

EMC TEST REPORT

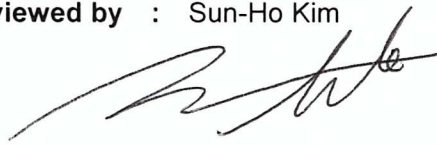
Project No.	LBE20200346	Issue No.	3
Applicant	Name of organization	Samsung Electronics Co., Ltd.	
	Address	(Maetan-dong) 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea	
	Date of application	March 23, 2020	
EUT	Type of device	☒ All other Receivers subject to part15 ☒ Class 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	A3LSMG981V	
	Kind of product	Mobile Phone	
	Model No.	SM-G981V	
	Variant Model No.	Refer to clause 4.6	
	Manufacturer	SAMSUNG ELECTRONICS CO., LTD. 302, 3 Gongdan 3-ro, Gumi-si, Gyengsangbuk-do, 39388, Republic of Korea	
Applied Standards		47 CFR Part 15, Subpart B, Class B / ANSI C63.4-2014	
Test Period		March 23, 2020 ~ May 6, 2020	
Issue date		May 6, 2020	
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 		Reviewed by : Sun-Ho 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.	Date of Issue	Revised detailed information
Issue 0	27 March 2020	There are no revisions and this version is basic test report.
Issue 1	2 April 2020	The 4.6 EUT description clause was modified as per customer's request. (added LTE FDD14, 5G NR n2,5,66,260,261 and deleted LTE FDD30)
Issue 2	6 May 2020	The 4.6 EUT description clause was modified to add LTE FDD5 band. The 4.7 EUT frequencies clause was modified to add n260 band and the radiated emission was tested up to 40 GHz.
Issue 3	6 May 2020	The 4.6 EUT description clause was modified to delete LTE FDD29.

※ Remark

Compliance with Part 15B requirements for the receiver part of the licensed transmitter (equipment code CXX) is covered by other test report.

2. Summary of test results

2.1 Emission

The EUT has been tested according to the following specifications:

Applied	Test type	Applied standard	Result
☒	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 an ISO/IEC 17025:2005 accredited testing laboratory by the National Radio Research Agency with designation No. KR0004. for EMC testing.

4. Test Setup configuration

4.1 Test Peripherals

The cables used for these peripherals are either permanently attached by the peripheral manufacturer or coupled with an assigned cable as defined below.

The following is a listing of the EUT and peripherals utilized during the performance of EMC test:

Mark	Description	Model No.	Serial No.	Manufacturer / Trademark	FCC ID
A	Mobile Phone	SM-G981V	-	SAMSUNG	A3LSMG981V
B	Battery	EB-BG980ABY	-	SAMSUNG	-
C	Headset	YBD-19HS	-	SAMSUNG	-
D	Data Cable	EP-DG980BBZ	-	SAMSUNG	-
E	Laptop Computer	Latitude5580	1WYRYM2	Dell	DoC
		Latitude5580	D3HRYM2	Dell	DoC
F	Laptop AC Adapter	LA65NM130	5DEA	Dell	DoC
		LA65NM130	5B3C	Dell	DoC
G	Mouse	SNJ-B138	Z5F8353	SAMSUNG	DoC
		AA-SM7PCPB	CNBA5903634ADV8J 31O3050	SAMSUNG	DoC
H	Router	DIR-806A	RF0F1D8018454	D-Link	DoC
			RF0F1D8011504	D-Link	DoC
I	Travel Adapter	EP-TA800	R37N2EA00B9RT3	SAMSUNG	-
J	OTG Gender	EE-UG970	-	SAMSUNG	-
K	USB Memory Stick	64GB	-	SANDISK	
L	DP Monitor	27UD88	711NTQD8H004	LG	-
M	DP Monitor AC Adaptor	LCAP31	EH8NN629490055062	LG	-
N	DP Cable	JCA141	BW2K1709000770	J5CREATE	-

4.2 EUT operating mode

To achieve compliance applied standard specification including CXX, JAB and JBP requirement, the following mode(s) were made during compliance testing:

4.2.1 Conducted Emission

No.	Operating mode
1	Camera (rear) + Charging (w/ TA) + Cellular receiver (LTE FDD26 Center Frequency)
2	Camera (front) + Charging (w/ TA)
3	Video + Audio playback from internal memory data + Charging (w/ TA)
4	USB Data Communication with PC (from external memory data)

4.2.2 Radiated Emission

No.	Operating mode
1	Camera (rear) + Charging (w/ TA)
2	Camera (front) + 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 Direct DP cable)
5	USB Data Communication with PC (from internal memory data)

4.3 Details of Sampling

Customer selected, single unit.

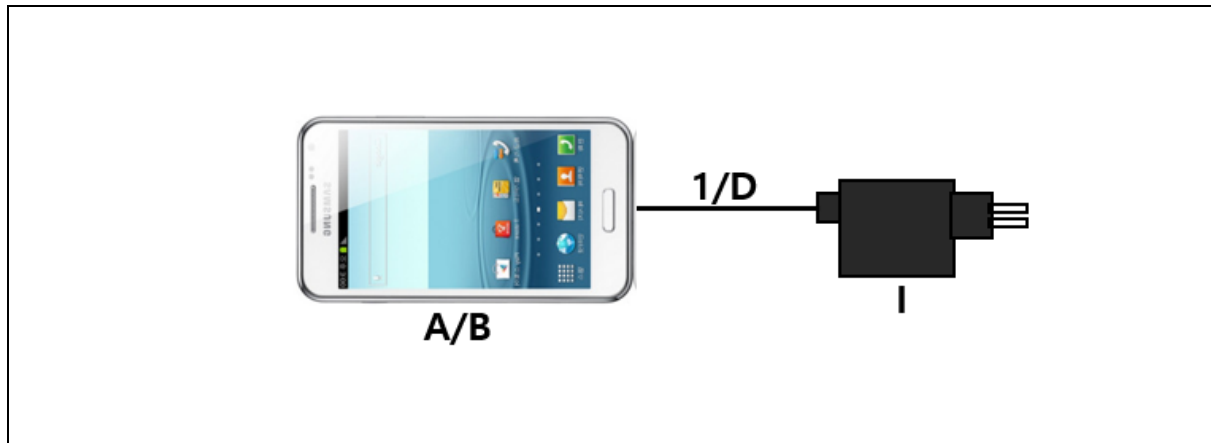
4.4 Used cable description

The EUT is configured, installed, arranged and operated in a manner consistent with typical applications. Interface cables/loads/devices are connected to at least one of each type of interface port of the EUT, and where practical, each cable shall be terminated in a device typical of actual usage. The type(s) of interconnecting cables to be used and the interface port (of the EUT) to which these were connected:

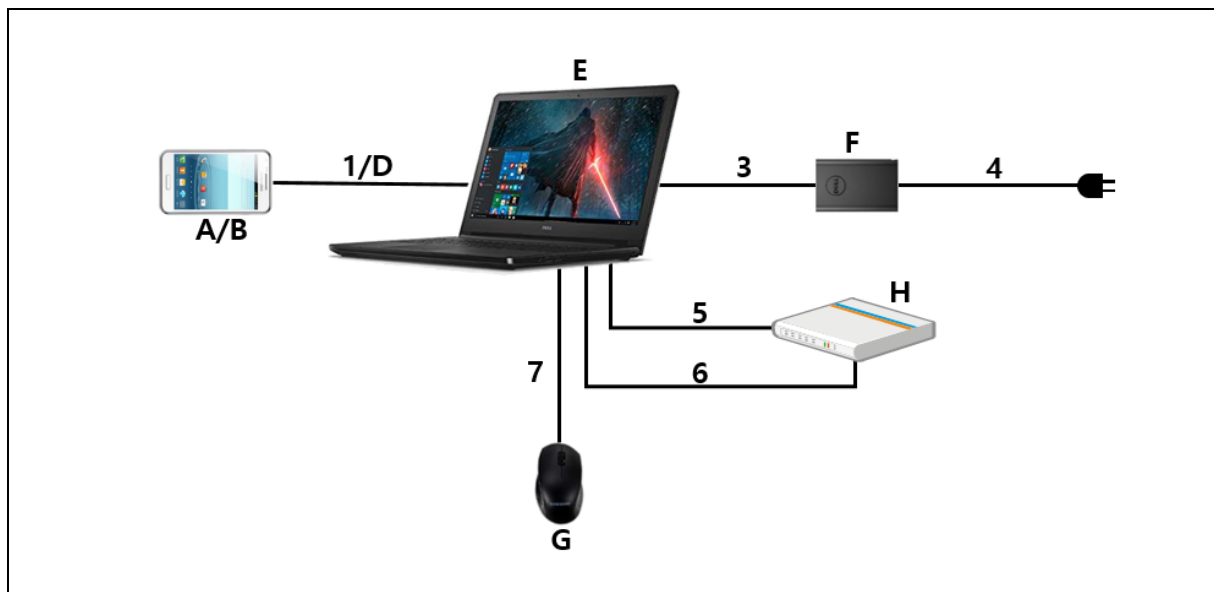
No.	Connected cable	Length [m]	Shielded [Y/N]	Note
1	Data Cable	1.0	Y	From EUT to Laptop Computer
2	Headset	1.2	N	For EUT
3	Power	1.8	N	From Laptop Computer to AC Adapter
4	Power	1.5	N	For Laptop AC Adapter
5	LAN	1.5	N	From Laptop Computer to Router
6	USB	0.8	Y	From Laptop Computer to Router for DC Power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

