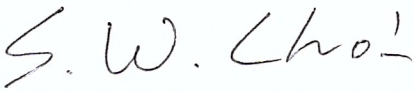



# EMC TEST REPORT

<b>Project No.</b>	LBE20182148	<b>Issue No.</b>	0
<b>Applicant</b>	<b>Name of organization</b>	Samsung Electronics Co., Ltd.	
	<b>Address</b>	(Maetan-dong) 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea	
	<b>Date of application</b>	December 10, 2018	
<b>EUT</b>	<b>Type of device</b>	<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	
	<b>Equipment authorization</b>	<input checked="" type="checkbox"/> Certification <input type="checkbox"/> Supplier's Declaration of Conformity	
	<b>FCC ID</b>	A3LSMA505FN	
	<b>Kind of product</b>	Mobile Phone	
	<b>Model No.</b>	SM-A505FN/DS	
	<b>Variant Model No.</b>	Refer to clause 4.6	
	<b>Manufacturer</b>	SAMSUNG ELECTRONICS VIETNAM CO.,LTD. Kcn Yen Binh1, huyen pho Yen Tinh Thai Nguyen VIETNAM	
	<b>Applied Standards</b>	47 CFR Part 15, Subpart B, Class B / ANSI C63.4-2014	
<b>Test Period</b>	December 17, 2018 ~ December 26, 2018		
<b>Issue date</b>	December 28, 2018		
<b>Test result : Complied</b>			
The equipment under test has found to be compliant with the applied standards. (Refer to the attached test result for more detail.)			
<b>Tested by</b> : Sung-Wook Choi		<b>Reviewed by</b> : Young-Hun Kim	
			
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.	Revised detailed information
Issue 0	There are no revisions and this version is basic test report.

### 1.2 Licensed band test report no.

No.	Remark
4788805437-E1	The cellular receiver mode refers to the other EMC 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-A505FN/DS	-	SAMSUNG	A3LSMA505FN
B	Battery	EB-BA505ABU	-	SAMSUNG	-
C	Headset	EHS61ASFWE	-	SAMSUNG	-
D	Data Cable	EP-DR140AWE	-	SAMSUNG	-
E	Micro SD Card	64GB	-	SAMSUNG	-
F	Desk-Top Computer	DM-C410	HFGD97AB700278X	SAMSUNG	-
		DM300S	A20100622	SAMSUNG	-
G	LCD TV Monitor	PE22BS	N849HVMP702249R	SAMSUNG	-
		EM23TS	NC26H1KSB01550B	SAMSUNG	-
H	Mouse	SML-210PB	TAKD125024 V	SAMSUNG	-
			TAKD124911 M	SAMSUNG	-
I	Keyboard	SDM8500P	8M001183	SAMSUNG	-
			8M001033	SAMSUNG	-
J	Gigabit Switch 8	J9794A	CN33FQ703Q	HP	-
			CN33FQ71XK	HP	-
K	Power Supply	EADP-15DC A	DIKD1245096741	Delta	-
			DIKD1245096576	Delta	-
L	Travel Adapter	EP-TA200	R37KB5W06Y1SE3	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.

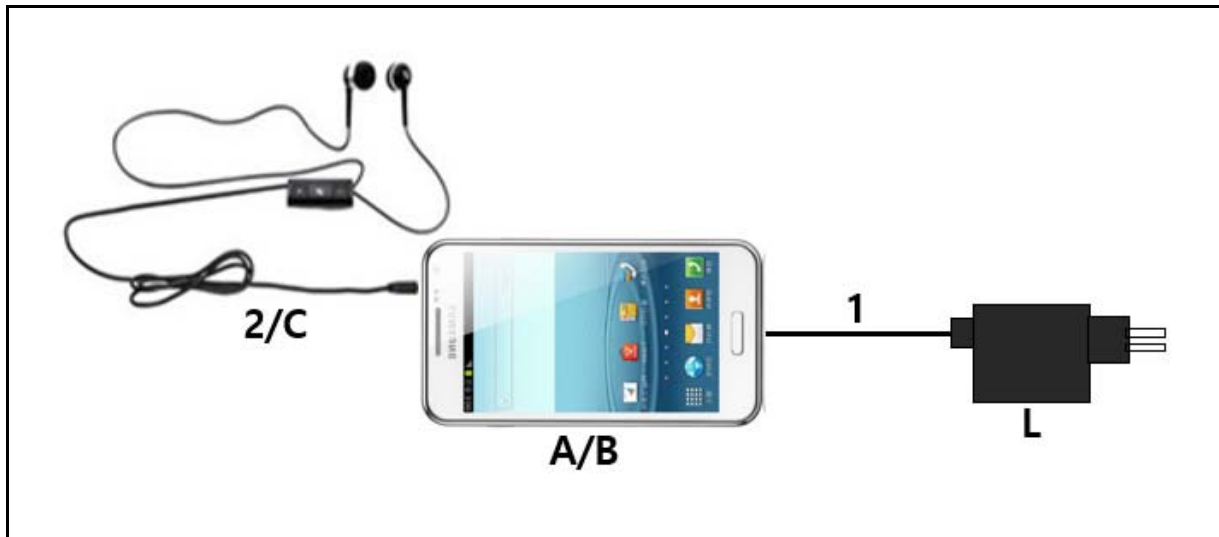
#### 4.4 Used cable description

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:

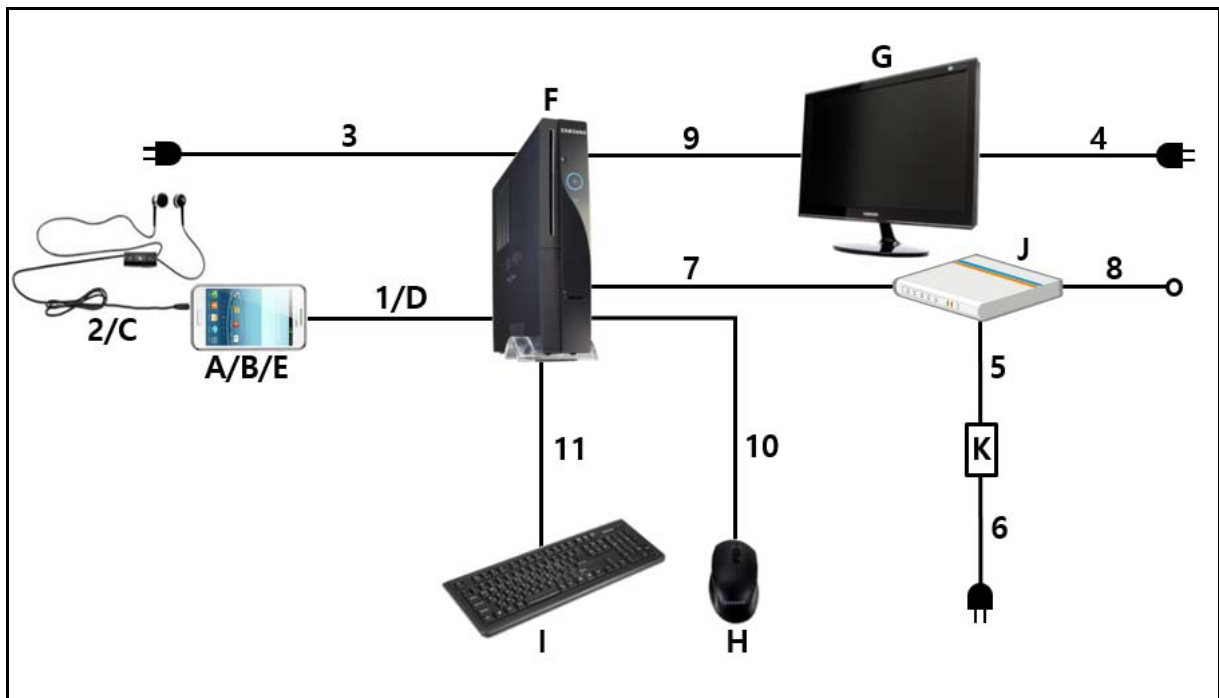
No.	Connected cable	Length [m]	Shielded [Y/N]	Note
1	Data Cable	0.8	Yes	From EUT to Desk-Top Computer
2	Headset	1.6	No	For EUT
3	Power	1.8	No	For Desk-Top Computer
4	Power	1.8	No	For LCD TV Monitor
5	Power	1.8	No	From Gigabit Switch 8 to Power Supply
6	Power	1.8	No	For Power Supply
7	LAN	1.5	No	From Desk-Top Computer to Gigabit Switch 8
8	LAN	1.5	No	From Gigabit Switch 8 to Local Area Network
9	RGB	1.8	Yes	From Desk-Top Computer to LCD TV Monitor
10	PS/2	1.5	Yes	From Desk-Top Computer to Mouse
11	PS/2	1.5	Yes	From Desk-Top Computer to Keyboard

