

Test Report for Antenna Specifications for CP38RE

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Frequency range and operation

WiFi-0 Antenna: 2.412 to 2.472 GHz and 5.18 to 7.115 GHz

WiFi-1 Antenna: 2.412 to 2.472 GHz and 5.18 to 7.115 GHz

Bluetooth Antenna: 2.402 to 2.484 GHz

Zigbee: 2.4-2.48 GHz

Lora: 902.2 to 927.6MHz

Antenna type

WiFi-0 Antenna, WiFi-1 Antenna: PCB dipole type

Bluetooth Antenna: stamping Inv F type

Lora & ZigBee Antenna: FPC Inv F type

Antenna Gain

Band	Peak Gain (dBi)			
	Wi-Fi ANT0	Wi-Fi ANT1	BT/BLE ANT	Lora / ZigBee
0.9GHz(902.2-927.6MHz)	NA	NA	NA	3.5
2.4GHz(2400-2480MHz)	7.2	4.0	4.0	4.0
5GHz Band I (5150-5250MHz)	5.0	4.2		
5GHz Band II-A (5250-5350MHz)	6.0	4.5		
5GHz Band II-C (5470-5725MHz)	5.9	5.0		
5GHz Band III (5725-5850MHz)	6.0	5.5		
UNII 5 (5955-6415MHz)	6.2	6.0		
UNII 6 (6435-6515MHz)	6.0	6.1		
UNII 7 (6535-6875MHz)	6.3	6.0		
UNII 8 (6875-7115MHz)	6.0	6.2		

Measurement Test method

Solder pigtails on feeding point of antennas and measure passive antenna performance by VNA and OTA chamber system. And the measurement was done in devices level.

Test Equipment used:

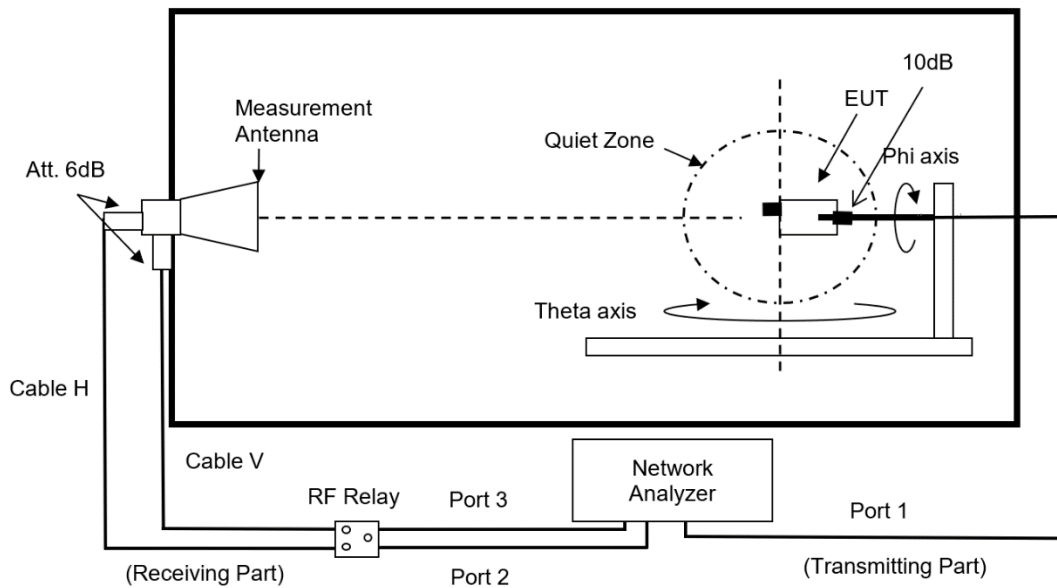
1. VNA: R&S ZVB8
2. OTA chamber: ETS 8500 Antenna Measurement System

OTA02-SZ					
Name	Manufacturer	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
Network Analyzer	R&S	ZVB8	100106	2023/10/16	2024/10/15
Switch Control	ETS-Lindgren	EMCenter	00116609	NCR	NCR
Diagonal Dual Polarized Horn	ETS-Lindgren	3164-08	00138285	NCR	NCR
Multi-Devices Controller	ETS-Lindgren	2090-OPT1	00155901	NCR	NCR
Medium Duty Holder	ETS-Lindgren	2015	N/A	NCR	NCR

Test set up

Refer to Below

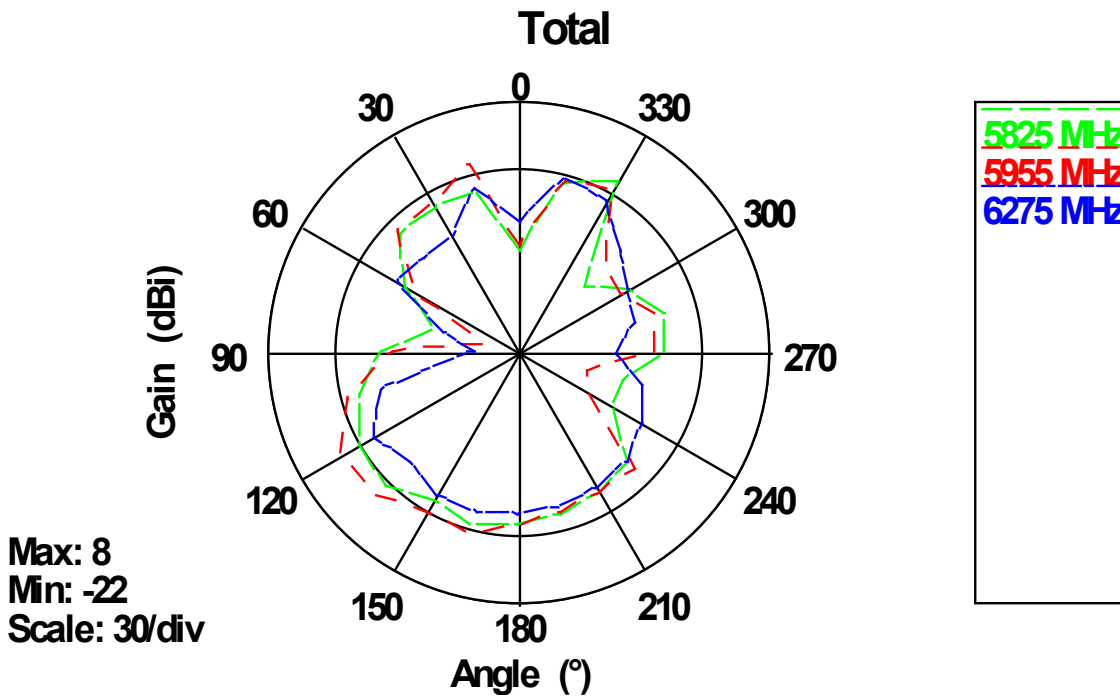
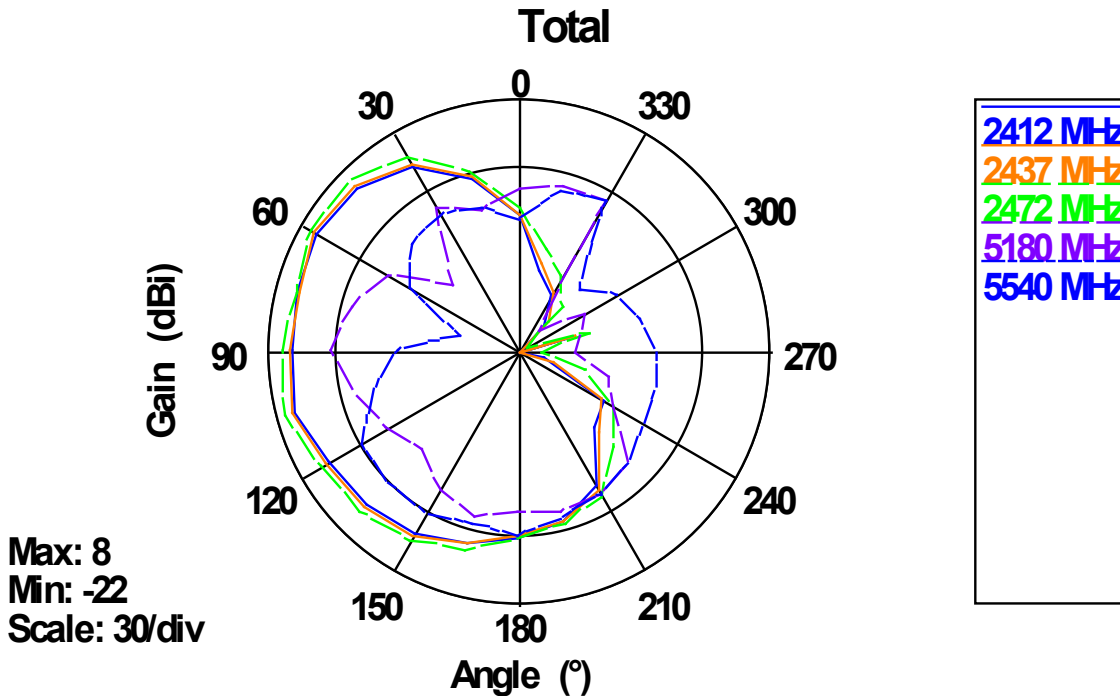
FII CHAMBER AXIS

