EMC TEST REPORT

Project No.	LBE20220696	**Issue No.**	0
Applicant	**Name of organization**	Samsung Electronics Co., Ltd.	
	Address	(Maetan-dong) 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea	
	Date of receipt	December 7, 2022	
EUT	**Type of device**	■ All other receivers subject to Part 15 ■ 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	A3LSMM146B	
	Kind of product	Mobile Phone	
	Model No.	SM-M146B/DSN	
	Variant Model No.	Refer to clause 4.6	
	Manufacturer	**Samsung Electronics Vietnam Co., Ltd.** Yenphong 1 - I.P Yentrung Commune, Yenphong Dist., Bac Ninh Province, Vietnam	
Applied Standards		47 CFR Part 15, Subpart B, Class B / ANSI C63.4-2014	
Test Period		December 12, 2022 ~ December 16, 2022	
Issue date		December 16, 2022	

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 : Seon-Tai Park	**Reviewed by** : Chang-Eun Park

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Samsung Electronics Co., Ltd., Global CS Center
(Maetan dong) 129, Samsung-ro, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do 16677, Korea

Table of Contents

1. Report Information 3

1.1 Revision history 3

2. Summary of test results 3

2.1 Emission 3

3. General Information 3

3.1 Test facility 3

4. Test Setup configuration 4

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. Results of individual test 12

5.1 Conducted Emission 12

5.2 Radiated Emission 18

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1. Report Information

1.1 Revision history

No.	Date of Issue	Revised detailed information
Issue 0	December 16, 2022	There are no revisions and this version is basic test report.

※ Remark
Only compliance with Part 15B (Section 15.107 Conducted limits) requirements for the receiver part of the licensed transmitter (equipment code CXX) is covered by this 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 Emission (Mains port)	47 CFR Part 15 Subpart B / ANSI C63.4-2014 (Class B)	Complied
■	Radiated Emission		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, 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 accredited testing laboratory by the National Radio Research Agency with designation No. KR0004. for EMC testing.

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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:

Description	Model No.	Serial No.	Manufacturer / Trademark	FCC ID
Mobile Phone	SM-M146B/DSN	-	SAMSUNG	A3LSMM146B
Headset	EHS64AVFWE	-	CRESYN	-
Data Cable	EP-DR140	-	RF TECH	-
Laptop Computer	Latitude5580	1WYRYM2	Dell	DoC
Laptop Computer	Latitude5580	D3HRYM2	Dell	DoC
Laptop AC Adapter	LA65NM130	5DEA	Dell	DoC
Laptop AC Adapter	LA65NM130	5B3C	Dell	DoC
Mouse	AA-SM7PCPB	CN57BA5903634AD V8JJCD4371	SAMSUNG	DoC
Mouse	SMH-210UB	TAKGA05788Z	SAMSUNG	DoC
Router	DIR-806A	RF0F1D8018454	D-Link	DoC
Router	DIR-806A	RF0F1D8011504	D-Link	DoC
Travel Adapter	EP-TA200B	R37TARX2XZ3SCA	SALCOM	-
Micro SD Card	64GB	-	SAMSUNG	-

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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) + 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 + Charging (w/TA)
5	USB data communication with PC (from external memory)

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
5	USB data communication with PC (from external memory)

4.3 Details of Sampling

Customer selected, single unit.

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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:

Connected cable	Length [m]	Shielded [Y/N]	Note
Data Cable	1.0	Y	From EUT to Laptop Computer or Travel Adapter
Headset	1.2	N	For EUT
Power	1.8	N	From Laptop Computer to AC Adapter
Power	1.5	N	For Laptop AC Adapter
LAN	1.5	N	From Laptop Computer to Router
USB	0.8	Y	From Laptop Computer to Router for DC Power
USB	1.8	Y	From Laptop Computer to Mouse

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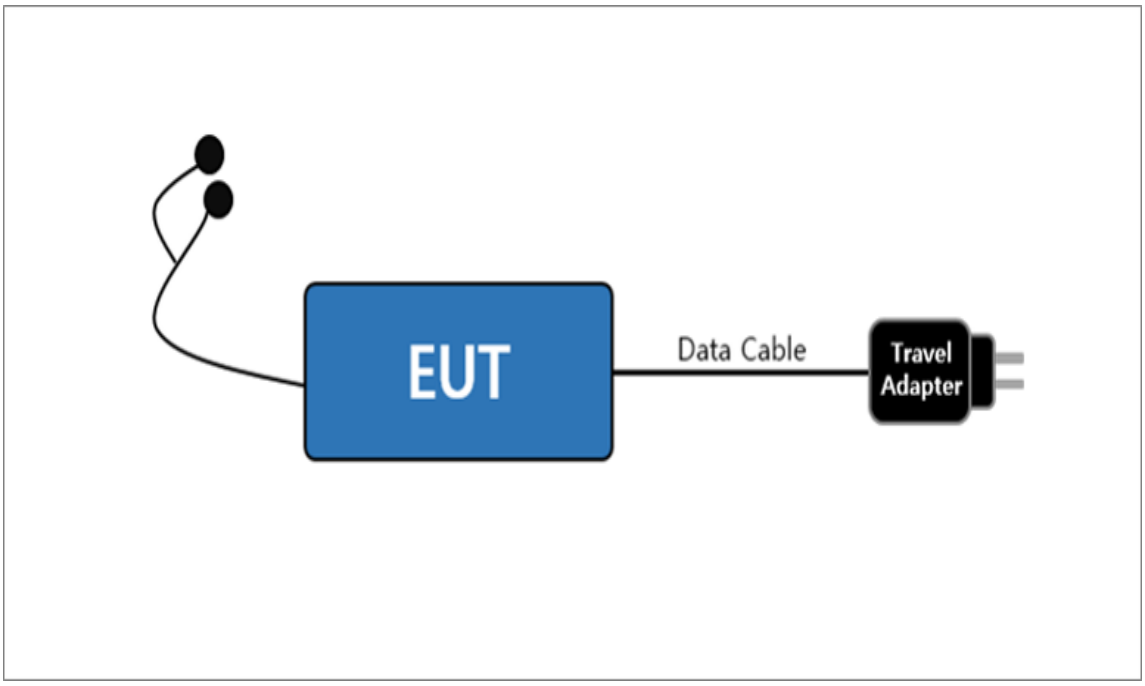
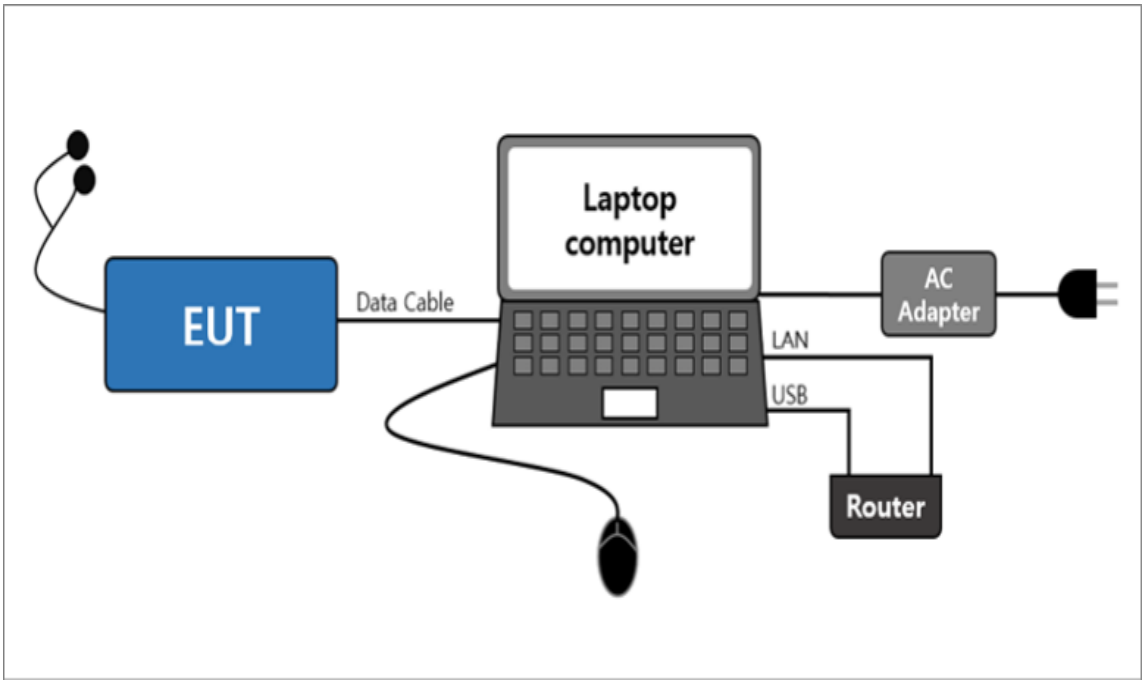
4.5 Test arrangement

4.5.1 Conducted Emission



[Mode 1 – 4]



[Mode 5]

