

DATASHEET

Platform information	
Brand	Model Number
NETGEAR	MR8400

WIFI Antenna information			
Vendor	Type	Antenna Part number (WLAN0)	Antenna Part number (WLAN1)
Pegatron	WLAN0: Monopole WLAN1: PIFA	1415-0BNL0NR	1415-0BNL0NR
WNC		81XYBH15.GCD	81XYBH15.GCD

2026

PEGATRON

Table of Contents

1. Specifications

2. Antenna Placement

2.1 All antenna positions on the DUT

2.2 WLAN0/WLAN1 on the PCBA

3. Performance Data

3.1 Return Loss

3.2 Peak gain summary

3.3 Max 2D Radiation Pattern Plane

4. Antenna Gain Measurement Setting

4.1 Test equipment

4.2 Measurement System Far-Field Information

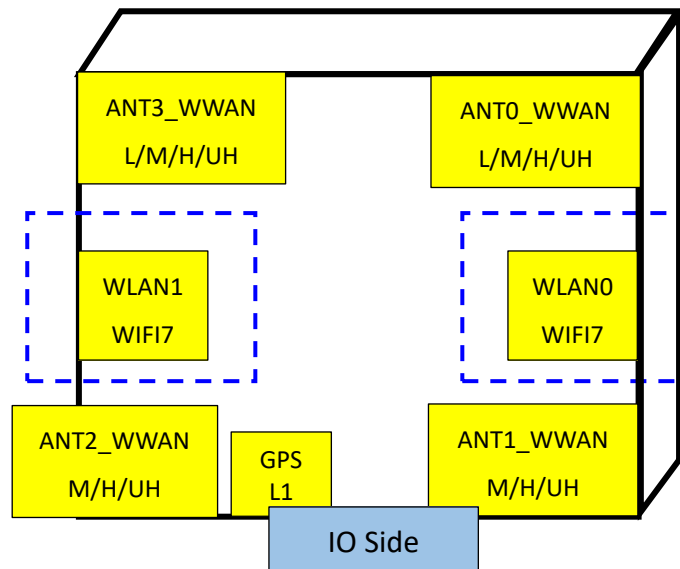
4.3 Test method

1. Specifications

Description	
Antenna type WLAN0 Antenna	Monopole
Antenna type WLAN1 Antenna	PIFA
Peak Gain WLAN0 Antenna	See the table 3.2.1
Peak Gain WLAN1 Antenna	See the table 3.2.2

