Wistron NeWeb Corp.

AP5050D DVT Report

2022/08/15

■ Normal ☐ Internal Use ☐ Confidential ☐ Restricted Confidential

Summary

- Patch array design, PCB + sheet metal
- VSWR < 2
- Dimension : 446x215x11.5(mm)
- Efficiency ~60%(without cable loss)
- Antenna Gain
  - Narrow Beam 2.4G/5G/6E : 8.8/8.1/8.0dBi(max.)
  - Wide Beam 2.4G/5G/6E : 6.2/6.7/6.4dBi(max.)
  - Scanning 2.4G/5G/6E : 6.2/6.7/6.4dBi(max.)
  - BLE/802.15.4 : 2.7dBi(max.)
  - GPS : 3.0dBi(max.)
- 3dB Beam width (azimuth/elevation)
  - Narrow Beam : 30/70 degree
  - Wide Beam : 70/70 degree
- **+/-45° Polarization for WIFI**
- Isolation
  - **above 30dB between 5G and 6G antennas**
  - above 20dB for the others
- Switch board and jump cable loss (dB)
  Narrow Beam 2.4G/5G/6E : 4.4/5.7/4.6dBi(max.)
  Wide Beam 2.4G/5G/6E : 4.4/6.4/4.6dBi(max.)
  Scanning 2.4G/5G/6E : 4.4/5/5.1dBi(max.)

Summary

2G Narrow Beam

Brand	WNC P/N	Ant.
WNC	95XEAJ15.G62	2G narrow ant3 2G narrow ant0
WNC	95XEAJ15.G63	2G narrow ant2 2G narrow ant1

2G Wide Beam

Brand	WNC P/N	Ant.
WNC	95XEAJ15.G64	2G wide ant3 2G wide ant0
WNC	95XEAJ15.G65	2G wide ant2 2G wide ant1

5G Scan

Brand	WNC P/N	Ant.
WNC	95XEAJ15.G69	5G scan ant0 5G scan ant1

5G Narrow Beam

Brand	WNC P/N	Ant.
WNC	95XEAJ15.G70	5G narrow ant0 5G narrow ant1
WNC	95XEAJ15.G71	5G narrow ant2 5G narrow ant3

5G Wide Beam

Brand	WNC P/N	Ant.
WNC	95XEAJ15.G67	5G wide ant0 5G wide ant1
WNC	95XEAJ15.G68	5G wide ant2 5G wide ant3

6G Scan

Brand	WNC P/N	Ant.
WNC	95XEAJ15.GA8	6G scan ant0 6G scan ant1

6G Narrow Beam

Brand	WNC P/N	Ant.
WNC	95XEAJ15.G72	6G narrow ant3 6G narrow ant0
WNC	95XEAJ15.G73	6G narrow ant1 6G narrow ant2

6G Wide Beam

Brand	WNC P/N	Ant.
WNC	95XEAJ15.G61	6G wide ant3 6G wide ant0
WNC	95XEAJ15.G66	6G wide ant1 6G wide ant2

Others

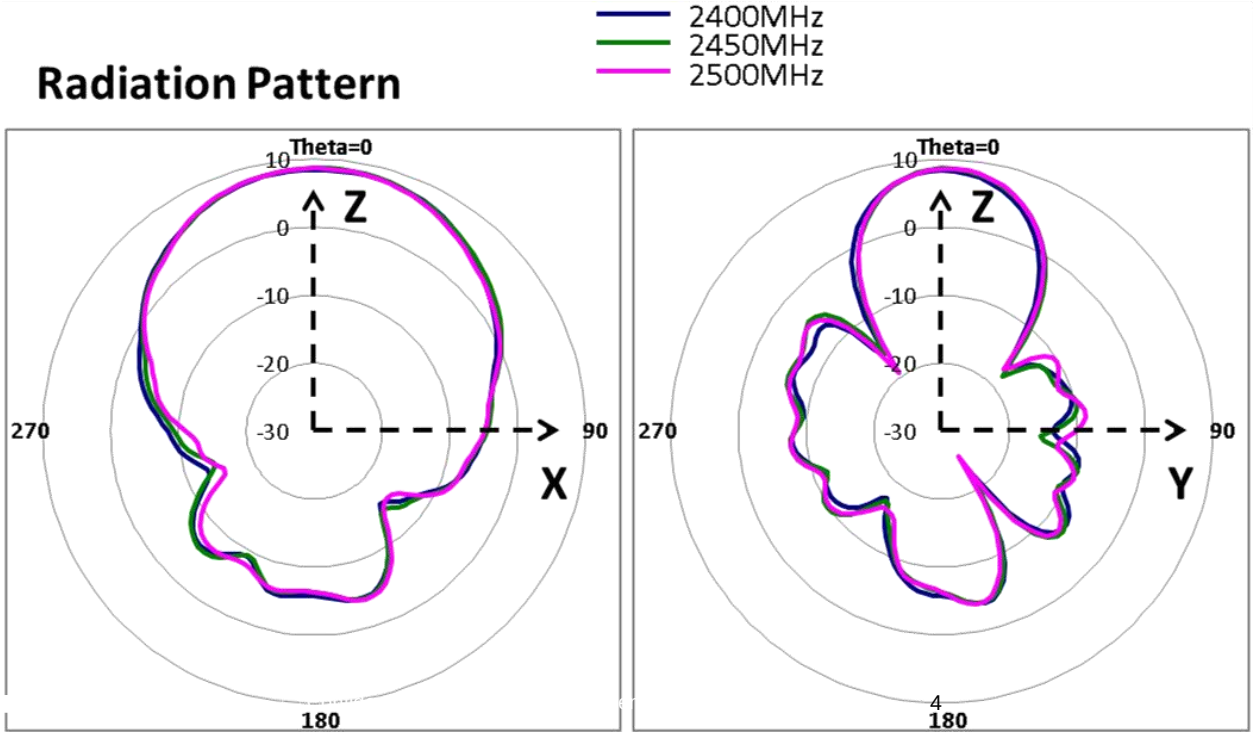
Brand	WNC P/N	Ant.
WNC	95XEAJ15.G74	BT/802.15.4
WNC	95XEAJ15.G75	GPS

