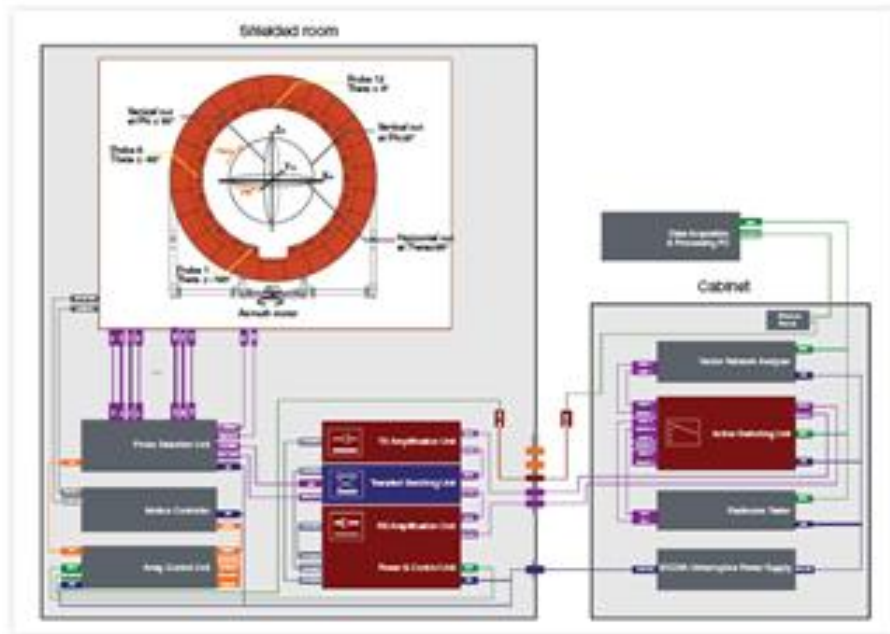


Nellie_D SKU P2 Antenna Testing Report - For Lab

2026.05.25
v04

Test Chamber General Information

- Antenna Vendor : WNC
- Test Date : Dec. 2025
- Test Engineer : Joe
- Measurement System : SATIMO SG24
- Software Name : Wave Studio
- Software Version : 22.5.6



