EMC TEST REPORT

Project No.	LBE20210793	**Issue No.**	1
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	November 24, 2021	
EUT	**Kind of product**	Notebook Computer	
	Type of device	Class B Notebook Computers and peripherals	
	Equipment authorization	☐ Supplier's Declaration of Conformity ☒ Certification	
	FCC ID	A3LAX211D730QED	
	Model No.	NP730QED	
		Variant Model No.	Refer to clause 4.6.2
	Manufacturer	Samsung Electronics Co.,Ltd. (Maetan-dong) 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea	
Applied Standards		47 CFR Part 15, Subpart B / ANSI C63.4-2014	
		ICES-003 Issue 7 / ANSI C63.4-2014 amended as per ANSI C63.4a-2017	
Test Period		December 2, 2021 ~ December 8, 2021	
Issue date		January 27, 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 : Young Hun Cheong

J. Y. H

Reviewed by : Kyung Hee Jang

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

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1. Report Information

1.1 Revision history

No.	Revised detailed information
Issue 0 (December 28, 2021)	There are no revisions and this version is basic test report.
Issue 1 (January 26, 2022)	Changed the equipment authorization. (SDoC → Certification)

1.2 Sample calculation (example)

1.2.1 Conducted emission (at 10 MHz)

- Limit = 60 dBμV (Quasi-peak limit)
- Level (50 dBμV) = Meter Reading (40.2 dBμV) + Factor (9.8 dB = AMN factor 9.7 dB + Cable loss 0.1 dB)
- Margin (10 dB) = Limit (60 dBμV) - Level (50 dBμV) = 10 dB below limit

1.2.2 Radiated emission (at 100 MHz)

- Limit = 30 dBμV/m at 10 m
- Level (20 dBμV/m)

  = Meter Reading (40 dBμV) + Factor (- 20 dB (1/m) = antenna factor + cable loss – amplifier gain)
- Margin (10 dB) = Limit (30 dBμV/m) - Level (20 dBμV/m) = 10 dB below limit

2. Summary of test results

The EUT has been tested according to the following specifications:

Applied	Test type	Applied standard	Result
☒	Conducted Emission	47 CFR Part 15, Subpart B / ANSI C63.4-2014 (☐ Class A, ☒ Class B)	Complied
☒	Radiated Emission		Complied

- Note : These results are deemed satisfactory evidence of compliance with ICES-003 of the Canadian Interference – Causing Equipment Regulations

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, 16-1-4 and shielded rooms.

The Global CS Center is operated as EMC testing laboratory in accordance with the requirements of ISO/IEC 17025.

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	FCC ID / DOC
Notebook Computer	NP730QED	-	Samsung	A3LAX211D730 QED
Travel Adapter	EP-TA865	R37R6KA04E2DK3	Dongyang	-
LCD Monitor	U2713HMt	CN-0GK0KD-74445-332-106L	Dell	DoC
LCD Monitor	P2317H	CN-0F4VYG-QDC00-74M-075I-A01	Dell	DoC
LCD Monitor	328C7Q	AU0A1812009070	PHILIPS	DoC
LCD Monitor	U2410f	CN-OG550M-72872-054-ORNL	Dell	DoC
Bluetooth Mouse	AA-MB1N9DW	-	Samsung	DoC
USB Memory	USB 3.0 32 GB	-	SanDisk	DoC
microSD Card	64 GB	-	Samsung	DoC
Headset	EHS64AVFWE	-	Samsung	-
S-Pen	CP-911-07B	-	Wacom	-

4.2 EUT operating mode

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

Operating Mode 1	HDMI + DP(USB Type-C) Mode (SSD & Memory card read/write, Wi-Fi(2.4G) & Bluetooth communication, Media playing, Camera preview, H pattern scrolling, Burn-In program)
Operating Mode 2	HDMI + DP(USB Type-C) Mode (SSD & Memory card read/write, Wi-Fi(5G) & Bluetooth communication, Media playing, Camera preview, H pattern scrolling, Burn-In program)
Operating Mode 3	HDMI + DP(USB Type-C) Mode (SSD & Memory card read/write, Wi-Fi(6G) & Bluetooth communication, Media playing, Camera preview, H pattern scrolling, Burn-In program)

4.3 Details of Sampling

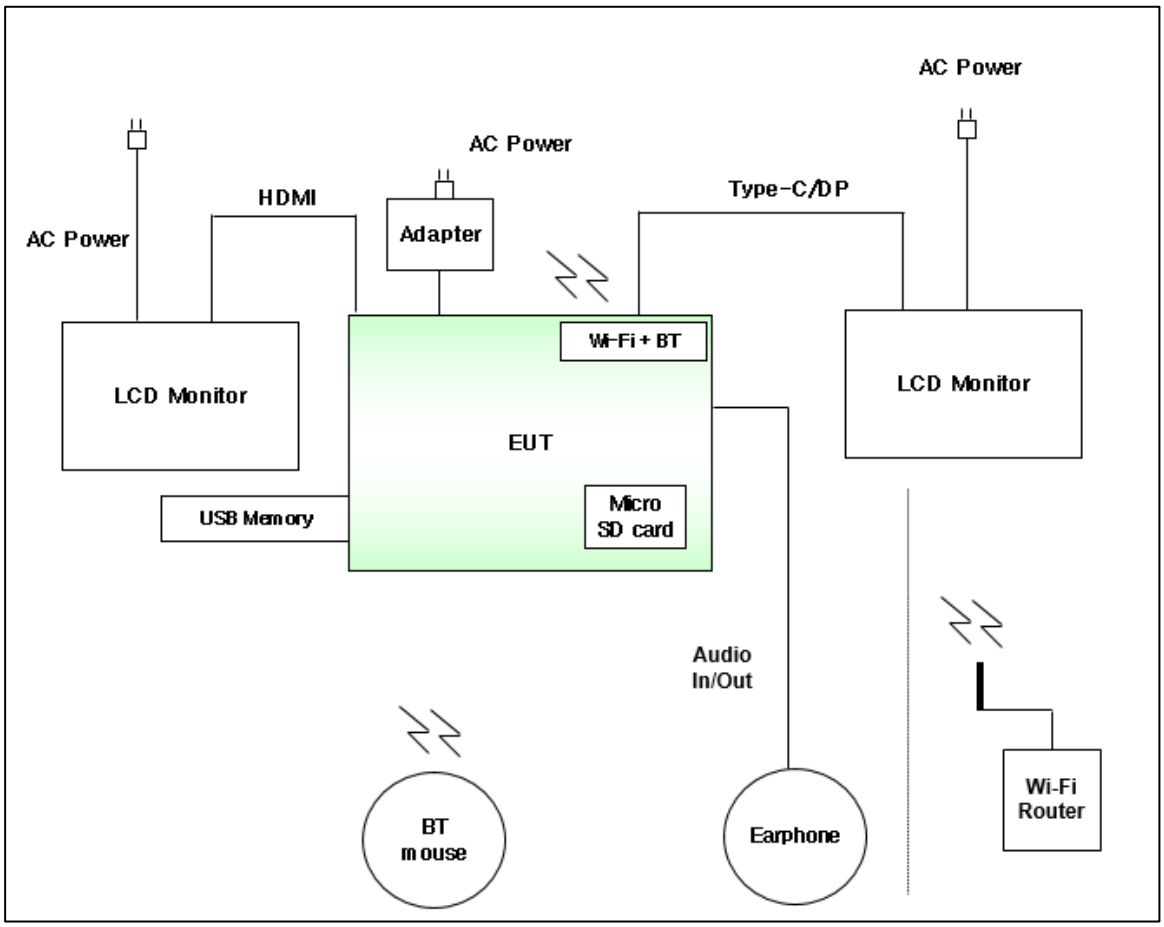
Customer selected, single unit.

