FCC EMI TEST REPORT

FCC ID	:	**2ABZ2-EE149**
Equipment	:	**Smart Phone**
Brand Name	:	**ONEPLUS**
Model Name	:	**IN2019**
Applicant	:	**OnePlus Technology (Shenzhen) Co., Ltd 18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen**
Manufacturer	:	**OnePlus Technology (Shenzhen) Co., Ltd 18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen**
Standard	:	**FCC 47 CFR FCC Part 15 Subpart B Class B**

The product was received on Jan. 03, 2020 and testing was started from Jan. 11, 2020 and completed on Jan. 14, 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.)

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FC9D0701	01	Initial issue of report	Mar. 06, 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 9.72 dB at 0.155 MHz
3.2	15.109	Radiated Emission	Pass	Under limit 6.88 dB at 121.530 MHz

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: Yimin Ho

1. General Description

1.1. Product Feature of Equipment Under Test

GSM/WCDMA/LTE/5GNR, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ac/ax, Wi-Fi 5GHz 802.11a/n/ac/ax, NFC, and GNSS.

Product Specification subjective to this standard	
Antenna Type	**WWAN:** Loop / IFA Antenna **WLAN 2.4GHz:** <Ant. 1> Couple Loop Antenna <Ant. 2> Monopole Antenna **WLAN 5GHz:** <Ant. 1> Couple Loop Antenna <Ant. 2> Loop Antenna **Bluetooth:** Couple Loop Antenna **GPS / Glonass / BDS / Galileo / SBAS:** Couple Loop Antenna **NFC:** Coil 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	03CH06-HY

FCC designation No.: TW1093

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).

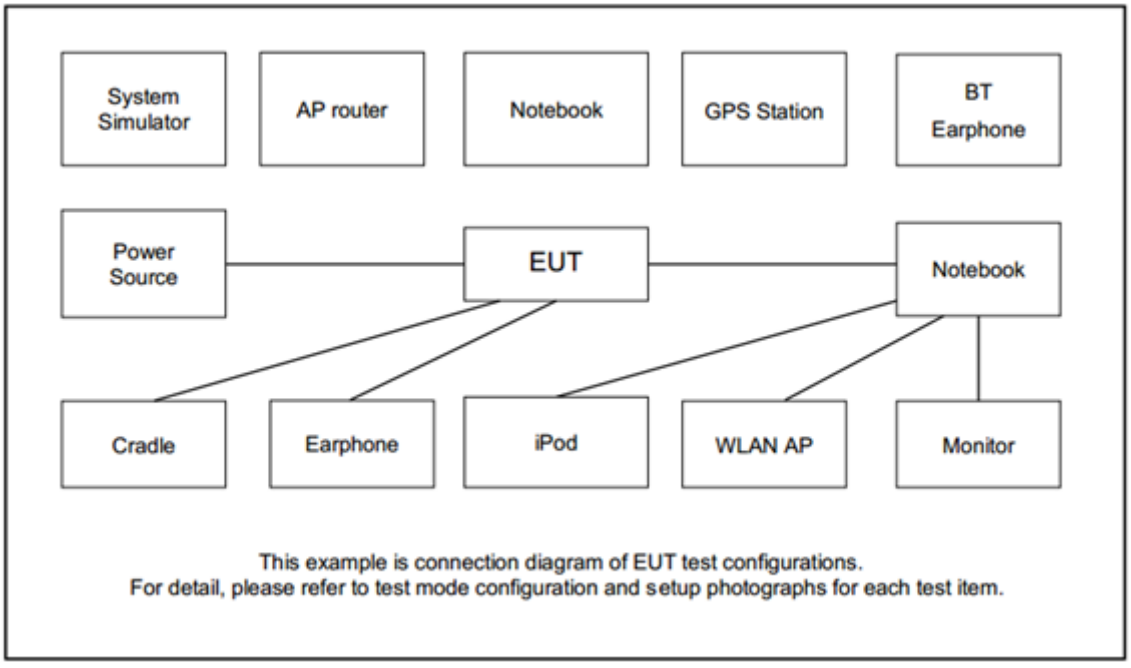
Test Items	Function Type
AC Conducted Emission	Mode 1: GSM850 Idle + WLAN Idle + Bluetooth Idle + NFC On + USB Cable 1 (Charging from AC Adapter 1) Mode 2: WCDMA Band V Idle + WLAN Idle + Bluetooth Idle + GPS Rx + USB Cable 1 (Charging from AC Adapter 2) Mode 3: LTE Band 5 Idle + WLAN Idle + Bluetooth Idle + Camera (Rear), LED light on + USB Cable 1 (Charging from AC Adapter 3) Mode 4: LTE Band 12 Idle + WLAN Idle + Bluetooth Idle + Camera (Front) + USB Cable 1 (Charging from AC Adapter 3) Mode 5: LTE Band 13 Idle + WLAN Idle + Bluetooth Idle + MPEG 4 (Color bar) + USB Cable 2 (Charging from AC Adapter 3) Mode 6: LTE Band 26 Idle + WLAN Idle + Bluetooth Idle + MPEG 4 (Color bar) + USB Cable 3 (Charging from AC Adapter 3) Mode 7: LTE Band 17 Idle + WLAN Idle + Bluetooth Idle + MPEG 4 (Color bar) + USB Cable 1 + USB File transfer Mode 8: LTE Band 71 Idle + WLAN Idle + Bluetooth Idle + MPEG 4 (Color bar) + USB Cable 2 + USB File transfer Mode 9: LTE Band 17 Idle + WLAN Idle + Bluetooth Idle + MPEG 4 (Color bar) + USB Cable 3 + USB File transfer