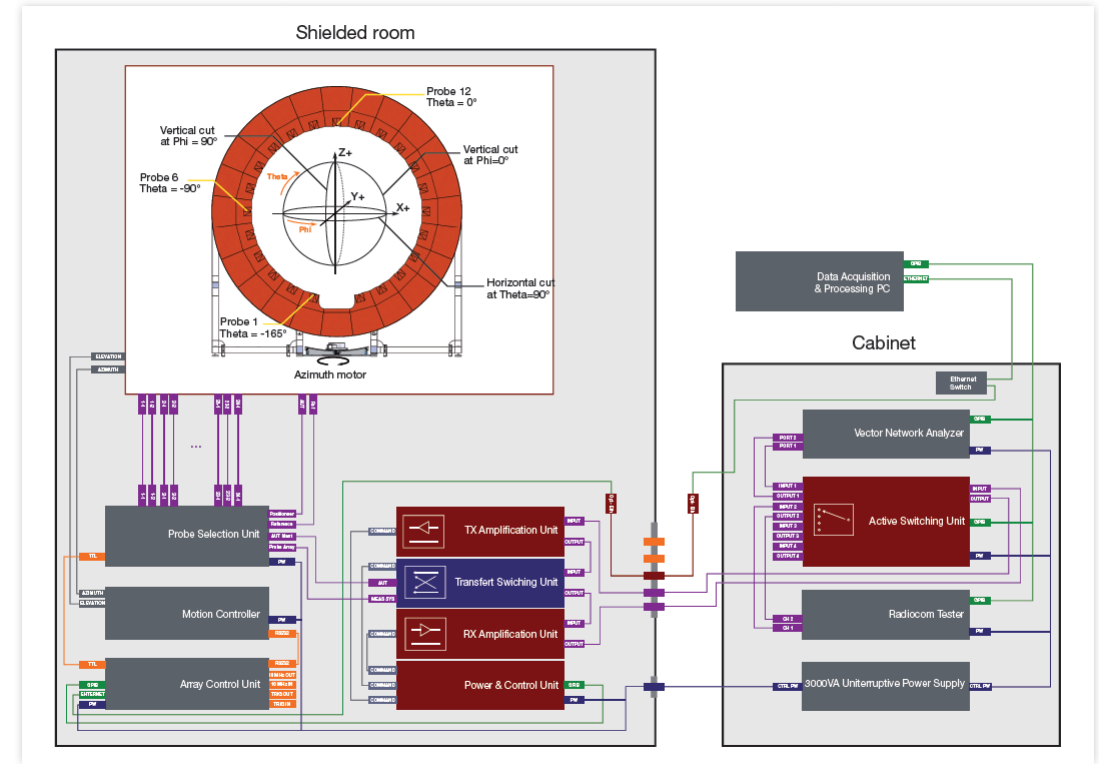
Antenna Measurement System Information

- 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

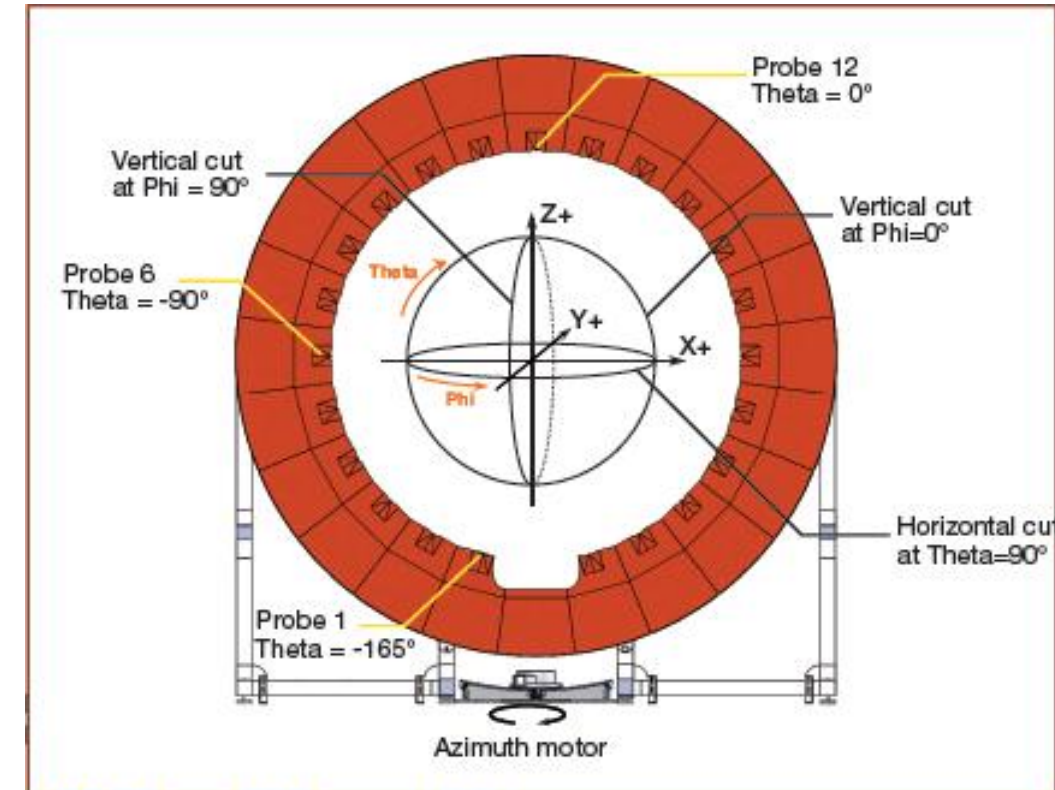
- Calibration Information



Device	Type / Model	Serial #	Manufacture	Cal. Date
Antenna Measurement System	SG24-L	HKG1669S	MVG-SATIMO	2025-10
Network Analyzer	Keysight E5080B	MY59203136	Keysight	2025-10

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.



Name and address of the antenna manufacture

WebCom Communication (Kunshan) Corporation - Kunshan Plant

 No. 6, 88 Central Avenue, Kunshan City,
Jiangsu Province, P.R.C.

 215300

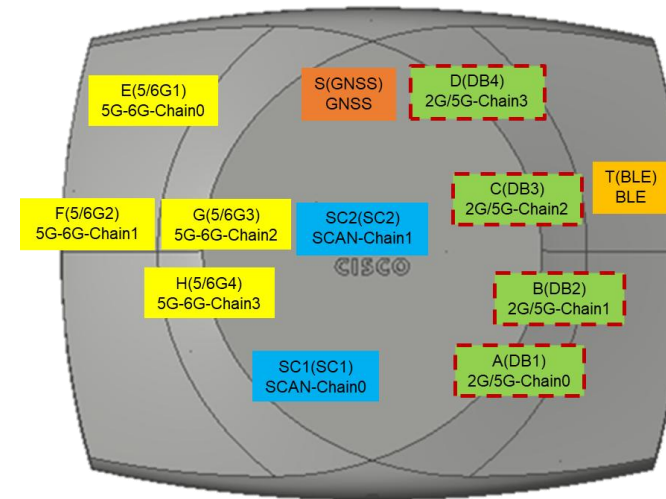
 +86-512-5772-2688

 +86-512-5772-3168

WIFI Dual-band - Composite Gain

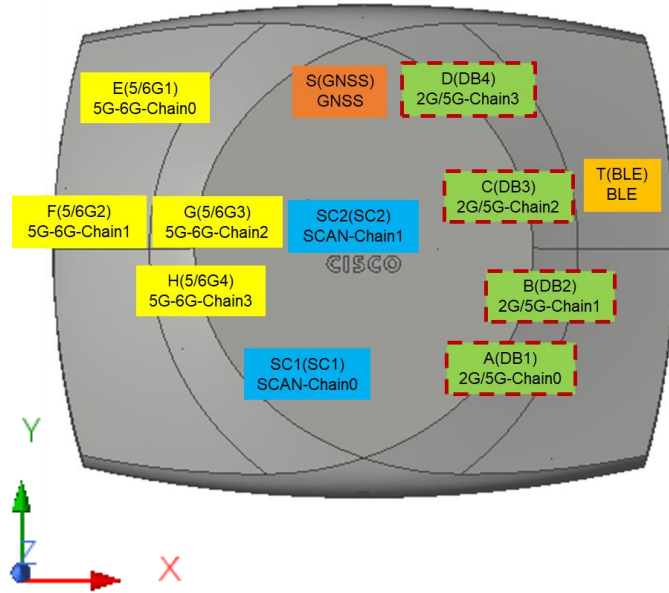
Freq.	2.45GHz	5.2GHz	5.3GHz	5.6GHz	5.785GHz
DB1 Max Gain (dBi)	6.60	6.05	6.07	6.48	6.78
DB2 Max Gain (dBi)	7.82	5.86	6.07	6.44	6.46
DB3 Max Gain (dBi)	8.06	5.52	5.77	6.54	6.70
DB4 Max Gain (dBi)	6.20	5.79	6.22	6.49	6.61
DB1 Pol. Theta / Phi	Theta 24 / 228	Theta 9 / 6	Theta 12 / 357	Phi 18 / 111	Phi 12 / 84
DB2 Pol. Theta / Phi	Phi 9 / 156	Theta 3 / 192	Phi 3 / 171	Phi 12 / 300	Phi 15 / 315
DB3 Pol. Theta / Phi	Theta 3 / 204	Phi 12 / 36	Theta 12 / 18	Phi 12 / 201	Phi 6 / 252
DB4 Pol. Theta / Phi	Phi 9 / 165	Phi 3 / 330	Phi 3 / 51	Phi 18 / 150	Phi 18 / 138

Radio	Antenna report	Polarization	model	Type
Radio 1- 2G/ Radio 3- 5GL5GF	DB1	V-pol	95XPAN15.G13	Dipole
	DB2	H-pol	95XPAN15.G14	Dipole
	DB3	V-pol	95XPAN15.G15	Dipole
	DB4	H-pol	95XPAN15.G16	Dipole

