

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-Q293		Yes		convertible PC		1
Antenna information										
Vendor			Type			Antenna Part number (Ant1/Tx1)		Antenna Part number (Ant2/Tx2)		
HONG-BO			PIFA			DQ602383900 (260-23839)		DQ602383900 (260-23839)		
Antenna vendor address										
4 F., No. 143, Xinhu 1st Rd., Neihu Dist., Taipei City 11494, Taiwan (R.O.C.)										
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
Ant 1	2.08	0.95	0.95	1.55	1.34	1.49	2.77	0.16	0.22	1.84
Ant 2	1.12	0.54	0.34	1.13	1.38	1.48	2.6	1.36	2.2	2.2
Module Information										
Model			Form factor and suffixes							
AX211NGW			Intel Garfield Peak 2 AX211 Wi-Fi 6e +Bluetooth 5.2 M.2 2230 160MHz CNVi WW WLAN							
BE200NGW			Intel Gale peak 2 BE200 Wi-Fi 7 + BT5.4 (802.11be 2x2)							

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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.

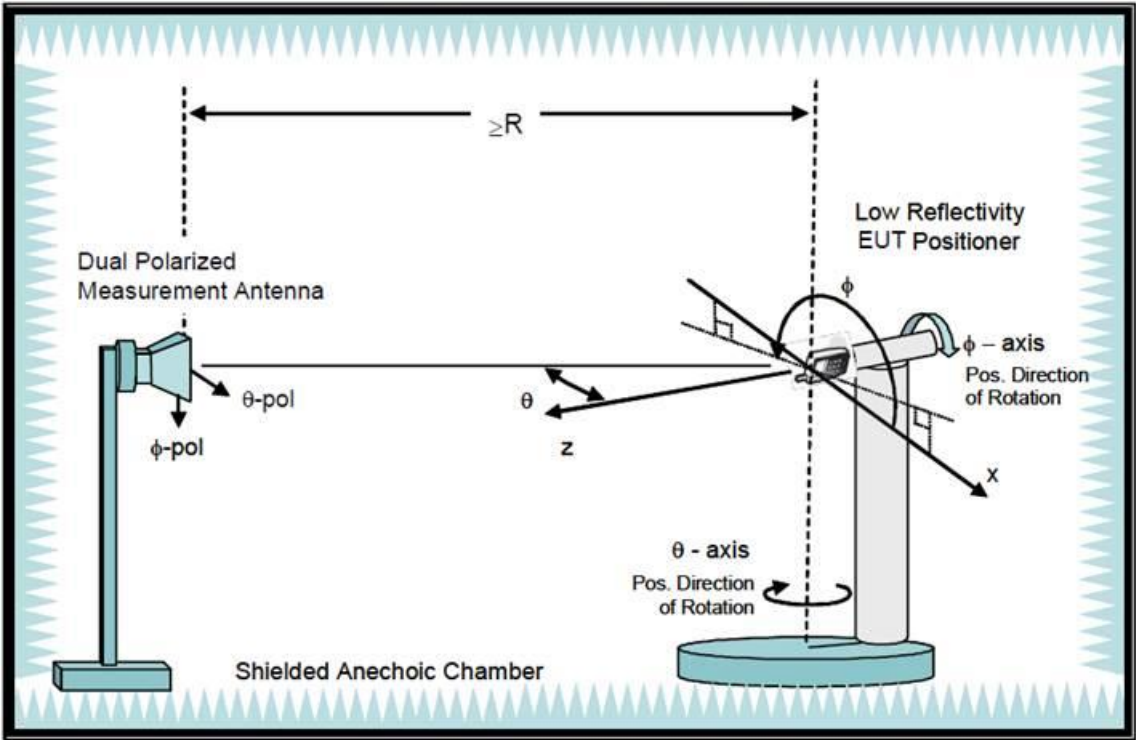
The Conical Cut method requires the ability of the Measurement Antenna to be physically rotated in the theta plane (overhead) of the EUT for implementations using a single Measurement Antenna, Eleven conical cuts are required to capture data at every 15 degrees from the EUT, with the top (0 degrees) and bottom (180 degrees) cuts not being measured. Typically, the EUT will reAnt 1 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.

