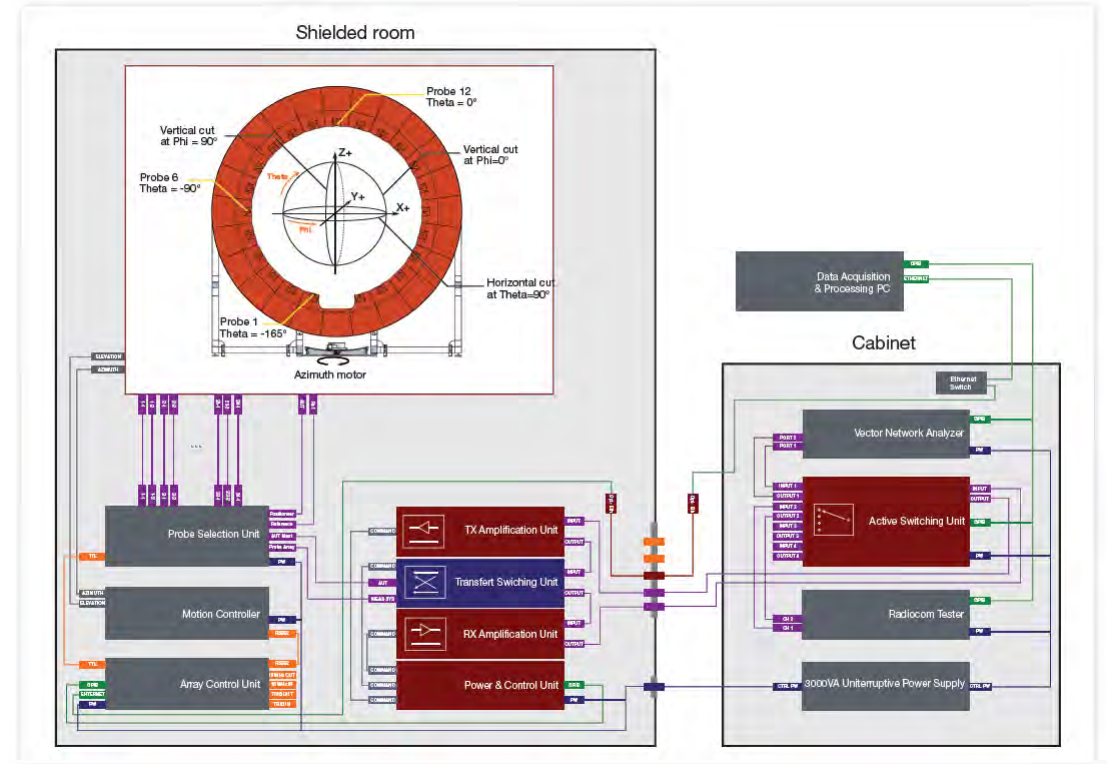
Antenna Measurement System Information

- Measurement System: SATIMO SG24 Chamber

Measurement setup:

- pattern & gain measurement
 - 1.satimo chamber (SG24)
 - 2.satimo program (wave studio)
 - 3.system overview :
- test item
 - 1.antenna passive test 400MHz~9GHz

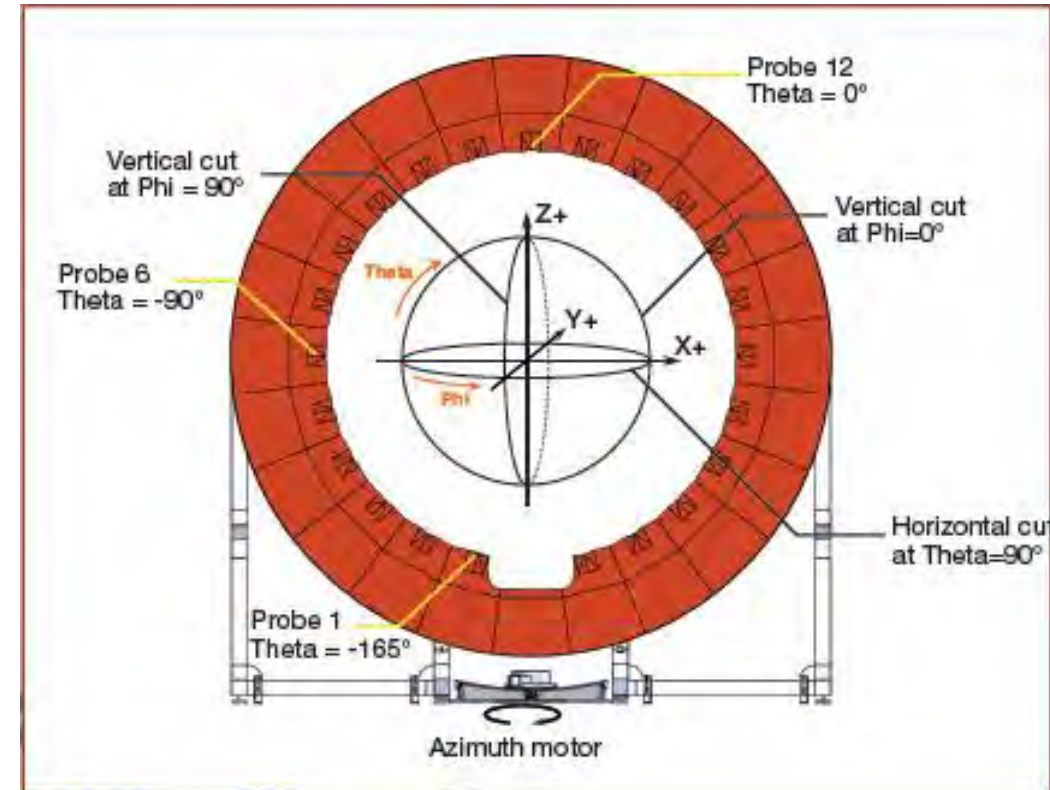
- Calibration Information



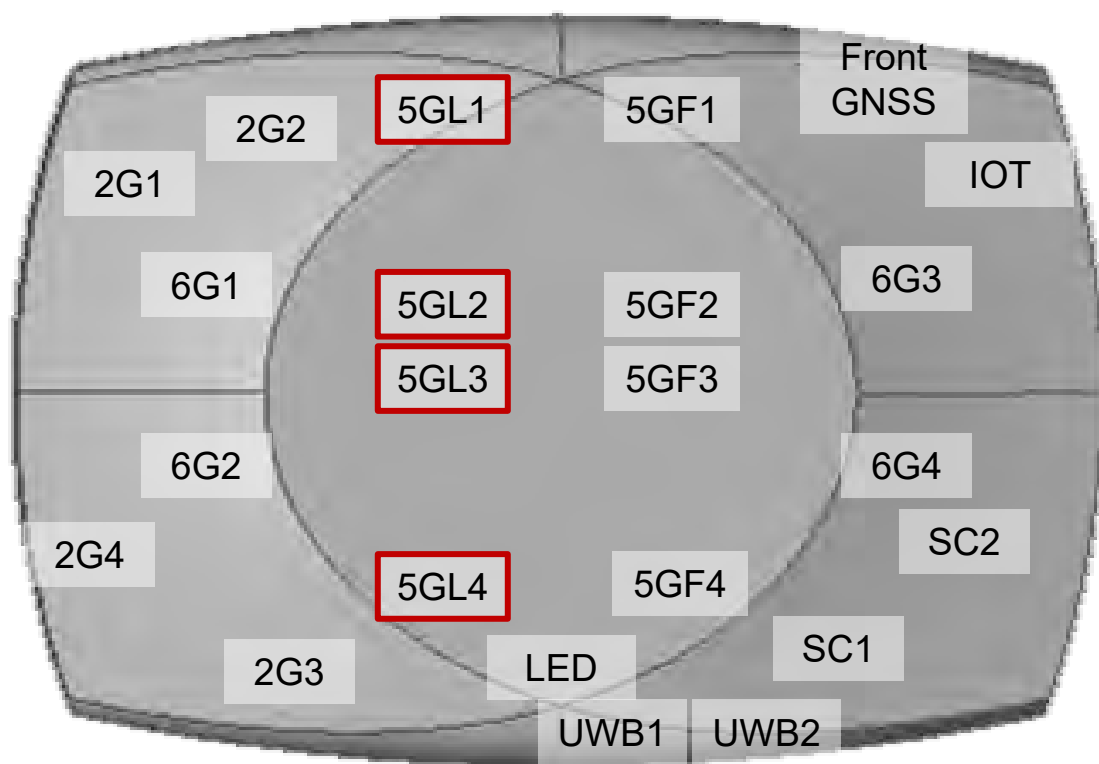
Device	Type / Model	Serial #	Manufacture	Cal. Date
Antenna Measurement System	SG24-L	HKG1669S	MVG-SATIMO	2024-11
Network Analyzer	Keysight E5080B	MY59203136	Keysight	2024-11

Test Procedure

1. Place the device to be tested on the fixture and align it with the center of the chamber.
2. Connect the antenna cable to the RF connector of the chamber.
3. Use the SW to configure parameters (antenna name, frequency points, measurement angles, antenna dimension), and then run the test SW (wave studio).
4. By phi from 0° to 360° and theta from 0° to 180° with a step size of 2 degrees, get the 3D data, including efficiency, peak gain, 2D and 3D radiation patterns.
5. This is far field test for antenna verification.
6. This is passive measurement, which means the device is off and not in any operating mode.



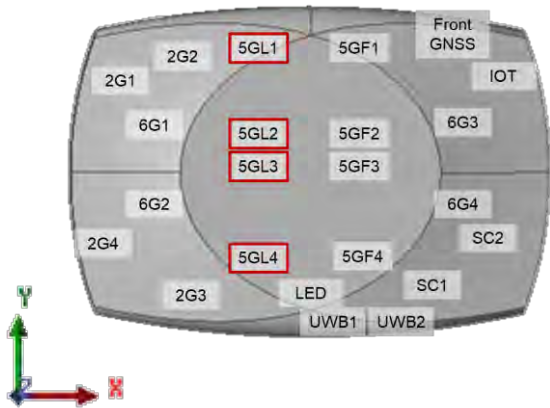
5GL



5GL1/2	5GL1_0deg	5GL1_7deg	5GL2_0deg	5GL2_7deg
VSWR	< 2.0			
H plane (3dB Avg.)	37°	36°	36°	35°
V plane (3dB Avg.)	37°	37°	36°	36°
Peak Gain of Major Polarization	8.8	9.0	9.4	9.4
Efficiency (Avg.)	50%	48%	51%	51%
φ1.37mm LLS cable loss (5GL1: 85 mm) (5GL2: 270 mm)	0.29dB @5GHz 0.31dB @6GHz		0.92dB @5GHz 1.00dB @6GHz	

5GL3/4	5GL3_0deg	5GL3_7deg	5GL4_0deg	5GL4_7deg
VSWR	< 2.0			
H plane (3dB Avg.)	35°	35°	36°	34°
V plane (3dB Avg.)	34°	34°	36°	35°
Peak Gain of Major Polarization	9.3	9.2	9.0	9.0
Efficiency (Avg.)	48%	47%	49%	47%
φ1.37mm LLS cable loss (5GL3: 240 mm) (5GL4: 370 mm)	0.82dB @5GHz 0.89dB @6GHz		1.26dB @5GHz 1.37dB @6GHz	

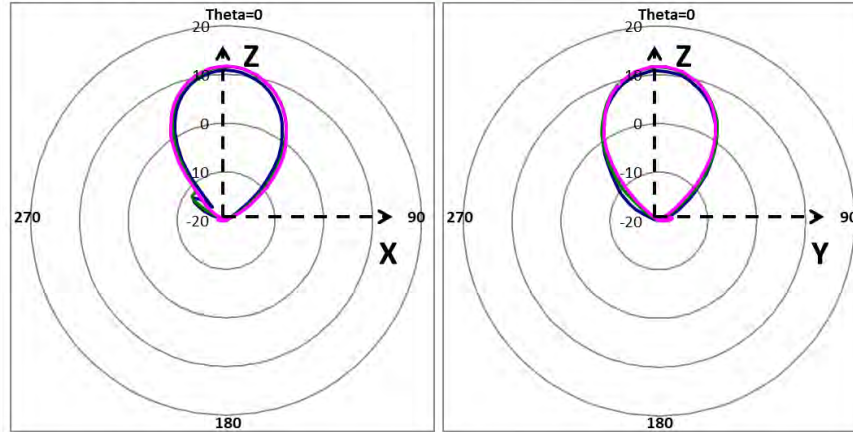
5GL Antenna Radiation Pattern Boresight mode



5GL1_0

Radiation Pattern

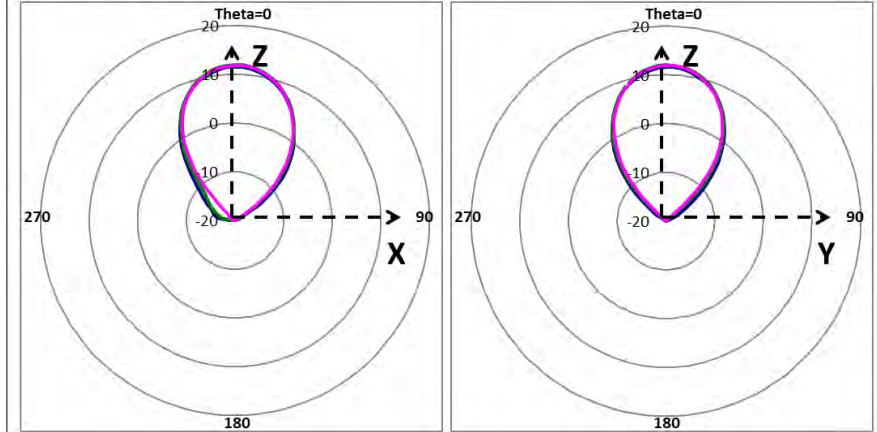
— 5150MHz
— 5250MHz
— 5350MHz



5GL2_0

Radiation Pattern

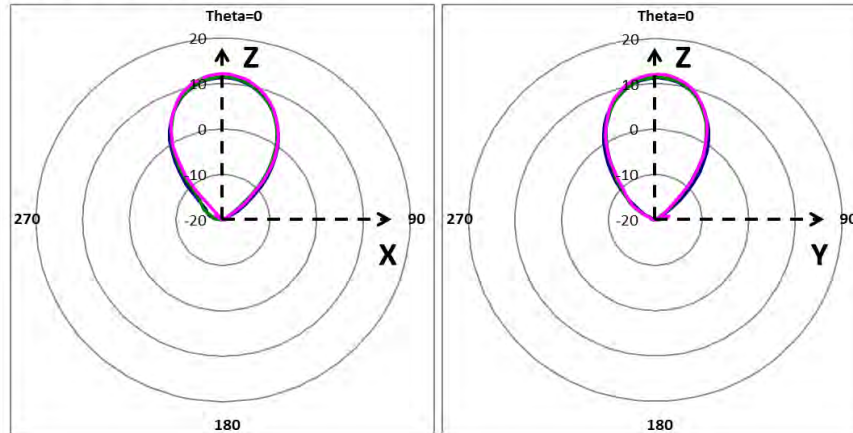
— 5150MHz
— 5250MHz
— 5350MHz



5GL3_0

Radiation Pattern

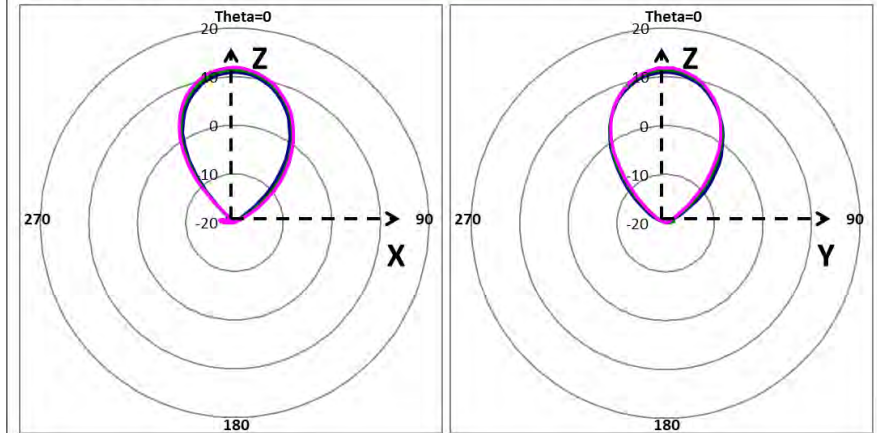
— 5150MHz
— 5250MHz
— 5350MHz



5GL4_0

Radiation Pattern

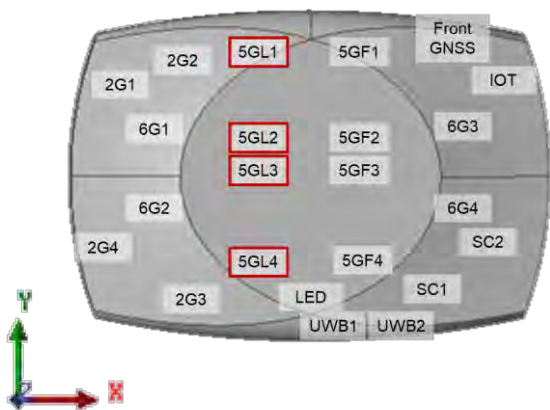
— 5150MHz
— 5250MHz
— 5350MHz



5GL antenna Boresight mode

* Measurement chamber sampling is 3 degree / step *

- 5GL1 & 5GL3 → V-Pol.
- 5GL2 & 5GL4 → H-Pol.