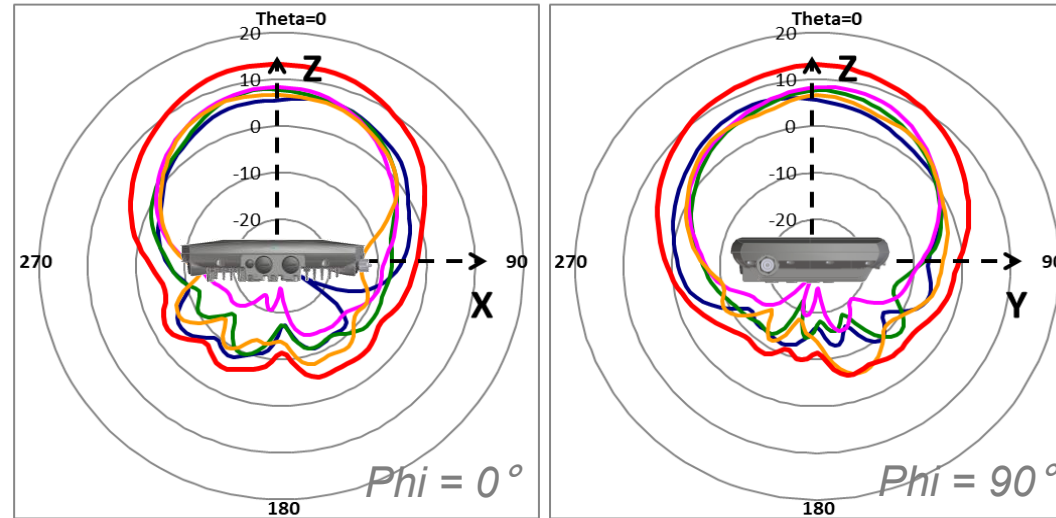


DB1 & DB3 → V-pol
DB2 & DB4 → H-pol

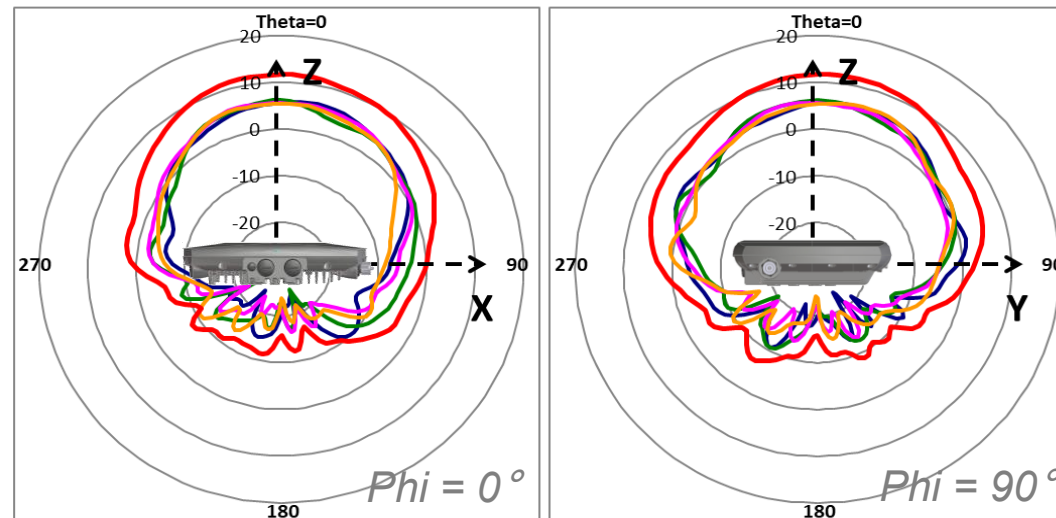
WIFI Dual-band - Pattern



DB_2G
Radiation Pattern



DB_5G
Radiation Pattern



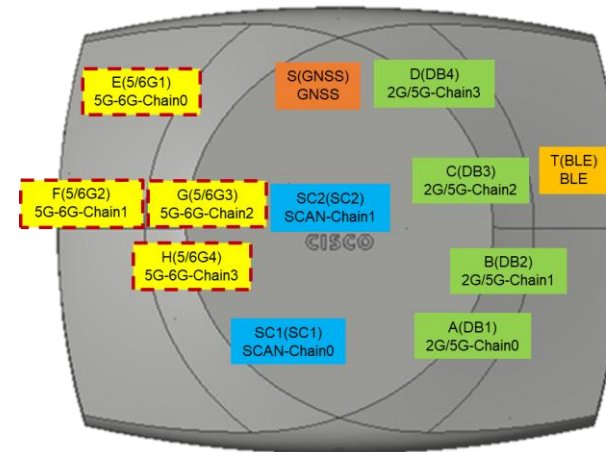
ANT	3dB BW (XZ / YZ)
DB1_2G	78° / 69°
DB2_2G	60° / 60°
DB3_2G	63° / 63°
DB4_2G	72° / 87°
Composite	72° / 78°

ANT	3dB BW (XZ / YZ)
DB1_5G	69° / 75°
DB2_5G	72° / 72°
DB3_5G	78° / 72°
DB4_5G	81° / 69°
Composite	81° / 75°

WIFI 5/6G - Composite Gain

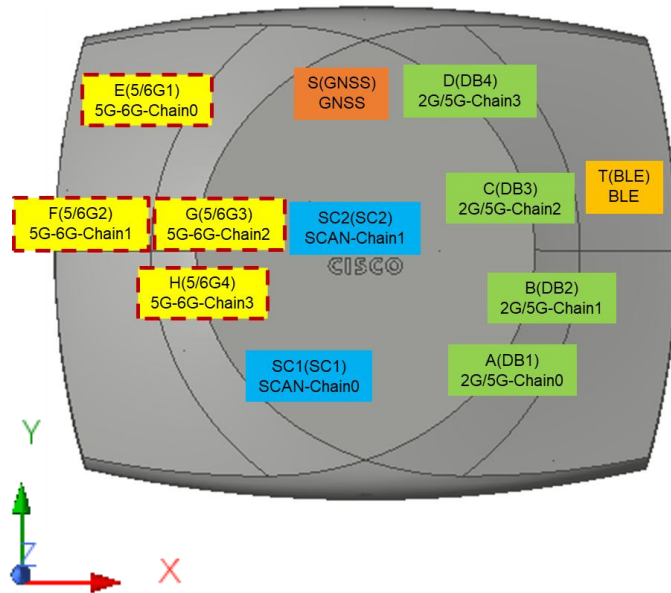
Freq.	5.6 GHz	5.785 GHz	6.175 GHz	6.475 GHz	6.695 GHz	6.995 GHz
5/6G1 Max Gain (dBi)	5.54	5.95	5.63	5.57	5.81	5.52
5/6G2 Max Gain (dBi)	6.32	6.00	5.23	6.38	6.40	6.67
5/6G3 Max Gain (dBi)	6.53	6.63	7.35	7.90	8.02	8.02
5/6G4 Max Gain (dBi)	6.79	7.03	7.46	7.90	8.28	8.14
5/6G1 Pol. Theta / Phi	Phi 12 / 225	Theta 3 / 225	Theta 12 / 54	Theta 9 / 54	Theta 6 / 48	Theta 0 / 0
5/6G2 Pol. Theta / Phi	Phi 12 / 141	Phi 15 / 330	Phi 9 / 264	Phi 3 / 231	Phi 9 / 168	Phi 12 / 132
5/6G3 Pol. Theta / Phi	Phi 15 / 42	Phi 12 / 108	Theta 3 / 132	Theta 6 / 111	Phi 18 / 42	Phi 18 / 42
5/6G4 Pol. Theta / Phi	Phi 12 / 33	Phi 6 / 87	Theta 3 / 135	Phi 18 / 54	Phi 18 / 48	Phi 18 / 45