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;

Connected cable	Length [m]	Shielded [Y/N]	Number of Ferrite Core	Note
DL(USB Type-C)	1.8	Y	-	From EUT to Travel Adapter
Power(AC)	1.8	N	-	For LCD Monitor
Power(AC)	1.8	N	-	For LCD Monitor
HDMI	1.5	Y	-	From EUT to LCD Monitor
DP (USB Type-C to DP)	1.0	Y	-	From EUT to LCD Monitor
Audio	1.2	N	-	From EUT to Headset

4.5 Test Arrangement



4.6 EUT Description

4.6.1 The following features describe EUT represented by this report:

Item	Specification	Remarks
CPU	Intel® Core™ i7-1260P Processor @ 2.5 GHz (18M L3 Cache)	-
Main Memory	Samsung, 16 GB LPDDR4x Memory (On BD 16 GB)	-
Graphic controller	Intel® Iris® Xe Graphics	-
LCD DISPLAY	SDC,13.3", ATNA33XC06, FHD AMOLED Display (1920 x 1080)	-
SSD	SAMSUNG, MZVLQ1T0HBLB-00BKN, 1TB	-
WLAN + BT Combo	Intel GfP2 , AX211D2W, AX211.D2WG.NV , 2x2 802.11 ax(Wi Fi 6E), Bluetooth5.1	-
Travel Adapter	Dongyang E&P, EP-TA865, 65W, 2 Pin	-
Data Link Cable	EP-DW767JWE, USB Type-C, 1800mm	-
Battery	SDI, AA-PBLN4VT, 15.52 V, 61.1 Wh(Typical)	-
Camera	KINGCOME, KPNB563, 720p HD	-
Input Devices	Keyboard, Touchpad, Touch Screen Panel, Finger Print Sensor Digitizer (External S-Pen w/o Bluetooth)	-
S-Pen	Wacom, CP-911-07B, w/o Bluetooth	-
Ports	USB Type-C (TBT) x 1, USB Type-C x 1, USB 3.2 x 1 HDMI x 1, Micro SD slot x 1, MIC-in/HP-out Combo x 1	-
BT mouse	Samsung, BT mouse, AA-MB1N9DW	-
H/W version	Rev. 1.0	-
S/W version	Windows 11	-

4.6.2 The variant models

- None

4.7 Clock Frequencies

Kind of Clocks	Frequency[MHz]	Kind of Clocks	Frequency[MHz]
CPU	2 500	LPDDR4x	4 267
Crystal	38.4	-	-

4.8 Test configuration and condition

The EUT exercise program was tested using the Burn-In test program for Windows.
While the EMC testing was being done, the LCD panel was open and a pattern of "H" characters was written to the display on the LCD panel.

The system was configured for testing in a typical fashion that a customer would normal 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 was exercised, as well as internal(SSD) and the external(microSD Card/USB Memory) storage media by writing and reading a continuous stream of "H" characters. The music was repetitively played through the headset. The webcam of the EUT was operated continuously. The EUT was connected through wireless communication with Wi-Fi router at 2.4/5/6 GHz band. Bluetooth Mouse was connected through Bluetooth communication.

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)

Test type		Measurement uncertainty (C.L. 95 %, k = 2)
Conducted Emission(Mains Port)		2.82 dB
Radiated Emission (30 MHz ~ 1 GHz)	Horizontal	4.64 dB
	Vertical	4.73 dB
Radiated Emission (Above 1 GHz)	Horizontal	4.52 dB
	Vertical	4.51 dB

* Remark

The values for uncertainty of conducted and radiated emissions are less than the corresponding values of U_{cispr} given in CISPR 16-4-2. Therefore no adjustment of measurement results is necessary when comparing them with the relevant limits.

5. Results of individual test

5.1 Conducted emission

Both conducted lines are measured in Quasi-Peak and 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

Frequency range Limits(MHz)	Resolution Bandwidth(kHz)	Limits of Class A, dB(μV)		Limits of Class B, dB(μV)	
		Quasi-peak	Average	Quasi-peak	Average
0.15 ~ 0.50	9	79	66	66 ~ 56	56 ~ 46
0.50 ~ 5	9	73	60	56	46
5 ~ 30	9			60	50
NOTE 1 The lower limit shall apply at the transition frequency NOTE 2 The Class B limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.					

If the reading on the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 seconds at each measurement frequency, the highest reading shall be recorded, with the exception of any brief isolated high reading (which shall be ignored).

5.1.1 Test instrumentation

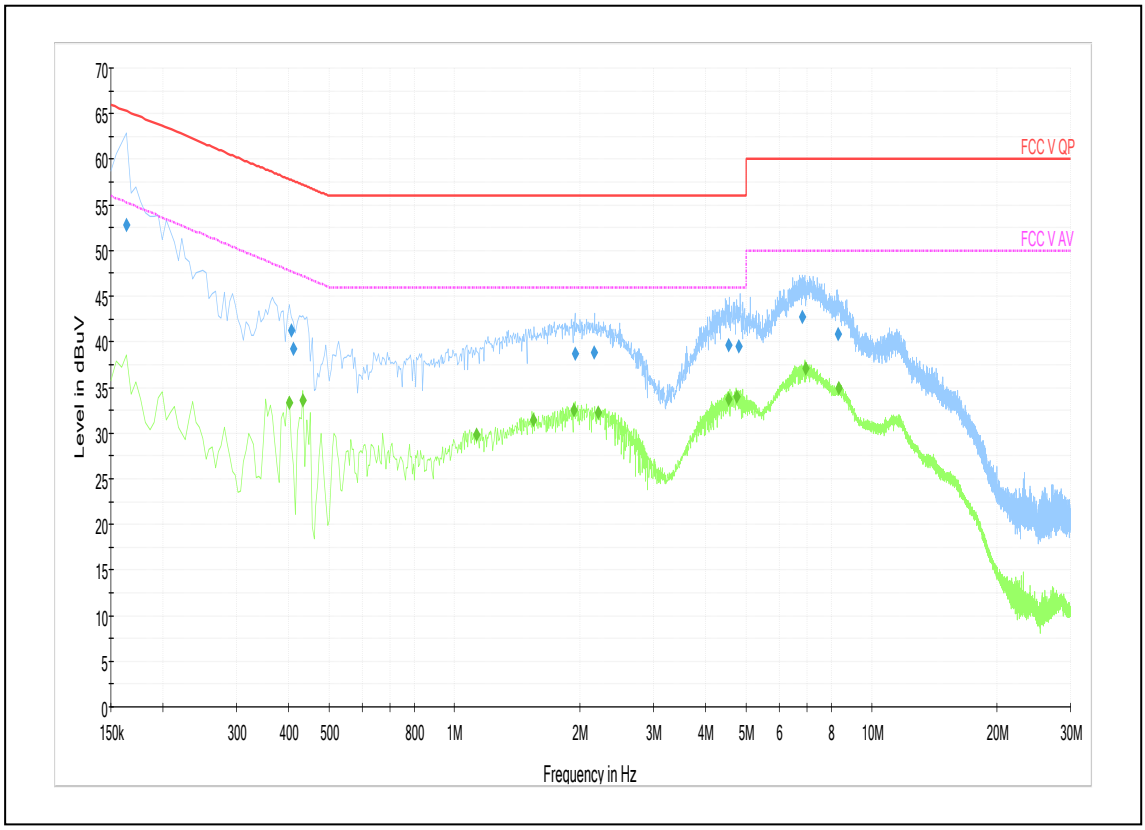
Test instrumentation	Model name	Manufacturer	Serial or Firmware (No./Ver.)	Next Calibration	
				Date	Interval (Month)
EMI Test Receiver	ESR3	R&S	102564	2022-06-02	12
Two-Line V-Network	ENV216	R&S	101369	2021-12-28	12
Two-Line V-Network	ENV216	R&S	102573	2022-06-03	12
Test Software	EMC32	R&S	Ver 10.50.10	-	-

