



FCC EMI TEST REPORT

FCC ID : PY7-73876N
Equipment : GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII
a/b/g/n/ac/ax, GPS, WPC and NFC
Brand Name : Sony
Applicant : Sony Corporation
1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan
Manufacturer : Sony Corporation
1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan
Standard : FCC 47 CFR FCC Part 15 Subpart B Class B

The product was received on Feb. 23, 2021 and testing was started from Apr. 30, 2021 and completed on Apr. 30, 2021. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issued Date
FD0D2218	01	Initial issue of report	May 03, 2021



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.107	AC Conducted Emission	Pass	Under limit 14.15 dB at 0.501 MHz
3.2	15.109	Radiated Emission	Pass	Under limit 4.85 dB at 32.910 MHz

Note: This is a variant report by changing support band via SW version. All the test cases were performed on original report which can be referred to Sporton Report Number FC0D2217.

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Dara Chiu

Report Producer: Lucy Wu

1. General Description

1.1. Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, DTS/UNII a/b/g/n/ac/ax, NFC, FM Receiver, WPC/WPT, and GNSS.

Product Specification subjective to this standard	
Antenna Type	WWAN: Loop Antenna WLAN: <Chain 0>: Loop Antenna <Chain 1>: Loop Antenna Bluetooth: <Chain 0>: Loop Antenna <Chain 1>: Loop Antenna GPS/Glonass/Galileo/BDS: Loop Antenna NFC: Loop Antenna WPC/WPT: Loop Antenna FM: Using earphone as Antenna

Remark: The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

EUT Information List			
HW Version	SW Version	S/N	Performed Test Item
A	0.505	QV7200KK6J	Conducted Emission Radiated Emission

Accessory List	
AC Adapter	Model Name : XQZ-UC1
	S/N : 0020W51300024
Earphone	Model Name : STH40D
	S/N : N/A
Bluetooth Earphone	Model Name : SBH82D
	S/N : N/A
USB Cable	Model Name : XQZ-UB1
	S/N : N/A
Wireless Charger	Model Name : F7U050
	S/N : 26S10EHC828473
	FCC ID : K7SF7U050

Note:

- Above EUT list used are electrically identical per declared by manufacturer.
- Above the accessories list are used to exercise the EUT during test, and the serial number of each type of accessories is listed in each section of this report. .
- For other wireless features of this EUT, test report will be issued separately.

1.2. Modification of EUT

No modifications are made to the EUT during all test items.

1.3. Test Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. CO05-HY

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. 03CH10-HY (TAF Code: 3786)
Remark	The Radiated Emission test item subcontracted to Sporton International Inc. Wensan Laboratory.

FCC designation No.: TW1093 and TW1132

1.4. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC 47 CFR FCC Part 15 Subpart B Class B
- ♦ ANSI C63.4-2014

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2. Test Configuration of Equipment Under Test

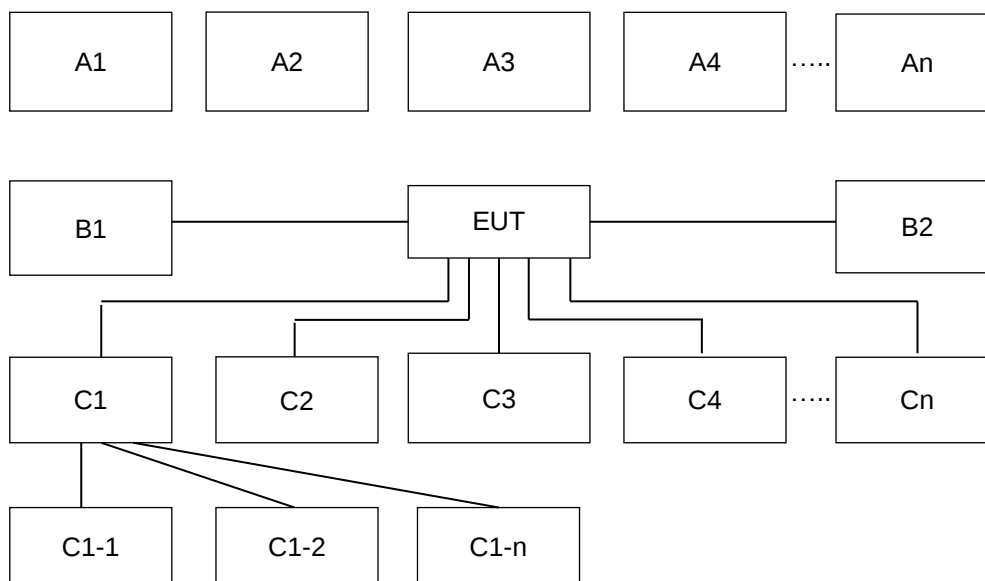
2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
AC Conducted Emission	Mode 1: LTE Band 12 (Low Channel) Idle + Bluetooth Idle + WLAN (5GHz) Idle + Camera (Rear) + Earphone + Battery + USB Cable (Charging from Adapter)
Radiated Emissions	Mode 1: LTE Band 12 (Low Channel) Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + GPS Rx + Earphone + Battery + WPC Charging Pad (Charging from Adapter)
Remark: 1. For radiation emission after pre-scanned the cellular band between 30MHz ~ 960MHz (LTE Band 12); only the worst case for cellular band test data of this mode was reported. 2. For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.	

