

DATASHEET

Model : MR8400

PEGATRON P/N : 1415-0BNLONR

WNC P/N : 81XYBH15.GCD

2026

PEGATRON

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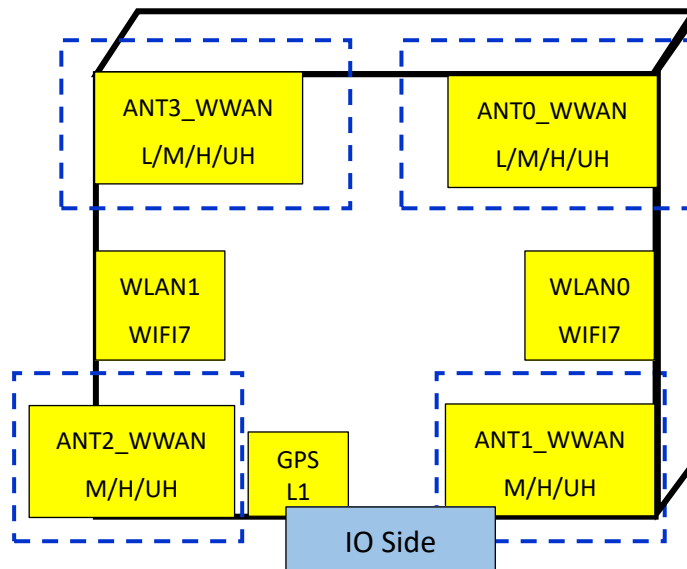
4.3 Test method

1. Specifications

Description	
Antenna type WWAN_ANT0 L/M/H/UH band Antenna	Monopole
Antenna type WWAN_ANT1 M/H/UH band Antenna	Monopole
Antenna type WWAN_ANT2 M/H/UH band Antenna	Monopole
Antenna type WWAN_ANT3 L/M/H/UH band Antenna	Monopole
Antenna type GPS Antenna	PIFA
Peak Gain WWAN_ANT0 L/M/H/UH band Antenna	See the table 3.2.1
Peak Gain WWAN_ANT1 L/M/H/UH band Antenna	See the table 3.2.2
Peak Gain WWAN_ANT2 L/M/H/UH band Antenna	See the table 3.2.3
Peak Gain WWAN_ANT3 L/M/H/HU band Antenna	See the table 3.2.4