4.5 Test arrangement

4.5.1 Conducted Emission

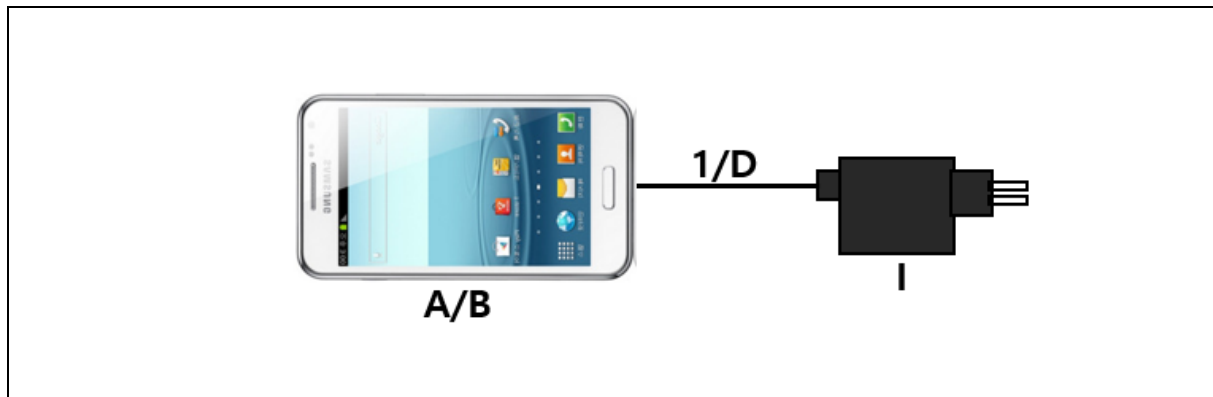


[Mode 1 - 3]

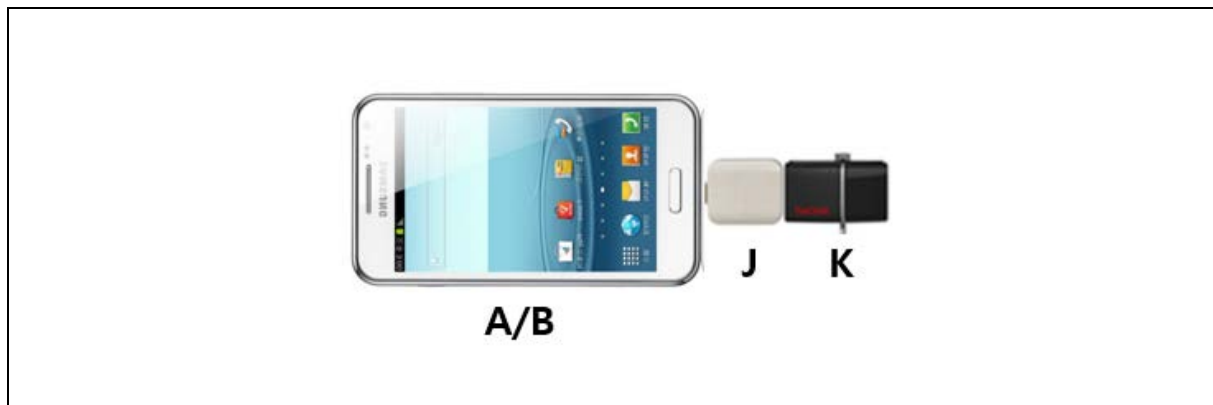


[Mode 4]

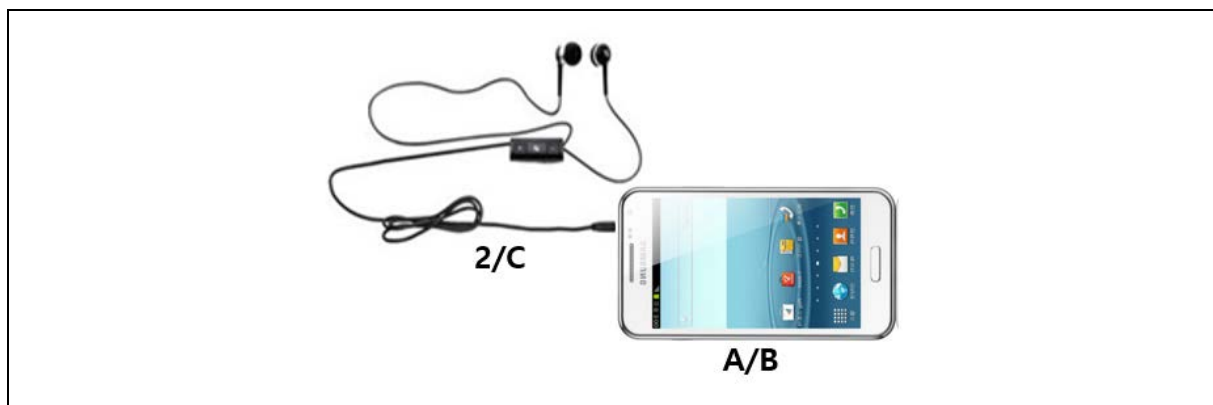
4.5.2 Radiated Emission



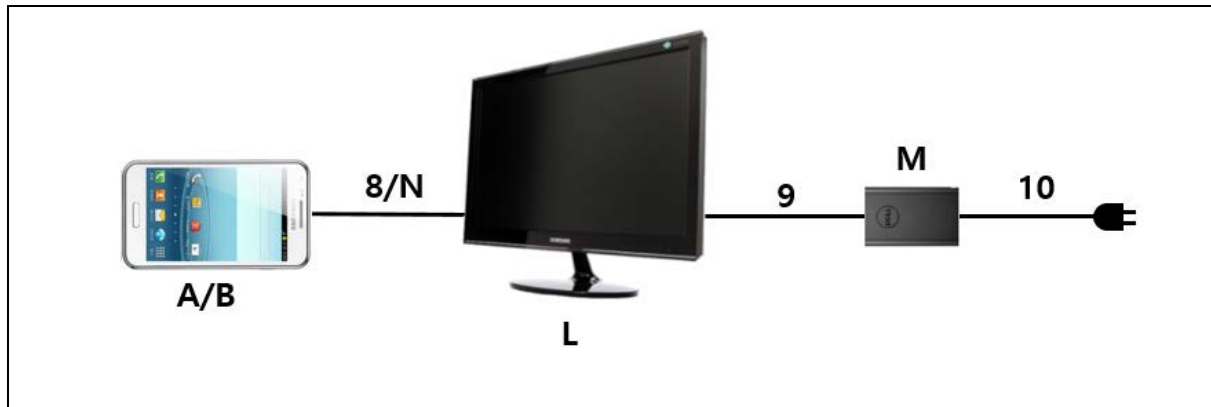
[Mode 1]



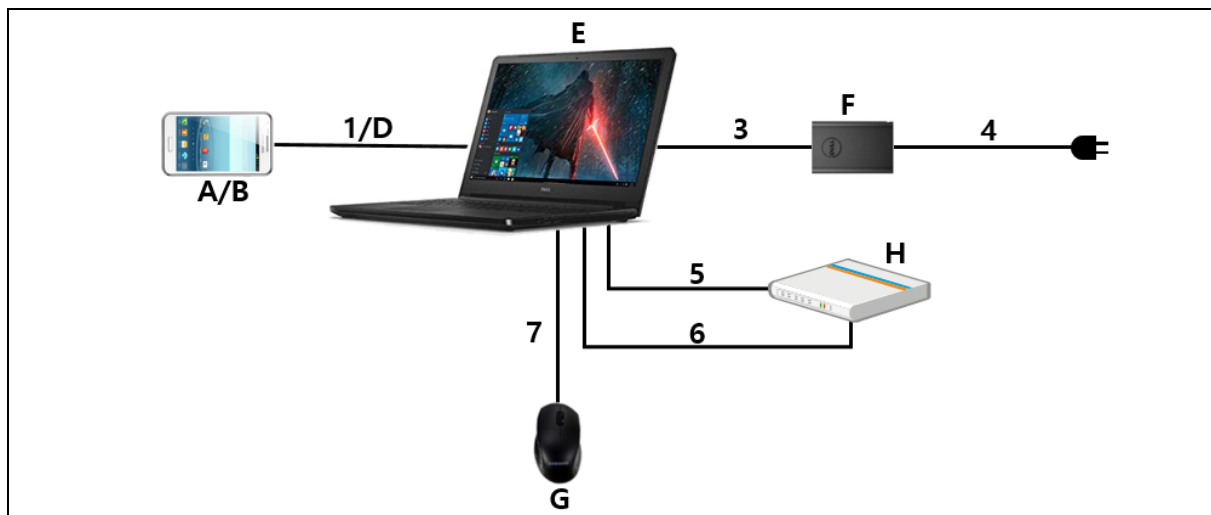
[Mode 2]



[Mode 3]



[Mode 4]



[Mode 5]

4.6 EUT Description

The EUT is a bar type Mobile Phone which can operate on GSM 850/900/1800/1900, WCDMA FDD 1/2/5/8, LTE FDD 2/3/4/5/7/8/12/13/14/18/19/20/26/28/66, LTE TDD 38/39/40/41/46/48, CDMA BC0/BC1, 5G NR n2/n5/n66/n260/n261 and incorporate Bluetooth, ANT+, Wi-Fi, NFC, GNSS, MST, OTG, Wireless Charging, DisplayPort, Camera, Audio and Video.

4.6.1 The variant models

- None

4.7 EUT Frequencies

The highest frequencies (Generated and used)	Frequency [MHz]
n260	40 000

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.