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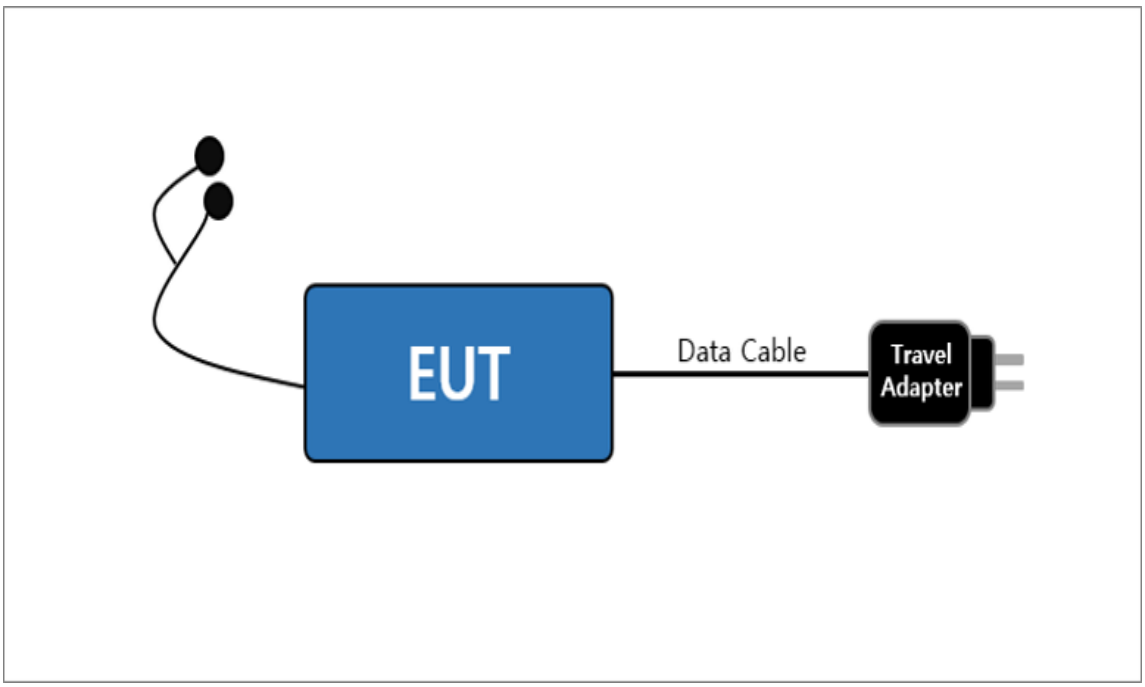
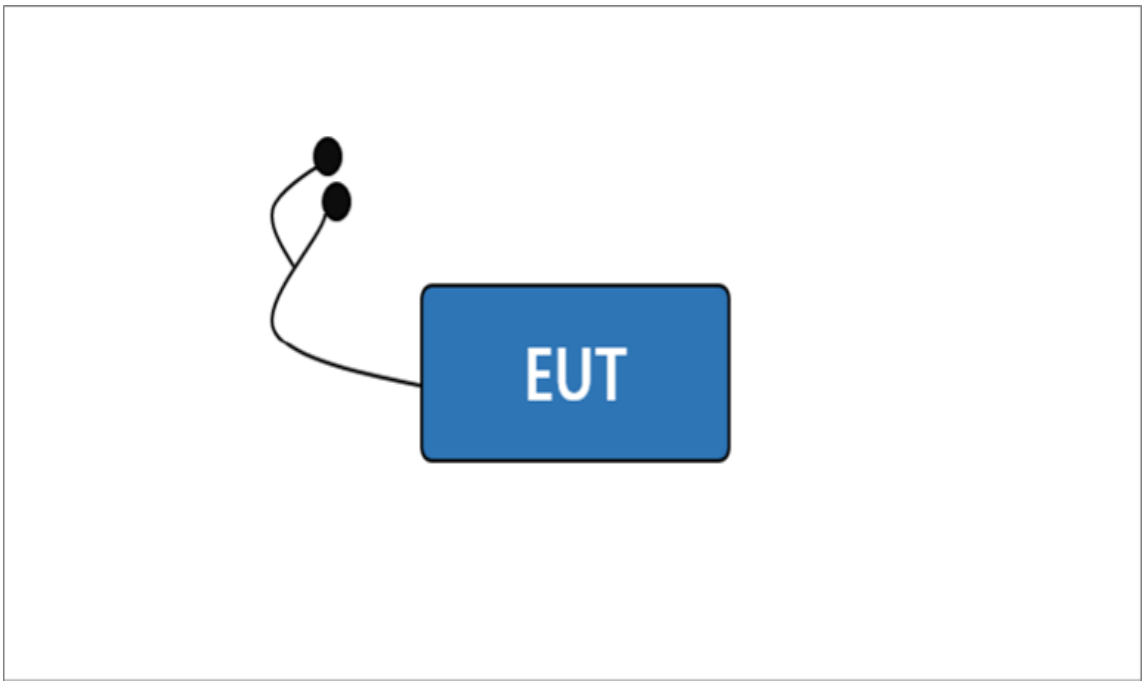
4.5.2 Radiated Emission



[Mode 1]



[Mode 2 – 4]

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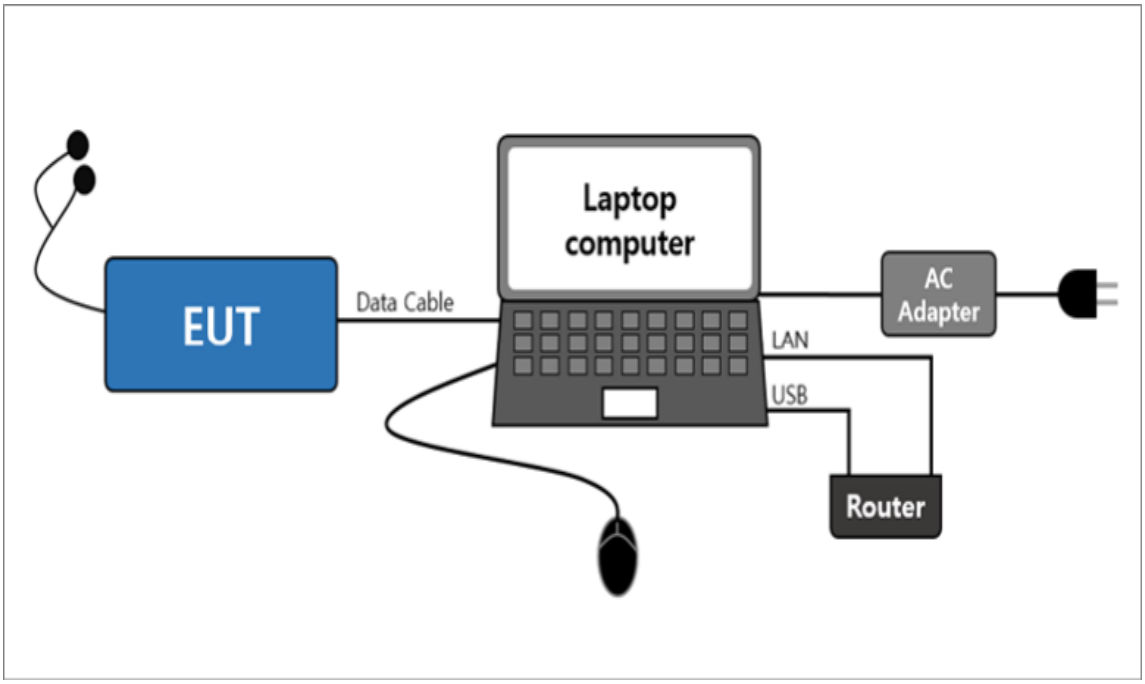

[Mode 5]

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4.6 EUT Description

The EUT is a bar type mobile phone which can operate on GSM 850/900/1800/1900, WCDMA FDD 1/2/4/5/8, LTE FDD 1/2/3/4/5/7/8/12/17/20/26/28/66, LTE TDD 38/40/41, 5G NR n1/3/5/7/8/20/28/38/40/41/66/77/78 and incorporates a Bluetooth, Wi-Fi (802.11 b/g/n/a/ac), Camera, Audio, Video, GNSS, FM Radio, SD Card and NFC.

4.6.1 The variant models

- None

4.7 EUT Frequencies

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

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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(if available), by writing and reading arbitrary data or charging with TA.

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

For the AC conducted emissions test, the conducted emissions of receiver modes which operate within the frequency range of 30-960 MHz were compared through preliminary tests. However, no significant differences were found to affect the conducted emission, so the test result for one representative receiver frequency band (LTE FDD26) were reported.

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

The video and audio(1 kHz sound) were repetitively played with the earphone connected.

The camera of the EUT was operated continuously.

Power source for the EUT operating was supplied by CVCF.

- 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)

Test type		Measurement uncertainty (C.L. approximately 95 %, *k* = 2)
Conducted Emission	AC Mains	2.83 dB
Radiated Emission (Below 1 GHz)	Horizontal	4.15 dB
	Vertical	4.51 dB
Radiated Emission (Above 1 GHz)	Horizontal	4.99 dB
	Vertical	4.99 dB

* Remark

1) The values for uncertainty of conducted and radiated emissions are less than the Corresponding values of Ucispr given in CISPR 16-4-2. Therefore no adjustment of measurement results is necessary when comparing them with the relevant limits.