Radio	Antenna report	Polarization	model	Type
Radio 2 6GF/5GH	5/6G1	V-pol	95XPAN15.G17	Dipole
	5/6G2	H-pol	95XPAN15.G18	Dipole
	5/6G3	V-pol	95XPAN15.G19	Dipole
	5/6G4	H-pol	95XPAN15.G20	Dipole

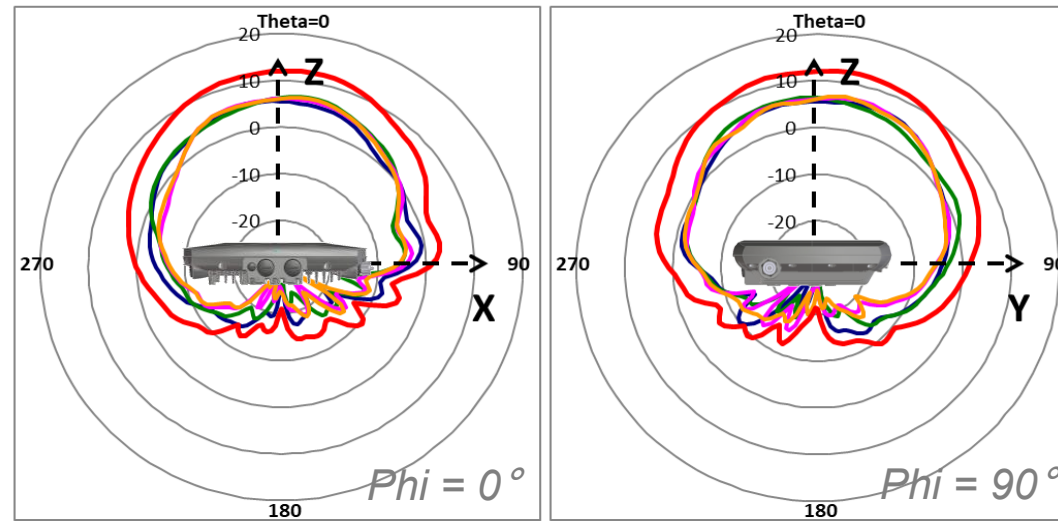


5/6G1 & 5/6G3 → V-pol
5/6G2 & 5/6G4 → H-pol

WIFI 5/6G - Pattern

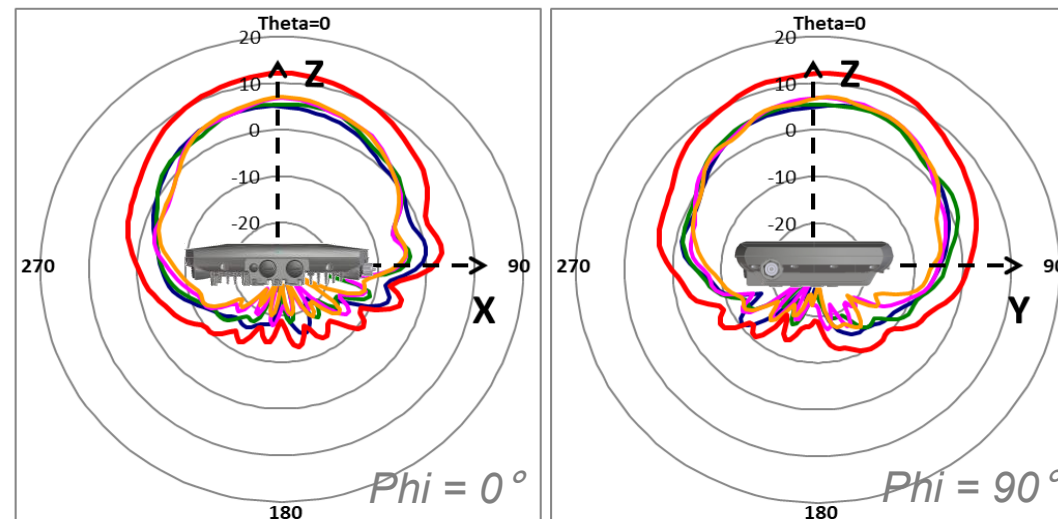


**5/6G_5G
Radiation Pattern**



ANT	3dB BW (XZ / YZ)
5/6G1_5G	75° / 78°
5/6G2_5G	66° / 81°
5/6G3_5G	69° / 66°
5/6G4_5G	66° / 63°
Composite	69° / 81°

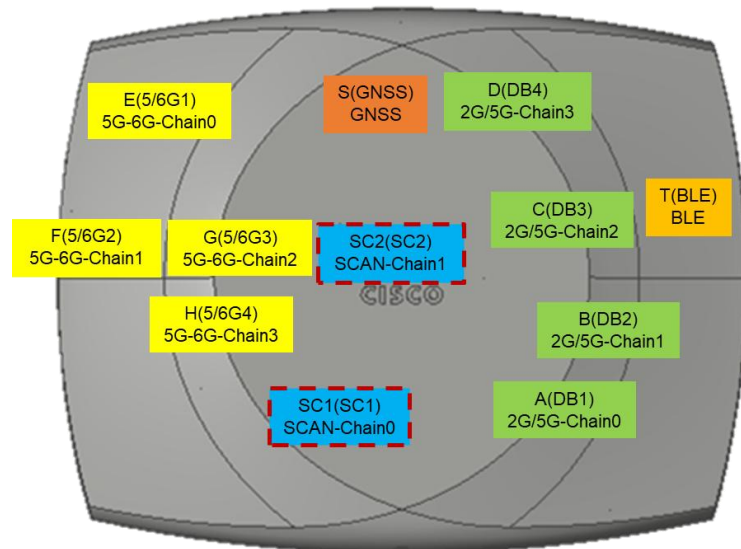
**5/6G_6G
Radiation Pattern**



ANT	3dB BW (XZ / YZ)
5/6G1_6G	78° / 75°
5/6G2_6G	81° / 84°
5/6G3_6G	66° / 66°
5/6G4_6G	63° / 60°
Composite	72° / 72°