Test Items	Function Type
Radiated Emissions	Mode 1 : GSM850 Idle + WLAN Idle + Bluetooth Idle + NFC On + USB Cable 1 (Charging from AC Adapter 1) Mode 2 : WCDMA Band V Idle + WLAN Idle + Bluetooth Idle + GPS Rx + USB Cable 1 (Charging from AC Adapter 2) Mode 3 : LTE Band 5 Idle + WLAN Idle + Bluetooth Idle + Camera (Rear), LED light on + USB Cable 1 (Charging from AC Adapter 3) Mode 4 : LTE Band 12 Idle + WLAN Idle + Bluetooth Idle + Camera (Front) + USB Cable 1 (Charging from AC Adapter 2) Mode 5 : LTE Band 13 Idle + WLAN Idle + Bluetooth Idle + MPEG 4 (Color bar) + USB Cable 2 (Charging from AC Adapter 2) Mode 6 : LTE Band 26 Idle + WLAN Idle + Bluetooth Idle + GPS Rx + USB Cable 3 (Charging from AC Adapter 2) Mode 7 : LTE Band 17 Idle + WLAN Idle + Bluetooth Idle + GPS Rx + USB Cable 1 + USB File transfer Mode 8 : LTE Band 71 Idle + WLAN Idle + Bluetooth Idle + GPS Rx + USB Cable 2 + USB File transfer Mode 9 : LTE Band 71 Idle + WLAN Idle + Bluetooth Idle + GPS Rx + USB Cable 3 + USB File transfer Mode 10 : LTE Band 71 Idle + WLAN Idle + Bluetooth Idle + GPS Rx + Earphone

Remark:

1. The worst case of AC is mode 7; only the test data of this mode was reported.
2. The worst case of RE is mode 9; only the test data of this mode was reported.
3. For radiation emission after pre-scanned the cellular band between 30MHz ~ 960MHz (GSM850/WCDMA Band V/LTE Band 5/12/13/17/71/26); only the worst case for cellular band test data of this mode was reported.
4. 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	Anritsu	MT8821C	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.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
7.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
8.	Notebook	ASUS	P2430U	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.4. EUT Operation Test Setup

The EUT was in GSM or 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.

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 the programs, “EMCTest.exe” under WIN10 installed in notebook to transfer files with EUT via USB cable.
2. Data application is transferred between Laptop and EUT via USB cable.
3. Execute “GPS Test” to make the EUT receive continuous signals from GPS station.
4. Execute “Video player” to play MPEG4 files.
5. Turn on camera to capture images.
6. Turn on NFC function.

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.

