

EMC TEST REPORT

Project No.	LBE20190581	Issue No.	0
Applicant	Name of organization	Samsung Electronics Co., Ltd.	
	Address	(Maetan-dong) 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea	
	Date of application	April 1, 2019	
EUT	Type of device	<input checked="" type="checkbox"/> All other Receivers subject to part15 <input checked="" type="checkbox"/> Class B Personal Computers and peripherals <input checked="" type="checkbox"/> Other Class B digital devices and peripherals <input checked="" type="checkbox"/> FM Broadcast Receiver	
	Equipment authorization	<input checked="" type="checkbox"/> Certification <input type="checkbox"/> Supplier's Declaration of Conformity	
	FCC ID	A3LSMA705W	
	Kind of product	Mobile Phone	
	Model No.	SM-A705W	
	Variant Model No.	Refer to clause 4.6	
	Manufacturer	SAMSUNG ELECTRONICS VIETNAM CO.,LTD. Kcn Yen Binh1, huyen pho Yen Tinh Thai Nguyen, VIETNAM SAMSUNG ELECTRONICS HUIZHOU CO.,LTD. 516229, Chenjiang Town, HuiZhou City, Guangdong Province, China	
Applied Standards	47 CFR Part 15, Subpart B, Class B / ANSI C63.4-2014		
Test Period	April 1, 2019 ~ April 18, 2019		
Issue date	April 22, 2019		
Test result : Complied The equipment under test has found to be compliant with the applied standards. (Refer to the attached test result for more detail.)			
Tested by : Soo-Joon Kim 		Reviewed by : Young-Hun Kim 	
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Global CS Center of Samsung Electronics Co., Ltd. (Maetan-dong) 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea			

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1. Report Information

1.1 Revision history

No.	Revised detailed information
Issue 0	There are no revisions and this version is basic test report.

1.2 RSE test report no.

No.	Remark
12726917-E1	The cellular receiver mode refers to the radiated spurious emissions test report.

2. Summary of test results

2.1 Emission

The EUT has been tested according to the following specifications:

Applied	Test type	Applied standard	Result
<input checked="" type="checkbox"/>	Conducted Disturbance (Mains port)	47 CFR Part 15 Subpart B / ANSI C63.4-2014 (Class B)	Complied
<input checked="" type="checkbox"/>	Radiated Disturbance		Complied

3. General Information

3.1 Test facility

The Global CS Center is located on Samsung Electronics Co., Ltd. at (Maetan-dong) 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea.

All testing are performed in Semi-anechoic chambers conforming to the site attenuation characteristics defined by ANSI C63.4, CISPR 32, CISPR 16-1-4 and Shielded rooms.

And all antennas are properly calibrated using ANSI C63.5:2017.

The Global CS Center is operated as testing laboratory in accordance with the requirements of ISO/IEC 17025:2005.

4. Test Setup configuration

4.1 Test Peripherals

The cables used for these peripherals are either permanently attached by the peripheral manufacturer or coupled with an assigned cable as defined below.

The following is a listing of the EUT and peripherals utilized during the performance of EMC test:

Mark	Description	Model No.	Serial No.	Manufacturer / Trademark	FCC ID
A	Mobile Phone	SM-A705W	-	SAMSUNG	A3LSMA705W
B	Battery	EB-BA705ABU	-	SAMSUNG	-
C	Headset	EHS64AVFBE	-	SAMSUNG	-
D	Data Cable	EP-DA705FBE	-	SAMSUNG	-
E	Micro SD Card	64GB	-	SAMSUNG	-
F	Laptop Computer	Latitude5580	1CHRYM2	Dell	-
			D3HRYM2	Dell	-
G	Laptop AC Adapter	LA65NM130	5D77	Dell	-
			5B3C	Dell	-
H	Mouse	AA-SM7PCPB	CN57BA5903634ADV 8JK281082	SAMSUNG	-
			CNBA5903634ADV8J 31O3050	SAMSUNG	-
I	OTG Gender	EE-UG970	-	SAMSUNG	
J	Router	DIR-806A	RF0F1D5000688	D-Link	-
			RF0F1D8011504	D-Link	-
K	Travel Adapter	EP-TA800	R37M36A0091SE3	SAMSUNG	-

4.2 EUT operating mode

To achieve compliance applied standard specification, the following mode(s) were made during compliance testing:

4.2.1 Conducted Emission

No.	Operating mode
1	Camera (rear) + Charging (w/ TA) + Cellular receiver (GSM850 Center Frequency) + FM (Low Ch.)
2	Camera (front) + Charging (w/ TA) + FM (Mid Ch.)
3	Charging (w/ TA) + FM (High Ch.)
4	Video + Audio playback from internal memory data + Charging (w/ TA)
5	USB Data Communication with PC (from external memory data)

4.2.2 Radiated Emission

No.	Operating mode
1	Camera (rear) + Charging (w/ TA) + FM (Low Ch.)
2	Camera (front) + FM (Mid Ch.)
3	FM (High Ch.)
4	Video + Audio playback from internal memory data
5	USB Data Communication with PC (from external memory data)

4.3 Details of Sampling

Customer selected, single unit.

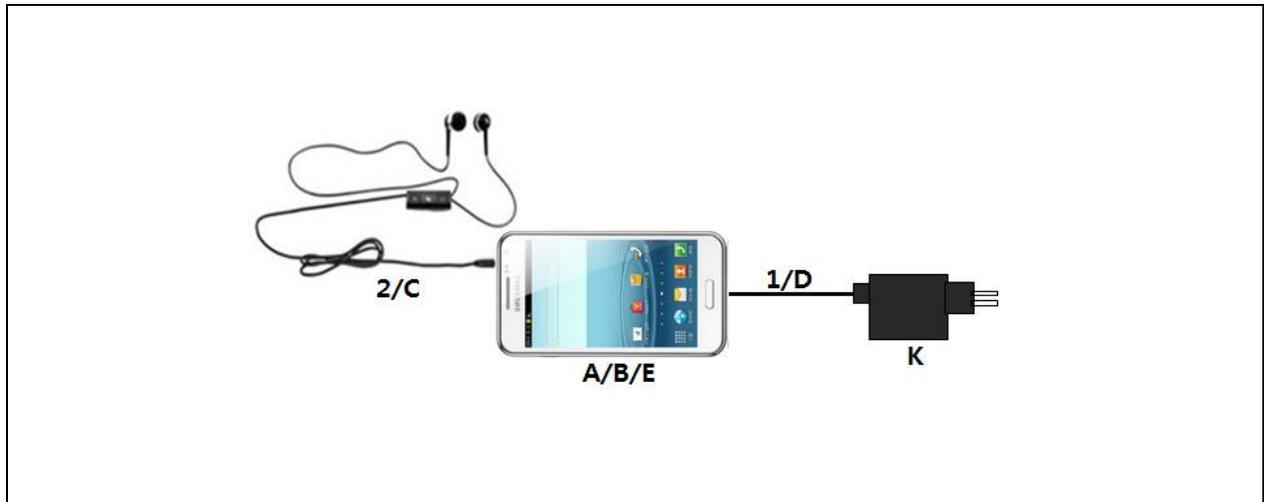
4.4 Used cable description

The EUT is configured, installed, arranged and operated in a manner consistent with typical applications. Interface cables/loads/devices are connected to at least one of each type of interface port of the EUT, and where practical, each cable shall be terminated in a device typical of actual usage. The type(s) of interconnecting cables to be used and the interface port (of the EUT) to which these were connected:

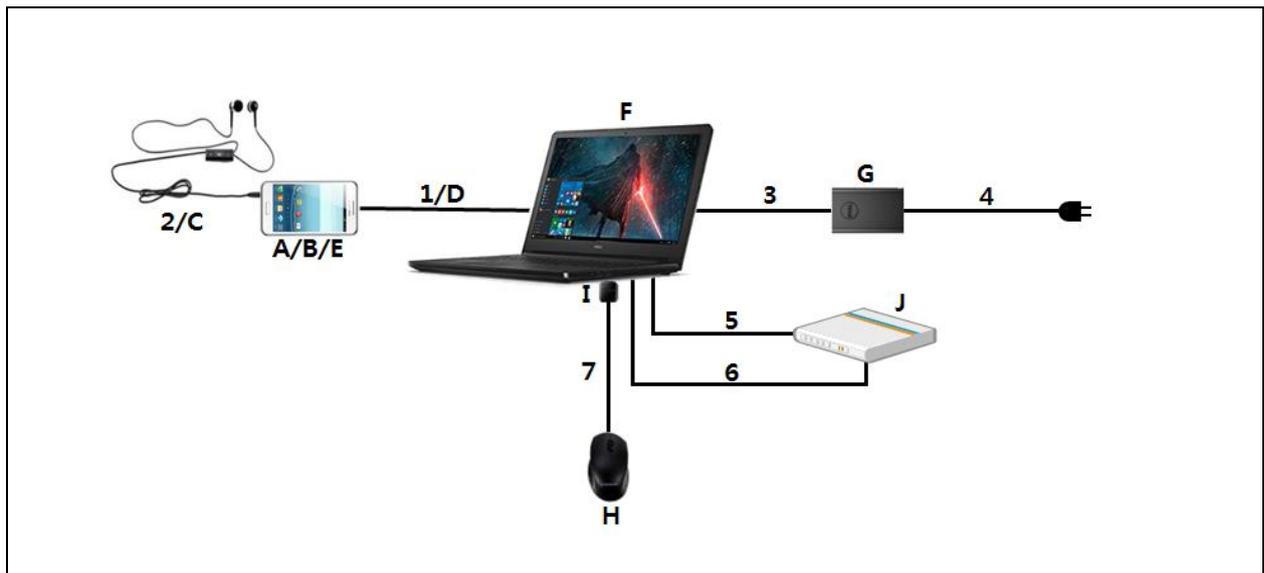
No.	Connected cable	Length [m]	Shielded [Y/N]	Note
1	Data Cable	1.0	Y	From EUT to Laptop Computer
				From EUT to Travel Adapter
2	Headset	1.3	N	For EUT
3	Power	1.8	N	For Laptop Computer to Laptop AC Adapter
4	Power	1.5	N	For Laptop AC Adapter
5	LAN	1.5	Y	From Laptop Computer to Router
6	USB	0.8	N	From Laptop Computer to Router for DC Power
7	USB	1.8	N	From OTG Gender to Mouse

