

EMC TEST REPORT

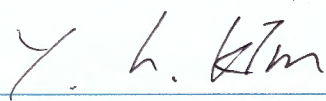
Project No.	LBE20190738	Issue No.	1
Applicant	Name of organization	Samsung Electronics Co., Ltd.	
	Address	(Maetan-dong) 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea	
	Date of application	May 13, 2019	
EUT	Type of device	☒ All other Receivers subject to part15 ☒ Class B Personal Computers and peripherals ☒ Other Class B digital devices and peripherals ☐ FM Broadcast Receiver	
	Equipment authorization	☒ Certification ☐ Supplier's Declaration of Conformity	
	FCC ID	A3LSMT727V	
	Kind of product	Portable Device	
	Model No.	SM-T727V	
	Variant Model No.	Refer to clause 4.6	
	Manufacturer	Samsung Electronics Vietnam Thai Nguyen Co., Ltd Yen Binh I industrial Park, Pho Yen District, Thai Nguyen Province, Vietnam	
Applied Standards		47 CFR Part 15, Subpart B, Class B / ANSI C63.4-2014	
Test Period		May 23, 2019 ~ May 27, 2019	
Issue date		June 13, 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 : 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			

Table of contents

1. Report Information

1.1 Revision history	3
1.2 RSE test report no.	3

2. Summary of test results

2.1 Emission	3
--------------------	---

3. General Information

3.1 Test facility	3
-------------------------	---

4. Test Configuration

4.1 Test Peripherals	4
4.2 EUT operating mode	5
4.3 Details of Sampling	5
4.4 Used cable description	6
4.5 Test arrangement	7
4.6 EUT Description	10
4.7 EUT Frequencies	10
4.8 Test configuration and condition	11
4.9 Measurement uncertainty	11

5. Result of individual tests

5.1 Conducted disturbance	12
5.2 Radiated disturbance	18

1. Report Information

1.1 Revision history

No.	Revised detailed information
Issue 0	There are no revisions and this version is basic test report.
Issue 1	Changed Operating Mode and Test condition.

1.2 RSE test report no.

No.	Remark
HCT-RF-1905-FC032	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
☒	Conducted Disturbance (Mains port)	47 CFR Part 15 Subpart B / ANSI C63.4-2014 (Class B)	Complied
☒	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	Portable Device	SM-T727V	-	SAMSUNG	A3LSMT727V
B	Battery	EB-BT725ABU	-	SAMSUNG	-
C	Headset	EHS64AVFWE	-	SAMSUNG	-
D	Data Cable	EP-DT725BWZ	-	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	CN57BA5903634ADV8JK281082	SAMSUNG	-
			CNBA5903634ADV8J31O3050	SAMSUNG	-
I	OTG Gender	EE-UG970	-	SAMSUNG	
J	Router	DIR-806A	RF0F1D5000688	D-Link	-
			RF0F1D8011504	D-Link	
K	Travel Adapter	EP-TA200	R37M2CD5H41SE3	SAMSUNG	
L	DP Monitor	27UD88	711NTQD8H004	LG	
M	DP Monitor AC Adapter	LCAP31	EH8NN629490055062	LG	
N	DP Cable	JCA141	BW2K1709000770	J5CREATE	
O	Charging Dock	EE-D3200	R37M3KA2691RT3	SAMSUNG	
P	Keyboard	EJ-FT720	-	SAMSUNG	
Q	Headset Jack	KCA-FT-1-0305	-	SAMSUNG	

This tablet device does not contain the minimum number of ports required for personal computer testing per ANSI C63.4, but the EUT is attached to a computer through its only available port, which represents worst case emissions. All other aspects of C63.4 testing requirements were maintained.

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 (LTE 5 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)
5	Dock Charging

4.2.2 Radiated Emission

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

4.3 Details of Sampling

Customer selected, single unit.

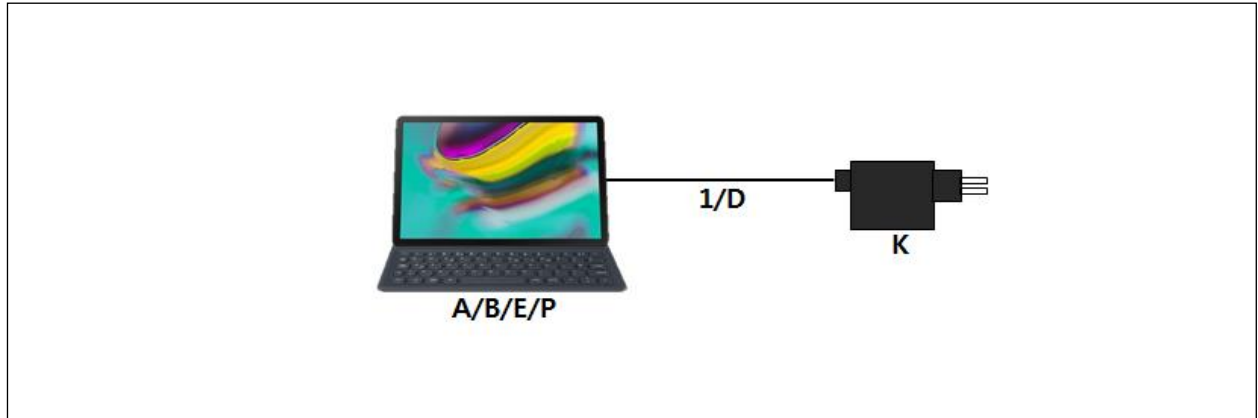
4.4 Used cable description

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:

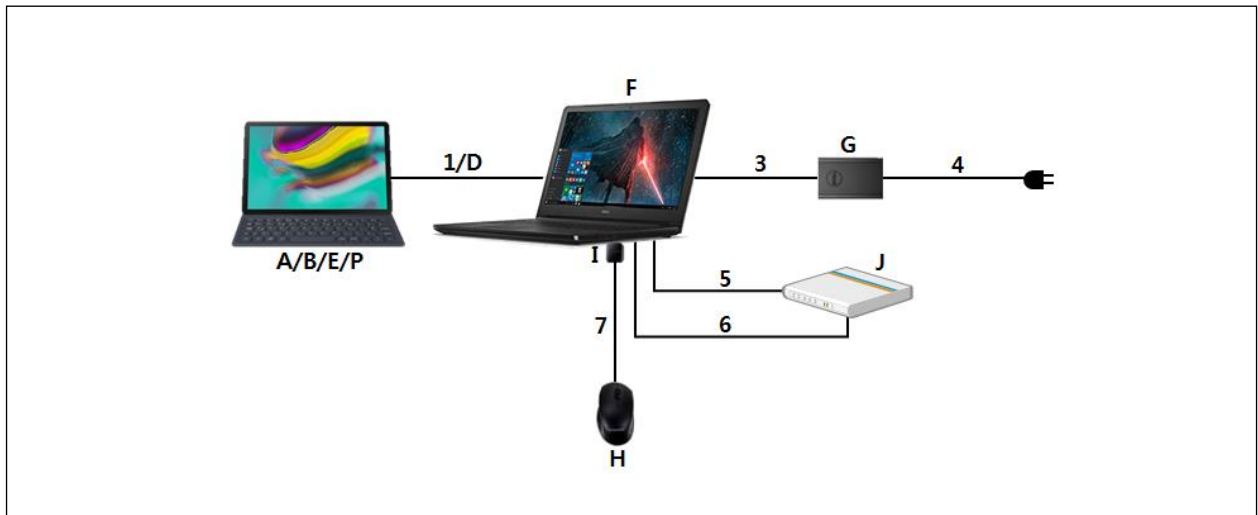
No.	Connected cable	Length [m]	Shielded [Y/N]	Note
1	Data Cable	1.0	Y	From EUT to Laptop Computer
2	Headset	1.2	N	For EUT
3	Power	1.8	N	For Laptop Computer to Laptop AC Adapter
4	Power	1.5	N	For Laptop AC Adapter
5	LAN	1.5	Y	From Laptop Computer to Router
6	USB	0.8	N	From Laptop Computer to Router for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

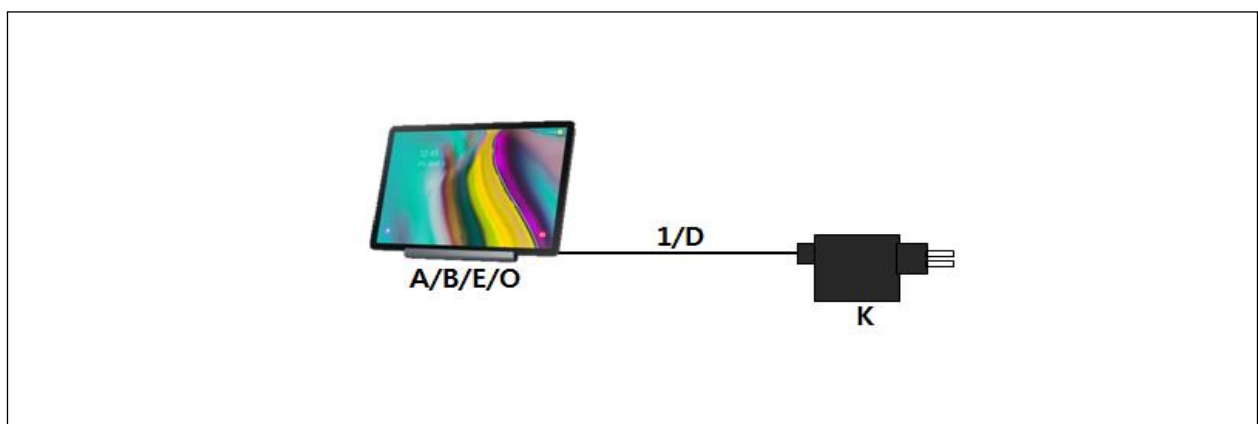
4.5.1 Conducted Emission



[Mode 1 - 3]

