

EMC TEST REPORT

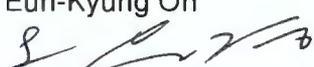
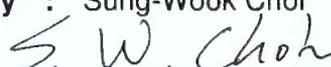
Project No.	LBE20191512	Issue No.	0
Applicant	Name of organization	Samsung Electronics Co., Ltd.	
	Address	(Maetan-dong) 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea	
	Date of application	December 18, 2019	
EUT	Type of device	<input checked="" type="checkbox"/> All other 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 type="checkbox"/> FM Broadcast Receiver	
	Equipment authorization	<input checked="" type="checkbox"/> Certification <input type="checkbox"/> Supplier's Declaration of Conformity	
	FCC ID	A3LSMG988B	
	Kind of product	Mobile Phone	
	Model No.	SM-G988B/DS	
	Variant Model No.	Refer to clause 4.6	
	Manufacturer	Samsung electronics Viet Nam Thai Nguyen Company -Yen Binh industrial - Dong Tien Ward - Pho Yen Town - Thai Nguyen province - Viet Nam Cikarang Industrial Estate, Jl. Jababeka Raya Blok F29-33 Bekasi, West Java, Indonesia 13097-105 Rua Thomas Nielsen Junior, 150 Predio A Pq.Imperador Campinas SP, Brazil Samsung Electronica Da Amazonia, AV Dos Oitis 1460 Manaus Amazonia Brasil 69075-842	
Applied Standards	47 CFR Part 15, Subpart B, Class B / ANSI C63.4-2014		
Test Period	December 20, 2019 ~ December 24, 2019		
Issue date	December 26, 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 : Eun-Kyung Oh 		Reviewed by : Sung-Wook Choi 	
The test results in this report only apply to the tested sample. This report must not be reproduced, except in full, without written permission from Global CS Center.			
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.	Date of Issue	Revised detailed information
Issue 0	December 26, 2019	There are no revisions and this version is basic test report.

※ Remark

Compliance with Part 15B requirements for the receiver part of the licensed transmitter (equipment code CXX) is covered by other 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 an ISO/IEC 17025:2005 accredited testing laboratory by the National Radio Research Agency with designation No. KR0004. for EMC testing.

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-G988B/DS	-	SAMSUNG	A3LSMG988B
B	Battery	EB-BG988ABY	-	SAMSUNG	-
C	Headset	YBD-19HS	-	SAMSUNG	-
D	Data Cable	EP-DG980BBE	-	SAMSUNG	-
E	Micro SD Card	64GB	-	SAMSUNG	DoC
F	Laptop Computer	Latitude5580	1CHRYM2	Dell	DoC
			D3HRYM2	Dell	DoC
G	Laptop AC Adapter	LA65NM130	5D77	Dell	DoC
			5B3C	Dell	DoC
H	Mouse	AA-SM7PCPB	CN57BA5903634ADV8J JCD4371	SAMSUNG	DoC
		SNJ-B138	Z5F8353	SAMSUNG	DoC
I	Router	DIR-806A	RF0F1D5000688	D-Link	DoC
			RF0F1D8011504	D-Link	DoC
J	Travel Adapter	EP-TA800	R37M8TM1002SE3	SAMSUNG	-
K	DP Monitor	27UD88	711NTQD8H004	LG	DoC
L	DP Monitor AC Adapter	LCAP31	EH8NN629490055062	LG	DoC
M	DP Cable	JCA141	BW2K1709000770	J5CREATE	DoC

4.2 EUT operating mode

To achieve compliance applied standard specification including CXX, JAB and JBP requirement, 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 (LTE FDD26 Center Frequency)
2	Camera (front) + Charging (w/ TA)
3	Video + Audio playback from internal memory data + Charging (w/ TA)
4	USB Data Communication with PC (from external memory data)

4.2.2 Radiated Emission

No.	Operating mode
1	Camera (rear) + Charging (w/ TA)
2	Camera (front)
3	Video + Audio playback from internal memory data (w/ Headset)
4	Video + Audio playback from internal memory data + Display out (w/ USB to Direct DP cable)
5	USB Data Communication with PC (from external memory data)

4.3 Details of Sampling

Customer selected, single unit.

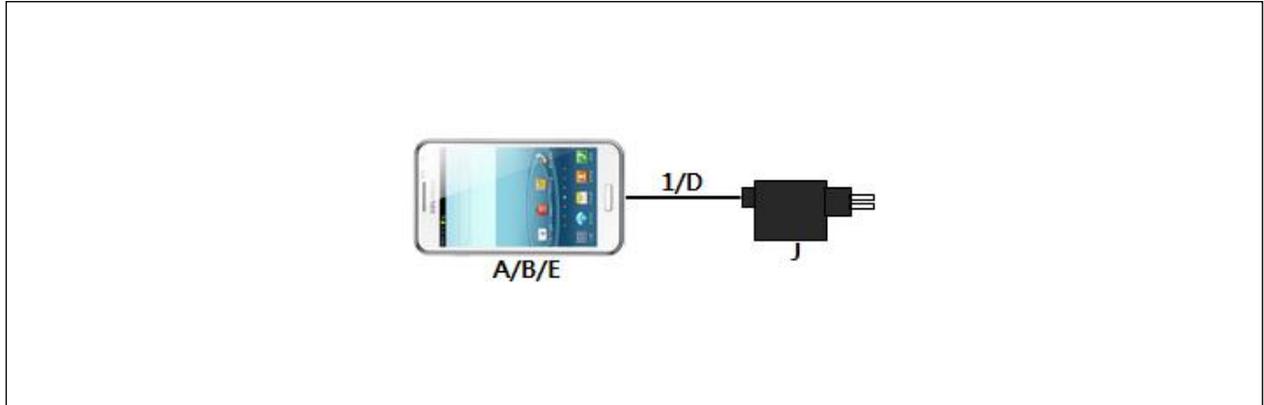
4.4 Used cable description

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:

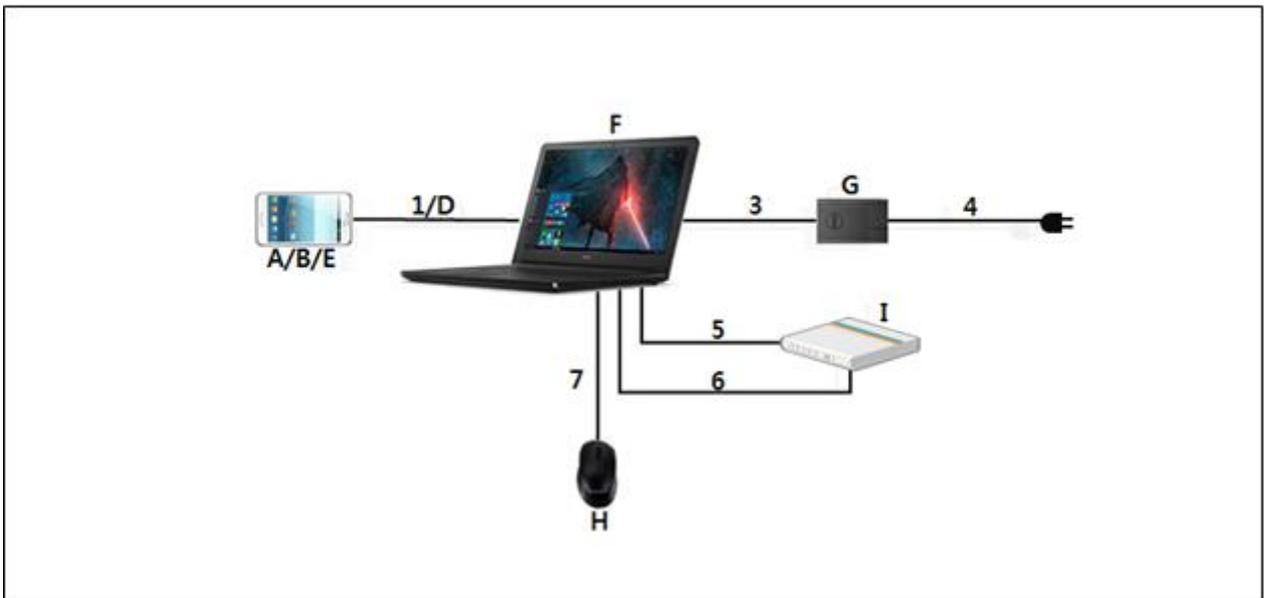
No.	Connected cable	Length [m]	Shielded [Y/N]	Note
1	Data Cable	1.0	Y	From EUT to Laptop Computer
2	Headset	1.2	N	For EUT
3	Power	1.8	N	For Laptop Computer to Laptop AC Adapter
4	Power	1.5	N	For Laptop AC Adapter
5	LAN	1.5	N	From Laptop Computer to Router
6	USB	0.8	N	From Laptop Computer to Router for DC Power
7	USB	1.8	N	From Laptop Computer to Mouse
8	DP Cable	1.1	Y	From DP Monitor to EUT
9	Power	1.2	N	From DP Monitor to DP Monitor AC Adapter
10	Power	1.8	N	For DP Monitor AC Adapter

