



Unlicensed Band Antenna Gain

Model: SM-A556E/DS, SM-A556E

FCC ID: A3LSMA556E

BT/WIFI #1_2.4GHz, 5GHz (SUB4)

A55 BT, WiFi #1 (Sub4 2.4G/5G)	
Freq	Peak.[dBi]
2400	-7.54
2412	-6.97
2437	-7.61
2442	-7.37
2450	-8.09
2462	-7.76
2472	-8.34
2484	-7.06
2500	-8.04
5150	-7.66
5200	-7.69
5220	-7.18
5250	-7.6
5280	-7.88
5300	-7.2
5350	-6.99
5400	-7.5
5500	-7.43
5600	-7.46
5700	-8.5
5785	-7.69
5800	-7.31
5805	-7.89
5850	-7.92

BT/WIFI #2_2.4GHz (SUB6), WIFI #2_5GHz (SUB1)

A55 WiFi #2 (Sub1 5G, Sub6 2.4G)	
Freq	Peak.[dBi]
2400	-8.68
2412	-8.56
2437	-7.4
2442	-7.37
2450	-7.61
2462	-7.31
2472	-7.92
2484	-7.03
2500	-7.13
5150	-7.08
5200	-7.23
5220	-7.14
5250	-7.55
5280	-7.12
5300	-7.33
5350	-7.29
5400	-6.98
5500	-7.29
5600	-7.77
5700	-7.56
5785	-7.37
5800	-7.22
5805	-8.19
5850	-8.82

Radiation Pattern Test

Antennas tested for Gain and Efficiency must be assembled into the enclosure and tested in the fully assembled and operating **SM-A556E** handset. The antenna is tested in free space in the anechoic chamber in the H, E1 and, E2 planes. The radiation patterns are measured at the center of transmit and receive bands.

A picture showing the geometry for this device is included in the test setup photos.

Chamber Information

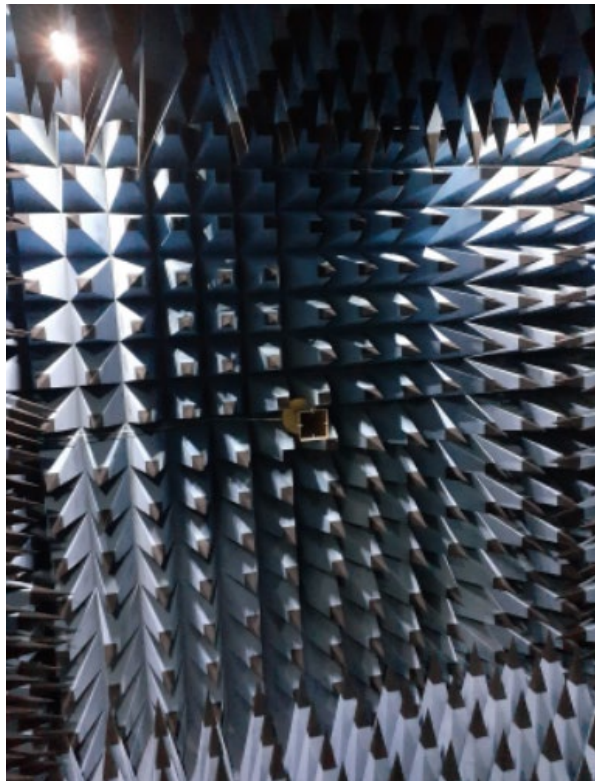
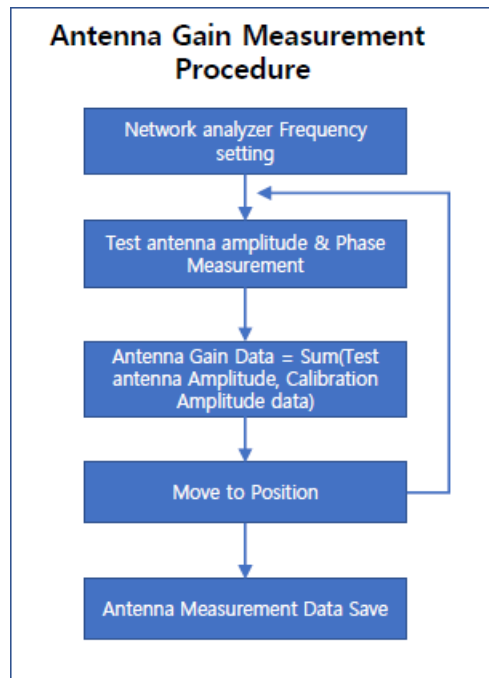


Figure 2: Geometry of Anechoic Chamber for Radiation patterns.