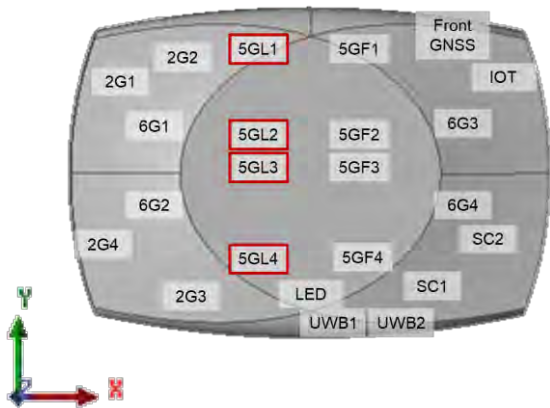
F/B Ratio-1
F = -90~90deg,
B = -180~ -90deg./90~180deg.

F/B Ratio-2
F = -90~90deg.,
B = -180~ -130deg./130~180deg.

5GL1 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio- 2	Efficie ncy	5GL2 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio- 2	Efficie ncy
5150	8.1	0	36/39	23/30	34/34	43/41	44%	5150	9.1	0	36/36	30/30	32/33	43/37	51%
5250	8.6	0	36/39	23/29	34/30	41/38	53%	5250	9.4	0	36/36	30/30	34/34	46/39	53%
5350	8.8	0	39/33	30/29	31/31	40/36	53%	5350	9.2	0	36/36	30/30	37/36	41/41	50%
Avg.	8.5	0	37/37	25/29	33/32	41/38	50%	Avg.	9.2	0	36/36	30/30	34/34	43/39	51%

5GL3 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio- 2	Efficie ncy	5GL4 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio- 2	Efficie ncy
5150	8.7	0	39/36	30/30	33/34	41/41	47%	5150	8.1	0	36/39	29/30	35/31	40/37	45%
5250	8.6	0	33/33	30/29	32/32	38/39	46%	5250	8.5	0	36/36	30/30	33/34	41/39	49%
5350	9.3	0	33/33	30/29	34/36	42/38	50%	5350	9.0	0	36/33	29/30	31/33	42/36	53%
Avg.	8.9	0	35/34	30/29	33/34	40/39	48%	Avg.	8.5	0	36/36	29/30	33/33	41/37	49%

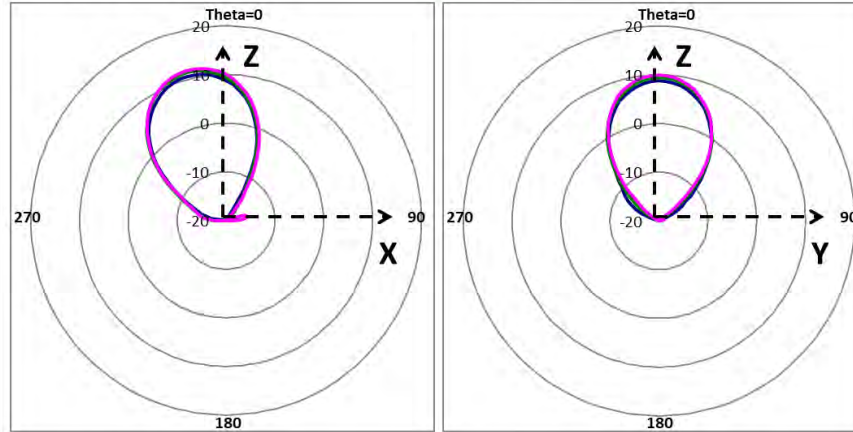
5GL Antenna Radiation Pattern Steering mode



5GL1_7

Radiation Pattern

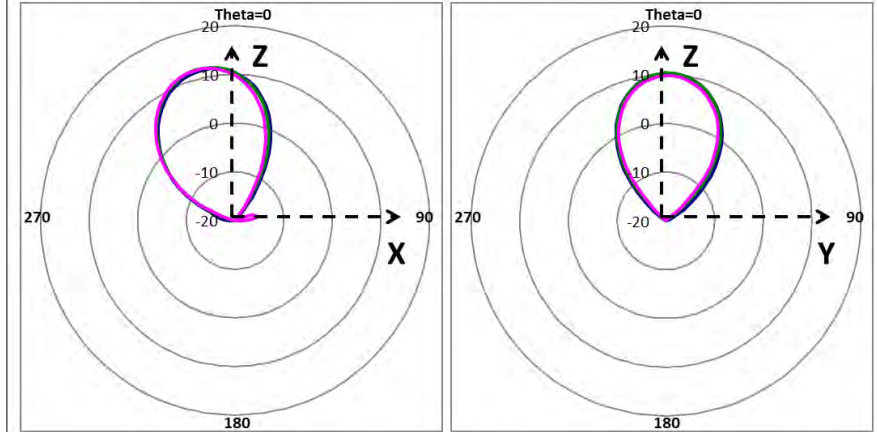
— 5150MHz
— 5250MHz
— 5350MHz



5GL2_7

Radiation Pattern

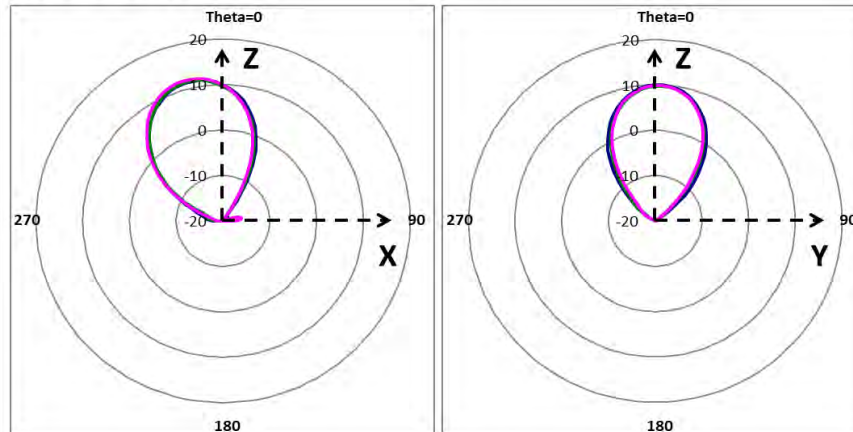
— 5150MHz
— 5250MHz
— 5350MHz



5GL3_7

Radiation Pattern

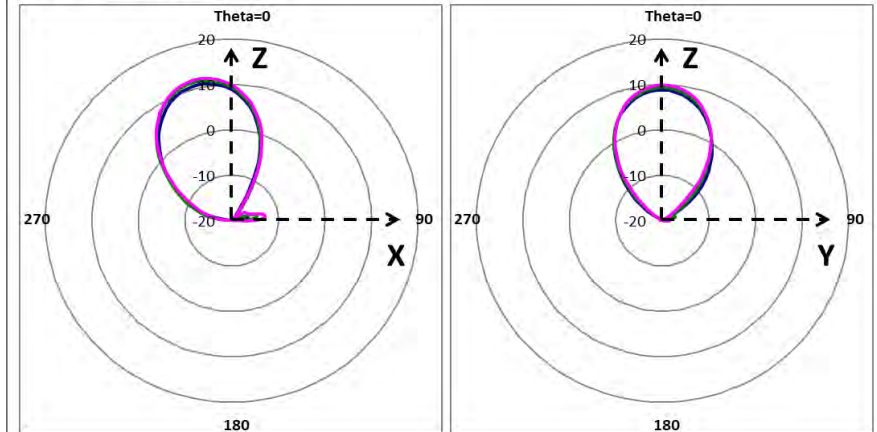
— 5150MHz
— 5250MHz
— 5350MHz



5GL4_7

Radiation Pattern

— 5150MHz
— 5250MHz
— 5350MHz

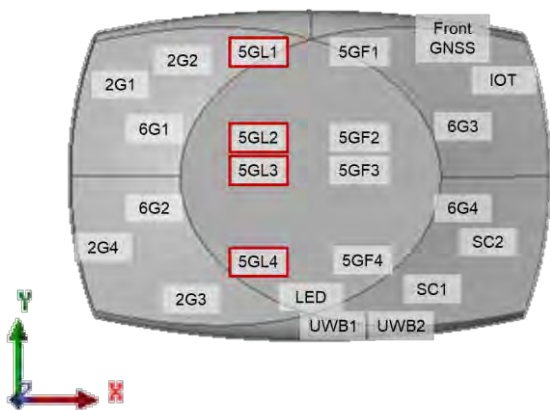


5GL antenna

Steering mode

* Measurement chamber sampling is 3 degree / step *

- 5GL1 & 5GL3 → V-Pol.
- 5GL2 & 5GL4 → H-Pol.



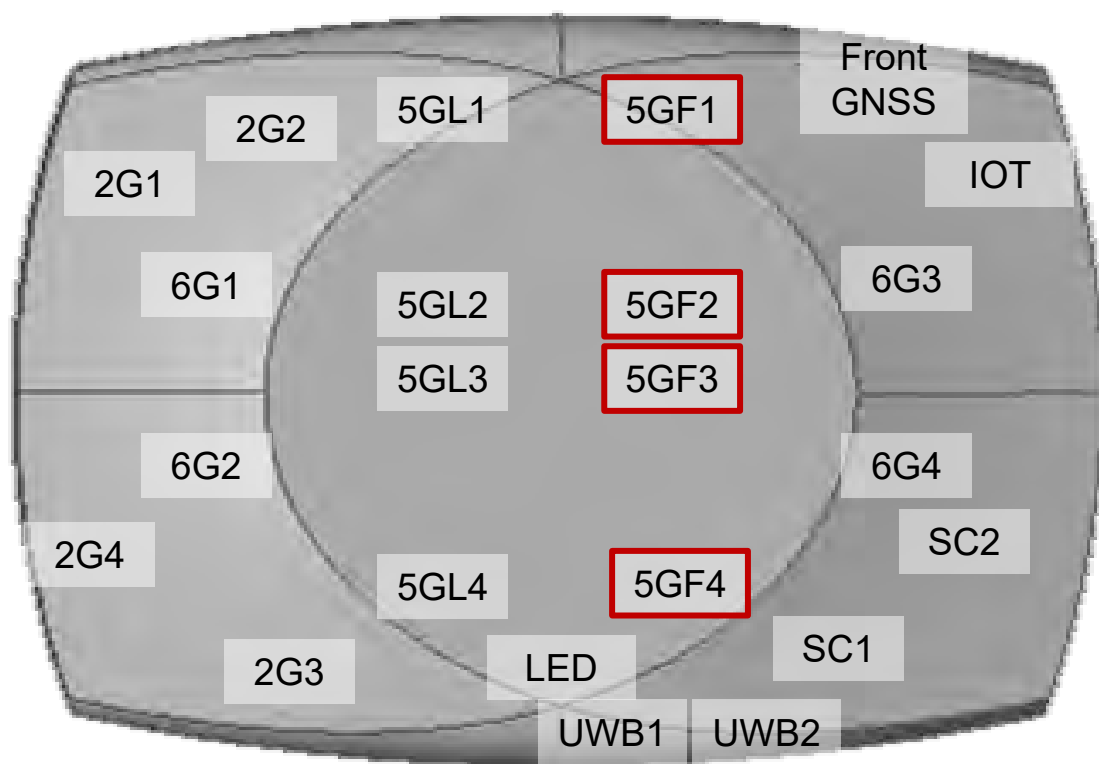
F/B Ratio-1
F = -90~90deg,
B = -180~ -90deg./90~180deg.

F/B Ratio-2
F = -90~90deg.,
B = -180~ -130deg./130~180deg.

