

# Regulatory WLAN Antenna Information

Platform information										
Brand	ODM	RMN	Intel platform (ex: Yes, No or NA)	Platform type (ex: regular NB, convertible PC, AIO...etc)	*SAR minimum separation (mm)					
HP Inc.	Quanta	TPN-Q295	Yes	Notebook PC	6.43 mm					
Antenna information										
Vendor		Type	Antenna Part number (Tx1/Ant1)				Antenna Part number (Tx2/Ant2)			
INPAQ		PIFA	DQ6E1LELE01 (MDA-LTE1LTE1LELE-01-003)				DQ6E1LELE01 (MDA-LTE1LTE1LELE-01-003)			
Peak gain w/ cable loss (dBi)*										
	2.4GHz 2400-2483.5 MHz	5.2GHz 5150-5250MHz	5.3GHz 5250-5350MHz	5.6GHz 5470-5725MHz	5.8GHz 5725-5850MHz	5.9GHz 5850-5895MHz	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	7.0 GHz 6875-7125MHz
Ant1	-0.44	-0.12	1.23	0.77	0.89	0.89	2.51	0.49	2.02	2.84
Ant2	0.64	2.60	1.92	2.17	1.19	0.85	2.97	2.89	2.82	2.93
Module Information										
Model	Form factor and suffixes									
MT7921	Mediatek MT7921 Wi Fi 6 +BT 5.2 M.2 2230 PCI e+USB WW WLAN 2x2 (M.2)									
Antenna vendor Address										
No. 11, Keyi St., 11th Neighborhood, Gongyi Vil., Zhunan Township, Miaoli County 350402, Taiwan (R.O.C.)										

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1. **Applicable test methods**

ETS-Lindgren AMS-8500 system is 3D fully anechoic chamber, it is applied to the “Conical Cut test method”, the detail description is described as below.

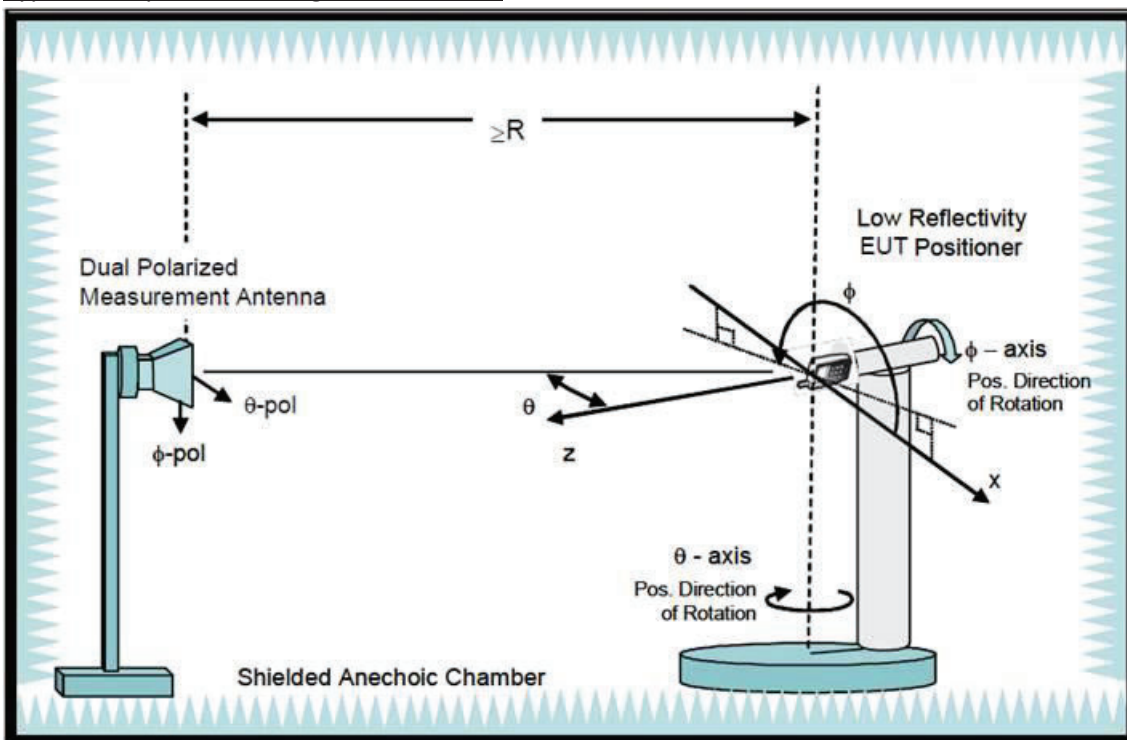
The Conical Cut method requires the ability of the Measurement Antenna to be physically rotated in the theta plane (overhead) of the EUT for implementations using a single Measurement Antenna, Eleven conical cuts are required to capture data at every 15 degrees from the EUT, with the top (0 degrees) and bottom (180 degrees) cuts not being measured. Typically, the EUT will remain affixed to a turntable during the entire measurement process. The Measurement Antenna will be positioned at a starting theta angle. The EUT will then be rotated around the full 360 degrees of phi rotation. The Measurement Antenna will then be positioned at the next theta angle, and the process repeated.