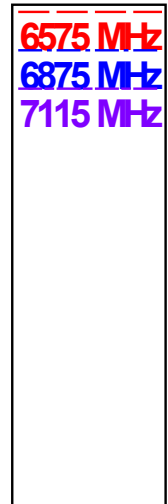
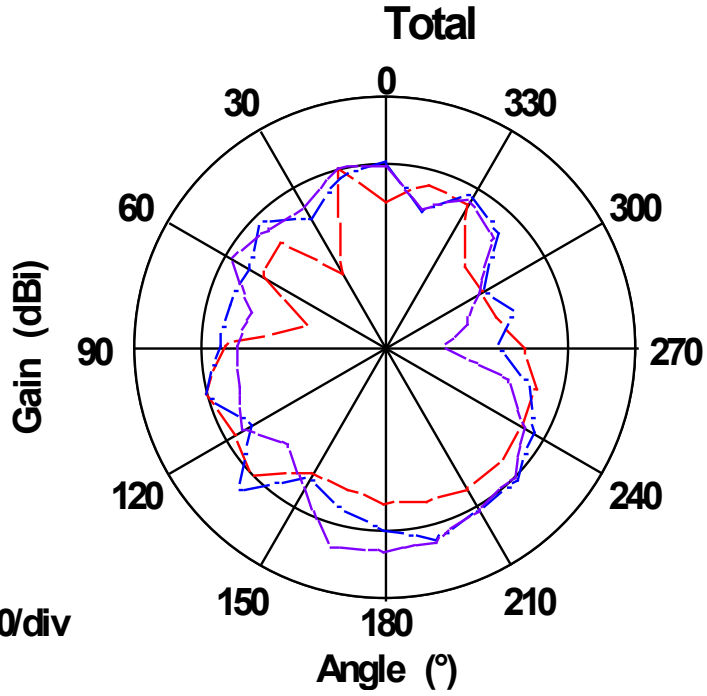


2D RADIATION PATTERN

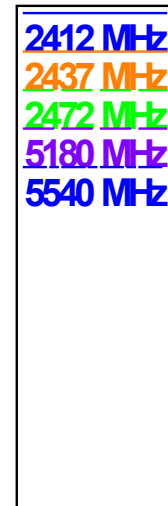
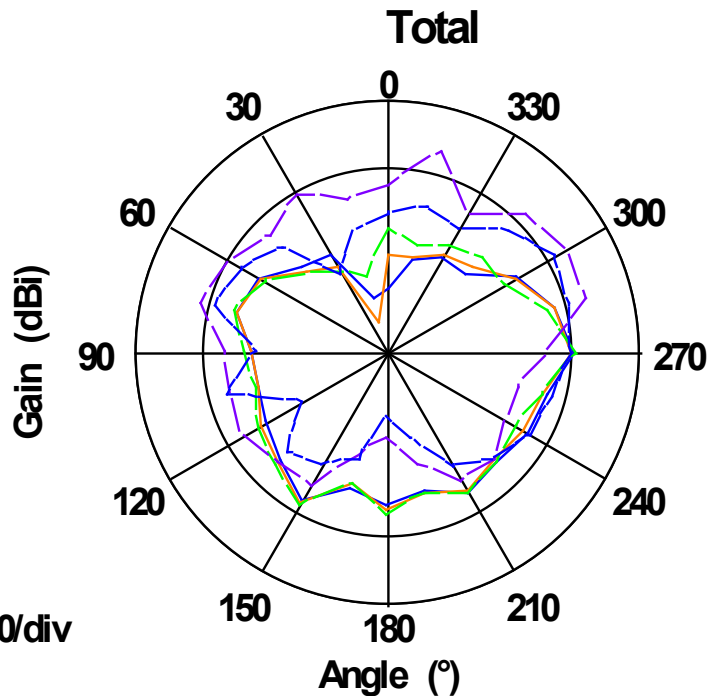
WiFi0 Antenna