5.1.2 Temperature and humidity condition

Test date	2021-12-08	**Test engineer**	Young Hun Cheong
Climate condition	Ambient temperature	(24.5 ± 0.5) ℃	Limit (15.0 to 35.0) ℃
	Relative humidity	(31.4 ± 0.5) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(102.9 ± 0.5) kPa	Limit (86.0 to 106.0) kPa
Test place	Shielded Room (SR10)		

5.1.3 Test results (mains port)

- Operating Mode 1 : Mains port



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

Final measurement results table (QP)

Frequency [MHz]	Level [2] [dBµV]	Line [3]	Factor [4] [dB]	Margin [5] [dB]	Limit [dBµV]
0.164	52.8	N	10.1	12.5	65.3
0.407	41.3	N	9.9	16.4	57.7
0.411	39.2	L1	9.9	18.4	57.6
1.946	38.7	L1	9.7	17.3	56.0
2.162	38.8	L1	9.7	17.2	56.0
4.538	39.6	L1	9.8	16.4	56.0
4.808	39.5	L1	9.8	16.5	56.0
6.815	42.8	L1	9.8	17.2	60.0
8.300	40.9	L1	9.8	19.2	60.0

Final measurement results table (CAV)

Frequency [MHz]	Level [2] [dBµV]	Line [3]	Factor [4] [dB]	Margin [5] [dB]	Limit [dBµV]
0.402	33.4	N	9.9	14.5	47.8
0.434	33.6	L1	9.9	13.6	47.2
1.131	29.8	L1	9.8	16.2	46.0
1.545	31.4	L1	9.8	14.6	46.0
1.932	32.5	L1	9.8	13.5	46.0
2.211	32.2	L1	9.7	13.8	46.0
4.547	33.7	L1	9.8	12.3	46.0
4.758	34.0	L1	9.8	12.1	46.0
6.936	37.1	L1	9.8	12.9	50.0
8.331	34.9	L1	9.8	15.1	50.0

Note 2) Level (QP and/or CAV) = Meter Reading + Factor

Note 3) Line = Polarity of input power (Live or Neutral)

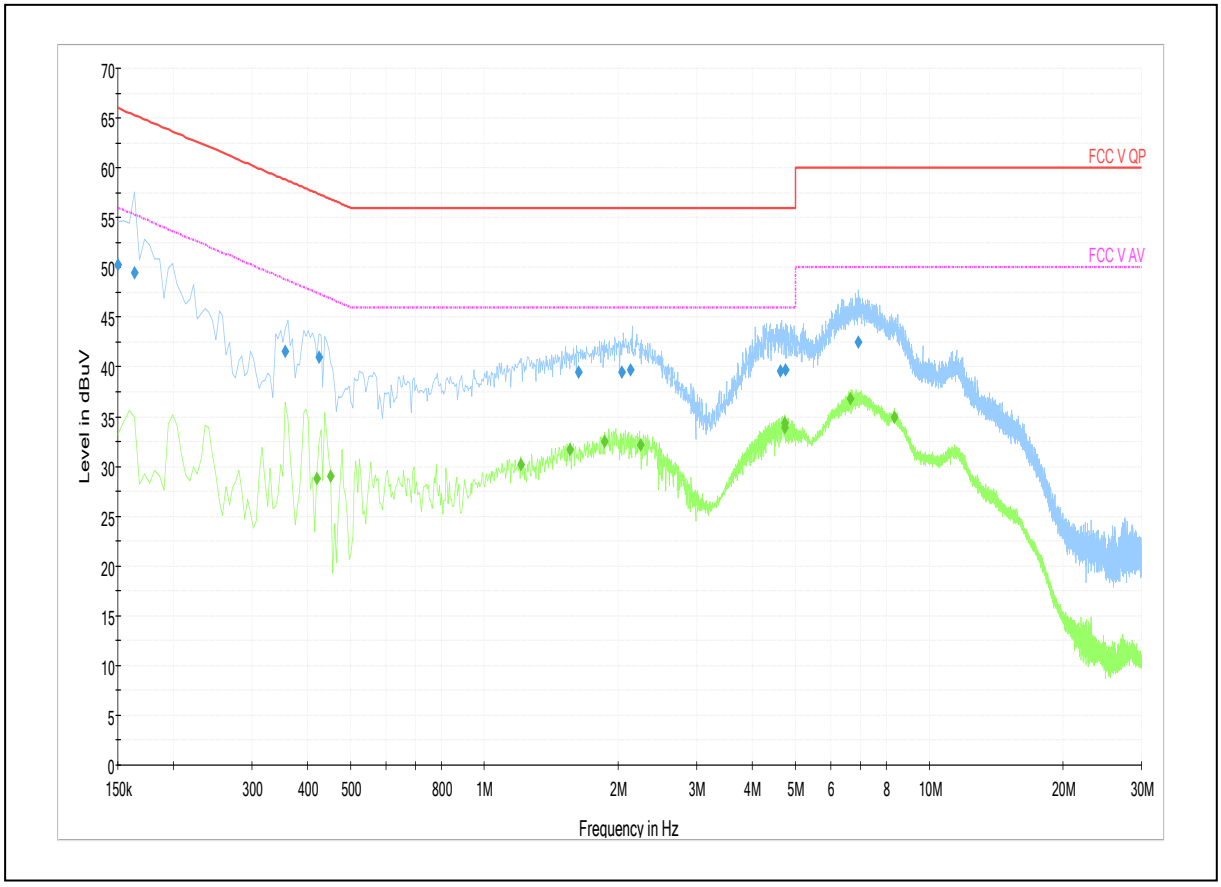
L1 : Abbreviation of Live Polarity, N : Abbreviation of Neutral Polarity,

Note 4) Factor = LISN Insertion Loss + Cable Loss

Note 5) Margin = Limit – Level (QP and/or CAV)

Note 6) QP : Abbreviation of Quasi-Peak, CAV : Abbreviation of CISPR-Average

- Operating Mode 2 : Mains port



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

Final measurement results table (QP)

Frequency [MHz]	Level [2] [dBµV]	Line [3]	Factor [4] [dB]	Margin [5] [dB]	Limit [dBµV]
0.150	50.3	L1	9.9	15.7	66.0
0.164	49.4	L1	10.1	15.9	65.3
0.357	41.6	L1	9.9	17.2	58.8
0.425	41.0	L1	9.9	16.4	57.4
1.631	39.5	L1	9.8	16.5	56.0
2.036	39.5	L1	9.7	16.5	56.0
2.126	39.7	L1	9.7	16.3	56.0
4.632	39.6	L1	9.8	16.5	56.0
4.754	39.7	L1	9.8	16.3	56.0
6.927	42.5	L1	9.8	17.5	60.0

Final measurement results table (CAV)

Frequency [MHz]	Level [2] [dBµV]	Line [3]	Factor [4] [dB]	Margin [5] [dB]	Limit [dBµV]
0.420	28.8	N	9.9	18.7	47.5
0.452	29.0	L1	9.9	17.8	46.9
1.208	30.2	L1	9.8	15.8	46.0
1.559	31.7	L1	9.8	14.3	46.0
1.860	32.5	L1	9.8	13.5	46.0
2.247	32.1	L1	9.7	13.9	46.0
4.727	33.9	L1	9.8	12.1	46.0
4.740	34.3	L1	9.8	11.7	46.0
6.648	36.9	L1	9.8	13.2	50.0
8.331	35.0	L1	9.8	15.0	50.0

Note 2) Level (QP and/or CAV) = Meter Reading + Factor

Note 3) Line = Polarity of input power (Live or Neutral)