2G Narrow Beam

Frequency (GHz)	2.4	2.45	2.5
Azimuth 3dB beamwidth	33°	33°	33°
Elevation 3dB beamwidth	70°	70°	67°
Gain (dBi)	8.4	8.8	8.7
Switch board and jump cable loss (dB)		4.4	

3dB Beam width : 30/70 degree (azimuth/elevation)
Polarization : +/-45°

Radiation Pattern

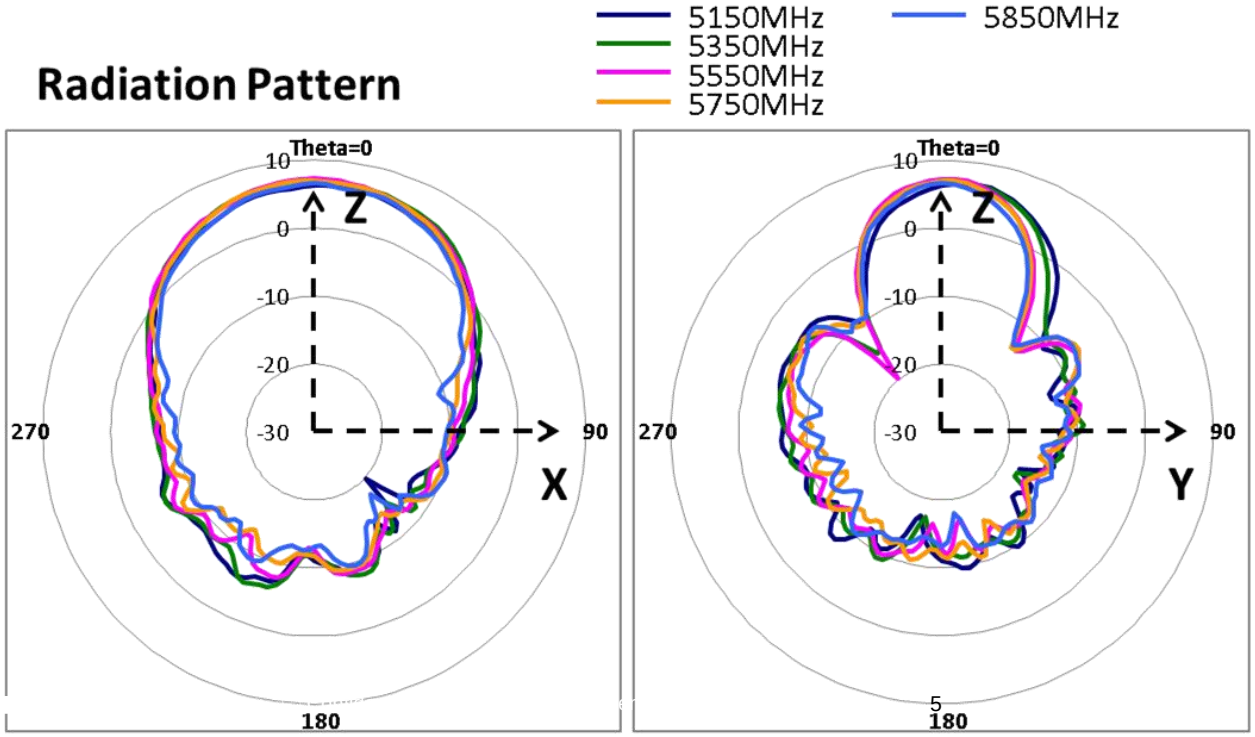


5G Narrow Beam

Frequency (GHz)	5.15	5.35	5.55	5.75	5.85
Azimuth 3dB beamwidth	36°	36°	33°	33°	31°
Elevation 3dB beamwidth	67°	68°	68°	65°	62°
Gain (dBi)	7.5	8.0	8.1	8.0	7.4
Switch board and jump cable loss (dB)			5.7		