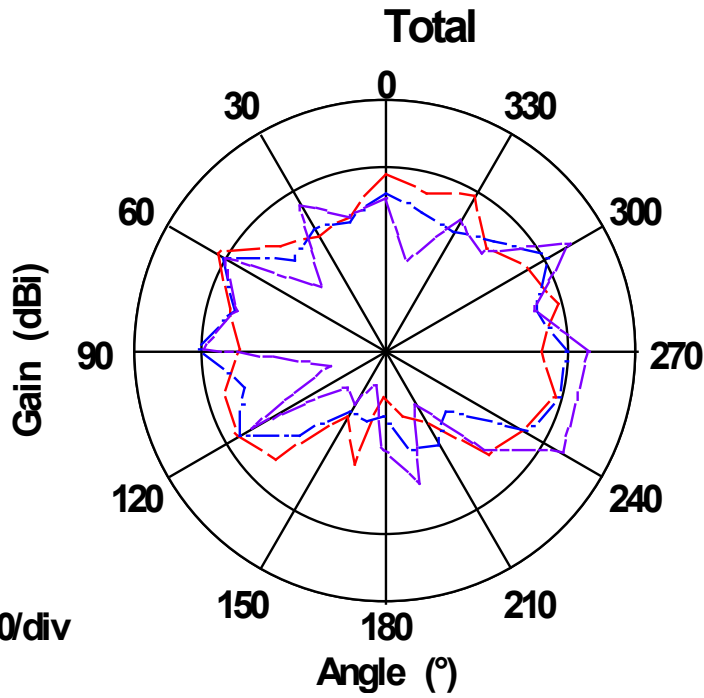
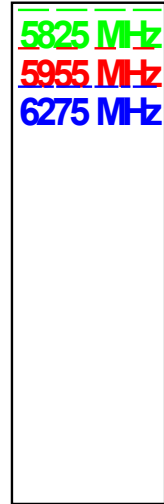
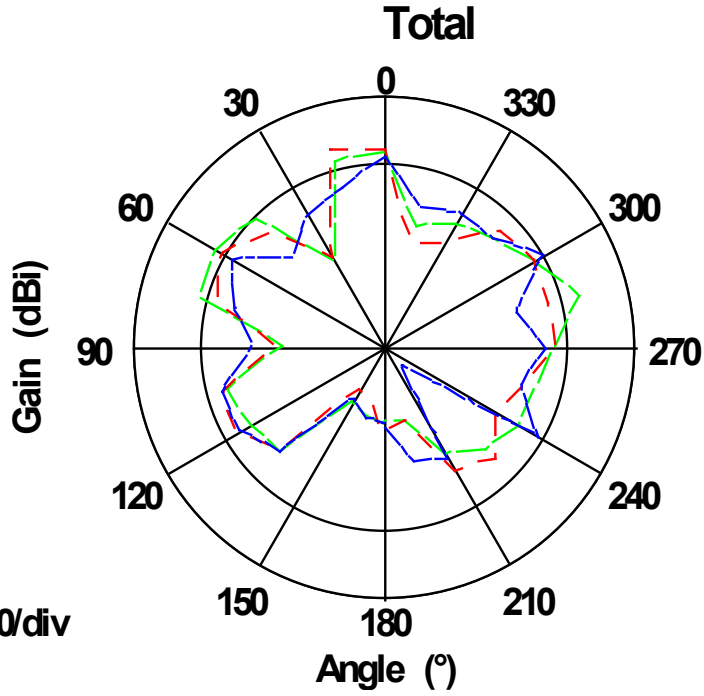
XY plane