4.5 Test arrangement

4.5.1 Conducted Emission

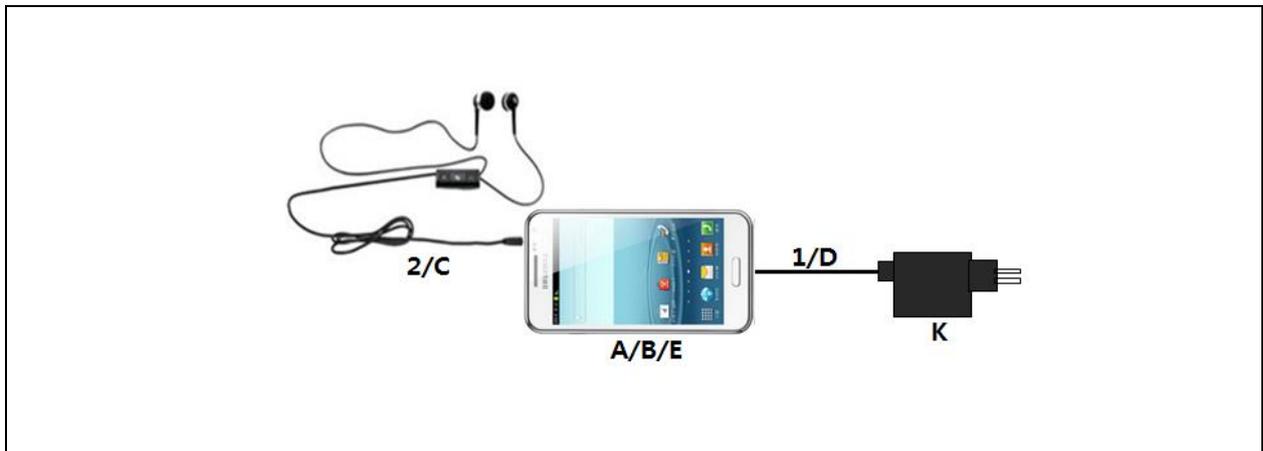


[Mode 1 - 4]

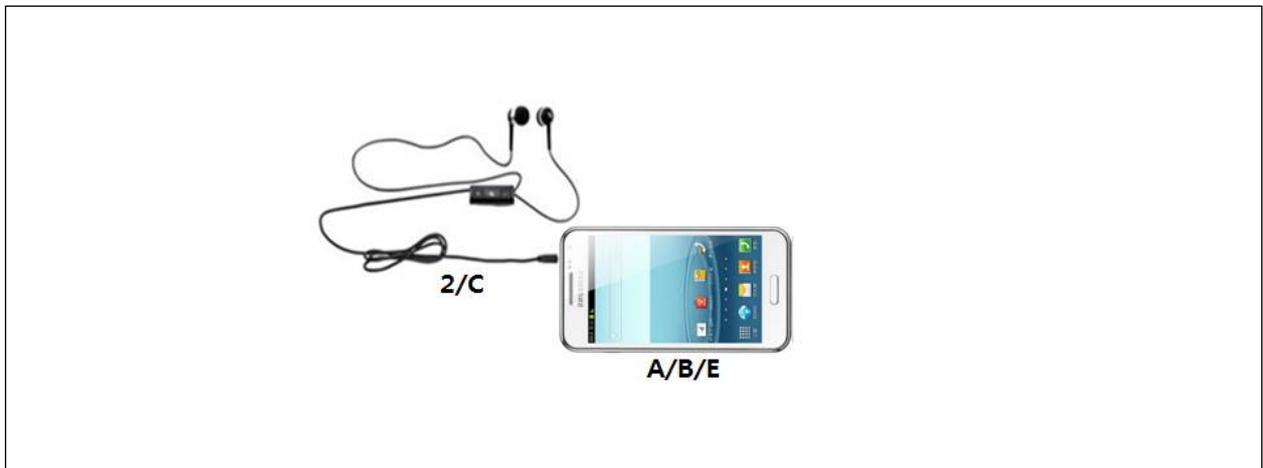


[Mode 5]

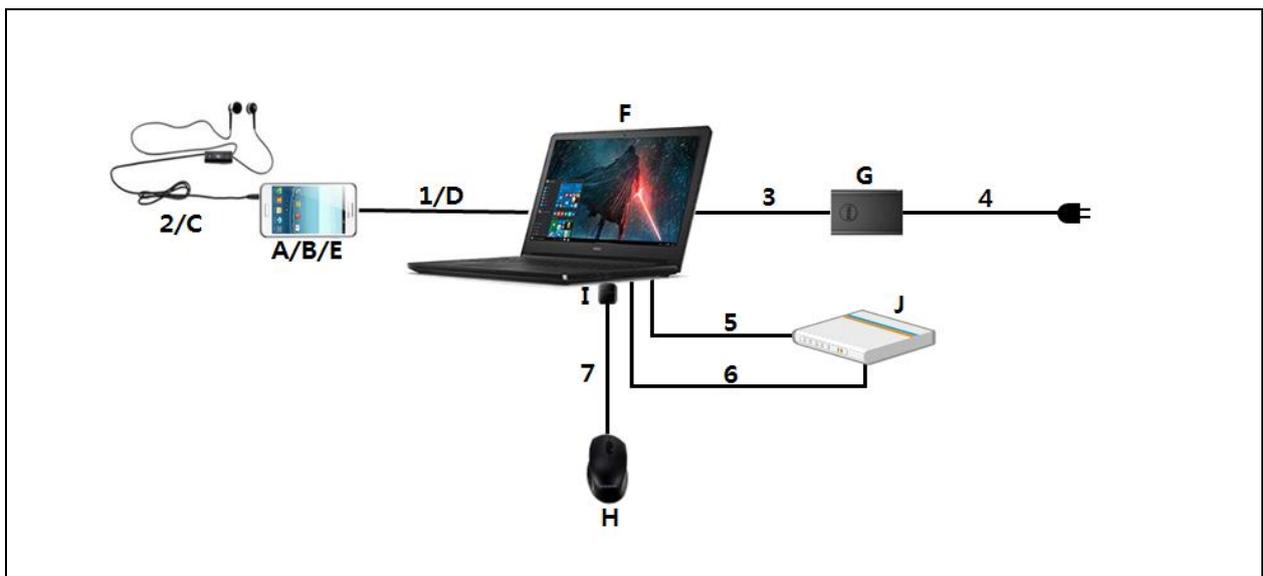
4.5.2 Radiated Emission



[Mode 1]



[Mode 2 - 4]



[Mode 5]

4.6 EUT Description

The EUT is a bar type Mobile Phone which can operate on GSM850/900/1800/1900, WCDMA FDD1/2/4/5/8, LTE FDD1/2/3/4/5/7/12/13/17/20/26/29/66, LTE TDD38/40/41 bands and incorporates a Camera, Bluetooth, Wi-Fi, ANT+, NFC, FM Radio, GNSS, MP3 and MP4 player.

4.6.1 The variant models

- none

4.7 EUT Frequencies

The highest frequencies (Generated and used)	Frequency [MHz]
Wi-Fi	5 825

4.8 Test configuration and condition

The system was configured for testing in a typical fashion that a customer would normally use. Cables were attached to each of the available I/O Ports. Where applicable, peripherals were attached to the I/O cables. All the external I/O ports are exercised, as well as internal and the external SD card, by writing and reading arbitrary data or charging with TA.

The EUT was investigated in three orientations and the worst case orientation is reported.

RX mode(850MHz) testing was performed with the GSM850 RX Test mode at center frequency. All licensed communication (850MHz) RX mode, GSM/WCDMA/LTE, test results are not significantly different.

The FM radio mode radiated testing was performed with the Low/Mid/High channel.

The video and music were repetitively played connected to the earphone.

The camera of the EUT was operated continuously.

Power source for the EUT operating was supplied by CVCF made by the Pacific Corp.

- Test Voltage : AC 120 V, 60 Hz

4.9 Measurement uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus: (According to CISPR 16-4-2 and UKAS M3003)

4.9.1 Emission

Test type		Measurement uncertainty (C.L. 95 %, k = 2)
Conducted disturbance	AC Mains	3.52 dB
Radiated Disturbance (30 MHz ~ 1 GHz)	Horizontal	4.99 dB
	Vertical	4.90 dB
Radiated Disturbance (1 GHz ~ 6 GHz)	Horizontal	5.06 dB
	Vertical	5.06 dB
Radiated Disturbance (6 GHz ~ 18 GHz)	Horizontal	5.33 dB
	Vertical	5.32 dB

5. Results of individual test

5.1 Conducted disturbance

The EUT is connected to a LISN via travel adapter. If the EUT is connected to the Laptop Computer USB port, the Laptop AC adapter is connected to a LISN.

Both conducted lines are measured in Quasi-Peak and CISPR-Average mode, including the worst-case data points for each tested configuration. The EUT measured in accordance with the methods described in standards.