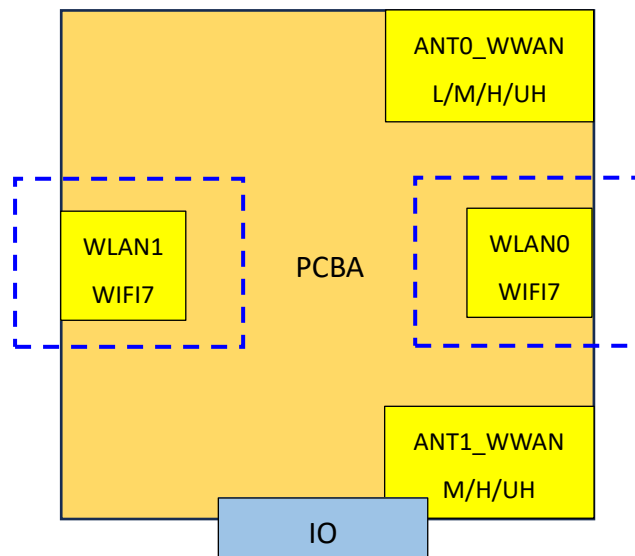
2. Antenna Placement

2.1 All Antenna Positions on the DUT



Overview

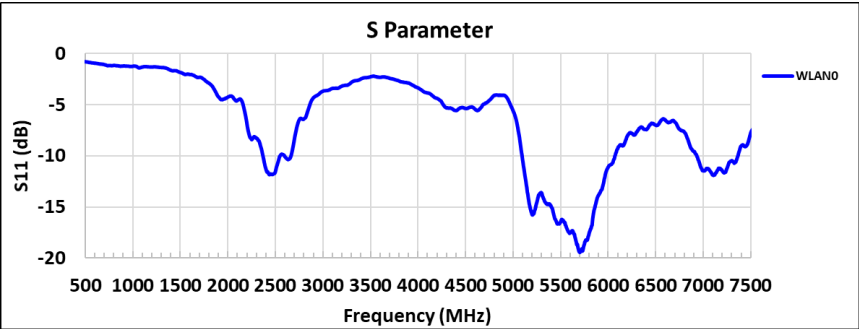
2.2 WLAN0/WLAN1 on the PCBA



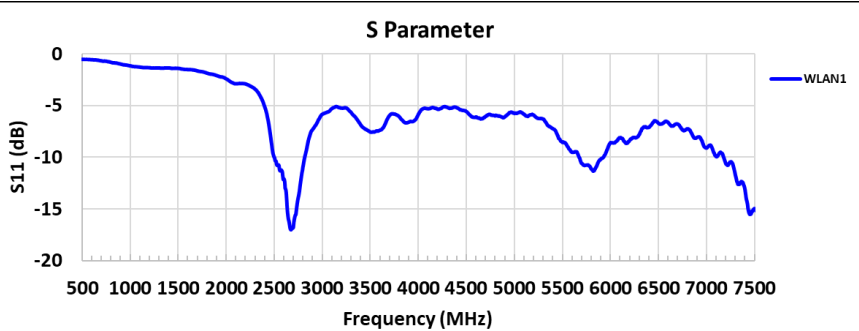
3. Performance Data

3.1 Return Loss

3.1.1 WLAN0 Antenna



3.1.2 WLAN1 Antenna



3.2 Peak Gain summary

WIFI band	
Polarization	Linear
WLAN0	Gain (dBi)
Frequency (MHz)	
2402	-0.03
2440	0.54
2478	0.24
2483.5	0.24
5160	2.91
5200	2.95
5250	3.04
5300	3.06
5470	3.11
5550	3.18
5620	3.71
5725	3.65
5785	3.6
5800	3.54
5850	3.52
5865	3.48
5895	3.31
5925	3.25
6175	3
6200	2.86
6425	2.45
6475	2.33
6525	2.27
6695	2.16
6875	1.93
6995	1.85
7115	1.79

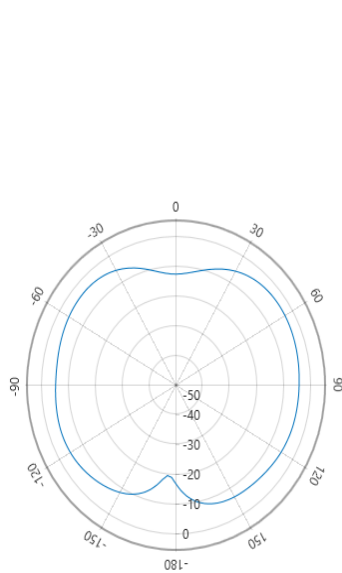
Table 3.2.1

WIFI band	
Polarization	Linear
WLAN1	Gain (dBi)
Frequency (MHz)	
2402	0.69
2440	0.31
2478	0.16
2483.5	0.16
5160	-0.08
5200	-0.1
5250	-0.3
5300	-0.25
5470	0.35
5550	0.95
5620	1.44
5725	1.41
5785	1.38
5800	1.37
5850	1.36
5865	1.36
5895	1.35
5925	1.32
6175	1.2
6200	1.19
6425	1.67
6475	1.68
6525	1.95
6695	2.31
6875	2.01
6995	1.53
7115	1.26