3dB Beam width : 30/70 degree (azimuth/elevation)
Polarization : +/-45°

Radiation Pattern

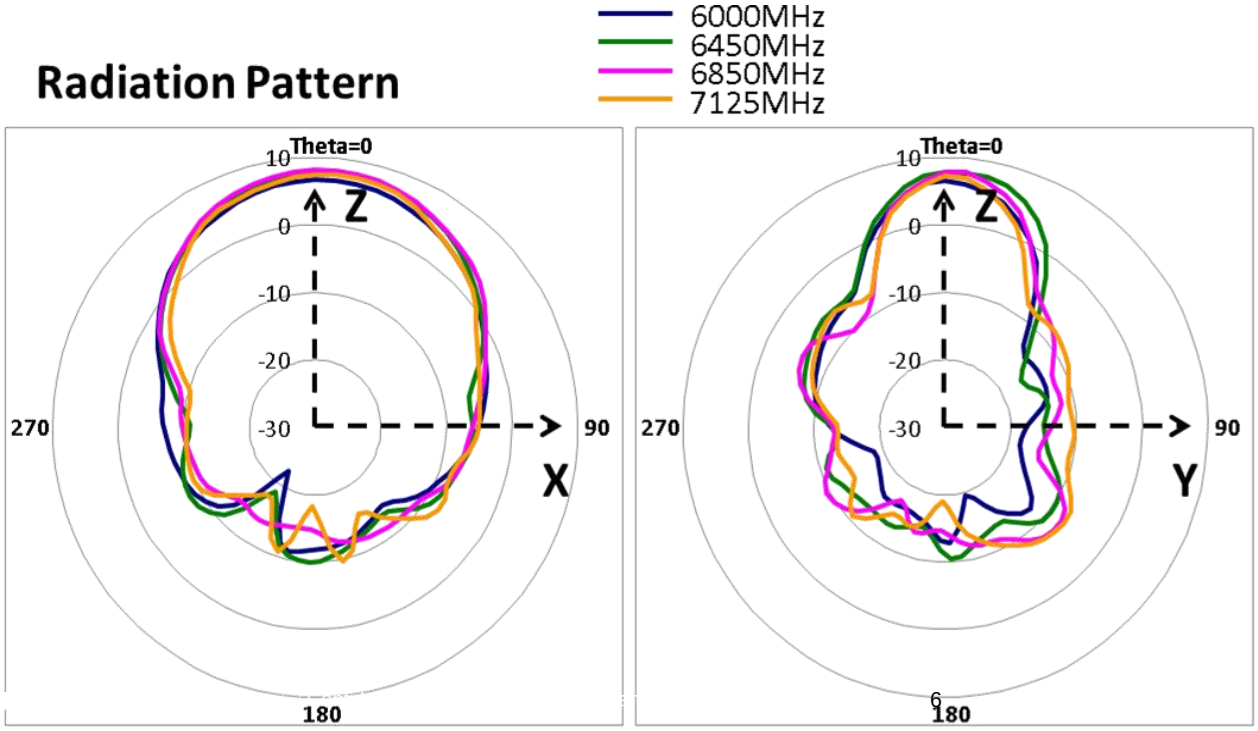


6G Narrow Beam

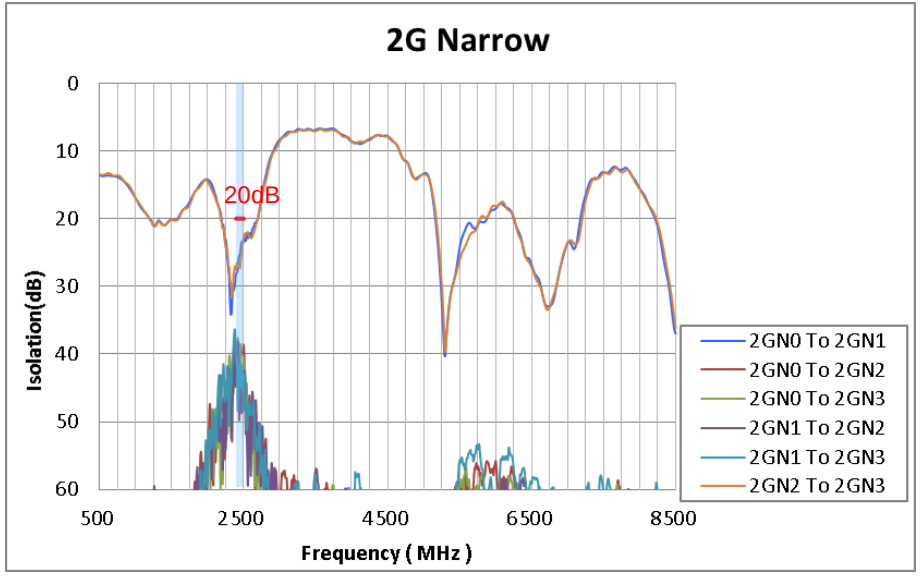
Frequency (GHz)	6000	6450	6850	7125
Azimuth 3dB beamwidth	36°	33°	31°	31°
Elevation 3dB beamwidth	66°	69°	65°	62°
Gain (dBi)	6.5	8.0	7.8	7.0
Switch board and jump cable loss (dB)	4.6			