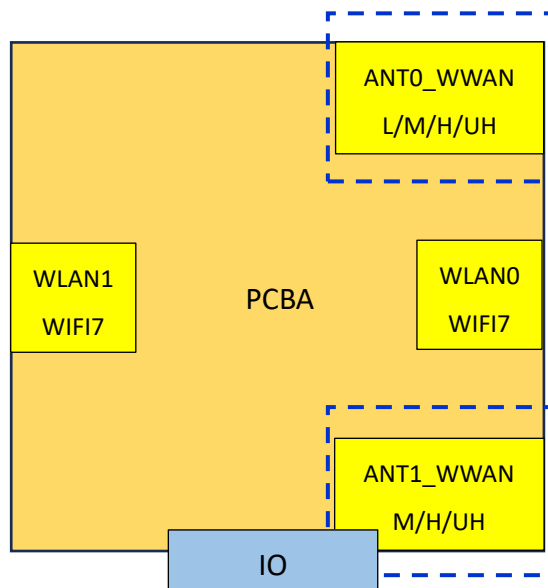
2. Antenna Placement

2.1 All Antenna Positions on the DUT



Overview

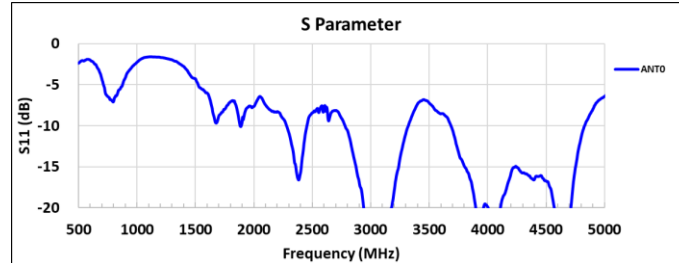
2.2 ANT0/ANT1 on the PCBA



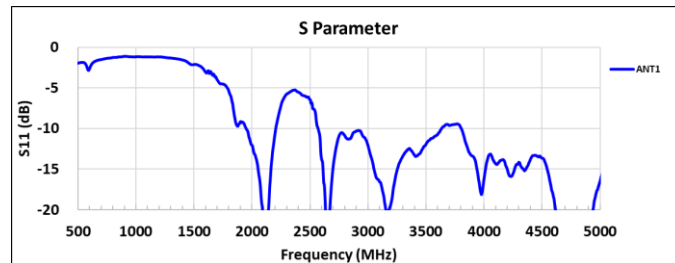
3. Performance Data

3.1 Return Loss

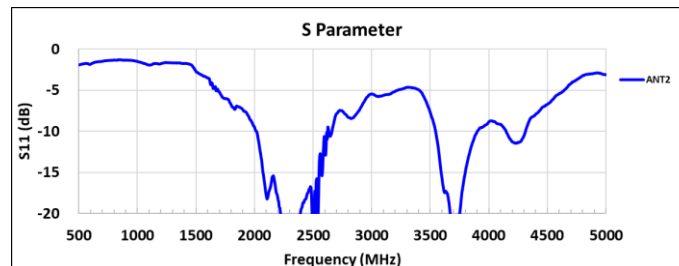
3.1.1 ANT0_WWAN_LMH&UH band Antenna



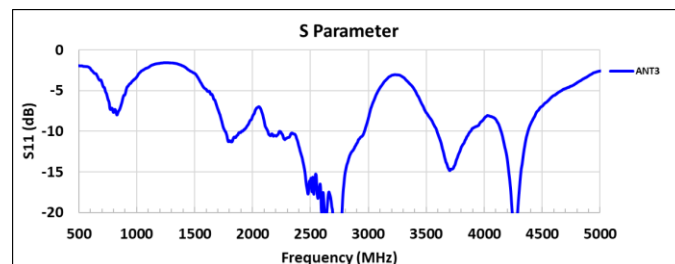
3.1.2 ANT1_WWAN_MH&UH band Antenna



3.1.3 ANT2_WWAN_MH&UH band Antenna



3.1.4 ANT3_WWAN_LMH&UH band Antenna



3.2 Peak Gain summary

L/M/H/UH band	
Polarization	Linear
ANT0	Gain (dBi)
Frequency (MHz)	
B1, n1 (1920 - 1980)	1.26
B2, n2 (1850 - 1910)	1.26
B3, n3 (1710 - 1785)	1.14
B4 (1710 - 1755)	1.14
B5, n5 (824 - 849)	1.12
B7, n7 (2500 - 2570)	1.25
B12, n12 (699 - 716)	-0.3
B13, n13 (777 - 787)	-0.08
B14, n14 (788 - 798)	-0.08
B17 (704 - 716)	-0.3
B25, n25 (1850 - 1915)	1.26
B26, n26 (814 - 849)	1.12
B30, n30 (2305 - 2315)	0.85
B38, n38 (2570 - 2620)	1.03
B41, n41 (2496 - 2690)	1.25
B42 (3400 - 3600)	3.31
B43 (3600 - 3800)	3.31
B48, n48 (3550 - 3700)	3.31
B66, n66 (1710 - 1780)	1.14
n70 (1695 - 1710)	1.14
B71, n71 (663 - 698)	-1.12
n77 (3300 - 4200)	3.56
n78 (3300 - 3800)	3.56

Table 3.2.1

L/M/H/UH band	
Polarization	Linear
ANT1	Gain (dBi)
Frequency (MHz)	
n41 (2496 - 2690)	1.01
n48 (3550 - 3700)	2.14
n77 (3300 - 4200)	2.99
n78 (3300 - 3800)	2.41

Table 3.2.2

L/M/H/UH band	
Polarization	Linear
ANT2	Gain (dBi)
Frequency (MHz)	
n41 (2496 - 2690)	1.09
n48 (3550 - 3700)	1.83
n77 (3300 - 4200)	2.85
n78 (3300 - 3800)	2.85