## 4.5 Test arrangement

### 4.5.1 Conducted Emission

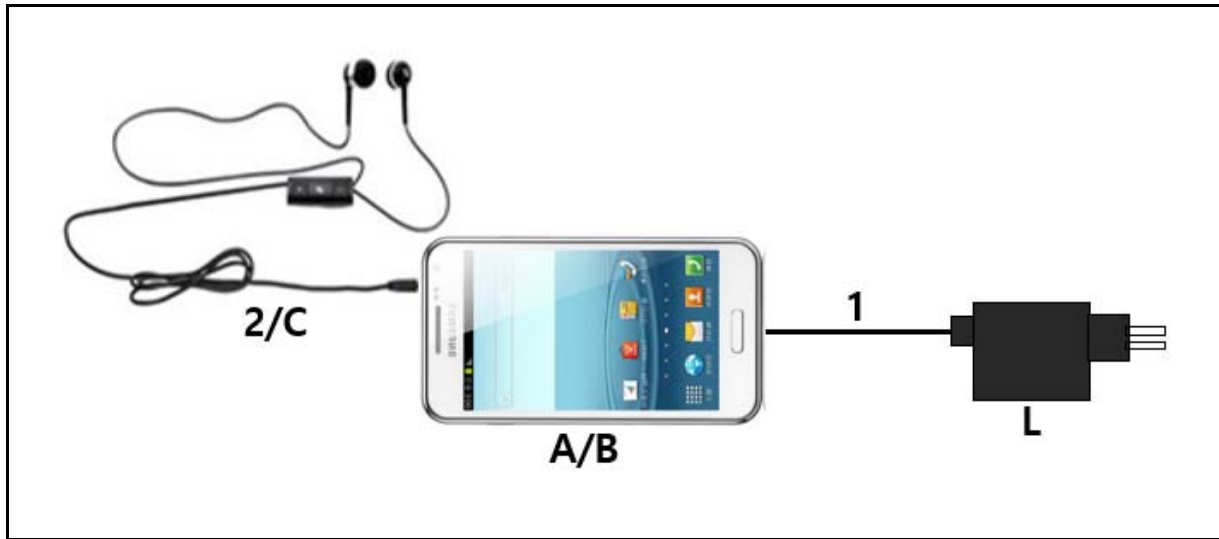


[ Mode 1 - 4 ]

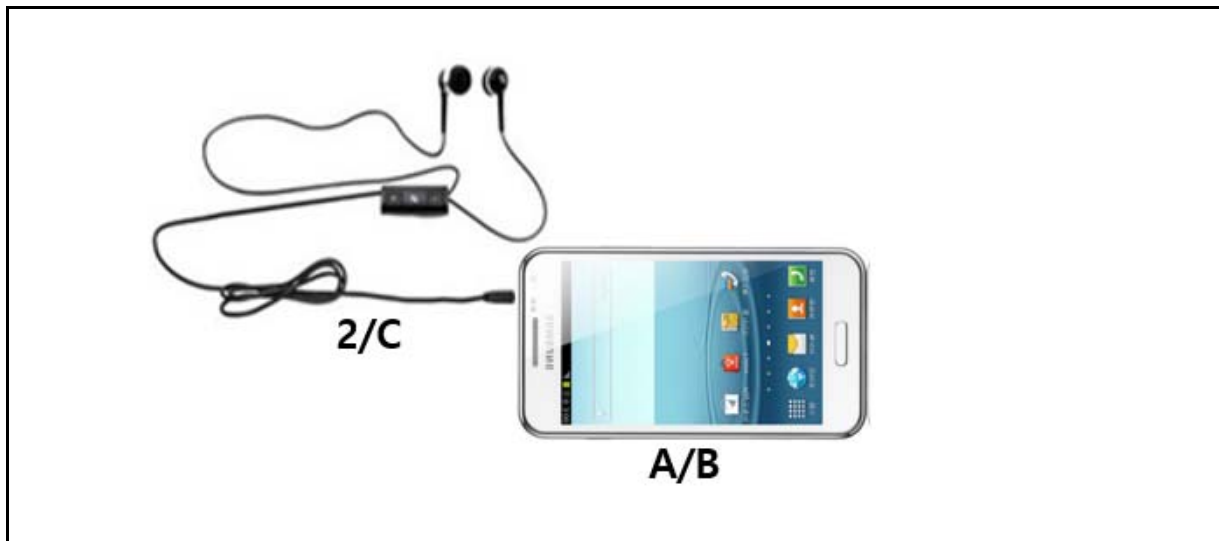


[ Mode 5 ]

### 4.5.2 Radiated Emission

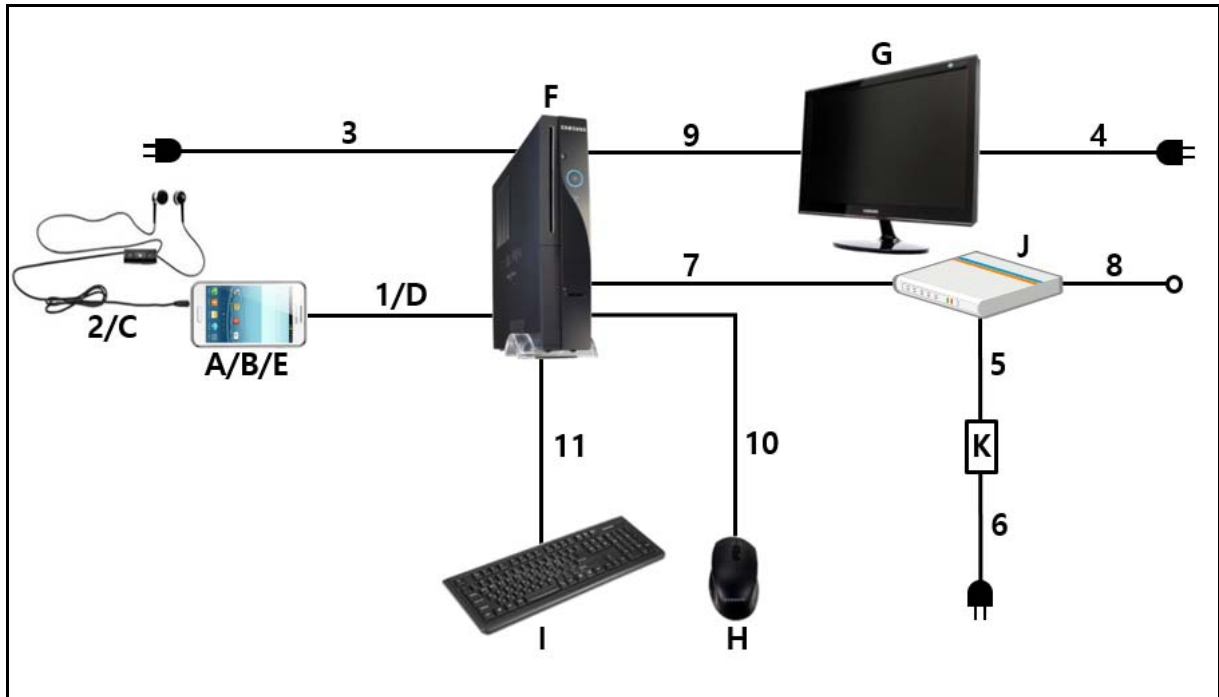


[ Mode 1 ]



[ 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 FDD1/2/5/8, LTE FDD1/3/5/7/8/20, 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

- SM-A505FN

## 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) radiated 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 (Below 1 GHz)	Horizontal	4.99 dB
	Vertical	4.90 dB
Radiated Disturbance (Above 1 GHz)	Horizontal	5.33 dB
	Vertical	5.32 dB

## 5. Results of individual test

### 5.1 Conducted disturbance

The EUT was connected to the Desk-Top Computer which was powered from one LISN for the measurements. The support equipment power cables were connected to a second 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

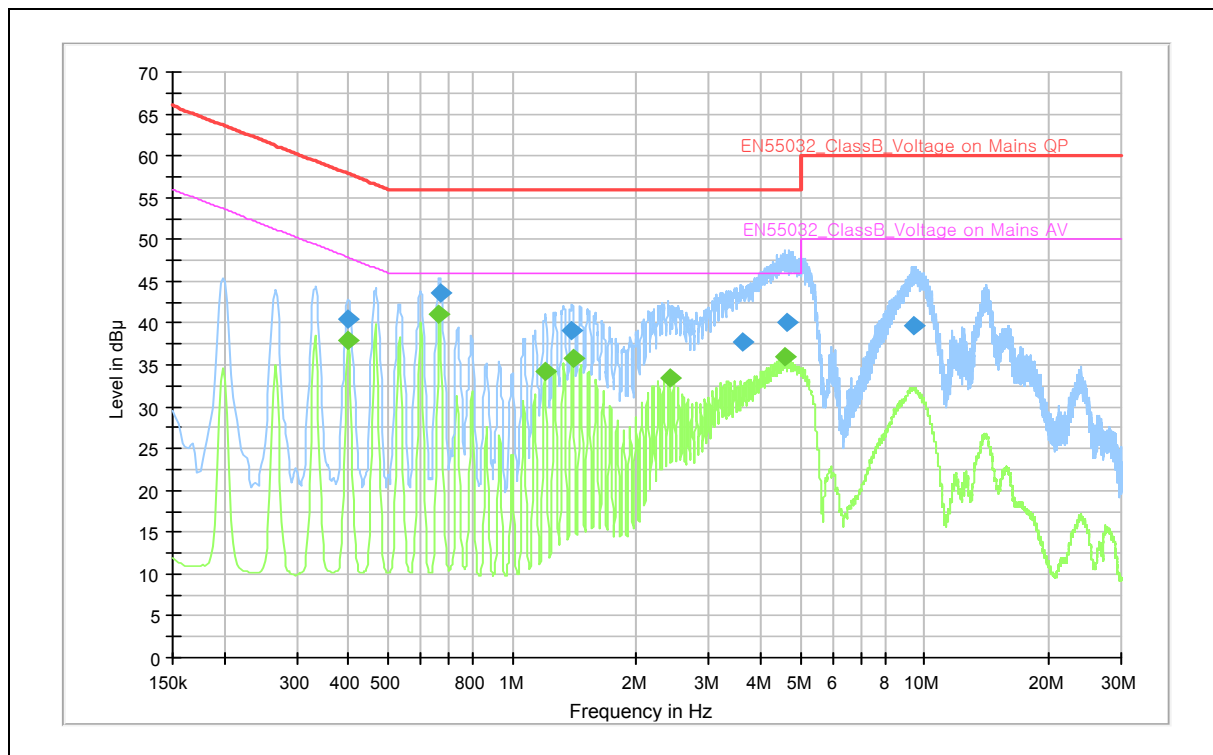
EMC No.	Test Instrument	Model name	Manufacturer	Serial No.	Calibration	
					Date	Interval (Month)
E5I-002	Universal Radio Communicator	CMU200	R&S	100612	2018-08-31	12
E5I-043	LISN	ENV216	R&S	101630	2018-08-17	12
E5I-017	EMI Test Receiver	ESU8	R&S	100483	2018-01-12	12
E5I-127	LISN	ENV216	R&S	102061	2018-07-23	12
-	Test software	EMC32	R&S	Ver 9.26.01	-	-

