EMC TEST REPORT

Project No.	LBE20190808	**Issue No.**	3
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 22, 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	A3LSMN976B	
	Kind of product	Mobile Phone	
	Model No.	SM-N976B	
	Variant Model No.	Refer to clause 4.6	
	Manufacturer	Samsung Electronics Vietnam Co., Ltd. KCN Yen Phong Industrial Zone 1, Yen Trung, Yen Phong, Bac Ninh, 2300325764, VNM	
Applied Standards		47 CFR Part 15, Subpart B, Class B / ANSI C63.4-2014	
Test Period		May 23, 2019 ~ June 17, 2019	
Issue date		June 28, 2019	

Test result : Complied

The equipment under test has found to be compliant with the applied standards.
(Refer to the attached test result for more detail.)

Tested by : Soo-Joon Kim S. J. Kim	**Reviewed by** : Young-Hun Kim Y. H. Kim

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

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1. Report Information

1.1 Revision history

No.	Date of Issue	Revised detailed information
Issue 0	June 21, 2019	There are no revisions and this version is basic test report.
Issue 1	June 24, 2019	The battery model name was changed as per customer's request.
Issue 2	June 27, 2019	The variant models were deleted and S-Pen model name was added as per customer's request.
Issue 3	June 28, 2019	The ESU 8 calibration date on page 18 was corrected. (2019-05-29 → 2018-06-08)

1.2 Licensed band test report no.

No.	Remark
4789009800-E1	The cellular receiver mode refers to the radiated spurious emissions test report.

2. Summary of test results

2.1 Emission

The EUT has been tested according to the following specifications:

Applied	Test type	Applied standard	Result
☒	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.

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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.

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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:

Mark	Description	Model No.	Serial No.	Manufacturer / Trademark	FCC ID
A	Mobile Phone	SM-N976B	-	SAMSUNG	A3LSMN976B
B	Battery	EB-BN972ABU L	-	SAMSUNG	-
C	Headset	YBD-19HS-008	-	SAMSUNG	-
D	Data Cable	EP-DN970BBE	-	SAMSUNG	-
E	Micro SD Card	64GB	-	SAMSUNG	-
F	Laptop Computer	Latitude5580	1CHRYM2	Dell	-
			D3HRYM2	Dell	-
G	Laptop AC Adapter	LA65NM130	5D77	Dell	-
			5DEA	Dell	-
H	Mouse	AA-SM7PCP	CN57BA5903634ADV 8JK281082	SAMSUNG	-
			CNBA5903634ADV8J 31O3050	SAMSUNG	-
I	Router	DIR-806A	RF0F1D5000688	D-Link	-
			RF0F1D8011504	D-Link	-
J	Travel Adapter	EP-TA800	R37M4PW6M11SE3	SAMSUNG	-
K	DP Monitor	27UD88	711NTQD8H004	LG	-
L	DP Monitor AC Adapter	LCAP31	EH8NN629490055062	LG	-
M	DP Cable	JCA141	BW2K1709000770	J5CREATE	-
N	OTG Gender	EE-UG970	-	SAMSUNG	-
O	USB Memory Stick	64GB	-	Sandisk	-
-	S-Pen	EJ-PN970	-	SAMSUNG	-

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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 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) + USB OTG (w/ USB gender: memory stick)
3	Video + Audio playback from internal memory data (w/ Headset)
4	Video + Audio playback from internal memory data + Display out (w/ USB to HDMI converter or Direct DP Cable)
5	USB Data Communication with PC (from external memory data)

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:

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

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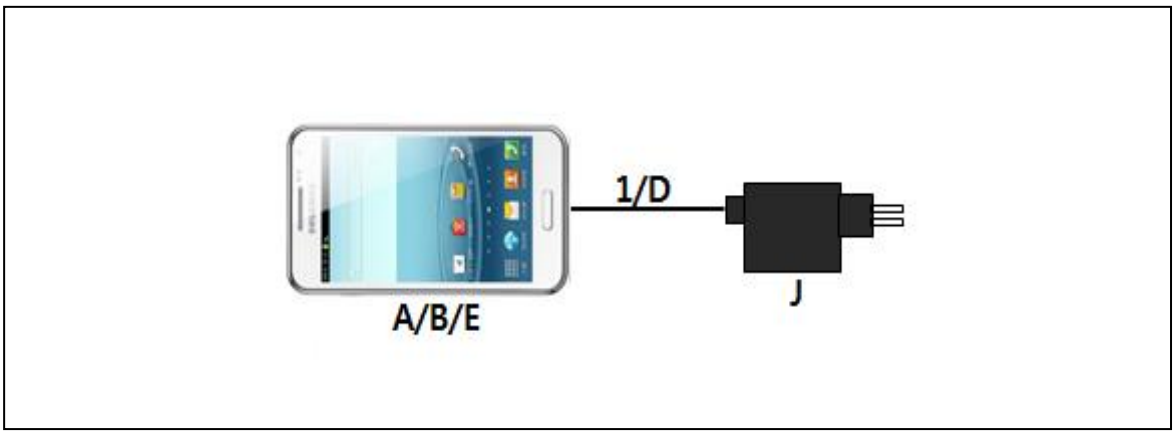
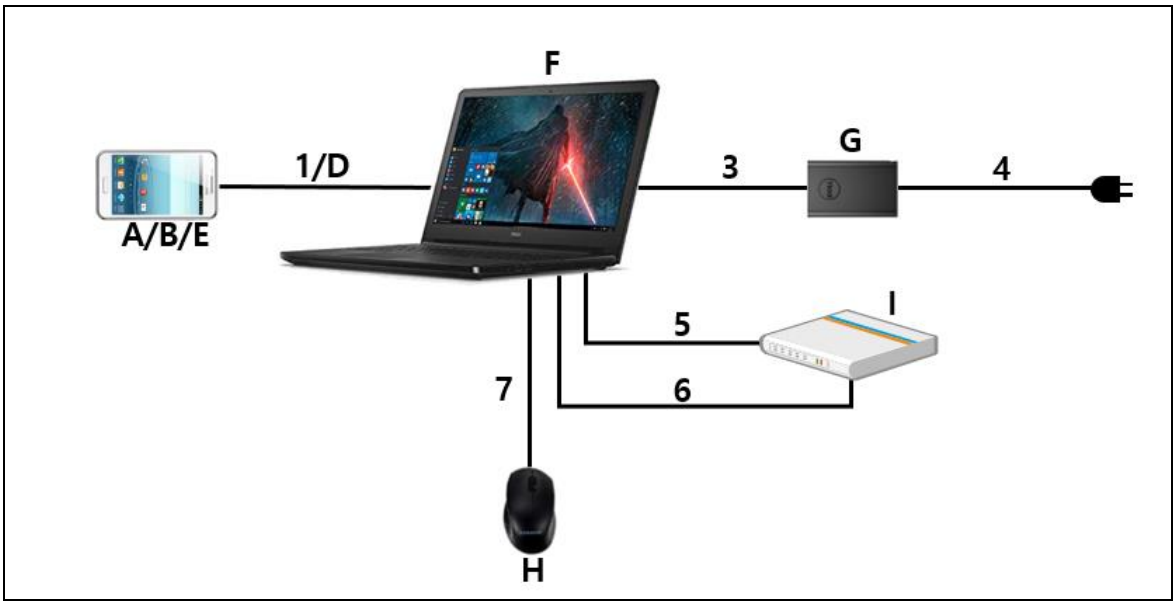
4.5 Test arrangement

4.5.1 Conducted Emission



[Mode 1 - 3]



[Mode 4]