2.2. Connection Diagram of Test System



Conduction Test Setup									
No.	Wireless Station	Connection Type	Test Mode						
			1	-	-	-	-	-	-
A1	BT Earphone	Bluetooth	X	-	-	-	-	-	-
A2	System Simulator	LTE	X	-	-	-	-	-	-
A3	AP router	WiFi	X	-	-	-	-	-	-
No.	Power Source	Connection Type	1	-	-	-	-	-	-
B1	AC : 120V/60Hz	Type C Cable	X	-	-	-	-	-	-
No.	Setup Peripherals	Connection Type	1	-	-	-	-	-	-
C1	Earphone	Earphone jack	X	-	-	-	-	-	-
C2	SD card	SD I/O interface without Cable	X	-	-	-	-	-	-

Radiation Test Setup									
No.	Wireless Station	Connection Type	Test Mode						
			1	-	-	-	-	-	-
A1	BT Earphone	Bluetooth	X	-	-	-	-	-	-
A2	System Simulator	GSM/UMTS/CDMA/WCDMA/LTE	X	-	-	-	-	-	-
A3	GPS Station	GPS	X	-	-	-	-	-	-
A4	AP router	WiFi	X	-	-	-	-	-	-
A5	WPC pad	WPC	X	-	-	-	-	-	-
No.	Power Source	Connection Type	1	-	-	-	-	-	-
B1	AC : 120V/60Hz	WPC	X	-	-	-	-	-	-
B2	Power from WPC	AC Power Cable	X	-	-	-	-	-	-
No.	Setup Peripherals	Connection Type	1	-	-	-	-	-	-
C1	Earphone	Earphone jack	X	-	-	-	-	-	-
C2	SD card	SD I/O interface without cable	X	-	-	-	-	-	-

2.3. Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
4.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.4. EUT Operation Test Setup

The EUT was in LTE idle mode during the test. The EUT was synchronized with the BCCH, and had been continuous receiving mode by setting paging reorganization of the system simulator.

At the same time, the EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test:

1. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.
2. Turn on camera to capture images.

