

FCC

EMC

TEST REPORT

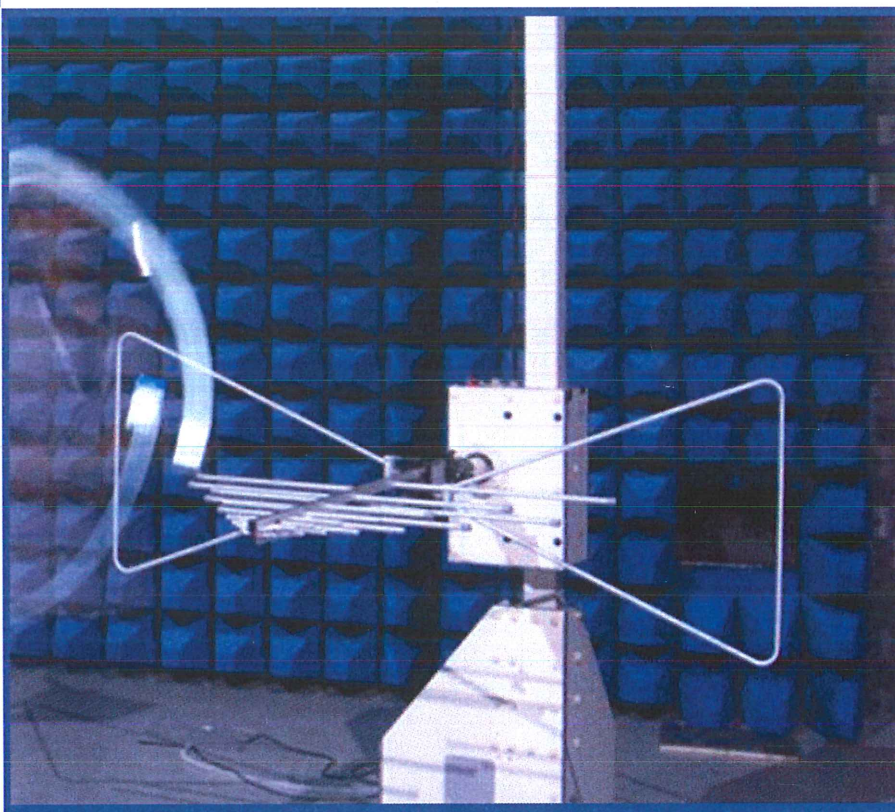
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Mobile Phone

ISSUED TO
Guangdong OPPO Mobile Telecommunications Corp., Ltd.

NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City,
Guangdong, China



Tested by: Liu Zhenxiang

Date Dec. 24, 2020

Approved by: Wei Yanquan

(Chief Engineer)

Date Dec. 24, 2020

Report No.: BL-SZ20A0177-401

EUT Name: Mobile Phone

Model Name: CPH2207

Brand Name: OPPO

Test Standard: 47 CFR Part 15 Subpart B

FCC ID: R9C-CPH2207

Test Conclusion: Pass

Test Date: Oct. 19, 2020 ~ Dec. 04, 2020

Date of Issue: Dec. 24, 2020

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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Dec. 16, 2020</u>	<u>Initial Issue</u>

TABLE OF CONTENTS

1	GENERAL INFORMATION	4
1.1	Identification of the Testing Laboratory	4
1.2	Identification of the Responsible Testing Location	4
1.3	Laboratory Condition	4
1.4	Announce	5
2	PRODUCT INFORMATION	6
2.1	Applicant Information	6
2.2	Manufacturer Information	6
2.3	Factory Information	6
2.4	General Description for Equipment under Test (EUT)	6
2.5	Ancillary Equipment	7
2.6	Technical Information	8
3	SUMMARY OF TEST RESULTS	9
3.1	Test Standards	9
3.2	Verdict	9
3.3	Test Uncertainty	9
4	GENERAL TEST CONFIGURATIONS	10
4.1	Test Environments	10
4.2	Test Equipment List	10
4.3	Test Enclosure list	12
4.4	Test Configurations	13
4.5	Test Setups	14
4.6	Test Conditions	16
5	TEST ITEMS	17
5.1	Emission Tests	17
ANNEX A	TEST RESULTS	19

A.1	Radiated Emission	19
A.2	Conducted Emission	27
ANNEX B	TEST SETUP PHOTOS	31
ANNEX C	EUT EXTERNAL PHOTOS	31
ANNEX D	EUT INTERNAL PHOTOS	31

1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co.,Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co.,Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. The laboratory is a testing organization accredited by American Association for Laboratory Accreditation(A2LA) according to ISO/IEC 17025.The accreditation certificate is 4344.01. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20°C to 25°C
Ambient Relative Humidity	45% to 55%
Ambient Pressure	100 kPa to 102 kPa

1.4 Announce

- (1) The test report refer to the BALUN report mode v6.9.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (7) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address	NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China

2.2 Manufacturer Information

Manufacturer	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address	NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China

2.3 Factory Information

Factory	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address	NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China

2.4 General Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Model Name Under Test	CPH2207
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	11
Software Version	ColorOS V11.1
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Ancillary Equipment

Ancillary Equipment 1	Li-Polymer Battery	
	Brand Name	OPPO
	Model No.	BLP825
	Serial No.	N/A
	Capacitance	Rated: 2200mAh/17.02Wh Typical: 2250mAh/17.41Wh
	Rated Voltage	7.74 V
	Limited Voltage	8.90 V
	Manufacturer	Dongguan NVT Technology Co., Ltd
Ancillary Equipment 2	Power Supply Unit(alternative) 1	
	Brand Name	OPPO
	Model No.	VCA7JAUH
	Serial No.	N/A
	Rated Input	100-240VAC 50/60Hz 1.8A
	Rated Output	5VDC 2A or 10VDC 6.5A Max (US Plug)
Ancillary Equipment 3	Power Supply Unit(alternative) 2	
	Brand Name	OPPO
	Model No.	VCA7JDUH
	Serial No.	N/A
	Rated Input	100-240VAC 50/60Hz 1.8A
	Rated Output	5VDC 2A or 10VDC 6.5A Max (US Plug)
Ancillary Equipment 4	Power Supply Unit(alternative) 3	
	Brand Name	OPPO
	Model No.	VCA7HAUH
	Serial No.	N/A
	Rated Input	100-240VAC 50/60Hz 1.8A
	Rated Output	5VDC 2A or 10VDC 6.5A Max (US Plug)
Ancillary Equipment 5	USB Cable	
	Model No.	DL129
	Length (Approx.)	1.0 m
Ancillary Equipment 6	Headset	
	Model No.	MH147
	Length (Approx.)	1.2 m
Note 1: Letter in () means plug type.		
Note 2: All adapters are tested, only the worst data of VCA7JAUH (US Plug 100-240VAC) shown in this report.		

2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/900/1800/1900 MHz 3G Network WCDMA/HSDPA/HSUPA/HSPA+ Band 1/2/4/5/6/8/19 4G Network FDD LTE Band 1/2/3/4/5/7/8/12/17/18/19/20/26/28/32/66 TDD LTE Band 38/39/40/41 CA Uplink (UL): CA_3C, CA_7C, CA_38C, CA_40C, CA_41C CA Downlink (DL): CA_20A_32A 5G Network SA: NR n1/n3/n7/n28/n41/n78 NSA(EN-DC): DC_1A_n28A, DC_1A_n40A, DC_1A_n77A, DC_1A_n78A, DC_3A_n5A, DC_3A_n7A, DC_3A_n8A, DC_3A_n20A, DC_3A_n28A, DC_3A_n38A, DC_3A_n40A, DC_3A_n41A, DC_3A_n77A, DC_3A_n78A, DC_5A_n7A, DC_5A_n78A, DC_7A_n5A, DC_7A_n28A, DC_7A_n78A, DC_8A_n41A, DC_8A_n78A, DC_20A_n28A, DC_20A_n78A, DC_28A_n78A, DC_38A_n78A, DC_41A_n78A Bluetooth 5.2 (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40), 802.11ac(VHT20/40), 802.11ax(HE20/40) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80), 802.11ax(HE20/40/80) U-NII-1/2A/2C/3, GPS, GLONASS, BDS, Galileo, NFC
Note 1: The EUT is a mobile phone, supporting dual SIM card slots under the same transceiver. Both SIM card slots support GSM, WCDMA, LTE and NR. And both SIM card slots share the same transceiver, so only SIM1 is tested in this report.	