#### 5.1.2 Temperature and humidity condition

Test date	2018-12-19	Test engineer	Sung-Wook Choi
Climate condition	Ambient temperature	(23.2 ~ 23.5) °C	Limit (15.0 to 35.0) °C
	Relative humidity	(43.7 ~ 44.9) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(101.4 ~ 101.6) kPa	Limit (86.0 to 106.0) kPa
Test place	Shield Room (SR8)		

### 5.1.3 Test results

Operating Mode 1: AC Mains



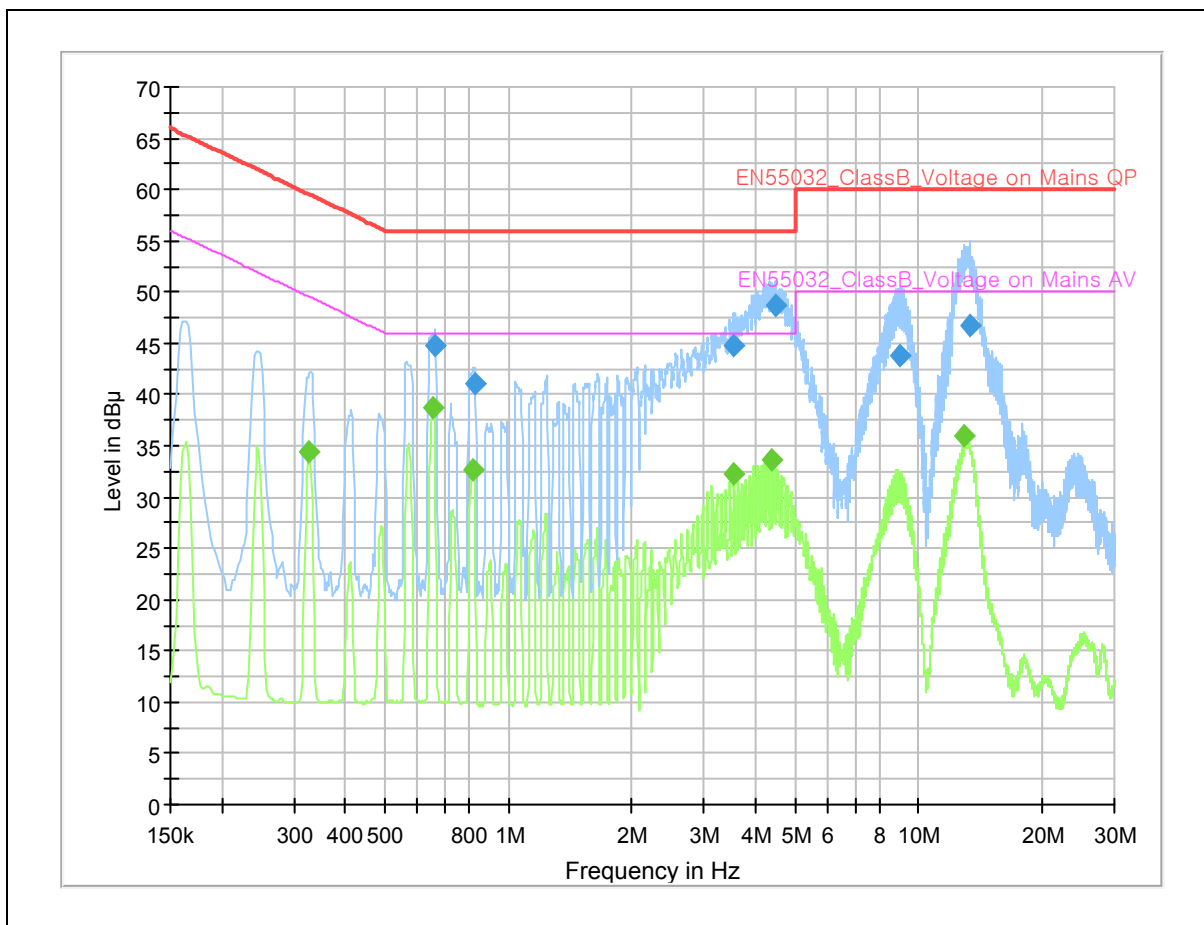
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBµV)	CAV (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.399	40.6	---	57.9	17.3	N	10.1
0.399	---	37.8	47.9	10.1	L1	10.2
0.664	---	41.1	46.0	4.9	L1	10.2
0.667	43.6	---	56.0	12.4	L1	10.2
1.198	---	34.2	46.0	11.8	L1	10.0
1.396	39.1	---	56.0	16.9	N	9.9
1.402	---	35.9	46.0	10.1	L1	10.0
2.403	---	33.5	46.0	12.5	L1	10.0
3.640	37.7	---	56.0	18.3	L1	10.0
4.598	---	36.1	46.0	9.9	L1	10.0
4.620	40.0	---	56.0	16.0	N	9.9
9.450	39.6	---	60.0	20.4	L1	10.1

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**



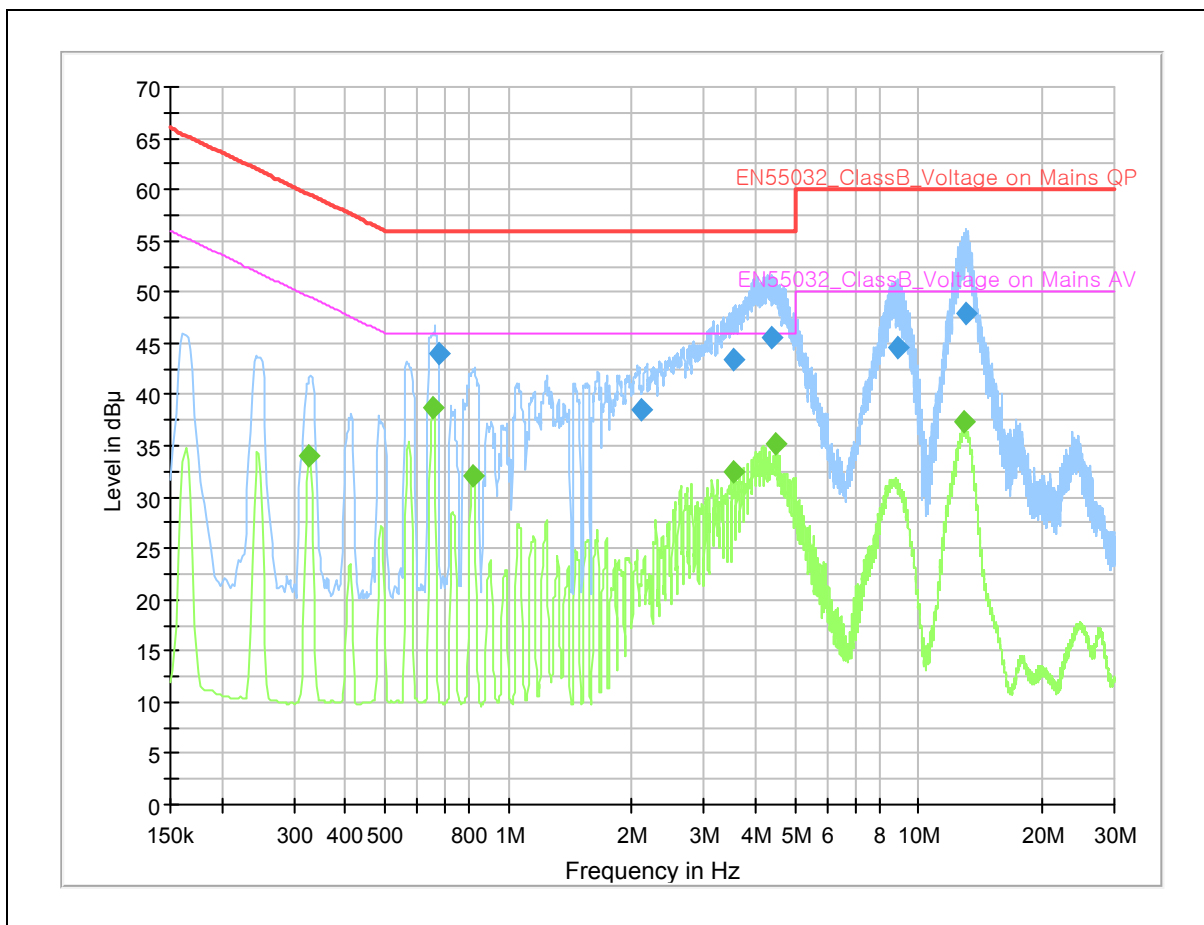
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBµV)	CAV (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.327	---	34.4	49.5	15.1	L1	10.1
0.655	---	38.6	46.0	7.4	L1	10.2
0.664	44.7	---	56.0	11.3	L1	10.2
0.820	---	32.6	46.0	13.4	L1	10.0
0.826	41.0	---	56.0	15.0	N	10.0
3.539	44.8	---	56.0	11.2	N	9.9
3.557	---	32.3	46.0	13.7	L1	10.0
4.383	---	33.7	46.0	12.3	L1	10.0
4.471	48.6	---	56.0	7.4	L1	10.0
9.012	43.8	---	60.0	16.2	N	10.2
12.895	---	35.9	50.0	14.1	N	10.4
13.300	46.8	---	60.0	13.2	L1	10.3