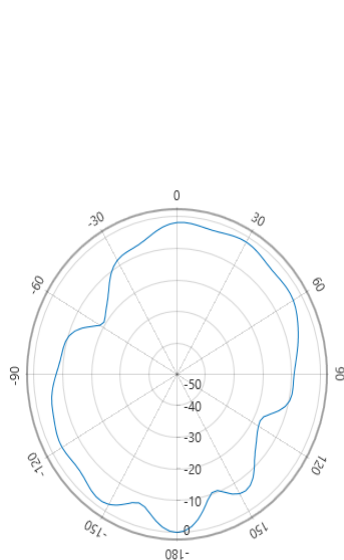
Table 3.2.3

L/M/H/UH band	
Polarization	Linear
ANT3	Gain (dBi)
Frequency (MHz)	
B2, n2 (1850 - 1910)	2.21
B4 (1710 - 1755)	1.37
B7, n7 (2500 - 2570)	1.58
B25, n25 (1850 - 1915)	2.21
B30, n30 (2305 - 2315)	1.41
B38, n38 (2570 - 2620)	1.58
B40, n40 (2300 - 2400)	1.41
B41, n41 (2496 - 2690)	1.58
B42 (3400 - 3600)	2.07
B43 (3600 - 3800)	1.86
B48, n48 (3550 - 3700)	2.07
B66 ,n66 (1710 - 1780)	1.37
n70 (1695 - 1710)	1.37
n77 (3300 - 4200)	2.37
n78 (3300 - 3800)	2.07