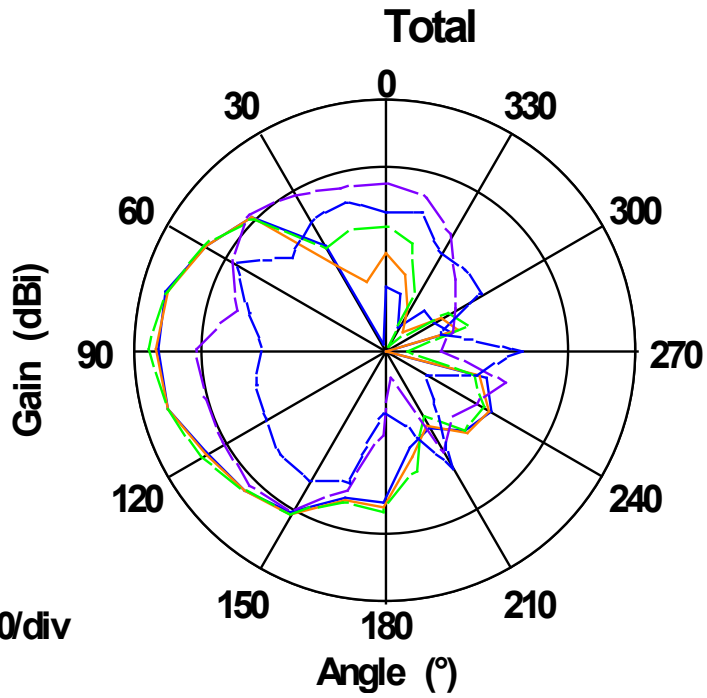


XZ plane

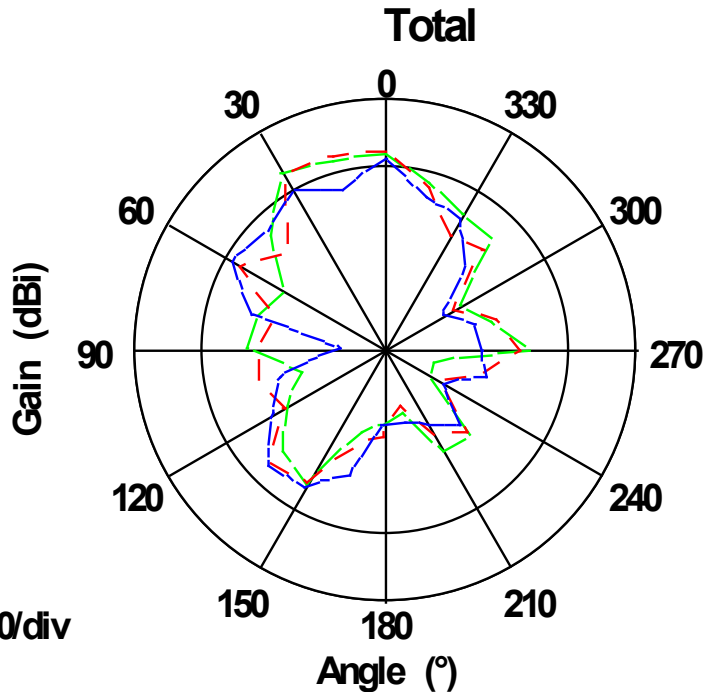




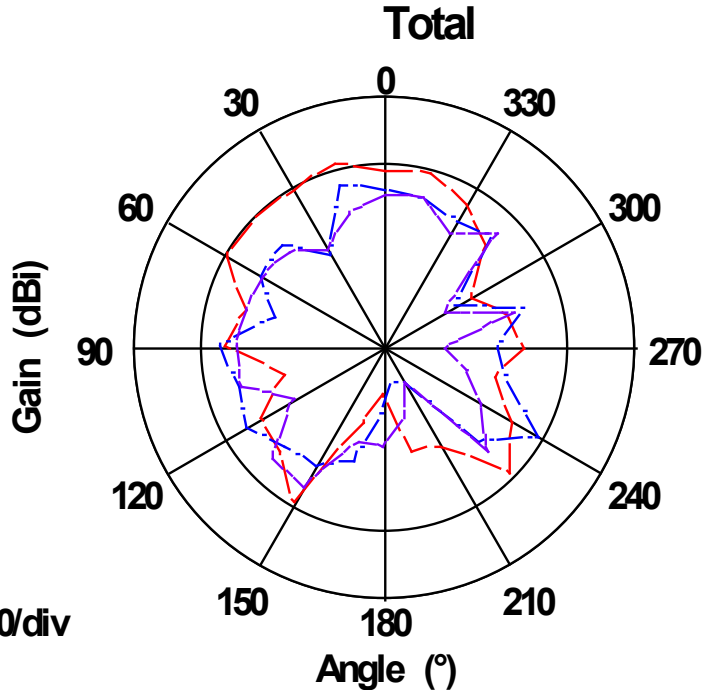
YZ plane



- 2412 MHz
- 2437 MHz
- 2472 MHz
- 5180 MHz
- 5540 MHz

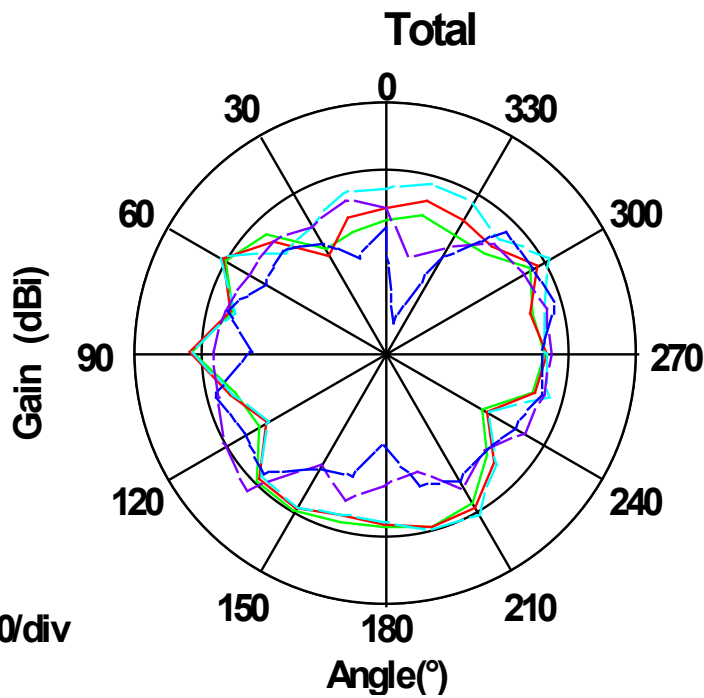


- 5825 MHz
- 5955 MHz
- 6275 MHz

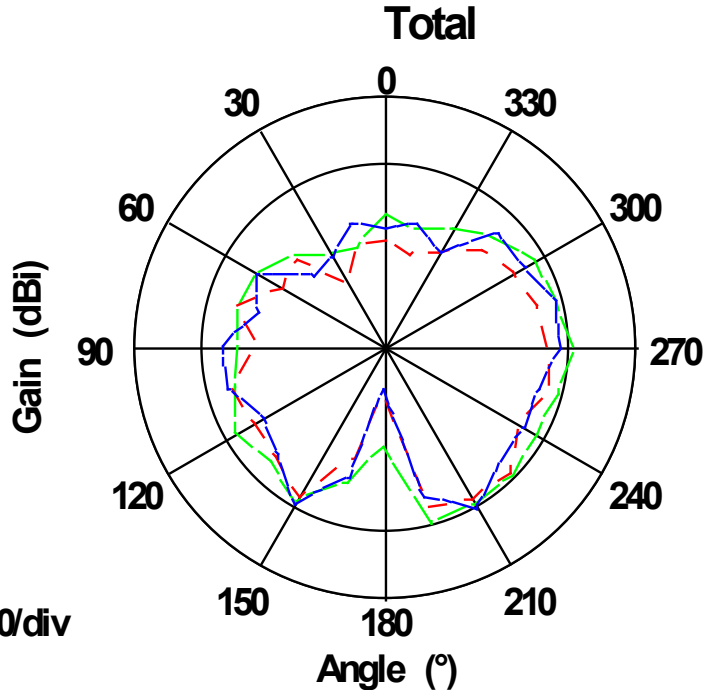


6575 MHz
6875 MHz
7115 MHz

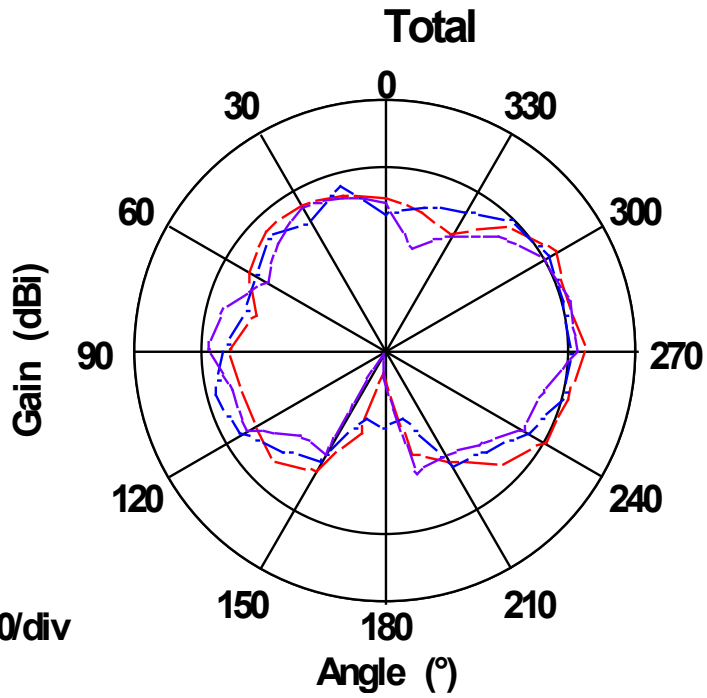
WiFi1 Antenna
XY plane



2412 MHz
2437 MHz
2472 MHz
5180 MHz
5540 MHz



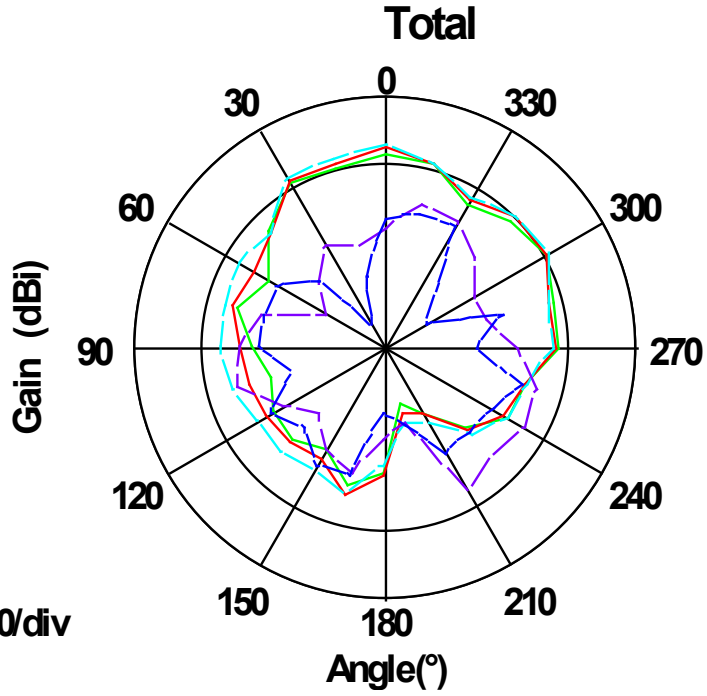
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 Min: -22
 Scale: 30/div