3. Test Result

3.1. Test of AC Conducted Emission Measurement

3.1.1. Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

<Class B>

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

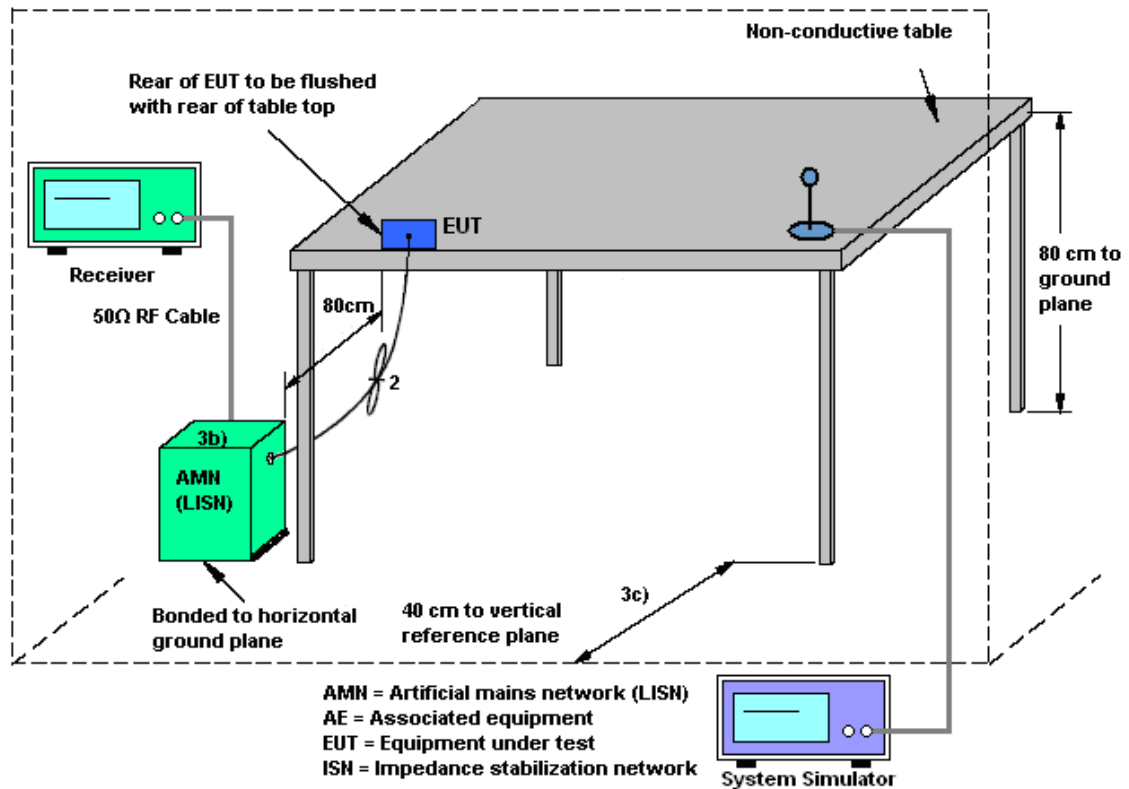
3.1.2. Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3. Test Procedure

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

3.1.4. Test Setup



3.1.5. Test Result of AC Conducted Emission

Please refer to Appendix A.

3.2. Test of Radiated Emission Measurement

3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

<Class B>

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.2.2. Measuring Instruments

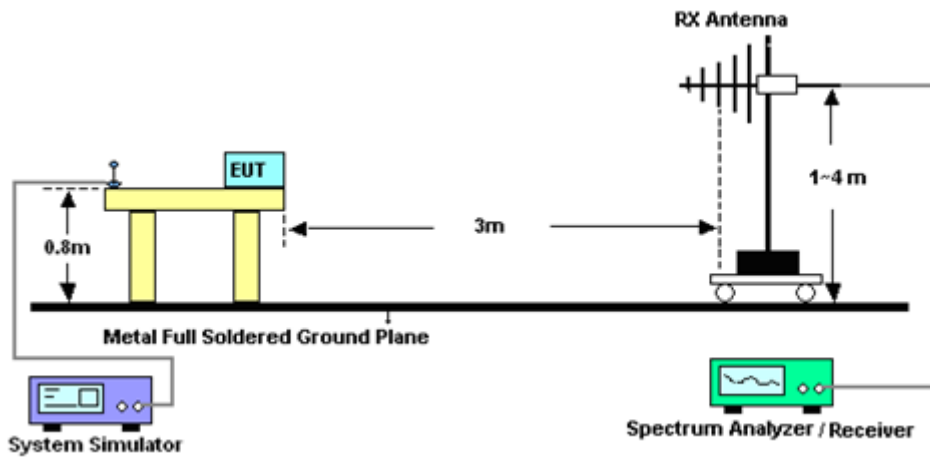
Refer a test equipment and calibration data table in this test report.