		θ -Axis	Φ -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	2023/01/07	2024/01/06
Measurement software	ETS-Lindgren	EMQuest	N/A	N/A
Multi axis positioning system(MAPSTM)	ETS-Lindgren	MCO 2115	N/A	N/A
Multi axis positioning system(MAPSTM)	ETS-Lindgren	EMCO 2110	N/A	N/A
MAPSTM controller	ETS-Lindgren	EMCO 2090	N/A	N/A
Horn antenna	ETS-Lindgren	3164-10	2023/03/03	2024/03/02
ETS OTA Chamber	ETS-Lindgren	AMS-8500	2023/03/03	2024/03/02
Cable	ETS-Lindgren	RFC SMS-100-NMR Series	N/A	N/A

Note: Chamber calibration included full set of implement

Antenna Information

Section 1. Antenna Assembly Specifications

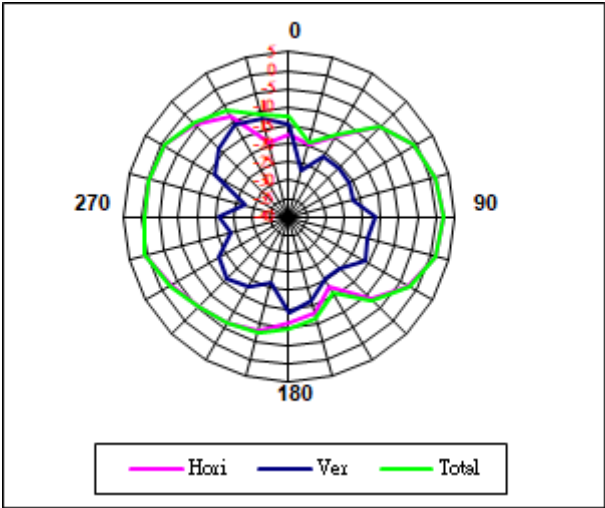
1A	1B	1C	1D		1E	1F	1G	1H
Antenna Part Number	Manufacturer	Antenna Type	Cable Assembly Part Number and Information	Freq Range MHz	* Peak Gain W/ Cable loss (dBi)	Peak Gain w/o Cable Loss (dBi)	Max VSWR	Cable Loss (dB)
P/N: DQ602383900 (260-23839) Ant 1 Antenna (TX1)	HONG-BO	PIFA	(P/N: 20632-001R-37) 50 ohm Coaxial length:139mm diameter: 1.37mm Black Connector: IPEX MHF-4L Plug	2400-2495	2.08	2.41	4	0.33
				5150-5250	0.95	1.43	4.5	0.48
				5250-5350	0.95	1.44	4.5	0.49
				5470-5725	1.55	2.05	4.5	0.5
				5725-5850	1.34	1.85	4.5	0.51
				5850-5895	1.49	2.00	4.5	0.51
				5925-6425	2.77	3.31	4.5	0.54
				6425-6525	0.16	0.7	4.5	0.54
				6525-6875	0.22	0.78	4.5	0.56
				6875-7125	1.84	2.42	4.5	0.58
P/N: DQ602383900 (260-23839) Ant 2 Antenna (TX2)	HONG-BO	PIFA	(P/N: 20632-001R-37) 50 ohm Coaxial length:205mm diameter: 1.37mm Black Connector: IPEX MHF-4L Plug	2400-2495	1.12	1.60	4	0.48
				5150-5250	0.54	1.25	4.5	0.71
				5250-5350	0.34	1.06	4.5	0.72
				5470-5725	1.13	1.87	4.5	0.74
				5725-5850	1.38	2.13	4.5	0.75
				5850-5895	1.48	2.23	4.5	0.75
				5925-6425	2.6	3.39	4.5	0.79
				6425-6525	1.36	2.16	4.5	0.8
				6525-6875	2.2	3.03	4.5	0.83
				6875-7125	2.2	3.05	4.5	0.85

