



## **Unlicensed Band Antenna Gain(BT/WLAN/UWB/NFC)**

**Model: SM-S926U, SM-S926U1**

**FCC ID: A3LSMS926U**

# 1. BT+ WLAN antenna type : Metal

## BT/WIFI#1\_2.4GHz\_5/6GHz (SUB4 ANT)

Freq. [Hz]	Peak. [dBi]
2,400,000,000 Hz	-7.26
2,412,000,000 Hz	-6.58
2,437,000,000 Hz	-5.49
2,442,000,000 Hz	-4.91
2,450,000,000 Hz	-3.55
2,462,000,000 Hz	-3.11
2,472,000,000 Hz	-2.53
2,484,000,000 Hz	-3.02
2,500,000,000 Hz	-3.74
5,150,000,000 Hz	-7.65
5,200,000,000 Hz	-6.44
5,220,000,000 Hz	-5.14
5,250,000,000 Hz	-5.73
5,280,000,000 Hz	-5.43
5,300,000,000 Hz	-4.61
5,350,000,000 Hz	-4.32
5,400,000,000 Hz	-3.02
5,500,000,000 Hz	-4.76
5,600,000,000 Hz	-3.65
5,700,000,000 Hz	-4.69
5,785,000,000 Hz	-4.06
5,800,000,000 Hz	-5.09
5,805,000,000 Hz	-5.27
5,850,000,000 Hz	-5.14
5,885,000,000 Hz	-4.49
5,895,000,000 Hz	-5.37
5,925,000,000 Hz	-7.78
6,025,000,000 Hz	-9.05
6,125,000,000 Hz	-8.12
6,225,000,000 Hz	-8.33
6,325,000,000 Hz	-8.91
6,425,000,000 Hz	-7.7
6,525,000,000 Hz	-7.65
6,625,000,000 Hz	-9.36
6,725,000,000 Hz	-9.84
6,825,000,000 Hz	-9.57
6,925,000,000 Hz	-10.76
7,025,000,000 Hz	-9.61
7,125,000,000 Hz	-11.63

**BT/WIFI #2\_2.4GHz (SUB6 ANT), WIFI #2\_5/6GHz (SUB1 ANT)**

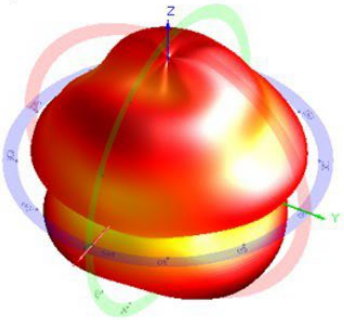
<b>Freq. [Hz]</b>	<b>Peak. [dBi]</b>
2,400,000,000 Hz	-10.7
2,412,000,000 Hz	-10.41
2,437,000,000 Hz	-7.67
2,442,000,000 Hz	-6.59
2,450,000,000 Hz	-4.79
2,462,000,000 Hz	-4.75
2,472,000,000 Hz	-5
2,484,000,000 Hz	-4.75
2,500,000,000 Hz	-5.38
5,150,000,000 Hz	-6.42
5,200,000,000 Hz	-5.92
5,220,000,000 Hz	-6.08
5,250,000,000 Hz	-5.33
5,280,000,000 Hz	-4.99
5,300,000,000 Hz	-4.76
5,350,000,000 Hz	-5.99
5,400,000,000 Hz	-5.12
5,500,000,000 Hz	-7.41
5,600,000,000 Hz	-6.49
5,700,000,000 Hz	-6.25
5,785,000,000 Hz	-6.16
5,800,000,000 Hz	-5.53
5,805,000,000 Hz	-6.08
5,850,000,000 Hz	-5.58
5,885,000,000 Hz	-5.7
5,895,000,000 Hz	-5.25
5,925,000,000 Hz	-8.61
6,025,000,000 Hz	-7.39
6,125,000,000 Hz	-9.32
6,225,000,000 Hz	-8.05
6,325,000,000 Hz	-7.22
6,425,000,000 Hz	-7.54
6,525,000,000 Hz	-7.88
6,625,000,000 Hz	-8.12
6,725,000,000 Hz	-8.26
6,825,000,000 Hz	-9
6,925,000,000 Hz	-9.23
7,025,000,000 Hz	-8.33
7,125,000,000 Hz	-7.44

## Test setup photos

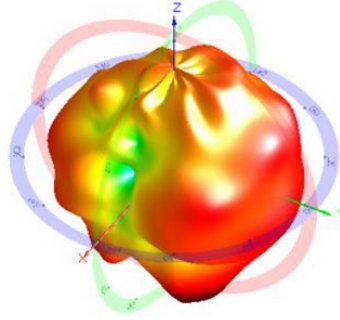
The antenna gain report test setup photos includes pictures of the measurement setup.