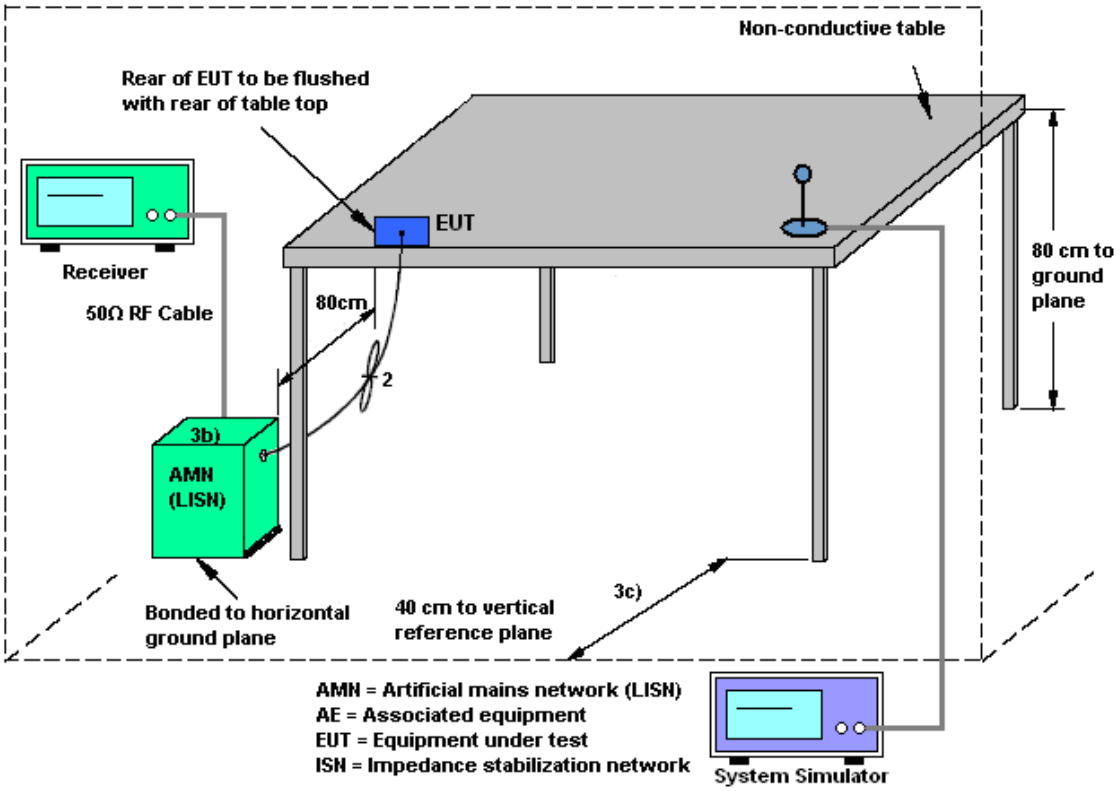
3.1.2. Measuring Instruments

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

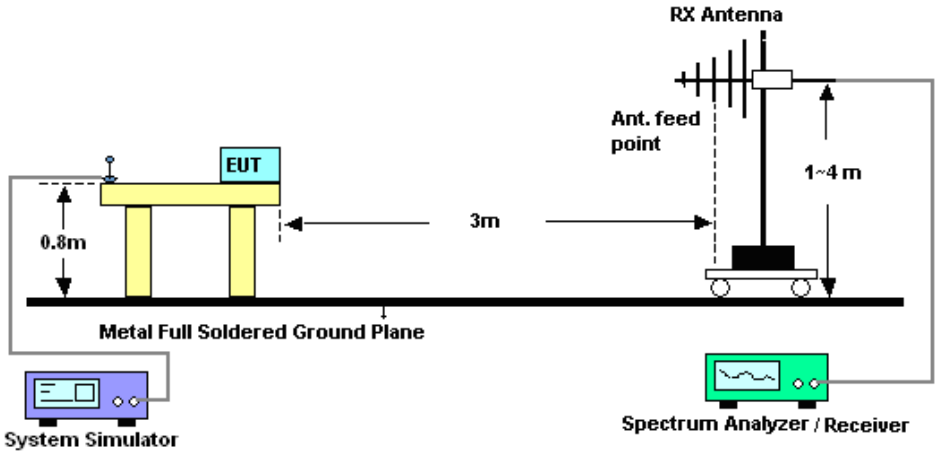
Refer a test equipment and calibration data table in this test report.