- ✓ Location : Samsung R&D Center R5 bld.
(129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea)
- ✓ Size : 4m x 3 x 3m (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

- ✓ Antenna type :
 - Wi-Fi 1 : Metal slit antenna
 - Wi-Fi 2_2.4G : Metal slot antenna
 - Wi-Fi 2_5G : Metal PIFA antenna

- ✓ Antenna manufacturer : Samsung Electronics

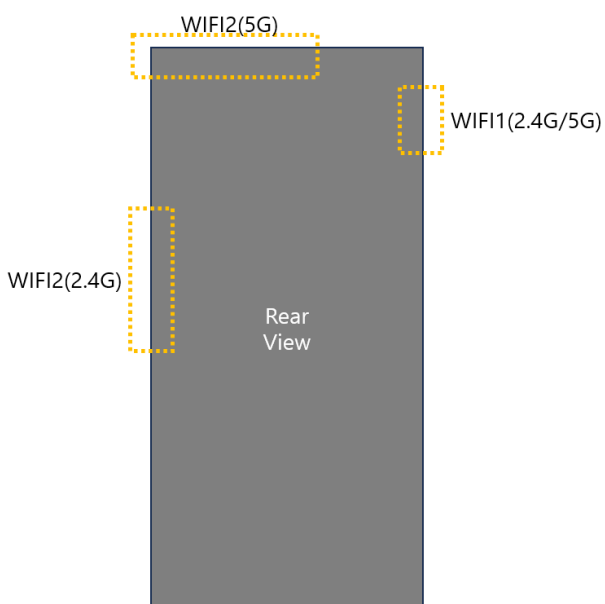
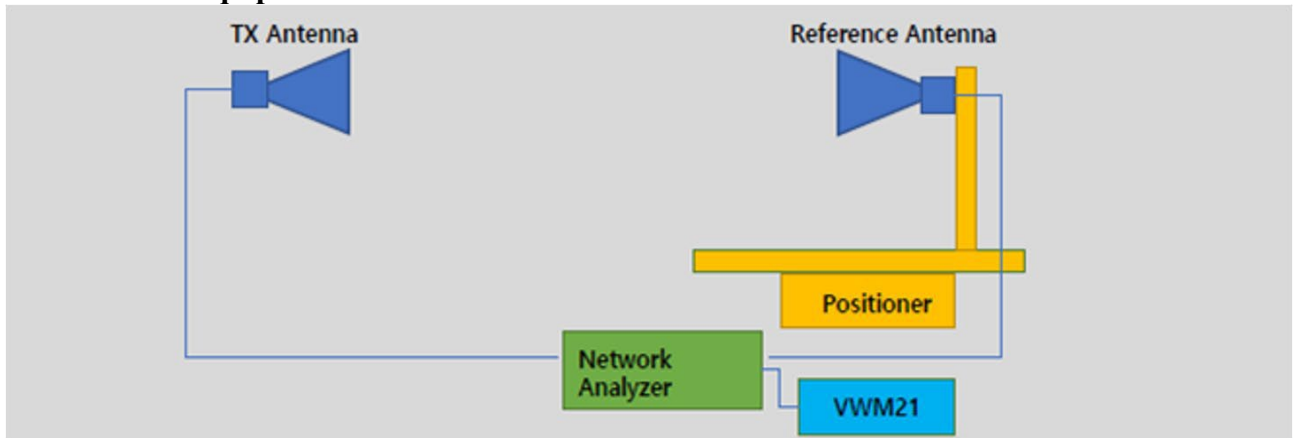