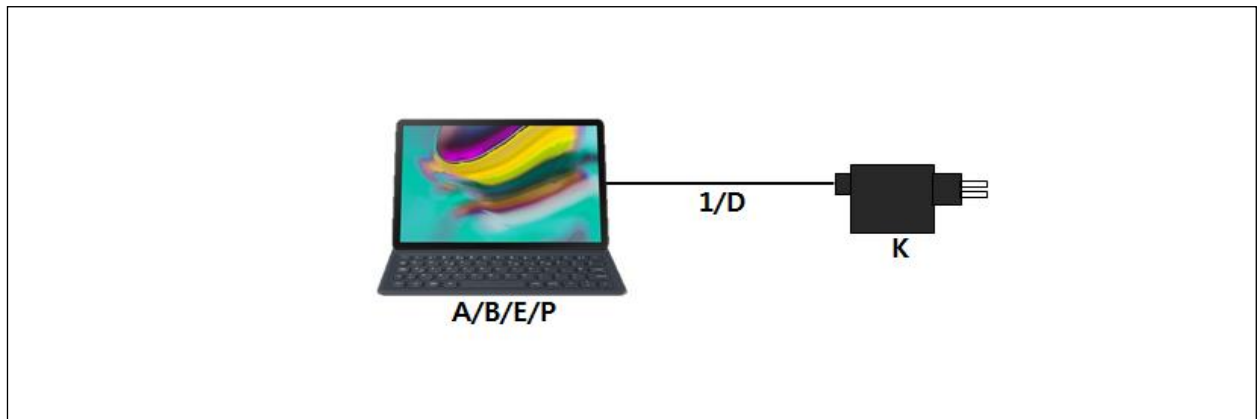


[Mode 4]

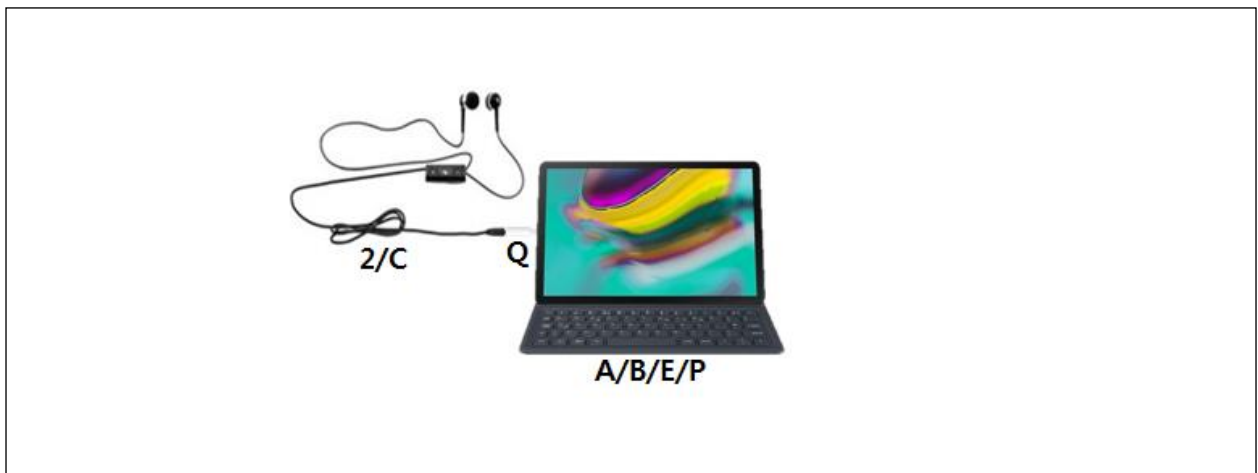


[Mode 5]

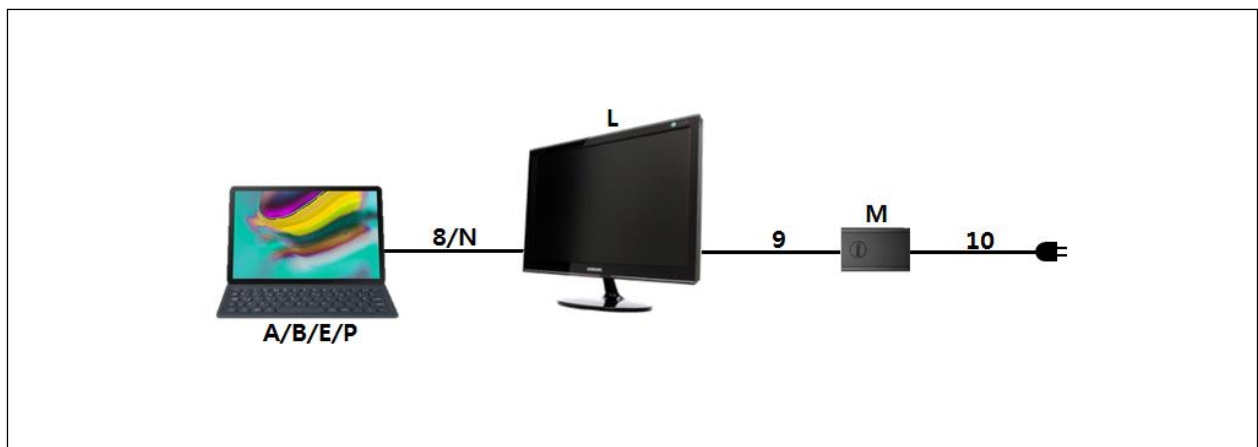
4.5.2 Radiated Emission



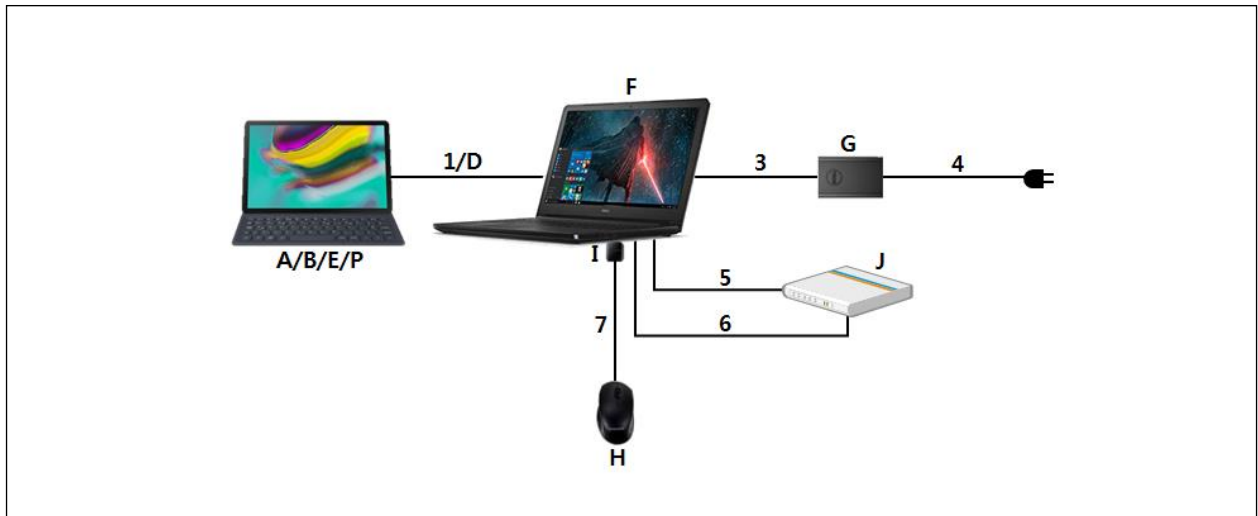
[Mode 1]



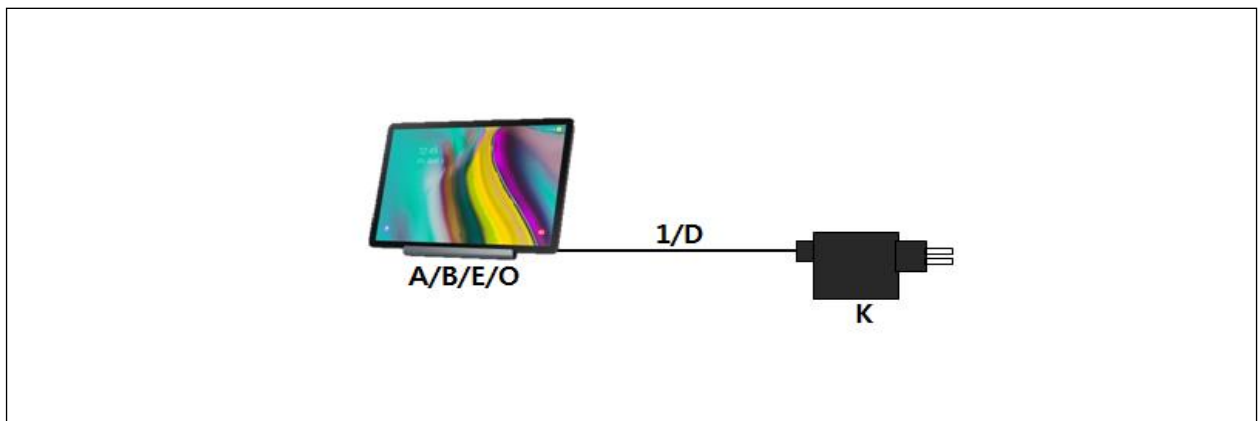
[Mode 2]



[Mode 3]



[Mode 4]



[Mode 5]

4.6 EUT Description

The EUT is a tablet type Portable Device which can operate on WCDMA FDD1/2/5/8, LTE FDD2/3/4/5/7/13/20/66 and Incorporates a camera, Bluetooth, ANT+, Wi-Fi, GNSS, DP, Audio and Video.

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(881.5 MHz) testing was performed with the LTE FDD5 RX Test mode at center frequency. All licensed communication (881.5 MHz) RX mode, WCDMA/LTE, test results are not significantly different.

The video and music were played repetitively.