Scanning - Composite Gain

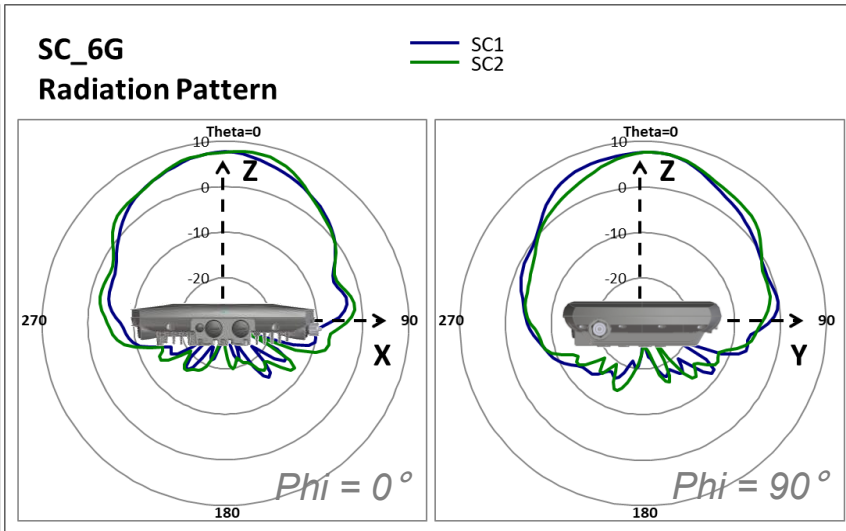
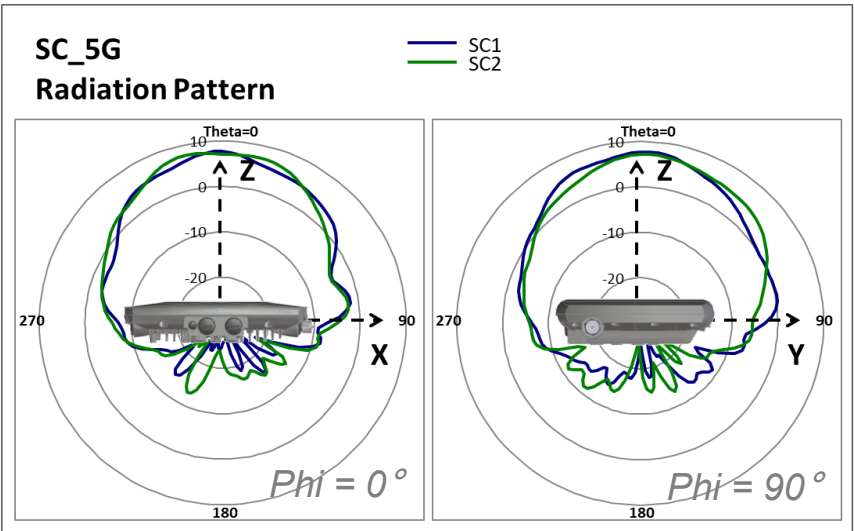
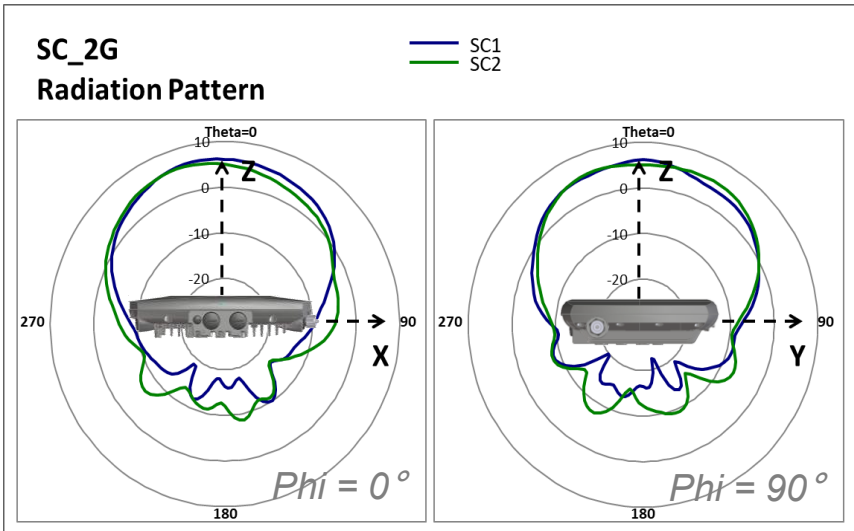
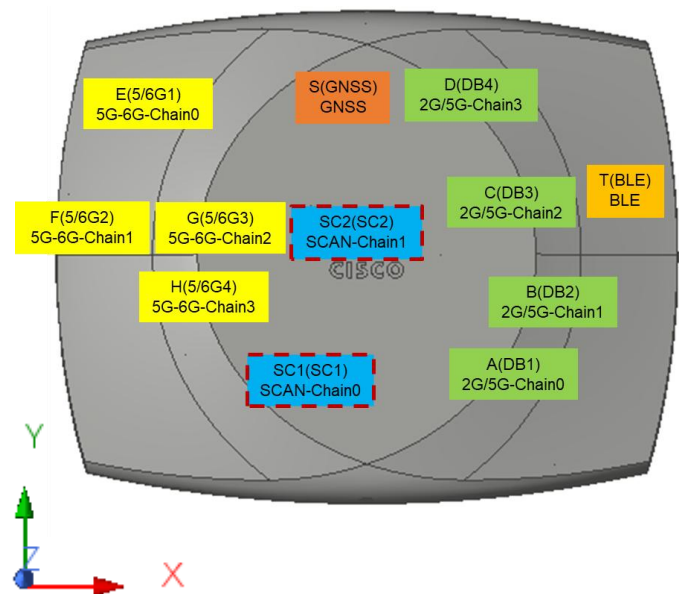
Freq.	2.45GHz	5.2GHz	5.3GHz	5.6GHz	5.785GHz	6.175Ghz	6.475GHz	6.695GHz	6.995GHz
SC1 Max Gain (dBi)	6.28	6.32	6.45	6.86	7.53	7.43	8.09	8.93	9.08
SC2 Max Gain (dBi)	6.87	6.49	7.06	6.94	7.22	7.74	9.59	9.56	9.61
SC1 Pol. Theta / Phi	Theta 3 / 216	Theta 15 / 321	Theta 12 / 198	Phi 6 / 132	Theta 0 / 0	Phi 6 / 342	Theta 6 / 27	Theta 3 / 90	Phi 3 / 102
SC2 Pol. Theta / Phi	Phi 21 / 231	Phi 30 / 165	Phi 12 / 183	Phi 15 / 15	Theta 12 / 162	Phi 6 / 0	Phi 3 / 45	Phi 3 / 9	Phi 0 / 0



Radio	Antenna report	Polarization	model	Type
Radio 0	SC1	H-pol	95XPAN15.G21	Dipole
SCAN (2T2R)	SC2	V-pol	95XPAN15.G22	Dipole