Limits for conducted disturbance at the mains ports of Class B ITE

Frequency range Limits [MHz]	Resolution Bandwidth [kHz]	Limits [dB(μV)]	
		Quasi-peak	Average
0,15 to 0,50	9	66 to 56	56 to 46
0,50 to 5	9	56	46
5 to 30	9	60	50

NOTE 1 The lower limit shall apply at the transition frequency.
NOTE 2 The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

5.1.1 Test instrumentation

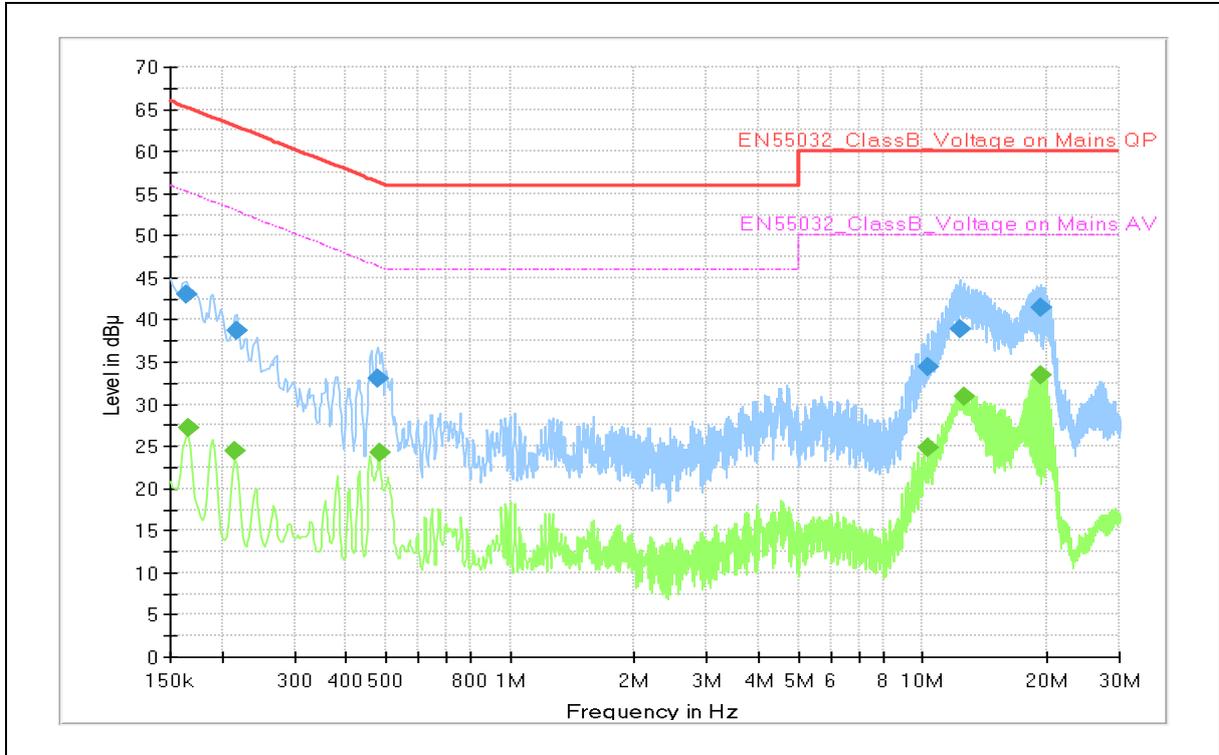
EMC No.	Test Instrument	Manufacturer	Model name	Serial No.	Calibration	
					Date	Interval (Month)
E5I-127	Two-Line V-Network	R&S	ENV216	102061	2018-07-23	12
E5I-017	EMI Test Receiver	R&S	ESU8	100483	2019-01-16	12
E5I-002	Universal Radio Communicator	R&S	CMU200	100612	2018-08-31	12
-	Test software	R&S	EMC32	Ver 9.26.01	-	-

5.1.2 Temperature and humidity condition

Test date	2019-04-18	Test engineer	Soo-Joon Kim
Climate condition	Ambient temperature	(22.1 ~ 22.4) ℃	Limit (15.0 to 35.0) ℃
	Relative humidity	(41.8 ~ 42.7) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(100.5 ~ 101.2) kPa	Limit (86.0 to 106.0) kPa
Test place	Shield Room (SR8)		

5.1.3 Test results

Operating Mode 1: AC Mains



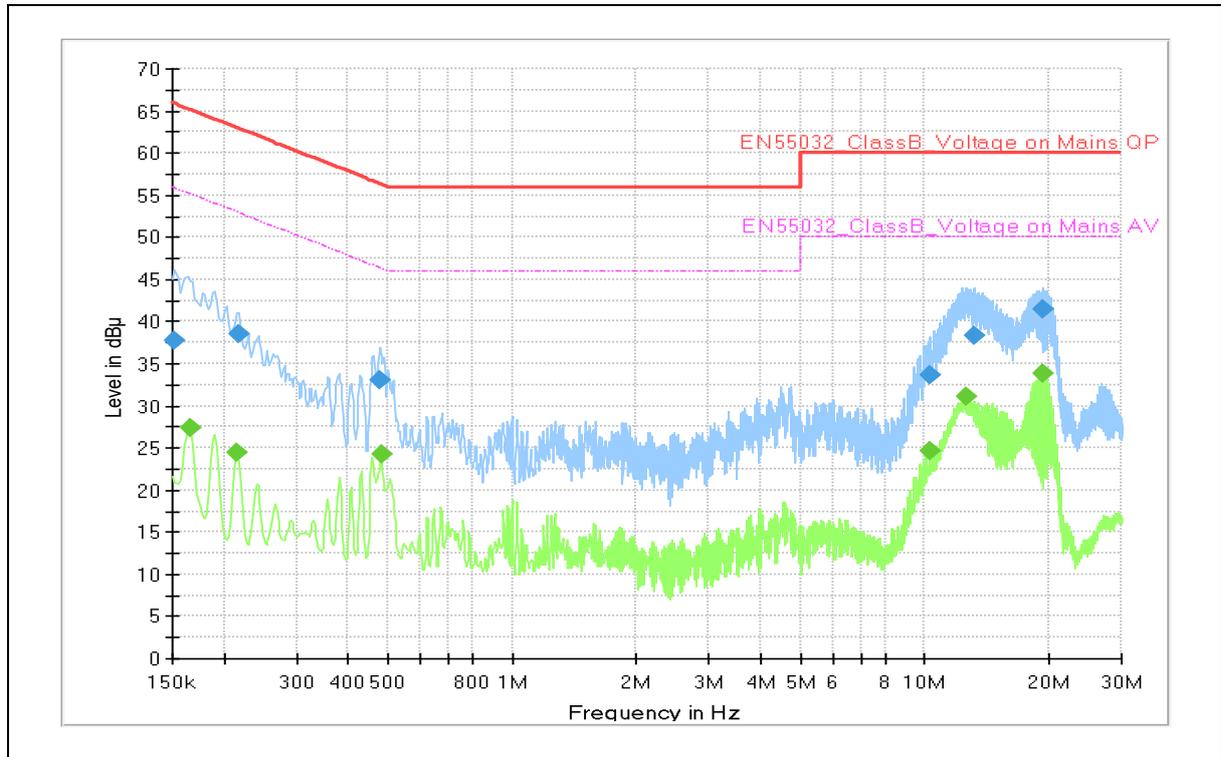
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.164	43.1	---	65.3	22.2	L1	9.9
0.166	---	27.2	55.2	28.0	L1	9.9
0.215	---	24.5	53.0	28.5	N	9.9
0.218	38.7	---	62.9	24.2	L1	10.0
0.479	33.1	---	56.4	23.3	L1	10.2
0.481	---	24.3	46.3	22.0	N	10.2
10.302	34.5	---	60.0	25.5	N	10.3
10.331	---	24.9	50.0	25.1	N	10.3
12.305	38.8	---	60.0	21.2	N	10.3
12.660	---	31.0	50.0	19.0	N	10.4
19.280	41.4	---	60.0	18.6	N	10.7
19.282	---	33.5	50.0	16.5	N	10.7

Note 2) Level (QP and/or CAV) = Meter Reading (QP and/or CAV) + Corr. (LISN Insertion Loss + Cable Loss)
 Margin (QP and/or CAV) = Limit – Level (QP and/or CAV)
 QP = Quasi-Peak, CAV = CISPR-Average, Corr. = Correction Factor

Operating Mode 2: AC Mains



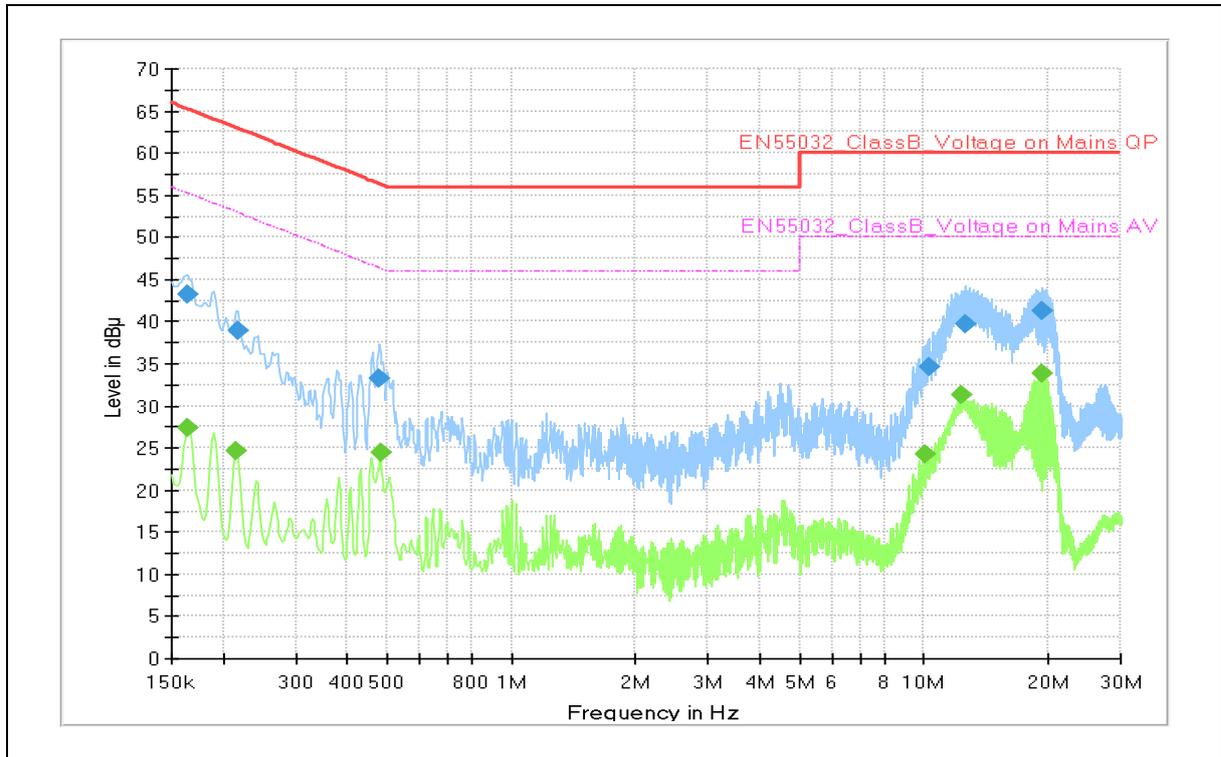
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.152	37.8	---	65.9	28.1	L1	9.9
0.166	---	27.3	55.2	27.9	N	9.9
0.215	---	24.5	53.0	28.5	N	9.9
0.218	38.5	---	62.9	24.4	N	9.9
0.479	33.1	---	56.4	23.3	L1	10.2
0.481	---	24.3	46.3	22.0	N	10.2
10.329	33.7	---	60.0	26.3	N	10.3
10.358	---	24.6	50.0	25.4	N	10.3
12.629	---	31.2	50.0	18.8	N	10.4
13.142	38.4	---	60.0	21.6	N	10.4
19.255	---	33.9	50.0	16.1	N	10.7
19.280	41.5	---	60.0	18.5	N	10.7