RX mode(850MHz) testing was performed with the LTE FDD26 RX Test mode at center frequency. All licensed communication (850MHz) RX mode, GSM/WCDMA/LTE, test results are not significantly different.

The video and audio were repetitively played with earphone connected.

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

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	4.91 dB
Radiated Disturbance (Above 1 GHz)	Horizontal	5.11 dB
	Vertical	5.12 dB

* Remark

- 1) The values for uncertainty of conducted and radiated emissions are less than the Corresponding values of Ucispr given in CISPR 55016-4-2. Therefore no adjustment of measurement results is necessary when comparing them with the relevant limits.

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

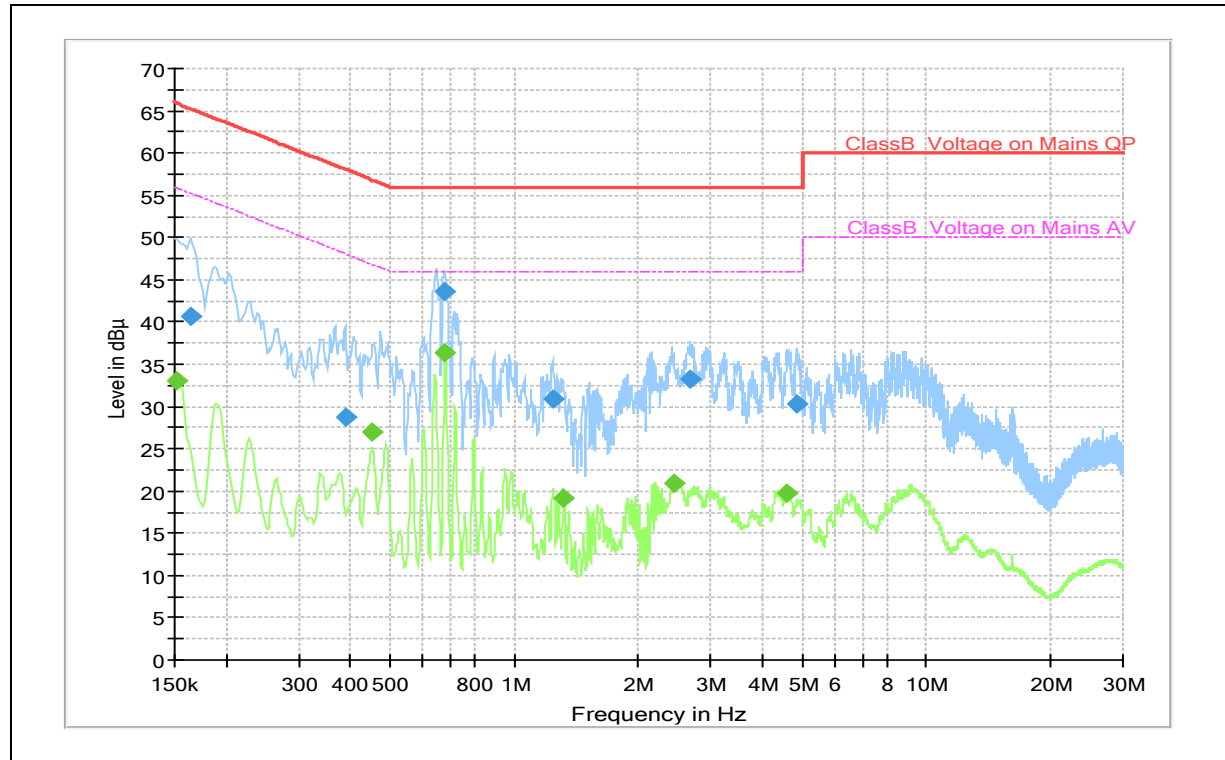
EMC No.	Test Instrument	Model name	Manufacturer	Serial No.	Next Calibration	
					Date	Interval (Month)
E5I-171	LTE Communicator	CMW500	R&S	154667	2020-08-06	12
E5I-017	EMI Test Receiver	ESU8	R&S	100483	2021-01-20	12
E5I-127	LISN	ENV216	R&S	102061	2020-08-01	12
-	Test software	EMC32	R&S	Ver 9.26.01	-	-

5.1.2 Temperature and humidity condition

Test date	2020-03-25	Test engineer	Soo-Joon Kim
Climate condition	Ambient temperature	(22.2 ~ 22.5) °C	Limit (15.0 to 35.0) °C
	Relative humidity	(42.8 ~ 43.3) % 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



QP / CAV final measurement results table:

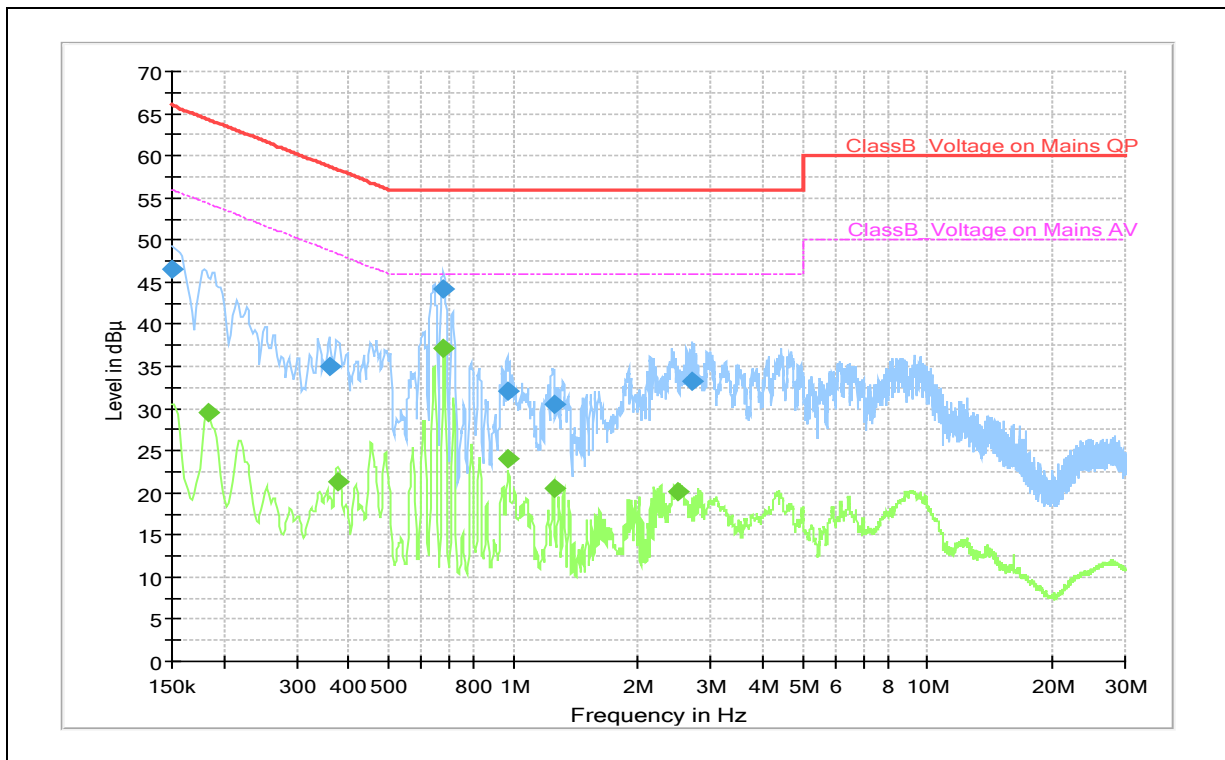
Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.152	---	33.1	55.9	22.8	L1	9.9
0.164	40.6	---	65.3	24.7	N	10.2
0.389	28.7	---	58.1	29.4	N	10.2
0.452	---	26.9	46.8	19.9	N	10.2
0.679	43.5	---	56.0	12.5	N	10.2
0.681	---	36.4	46.0	9.6	L1	10.0
1.237	30.9	---	56.0	25.1	N	10.0
1.320	---	19.2	46.0	26.8	L1	9.9
2.443	---	20.8	46.0	25.2	N	9.9
2.677	33.2	---	56.0	22.8	N	9.9
4.594	---	19.7	46.0	26.3	N	10.0
4.873	30.3	---	56.0	25.7	N	10.0

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

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


QP / CAV final measurement results table:

Frequency (MHz)	QP (dB μ V)	CAV (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Corr. (dB)
0.150	46.5	---	66.0	19.5	N	9.9
0.184	---	29.5	54.3	24.8	N	10.2
0.359	35.0	---	58.7	23.7	N	10.1
0.377	---	21.3	48.3	27.0	N	10.2
0.679	44.1	---	56.0	11.9	N	10.2
0.681	---	37.2	46.0	8.8	N	10.2
0.967	32.1	---	56.0	23.9	N	10.0
0.971	---	24.0	46.0	22.0	N	10.0
1.253	30.5	---	56.0	25.5	N	10.0
1.253	---	20.5	46.0	25.5	N	10.0
2.490	---	20.2	46.0	25.8	N	9.9
2.708	33.3	---	56.0	22.7	N	9.9