4.5 Test arrangement

4.5.1 Conducted Emission

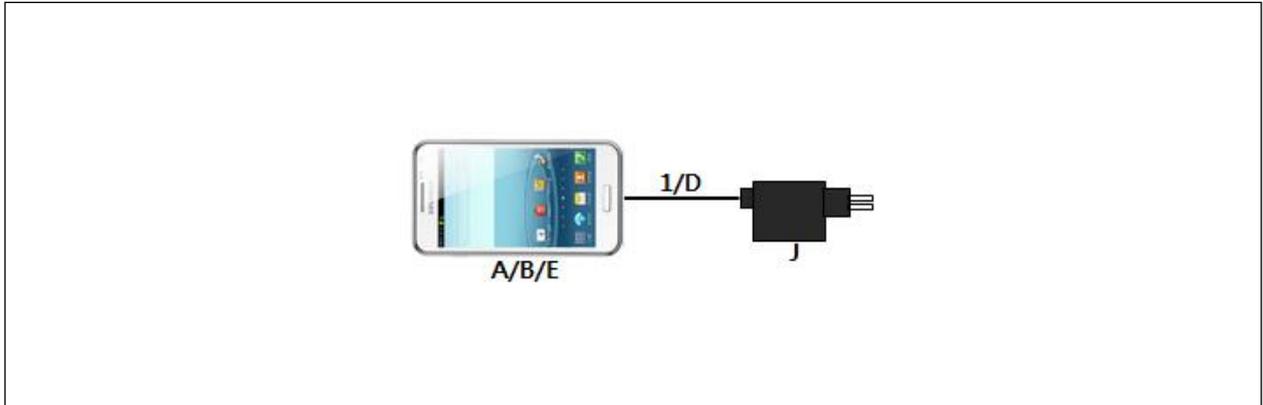


[Mode 1 - 3]

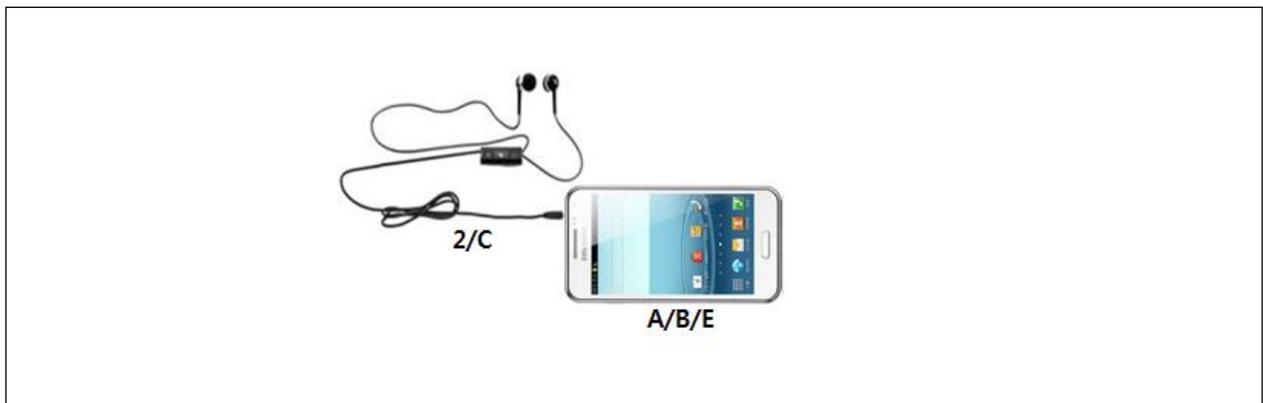


[Mode 4]

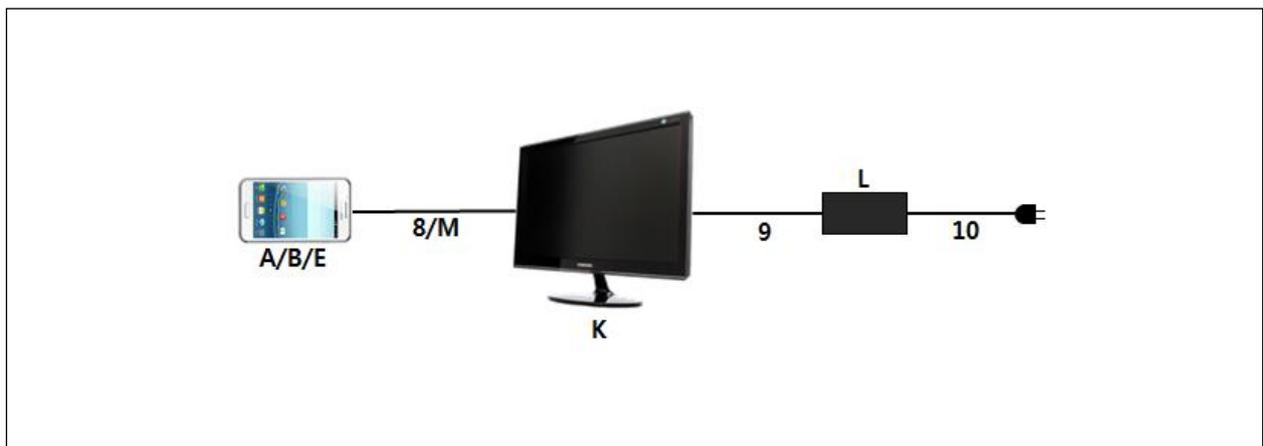
4.5.2 Radiated Emission



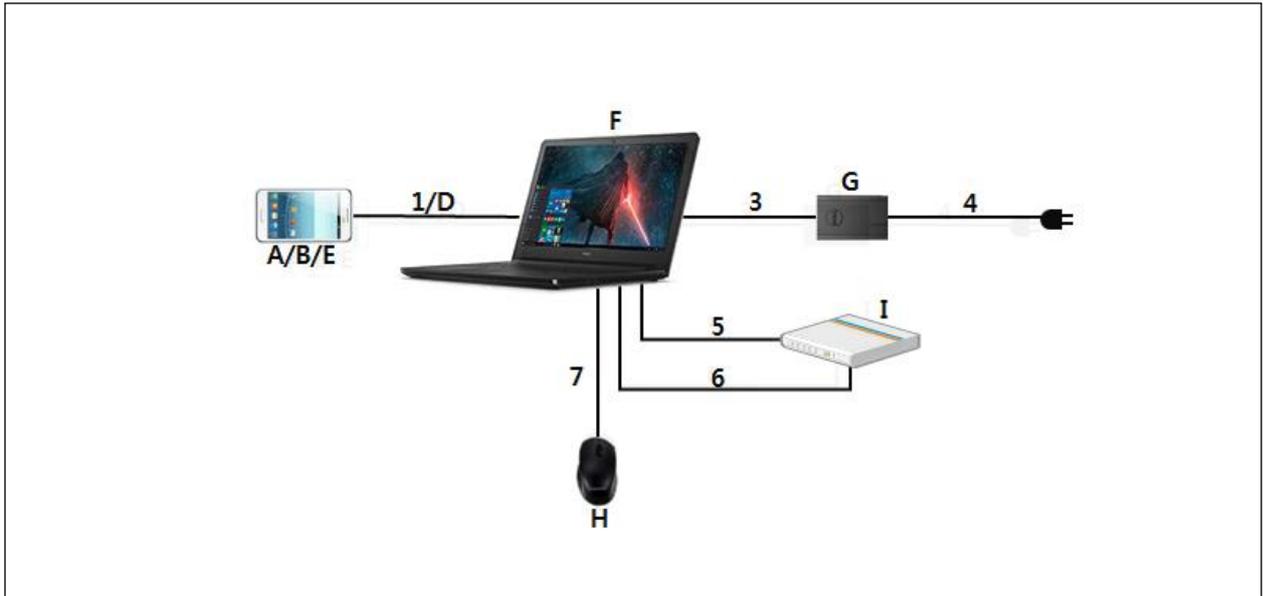
[Mode 1]



[Mode 2 - 3]



[Mode 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 FDD1/2/3/4/5/7/8/12/13/17/18/19/20/25/26/28/66, LTE TDD38/39/40/41, NR n1/3/5/7/8/28/40/77/78 and Incorporates a Bluetooth, ANT+, Wi-Fi, Camera, GNSS, NFC, Wireless Charging, MST, DP, Audio and Video.

4.6.1 The variant models

- SM-G988B

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.

Cellular RX mode testing was performed with the LTE FDD26 RX Test mode at center frequency. All licensed communication Cellular RX mode, GSM/WCDMA/LTE, test results are not significantly different.

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

The video and music were played on monitor through Display Out function using direct DP Cable or DP converter.