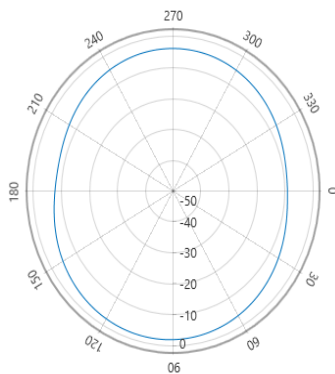
Table 3.2.4

3.3 Max 2D Radiation Pattern Plane

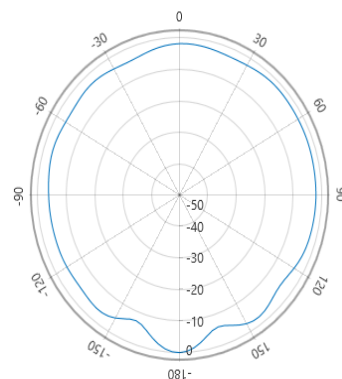
- ANT0



X-Z plan

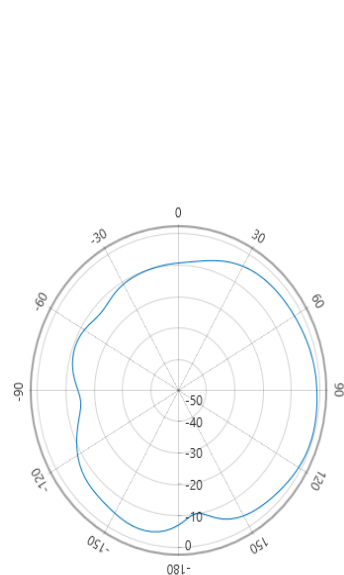


X-Y plan

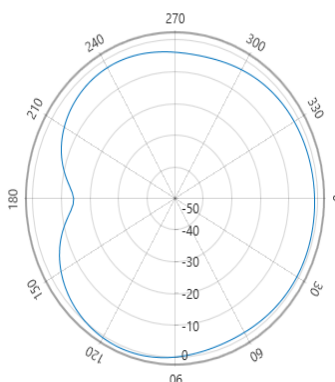


Y-Z plan

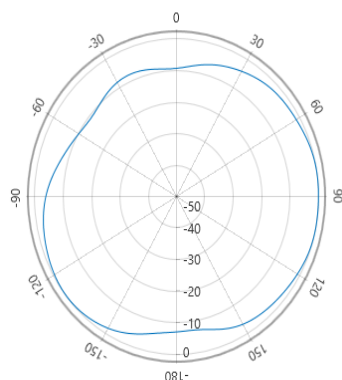
LB highest value : 837 MHz



X-Z plan

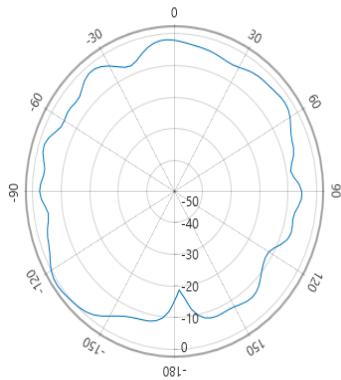


X-Y plan

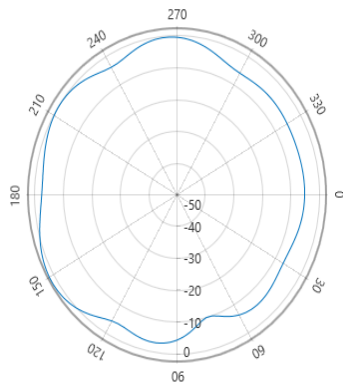