3dB Beam width : 30/70 degree (azimuth/elevation)
Polarization : +/-45°

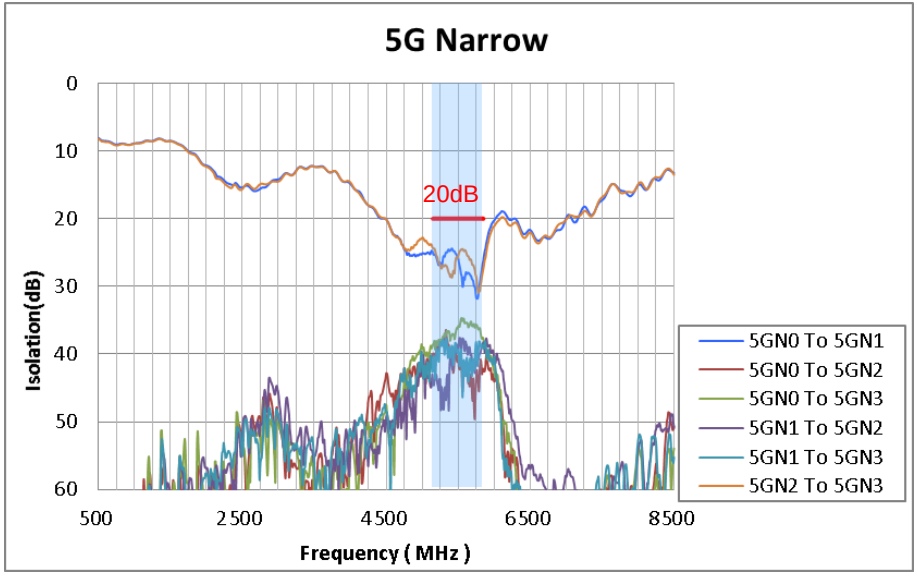
Radiation Pattern



Narrow Beam_Isolation

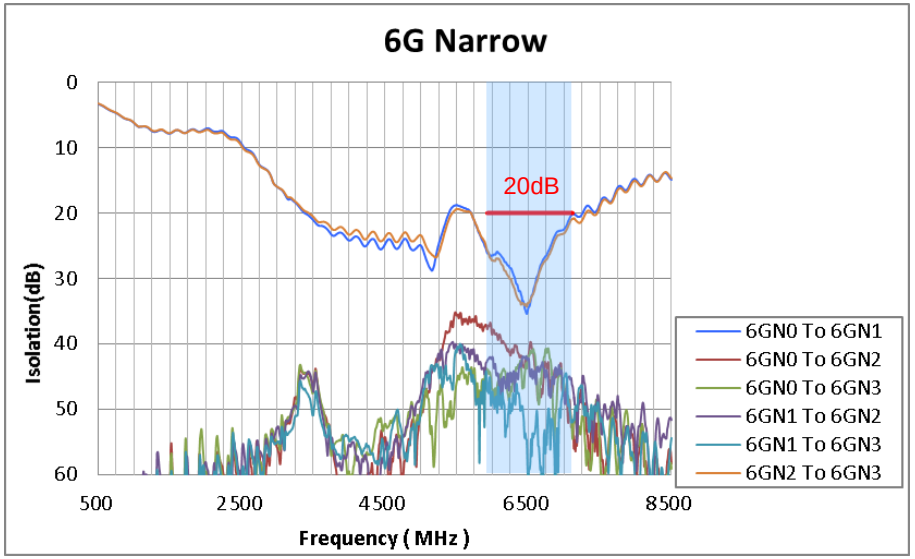


2G to 2G : 20dB

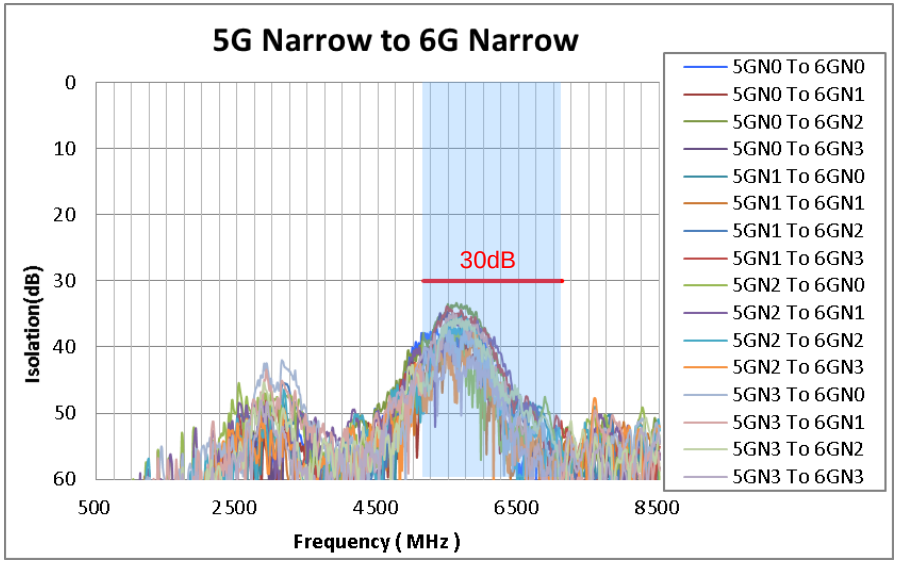


5G to 5G : 20dB

Narrow_Isolation



6G to 6G : 20dB



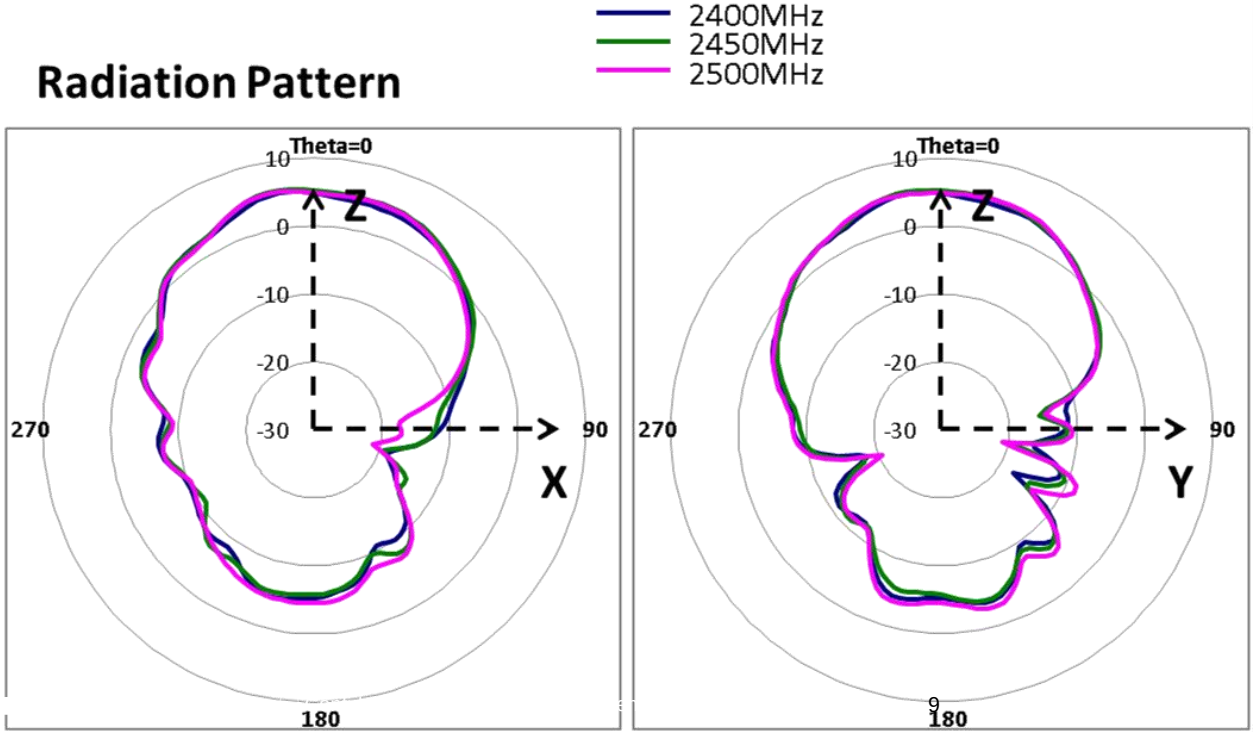
5G to 6G : 30dB

2G Wide Beam & Scanning

Frequency (GHz)	2.4	2.45	2.5
Azimuth 3dB beamwidth	68°	65°	66°
Elevation 3dB beamwidth	71°	68°	72°
Gain (dBi)	5.9	6.2	6.0
Switch board and jump cable loss (dB)		4.4	