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	2.83 dB
Radiated Disturbance (30 MHz ~ 1 GHz)	Horizontal	4.99 dB
	Vertical	4.90 dB
Radiated Disturbance (1 GHz ~ 6 GHz)	Horizontal	4.96 dB
	Vertical	4.95 dB
Radiated Disturbance (6 GHz ~ 18 GHz)	Horizontal	5.13 dB
	Vertical	5.12 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

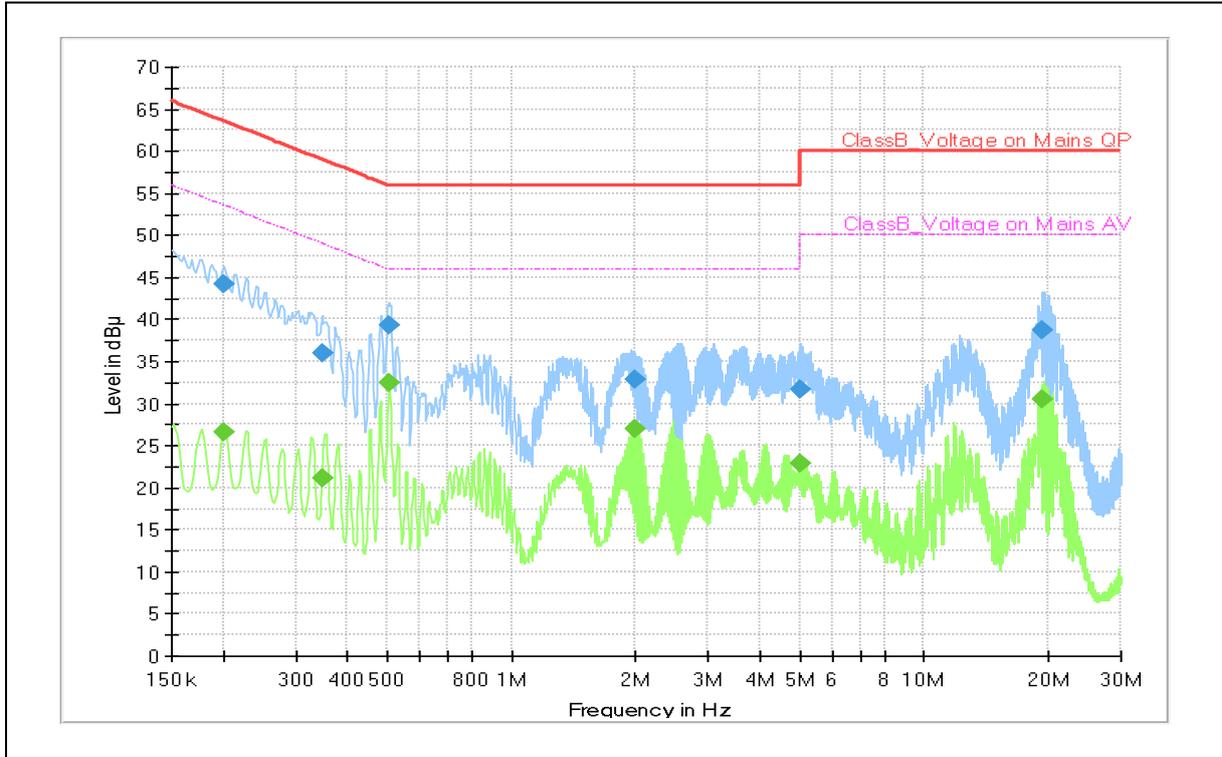
EMC No.	Test Instrument	Model name	Manufacturer	Serial No.	Calibration	
					Date	Interval (Month)
E5I-171	LTE Communicator	CMW500	R&S	154667	2019-08-06	12
E5I-017	EMI Test Receiver	ESU8	R&S	100483	2019-01-16	12
E5I-127	Two-Line V-Network	ENV216	R&S	102061	2019-08-01	12
-	Test software	EMC32	R&S	Ver 9.26.01	-	-

5.1.2 Temperature and humidity condition

Test date	2019-12-24	Test engineer	Eun-Kyung Oh
Climate condition	Ambient temperature	(22.3 ~ 22.6) °C	Limit (15.0 to 35.0) °C
	Relative humidity	(43.0 ~ 43.3) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(101.0 ~ 101.3) kPa	Limit (86.0 to 106.0) kPa
Test place	Shield Room (SR8)		

5.1.3 Test results

Operating Mode 1: AC Mains



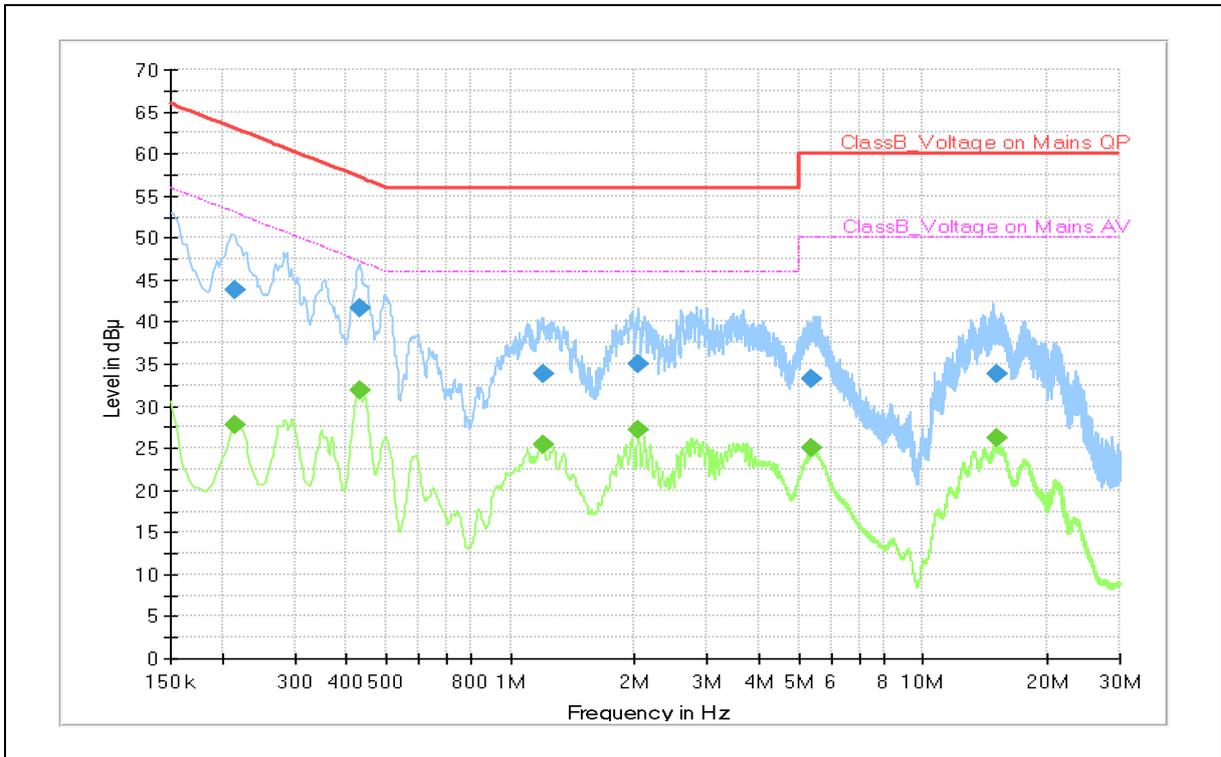
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.202	44.1	---	63.5	19.4	N	10.0
0.202	---	26.5	53.5	27.0	N	10.0
0.348	---	21.2	49.0	27.8	N	10.1
0.348	36.0	---	59.0	23.0	N	10.1
0.503	---	32.4	46.0	13.6	L1	10.1
0.503	39.4	---	56.0	16.6	L1	10.1
1.984	32.9	---	56.0	23.1	L1	9.9
1.984	---	26.9	46.0	19.1	L1	9.9
5.026	---	22.9	50.0	27.1	L1	9.9
5.026	31.7	---	60.0	28.3	L1	9.9
19.419	---	30.5	50.0	19.5	L1	10.4
19.419	38.8	---	60.0	21.2	L1	10.4