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5. Results of individual test

5.1 Conducted Emission

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 emission at the mains ports of Class B

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.	Next Calibration	
					Date	Interval (Month)
E5I-006	LTE Communicator	CMW500	R&S	132728	2023-04-12	12
E5I-109	Universal Radio Communicator	CMU200	R&S	110431	2022-12-08	12
E5I-127	Two-Line V-Network	ENV216	R&S	102061	2023-01-17	12
E5I-247	EMI Test Receiver	ESW8	R&S	103124	2023-07-20	12
-	Test software	EMC32	R&S	Ver 10.60.20	-	-

5.1.2 Temperature and humidity condition

Test date	2022-12-16	**Test engineer**	Seon-Tai Park
Climate condition	Ambient temperature	(22.7 ± 0.5) ℃	Limit (15.0 to 35.0) ℃
	Humidity	(40.7 ± 0.5) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(101.4 ± 0.5) kPa	Limit (86.0 to 106.0) kPa
Test place	Shield Room (SR8)		

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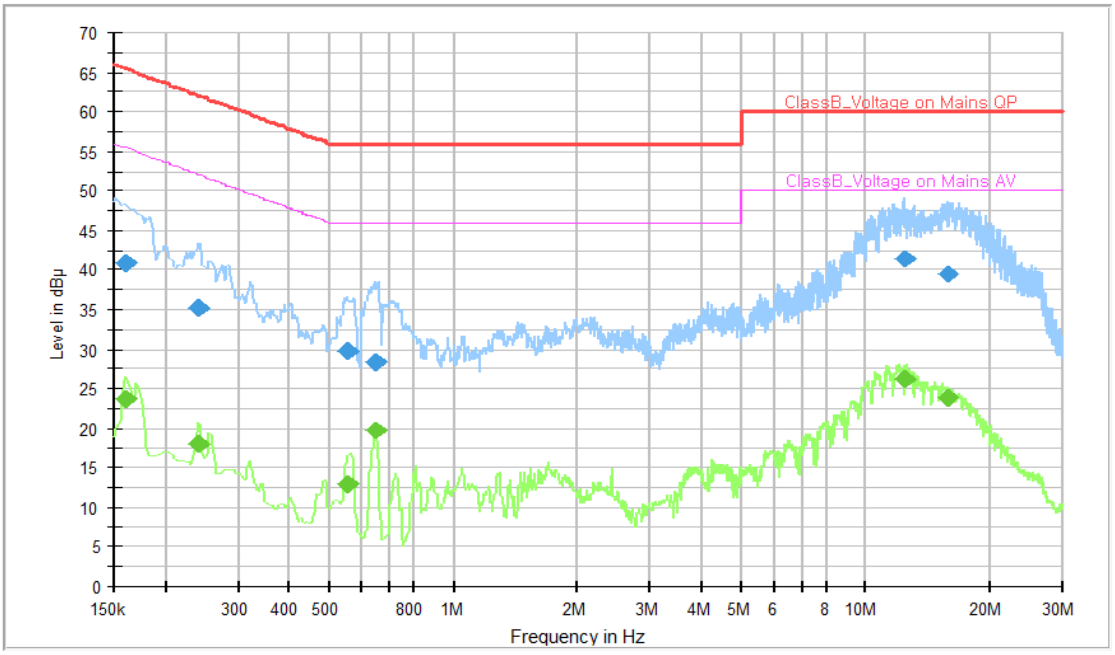
5.1.3 Test Results

□ 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)
0.161	---	23.6	55.4	31.8	L1	10.1
0.161	40.9	---	65.4	24.5	L1	10.1
0.240	---	18.1	52.1	34.0	L1	9.9
0.240	35.1	---	62.1	27.0	L1	9.9
0.551	29.8	---	56.0	26.2	N	10.1
0.551	---	12.9	46.0	33.1	N	10.1
0.647	28.4	---	56.0	27.6	L1	10.2
0.647	---	19.7	46.0	26.3	L1	10.2
12.451	---	26.1	50.0	23.9	N	10.4
12.451	41.5	---	60.0	18.5	N	10.4
15.833	---	23.9	50.0	26.1	N	10.5
15.833	39.4	---	60.0	20.6	N	10.5

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

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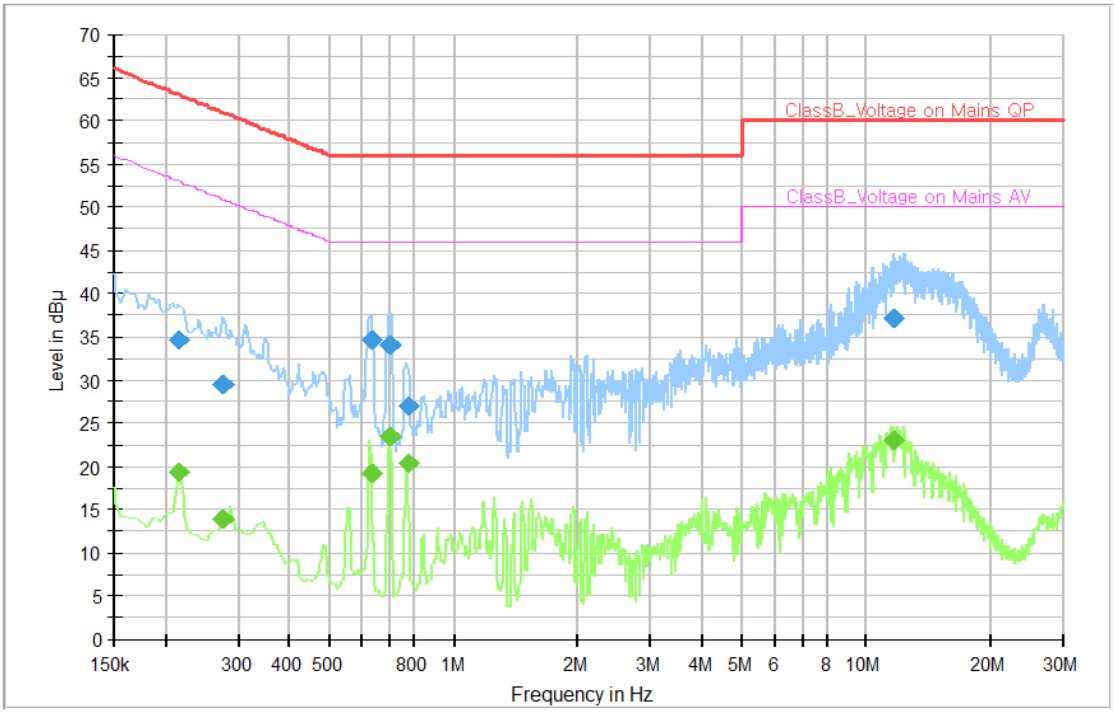
□ Operating Mode 2: AC Mains



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	---	19.3	53.0	33.7	L1	10.0
0.215	34.5	---	63.0	28.5	L1	10.0
0.276	---	13.9	50.9	37.0	L1	9.9
0.276	29.5	---	60.9	31.4	L1	9.9
0.632	34.6	---	56.0	21.4	N	10.1
0.632	---	19.2	46.0	26.8	N	10.1
0.699	---	23.4	46.0	22.6	N	10.0
0.699	34.0	---	56.0	22.0	N	10.0
0.771	26.9	---	56.0	29.1	L1	10.1
0.771	---	20.4	46.0	25.6	L1	10.1
11.630	---	23.0	50.0	27.0	N	10.3
11.630	37.1	---	60.0	22.9	N	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

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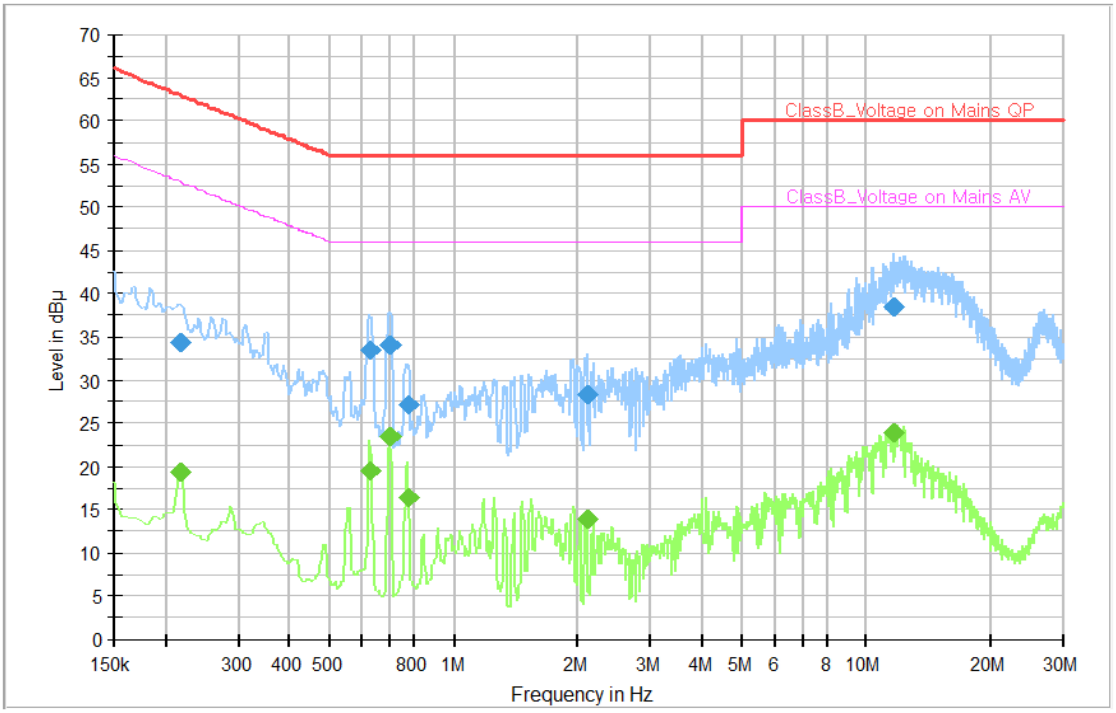
□ Operating Mode 3: AC Mains