3.2.3. Test Procedures

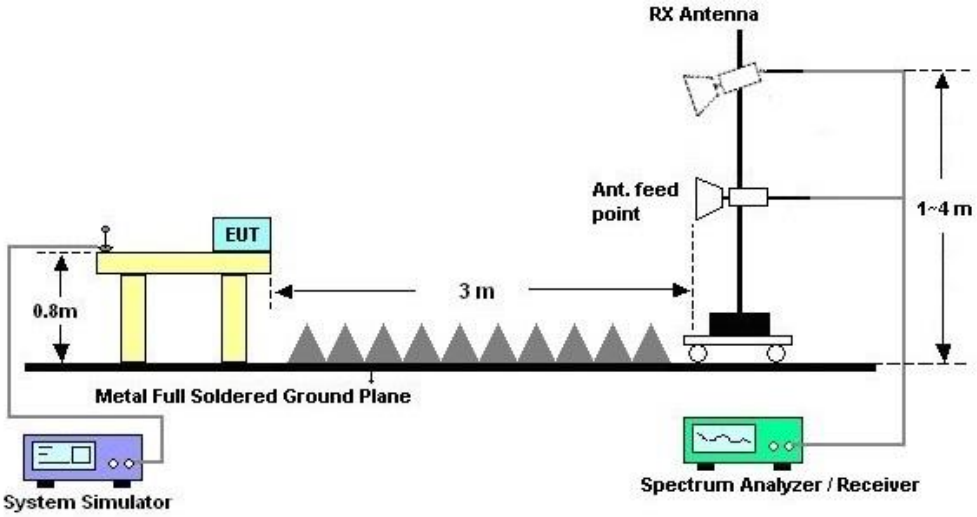
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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
Amplifier	SONOMA	310N	186713	9kHz~1GHz	May 01, 2019	Jan. 13, 2020~ Jan. 14, 2020	Apr. 30, 2020	Radiation (03CH06-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	35419 & 03	30MHz~1GHz	Apr. 30, 2019	Jan. 13, 2020~ Jan. 14, 2020	Apr. 29, 2020	Radiation (03CH06-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY57290111	3Hz~26.5GHz	Dec. 05, 2019	Jan. 13, 2020~ Jan. 14, 2020	Dec. 04, 2020	Radiation (03CH06-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1156	1GHz~18GHz	Aug. 30, 2019	Jan. 13, 2020~ Jan. 14, 2020	Aug. 29, 2020	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz~26.5GHz	Apr. 25, 2019	Jan. 13, 2020~ Jan. 14, 2020	Apr. 24, 2020	Radiation (03CH06-HY)
Preamplifier	MITEQ	00101800-30-10P	1850117	1GHz~18GHz	May 23, 2019	Jan. 13, 2020~ Jan. 14, 2020	May 22, 2020	Radiation (03CH06-HY)
Controller	INN-CO	EM1000	060782	Control Turn table & Ant Mast	N/A	Jan. 13, 2020~ Jan. 14, 2020	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1m~4m	N/A	Jan. 13, 2020~ Jan. 14, 2020	N/A	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0-360 degree	N/A	Jan. 13, 2020~ Jan. 14, 2020	N/A	Radiation (03CH06-HY)
Test Software	AUDIX	e3	6.2009-8-24 (k5)	N/A	N/A	Jan. 13, 2020~ Jan. 14, 2020	N/A	Radiation (03CH06-HY)
RF Cable	HUBER+SUHNER/WOKEN/HARBOUR INDUSTRIES	SUCOFLEX 104 /STORM/LL142	MY24966/4/00100A1O2A178T/CA3601-3601-1000	30MHz-26GHz	Nov. 21, 2019	Jan. 13, 2020~ Jan. 14, 2020	Nov. 20, 2020	Radiation (03CH06-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jan. 11, 2020~ Jan. 14, 2020	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 15, 2019	Jan. 11, 2020~ Jan. 14, 2020	Nov. 14, 2020	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Mar. 19, 2019	Jan. 11, 2020~ Jan. 14, 2020	Mar. 18, 2020	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 15, 2019	Jan. 11, 2020~ Jan. 14, 2020	Nov. 14, 2020	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jan. 11, 2020~ Jan. 14, 2020	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 02, 2020	Jan. 11, 2020~ Jan. 14, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 02, 2020	Jan. 11, 2020~ Jan. 14, 2020	Jan. 01, 2021	Conduction (CO05-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**