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



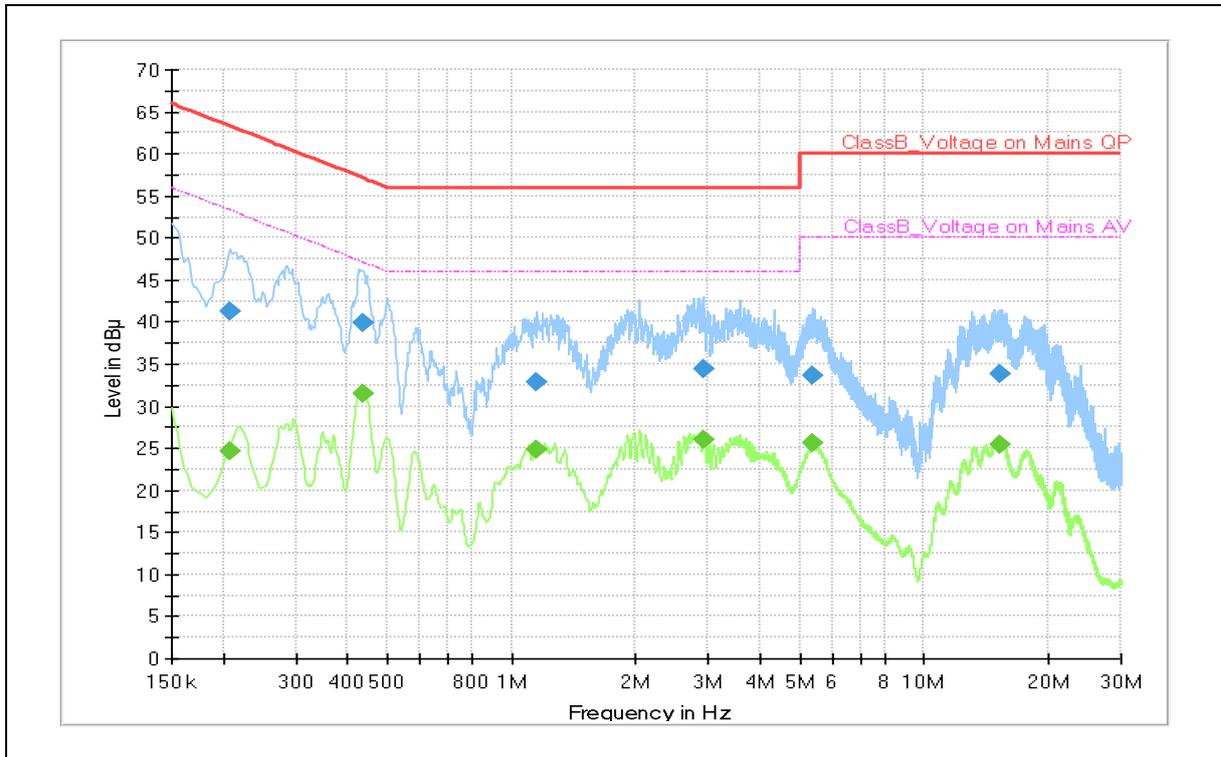
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBµV)	CAV (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.215	---	27.8	53.0	25.2	L1	9.9
0.215	43.8	---	63.0	19.2	L1	9.9
0.431	---	31.8	47.2	15.4	L1	10.1
0.431	41.7	---	57.2	15.5	N	10.2
1.199	---	25.3	46.0	20.7	L1	9.9
1.199	33.7	---	56.0	22.3	L1	9.9
2.040	---	27.3	46.0	18.7	L1	9.9
2.040	35.1	---	56.0	20.9	L1	9.9
5.372	---	25.1	50.0	24.9	L1	9.9
5.372	33.2	---	60.0	26.8	L1	9.9
15.020	---	26.3	50.0	23.7	L1	10.2
15.020	33.8	---	60.0	26.2	L1	10.2

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



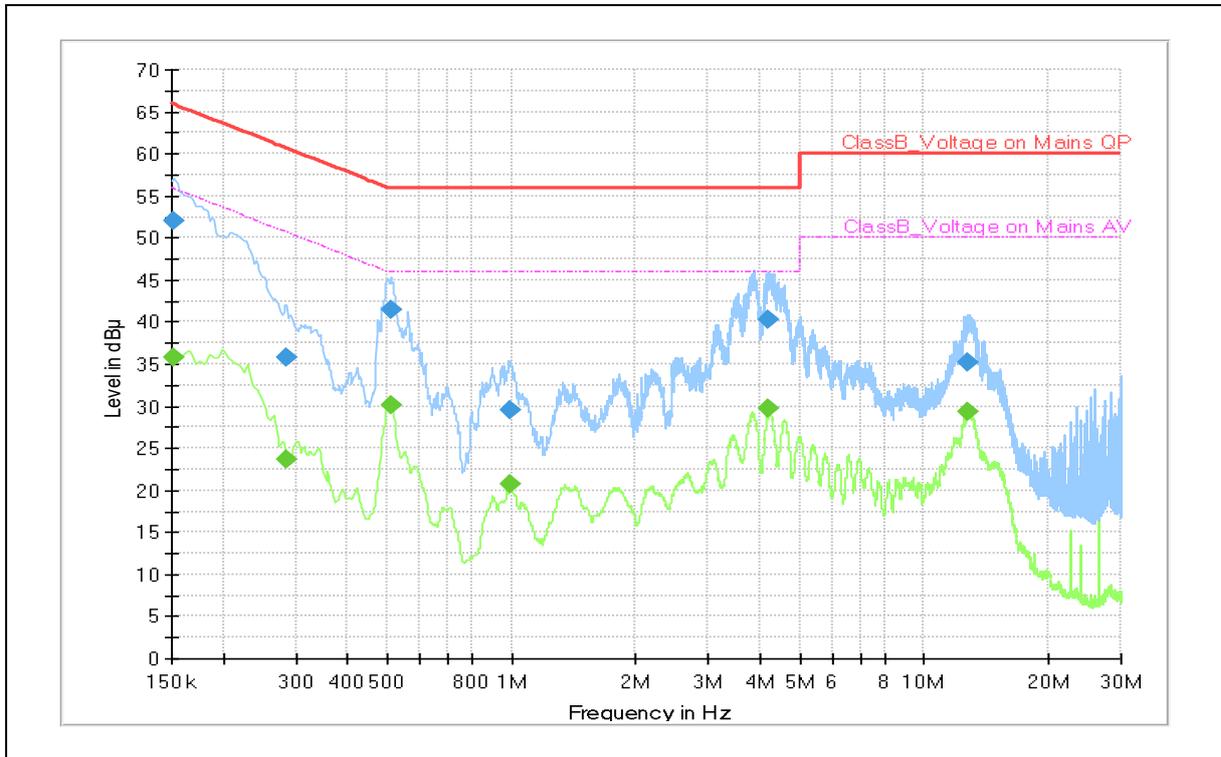
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.209	41.4	---	63.3	21.9	N	10.0
0.209	---	24.7	53.3	28.6	N	10.0
0.438	39.8	---	57.1	17.3	L1	10.1
0.438	---	31.5	47.1	15.6	L1	10.1
1.154	32.8	---	56.0	23.2	L1	9.9
1.154	---	24.9	46.0	21.1	L1	9.9
2.909	34.4	---	56.0	21.6	L1	9.9
2.909	---	26.0	46.0	20.0	L1	9.9
5.390	33.7	---	60.0	26.3	L1	9.9
5.390	---	25.7	50.0	24.3	L1	9.9
15.335	33.9	---	60.0	26.1	L1	10.2
15.335	---	25.5	50.0	24.5	L1	10.2

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)
0.152	---	35.9	55.9	20.0	N	9.9
0.152	52.1	---	65.9	13.8	N	9.9
0.285	35.7	---	60.7	25.0	N	9.9
0.285	---	23.6	50.7	27.1	N	9.9
0.510	41.5	---	56.0	14.5	L1	10.1
0.510	---	30.1	46.0	15.9	L1	10.1
0.989	---	20.7	46.0	25.3	N	9.9
0.989	29.5	---	56.0	26.5	N	9.9
4.182	40.3	---	56.0	15.7	L1	9.8
4.182	---	29.7	46.0	16.3	L1	9.8
12.806	35.2	---	60.0	24.8	L1	9.9
12.806	---	29.3	50.0	20.7	L1	9.9

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

Note) Distance correction formula from $D_1(3\text{m})$ to $D_2(10\text{m})$
: Limit at $D_2 = \text{Limit at } D_1 + 20\text{Log}(D_1 / D_2)$

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

5.2.1 Test instrumentation

EMC No.	Test Instrument	Model name	Manufacturer	Serial No.	Calibration	
					Date	Interval (Month)
E5I-016	EMI Test Receiver	ESU8	R&S	100482	2019-05-29	12
E5I-021	EMI Test Receiver	ESU40	R&S	100376	2019-01-30	12
E5I-149	Horn Antenna	HF907	R&S	102525	2018-06-15	24
E5I-039	Signal Conditioning Unit	SCU-18	R&S	10211	2019-01-23	12
E5I-037	WideBand Horn Antenna	WBH 18-40K	R&S	11201	2019-01-31	24
E5I-042	Signal Conditioning Unit	SCU-40A	R&S	10004	2019-09-11	12
E5I-120	BiLog Antenna	CBL6112D	TESEQ	36997	2018-04-23	24
E5I-072	BiLog Antenna	CBL6112D	TESEQ	36009	2018-04-23	24
E5I-073	Preamplifier	310N	SONOMA	332016	2019-05-09	12
E5I-074	Preamplifier	310N	SONOMA	332017	2019-05-09	12
-	Test software	EP7RE	TOYO	Ver 5.8.2	-	-
-	Test software	EMC32	R&S	Ver 9.25.00	-	-

