



FCC EMI TEST REPORT

FCC ID : PJO6901
Equipment : MT-T800
Brand Name : Arima
Model Name : MT-T800
Marketing Name : Arima tablet
Applicant : Arima Communication Corporation
No. 16, Lane 658, Ying Tao Road, Yingge Dist., New
Taipei City 23943, Taiwan (ROC)
Manufacturer : Arima Communication Corporation
No. 16, Lane 658, Ying Tao Road, Yingge Dist., New
Taipei City 23943, Taiwan (ROC)
Standard : FCC 47 CFR FCC Part 15 Subpart B Class B

The product was received on Feb. 14, 2020 and testing was started from Feb. 22, 2020 and completed on Feb. 24, 2020. 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this 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, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issued Date
FC012248	01	Initial issue of report	May 29, 2020

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 10.91 dB at 0.527 MHz
3.2	15.109	Radiated Emission	Pass	Under limit 4.04 dB at 166.770 MHz for Quasi-Peak

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: Ruby Zou

1. General Description

1.1. Product Feature of Equipment Under Test

WCDMA/LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n, FM Receiver, and GNSS.

Product Specification subjective to this standard	
Antenna Type	WWAN: Fixed Internal Antenna WLAN: Monopole Antenna Bluetooth: Monopole Antenna GPS / Glonass: Fixed Internal Antenna FM: Using Earphone as Antenna

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. EMC & Wireless Communications 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