3dB Beam width : 70/70 degree (azimuth/elevation)
Polarization : +/-45°

Radiation Pattern

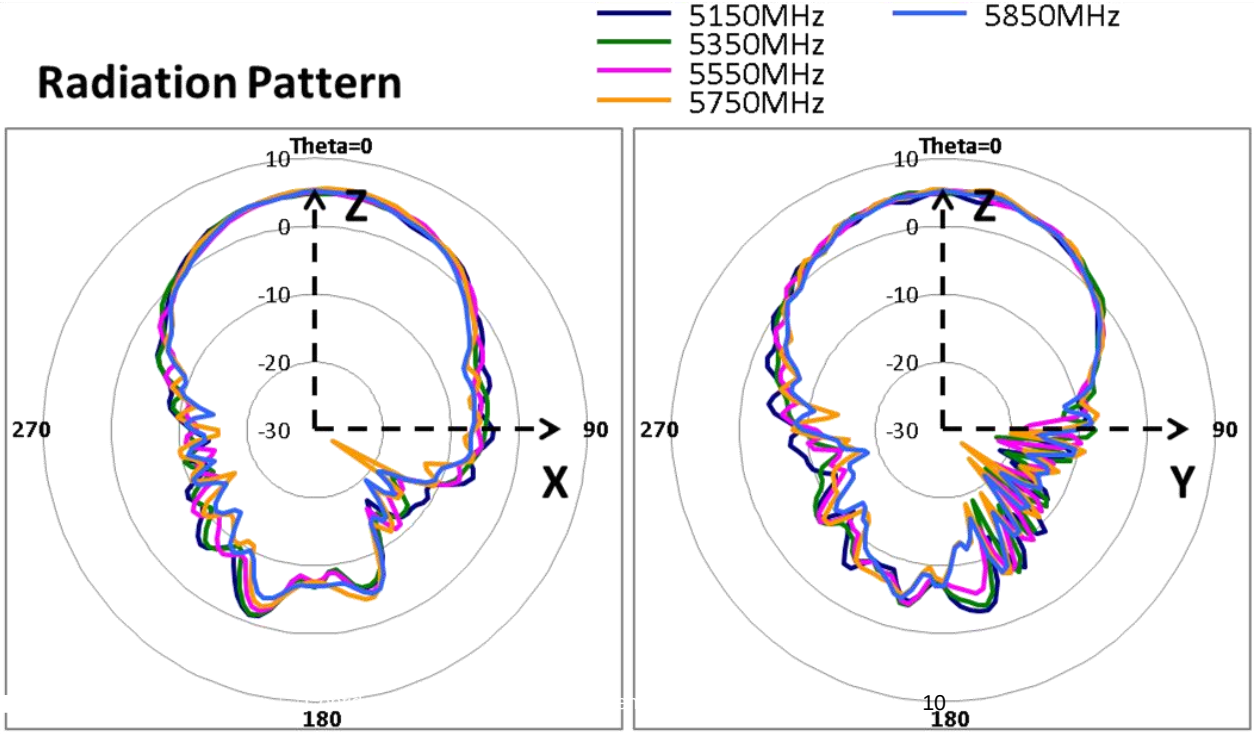


5G Wide Beam & Scanning

3dB Beam width : 70/70 degree (azimuth/elevation)
Polarization : +/-45°

Frequency (GHz)	5.15	5.35	5.55	5.75	5.85
Azimuth 3dB beamwidth	75°	76°	73°	73°	70°
Elevation 3dB beamwidth	76°	75°	72°	70°	68°
Gain (dBi)	5.8	6.2	6.3	6.7	6.1
Switch board and jump cable loss (dB)	6.4(wide beam) 5(scanning)				