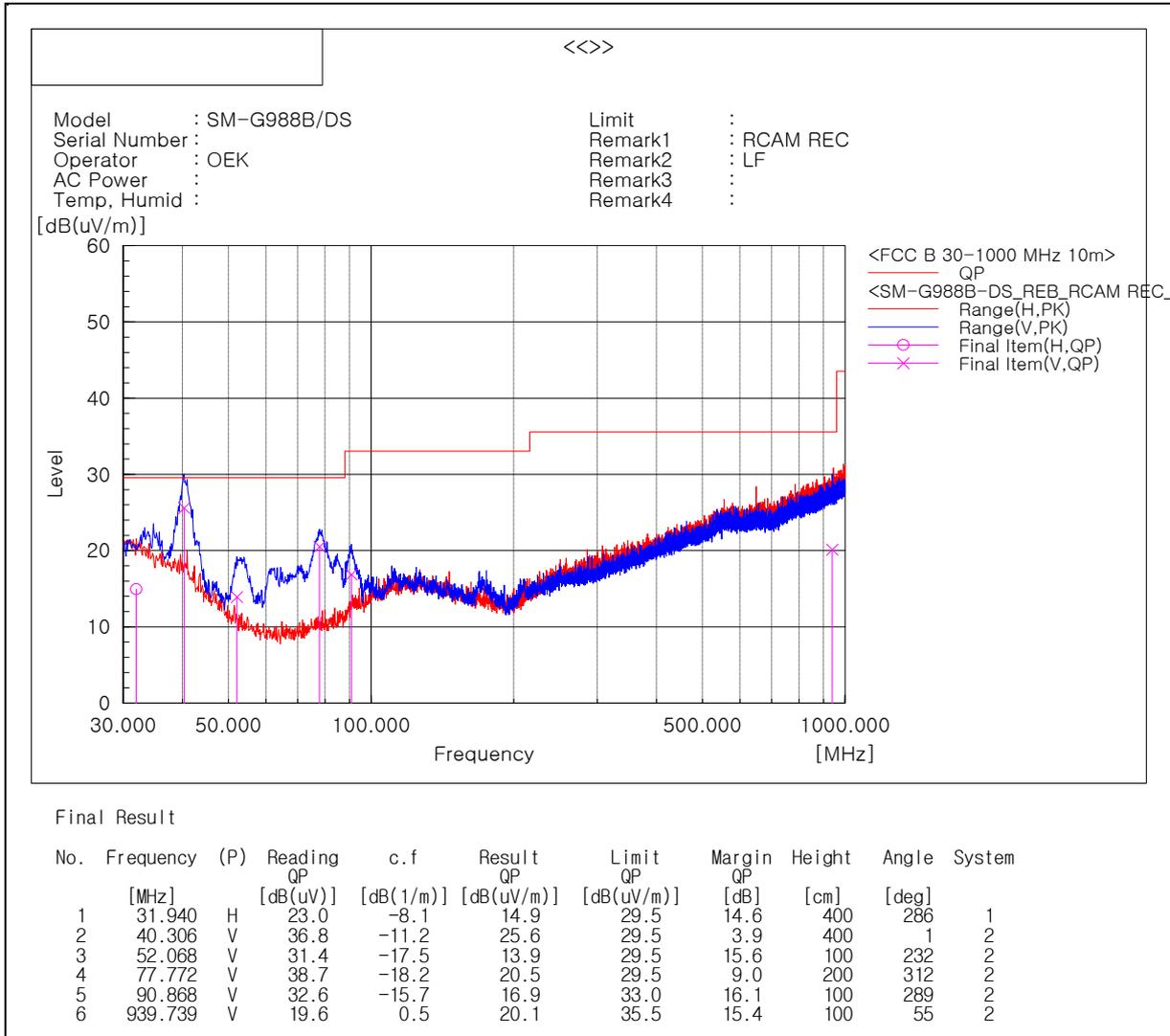
5.2.2 Temperature and humidity condition

Test date	2019-12-20	Test engineer	Eun-Kyung Oh
Climate condition	Ambient temperature	(21.9 ~ 22.2) °C	Limit (15.0 to 35.0) °C
	Relative humidity	(42.6 ~ 42.9) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(102.1 ~ 102.4) kPa	Limit (86.0 to 106.0) kPa
Test place	Semi-Anechoic Chamber (SAC4)		

5.2.3 Test results

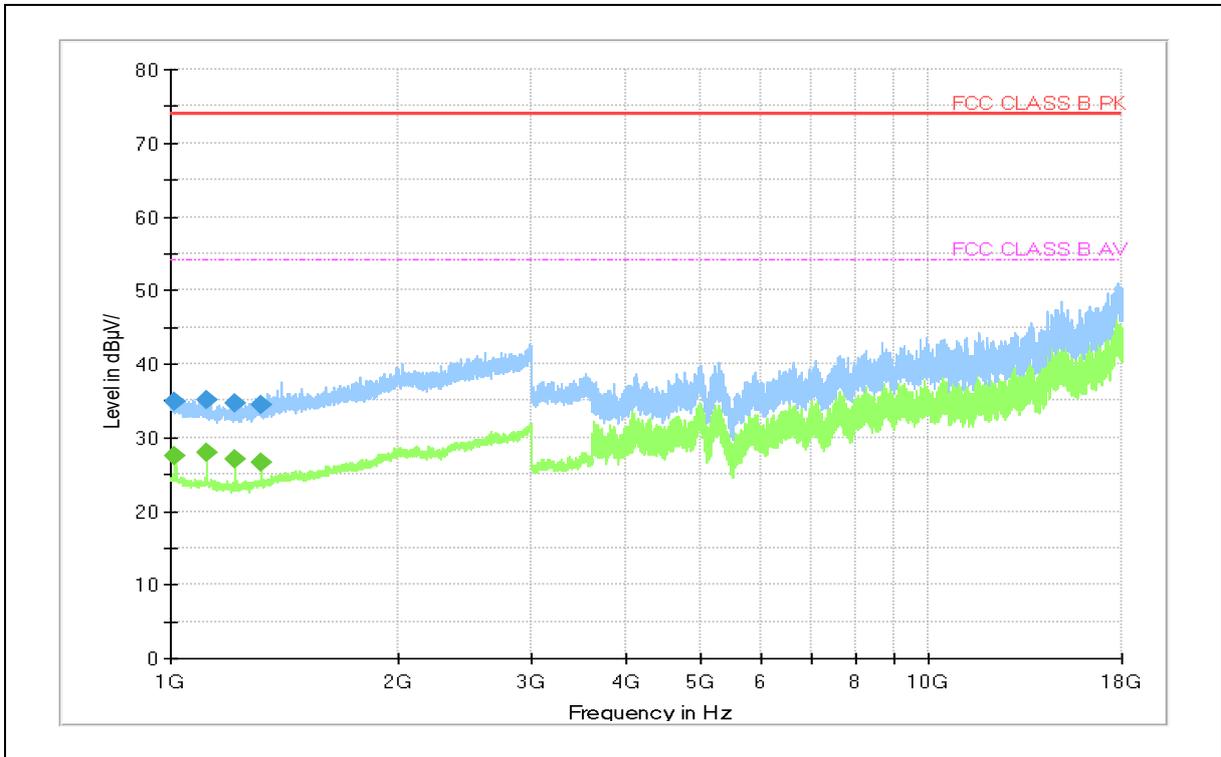
Operating Mode 1

- Frequencies below 1 GHz



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)
1 015.000	---	27.5	54.0	26.5	145.0	V	28.0	6.4
1 015.000	34.8	---	74.0	39.2	213.0	V	268.0	6.4
1 116.500	35.1	---	74.0	38.9	187.0	V	35.0	6.2
1 117.000	---	28.0	54.0	26.0	122.0	V	86.0	6.2
1 218.500	---	27.0	54.0	27.0	116.0	V	198.0	6.0
1 218.500	34.6	---	74.0	39.4	172.0	V	95.0	6.0
1 320.000	34.4	---	74.0	39.6	127.0	V	350.0	6.9
1 320.000	---	26.5	54.0	27.5	134.0	V	350.0	6.9

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

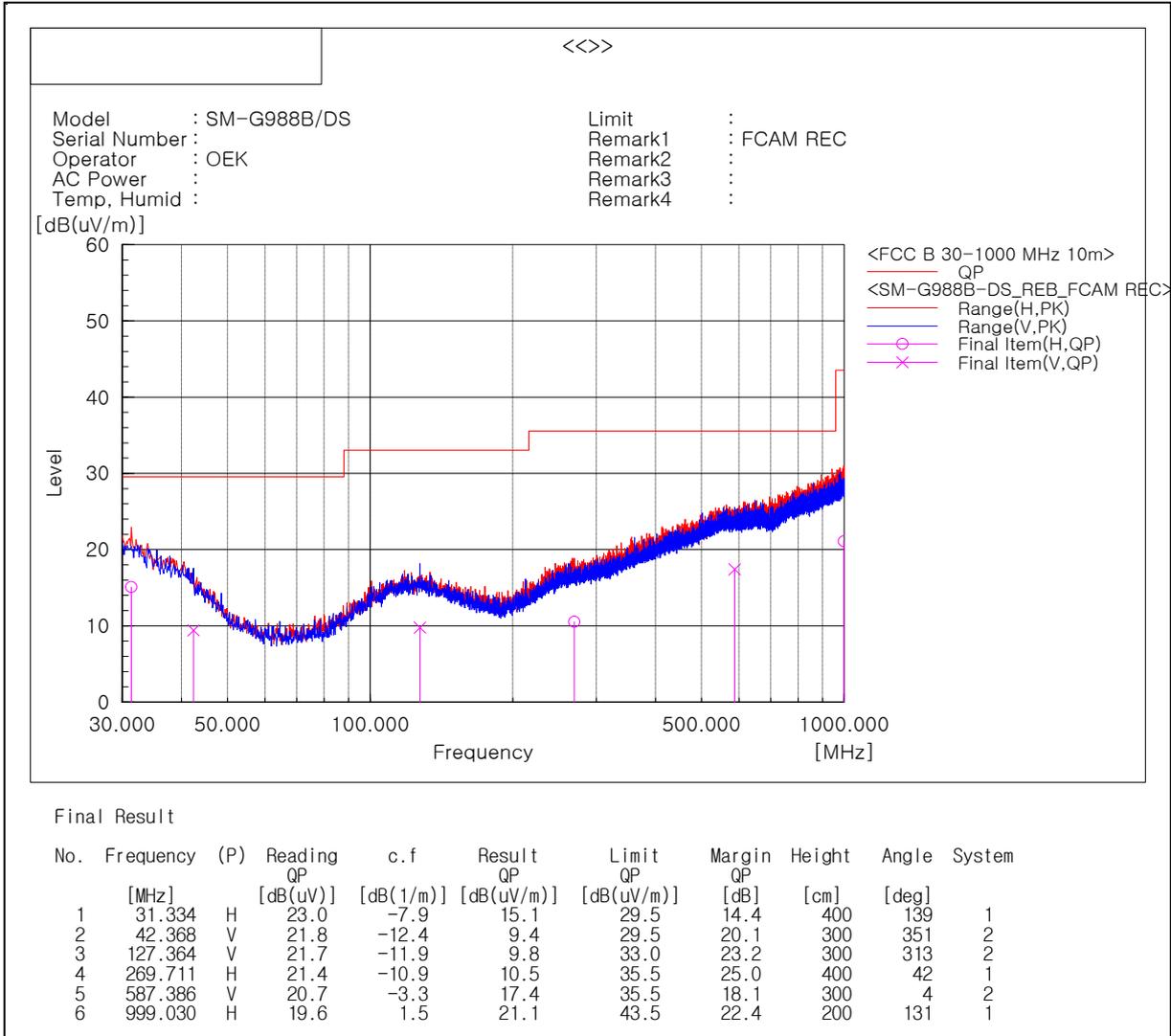
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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