The requirement for the following technical information of the EUT was tested in this report:

The Highest Speed of Processor	N/A
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3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	FCC 47 CFR Part 15 Subpart B (10-1-19 Edition)	Unintentional Radiators
2	ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low- Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

3.2 Verdict

No.	Description	FCC Rule	Test Verdict	Result
1	Radiated Emission	15.109	Pass	Annex A .1
2	Conducted Emission, AC Ports	15.107	Pass	Annex A .2

Note: There are two forms of this product: it supports dual SIM cards in some regions or operators; while in other regions or operators supports single cards. When supports dual SIM cards, SIM1 and SIM2 are based on the same radio frequency module, and the working mechanism is dual-standby with single-pass, which means SIM1 and SIM2 cannot work at the same time in the communication mode; When only supports a single SIM card, other software and hardware are consistent with the status that supports dual cards.

3.3 Test Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Conducted emissions (9 kHz-30 MHz)	2.96 dB
Radiated emissions (30 MHz-1 GHz)	3.67 dB
Radiated emissions (1 GHz-18 GHz)	3.57 dB
Radiated emissions (18 GHz-40 GHz)	5.16 dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

Environment Parameter	Selected Values During Tests			
	Temperature	Voltage	Relative Humidity	Ambient Pressure
Normal Temperature, Normal Voltage (NTNV)	23°C to 25°C	AC 120 V/60 Hz	50% to 55%	100 kPa to 102 kPa

4.2 Test Equipment List

Radiated Emission Test For Frequency Below 1 GHz (10 m)						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWA RZ	ESRP	101036	2020.06.09	2021.06.08	☐
Test Antenna- Bi-Log	SCHWARZBECK	VULB 9168	9168-0883	2020.05.11	2022.05.10	☐
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	N/A	2018.08.08	2021.08.07	☐
Test Software	BALUN	BL410_E	V19.918	--	--	☐

Radiated Emission Test For Frequency Below 1 GHz (3 m)						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2020.09.18	2021.09.17	☒
Test Antenna- Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2021.07.01	☒
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2018.07.18	2021.07.27	☒
Test Software	BALUN	BL410_E	V19.918	--	--	☒

Radiated Emission Test For Frequency 1 GHz-18 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2020.09.18	2021.09.17	☒
Test Antenna- Horn	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2021.07.01	☒
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2018.07.18	2021.07.17	☒
Test Software	BALUN	BL410_E	V19.918	--	--	☒

Radiated Emission Test For Frequency Above 18 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE & SCHWARZ	FSV40	101544	2020.02.19	2021.02.18	☒
Test Antenna-Horn	A-INFOMW	LB-180400KF	J211060273	2019.01.05	2021.01.04	☒
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2018.07.18	2021.07.17	☒
Test Software	BALUN	BL410_E	V19.918	--	--	☒

Conducted disturbance Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2020.06.08	2021.06.07	☒
LISN	SCHWARZBECK	NSLK 8127	8127-687	2020.06.09	2021.06.08	☒
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.4m*3.1m*2.8m	N/A	2018.08.16	2021.08.15	☒
Test Software	BALUN	BL410_E	V19.918	--	--	☒

4.3 Test Enclosure list

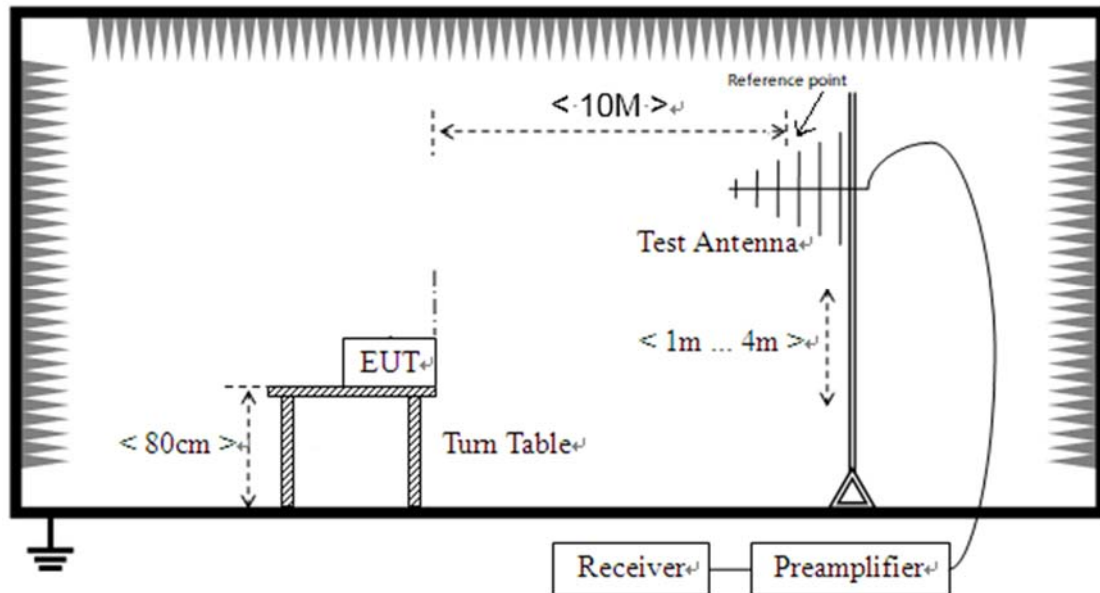
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	☐
Laptop	Apple	A1465	N/A	N/A	N/A	☒
Printer	HP	DESKJET 1000	N/A	N/A	N/A	☐
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	☐
Mouse	Logitech	M100	N/A	N/A	N/A	☐
USB disk	Kingston	N/A	N/A	N/A	N/A	☐
TF Card	Kingston	N/A	N/A	N/A	N/A	☐
VGA Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
HDMI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
DVI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
Coaxial video cable	N/A	N/A	N/A	2.0 m	Shielded with core	☐
iPhone	Apple	A1586	N/A	N/A	N/A	☐
Phone	MI	M4	N/A	N/A	N/A	☐
Bluetooth Earphone	SAMSUNG	Gear Circle	N/A	N/A	N/A	☐
Wireless Communication s Test Set	R&S	CMW500	142028	N/A	Cal. Due 2019.06.14	☐
WIFI Router	TP-LINK	TL-WDR7500	N/A	N/A	N/A	☐
Earphone	N/A	OPPO	N/A	1.1 m	N/A	☐
Car Battery	Camel	55530	N/A	N/A	12 V/55 Ah	☐
Artificial load	N/A	N/A	N/A	N/A	2.5 Ω /100 W	☐
Artificial load	N/A	N/A	N/A	N/A	5 Ω /100 W	☐
Electronic Load	ITECH	IT8511	N/A	N/A	N/A	☐
USB Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
DC Power Supply	ITECH	IT6863A	60001401068 7210006	N/A	N/A	☐
LCD Monitor	SAMSUNG	UA32C4000P	N/A	N/A	N/A	☐
LCD Monitor	Dell	U241HB	N/A	N/A	N/A	☐
RJ45 Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐

4.4 Test Configurations

Test Configurations (TC) No.	Description
TC01	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery
TC02	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + Battery
TC03	<u>The USB Test Mode</u> EUT + USB Cable + Battery+ Laptop
TC04	<u>The Headset Test Mode</u> EUT + TYPE-C Headset + Battery