Section 3. Radiation characteristics of antenna loaded in Host Platform

Ant 1 Antenna

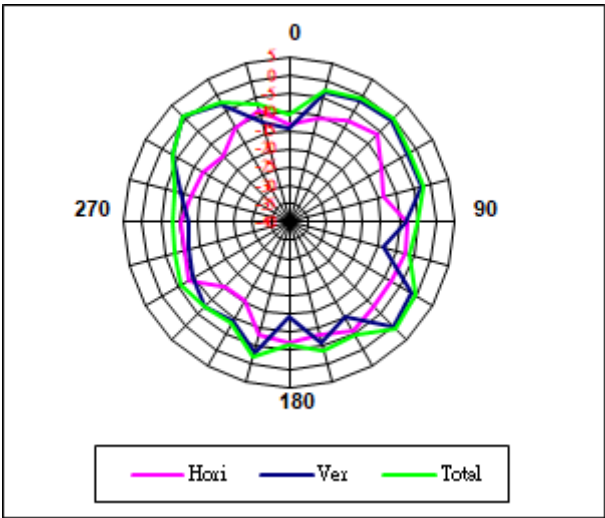
Max Antenna 2D Radiation Pattern 2400 – 2495 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
2400-2495	2.08



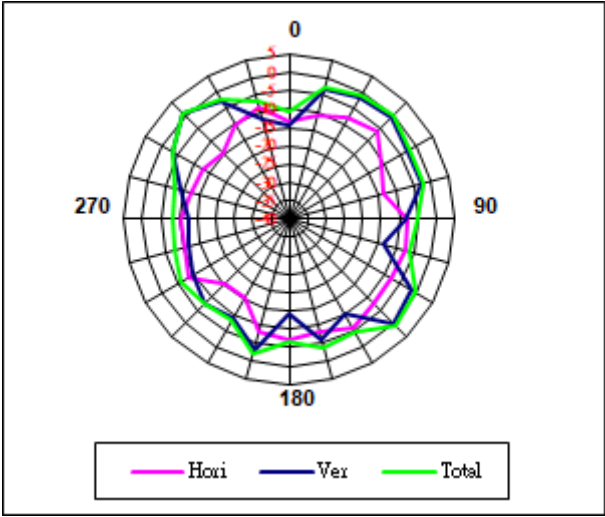
Max Antenna 2D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5150-5250	0.95



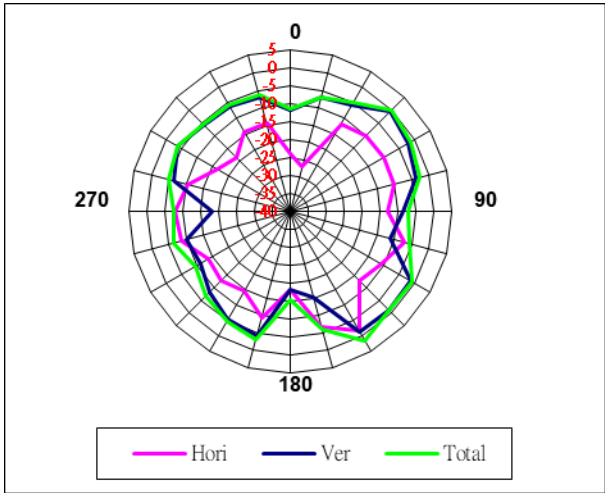
Max Antenna 2D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5250-5350	0.95