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

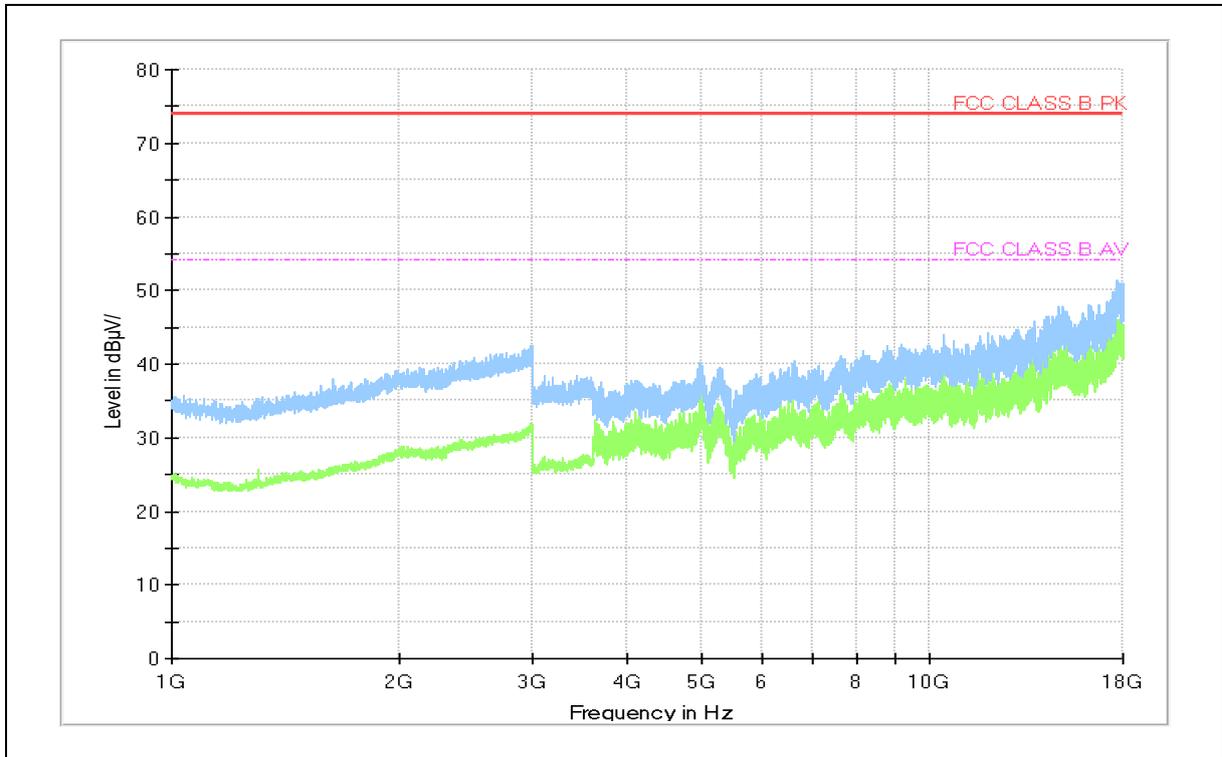
Operating Mode 2

- Frequencies below 1 GHz



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

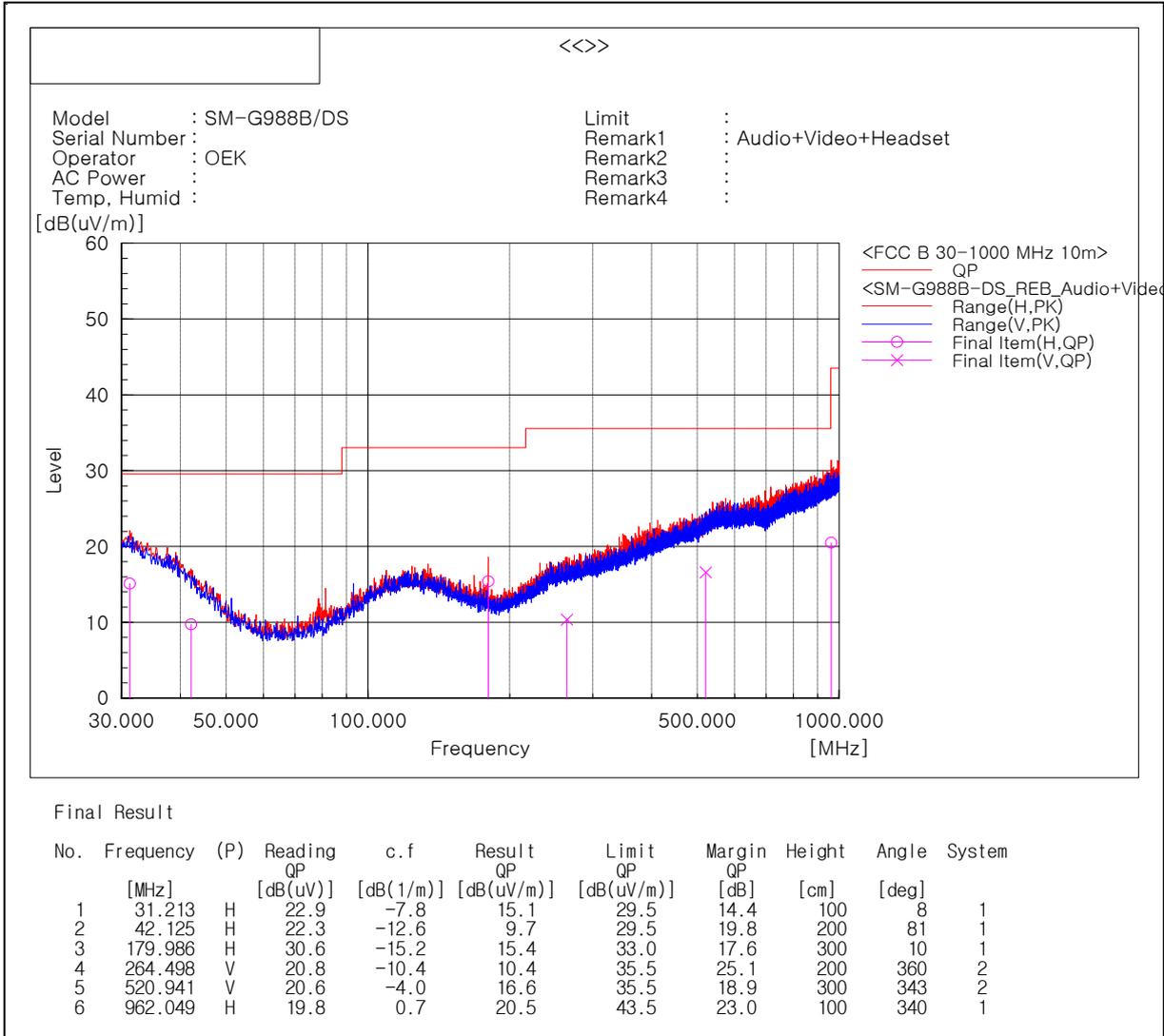
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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