FCC designation No.: TW1093 and TW1098

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

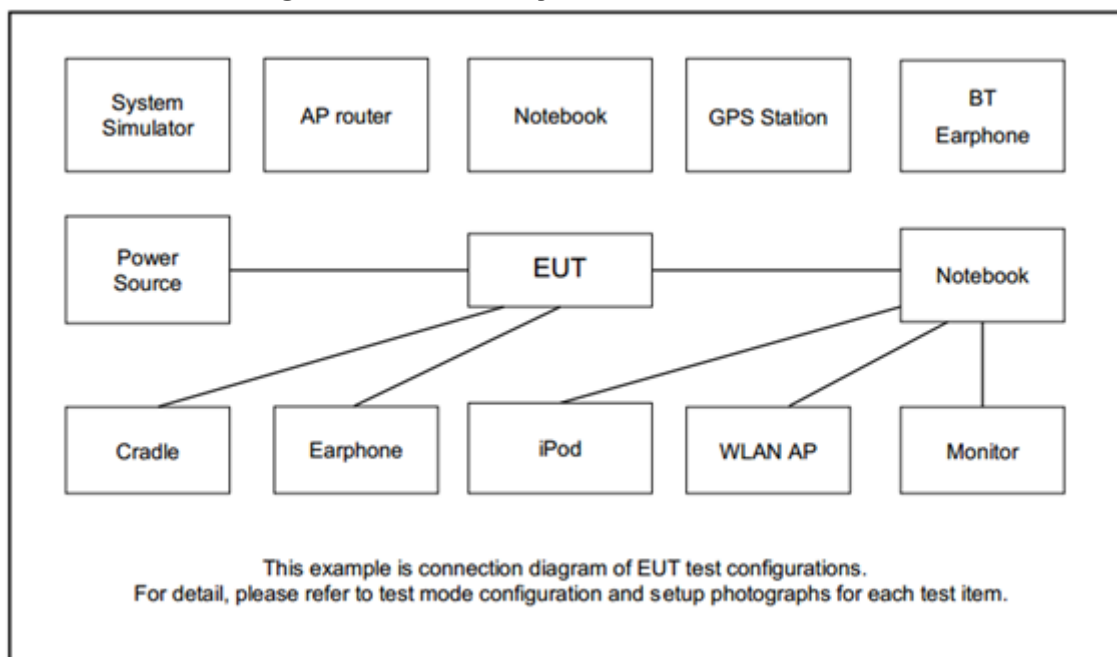
2.1. Test Mode

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: WCDMA Band II Idle + WLAN (2.4GHz) Idle + Bluetooth Idle + Video Record (Front) + Earphone + SD Card + Battery + USB Cable (Charging from Adapter)
	Mode 2: WCDMA Band IV Idle + WLAN (5GHz) Idle + Bluetooth Idle + Video Record (Rear) + Earphone + SD Card + Battery + USB Cable (Charging from Adapter)
	Mode 3: WCDMA Band V Idle + WLAN (2.4GHz) Idle + Bluetooth Idle + MPEG4 + Earphone + SD Card + Battery + USB Cable (Charging from Adapter)
	Mode 4: LTE Band 2 Idle + WLAN (5GHz) Idle + Bluetooth Idle + H-Pattern + Earphone + SD Card + Battery + USB Cable (Charging from Adapter)
	Mode 5: LTE Band 12 Idle + WLAN (2.4GHz) Idle + Bluetooth Idle + GPS Rx + Earphone + SD Card + Battery + USB Cable (Charging from Adapter)
	Mode 6: LTE Band 41 Idle + WLAN (5GHz) Idle + Bluetooth Idle + FM Rx + Earphone + SD Card + Battery + USB Cable (Charging from Adapter)
Radiated Emissions	Mode 1: WCDMA Band II Idle + WLAN (2.4GHz) Idle + Bluetooth Idle + Video Record (Front) + Earphone + SD Card + Battery + USB Cable (Charging from Adapter)
	Mode 2: WCDMA Band IV Idle + WLAN (5GHz) Idle + Bluetooth Idle + Video Record (Rear) + Earphone + SD Card + Battery + USB Cable (Charging from Adapter)
	Mode 3: WCDMA Band V Idle + WLAN (2.4GHz) Idle + Bluetooth Idle + MPEG4 + Earphone + SD Card + Battery + USB Cable (Charging from Adapter)
	Mode 4: LTE Band 2 Idle + WLAN (5GHz) Idle + Bluetooth Idle + H-Pattern + Earphone + SD Card + Battery + USB Cable (Charging from Adapter)
	Mode 5: LTE Band 12 Idle + WLAN (2.4GHz) Idle + Bluetooth Idle + GPS Rx + Earphone + SD Card + Battery + USB Cable (Data Link with SD Card)
	Mode 6: LTE Band 41 Idle + WLAN (5GHz) Idle + Bluetooth Idle + FM Rx + Earphone + SD Card + Battery + USB Cable (Data Link with eMMC)
Remark: - The worst case of AC is mode 5; only the test data of this mode was reported. - The worst case of RE is mode 6; only the test data of this mode was reported. - For radiation emission after pre-scanned the cellular band between 30MHz ~ 960MHz (WCDMA Band V/LTE Band 12); only the worst case for cellular band test data of this mode was reported. - Data Link with Notebook means data application transferred mode between EUT and Notebook.	

2.2. Connection Diagram of Test System



2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
4.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
5.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
6.	Notebook	Dell	Latitude 5480	FCC DoC	N/A	AC I/P : Unshielded, 1.2m DC O/P : Shielded, 1.8m
7.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
8.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A
9.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A



2.4. EUT Operation Test Setup

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

For associated equipment, the programs, "EMCTest.exe" installed in notebook, which generated a complete line of repeating "H" pattern, were used as the test software. The programs were executed as follows:

- a. Turn on the power of all equipment.
- b. The notebook reads the test program from the hard disk drive and runs it.
- c. The notebook sends "H" messages to the panel, and "H" patterns are displayed on the screen.
- d. The notebook sends "H" messages to the internal hard disk, and the messages are read by the hard disk and written in it.
- e. Repeat the steps from b to d.

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. Data application is transferred between Laptop and EUT via USB cable.
2. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.
3. Execute "Video player" to play MPEG4 files.
4. Turn on camera to capture images.
5. Execute "H Pattern" to show H Patterns via HDMI Cable on the Monitor.
6. Execute FM function to make the EUT receive signals from System Simulator.

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.