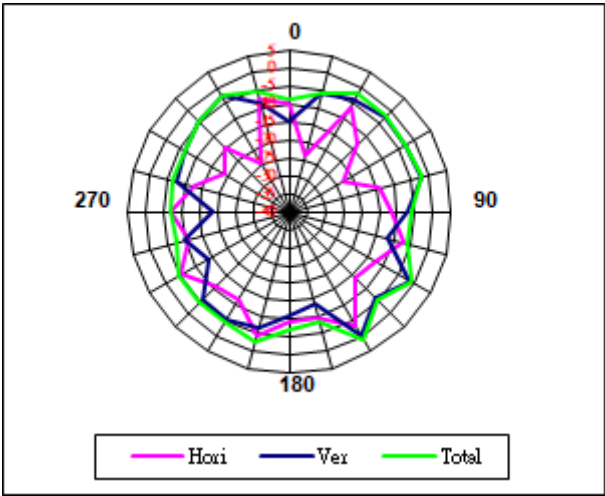
Max Antenna 2D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5470-5725	1.55



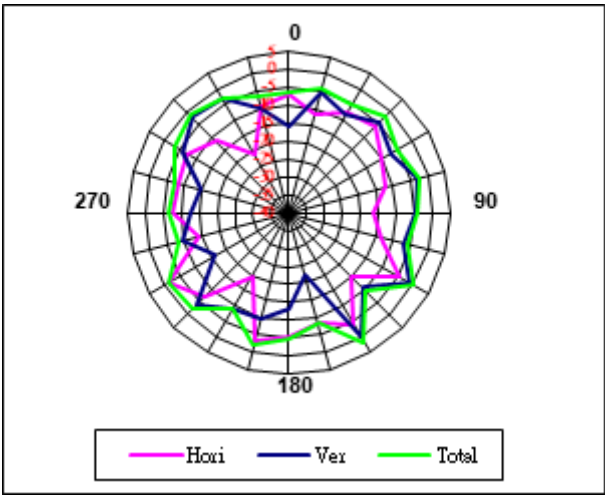
Max Antenna 2D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5725-5850	1.34



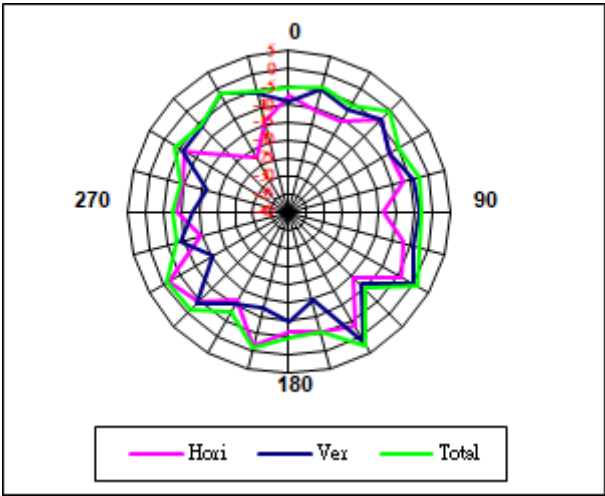
Max Antenna 2D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5850-5895	1.49



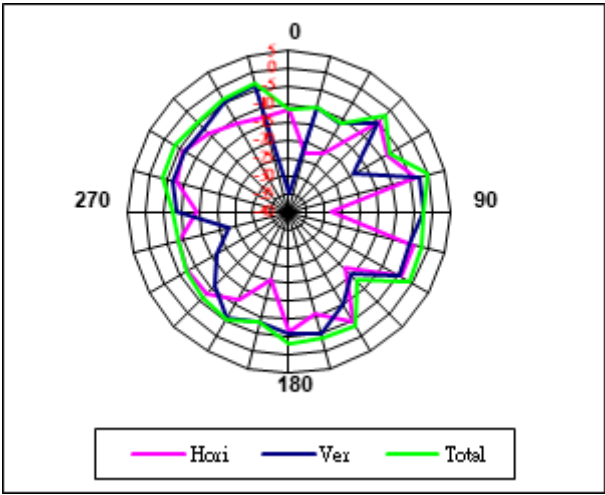
Max Antenna 2D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5925-6425	2.77