## Radiation plots for max gain plane (3D)

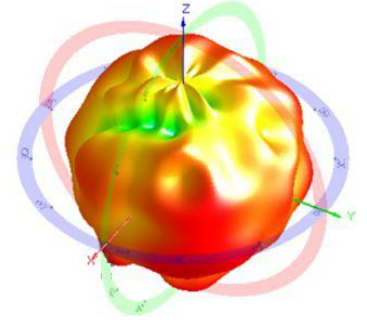
WiFi-1



2.5G

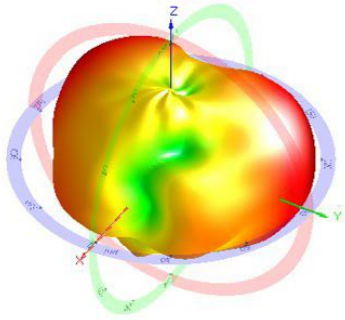


5G

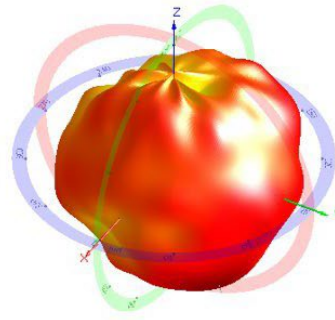


6G

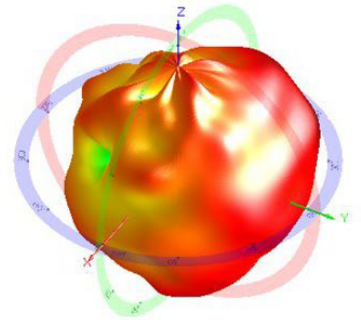
WiFi-2



2.5G



5G



6G

## UWB Sub5, Ant I -Metal

No.	Freq.[MHz]	Avg.[dBi]	Peak[dBi]
1	6250	-12.62	-5.57
2	6300	-13.1	-5.43
3	6350	-12.71	-5.36
4	6400	-12.72	-4.87
5	6450	-12.46	-5.05
6	6500	-12.66	-4.99
7	6550	-12.78	-5.09
8	6600	-12.21	-4.04
9	6650	-12.95	-5.01
10	6700	-13.14	-4.74
11	6750	-11.51	-4.1
12	7750	-13.32	-7.54
13	7800	-13.09	-6.82
14	7850	-12.66	-6.08
15	7900	-12.71	-5.97
16	7950	-12.67	-5.51
17	8000	-12.73	-6.05
18	8050	-12.26	-5.22
19	8100	-12.48	-5.52
20	8150	-13.33	-6.33
21	8200	-13.16	-5.53
22	8250	-12.77	-6.22