Table of calibrated equipment



Part	Model Name	Specification	Cal date	Serial number
Tx Antenna	QRH-006M-006G	600MHz to 6GHz	Calibrated date :2023.4.17 / Cal. Due : 2024.4.17	-
	QRH-002G-018G	2GHz to 18GHz	Calibrated date : 2023.4.17 / Cal. Due : 2024.4.17	-
Reference Antenna	BBHA9120LFA	680MHz to 6500MHz	Calibration Frequency(680MHz to 6GHz) Calibrated date: 2023.4.17 / Cal. Due : 2024.4.17	9120LF-365
	BBHA9120C	2GHz to 18GHz	Calibration Frequency(2GHz to 8.5GHz) Calibrated date: 2023.4.17 / Cal. Due : 2024.4.17	BBHA9120C#714
Network Analyzer	Keysight	100KHz to 18GHz	Calibrated date : 2023.4.17 / Cal. Due : 2024.4.17	MY5420
Measurement Software	VWM21		MTG Visual Wave-Mobile(Ver.2.1)	-

Test dates

2023.12.08

Names of test personnel

Youngjung Kim, Jesun Moon

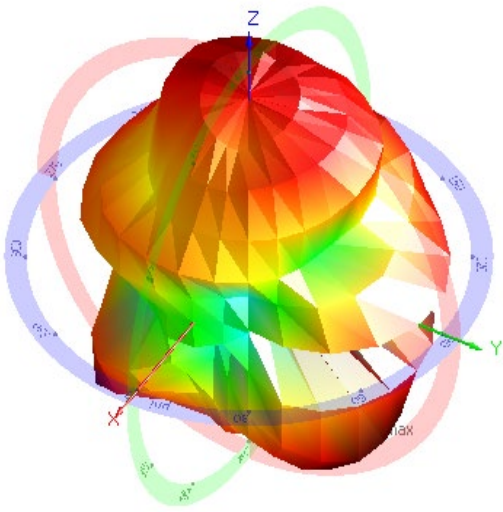
Names of commercial test software being used

MTG Visual Wave-Mobile (Ver.2.1)

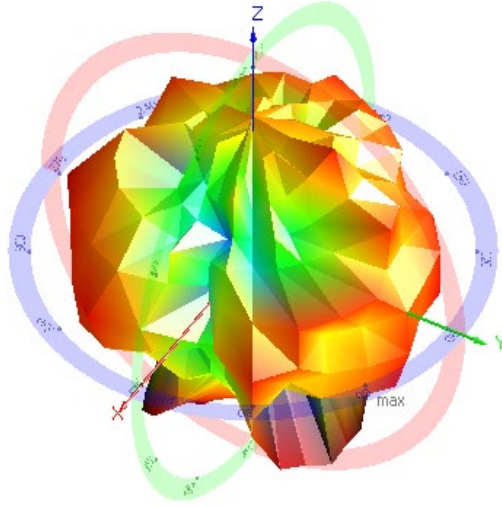
Radiation plots for max gain plane (3D)

WiFi1

2.4G

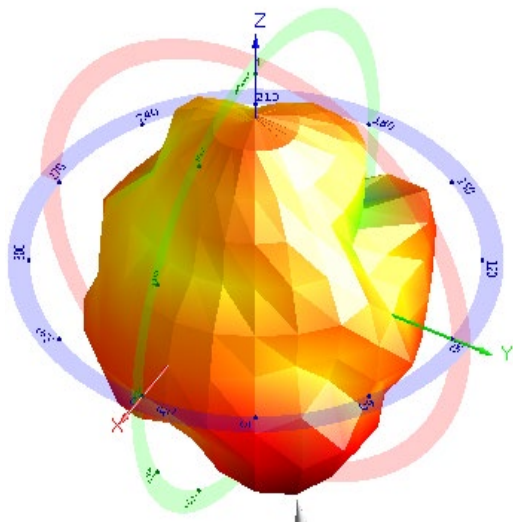


5G



WiFi2

2.4G



5G

