

# EMC TEST REPORT

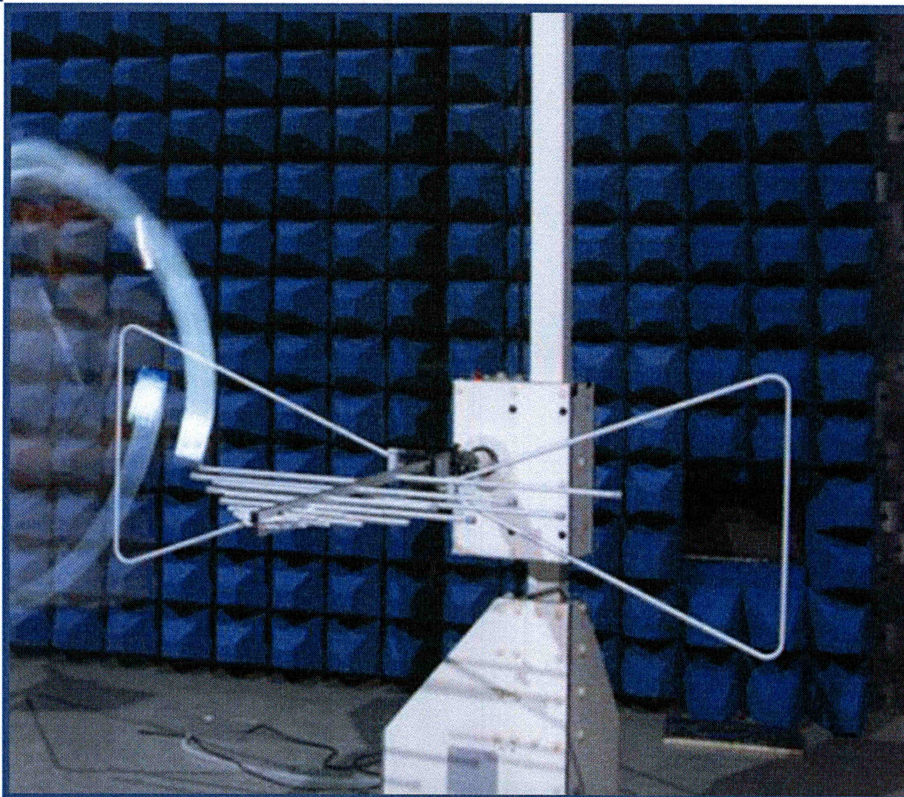
ISSUED BY  
Shenzhen BALUN Technology Co., Ltd.



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

Liu Zhenxiang

Date: May 31, 2021

Approved by: Wei Yanquan

Wei Yanquan  
(Chief Engineer)

Date: May 31, 2021



Report No.: BL-SZ2140420-401

EUT Name: Mobile Phone

Model Name: CPH2247

Brand Name: OPPO

Test Standard: 47 CFR Part 15 Subpart B

FCC ID: R9C-CPH2247

Test Conclusion: Pass

Test Date: Apr. 15, 2021 ~ Apr. 26, 2021

Date of Issue: May 31, 2021

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### Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>May 27, 2021</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>May 31, 2021</u>	<u>Adds 1.2 section to the Accreditation Certificate</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 .....	4
2	PRODUCT INFORMATION .....	5
2.1	Applicant Information .....	5
2.2	Manufacturer Information .....	5
2.3	Factory Information .....	5
2.4	General Description for Equipment under Test (EUT) .....	5
2.5	Ancillary Equipment .....	6
2.6	Technical Information .....	7
3	SUMMARY OF TEST RESULTS.....	8
3.1	Test Standards.....	8
3.2	Verdict.....	8
3.3	Test Uncertainty .....	8
4	GENERAL TEST CONFIGURATIONS.....	9
4.1	Test Environments .....	9
4.2	Test Equipment List .....	9
4.3	Test Enclosure list.....	11
4.4	Test Configurations .....	12
4.5	Test Setups .....	13
4.6	Test Conditions .....	15
5	TEST ITEMS.....	16
5.1	Emission Tests.....	16

ANNEX A TEST RESULTS..... 18

    A.1 Radiated Emission ..... 18

    A.2 Conducted Emission ..... 26

ANNEX B TEST SETUP PHOTOS ..... 30

ANNEX C EUT EXTERNAL PHOTOS ..... 30

ANNEX D EUT INTERNAL PHOTOS ..... 30

# 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	45% to 55%
Ambient Pressure	100 kPa to 102 kPa

## 1.4 Announce

- (1) The test report refer to the BALUN report mode v7.0.
- (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	CPH2247
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	11
Software Version	ColorOS V11.3
Dimensions (Approx.)	160.8x72.5x7.99mm
Weight (Approx.)	188g(with battery)

## 2.5 Ancillary Equipment

Ancillary Equipment 1	Li-Polymer Battery 1	
	Brand Name	OPPO
	Model No.	BLP825
	Serial No.	N/A
	Capacitance	Rated: 2200mAh/17.02Wh Typical: 2250mAh/17.41Wh
	Rated Voltage	7.74V
	Limited Voltage	8.9 V
	Manufacturer	Dongguan NVT Technology Co., Ltd
Ancillary Equipment 2	Power Supply Unit 1	
	Brand Name	OPPO
	Model No.	VCA7JBUH
	Serial No.	N/A
	Rated Input	100-240VAC 50/60Hz 1.8A
Rated Output	Output 1: 5VDC 3A or 10VDC 6.5A Output 2: PDO:5VDC 3A/ 9VDC 3A /12VDC 3A /15VDC 3A/ 20VDC 2.25A Output 3: PPS:3.3-16VDC 3A Max (US Plug)	
Ancillary Equipment 3	Power Supply Unit(alternative) 2	
	Brand Name	OPPO
	Model No.	VCA7JAUH
	Serial No.	N/A
	Rated Input	Input 1: 100-130VAC 50/60Hz 1.8A Input 2: 200-240VAC 50/60Hz 1.8A
Rated Output	Output 1: 5VDC 2A or 10VDC 5A Max Output 2: 5VDC 2A or 10VDC 6.5A Max (US Plug)	
Ancillary Equipment 4	Power Supply Unit(alternative) 3	
	Brand Name	OPPO
	Model No.	VCA7JDUH
	Serial No.	N/A
	Rated Input	Input 1: 100-130VAC 50/60Hz 1.8A Input 2: 200-240VAC 50/60Hz 1.8A
Rated Output	Output 1: 5VDC 2A or 10VDC 5A Max Output 2: 5VDC 2A or 10VDC 6.5A Max (US Plug)	
Ancillary Equipment 5	Power Supply Unit(alternative) 4	
	Brand Name	OPPO
	Model No.	VCA7HAUH
	Rated Input	Input 1: 100-130VAC 50/60Hz 1.8A Input 2: 200-240VAC 50/60Hz 1.8A

	Rated Output	Output 1: 5VDC 2A or 10VDC 5A Max Output 2: 5VDC 2A or 10VDC 6.5A Max (US Plug)
Ancillary Equipment 6	USB Cable	
	Model No.	DL133
	Length (Approx.)	1.0 m
Ancillary Equipment 7	USB Cable	
	Model No.	DL149
	Length (Approx.)	1.0 m
Ancillary Equipment 8	USB Cable	
	Model No.	DL129
	Length (Approx.)	1.0 m
Ancillary Equipment 9	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 VCA7HAUH (US Plug 100-240VAC) 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/HSPA+ Band 2/4/5 4G Network LTE FDD Band 2/4/5/7/12/17/26/66 LTE TDD Band 38/41 LTE CA Uplink (UL): CA_7C, CA_38C, CA_41C 5G Network SA: NR n5/n7/n38/n41 NSA: DC_2A_n66A, DC_5A_n7A, DC_5A_n66A, DC_7A_n5A, DC_7A_n66A Bluetooth (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, SBAS, 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	1.3 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

Note: Support both ordinary SIM card and eSIM card.