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.3**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.8**

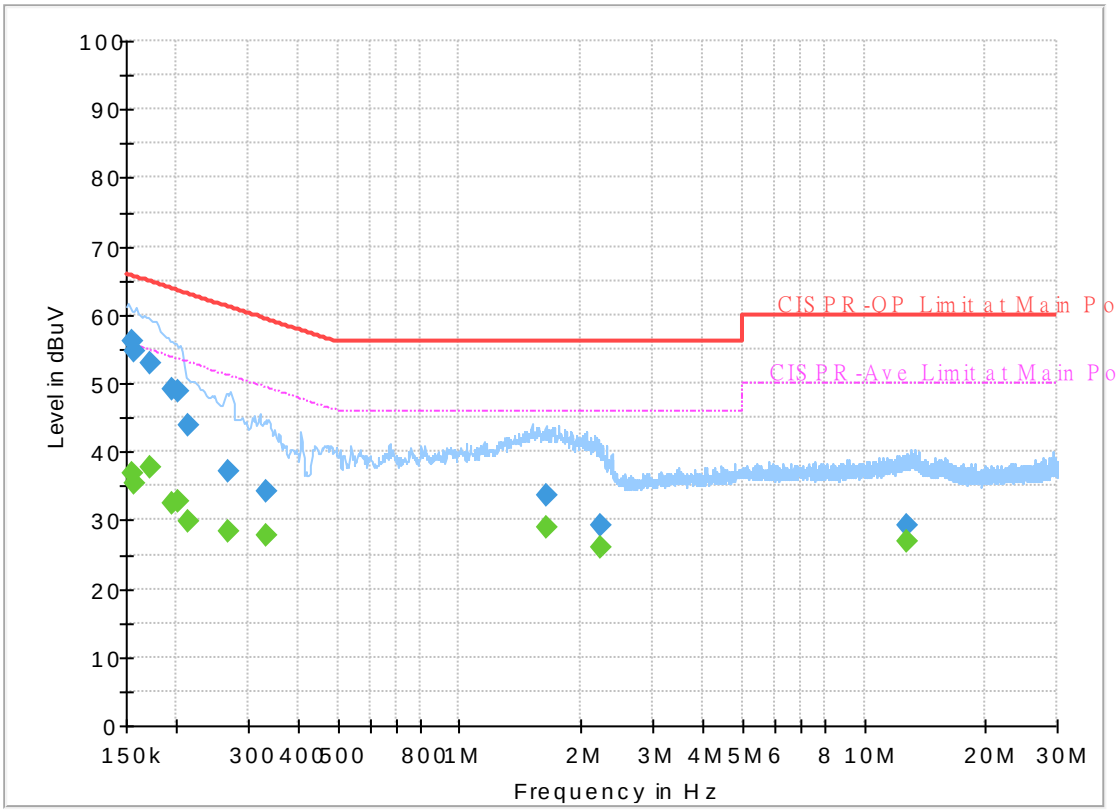
Appendix A. AC Conducted Emission Test Results

Test Engineer :	Howard Huang	**Temperature :**	21~23℃
		Relative Humidity :	40~43%