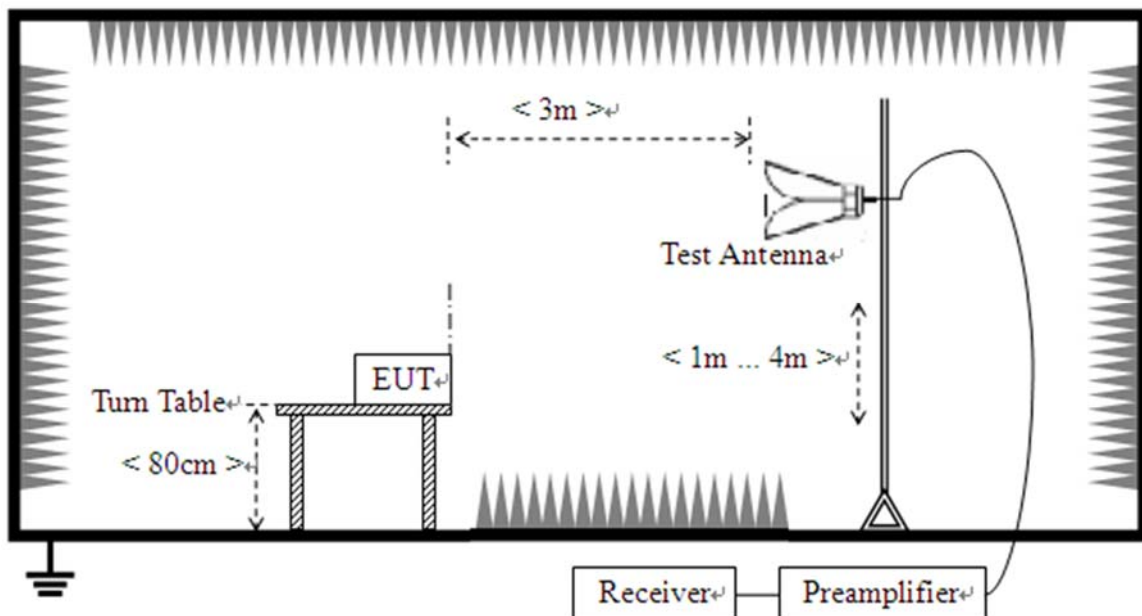
4.5 Test Setups

Test Setup 1



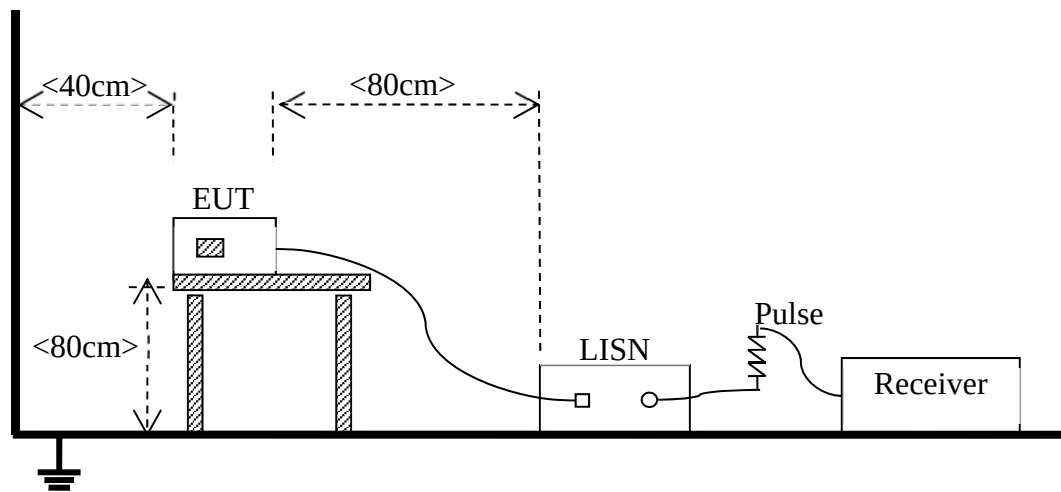
(For Radiated Emission Test (30 MHz-1 GHz))

Test Setup 2



(For Radiated Emission Test (above 1 GHz))

Test Setup 3



(For Conducted Emission, AC Ports Test)

4.6 Test Conditions

Test Case	Test Conditions	
Radiated Emission	Test Env.	NTNV
	Test Setup	Test Setup 1&2
	Test Configuration	TC01~TC04 ^{Note}
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC03 ^{Note}
Note: Based on client request, all normal using modes of the normal function were tested but only the worst test data of the worst mode is reported by this report. The Camera Test Mode is the worst mode in this report.		

5 TEST ITEMS

5.1 Emission Tests

5.1.1 Radiated Emission

5.1.1.1 Limit

Frequency range (MHz)	Class B (at 3 m)		Class B (at 10 m)	Class A (at 10 m)	
	Field Strength ($\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)	Field Strength ($\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)
30 - 88	100	40	30	90	39
88 - 216	150	43.5	33.5	150	43.5
216 - 960	200	46	36	210	46.4
Above 960	500	54	44	300	49.5

NOTE:

- 1) Field Strength (dB $\mu\text{V/m}$) = $20 \times \log [\text{Field Strength } (\mu\text{V/m})]$.
- 2) In the emission tables above, the tighter limit applies at the band edges.

5.1.1.2 Test Setup

Refer to 4.5 section (test setup 1 to test setup 2) for radiated emission test, the photo of test setup please refer to ANNEX B.

5.1.1.3 Test Procedure

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

An initial pre-scan was performed in the chamber using the EMI Receiver in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bi-Log antenna with 2 orthogonal polarities.

5.1.1.4 Test Result

Please refer to ANNEX A.1.

NOTE:

1. Results (dB $\mu\text{V/m}$) = Reading (dB μV) + Factor (dB/m)

The reading level is calculated by software which is not shown in the sheet

2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain (dB)

3. Over limit = Results – Limit.

5.1.2 Conducted Emission

5.1.2.1 Test Limit

Frequency range (MHz)	Class A	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 - 0.50	79	66
0.50 - 30	73	60

Frequency range (MHz)	Class B	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- 1) The lower limit shall apply at the band edges.
- 2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50 MHz.

5.1.2.2 Test Setup

Refer to 4.5 section test (test setup 3) for conducted emission, the photo of test setup please refer to ANNEX B.

5.1.2.3 Test Procedure

The EUT is connected to the power mains through a LISN which provides 50 Ω /50 μ H of coupling impedance for the measuring instrument. The test frequency range is from 150 kHz to 30 MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.1.2.4 Test Result

Please refer to ANNEX A.2.

NOTE:

1. Results (dB μ V/m) = Reading (dB μ V) + Factor (dB/m)

The reading level is calculated by software which is not shown in the sheet

2. Factor = Insertion loss + Cable loss

3. Over limit = Results – Limit.

ANNEX A TEST RESULTS

A.1 Radiated Emission

Note 1: The symbol of “--” in the table which means not application.

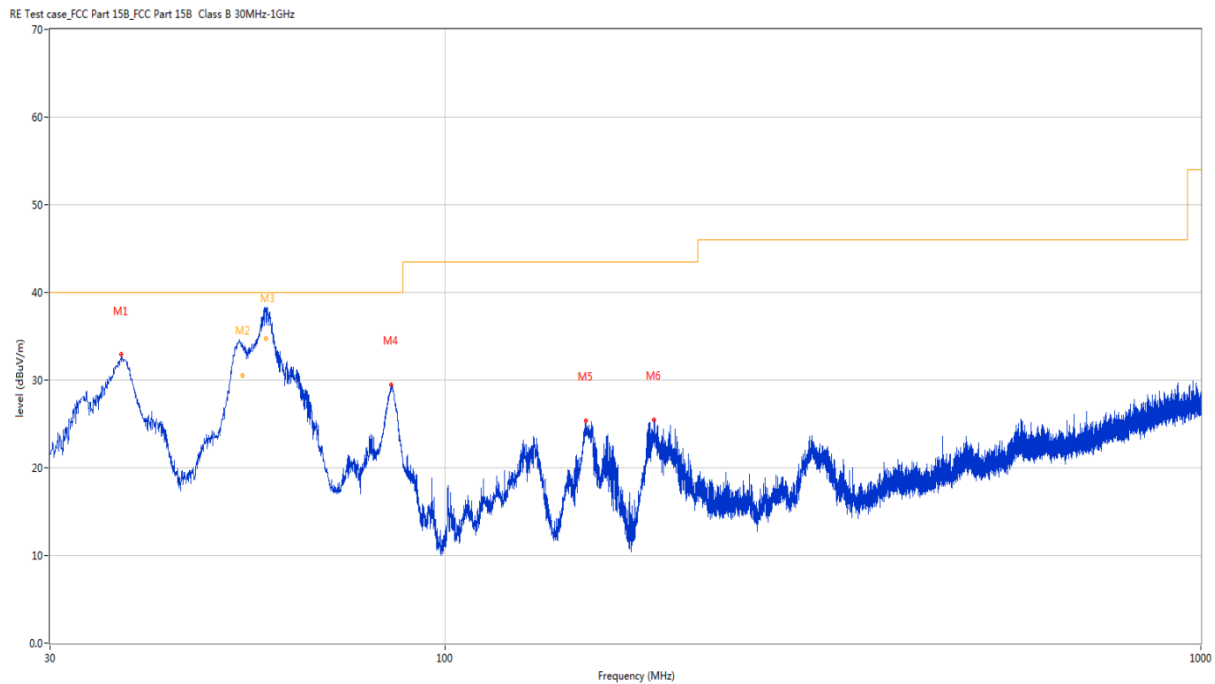
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note 3: The Radiated Emission from 18G-40G is noise only, do not show on the report.