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

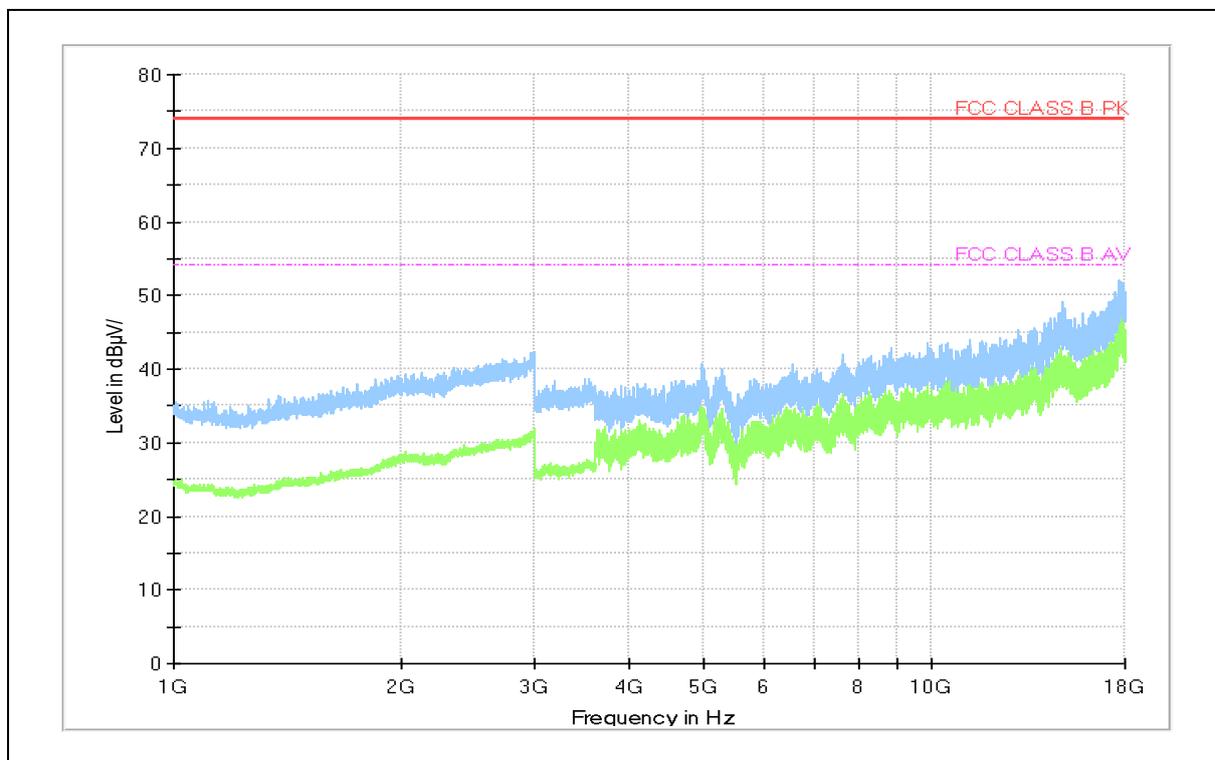
Operating Mode 3

- Frequencies below 1 GHz



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

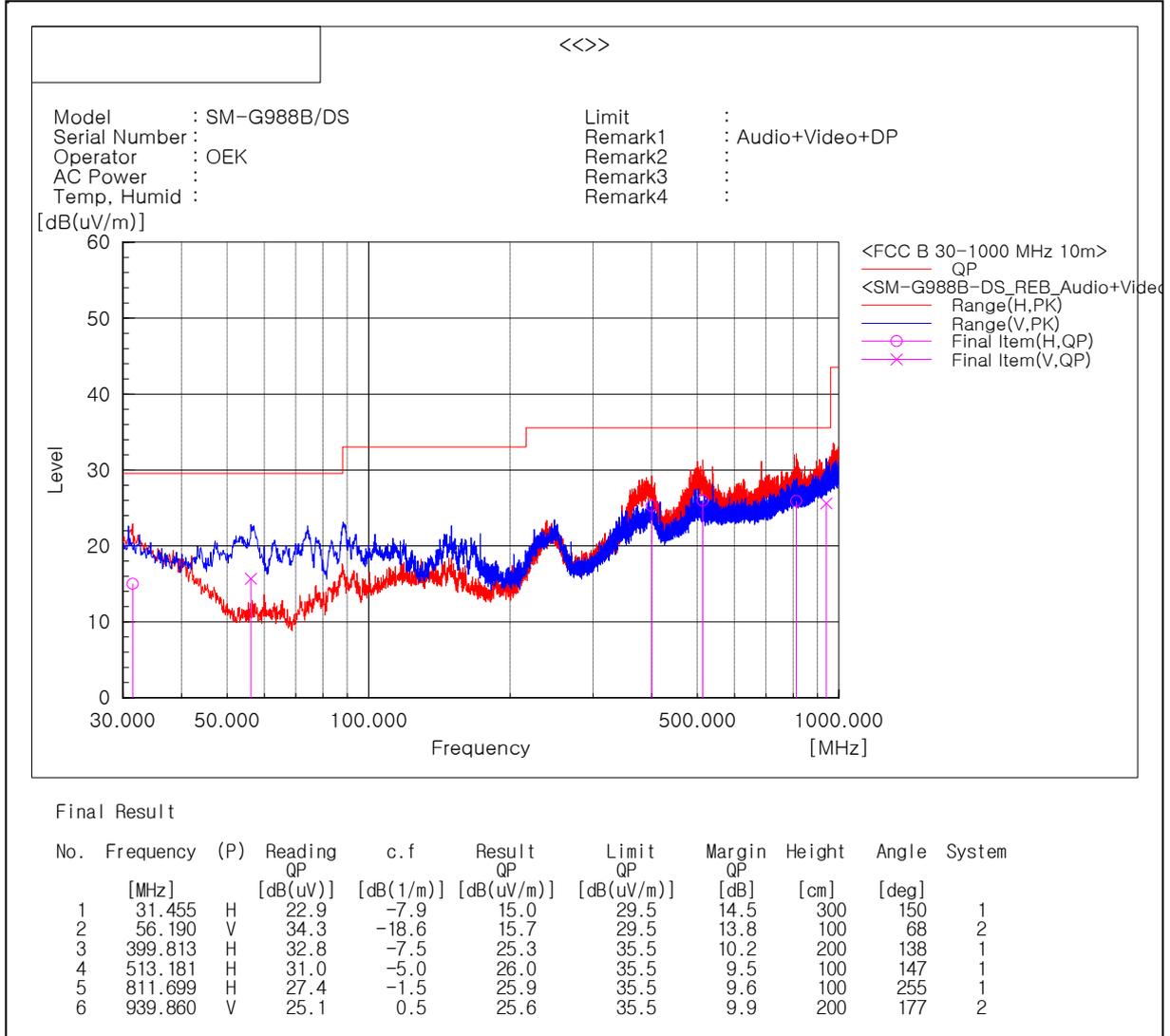
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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

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

Operating Mode 4

- Frequencies below 1 GHz



Note1) Receiving antenna polarization : Horizontal, Vertical

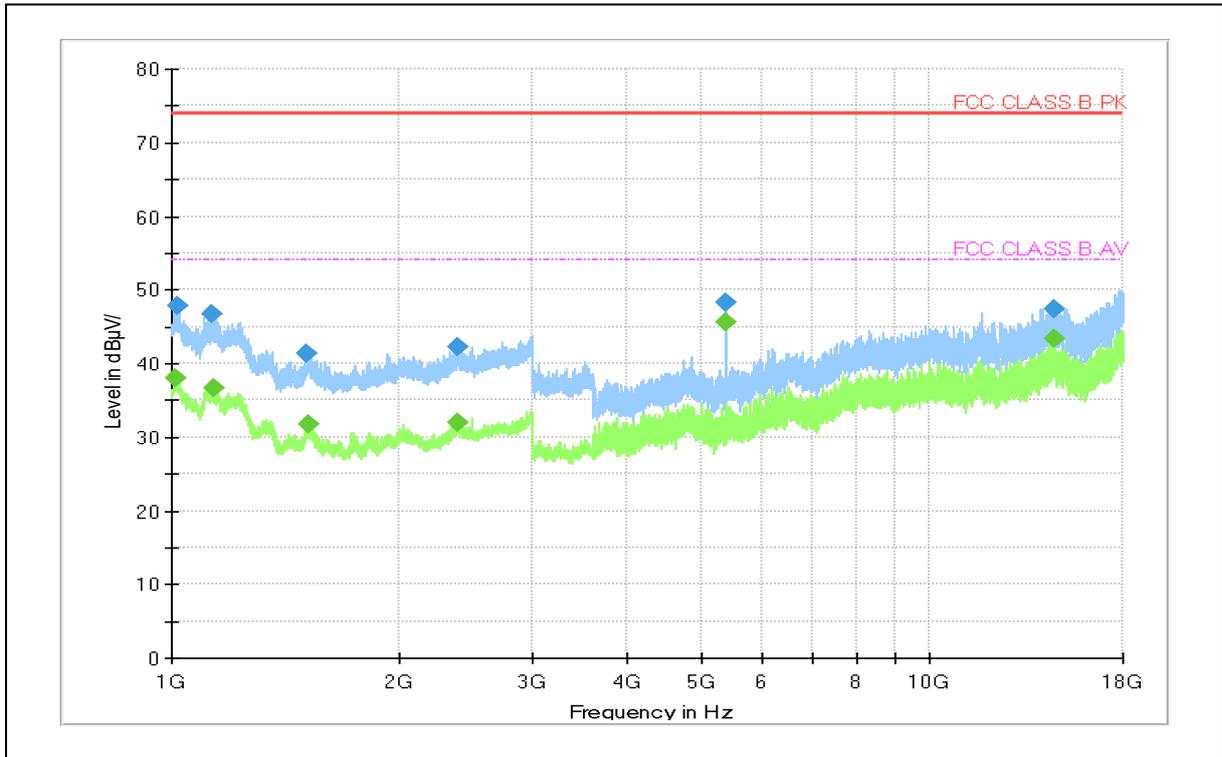
Test Distance : 10 m, Antenna Height : 1 to 4 meters