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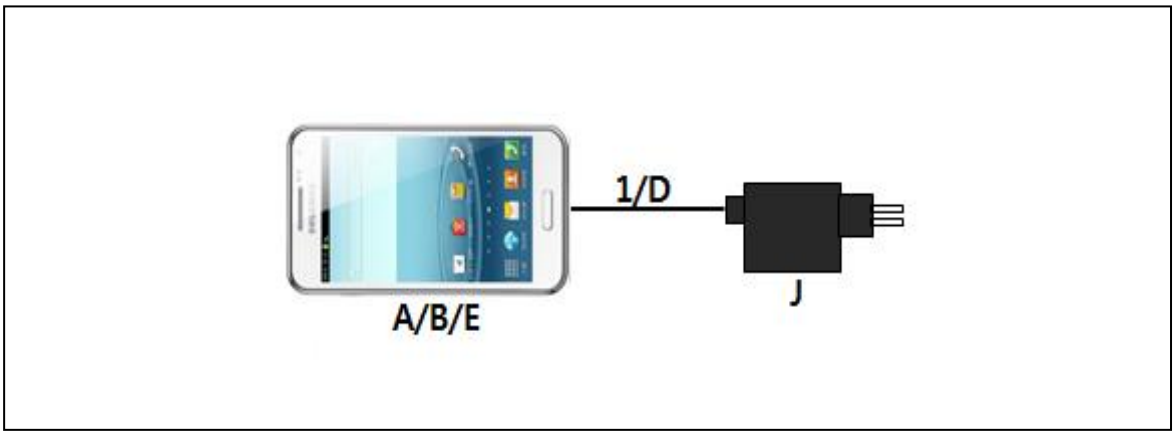
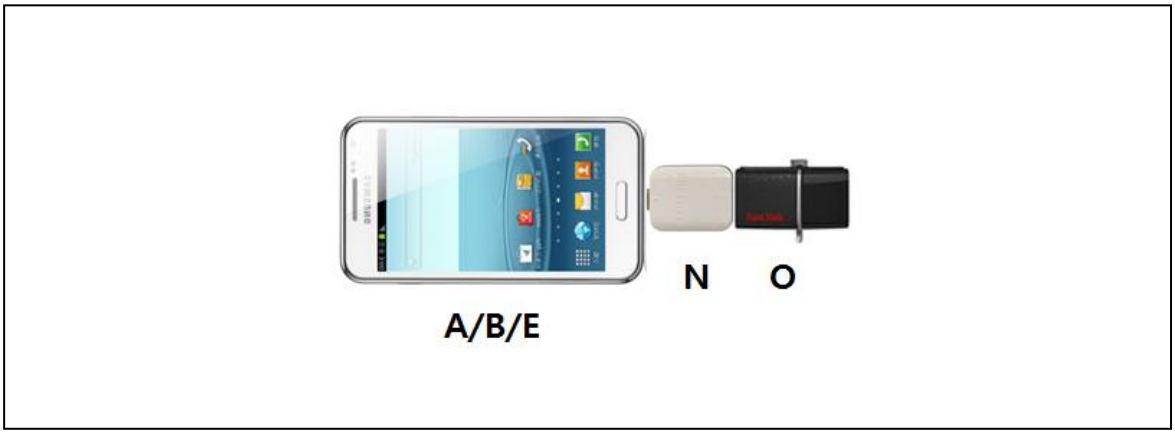
4.5.2 Radiated Emission



[Mode 1]



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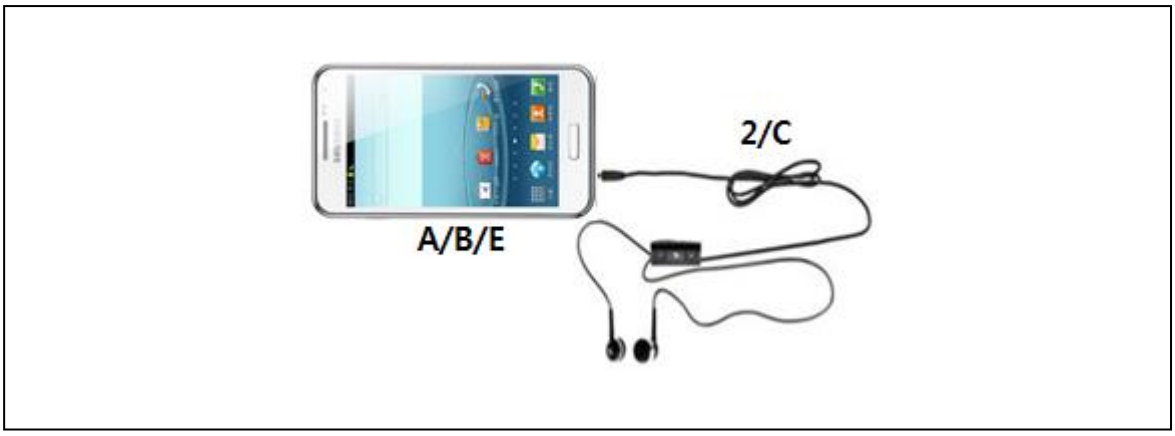

[Mode 3]

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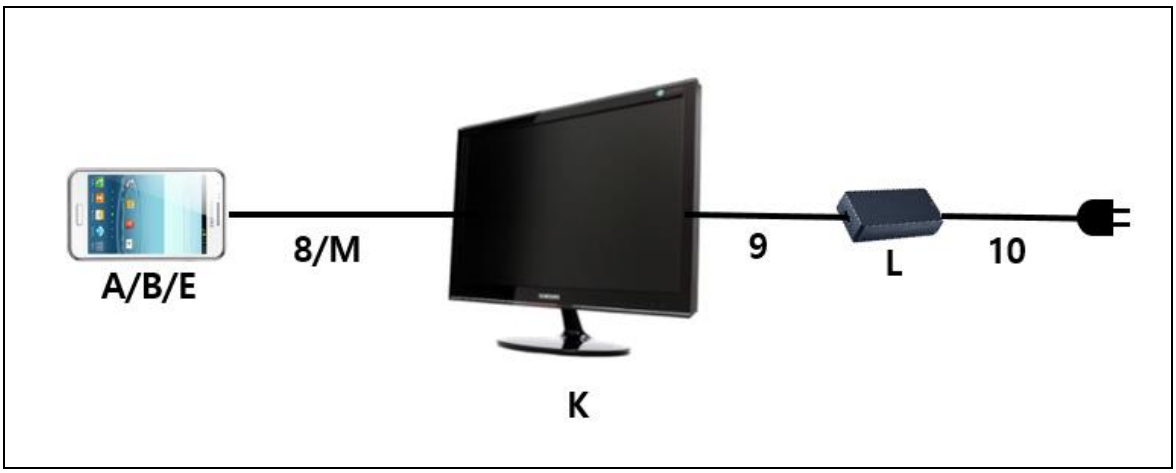

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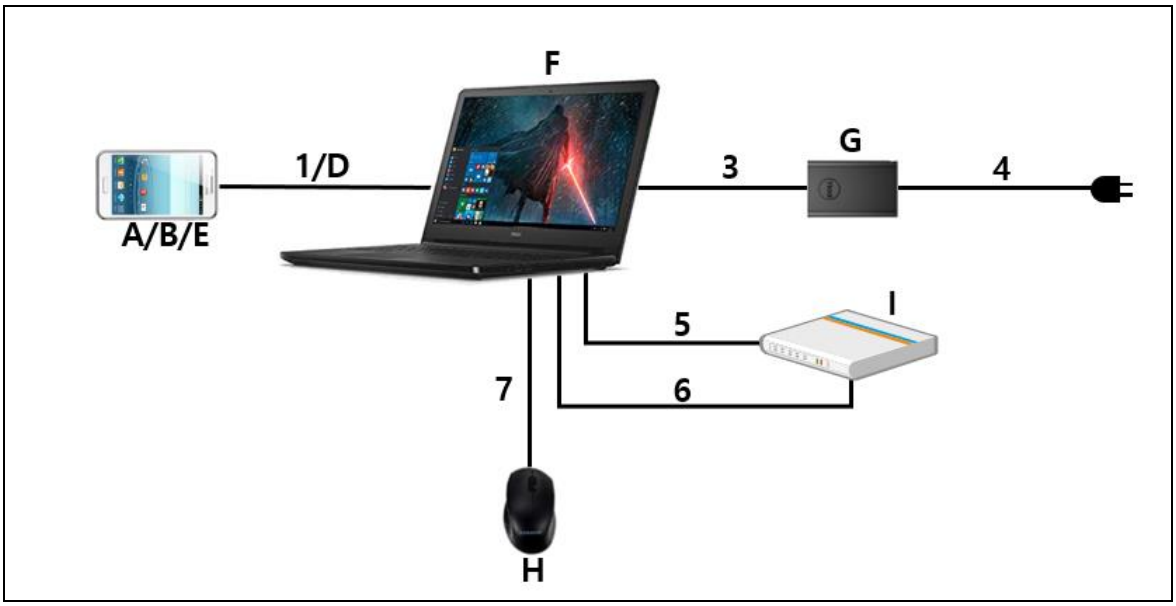

[Mode 5]

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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 FDD1/2/4/5/8, TD-SCDMA B34/B39, LTE FDD1/2/3/4/5/7/8/12/13/17/18/19/20/25 /26/28/32/66, LTE TDD38/39/40/41, NR n78 and incorporate Bluetooth, ANT+, Wi-Fi, GNSS, NFC, MST, OTG, DP, Wireless Charging, S-Pen, Camera, 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

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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, 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.