Note 2) Level (QP and/or CAV) = Meter Reading (QP and/or CAV) + Corr. (LISN Insertion Loss + Cable Loss)
 Margin (QP and/or CAV) = Limit – Level (QP and/or CAV)
 QP = Quasi-Peak, CAV = CISPR-Average, Corr. = Correction Factor

Operating Mode 3: AC Mains



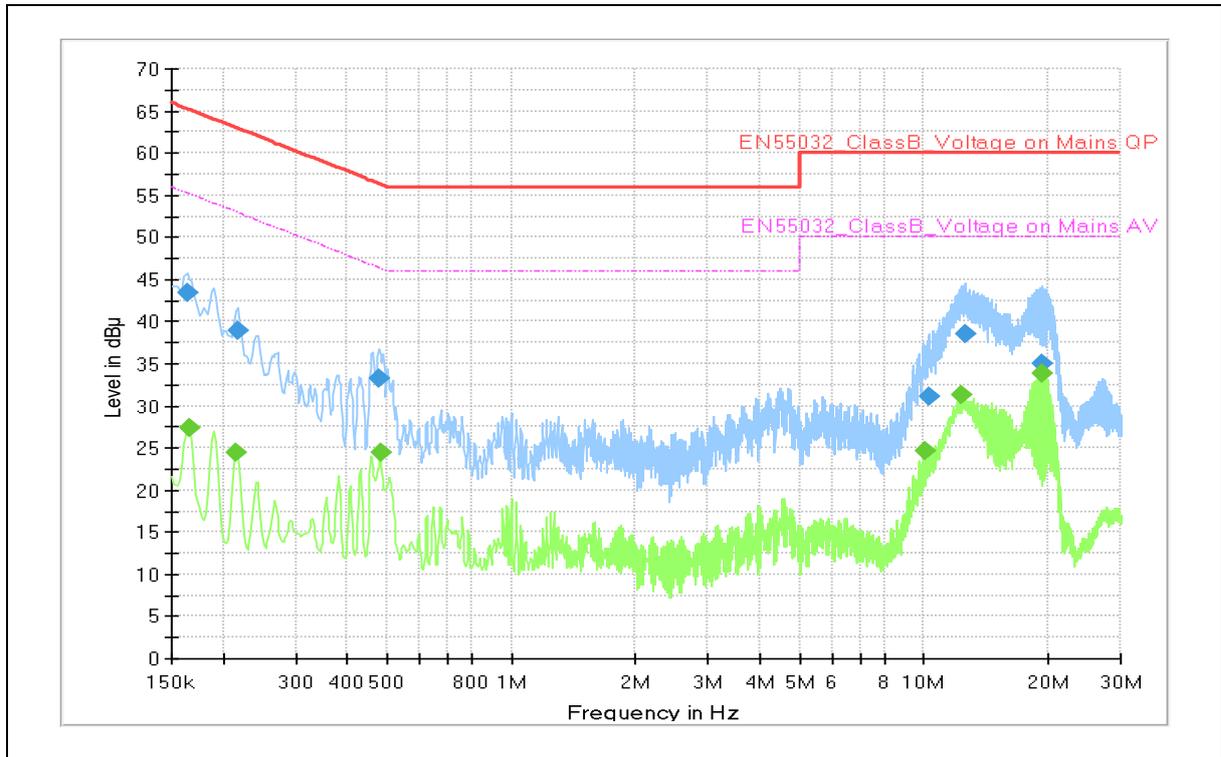
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBµV)	CAV (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.164	43.3	---	65.3	22.0	N	9.9
0.164	---	27.4	55.3	27.9	N	9.9
0.215	---	24.7	53.0	28.3	N	9.9
0.218	38.9	---	62.9	24.0	L1	10.0
0.479	33.2	---	56.4	23.2	L1	10.2
0.481	---	24.3	46.3	22.0	N	10.2
10.032	---	24.3	50.0	25.7	N	10.2
10.248	34.6	---	60.0	25.4	N	10.3
12.388	---	31.2	50.0	18.8	N	10.3
12.602	39.7	---	60.0	20.3	N	10.4
19.255	---	33.8	50.0	16.2	N	10.7
19.280	41.3	---	60.0	18.7	N	10.7

Note 2) Level (QP and/or CAV) = Meter Reading (QP and/or CAV) + Corr. (LISN Insertion Loss + Cable Loss)
 Margin (QP and/or CAV) = Limit – Level (QP and/or CAV)
 QP = Quasi-Peak, CAV = CISPR-Average, Corr. = Correction Factor

Operating Mode 4: AC Mains



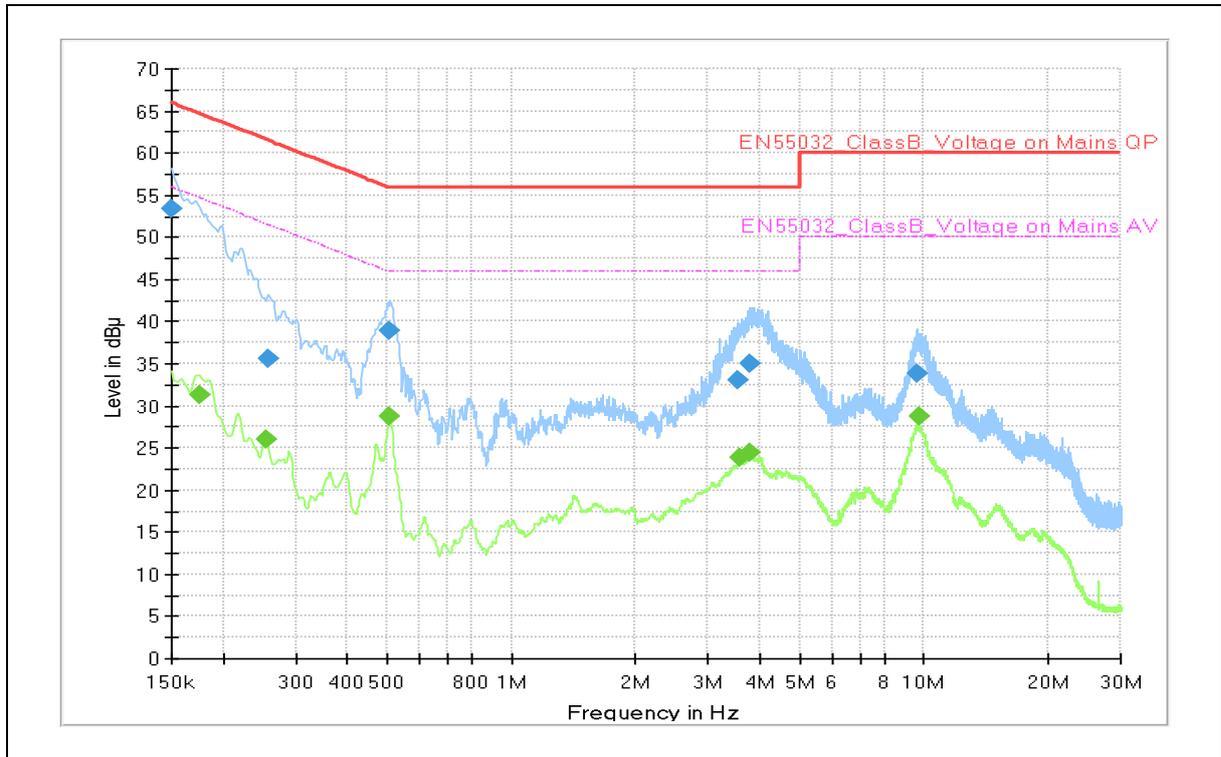
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.164	43.4	---	65.3	21.9	L1	9.9
0.166	---	27.3	55.2	27.9	L1	9.9
0.215	---	24.5	53.0	28.5	N	9.9
0.218	38.9	---	62.9	24.1	N	9.9
0.479	33.2	---	56.4	23.2	L1	10.2
0.481	---	24.5	46.3	21.8	N	10.2
10.059	---	24.7	50.0	25.3	N	10.2
10.291	31.1	---	60.0	28.9	N	10.3
12.388	---	31.2	50.0	18.8	N	10.3
12.548	38.6	---	60.0	21.4	N	10.4
19.250	35.1	---	60.0	24.9	N	10.7
19.255	---	33.8	50.0	16.2	N	10.7

Note 2) Level (QP and/or CAV) = Meter Reading (QP and/or CAV) + Corr. (LISN Insertion Loss + Cable Loss)
 Margin (QP and/or CAV) = Limit – Level (QP and/or CAV)
 QP = Quasi-Peak, CAV = CISPR-Average, Corr. = Correction Factor

Operating Mode 5: AC Mains



Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.150	53.3	---	66.0	12.7	N	9.7
0.175	---	31.3	54.7	23.4	N	9.8
0.256	---	26.1	51.6	25.5	L1	9.7
0.258	35.6	---	61.5	25.9	L1	9.7
0.508	38.8	---	56.0	17.2	L1	10.0
0.508	---	28.8	46.0	17.2	L1	10.0
3.536	33.0	---	56.0	23.0	N	9.7
3.563	---	23.8	46.0	22.2	N	9.7
3.791	---	24.4	46.0	21.6	N	9.7
3.791	35.0	---	56.0	21.0	N	9.7
9.632	33.8	---	60.0	26.2	L1	9.8
9.695	---	28.7	50.0	21.3	L1	9.8

Note 2) Level (QP and/or CAV) = Meter Reading (QP and/or CAV) + Corr. (LISN Insertion Loss + Cable Loss)
 Margin (QP and/or CAV) = Limit – Level (QP and/or CAV)
 QP = Quasi-Peak, CAV = CISPR-Average, Corr. = Correction Factor

5.2 Radiated disturbance

The following data lists the significant emission frequencies, measured levels, correction factors (for antenna and cables), orientation of table, polarization and height of antenna, the corrected reading, the limit, and the amount of margin.

