

EMC

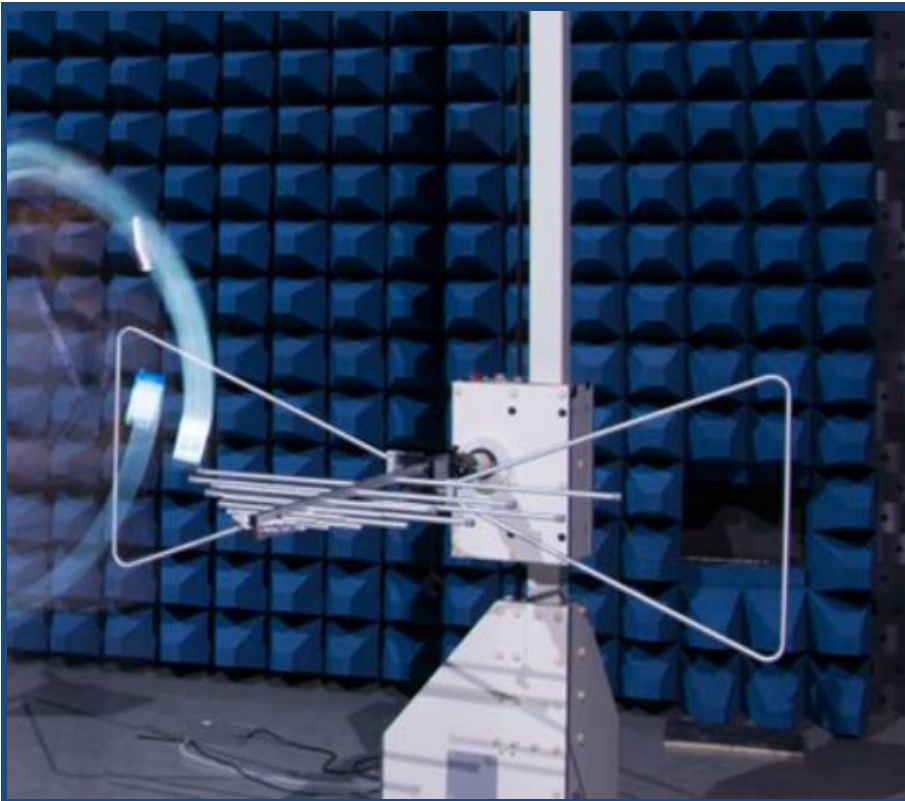
TEST REPORT

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: Zhenxiang Liu
Liu Zhenxiang
Date Jan. 20, 2022

Approved by: Jianming Liao
Liao Jianming
(Technical Director)
Date Jan. 20, 2022

Report No.: BL-SZ2190589-401
EUT Name: Mobile Phone
Model Name: CPH2307
Brand Name: OPPO
Test Standard: 47 CFR Part 15 Subpart B
(refer section 3.1)
FCC ID: R9C-CPH2307

Test Conclusion: Pass
Test Date: Oct. 08, 2021 ~ Oct. 15, 2021
Date of Issue: Jan. 20, 2022

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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Dec. 28, 2021</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>Jan. 20, 2022</u>	<u>Note 4 is added to Chapter A.1</u>

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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 is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.
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	30% to 60%
Ambient Pressure	100 kPa to 102 kPa

1.4 Announce

- (1) The test report reference to the report template version v7.2.
- (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	CPH2307
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	0
Software Version	ColorOS V12.1
Dimensions (Approx.)	160.3*72.6*8.68mm
Weight (Approx.)	196g (with battery)

2.5 Ancillary Equipment

Ancillary Equipment 1	Li-Polymer Battery 1	
	Brand Name	OPPO
	Model No.	BLP891
	Serial No.	N/A
	Capacity	Rated: 2340mAh/18.11Wh Typical: 2400mAh/18.57Wh
	Rated Voltage	7.74 V
	Limit Charge Voltage	8.90 V
Ancillary Equipment 2	Power Supply Unit 1	
	Brand Name	OPPO
	Model No.	VCA7JFUH (USA Plug 65W)
	Serial No.	N/A
	Rated Input 1	100-130VAC 50/60Hz 1.8A
	Rated Output 1	5VDC 2A or 10VDC 5A Max
	Rated Input 2	200-240VAC 50/60Hz 1.8A
	Rated Output 2	5VDC 2A or 10VDC 6.5A Max
Ancillary Equipment 3	Power Supply Unit(alternative) 2	
	Brand Name	OPPO
	Model No.	VCB8JAUH (USA Plug 80W)
	Serial No.	N/A
	Rated Input 1	100-130VAC 50/60Hz 2.0A
	Rated Output 1	5VDC 2A or 5.0~10VDC 6.5A Max
	Rated Input 2	200-240VAC 50/60Hz 1.8A
	Rated Output 2	5VDC 2A or 5.0~11VDC 7.3A Max
Ancillary Equipment 4	USB Cable	
	Model No.	DL129
	Length (Approx.)	1.2 m
Ancillary Equipment 5	Data connector	
	Model No.	N/A
	Length (Approx.)	N/A
Note 1: Letter in () means plug type.		
Note 2: All batteries are tested, only the worst data of VCA7JFUH (USA Plug 65W) shown in this report.		

2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/1900 MHz 3G Network WCDMA/HSDPA/HSUPA/DC-HSDPA/HSPA+ Band 2/4/5 4G Network LTE FDD Band 2/4/5/7/12/13/17/25/26/66 LTE TDD Band 38/41 LTE CA Uplink (UL): 7C/38C/41C 5G Network SA: NR n5/n7/n12/n13/n26/n38/n41/n66 NSA: ENDC DC_7A_n5A, DC_5A_n7A, DC_66A_n7A, DC_25A_n41A, DC_26A_n41A, DC_7A_n66A Bluetooth 5.0 (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40), 802.11ac(VHT20/40) and 802.11ax(HE20/40) 5G WIFI U-NII-1/2A/2C/3, 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80/160) and 802.11ax(HE20/40/80/160) GPS, GLONASS, Beidou, Galileo, NFC
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The requirement for the following technical information of the EUT was tested in this report:

The Highest Speed of Processor	2.842 GHz
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3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	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

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)	20°C to 25°C	AC 120 V/60 Hz or DC 7.74 V from Battery	30% to 60%	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&SCHWARZ	ESRP	101036	2021.06.01	2022.05.31	☐
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	2021.08.15	2024.08.14	☐
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	2021.09.13	2022.09.12	☒
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2022.07.01	☒
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2018.07.18	2022.07.17	☒
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	2021.09.13	2022.09.12	☒
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2022.07.01	☒
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2018.07.18	2022.07.17	☒
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	2021.04.01	2022.03.31	☒
Test Antenna-Horn	A-INFOMW	LB-180400KF	J211060273	2021.01.05	2023.01.04	☒
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2018.07.18	2022.07.17	☒
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	2021.06.01	2022.05.31	☒
LISN	SCHWARZBECK	NSLK 8127	8127-687	2021.06.08	2022.06.07	☒
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.4m*3.1m*2.8m	N/A	2018.08.16	2022.08.15	☒
Test Software	BALUN	BL410_E	V19.918	--	--	☒

