

FCC

EMC

TEST REPORT

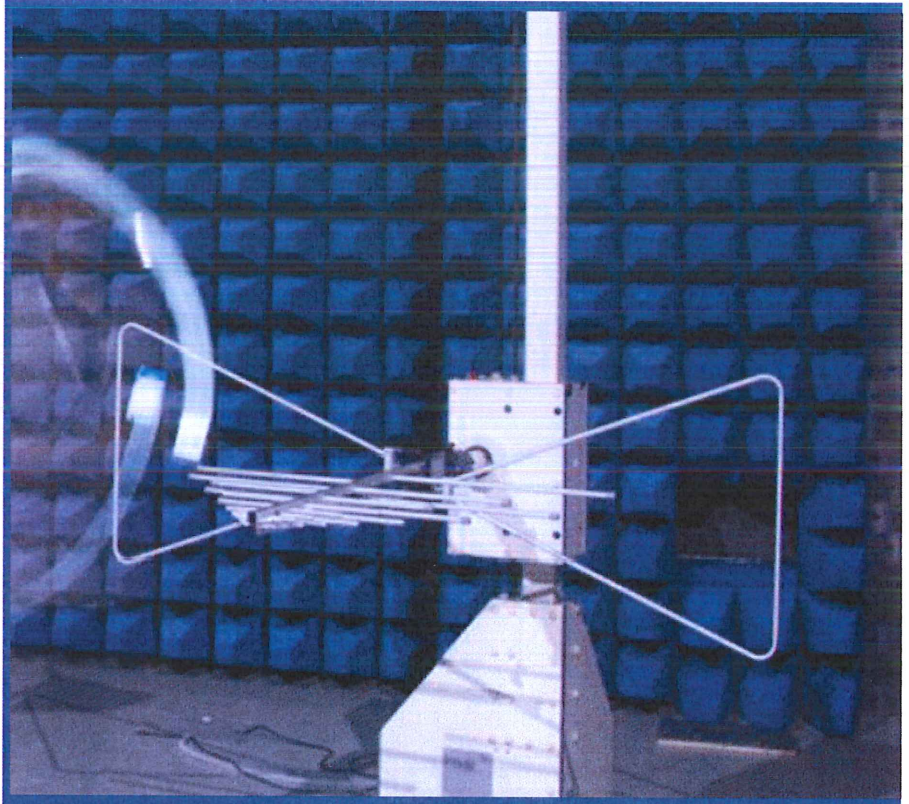
ISSUED BY  
Shenzhen BALUN Technology Co., Ltd.



FOR  
**Mobile Phone**

ISSUED TO  
vivo Mobile Communication Co., Ltd.

#283, BBK Road, Wusha, Chang'An, DongGuan City, China



Tested by: Liu Zhenxiang  
Liu Zhenxiang  
Date Jun. 03, 2020

Approved by: [Signature]  
Liao Jianming  
(Technical Director)  
Date Jun. 03, 2020



Report No.: BL-SZ2040775-401

EUT Name: Mobile Phone

Model Name: vivo 1935

Brand Name: vivo

Test Standard: 47 CFR Part 15 Subpart B

FCC ID: 2AUCY-V1935

Test Conclusion: Pass

Test Date: Apr. 28, 2020 ~ May 07, 2020

Date of Issue: Jun. 03, 2020

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**Revision History**

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Jun. 01, 2020</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>Jun. 03, 2020</u>	<u>Update Test Mode And Test Data</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	<p>The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1.</p> <p>The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.</p> <p>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.</p> <p>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.</p>
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 v6.8.
- (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	vivo Mobile Communication Co., Ltd.
Address	#283, BBK Road, Wusha, Chang'An, DongGuan City, China

### 2.2 Manufacturer Information

Manufacturer	vivo Mobile Communication Co., Ltd.
Address	#283, BBK Road, Wusha, Chang'An, DongGuan City, China

### 2.3 Factory Information

Factory	vivo Mobile Communication Co., Ltd.
Address	#283, BBK Road, Wusha, Chang'An, DongGuan City, China

### 2.4 General Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Model Name Under Test	vivo 1935
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	MP_0.1
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

## 2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	vivo
	Model No.	B-M3
	Serial No.	N/A
	Capacity	4880 mAh
	Rated Voltage	3.87 V
	Limited Voltage	4.2 V
Ancillary Equipment 2	Adapter 1	
	Brand Name	vivo
	Model No.	V1020D-US
	Serial No.	N/A
	Rated Input	100-240 V~, 50 / 60 Hz, 0.35 A
	Rated Output	5 V= 2 A
	Manufacturer	Phitek
Ancillary Equipment 3	Adapter 2	
	Brand Name	vivo
	Model No.	V1020D-US
	Serial No.	N/A
	Rated Input	100-240 V~, 50 / 60 Hz, 0.35 A
	Rated Output	5 V= 2 A
	Manufacturer	Salcomp
Ancillary Equipment 4	Adapter 3	
	Brand Name	vivo
	Model No.	V1020D-EU
	Serial No.	N/A
	Rated Input	100-240 V~, 50 / 60 Hz, 0.35 A
	Rated Output	5 V= 2 A
	Manufacturer	Aohai
Ancillary Equipment 5	USB Cable	
	Model No.	N/A
	Length (Approx.)	1.0 m
Ancillary Equipment 6	Earphone	
	Model No.	N/A
	Length (Approx.)	1.2 m
<p>Note 1: Letter in ( ) means plug type.</p> <p>Note 2: All adapters are tested, only the worst data of V1020D-US(Manufacturer: Phitek) shown in this report.</p>		

## 2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/1900 MHz 3G Network CDMA 1x Band Class 0 EVDO Rel. 0/Rev. A Band Class 0 WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network FDD LTE Band 2/4/5/7/26 TDD LTE Band 38/41 LTE CA Uplink (UL): 41C Bluetooth 5.0 (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) 5G WIFI 802.11a, 802.11n(HT20/40) and 802.11ac(VHT20/40/80) Band 1/2/3/4 SRD, GPS, GLONASS, Galileo, BDS, FM receiver
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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 GHz
About the Product	The equipment is Mobile Phone, intended for used with information technology equipment.