#### 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 or DC 7.74 V from Battery	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&SCHWARZ	ESRP	101036	2020.06.09	2021.06.08	<input type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	9168-0883	2020.05.11	2022.05.10	<input type="checkbox"/>
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	N/A	2018.08.08	2021.08.07	<input type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input type="checkbox"/>

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	<input checked="" type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2021.07.01	<input checked="" type="checkbox"/>
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2018.07.18	2021.07.27	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input checked="" type="checkbox"/>

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	<input checked="" type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2021.07.01	<input checked="" type="checkbox"/>
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2018.07.18	2021.07.17	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input checked="" type="checkbox"/>

Conducted disturbance Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9010B	MY5711030 9	2020.06.08	2021.06.07	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NSLK 8127	8127-687	2020.06.09	2021.06.08	<input checked="" type="checkbox"/>
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.4m*3.1m*2 .8m	N/A	2018.08.16	2021.08.15	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input checked="" type="checkbox"/>

### 4.3 Test Enclosure list

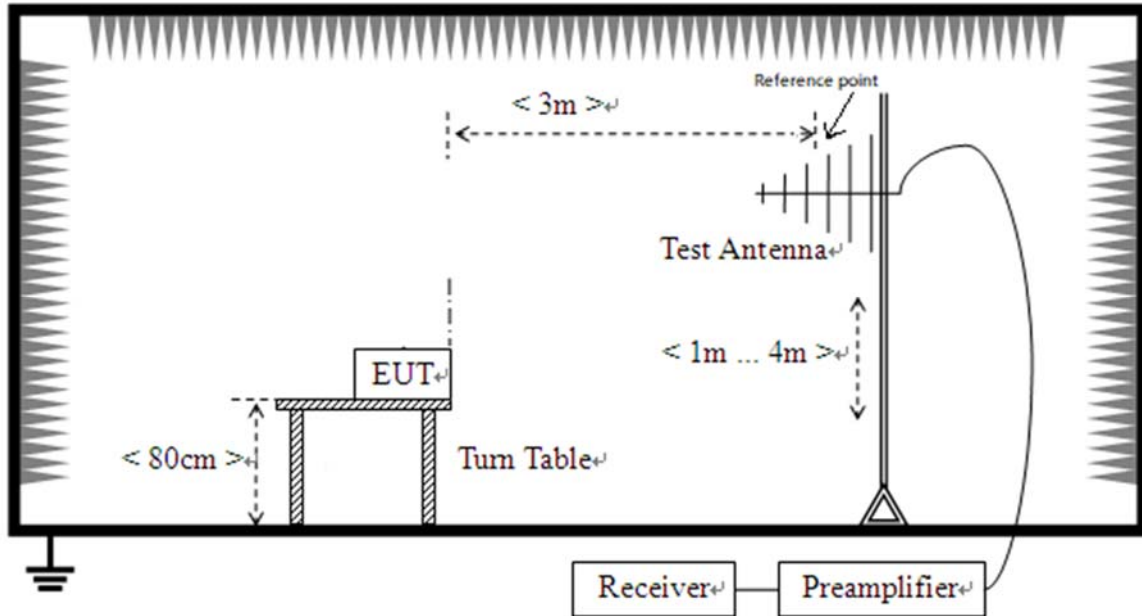
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	<input type="checkbox"/>
Laptop	Apple	A1465	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Printer	HP	DESKJET 1000	N/A	N/A	N/A	<input type="checkbox"/>
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	<input type="checkbox"/>
Mouse	Logitech	M100	N/A	N/A	N/A	<input type="checkbox"/>
USB disk	Kingston	N/A	N/A	N/A	N/A	<input type="checkbox"/>
TF Card	Kingston	N/A	N/A	N/A	N/A	<input type="checkbox"/>
VGA Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
HDMI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
DVI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
Coaxial video cable	N/A	N/A	N/A	2.0 m	Shielded with core	<input type="checkbox"/>
iPhone	Apple	A1586	N/A	N/A	N/A	<input type="checkbox"/>
Phone	MI	M4	N/A	N/A	N/A	<input type="checkbox"/>
Bluetooth Earphone	SAMSUNG	Gear Circle	N/A	N/A	N/A	<input type="checkbox"/>
Wireless Communications Test Set	R&S	CMW500	142028	N/A	Cal. Due 2021.06.08	<input type="checkbox"/>
WIFI Router	TP-LINK	TL-WDR7500	N/A	N/A	N/A	<input type="checkbox"/>
Earphone	N/A	OPPO	N/A	1.1 m	N/A	<input type="checkbox"/>
Car Battery	Camel	55530	N/A	N/A	12 V/55 Ah	<input type="checkbox"/>
Artificial load	N/A	N/A	N/A	N/A	2.5 Ω/100 W	<input type="checkbox"/>
Artificial load	N/A	N/A	N/A	N/A	5 Ω/100 W	<input type="checkbox"/>
Electronic Load	ITECH	IT8511	N/A	N/A	N/A	<input type="checkbox"/>
USB Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
DC Power Supply	ITECH	IT6863A	60001401068 7210006	N/A	N/A	<input type="checkbox"/>
LCD Monitor	SAMSUNG	UA32C4000P	N/A	N/A	N/A	<input type="checkbox"/>
LCD Monitor	Dell	U241HB	N/A	N/A	N/A	<input type="checkbox"/>
RJ45 Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>

## 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 WCDMA Band 5 RX Test Mode</u> WCDMA Band 5 RX + EUT +Adapter + USB Cable + Battery
TC03	<u>The FDD LTE Band 5 RX Test Mode</u> LTE Band 5 RX + EUT +Adapter + USB Cable + Battery
TC04	<u>The FDD LTE Band 12 RX Test Mode</u> LTE Band 12 RX + EUT +Adapter + USB Cable + Battery
TC05	<u>The FDD LTE Band 17 RX Test Mode</u> LTE Band 17 RX + EUT +Adapter + USB Cable + Battery
TC06	<u>The FDD LTE Band 26 RX Test Mode</u> LTE Band 26 RX + EUT +Adapter + USB Cable + Battery
TC07	<u>The n5 Test Mode</u> n5 RX + EUT + Adapter + USB Cable + Battery
TC08	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + Battery
TC09	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery
TC10	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Laptop
TC11	<u>The Type-C Headset Test Mode</u> EUT + Headset + Battery