4.3 Test Enclosure list

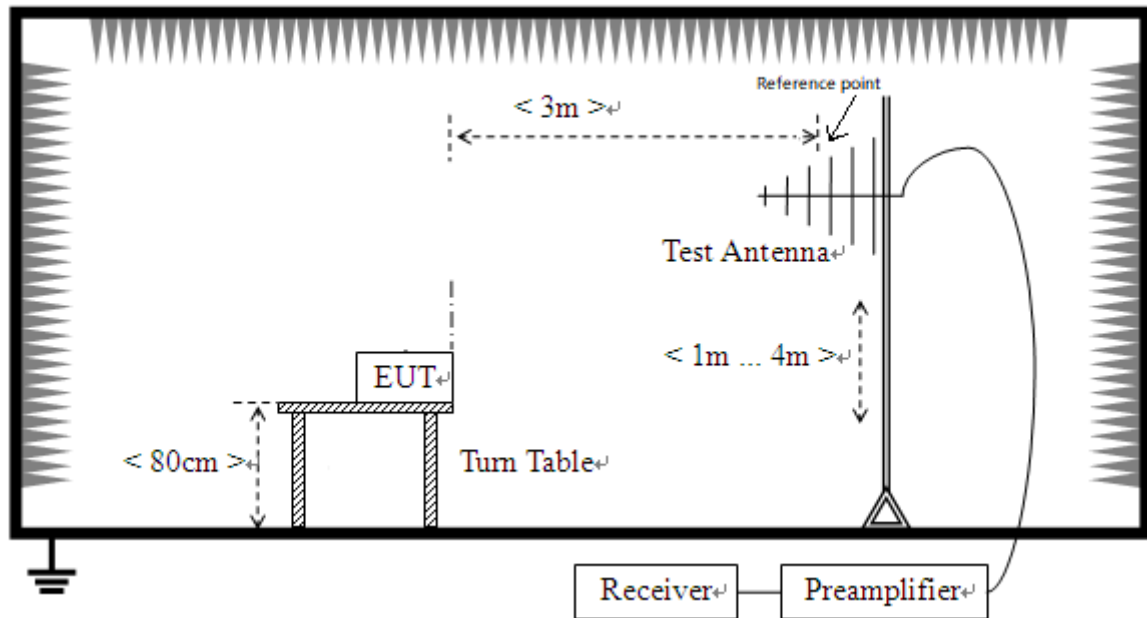
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	☐
Laptop	Apple	A1465	N/A	N/A	N/A	☒
Printer	HP	DESKJET 1000	N/A	N/A	N/A	☐
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	☐
Mouse	Logitech	M100	N/A	N/A	N/A	☐
USB disk	Kingston	N/A	N/A	N/A	N/A	☐
TF Card	Kingston	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 2022.01.13	☒
WIFI Router	TP-LINK	TL-WDR7500	N/A	N/A	N/A	☐
Headset	N/A	N/A	N/A	N/A	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	☐
Wireless Charger	OPPO	OAWV02	N/A	N/A	Output: 45W (Max.)	☒

4.4 Test Configurations

Test Configurations (TC) No.	Description
TC01	<u>The GSM 850 MHz RX Test Mode</u> GSM 850 MHz RX + EUT +Adapter + USB Cable + Battery
TC02	<u>The EGPRS 850 MHz RX Test Mode</u> EGPRS 850 MHz RX + EUT +Adapter + USB Cable + Battery
TC03	<u>The WCDMA Band 5 RX Test Mode</u> WCDMA Band 5 RX + EUT +Adapter + USB Cable + Battery
TC04	<u>The FDD LTE Band 5 RX Test Mode</u> LTE Band 5 RX + EUT +Adapter + USB Cable + Battery
TC05	<u>The FDD LTE Band 12 RX Test Mode</u> LTE Band 12 RX + EUT +Adapter + USB Cable + Battery
TC06	<u>The FDD LTE Band 13 RX Test Mode</u> LTE Band 13 RX + EUT +Adapter + USB Cable + Battery
TC07	<u>The FDD LTE Band 17 RX Test Mode</u> LTE Band 17 RX + EUT +Adapter + USB Cable + Battery
TC08	<u>The FDD LTE Band 26 RX Test Mode</u> LTE Band 26 RX + EUT +Adapter + USB Cable + Battery
TC09	<u>The n5 Test Mode</u> n5 RX + EUT + Adapter + USB Cable + Battery
TC10	<u>The n12 RX Test Mode</u> n12 RX + EUT + Adapter + USB Cable + Battery
TC11	<u>The n13 RX Test Mode</u> n13 RX + EUT + Adapter + USB Cable + Battery
TC12	<u>The n26 RX Test Mode</u> n26 RX + EUT + Adapter + USB Cable + Battery
TC13	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + wireless charger + Battery
TC14	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + wireless charger + Battery
TC15	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Laptop
TC16	<u>The USB Test Mode</u> EUT + USB Cable + Battery + iPhone 12
TC17	<u>The Headset Test Mode</u> EUT + Battery + Laptop + TF Card

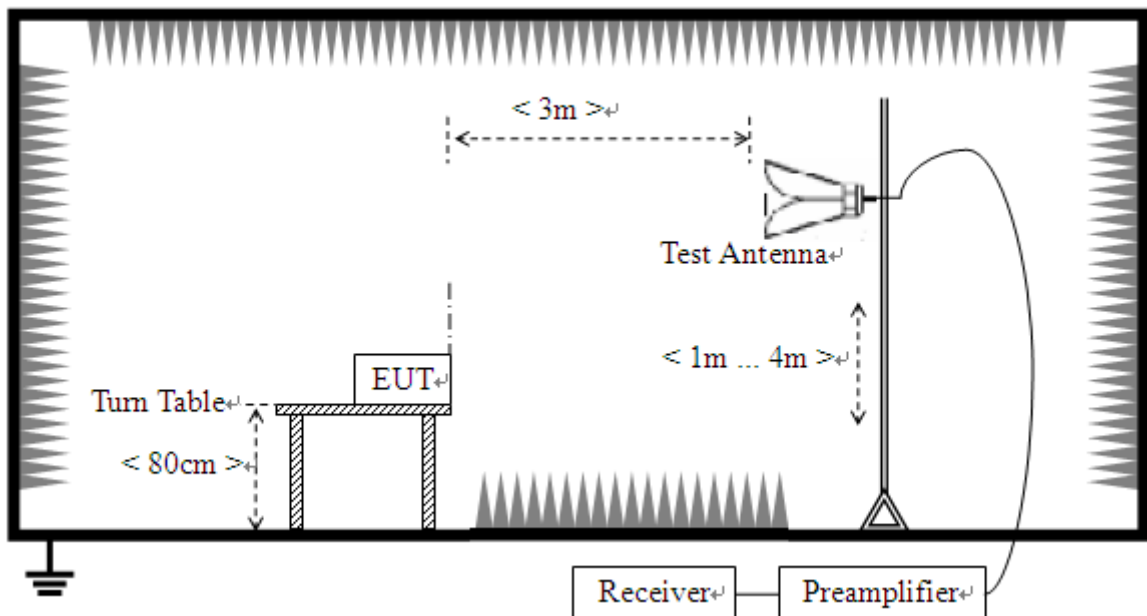
4.5 Test Setups

Test Setup 1



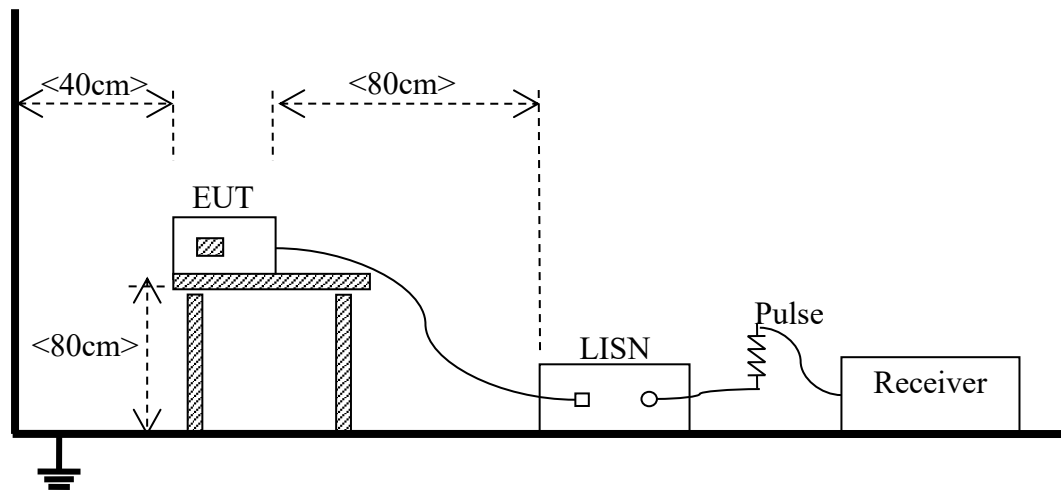
(For Radiated Emission Test (30 MHz-1 GHz))