EUT Information

Report NO :	9D0701
Test Mode :	Mode 7
Test Voltage :	120Vac/60Hz
Phase :	Line

Full Spectrum



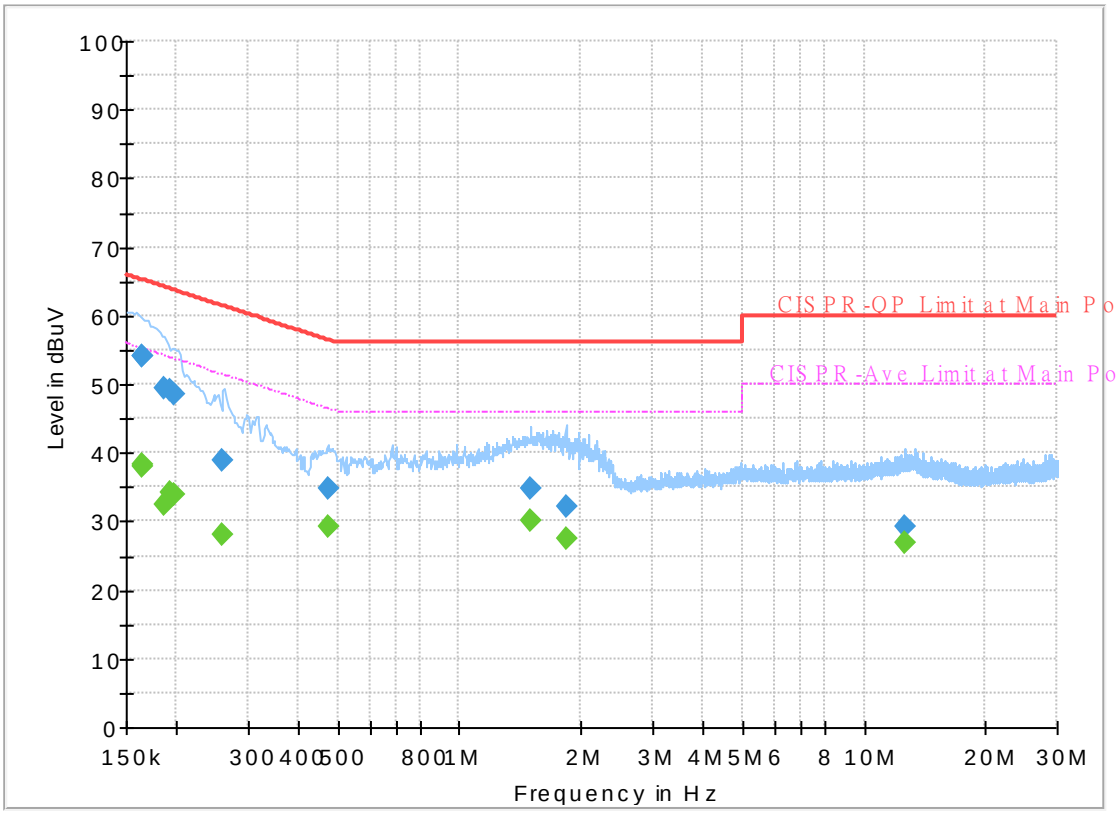
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.154523	---	36.99	55.75	18.76	L1	OFF	19.5
0.154523	56.03	---	65.75	9.72	L1	OFF	19.5
0.156750	---	35.51	55.63	20.12	L1	OFF	19.5
0.156750	54.75	---	65.63	10.88	L1	OFF	19.5
0.172500	---	37.58	54.84	17.26	L1	OFF	19.5
0.172500	53.00	---	64.84	11.84	L1	OFF	19.5
0.195000	---	32.44	53.82	21.38	L1	OFF	19.5
0.195000	49.14	---	63.82	14.68	L1	OFF	19.5
0.202560	---	32.86	53.51	20.65	L1	OFF	19.5
0.202560	48.84	---	63.51	14.67	L1	OFF	19.5
0.212820	---	29.88	53.10	23.22	L1	OFF	19.5
0.212820	43.95	---	63.10	19.15	L1	OFF	19.5
0.267270	---	28.23	51.20	22.97	L1	OFF	19.5
0.267270	37.23	---	61.20	23.97	L1	OFF	19.5
0.332250	---	27.81	49.40	21.59	L1	OFF	19.5
0.332250	34.12	---	59.40	25.28	L1	OFF	19.5
1.639500	---	28.89	46.00	17.11	L1	OFF	19.6
1.639500	33.67	---	56.00	22.33	L1	OFF	19.6
2.238000	---	25.91	46.00	20.09	L1	OFF	19.7
2.238000	29.22	---	56.00	26.78	L1	OFF	19.7
12.779250	---	26.93	50.00	23.07	L1	OFF	20.1
12.779250	29.21	---	60.00	30.79	L1	OFF	20.1