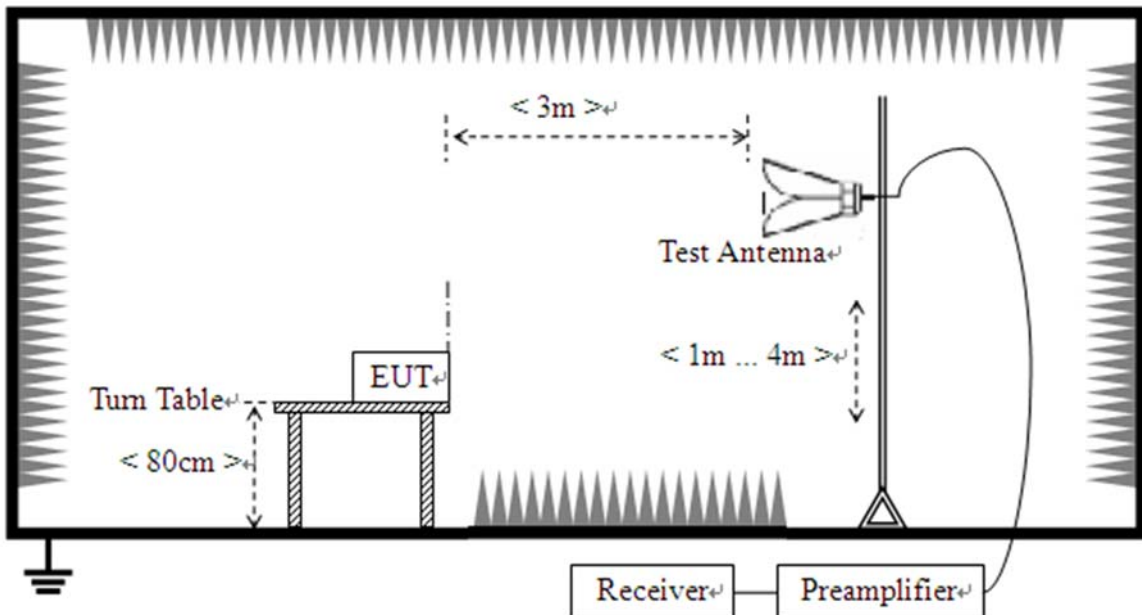
## 4.5 Test Setups

### Test Setup 1



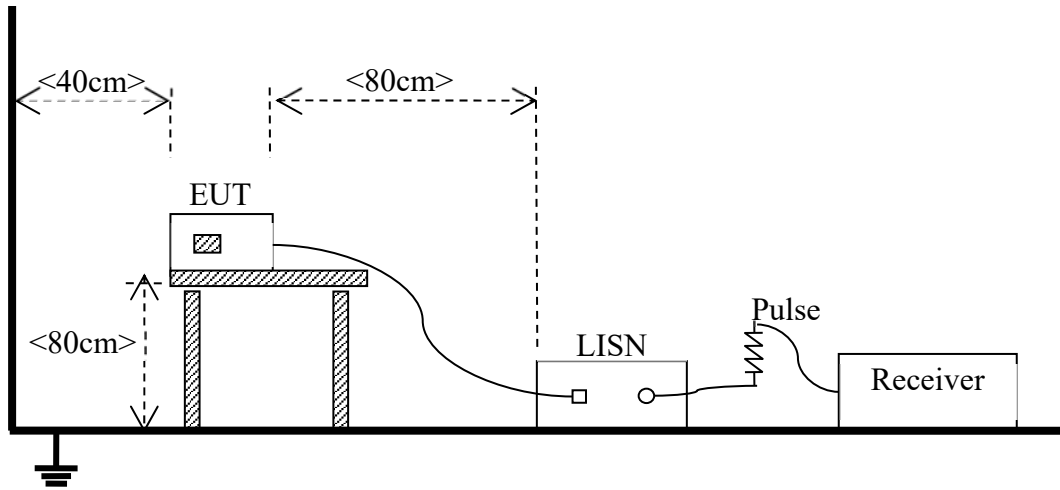
(For Radiated Emission Test (30 MHz-1 GHz))

### 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~TC11 <sup>Note</sup>
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC10 <sup>Note</sup>

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 ( $\text{dB}\mu\text{V/m}$ )	Field Strength ( $\text{dB}\mu\text{V/m}$ )	Field Strength ( $\mu\text{V/m}$ )	Field Strength ( $\text{dB}\mu\text{V/m}$ )
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 ( $\text{dB}\mu\text{V/m}$ ) =  $20 \cdot \log$  [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 ( $\text{dB}\mu\text{V/m}$ ) = Reading ( $\text{dB}\mu\text{V}$ ) + Factor ( $\text{dB/m}$ )

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

2. Factor ( $\text{dB/m}$ ) = Antenna Factor ( $\text{dB/m}$ ) + Cable Factor ( $\text{dB}$ ) – Amplifier Gain ( $\text{dB}$ )

3. Over limit = Results – Limit.



## 5.1.2 Conducted Emission

### 5.1.2.1 Test Limit

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

Frequency range (MHz)	Class B	
	Quasi-peak (dB $\mu$ V)	Average (dB $\mu$ 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  $\Omega$ /50  $\mu$ 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:

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

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

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

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

## ANNEX A TEST RESULTS

### A.1 Radiated Emission

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

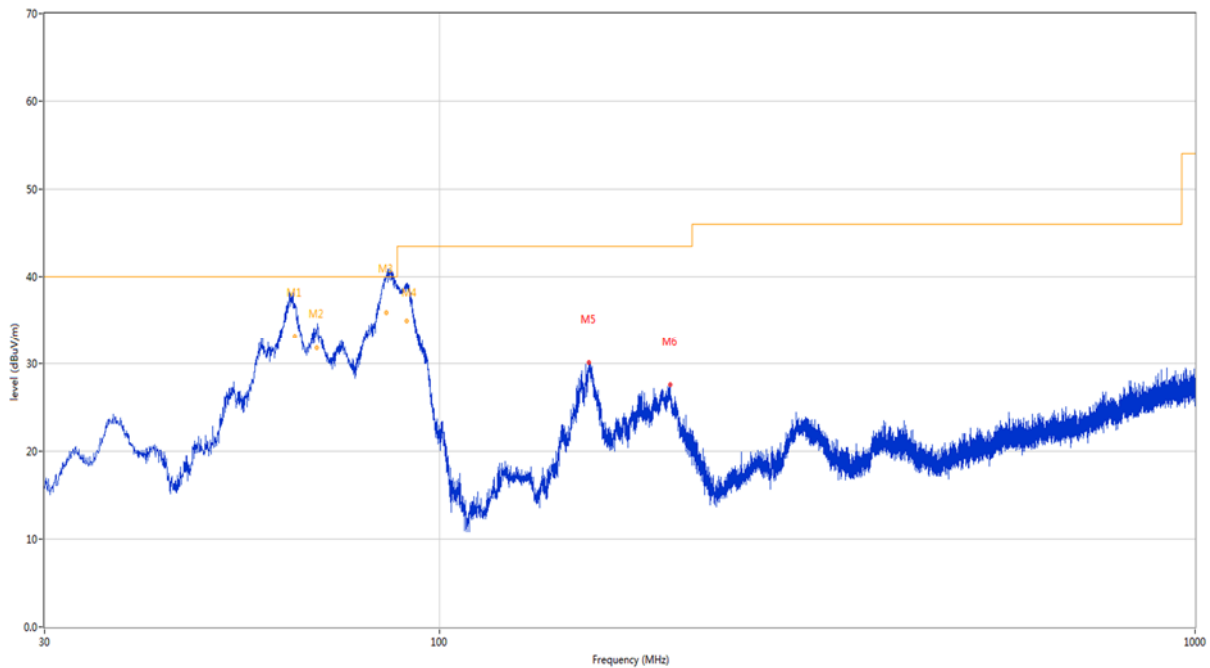
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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