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 (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 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

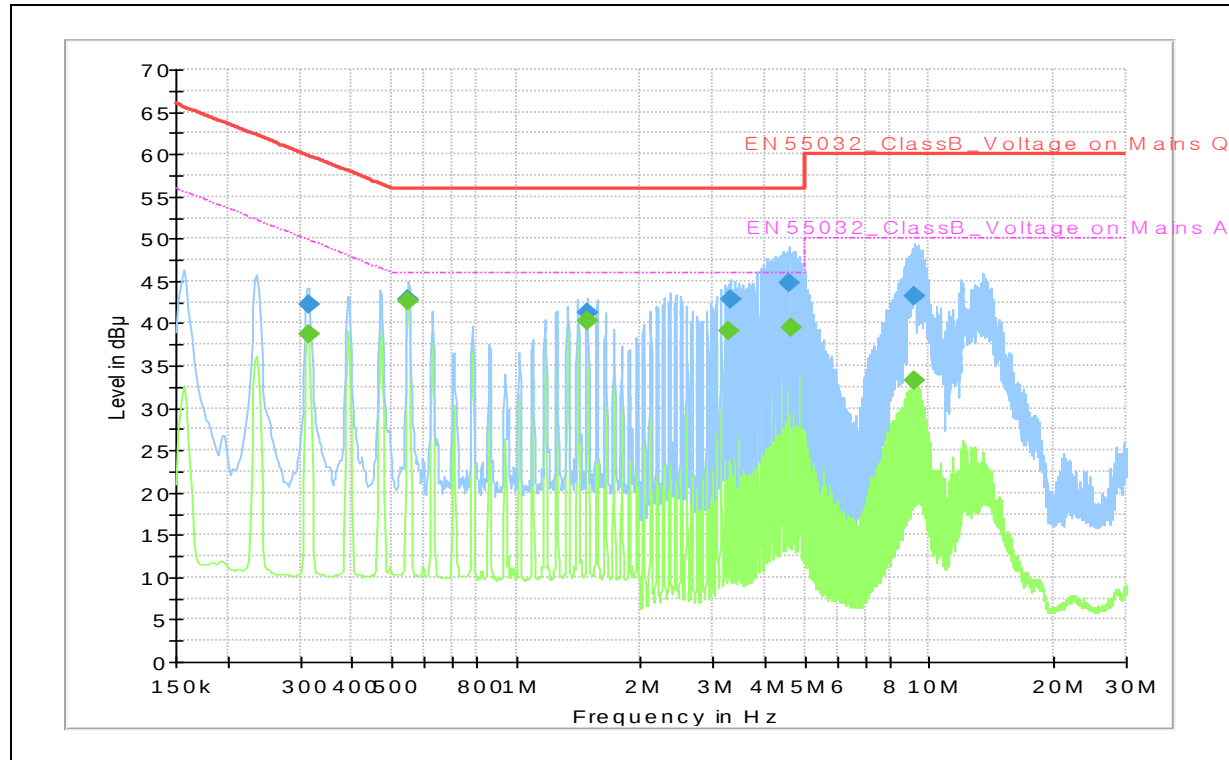
EMC No.	Test Instrument	Model name	Manufacturer	Serial No.	Calibration	
					Date	Interval (Month)
E5I-171	LTE Communicator	CMW500	R&S	154667	2018-08-07	12
E5I-017	EMI Test Receiver	ESU8	R&S	100483	2019-01-16	12
E5I-127	LISN	ENV216	R&S	102061	2018-07-23	12
-	Test software	EMC32	R&S	Ver 9.26.01	-	-

5.1.2 Temperature and humidity condition

Test date	2019-05-27	Test engineer	Eun-Kyung Oh
Climate condition	Ambient temperature	(22.0 ~ 22.3) °C	Limit (15.0 to 35.0) °C
	Relative humidity	(49.1 ~ 49.4) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(100.2 ~ 100.5) kPa	Limit (86.0 to 106.0) kPa
Test place	Shield Room (SR8)		

5.1.3 Test results

☐ Operating Mode 1: AC Mains



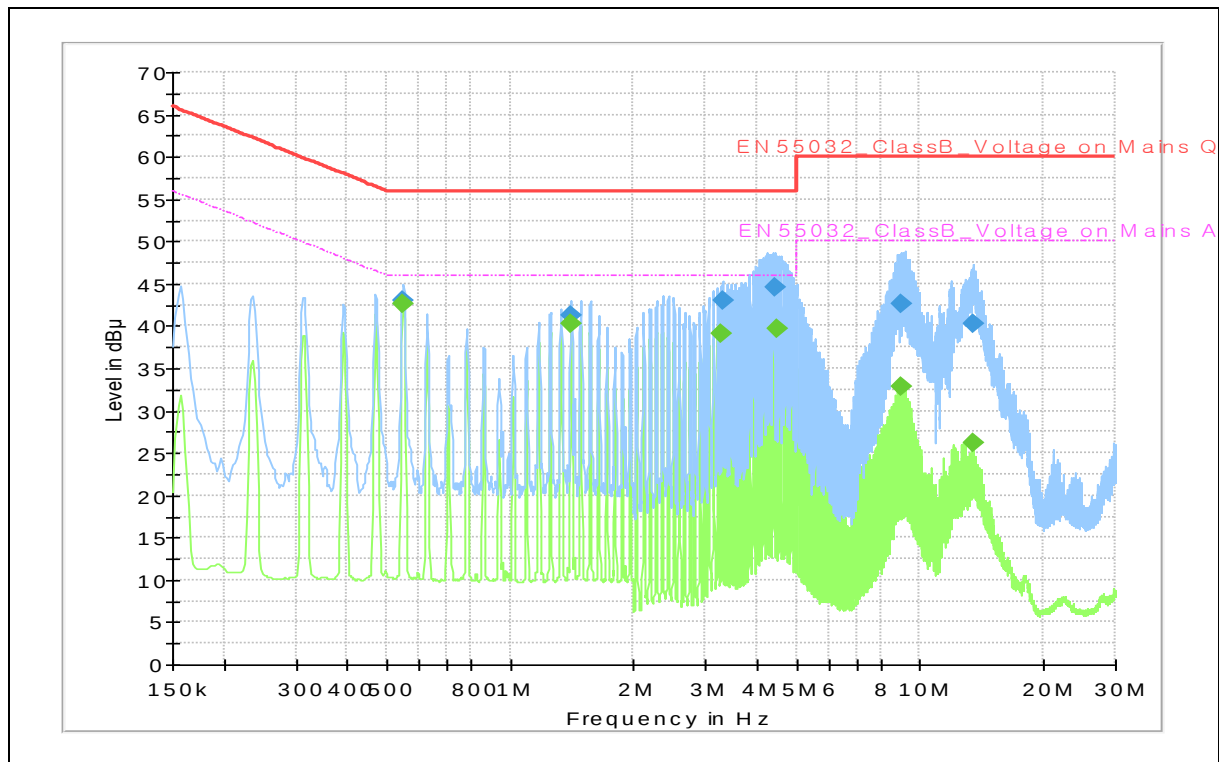
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.314	42.3	---	59.9	17.6	N	10.0
0.314	---	38.9	49.9	11.0	L1	10.1
0.548	42.9	---	56.0	13.1	L1	10.2
0.548	---	42.7	46.0	3.3	L1	10.2
1.487	---	40.2	46.0	5.8	L1	10.0
1.489	41.3	---	56.0	14.7	L1	10.0
3.287	---	39.2	46.0	6.8	L1	10.0
3.293	42.9	---	56.0	13.1	L1	10.0
4.607	44.8	---	56.0	11.2	N	9.9
4.619	---	39.5	46.0	6.5	L1	10.0
9.213	43.3	---	60.0	16.7	N	10.2
9.238	---	33.2	50.0	16.8	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



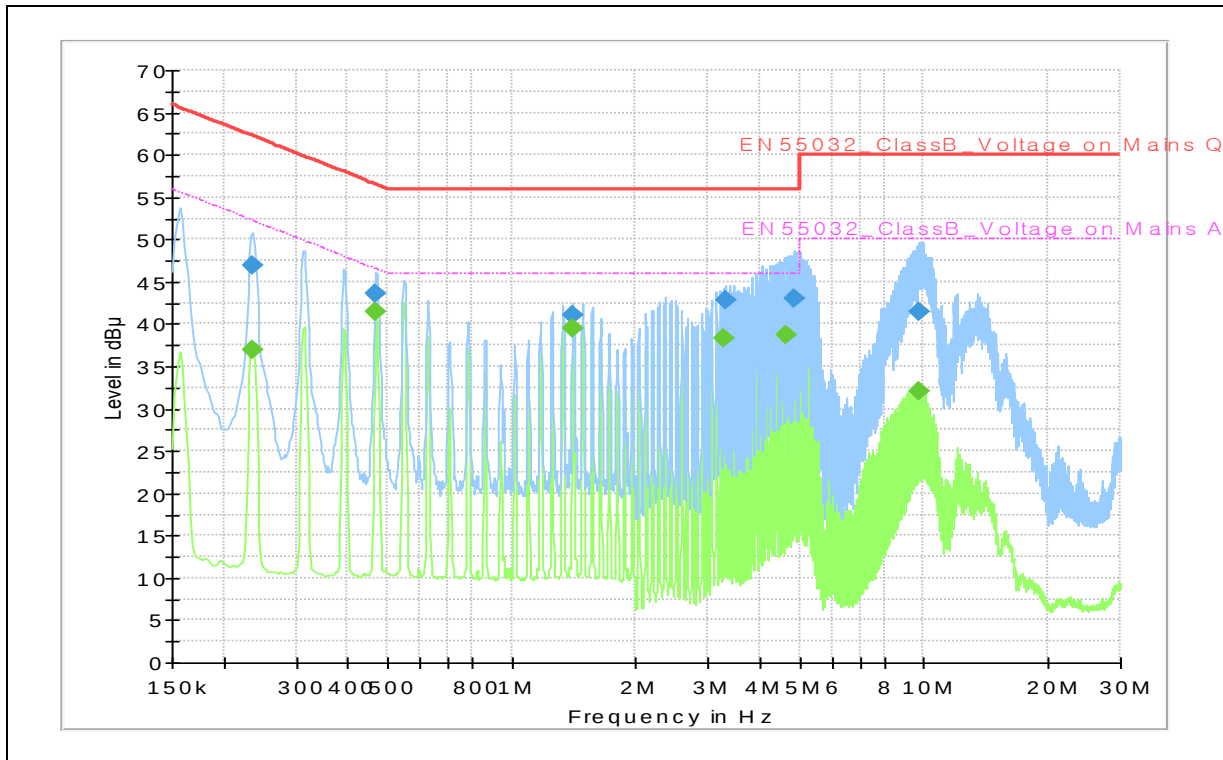
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.548	---	42.7	46.0	3.3	L1	10.2
0.548	42.9	---	56.0	13.1	L1	10.2
1.408	---	40.3	46.0	5.7	L1	10.0
1.410	41.3	---	56.0	14.7	L1	10.0
3.287	---	39.1	46.0	6.9	L1	10.0
3.293	42.9	---	56.0	13.1	L1	10.0
4.450	44.7	---	56.0	11.3	N	9.9
4.461	---	39.7	46.0	6.3	L1	10.0
8.977	42.7	---	60.0	17.3	N	10.2
8.997	---	32.9	50.0	17.1	L1	10.1
13.452	---	26.2	50.0	23.8	N	10.4
13.470	40.2	---	60.0	19.8	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