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**



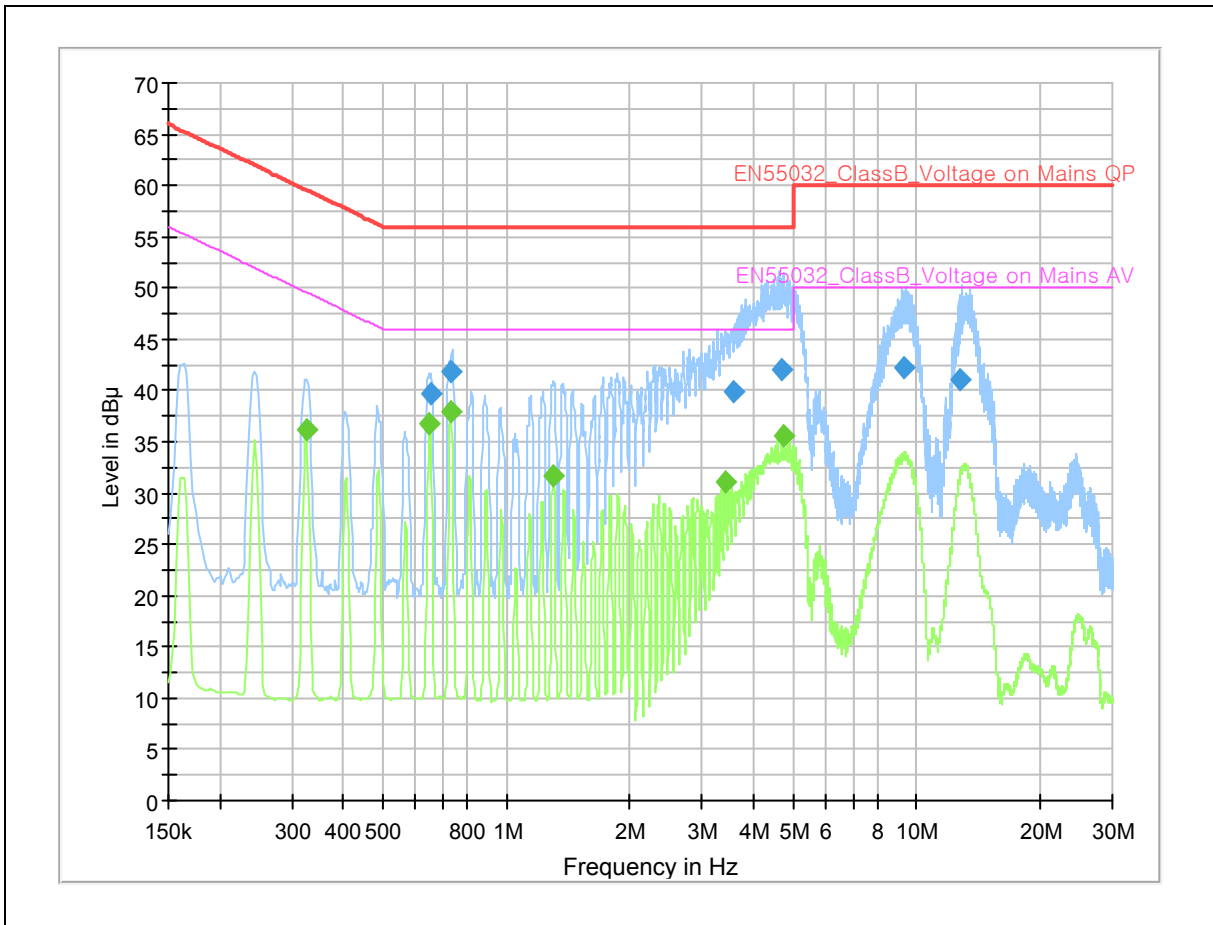
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBµV)	CAV (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.328	---	34.0	49.5	15.5	L1	10.1
0.674	44.0	---	56.0	12.0	L1	10.2
0.656	---	38.6	46.0	7.4	L1	10.2
0.823	---	32.1	46.0	13.9	L1	10.0
2.104	38.6	---	56.0	17.4	N	9.9
3.521	43.5	---	56.0	12.5	N	9.9
3.557	---	32.5	46.0	13.5	L1	10.0
4.364	45.6	---	56.0	10.4	N	9.9
4.503	---	35.2	46.0	10.8	L1	10.0
8.869	44.5	---	60.0	15.5	N	10.2
12.906	---	37.3	50.0	12.7	L1	10.3
12.990	47.9	---	60.0	12.1	N	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 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)
0.325	---	36.2	49.6	13.4	L1	10.1
0.649	---	36.8	46.0	9.2	L1	10.2
0.653	39.6	---	56.0	16.4	N	10.1
0.732	---	37.9	46.0	8.1	L1	10.1
0.736	41.8	---	56.0	14.2	N	10.0
1.301	---	31.6	46.0	14.4	L1	10.0
3.409	---	31.1	46.0	14.9	L1	10.0
3.597	39.9	---	56.0	16.1	N	9.9
4.686	42.0	---	56.0	14.0	N	9.9
4.755	---	35.6	46.0	10.4	L1	10.0
9.266	42.2	---	60.0	17.8	N	10.2
12.813	41.1	---	60.0	18.9	N	10.4

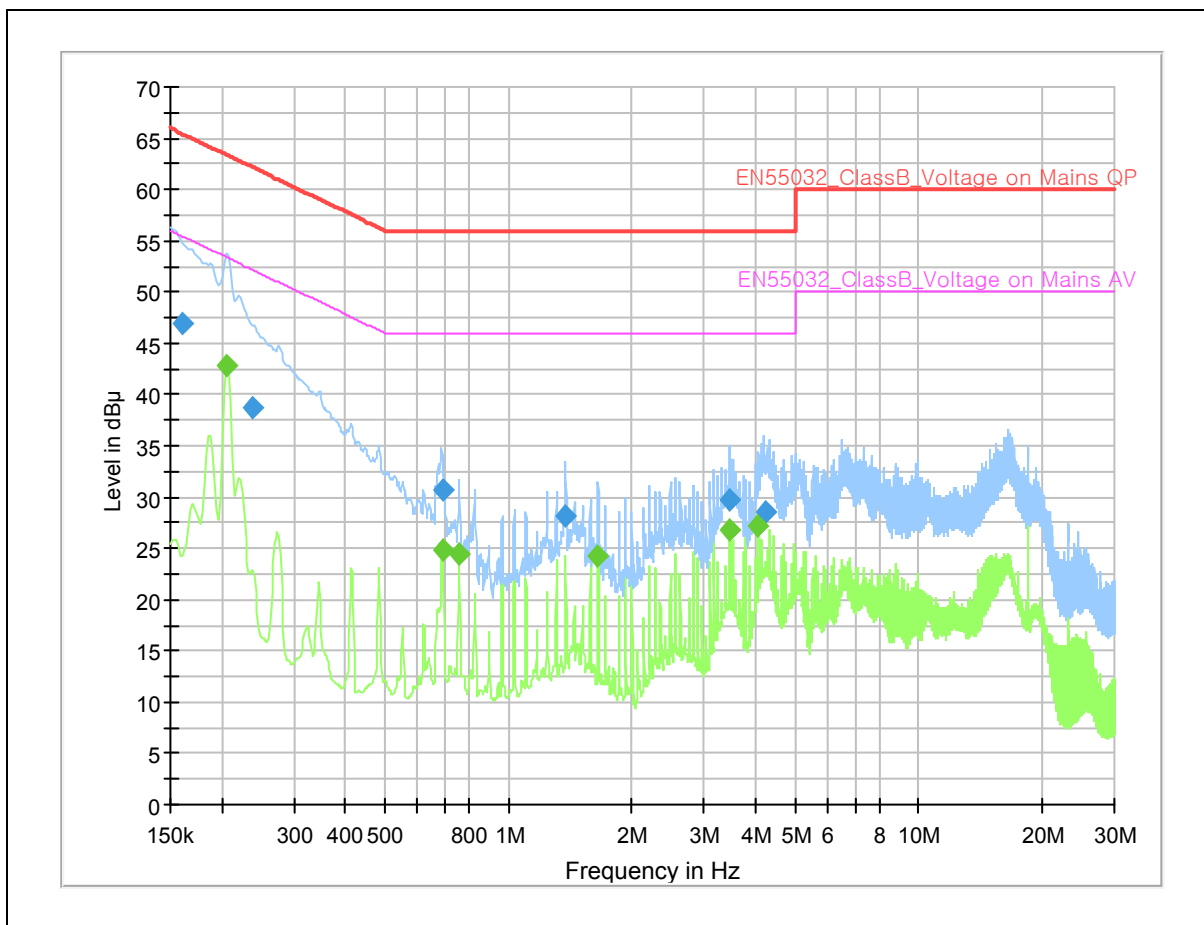
Note 2) Level (QP and/or CAV) = Meter Reading (QP and/or CAV) + Corr. (LISN Insertion Loss + Cable Loss)

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

QP = Quasi-Peak, CAV = CISPR-Average, Corr. = Correction Factor



**Operating Mode 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)
0.161	46.9	---	65.4	18.5	L1	9.8
0.205	---	42.8	53.4	10.6	L1	9.9
0.239	38.7	---	62.1	23.4	L1	9.7
0.689	---	24.8	46.0	21.2	N	9.9
0.691	30.7	---	56.0	25.3	N	9.9
0.759	---	24.5	46.0	21.5	N	9.9
1.380	28.1	---	56.0	27.9	N	9.7
1.654	---	24.2	46.0	21.8	N	9.8
3.448	29.7	---	56.0	26.3	N	9.7
3.450	---	26.7	46.0	19.3	N	9.7
4.071	---	27.2	46.0	18.8	N	9.7
4.224	28.5	---	56.0	27.5	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	Model name	Manufacturer	Serial No.	Calibration	
					Date	Interval (Month)
E5I-022	Signal Generator	SMB100A	R&S	175856	2018-05-11	12
E5I-016	EMI Test Receiver	ESU8	R&S	100482	2018-06-08	12
E5I-021	EMI Test Receiver	ESU40	R&S	100376	2018-01-31	12
E5I-149	Horn Antenna	HF907	R&S	102525	2018-06-15	24
E5I-039	Signal Conditioning Unit	SCU-18	R&S	10211	2018-01-22	12
E5I-037	Wide Band Horn Antenna	WBH 18-40K	R&S	11201	2017-10-13	24
E5I-042	Signal Conditioning Unit	SCU-40A	R&S	10004	2018-09-05	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	2018-05-09	12
E5I-074	Preamplifier	310N	SONOMA	332017	2018-05-09	12
-	Test software	EP7RE	TOYO	Ver 5.8.2	-	-
-	Test software	EMC32	R&S	Ver 9.25.00	-	-