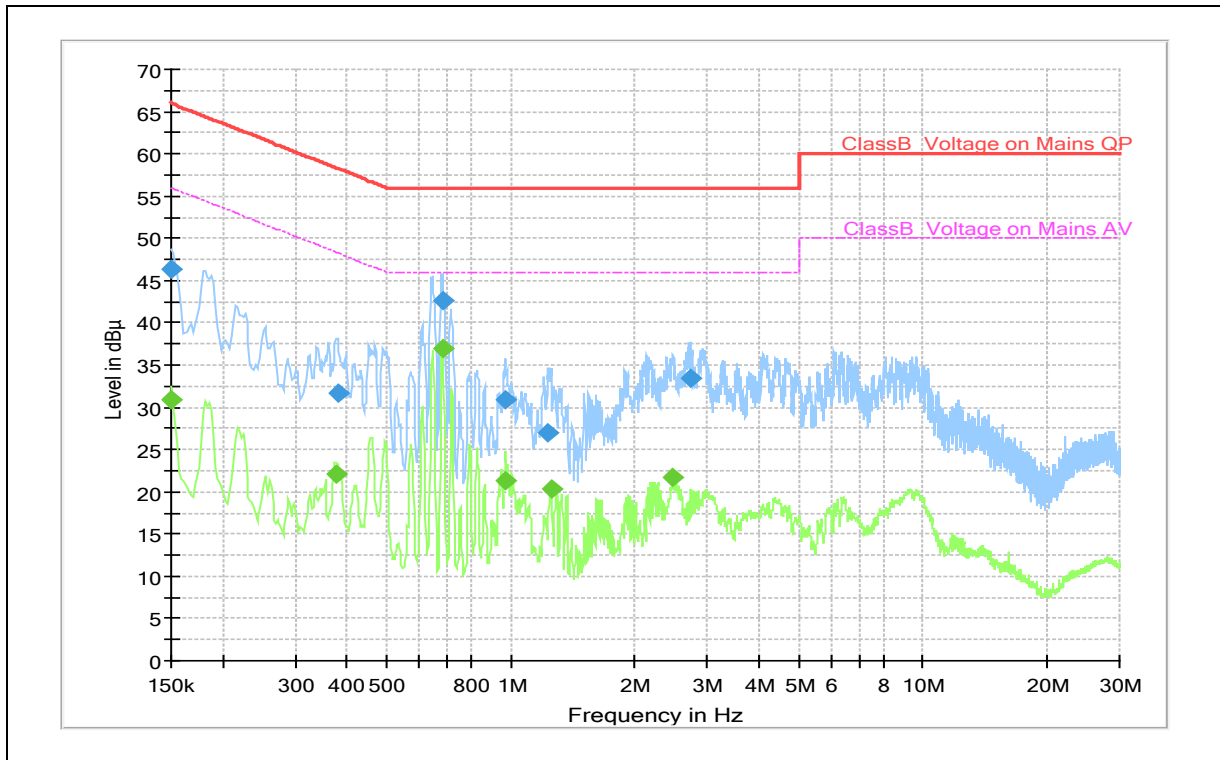
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

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



QP / CAV final measurement results table:

Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.150	---	30.8	56.0	25.2	L1	9.8
0.150	46.3	---	66.0	19.7	L1	9.8
0.377	---	22.2	48.3	26.1	N	10.2
0.380	31.6	---	58.3	26.7	N	10.2
0.683	---	36.9	46.0	9.1	N	10.2
0.683	42.6	---	56.0	13.4	N	10.2
0.969	30.9	---	56.0	25.1	N	10.0
0.974	---	21.4	46.0	24.6	N	10.0
1.235	27.1	---	56.0	28.9	N	10.0
1.255	---	20.4	46.0	25.6	L1	9.9
2.479	---	21.7	46.0	24.3	N	9.9
2.726	33.5	---	56.0	22.5	N	9.9

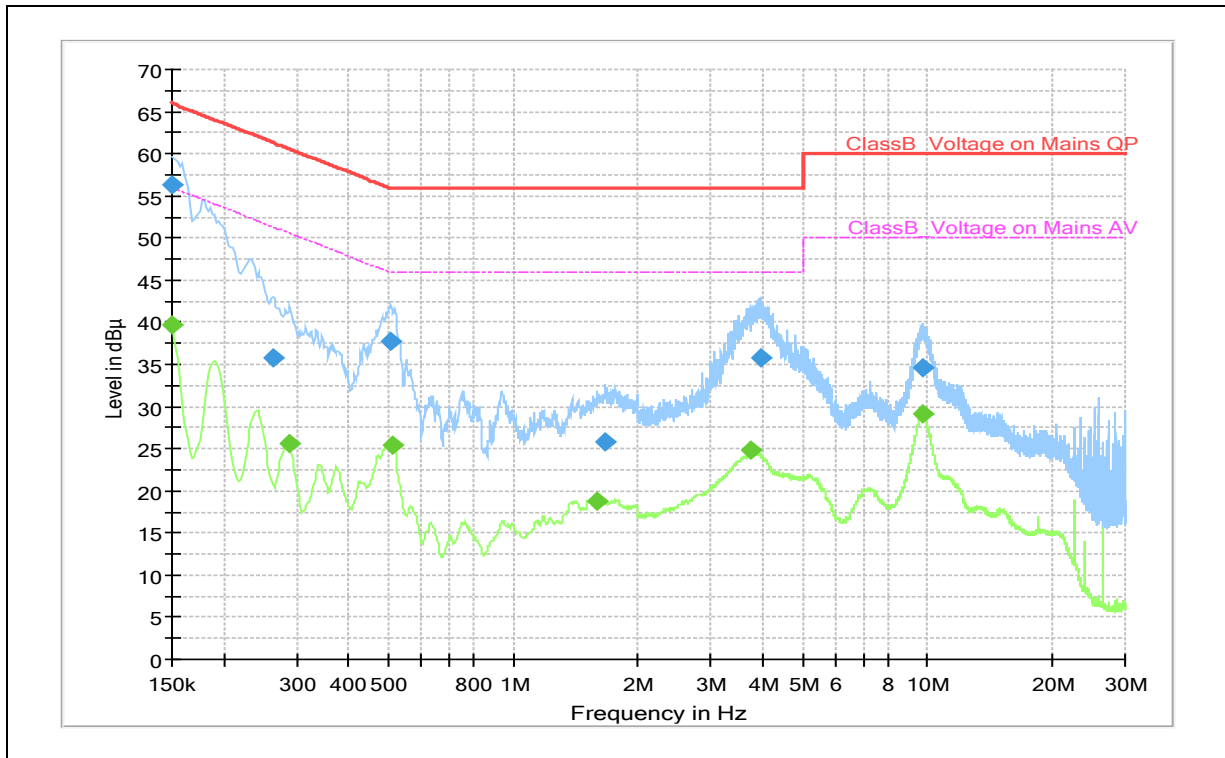
Note 1) Two graphs measured for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

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



QP / CAV final measurement results table:

Frequency (MHz)	QP (dBμV)	CAV (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.150	56.3	---	66.0	9.7	N	9.8
0.150	---	39.6	56.0	16.4	L1	9.8
0.263	35.8	---	61.4	25.6	L1	9.8
0.287	---	25.5	50.6	25.1	L1	9.8
0.508	37.7	---	56.0	18.3	L1	10.1
0.510	---	25.4	46.0	20.6	L1	10.1
1.599	---	18.8	46.0	27.2	N	9.8
1.664	25.9	---	56.0	30.1	N	9.8
3.764	---	24.9	46.0	21.1	N	9.8
3.950	35.8	---	56.0	20.2	N	9.8
9.697	---	29.1	50.0	20.9	L1	9.8
9.746	34.7	---	60.0	25.3	L1	9.8

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

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 3 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 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 Polarisation	Resolution Bandwidth [MHz]	Video Bandwidth [MHz]	Turntable position
100 ~ 400	Horizontal, Vertical	1	3	Continuous

Measurements within 6 dB of the limit were then maximized by adjusting turntable position. Final measurements were made using peak and CISPR-average detectors.

Limits for radiated disturbance of Class B ITE at a measuring distance of 3 m and 10 m

Frequency range Limits [MHz]	Field Strength		
	3 m [$\mu\text{V/m}$]	3 m [dB($\mu\text{V/m}$)]	10 m [dB($\mu\text{V/m}$)]
30 to 88	100	40.0	29.5
88 to 216	150	43.5	33.0
216 to 960	200	46.0	35.5
Above 960	500	54.0	43.5

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

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

5.2.1 Test instrumentation

EMC No.	Test Instrument	Model name	Manufacturer	Serial No.	Next Calibration	
					Date	Interval (Month)
E5I-020	EMI Test Receiver	ESU40	R&S	100375	2020-09-02	12
E5I-036	Horn Antenna	HF907	R&S	100507	2020-06-15	24
E5I-040	Signal Conditioning Unit	SCU-18	R&S	10210	2020-04-05	12
E5I-037	WideBand Horn Antenna	WBH 18-40K	R&S	11201	2021-01-31	24
E5I-042	Signal Conditioning Unit	SCU-40A	R&S	10004	2020-09-11	12
E5I-070	BiLog Antenna	CBL6112D	TESEQ	35383	2020-10-12	24
E5I-075	Preamplifier	310N	SONOMA	332018	2020-05-27	12
-	Test software	EP7RE	TOYO	Ver 5.8.2	-	-
-	Test software	EMC32	R&S	Ver 9.25.00	-	-