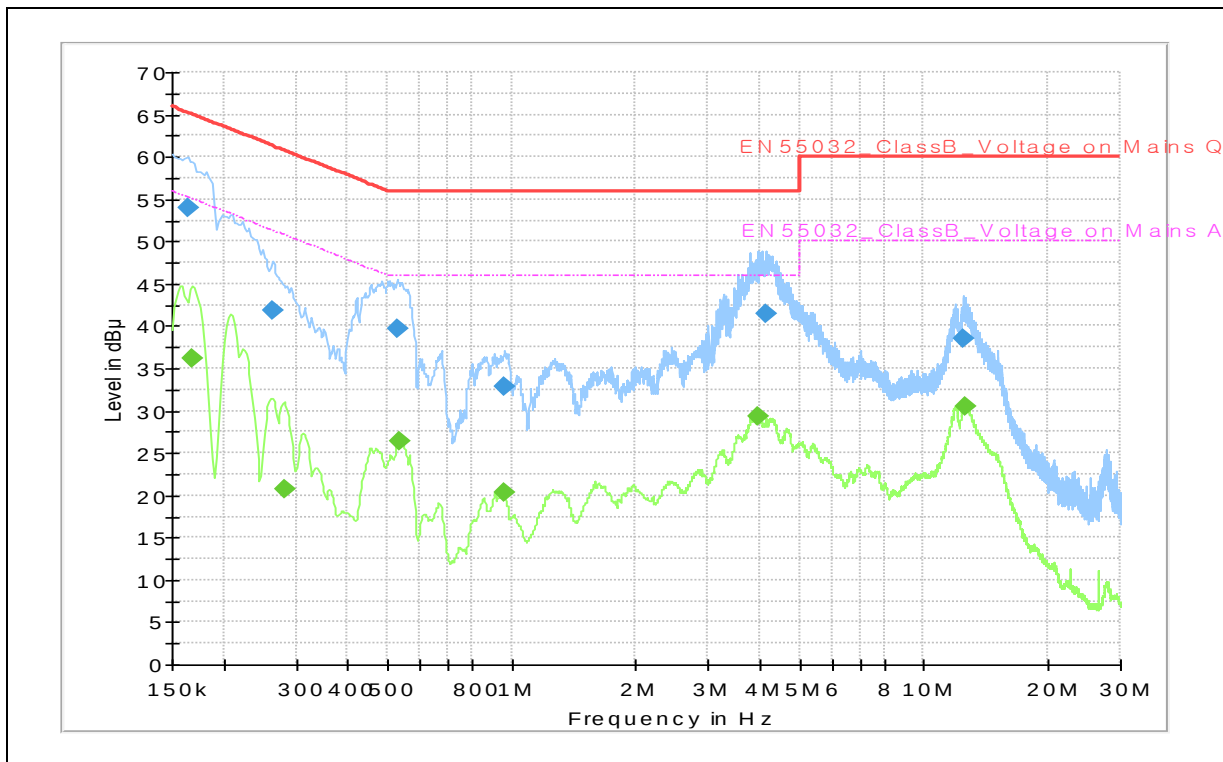
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

QP / CAV final measurement results table:

Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.236	46.9	---	62.3	15.4	N	9.8
0.236	---	37.1	52.3	15.2	L1	9.9
0.470	---	41.4	46.5	5.1	L1	10.2
0.470	43.5	---	56.5	13.0	N	10.2
1.410	---	39.5	46.0	6.5	L1	10.0
1.412	41.1	---	56.0	14.9	L1	10.0
3.289	---	38.3	46.0	7.7	L1	10.0
3.291	42.8	---	56.0	13.2	L1	10.0
4.621	---	38.7	46.0	7.3	L1	10.0
4.848	43.0	---	56.0	13.0	N	9.9
9.767	41.5	---	60.0	18.5	N	10.2
9.787	---	32.1	50.0	17.9	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 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:

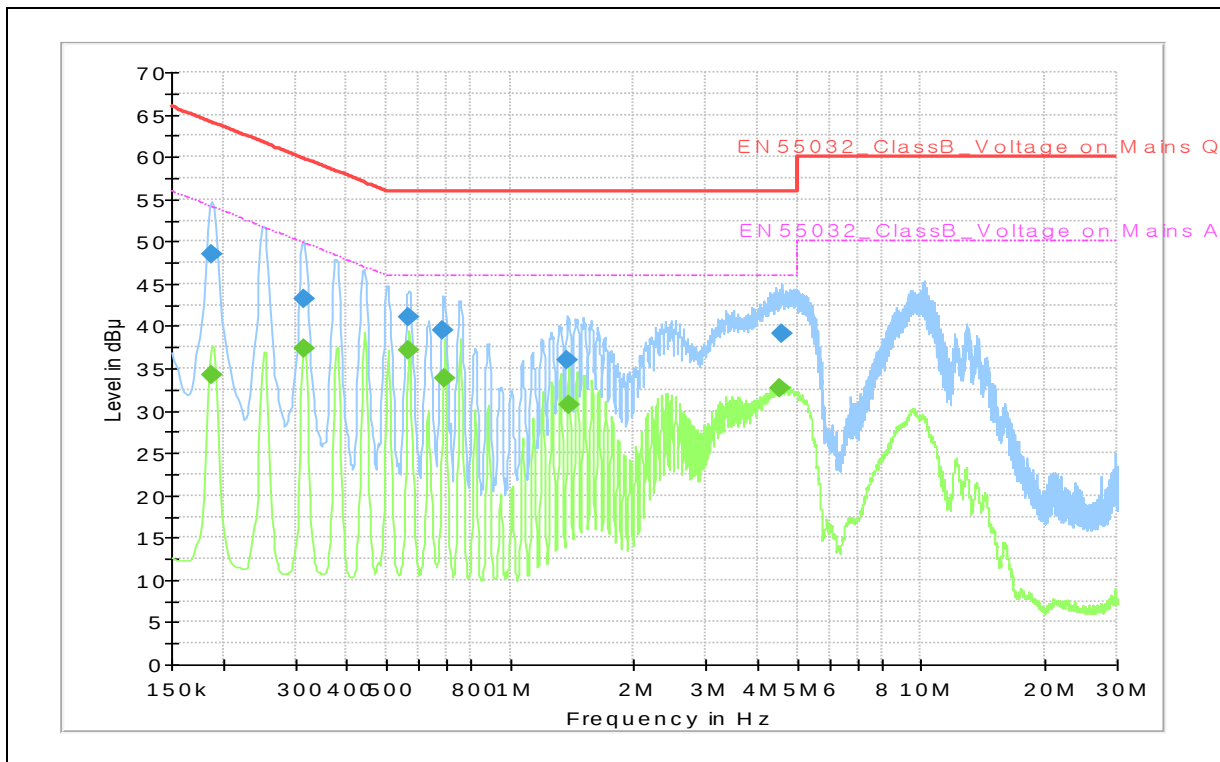
Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.164	54.0	---	65.3	11.3	L1	9.8
0.168	---	36.2	55.1	18.9	L1	9.8
0.263	42.0	---	61.4	19.4	L1	9.7
0.281	---	20.8	50.8	30.0	L1	9.8
0.528	39.6	---	56.0	16.4	L1	10.0
0.533	---	26.4	46.0	19.6	L1	10.0
0.958	---	20.3	46.0	25.7	L1	9.8
0.965	32.8	---	56.0	23.2	L1	9.8
3.964	---	29.4	46.0	16.6	N	9.7
4.151	41.4	---	56.0	14.6	N	9.7
12.485	38.5	---	60.0	21.5	L1	9.9
12.559	---	30.5	50.0	19.5	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

□ 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)
0.188	48.4	---	64.1	15.7	N	10.0
0.188	---	34.3	54.1	19.8	L1	10.0
0.314	43.2	---	59.9	16.7	N	10.0
0.317	---	37.3	49.8	12.5	L1	10.1
0.569	41.0	---	56.0	15.0	L1	10.2
0.569	---	37.1	46.0	8.9	L1	10.2
0.688	39.4	---	56.0	16.6	N	10.1
0.695	---	33.9	46.0	12.1	L1	10.1
1.383	35.9	---	56.0	20.1	L1	10.0
1.390	---	30.7	46.0	15.3	L1	10.0
4.553	---	32.7	46.0	13.3	L1	10.0
4.574	39.1	---	56.0	16.9	L1	10.0

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-016	EMI Test Receiver	ESU8	R&S	100482	2018-06-08	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	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	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	-	-