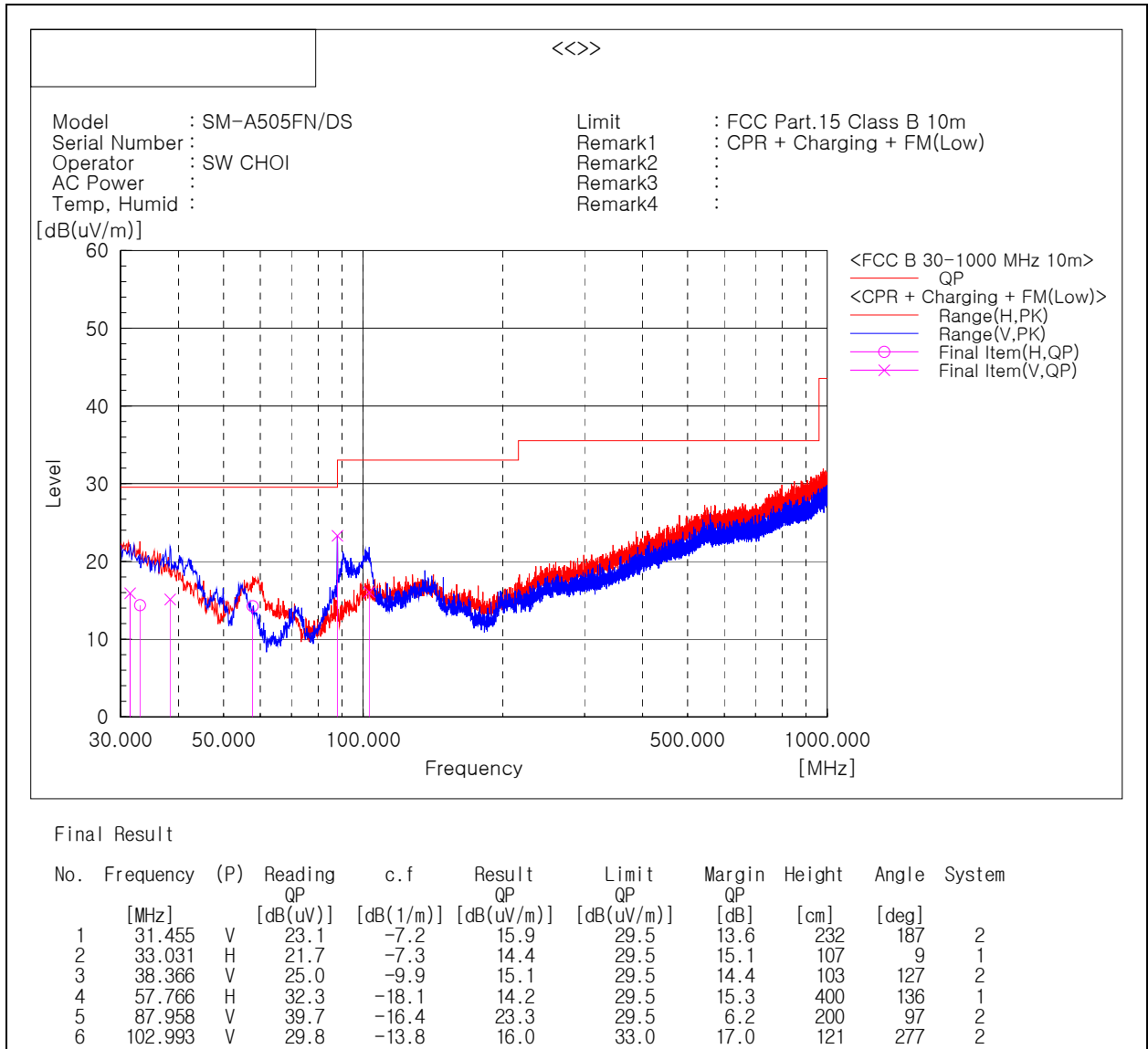
## 5.2.2 Temperature and humidity condition

<b>Test date</b>	2018-12-17, 2018-12-26	<b>Test engineer</b>	Sung-Wook Choi
<b>Climate condition</b>	Ambient temperature	(22.8 ~ 23.0) °C	Limit (15.0 to 35.0) °C
	Relative humidity	(47.9 ~ 49.0) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(101.9 ~ 102.1) kPa	Limit (86.0 to 106.0) kPa
<b>Test place</b>	Semi-Anechoic Chamber (SAC4)		

### 5.2.3 Test results

Operating Mode 1

- Frequencies below 1 GHz



\* Radiated emissions (Rx frequency 87.958 MHz) from the transceiver shall be ignored

Note1) Receiving antenna polarization : Horizontal, Vertical

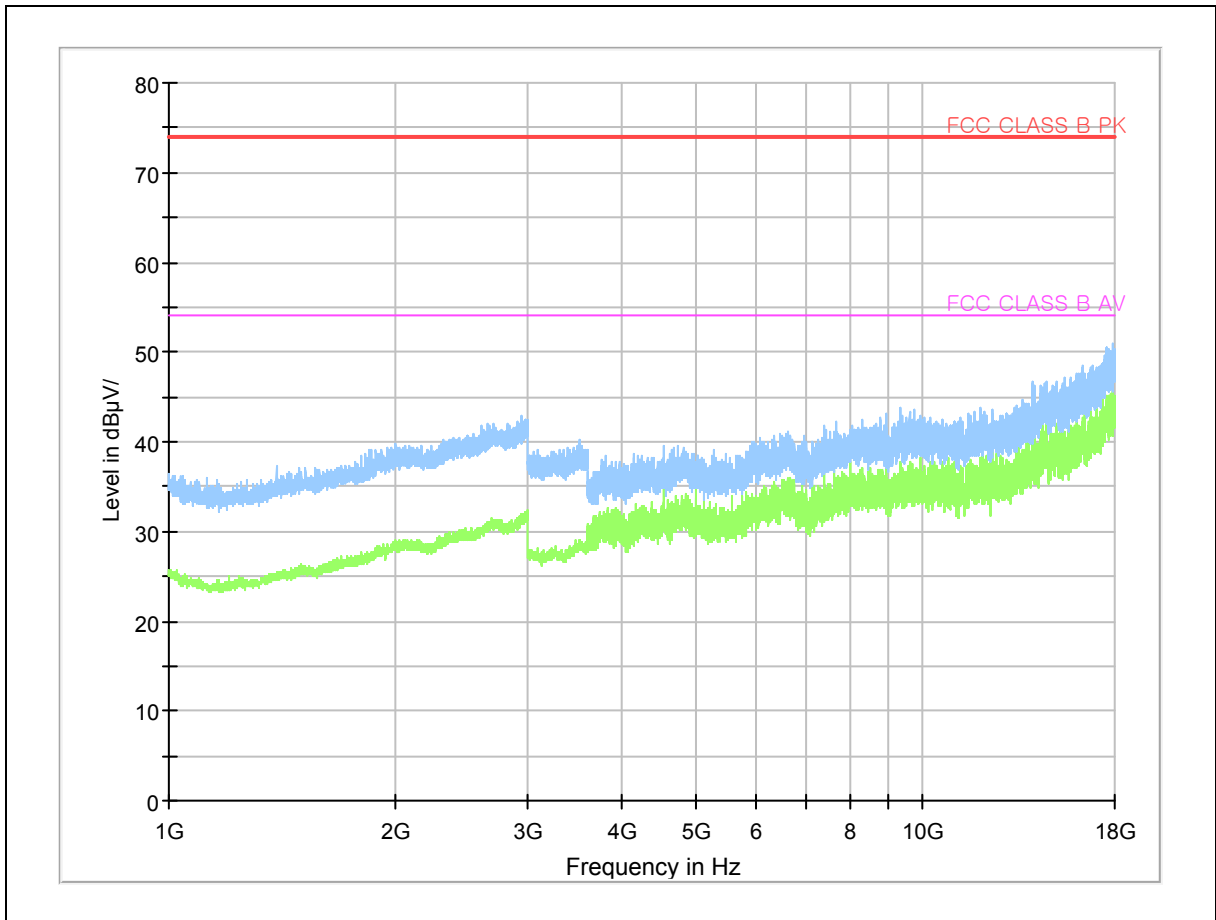
Test Distance : 10 m, Antenna Height : 1 to 4 meters