### 3 SUMMARY OF TEST RESULTS

#### 3.1 Test Standards

No.	Identity	Document Title
1	FCC 47 CFR Part 15 Subpart B (10-1-18 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)	3.66 dB
Radiated emissions (1 GHz-18 GHz)	5.57 dB
Radiated emissions (18 GHz-40 GHz)	6.12 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 3.87 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	2019.07.04	2020.07.03	<input type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	9168-0883	2019.05.11	2021.05.10	<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	2019.10.29	2020.10.28	<input checked="" type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2018.08.22	2020.08.21	<input checked="" type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1600	2018.07.12	2020.07.11	<input 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"/>

Radiated Emission Test For Frequency 1 GHz-18 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2019.10.29	2020.10.28	<input checked="" type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1148	2018.07.12	2020.07.11	<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"/>

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	<input checked="" type="checkbox"/>
Test Antenna-Horn	A-INFOMW	LB-180400K F	J211060273	2019.01.05	2021.01.04	<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	2019.06.13	2020.06.12	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NSLK 8127	8127-687	2019.07.04	2020.07.03	<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 checked="" 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 checked="" type="checkbox"/>
Wireless Communications Test Set	R&S	CMW500	142028	N/A	Cal. Due 2020.06.13	<input checked="" type="checkbox"/>
WIFI Router	TP-LINK	TL-WDR7500	N/A	N/A	N/A	<input checked="" 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"/>

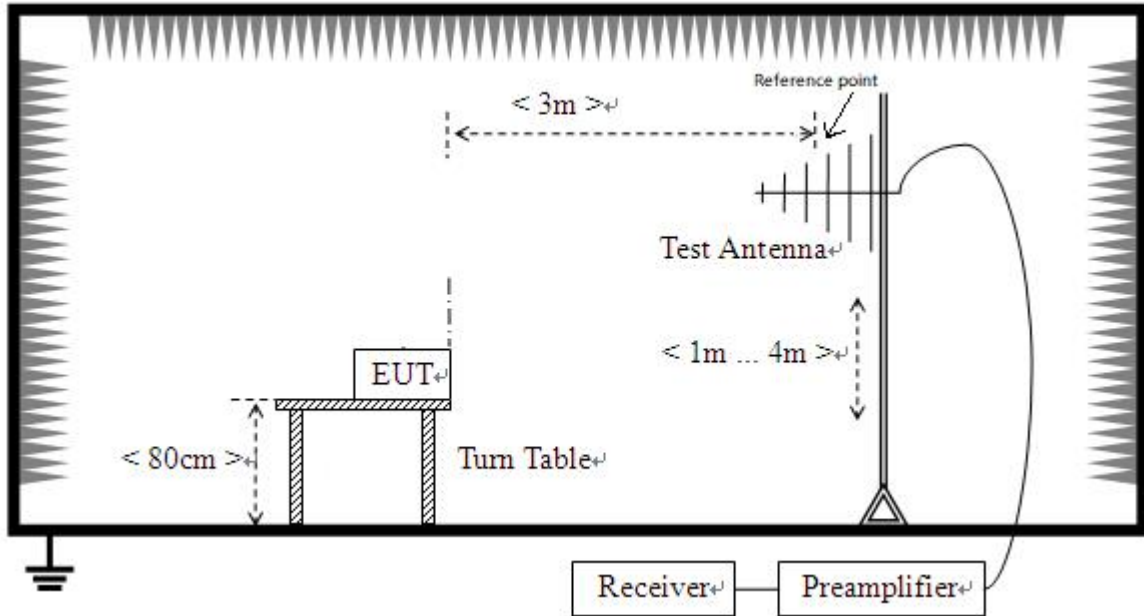
## 4.4 Test Configurations

Test Configurations (TC) No.	Description
Traffic Test Mode	
TC01	<u>The GSM 850 MHz Test Mode</u> GSM 850 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI Link (2.4G) + GPS RX
TC02	<u>The EDGE 850 MHz Test Mode</u> EDGE 850 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI Link (5G) + GLONASS RX
TC03	<u>The GSM 850 MHz Test Mode with internal speaker</u> GSM 850 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + BDS RX
TC04	<u>The GSM 1900 Test Mode</u> GSM 1900 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + Galileo RX
TC05	<u>The EDGE 1900 MHz Test Mode</u> EDGE 1900 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + GPS RX
TC06	<u>The CDMA BC0 Test Mode</u> CDMA BC0 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + GLONASS RX
TC07	<u>The EVDO BC0 Test Mode</u> EVDO BC0 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + BDS RX
TC08	<u>The WCDMA Band 2 Test Mode</u> WCDMA Band 2 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + Galileo RX
TC09	<u>The WCDMA Band 4 Test Mode</u> WCDMA Band 4 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + GPS RX
TC10	<u>The WCDMA Band 5 Test Mode</u> WCDMA Band 5 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + GLONASS RX
TC11	<u>The CDMA BC0 Test Mode</u> CDMA BC0 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + BDS RX
TC12	<u>The FDD LTE Band 2 Test Mode</u> LTE Band 2 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + Galileo RX
TC13	<u>The FDD LTE Band 4 Test Mode</u> LTE Band 4 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + GPS RX
TC14	<u>The FDD LTE Band 5 Test Mode</u>

	LTE Band 5 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + GLONASS RX
TC15	<u>The FDD LTE Band 7 Test Mode</u> LTE Band 7 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + BDS RX
TC16	<u>The FDD LTE Band 26 Test Mode</u> LTE Band 26 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + Galileo RX
TC17	<u>The TDD LTE Band 38 Test Mode</u> LTE Band 38 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + GPS RX
TC18	<u>The TDD LTE Band 41 Test Mode</u> LTE Band 41 Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + GLONASS RX
TC19	<u>The LTE CA_41C Test Mode</u> LTE CA_41C Idle + Adapter + USB Cable + Battery + Earphone + BT RX + WIFI RX + BDS RX
Amusement Test Mode	
TC20	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Earphone + TF Card
TC21	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery + Earphone + TF Card
TC22	<u>The FM Test Mode</u> EUT + Adapter + USB Cable + Battery + Earphone + FM RX
TC23	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Earphone + Laptop+ TF Card