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)
0.218	---	19.3	52.9	33.6	L1	10.0
0.218	34.5	---	62.9	28.4	L1	10.0
0.625	33.5	---	56.0	22.5	N	10.1
0.625	---	19.6	46.0	26.4	N	10.1
0.699	33.9	---	56.0	22.1	N	10.0
0.699	---	23.4	46.0	22.6	N	10.0
0.778	---	16.5	46.0	29.5	L1	10.0
0.778	27.1	---	56.0	28.9	L1	10.0
2.112	---	13.9	46.0	32.1	N	10.0
2.112	28.3	---	56.0	27.7	N	10.0
11.625	---	23.9	50.0	26.1	N	10.3
11.625	38.6	---	60.0	21.4	N	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

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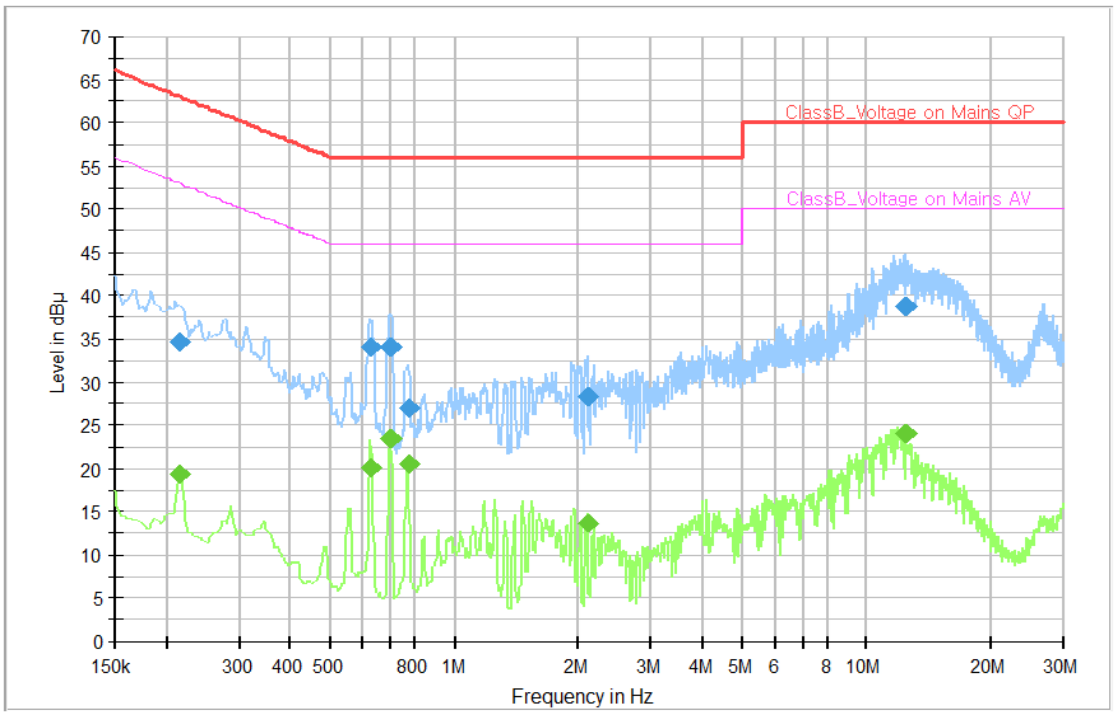
□ Operating Mode 4: AC Mains



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)
0.215	---	19.4	53.0	33.6	L1	10.0
0.215	34.6	---	63.0	28.4	L1	10.0
0.629	34.0	---	56.0	22.0	N	10.1
0.629	---	20.1	46.0	25.9	N	10.1
0.699	33.9	---	56.0	22.1	N	10.0
0.699	---	23.5	46.0	22.5	N	10.0
0.771	---	20.5	46.0	25.5	L1	10.1
0.771	27.1	---	56.0	28.9	L1	10.1
2.112	---	13.8	46.0	32.2	N	10.0
2.112	28.4	---	56.0	27.6	N	10.0
12.467	---	24.0	50.0	26.0	N	10.4
12.467	38.8	---	60.0	21.2	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

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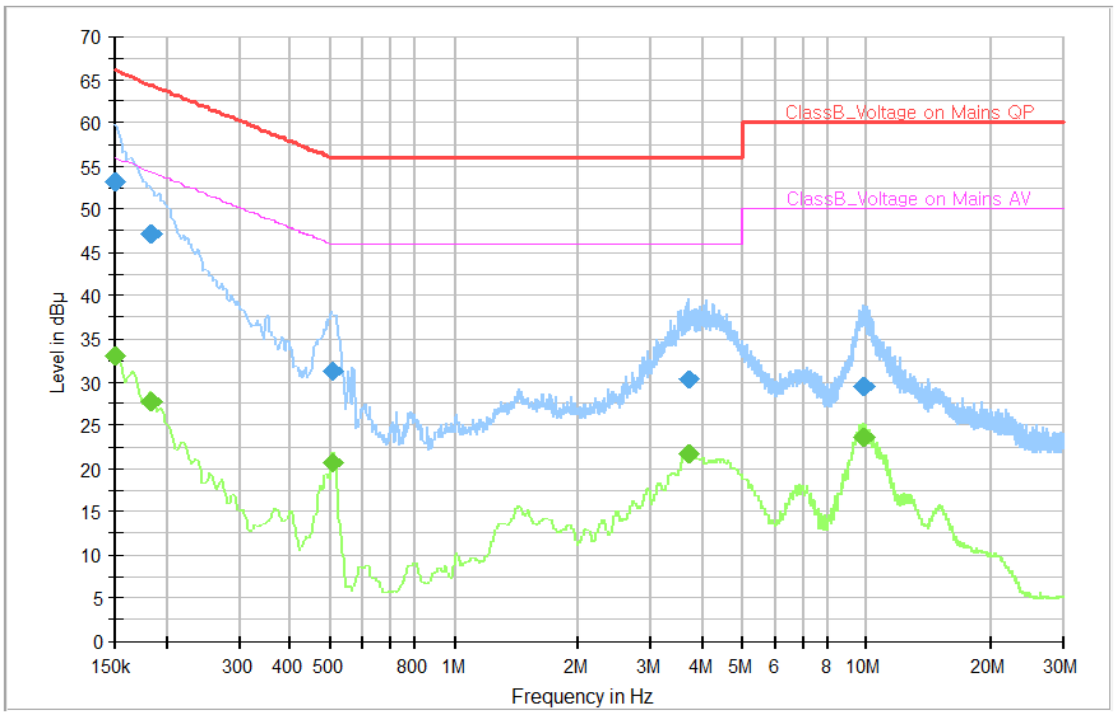
□ Operating Mode 5: AC Mains



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	---	33.0	56.0	23.0	L1	9.8
0.150	53.1	---	66.0	12.9	L1	9.8
0.184	---	27.8	54.3	26.5	L1	10.0
0.184	47.2	---	64.3	17.2	L1	10.0
0.506	---	20.7	46.0	25.3	L1	10.0
0.506	31.3	---	56.0	24.7	L1	10.0
3.683	---	21.6	46.0	24.4	L1	9.8
3.683	30.3	---	56.0	25.7	L1	9.8
9.841	---	23.6	50.0	26.4	L1	9.9
9.841	29.5	---	60.0	30.5	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

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5.2 Radiated Emission

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 Polarization	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 operates 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 Polarization	Resolution Bandwidth [MHz]	Video Bandwidth [MHz]	Turntable position [degrees]
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 emission of Class B at a measuring distance of 3 m and 10 m

Frequency range Limits [MHz]	Field Strength		
	3 m [μV/m]	3 m [dB(μV/m)]	10 m [dB(μV/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 fomula from D1(3m) to D2(10m)
: Limit at D2 = Limit at D1 + 20Log(D1 /D2)
Results checked manually; and points close to the limit line were re-measured.