SC1 → H-pol
SC2 → V-pol

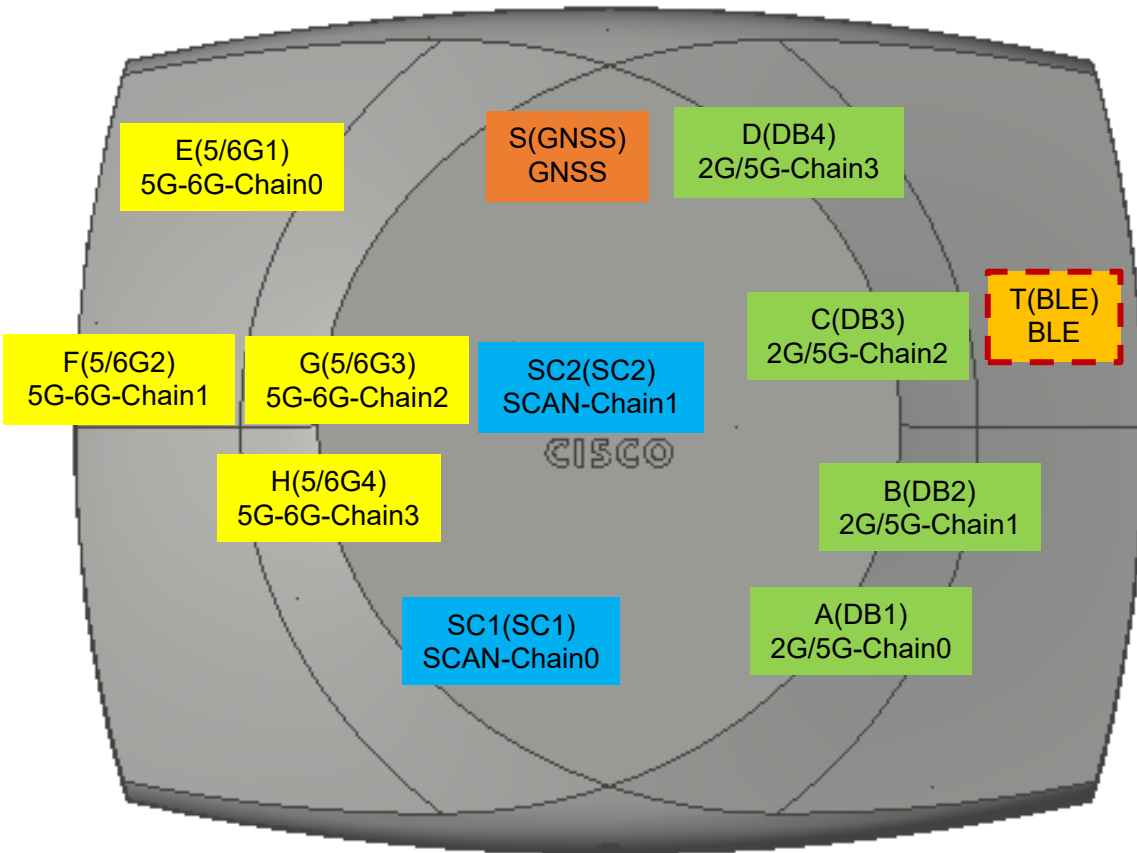
Scanning - Pattern



ANT	3dB BW (XZ / YZ)
SC1_2G	81° / 87°
SC2_2G	78° / 96°
ANT	3dB BW (XZ / YZ)
SC1_5G	60° / 57°
SC2_5G	57° / 69°
ANT	3dB BW (XZ / YZ)
SC1_6G	57° / 60°
SC2_6G	57° / 48°

BLE - Gain

(802.15.4)

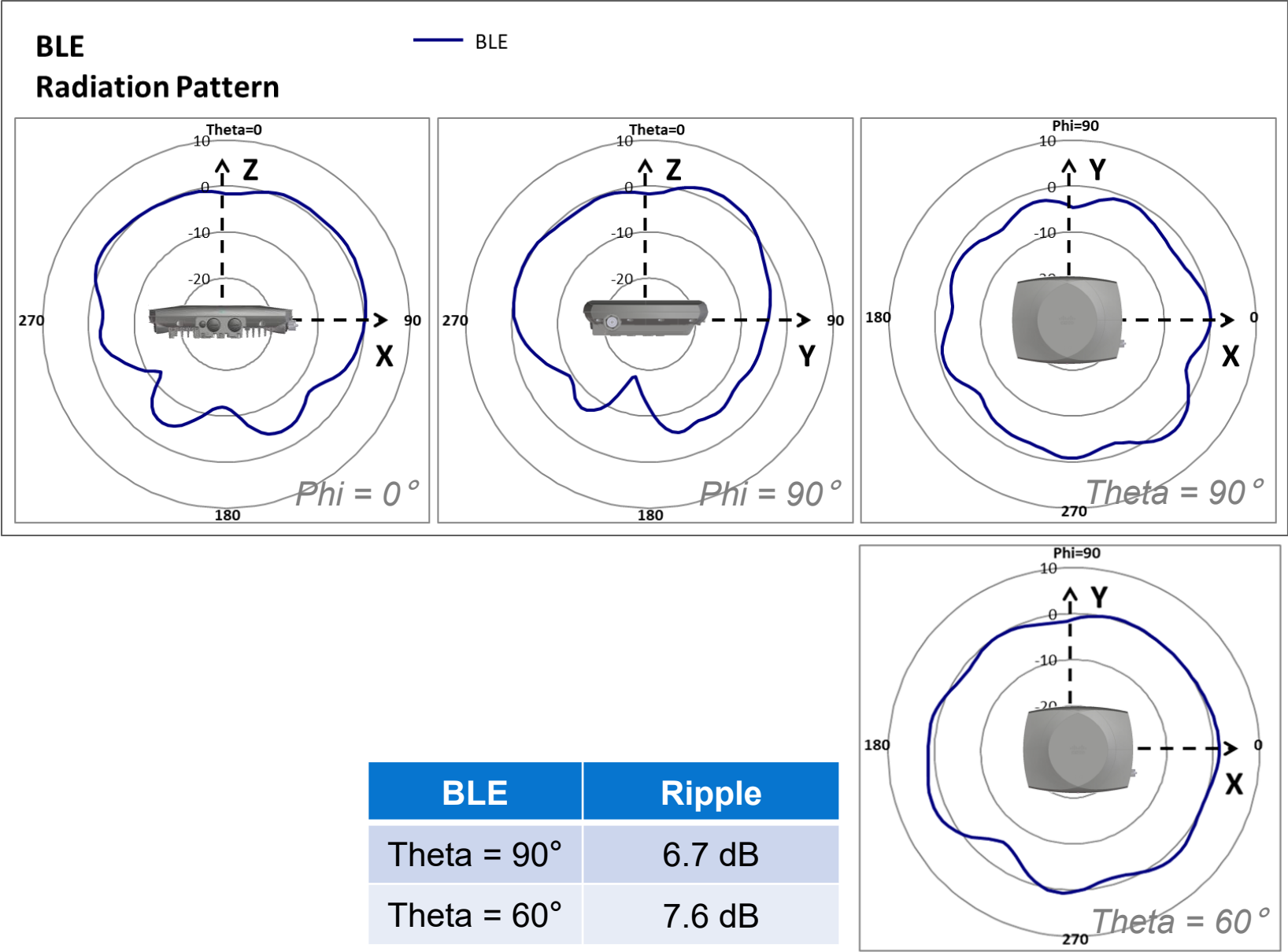
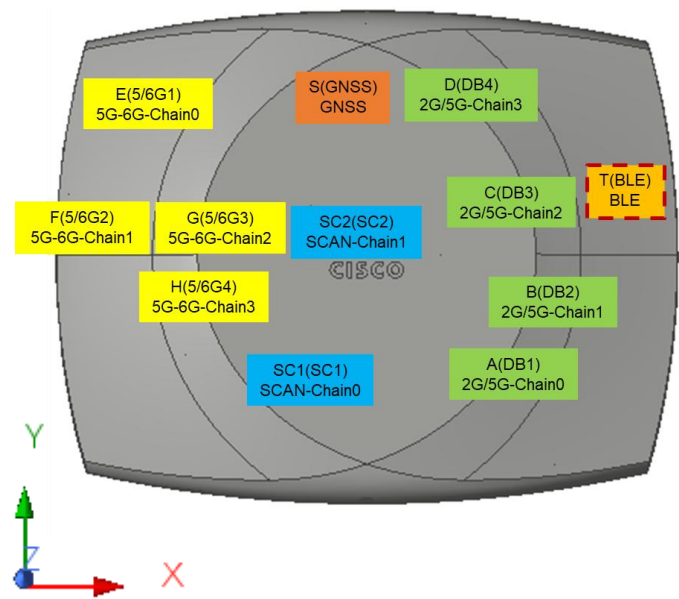