3.2.3. Test Procedures

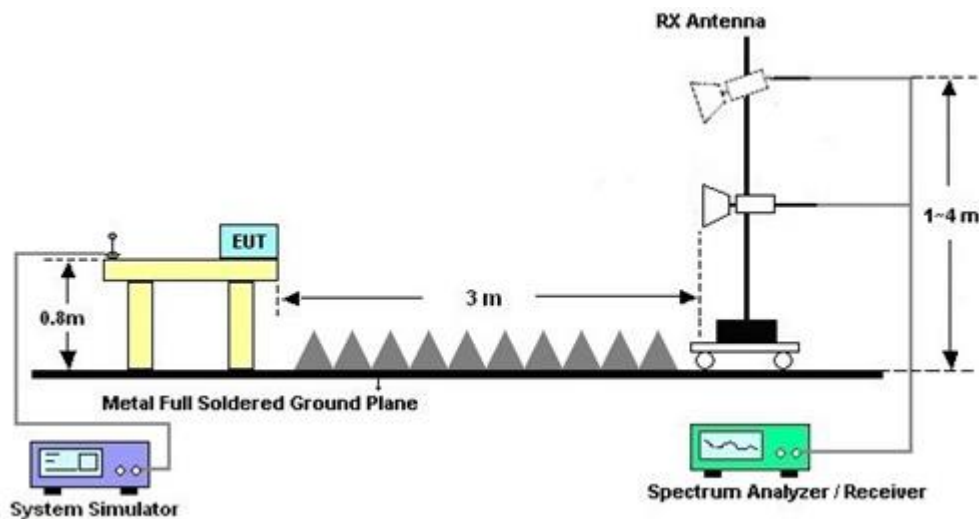
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120 kHz/VBW=300 kHz for frequency below 1 GHz; RBW=1 MHz VBW=3 MHz (Peak), RBW=1 MHz/VBW=10 Hz (Average) for frequency above 1 GHz).
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dBμV/m) = 20 log Emission level (μV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.2.5. Test Result of Radiated Emission

Please refer to Appendix B.



4. List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Apr. 30, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 30, 2020	Apr. 30, 2021	Nov. 29, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	Apr. 30, 2021	Nov. 17, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2020	Apr. 30, 2021	Nov. 15, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Apr. 30, 2021	N/A	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Apr. 30, 2021	Dec. 30, 2021	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Feb. 25, 2021	Apr. 30, 2021	Feb. 24, 2022	Conduction (CO05-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Oct. 21, 2020	Apr. 30, 2021	Oct. 20, 2021	Radiation (03CH10-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	35413 & 02	30MHz~1GHz	Feb. 10, 2021	Apr. 30, 2021	Feb. 09, 2022	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02114	1GHz~18GHz	Aug. 04, 2020	Apr. 30, 2021	Aug. 03, 2021	Radiation (03CH10-HY)
Preamplifier	Jet-Power	JAP00101800-30-10P	160118550004	1GHz~18GHz	Mar. 01, 2021	Apr. 30, 2021	Feb. 28, 2022	Radiation (03CH10-HY)
Spectrum Analyzer	Keysight	N9010A	MY53470118	10Hz~44GHz	Jan. 15, 2021	Apr. 30, 2021	Jan. 14, 2022	Radiation (03CH10-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	N/A	Apr. 30, 2021	N/A	Radiation (03CH10-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Apr. 30, 2021	N/A	Radiation (03CH10-HY)
Turn Table	EMEC	TT 2200	N/A	0~360 Degree	N/A	Apr. 30, 2021	N/A	Radiation (03CH10-HY)
Software	Audix	E3 6.2009-8-24	RK-001042	N/A	N/A	Apr. 30, 2021	N/A	Radiation (03CH10-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY55420170	20MHz~8.4GHz	May 21, 2020	Apr. 30, 2021	May 20, 2021	Radiation (03CH10-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104 / 102	MY11692/4PE, MY11693/4PE, MY2855/2	30MHz~1GHz	Nov. 06, 2020	Apr. 30, 2021	Nov. 05, 2021	Radiation (03CH10-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104 / 102	MY11692/4PE, MY11693/4PE, MY2855/2	1GHz~18GHz	Nov. 06, 2020	Apr. 30, 2021	Nov. 05, 2021	Radiation (03CH10-HY)

5. Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.3
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.7
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1
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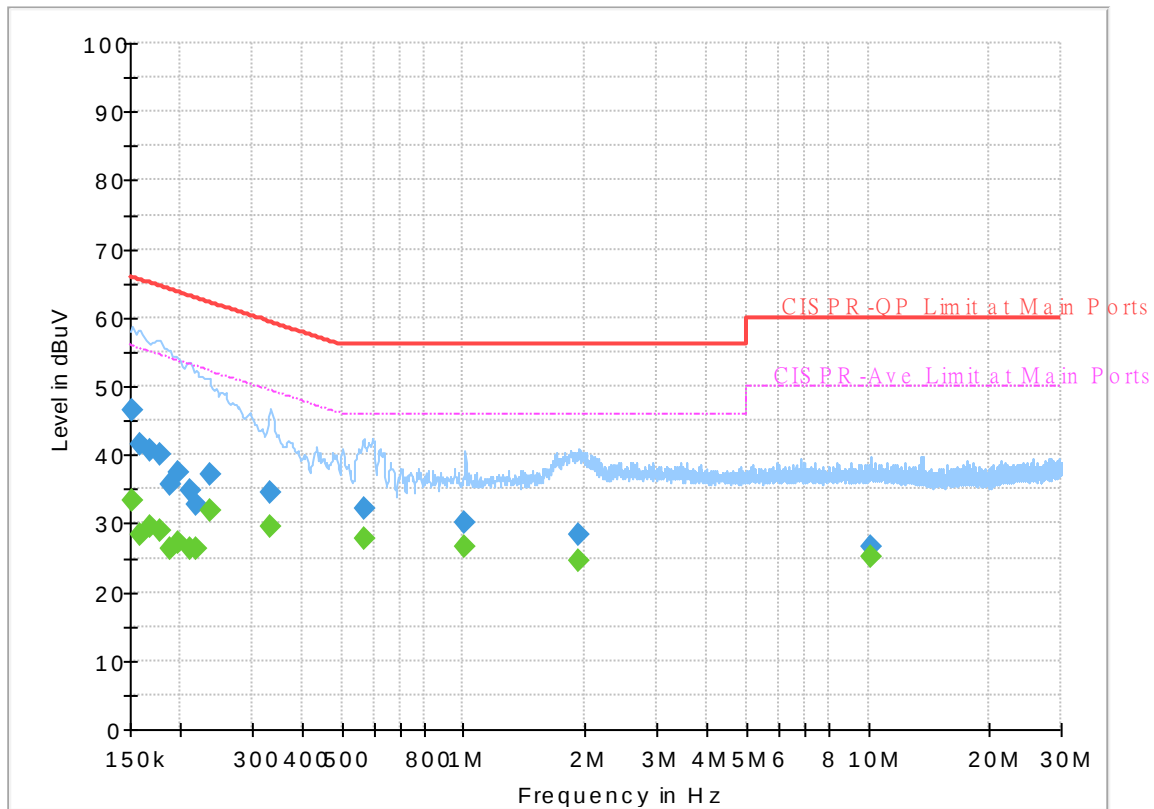
Appendix A. AC Conducted Emission Test Results