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~TC17 ^{Note}
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC16 ^{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 $\mu\text{V/m}$) = $20 \cdot \log$ [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 (dBμV)	Average (dBμV)
0.15 - 0.50	79	66
0.50 - 30	73	60

Frequency range (MHz)	Class B	
	Quasi-peak (dBμV)	Average (dBμV)
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 μH 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:

$$1. \text{ Results (dBuV) = Reading (dBuV) + Factor (dB)}$$

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

$$2. \text{ Factor = Insertion loss + Cable loss}$$

$$3. \text{ Over limit = Results – Limit.}$$

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.

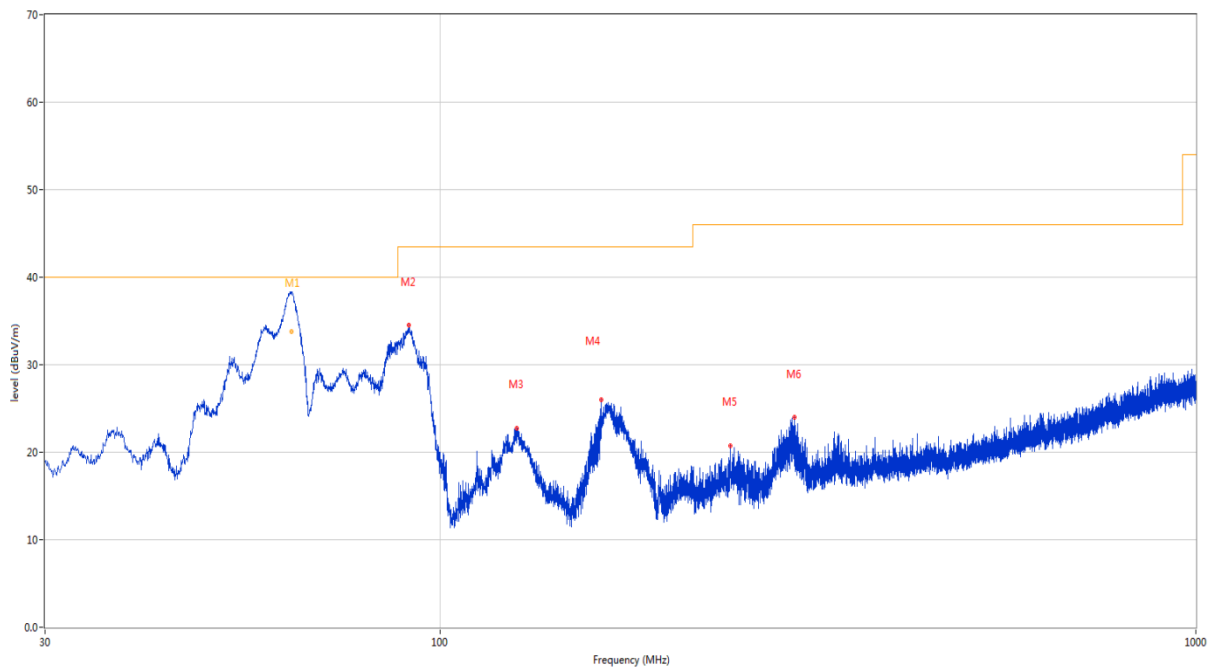
Note 3: The Radiated Emission from 18G-40G is noise only, do not show on the report.

Note 4: All the configurations were pre tested, only the worst configuration has been reported in this report.