Test Data and Plots

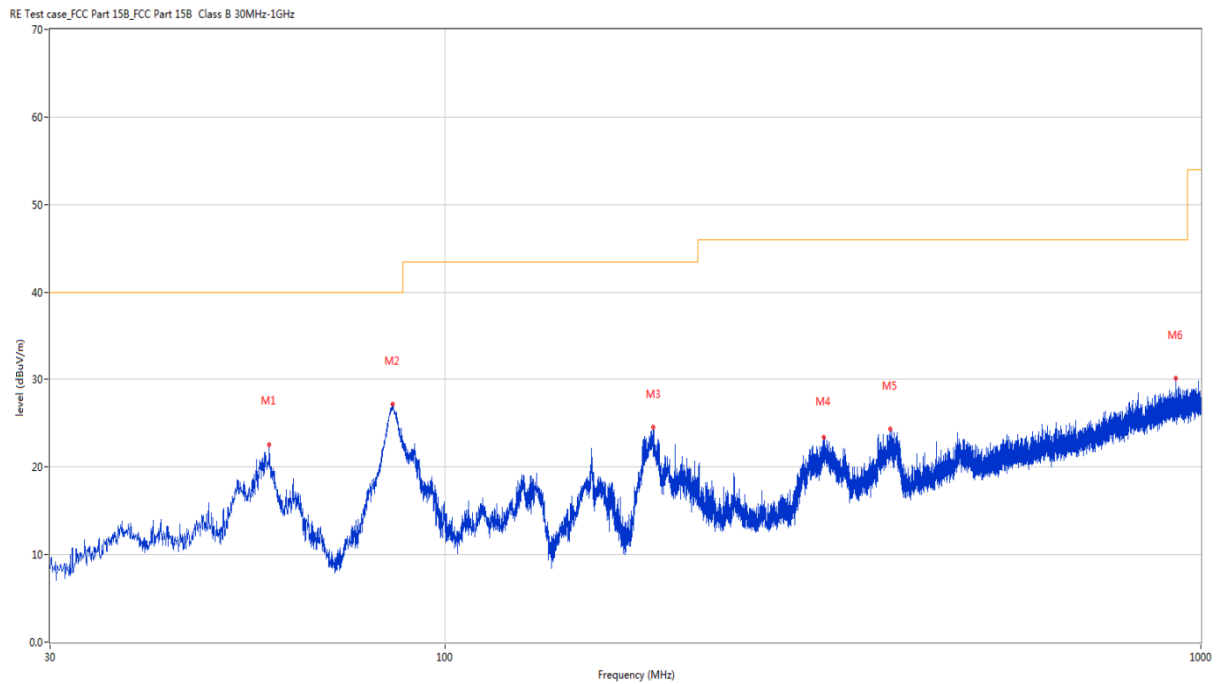
The Camera Test Mode

A.1.1 Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	37.275	32.93	-24.59	40.0	-7.07	Peak	240.20	100	Vertical	Pass
2	53.868	36.64	-22.93	40.0	-3.36	Peak	277.70	154	Vertical	N/A
2*	53.868	30.52	-22.93	40.0	-9.48	QP	277.70	154	Vertical	Pass
3	57.968	38.16	-24.08	40.0	-1.84	Peak	189.30	102	Vertical	N/A
3*	57.968	34.76	-24.08	40.0	-5.24	QP	189.30	102	Vertical	Pass
4	84.757	29.47	-27.60	40.0	-10.53	Peak	95.40	100	Vertical	Pass
5	153.384	25.42	-27.51	43.5	-18.08	Peak	14.70	100	Vertical	Pass
6	189.128	25.48	-25.31	43.5	-18.02	Peak	31.70	100	Vertical	Pass

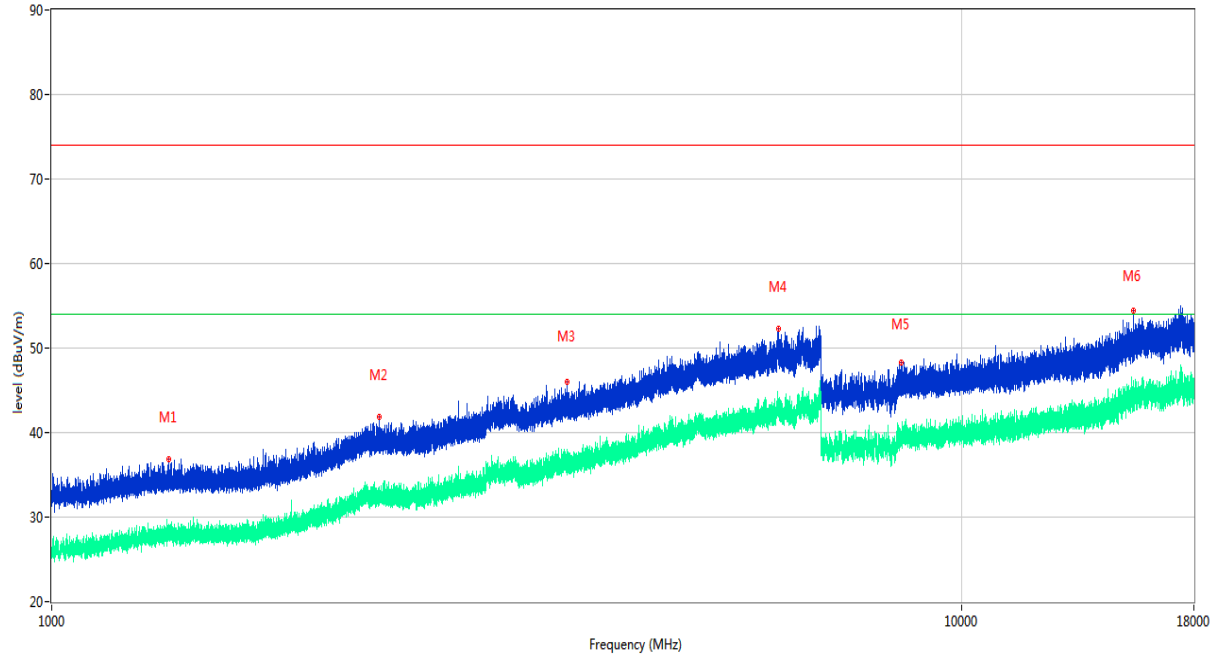
A.1.2 Test Antenna Horizontal, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	58.518	22.54	-24.07	40.0	-17.46	Peak	132.50	200	Horizontal	Pass
2	85.145	27.15	-27.48	40.0	-12.85	Peak	24.00	200	Horizontal	Pass
3	188.692	24.49	-25.34	43.5	-19.01	Peak	295.30	200	Horizontal	Pass
4	316.878	23.35	-20.93	46.0	-22.65	Peak	98.30	100	Horizontal	Pass
5	387.687	24.33	-19.44	46.0	-21.67	Peak	206.00	100	Horizontal	Pass
6	927.201	30.10	-9.42	46.0	-15.90	Peak	90.70	200	Horizontal	Pass