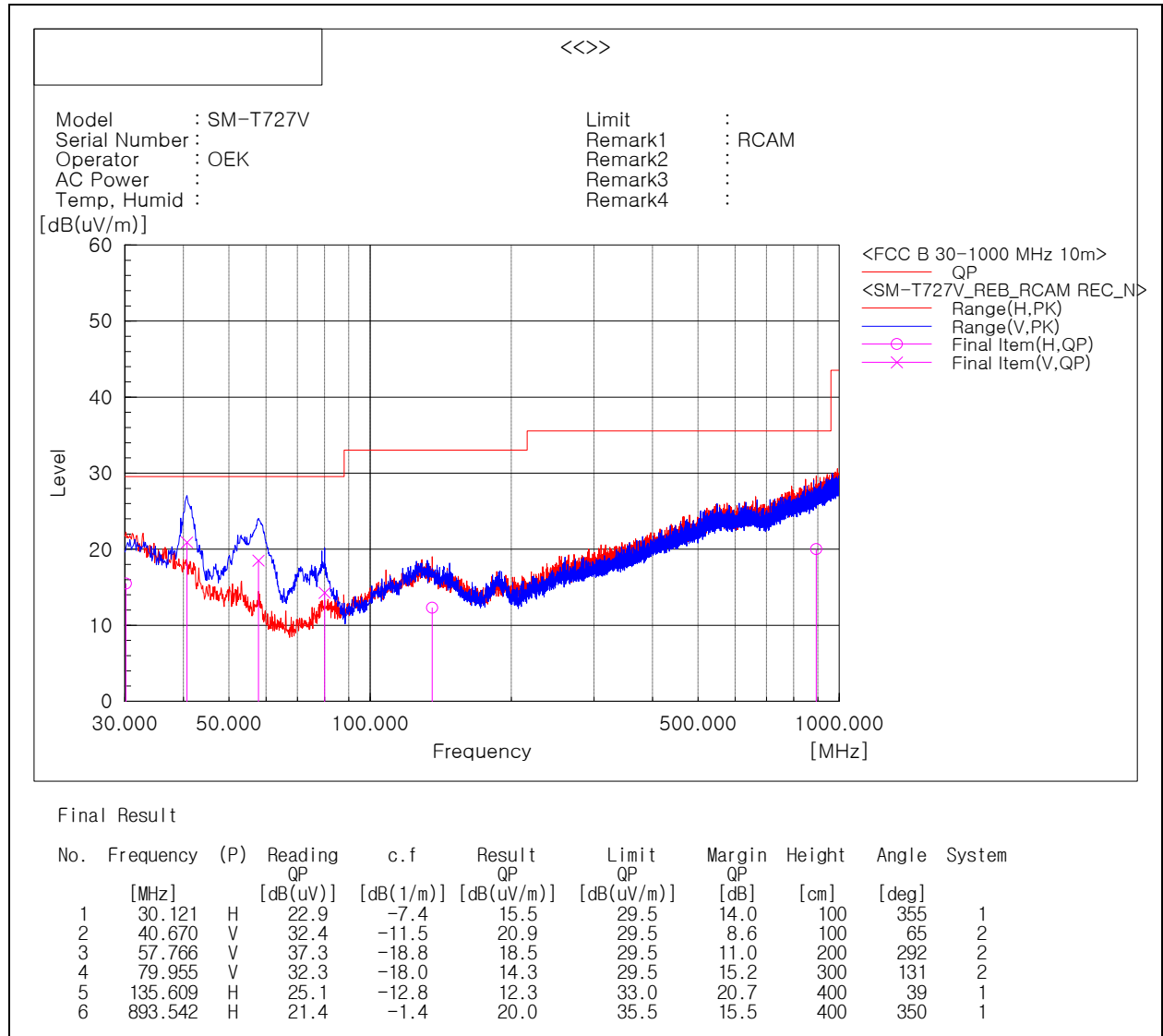
5.2.2 Temperature and humidity condition

Test date	2019-05-23	Test engineer	Eun-Kyung Oh
Climate condition	Ambient temperature	(23.0 ~ 23.3) °C	Limit (15.0 to 35.0) °C
	Relative humidity	(43.2 ~ 43.5) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(100.3 ~ 100.6) 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

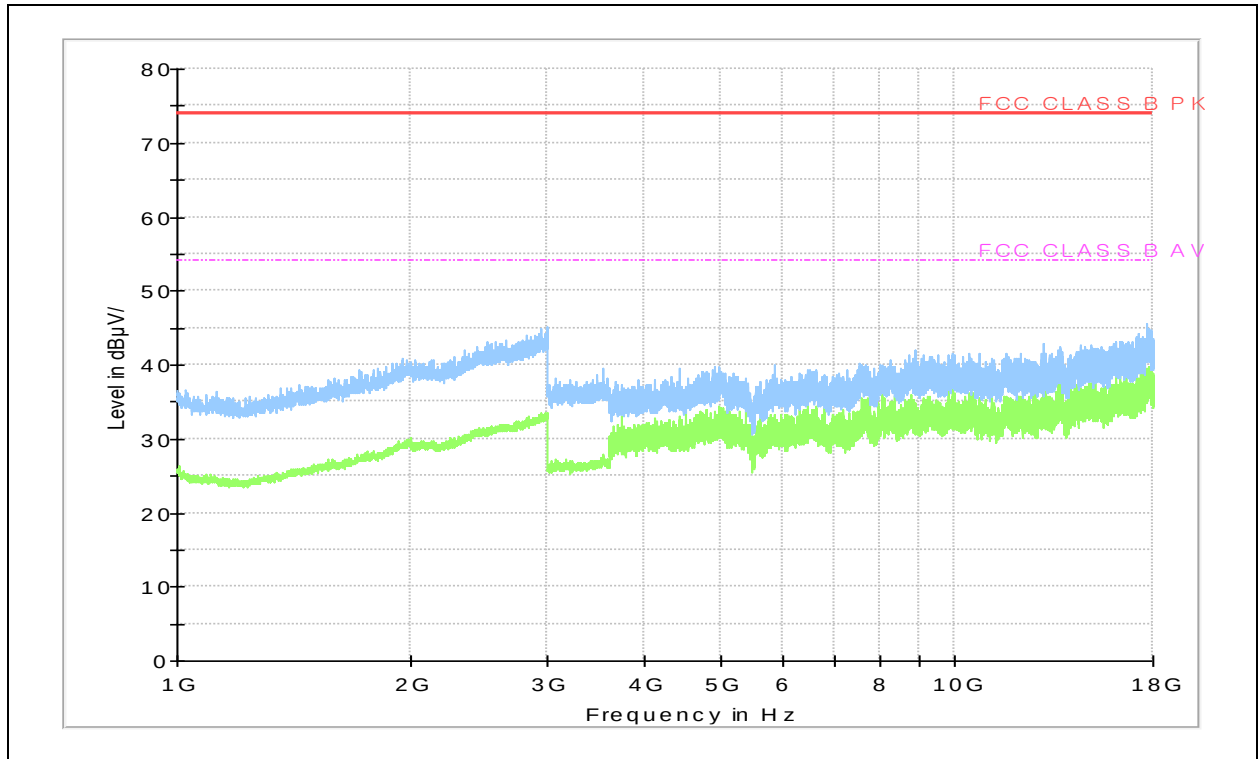
Test Distance : 10 m, Antenna Height : 1 to 4 meters

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



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

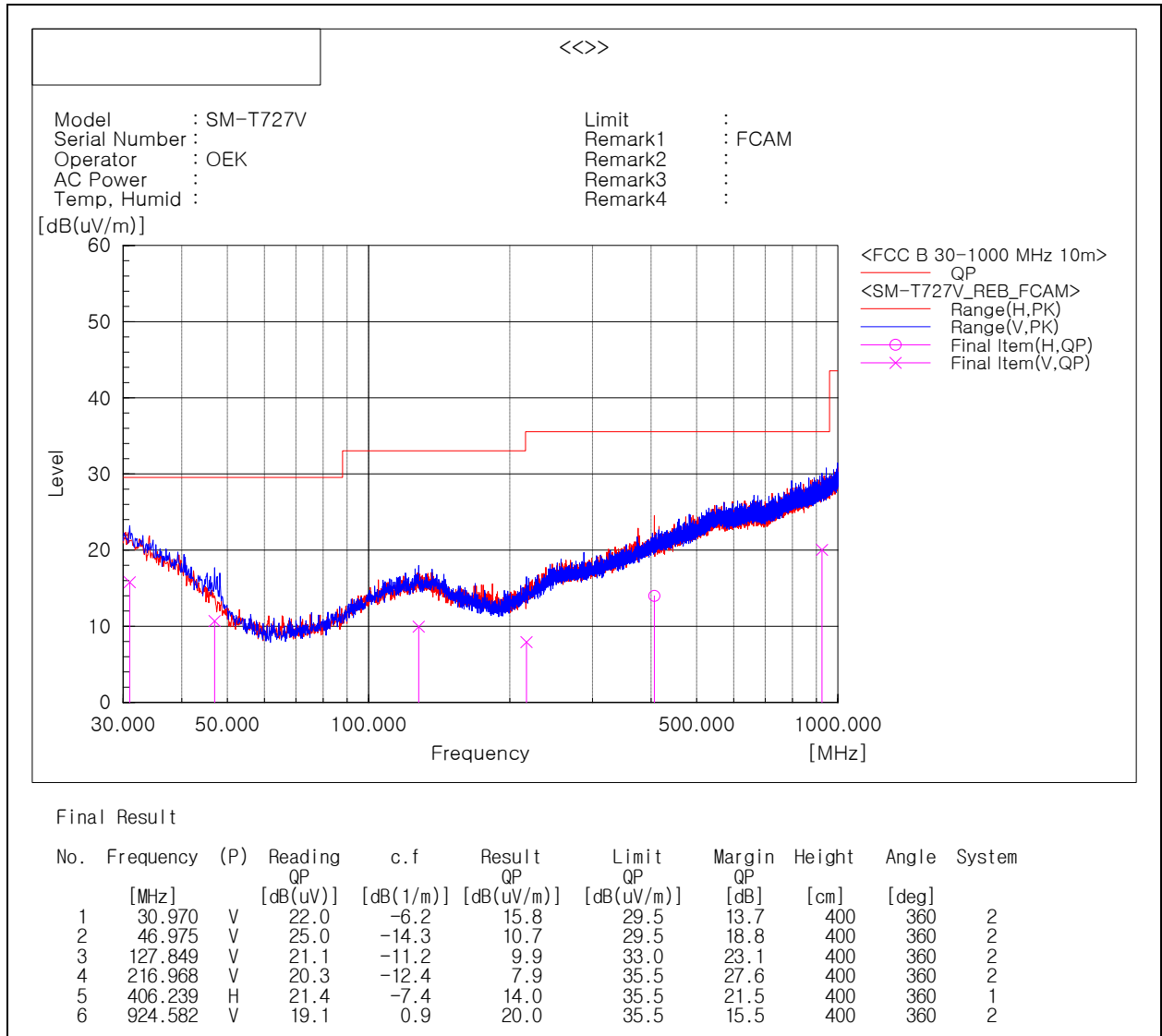
Note 2) Receiving antenna polarization : Horizontal, Vertical