The EUT was connected to USB Memory stick using USB OTG gender.

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

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5. Results of individual test

5.1 Conducted disturbance

The EUT was 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	2019-06-17	**Test engineer**	Soo-Joon Kim
Climate condition	Ambient temperature	(22.2 ~ 22.5) ℃	Limit (15.0 to 35.0) ℃
	Relative humidity	(44.5 ~ 45.2) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(100.6 ~ 100.9) kPa	Limit (86.0 to 106.0) kPa
Test place	Shield Room (SR8)		

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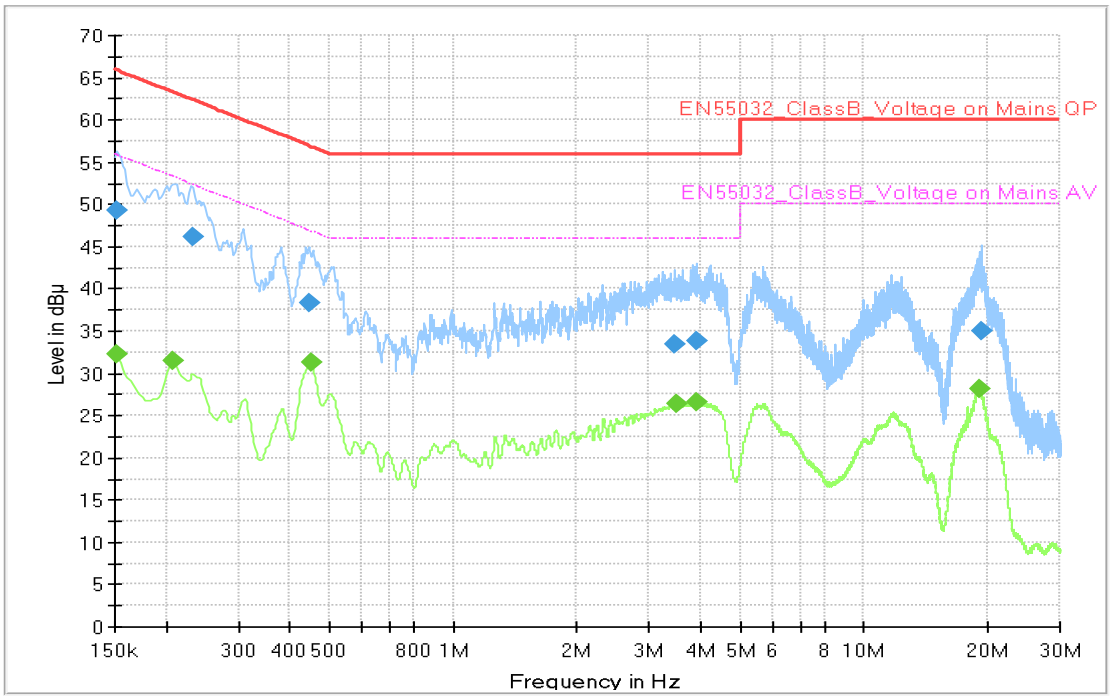
5.1.3 Test results

☐ 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)
0.152	---	32.3	55.9	23.6	L1	9.9
0.152	49.2	---	65.9	16.7	L1	9.9
0.209	---	31.5	53.3	21.8	L1	10.0
0.233	46.2	---	62.3	16.1	N	9.8
0.445	38.3	---	57.0	18.7	L1	10.2
0.452	---	31.2	46.8	15.6	L1	10.2
3.451	33.5	---	56.0	22.5	L1	10.0
3.480	---	26.4	46.0	19.6	L1	10.0
3.926	---	26.5	46.0	19.5	L1	10.0
3.930	33.8	---	56.0	22.2	L1	10.0
19.070	---	28.2	50.0	21.8	L1	10.5
19.349	35.0	---	60.0	25.0	L1	10.6

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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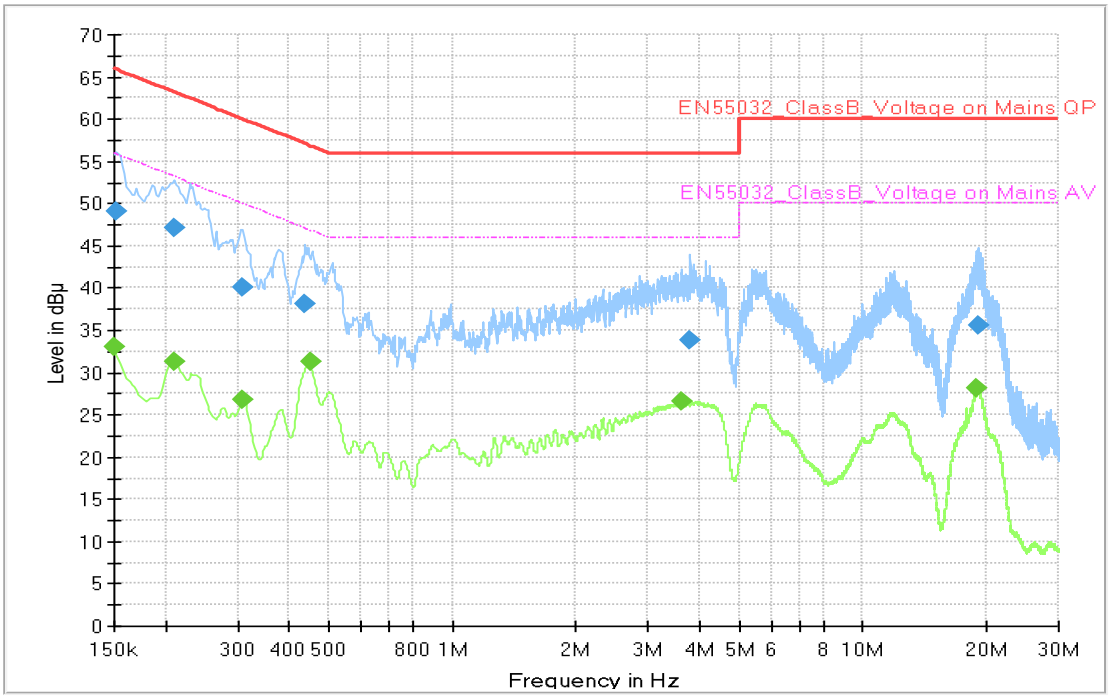
☐ Operating Mode 2: AC Mains



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)
0.150	---	33.1	56.0	22.9	L1	9.9
0.152	49.0	---	65.9	16.9	N	9.9
0.211	47.1	---	63.2	16.1	N	10.0
0.211	---	31.3	53.2	21.9	L1	10.0
0.308	40.1	---	60.0	19.9	L1	10.0
0.310	---	26.8	50.0	23.2	L1	10.0
0.438	38.2	---	57.1	18.9	L1	10.2
0.449	---	31.2	46.9	15.7	L1	10.2
3.620	---	26.6	46.0	19.4	L1	10.0
3.804	33.9	---	56.0	22.1	L1	10.0
19.003	---	28.2	50.0	21.8	L1	10.5
19.037	35.6	---	60.0	24.4	L1	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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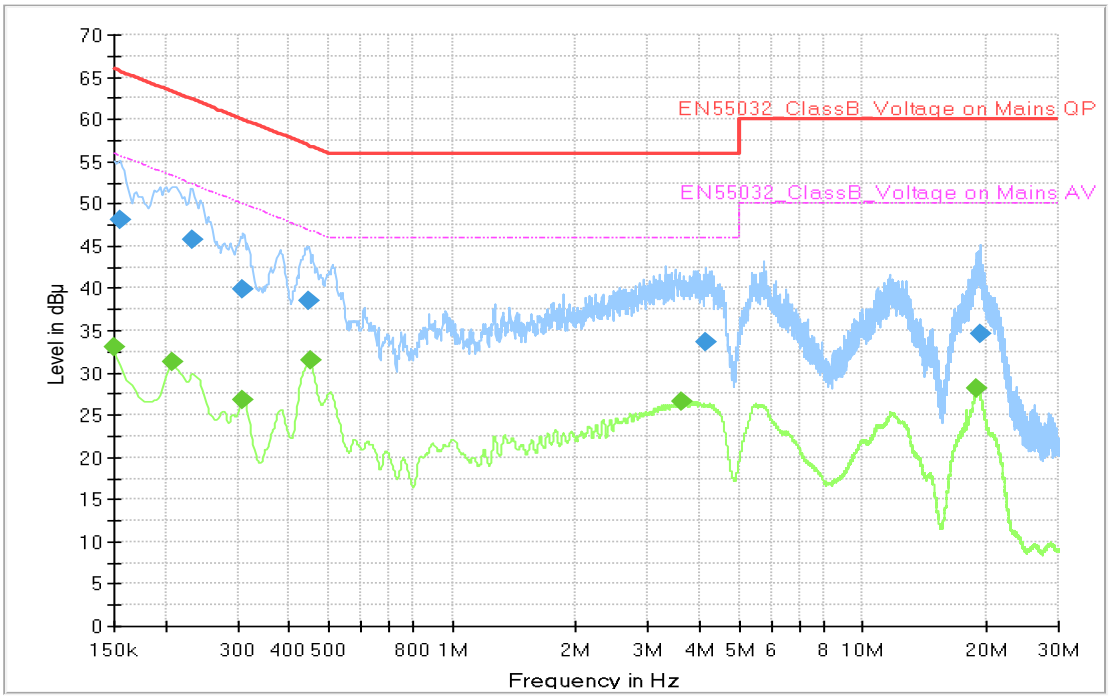
☐ Operating Mode 3: AC Mains