		$\theta$ -Axis	$\Phi$ -Axis
Passive	Step size	15°~165° step: 15°	0°~345° step: 15°
	N / M (Points)	12	24

2. **Test & System Description**

a. Test setup

Typical Setup for ETS-Lindgren AMS-8500:



## b. Equipment list

Equipment Description	Manufacturer	Identification no.	Current calibration date	Next calibration date
Network analyzer	Agilent	E5071C	2023/01/06	2024/01/08
Measurement software	ETS-Lindgren	EMQuest	2023/03/03	2024/03/04
Multi axis positioning system(MAPSTM)	ETS-Lindgren	EMCO 2115	2023/03/03	2024/03/04
Multi axis positioning system(MAPSTM)	ETS-Lindgren	EMCO 2110	2023/03/03	2024/03/04
MAPSTM controller	ETS-Lindgren	EMCO 2090	2023/03/03	2024/03/04
Horn antenna	ETS-Lindgren	3164-10	2023/03/03	2024/03/04
Cable 40cm 18 GHz	Jmtt	201EH012010400	2023/04/07	2024/04/08
Cable 6m 18 GHz	Jmtt	201EH012016000	2023/04/07	2024/04/08
Cable 6m 18 GHz	Jmtt	201EH012016000	2023/04/07	2024/04/08
Cable 3.5m 18 GHz	Jmtt	201EH012013500	2023/04/07	2024/04/08
Cable 1.5m 18 GHz	Jmtt	201EH012011500	2023/04/07	2024/04/08

# Antenna Information

## Section 1. Antenna Assembly Specifications

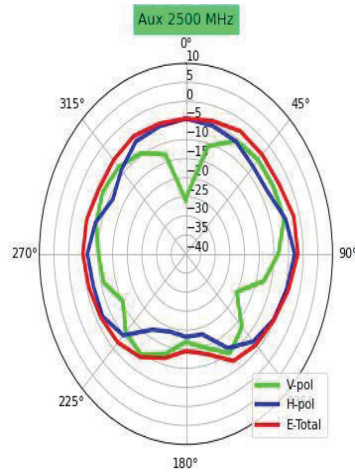
1A	1B	1C	1D		1E	1F	1G	1H
Antenna Part Number	Manufacturer	Antenna Type	Cable Assembly Part Number and Information	Freq Range MHz	* Peak Gain W/ Cable loss (dBi)	Peak Gain w/o Cable Loss (dBi)	Max VSWR	Cable Loss (dB)
<p>P/N: DQ6E1LELE01 (MDA-LTE1LTE1LELE-01-003) Tx1 Antenna Ant1</p>	INPAQ	PIFA	<p>Connector: IPEX (P/N: 20632-001R-37) 50 ohm Coaxial length: 351mm diameter: 1.13mm</p>	2400-2495	-0.44	0.53	3.0	0.97
				5150-5250	-0.12	1.32	3.0	1.44
				5250-5350	1.23	2.68	3.0	1.45
				5470-5725	0.77	2.26	3.0	1.49
				5725-5850	0.89	2.40	3.0	1.51
				5850-5895	0.89	2.41	3.0	1.52
				5925-6425	2.51	4.08	3.0	1.57
				6425-6525	0.49	2.11	3.0	1.62
				6525-6875	2.02	3.67	3.0	1.65
6875-7125	2.84	4.54	3.0	1.70				
<p>P/N: DQ6E1LELE01 (MDA-LTE1LTE1LELE-01-003) Tx2 Antenna Ant2</p>	INPAQ	PIFA	<p>Connector: IPEX (P/N: 20632-001R-37) 50 ohm Coaxial length: 199mm diameter: 1.13mm</p>	2400-2495	0.64	1.19	3	0.55
				5150-5250	2.6	3.41	3	0.81
				5250-5350	1.92	2.74	3	0.82
				5470-5725	2.17	3.01	3	0.84
				5725-5850	1.19	2.04	3	0.85
				5850-5895	0.85	1.71	3	0.86
				5925-6425	2.97	3.85	3	0.88
				6425-6525	2.89	3.8	3	0.91
				6525-6875	2.82	3.75	3	0.93
6875-7125	2.93	3.89	3	0.96				