Radio	Antenna report	Polarization	model	Type
BLE/Zigbee	BLE	V-pol	95XPAN15.G23	PIFA

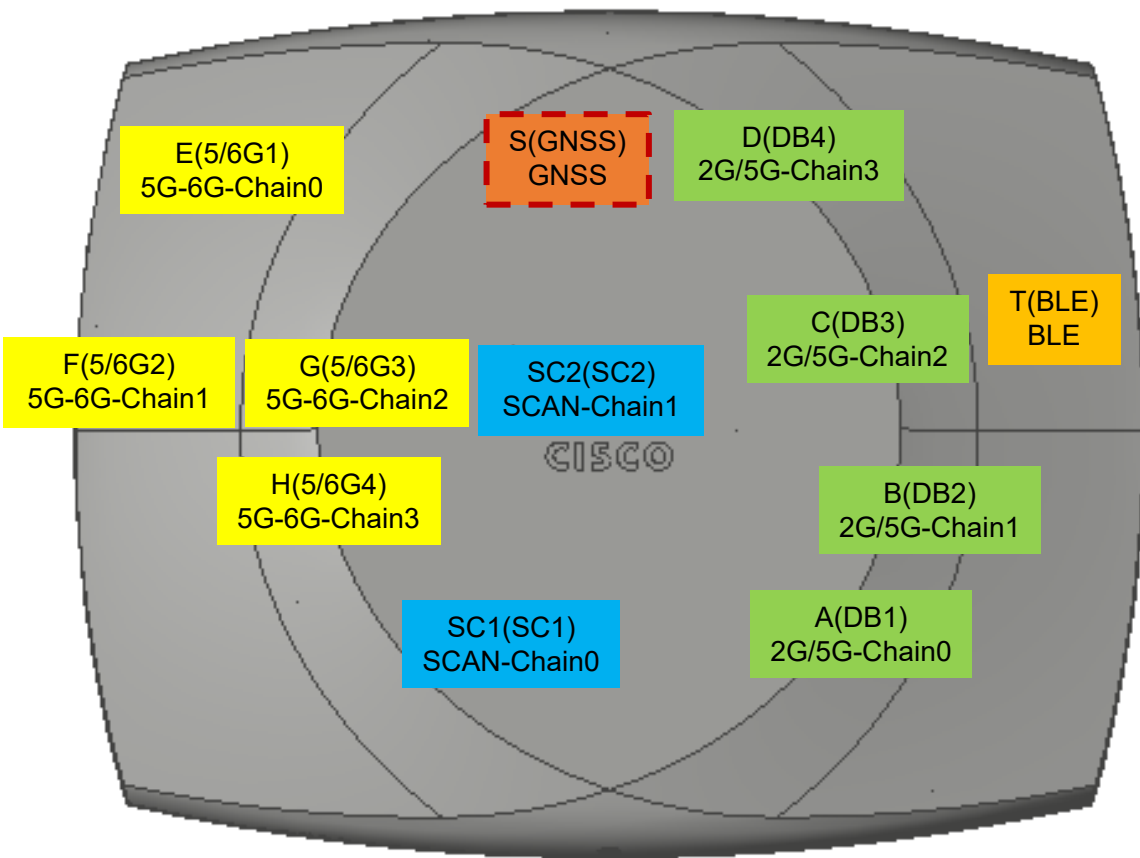
(802.15.4)

Freq.	2.4GHz	2.45GHz	2.484GHz
BLE Max Gain (dBi)	3.4	3.1	3.2
BLE Pol. Theta / Phi	Theta 42 / 69	Theta 63 / 201	Theta 57 / 195