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**

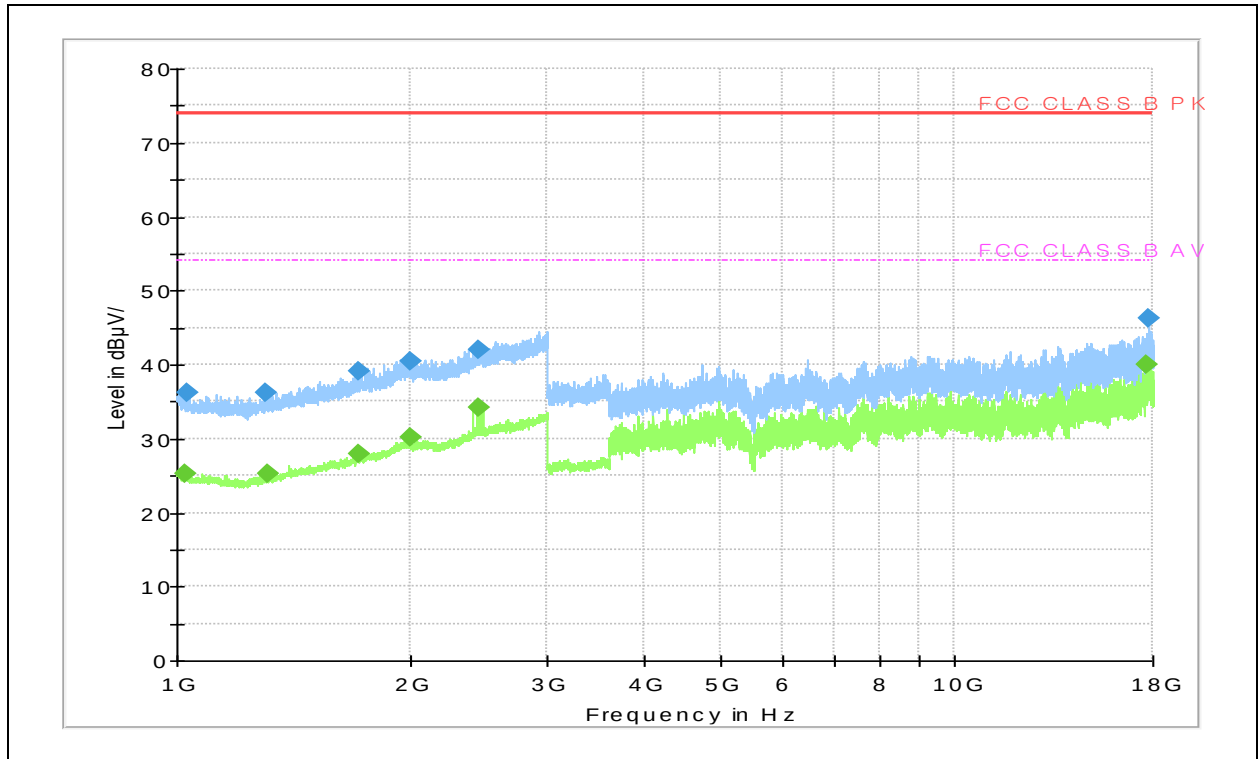
Note1) Receiving antenna polarization : Horizontal, Vertical

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

Frequency (MHz)	PK (dBµV/m)	CAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1 026.500	---	25.2	54.0	28.8	105.0	V	202.0	6.4
1 030.000	36.2	---	74.0	37.8	120.0	V	261.0	6.3
1 303.500	36.2	---	74.0	37.8	275.0	H	96.0	7.0
1 310.500	---	25.3	54.0	28.7	100.0	H	336.0	7.1
1 710.500	---	27.9	54.0	26.1	204.0	V	0.0	10.2
1 713.500	39.1	---	74.0	34.9	305.0	H	0.0	10.2
1 993.000	---	30.2	54.0	23.8	152.0	H	302.0	12.3
1 996.500	40.4	---	74.0	33.6	236.0	V	221.0	12.3
2 441.000	---	34.2	54.0	19.8	103.0	H	234.0	13.5
2 443.500	42.1	---	74.0	31.9	400.0	H	234.0	13.5
17 704.500	---	40.0	54.0	14.0	395.0	H	200.0	30.3
17 731.500	46.2	---	74.0	27.8	114.0	V	8.0	30.3

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

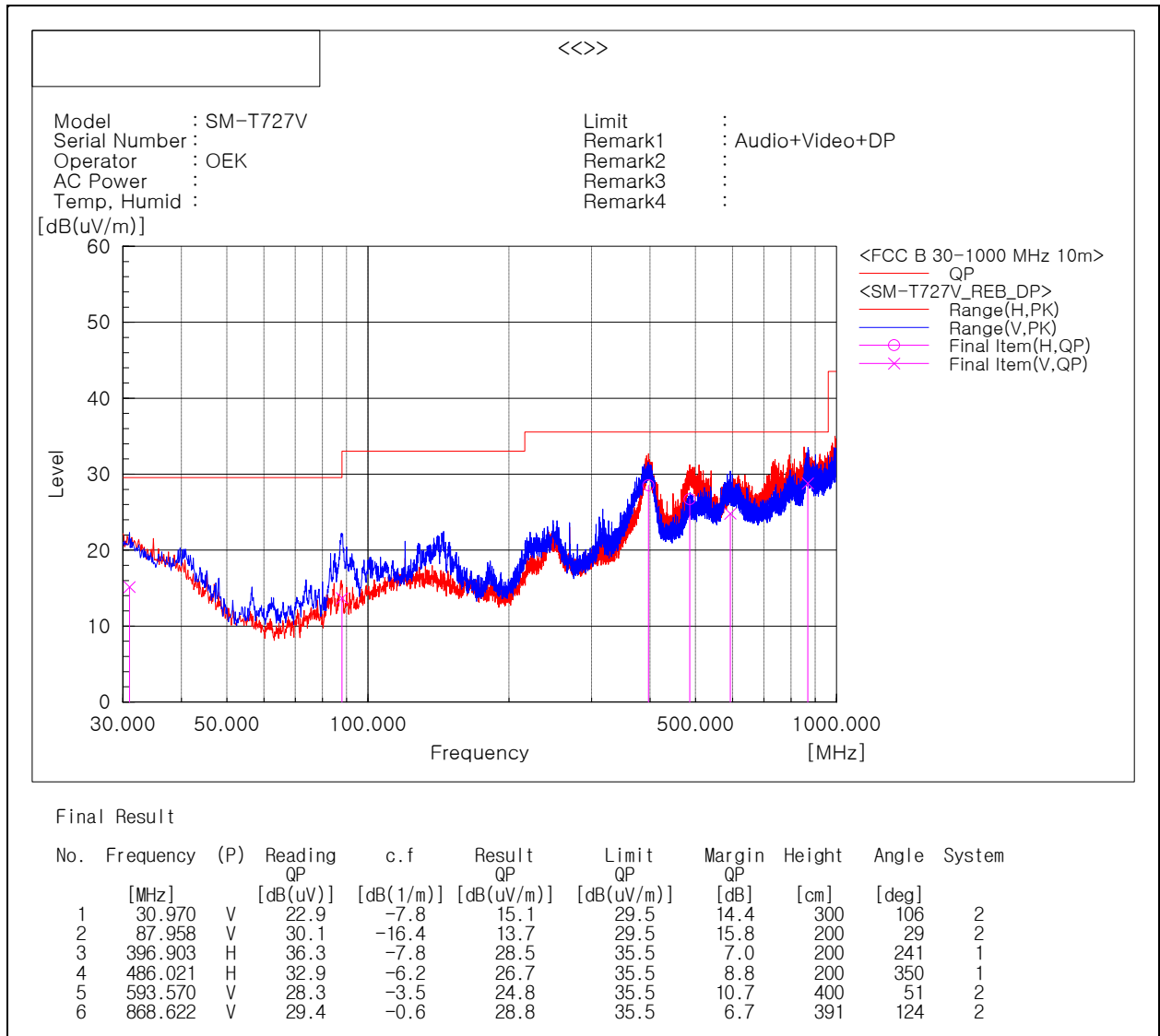
Note 2) Receiving antenna polarization : Horizontal, Vertical