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)
0.150	---	33.0	56.0	23.0	L1	9.9
0.155	48.2	---	65.8	17.6	N	9.9
0.209	---	31.2	53.3	22.1	L1	10.0
0.233	45.8	---	62.3	16.5	N	9.8
0.310	---	26.8	50.0	23.2	L1	10.0
0.310	39.8	---	60.0	20.2	N	10.0
0.447	38.6	---	56.9	18.3	L1	10.2
0.452	---	31.4	46.8	15.4	L1	10.2
3.622	---	26.6	46.0	19.4	L1	10.0
4.142	33.7	---	56.0	22.3	L1	10.0
19.010	---	28.2	50.0	21.8	L1	10.5
19.320	34.7	---	60.0	25.3	L1	10.6

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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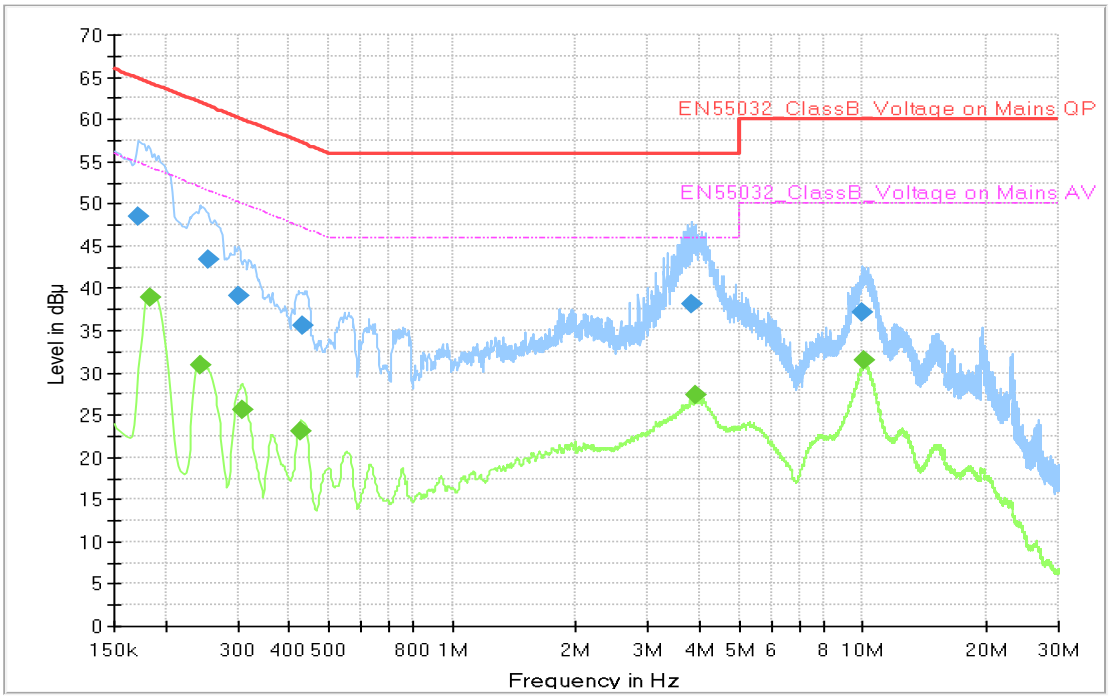
☐ Operating Mode 4: AC Mains



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)
0.173	48.5	---	64.8	16.3	L1	9.8
0.184	---	38.9	54.3	15.4	L1	9.9
0.245	---	30.8	51.9	21.1	L1	9.7
0.256	43.5	---	61.6	18.1	N	9.7
0.301	39.1	---	60.2	21.1	L1	9.8
0.308	---	25.6	50.0	24.4	L1	9.9
0.429	---	23.0	47.3	24.3	L1	10.0
0.431	35.5	---	57.2	21.7	L1	10.0
3.845	38.2	---	56.0	17.8	L1	9.8
3.932	---	27.4	46.0	18.6	N	9.7
10.014	37.2	---	60.0	22.8	L1	9.8
10.070	---	31.6	50.0	18.4	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

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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 [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

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.	Calibration	
					Date	Interval (Month)
E5I-171	LTE Communicator	CMW500	R&S	154667	2018-08-07	12
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	Wide Band 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-075	Preamplifier	310N	SONOMA	332016	2019-05-09	12
E5I-076	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 ~ 2019-05-24	**Test engineer**	Soo-Joon Kim
Climate condition	Ambient temperature	(22.3 ~ 22.7) ℃	Limit (15.0 to 35.0) ℃
	Relative humidity	(40.6 ~ 44.9) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(100.1 ~ 100.9) kPa	Limit (86.0 to 106.0) kPa
Test place	Semi-Anechoic Chamber (SAC4)		

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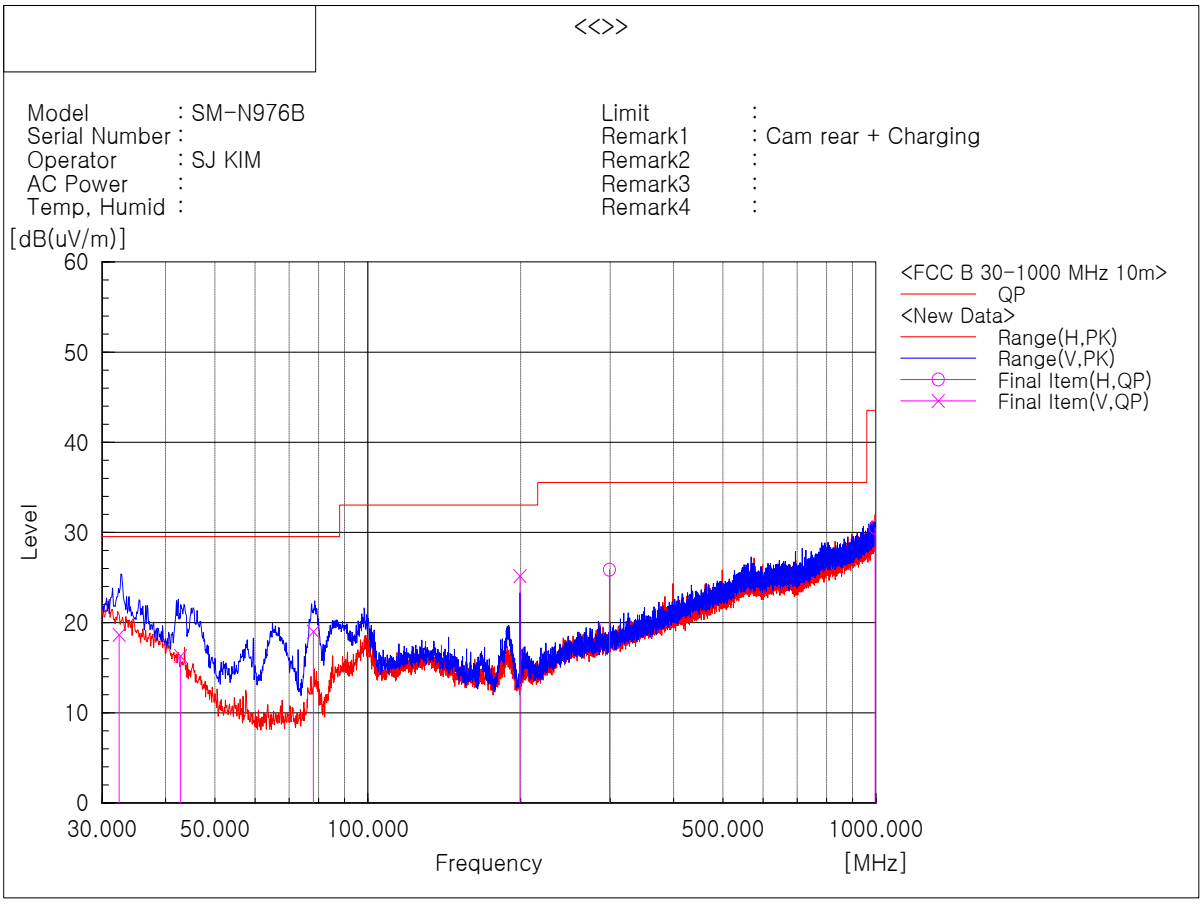
5.2.3 Test results