## Section 3. Radiation characteristics of antenna loaded in Host Platform

### Ant1 Antenna

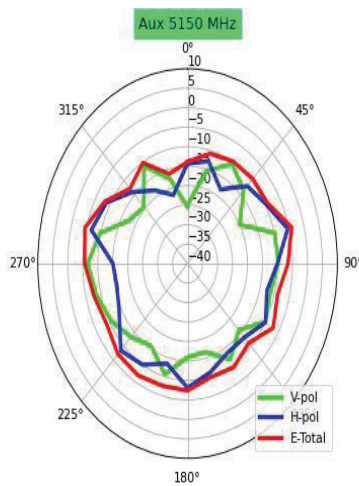
#### Max Antenna 2D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
2400.0-2500.0	-0.44



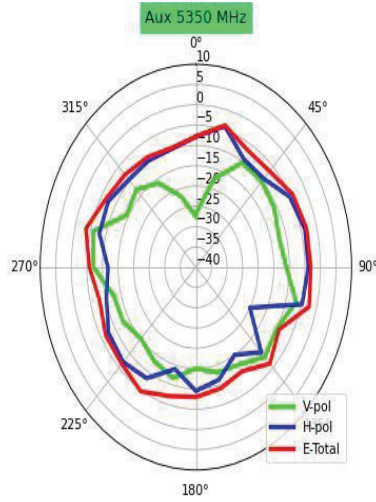
#### Max Antenna 2D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5150.0-5250.0	-0.12



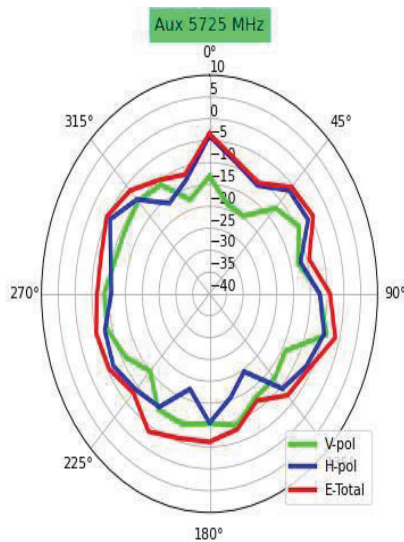
### Max Antenna 2D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5250.0-5350.0	1.23



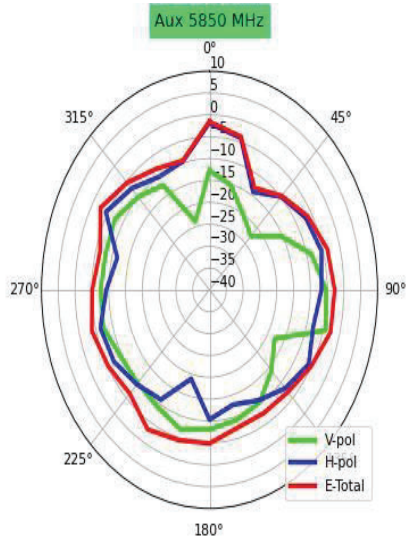
### Max Antenna 2D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5470.0-5725.0	0.77