Test Data and Plots

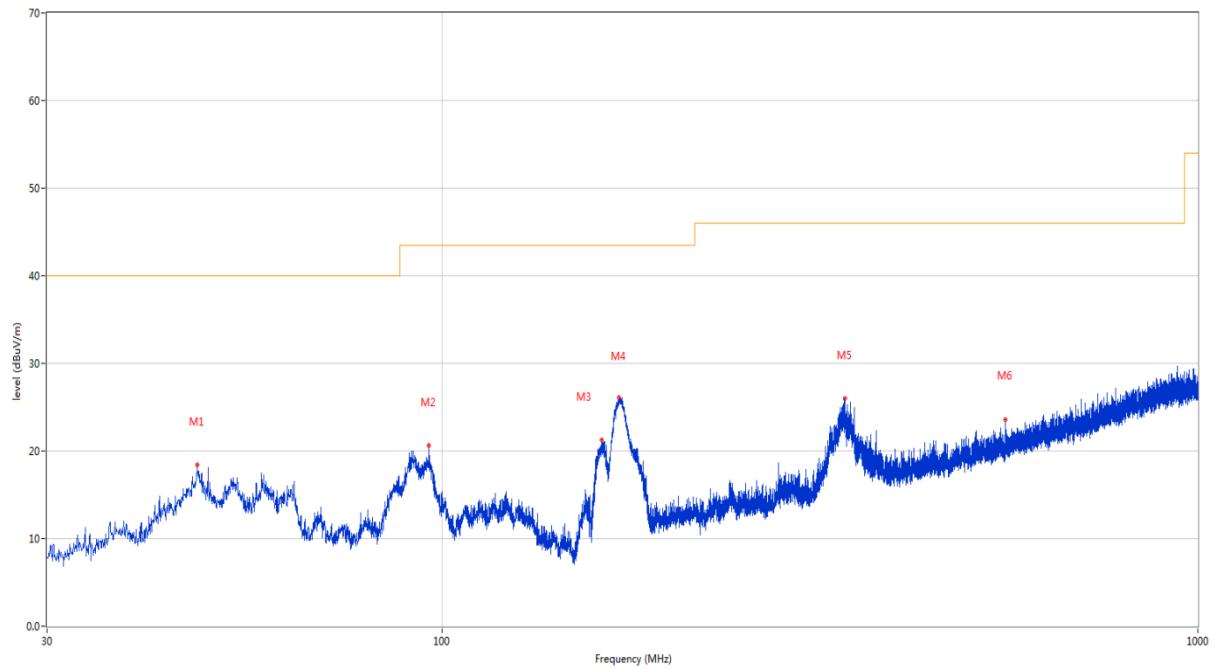
The Camera Test Mode

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



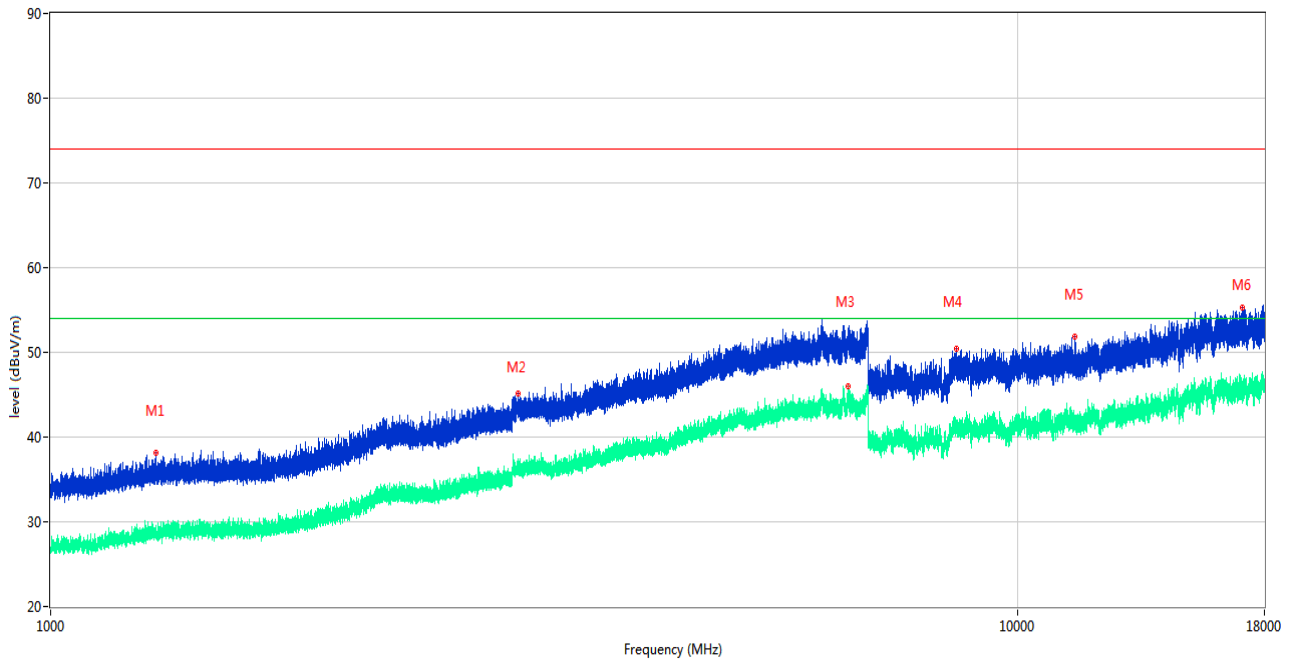
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	63.512	39.42	-24.87	40.0	-0.58	Peak	353.50	103	Vertical	N/A
1*	63.512	33.83	-24.87	40.0	-6.17	QP	353.50	103	Vertical	Pass
2	90.965	34.53	-25.88	43.5	-8.97	Peak	136.90	100	Vertical	Pass
3	126.224	22.72	-26.70	43.5	-20.78	Peak	258.70	100	Vertical	Pass
4	163.278	25.96	-26.92	43.5	-17.54	Peak	158.00	100	Vertical	Pass
5	241.896	20.70	-22.76	46.0	-25.30	Peak	310.90	100	Vertical	Pass
6	294.664	24.02	-21.83	46.0	-21.98	Peak	288.70	100	Vertical	Pass

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



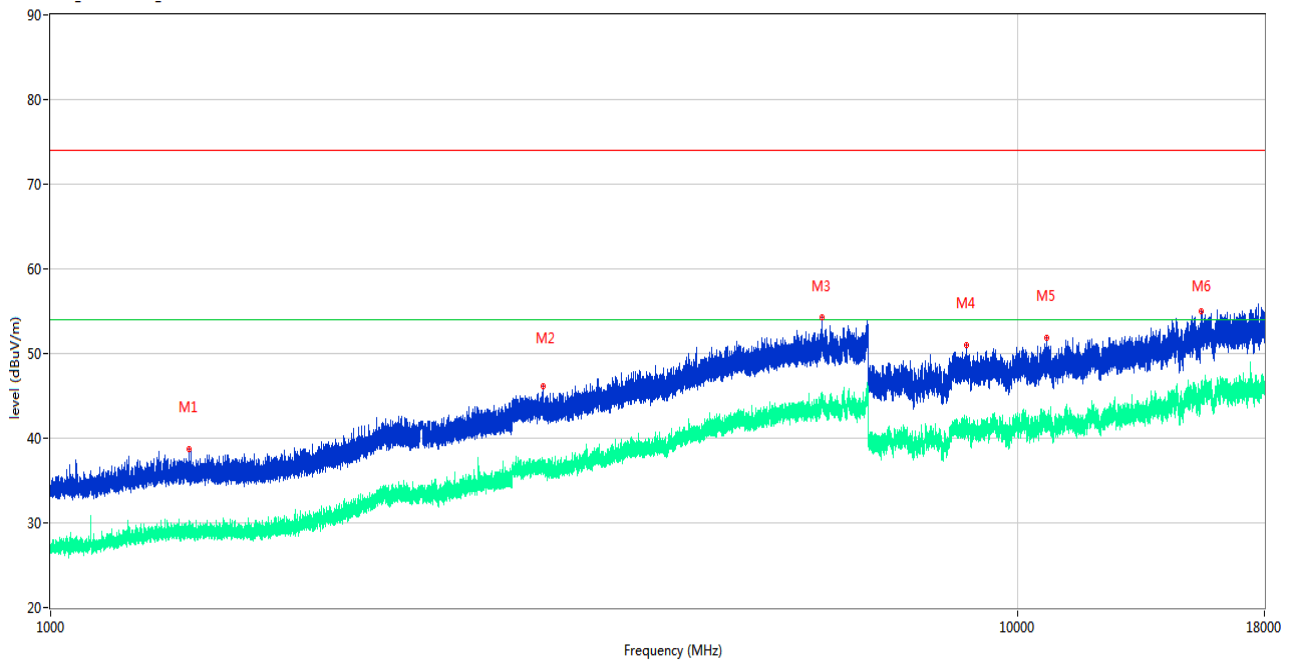
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	47.411	18.40	-22.78	40.0	-21.60	Peak	50.60	200	Horizontal	Pass
2	96.008	20.63	-24.73	43.5	-22.87	Peak	182.10	200	Horizontal	Pass
3	162.745	21.23	-27.00	43.5	-22.27	Peak	177.40	100	Horizontal	Pass
4	171.184	26.09	-26.55	43.5	-17.41	Peak	0.00	200	Horizontal	Pass
5	340.885	26.01	-20.07	46.0	-19.99	Peak	156.30	100	Horizontal	Pass
6	556.953	23.54	-15.43	46.0	-22.46	Peak	359.00	100	Horizontal	Pass

A.1.3 Test Antenna Vertical, 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	1285.900	38.09	-17.53	74.0	-35.91	Peak	324.00	100	Vertical	Pass
1**	1285.900	29.20	-17.53	54.0	-24.80	AV	324.00	100	Vertical	Pass
2	3040.600	45.09	-8.46	74.0	-28.91	Peak	360.00	100	Vertical	Pass
2**	3040.600	36.29	-8.46	54.0	-17.71	AV	360.00	100	Vertical	Pass
3	6683.800	52.30	-0.34	74.0	-21.70	Peak	239.00	100	Vertical	Pass
3**	6683.800	45.97	-0.34	54.0	-8.03	AV	239.00	100	Vertical	Pass
4	8639.325	50.42	-1.83	74.0	-23.58	Peak	42.00	100	Vertical	Pass
4**	8639.325	41.10	-1.83	54.0	-12.90	AV	42.00	100	Vertical	Pass
5	11463.151	51.80	-0.14	74.0	-22.20	Peak	91.00	100	Vertical	Pass
5**	11463.151	41.76	-0.14	54.0	-12.24	AV	91.00	100	Vertical	Pass
6	17086.500	55.25	1.46	74.0	-18.75	Peak	164.00	100	Vertical	Pass
6**	17086.500	45.45	1.46	54.0	-8.55	AV	164.00	100	Vertical	Pass