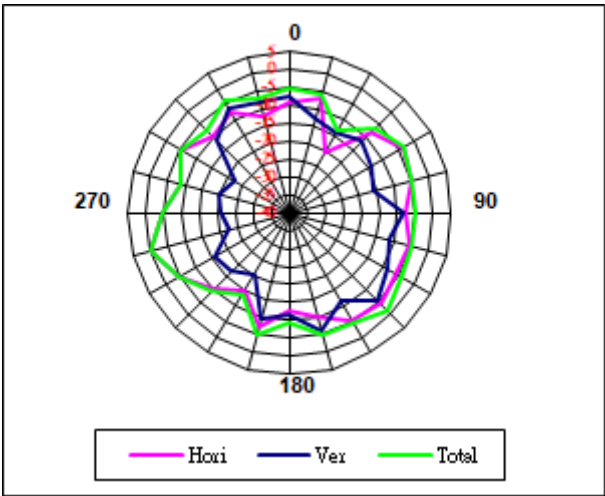
Max Antenna 2D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
6425-6525	0.16



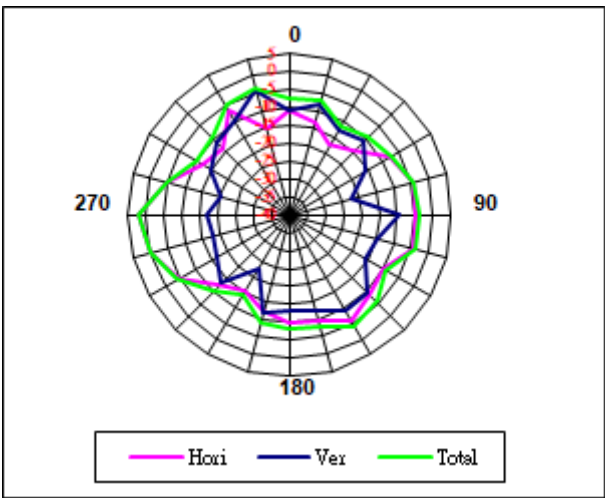
Max Antenna 2D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
6525-6875	0.22



Max Antenna 2D Radiation Pattern 6875-7125 MHz

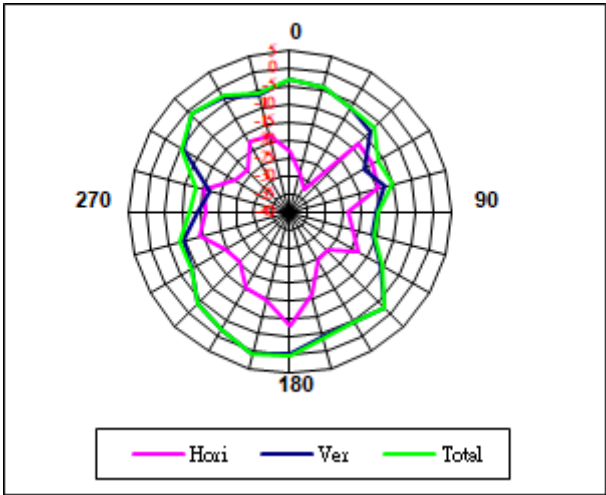
Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
6875-7125	1.84



Ant 2iliary Antenna

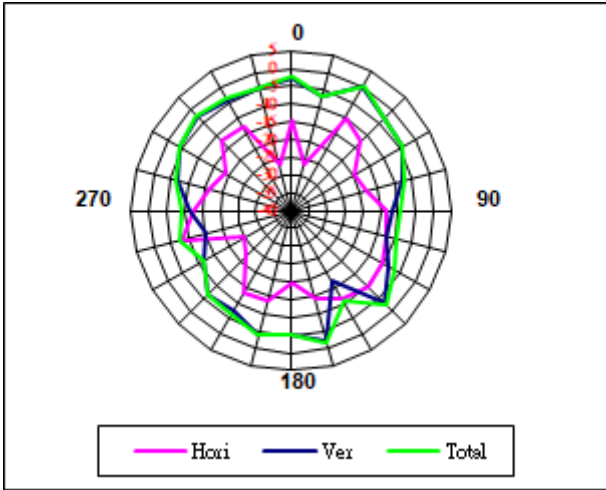
Max Antenna 2D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
2400-2483.5	1.12