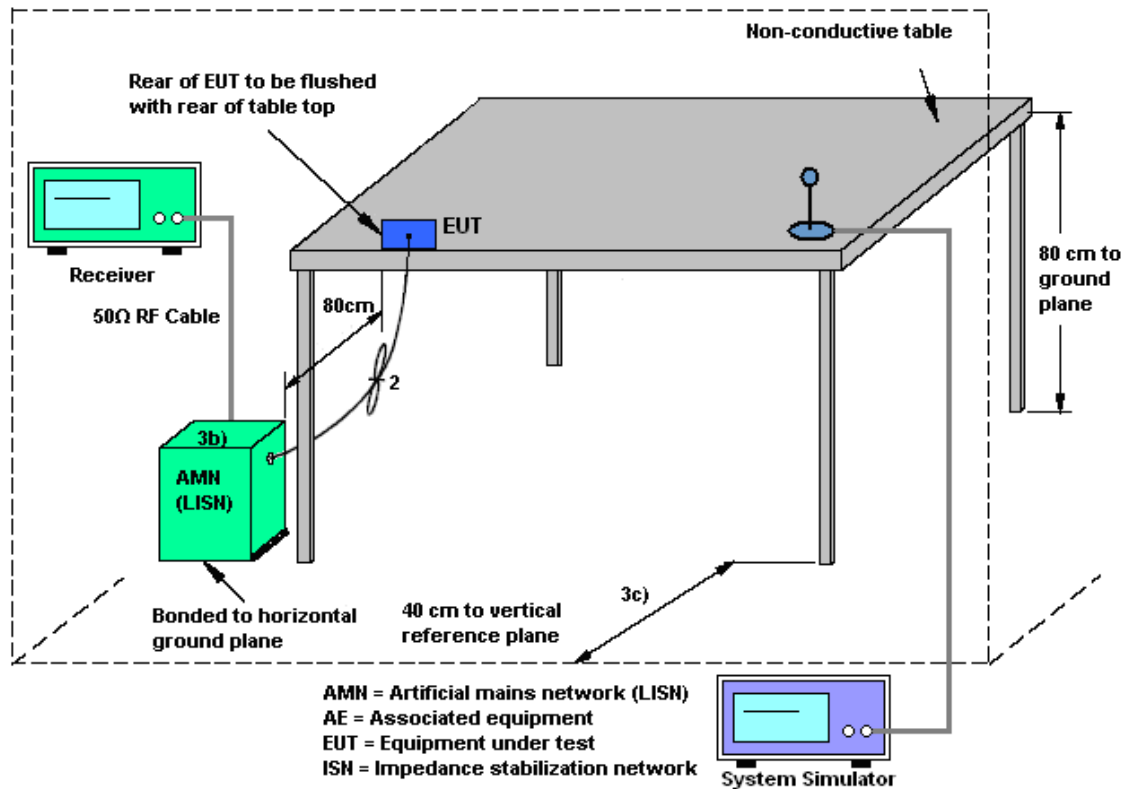
3.1.2. Measuring Instruments

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 should 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

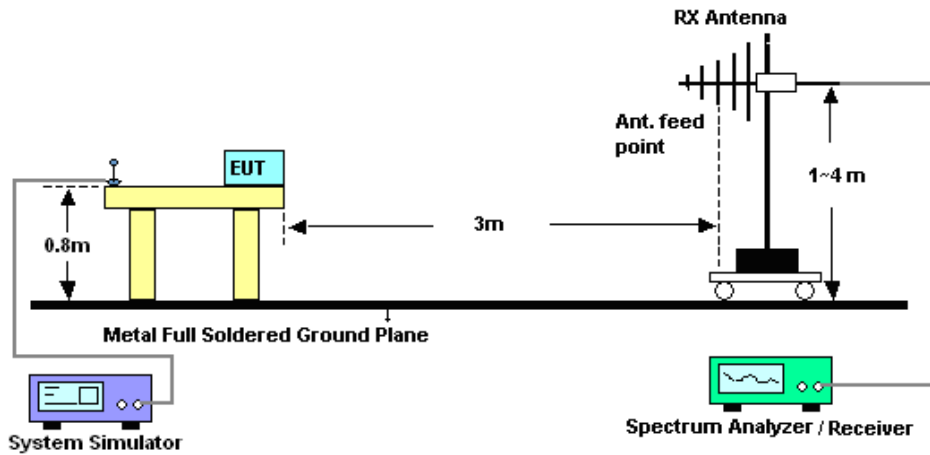
Refer a test equipment and calibration data table in this test report.