5GL1 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio- 2	Efficie ncy	5GL2 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio- 2	Efficie ncy
5150	7.9	-15	36/39	29/26	33/35	39/39	42%	5150	9.2	-12	36/36	30/30	32/32	41/37	51%
5250	8.5	-15	36/39	29/28	31/32	39/36	50%	5250	9.4	-12	36/36	30/30	34/34	42/37	52%
5350	9.0	-15	36/33	25/27	30/30	36/33	52%	5350	9.2	-15	33/36	28/30	30/35	40/40	49%
Avg.	8.5	-15	36/37	28/27	31/32	38/36	48%	Avg.	9.2	-13	35/36	29/30	32/34	41/38	51%

5GL3 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio- 2	Efficie ncy	5GL4 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio- 2	Efficie ncy
5150	8.8	-12	36/36	30/30	30/33	40/38	48%	5150	8.0	-15	36/39	27/29	30/30	39/35	42%
5250	8.6	-12	36/33	28/29	31/35	39/35	45%	5250	8.5	-15	33/33	26/27	29/30	39/36	48%
5350	9.2	-15	33/33	28/29	30/35	41/36	48%	5350	9.0	-15	33/33	25/28	27/28	36/34	51%
Avg.	8.9	-13	35/34	29/29	31/34	40/37	47%	Avg.	8.5	-15	34/35	26/28	29/29	38/35	47%

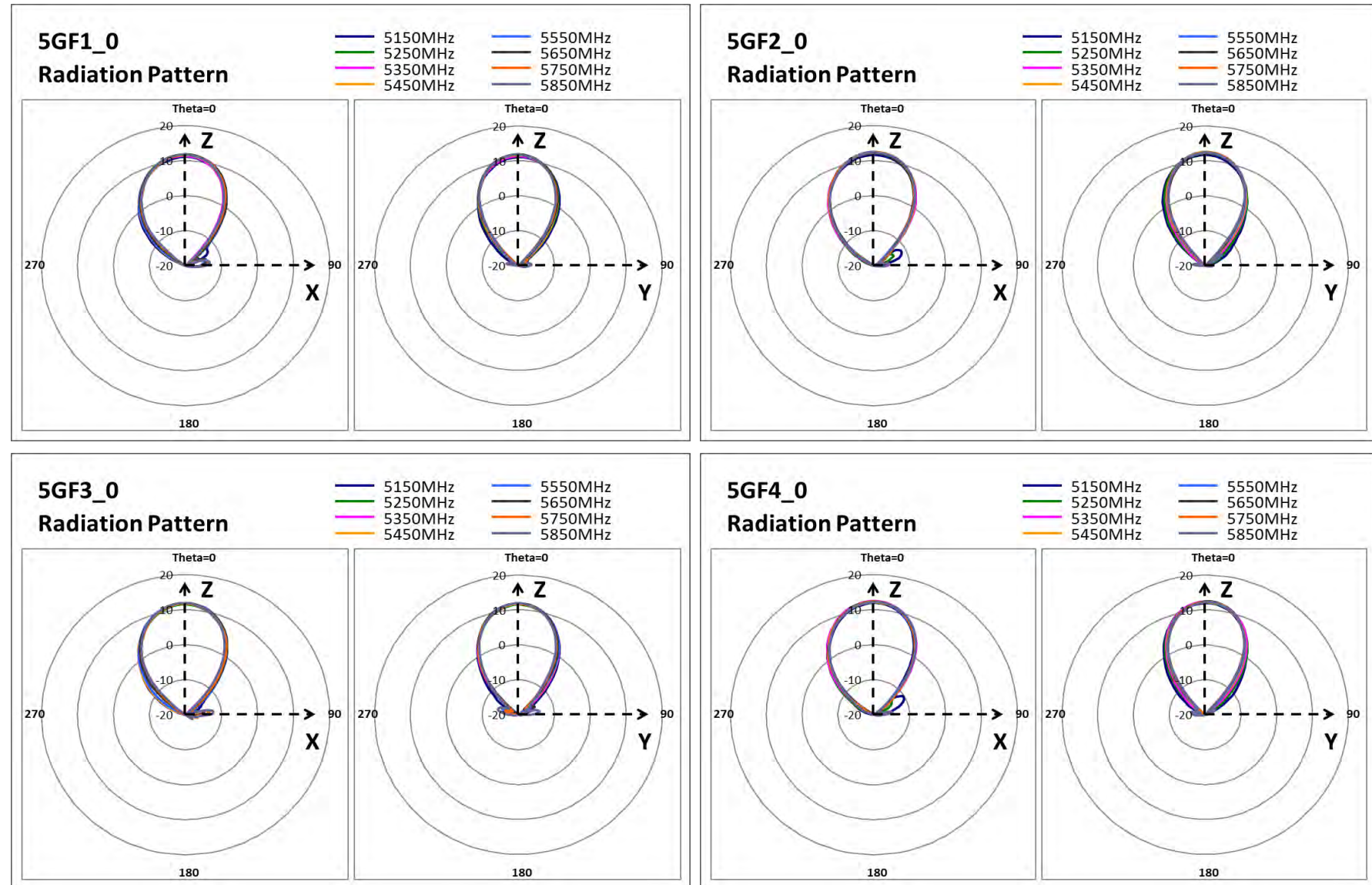
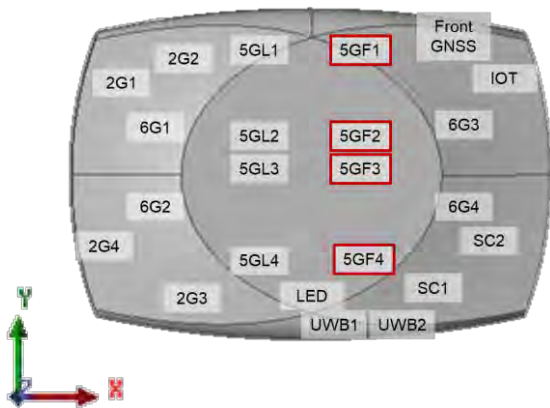
5GF



5GF1/2	5GF1_0deg	5GF1_7deg	5GF2_0deg	5GF2_7deg
VSWR	< 2.0			
H plane (3dB Avg.)	36°	36°	37°	35°
V plane (3dB Avg.)	33°	34°	33°	33°
Peak Gain of Major Polarization	9.8	10.0	10.6	10.6
Efficiency (Avg.)	49%	49%	55%	54%
φ1.37mm LLS cable loss (5GF1: 272 mm) (5GF2: 120 mm)	0.92dB @5GHz 1.01dB @6GHz		0.41dB @5GHz 0.44dB @6GHz	

5GF3/4	5GF3_0deg	5GF3_7deg	5GF4_0deg	5GF4_7deg
VSWR	< 2.0			
H plane (3dB Avg.)	36°	36°	37°	34°
V plane (3dB Avg.)	33°	35°	32°	33°
Peak Gain of Major Polarization	10.3	10.3	10.7	10.7
Efficiency (Avg.)	51%	51%	55%	54%
φ1.37mm LLS cable loss (5GF3: 216 mm) (5GF4: 145 mm)	0.73dB @5GHz 0.80dB @6GHz		0.49dB @5GHz 0.54dB @6GHz	

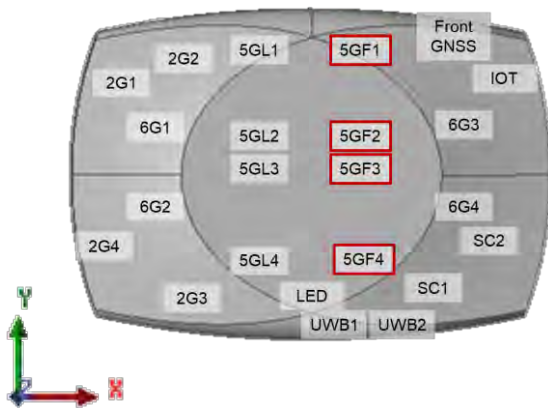
5GF Antenna Radiation Pattern Boresight mode



5GF Boresight mode

* Measurement chamber sampling is 3 degree / step *

- 5GF1 & 5GF3 → V-Pol.
- 5GF2 & 5GF4 → H-Pol.



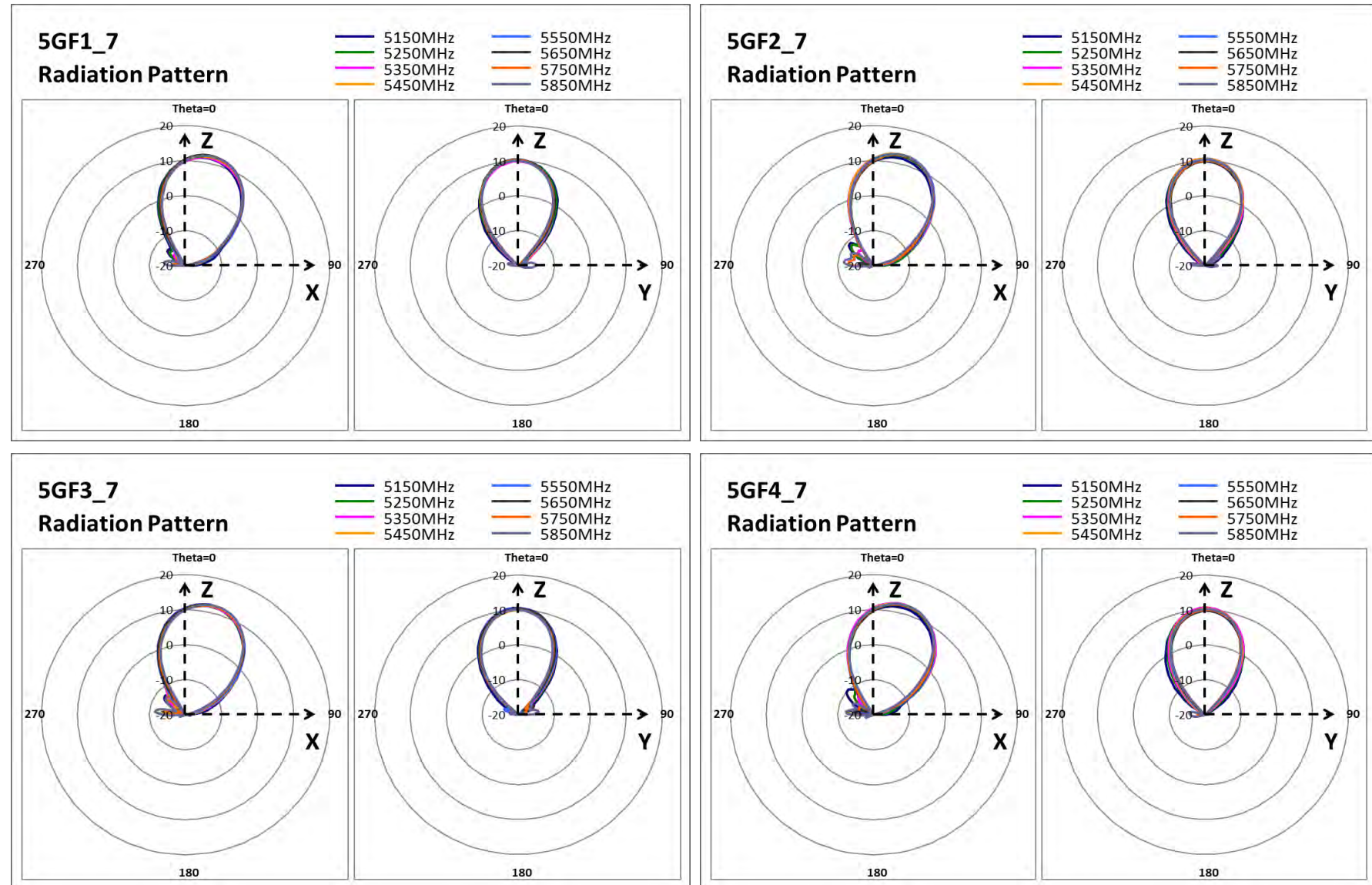
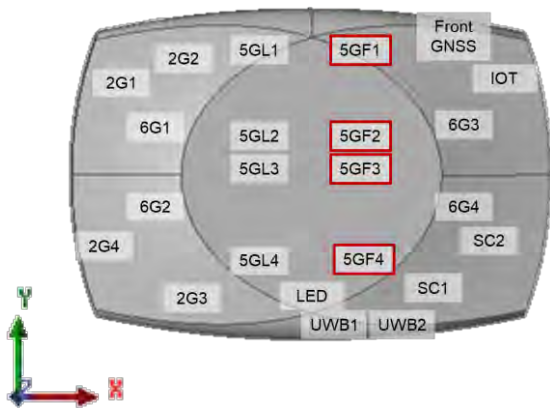
F/B Ratio-1
F = -90~90deg,
B = -180~ -90deg./90~180deg.

F/B Ratio-2
F = -90~90deg.,
B = -180~ -130deg./130~180deg.

5GF1 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio -2	Effici ency	5GF2 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio -2	Effici ency
5150	8.9	0	36/36	24/30	36/36	43/39	48%	5150	9.5	0	39/36	23/30	34/34	42/44	54%
5250	9.3	0	36/33	28/30	39/35	44/43	50%	5250	10.3	0	39/33	26/30	41/32	44/42	57%
5350	9.4	0	36/33	29/30	37/33	41/42	47%	5350	10.0	0	39/33	30/30	38/34	44/40	56%
5450	9.6	0	36/33	30/30	32/32	40/43	50%	5450	10.6	0	36/33	30/30	39/36	44/42	57%
5550	9.3	0	36/33	26/30	28/33	39/40	51%	5550	10.3	0	36/33	30/30	39/37	44/42	56%
5650	9.7	0	36/33	26/29	28/33	40/42	51%	5650	10.1	0	36/33	30/30	35/35	43/41	51%
5750	9.8	0	36/33	25/29	27/32	36/38	48%	5750	10.2	0	36/33	30/29	31/34	40/38	54%
5850	9.5	0	36/33	25/28	26/29	36/37	48%	5850	10.0	0	36/33	28/27	29/30	38/37	54%
Avg.	9.4	0	36/33	27/30	32/33	40/41	49%	Avg.	10.1	0	37/33	28/30	36/34	42/41	55%

5GF3 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio -2	Effici ency	5GF4 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio -2	Effici ency
5150	9.5	0	36/33	30/30	36/35	36/39	53%	5150	10.3	0	36/33	22/30	33/35	39/37	54%
5250	9.6	0	36/33	30/30	38/34	40/38	50%	5250	10.4	0	36/36	30/30	38/35	42/43	58%
5350	9.9	0	36/33	30/30	32/34	36/39	52%	5350	10.6	0	39/33	30/30	33/33	41/42	59%
5450	9.6	0	36/33	28/29	28/35	36/35	52%	5450	10.6	0	36/33	30/30	35/32	44/43	54%
5550	10.0	0	36/33	27/27	28/35	36/38	54%	5550	10.3	0	36/33	30/30	33/32	40/40	54%
5650	10.3	0	36/33	27/27	28/33	34/39	53%	5650	10.7	0	36/30	29/30	30/33	37/40	54%
5750	9.7	0	36/33	25/28	27/32	33/37	49%	5750	10.4	0	36/30	29/30	30/32	35/41	54%
5850	9.9	0	36/33	24/26	25/29	31/35	49%	5850	10.1	0	39/30	27/28	29/30	33/39	54%
Avg.	9.8	0	36/33	30/30	30/33	35/37	51%	Avg.	10.4	0	37/32	28/30	33/33	39/41	55%

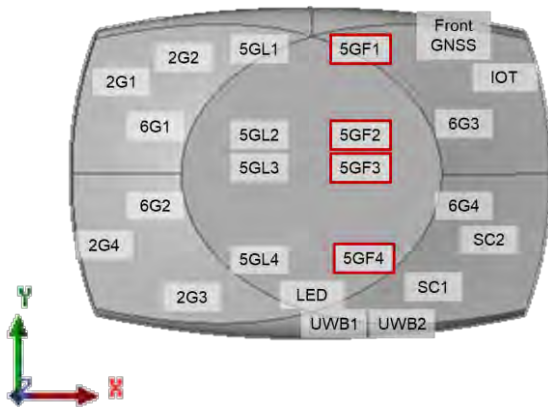
5GF Antenna Radiation Pattern Steering mode



5GF Steering mode

* Measurement chamber sampling is 3 degree / step *

- 5GF1 & 5GF3 → V-Pol.
- 5GF2 & 5GF4 → H-Pol.