Test Engineer :	Tom Lee	Temperature :	23~26℃
		Relative Humidity :	40~50%

EUT Information

Report NO : 0D2218
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



Final_Result

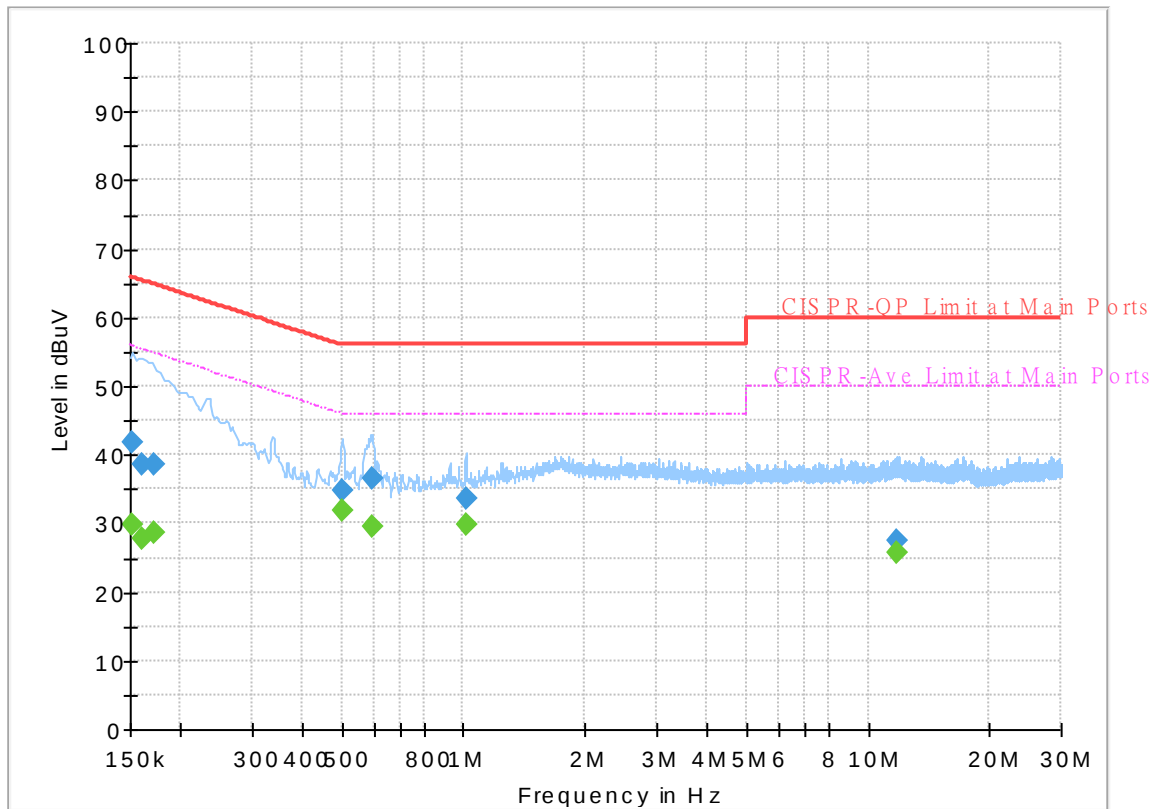
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	33.33	55.88	22.55	L1	OFF	19.5
0.152250	46.42	---	65.88	19.46	L1	OFF	19.5
0.159000	---	28.39	55.52	27.13	L1	OFF	19.5
0.159000	41.42	---	65.52	24.10	L1	OFF	19.5
0.168000	---	29.63	55.06	25.43	L1	OFF	19.5
0.168000	40.61	---	65.06	24.45	L1	OFF	19.5
0.177000	---	28.90	54.63	25.73	L1	OFF	19.5
0.177000	39.99	---	64.63	24.64	L1	OFF	19.5
0.188250	---	26.45	54.11	27.66	L1	OFF	19.5
0.188250	35.66	---	64.11	28.45	L1	OFF	19.5
0.197250	---	27.19	53.73	26.54	L1	OFF	19.5
0.197250	37.40	---	63.73	26.33	L1	OFF	19.5
0.210750	---	26.22	53.18	26.96	L1	OFF	19.5
0.210750	34.89	---	63.18	28.29	L1	OFF	19.5
0.217500	---	26.26	52.91	26.65	L1	OFF	19.5
0.217500	32.65	---	62.91	30.26	L1	OFF	19.5
0.235500	---	31.95	52.25	20.30	L1	OFF	19.5
0.235500	37.02	---	62.25	25.23	L1	OFF	19.5
0.334500	---	29.43	49.34	19.91	L1	OFF	19.5
0.334500	34.46	---	59.34	24.88	L1	OFF	19.5
0.566250	---	27.72	46.00	18.28	L1	OFF	19.7

0.566250	32.21	---	56.00	23.79	L1	OFF	19.7
1.009500	---	26.56	46.00	19.44	L1	OFF	20.0
1.009500	30.15	---	56.00	25.85	L1	OFF	20.0
1.936500	---	24.54	46.00	21.46	L1	OFF	20.0
1.936500	28.39	---	56.00	27.61	L1	OFF	20.0
10.117500	---	25.25	50.00	24.75	L1	OFF	20.0
10.117500	26.64	---	60.00	33.36	L1	OFF	20.0