A.1.3 Test Antenna Vertical, 1 GHz – 18 GHz

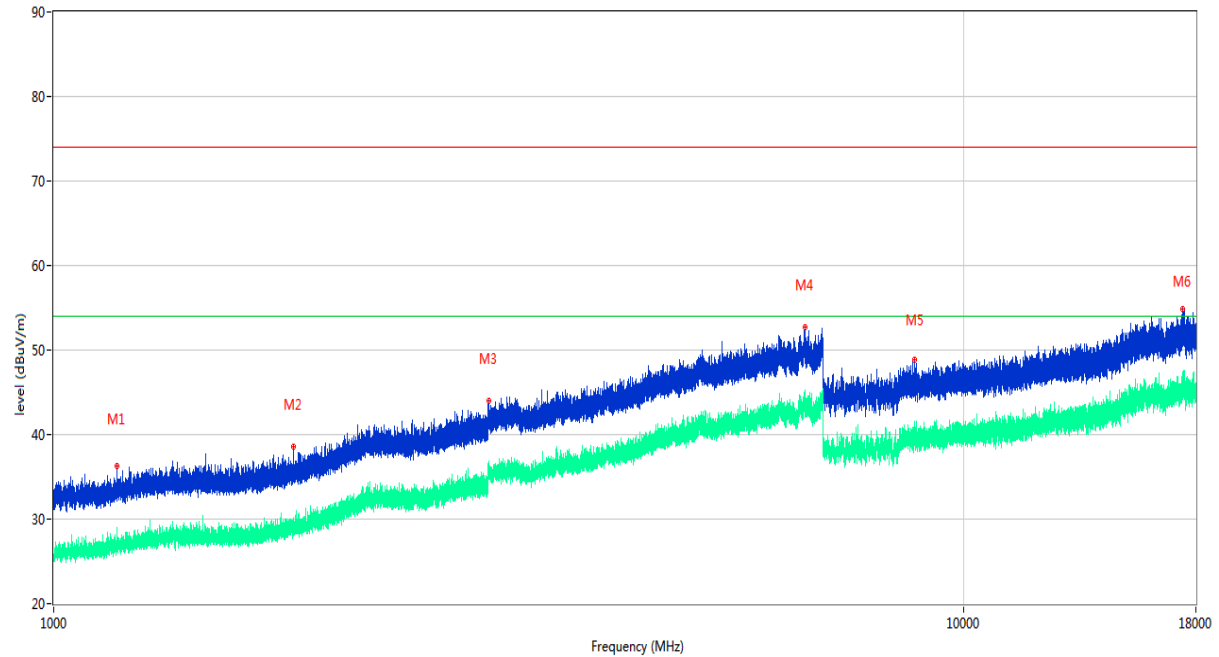
RE Test case_FCC Part 15B_FCC Part 15B Class B 1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1343.900	36.82	-17.29	74.0	-37.18	Peak	297.00	150	Vertical	Pass
1**	1343.900	27.71	-17.29	54.0	-26.29	AV	297.00	150	Vertical	Pass
2	2290.000	41.79	-12.77	74.0	-32.21	Peak	100.00	150	Vertical	Pass
2**	2290.000	32.28	-12.77	54.0	-21.72	AV	100.00	150	Vertical	Pass
3	3687.600	46.01	-5.97	74.0	-27.99	Peak	145.00	150	Vertical	Pass
3**	3687.600	36.07	-5.97	54.0	-17.93	AV	145.00	150	Vertical	Pass
4	6292.000	52.28	-0.42	74.0	-21.72	Peak	160.00	150	Vertical	Pass
4**	6292.000	43.73	-0.42	54.0	-10.27	AV	160.00	150	Vertical	Pass
5	8588.438	48.23	-2.11	74.0	-25.77	Peak	151.00	150	Vertical	Pass
5**	8588.438	39.90	-2.11	54.0	-14.10	AV	151.00	150	Vertical	Pass
6	15457.950	54.38	1.52	74.0	-19.62	Peak	243.00	150	Vertical	Pass
6**	15457.950	44.06	1.52	54.0	-9.94	AV	243.00	150	Vertical	Pass

A.1.4 Test Antenna Horizontal, 1 GHz – 18 GHz

RE Test case_FCC Part 15B_FCC Part 15B Class B 1GHz-18GHz

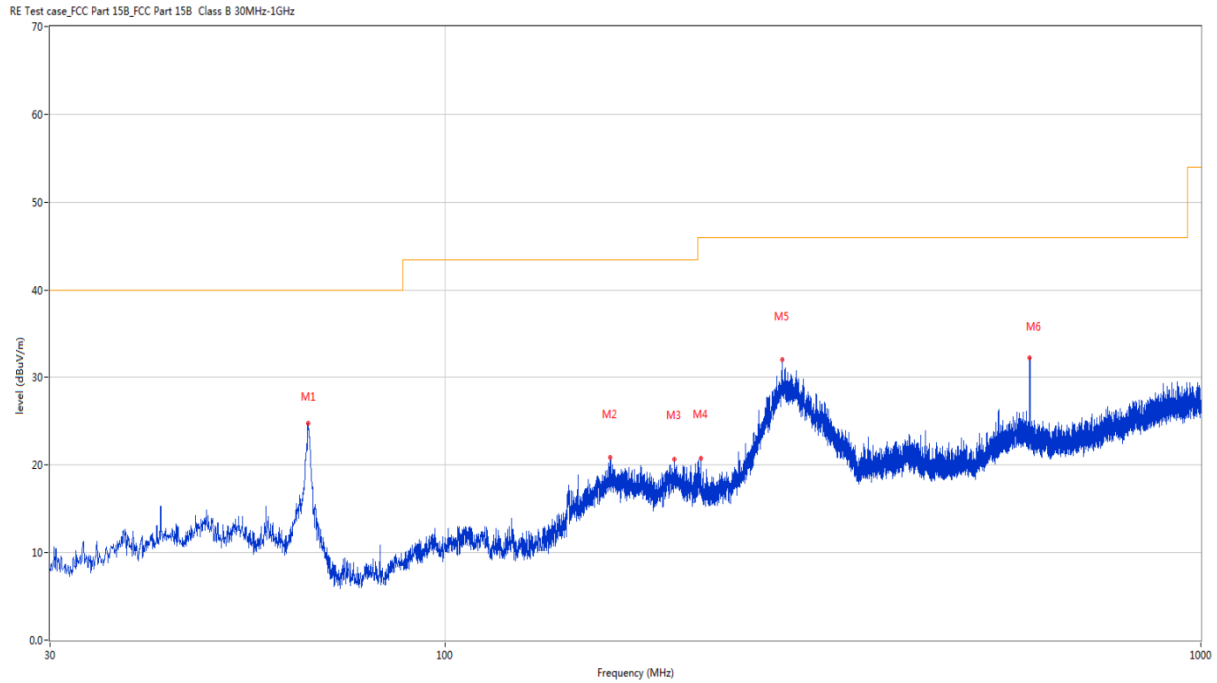


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1173.700	36.26	-18.03	74.0	-37.74	Peak	18.00	150	Horizontal	Pass
1**	1173.700	26.76	-18.03	54.0	-27.24	AV	18.00	150	Horizontal	Pass
2	1834.300	38.56	-16.64	74.0	-35.44	Peak	167.00	150	Horizontal	Pass
2**	1834.300	29.80	-16.64	54.0	-24.20	AV	167.00	150	Horizontal	Pass
3	3011.200	43.94	-8.27	74.0	-30.06	Peak	55.00	150	Horizontal	Pass
3**	3011.200	35.28	-8.27	54.0	-18.72	AV	55.00	150	Horizontal	Pass
4	6691.600	52.75	-0.30	74.0	-21.25	Peak	331.00	150	Horizontal	Pass
4**	6691.600	43.61	-0.30	54.0	-10.39	AV	331.00	150	Horizontal	Pass
5	8834.825	48.91	-0.94	74.0	-25.09	Peak	280.00	150	Horizontal	Pass
5**	8834.825	39.62	-0.94	54.0	-14.38	AV	280.00	150	Horizontal	Pass
6	17428.011	54.83	3.52	74.0	-19.17	Peak	133.00	150	Horizontal	Pass
6**	17428.011	46.14	3.52	54.0	-7.86	AV	133.00	150	Horizontal	Pass