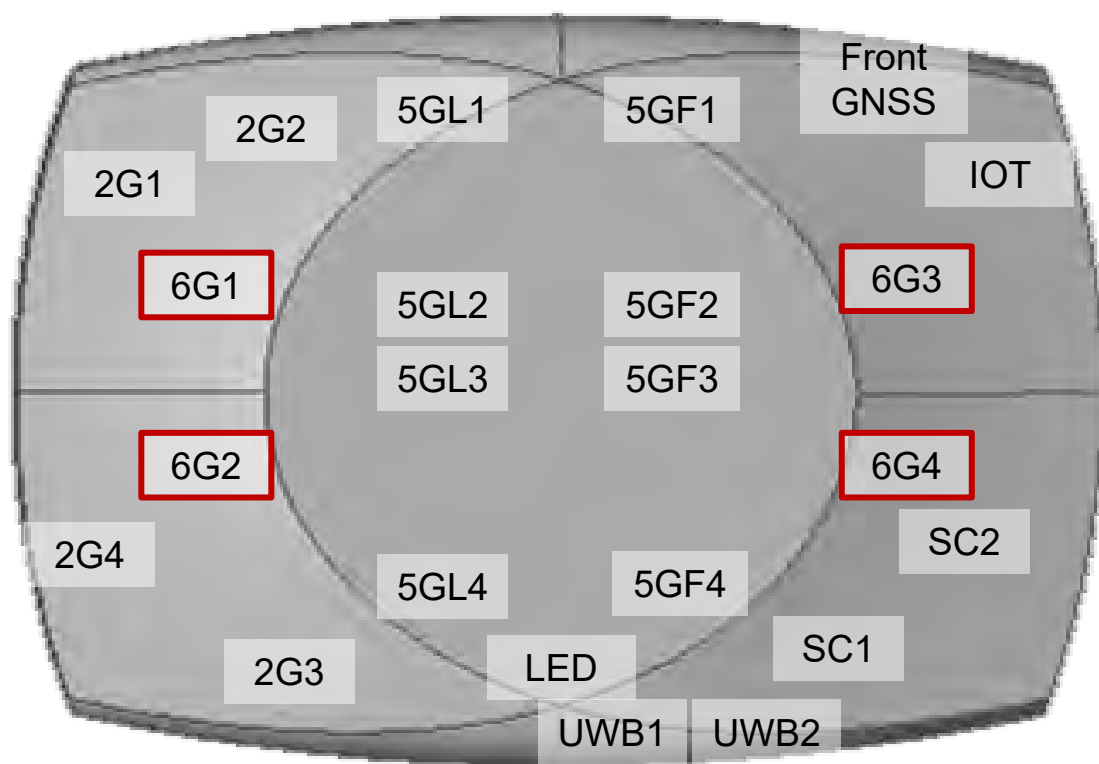
F/B Ratio-1
F = -90~90deg,
B = -180~ -90deg./90~180deg.

F/B Ratio-2
F = -90~90deg.,
B = -180~ -130deg./130~180deg.

5GF1 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio -2	Effici ency	5GF2 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio -2	Effici ency
5150	9.0	12	36/36	25/30	30/35	40/39	49%	5150	9.3	15	36/36	22/30	29/32	40/40	51%
5250	9.4	12	36/33	26/30	33/37	41/42	50%	5250	10.2	15	36/33	24/30	30/34	43/40	56%
5350	9.4	12	36/33	27/30	33/37	40/42	46%	5350	10.2	15	36/33	27/30	32/35	43/39	57%
5450	9.6	12	36/36	30/30	34/32	40/41	48%	5450	10.6	15	36/33	29/30	34/33	44/41	57%
5550	9.7	12	36/33	30/30	36/32	40/38	50%	5550	10.3	15	33/33	30/30	34/34	39/38	55%
5650	10.0	12	36/33	30/29	34/31	39/38	51%	5650	10.2	15	33/33	28/29	31/33	36/36	50%
5750	10.0	12	36/33	29/27	32/29	39/35	47%	5750	10.3	15	33/33	25/26	29/29	36/36	52%
5850	9.8	15	36/33	26/25	30/25	36/34	48%	5850	10.3	15	33/33	24/26	28/27	36/34	53%
Avg.	9.6	12	36/34	26/30	33/32	39/39	49%	Avg.	10.2	15	35/33	26/29	31/32	40/38	54%

5GF3 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio -2	Effici ency	5GF4 XZ/YZ	Peak Gain of Major Polarization	Peak Gain Angle	BW	SLL	F/B Ratio -1	F/B Ratio -2	Effici ency
5150	9.9	12	33/36	24/30	31/36	33/36	53%	5150	9.9	15	36/36	22/30	29/32	38/37	51%
5250	9.8	12	36/36	30/30	31/35	40/39	49%	5250	10.3	15	36/33	30/29	31/32	38/39	58%
5350	9.8	12	36/36	30/30	32/32	38/40	49%	5350	10.7	15	36/33	30/29	33/32	43/40	59%
5450	9.7	15	36/36	30/28	33/34	35/34	51%	5450	10.6	15	33/33	30/30	35/31	40/39	54%
5550	10.1	12	36/36	29/26	33/36	37/36	53%	5550	10.2	15	33/33	28/29	33/31	38/37	52%
5650	10.3	15	36/36	27/26	31/32	35/35	52%	5650	10.4	15	33/33	27/29	31/29	36/36	50%
5750	9.9	15	36/33	25/27	31/31	35/36	49%	5750	10.4	15	33/33	25/28	29/28	37/39	52%
5850	10.1	15	36/33	24/25	28/28	33/32	50%	5850	10.3	15	33/33	25/26	28/26	34/35	53%
Avg.	10.0	14	36/35	28/30	31/33	36/36	51%	Avg.	10.4	15	34/33	27/29	31/30	38/38	54%

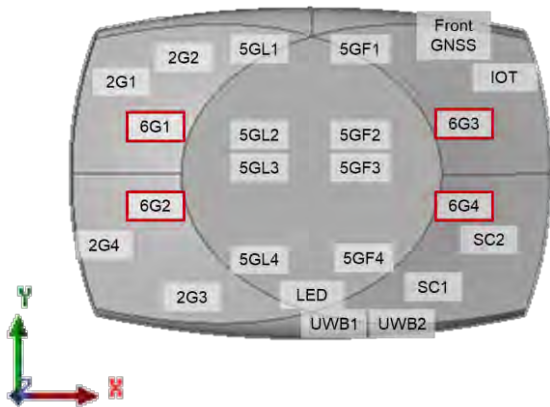
6G



6G1/2	6G1 NB	6G1 WB	6G2 NB	6G2 WB
VSWR	< 2.0			
H plane (3dB Avg.)	35°	86°	35°	81°
V plane (3dB Avg.)	33°	33°	32°	36°
Peak Gain of Major Polarization	9.2	6.0	9.2	5.4
Efficiency (Avg.)	45%	43%	43%	39%
φ1.37mm LLS cable loss (6G1: 371 mm) (6G2: 450 mm)	1.37dB @5GHz 1.52dB @6GHz		1.67dB @5GHz 1.85dB @6GHz	

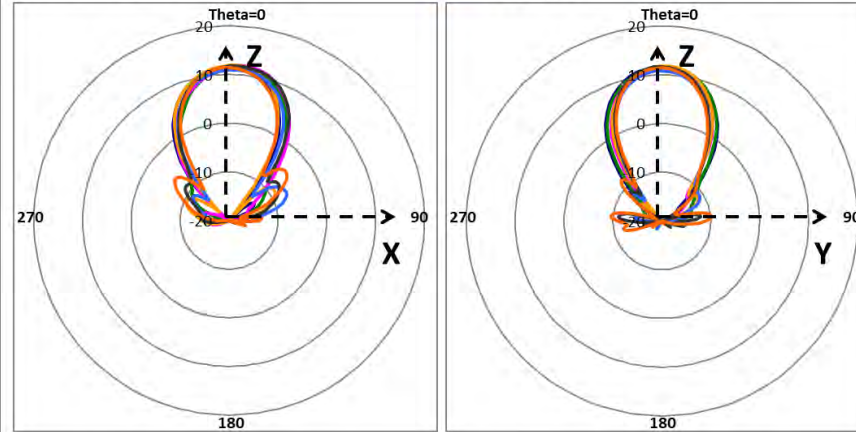
6G3/4	6G3 NB	6G3 WB	6G4 NB	6G4 WB
VSWR	< 2.0			
H plane (3dB Avg.)	33°	84°	34°	81°
V plane (3dB Avg.)	33°	31°	33°	33°
Peak Gain of Major Polarization	10.0	6.9	10.1	7.0
Efficiency (Avg.)	51%	50%	48%	46%
φ1.37mm LLS cable loss (6G3: 110 mm) (6G4: 146 mm)	0.41dB @5GHz 0.45dB @6GHz		0.54dB @5GHz 0.60dB @6GHz	

6G Antenna Radiation Pattern Narrow Beam



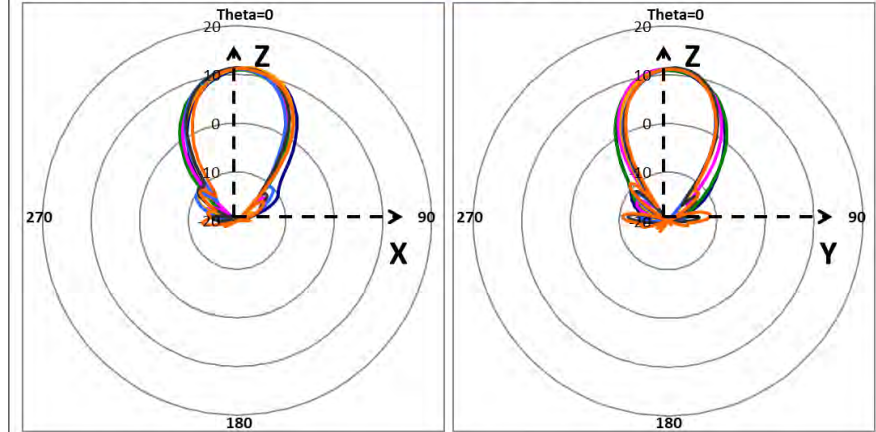
6G1_NB
Radiation Pattern

5945MHz
6145MHz
6345MHz
6545MHz
6745MHz
6945MHz
7125MHz



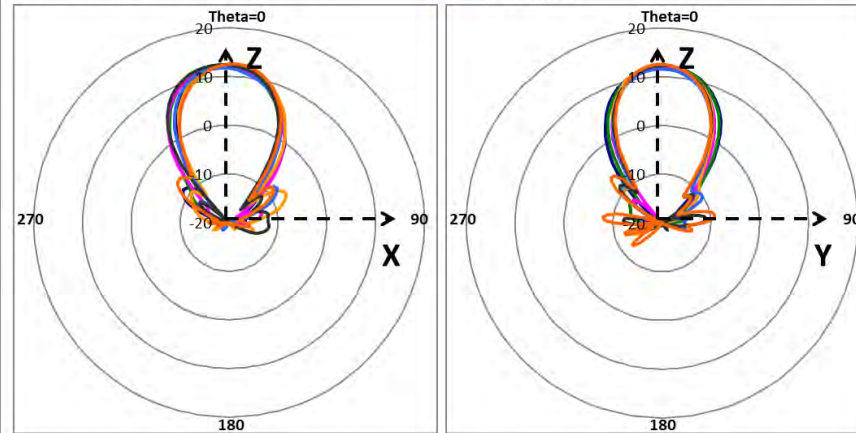
6G2_NB
Radiation Pattern

5945MHz
6145MHz
6345MHz
6545MHz
6745MHz
6945MHz
7125MHz



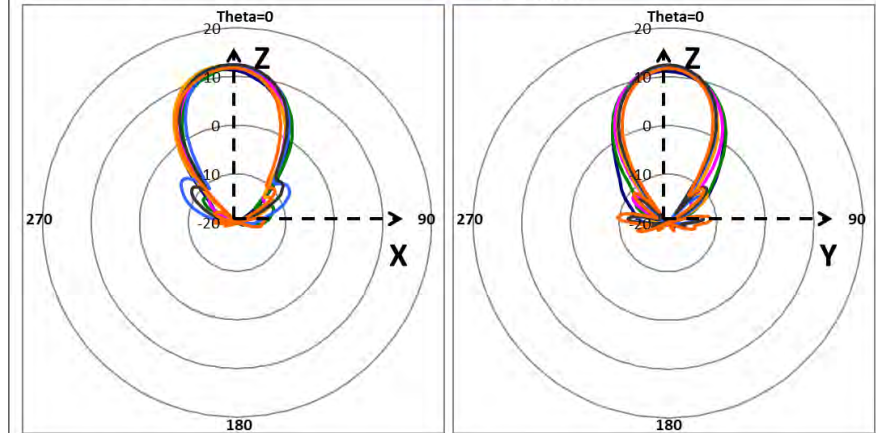
6G3_NB
Radiation Pattern

5945MHz
6145MHz
6345MHz
6545MHz
6745MHz
6945MHz
7125MHz



6G4_NB
Radiation Pattern

5945MHz
6145MHz
6345MHz
6545MHz
6745MHz
6945MHz
7125MHz



6G

Narrow Beam

- 6G1 & 6G3 → V-Pol.
- 6G2 & 6G4 → H-Pol.



F/B Ratio-1
F = -90~90deg,
B = -180~ -90deg./90~180deg.

F/B Ratio-2
F = -90~90deg.,
B = -180~ -130deg./130~180deg.