#### Test Data and Plots

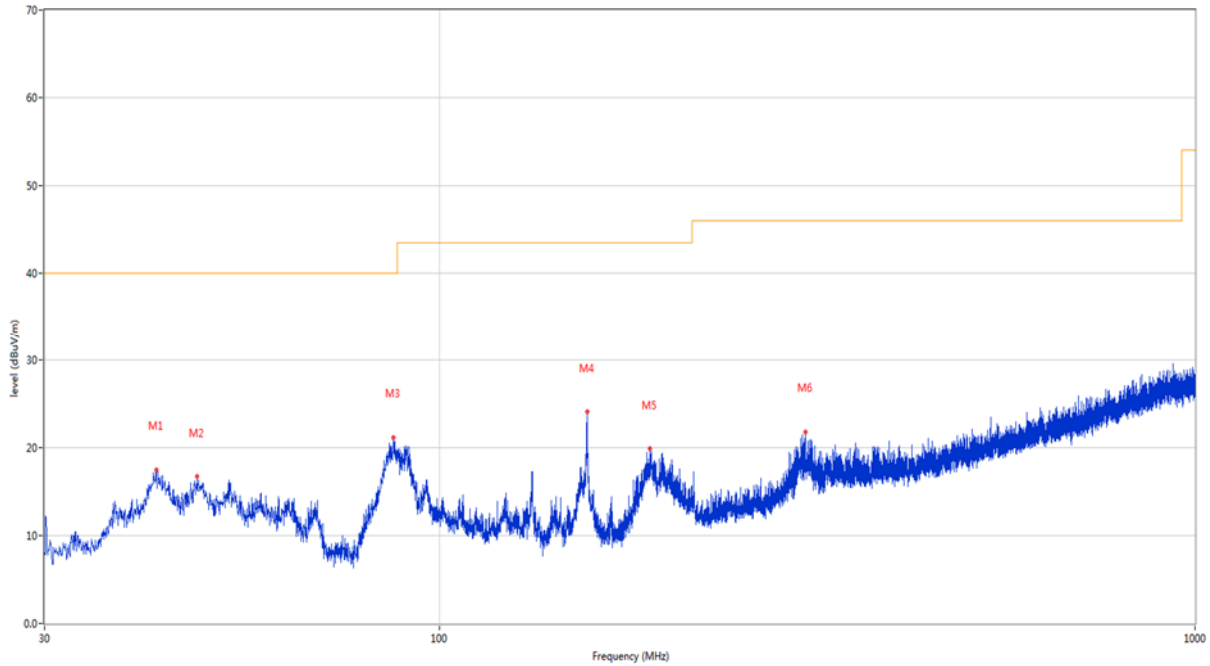
##### The Camera Test Mode

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



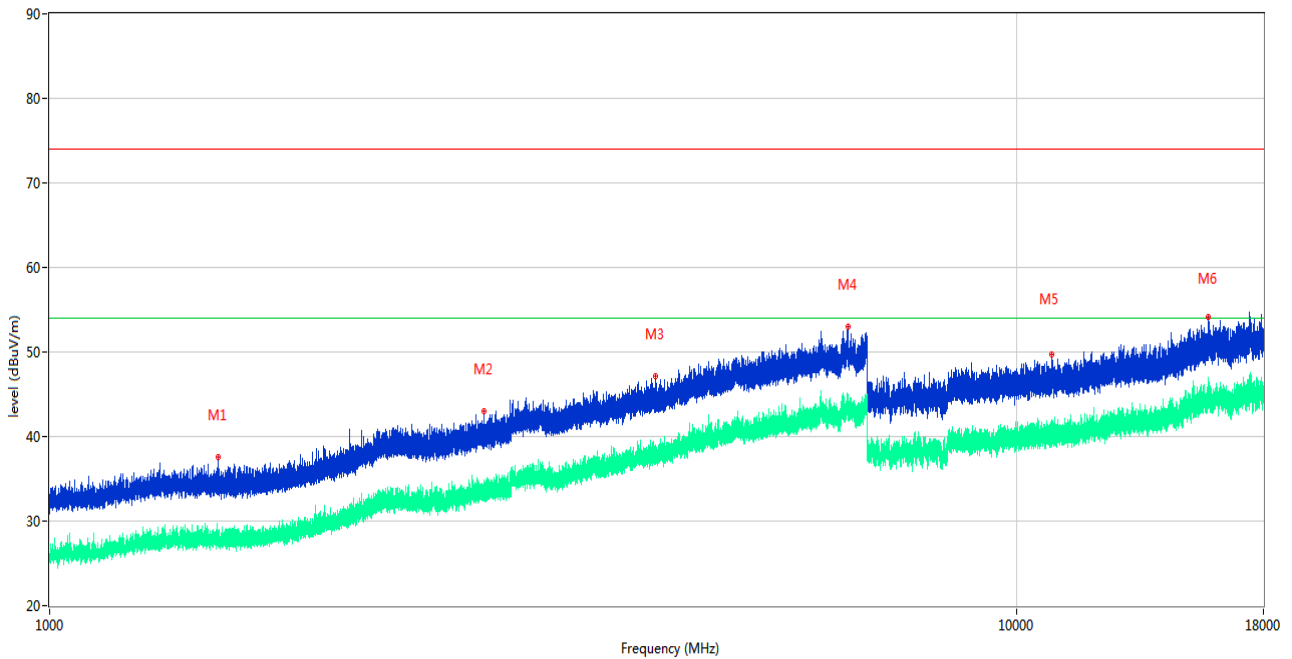
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	64.339	38.10	-24.92	40.0	-1.90	Peak	119.70	101	Vertical	N/A
1*	64.339	33.11	-24.92	40.0	-6.89	QP	119.70	101	Vertical	Pass
2	68.830	34.16	-26.43	40.0	-5.84	Peak	119.70	100	Vertical	N/A
2*	68.830	31.74	-26.43	40.0	-8.26	QP	119.70	100	Vertical	Pass
3	85.029	37.69	-27.36	40.0	-2.31	Peak	99.00	100	Vertical	N/A
3*	85.029	35.89	-27.36	40.0	-4.11	QP	99.00	100	Vertical	Pass
4	90.517	36.90	-25.95	43.5	-6.60	Peak	145.40	100	Vertical	N/A
4*	90.517	34.96	-25.95	43.5	-8.54	QP	145.40	100	Vertical	Pass
5	157.458	30.06	-27.62	43.5	-13.44	Peak	271.70	100	Vertical	Pass
6	201.932	27.54	-23.80	43.5	-15.96	Peak	233.70	100	Vertical	Pass

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



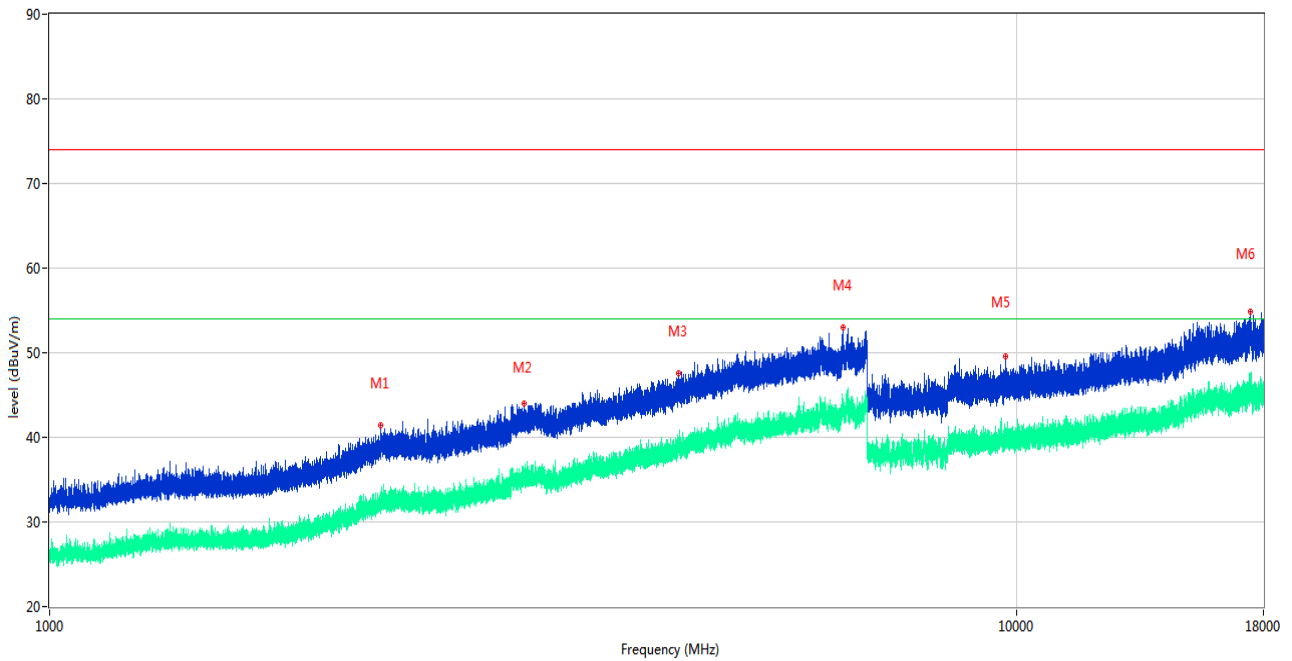
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	42.173	17.51	-23.44	40.0	-22.49	Peak	201.70	200	Horizontal	Pass
2	47.751	16.69	-22.70	40.0	-23.31	Peak	167.60	200	Horizontal	Pass
3	86.842	21.20	-26.82	40.0	-18.80	Peak	163.20	200	Horizontal	Pass
4	156.779	24.07	-27.52	43.5	-19.43	Peak	3.30	200	Horizontal	Pass
5	189.856	19.93	-25.25	43.5	-23.57	Peak	316.70	200	Horizontal	Pass
6	304.801	21.76	-21.15	46.0	-24.24	Peak	304.50	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	1492.600	37.58	-17.51	74.0	-36.42	Peak	261.00	150	Vertical	Pass
1**	1492.600	27.88	-17.51	54.0	-26.12	AV	261.00	150	Vertical	Pass
2	2813.500	43.03	-10.03	74.0	-30.97	Peak	105.00	150	Vertical	Pass
2**	2813.500	34.24	-10.03	54.0	-19.76	AV	105.00	150	Vertical	Pass
3	4228.200	47.15	-4.59	74.0	-26.85	Peak	188.00	150	Vertical	Pass
3**	4228.200	38.27	-4.59	54.0	-15.73	AV	188.00	150	Vertical	Pass
4	6694.800	52.96	-0.41	74.0	-21.04	Peak	333.00	150	Vertical	Pass
4**	6694.800	42.97	-0.41	54.0	-11.03	AV	333.00	150	Vertical	Pass
5	10862.276	49.74	-0.09	74.0	-24.26	Peak	77.00	150	Vertical	Pass
5**	10862.276	39.91	-0.09	54.0	-14.09	AV	77.00	150	Vertical	Pass
6	15799.200	54.13	2.31	74.0	-19.87	Peak	363.00	150	Vertical	Pass
6**	15799.200	45.77	2.31	54.0	-8.23	AV	363.00	150	Vertical	Pass