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5.2.1 Test instrumentation

EMC No.	Test Instrument	Model name	Manufacturer	Serial No.	Next Calibration	
					Date	Interval (Month)
E5I-021	EMI Test Receiver	ESU40	R&S	100376	2023-01-28	12
E5I-018	EMI Test Receiver	ESU8	R&S	100484	2023-05-26	12
E5I-248	EMI Test Receiver	ESW44	R&S	103129	2023-07-20	12
E5I-069	BiLog Antenna	CBL6112D	TESEQ	35382	2023-08-09	24
E5I-138	6 dB Fixed Attenuator	8491A	Keysight	MY52462285	2023-08-09	24
E5I-071	BiLog Antenna	CBL6112D	TESEQ	35384	2023-08-09	24
E5I-136	6 dB Fixed Attenuator	8491A	Keysight	MY52462355	2023-08-09	24
E5I-073	Preamplifier	310N	SONOMA	332016	2023-05-02	12
E5I-074	Preamplifier	310N	SONOMA	332017	2023-05-02	12
E5I-149	Horn Antenna	HF907	R&S	102525	2023-04-04	12
E5I-039	Signal Conditioning Unit	SCU-18	R&S	10211	2023-04-18	12
E5I-037	WideBand Horn Antenna	WBH 18-40K	R&S	11201	2023-03-14	12
E5I-042	Signal Conditioning Unit	SCU-40A	R&S	10004	2023-09-21	12
E5I-023	Signal Generator	SMB100A	R&S	175857	2023-01-28	12
-	Test software	EP7RE	TOYO	Ver 8.0.20	-	-
-	Test software	EMC32	R&S	Ver 10.60.20	-	-

5.2.1 Temperature and humidity condition

Test date	2022-12-12 ~ 2022-12-13	**Test engineer**	Seon-Tai Park
Climate condition	Ambient temperature	(23.3 ± 0.5) ℃	Limit (15.0 to 35.0) ℃
	Humidity	(37.1 ± 0.5) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(101.5 ± 0.5) kPa	Limit (86.0 to 106.0) kPa
Test place	Semi-Anechoic Chamber (SAC5)		

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5.2.3 Test Results

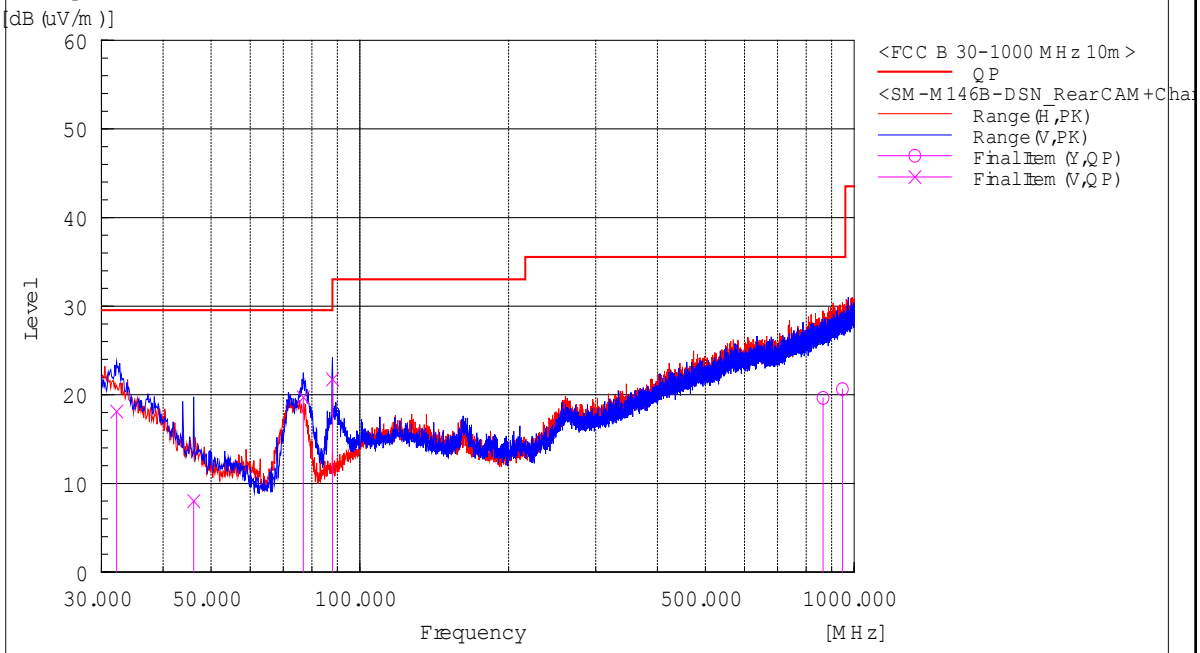
□ Operating Mode 1

- Frequencies below 1 GHz

<<>>

Model : SM-M146B/DSN
Serial Number :
Operator : ST Park
AC Power :
Temp, Humid :

Limit :
Remark1 : Rear Camera (Normal)
Remark2 : Charging (w/TA)
Remark3 : FM (bw ch.)
Remark4 :



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	32.183	V	25.9	-7.8	18.1	29.5	11.4	140	37	2
2	46.126	V	23.3	-15.3	8.0	29.5	21.5	266	0	2
3	76.802	V	37.6	-17.9	19.7	29.5	9.8	177	234	2
4	87.958	V	38.0	-16.2	21.8	29.5	7.7	150	324	2
5	865.534	H	20.4	-0.7	19.7	35.5	15.8	204	264	1
6	946.892	H	20.4	0.2	20.6	35.5	14.9	293	99	1

Remark : Radiated emission (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

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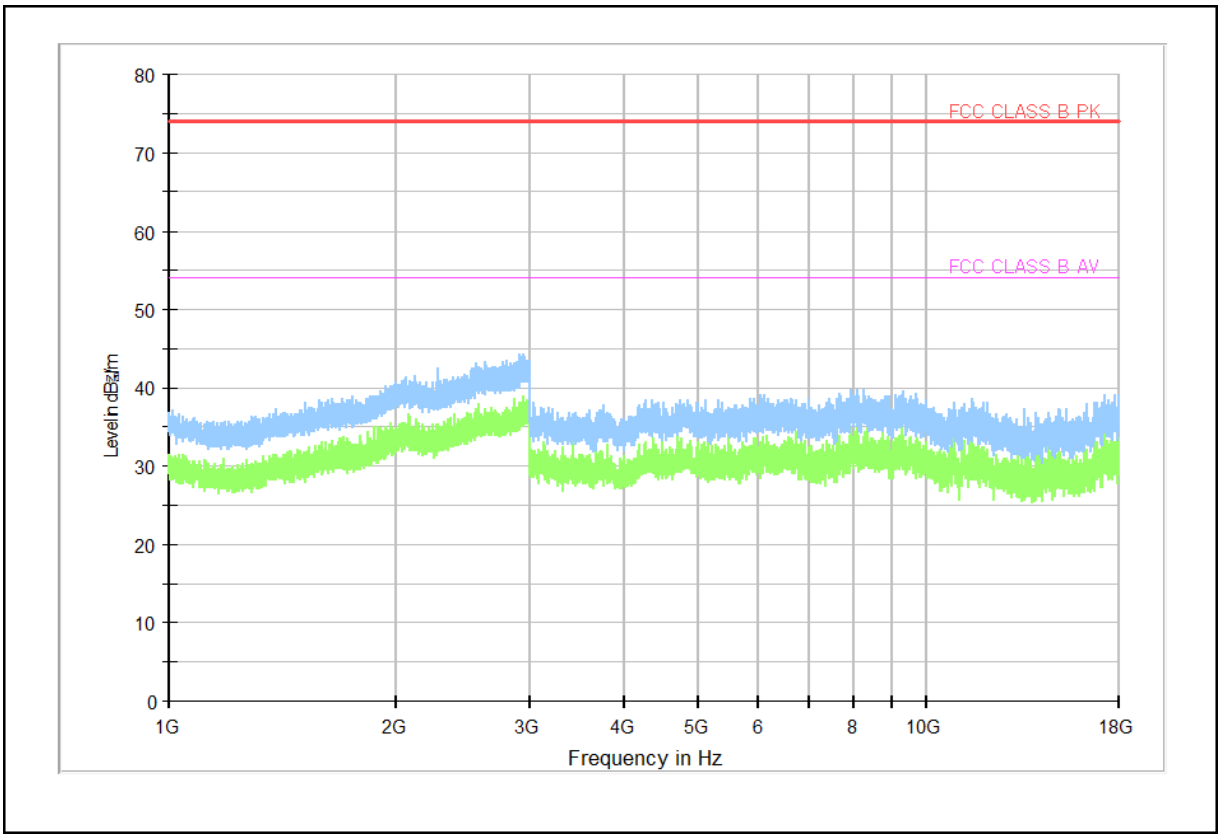
- Frequencies above 1 GHz