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

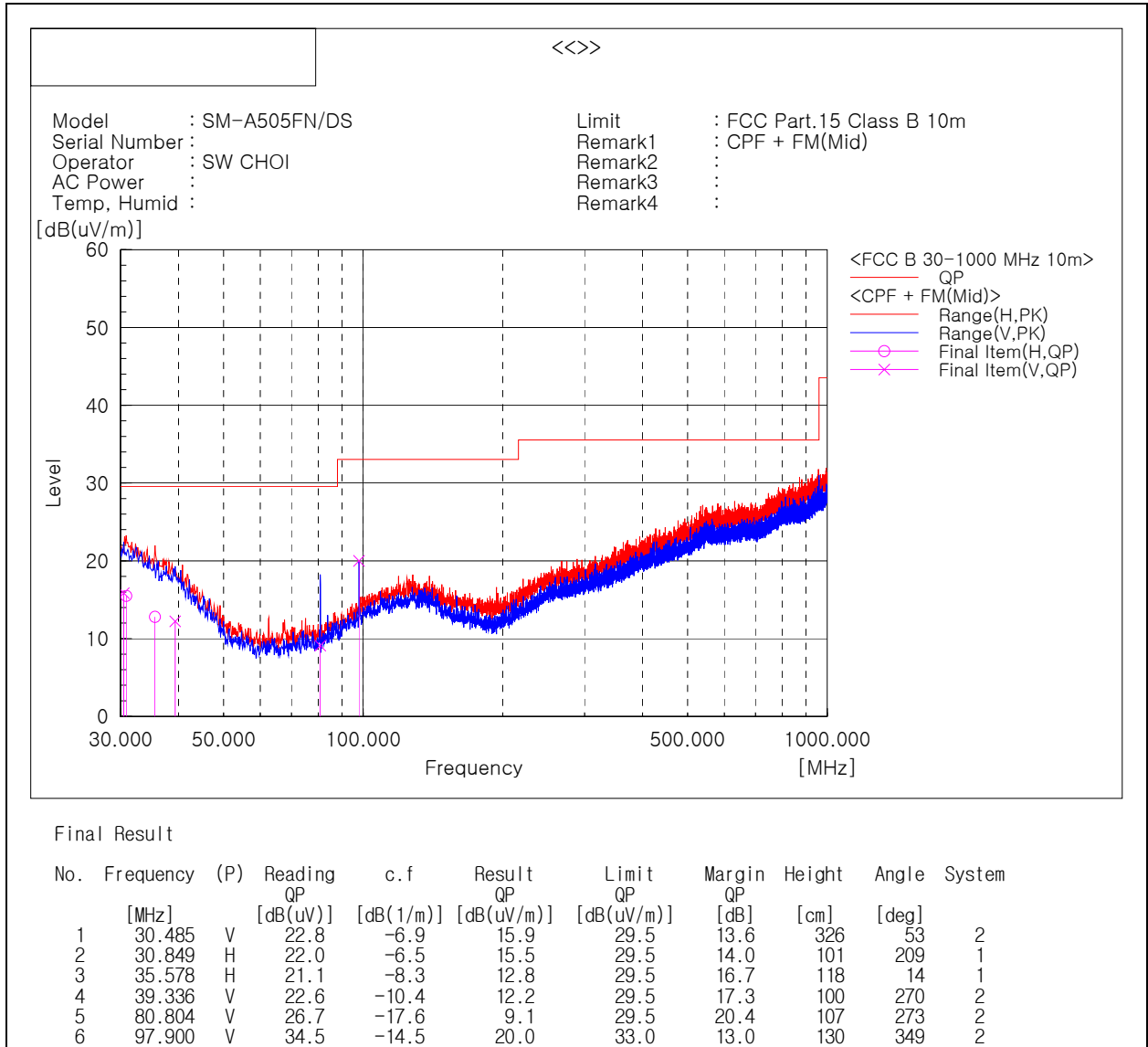
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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



\* Radiated emissions (Rx frequency 97.900 MHz) from the transceiver shall be ignored

Note1) Receiving antenna polarization : Horizontal, Vertical

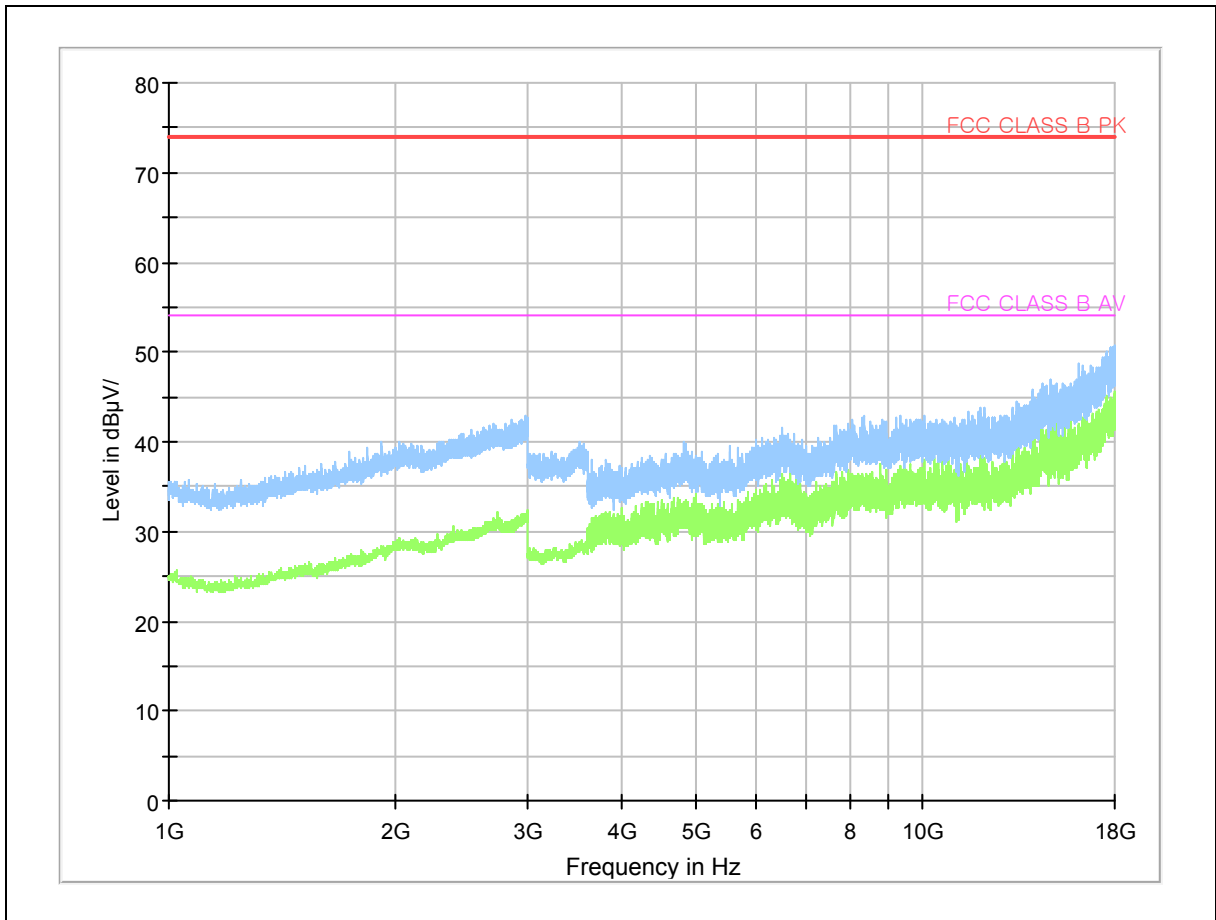
Test Distance : 10 m, Antenna Height : 1 to 4 meters

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

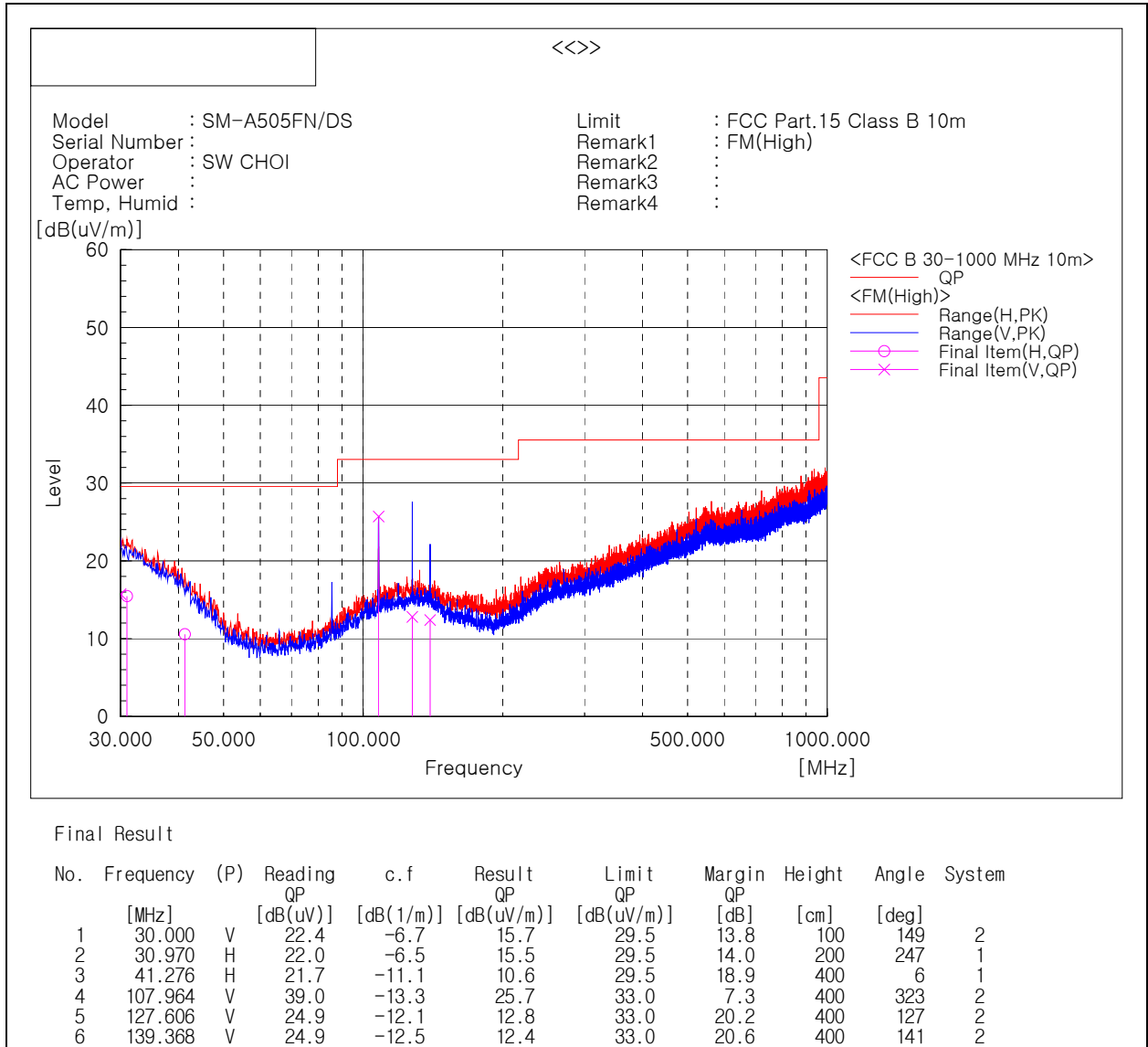
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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