Radiation Pattern

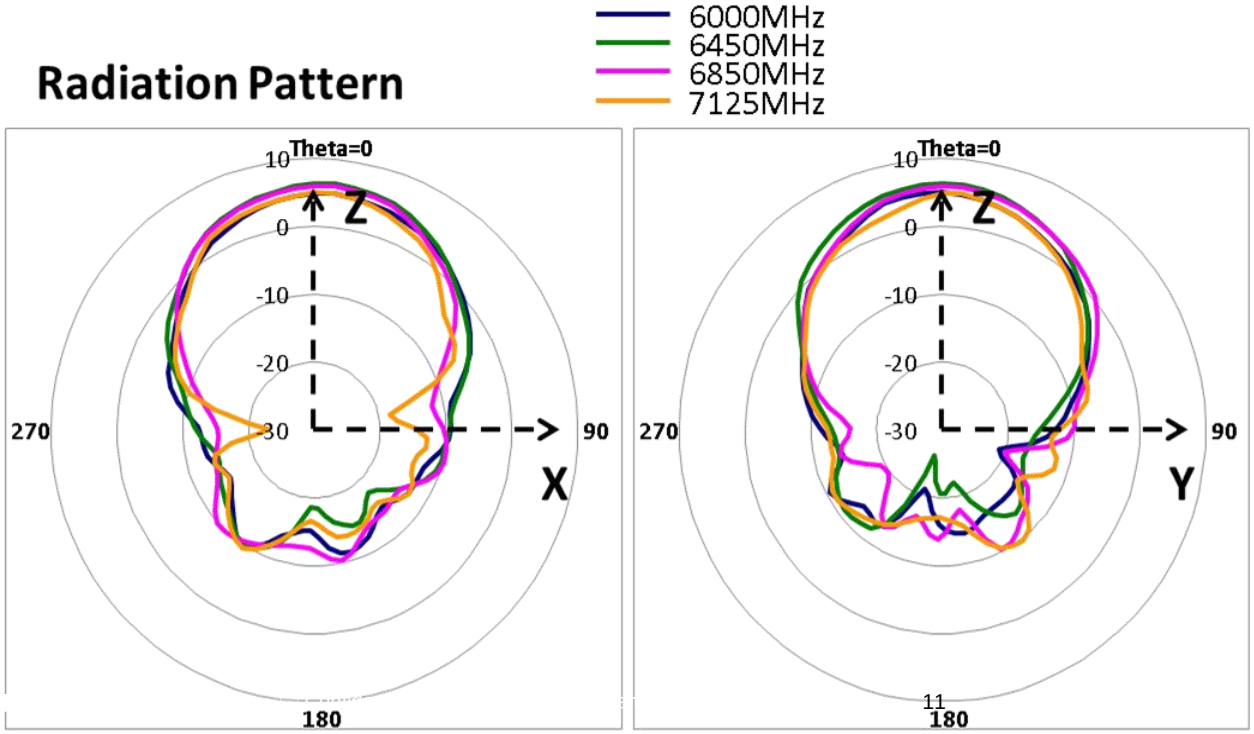


6G Wide Beam & Scanning

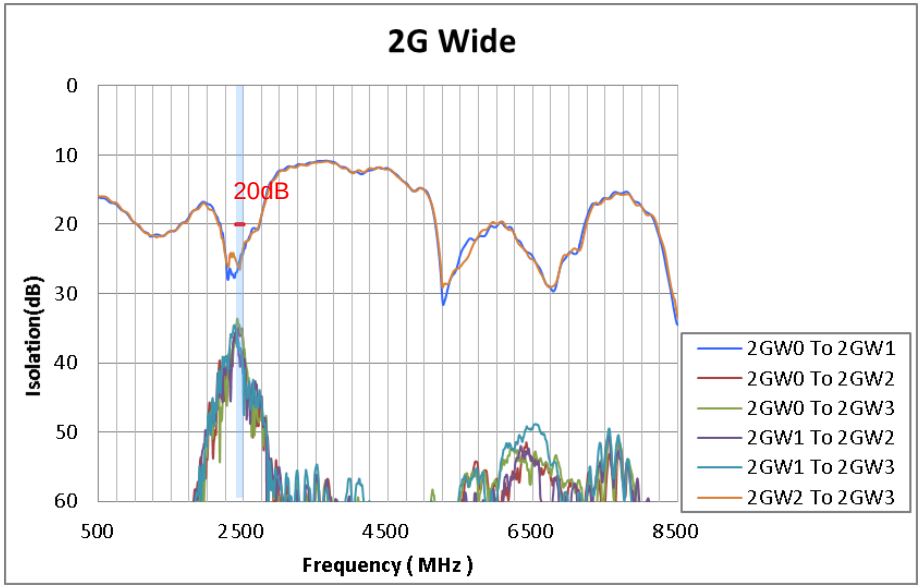
Frequency (GHz)	6000	6450	6850	7125
Azimuth 3dB beamwidth	68°	70°	68°	68°
Elevation 3dB beamwidth	65°	68°	67°	63°
Gain (dBi)	4.9	6.4	5.5	4.6
Switch board and jump cable loss (dB)	4.6(wide beam) 5.1(scanning)			