* Measurement chamber sampling is 3 degree / step *

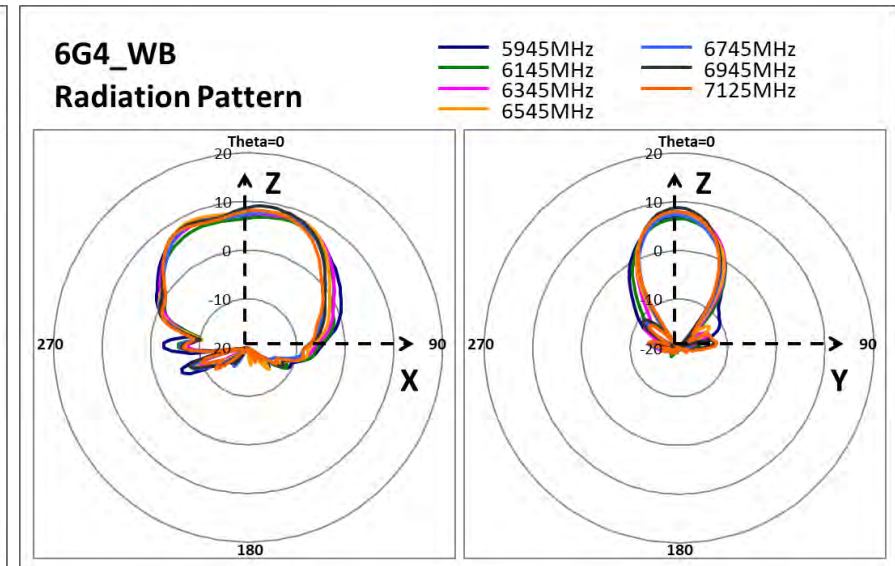
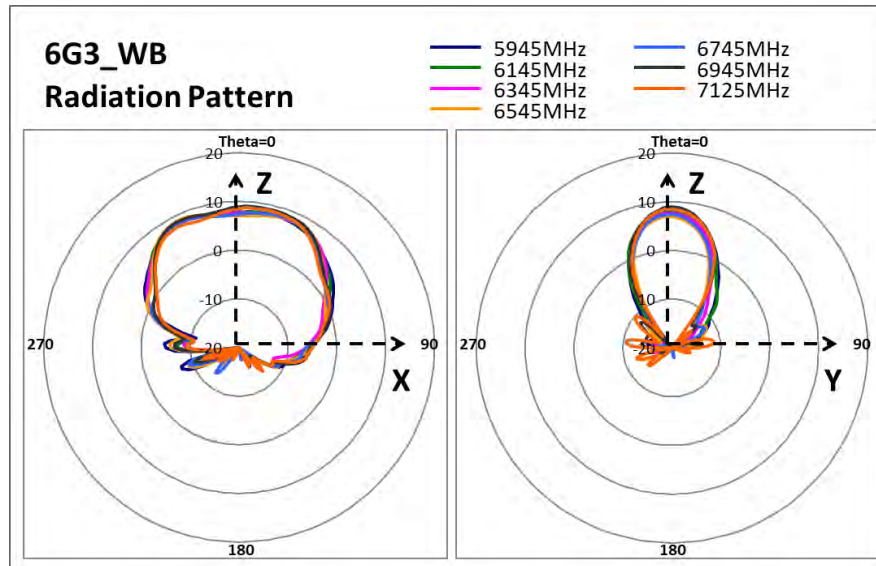
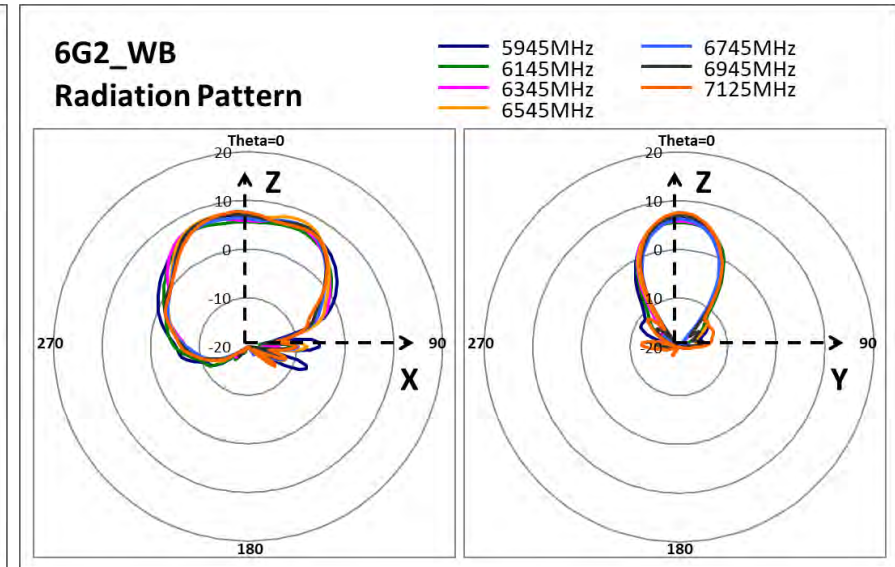
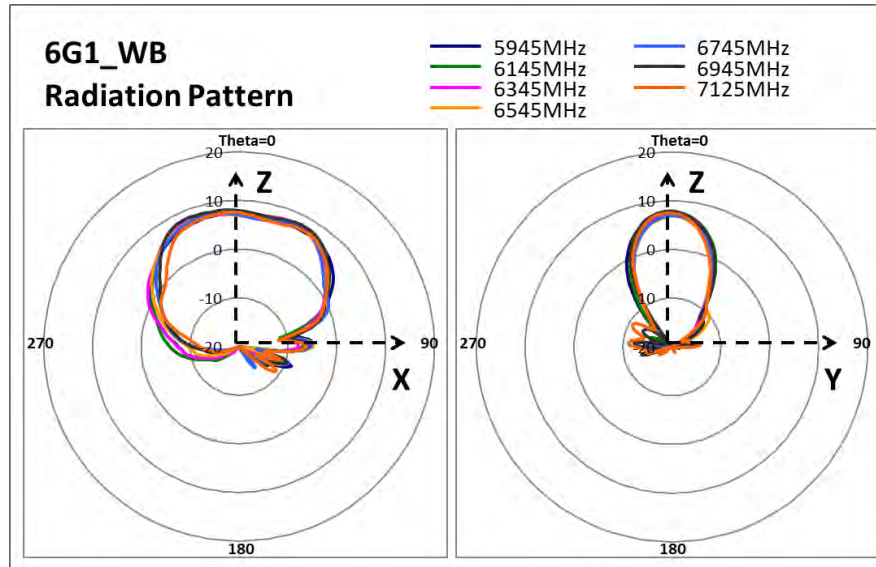
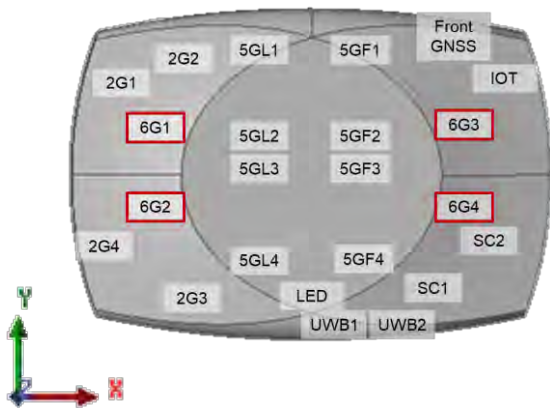
6G1 XZ/YZ	Peak Gain of Major Polarization	BW	SLL	F/B Ratio -1	F/B Ratio -2	Efficiency
5945	9.0	36/36	23/26	29/29	38/37	48%
6145	9.1	33/36	30/27	30/30	36/37	47%
6345	9.2	36/33	27/27	29/32	37/39	49%
6545	9.0	33/33	20/24	28/30	38/35	44%
6745	8.4	36/30	20/22	29/27	37/32	39%
6945	9.1	39/30	22/23	28/26	36/31	46%
7125	8.9	33/30	21/21	25/24	32/31	39%
Avg.	9.0	35/33	23/24	28/28	36/35	45%

6G3 XZ/YZ	Peak Gain of Major Polarization	BW	SLL	F/B Ratio -1	F/B Ratio -2	Efficiency
5945	9.9	33/36	21/27	29/30	32/32	56%
6145	10.0	33/36	28/25	32/30	32/33	56%
6345	9.9	33/33	25/25	28/27	30/33	51%
6545	9.8	33/33	19/22	27/26	31/31	49%
6745	9.5	36/33	20/21	30/26	30/32	45%
6945	9.9	36/30	24/21	24/24	32/31	52%
7125	9.7	30/27	19/19	28/24	31/26	46%
Avg.	9.8	33/33	22/23	28/27	31/31	51%

6G2 XZ/YZ	Peak Gain of Major Polarization	BW	SLL	F/B Ratio -1	F/B Ratio -2	Efficiency
5945	9.0	36/36	26/30	27/29	35/37	46%
6145	8.5	36/36	25/30	28/34	39/35	45%
6345	9.2	33/33	23/24	28/34	39/34	44%
6545	8.7	36/33	22/22	31/31	34/33	42%
6745	8.7	33/27	20/24	28/29	35/32	39%
6945	8.7	36/30	19/23	30/28	36/30	42%
7125	8.8	33/27	19/22	25/24	30/28	39%
Avg.	8.8	35/32	22/25	28/30	35/33	43%

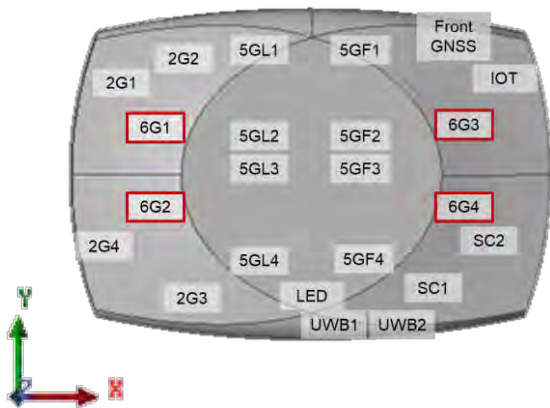
6G4 XZ/YZ	Peak Gain of Major Polarization	BW	SLL	F/B Ratio -1	F/B Ratio -2	Efficiency
5945	9.5	33/36	30/30	32/28	32/34	50%
6145	9.3	36/39	23/30	26/33	35/34	52%
6345	9.8	33/33	25/23	31/31	33/32	49%
6545	10.1	33/33	24/22	33/29	33/32	49%
6745	9.8	33/30	18/23	28/29	33/33	46%
6945	10.0	36/30	20/22	31/27	32/32	50%
7125	9.4	36/27	22/21	26/24	32/30	42%
Avg.	9.7	34/33	23/24	30/29	33/32	48%

6G Antenna Radiation Pattern Wide Beam



6G Wide Beam

- 6G1 & 6G3 → V-Pol.
- 6G2 & 6G4 → H-Pol.



F/B Ratio-1
F = -90~90deg,
B = -180~ -90deg./90~180deg.

F/B Ratio-2
F = -90~90deg.,
B = -180~ -130deg./130~180deg.

* Measurement chamber sampling is 3 degree / step *

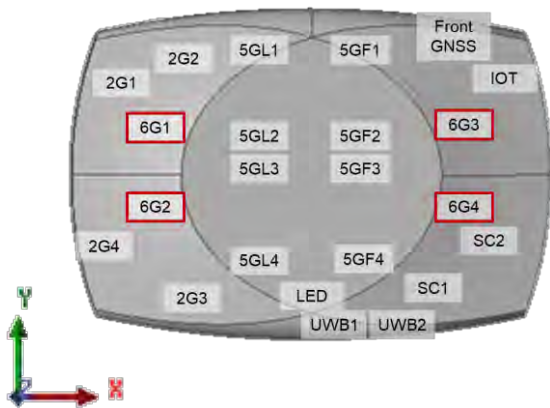
6G1 XZ/YZ	Peak Gain of Major Polarization	BW 3dB	BW 4dB	BW 6dB	SLL	F/B Ratio-1	F/B Ratio-2	Efficiency
5945	5.4	96/36	102/42	120/48	/26	12/30	27/33	46%
6145	5.2	87/36	96/42	108/48	/22	14/26	26/31	46%
6345	5.4	87/36	96/39	111/48	/28	15/28	26/30	47%
6545	4.9	84/30	93/36	108/42	/24	14/26	23/28	40%
6745	5.3	84/33	90/36	105/45	/22	14/25	24/29	39%
6945	6.0	81/30	90/36	102/45	/20	15/25	24/26	45%
7125	5.3	81/30	90/33	102/39	/21	16/24	21/29	38%
Avg.	5.4	86/33	94/38	108/45	/23	14/26	25/30	43%

6G2 XZ/YZ	Peak Gain of Major Polarization	BW 3dB	BW 4dB	BW 6dB	SLL	F/B Ratio-1	F/B Ratio-2	Efficiency
5945	5.1	87/36	99/42	114/48	/17	13/26	24/27	44%
6145	4.1	90/42	99/48	114/57	/24	13/25	23/29	39%
6345	4.9	84/42	90/42	105/51	/20	15/26	27/26	41%
6545	5.2	78/36	84/39	96/48	/21	16/24	25/29	41%
6745	4.9	78/33	84/36	96/45	/24	16/26	25/28	35%
6945	4.9	78/33	84/39	96/45	/21	16/25	24/26	36%
7125	5.4	75/33	81/36	96/45	/18	16/21	22/25	38%
Avg.	4.9	81/36	89/40	102/48	/21	15/25	24/27	39%

6G

Wide Beam

- 6G1 & 6G3 → V-Pol.
- 6G2 & 6G4 → H-Pol.



F/B Ratio-1
F = -90~90deg,
B = -180~ -90deg./90~180deg.

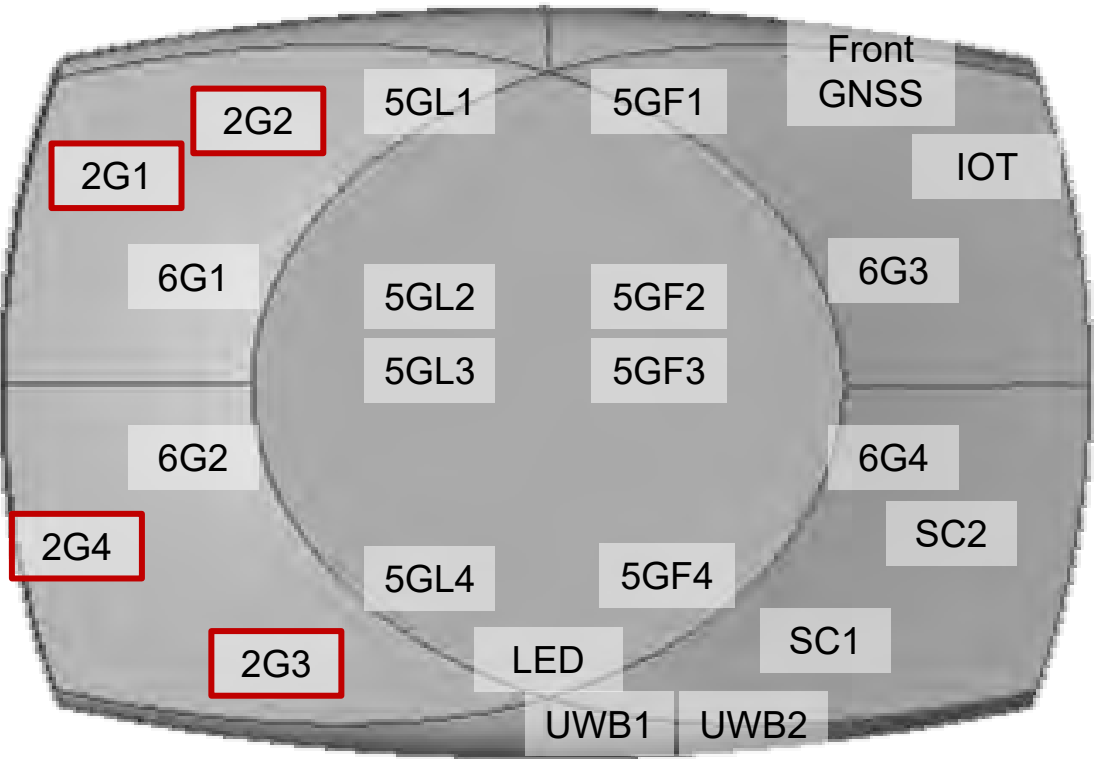
F/B Ratio-2
F = -90~90deg.,
B = -180~ -130deg./130~180deg.