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

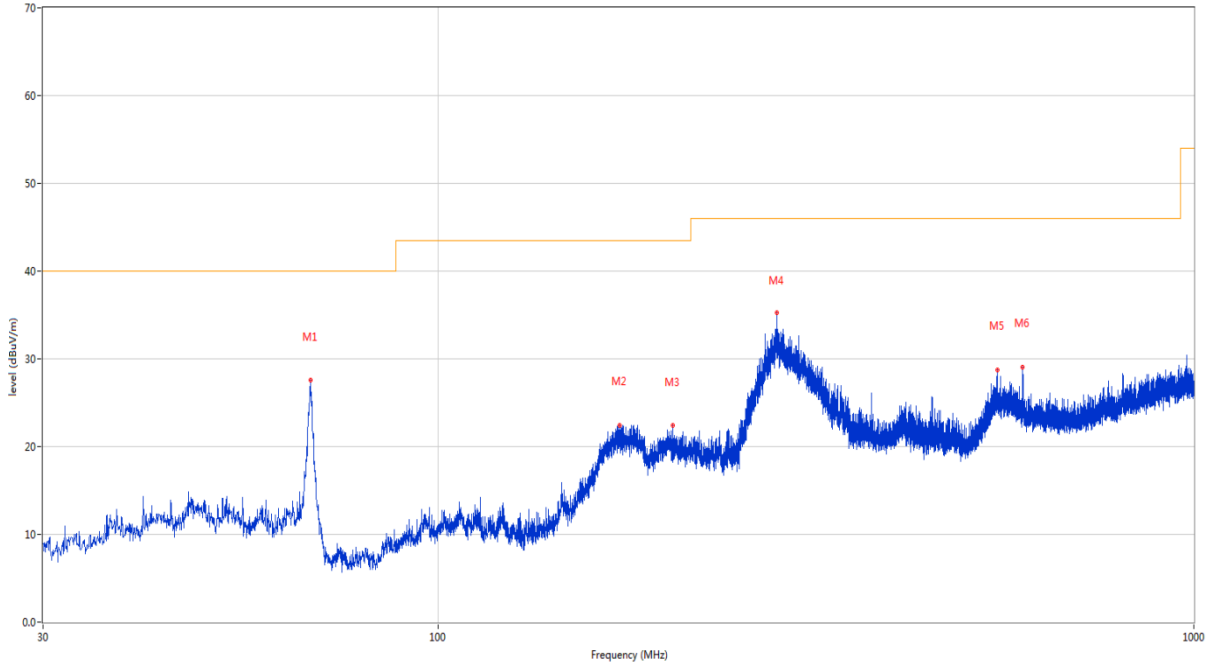


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2198.400	41.46	-13.18	74.0	-32.54	Peak	210.00	150	Horizontal	Pass
1**	2198.400	32.44	-13.18	54.0	-21.56	AV	210.00	150	Horizontal	Pass
2	3095.000	43.98	-8.35	74.0	-30.02	Peak	0.00	150	Horizontal	Pass
2**	3095.000	35.50	-8.35	54.0	-18.50	AV	0.00	150	Horizontal	Pass
3	4473.000	47.55	-3.66	74.0	-26.45	Peak	286.00	150	Horizontal	Pass
3**	4473.000	38.99	-3.66	54.0	-15.01	AV	286.00	150	Horizontal	Pass
4	6617.000	53.00	-0.05	74.0	-21.00	Peak	152.00	150	Horizontal	Pass
4**	6617.000	42.94	-0.05	54.0	-11.06	AV	152.00	150	Horizontal	Pass
5	9748.787	49.54	-0.45	74.0	-24.46	Peak	83.00	150	Horizontal	Pass
5**	9748.787	39.48	-0.45	54.0	-14.52	AV	83.00	150	Horizontal	Pass
6	17461.875	54.84	2.86	74.0	-19.16	Peak	273.00	150	Horizontal	Pass
6**	17461.875	45.74	2.86	54.0	-8.26	AV	273.00	150	Horizontal	Pass