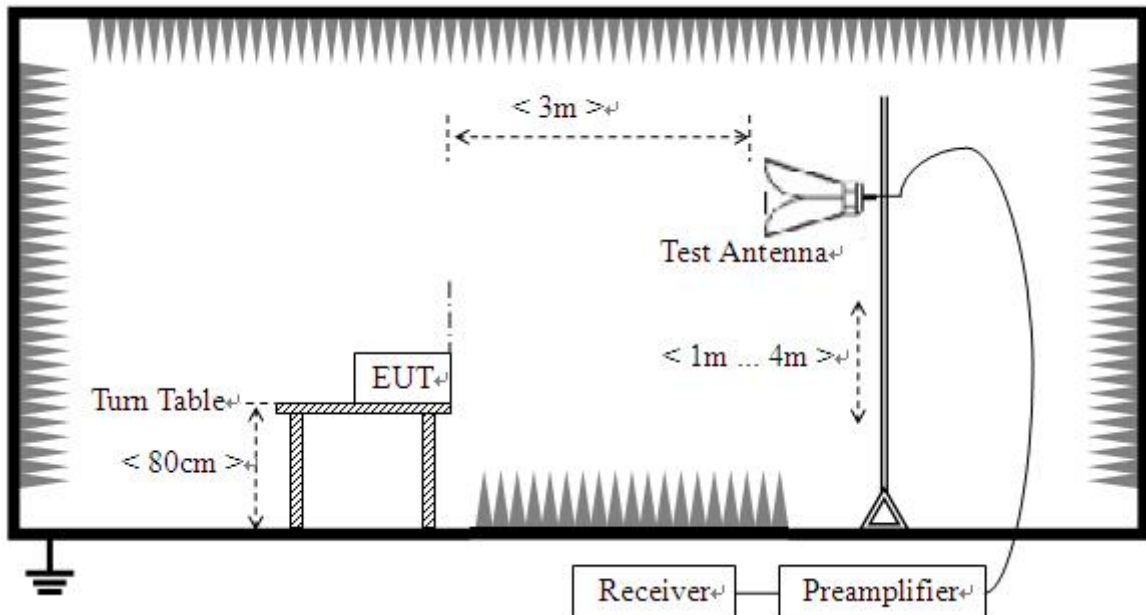
## 4.5 Test Setups

### Test Setup 1



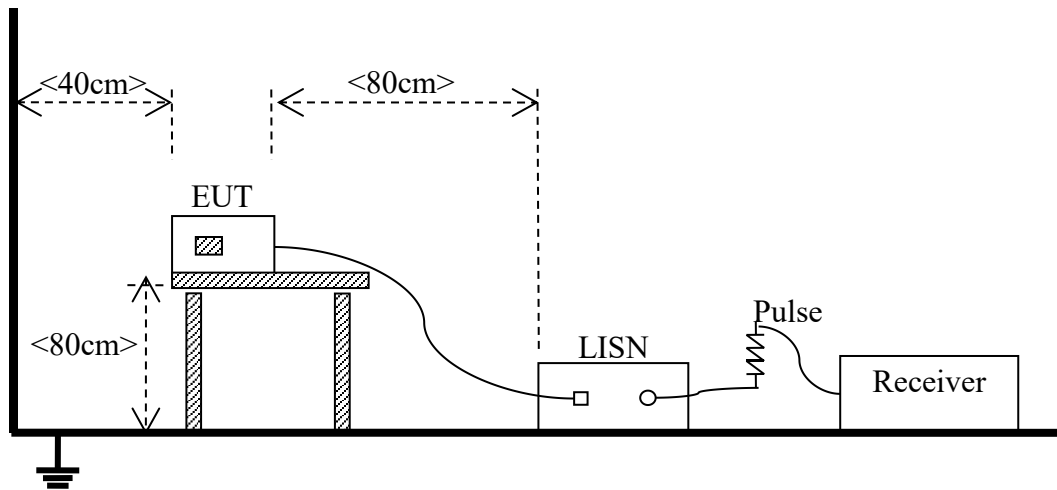
(For Radiated Emission Test (30 MHz-1 GHz))

### 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~TC23 <sup>Note</sup>
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC23 <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 (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. Results (dBuV/m) = Reading (dBuV) + 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.

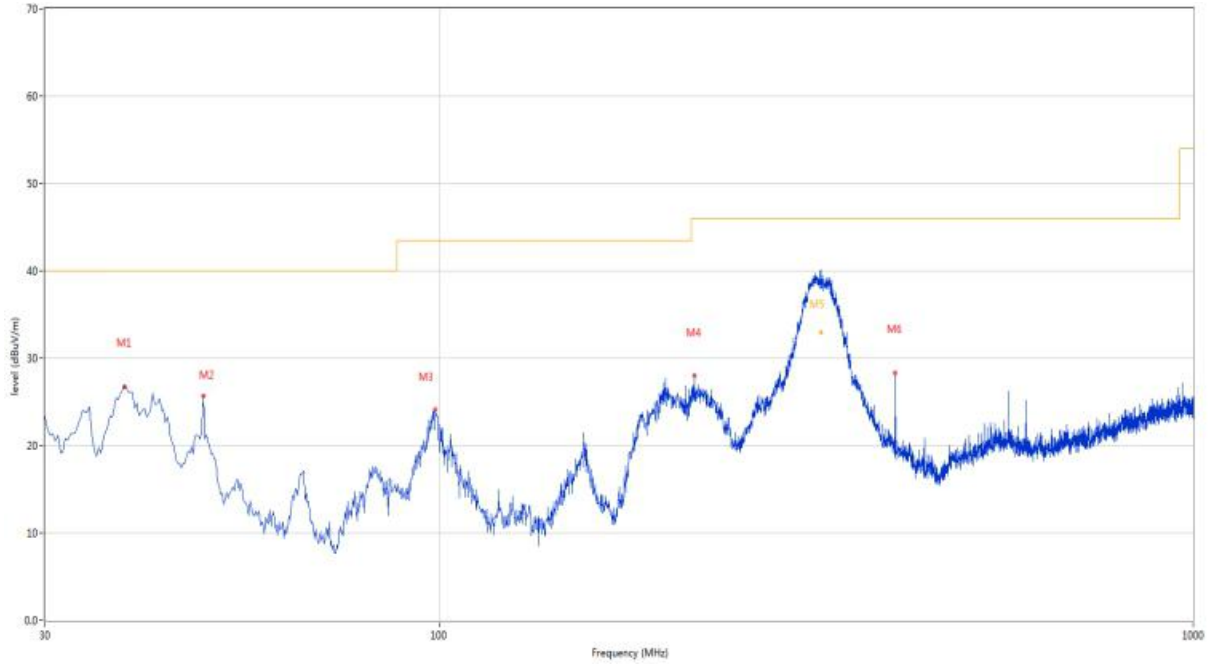
Note 3: The Radiated Emission from 18G-40G is noise only, do not show on the report.