* Measurement chamber sampling is 3 degree / step *

6G3 XZ/YZ	Peak Gain of Major Polarization	BW 3dB	BW 4dB	BW 6dB	SLL	F/B Ratio-1	F/B Ratio-2	Efficiency
5945	6.4	90/33	99/39	123/48	/23	13/25	24/28	54%
6145	6.4	90/33	96/39	111/45	/23	14/27	24/28	54%
6345	6.4	87/33	93/36	108/45	/23	15/23	27/30	49%
6545	6.2	84/30	87/36	102/42	/19	14/20	24/27	48%
6745	6.5	81/30	90/33	99/42	/20	15/23	21/25	45%
6945	6.9	78/30	84/33	99/42	/21	14/24	23/26	52%
7125	6.0	78/30	84/33	96/42	/19	14/21	22/24	46%
Avg.	6.4	84/31	90/36	105/44	/21	14/23	24/27	50%

6G4 XZ/YZ	Peak Gain of Major Polarization	BW 3dB	BW 4dB	BW 6dB	SLL	F/B Ratio-1	F/B Ratio-2	Efficiency
5945	5.6	90/36	99/42	120/51	/26	12/25	22/31	50%
6145	5.3	84/39	93/45	108/51	/21	13/24	22/24	46%
6345	5.3	87/36	96/42	111/48	/19	14/23	23/27	47%
6545	6.2	78/33	84/39	102/45	/20	16/27	22/28	49%
6745	5.4	78/30	84/36	99/45	/19	16/24	23/27	42%
6945	7.0	75/27	81/33	93/39	/20	17/24	25/30	47%
7125	5.6	75/33	81/36	93/45	/20	16/22	24/27	40%
Avg.	5.8	81/33	88/39	104/46	/21	15/24	23/28	46%

2.4G



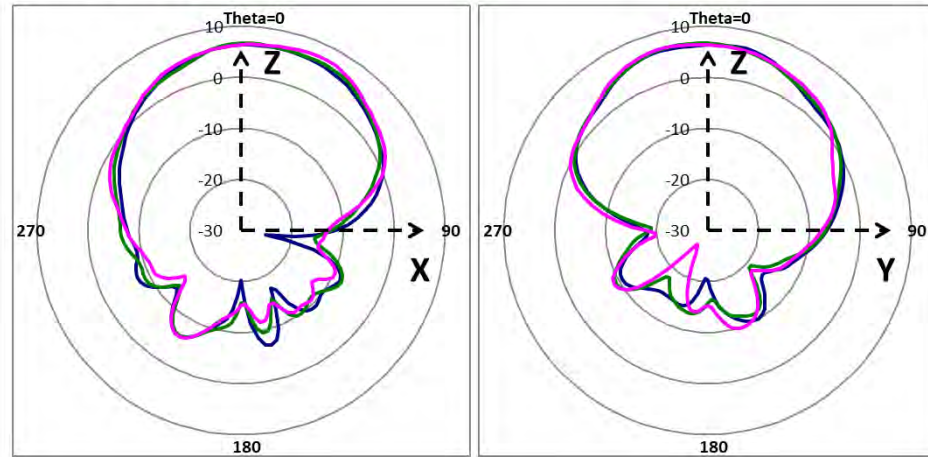
2.4G	2G1	2G2	2G3	2G4
VSWR	< 2.0			
H plane (3dB Avg.)	74°	90°	75°	72°
V plane (3dB Avg.)	68°	84°	64°	78°
Peak Gain of Major Polarization	5.0	4.3	5.1	5.3
Efficiency (Avg.)	80%	77%	76%	77%
φ1.37mm LLS cable loss	170mm 0.40dB @2GHz	125mm 0.29dB @2GHz	345mm 0.81dB @2GHz	325mm 0.76dB @2GHz



2.4G Radiation pattern

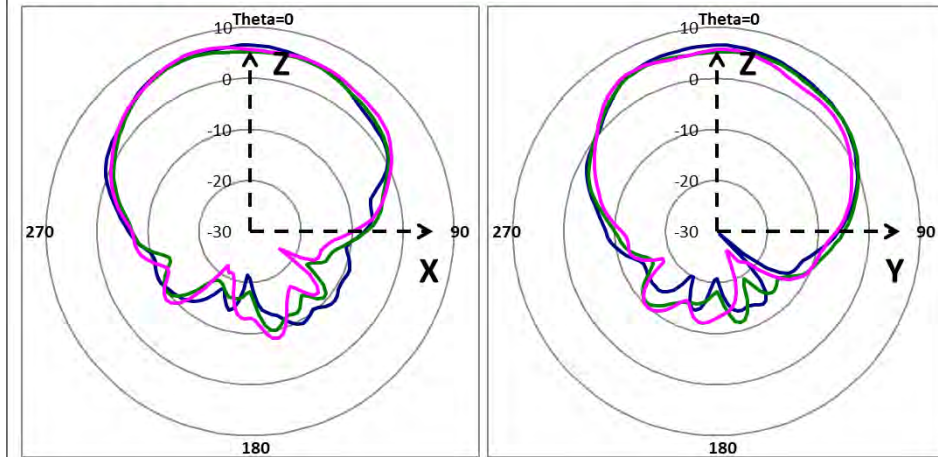
2G1
Radiation Pattern

— 2401MHz
— 2452MHz
— 2495MHz



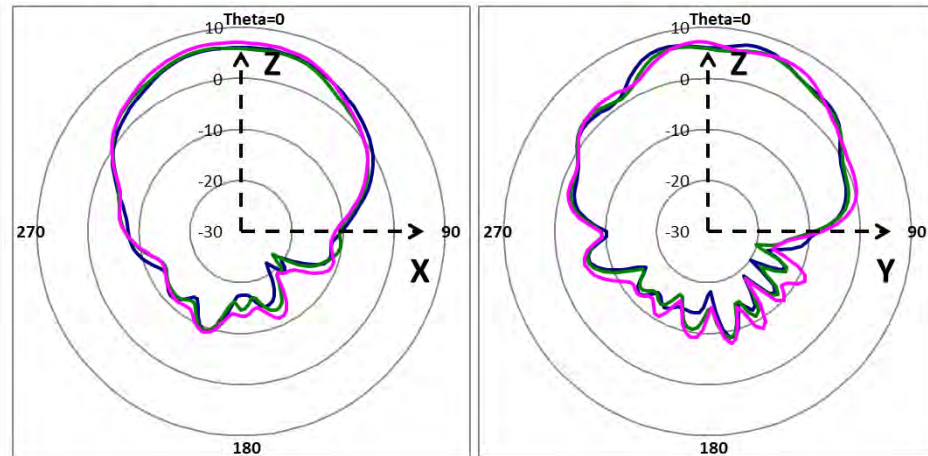
2G2
Radiation Pattern

— 2401MHz
— 2452MHz
— 2495MHz



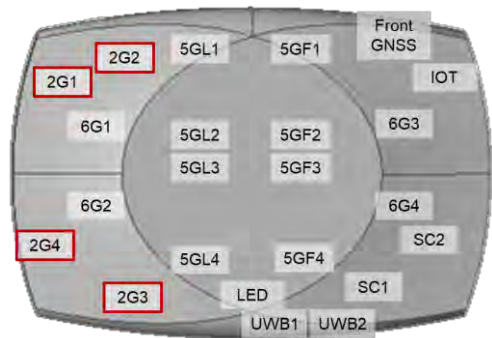
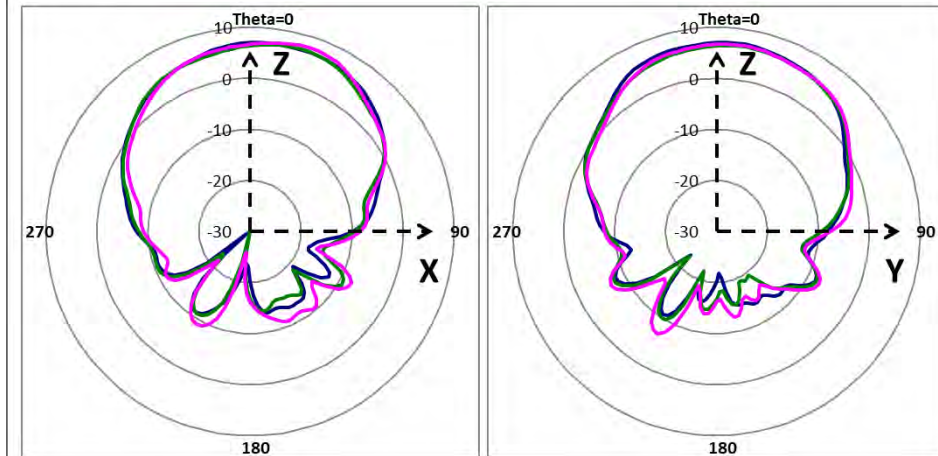
2G3
Radiation Pattern

— 2401MHz
— 2452MHz
— 2495MHz



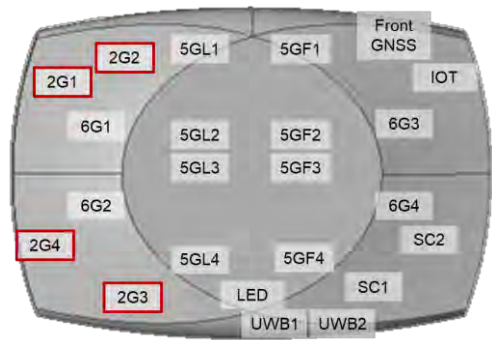
2G4
Radiation Pattern

— 2401MHz
— 2452MHz
— 2495MHz



2.4G Antenna

- 2G2 & 2G3 → V-Pol.
- 2G1 & 2G4 → H-Pol.



F/B Ratio-1
F = -90~90deg,
B = -180~ -90deg./90~180deg.

F/B Ratio-2
F = -90~90deg.,
B = -180~ -130deg./130~180deg.

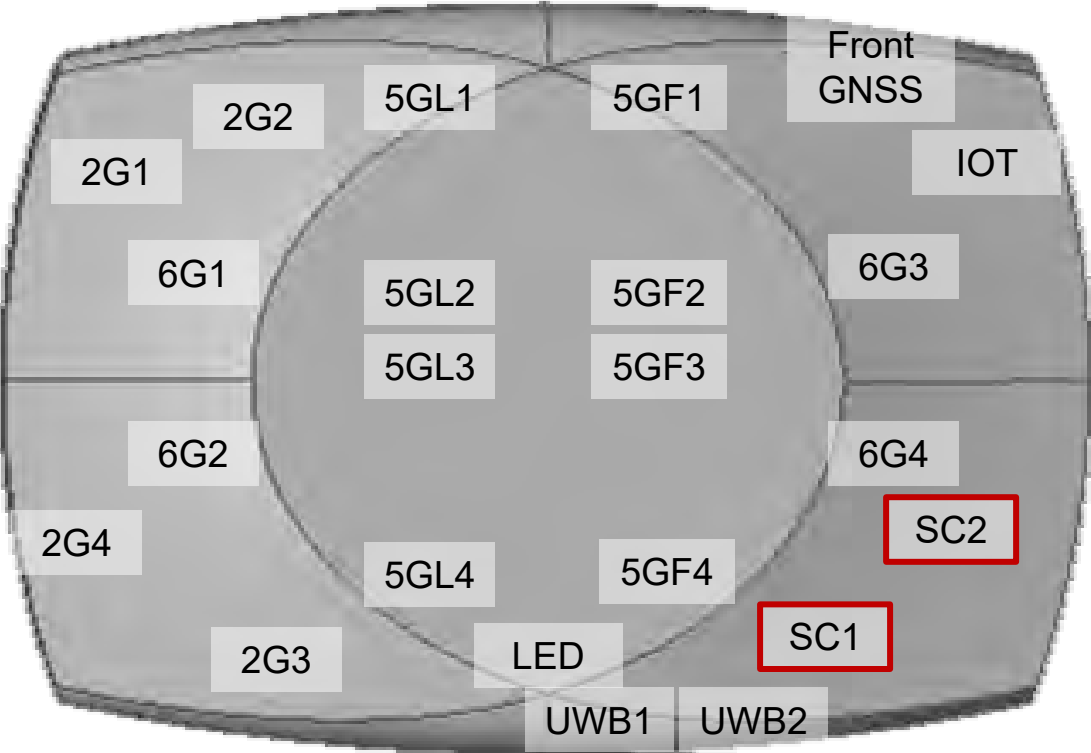
2G1 XZ/YZ	Efficiency	Peak Gain of Major Polarization	BW	F/B Ratio-1	F/B Ratio-2
2401	76%	3.9	78 / 66	13 / 16	13 / 18
2452	78%	4.5	72 / 63	13 / 12	13 / 17
2495	87%	5.0	72 / 75	9 / 11	13 / 17
Avg.	80%	4.5	74 / 68	12 / 13	13 / 17

2G3 XZ/YZ	Efficiency	Peak Gain of Major Polarization	BW	F/B Ratio-1	F/B Ratio-2
2401	76%	5.1	78 / 63	14 / 10	16 / 15
2452	73%	4.3	75 / 69	13 / 9	15 / 16
2495	78%	5.1	72 / 60	16 / 12	16 / 15
Avg.	76%	4.8	75 / 64	14 / 10	16 / 15

2G2 XZ/YZ	Efficiency	Peak Gain of Major Polarization	BW	F/B Ratio-1	F/B Ratio-2
2401	78%	4.0	81 / 81	13 / 14	16 / 16
2452	75%	3.8	93 / 96	7 / 12	15 / 20
2495	78%	4.3	96 / 75	9 / 13	15 / 16
Avg.	77%	4.0	90 / 84	10 / 13	15 / 17

2G4 XZ/YZ	Efficiency	Peak Gain of Major Polarization	BW	F/B Ratio-1	F/B Ratio-2
2401	78%	4.7	78 / 78	13 / 14	18 / 15
2452	74%	4.8	75 / 78	12 / 14	18 / 18
2495	79%	5.3	63 / 78	14 / 14	17 / 14
Avg.	77%	4.9	72 / 78	13 / 14	18 / 16

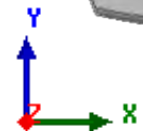
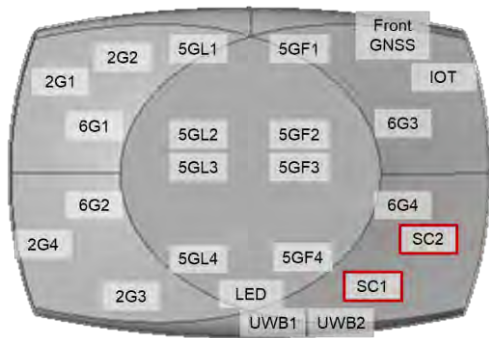
Scanning



Scanning	SC1 2G / 5-7G	SC2 2G / 5-7G
VSWR	< 2.0	
H plane (3dB Avg.)	76° / 59°	82° / 64°
V plane (3dB Avg.)	65° / 63°	70° / 59°
Peak Gain of Major Polarization	3.7 / 6.1	5.1 / 6.4
Efficiency (Avg.)	68% / 68%	80% / 71%
φ1.37mm LLS cable loss	178mm 0.42dB @2GHz 0.66dB @6GHz 0.73dB @7GHz	161mm 0.38dB @2GHz 0.60dB @6GHz 0.66dB @7GHz