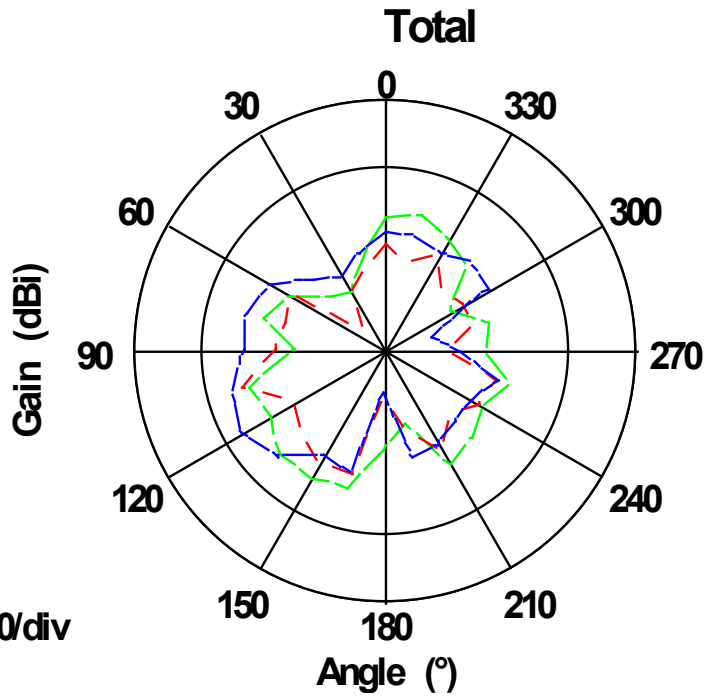
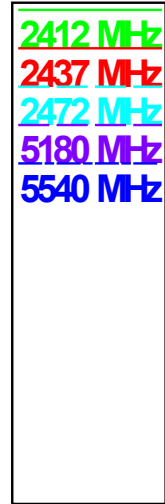
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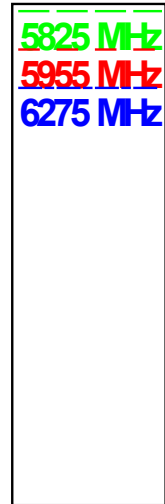
XZ plane

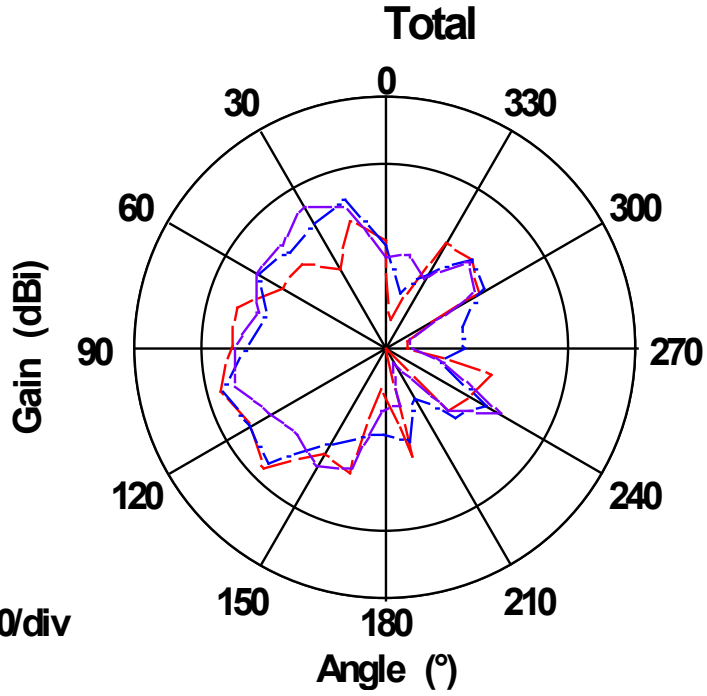


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 Scale: 30/div

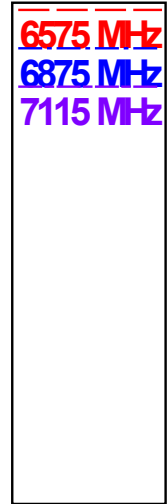


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 Min: -22
 Scale: 30/div

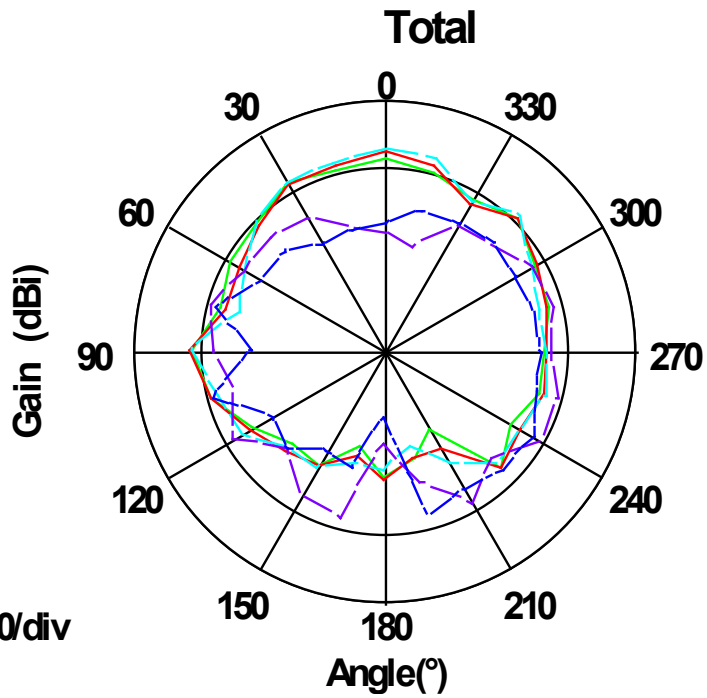




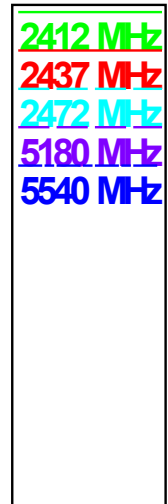
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Scale: 30/div