3dB Beam width : 70/70 degree (azimuth/elevation)
Polarization : +/-45°

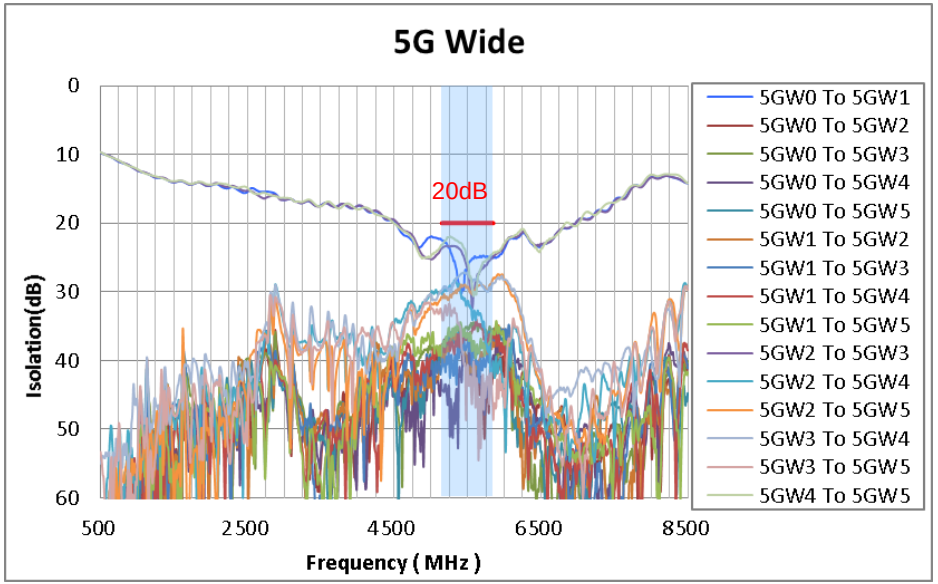
Radiation Pattern



Wide Beam_Isolation

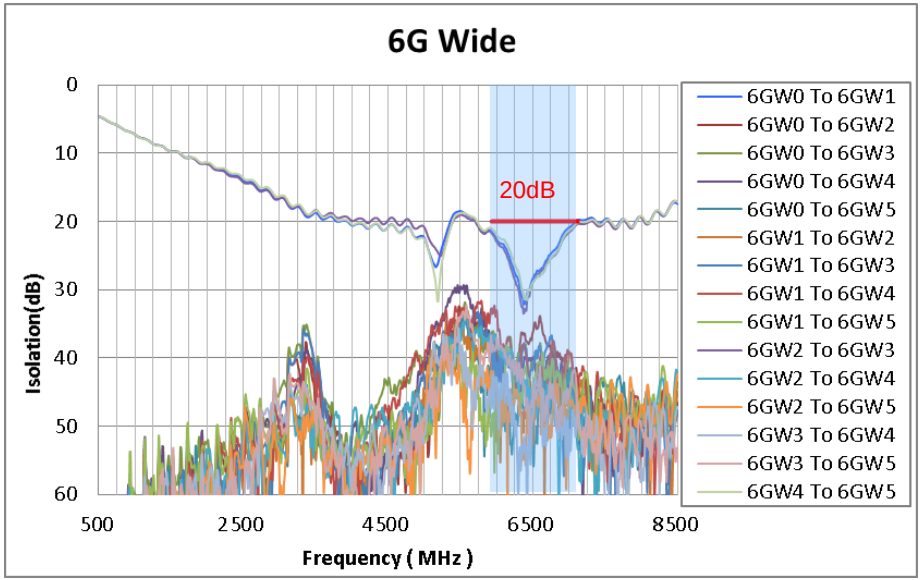


2G to 2G : 20dB

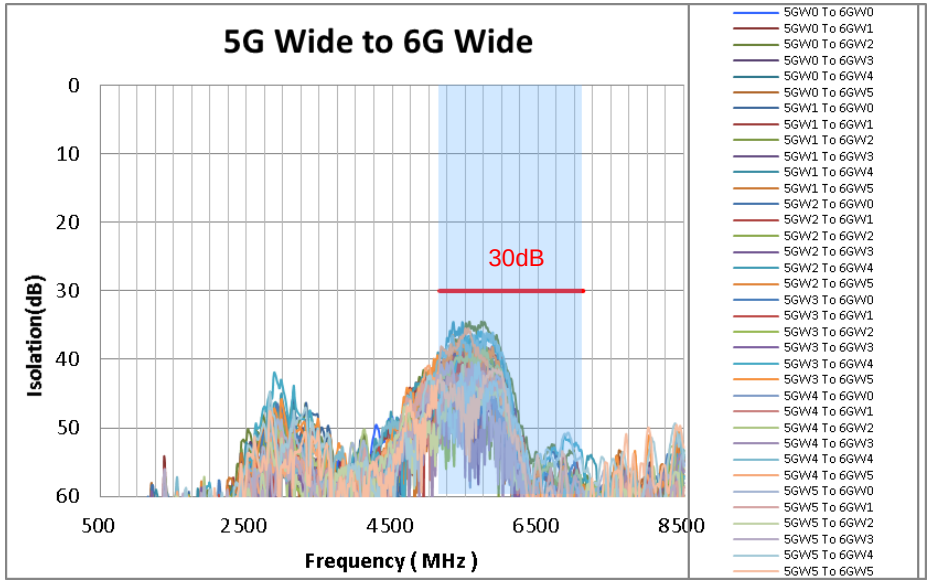


5G to 5G : 20dB

Wide Beam_Isolation



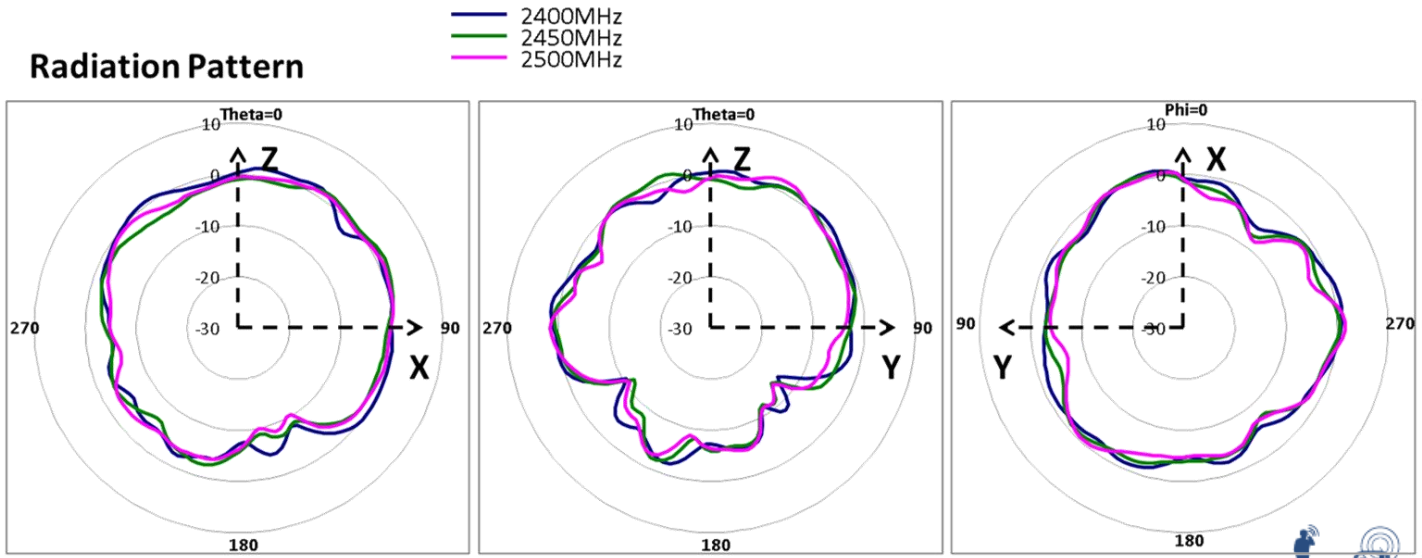
6G to 6G : 20dB



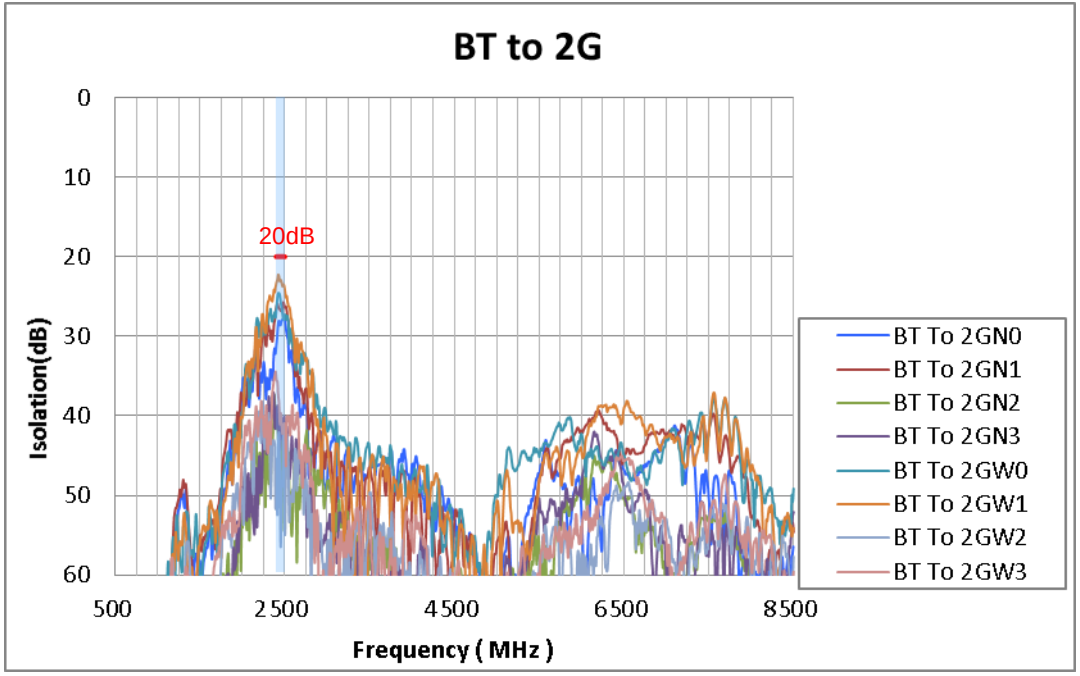