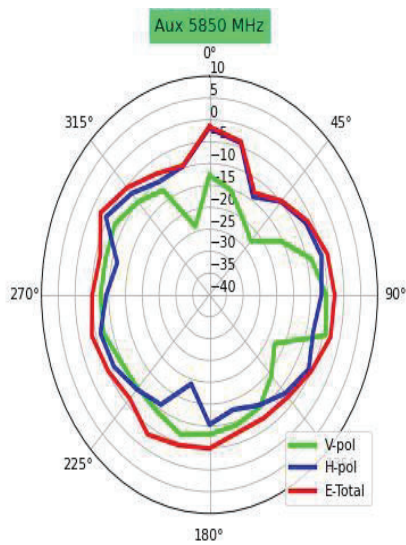
## Max Antenna 2D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5725.0-5850.0	0.89



## Max Antenna 2D Radiation Pattern 5850-5895 MHz

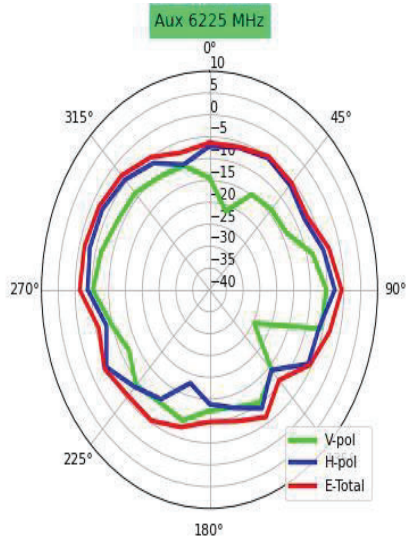
Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5850.0-5895.0	0.89





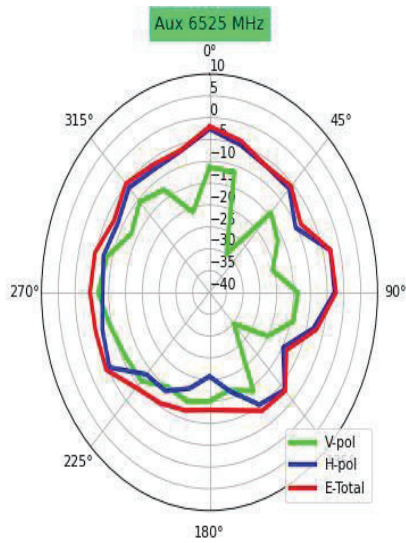
## Max Antenna 2D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5925.0-6425.0	2.51



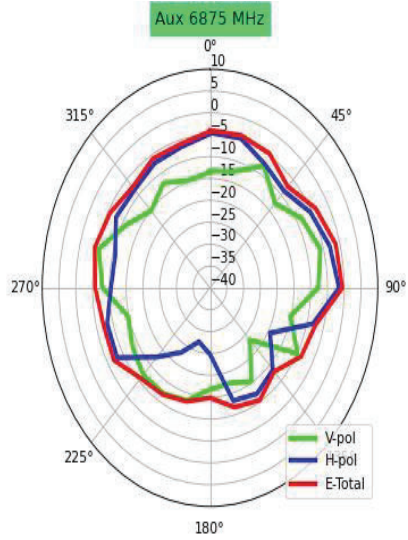
## Max Antenna 2D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
6425.0-6525.0	0.49