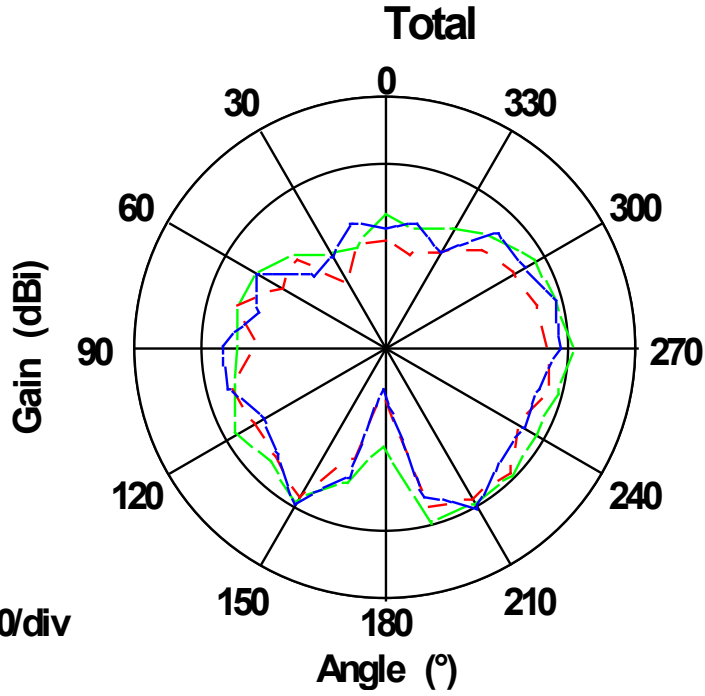


YZ plane

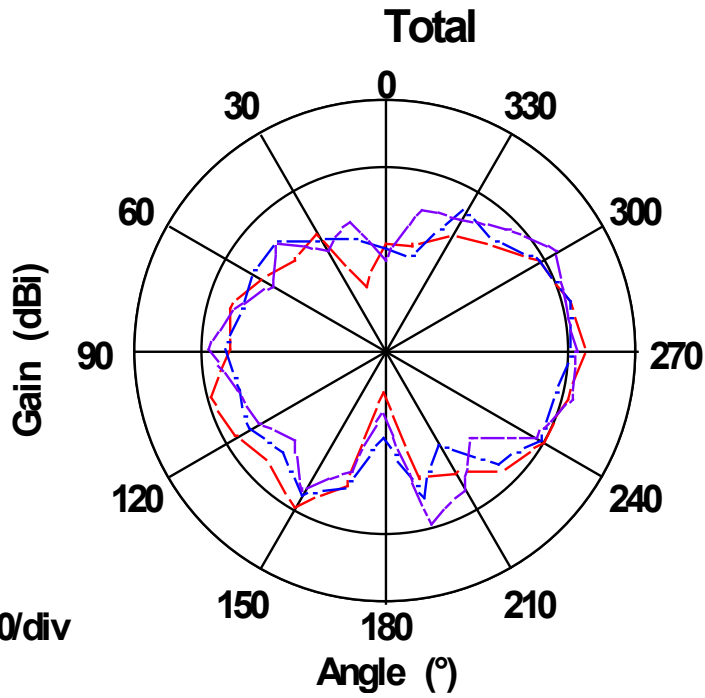
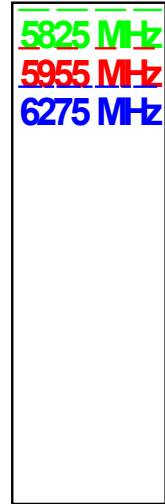


Max: 8
Min: -22
Scale: 30/div

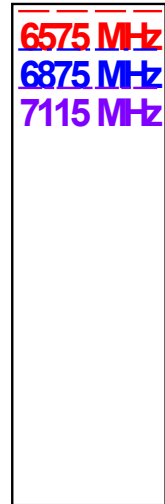




Max: 8
 Min: -22
 Scale: 30/div



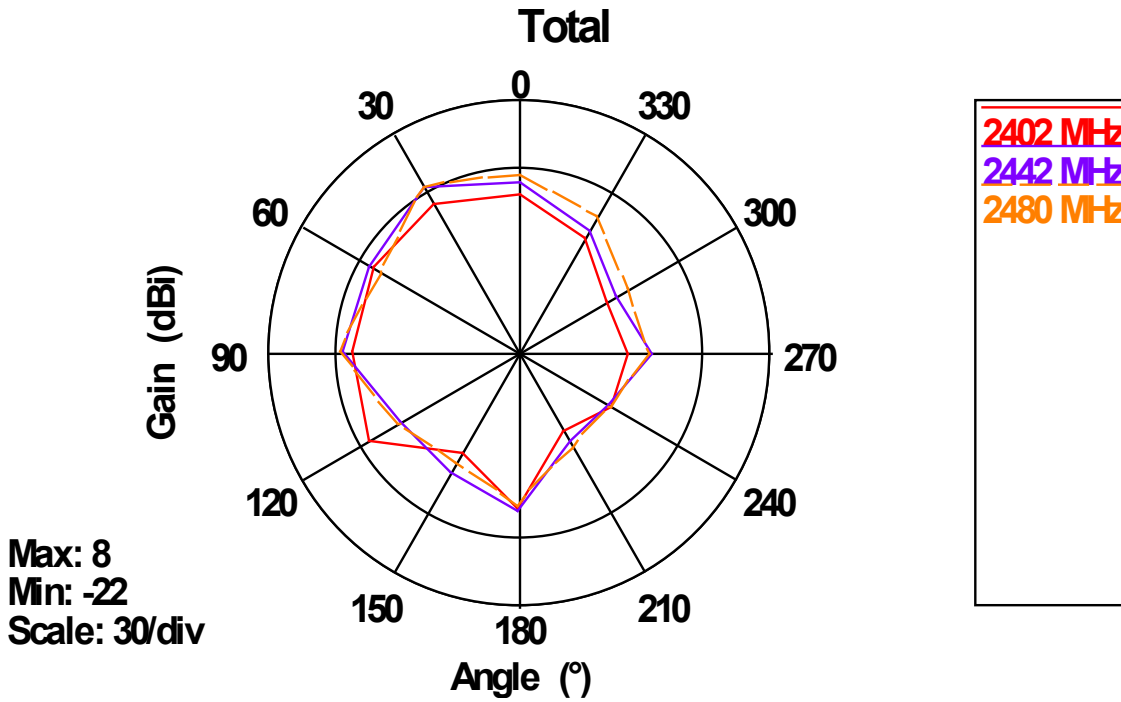
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BT Antenna