Y-Z plan

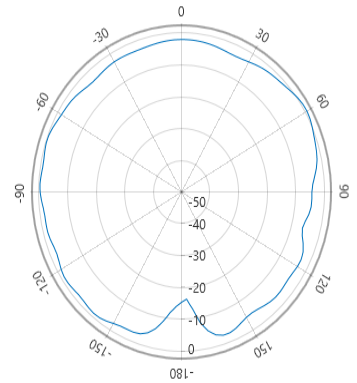
MHB highest value : 1850 MHz



X-Z plan



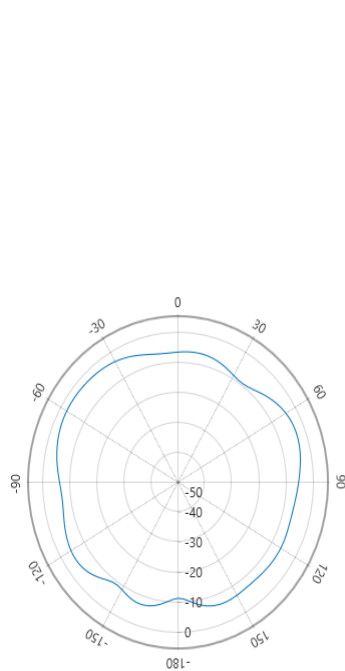
X-Y plan



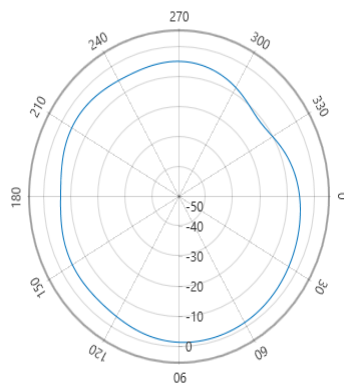
Y-Z plan

UHB highest value : 3800 MHz

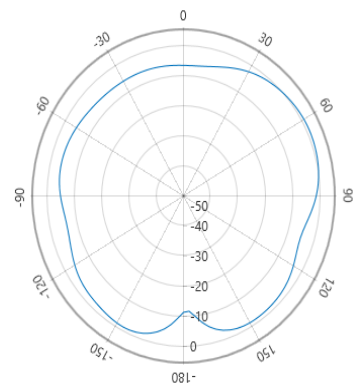
● ANT1



X-Z plan

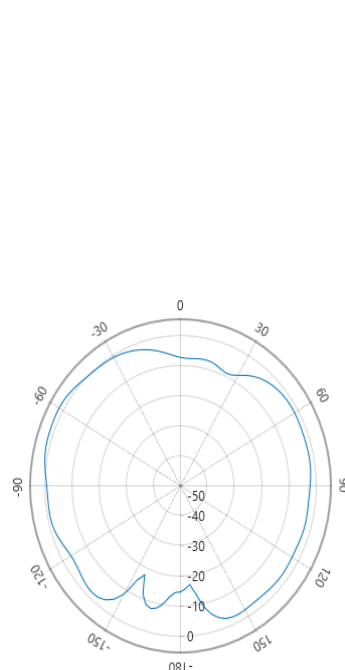


X-Y plan

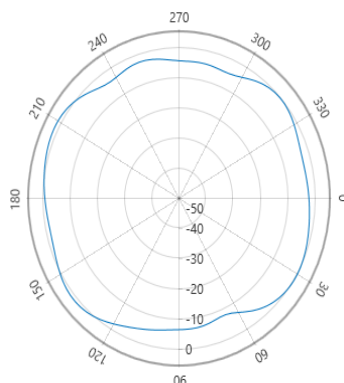


Y-Z plan