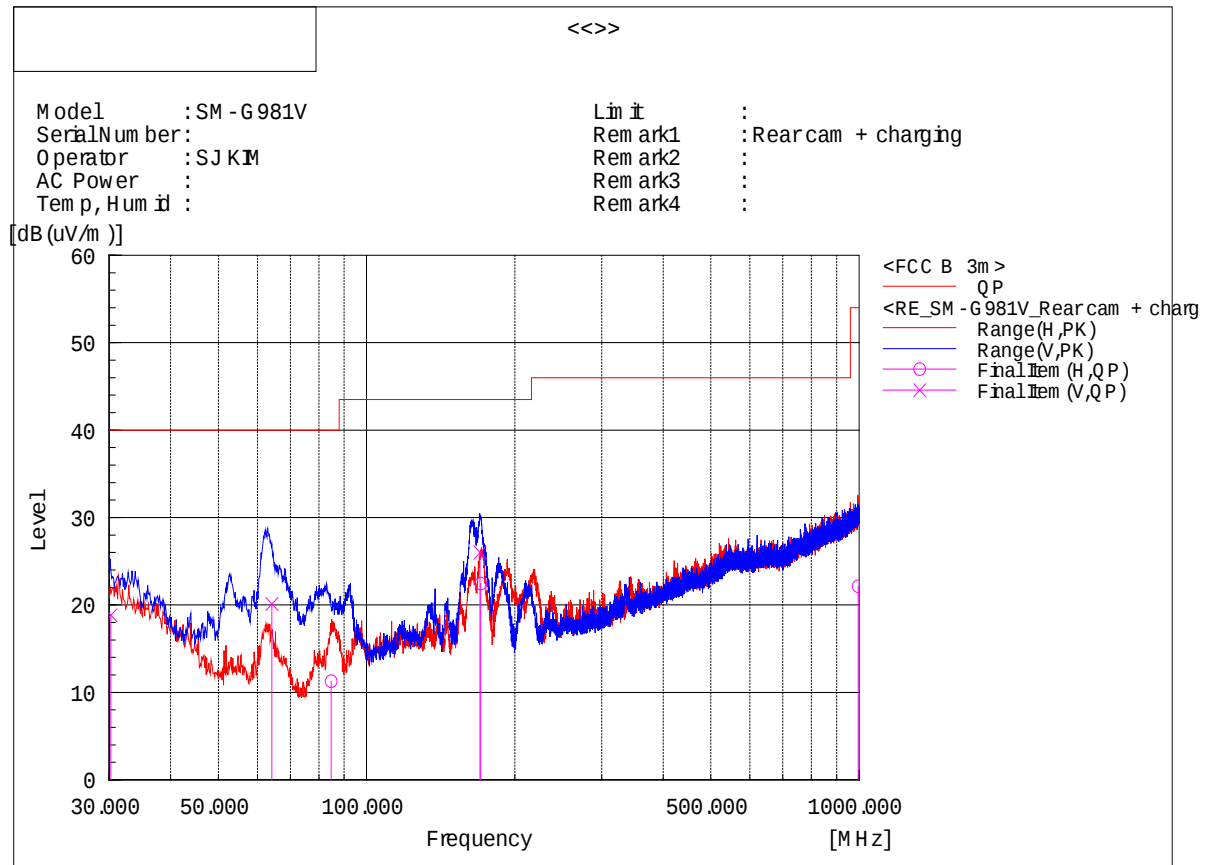
5.2.2 Temperature and humidity condition

Test date	2020-03-23 ~ 2020-03-24, 2020-05-06	Test engineer	Soo-Joon Kim
Climate condition	Ambient temperature	(21.2 ~ 23.6) °C	Limit (15.0 to 35.0) °C
	Relative humidity	(42.5 ~ 48.1) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(101.2 ~ 102.6) kPa	Limit (86.0 to 106.0) kPa
Test place	Semi-Anechoic Chamber (SAC5)		

5.2.3 Test results

☐ Operating Mode 1

- Frequencies below 1 GHz



Final Result

No.	Frequency (P)	Reading	c.f	Result	Limit	Margin	Height	Angle
	[MHz]	QP [dB(μV)]	[dB(1/m)]	QP [dB(μV/m)]	QP [dB(μV/m)]	QP [dB]	[cm]	[deg]
1	30.257	V 26.0	-7.2	18.8	40.0	21.2	104	0
2	64.230	V 39.0	-18.9	20.1	40.0	19.9	116	261
3	84.677	H 28.6	-17.3	11.3	40.0	28.7	370	22
4	169.802	V 40.1	-14.1	26.0	43.5	17.5	100	134
5	170.378	H 36.5	-14.1	22.4	43.5	21.1	190	129
6	995.195	H 20.0	2.1	22.1	54.0	31.9	247	289

Note1) Receiving antenna polarization : Horizontal, Vertical

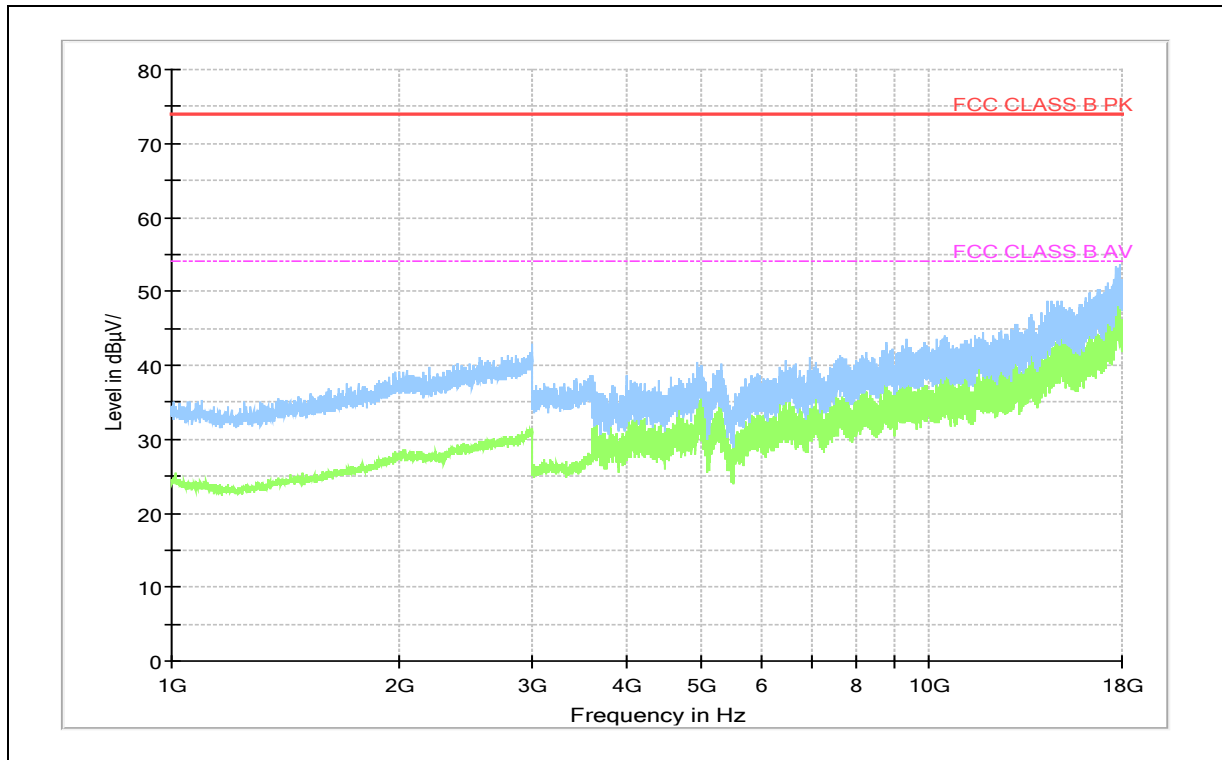
Test Distance : 3 m, Antenna Height : 1 to 4 meters

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 40 GHz and found no emissions

Note 2) Receiving antenna polarization : Horizontal, Vertical

Test Distance : 3 m, Antenna Height : 1 to 4 meters

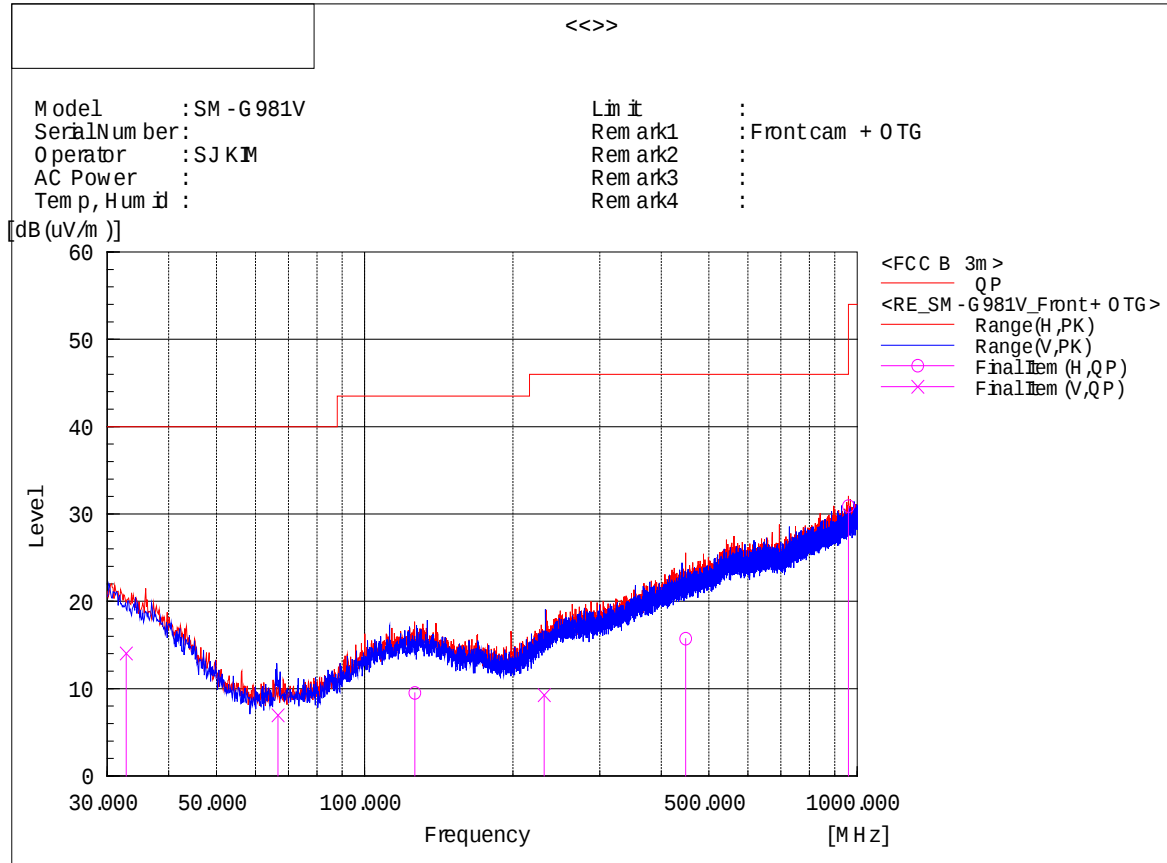
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	32.788	V	22.1	-8.1	14.0	40.0	26.0	151	86
2	66.701	V	25.9	-18.9	7.0	40.0	33.0	206	105
3	126.425	H	21.9	-12.4	9.5	43.5	34.0	123	329
4	231.409	V	21.7	-12.4	9.3	46.0	36.7	237	114
5	448.333	H	21.6	-5.9	15.7	46.0	30.3	127	234
6	960.002	H	29.7	1.2	30.9	54.0	23.1	100	345