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

Operating Mode 3

- Frequencies below 1 GHz



\* Radiated emissions (Rx frequency 107.964 MHz) from the transceiver shall be ignored

Note1) Receiving antenna polarization : Horizontal, Vertical

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

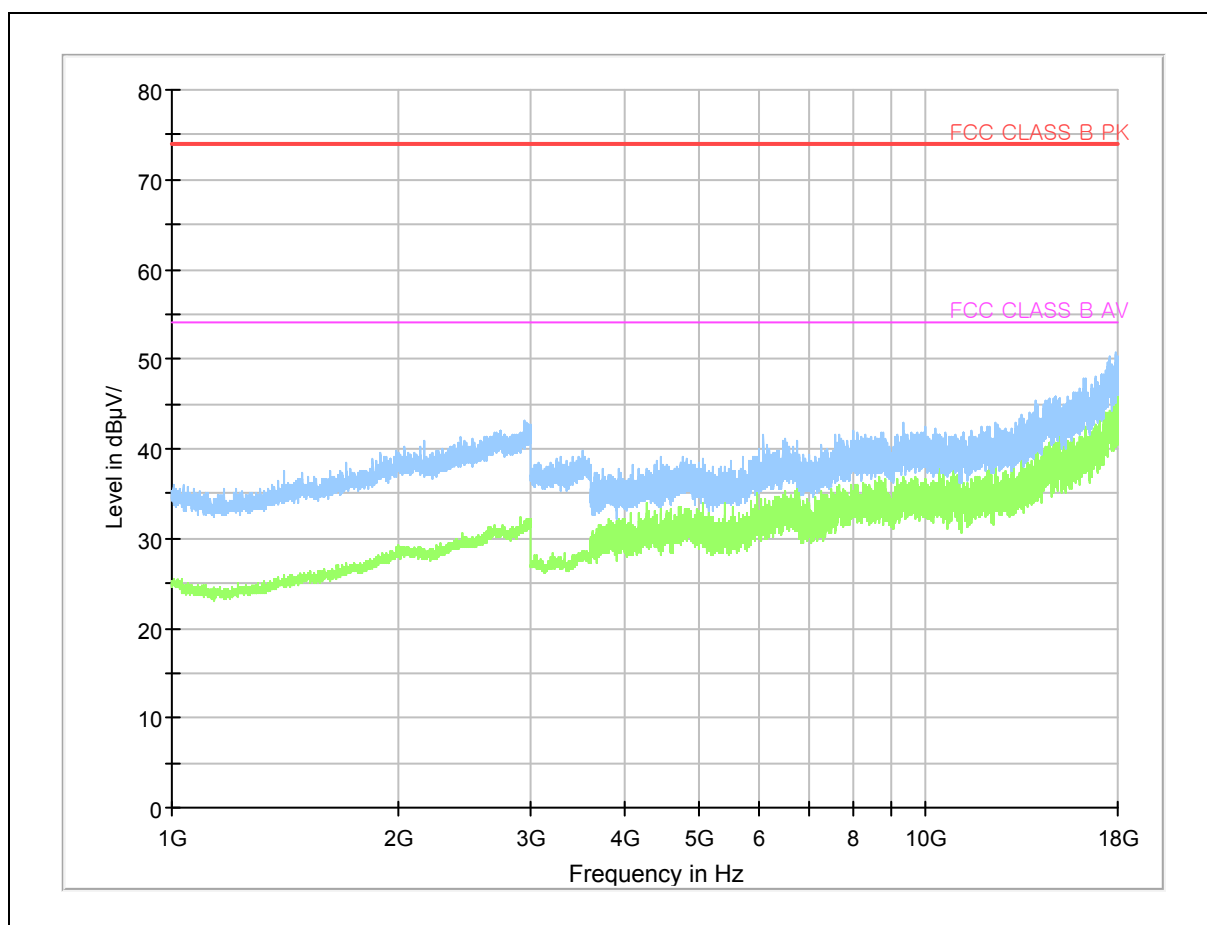
Result (QP) = Reading (QP) + c.f (Antenna Factor + Cable Loss - Amp. Gain)

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

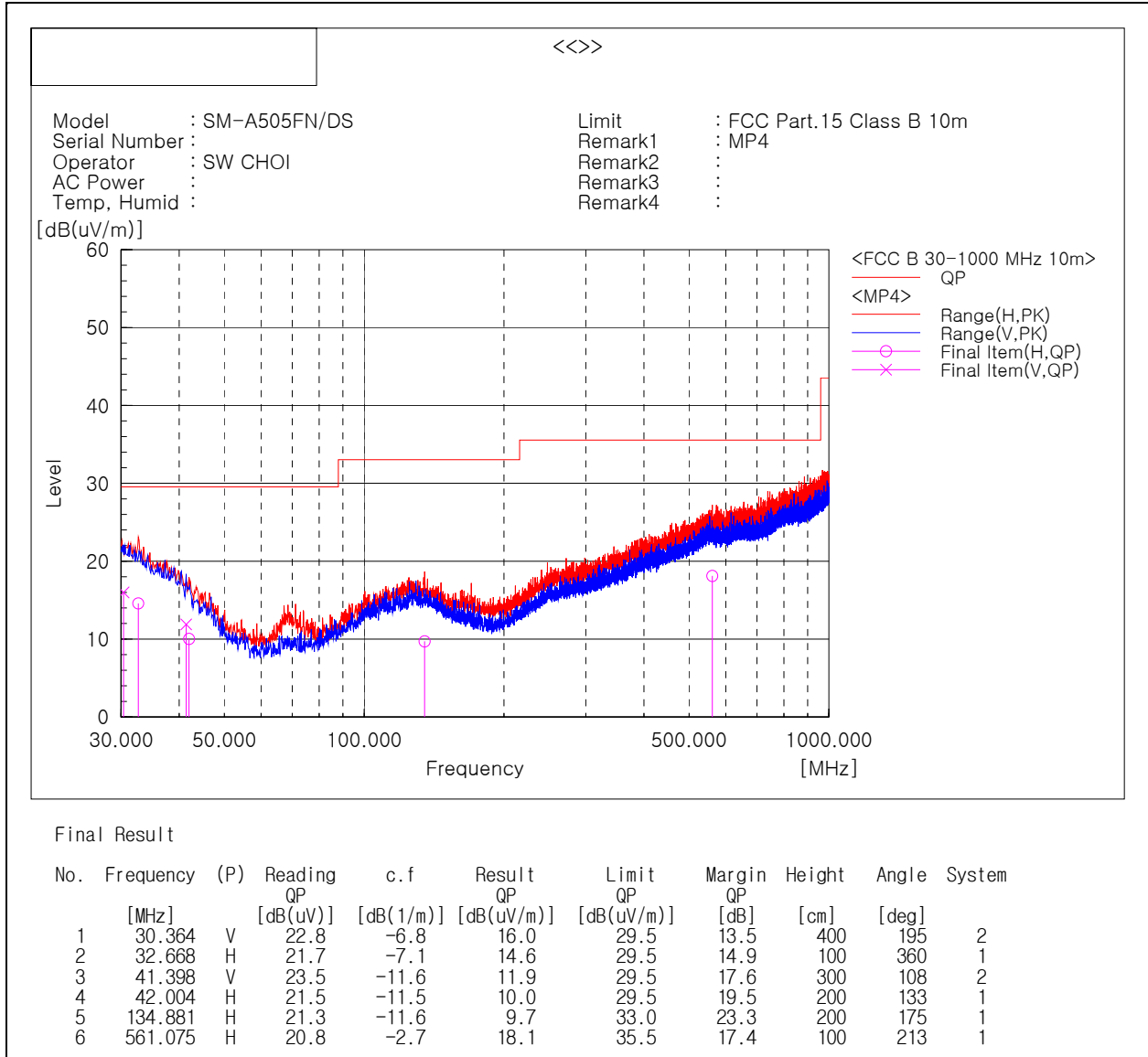
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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

