1. Measurement information

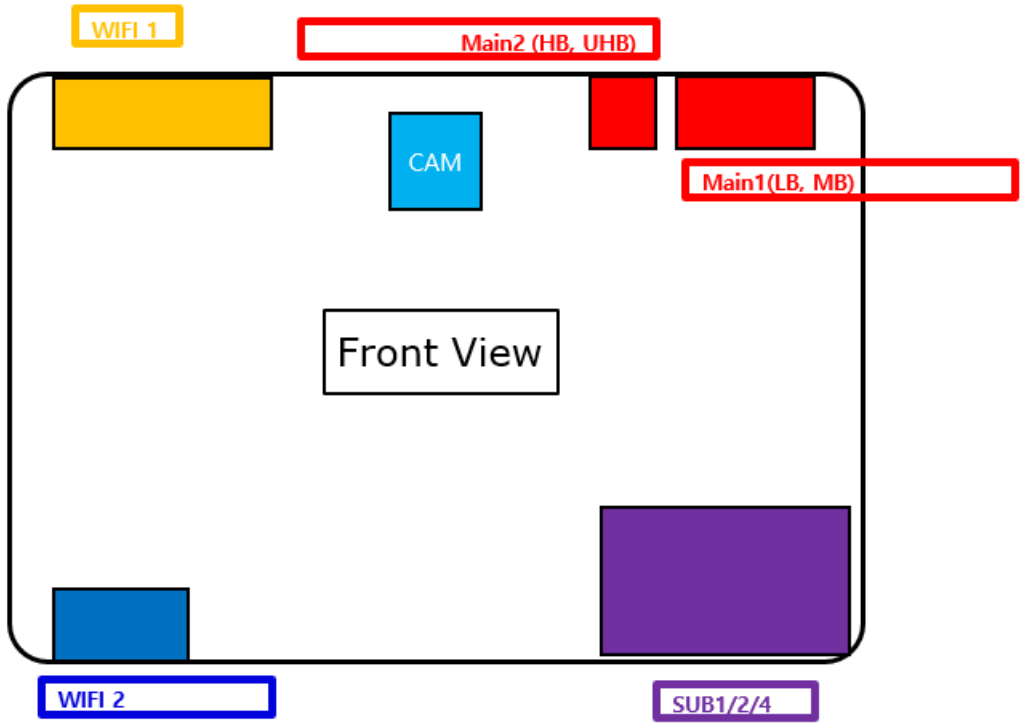
- Measurement : Samsung Electronics
- Equipment : RTS60 Chamber, ZNB 8 Network Analyzer

2.1. Return Loss & VSWR Test

The VSWR measurement of antennas assembled into a fully operating SM-T636B is measured on the Network Analyzer. The handset is set up with a 50 Ohm coaxial cable connected to the 50 Ohm point. Calibration is done at the end of the 50 Ohm coaxial cable connection. The other end of the 50 Ohm coaxial cable is connected to a network analyzer. The handset is positioned on a non-conductive table for free space measurements.

2.2. Return Loss & VSWR Test

Samsung Antenna Lab has a system that can measure VSWR using RTS60 chamber and ZNB8 network analyzer. In order to measure the VSWR of each antenna, the antenna lab connects the coaxial cable to the point in contact with the antenna on the main board. The VSWR is measured through the coaxial cable connected in the set. At this time, the SM-T636B is assembled in the same state as the user environment.

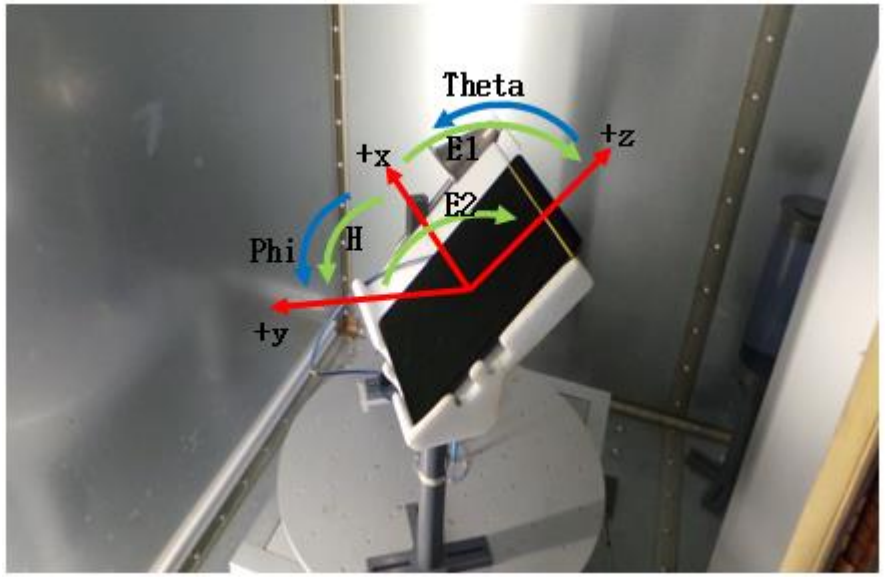


※ Coaxial cables are connected to each antenna.