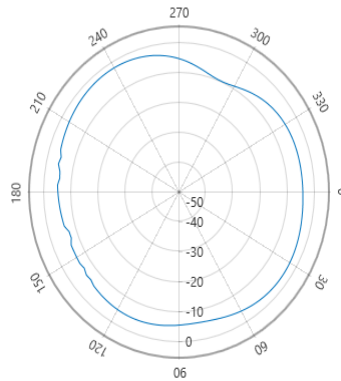
Table 3.2.2

3.3 Max 2D Radiation Pattern Plane

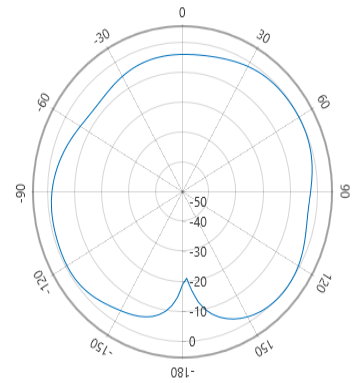
● WLAN0



X-Z plan

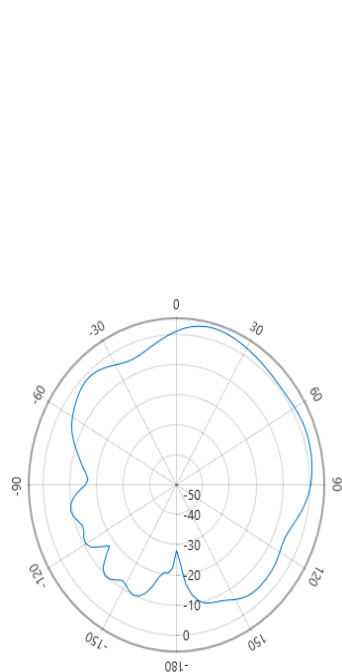


X-Y plan

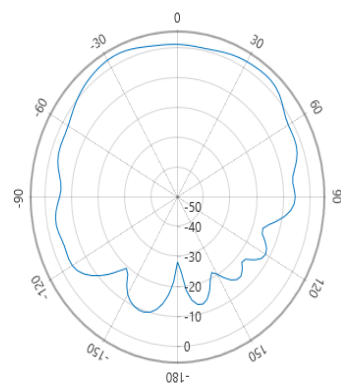


Y-Z plan

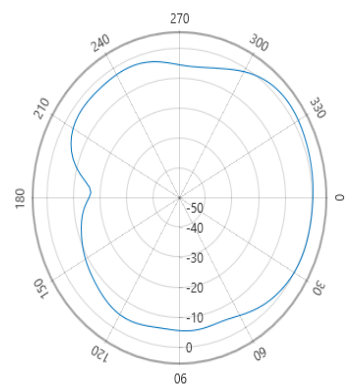
2.4G highest value : 2440 MHz



X-Z plan

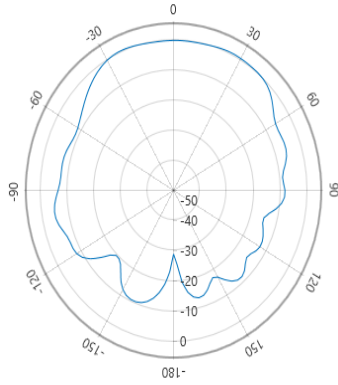


X-Y plan

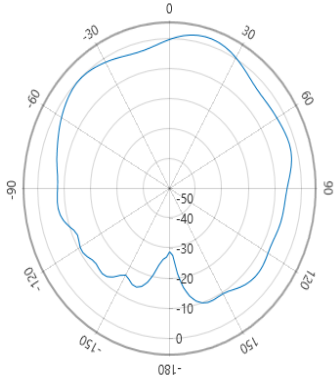


Y-Z plan