Peak measurements were made over the changeable frequency range 30 MHz to 1 GHz at a measurement distance of 10 m for the following antenna and turntable arrangements:

Antenna Height [cm]	Antenna Polarisation	Resolution Bandwidth [kHz]	Video Bandwidth [kHz]	Turntable position [degrees]
100 ~ 400	Horizontal, Vertical	120	300	Continuous

Measurements within 6 dB of the limit were then maximized by adjusting turntable position. Final measurements were made using quasi-peak detector.

Peak/CISPR-Average measurements were made over the changeable frequency range 1 GHz to 40 GHz or 5th harmonics of the highest frequency generated or used in the device or on which the device operate or tunes at a measurement distance of 3 m for the following antenna and turntable arrangements. The measurements above 1 GHz were performed with the bore-sighting antenna aimed at the EUT.

Antenna Height [cm]	Antenna Polarisation	Resolution Bandwidth [MHz]	Video Bandwidth [MHz]	Turntable position
100 ~ 400	Horizontal, Vertical	1	3	Continuous

Measurements within 6 dB of the limit were then maximized by adjusting turntable position. Final measurements were made using peak and CISPR-average detectors.

Limits for radiated disturbance of Class B ITE at a measuring distance of 3 m and 10 m

Frequency range Limits [MHz]	Field Strength		
	3 m [$\mu\text{V/m}$]	3 m [dB($\mu\text{V/m}$)]	10 m [dB($\mu\text{V/m}$)]
30 to 88	100	40.0	29.5
88 to 216	150	43.5	33.0
216 to 960	200	46.0	35.5
Above 960	500	54.0	43.5

Results checked manually; and points close to the limit line were re-measured.

5.2.1 Test instrumentation

EMC No.	Test Instrument	Manufacturer	Model name	Serial No.	Calibration	
					Date	Interval (Month)
E5I-022	Signal Generator	R&S	SMB100A	175856	2018-05-11	12
E5I-021	EMI Test Receiver	R&S	ESU40	100376	2019-01-30	12
E5I-016	EMI Test Receiver	R&S	ESU8	100482	2018-06-08	12
E5I-149	Horn Antenna	R&S	HF907	102525	2018-06-15	24
E5I-039	Signal Conditioning Unit	R&S	SCU-18	10211	2019-01-23	12
E5I-120	BiLog Antenna	TESEQ	CBL6112D	36997	2018-04-23	24
E5I-072	BiLog Antenna	TESEQ	CBL6112D	36009	2018-04-23	24
E5I-075	Preamplifier	SONOMA	310N	332018	2018-05-25	12
E5I-076	Preamplifier	SONOMA	310N	332019	2018-05-25	12
E5I-037	WideBand Horn Antenna	R&S	WBH 18-40K	11201	2019-01-31	24
E5I-042	Signal Conditioning Unit	R&S	SCU-40A	10004	2018-09-05	12
-	Test software	TOYO	EP7RE	Ver 5.8.2	-	-
-	Test software	R&S	EMC32	Ver 9.25.00	-	-

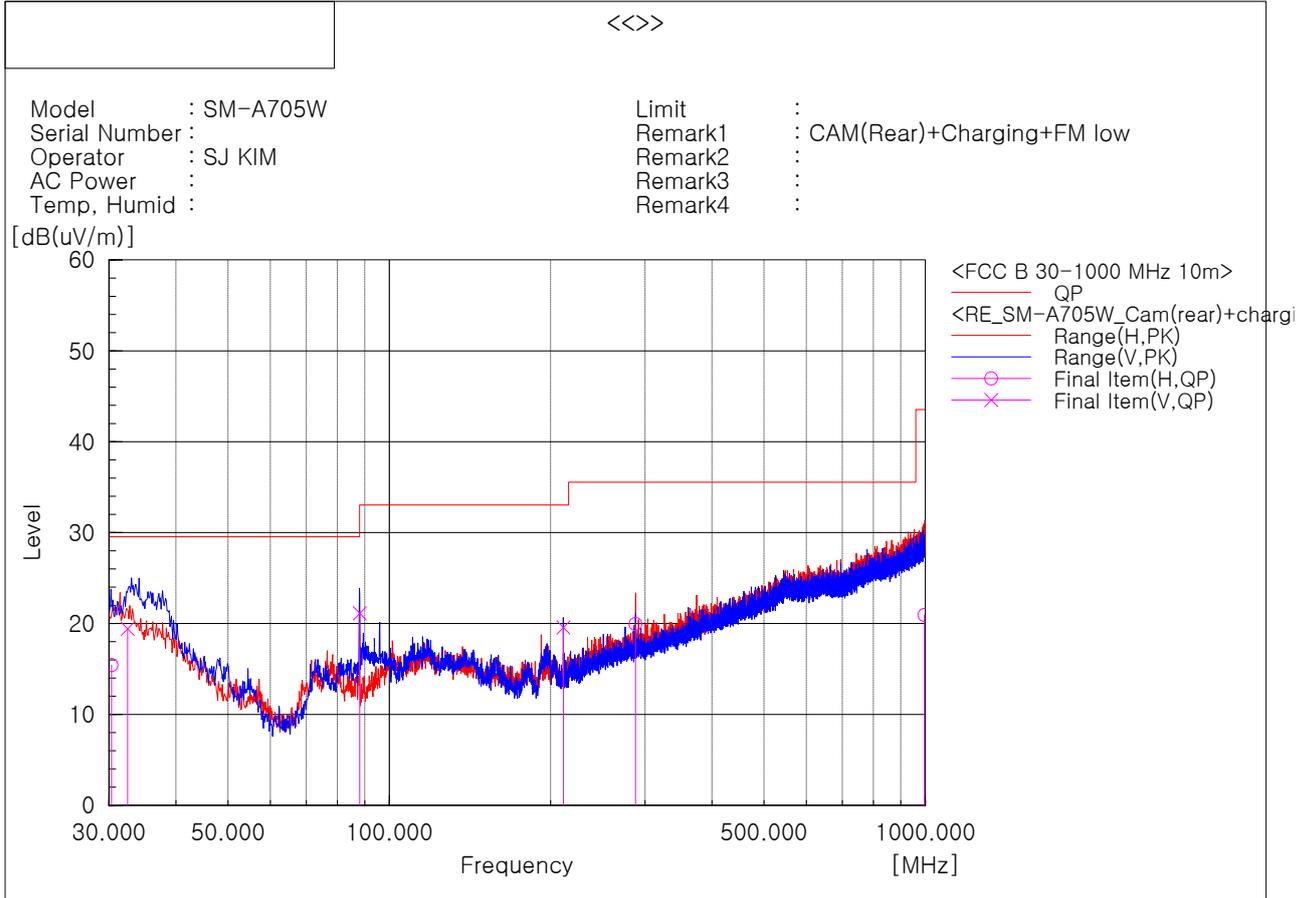
5.2.2 Temperature and humidity condition

Test date	2019-04-01	Test engineer	Soo-Joon Kim
Climate condition	Ambient temperature	(22.4 ~ 22.7) °C	Limit (15.0 to 35.0) °C
	Relative humidity	(38.4 ~ 41.6) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(101.7 ~ 102.1) kPa	Limit (86.0 to 106.0) kPa
Test place	Semi-Anechoic Chamber (SAC4)		

5.2.3 Test results

Operating Mode 1

- Frequencies below 1 GHz



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	System
1	30.319	H	22.7	-7.3	15.4	29.5	14.1	187	91	1
2	32.494	V	26.7	-7.3	19.4	29.5	10.1	100	219	2
3	88.046	V	37.3	-16.2	21.1	33.0	11.9	170	95	2
4	211.213	V	33.3	-13.7	19.6	33.0	13.4	100	342	2
5	287.972	H	30.5	-10.6	19.9	35.5	15.6	331	15	1
6	996.177	H	19.5	1.4	20.9	43.5	22.6	400	221	1

* Radiated emissions (Rx frequency 88.046 MHz) from the transceiver shall be ignored

Note1) Receiving antenna polarization : Horizontal, Vertical

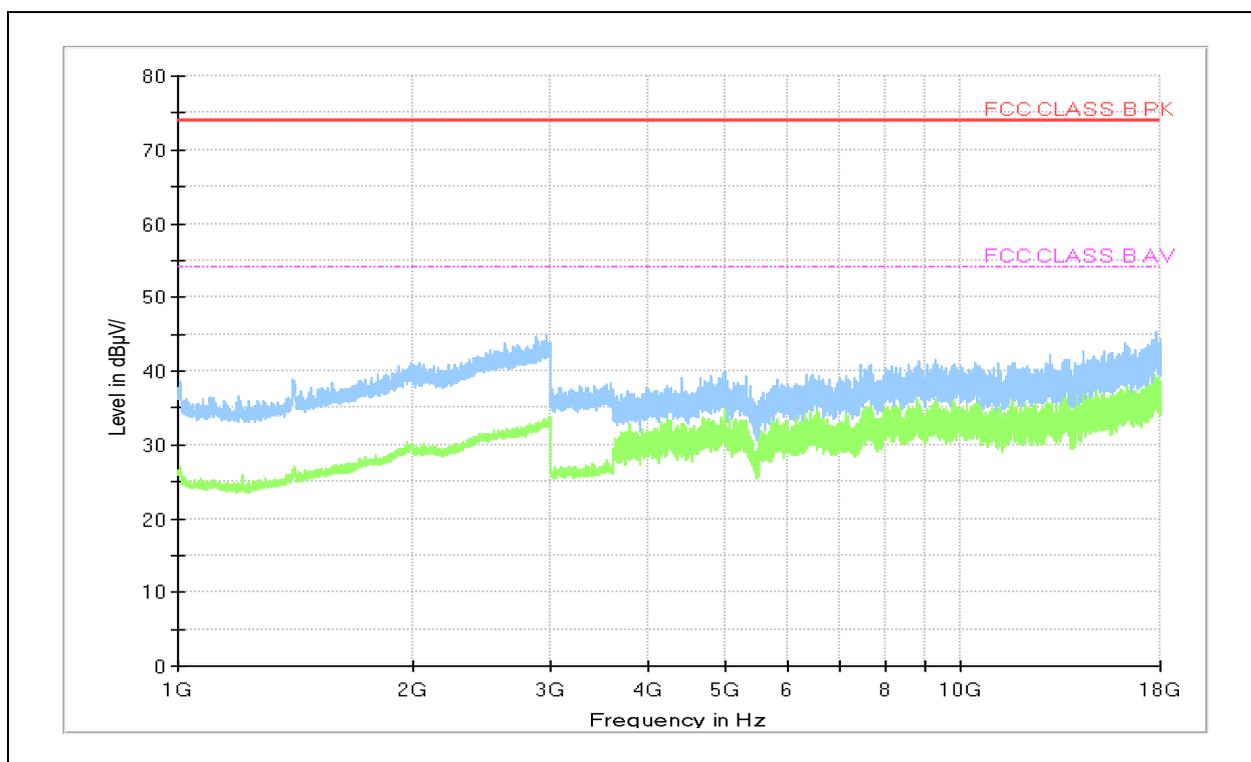
Test Distance : 10 m, Antenna Height : 1 to 4 meters