Note1) Receiving antenna polarization : Horizontal, Vertical

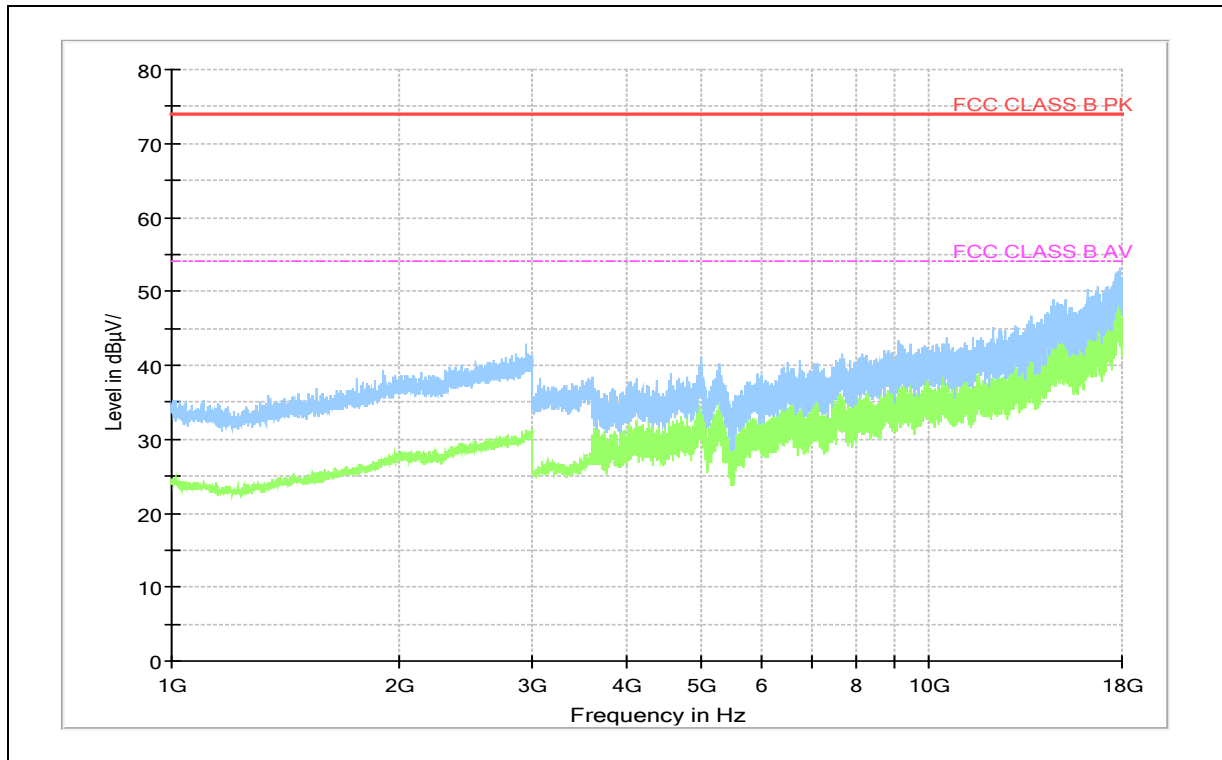
Test Distance : 3 m, Antenna Height : 1 to 4 meters

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 40 GHz and found no emissions

Note 2) Receiving antenna polarization : Horizontal, Vertical

Test Distance : 3 m, Antenna Height : 1 to 4 meters

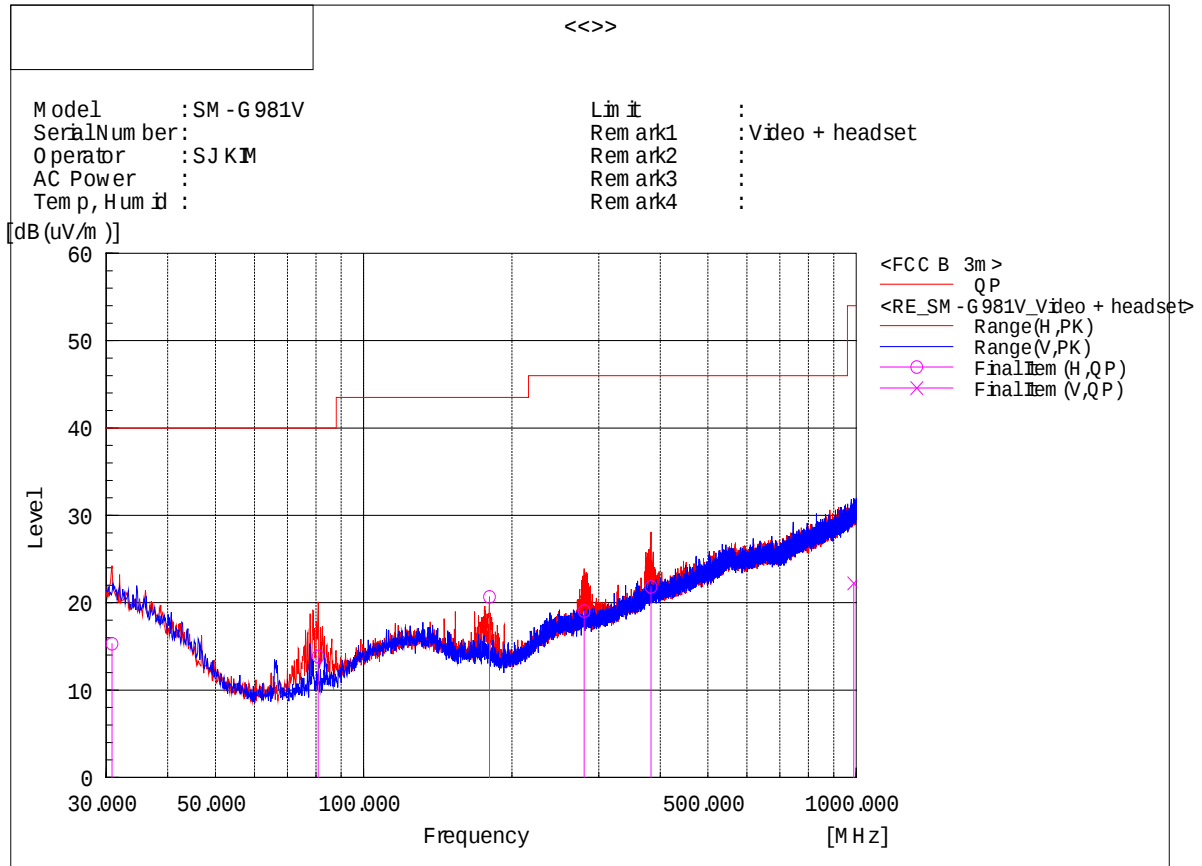
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	30.849	H	22.7	-7.4	15.3	40.0	24.7	100	164
2	80.804	H	31.9	-18.0	13.9	40.0	26.1	363	352
3	179.986	H	35.2	-14.5	20.7	43.5	22.8	146	2
4	280.260	H	29.4	-10.3	19.1	46.0	26.9	105	21
5	382.959	H	29.2	-7.4	21.8	46.0	24.2	100	19
6	989.087	V	20.3	1.9	22.2	54.0	31.8	100	335