5G to 6G : 30dB

BLE/802.15.4

Frequency (GHz)	2.4	2.45	2.5
Gain (dBi)	2.3	2.7	2.2

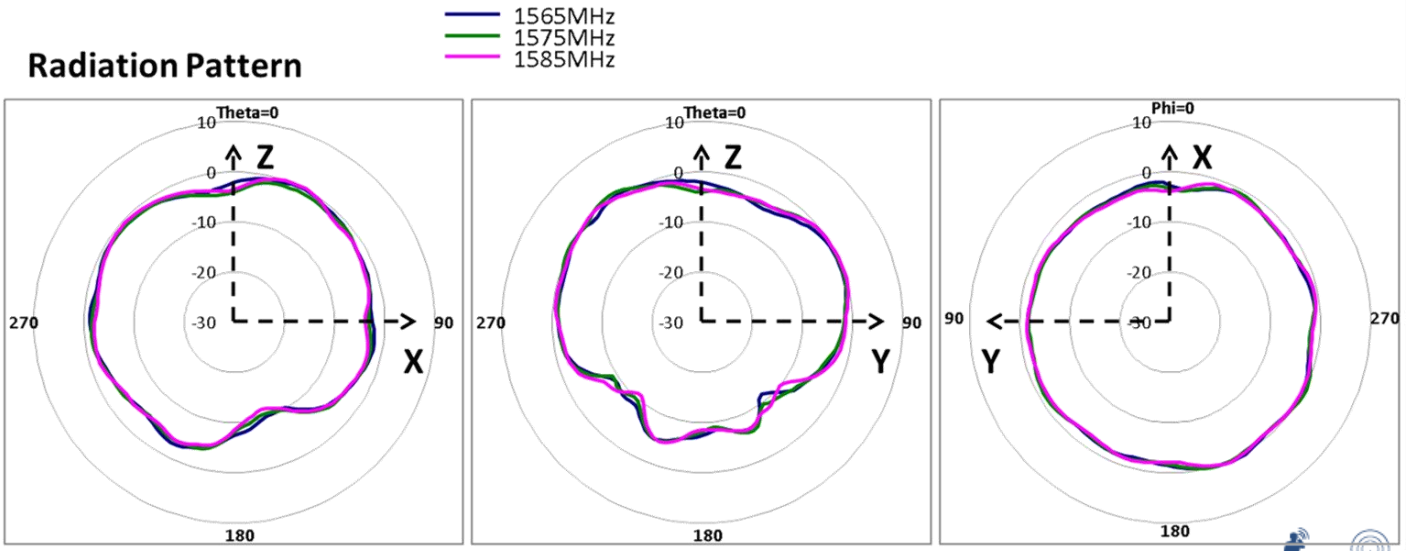


BLE/802.15.4 to the other_Isolation

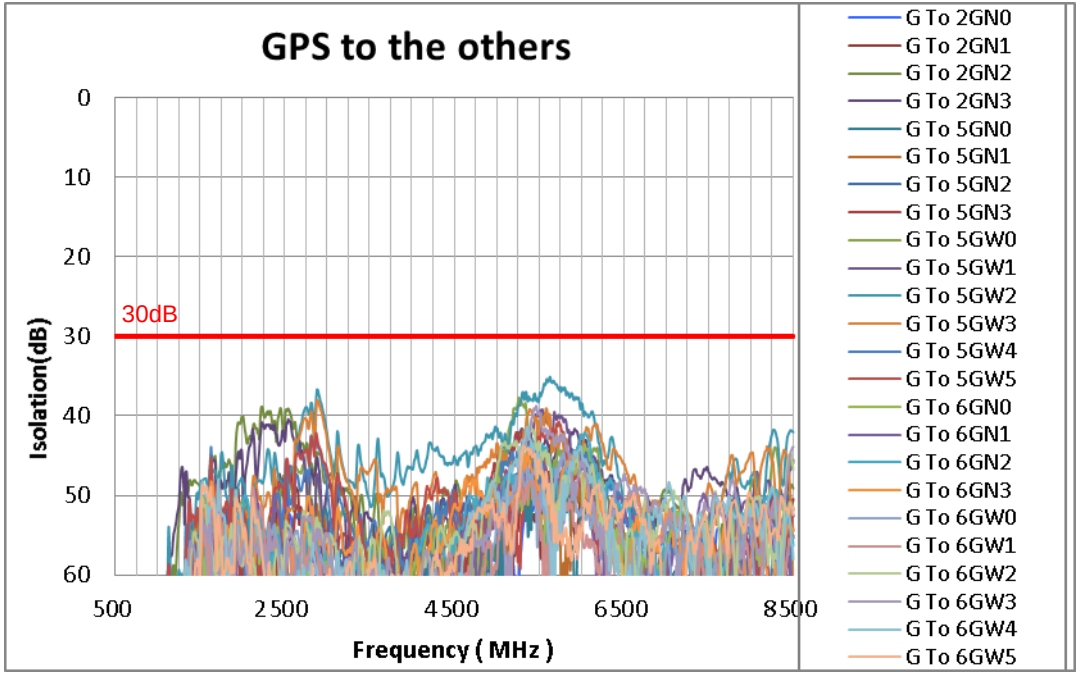


GPS

Frequency (GHz)	1.565	1.575	1.585
Gain (dBi)	2.6	3.0	2.8



GPS to the others_Isolation



WNC

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