Result (QP) = Reading (QP) + c.f (Antenna Factor + Cable Loss - Amp. Gain)

Margin (QP) = Limit - Level (QP)

QP = Quasi-Peak, c.f = Correction Factor

- Frequencies above 1 GHz



Note 1) We have also tested from 18 GHz to 30 GHz and found no emissions

Note 2) Receiving antenna polarization : Horizontal, Vertical

Test Distance : 3 m, Antenna Height : 1 to 4 meters

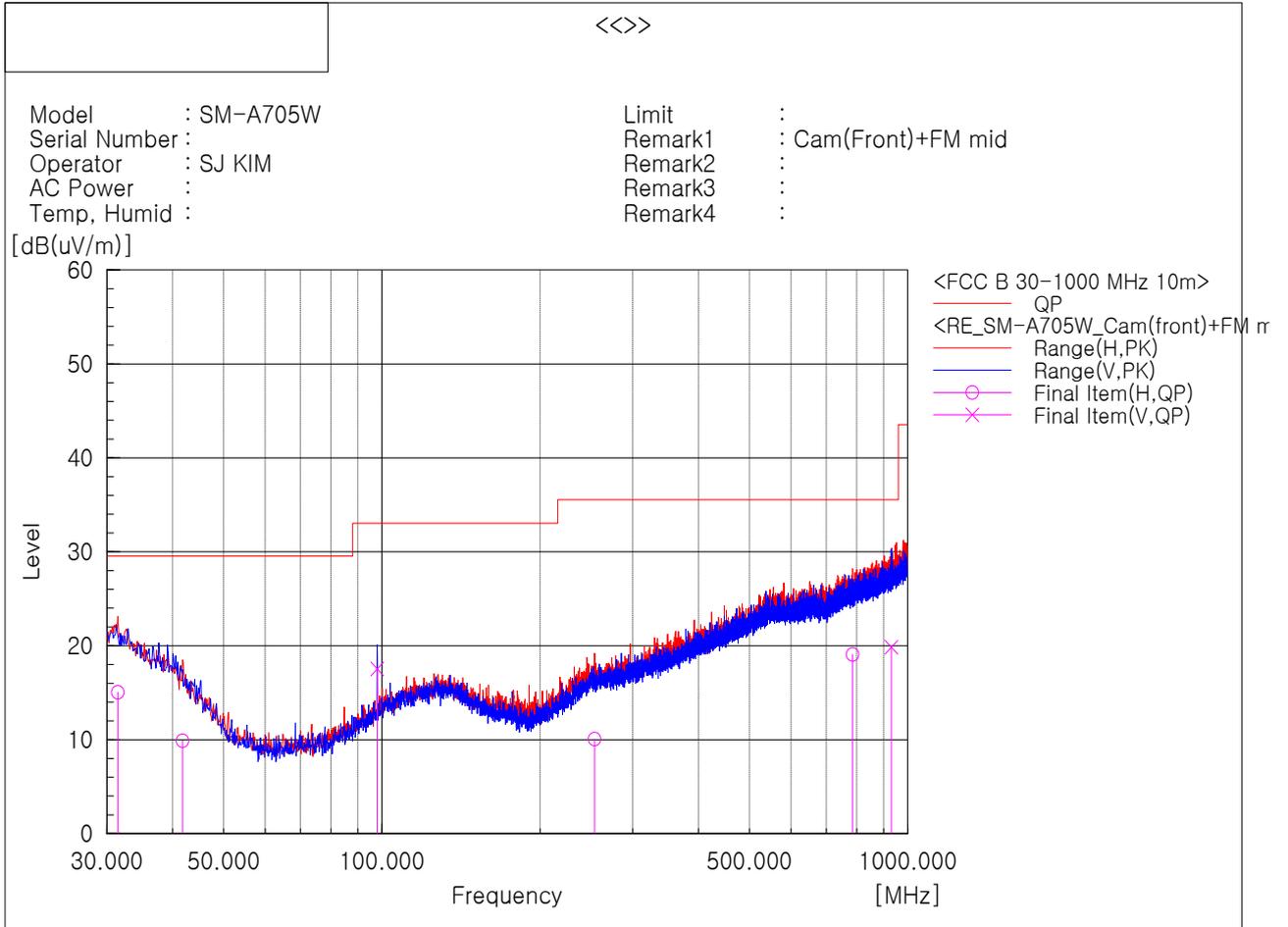
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

Margin (PK and/or CAV) = Limit – Level (PK and/or CAV)

PK = Peak, CAV = CISPR-Average, Corr. = Correction Factor

Operating Mode 2

- Frequencies below 1 GHz



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	System
1	31.455	H	22.7	-7.7	15.0	29.5	14.5	200	310	1
2	41.761	H	22.3	-12.4	9.9	29.5	19.6	200	322	1
3	97.986	V	31.8	-14.3	17.5	33.0	15.5	100	164	2
4	253.828	H	21.4	-11.3	10.1	35.5	25.4	300	10	1
5	785.751	H	21.0	-1.9	19.1	35.5	16.4	400	31	1
6	930.887	V	19.9	0.0	19.9	35.5	15.6	100	229	2

* Radiated emissions (Rx frequency 97.986 MHz) from the transceiver shall be ignored

Note1) Receiving antenna polarization : Horizontal, Vertical

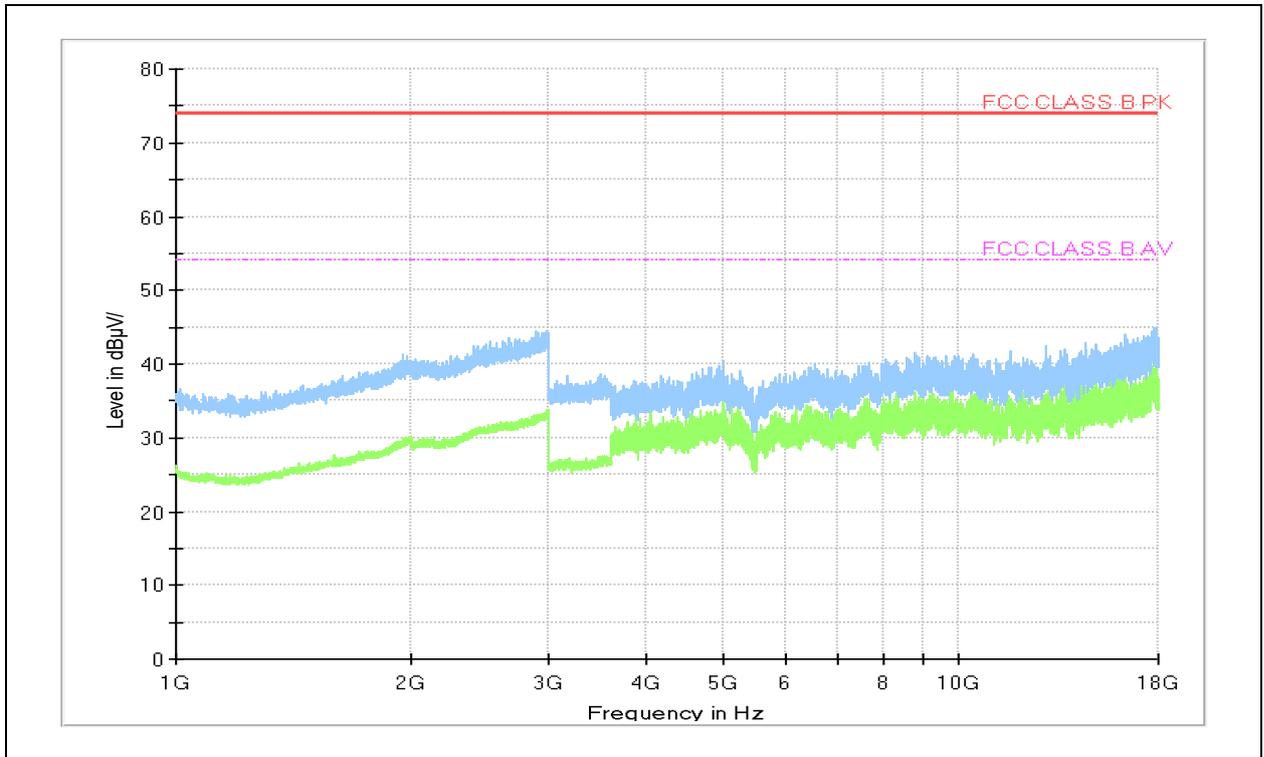
Test Distance : 10 m, Antenna Height : 1 to 4 meters

Result (QP) = Reading (QP) + c.f (Antenna Factor + Cable Loss - Amp. Gain)

Margin (QP) = Limit - Level (QP)