Note1) Receiving antenna polarization : Horizontal, Vertical

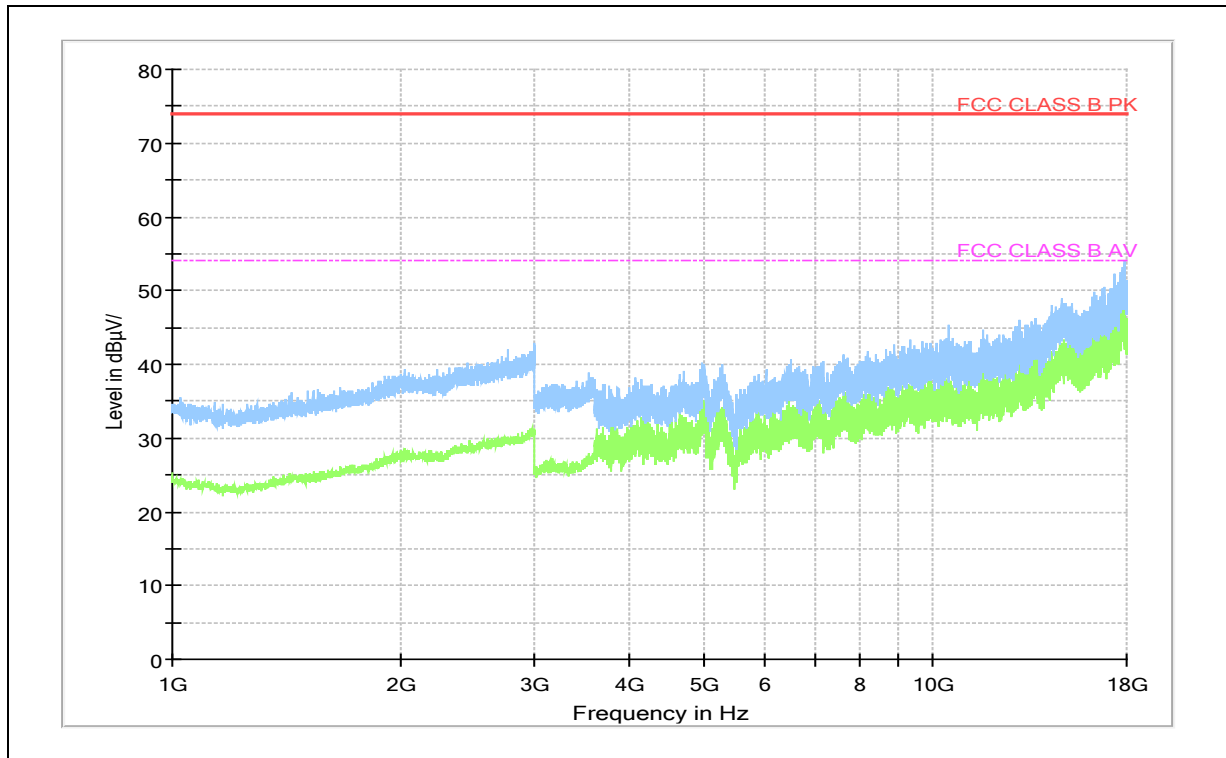
Test Distance : 3 m, Antenna Height : 1 to 4 meters

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 40 GHz and found no emissions

Note 2) Receiving antenna polarization : Horizontal, Vertical

Test Distance : 3 m, Antenna Height : 1 to 4 meters

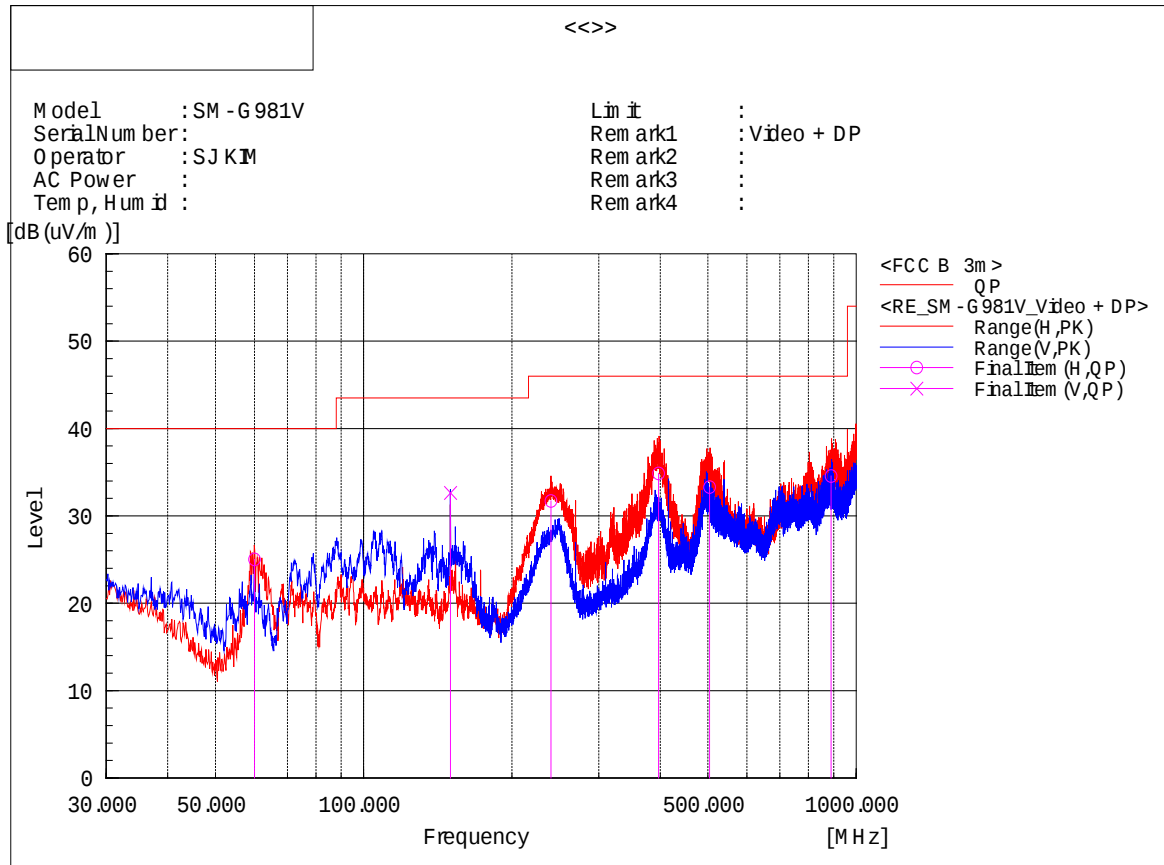
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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



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]
1	60.040	H	44.0	-19.0	25.0	40.0	15.0	354	220
2	150.009	V	46.4	-13.8	32.6	43.5	10.9	100	196
3	240.041	H	43.4	-11.7	31.7	46.0	14.3	116	234
4	396.852	H	41.9	-7.0	34.9	46.0	11.1	101	37
5	503.952	H	38.2	-4.9	33.3	46.0	12.7	223	231
6	889.582	H	34.7	-0.1	34.6	46.0	11.4	114	231

Note1) Receiving antenna polarization : Horizontal, Vertical

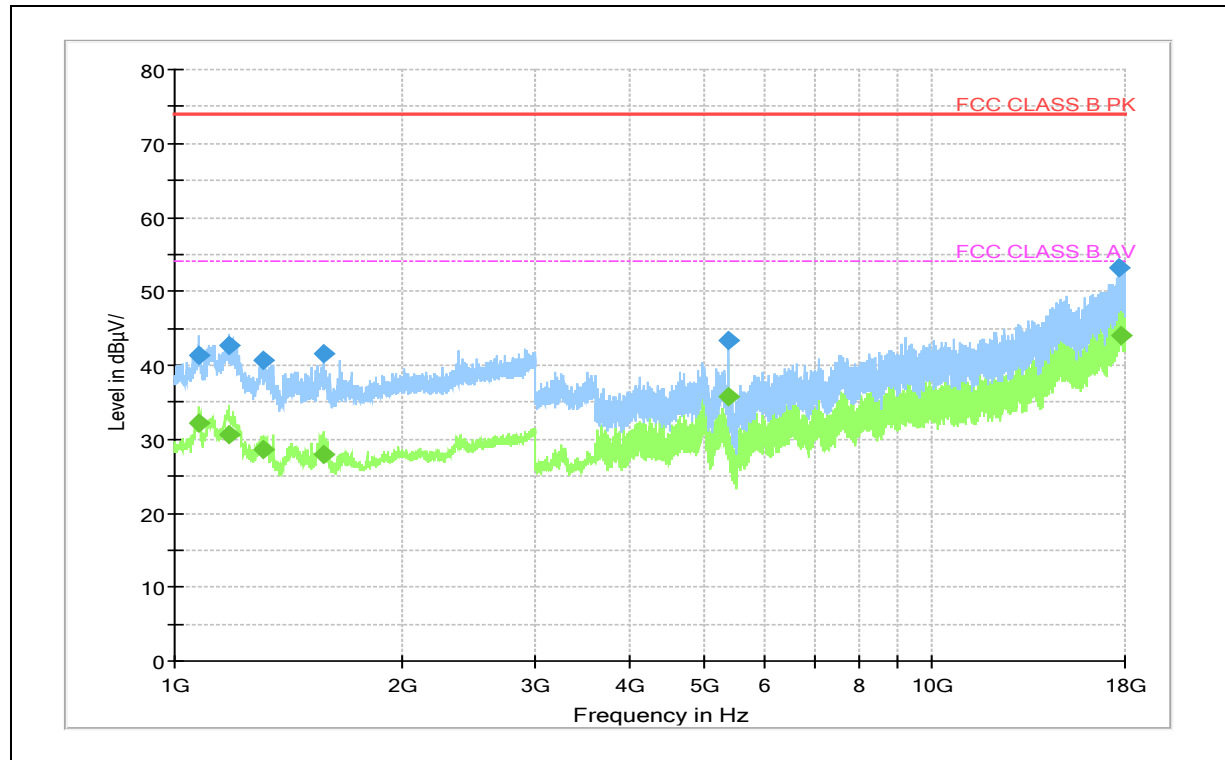
Test Distance : 3 m, Antenna Height : 1 to 4 meters