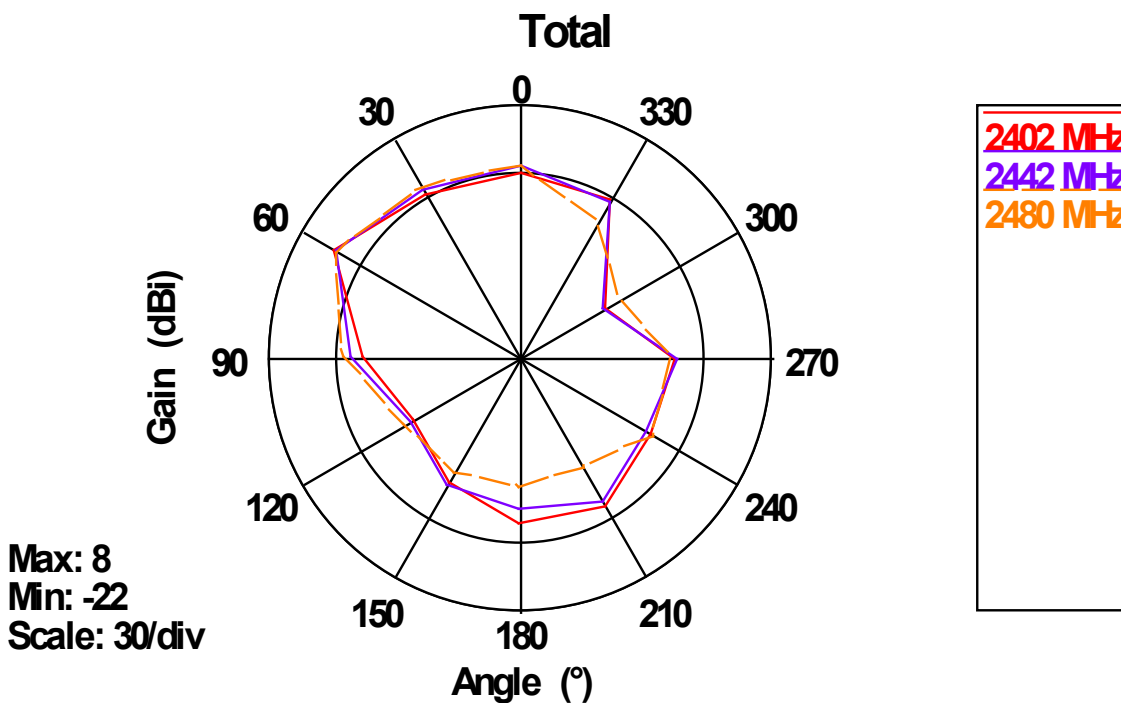
Phi=0

XY plane



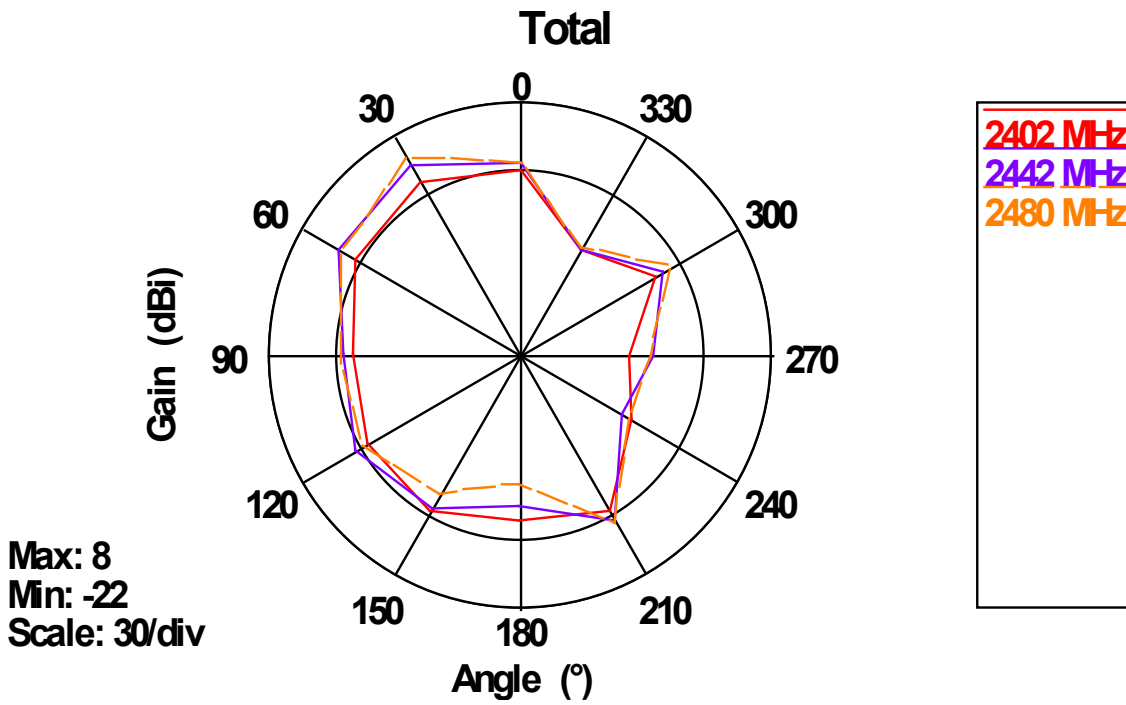
Phi=90

XZ plane



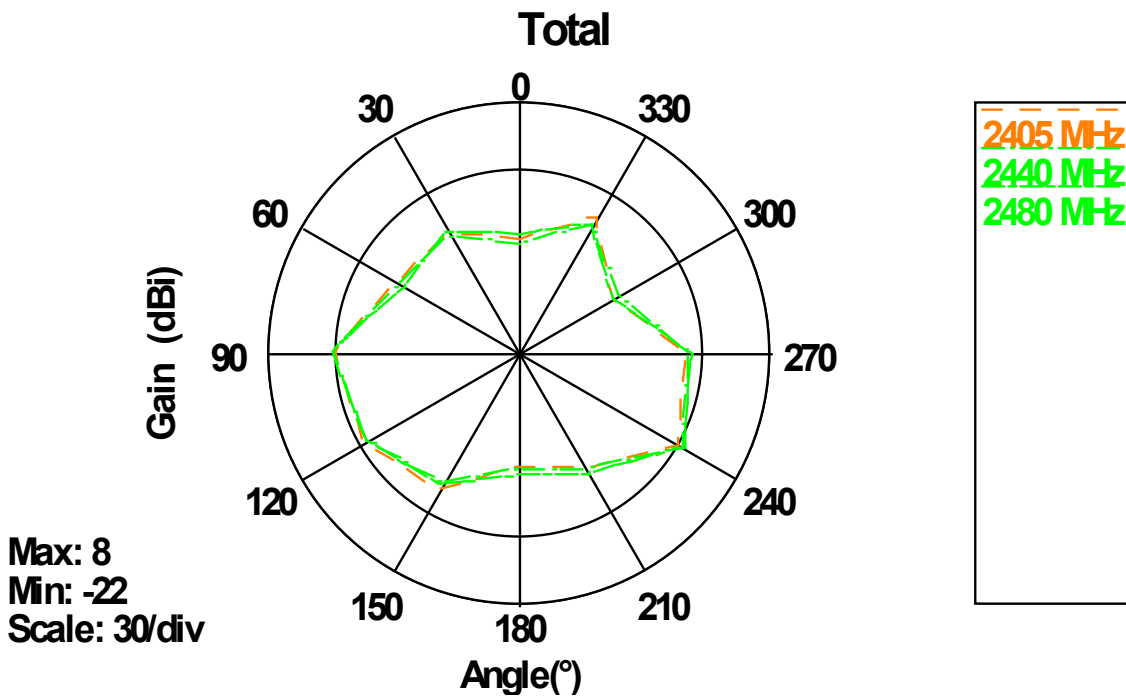
Theta 90

YZ plane

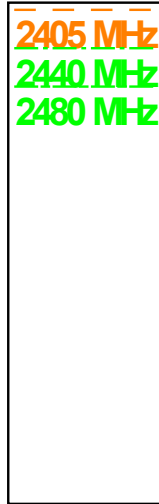
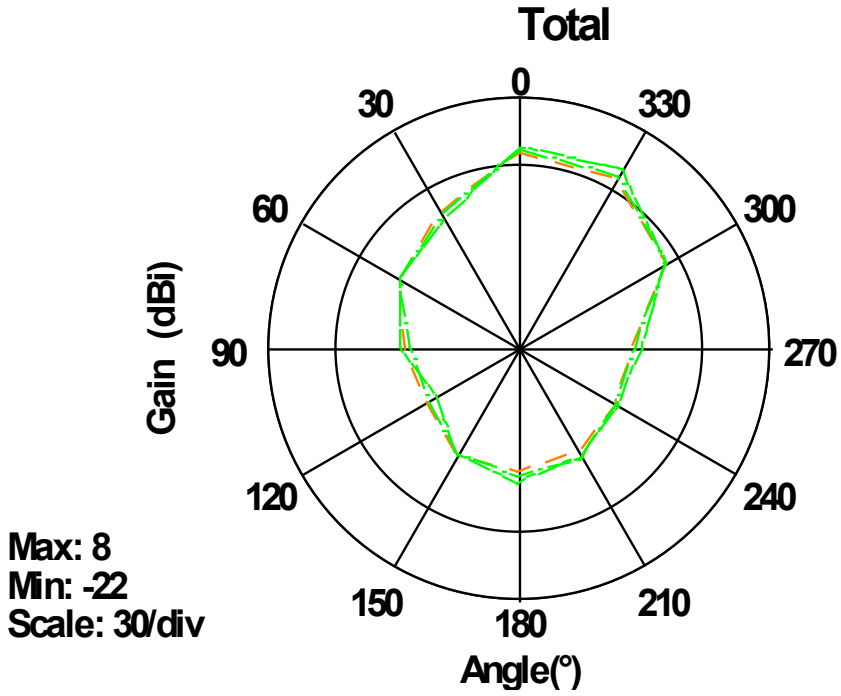