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

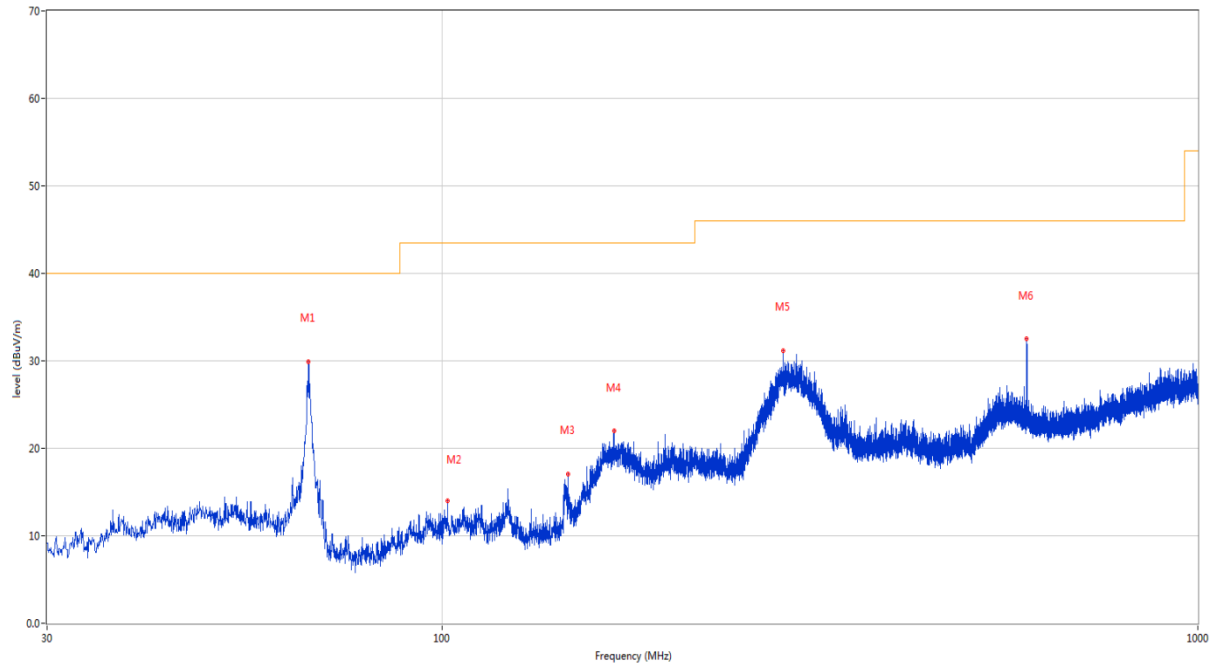


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1388.900	38.66	-17.46	74.0	-35.34	Peak	288.00	100	Horizontal	Pass
1**	1388.900	28.36	-17.46	54.0	-25.64	AV	288.00	100	Horizontal	Pass
2	3227.400	46.16	-7.14	74.0	-27.84	Peak	238.00	100	Horizontal	Pass
2**	3227.400	36.62	-7.14	54.0	-17.38	AV	238.00	100	Horizontal	Pass
3	6279.400	54.35	-0.20	74.0	-19.65	Peak	86.00	100	Horizontal	Pass
3**	6279.400	44.81	-0.20	54.0	-9.19	AV	86.00	100	Horizontal	Pass
4	8849.776	51.06	-0.90	74.0	-22.94	Peak	234.00	100	Horizontal	Pass
4**	8849.776	41.77	-0.90	54.0	-12.23	AV	234.00	100	Horizontal	Pass
5	10731.175	51.85	-0.76	74.0	-22.15	Peak	207.00	100	Horizontal	Pass
5**	10731.175	41.96	-0.76	54.0	-12.04	AV	207.00	100	Horizontal	Pass
6	15497.588	55.03	1.11	74.0	-18.97	Peak	159.00	100	Horizontal	Pass
6**	15497.588	45.27	1.11	54.0	-8.73	AV	159.00	100	Horizontal	Pass