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

Operating Mode 4

- Frequencies below 1 GHz



Note1) Receiving antenna polarization : Horizontal, Vertical

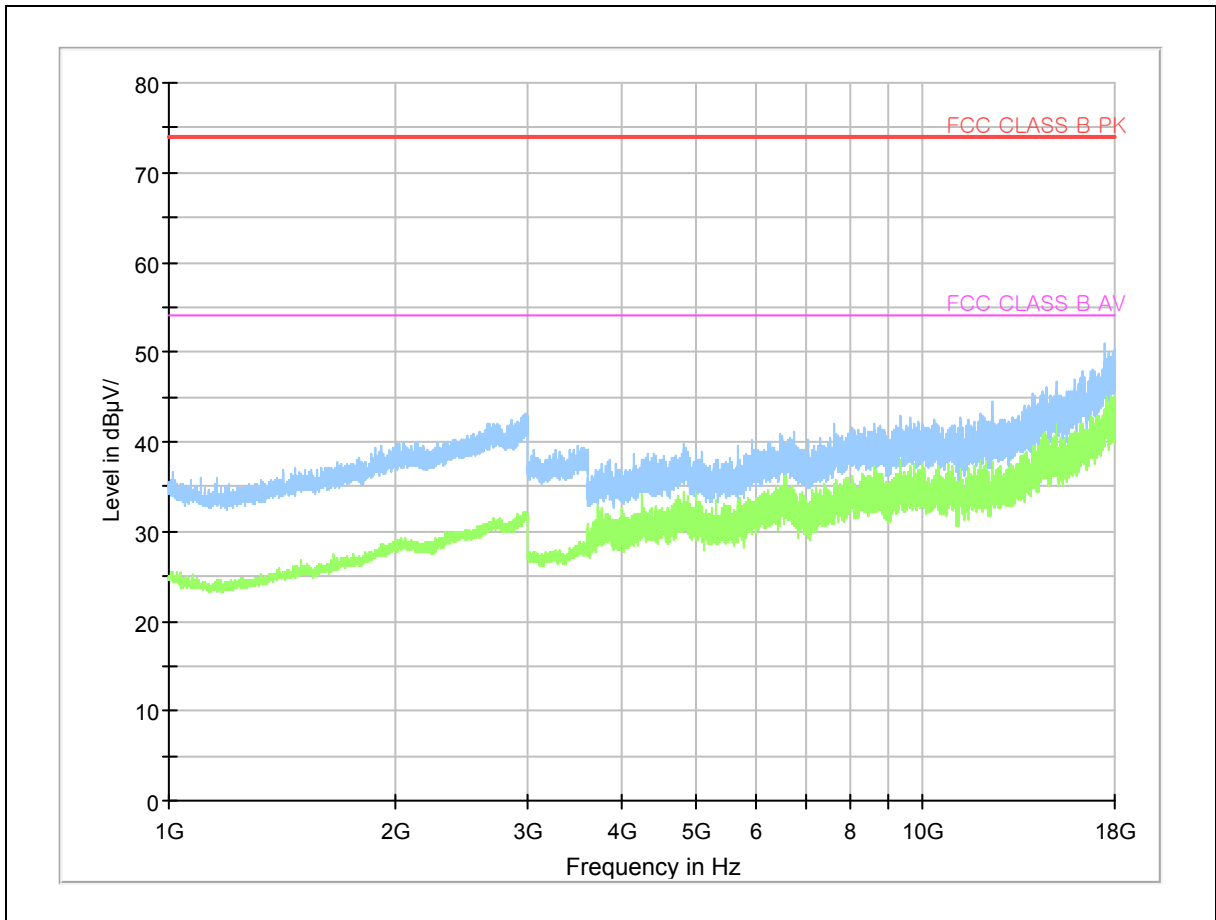
Test Distance : 10 m, Antenna Height : 1 to 4 meters

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**



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

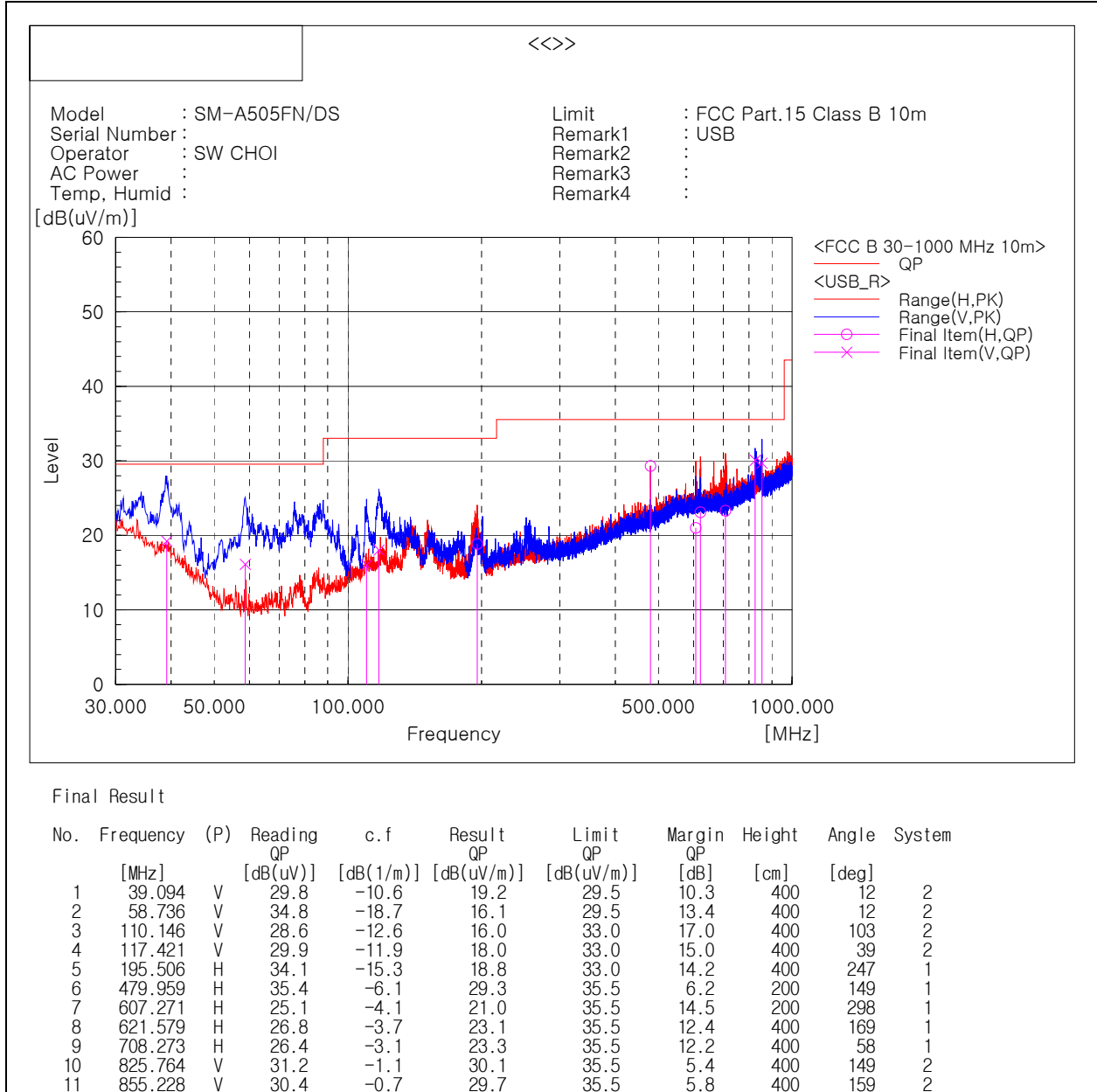
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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

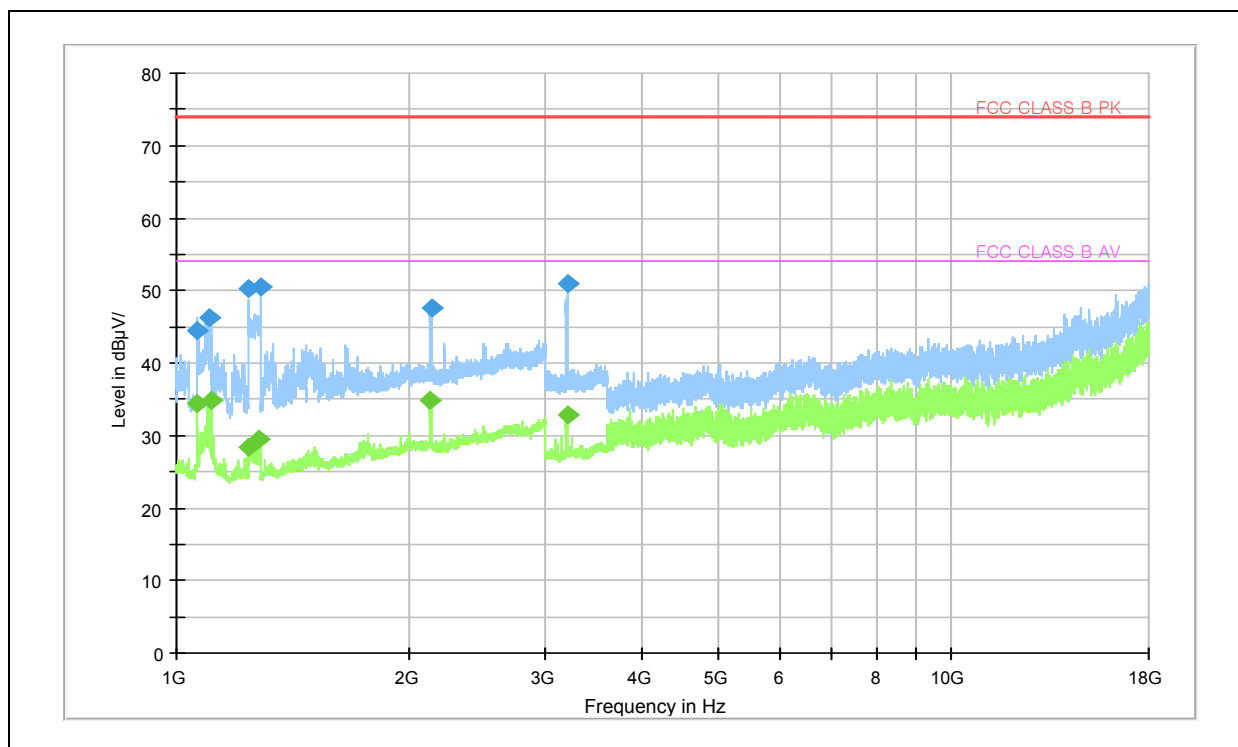
Test Distance : 10 m, Antenna Height : 1 to 4 meters

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)
1 064.400	44.4	---	74.0	29.6	100.0	V	32.0	6.5
1 065.600	---	34.5	54.0	19.5	100.0	H	30.0	6.5
1 099.700	46.2	---	74.0	27.8	100.0	V	168.0	6.5
1 112.100	---	35.0	54.0	19.0	100.0	H	255.0	6.5
1 238.100	50.3	---	74.0	23.7	100.0	V	156.0	7.2
1 239.100	---	28.4	54.0	25.6	100.0	H	177.0	7.2
1 280.800	---	29.4	54.0	24.6	100.0	H	163.0	7.4
1 283.300	50.4	---	74.0	23.6	100.0	V	161.0	7.5
2 125.500	---	34.8	54.0	19.2	100.0	H	211.0	12.9
2 131.500	47.5	---	74.0	26.5	100.0	H	222.0	12.9
3 197.000	---	32.8	54.0	21.2	100.0	H	236.0	0.8
3 200.000	50.9	---	74.0	23.1	100.0	H	232.0	0.8

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