Test Data and Plots

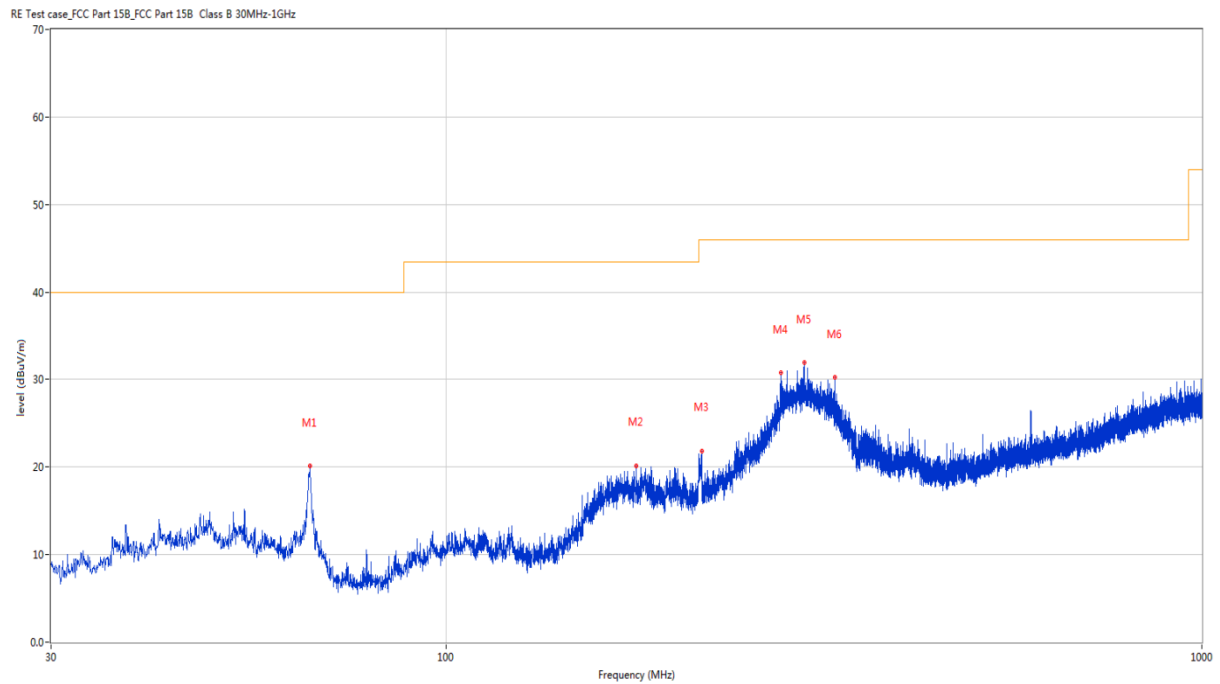
The USB Test Mode

A.1.5 Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	65.939	24.70	-25.12	40.0	-15.30	Peak	95.50	100	Vertical	Pass
2	165.315	20.84	-26.75	43.5	-22.66	Peak	228.90	100	Vertical	Pass
3	200.865	20.68	-23.97	43.5	-22.82	Peak	194.60	100	Vertical	Pass
4	217.938	20.77	-24.12	46.0	-25.23	Peak	176.20	200	Vertical	Pass
5	279.290	32.00	-21.84	46.0	-14.00	Peak	38.80	200	Vertical	Pass
6	594.006	32.22	-14.68	46.0	-13.78	Peak	197.30	200	Vertical	Pass

A.1.6 Test Antenna Horizontal, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	66.035	20.10	-25.14	40.0	-19.90	Peak	14.50	200	Horizontal	Pass
2	178.604	20.15	-26.13	43.5	-23.35	Peak	207.70	200	Horizontal	Pass
3	217.986	21.81	-24.12	46.0	-24.19	Peak	254.20	200	Horizontal	Pass
4	277.253	30.75	-21.93	46.0	-15.25	Peak	123.20	100	Horizontal	Pass
5	297.817	31.90	-21.37	46.0	-14.10	Peak	266.90	100	Horizontal	Pass
6	326.869	30.25	-20.74	46.0	-15.75	Peak	123.20	100	Horizontal	Pass

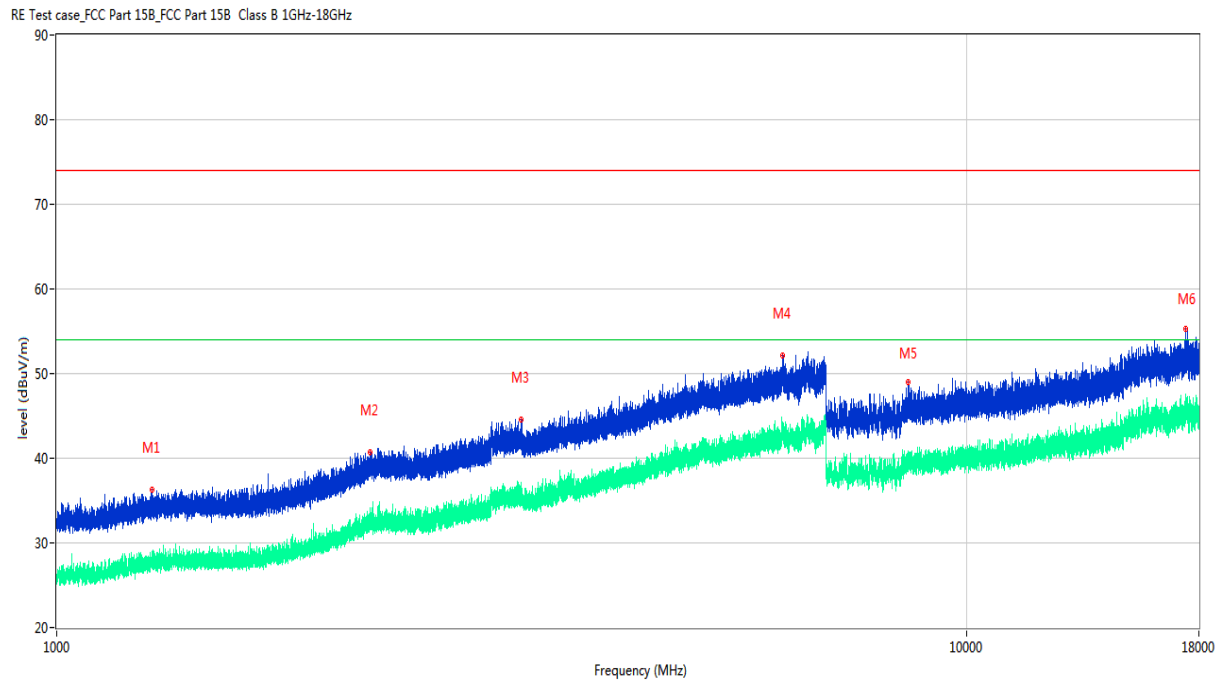
A.1.7 Test Antenna Vertical, 1 GHz – 18 GHz

RE Test case_FCC Part 15B_FCC Part 15B Class B 1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1351.100	37.17	-17.39	74.0	-36.83	Peak	0.00	150	Vertical	Pass
1**	1351.100	28.57	-17.39	54.0	-25.43	AV	0.00	150	Vertical	Pass
2	2220.800	41.41	-12.87	74.0	-32.59	Peak	158.00	150	Vertical	Pass
2**	2220.800	31.90	-12.87	54.0	-22.10	AV	158.00	150	Vertical	Pass
3	4065.000	46.16	-5.30	74.0	-27.84	Peak	360.00	150	Vertical	Pass
3**	4065.000	37.39	-5.30	54.0	-16.61	AV	360.00	150	Vertical	Pass
4	6691.400	52.25	-0.30	74.0	-21.75	Peak	230.00	150	Vertical	Pass
4**	6691.400	44.38	-0.30	54.0	-9.62	AV	230.00	150	Vertical	Pass
5	8742.537	48.81	-1.79	74.0	-25.19	Peak	283.00	150	Vertical	Pass
5**	8742.537	39.70	-1.79	54.0	-14.30	AV	283.00	150	Vertical	Pass
6	17465.287	54.72	2.89	74.0	-19.28	Peak	134.00	150	Vertical	Pass
6**	17465.287	46.58	2.89	54.0	-7.42	AV	134.00	150	Vertical	Pass