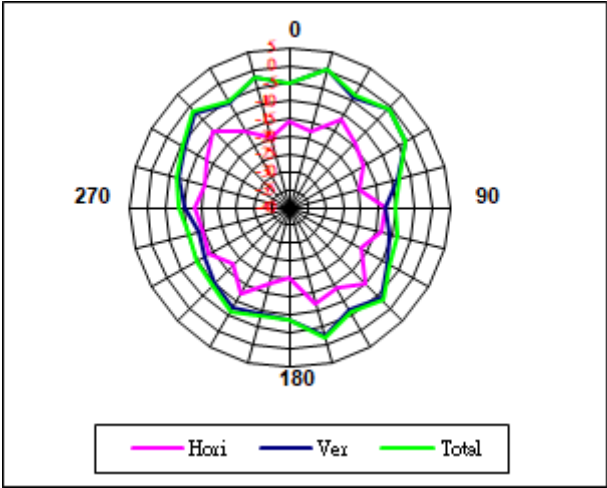
Max Antenna 2D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5150-5250	0.54



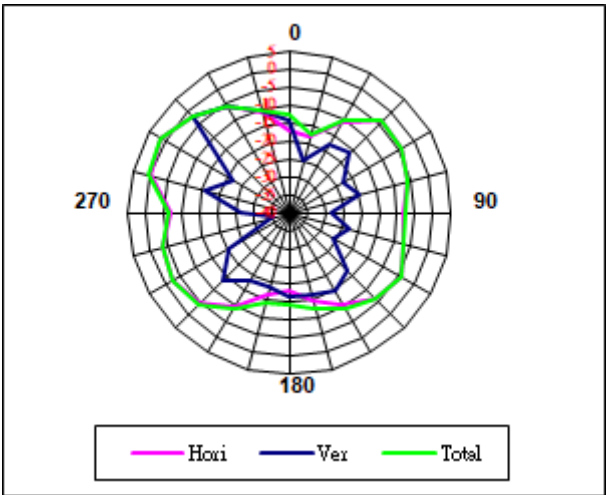
Max Antenna 2D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5250-5350	0.34



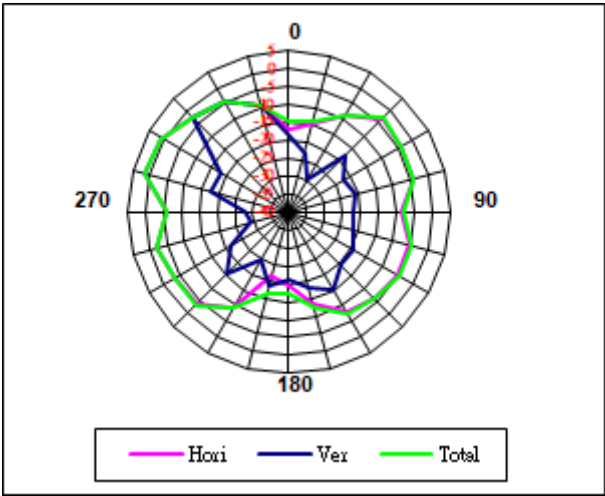
Max Antenna 2D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5470-5725	1.13