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)	CAV (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1 075.500	41.3	---	74.0	32.7	100.0	V	218.0	6.1
1 077.000	---	32.1	54.0	21.9	102.8	V	18.0	6.1
1 177.000	---	30.6	54.0	23.4	101.2	V	210.0	5.9
1 179.000	42.6	---	74.0	31.4	100.0	V	209.0	5.9
1 305.500	---	28.6	54.0	25.4	100.0	V	29.0	6.8
1 306.500	40.8	---	74.0	33.2	100.0	V	36.0	6.8
1 569.500	41.5	---	74.0	32.5	100.0	V	92.0	8.8
1 572.500	---	27.9	54.0	26.1	100.0	V	92.0	8.9
5 400.000	---	35.7	54.0	18.3	101.6	V	144.0	6.3
5 400.000	43.4	---	74.0	30.6	101.3	V	146.0	6.3
17 653.500	53.3	---	74.0	20.7	100.8	V	290.0	37.5
17 727.000	---	44.0	54.0	10.0	101.1	V	143.0	38.2

Note 1) We have also tested from 18 GHz to 40 GHz and found no emissions

Note 2) Receiving antenna polarization : Horizontal, Vertical

Test Distance : 3 m, Antenna Height : 1 to 4 meters

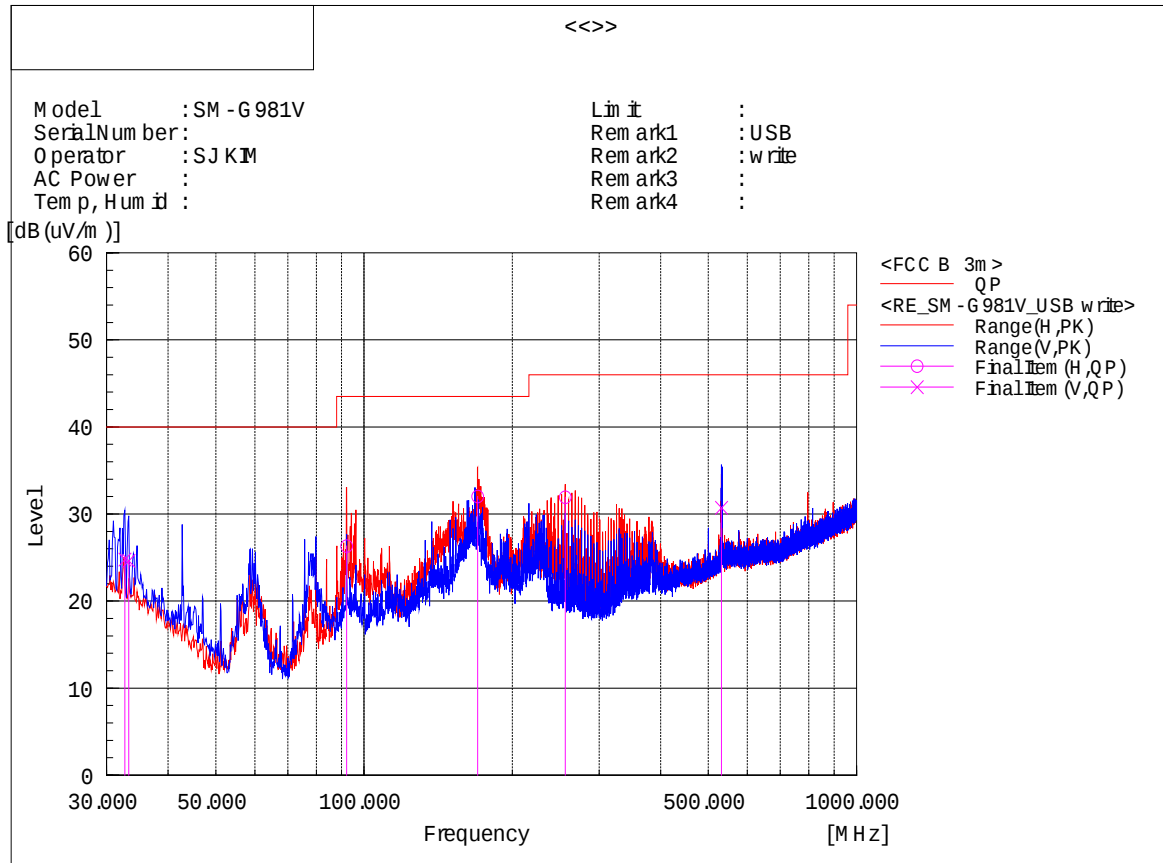
Level (PK and/or CAV) = Reading (PK and/or CAV) + Corr. (Antenna Factor + Cable Loss - Amp. Gain)

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



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]
1	32.668	V	32.8	-8.0	24.8	40.0	15.2	100	0
2	33.274	V	32.9	-8.3	24.6	40.0	15.4	100	20
3	92.201	H	42.0	-15.7	26.3	43.5	17.2	350	293
4	170.044	H	46.1	-14.1	32.0	43.5	11.5	178	19
5	256.010	H	42.7	-10.8	31.9	46.0	14.1	106	285
6	531.733	V	34.5	-3.8	30.7	46.0	15.3	120	35

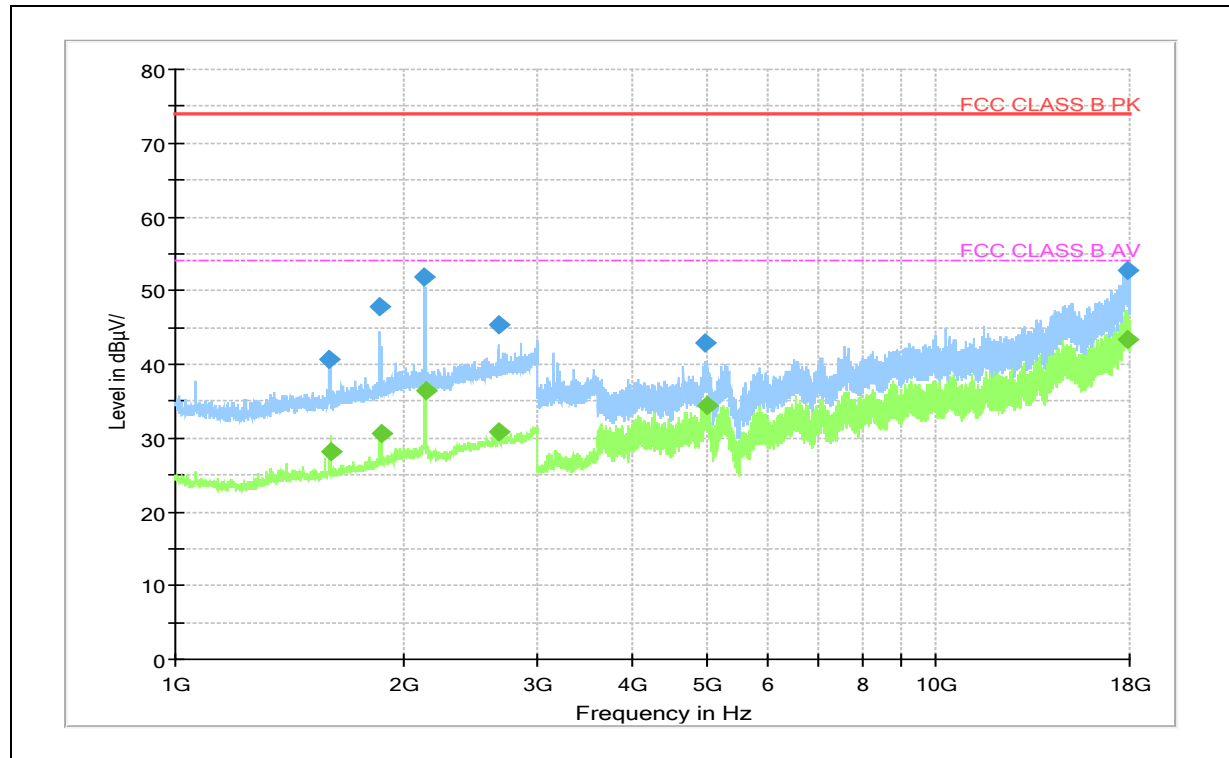
Note1) Receiving antenna polarization : Horizontal, Vertical

Test Distance : 3 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/)	CAV (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1 597.500	40.6	---	74.0	33.4	100.0	V	98.0	9.0
1 600.000	---	28.1	54.0	25.9	101.1	V	281.0	9.0
1 859.000	47.8	---	74.0	26.2	101.7	V	0.0	10.6
1 864.000	---	30.7	54.0	23.3	100.8	V	99.0	10.6
2 127.500	51.8	---	74.0	22.2	102.3	V	252.0	11.9
2 130.500	---	36.4	54.0	17.6	100.9	V	1.0	11.9
2 663.000	---	30.9	54.0	23.1	101.5	V	245.0	14.0
2 664.500	45.3	---	74.0	28.7	100.0	V	257.0	14.0
4 986.000	42.8	---	74.0	31.2	100.0	V	263.0	7.8
4 995.500	---	34.3	54.0	19.7	100.0	V	276.0	8.1
17 837.500	52.8	---	74.0	21.2	101.0	V	149.0	38.7
17 839.000	---	43.4	54.0	10.6	102.5	V	35.0	38.7

Note 1) We have also tested from 18 GHz to 40 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