3.2.3. Test Procedures

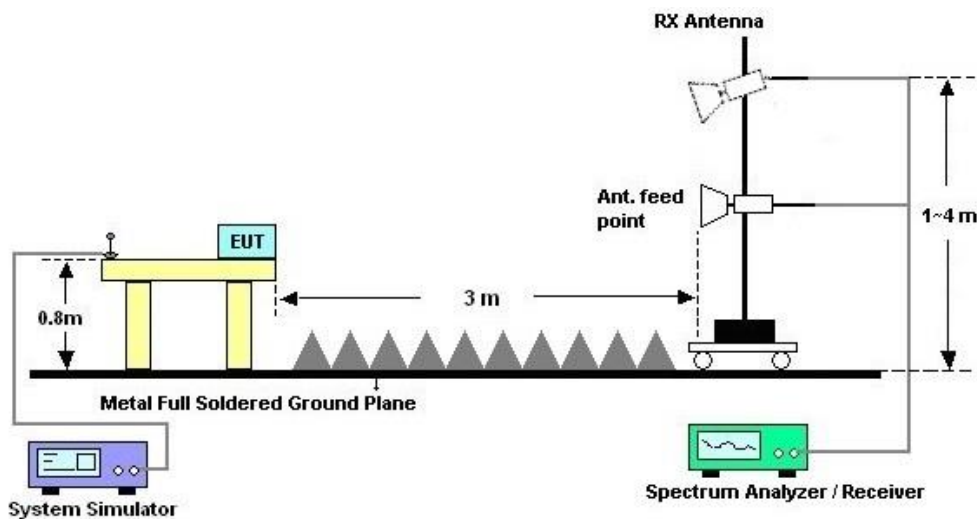
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
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	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Feb. 22, 2020	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 15, 2019	Feb. 22, 2020	Nov. 14, 2020	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Mar. 19, 2019	Feb. 22, 2020	Mar. 18, 2020	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 15, 2019	Feb. 22, 2020	Nov. 14, 2020	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Feb. 22, 2020	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 02, 2020	Feb. 22, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 02, 2020	Feb. 22, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	41912 & 05	30MHz~1GHz	Feb. 09, 2020	Feb. 24, 2020	Feb. 08, 2021	Radiation (03CH10-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Oct. 22, 2019	Feb. 24, 2020	Oct. 21, 2020	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1325	1GHz~18GHz	Oct. 09, 2019	Feb. 24, 2020	Oct. 08, 2020	Radiation (03CH10-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	N/A	Feb. 24, 2020	N/A	Radiation (03CH10-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Feb. 24, 2020	N/A	Radiation (03CH10-HY)