Note 4: 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

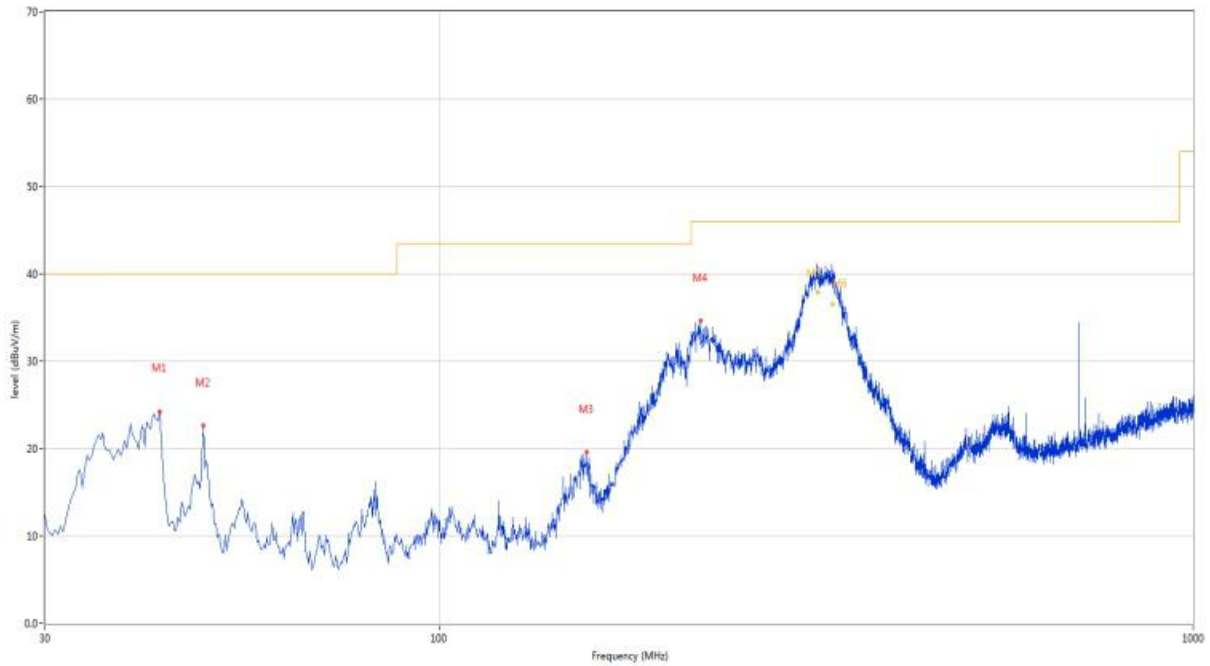
The Camera Test Mode

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



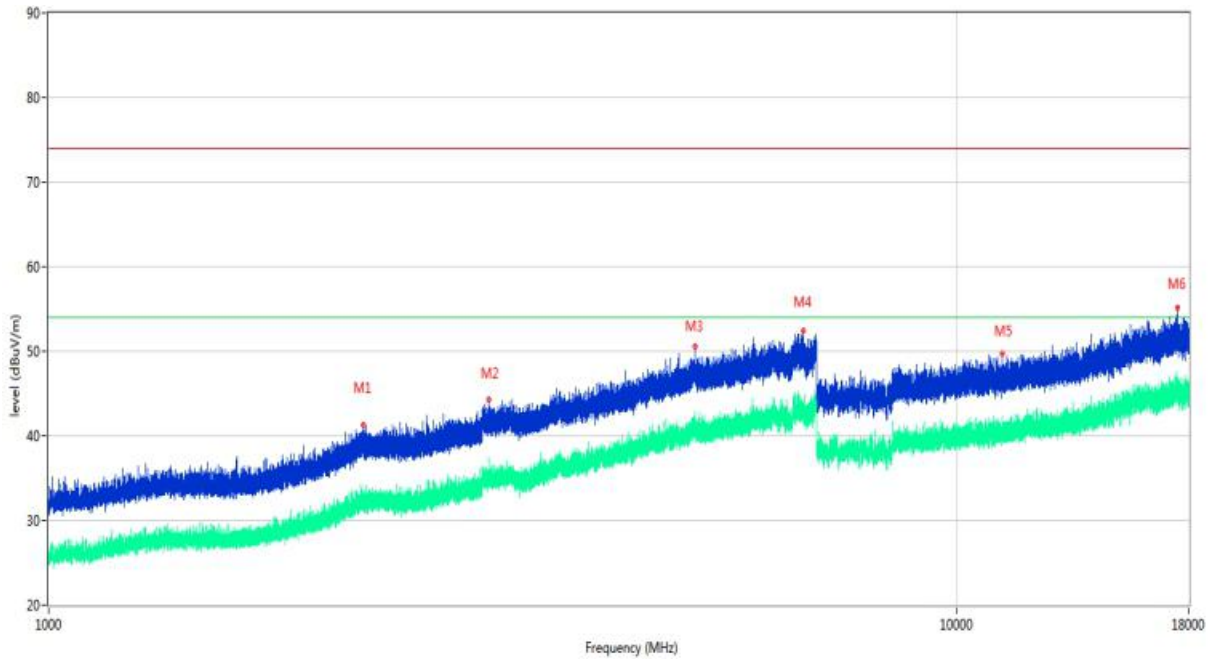
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	38.245	26.79	-24.51	40.0	-13.21	Peak	0.00	200	Vertical	Pass
2	48.672	25.65	-22.50	40.0	-14.35	Peak	333.00	100	Vertical	Pass
3	98.870	24.08	-24.86	43.5	-19.42	Peak	71.90	100	Vertical	Pass
4	217.938	27.97	-24.12	46.0	-18.03	Peak	353.10	100	Vertical	Pass
5	320.725	37.62	-21.15	46.0	-8.38	Peak	0.00	184	Vertical	N/A
5*	320.725	32.97	-21.15	46.0	-13.03	QP	0.00	184	Vertical	Pass
6	402.722	28.27	-19.11	46.0	-17.73	Peak	275.60	100	Vertical	Pass