EUT Information

Report NO : 0D2218
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Neutral

Full Spectrum

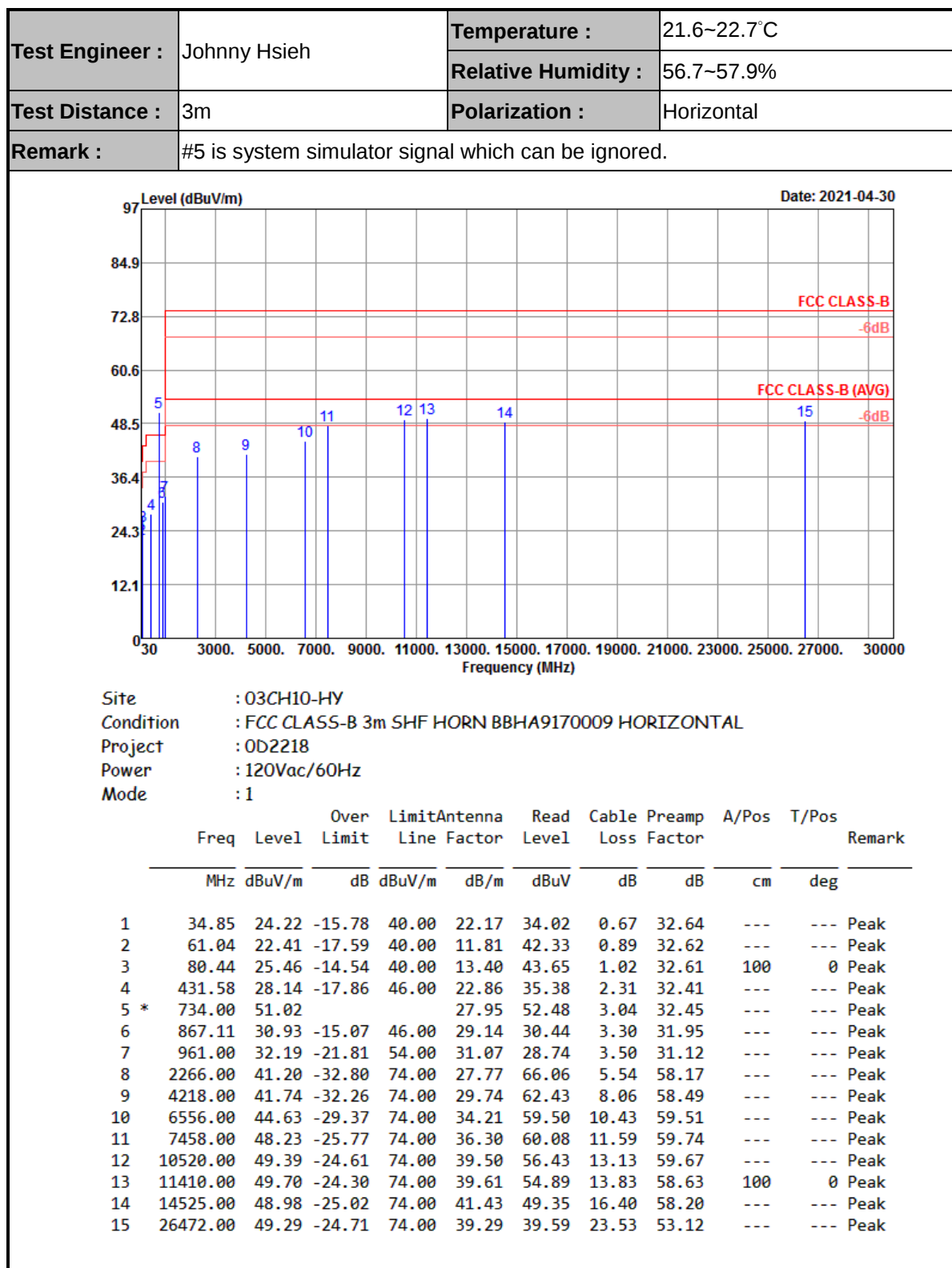


Final_Result

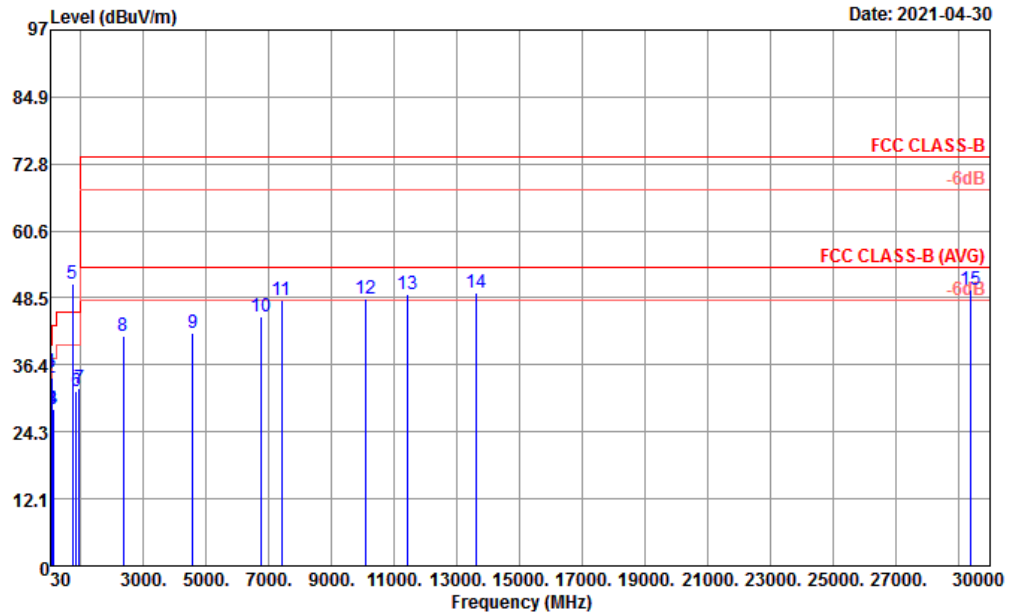
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	29.68	55.88	26.20	N	OFF	19.5
0.152250	41.79	---	65.88	24.09	N	OFF	19.5
0.161250	---	27.92	55.40	27.48	N	OFF	19.5
0.161250	38.58	---	65.40	26.82	N	OFF	19.5
0.172500	---	28.56	54.84	26.28	N	OFF	19.5
0.172500	38.51	---	64.84	26.33	N	OFF	19.5
0.501000	---	31.85	46.00	14.15	N	OFF	19.7
0.501000	34.66	---	56.00	21.34	N	OFF	19.7
0.595500	---	29.53	46.00	16.47	N	OFF	19.8
0.595500	36.62	---	56.00	19.38	N	OFF	19.8
1.011750	---	29.95	46.00	16.05	N	OFF	20.1
1.011750	33.66	---	56.00	22.34	N	OFF	20.1
11.744250	---	25.61	50.00	24.39	N	OFF	20.1
11.744250	27.63	---	60.00	32.37	N	OFF	20.1



Appendix B. Radiated Emission Test Result



Test Engineer :	Johnny Hsieh	Temperature :	21.6~22.7°C
		Relative Humidity :	56.7~57.9%
Test Distance :	3m	Polarization :	Vertical
Remark :	#5 is system simulator signal which can be ignored.		



Site : 03CH10-HY
 Condition : FCC CLASS-B 3m SHF HORN BBHA9170009 VERTICAL