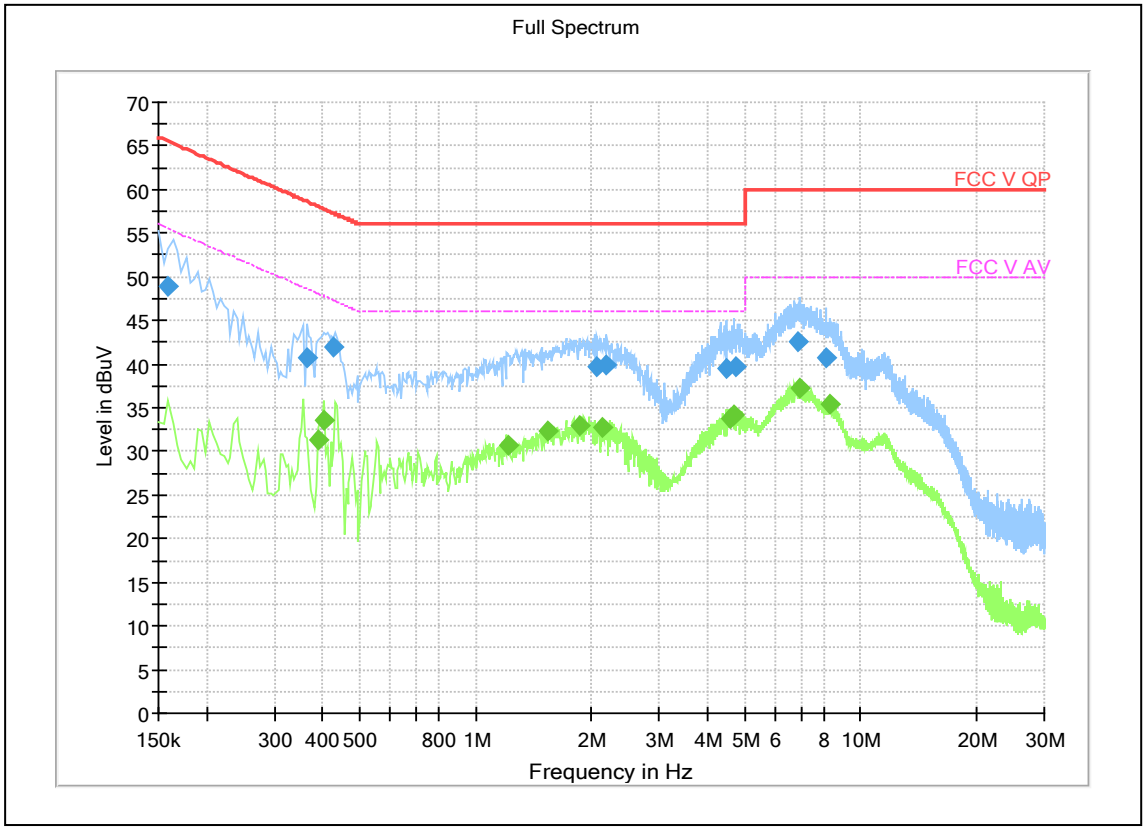
L1 : Abbreviation of Live Polarity, N : Abbreviation of Neutral Polarity,

Note 4) Factor = LISN Insertion Loss + Cable Loss

Note 5) Margin = Limit – Level (QP and/or CAV)

Note 6) QP : Abbreviation of Quasi-Peak, CAV : Abbreviation of CISPR-Average

- Operating Mode 3 : Mains port



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

Final measurement results table (QP)

Frequency [MHz]	Level [2] [dBµV]	Line [3]	Factor [4] [dB]	Margin [5] [dB]	Limit [dBµV]
0.159	48.8	L1	10.1	16.7	65.5
0.366	40.8	L1	9.9	17.8	58.6
0.429	42.0	L1	9.9	15.3	57.3
2.067	39.8	L1	9.7	16.2	56.0
2.189	39.8	L1	9.7	16.2	56.0
4.470	39.5	L1	9.8	16.5	56.0
4.740	39.6	L1	9.8	16.4	56.0
6.887	42.6	L1	9.8	17.4	60.0
8.129	40.8	L1	9.8	19.2	60.0

Final measurement results table (CAV)

Frequency [MHz]	Level [2] [dBµV]	Line [3]	Factor [4] [dB]	Margin [5] [dB]	Limit [dBµV]
0.389	31.3	L1	9.9	16.8	48.1
0.402	33.5	N	9.9	14.3	47.8
1.212	30.6	L1	9.8	15.4	46.0
1.532	32.3	L1	9.8	13.7	46.0
1.874	33.0	L1	9.8	13.0	46.0
2.135	32.8	L1	9.7	13.2	46.0
4.605	33.8	L1	9.8	12.2	46.0
4.686	34.2	L1	9.8	11.8	46.0
6.927	37.3	L1	9.8	12.7	50.0
8.327	35.4	L1	9.8	14.6	50.0

Note 2) Level (QP and/or CAV) = Meter Reading + Factor

Note 3) Line = Polarity of input power (Live or Neutral)

L1 : Abbreviation of Live Polarity, N : Abbreviation of Neutral Polarity,

Note 4) Factor = LISN Insertion Loss + Cable Loss

Note 5) Margin = Limit – Level (QP and/or CAV)

Note 6) QP : Abbreviation of Quasi-Peak, CAV : Abbreviation of CISPR-Average

5.2 Radiated emission

Of those disturbances above (*L* – 20 dB), where *L* is the limit level in logarithmic units, record at least the disturbance levels and the frequencies of the six highest disturbances.
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. All measurements were taken utilizing quasi-peak detection unless stated otherwise.
Measurements were performed at an antenna to EUT distance of 10 meters and elevated between 1 and 4 meters. Both vertical and horizontal antenna polarizations were measured.

Below 1 GHz, peak detector function mode for prescan was used with resolution bandwidth of 120 kHz and a video bandwidth of 300 kHz and sweep method.
The sweep time for prescan set below 200 ms up and final measurement with quasi-peak detector evaluated for suspected frequencies points, which are detected from prescan measurement.

Final measurements consisted of 3 steps.
First step, frequency fine tuning to find exact disturbance frequency.
Second step, rechecking to search for maximum height and azimuth for interference from EUT
In final step, there are conducted measuring with quasi-peak detector for points
which are detected from 1st step & 2nd step.

Limits for radiated emission at a measuring distance of 10 m

Frequency range Limits (MHz)	Resolution Bandwidth (kHz)	Quasi-peak Limits, dB(μV/m)	
		Class A	Class B
30 ~ 230	120	40	30
230 ~ 1 000	120	47	37

Note) Test data in this section has been taken against the CISPR limit as it is the most stringent limit. By complying with more restrictive the CISPR limit compliance with the FCC and ICES-003 Issue 7 limit also demonstrated.

Peak measurements were made over the changeable frequency range above 1 GHz to 40 GHz in accordance with internal maximum operating frequency at a measurement distance of 3 m for the following antenna and turntable arrangements:

Antenna Height (cm)	Antenna Polarisation	Turntable position (degrees)
100 ~ 400	Horizontal, Vertical	Continuous

Limits for above 1 GHz at a measurement distance of 3 m

Frequency range Limits (GHz)	Resolution Bandwidth (MHz)	Limits of Class A, dB(μV/m)		Limits of Class B, dB(μV/m)	
		Peak	Average	Peak	Average
Above 1 GHz	1	80	60	74	54
NOTE The lower limit shall apply at the transition frequency.					

Measurements within 20 dB of the limit were then maximized by adjusting turntable position. Final measurements were made using a CISPR-Average detector.