☐ Operating Mode 1

- Frequencies below 1 GHz



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	System
1	32.393	V	25.2	-6.6	18.6	29.5	10.9	102	92	2
2	42.804	V	27.9	-11.6	16.3	29.5	13.2	118	137	2
3	78.141	V	36.0	-17.0	19.0	29.5	10.5	188	237	2
4	199.340	V	39.1	-13.9	25.2	33.0	7.8	118	346	2
5	299.014	H	36.4	-10.5	25.9	35.5	9.6	291	201	1
6	996.650	H	29.4	1.1	30.5	43.5	13.0	100	37	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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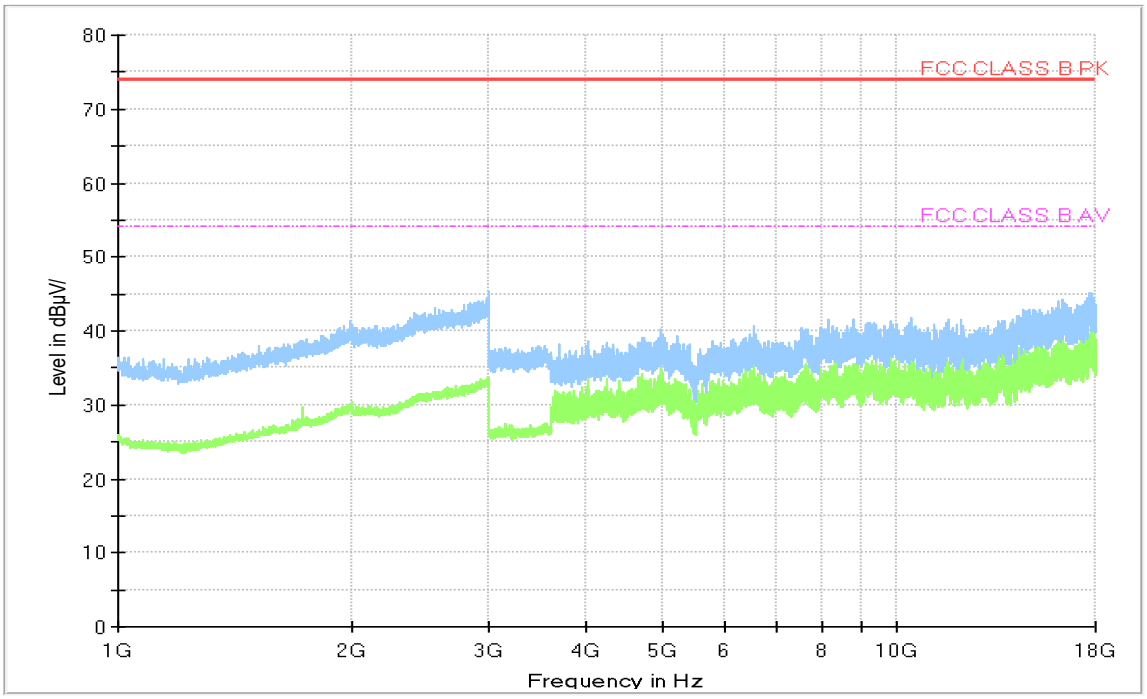
- Frequencies above 1 GHz



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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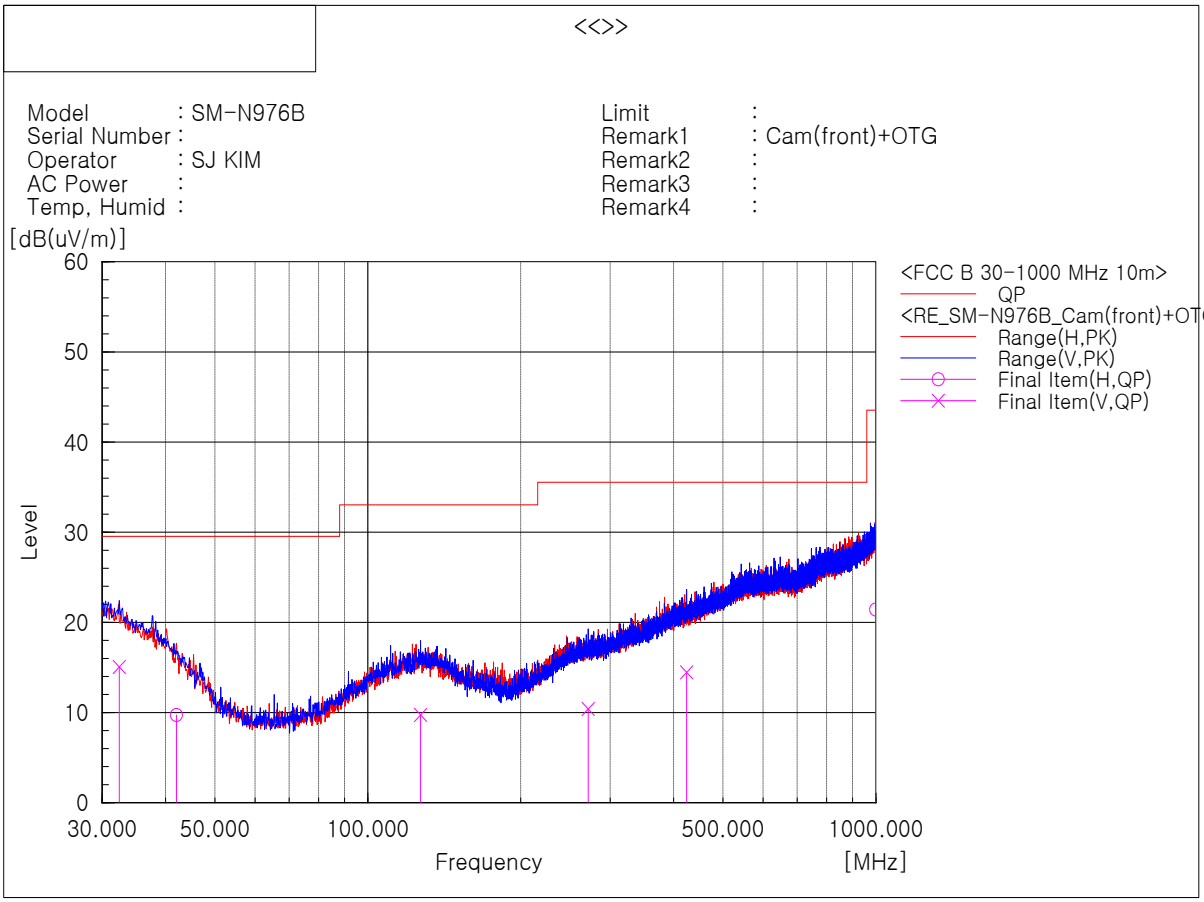
☐ Operating Mode 2