QP = Quasi-Peak, c.f = Correction Factor

- Frequencies above 1 GHz



Note 1) We have also tested from 18 GHz to 30 GHz and found no emissions

Note 2) Receiving antenna polarization : Horizontal, Vertical

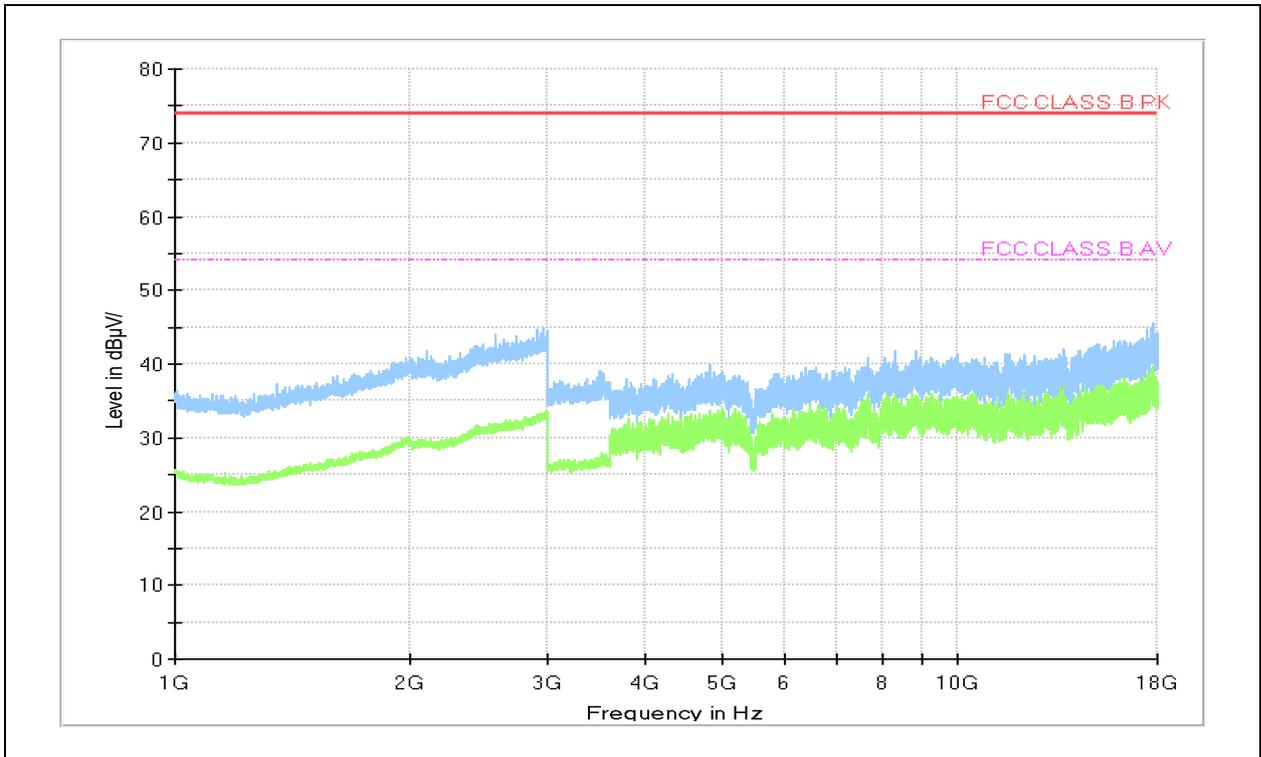
Test Distance : 3 m, Antenna Height : 1 to 4 meters

Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

Margin (PK and/or CAV) = Limit – Level (PK and/or CAV)

PK = Peak, CAV = CISPR-Average, Corr. = Correction Factor

- Frequencies above 1 GHz



Note 1) We have also tested from 18 GHz to 30 GHz and found no emissions

Note 2) Receiving antenna polarization : Horizontal, Vertical

Test Distance : 3 m, Antenna Height : 1 to 4 meters

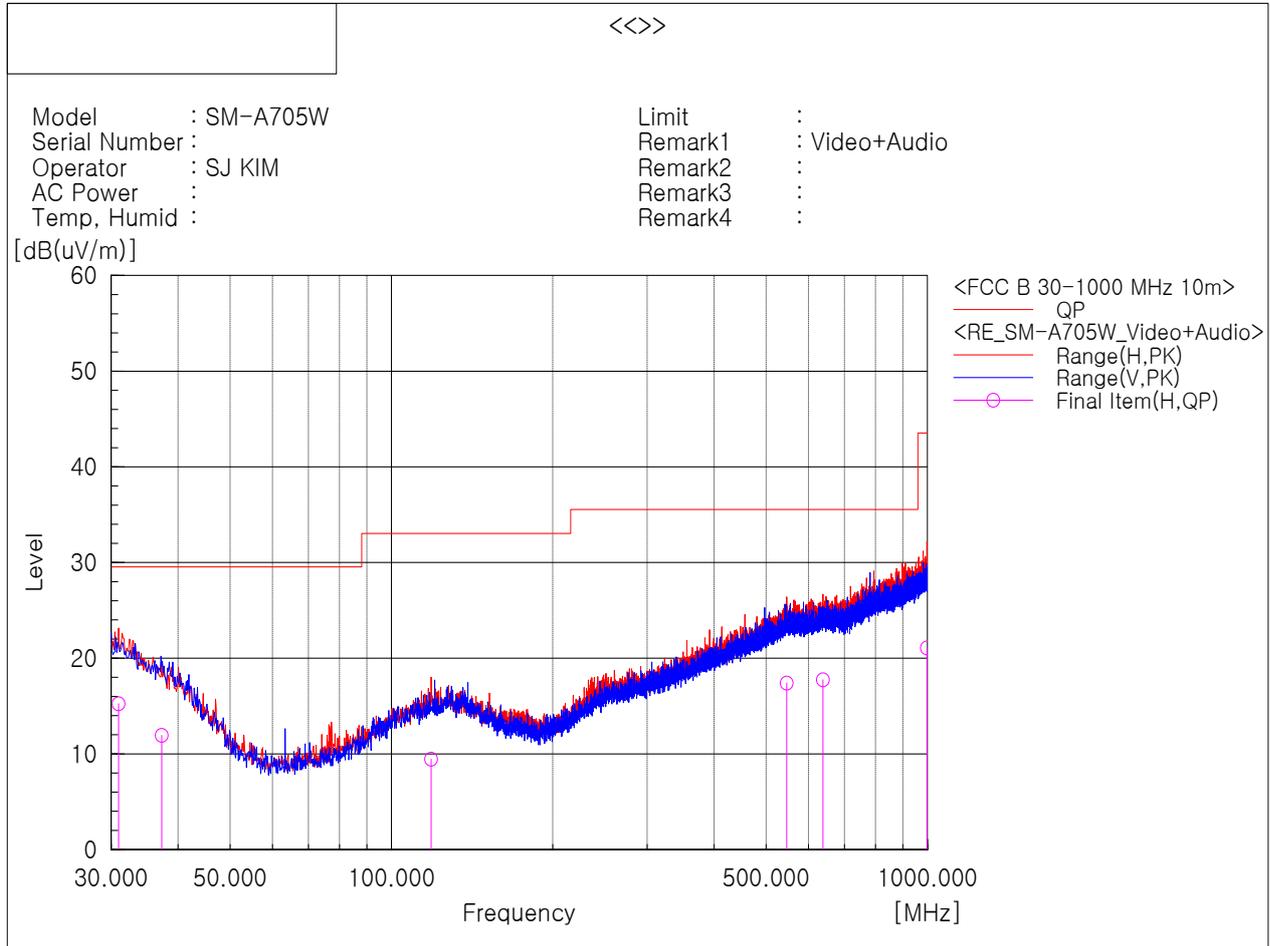
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

Margin (PK and/or CAV) = Limit – Level (PK and/or CAV)

PK = Peak, CAV = CISPR-Average, Corr. = Correction Factor

Operating Mode 4

- Frequencies below 1 GHz



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	System
1	30.970	H	22.7	-7.5	15.2	29.5	14.3	100	128	1
2	37.275	H	21.9	-10.0	11.9	29.5	17.6	200	108	1
3	118.634	H	22.2	-12.8	9.4	33.0	23.6	300	307	1
4	546.283	H	21.3	-3.9	17.4	35.5	18.1	300	124	1
5	638.311	H	21.2	-3.5	17.7	35.5	17.8	100	351	1
6	997.696	H	19.7	1.4	21.1	43.5	22.4	100	288	1

Note1) Receiving antenna polarization : Horizontal, Vertical

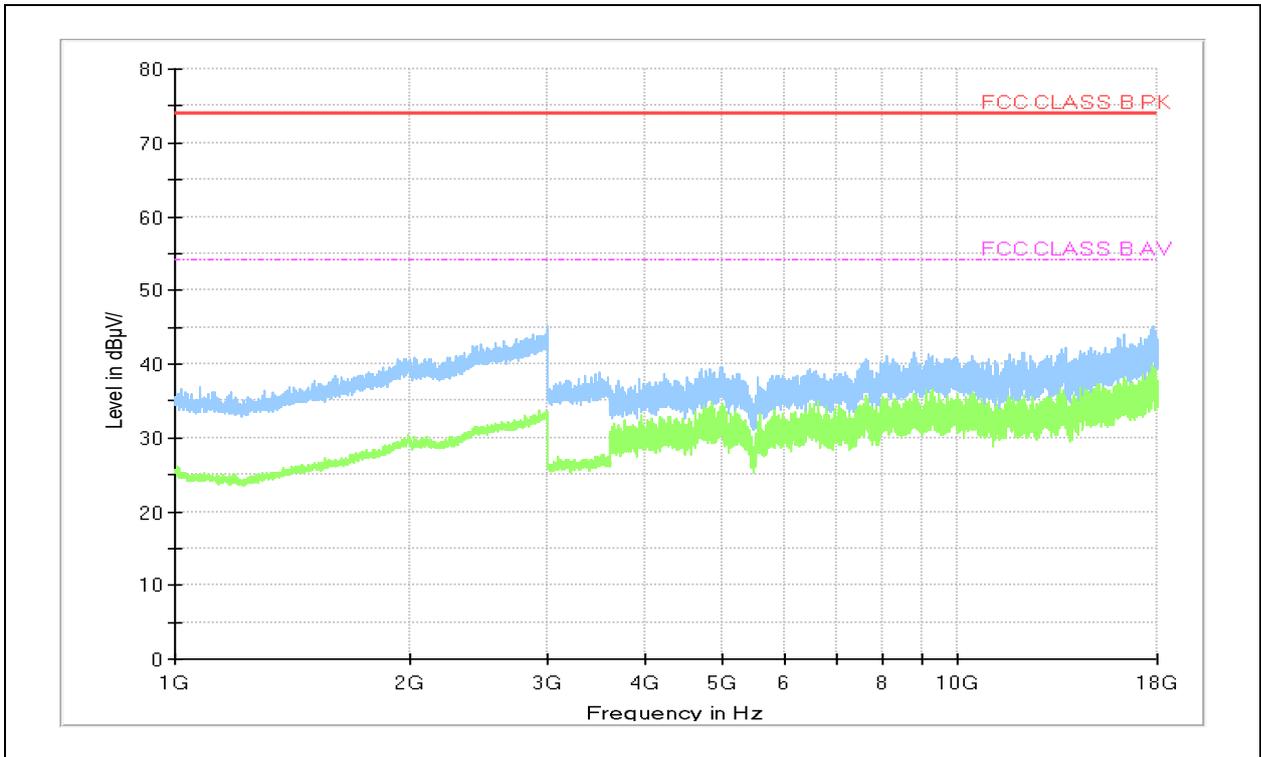
Test Distance : 10 m, Antenna Height : 1 to 4 meters