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

5.2.1 Test instrumentation

Test instrumentation	Model name	Manufacturer	Serial or Firmware (No./Ver.)	Next Calibration	
				Date	Interval (Month)
Preamplifier	317	Sonoma	312701	2022-04-13	12
Preamplifier	317	Sonoma	312702	2022-04-13	12
Preamplifier	SCU 18	R&S	1522002	2022-03-31	12
Preamplifier	SCU40	R&S	100477	2022-03-26	12
BILOG Antenna	CBL6112D	Teseq	25513	2022-06-30	24
BILOG Antenna	CBL6112B	Schaffner	2804	2022-06-30	24
Horn Antenna	HF906	R&S	100028	2023-03-11	24
Horn Antenna	QWH-SL-18-40-K-HG-R	Stealite Antennas	19715	2023-03-25	24
EMI Test Receiver	ESU-26	R&S	100364	2022-04-15	12
EMI Test Receiver	ESR3	R&S	102563	2022-05-20	12
EMI Test Receiver	N9038A	Keysight	MY57291010	2022-11-18	12
Test Software	EP5/RE	Toyo	Ver 6.0.140	-	-

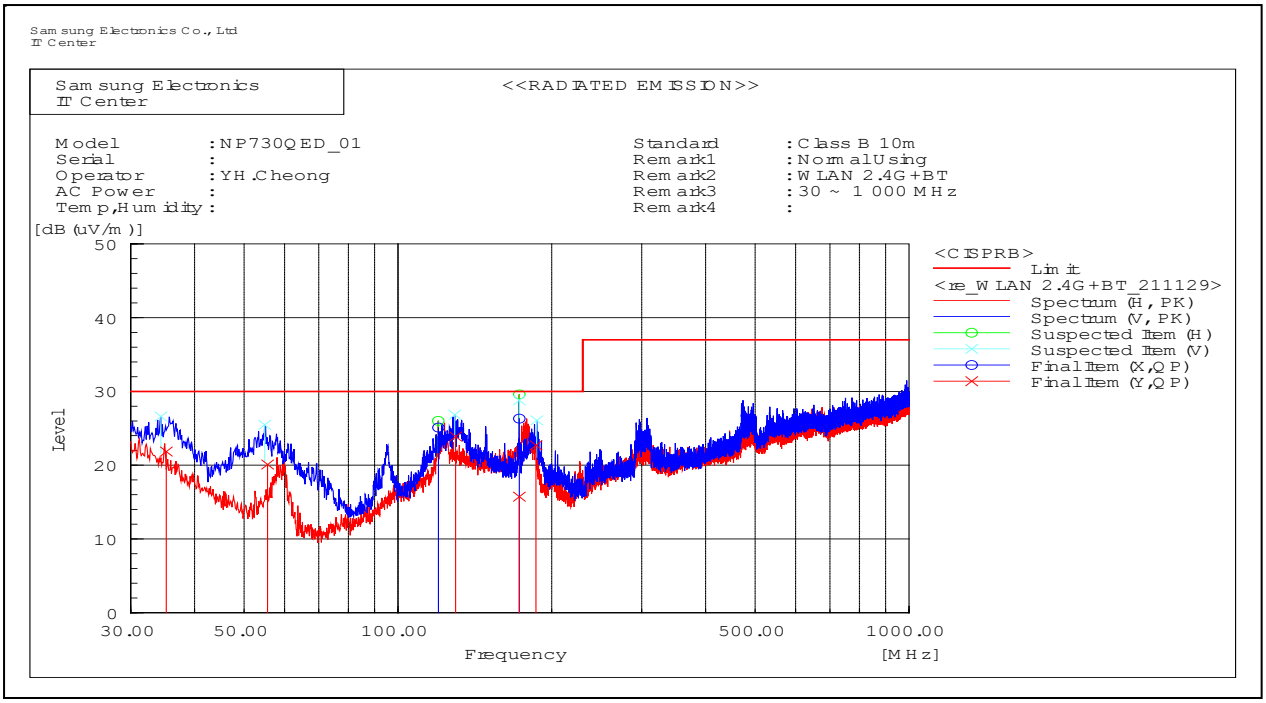
5.2.2 Temperature and humidity condition

Test date	2021-12-02	**Test engineer**	Young Hun Cheong
Climate condition	Ambient temperature	(20.0 ± 0.5) ℃	Limit (15.0 to 35.0) ℃
	Relative humidity	(42.1 ± 0.5) % R.H.	Limit (25.0 to 75.0) % R.H.
	Atmospheric pressure	(101.8 ± 0.5) kPa	Limit (86.0 to 106.0) kPa
Test place	Semi-Anechoic Chamber (SAC6)		

5.2.3 Test results

5.2.3.1 30 MHz ~ 1 000 MHz results

- Operating Mode 1



Final measurement results table (QP)

Frequency [MHz]	(P) [1]	Reading [2] [dB(μV)]	Factor [3] [dB(1/m)]	Level [4] [dB(μV/m)]	Limit [dB(μV/m)]	Margin [5] [dB]	Height [cm]	Angle [deg]
35.230	V	36.0	-14.1	21.9	30.0	8.1	100.0	350.8
55.564	V	43.4	-23.3	20.1	30.0	9.9	301.0	290.4
120.023	H	42.1	-17.0	25.1	30.0	4.9	400.1	356.5
129.651	V	40.9	-17.0	23.9	30.0	6.1	100.0	358.9
172.797	V	35.2	-19.5	15.7	30.0	14.3	400.0	335.0
172.812	H	46.2	-19.9	26.3	30.0	3.7	400.1	205.5
186.185	V	42.2	-19.5	22.7	30.0	7.3	100.0	323.0

Note 1) (P) : Abbreviation of Antenna Polarity

Note 2) Reading : Received raw Quasi-peak signal

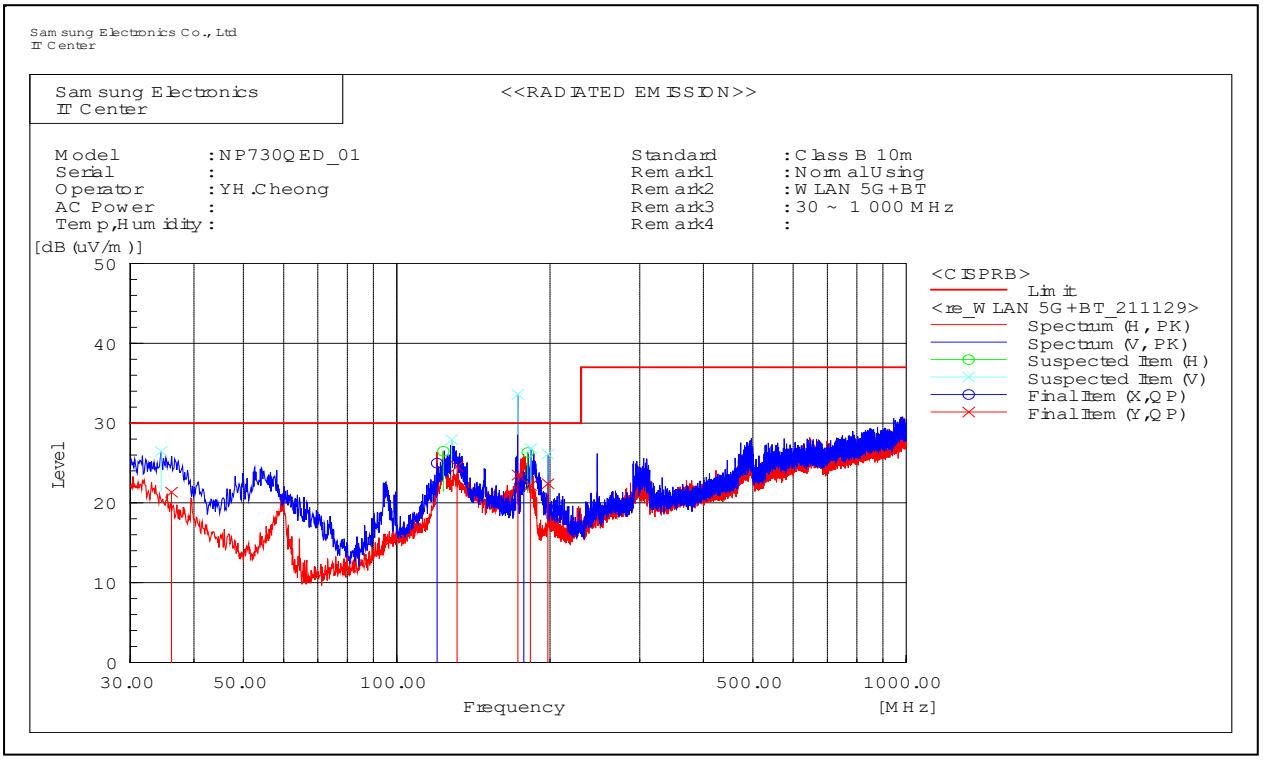
Note 3) Factor = Antenna factor + Cable loss – Amplifier gain