- 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	32.425	V	21.7	-6.6	15.1	29.5	14.4	100	311	2
2	42.004	H	22.3	-12.6	9.7	29.5	19.8	400	303	1
3	127.000	V	20.9	-11.2	9.7	33.0	23.3	100	142	2
4	271.530	V	20.1	-9.7	10.4	35.5	25.1	300	126	2
5	424.184	V	20.0	-5.5	14.5	35.5	21.0	400	7	2
6	999.272	H	20.2	1.2	21.4	43.5	22.1	100	193	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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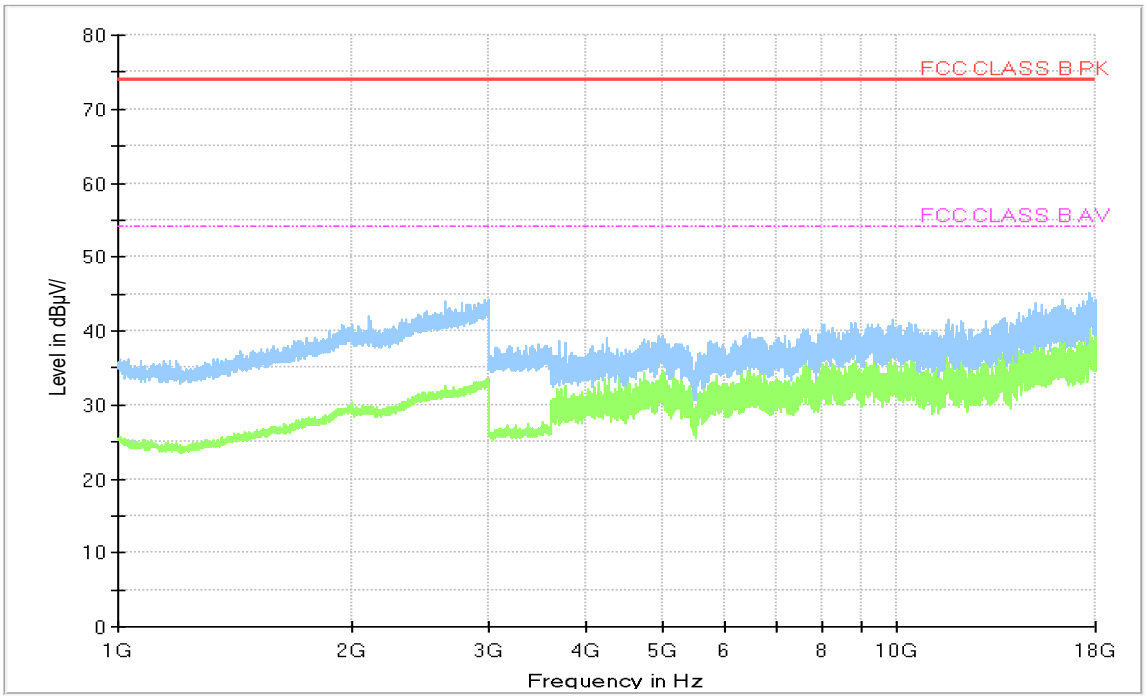
- Frequencies above 1 GHz



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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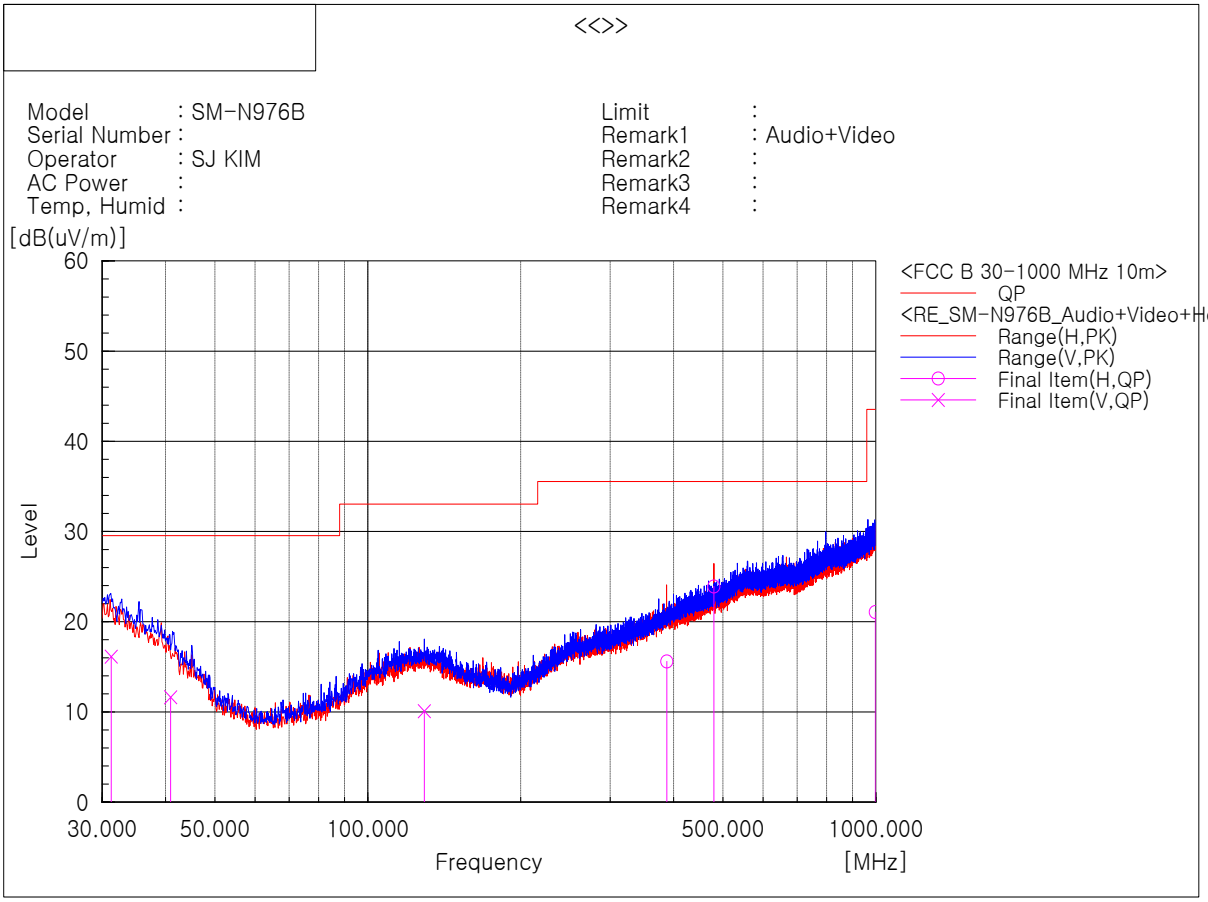
☐ Operating Mode 3

- 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	31.257	V	22.3	-6.2	16.1	29.5	13.4	112	133	2
2	40.917	V	22.0	-10.4	11.6	29.5	17.9	232	241	2
3	129.179	V	21.3	-11.2	10.1	33.0	22.9	125	11	2
4	387.726	H	23.6	-8.0	15.6	35.5	19.9	244	23	1
5	480.064	H	30.1	-6.2	23.9	35.5	11.6	194	25	1
6	997.524	H	20.0	1.1	21.1	43.5	22.4	278	5	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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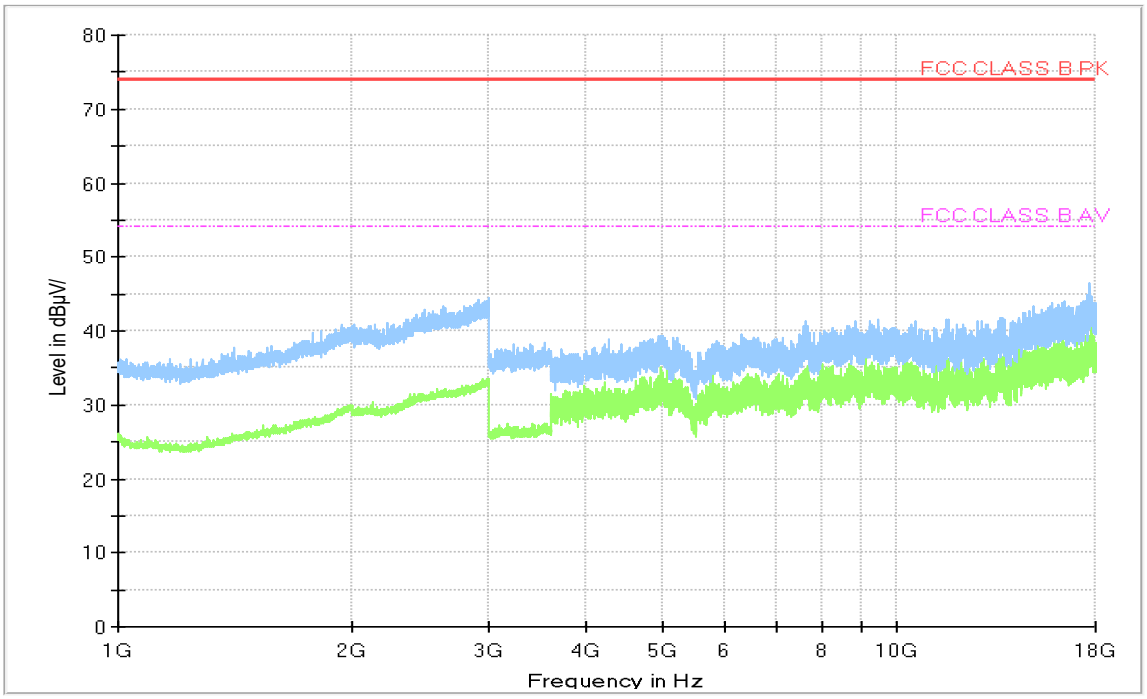
- Frequencies above 1 GHz