EUT Information

Report NO :	9D0701
Test Mode :	Mode 7
Test Voltage :	120Vac/60Hz
Phase :	Neutral

Full Spectrum

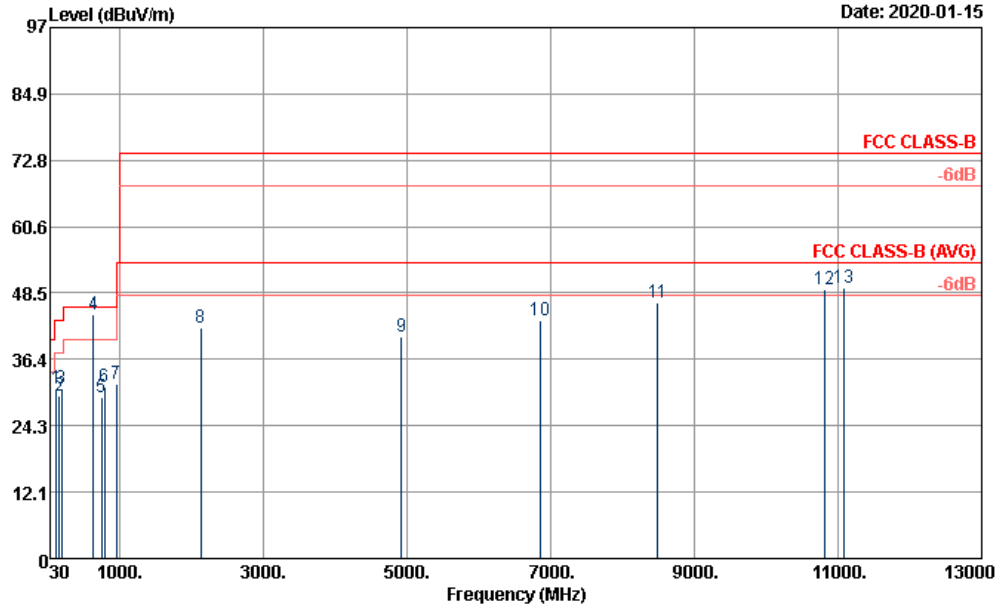


Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.163500	---	38.11	55.28	17.17	N	OFF	19.6
0.163500	54.21	---	65.28	11.07	N	OFF	19.6
0.163680	---	38.25	55.28	17.03	N	OFF	19.6
0.163680	54.17	---	65.28	11.11	N	OFF	19.6
0.186000	---	32.38	54.21	21.83	N	OFF	19.6
0.186000	49.44	---	64.21	14.77	N	OFF	19.6
0.192120	---	34.09	53.94	19.85	N	OFF	19.6
0.192120	49.10	---	63.94	14.84	N	OFF	19.6
0.197250	---	33.91	53.73	19.82	N	OFF	19.6
0.197250	48.52	---	63.73	15.21	N	OFF	19.6
0.258810	---	28.03	51.47	23.44	N	OFF	19.6
0.258810	38.77	---	61.47	22.70	N	OFF	19.6
0.473460	---	29.35	46.45	17.10	N	OFF	19.6
0.473460	34.75	---	56.45	21.70	N	OFF	19.6
1.503960	---	30.18	46.00	15.82	N	OFF	19.6
1.503960	34.87	---	56.00	21.13	N	OFF	19.6
1.829940	---	27.52	46.00	18.48	N	OFF	19.6
1.829940	32.02	---	56.00	23.98	N	OFF	19.6
12.637320	---	26.89	50.00	23.11	N	OFF	20.1
12.637320	29.21	---	60.00	30.79	N	OFF	20.1

Appendix B. Radiated Emission Test Result

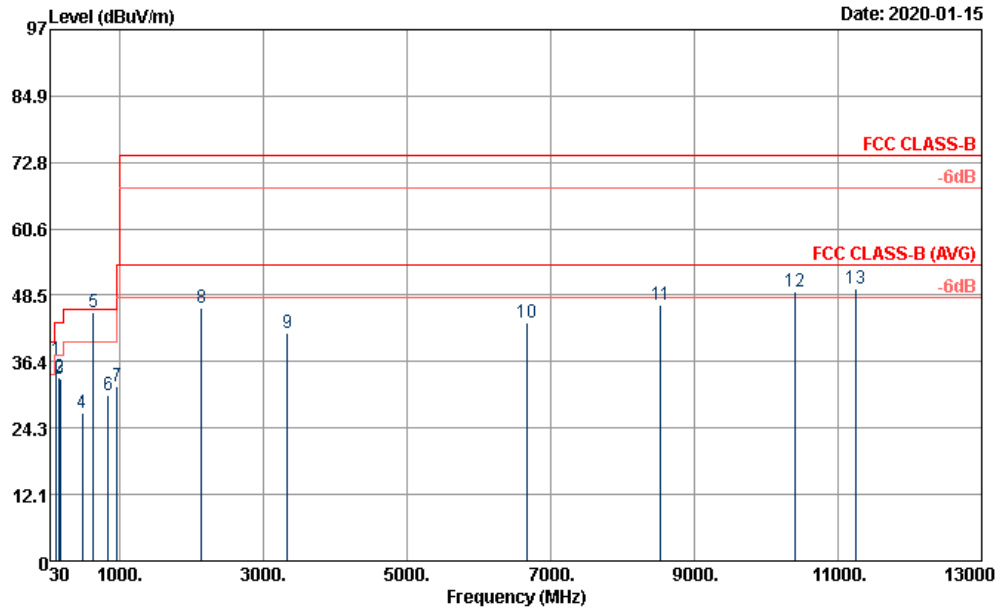
Test Engineer :	You Xian Chen and Yuan Lee	**Temperature :**	24~25°C
		Relative Humidity :	42~44%
Test Distance :	3m	**Polarization :**	Horizontal
Remark :	#4 is system simulator signal which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m 9120D_1156 HORIZONTAL
Project : 9D0701
Power : From System
Memo : Mode 9
: eMMC to NB