※ The coaxial cable is connected to the RTS60 chamber to measure the VSWR.

3. Radiation Pattern Test

Antennas tested for Gain and Efficiency must be assembled into the enclosure and tested in the fully assembled and operating SM-T636B. 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.



4. Test Method (Manufacturing)

All measurements are done with SM-T636B fully assembled. Measure in consideration of the customer's usage environment. Use a fully shielded chamber environment to prevent any noise-induced errors. Typically, the electrical properties of the antenna are measured using a jig that can hold the set.

4. Antenna Gain

4.1. SM-T636B Main Antenna

-. Antenna Manufacturer: Kyocera AVX

-. Antenna Type: LDS

ANT	Band	Freq(MHz)	Eff	AVG(dBi)	Peak(dBi)
Main 1	B12, B17	698	18.9 %	-7.2 dBi	-3.2 dBi
		704	19.3 %	-10.0 dBi	-5.4 dBi
		716	21.3 %	-6.7 dBi	-2.8 dBi
	B13	777	23.6 %	-6.3 dBi	-2.3 dBi
		782	24.4 %	-6.1 dBi	-2.2 dBi
		787	24.6 %	-6.1 dBi	-2.2 dBi
	B28	704	10.0 %	-10.0 dBi	-5.4 dBi
		729	16.0 %	-7.9 dBi	-3.7 dBi
		746	20.5 %	-6.9 dBi	-3.1 dBi
	B5, 20	821	23.6 %	-6.3 dBi	-1.7 dBi
		847	30.5 %	-5.2 dBi	0.7 dBi
		862	35.7 %	-4.5 dBi	1.3 dBi
	B8	894	38.0 %	-4.2 dBi	0.9 dBi
		896.5	34.2 %	-4.7 dBi	0.5 dBi
		915	35.7 %	-4.5 dBi	0.9 dBi
	B3, B4, B66	1710	34.1 %	-4.7 dBi	1.0 dBi
		1747.5	42.9 %	-3.7 dBi	2.8 dBi
		1785	49.2 %	-3.1 dBi	3.2 dBi
	B2	1876	54.9 %	-2.6 dBi	3.9 dBi
		1880	56.7 %	-2.5 dBi	4.0 dBi
		1910	51.6 %	-2.9 dBi	3.7 dBi
	B1	1920	50.6 %	-3.0 dBi	3.6 dBi
		1950	44.6 %	-3.5 dBi	3.2 dBi
		1980	40.7 %	-3.9 dBi	2.9 dBi
Main 2	B40	2300	27.9 %	-5.5 dBi	0.3 dBi
		2350	26.0 %	-5.9 dBi	-0.8 dBi
		2400	28.5 %	-5.4 dBi	-2.0 dBi
	B41	2496	31.4 %	-5.0 dBi	-0.9 dBi
		2573.6	33.3 %	-4.8 dBi	-0.5 dBi
		2690	30.0 %	-5.2 dBi	-1.4 dBi
	N77	3300	25.0 %	-6.0 dBi	-0.5 dBi
		3750	37.7 %	-4.2 dBi	1.5 dBi
		4200	34.1 %	-4.7 dBi	0.3 dBi
	N78	3300	25.0 %	-6.0 dBi	-0.5 dBi
		3550	34.7 %	-4.6 dBi	0.8 dBi
		3800	35.0 %	-4.6 dBi	1.1 dBi

4.2. SM-T636B WiFi Antenna

-. Antenna Manufacturer: Kyocera AVX

-. Antenna Type: LDS

ANT	Freq(MHz)	Efficiency	AVG(dBi)	Peak(dBi)
WIFI 1	2400	16.5%	-7.5	-2.5
	2420	27.7%	-5.6	-2.8
	2440	27.6%	-5.6	-2.9
	2460	25.5%	-5.9	-2.9
	2480	27.6%	-5.6	-2.8
	2500	15.7%	-8.0	-3.0
	5150	14.4%	-8.4	-8.4
	5290	31.7%	-5.0	-5.0
	5430	42.3%	-3.7	-3.7
	5570	38.6%	-4.1	-4.1
	5710	39.3%	-4.1	-4.1
	5850	11.8%	-9.3	-9.3

ANT	Freq(MHz)	Efficiency	AVG(dBi)	Peak(dBi)
WIFI 2	2400	15.2%	-8.2	-2.5
	2420	29.0%	-5.4	-2.6
	2440	29.9%	-5.2	-2.7
	2460	29.0%	-5.4	-2.8
	2480	28.7%	-5.4	-2.9
	2500	25.6%	-5.9	-3.0
	5150	26.3%	-5.8	-2.8
	5290	26.5%	-5.8	-2.9
	5430	316.0%	-5.0	-2.6
	5570	29.6%	-5.3	-2.6
	5710	28.2%	-5.5	-2.8
	5850	18.4%	-7.3	-2.9