A.1.8 Test Antenna Horizontal, 1 GHz – 18 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1274.000	36.34	-17.35	74.0	-37.66	Peak	315.00	150	Horizontal	Pass
1**	1274.000	28.57	-17.35	54.0	-25.43	AV	315.00	150	Horizontal	Pass
2	2209.200	40.70	-12.94	74.0	-33.30	Peak	4.00	150	Horizontal	Pass
2**	2209.200	32.78	-12.94	54.0	-21.22	AV	4.00	150	Horizontal	Pass
3	3238.000	44.59	-7.97	74.0	-29.41	Peak	350.00	150	Horizontal	Pass
3**	3238.000	34.47	-7.97	54.0	-19.53	AV	350.00	150	Horizontal	Pass
4	6274.200	52.10	-0.22	74.0	-21.90	Peak	25.00	150	Horizontal	Pass
4**	6274.200	42.99	-0.22	54.0	-11.01	AV	25.00	150	Horizontal	Pass
5	8629.550	48.99	-1.90	74.0	-25.01	Peak	190.00	150	Horizontal	Pass
5**	8629.550	39.99	-1.90	54.0	-14.01	AV	190.00	150	Horizontal	Pass
6	17423.286	55.29	3.67	74.0	-18.71	Peak	136.00	150	Horizontal	Pass
6**	17423.286	46.40	3.67	54.0	-7.60	AV	136.00	150	Horizontal	Pass

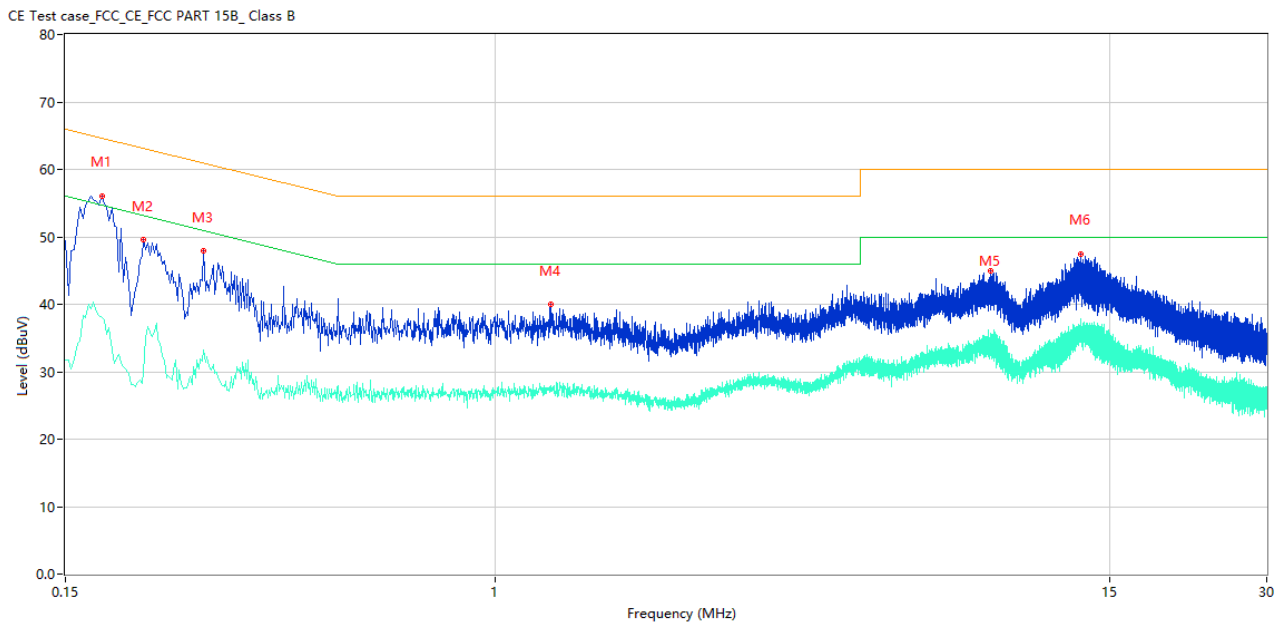
A.2 Conducted Emission

Note: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

Test Data and Plots

The Camera Test Mode

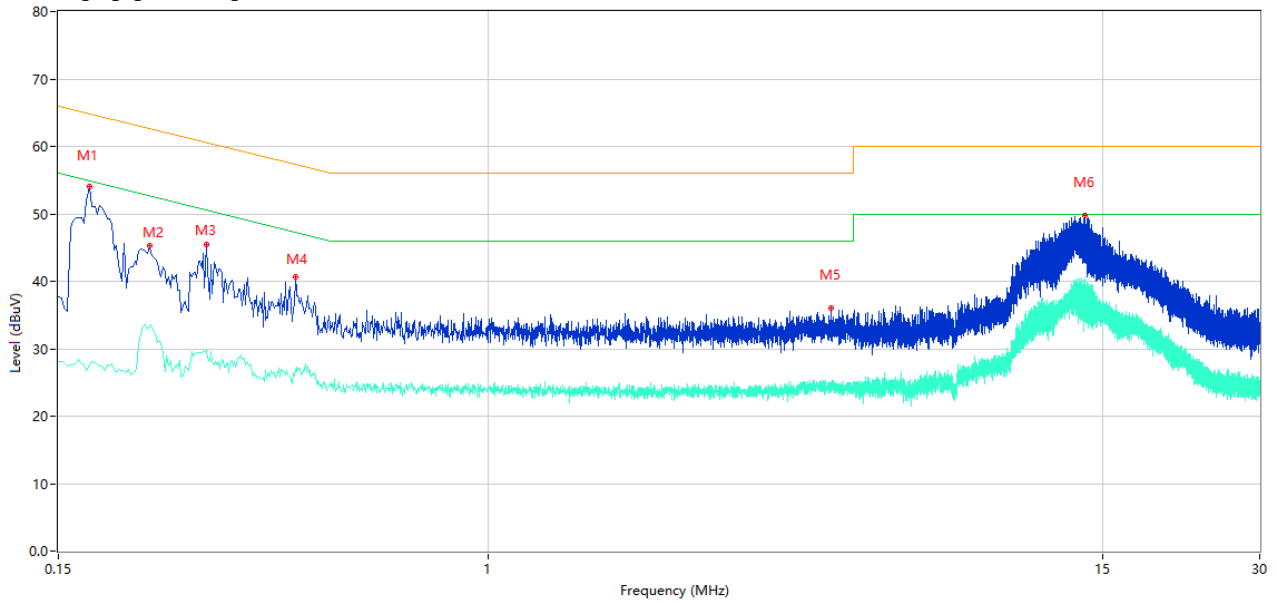
A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.176	56.09	10.39	64.67	-8.58	Peak	L	Pass
1**	0.176	38.04	10.39	54.67	-16.63	AV	L	Pass
2	0.212	49.55	10.38	63.13	-13.58	Peak	L	Pass
2**	0.212	29.96	10.38	53.13	-23.17	AV	L	Pass
3	0.276	47.95	10.34	60.94	-12.99	Peak	L	Pass
3**	0.276	33.23	10.34	50.94	-17.71	AV	L	Pass
4	1.274	39.99	10.25	56.00	-16.01	Peak	L	Pass
4**	1.274	27.64	10.25	46.00	-18.36	AV	L	Pass
5	8.896	45.01	10.36	60.00	-14.99	Peak	L	Pass
5**	8.896	33.81	10.36	50.00	-16.19	AV	L	Pass
6	13.220	47.41	10.39	60.00	-12.59	Peak	L	Pass
6**	13.220	36.04	10.39	50.00	-13.96	AV	L	Pass