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



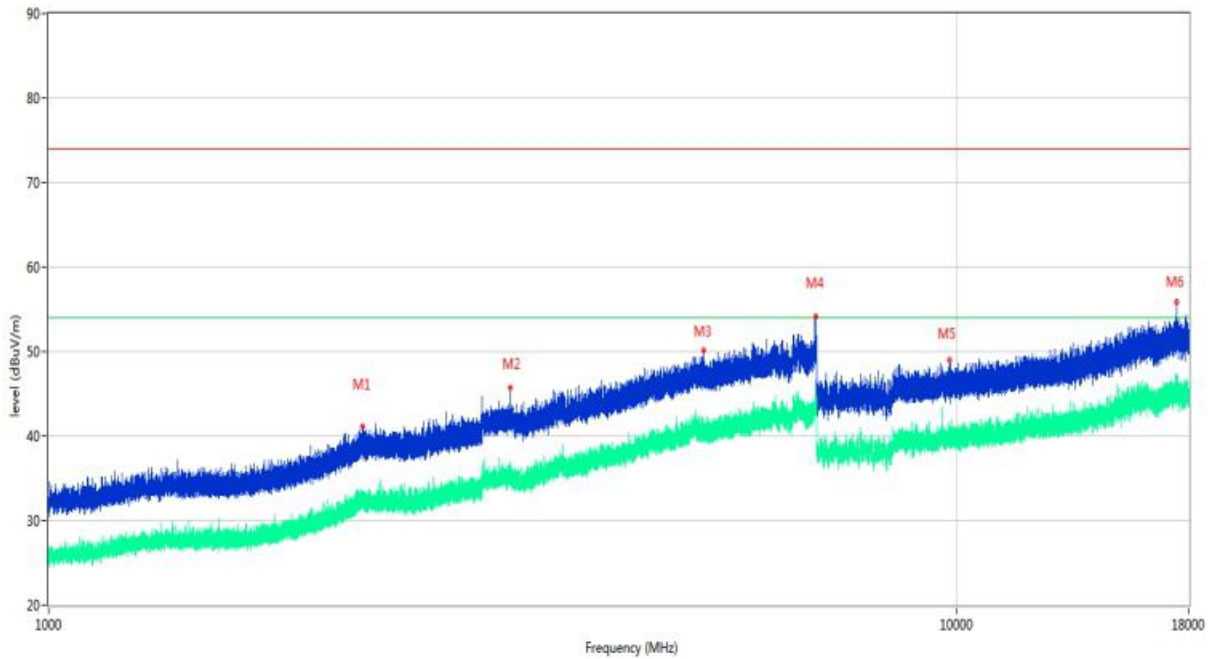
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	42.610	24.25	-23.41	40.0	-15.75	Peak	0.00	200	Horizontal	Pass
2	48.672	22.63	-22.50	40.0	-17.37	Peak	0.00	200	Horizontal	Pass
3	156.828	19.57	-27.53	43.5	-23.93	Peak	282.40	200	Horizontal	Pass
4	222.060	34.63	-23.92	46.0	-11.37	Peak	115.00	100	Horizontal	Pass
5	317.599	41.98	-20.95	46.0	-4.02	Peak	246.70	100	Horizontal	N/A
5*	317.599	37.90	-20.95	46.0	-8.10	QP	246.70	100	Horizontal	Pass
6	332.262	40.65	-20.68	46.0	-5.35	Peak	246.70	107	Horizontal	N/A
6*	332.262	36.50	-20.68	46.0	-9.50	QP	246.70	107	Horizontal	Pass

A.1.3 Test Antenna Vertical, 1 GHz – 12.75 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2219.700	41.22	-12.83	74.0	-32.78	Peak	361.00	150	Vertical	Pass
1**	2219.700	32.71	-12.83	54.0	-21.29	AV	361.00	150	Vertical	Pass
2	3053.600	44.35	-7.80	74.0	-29.65	Peak	109.00	150	Vertical	Pass
2**	3053.600	35.30	-7.80	54.0	-18.70	AV	109.00	150	Vertical	Pass
3	5145.000	50.54	-2.59	74.0	-23.46	Peak	249.00	150	Vertical	Pass
3**	5145.000	40.68	-2.59	54.0	-13.32	AV	249.00	150	Vertical	Pass
4	6777.800	52.48	-0.93	74.0	-21.52	Peak	9.00	150	Vertical	Pass
4**	6777.800	42.14	-0.93	54.0	-11.86	AV	9.00	150	Vertical	Pass
5	11215.901	49.71	-0.19	74.0	-24.29	Peak	80.00	150	Vertical	Pass
5**	11215.901	41.05	-0.19	54.0	-12.95	AV	80.00	150	Vertical	Pass
6	17479.463	55.12	2.76	74.0	-18.88	Peak	207.00	150	Vertical	Pass
6**	17479.463	46.03	2.76	54.0	-7.97	AV	207.00	150	Vertical	Pass

## A.1.4 Test Antenna Horizontal, 1 GHz – 12.75 GHz



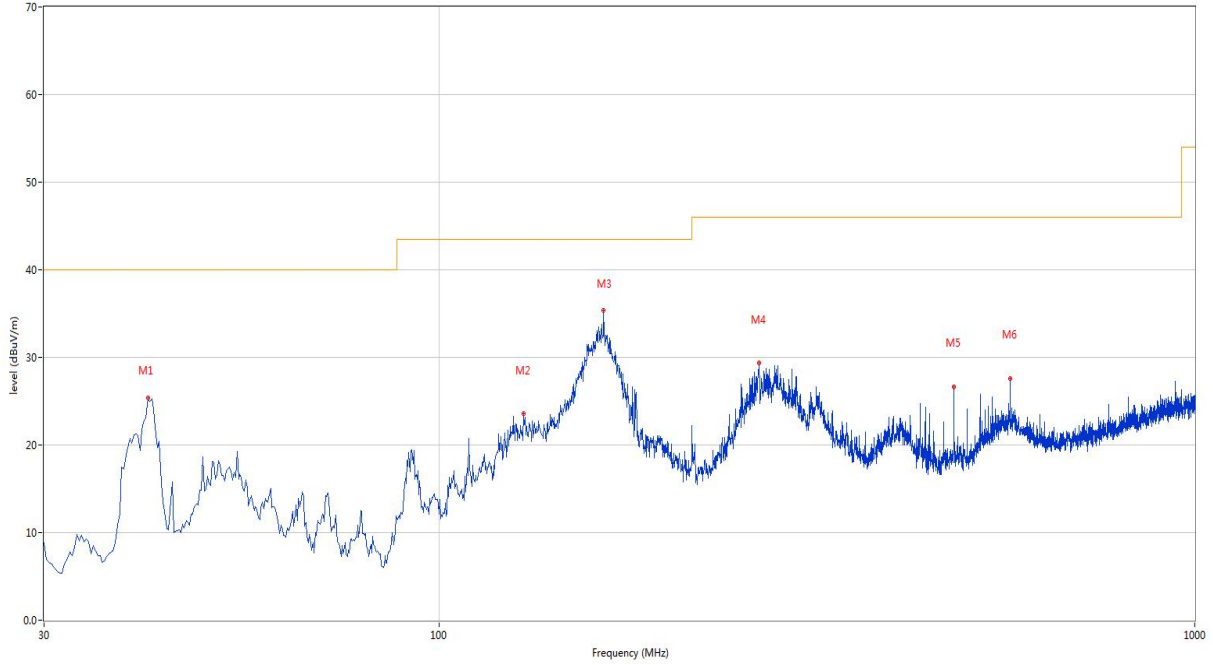
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2216.900	41.17	-12.75	74.0	-32.83	Peak	57.00	150	Horizontal	Pass
1**	2216.900	31.63	-12.75	54.0	-22.37	AV	57.00	150	Horizontal	Pass
2	3226.400	45.75	-7.09	74.0	-28.25	Peak	-1.00	150	Horizontal	Pass
2**	3226.400	34.96	-7.09	54.0	-19.04	AV	-1.00	150	Horizontal	Pass
3	5265.200	50.10	-3.03	74.0	-23.90	Peak	-3.00	150	Horizontal	Pass
3**	5265.200	41.47	-3.03	54.0	-12.53	AV	-3.00	150	Horizontal	Pass
4	6987.000	54.19	0.46	74.0	-19.81	Peak	228.00	150	Horizontal	Pass
4**	6987.000	43.18	0.46	54.0	-10.82	AV	228.00	150	Horizontal	Pass
5	9805.712	48.94	-0.09	74.0	-25.06	Peak	360.00	150	Horizontal	Pass
5**	9805.712	39.21	-0.09	54.0	-14.79	AV	360.00	150	Horizontal	Pass
6	17437.463	55.83	3.14	74.0	-18.17	Peak	0.00	150	Horizontal	Pass
6**	17437.463	45.22	3.14	54.0	-8.78	AV	0.00	150	Horizontal	Pass