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

☐ Operating Mode 3**- Frequencies below 1 GHz**

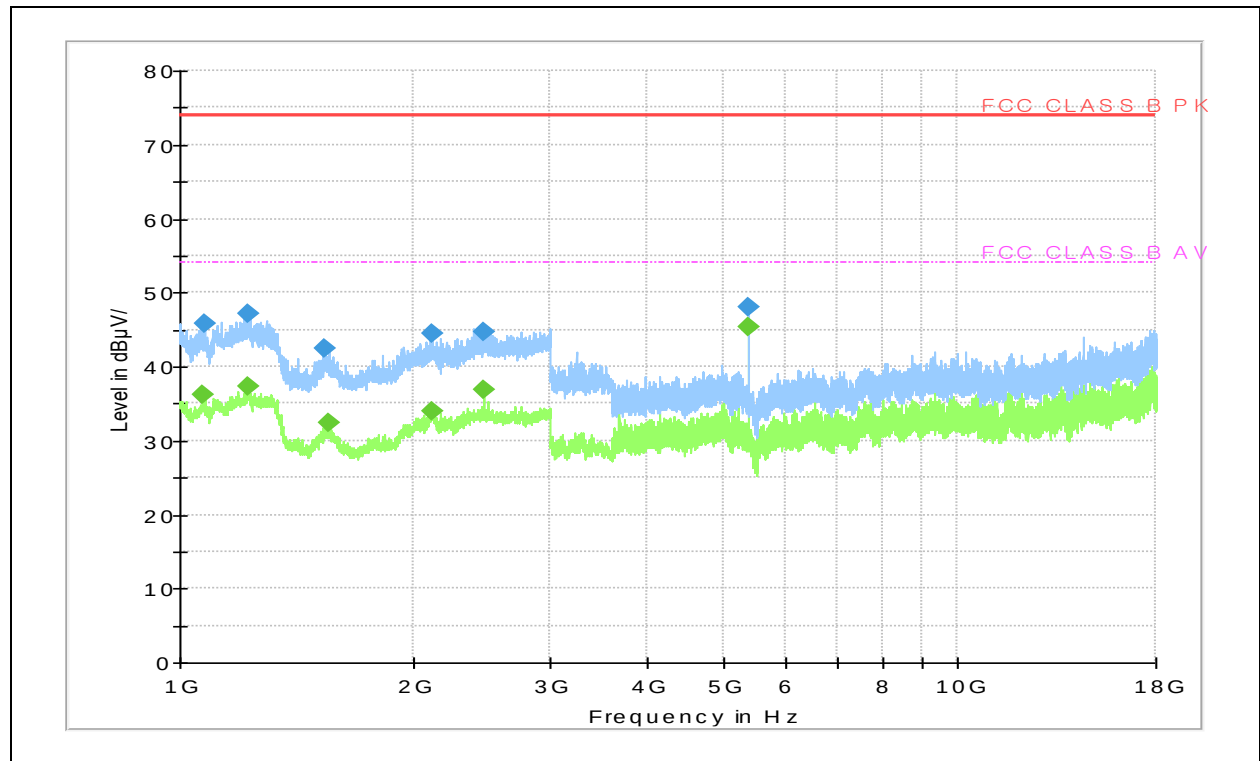
Note1) Receiving antenna polarization : Horizontal, Vertical

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

Frequency (MHz)	PK (dBμV/m)	CAV (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1 068.500	---	36.2	54.0	17.8	145.0	H	147.0	6.2
1 076.000	45.9	---	74.0	28.1	106.0	H	152.0	6.3
1 224.500	---	37.4	54.0	16.6	221.0	V	235.0	6.3
1 225.000	47.2	---	74.0	26.8	175.0	V	235.0	6.3
1 539.500	42.4	---	74.0	31.6	239.0	V	212.0	9.0
1 556.500	---	32.4	54.0	21.6	323.0	V	224.0	9.1
2 109.500	44.5	---	74.0	29.5	247.0	H	130.0	12.5
2 114.000	---	34.1	54.0	19.9	126.0	H	231.0	12.5
2 462.000	44.7	---	74.0	29.3	108.0	H	101.0	13.6
2 462.500	---	36.8	54.0	17.2	117.0	H	101.0	13.6
5 399.500	48.1	---	74.0	25.9	376.0	H	128.0	6.7
5 400.000	---	45.3	54.0	8.7	109.0	H	128.0	6.7

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

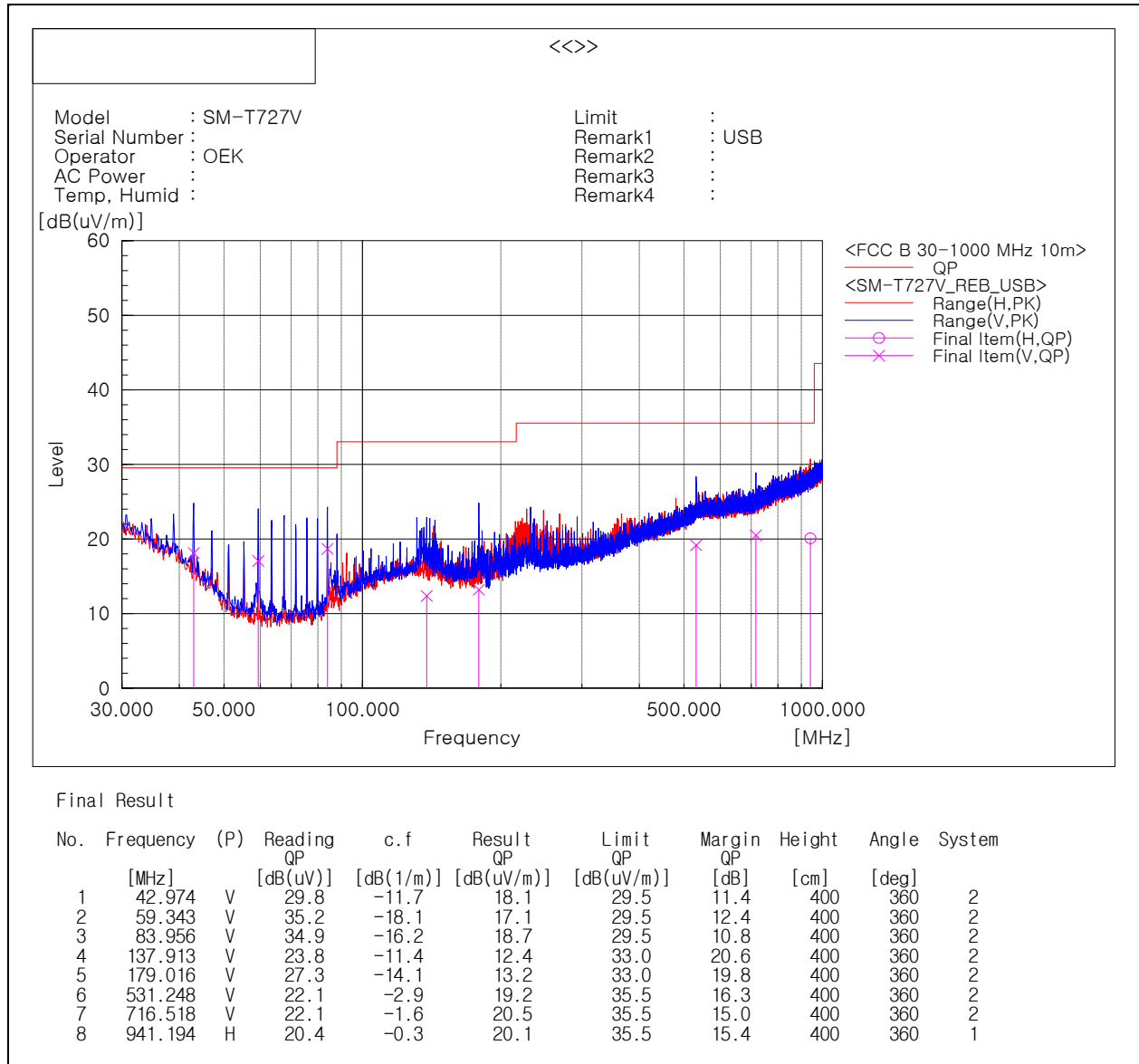
Note 2) Receiving antenna polarization : Horizontal, Vertical

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**

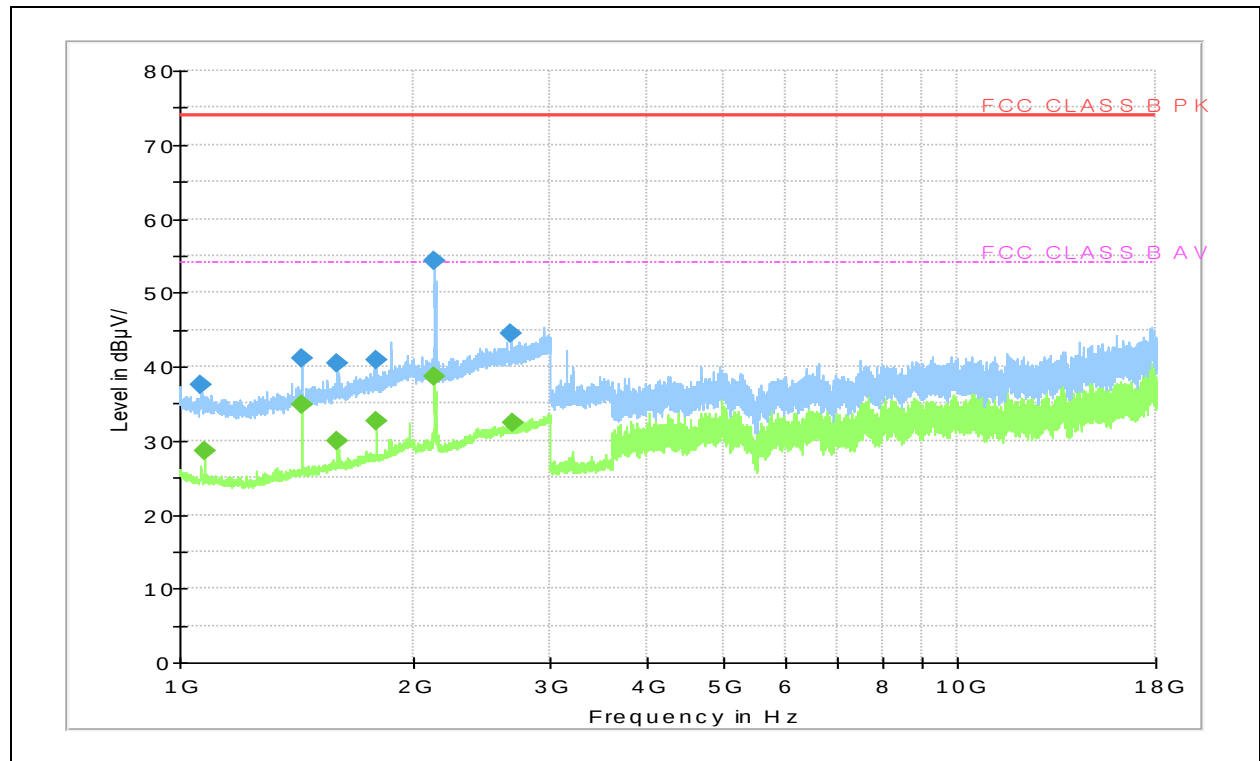
Note1) Receiving antenna polarization : Horizontal, Vertical