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		120.18	31.19	-12.31	43.50	44.23	17.10	1.44	31.64	100	0	Peak
2		159.60	29.59	-13.91	43.50	43.39	16.10	1.64	31.60	---	---	Peak
3		193.89	31.15	-12.35	43.50	46.45	14.40	1.80	31.57	---	---	Peak
4	!	634.50	44.57			46.97	25.89	3.38	31.84	---	---	Peak
5		743.80	29.39	-16.61	46.00	29.73	27.54	3.65	31.79	---	---	Peak
6		792.10	31.24	-14.76	46.00	31.37	27.58	3.72	31.70	---	---	Peak
7		951.70	32.00	-14.00	46.00	28.01	30.37	4.06	30.85	---	---	Peak
8		2128.00	42.14	-31.86	74.00	69.65	27.30	6.26	61.07	---	---	Peak
9		4918.00	40.61	-33.39	74.00	58.02	31.20	9.74	58.35	---	---	Peak
10		6856.00	43.44	-30.56	74.00	55.28	34.50	12.12	58.46	---	---	Peak
11		8494.00	46.64	-27.36	74.00	52.55	36.90	14.40	57.21	---	---	Peak
12		10816.00	49.21	-24.79	74.00	49.19	40.32	16.51	56.81	---	---	Peak
13		11080.00	49.33	-24.67	74.00	48.82	40.15	16.71	56.35	100	0	Peak

Test Engineer :	You Xian Chen and Yuan Lee	**Temperature :**	24~25°C
		Relative Humidity :	42~44%
Test Distance :	3m	**Polarization :**	Vertical
Remark :	#5 is system simulator signal which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m 9120D_1156 VERTICAL
Project : 9D0701
Power : From System
Memo : Mode 9
: eMMC to NB

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		121.53	36.62	-6.88	43.50	49.63	17.12	1.45	31.64	100	0	Peak
2		154.47	33.44	-10.06	43.50	46.84	16.54	1.61	31.61	---	---	Peak
3		166.62	33.35	-10.15	43.50	47.78	15.44	1.66	31.59	---	---	Peak
4		481.30	26.96	-19.04	46.00	32.54	23.21	2.87	31.79	---	---	Peak
5	!	634.50	45.42			47.82	25.89	3.38	31.84	---	---	Peak
6		839.00	30.32	-15.68	46.00	29.31	28.36	3.88	31.55	---	---	Peak
7		959.40	32.02	-13.98	46.00	27.52	30.75	4.07	30.79	---	---	Peak
8		2134.00	46.08	-27.92	74.00	73.39	27.50	6.26	61.07	---	---	Peak
9		3334.00	41.53	-32.47	74.00	67.08	28.23	7.75	61.53	---	---	Peak
10		6670.00	43.61	-30.39	74.00	56.05	34.43	11.66	58.53	---	---	Peak
11		8530.00	46.68	-27.32	74.00	52.36	37.10	14.45	57.23	---	---	Peak
12		10402.00	49.26	-24.74	74.00	50.62	40.10	16.16	57.62	---	---	Peak
13		11254.00	49.59	-24.41	74.00	49.14	39.85	16.85	56.25	100	0	Peak