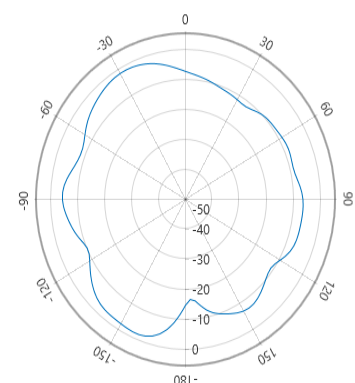
MHB highest value : 2550 MHz



X-Z plan



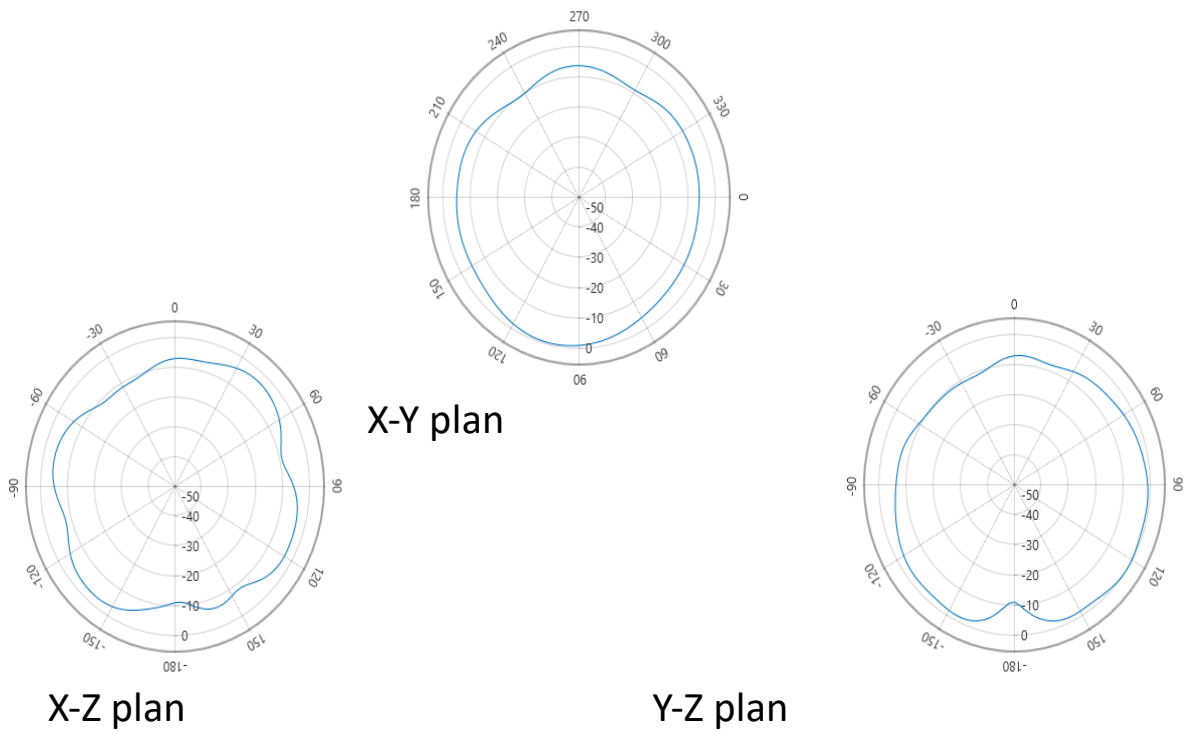
X-Y plan



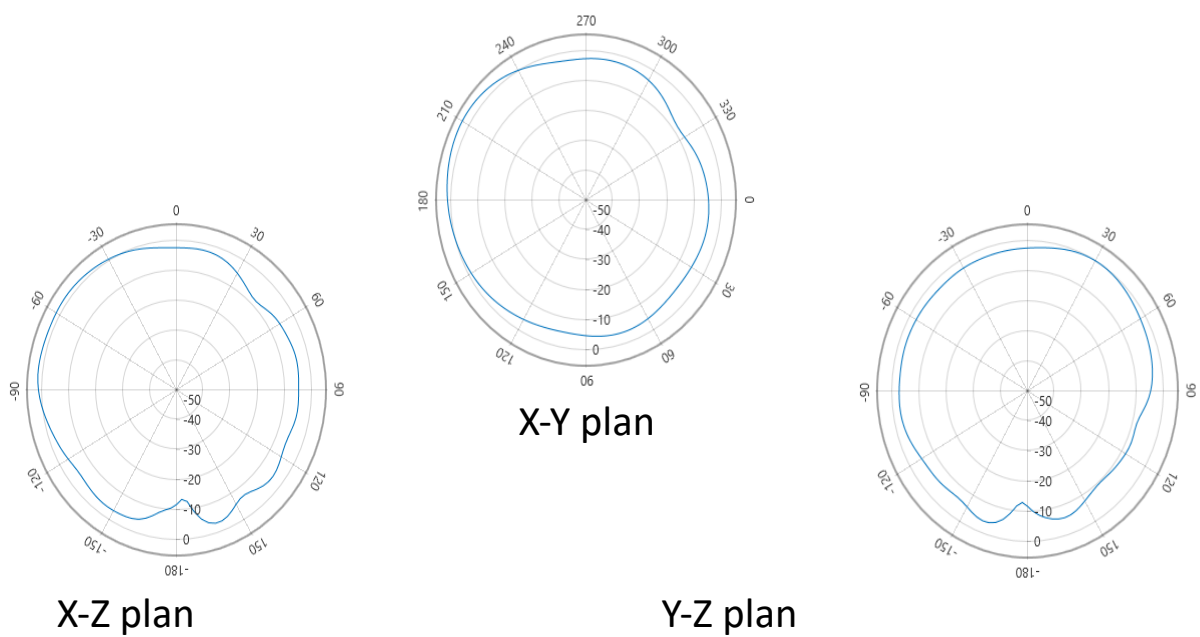
Y-Z plan

UHB highest value : 3900 MHz

● ANT2

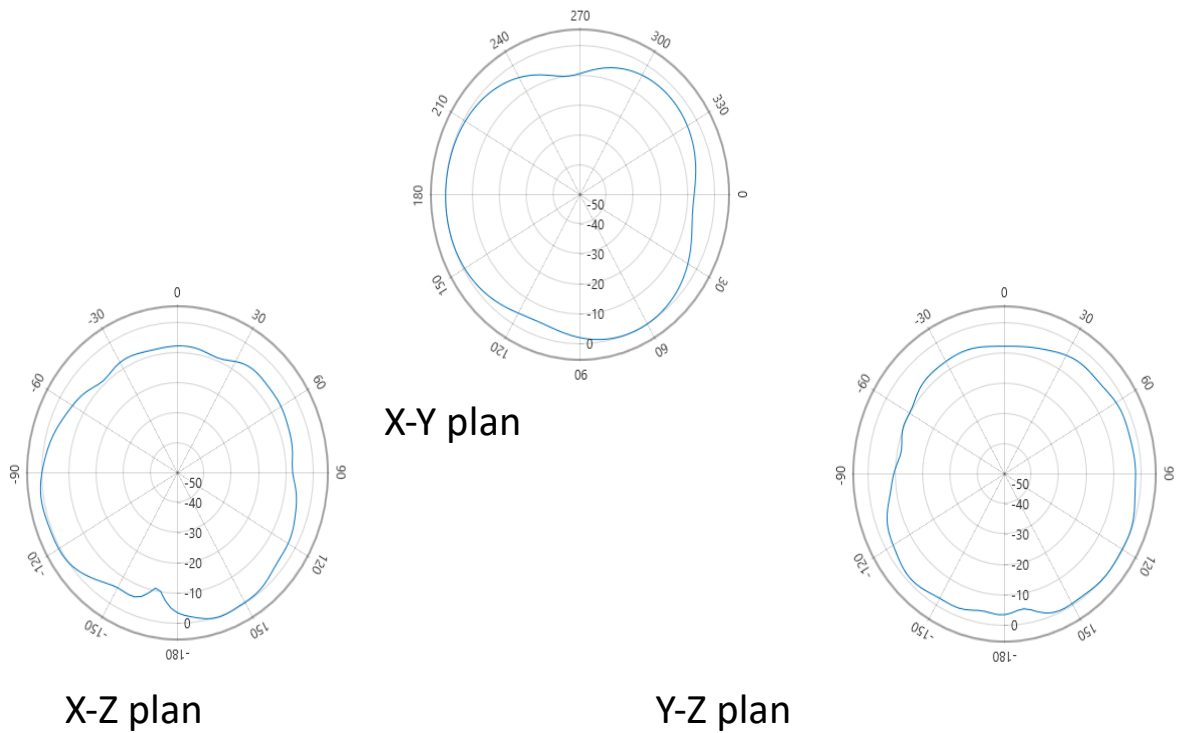


MHB highest value : 2600 MHz

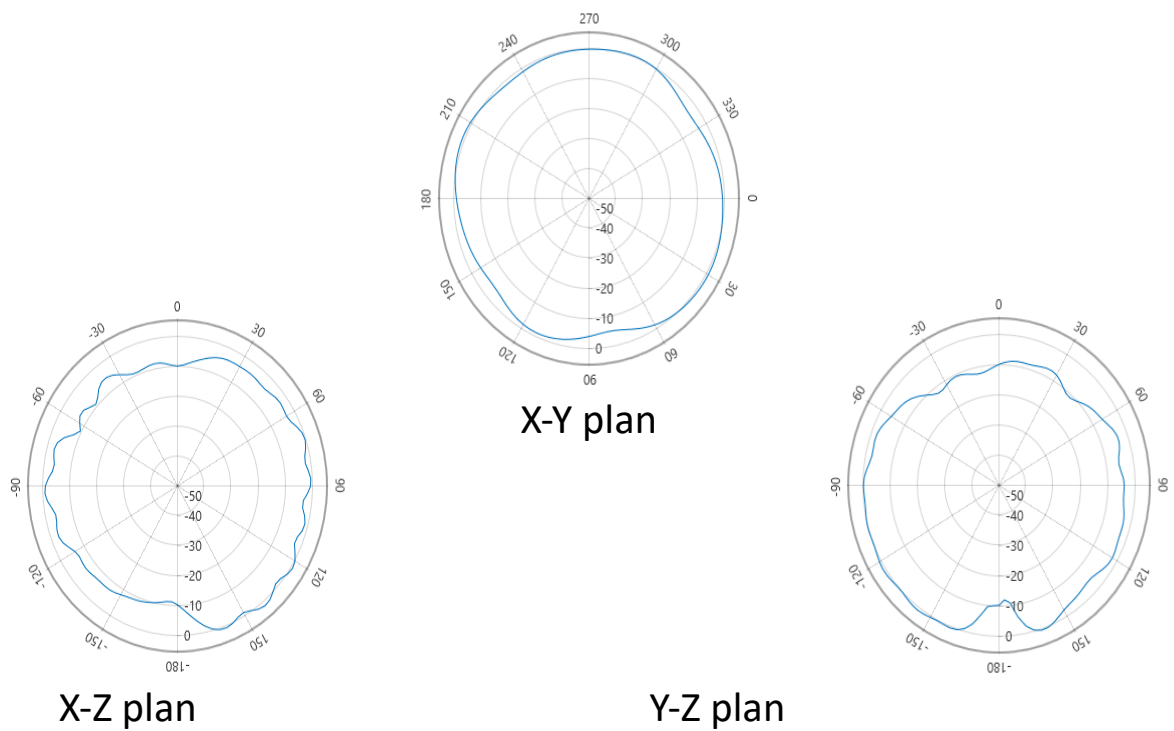


UHB highest value : 3400 MHz

● ANT3



MHB highest value : 1850 MHz

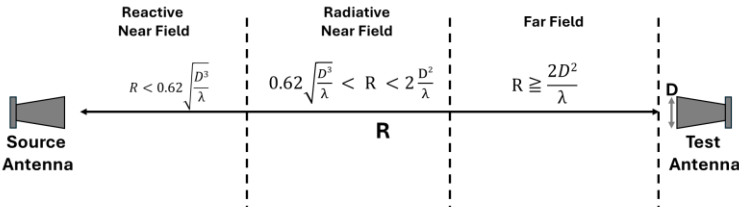


UHB highest value : 3900 MHz

- MVG SG-24-S calibration date : 2025/ 11 / 25
- MVG SG-24-S expired date : 2026/ 12 / 31
- MVG SG-24-S calibration name of personnel : MVG Charles
- ENA E5063A Network analyzer calibration date : 2025 / 02 / 03
- ENA E5063A Network analyzer expired date : 2027 / 02 / 02
- ENA E5063A Network analyzer calibration name of personnel : Keysight Freddy Hsu