Turn Table	EMEC	TT 2200	N/A	0~360 Degree	N/A	Feb. 24, 2020	N/A	Radiation (03CH10-HY)
Software	Audix	E3 6.2009-8-24	RK-001042	N/A	N/A	Feb. 24, 2020	N/A	Radiation (03CH10-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290045	20MHz~8.4GHz	Jan. 18, 2020	Feb. 24, 2020	Jan. 17, 2021	Radiation (03CH10-HY)
Preamplifier	Jet-Power	JAP00101800-30-10P	160118550004	1GHz~18GHz	Sep. 27, 2019	Feb. 24, 2020	Sep. 26, 2020	Radiation (03CH10-HY)
Signal Analyzer	R&S	FSV3044	101009	10Hz~44GHz	Nov. 11, 2019	Feb. 24, 2020	Nov. 10, 2020	Radiation (03CH10-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104 / 102	MY11692/4PE MY11693/4PE, MY2855/2	30MHz~1GHz	Nov. 07, 2019	Feb. 24, 2020	Nov. 06, 2020	Radiation (03CH10-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104 / 102	MY11692/4PE MY11693/4PE, MY2855/2	1GHz~18GHz	Nov. 07, 2019	Feb. 24, 2020	Nov. 06, 2020	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% ($U = 2Uc(y)$)	2.0
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.8
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.3
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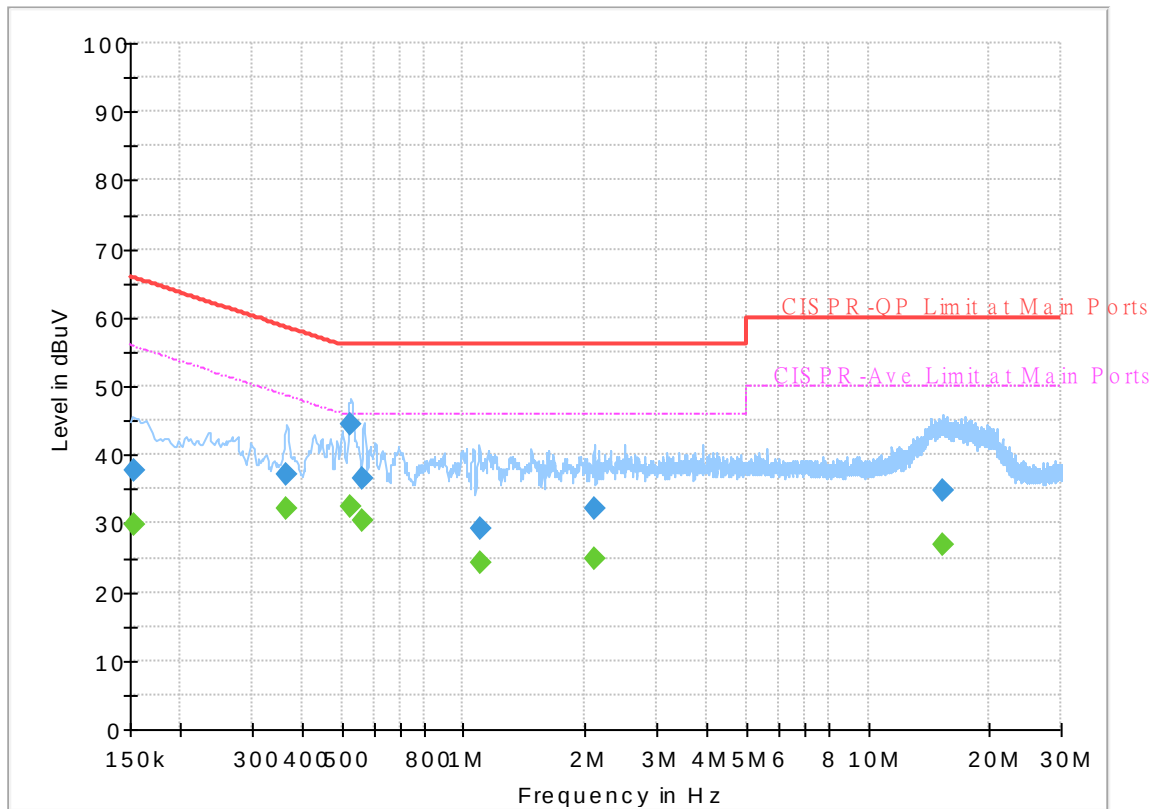
Appendix A. AC Conducted Emission Test Results