BLE - Pattern



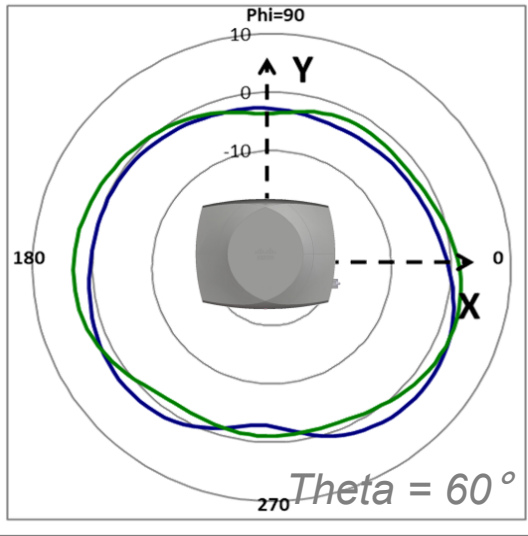
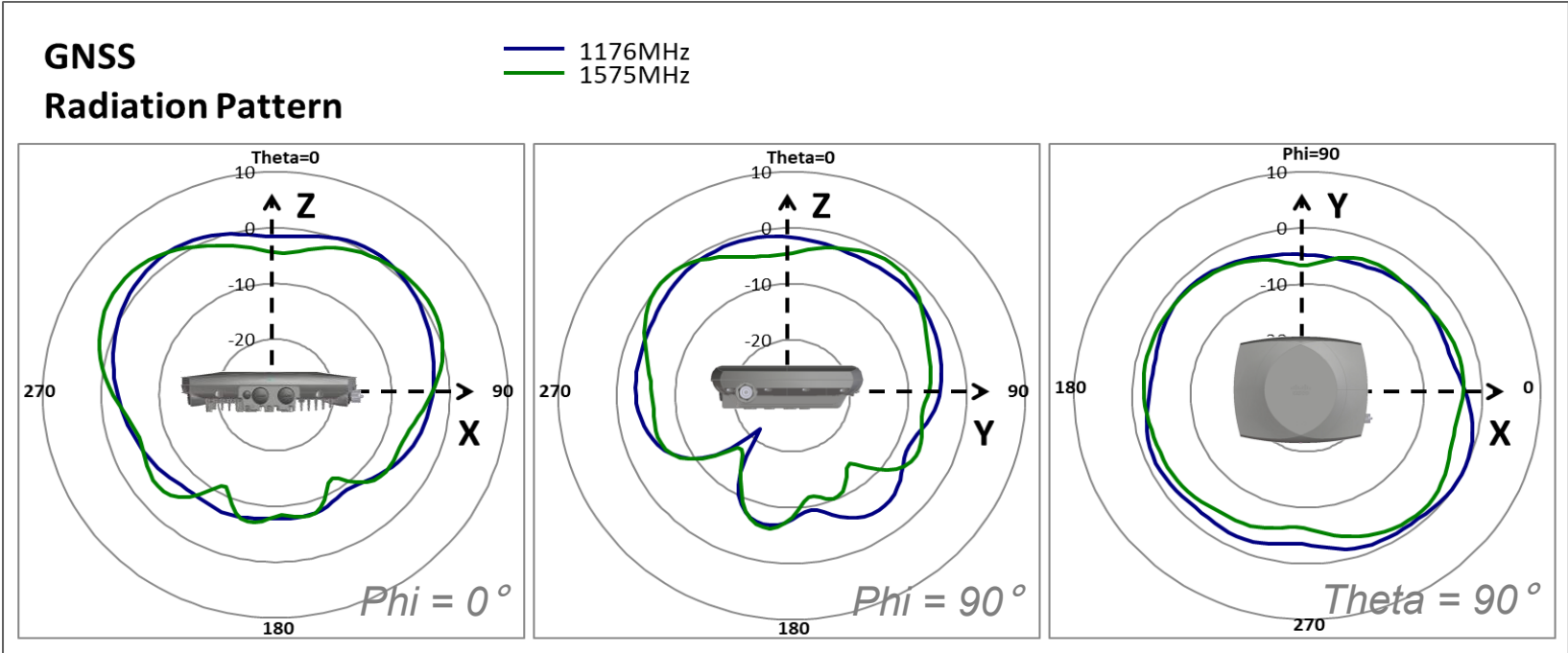
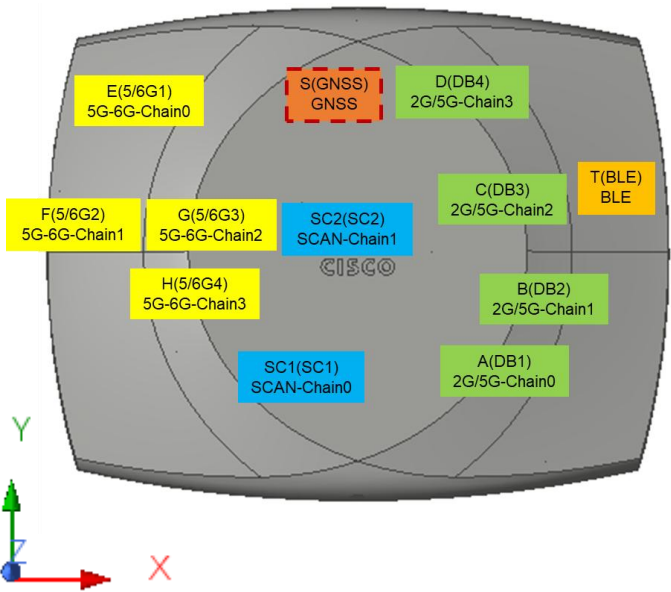
GNSS - Gain



Radio	Antenna report	Polarization	model	Type
GNSS	GNSS	V-pol	95XPAN15.G12	PIFA

Freq.	1.176GHz	1.575GHz
GNSS Max Gain (dBi)	3.0	3.3
GNSS Pol. Theta / Phi	Theta 51 / 318	Theta 54 / 183

GNSS - Pattern



GNSS Ripple	1176MHz	1575MHz
Theta = 90°	4.9 dB	5.2 dB
Theta = 60°	6.5 dB	6.9 dB

Gain Above 30 Degrees Over The Horizon

Dual Band	Frequency	Major polarization Gain
DB1	5150	1.5
	5250	1.8
DB2	5150	0.4
	5250	-0.6
DB3	5150	2.2
	5250	2.0
DB4	5150	0.4
	5250	1.8

Gain Above 30 Degrees Over The Horizon

5G-6G	Frequency	Major polarization Gain
5G-6G1	5925	2.2
	6425	2.1
	6525	2.1
	6875	2.3
5G-6G2	5925	0.9
	6425	1.1
	6525	0.9
	6875	1.3
5G-6G3	5925	0.7
	6425	0.2
	6525	-0.6
	6875	-1.1
5G-6G4	5925	-0.1
	6425	-1.3
	6525	-1.3
	6875	-0.7

Gain Above 30 Degrees Over The Horizon

Scanning	Frequency	Major polarization Gain
SC1	5150	0.9
	5250	0.2
	5925	-0.9
	6425	-2.2
	6525	-2.8
	6875	-3.3
SC2	5150	0.4
	5250	1.0
	5925	0.4
	6425	-2.0
	6525	-1.8
	6875	-1.7

The background of the slide features a photograph of a modern glass skyscraper under a bright sky. In the lower-left foreground, there are out-of-focus green leaves. The WNC logo is prominently displayed in the upper center, and the words 'Thank You!' are centered below it. A smaller WNC logo is visible on a building in the background.

WNC

WNC Corporation

Thank You!