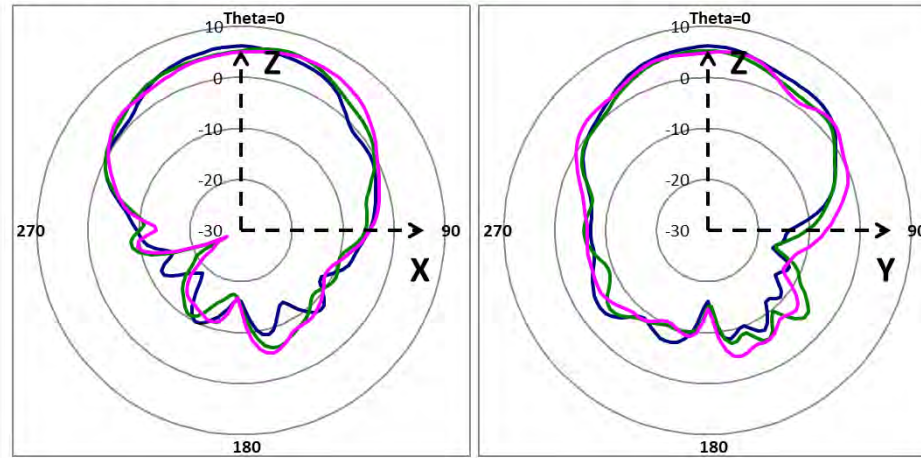


Scanning Radiation pattern



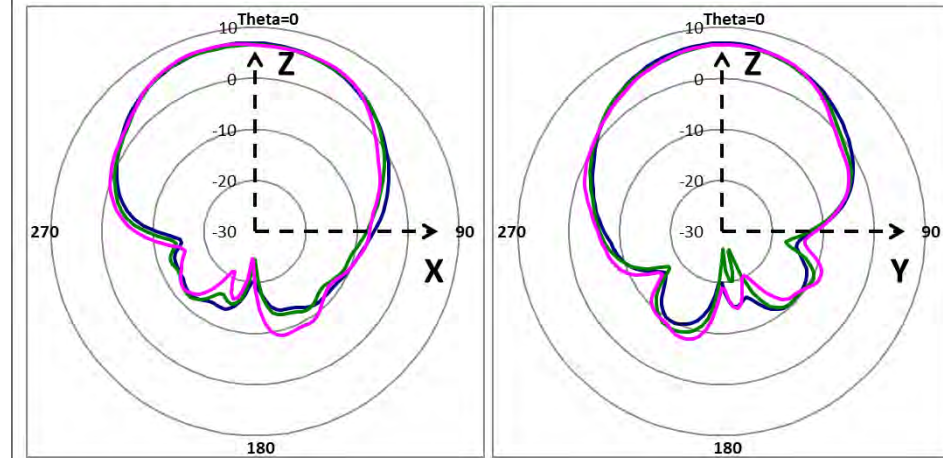
SC1
Radiation Pattern

— 2401MHz
— 2452MHz
— 2495MHz



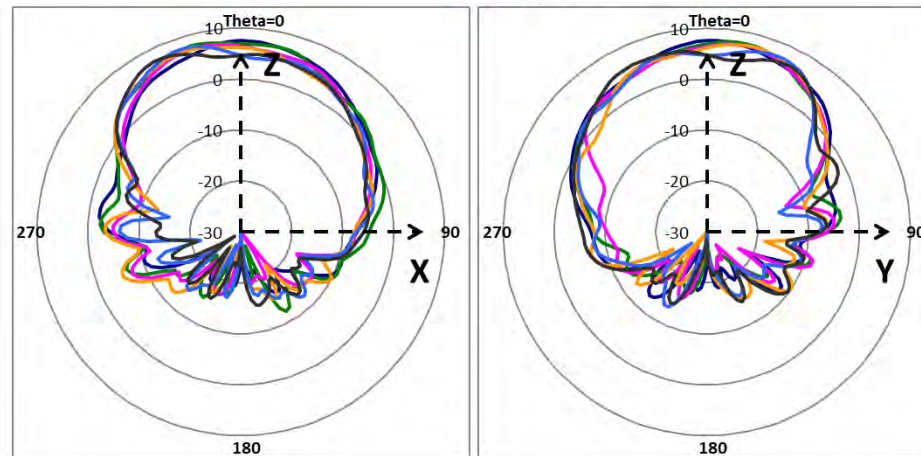
SC2
Radiation Pattern

— 2401MHz
— 2452MHz
— 2495MHz



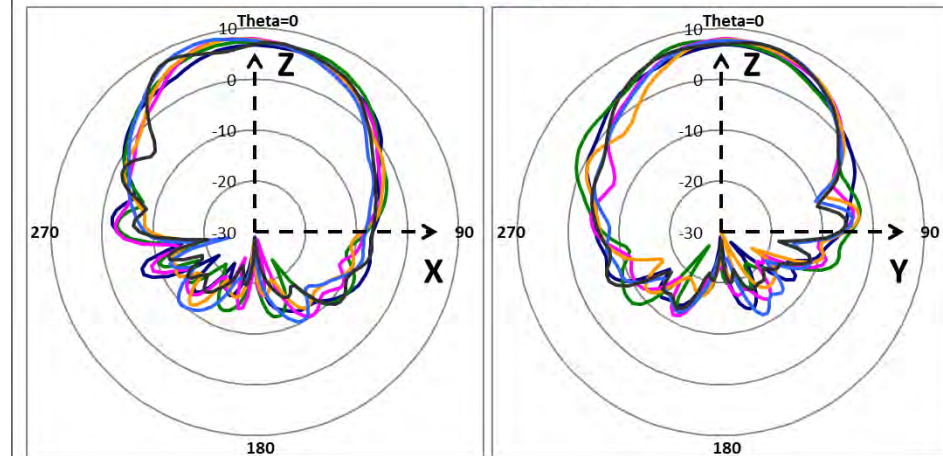
SC1
Radiation Pattern

— 5150MHz
— 5550MHz
— 5945MHz
— 6345MHz
— 6745MHz
— 7125MHz



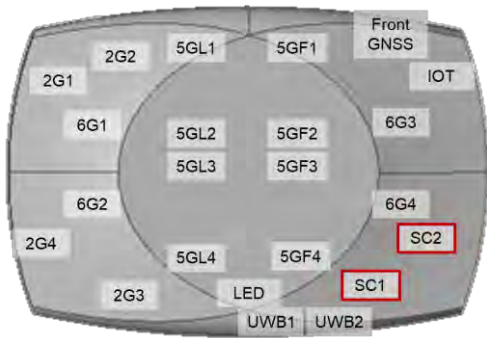
SC2
Radiation Pattern

— 5150MHz
— 5550MHz
— 5945MHz
— 6345MHz
— 6745MHz
— 7125MHz



Scanning Antenna

- SC1 → V-Pol.
- SC2 → H-Pol.



F/B Ratio-1
F = -90~90deg,
B = -180~ -90deg./90~180deg.

F/B Ratio-2
F = -90~90deg.,
B = -180~ -130deg./130~180deg.

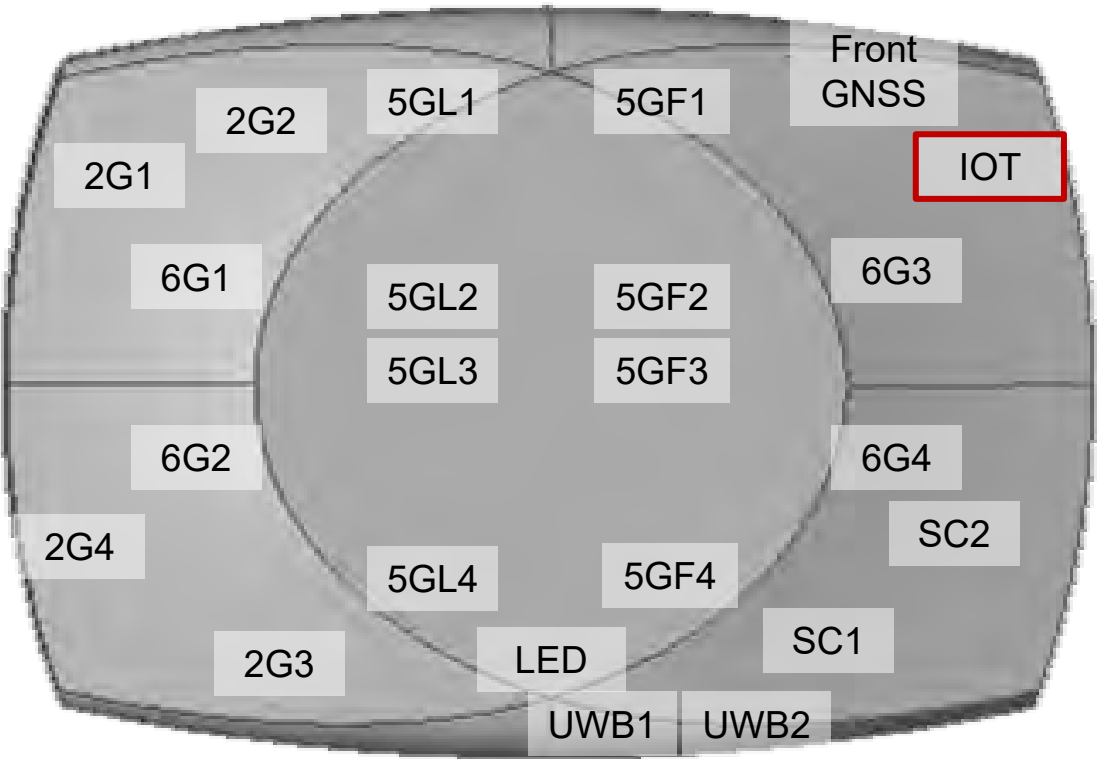
SC1 XZ/YZ	Efficiency	Peak Gain of Major Polarization	BW	F/B Ratio-1	F/B Ratio-2
2401	65	3.7	69 / 75	10 / 10	12 / 10
2452	65	3.5	75 / 60	11 / 10	14 / 10
2495	74	3.7	84 / 60	9 / 10	11 / 10
Avg.	68	3.6	76 / 65	10 / 10	12 / 10

SC1 XZ/YZ	Efficiency	Peak Gain of Major Polarization	BW	F/B Ratio-1	F/B Ratio-2
5150	72	4.9	63 / 63	12 / 14	17 / 21
5550	73	6.1	60 / 51	9 / 14	24 / 21
5945	63	4.8	66 / 57	12 / 16	21 / 20
6345	63	5.0	63 / 63	10 / 12	17 / 20
6745	68	5.8	39 / 63	11 / 10	20 / 19
7125	67	5.7	60 / 78	10 / 7	16 / 13
Avg.	68	5.4	59 / 63	11 / 12	19 / 19

SC2 XZ/YZ	Efficiency	Peak Gain of Major Polarization	BW	F/B Ratio-1	F/B Ratio-2
2401	77	4.2	81 / 69	12 / 13	18 / 15
2452	78	4.6	84 / 72	15 / 12	18 / 17
2495	84	5.1	81 / 69	12 / 12	16 / 14
Avg.	80	4.7	82 / 70	13 / 12	17 / 15

SC2 XZ/YZ	Efficiency	Peak Gain of Major Polarization	BW	F/B Ratio-1	F/B Ratio-2
5150	70	4.5	69 / 69	10 / 12	16 / 20
5550	80	5.2	75 / 54	13 / 10	16 / 19
5945	70	5.3	54 / 57	14 / 13	18 / 19
6345	68	5.5	60 / 51	14 / 14	19 / 19
6745	68	6.4	54 / 57	15 / 14	19 / 18
7125	69	5.3	69 / 66	11 / 12	15 / 15
Avg.	71	5.4	64 / 59	13 / 12	17 / 18

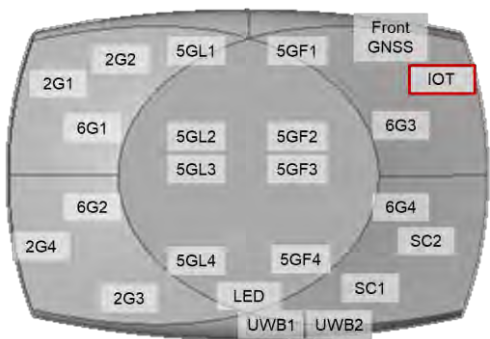
IoT



IoT	IoT
VSWR	< 2.0
H plane (3dB Avg.)	77°
V plane (3dB Avg.)	75°
Peak Gain of Major Polarization	6.1
Efficiency (Avg.)	74%
φ1.37mm LLS cable loss	418mm 0.98dB @2GHz

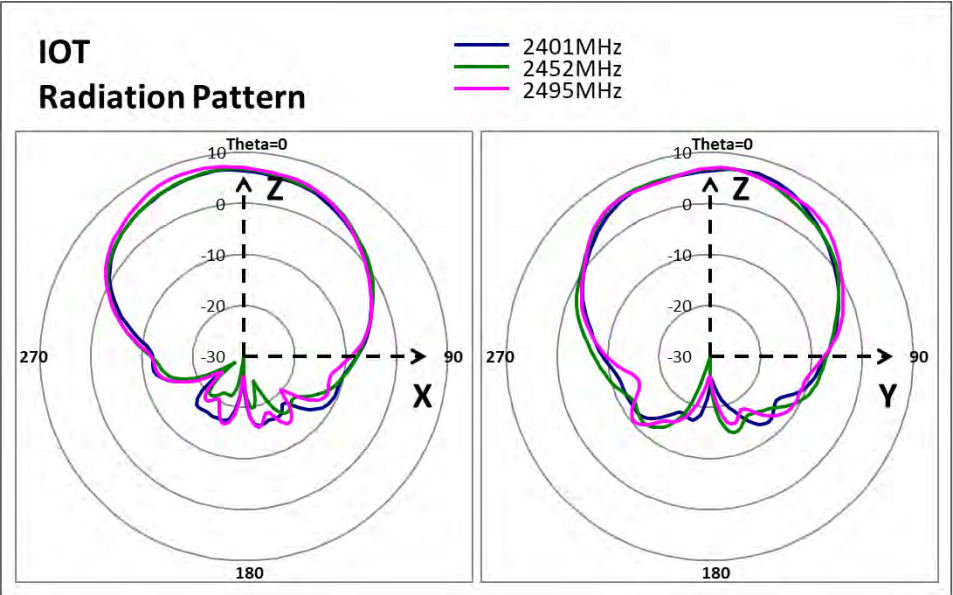


IoT Radiation pattern



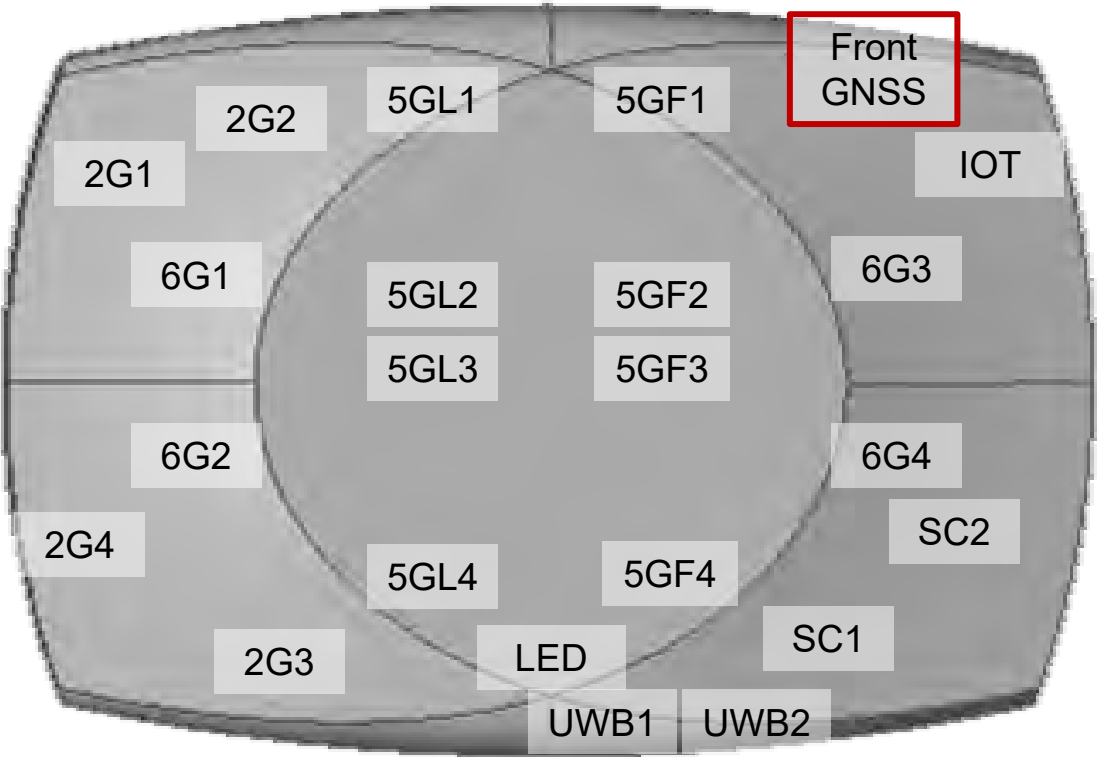
F/B Ratio-1
F = -90~90deg,
B = -180~ -90deg./90~180deg.

F/B Ratio-2
F = -90~90deg.,
B = -180~ -130deg./130~180deg.