Test Data and Plots

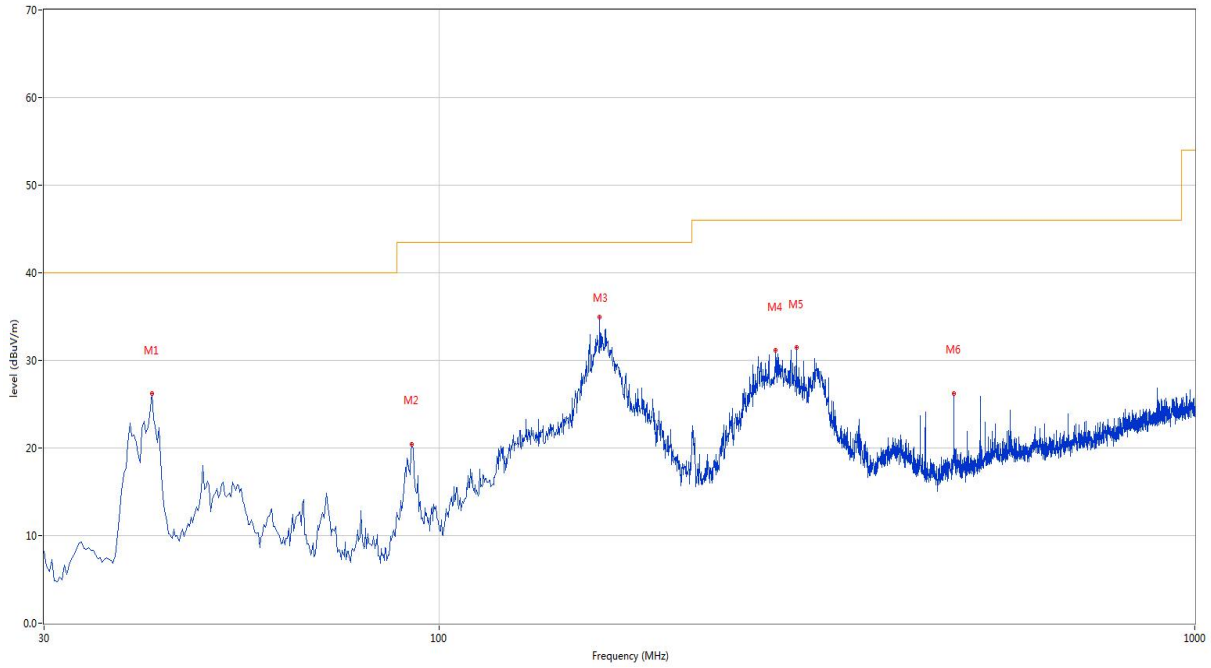
The USB Test Mode

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



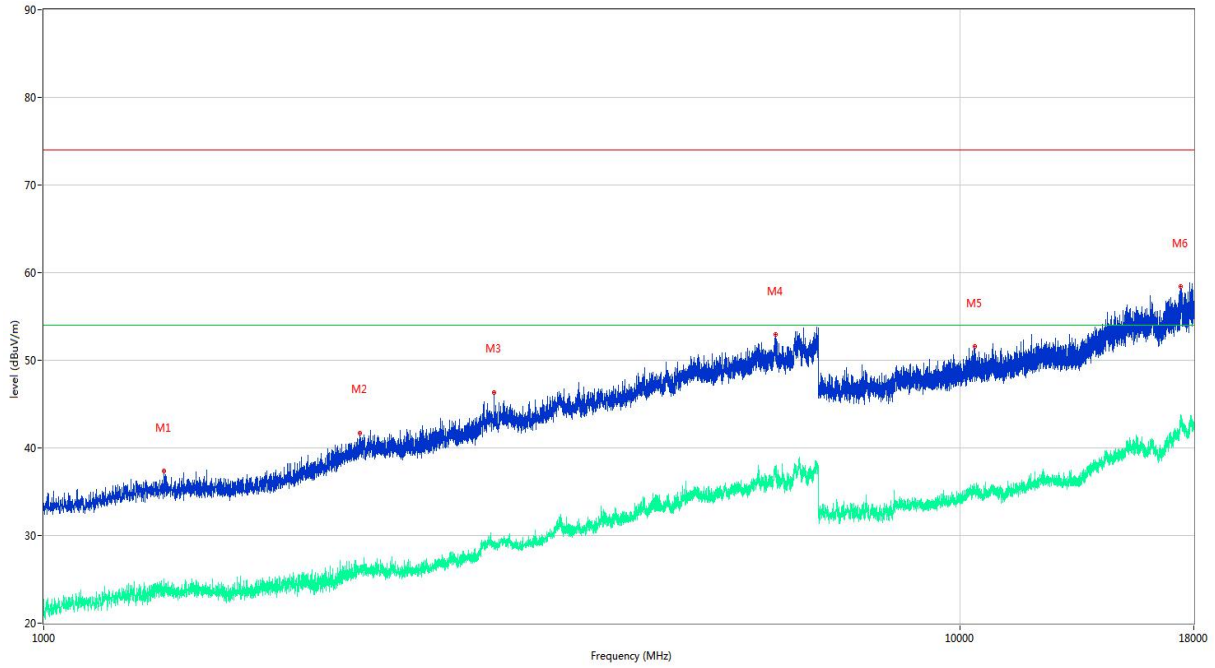
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	41.155	25.38	-23.74	40.0	-14.62	Peak	300.70	200	Vertical	Pass
2	129.425	23.62	-27.08	43.5	-19.88	Peak	43.20	100	Vertical	Pass
3	165.072	35.35	-26.77	43.5	-8.15	Peak	267.00	100	Vertical	Pass
4	265.225	29.38	-22.17	46.0	-16.62	Peak	94.90	200	Vertical	Pass
5	480.080	26.59	-17.01	46.0	-19.41	Peak	237.90	200	Vertical	Pass
6	569.320	27.59	-14.96	46.0	-18.41	Peak	53.50	100	Vertical	Pass