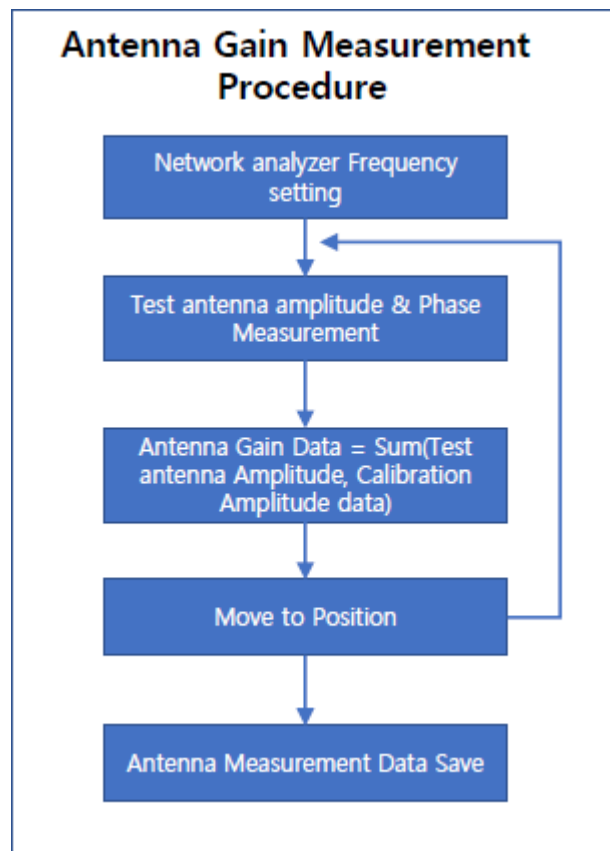
## Chamber Information



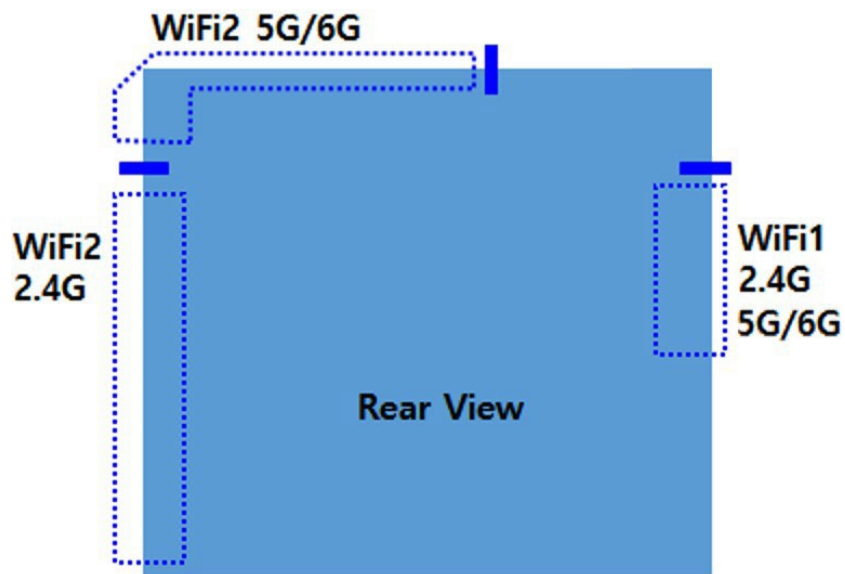
Figure 2: Geometry of Anechoic Chamber for Radiation patterns.

- ✓ Location : Samsung R&D Center R5 bld.
- ✓ Size : 4m x 2.5 x 2.5m (L x W x H)
- ✓ Frequency : 600 MHz -18GHz
- ✓ TX Antenna : 2GHz –18GHz Dual Polarization
- ✓ Quiet zone : 22cm @ 6GHz (Far-Field Length 2m)
- ✓ 2-axis DUT positioner -360°continuous rotation

## Antenna Gain Measurement Procedure

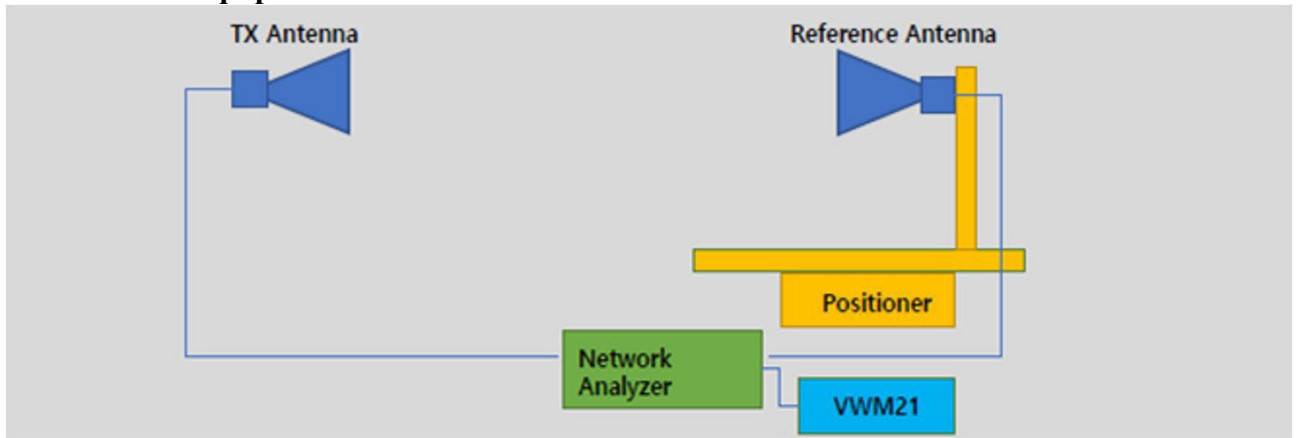


## Detail antenna description



The antennas can be seen in the internal photos.

**Table of calibrated equipment**



Part	Model Name	Specification	Cal date	Serial number
Tx Antenna	QRH-006M-006G	600MHz to 6GHz	Calibrated date :2023.8.8 / Cal. Due : 2024.12.28	-
	QRH-002G-018G	2GHz to 18GHz	Calibrated date :2023.8.8 / Cal. Due : 2024.12.28	-
Reference Antenna	BBHA9120LFA	680MHz to 6500MHz	Calibration Frequency(680MHz to 6GHz) Calibrated date:2023.8.8 / Cal. Due : 2024.12.28	9120LF-365
	BBHA9120C	2GHz to 18GHz	Calibration Frequency(2GHz to 8.5GHz) Calibrated date:2023.8.8 / Cal. Due : 2024.12.28	BBHA9120C#714
Network Analyzer	Agilent 5071B	300KHz to 8.5GHz	Calibrated date :2023.8.8 / Cal. Due : 2024.12.28	C000026236
Measurement Software	VWM21		MTG Visual Wave-Mobile(Ver.2.1)	-

**Test dates**

**2023.09.01**

**Names of test personnel**

**Hee-jun Lee, Myung-gu Kang, Byung-man Lim**

**Names of commercial test software being used**

**MTG Visual Wave-Mobile (Ver.2.1)**



### 3. NFC antenna

- Antenna type : FPCB type
- Antenna number of turns : 3 turns
- Antenna size : 34.0 x 37.5 mm
- Antenna photo : Please refer to internal photo