IoT XZ/YZ	Efficiency	Peak Gain of Major Polarization	BW	F/B Ratio-1	F/B Ratio-2
2401	70%	5.0	78 / 69	12 / 13	23 / 19
2452	72%	4.9	78 / 72	13 / 13	18 / 19
2495	79%	6.1	75 / 84	11 / 16	20 / 18
Avg.	74%	5.3	77 / 75	12 / 14	20 / 18

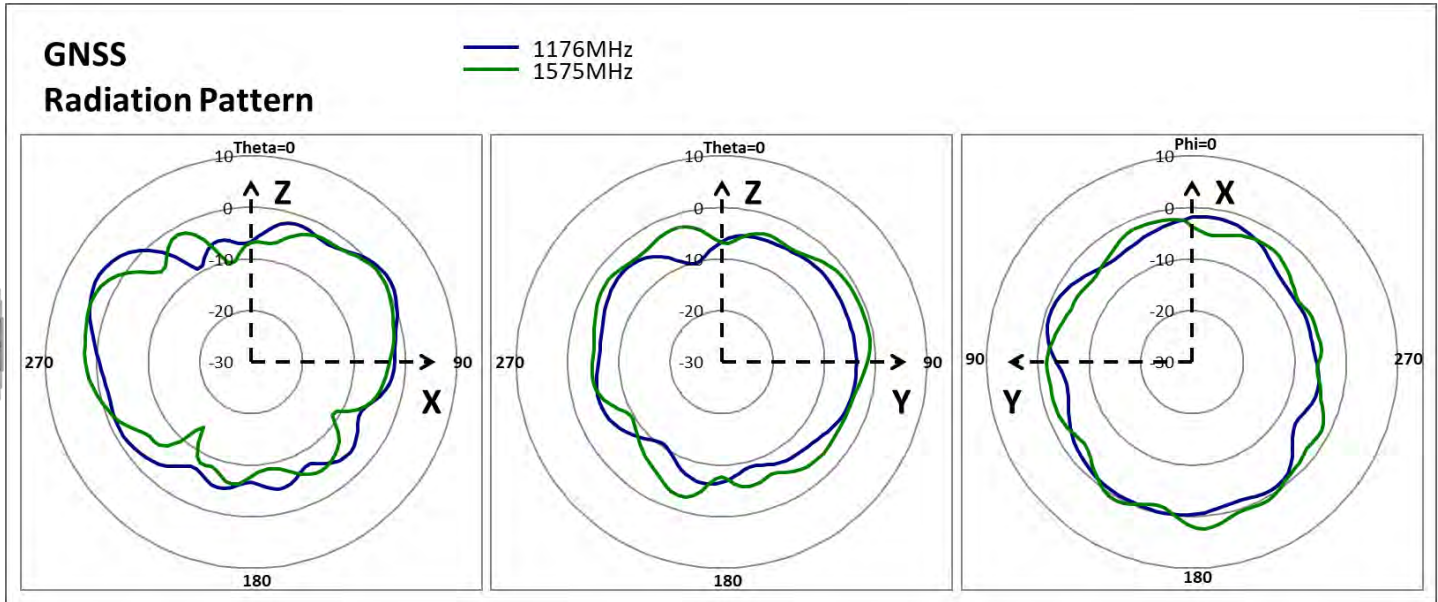
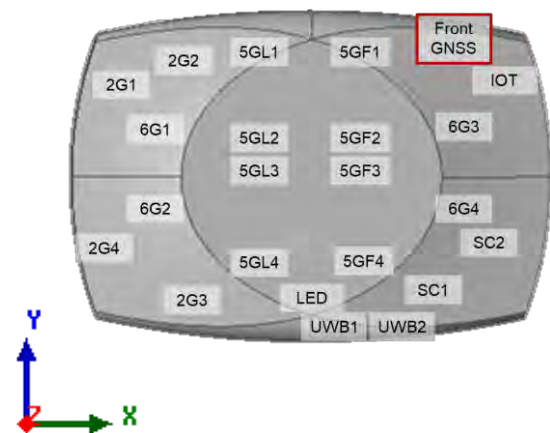
GNSS _ Front side



GNSS	1176MHz	1575MHz
VSWR	< 2.0	
Peak Gain of Major Polarization	3.8	2.7
Efficiency	50%	56%
ϕ 1.37mm LLS cable loss	277mm 0.44dB @1.1GHz	277mm 0.51dB @1.5GHz

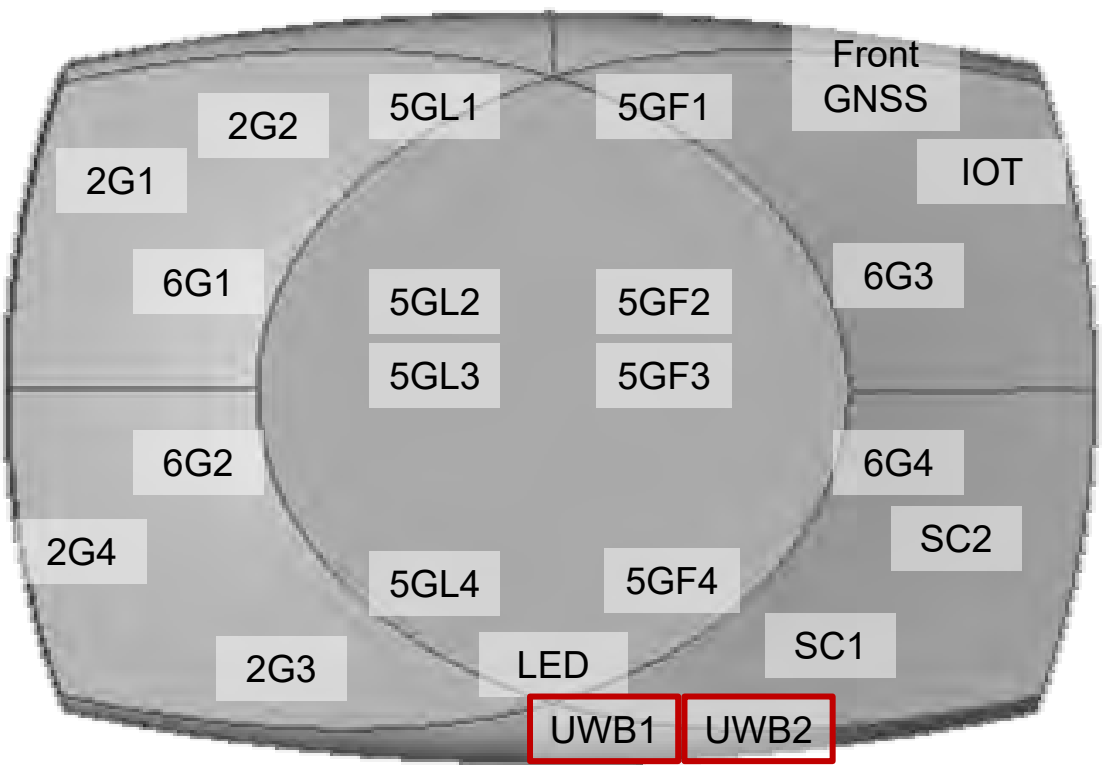


GNSS Radiation pattern Front side



Front side GNSS	Efficiency	Peak Gain of Major Polarization
1165	45%	3.1
1176	50%	3.8
1185	50%	3.6
1565	54%	2.9
1575	56%	2.7
1585	58%	2.5
Avg.	52%	3.1

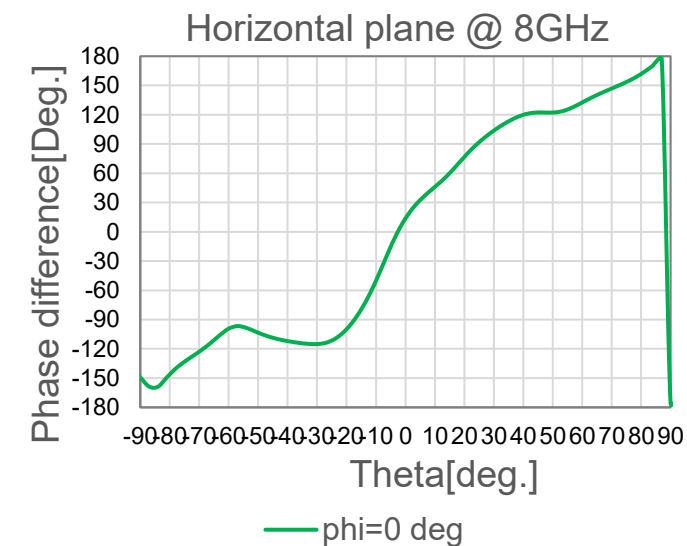
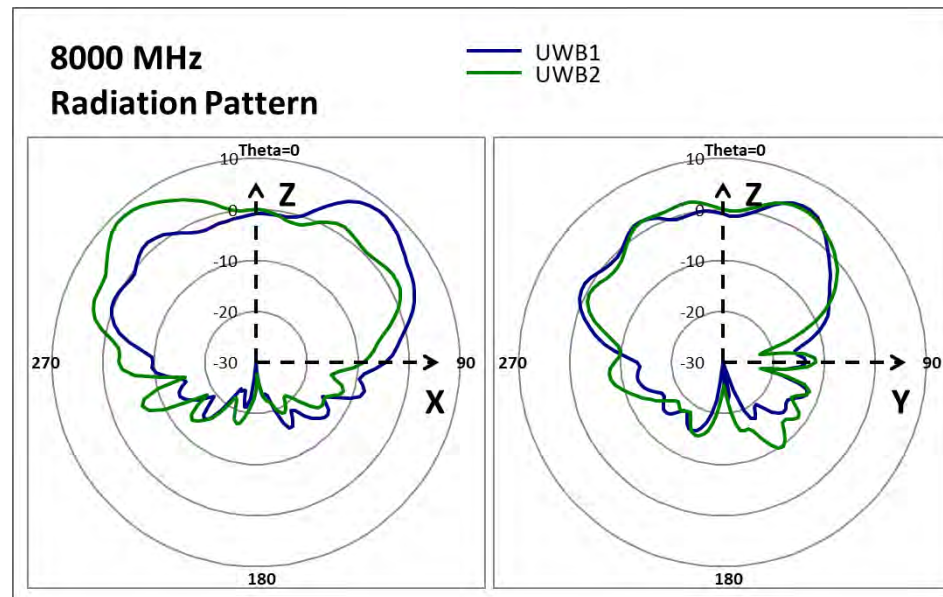
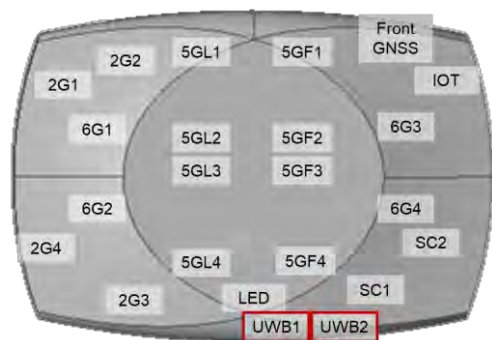
UWB



UWB	UWB1	UWB2
VSWR	< 2.0	
Peak Gain of Major Polarization	8.2	8.6
Efficiency	67%	68%
ϕ 1.13mm LLS cable loss	95.6mm 0.50dB @8GHz	95.6mm 0.50dB @8GHz



UWB Radiation pattern



UWB1 XZ/YZ	Efficiency	Peak Gain of Major Polarization	3 dB BW	6 dB BW	10 dB BW
8000	67%	8.2	33 / 51	96 / 48	105 / 144

UWB2 XZ/YZ	Efficiency	Peak Gain of Major Polarization	3 dB BW	6 dB BW	10 dB BW
8000	68%	8.6	33 / 60	93 / 123	177 / 147

Elevation Gain Above 30 degrees – 5G Radio

5GL

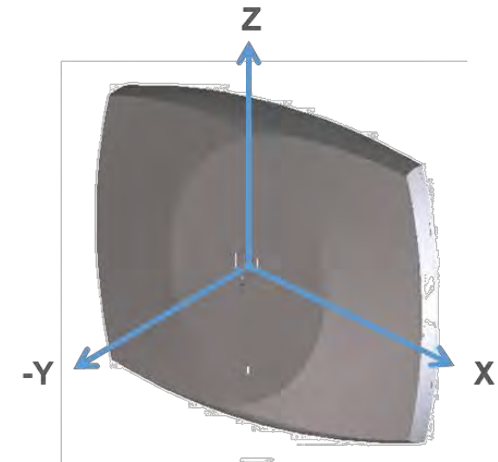
5GL Boresight mode	Frequency	Gain of Major Polarization
5GL1	5150	0.31
	5250	0.37
5GL2	5150	0.12
	5250	0.76
5GL3	5150	0.47
	5250	-0.14
5GL4	5150	0.90
	5250	0.95

5GL Steering mode	Frequency	Gain of Major Polarization
5GL1	5150	0.88
	5250	0.59
5GL2	5150	0.42
	5250	1.22
5GL3	5150	0.62
	5250	-0.38
5GL4	5150	1.20
	5250	1.32

5GF

5GF Boresight mode	Frequency	Gain of Major Polarization
5GF1	5150	-1.46
	5250	-1.99
5GF2	5150	-0.25
	5250	-0.10
5GF3	5150	0.34
	5250	-0.63
5GF4	5150	1.42
	5250	0.72

5GF Steering mode	Frequency	Gain of Major Polarization
5GF1	5150	0.52
	5250	-0.24
5GF2	5150	0.35
	5250	0.18
5GF3	5150	0.78
	5250	0.49
5GF4	5150	2.26
	5250	1.47



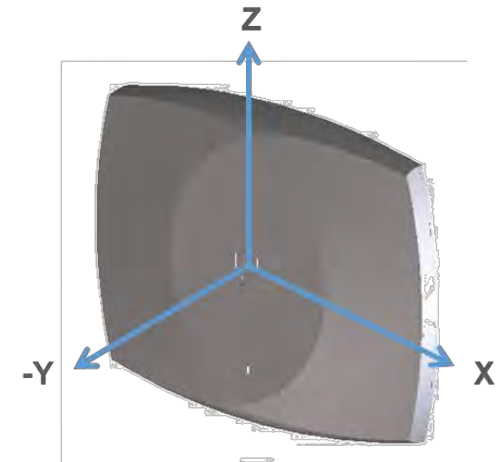
Elevation Gain Above 30 degrees – 6G Radio

Narrow Beam

6G Narrow Beam mode	Frequency	Gain of Major Polarization
6G1	5945	0.82
	6145	-0.18
	6345	-1.60
	6545	-2.51
	6745	-4.32
6G2	5945	0.66
	6145	0.50
	6345	-1.02
	6545	-3.04
	6745	-4.22
6G3	5945	2.54
	6145	2.05
	6345	0.26
	6545	-1.61
	6745	-3.61
6G4	5945	0.81
	6145	1.94
	6345	0.25
	6545	-1.33
	6745	-3.91

Wide Beam

6G Wide Beam mode	Frequency	Gain of Major Polarization
6G1	5945	-3.20
	6145	-3.59
	6345	-4.34
	6545	-6.66
	6745	-7.00
6G2	5945	-3.54
	6145	-1.49
	6345	-3.80
	6545	-4.79
	6745	-5.46
6G3	5945	-1.46
	6145	-1.45
	6345	-3.44
	6545	-5.75
	6745	-6.01
6G4	5945	-2.75
	6145	-1.88
	6345	-2.89
	6545	-3.04
	6745	-6.50



The logo for WNC, featuring the letters 'WNC' in a bold, blue, italicized sans-serif font.

WNC

Wistron NeWeb Corp.

Thank You!