Test Engineer :	Tom Lee	Temperature :	21~24℃
		Relative Humidity :	45~53%

EUT Information

Report NO : 012248
Test Mode : Mode 5
Test Voltage : 120Vac/60Hz
Phase : Line

Full Spectrum



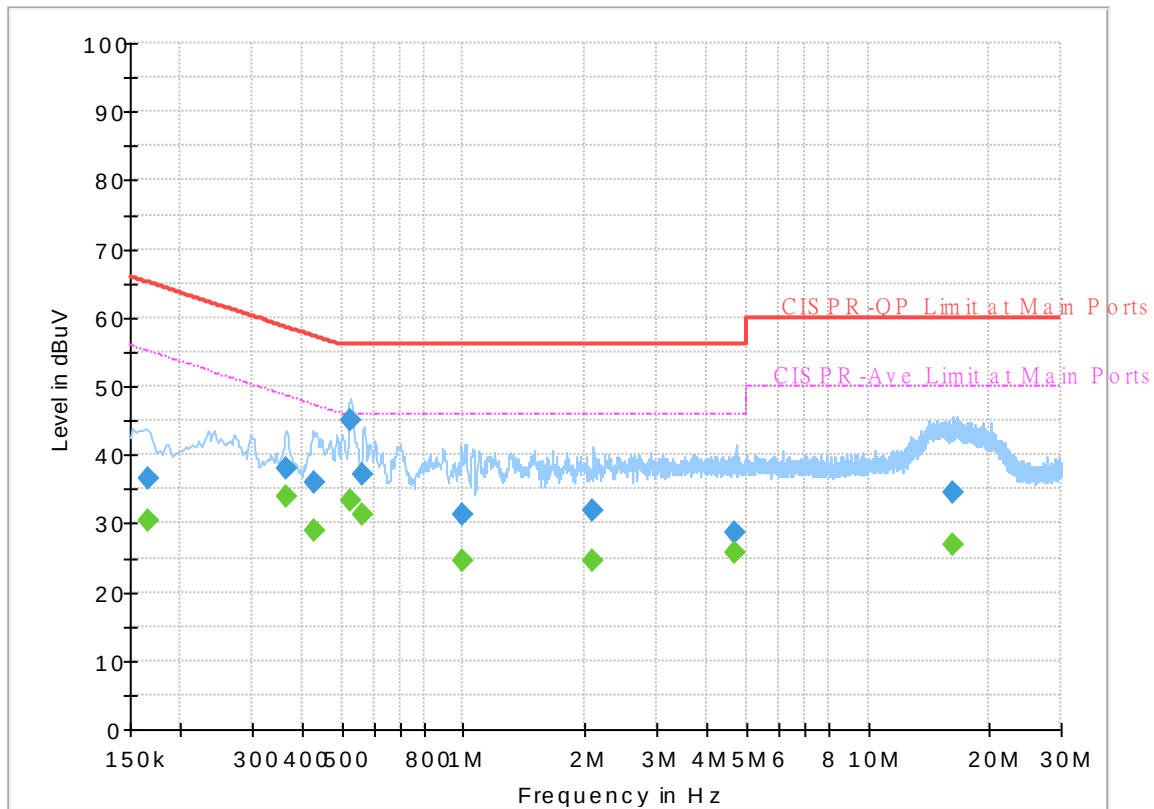
Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152633	---	29.69	55.86	26.17	L1	OFF	19.5
0.152633	37.66	---	65.86	28.20	L1	OFF	19.5
0.362850	---	32.06	48.66	16.60	L1	OFF	19.5
0.362850	37.14	---	58.66	21.52	L1	OFF	19.5
0.523500	---	32.60	46.00	13.40	L1	OFF	19.5
0.523500	44.57	---	56.00	11.43	L1	OFF	19.5
0.562470	---	30.42	46.00	15.58	L1	OFF	19.5
0.562470	36.58	---	56.00	19.42	L1	OFF	19.5
1.097250	---	24.14	46.00	21.86	L1	OFF	19.6
1.097250	29.18	---	56.00	26.82	L1	OFF	19.6
2.103360	---	24.86	46.00	21.14	L1	OFF	19.7
2.103360	32.10	---	56.00	23.90	L1	OFF	19.7
15.353250	---	26.89	50.00	23.11	L1	OFF	20.1
15.353250	34.68	---	60.00	25.32	L1	OFF	20.1

EUT Information

Report NO : 012248
 Test Mode : Mode 5
 Test Voltage : 120Vac/60Hz
 Phase : Neutral