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)
1 062.000	37.6	---	74.0	36.4	191.0	H	52.0	6.2
1 074.500	---	28.5	54.0	25.5	165.0	V	234.0	6.3
1 432.500	---	34.8	54.0	19.2	124.0	V	0.0	8.2
1 432.500	41.0	---	74.0	33.0	232.0	V	0.0	8.2
1 595.000	---	30.0	54.0	24.0	209.0	V	87.0	9.4
1 597.000	40.4	---	74.0	33.6	175.0	V	87.0	9.4
1 791.000	---	32.7	54.0	21.3	138.0	V	0.0	10.4
1 791.500	40.9	---	74.0	33.1	316.0	V	1.0	10.4
2 125.000	54.4	---	74.0	19.6	280.0	V	143.0	12.4
2 128.500	---	38.7	54.0	15.3	115.0	V	23.0	12.4
2 660.000	44.4	---	74.0	29.6	184.0	V	279.0	14.7
2 686.000	---	32.4	54.0	21.6	121.0	H	36.0	14.7

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

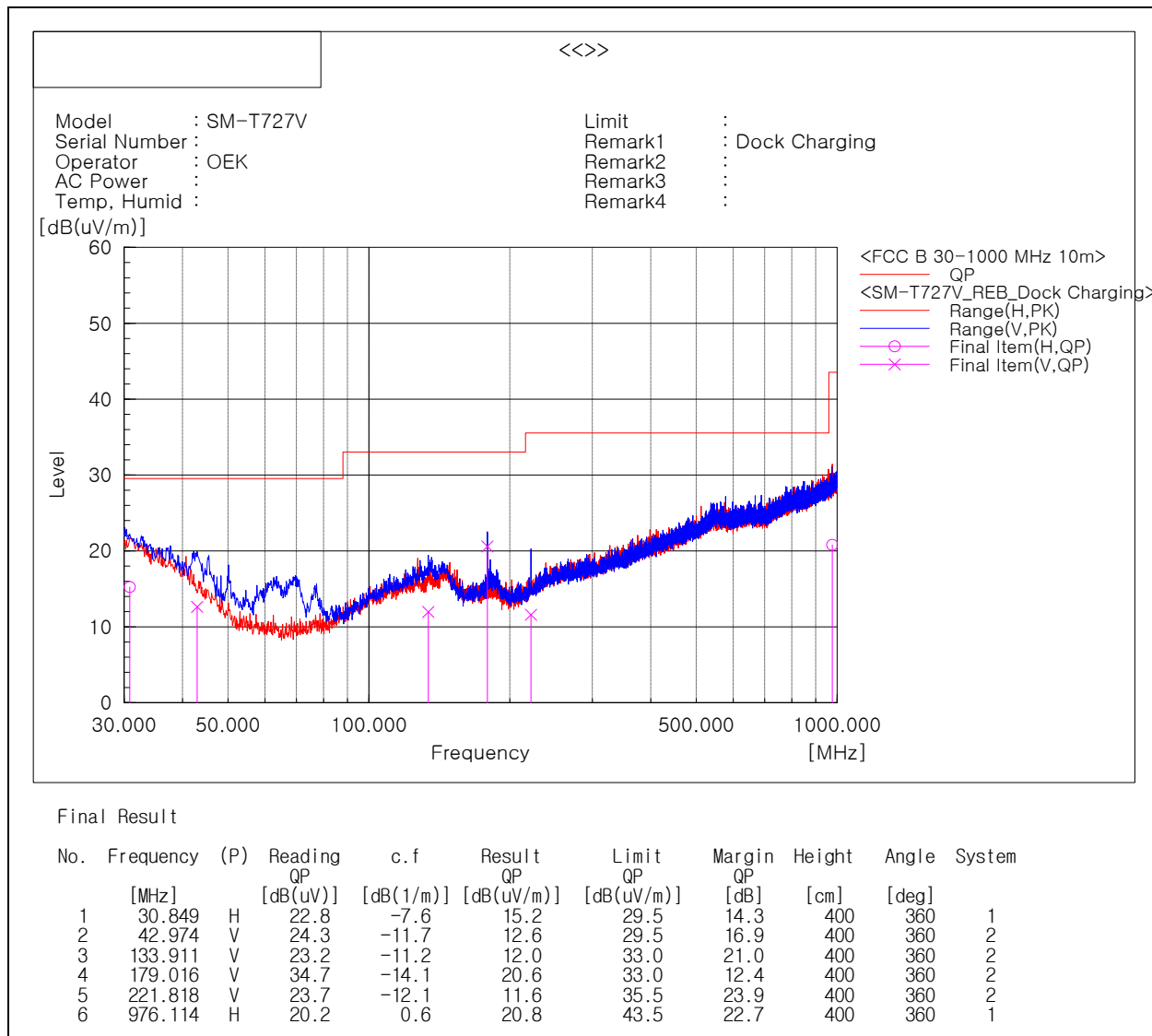
Note 2) Receiving antenna polarization : Horizontal, Vertical

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**

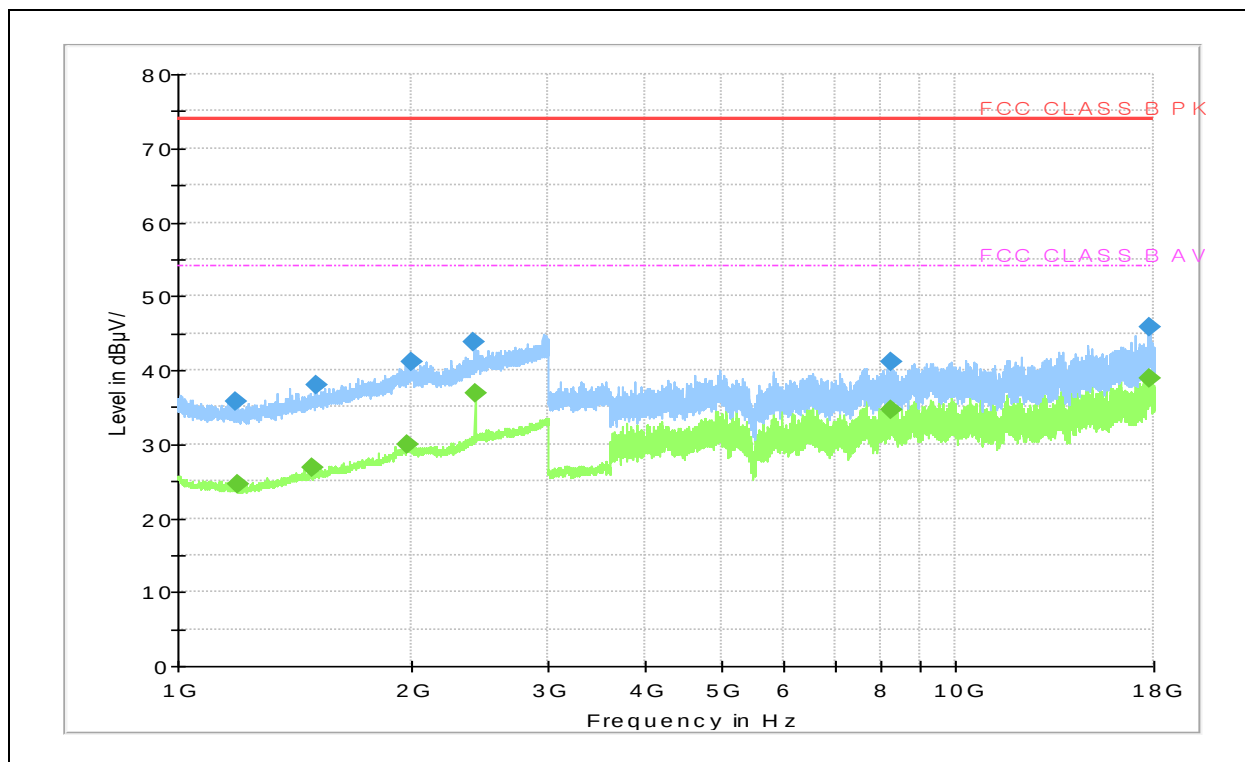
Note1) Receiving antenna polarization : Horizontal, Vertical

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)
1 186.000	35.8	---	74.0	38.2	125.0	V	340.0	6.2
1 193.000	---	24.7	54.0	29.3	103.0	V	207.0	6.1
1 490.500	---	26.7	54.0	27.3	164.0	H	238.0	8.6
1 511.000	37.9	---	74.0	36.1	212.0	H	226.0	8.8
1 977.500	---	29.9	54.0	24.1	149.0	H	106.0	12.2
1 998.000	41.1	---	74.0	32.9	107.0	V	0.0	12.3
2 407.500	43.7	---	74.0	30.3	276.0	V	312.0	13.3
2 408.000	---	36.9	54.0	17.1	318.0	V	312.0	13.3
8 295.000	---	34.6	54.0	19.4	186.0	V	294.0	13.3
8 295.000	41.1	---	74.0	32.9	105.0	V	294.0	13.3
17 790.000	45.8	---	74.0	28.2	144.0	V	9.0	30.5
17 790.500	---	38.8	54.0	15.2	219.0	H	170.0	30.5

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