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)
1 014.800	---	37.9	54.0	16.1	202.0	V	233.0	7.3
1 018.000	47.9	---	74.0	26.1	185.0	V	212.0	7.3
1 132.800	46.6	---	74.0	27.4	124.0	H	200.0	7.0
1 134.000	---	36.5	54.0	17.5	246.0	H	205.0	7.0
1 511.200	41.3	---	74.0	32.7	192.0	H	215.0	9.9
1 512.800	---	31.7	54.0	22.3	178.0	H	220.0	9.9
2 384.400	42.3	---	74.0	31.7	259.0	H	256.0	13.6
2 385.600	---	32.1	54.0	21.9	207.0	H	251.0	13.6
5 399.500	---	45.6	54.0	8.4	152.0	H	119.0	7.3
5 399.500	48.4	---	74.0	25.6	137.0	H	112.0	7.3
14 612.500	47.4	---	74.0	26.6	256.0	H	196.0	29.8
14 612.500	---	43.4	54.0	10.6	118.0	H	185.0	29.8

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

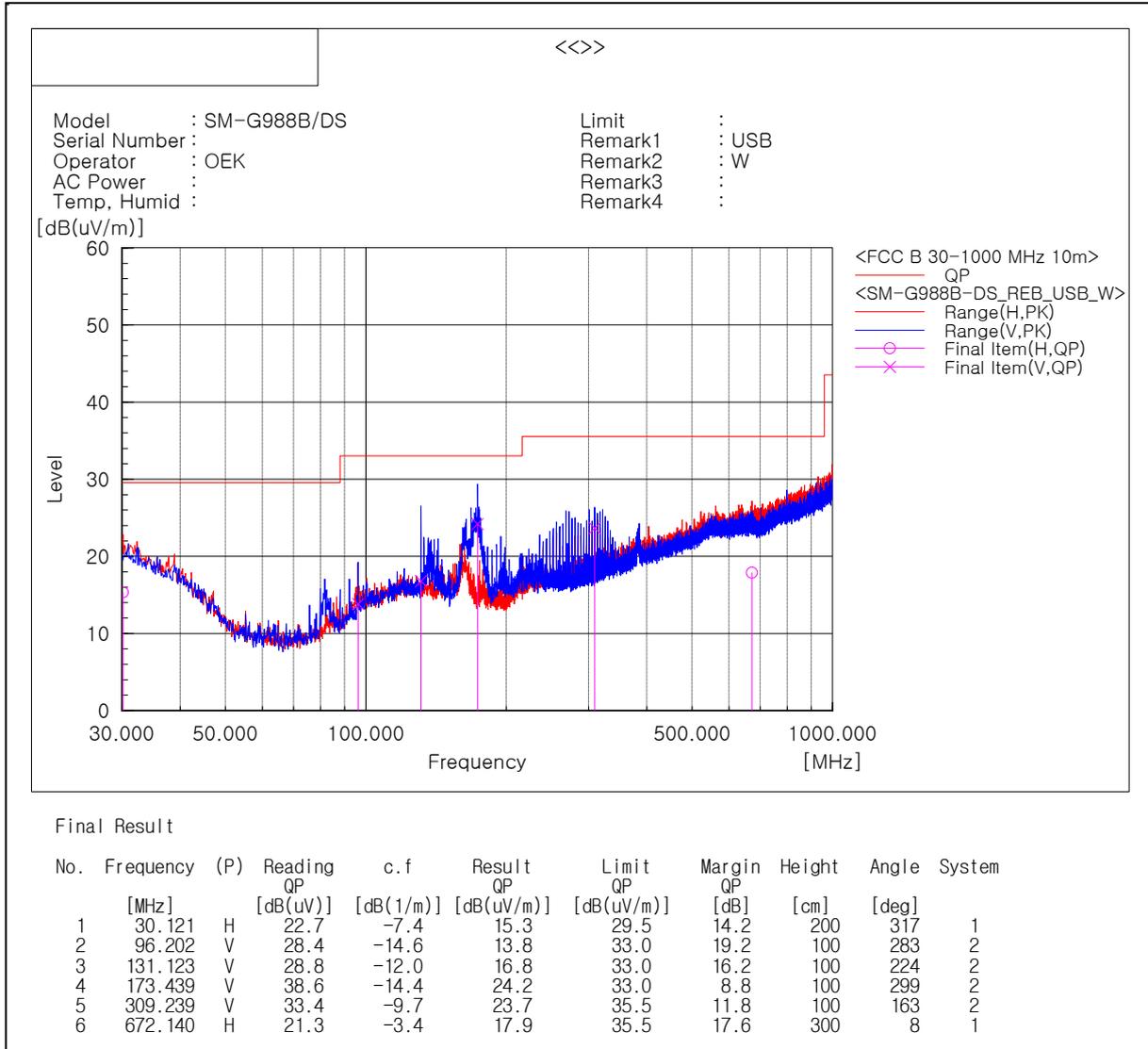
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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



Note1) Receiving antenna polarization : Horizontal, Vertical

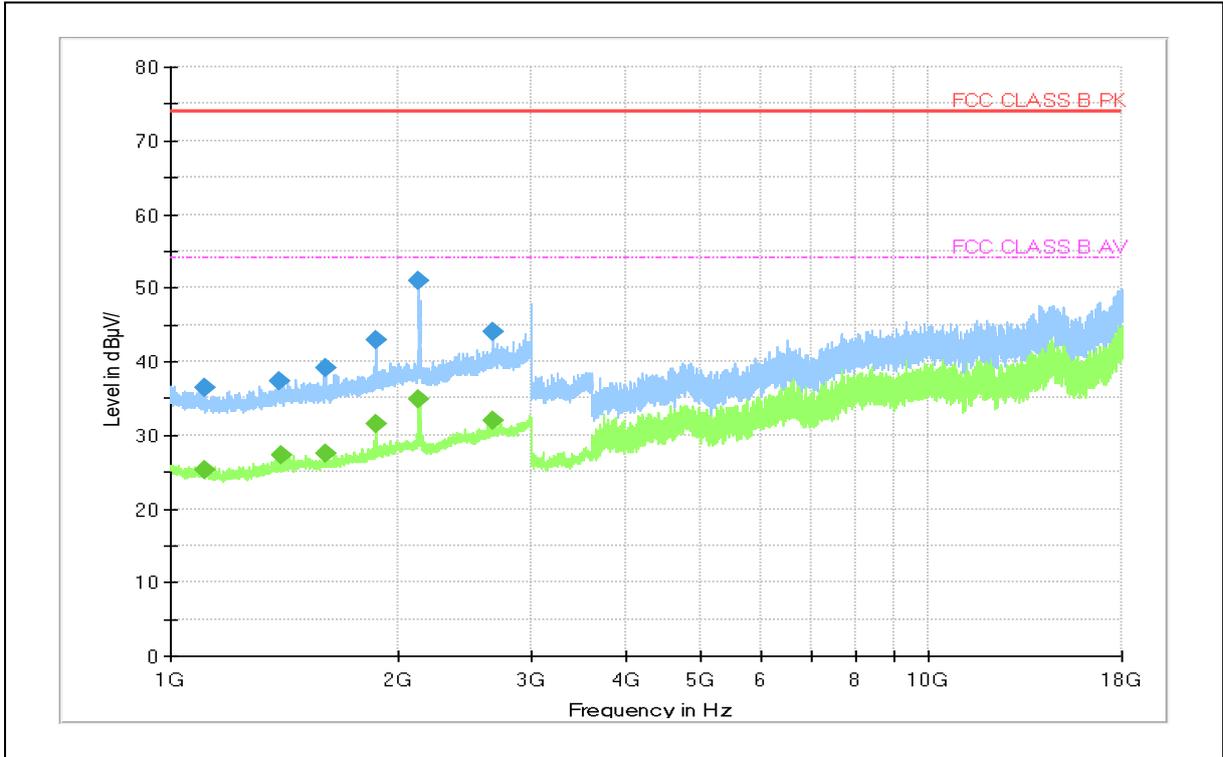
Test Distance : 10 m, Antenna Height : 1 to 4 meters

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)
1 109.600	---	25.3	54.0	28.7	115.0	V	0.0	7.1
1 112.000	36.4	---	74.0	37.6	197.0	H	305.0	7.1
1 390.800	37.2	---	74.0	36.8	136.0	V	129.0	8.8
1 398.400	---	27.3	54.0	26.7	245.0	V	158.0	8.9
1 598.800	---	27.6	54.0	26.4	182.0	V	119.0	10.1
1 598.800	39.1	---	74.0	34.9	133.0	V	138.0	10.1
1 863.200	---	31.5	54.0	22.5	291.0	V	15.0	11.7
1 864.000	43.0	---	74.0	31.0	167.0	V	0.0	11.7
2 124.800	---	34.7	54.0	19.3	125.0	V	139.0	12.9
2 126.400	50.9	---	74.0	23.1	182.0	V	16.0	12.9
2 660.400	---	32.0	54.0	22.0	212.0	V	337.0	15.1
2 665.600	44.1	---	74.0	29.9	164.0	V	346.0	15.1

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