A.2.2 N Phase

CE Test case_FCC_CE_FCC PART 15B_Class B

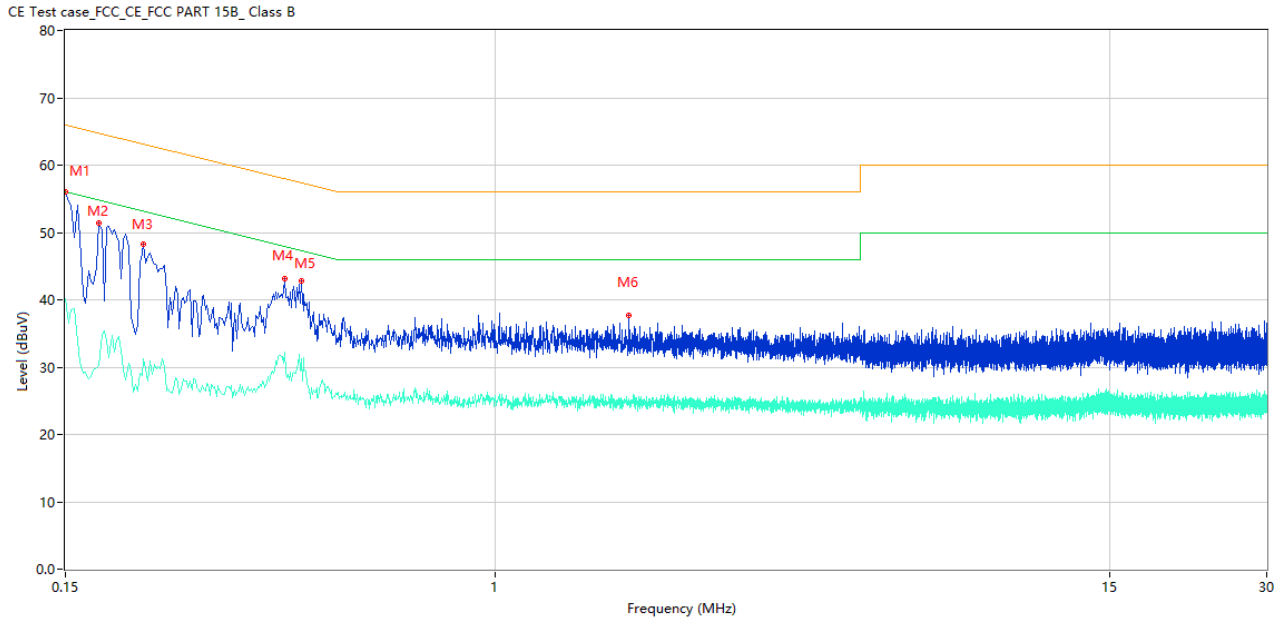


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.172	54.13	10.40	64.86	-10.73	Peak	N	Pass
1**	0.172	27.68	10.40	54.86	-27.18	AV	N	Pass
2	0.224	45.22	10.37	62.67	-17.45	Peak	N	Pass
2**	0.224	33.40	10.37	52.67	-19.27	AV	N	Pass
3	0.288	45.46	10.34	60.58	-15.12	Peak	N	Pass
3**	0.288	29.83	10.34	50.58	-20.75	AV	N	Pass
4	0.426	40.68	10.31	57.33	-16.65	Peak	N	Pass
4**	0.426	26.64	10.31	47.33	-20.69	AV	N	Pass
5	4.520	36.03	10.31	56.00	-19.97	Peak	N	Pass
5**	4.520	23.63	10.31	46.00	-22.37	AV	N	Pass
6	13.870	49.73	10.40	60.00	-10.27	Peak	N	Pass
6**	13.870	39.96	10.40	50.00	-10.04	AV	N	Pass

Test Data and Plots

The USB Test Mode

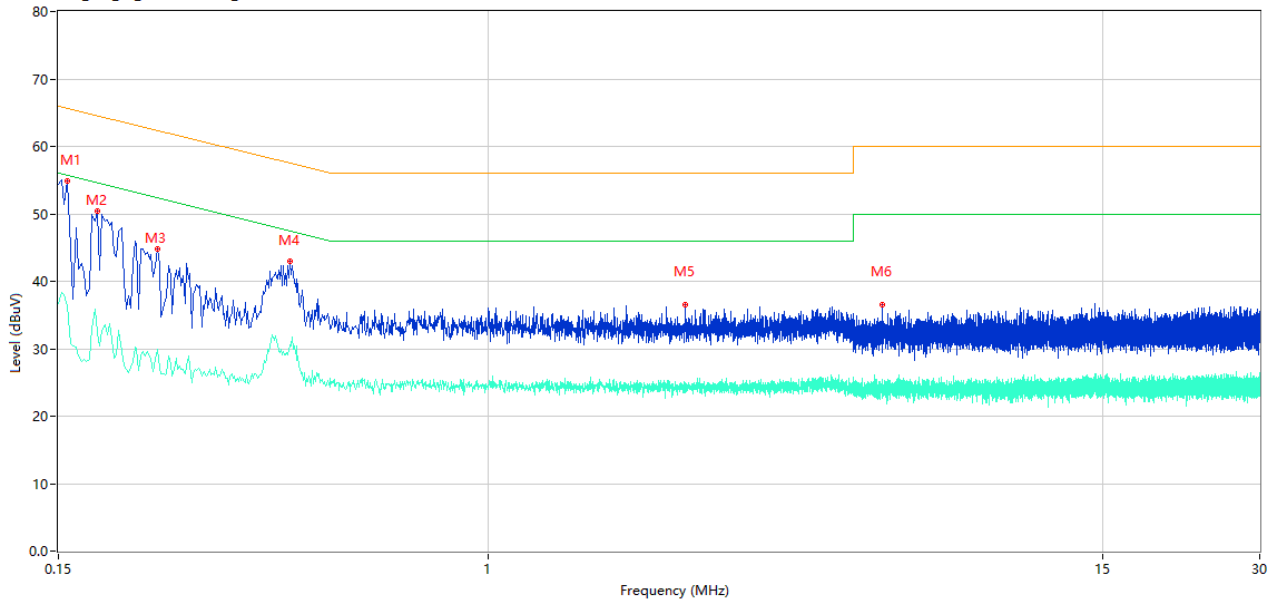
A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	56.06	10.41	66.00	-9.94	Peak	L	Pass
1**	0.150	40.20	10.41	56.00	-15.80	AV	L	Pass
2	0.174	51.34	10.39	64.77	-13.43	Peak	L	Pass
2**	0.174	30.21	10.39	54.77	-24.56	AV	L	Pass
3	0.212	48.34	10.38	63.13	-14.79	Peak	L	Pass
3**	0.212	31.20	10.38	53.13	-21.93	AV	L	Pass
4	0.394	43.12	10.30	57.98	-14.86	Peak	L	Pass
4**	0.394	32.23	10.30	47.98	-15.75	AV	L	Pass
5	0.424	42.77	10.31	57.37	-14.60	Peak	L	Pass
5**	0.424	31.27	10.31	47.37	-16.10	AV	L	Pass
6	1.800	37.65	10.25	56.00	-18.35	Peak	L	Pass
6**	1.800	24.50	10.25	46.00	-21.50	AV	L	Pass

A.2.4 N Phase

CE Test case_FCC_CE_FCC PART 15B_Class B



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.156	54.92	10.41	65.67	-10.75	Peak	N	Pass
1**	0.156	36.33	10.41	55.67	-19.34	AV	N	Pass
2	0.178	50.41	10.39	64.58	-14.17	Peak	N	Pass
2**	0.178	32.47	10.39	54.58	-22.11	AV	N	Pass
3	0.232	44.83	10.36	62.38	-17.55	Peak	N	Pass
3**	0.232	29.89	10.36	52.38	-22.49	AV	N	Pass
4	0.416	42.93	10.31	57.53	-14.60	Peak	N	Pass
4**	0.416	30.54	10.31	47.53	-16.99	AV	N	Pass
5	2.384	36.46	10.27	56.00	-19.54	Peak	N	Pass
5**	2.384	24.16	10.27	46.00	-21.84	AV	N	Pass
6	5.676	36.52	10.30	60.00	-23.48	Peak	N	Pass
6**	5.676	24.79	10.30	50.00	-25.21	AV	N	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ20A0177-AE-1.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ20A0177-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ20A0177-AI.PDF”.

--END OF REPORT--