Result (QP) = Reading (QP) + c.f (Antenna Factor + Cable Loss - Amp. Gain)

Margin (QP) = Limit - Level (QP)

QP = Quasi-Peak, c.f = Correction Factor

- Frequencies above 1 GHz



Note 1) We have also tested from 18 GHz to 30 GHz and found no emissions

Note 2) Receiving antenna polarization : Horizontal, Vertical

Test Distance : 3 m, Antenna Height : 1 to 4 meters

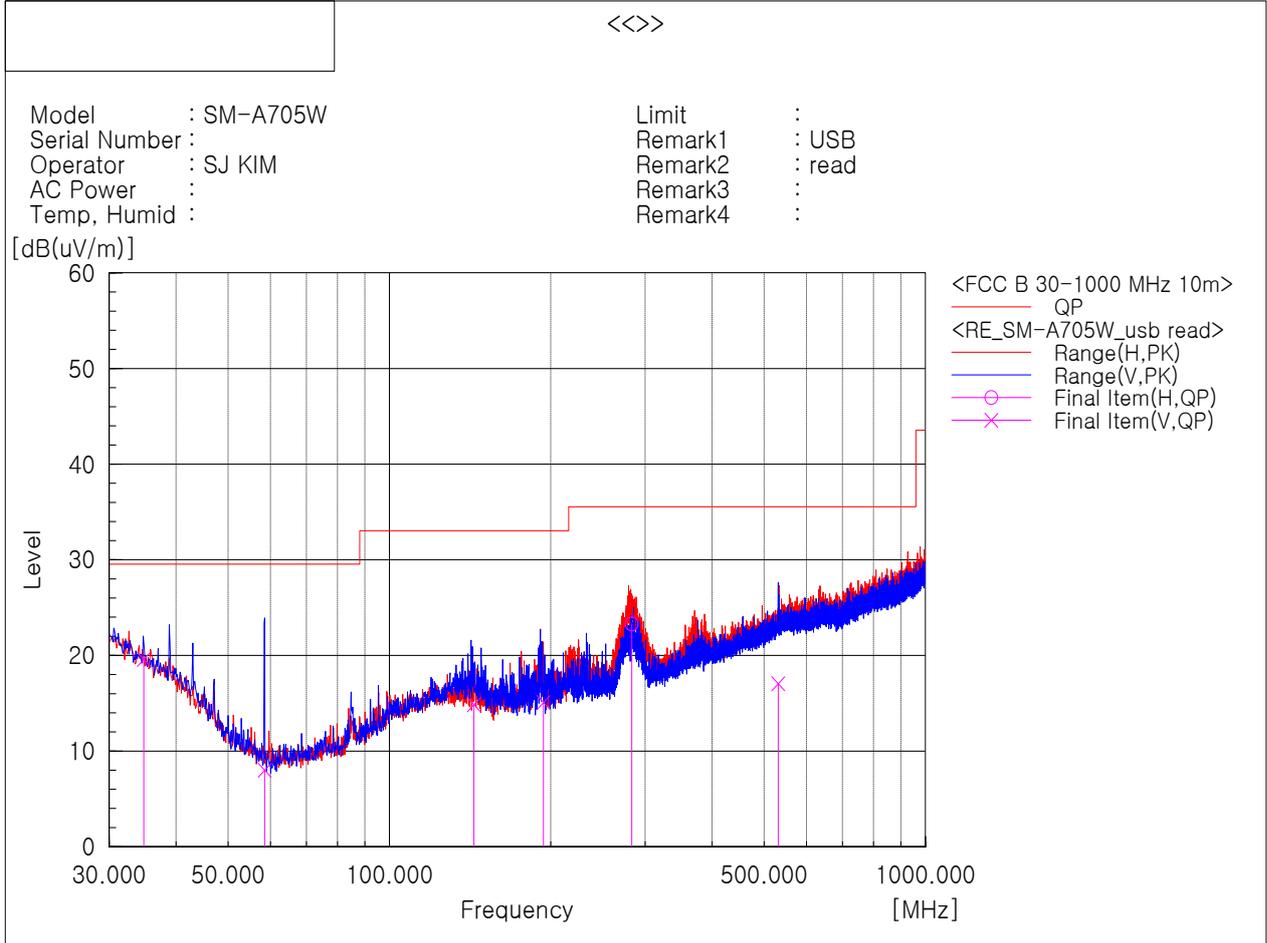
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

Margin (PK and/or CAV) = Limit – Level (PK and/or CAV)

PK = Peak, CAV = CISPR-Average, Corr. = Correction Factor

Operating Mode 5

- Frequencies below 1 GHz



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	System
1	34.823	V	27.7	-8.1	19.6	29.5	9.9	162	212	2
2	58.494	V	26.8	-18.8	8.0	29.5	21.5	123	95	2
3	143.771	V	27.7	-12.8	14.9	33.0	18.1	100	317	2
4	193.774	V	30.2	-15.1	15.1	33.0	17.9	100	321	2
5	283.260	H	33.9	-10.6	23.3	35.5	12.2	372	7	1
6	531.271	V	20.9	-3.9	17.0	35.5	18.5	361	27	2

Note1) Receiving antenna polarization : Horizontal, Vertical

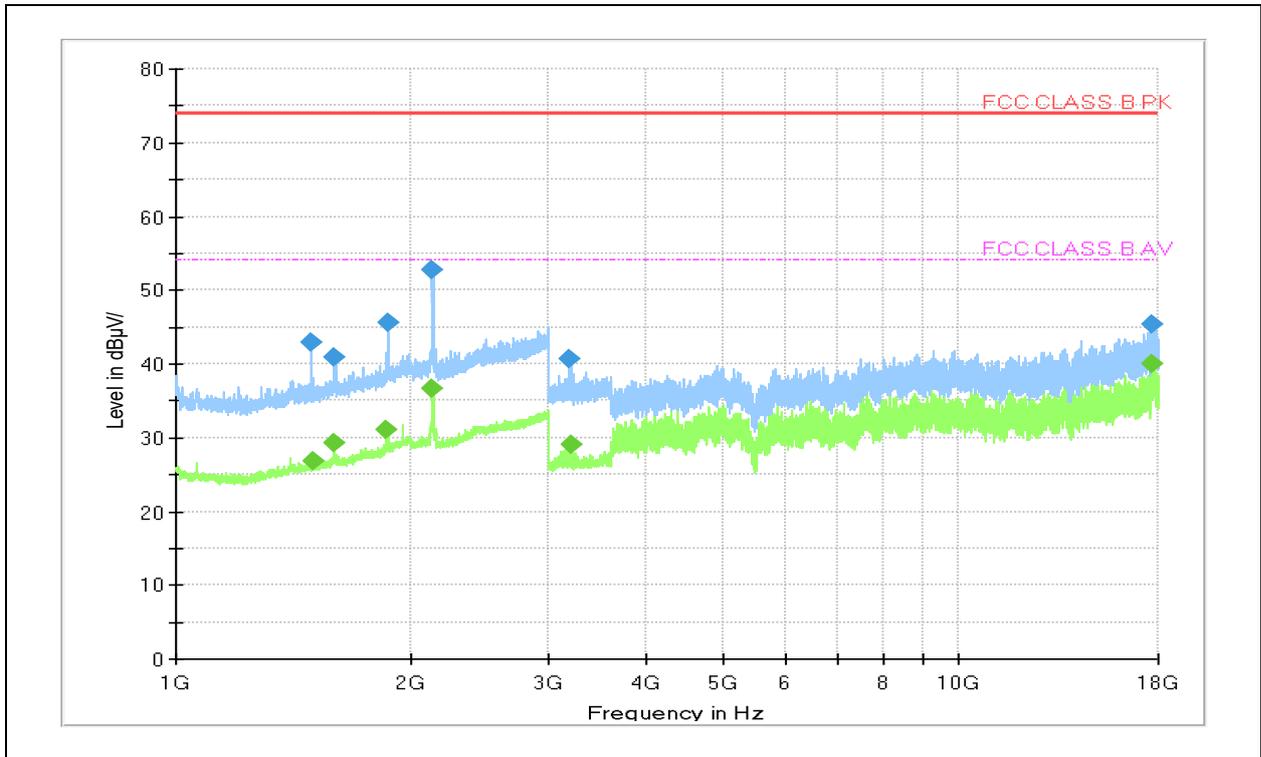
Test Distance : 10 m, Antenna Height : 1 to 4 meters

Result (QP) = Reading (QP) + c.f (Antenna Factor + Cable Loss - Amp. Gain)

Margin (QP) = Limit - Level (QP)

QP = Quasi-Peak, c.f = Correction Factor

- Frequencies above 1 GHz



Frequency (MHz)	PK (dBµV/m)	CAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1 491.000	43.0	---	74.0	31.0	100.0	H	122.0	8.6
1 497.000	---	26.8	54.0	27.2	100.0	V	279.0	8.7
1 595.500	41.0	---	74.0	33.0	100.0	V	0.0	9.4
1 597.000	---	29.4	54.0	24.6	100.0	V	126.0	9.4
1 856.500	---	31.0	54.0	23.0	100.0	V	80.0	11.0
1 864.000	45.6	---	74.0	28.4	100.0	V	0.0	11.1
2 124.000	52.8	---	74.0	21.2	100.0	V	0.0	12.4
2 125.000	---	36.6	54.0	17.4	100.0	V	0.0	12.4
3 187.000	40.7	---	74.0	33.3	100.0	V	0.0	1.1
3 192.000	---	29.1	54.0	24.9	100.0	V	0.0	1.1
17 689.000	---	40.0	54.0	14.0	100.0	H	230.0	30.2
17 726.000	45.3	---	74.0	28.7	100.0	H	277.0	30.3

Note 1) We have also tested from 18 GHz to 30 GHz and found no emissions

Note 2) Receiving antenna polarization : Horizontal, Vertical

Test Distance : 3 m, Antenna Height : 1 to 4 meters

Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

Margin (PK and/or CAV) = Limit – Level (PK and/or CAV)

PK = Peak, CAV = CISPR-Average, Corr. = Correction Factor