 Project : 0D2218
 Power : 120Vac/60Hz
 Mode : 1

	Freq	Level	Over	Limit	Antenna	Read	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Factor	Level	Loss	Factor	cm	deg	
1	32.91	35.15	-4.85	40.00	23.03	44.11	0.65	32.64	100	0	Peak
2	61.04	34.12	-5.88	40.00	11.81	54.04	0.89	32.62	---	---	Peak
3	80.44	28.28	-11.72	40.00	13.40	46.47	1.02	32.61	---	---	Peak
4	121.18	28.24	-15.26	43.50	17.38	42.20	1.23	32.57	---	---	Peak
5 *	734.00	51.08			27.95	52.54	3.04	32.45	---	---	Peak
6	848.68	31.49	-14.51	46.00	29.24	31.04	3.27	32.06	---	---	Peak
7	955.38	32.16	-13.84	46.00	30.93	28.91	3.49	31.17	---	---	Peak
8	2358.00	41.48	-32.52	74.00	27.57	66.40	5.63	58.12	---	---	Peak
9	4562.00	42.24	-31.76	74.00	30.55	61.86	8.23	58.40	---	---	Peak
10	6746.00	45.13	-28.87	74.00	34.21	59.97	10.53	59.58	---	---	Peak
11	7410.00	48.01	-25.99	74.00	36.22	59.82	11.71	59.74	---	---	Peak
12	10102.00	48.26	-25.74	74.00	38.81	56.98	12.80	60.33	---	---	Peak
13	11408.00	49.15	-24.85	74.00	39.61	54.34	13.83	58.63	---	---	Peak
14	13595.00	49.58	-24.42	74.00	40.09	51.35	15.74	57.60	---	---	Peak
15	29376.00	50.03	-23.97	74.00	40.50	39.50	24.78	54.75	100	0	Peak

————THE END————