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

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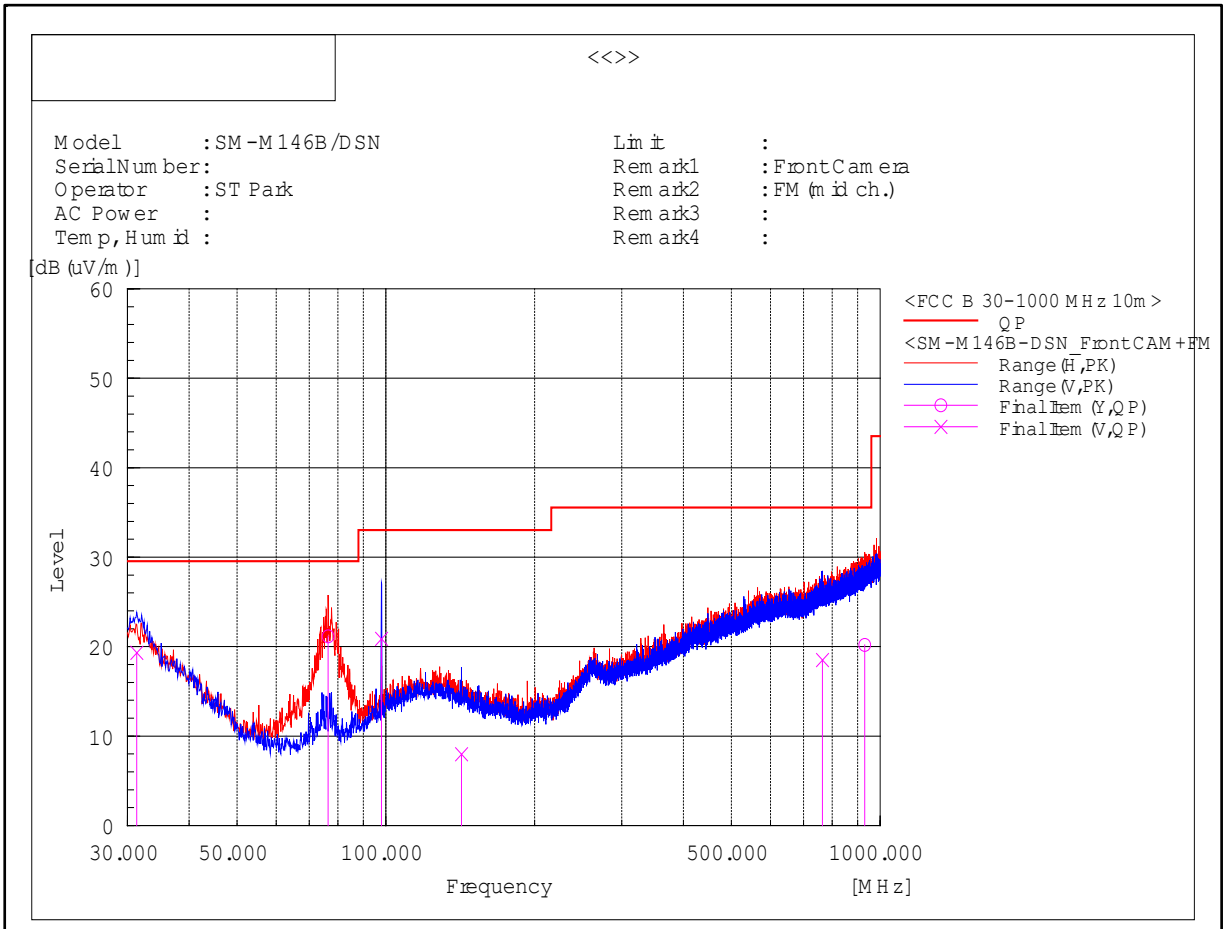
□ Operating Mode 2

- 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	31.334	V	26.7	-7.4	19.3	29.5	10.2	100	80	2
2	76.439	H	39.4	-18.3	21.1	29.5	8.4	400	329	1
3	97.900	V	35.3	-14.4	20.9	33.0	12.1	166	115	2
4	142.278	V	21.2	-13.2	8.0	33.0	25.0	125	349	2
5	763.684	V	19.8	-1.3	18.5	35.5	17.0	143	299	2
6	930.524	H	20.1	0.1	20.2	35.5	15.3	117	95	1

Remark : Radiated emission (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

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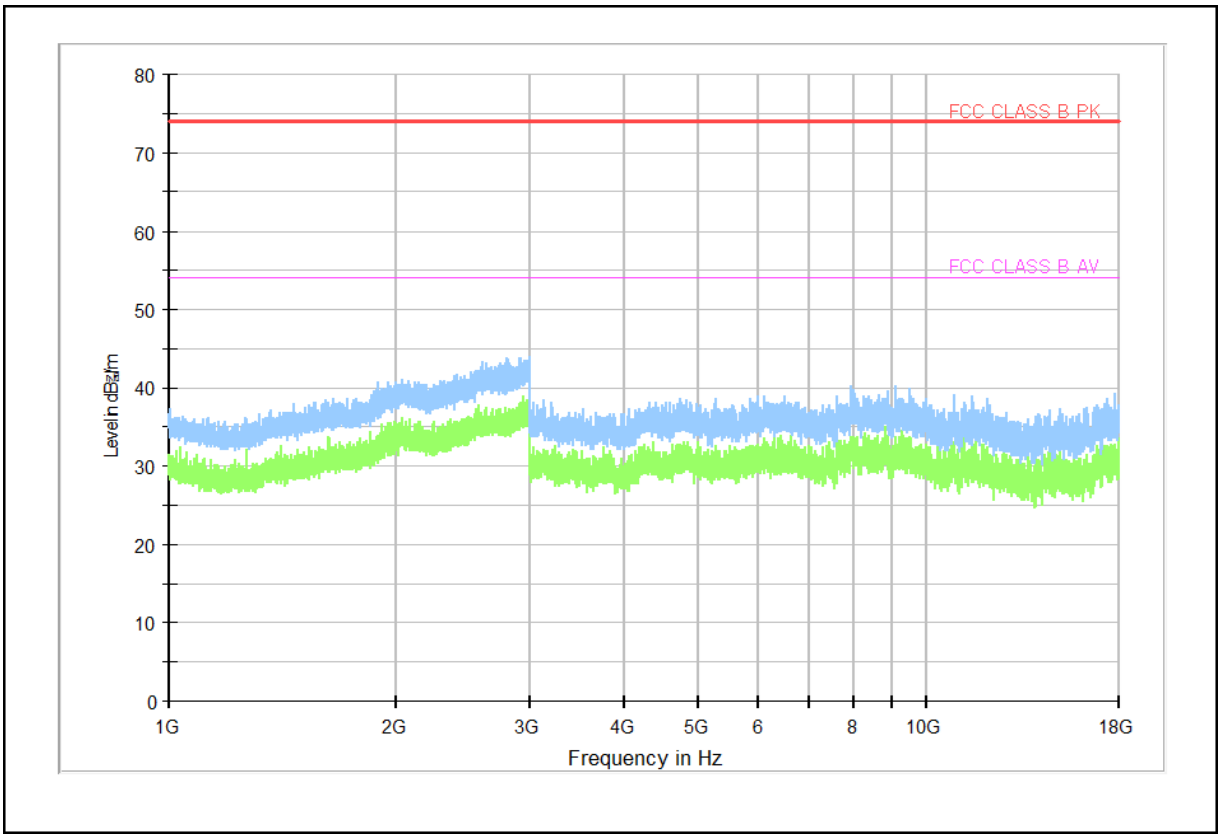
- Frequencies above 1 GHz



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

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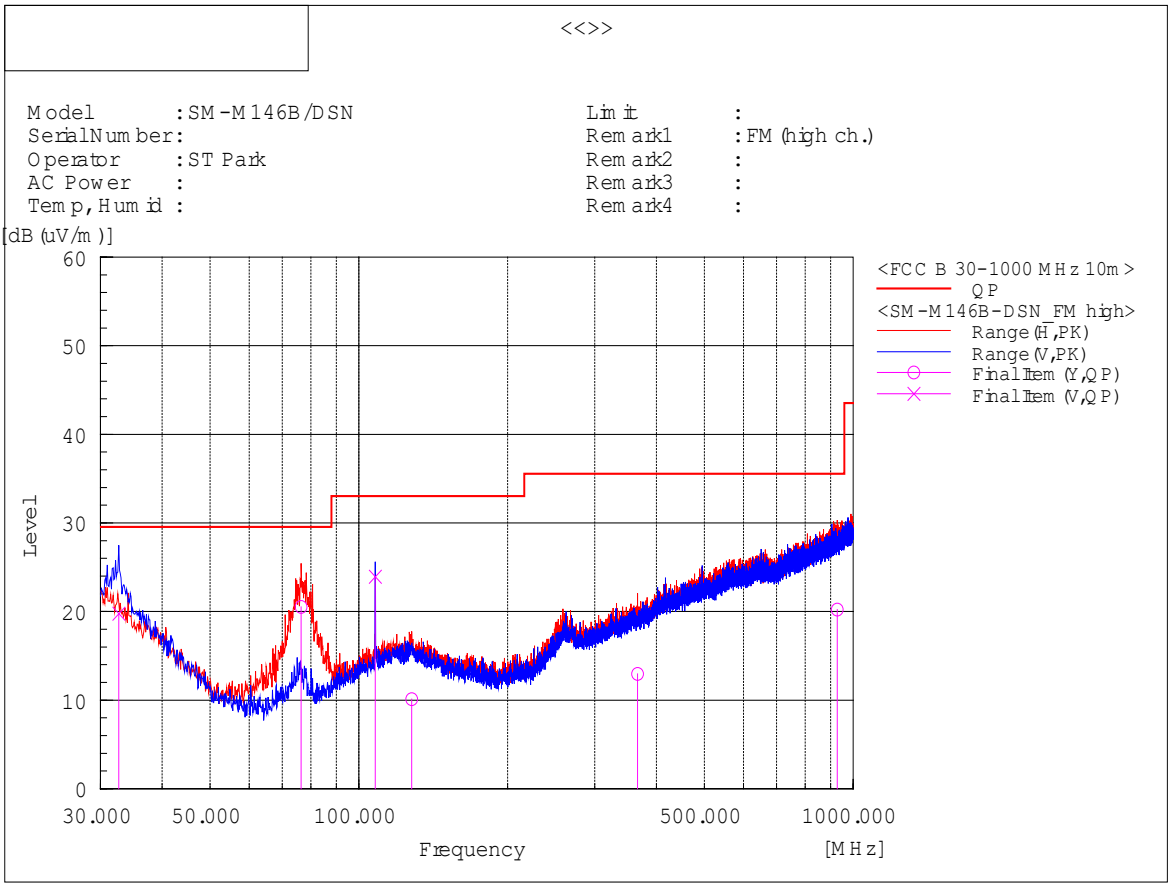
□ Operating Mode 3