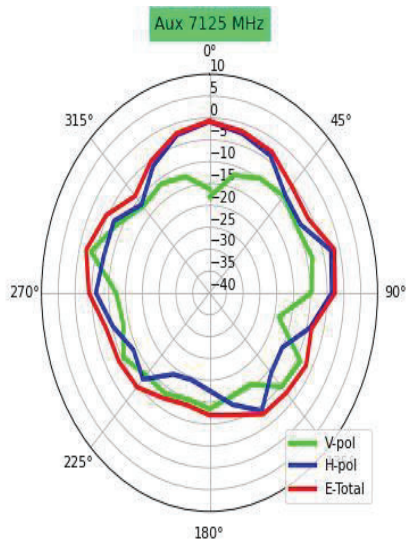
## Max Antenna 2D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
6525.0-6875.0	2.02



## Max Antenna 2D Radiation Pattern 6875-7125 MHz

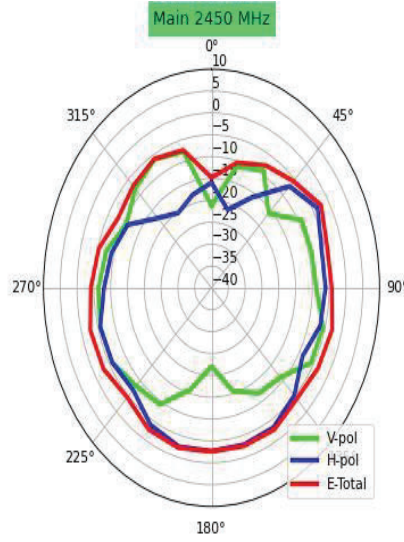
Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
6875.0-7125.0	2.84



## Ant2 Antenna

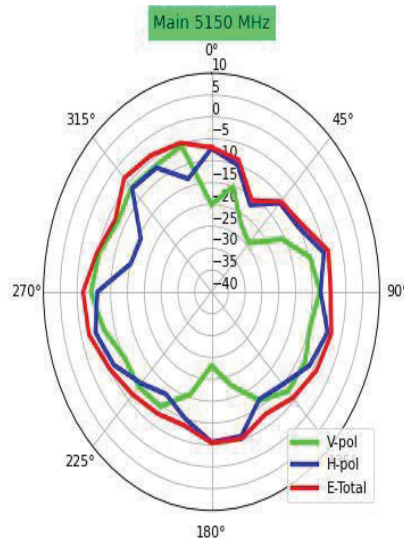
### Max Antenna 2D Radiation Pattern 2400 – 2495 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
2400.0-2500.0	0.64



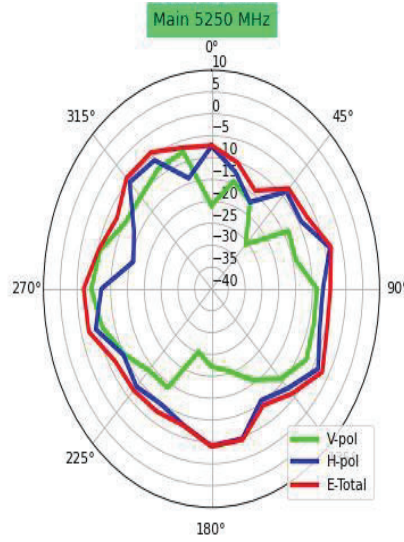
### Max Antenna 2D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5150.0-5250.0	2.6



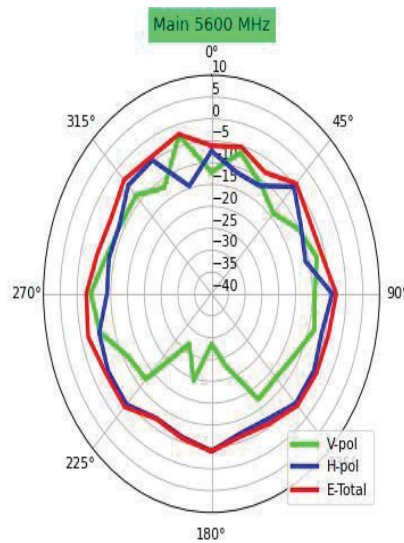
## Max Antenna 2D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5250.0-5350.0	1.92