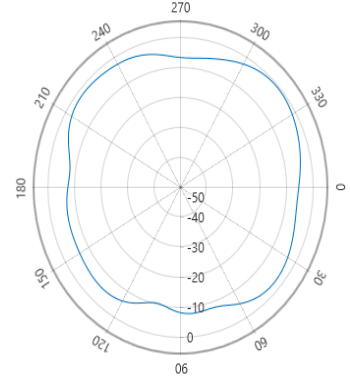
5G highest value : 5620 MHz



X-Y plan



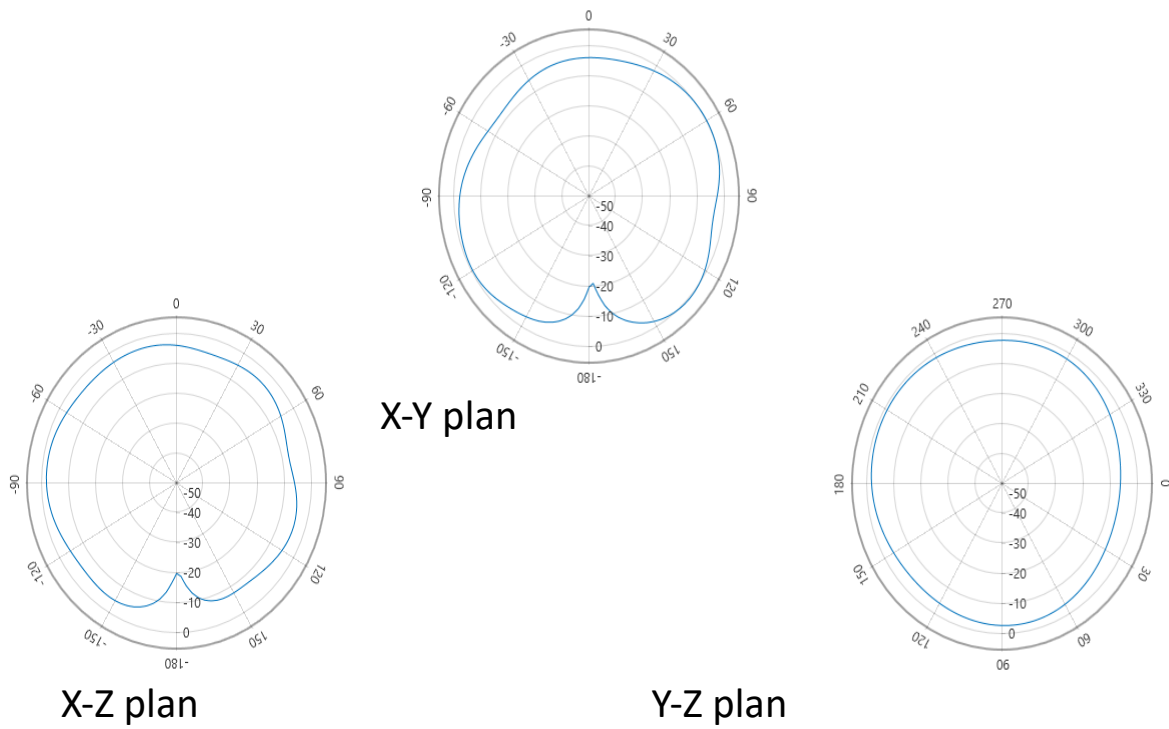
X-Z plan



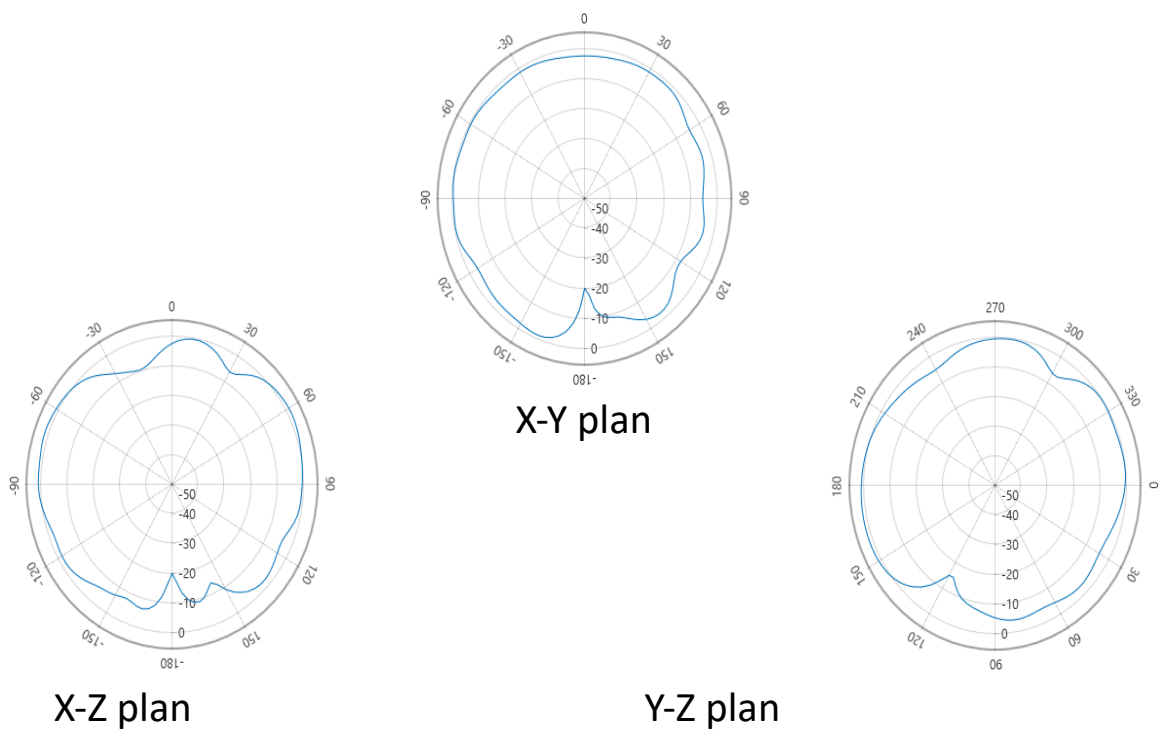
Y-Z plan

6G highest value : 6200 MHz

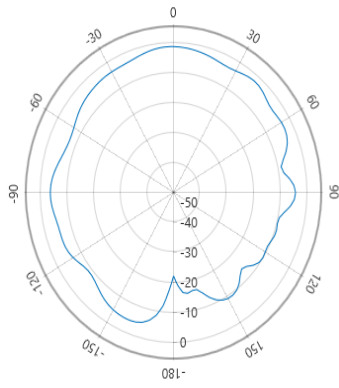
● WLAN1



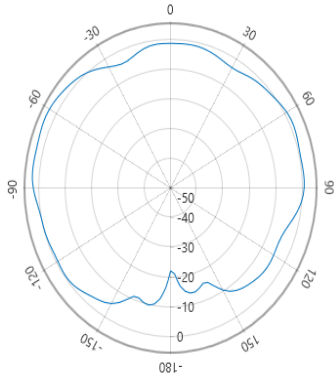
2.4G highest value : 2402 MHz



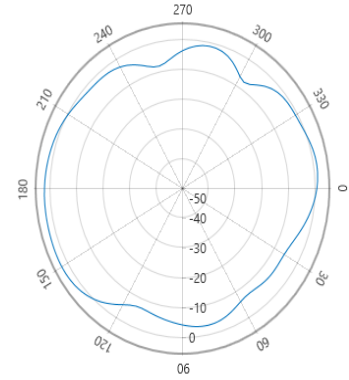
5G highest value : 5620 MHz



X-Y plan



X-Z plan

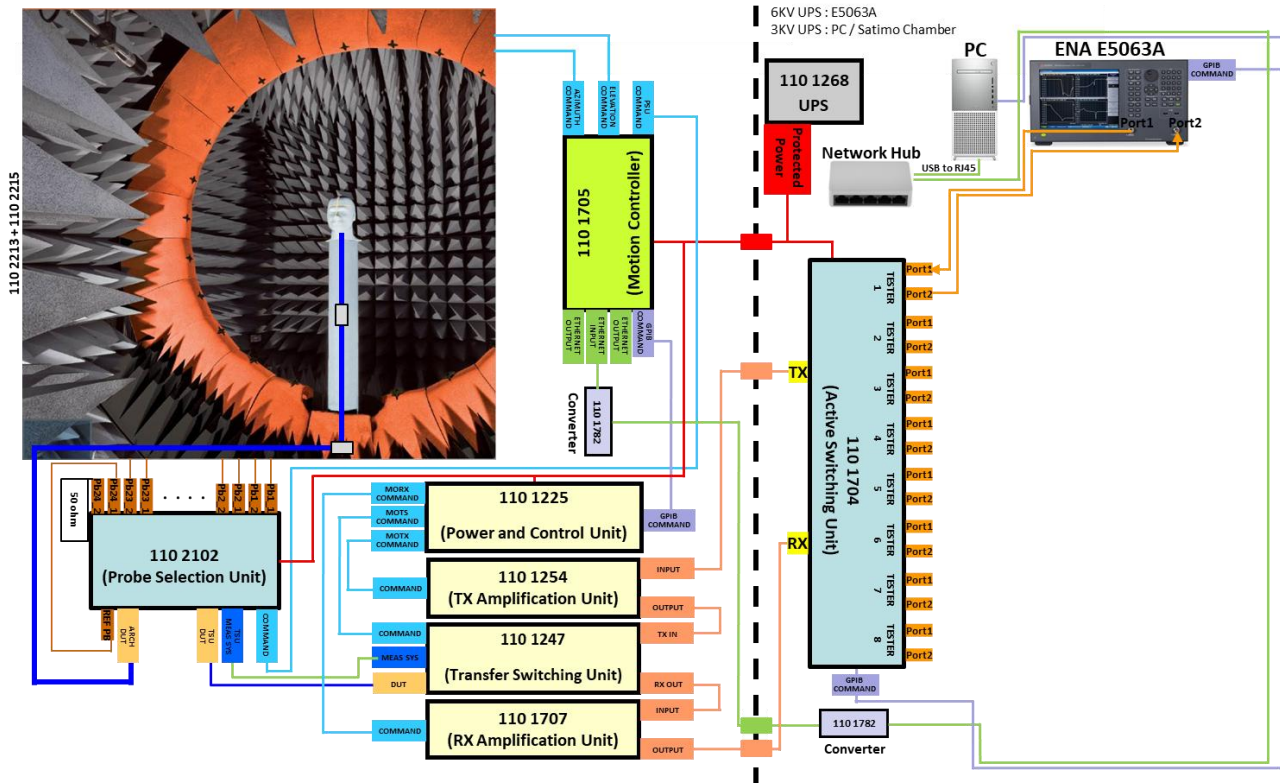