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



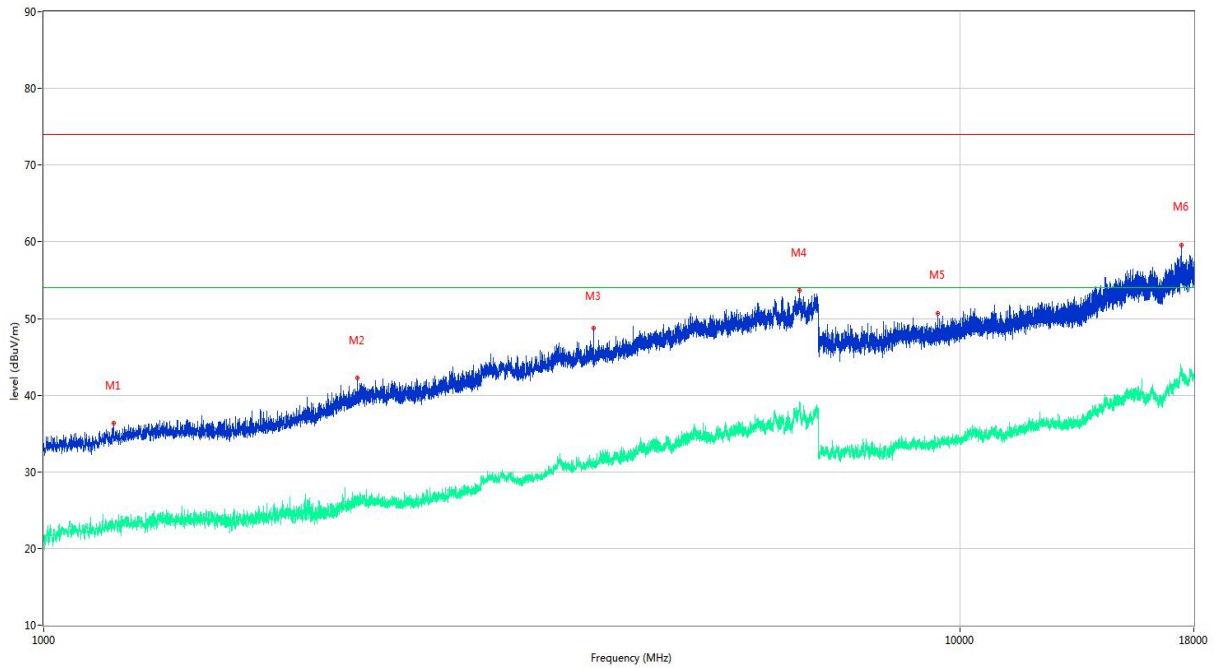
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	41.640	26.20	-23.58	40.0	-13.80	Peak	356.40	100	Horizontal	Pass
2	92.080	20.44	-25.62	43.5	-23.06	Peak	70.60	200	Horizontal	Pass
3	163.133	35.00	-26.94	43.5	-8.50	Peak	209.80	200	Horizontal	Pass
4	278.805	31.19	-21.87	46.0	-14.81	Peak	242.80	100	Horizontal	Pass
5	296.992	31.47	-21.55	46.0	-14.53	Peak	253.10	100	Horizontal	Pass
6	480.080	26.24	-17.01	46.0	-19.76	Peak	253.10	100	Horizontal	Pass

A.1.7 Test Antenna Vertical, 1 GHz – 12.75 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1352.500	37.36	-17.38	74.0	-36.64	Peak	187.00	100	Vertical	Pass
1**	1352.500	25.05	-17.38	54.0	-28.95	AV	187.00	100	Vertical	Pass
2	2214.500	41.69	-12.87	74.0	-32.31	Peak	179.00	100	Vertical	Pass
2**	2214.500	25.83	-12.87	54.0	-28.17	AV	179.00	100	Vertical	Pass
3	3099.000	46.34	-8.29	74.0	-27.66	Peak	169.00	100	Vertical	Pass
3**	3099.000	28.79	-8.29	54.0	-25.21	AV	169.00	100	Vertical	Pass
4	6292.000	52.90	0.05	74.0	-21.10	Peak	248.00	100	Vertical	Pass
4**	6292.000	36.75	0.05	54.0	-17.25	AV	248.00	100	Vertical	Pass
5	10385.313	51.57	0.71	74.0	-22.43	Peak	51.00	100	Vertical	Pass
5**	10385.313	35.29	0.71	54.0	-18.71	AV	51.00	100	Vertical	Pass
6	17414.625	58.41	4.72	74.0	-15.59	Peak	61.00	100	Vertical	Pass
6**	17414.625	43.26	4.72	54.0	-10.74	AV	61.00	100	Vertical	Pass

A.1.8 Test Antenna Horizontal, 1 GHz – 12.75 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1191.500	36.29	-17.86	74.0	-37.71	Peak	203.00	100	Horizontal	Pass
1**	1191.500	23.21	-17.86	54.0	-30.79	AV	203.00	100	Horizontal	Pass
2	2200.000	42.20	-12.97	74.0	-31.80	Peak	216.00	100	Horizontal	Pass
2**	2200.000	26.90	-12.97	54.0	-27.10	AV	216.00	100	Horizontal	Pass
3	3981.000	48.78	-5.74	74.0	-25.22	Peak	23.00	100	Horizontal	Pass
3**	3981.000	30.90	-5.74	54.0	-23.10	AV	23.00	100	Horizontal	Pass
4	6680.000	53.63	0.11	74.0	-20.37	Peak	133.00	100	Horizontal	Pass
4**	6680.000	38.64	0.11	54.0	-15.36	AV	133.00	100	Horizontal	Pass
5	9458.125	50.67	-0.21	74.0	-23.33	Peak	206.00	100	Horizontal	Pass
5**	9458.125	33.65	-0.21	54.0	-20.35	AV	206.00	100	Horizontal	Pass
6	17463.187	59.56	3.85	74.0	-14.44	Peak	116.00	100	Horizontal	Pass
6**	17463.187	42.89	3.85	54.0	-11.11	AV	116.00	100	Horizontal	Pass