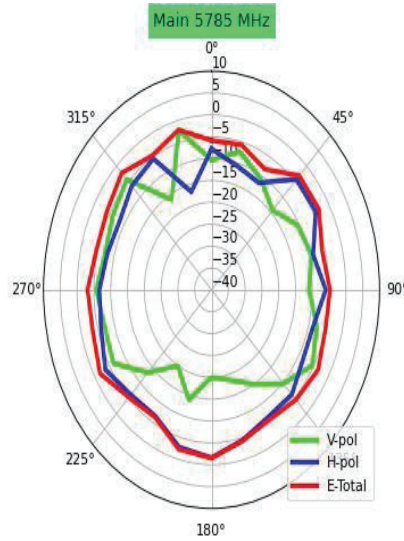
## Max Antenna 2D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5470.0-5725.0	2.17



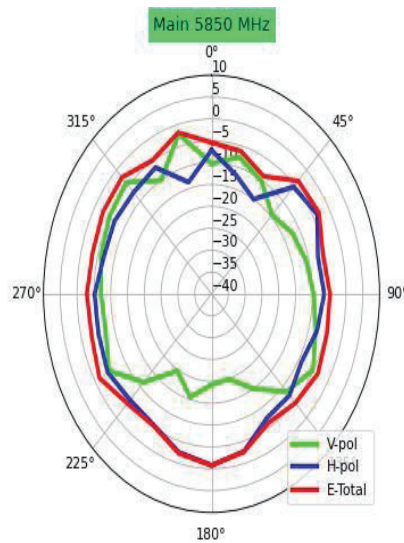
## Max Antenna 2D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5725.0-5850.0	1.19



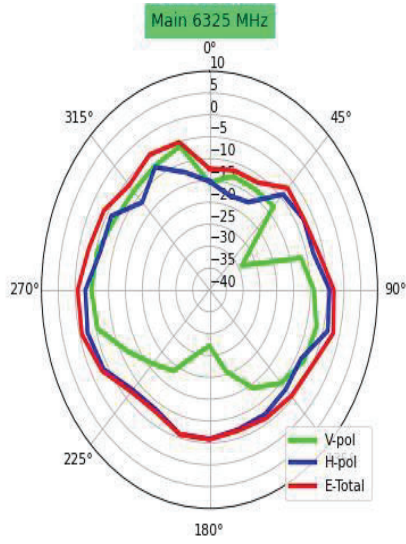
## Max Antenna 2D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5850.0-5895.0	0.85



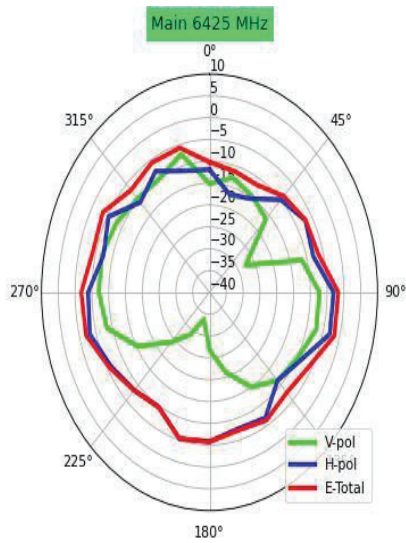
## Max Antenna 2D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
5925.0-6425.0	2.97



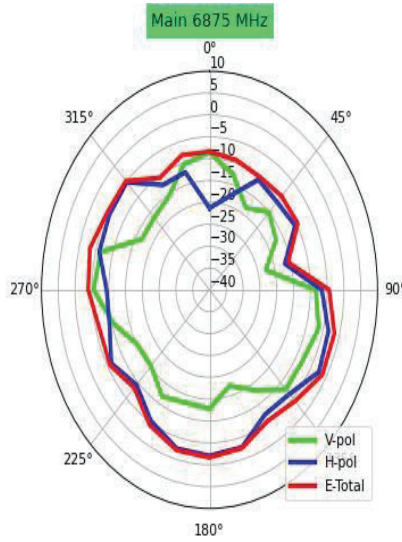
## Max Antenna 2D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
6425.0-6525.0	2.89



### Max Antenna 2D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
6525.0-6875.0	2.82



### Max Antenna 2D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak(dBi)
6875.0-7125.0	2.93