Full Spectrum

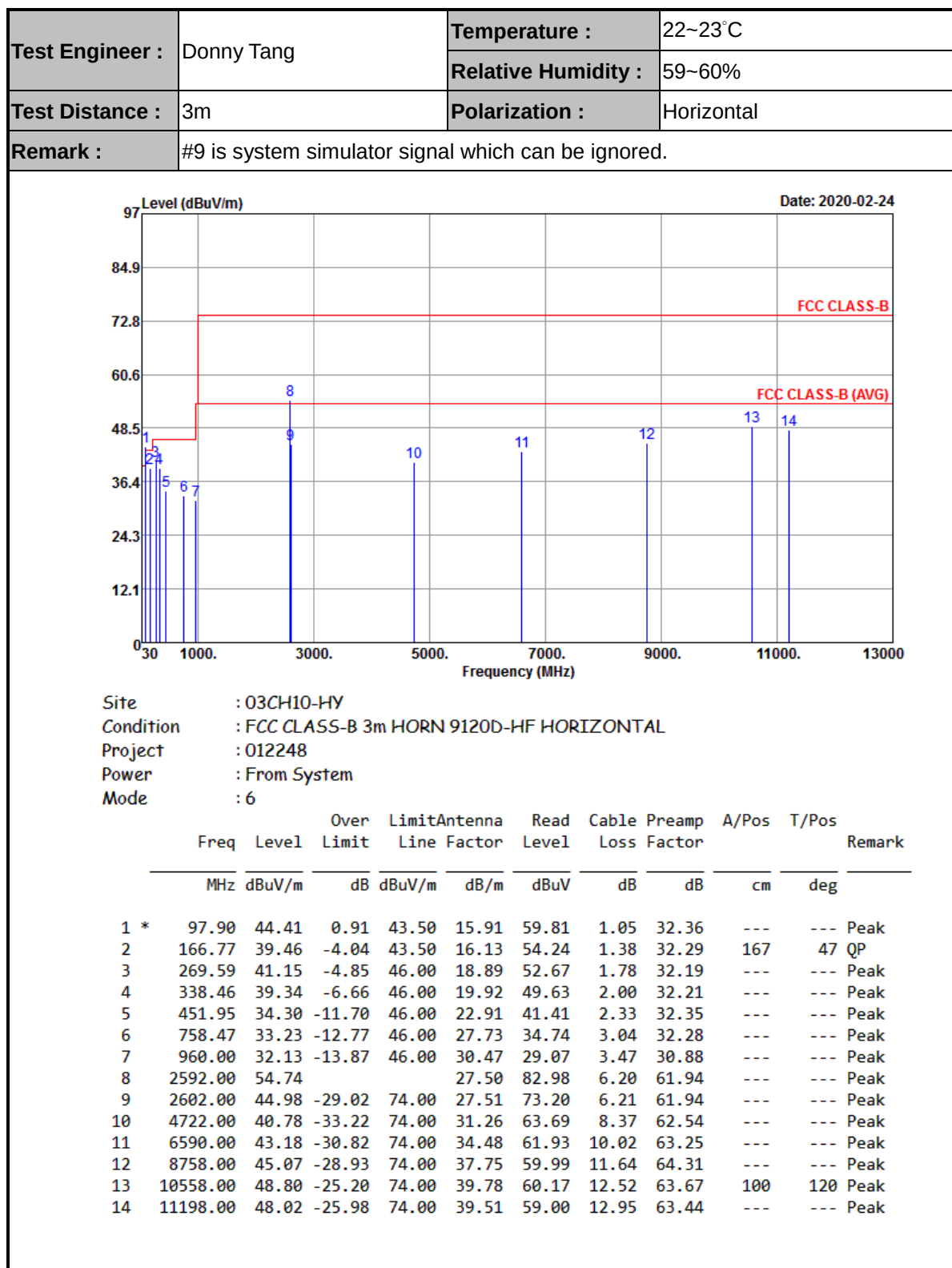


Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.166830	---	30.36	55.12	24.76	N	OFF	19.6
0.166830	36.67	---	65.12	28.45	N	OFF	19.6
0.365820	---	33.86	48.60	14.74	N	OFF	19.6
0.365820	38.03	---	58.60	20.57	N	OFF	19.6
0.429000	---	29.08	47.27	18.19	N	OFF	19.6
0.429000	35.87	---	57.27	21.40	N	OFF	19.6
0.526740	---	33.27	46.00	12.73	N	OFF	19.6
0.526740	45.09	---	56.00	10.91	N	OFF	19.6
0.563640	---	31.37	46.00	14.63	N	OFF	19.6
0.563640	37.22	---	56.00	18.78	N	OFF	19.6
0.991500	---	24.43	46.00	21.57	N	OFF	19.6
0.991500	31.40	---	56.00	24.60	N	OFF	19.6
2.091750	---	24.67	46.00	21.33	N	OFF	19.6
2.091750	31.76	---	56.00	24.24	N	OFF	19.6
4.706250	---	25.63	46.00	20.37	N	OFF	19.8
4.706250	28.71	---	56.00	27.29	N	OFF	19.8
16.291590	---	26.98	50.00	23.02	N	OFF	20.2
16.291590	34.37	---	60.00	25.63	N	OFF	20.2