Zigbee Antenna

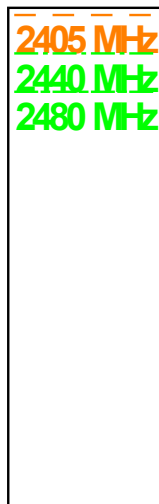
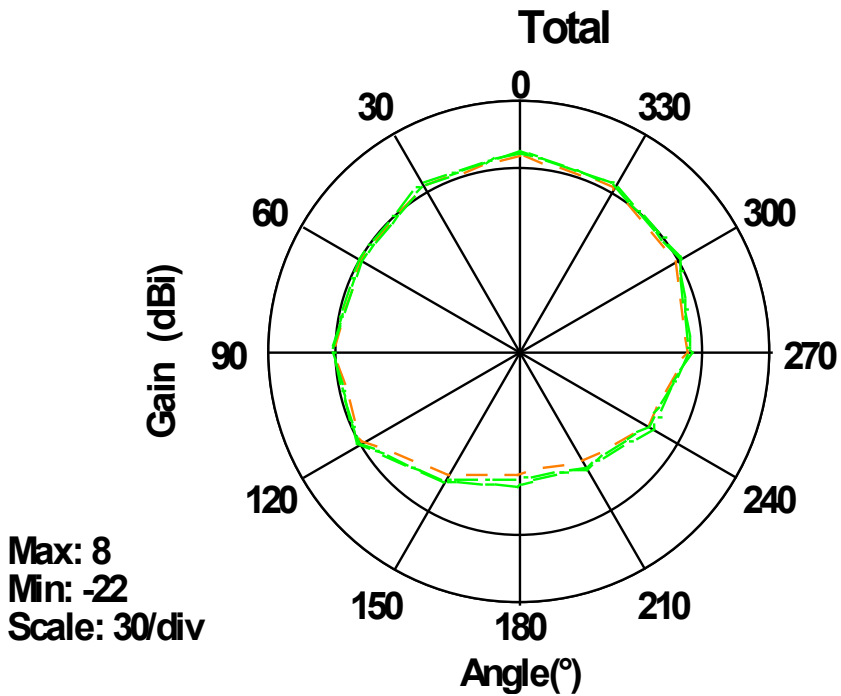
XY plane



XZ plane

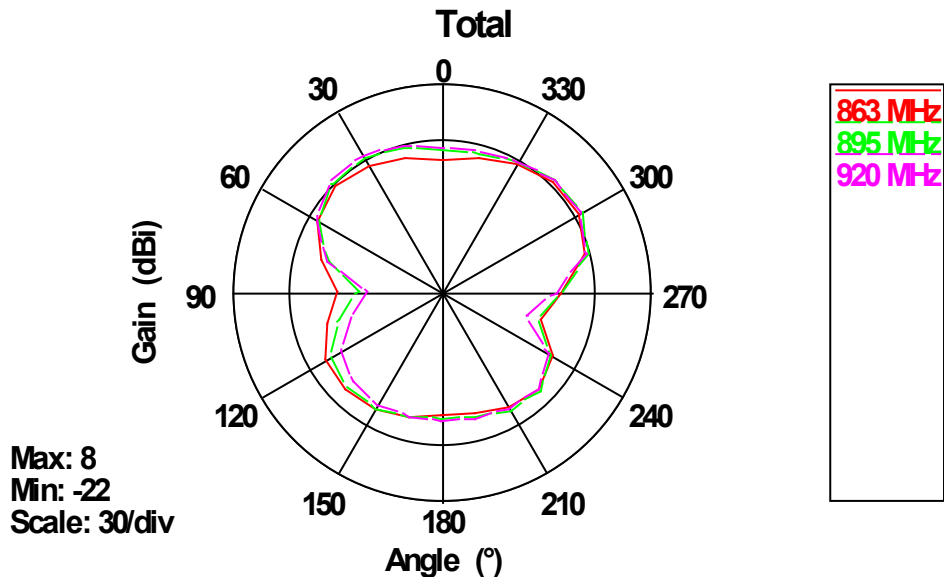


YZ plane

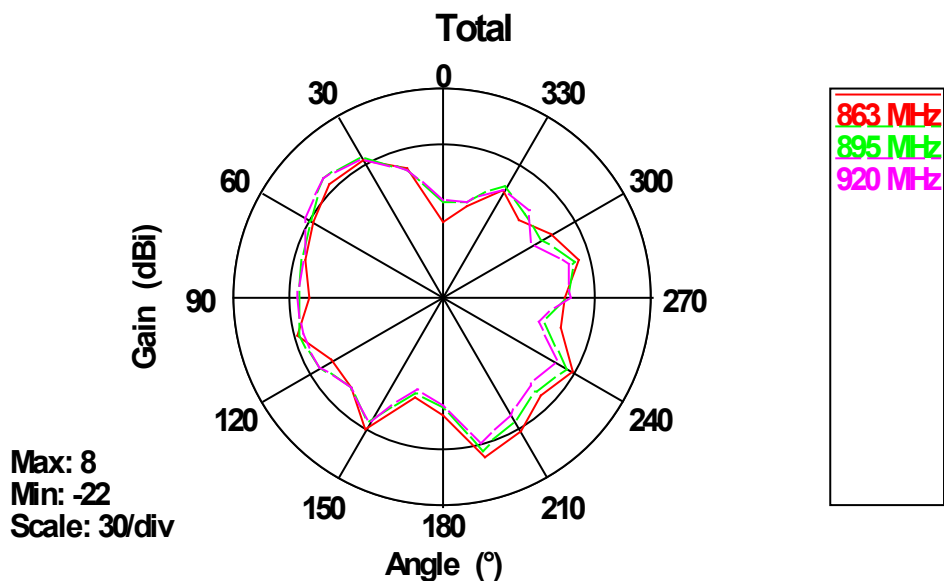


Lora Antenna

XY plane



XZ plane



YZ plane