Y-Z plan

6G highest value : 6695 MHz

4. Antenna Gain Measurement Setting

4.1 Test Equipment



The pieces of test equipment and software used are as follows:

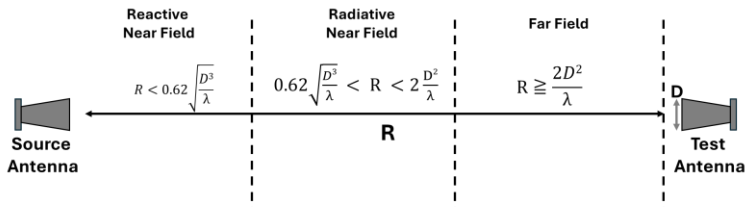
- The MVG SG-24-S 3D fully anechoic chamber, also known as a Satimo chamber.
- Keysight ENA E5063A Network analyzer
- MVG measurement software: WaveStudio 23.3

The pieces of test equipment calibration information are as follows:

- 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

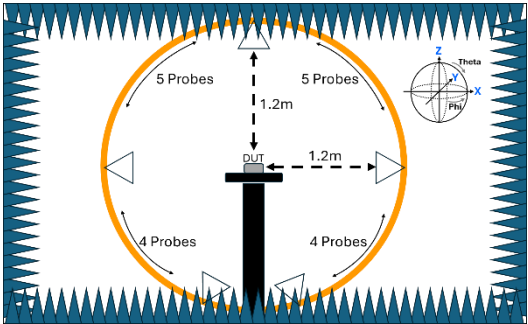
4.2 Measurement System far-field information

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

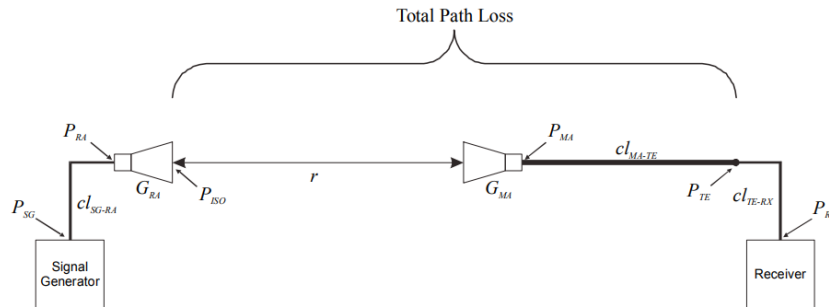
$$P_{ISO} = P_{RA} + G_{RA}$$

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

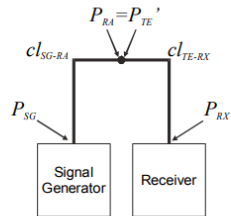
$$PL = P_{RA} + G_{RA} - P_{TE}$$

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