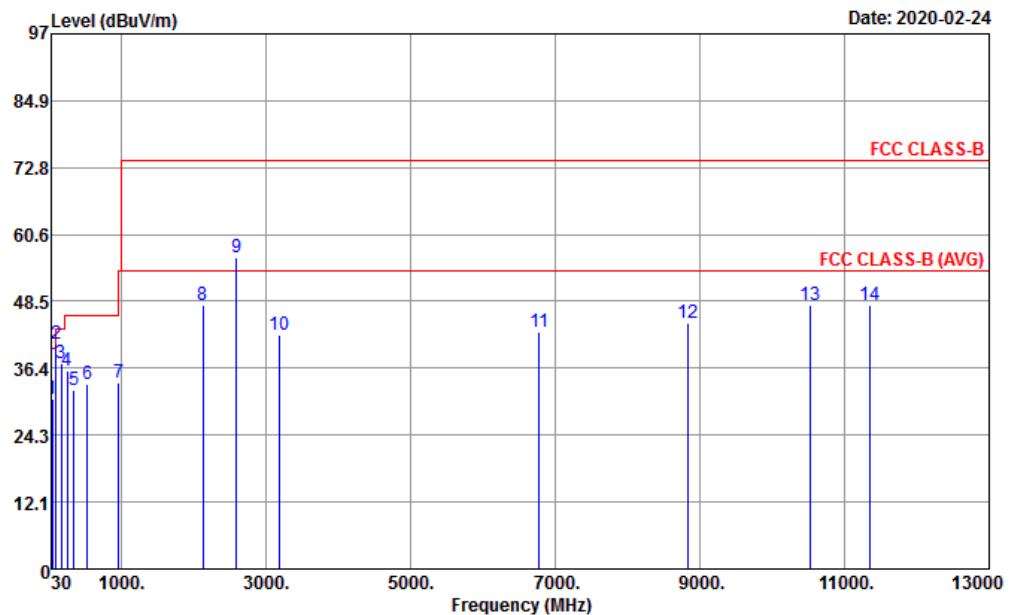


Appendix B. Radiated Emission Test Result





Test Engineer :	Donny Tang	Temperature :	22~23°C
		Relative Humidity :	59~60%
Test Distance :	3m	Polarization :	Vertical
Remark :	#9 is system simulator signal which can be ignored.		



Site : 03CH10-HY
Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL
Project : 012248
Power : From System
Mode : 6

	Freq	Level	Over Limit	Limit	Antenna Line Factor	Read Level	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dBuV	dB	dB	cm	deg	
1	45.52	30.91	-9.09	40.00	16.85	45.81	0.72	32.47	---	---	Peak
2	97.90	40.69	-2.81	43.50	15.91	56.09	1.05	32.36	---	---	Peak
3	166.77	37.17	-6.33	43.50	16.13	51.95	1.38	32.29	100	45	QP
4	252.13	35.90	-10.10	46.00	18.47	47.92	1.72	32.21	---	---	Peak
5	344.28	32.32	-13.68	46.00	19.99	42.53	2.02	32.22	---	---	Peak
6	532.46	33.37	-12.63	46.00	23.80	39.48	2.54	32.45	---	---	Peak
7	960.00	33.81	-12.19	46.00	30.47	30.75	3.47	30.88	---	---	Peak
8	2124.00	47.89	-26.11	74.00	27.24	77.03	5.52	61.90	---	---	Peak
9	2592.00	56.61			27.50	84.85	6.20	61.94	---	---	Peak
10	3188.00	42.44	-31.56	74.00	28.82	68.91	6.85	62.14	---	---	Peak
11	6778.00	42.95	-31.05	74.00	34.46	61.91	9.95	63.37	---	---	Peak
12	8836.00	44.65	-29.35	74.00	38.00	59.39	11.63	64.37	---	---	Peak
13	10530.00	47.95	-26.05	74.00	39.84	59.28	12.51	63.68	---	---	Peak
14	11360.00	47.96	-26.04	74.00	39.72	58.65	13.06	63.47	100	104	Peak