Note 4) Level = Reading QP + Factor, Real signal Quasi-peak level

Note 5) Margin = Limit – Level QP

Note 6) QP : Abbreviation of Quasi-peak

- Operating Mode 2



Final measurement results table (QP)

Frequency [MHz]	(P) [1]	Reading [2] [dB(μV)]	Factor [3] [dB(1/m)]	Level [4] [dB(μV/m)]	Limit [dB(μV/m)]	Margin [5] [dB]	Height [cm]	Angle [deg]
36.139	V	35.9	-14.5	21.4	30.0	8.6	100.0	84.9
120.024	H	42.0	-17.0	25.0	30.0	5.0	400.0	5.0
131.318	V	41.7	-17.1	24.6	30.0	5.4	100.0	3.4
172.869	V	43.0	-19.5	23.5	30.0	6.5	100.0	12.4
177.554	H	42.3	-19.9	22.4	30.0	7.6	400.0	3.4
183.026	V	41.8	-19.6	22.2	30.0	7.8	100.0	303.8
197.954	V	41.7	-19.3	22.4	30.0	7.6	100.0	34.5

Note 1) (P) : Abbreviation of Antenna Polarity

Note 2) Reading : Received raw Quasi-peak signal

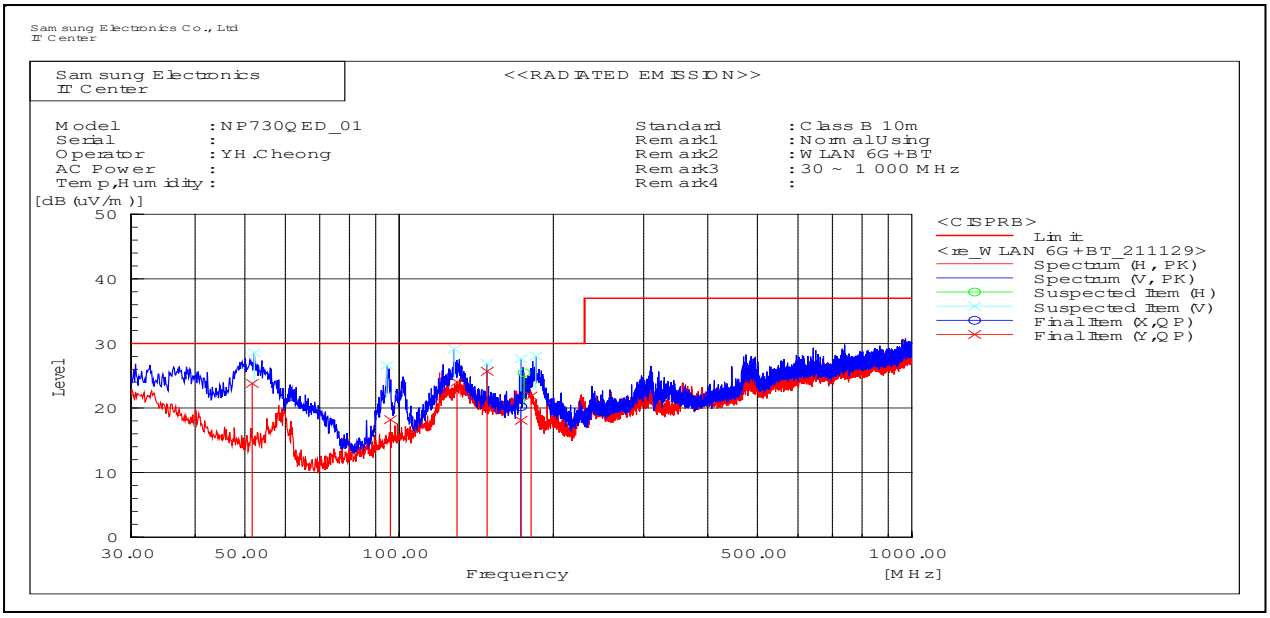
Note 3) Factor = Antenna factor + Cable loss – Amplifier gain

Note 4) Level = Reading QP + Factor, Real signal Quasi-peak level

Note 5) Margin = Limit – Level QP

Note 6) QP : Abbreviation of Quasi-peak

- Operating Mode 3



Final measurement results table (QP)

Frequency [MHz]	(P) [1]	Reading [2] [dB(μV)]	Factor [3] [dB(1/m)]	Level [4] [dB(μV/m)]	Limit [dB(μV/m)]	Margin [5] [dB]	Height [cm]	Angle [deg]
51.695	V	45.9	-22.1	23.8	30.0	6.2	296.0	307.5
96.176	V	37.8	-19.6	18.2	30.0	11.8	400.0	275.7
129.672	V	41.0	-17.0	24.0	30.0	6.0	100.0	346.3
148.497	V	43.8	-18.1	25.7	30.0	4.3	100.0	307.7
172.821	H	40.1	-19.9	20.2	30.0	9.8	299.8	11.0
172.879	V	37.6	-19.5	18.1	30.0	11.9	100.0	338.9
180.911	V	41.5	-19.6	21.9	30.0	8.1	100.0	338.9