- 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	32.668	V	27.8	-8.0	19.8	29.5	9.7	103	178	2
2	76.439	H	38.8	-18.3	20.5	29.5	9.0	388	343	1
3	107.964	V	36.9	-13.0	23.9	33.0	9.1	100	2	2
4	127.970	H	22.6	-12.5	10.1	33.0	22.9	400	153	1
5	366.226	H	21.7	-8.7	13.0	35.5	22.5	104	241	1
6	928.462	H	20.1	0.1	20.2	35.5	15.3	385	174	1

Remark : Radiated emission (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

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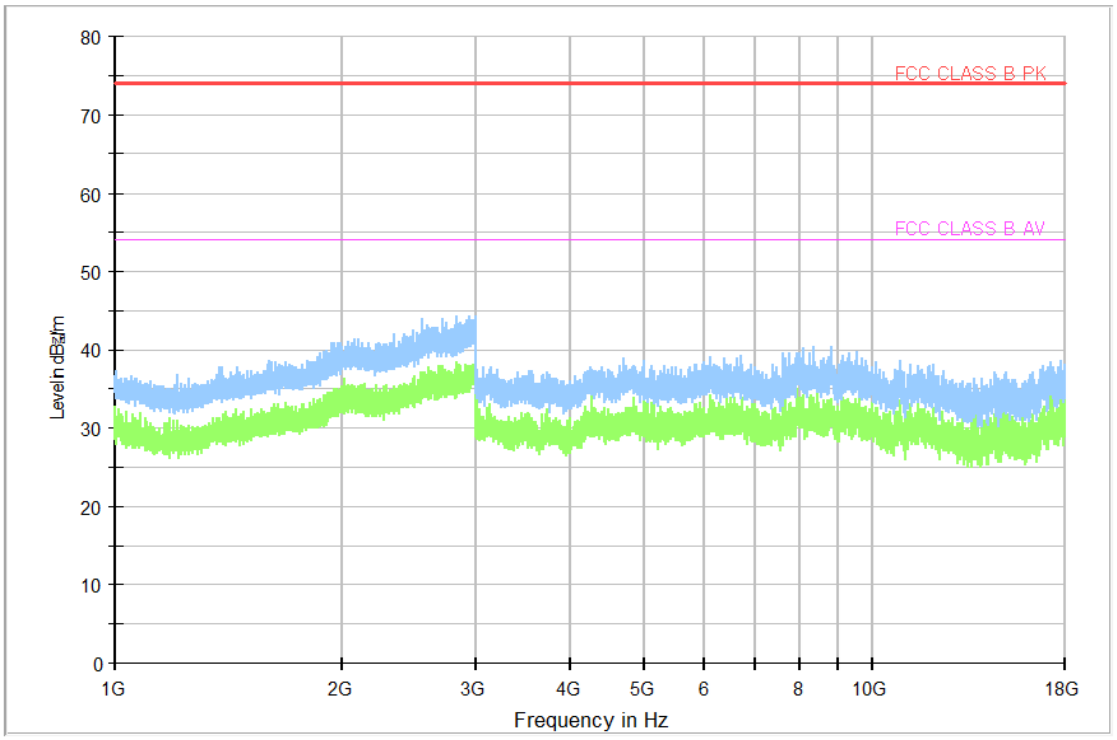
- Frequencies above 1 GHz



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

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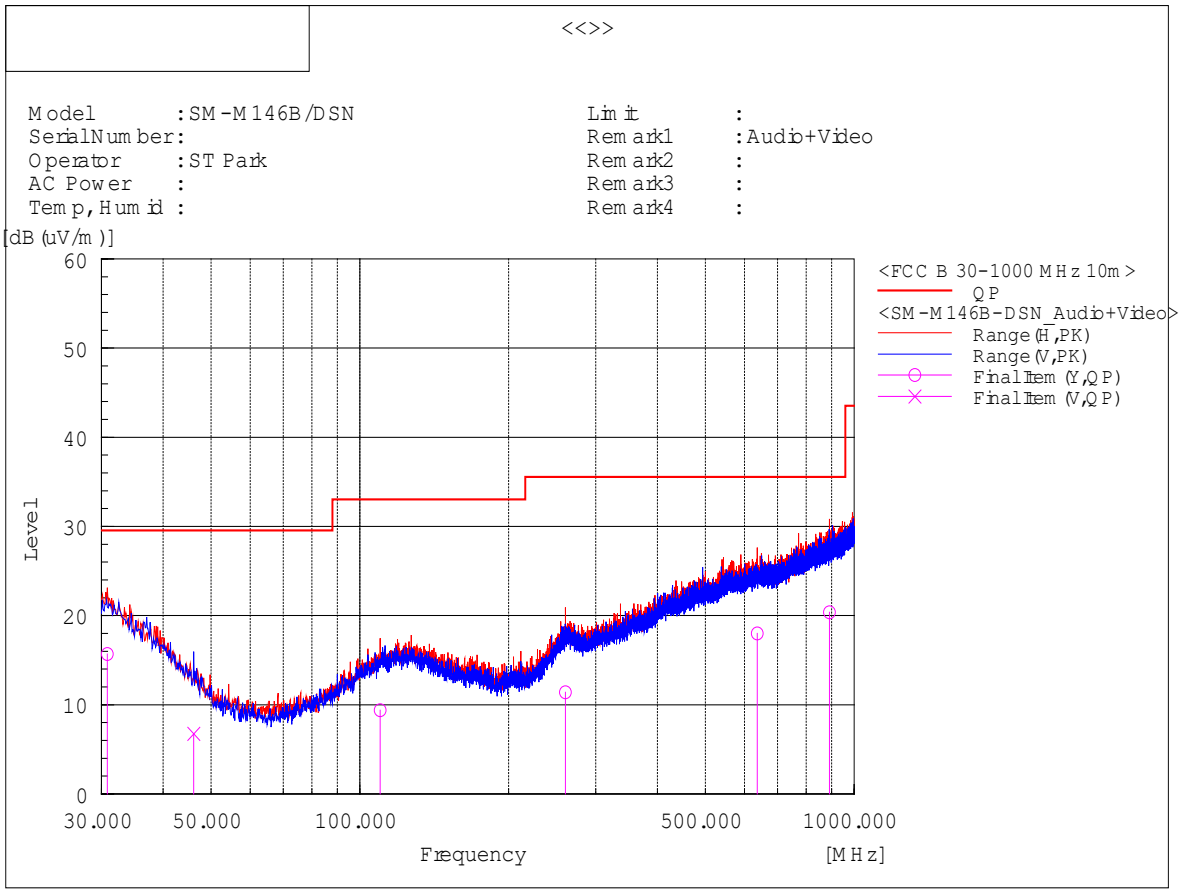
□ Operating Mode 4

- 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	30.849	H	23.1	-7.4	15.7	29.5	13.8	102	42	1
2	46.126	V	22.1	-15.3	6.8	29.5	22.7	198	281	2
3	109.904	H	22.4	-13.0	9.4	33.0	23.6	150	155	1
4	260.618	H	21.7	-10.3	11.4	35.5	24.1	121	306	1
5	636.493	H	21.4	-3.4	18.0	35.5	17.5	151	27	1
6	891.481	H	20.7	-0.3	20.4	35.5	15.1	270	58	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

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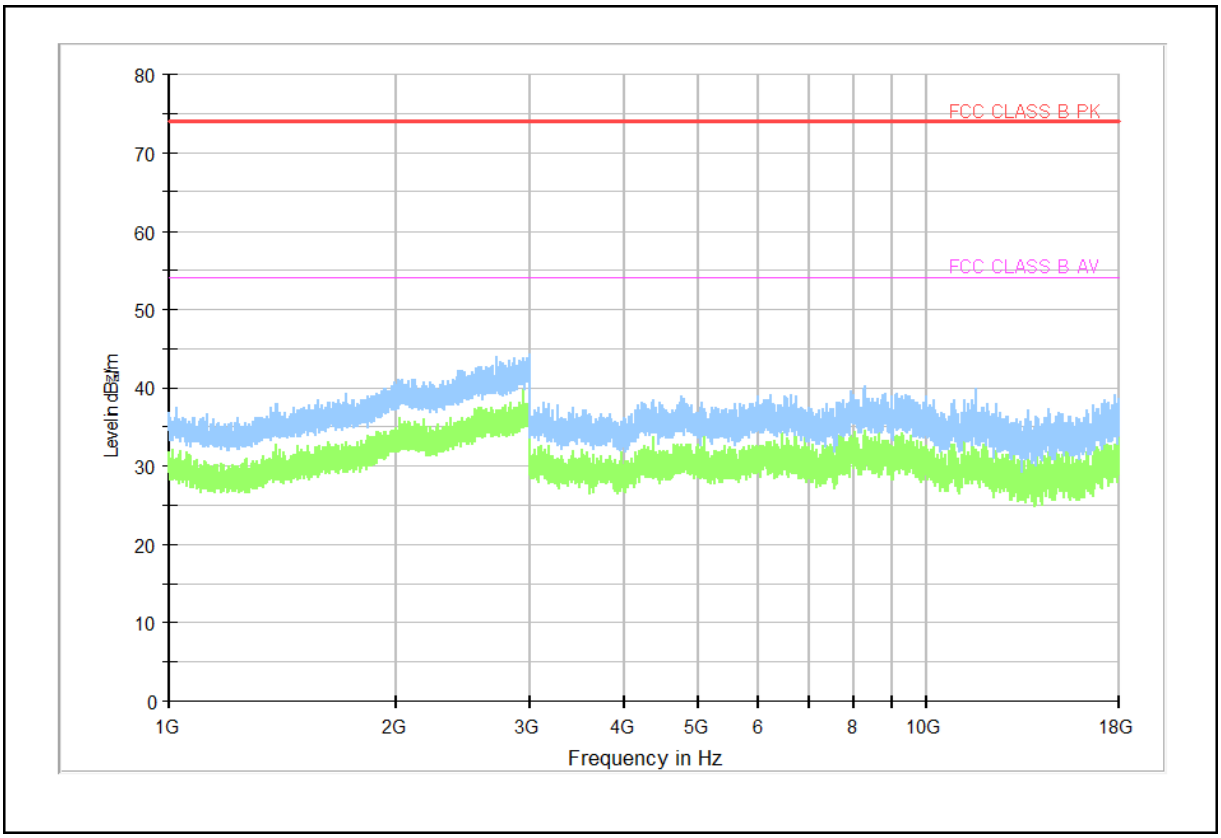
- Frequencies above 1 GHz