Test Data and Plots

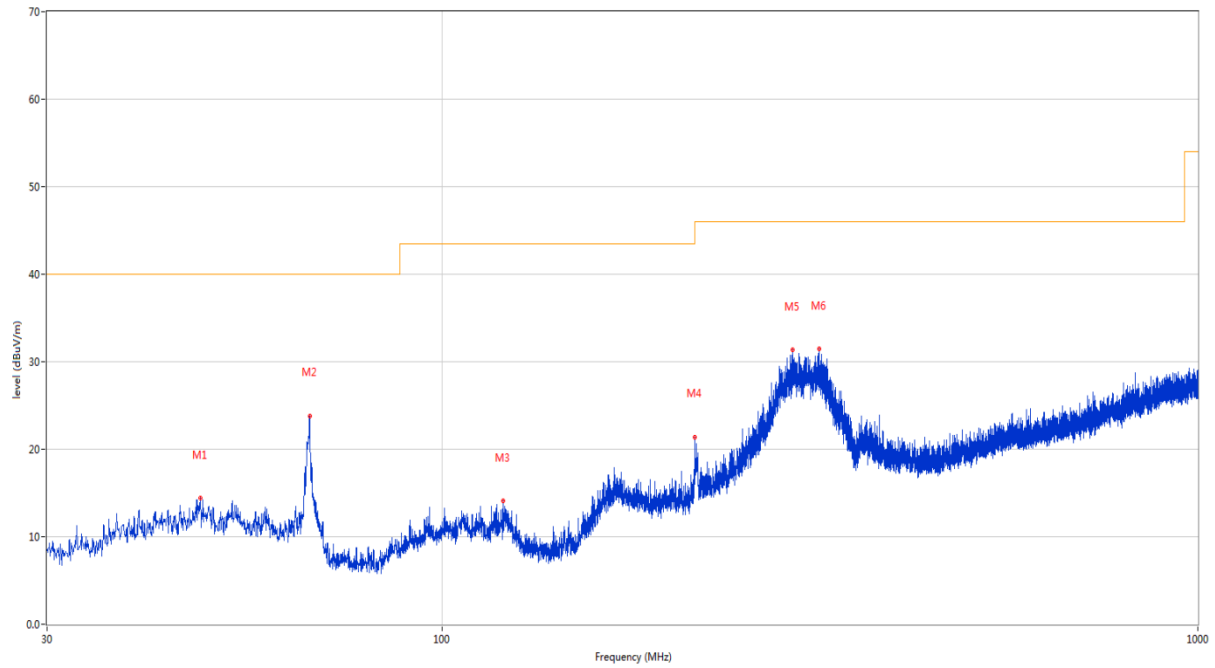
The USB Test Mode

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



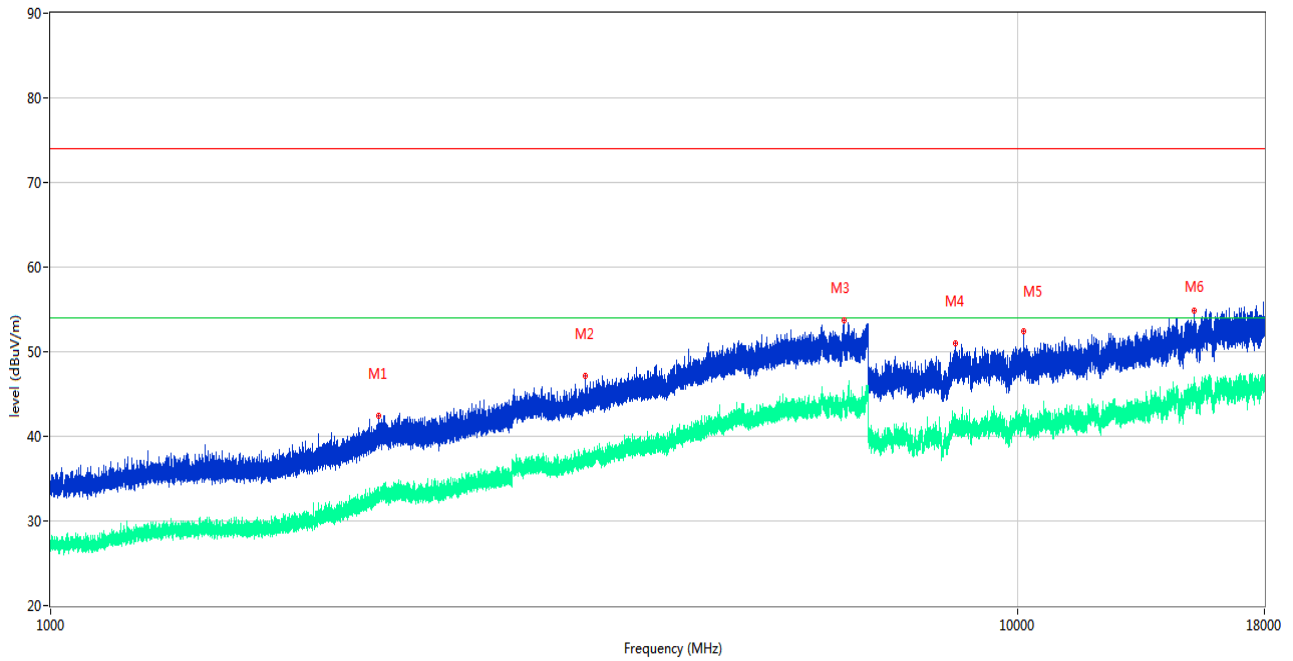
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	66.569	29.94	-25.32	40.0	-10.06	Peak	144.50	100	Vertical	Pass
2	101.634	14.01	-24.58	43.5	-29.49	Peak	39.50	100	Vertical	Pass
3	146.740	17.09	-27.63	43.5	-26.41	Peak	360.00	200	Vertical	Pass
4	168.758	21.99	-27.07	43.5	-21.51	Peak	165.50	100	Vertical	Pass
5	282.830	31.13	-21.81	46.0	-14.87	Peak	360.00	200	Vertical	Pass
6	594.006	32.48	-14.68	46.0	-13.52	Peak	237.60	100	Vertical	Pass

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



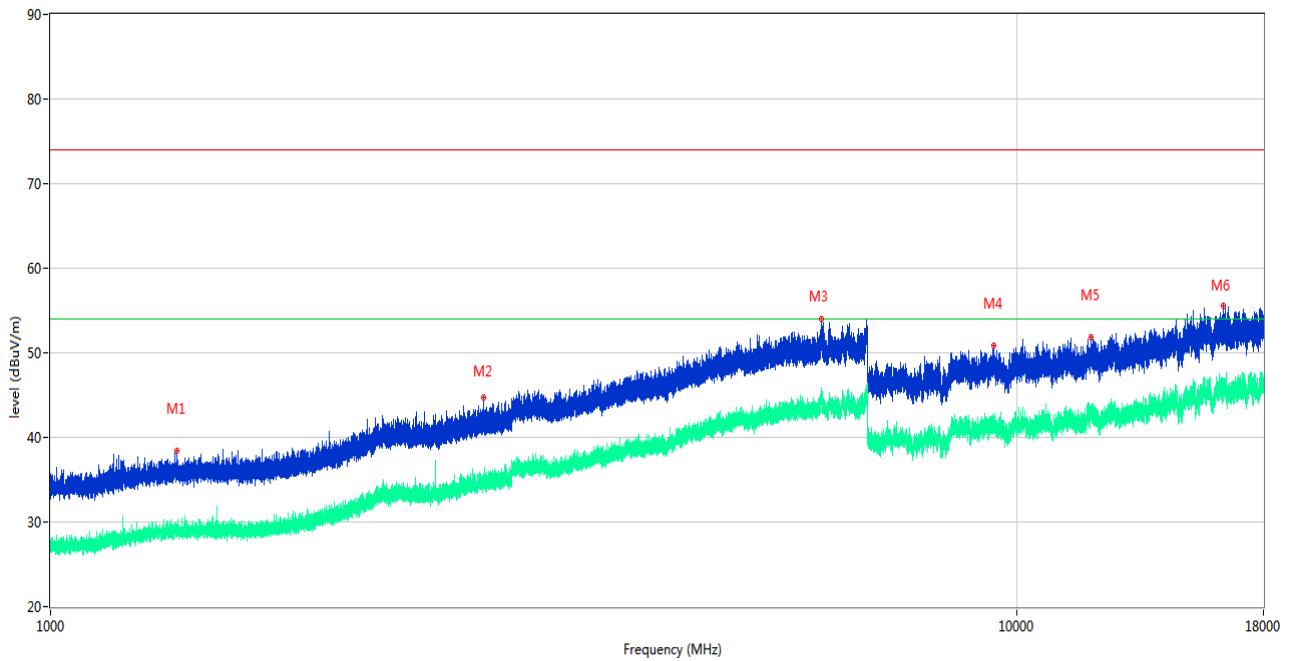
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	47.897	14.41	-22.66	40.0	-25.59	Peak	215.60	100	Horizontal	Pass
2	66.763	23.74	-25.39	40.0	-16.26	Peak	338.60	200	Horizontal	Pass
3	120.549	14.15	-25.81	43.5	-29.35	Peak	83.60	200	Horizontal	Pass
4	215.949	21.42	-23.91	43.5	-22.08	Peak	274.90	100	Horizontal	Pass
5	290.784	31.32	-21.65	46.0	-14.68	Peak	274.90	100	Horizontal	Pass
6	315.471	31.45	-21.04	46.0	-14.55	Peak	100.30	100	Horizontal	Pass

A.1.7 Test Antenna Vertical, 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	2182.700	42.42	-13.36	74.0	-31.58	Peak	114.00	100	Vertical	Pass
1**	2182.700	32.67	-13.36	54.0	-21.33	AV	114.00	100	Vertical	Pass
2	3570.400	47.15	-6.51	74.0	-26.85	Peak	182.00	100	Vertical	Pass
2**	3570.400	37.02	-6.51	54.0	-16.98	AV	182.00	100	Vertical	Pass
3	6611.600	53.76	0.19	74.0	-20.24	Peak	35.00	100	Vertical	Pass
3**	6611.600	43.86	0.19	54.0	-10.14	AV	35.00	100	Vertical	Pass
4	8616.612	50.94	-2.09	74.0	-23.06	Peak	149.00	100	Vertical	Pass
4**	8616.612	41.20	-2.09	54.0	-12.80	AV	149.00	100	Vertical	Pass
5	10154.738	52.45	-0.14	74.0	-21.55	Peak	0.00	100	Vertical	Pass
5**	10154.738	42.17	-0.14	54.0	-11.83	AV	0.00	100	Vertical	Pass
6	15238.500	54.80	0.97	74.0	-19.20	Peak	361.00	100	Vertical	Pass
6**	15238.500	45.73	0.97	54.0	-8.27	AV	361.00	100	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	1352.600	38.49	-17.40	74.0	-35.51	Peak	138.00	100	Horizontal	Pass
1**	1352.600	28.76	-17.40	54.0	-25.24	AV	138.00	100	Horizontal	Pass
2	2804.300	44.66	-10.39	74.0	-29.34	Peak	163.00	100	Horizontal	Pass
2**	2804.300	34.69	-10.39	54.0	-19.31	AV	163.00	100	Horizontal	Pass
3	6274.200	54.02	-0.22	74.0	-19.98	Peak	216.00	100	Horizontal	Pass
3**	6274.200	44.55	-0.22	54.0	-9.45	AV	216.00	100	Horizontal	Pass
4	9477.963	50.88	-0.61	74.0	-23.12	Peak	298.00	100	Horizontal	Pass
4**	9477.963	41.45	-0.61	54.0	-12.55	AV	298.00	100	Horizontal	Pass
5	11925.737	51.87	1.52	74.0	-22.13	Peak	95.00	100	Horizontal	Pass
5**	11925.737	43.28	1.52	54.0	-10.72	AV	95.00	100	Horizontal	Pass
6	16376.438	55.57	1.82	74.0	-18.43	Peak	21.00	100	Horizontal	Pass
6**	16376.438	45.90	1.82	54.0	-8.10	AV	21.00	100	Horizontal	Pass