Test Data and Plots

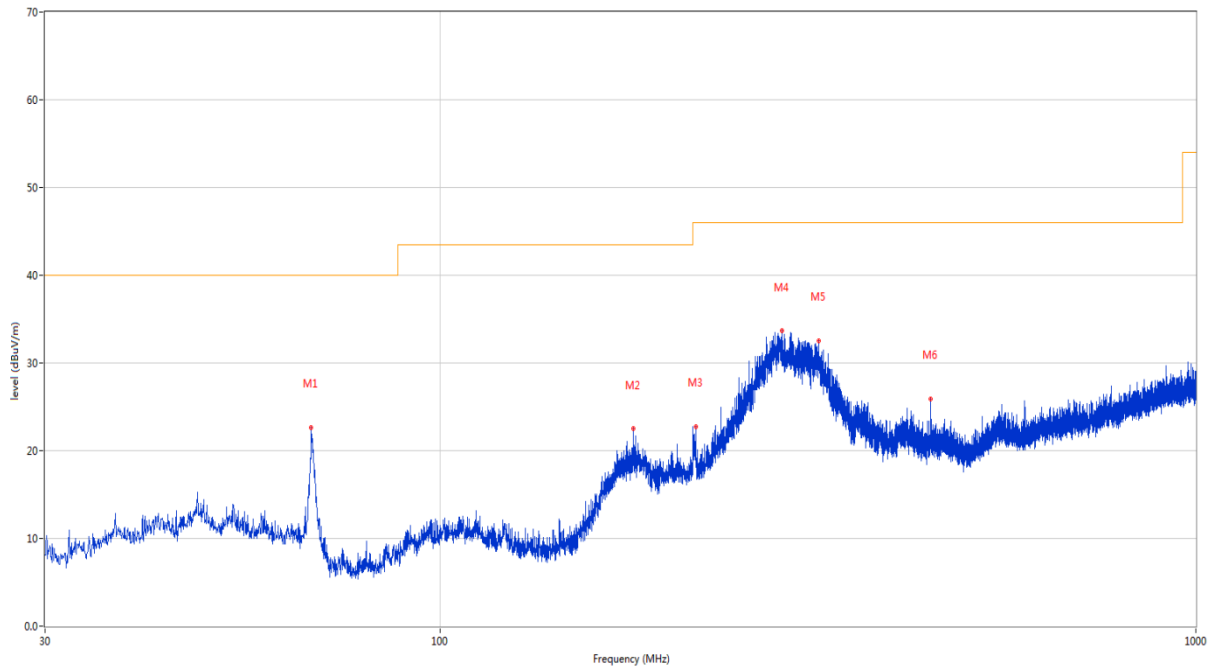
The USB Test Mode

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



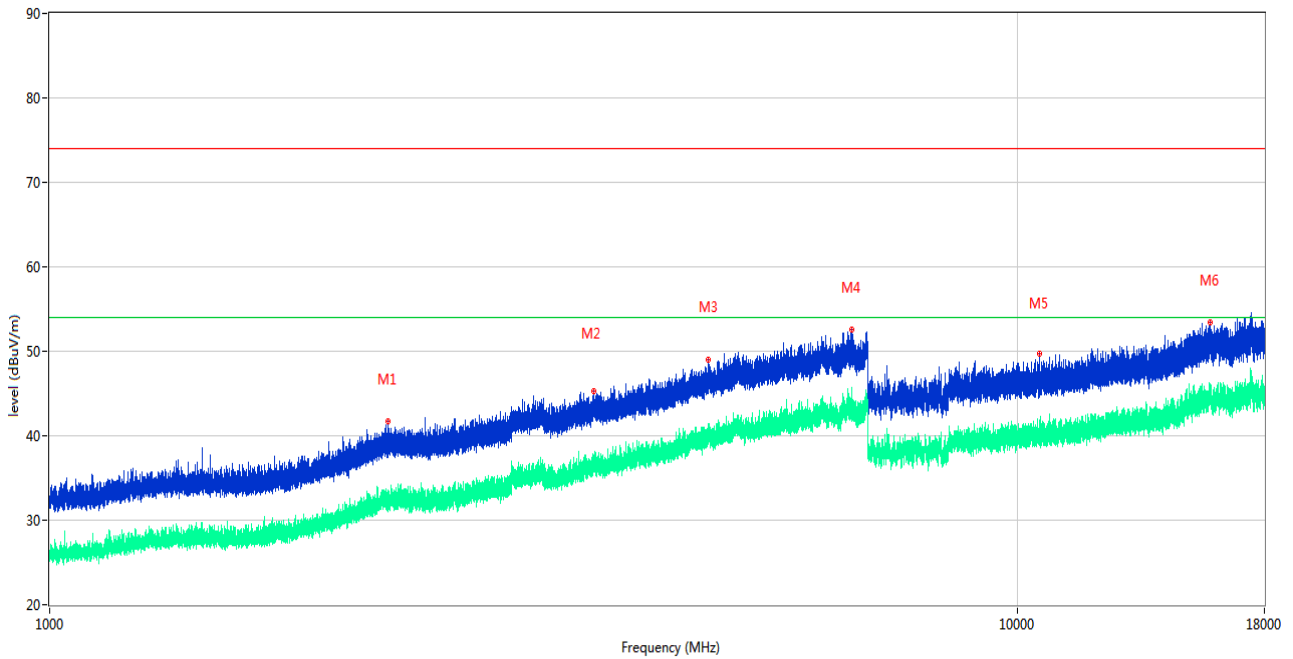
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	67.782	27.54	-25.78	40.0	-12.46	Peak	116.20	100	Vertical	Pass
2	173.948	22.47	-26.52	43.5	-21.03	Peak	170.30	100	Vertical	Pass
3	204.503	22.42	-23.75	43.5	-21.08	Peak	161.90	100	Vertical	Pass
4	280.745	35.25	-21.73	46.0	-10.75	Peak	70.30	200	Vertical	Pass
5	549.726	28.76	-15.57	46.0	-17.24	Peak	178.90	100	Vertical	Pass
6	593.910	29.03	-14.69	46.0	-16.97	Peak	170.80	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	67.539	22.64	-25.69	40.0	-17.36	Peak	360.00	200	Horizontal	Pass
2	180.059	22.49	-26.04	43.5	-21.01	Peak	265.70	200	Horizontal	Pass
3	218.083	22.75	-24.12	46.0	-23.25	Peak	118.00	100	Horizontal	Pass
4	283.122	33.73	-21.85	46.0	-12.27	Peak	151.30	100	Horizontal	Pass
5	316.732	32.56	-20.94	46.0	-13.44	Peak	122.50	100	Horizontal	Pass
6	445.451	25.92	-17.69	46.0	-20.08	Peak	79.60	200	Horizontal	Pass

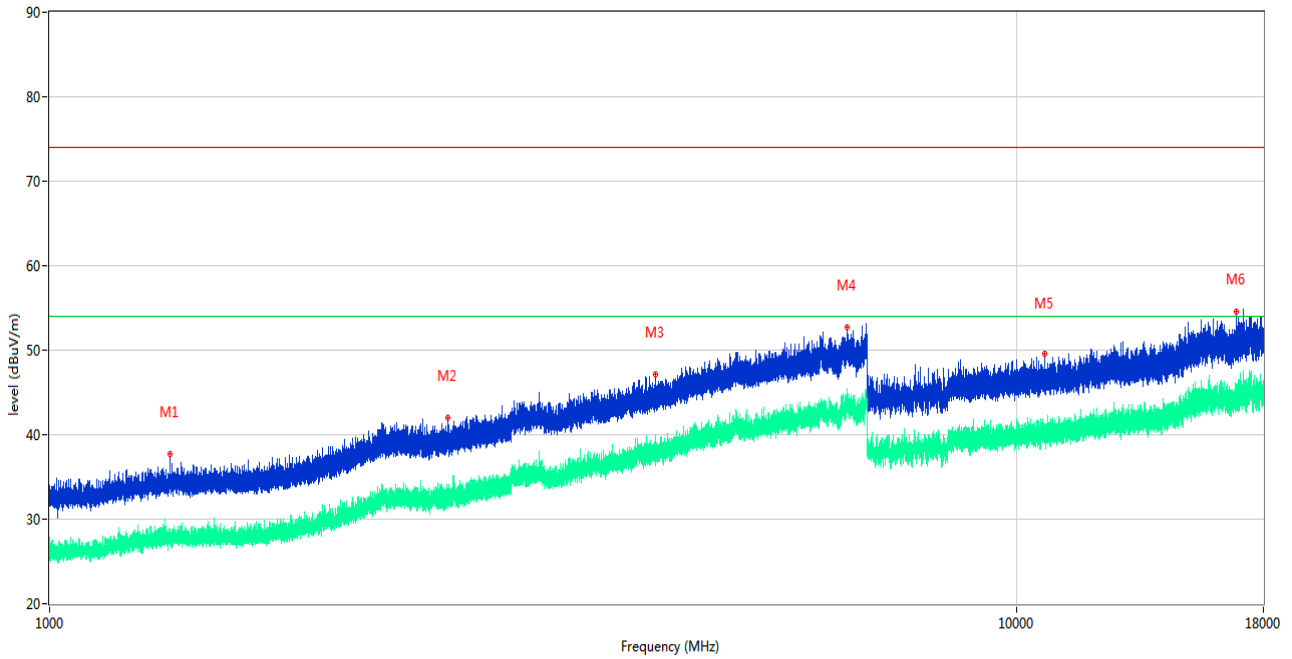
## A.1.7 Test Antenna Vertical, 1 GHz – 18 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2238.600	41.72	-13.09	74.0	-32.28	Peak	6.00	150	Vertical	Pass
1**	2238.600	31.59	-13.09	54.0	-22.41	AV	6.00	150	Vertical	Pass
2	3651.600	45.34	-6.25	74.0	-28.66	Peak	258.00	150	Vertical	Pass
2**	3651.600	36.78	-6.25	54.0	-17.22	AV	258.00	150	Vertical	Pass
3	4788.800	48.97	-2.76	74.0	-25.03	Peak	176.00	150	Vertical	Pass
3**	4788.800	39.26	-2.76	54.0	-14.74	AV	176.00	150	Vertical	Pass
4	6743.600	52.56	-0.31	74.0	-21.44	Peak	111.00	150	Vertical	Pass
4**	6743.600	42.93	-0.31	54.0	-11.07	AV	111.00	150	Vertical	Pass
5	10531.651	49.74	-0.69	74.0	-24.26	Peak	164.00	150	Vertical	Pass
5**	10531.651	39.80	-0.69	54.0	-14.20	AV	164.00	150	Vertical	Pass
6	15805.763	53.40	2.25	74.0	-20.60	Peak	97.00	150	Vertical	Pass
6**	15805.763	44.39	2.25	54.0	-9.61	AV	97.00	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	1333.000	37.68	-17.44	74.0	-36.32	Peak	65.00	150	Horizontal	Pass
1**	1333.000	27.89	-17.44	54.0	-26.11	AV	65.00	150	Horizontal	Pass
2	2579.300	41.93	-11.82	74.0	-32.07	Peak	0.00	150	Horizontal	Pass
2**	2579.300	32.57	-11.82	54.0	-21.43	AV	0.00	150	Horizontal	Pass
3	4234.200	47.13	-4.58	74.0	-26.87	Peak	214.00	150	Horizontal	Pass
3**	4234.200	38.14	-4.58	54.0	-15.86	AV	214.00	150	Horizontal	Pass
4	6684.200	52.65	-0.30	74.0	-21.35	Peak	253.00	150	Horizontal	Pass
4**	6684.200	44.81	-0.30	54.0	-9.19	AV	253.00	150	Horizontal	Pass
5	10690.925	49.63	-0.73	74.0	-24.37	Peak	225.00	150	Horizontal	Pass
5**	10690.925	39.91	-0.73	54.0	-14.09	AV	225.00	150	Horizontal	Pass
6	16878.599	54.50	1.12	74.0	-19.50	Peak	156.00	150	Horizontal	Pass
6**	16878.599	44.50	1.12	54.0	-9.50	AV	156.00	150	Horizontal	Pass