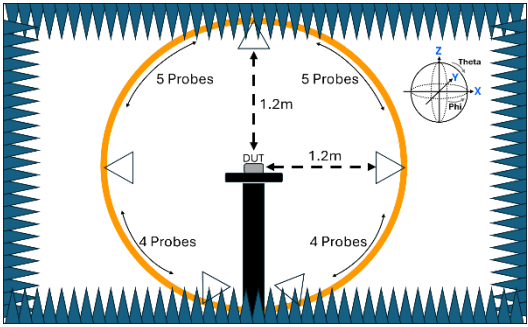
4.2 Measurement System far-field information

Based on the formulas for far-field and near-field calculations, the far-field information for the SG-24S 3D Chamber is as follows :



Frequency (MHz)	Near Field	Far Field	DUT to Measurement antenna distance
850 MHz	$R < 0.0177\text{m}$	$R \geq 0.0958\text{m}$	$R = 1.2\text{m}$
2300 MHz	$R < 0.0877\text{m}$	$R \geq 0.2594\text{m}$	$R = 1.2\text{m}$
5895 MHz	$R < 0.1462\text{m}$	$R \geq 0.6640\text{m}$	$R = 1.2\text{m}$
7125 MHz	$R < 0.1607\text{m}$	$R \geq 0.8029\text{m}$	$R = 1.2\text{m}$

R : Far-field distance
 λ : Wavelength ($\lambda = c/f$)
D : Antenna size



4.3 Test Method

EIRP measurement is based on industry-standard method described in CTIA OTA Test Plan (current version 3.9.4). Peak gain is calculated by subtracting Conducted Power from the measured maximum EIRP. Testing is performed with Antenna integrated in the product. Below is the measurement summary from the specification:

Figure 4-2 shows a typical real world configuration for measuring the path loss. In this case, a reference antenna with known gain is used in place of the theoretical isotropic source. The path loss may then be determined from the power into the reference antenna by adding the gain of the reference antenna. That is:

EQUATION 4.2

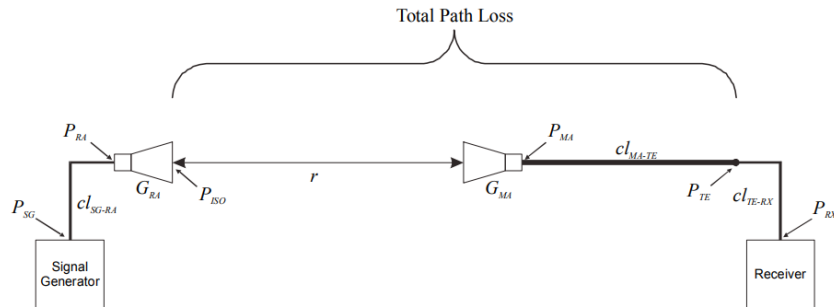
$$P_{ISO} = P_{RA} + G_{RA}$$

where P_{RA} is the power radiated by reference antenna, and G_{RA} is the gain of the reference antenna, so that:

EQUATION 4.3

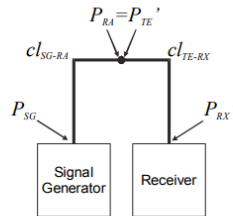
$$PL = P_{RA} + G_{RA} - P_{TE}$$

FIGURE 4-2 TYPICAL CONFIGURATION FOR MEASURING PATH LOSS



$$P_{RA} - P_{TE} = P_{RX}' - P_{RX}$$

FIGURE 4-3 CABLE REFERENCE CALIBRATION CONFIGURATION



where P_{RX}' is the power measured at the receiver during the cable reference test, and P_{RX} is the power measured at the receiver during the range path loss measurement in Figure 4-2. Note that this formulation assumes that the effects of the reference antenna VSWR are accounted for in the gain of the reference antenna. For more information on this subject, refer to [1]. Thus, the path loss is then just given by:

EQUATION 4.5

$$PL = G_{RA} + P_{RX}' - P_{RX}$$

Test date : 2026/04/11

The list of antenna engineers performed antenna passive measurement activities :

- Pegatron Aries_Lin
- Pegatron Junwei_Huang