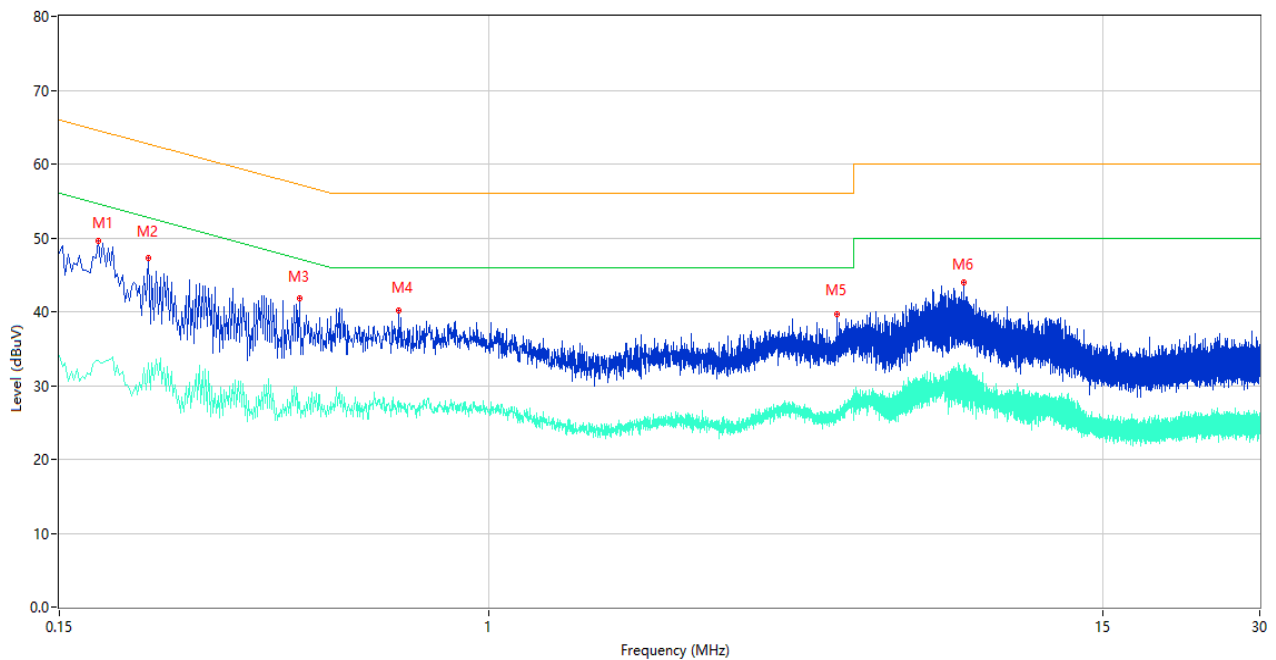
A.2 Conducted Emission

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

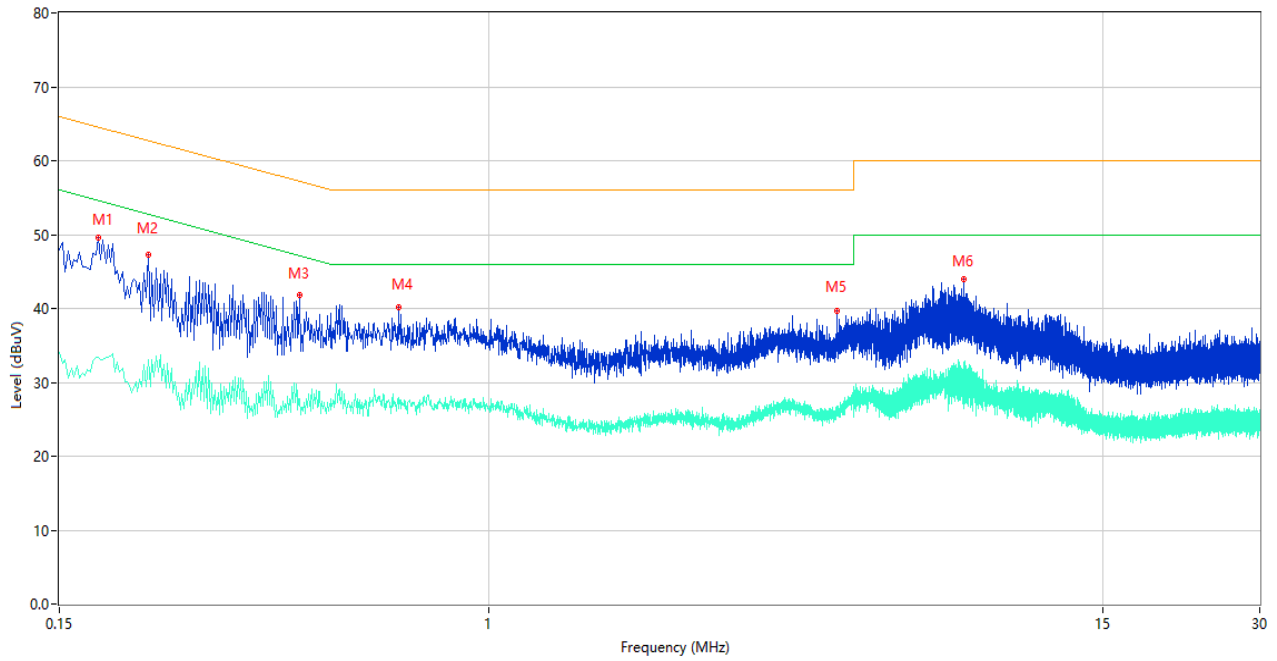
The Camera Test Mode

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.178	49.61	10.39	64.58	-14.97	Peak	L	Pass
1**	0.178	33.33	10.39	54.58	-21.25	AV	L	Pass
2	0.222	47.28	10.37	62.74	-15.46	Peak	L	Pass
2**	0.222	33.01	10.37	52.74	-19.73	AV	L	Pass
3	0.434	41.84	10.31	57.18	-15.34	Peak	L	Pass
3**	0.434	27.81	10.31	47.18	-19.37	AV	L	Pass
4	0.670	40.09	10.28	56.00	-15.91	Peak	L	Pass
4**	0.670	27.87	10.28	46.00	-18.13	AV	L	Pass
5	4.636	39.65	10.31	56.00	-16.35	Peak	L	Pass
5**	4.636	26.83	10.31	46.00	-19.17	AV	L	Pass
6	8.130	44.00	10.35	60.00	-16.00	Peak	L	Pass
6**	8.130	32.80	10.35	50.00	-17.20	AV	L	Pass