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

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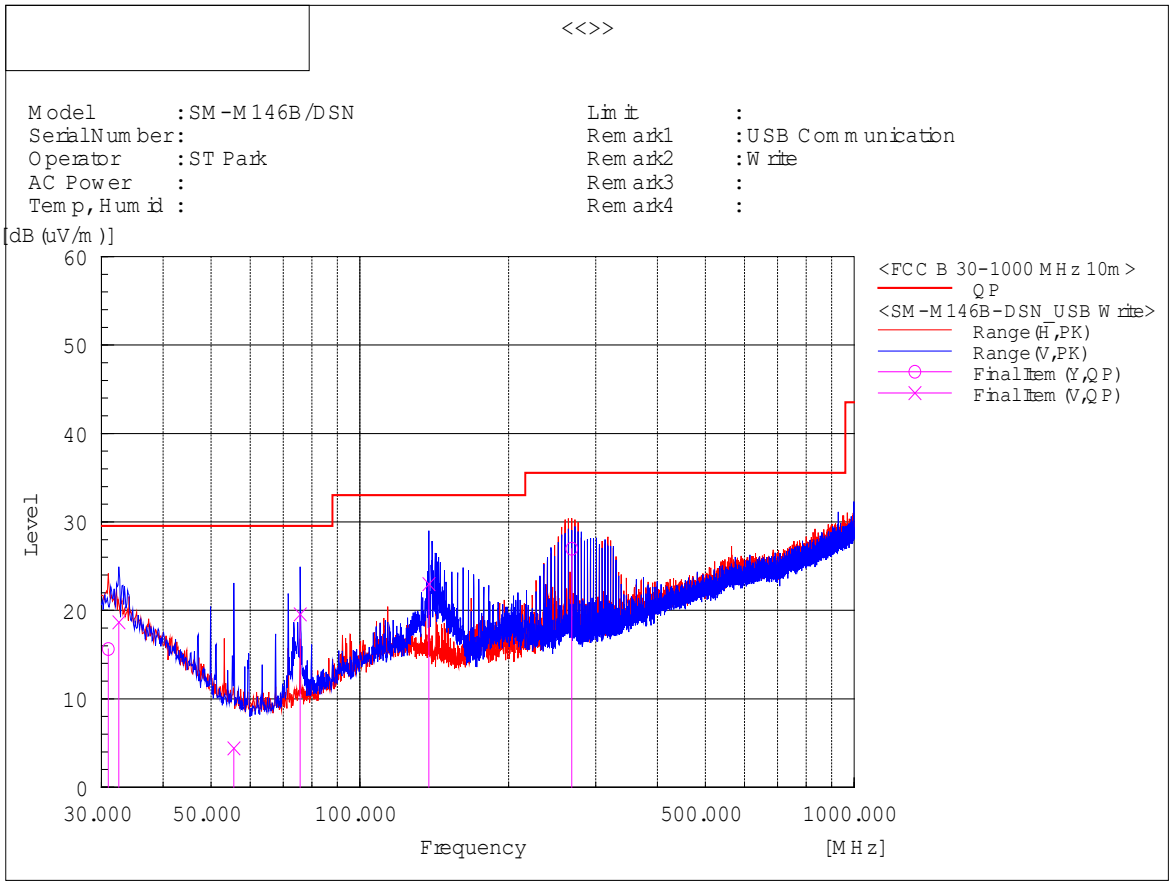
□ Operating Mode 5

- 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	30.970	H	23.0	-7.4	15.6	29.5	13.9	113	100	1
2	32.546	V	26.6	-7.9	18.7	29.5	10.8	100	60	2
3	55.584	V	22.9	-18.5	4.4	29.5	25.1	111	177	2
4	75.711	V	37.7	-18.1	19.6	29.5	9.9	147	270	2
5	137.913	V	35.8	-12.8	23.0	33.0	10.0	100	280	2
6	268.256	H	37.5	-10.5	27.0	35.5	8.5	400	276	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

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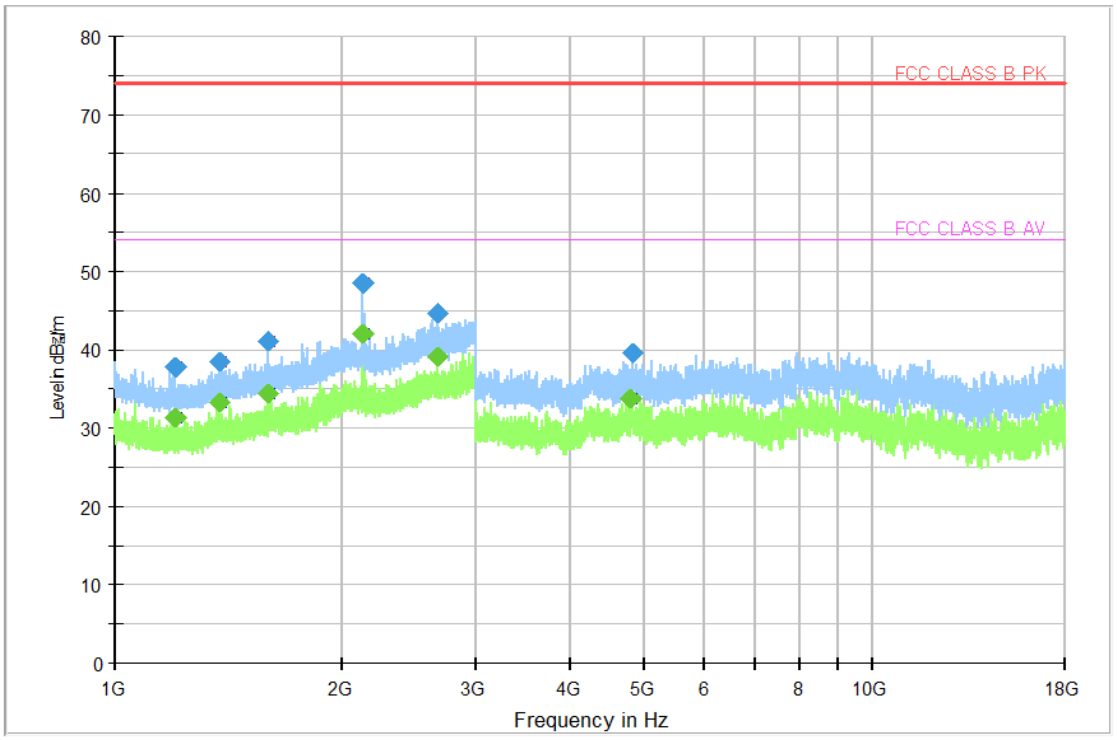
- Frequencies above 1 GHz



Frequency (MHz)	PK (dBµV/m)	CAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1 200.600	---	31.30	54.00	22.70	102.00	H	76.00	8.00
1 200.600	37.78	---	74.00	36.22	103.70	H	76.00	8.00
1 374.600	---	33.31	54.00	20.69	109.10	V	30.00	10.00
1 374.600	38.54	---	74.00	35.46	101.00	V	30.00	10.00
1 589.000	---	34.48	54.00	19.52	102.80	V	85.00	11.00
1 592.400	41.14	---	74.00	32.86	101.10	V	82.00	11.00
2 128.400	---	42.07	54.00	11.93	108.00	V	342.00	14.00
2 128.400	48.43	---	74.00	25.57	104.50	V	342.00	14.00
2 666.600	---	39.03	54.00	14.97	103.10	V	330.00	17.00
2 666.600	44.66	---	74.00	29.34	104.70	V	330.00	17.00
4 804.000	---	33.76	54.00	20.24	105.10	V	53.00	5.00
4 817.500	39.58	---	74.00	34.42	101.20	H	309.00	5.00

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

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