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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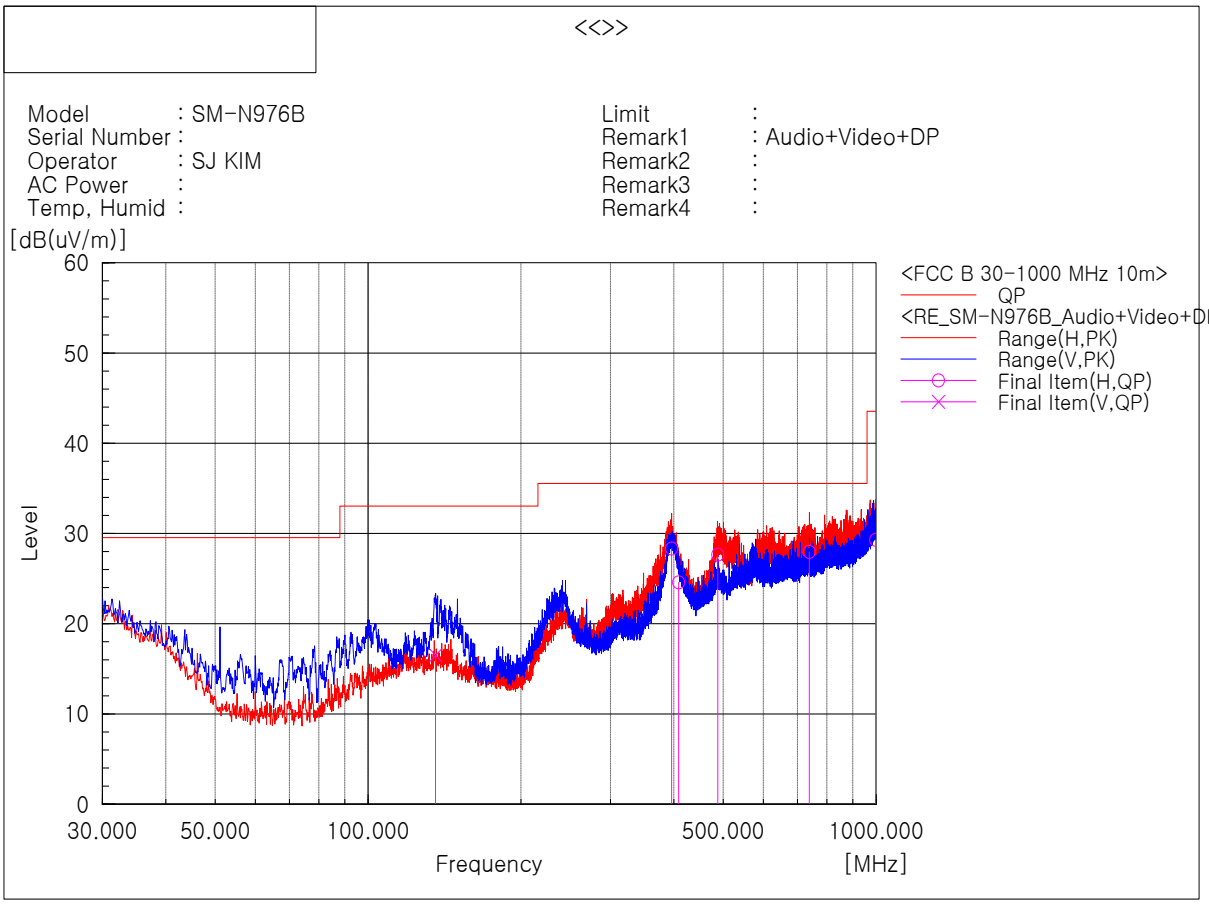
☐ Operating Mode 4

- 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	135.740	V	27.7	-11.2	16.5	33.0	16.5	100	0	2
2	395.761	H	36.1	-7.8	28.3	35.5	7.2	265	186	1
3	408.734	H	32.0	-7.4	24.6	35.5	10.9	221	184	1
4	487.944	H	33.7	-6.0	27.7	35.5	7.8	163	147	1
5	738.903	H	30.9	-2.9	28.0	35.5	7.5	118	155	1
6	998.362	H	28.1	1.2	29.3	43.5	14.2	102	173	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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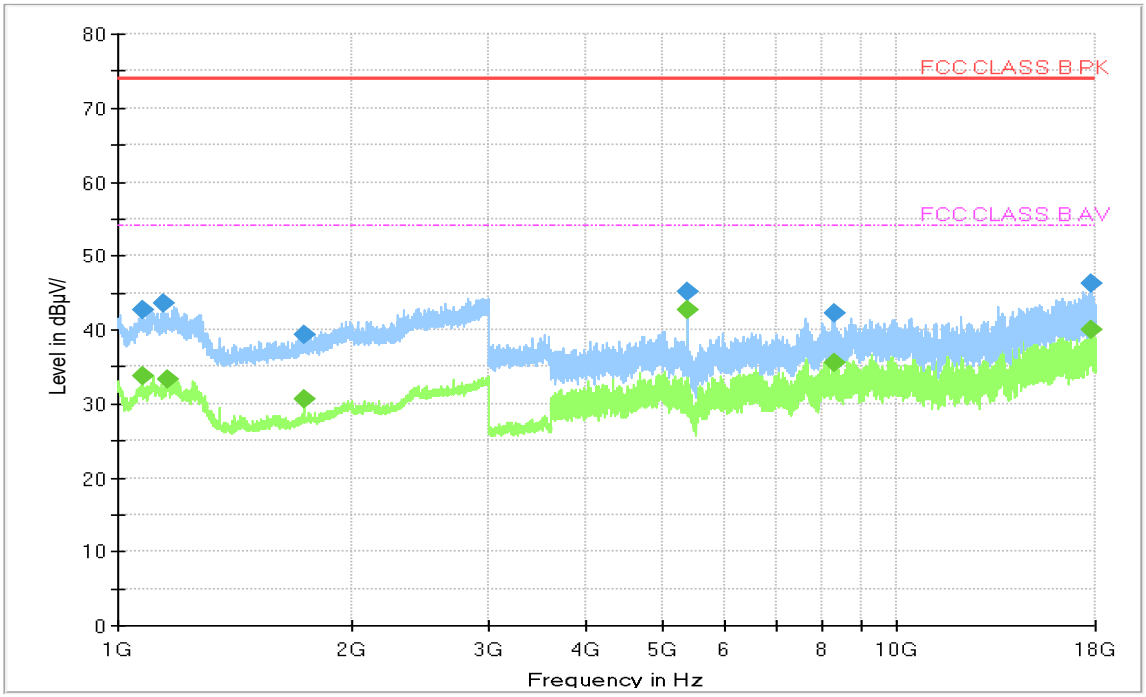
- Frequencies above 1 GHz



Frequency (MHz)	PK (dBµV/m)	CAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1 077.000	---	33.7	54.0	20.3	105.0	H	246.0	6.3
1 077.000	42.7	---	74.0	31.3	110.0	H	246.0	6.3
1 145.000	43.6	---	74.0	30.4	100.0	H	36.0	6.3
1 159.500	---	33.3	54.0	20.7	100.0	H	30.0	6.3
1 732.000	---	30.6	54.0	23.4	102.0	V	86.0	10.3
1 732.500	39.3	---	74.0	34.7	100.0	V	86.0	10.3
5 399.500	45.0	---	74.0	29.0	110.0	H	130.0	6.7
5 400.000	---	42.7	54.0	11.3	114.0	H	116.0	6.7
8 331.500	---	35.6	54.0	18.4	100.0	H	176.0	13.4
8 331.500	42.3	---	74.0	31.7	100.0	H	176.0	13.4
17 826.000	---	40.1	54.0	13.9	100.0	H	67.0	30.5
17 826.000	46.4	---	74.0	27.6	100.0	H	67.0	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