A.2.2 N Phase

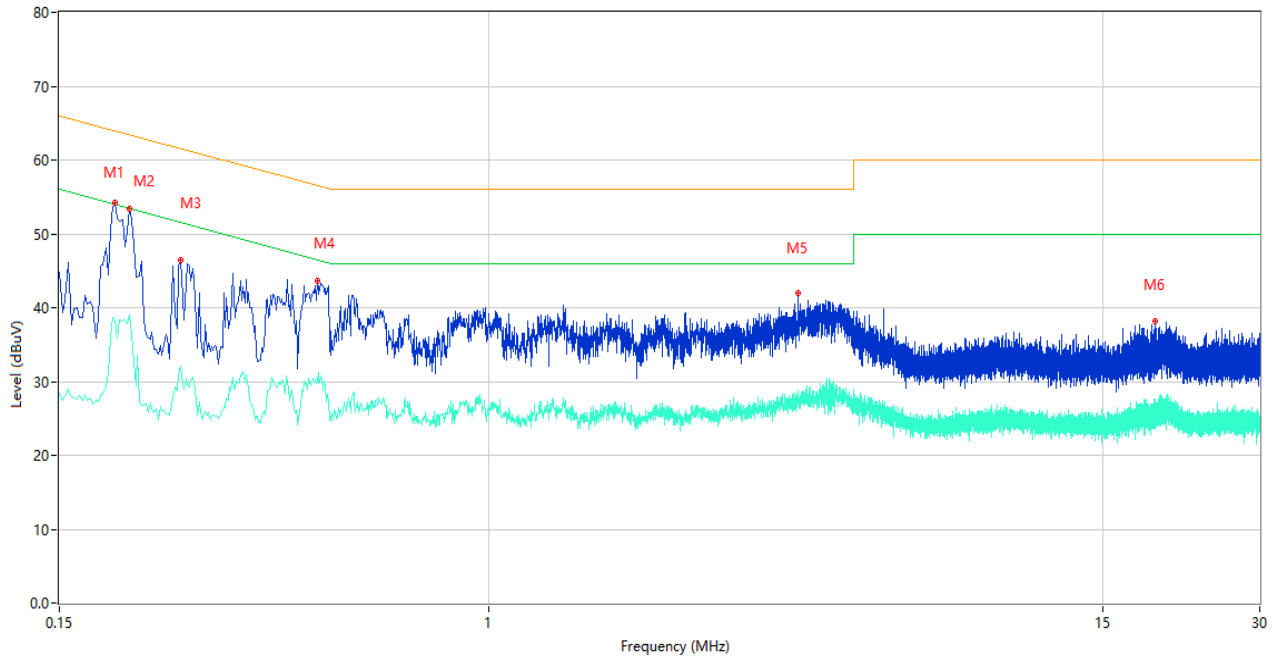


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.178	49.61	10.39	64.58	-14.97	Peak	L	Pass
1**	0.178	33.33	10.39	54.58	-21.25	AV	L	Pass
2	0.222	47.28	10.37	62.74	-15.46	Peak	L	Pass
2**	0.222	33.01	10.37	52.74	-19.73	AV	L	Pass
3	0.434	41.84	10.31	57.18	-15.34	Peak	L	Pass
3**	0.434	27.81	10.31	47.18	-19.37	AV	L	Pass
4	0.670	40.09	10.28	56.00	-15.91	Peak	L	Pass
4**	0.670	27.87	10.28	46.00	-18.13	AV	L	Pass
5	4.636	39.65	10.31	56.00	-16.35	Peak	L	Pass
5**	4.636	26.83	10.31	46.00	-19.17	AV	L	Pass
6	8.130	44.00	10.35	60.00	-16.00	Peak	L	Pass
6**	8.130	32.80	10.35	50.00	-17.20	AV	L	Pass

Test Data and Plots

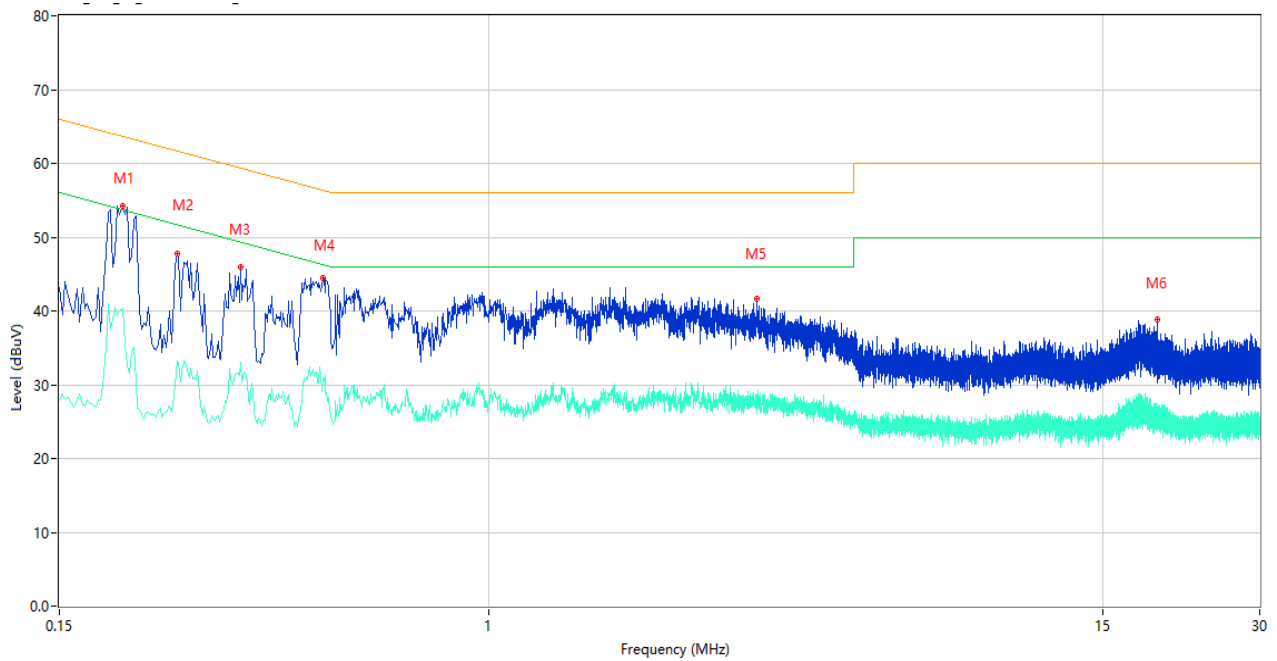
The USB Test Mode

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.192	54.25	10.38	63.95	-9.70	Peak	L	Pass
1**	0.192	38.36	10.38	53.95	-15.59	AV	L	Pass
2	0.204	53.34	10.38	63.45	-10.11	Peak	L	Pass
2**	0.204	38.98	10.38	53.45	-14.47	AV	L	Pass
3	0.256	46.46	10.34	61.56	-15.10	Peak	L	Pass
3**	0.256	32.02	10.34	51.56	-19.54	AV	L	Pass
4	0.468	43.58	10.30	56.55	-12.97	Peak	L	Pass
4**	0.468	30.09	10.30	46.55	-16.46	AV	L	Pass
5	3.914	41.91	10.30	56.00	-14.09	Peak	L	Pass
5**	3.914	27.97	10.30	46.00	-18.03	AV	L	Pass
6	18.910	38.20	10.52	60.00	-21.80	Peak	L	Pass
6**	18.910	27.58	10.52	50.00	-22.42	AV	L	Pass

A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.198	54.23	10.38	63.69	-9.46	Peak	N	Pass
1**	0.198	40.37	10.38	53.69	-13.32	AV	N	Pass
2	0.252	47.70	10.34	61.69	-13.99	Peak	N	Pass
2**	0.252	33.28	10.34	51.69	-18.41	AV	N	Pass
3	0.334	46.00	10.33	59.35	-13.35	Peak	N	Pass
3**	0.334	32.99	10.33	49.35	-16.36	AV	N	Pass
4	0.480	44.47	10.29	56.34	-11.87	Peak	N	Pass
4**	0.480	30.80	10.29	46.34	-15.54	AV	N	Pass
5	3.252	41.60	10.30	56.00	-14.40	Peak	N	Pass
5**	3.252	28.58	10.30	46.00	-17.42	AV	N	Pass
6	19.108	38.80	10.52	60.00	-21.20	Peak	N	Pass
6**	19.108	26.94	10.52	50.00	-23.06	AV	N	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2190589-AE-1.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2190589-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2190589-AI.PDF”.

--END OF REPORT--