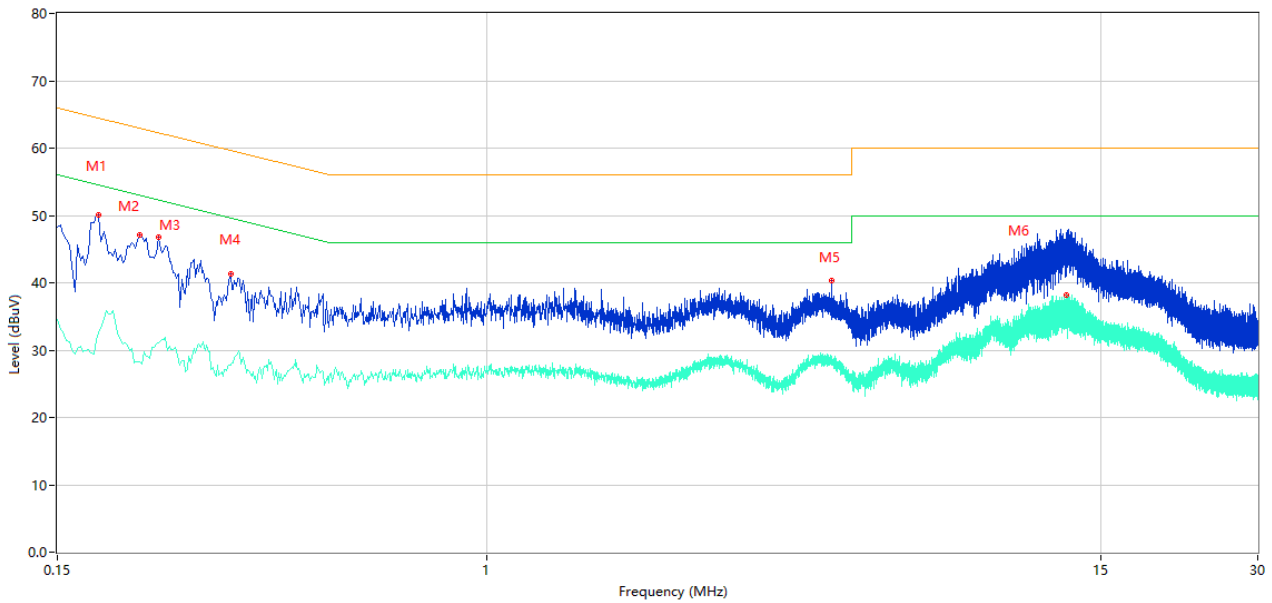
## A.2 Conducted Emission

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

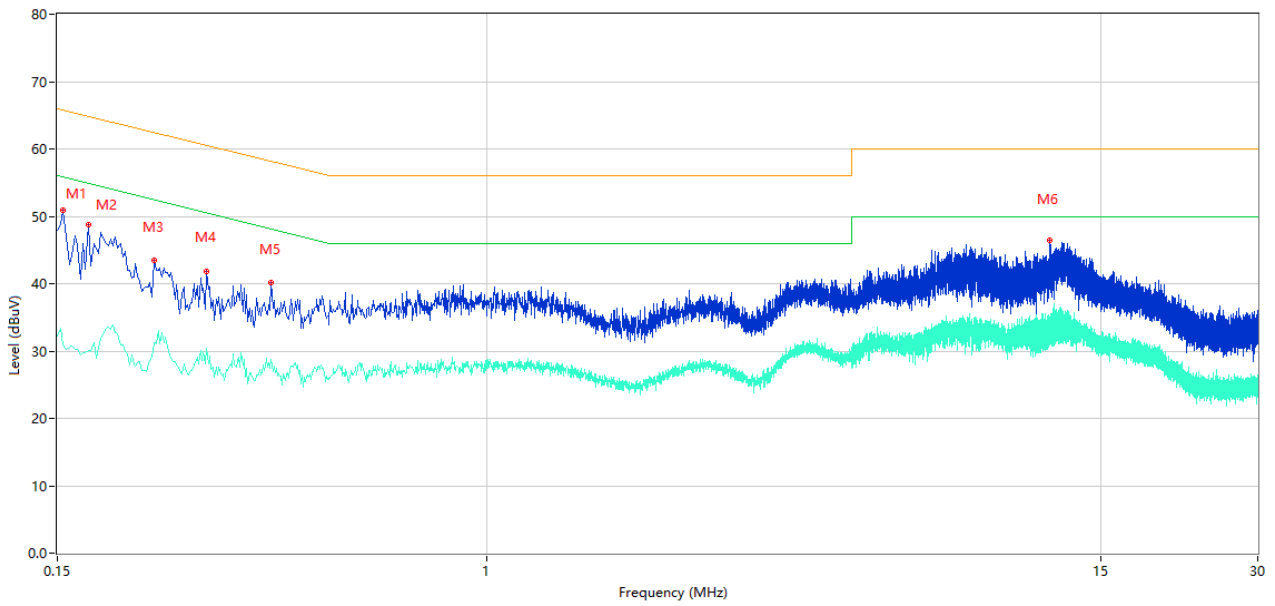
#### The Camera Test Mode

##### A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.180	50.05	10.39	64.49	-14.44	Peak	L	Pass
1**	0.180	32.64	10.39	54.49	-21.85	AV	L	Pass
2	0.216	47.03	10.37	62.97	-15.94	Peak	L	Pass
2**	0.216	28.33	10.37	52.97	-24.64	AV	L	Pass
3	0.234	46.73	10.35	62.31	-15.58	Peak	L	Pass
3**	0.234	31.14	10.35	52.31	-21.17	AV	L	Pass
4	0.322	41.38	10.33	59.66	-18.28	Peak	L	Pass
4**	0.322	27.74	10.33	49.66	-21.92	AV	L	Pass
5	4.582	40.26	10.31	56.00	-15.74	Peak	L	Pass
5**	4.582	27.94	10.31	46.00	-18.06	AV	L	Pass
6	12.874	45.27	10.39	60.00	-14.73	Peak	L	Pass
6**	12.874	38.21	10.39	50.00	-11.79	AV	L	Pass