Note 1) (P) : Abbreviation of Antenna Polarity

Note 2) Reading : Received raw Quasi-peak signal

Note 3) Factor = Antenna factor + Cable loss – Amplifier gain

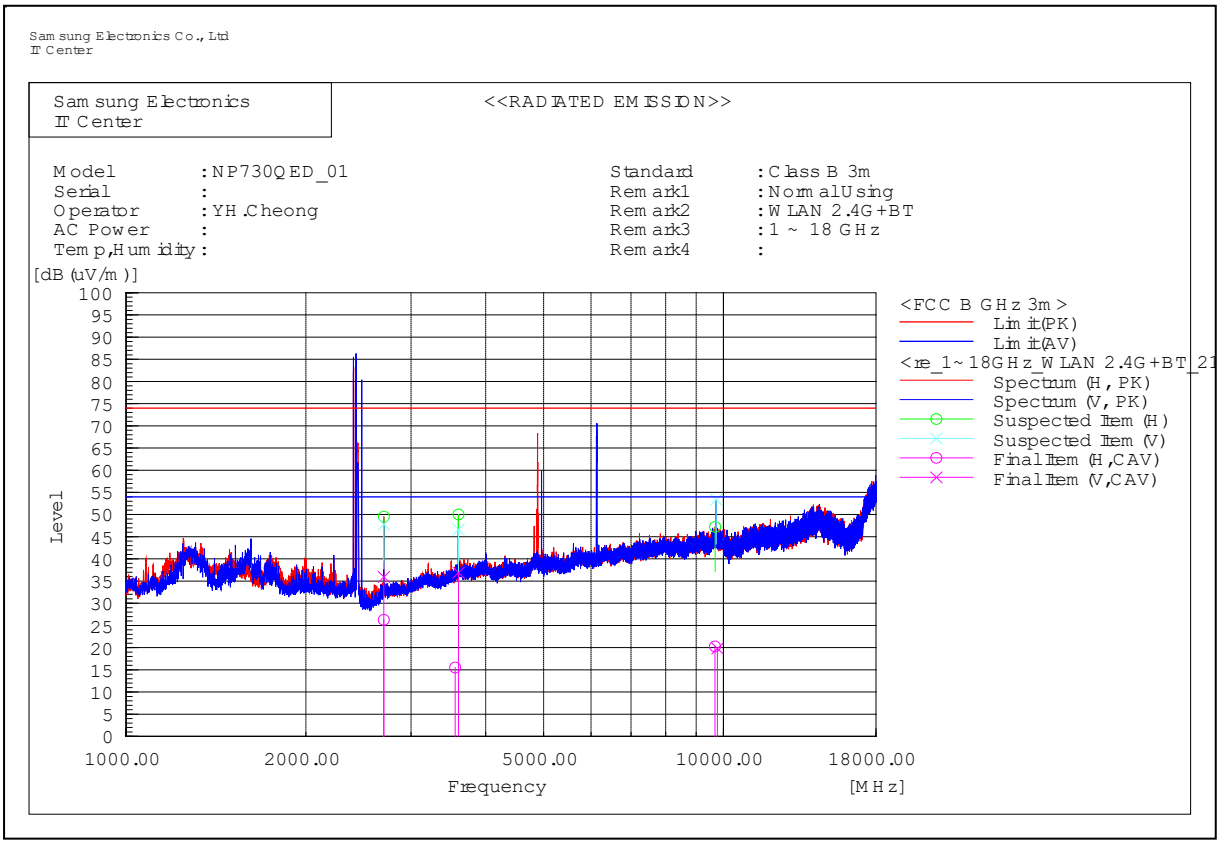
Note 4) Level = Reading QP + Factor, Real signal Quasi-peak level

Note 5) Margin = Limit – Level QP

Note 6) QP : Abbreviation of Quasi-peak

5.2.3.2 Above 1 GHz results

- Operating Mode 1



Measurement results (PK)

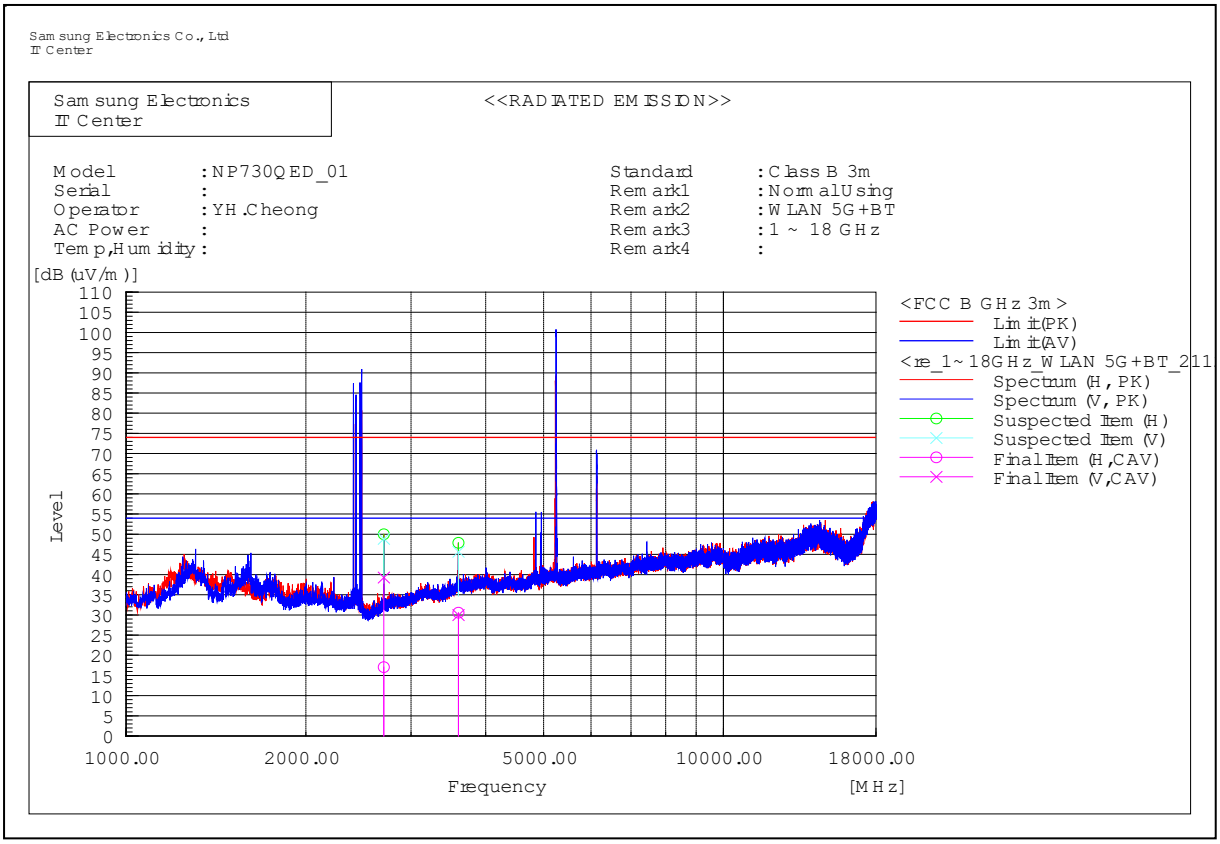
Frequency [MHz]	(P) [1]	Reading [2] [dB(μV)]	Factor [3] [dB(1/m)]	Level [4] [dB(μV/m)]	Limit [dB(μV/m)]	Margin [5] [dB]	Height [cm]	Angle [deg]
2 699.500	V	57.1	-9.3	47.8	74.0	26.2	109.8	180.3
2 700.250	H	58.8	-9.3	49.5	74.0	24.5	105.1	180.7
3 599.500	H	53.1	-3.1	50.0	74.0	24.0	105.1	177.0
3 599.500	V	49.8	-3.1	46.7	74.0	27.3	109.8	183.4
9 684.250	H	38.6	8.6	47.2	74.0	26.8	105.1	6.7
9 724.750	V	44.7	8.7	53.4	74.0	20.6	109.8	71.2

Measurement results (CAV)

Frequency [MHz]	(P) [1]	Reading [2] [dB(μV)]	Factor [3] [dB(1/m)]	Level [4] [dB(μV/m)]	Limit [dB(μV/m)]	Margin [5] [dB]	Height [cm]	Angle [deg]
2 699.830	H	35.6	-9.3	26.3	54.0	27.7	105.0	183.1
2 699.860	V	45.3	-9.3	36.0	54.0	18.0	109.6	180.8
3 554.500	H	18.8	-3.3	15.5	54.0	38.5	105.0	248.8
3 599.658	V	40.0	-3.1	36.9	54.0	17.1	109.7	235.8
9 673.997	H	11.8	8.5	20.3	54.0	33.7	104.8	233.9
9 768.115	V	11.0	8.8	19.8	54.0	34.2	109.9	266.2

Note 1) (P) : Abbreviation of Antenna Polarity
Note 2) Reading = Received raw signal(PK, CAV)
Note 3) Factor = Antenna factor + Cable loss – Amplifier gain
Note 4) Level = Reading(PK, CAV) + Factor(Antenna Factor + Cable Loss - Amp. Gain)
Note 5) Margin = Limit – Level(PK, CAV)
Note 6) PK : Abbreviation of Peak, CAV : Abbreviation of CISPR-Average
Note 7) Any radiated emissions do not detected from 18 GHz to 40 GHz.
Note 8) Radiated emissions (Tx/Rx frequencies and Harmonics) from the transceiver shall be ignored.
- Wi-Fi(2.4 GHz) : (2 402～2 482) MHz, Wi-Fi(6 GHz) : (5 925～7 125) MHz
Bluetooth : (2 400～2 483.5) MHz