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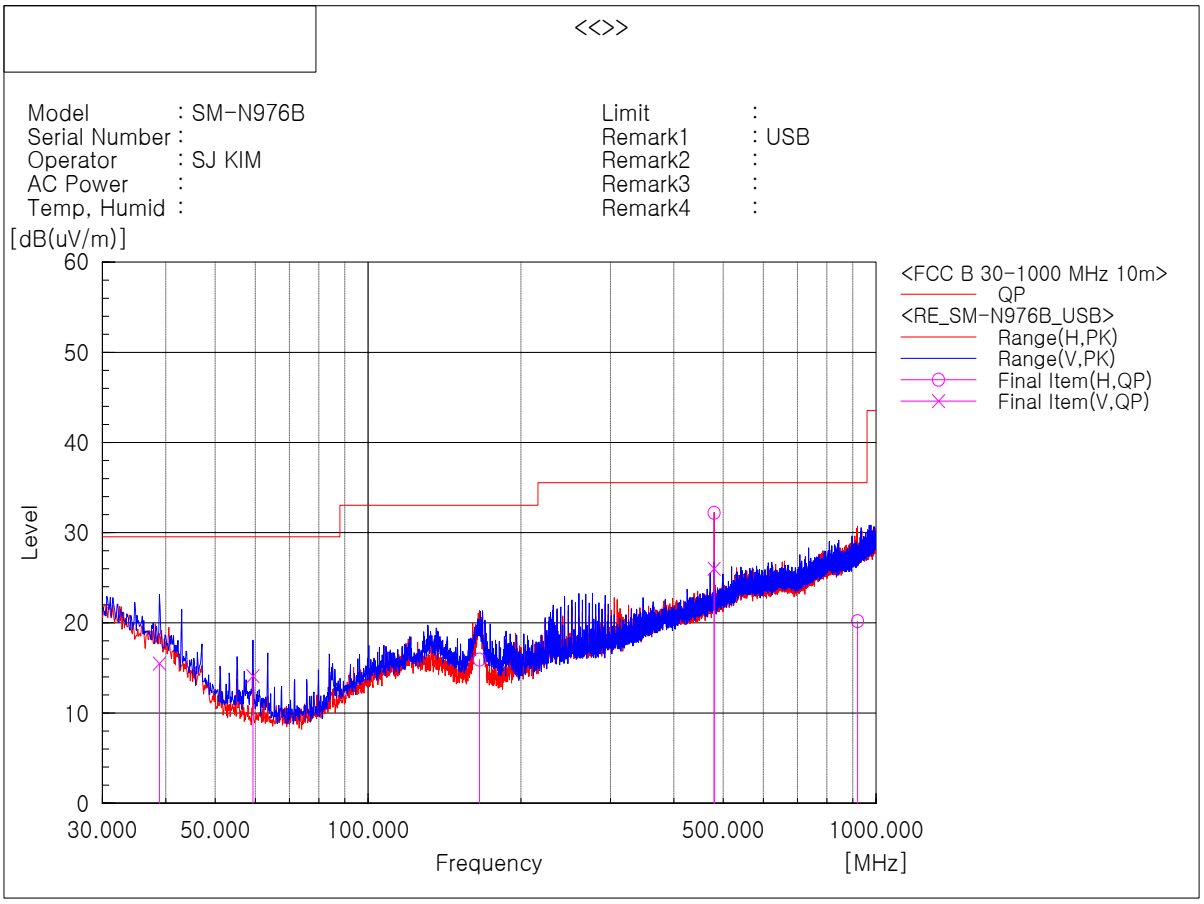
☐ Operating Mode 5

- 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	38.851	V	24.8	-9.3	15.5	29.5	14.0	200	250	2
2	59.343	V	32.2	-18.1	14.1	29.5	15.4	200	116	2
3	165.679	H	30.4	-14.5	15.9	33.0	17.1	400	24	1
4	479.991	H	38.4	-6.2	32.2	35.5	3.3	261	52	1
5	480.023	V	30.5	-4.5	26.0	35.5	9.5	357	337	2
6	919.500	H	20.9	-0.7	20.2	35.5	15.3	120	200	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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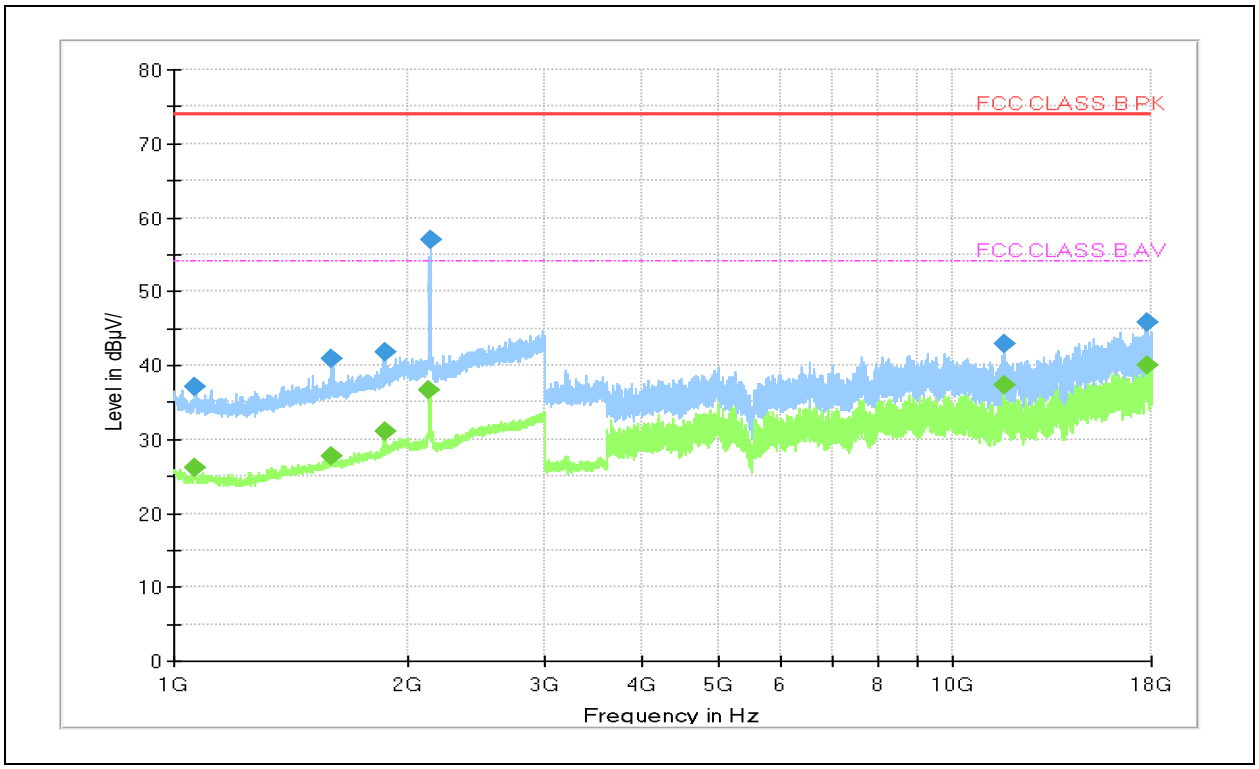
- Frequencies above 1 GHz



Frequency (MHz)	PK (dBµV/m)	CAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1 064.000	37.1	---	74.0	36.9	100.0	V	0.0	6.2
1 065.500	---	26.2	54.0	27.8	101.0	V	185.0	6.2
1 594.000	---	27.7	54.0	26.3	100.0	V	174.0	9.4
1 595.000	40.9	---	74.0	33.1	100.0	V	0.0	9.4
1 864.000	---	31.1	54.0	22.9	103.0	V	146.0	11.1
1 864.000	41.8	---	74.0	32.2	100.0	V	146.0	11.1
2 128.500	---	36.6	54.0	17.4	105.0	V	276.0	12.4
2 132.500	57.0	---	74.0	17.0	100.0	V	350.0	12.4
11 629.000	42.8	---	74.0	31.2	110.0	H	123.0	17.9
11 642.500	---	37.3	54.0	16.7	100.0	H	50.0	17.9
17 749.000	---	40.0	54.0	14.0	100.0	H	0.0	30.4
17 757.500	45.7	---	74.0	28.3	100.0	H	80.0	30.4

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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