## A.2.2 N Phase

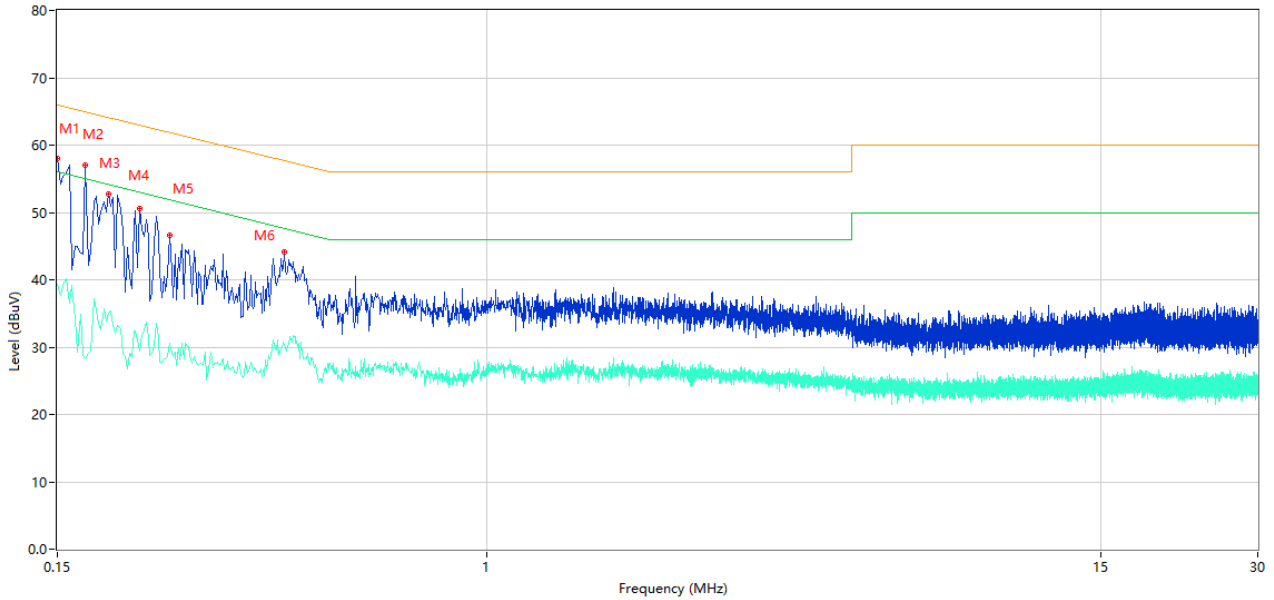


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.154	50.89	10.41	65.78	-14.89	Peak	N	Pass
1**	0.154	30.92	10.41	55.78	-24.86	AV	N	Pass
2	0.172	48.70	10.40	64.86	-16.16	Peak	N	Pass
2**	0.172	30.13	10.40	54.86	-24.73	AV	N	Pass
3	0.230	43.51	10.36	62.45	-18.94	Peak	N	Pass
3**	0.230	31.30	10.36	52.45	-21.15	AV	N	Pass
4	0.290	41.87	10.34	60.52	-18.65	Peak	N	Pass
4**	0.290	30.39	10.34	50.52	-20.13	AV	N	Pass
5	0.386	40.15	10.30	58.15	-18.00	Peak	N	Pass
5**	0.386	28.77	10.30	48.15	-19.38	AV	N	Pass
6	11.960	46.47	10.38	60.00	-13.53	Peak	N	Pass
6**	11.960	33.86	10.38	50.00	-16.14	AV	N	Pass

## Test Data and Plots

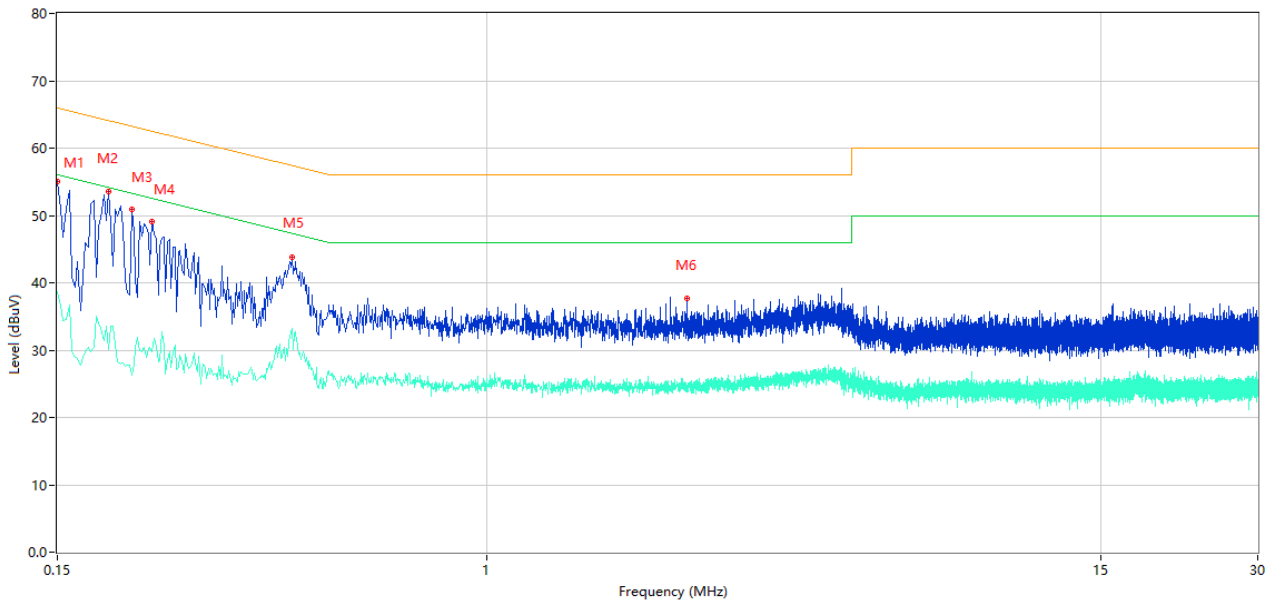
### The USB Test Mode

#### A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	57.96	10.41	66.00	-8.04	Peak	L	Pass
1**	0.150	39.28	10.41	56.00	-16.72	AV	L	Pass
2	0.170	57.05	10.40	64.96	-7.91	Peak	L	Pass
2**	0.170	28.21	10.40	54.96	-26.75	AV	L	Pass
3	0.188	52.69	10.38	64.12	-11.43	Peak	L	Pass
3**	0.188	34.97	10.38	54.12	-19.15	AV	L	Pass
4	0.216	50.53	10.37	62.97	-12.44	Peak	L	Pass
4**	0.216	29.38	10.37	52.97	-23.59	AV	L	Pass
5	0.246	46.67	10.34	61.89	-15.22	Peak	L	Pass
5**	0.246	30.61	10.34	51.89	-21.28	AV	L	Pass
6	0.408	44.19	10.31	57.69	-13.50	Peak	L	Pass
6**	0.408	30.22	10.31	47.69	-17.47	AV	L	Pass

## A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	55.07	10.41	66.00	-10.93	Peak	N	Pass
1**	0.150	38.68	10.41	56.00	-17.32	AV	N	Pass
2	0.188	53.48	10.38	64.12	-10.64	Peak	N	Pass
2**	0.188	30.16	10.38	54.12	-23.96	AV	N	Pass
3	0.208	50.95	10.38	63.28	-12.33	Peak	N	Pass
3**	0.208	26.29	10.38	53.28	-26.99	AV	N	Pass
4	0.228	49.08	10.36	62.52	-13.44	Peak	N	Pass
4**	0.228	29.70	10.36	52.52	-22.82	AV	N	Pass
5	0.422	43.85	10.31	57.41	-13.56	Peak	N	Pass
5**	0.422	33.22	10.31	47.41	-14.19	AV	N	Pass
6	2.416	37.61	10.26	56.00	-18.39	Peak	N	Pass
6**	2.416	24.79	10.26	46.00	-21.21	AV	N	Pass

## **ANNEX B TEST SETUP PHOTOS**

Please refer the document "BL-SZ2140420-AE-1.PDF".

## **ANNEX C EUT EXTERNAL PHOTOS**

Please refer the document "BL-SZ2140420-AW.PDF".

## **ANNEX D EUT INTERNAL PHOTOS**

Please refer the document "BL-SZ2140420-AI.PDF".

--END OF REPORT--