- Operating Mode 2



Measurement results (PK)

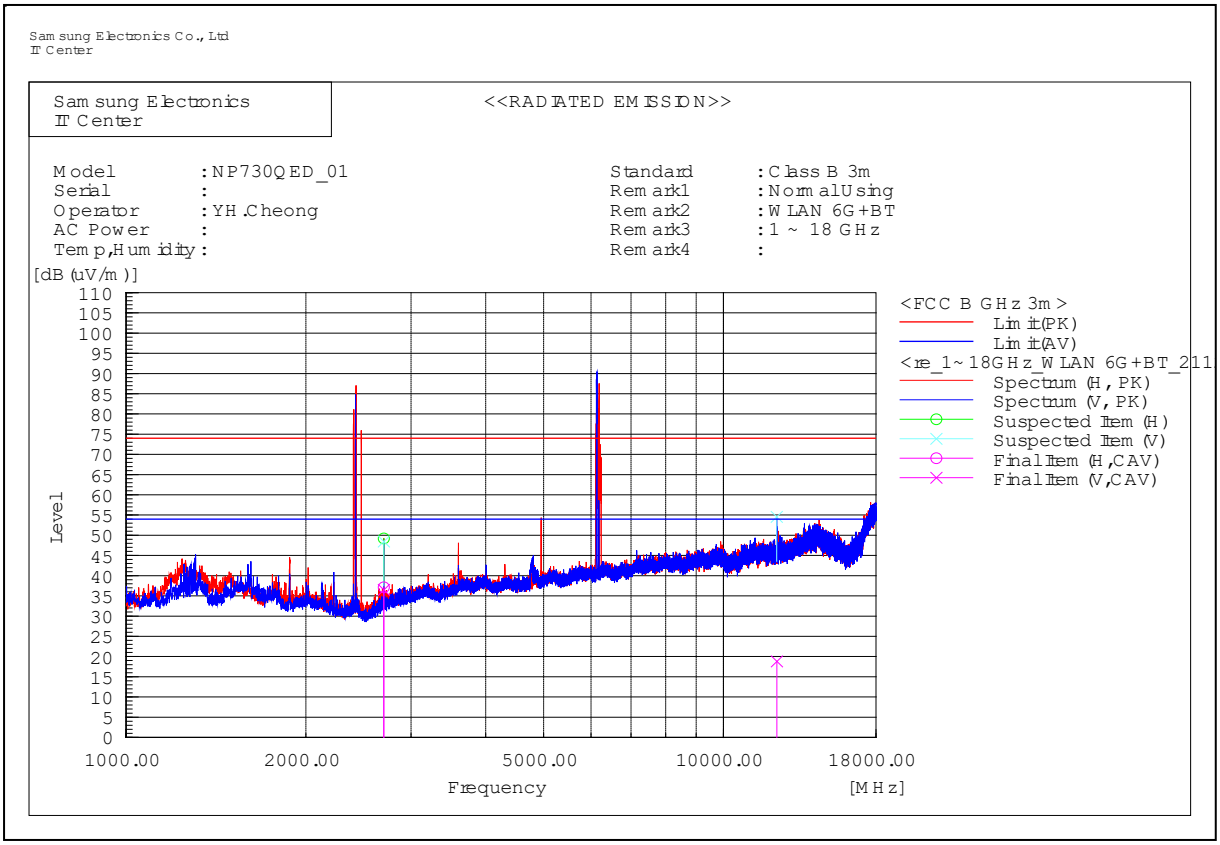
Frequency [MHz]	(P) [1]	Reading [2] [dB(μV)]	Factor [3] [dB(1/m)]	Level [4] [dB(μV/m)]	Limit [dB(μV/m)]	Margin [5] [dB]	Height [cm]	Angle [deg]
2 699.500	V	58.2	-9.3	48.9	74.0	25.1	109.8	177.6
2 700.250	H	59.3	-9.3	50.0	74.0	24.0	104.6	184.1
3 599.500	H	51.0	-3.1	47.9	74.0	26.1	104.6	239.9
3 599.500	V	48.8	-3.1	45.7	74.0	28.3	109.8	180.8

Measurement results (CAV)

Frequency [MHz]	(P) [1]	Reading [2] [dB(μV)]	Factor [3] [dB(1/m)]	Level [4] [dB(μV/m)]	Limit [dB(μV/m)]	Margin [5] [dB]	Height [cm]	Angle [deg]
2 699.800	H	26.4	-9.3	17.1	54.0	36.9	104.5	183.7
2 699.883	V	48.6	-9.3	39.3	54.0	14.7	109.4	178.0
3 599.433	H	33.7	-3.1	30.6	54.0	23.4	104.5	239.4
3 599.530	V	33.1	-3.1	30.0	54.0	24.0	109.8	181.2

Note 1) (P) : Abbreviation of Antenna Polarity
Note 2) Reading = Received raw signal(PK, CAV)
Note 3) Factor = Antenna factor + Cable loss – Amplifier gain
Note 4) Level = Reading(PK, CAV) + Factor(Antenna Factor + Cable Loss - Amp. Gain)
Note 5) Margin = Limit – Level(PK, CAV)
Note 6) PK : Abbreviation of Peak, CAV : Abbreviation of CISPR-Average
Note 7) Any radiated emissions do not detected from 18 GHz to 40 GHz.
Note 8) Radiated emissions (Tx/Rx frequencies and Harmonics) from the transceiver shall be ignored.
- Wi-Fi(5 GHz) : (5 170～5 710) MHz, Wi-Fi(6 GHz) : (5 925～7 125) MHz,
Bluetooth : (2 400～2 483.5) MHz

- Operating Mode 3



Measurement results (PK)

Frequency [MHz]	(P) [1]	Reading [2] [dB(μV)]	Factor [3] [dB(1/m)]	Level [4] [dB(μV/m)]	Limit [dB(μV/m)]	Margin [5] [dB]	Height [cm]	Angle [deg]
2 699.500	H	58.5	-9.3	49.2	74.0	24.8	105.1	191.0
2 699.500	V	57.8	-9.3	48.5	74.0	25.5	109.8	185.9
12 278.670	V	43.6	11.0	54.6	74.0	19.4	119.7	208.3

Measurement results (CAV)

Frequency [MHz]	(P) [1]	Reading [2] [dB(μV)]	Factor [3] [dB(1/m)]	Level [4] [dB(μV/m)]	Limit [dB(μV/m)]	Margin [5] [dB]	Height [cm]	Angle [deg]
2 699.860	H	46.4	-9.3	37.1	54.0	16.9	104.8	190.5
2 699.868	V	45.8	-9.3	36.5	54.0	17.5	109.9	186.2
12 280.110	V	7.8	11.0	18.8	54.0	35.2	119.5	207.8

Note 1) (P) : Abbreviation of Antenna Polarity
Note 2) Reading = Received raw signal(PK, CAV)
Note 3) Factor = Antenna factor + Cable loss – Amplifier gain
Note 4) Level = Reading(PK, CAV) + Factor(Antenna Factor + Cable Loss - Amp. Gain)
Note 5) Margin = Limit – Level(PK, CAV)
Note 6) PK : Abbreviation of Peak, CAV : Abbreviation of CISPR-Average
Note 7) Any radiated emissions do not detected from 18 GHz to 40 GHz.
Note 8) Radiated emissions (Tx/Rx frequencies and Harmonics) from the transceiver shall be ignored.
- Wi-Fi(6 GHz) : (5 925～7 125) MHz, Bluetooth : (2 400～2 483.5) MHz