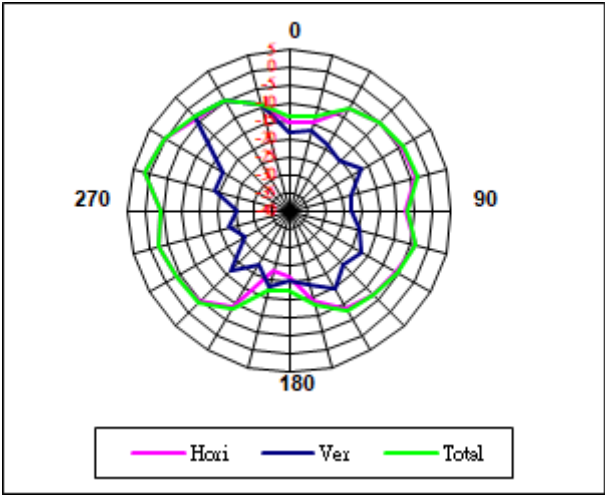
Max Antenna 2D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5725-5850	1.38



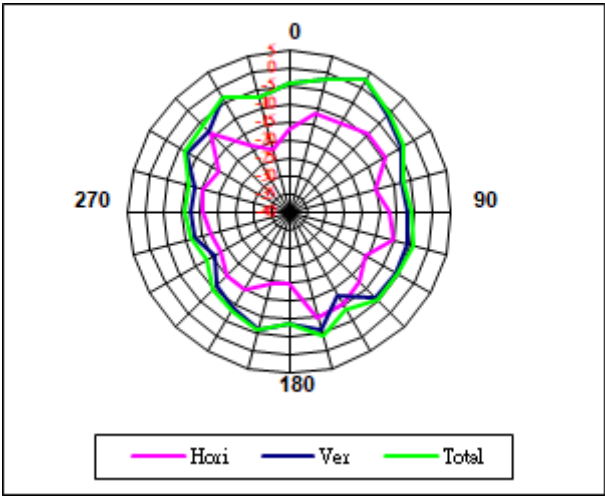
Max Antenna 2D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5850-5895	1.48



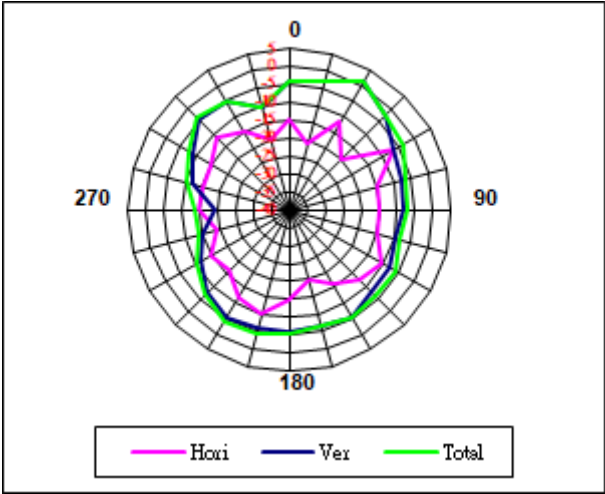
Max Antenna 2D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
5925-6425	2.6



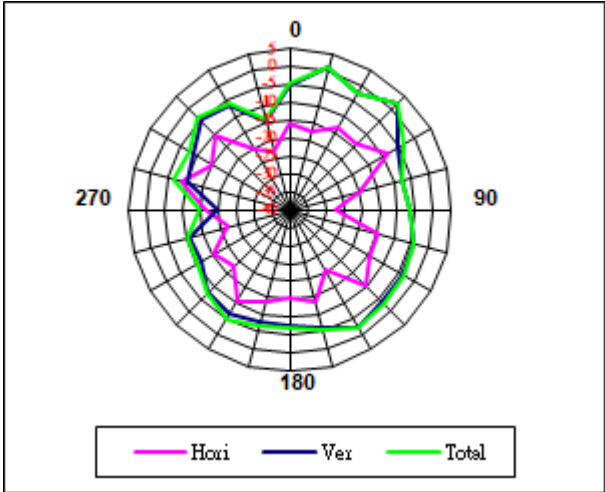
Max Antenna 2D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
6425-6525	1.36



Max Antenna 2D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
6525-6875	2.2



Max Antenna 2D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Horizontal+ Vertical (dBi) peak (dBi)
6875-7125	2.2