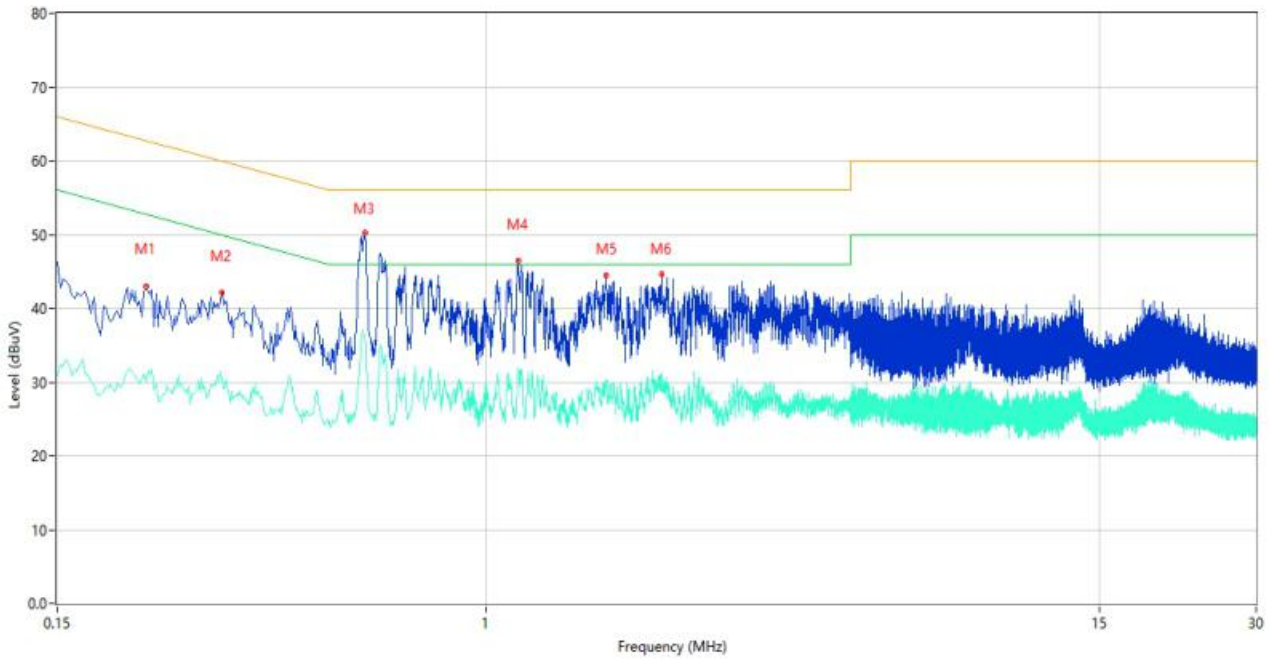
## A.2 Conducted Emission

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

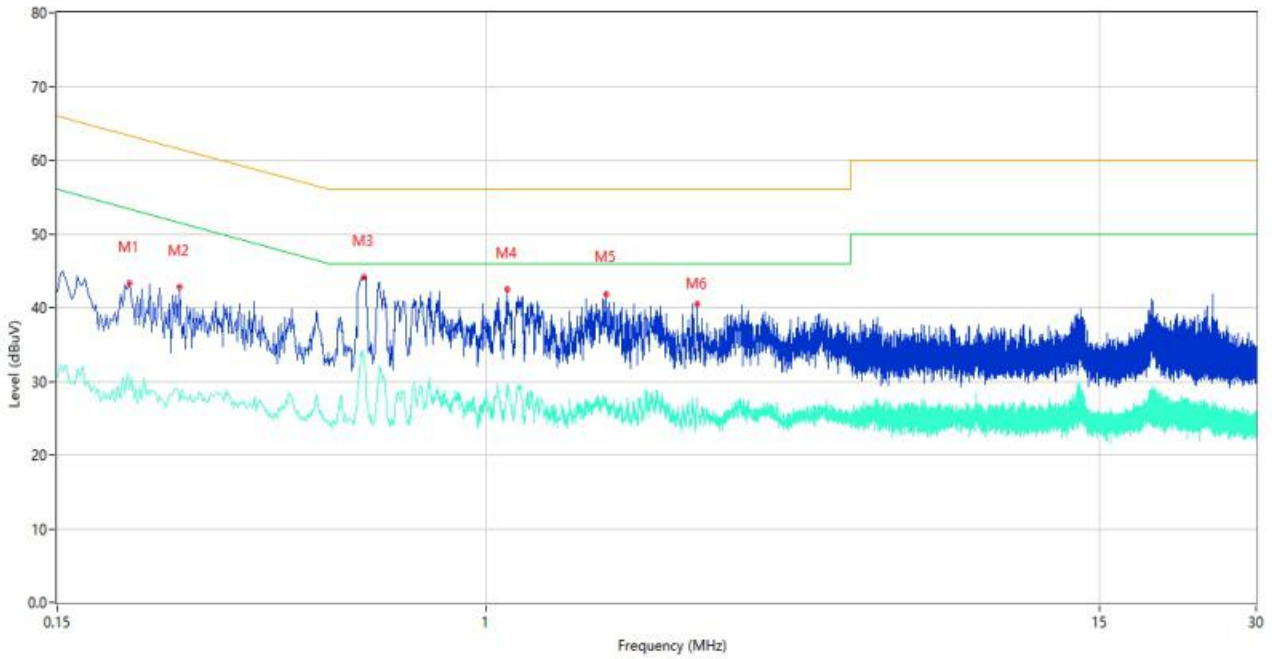
#### The Camera Test Mode

##### A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.222	43.03	10.37	62.74	-19.71	Peak	L	Pass
1**	0.222	30.13	10.37	52.74	-22.61	AV	L	Pass
2	0.310	42.15	10.33	59.97	-17.82	Peak	L	Pass
2**	0.310	30.19	10.33	49.97	-19.78	AV	L	Pass
3	0.584	50.77	10.27	56.00	-5.23	Peak	L	N/A
3*	0.584	48.89	10.27	56.00	-7.11	QP	L	Pass
3**	0.584	36.15	10.27	46.00	-9.85	AV	L	Pass
4	1.150	46.45	10.24	56.00	-9.55	Peak	L	Pass
4**	1.150	31.56	10.24	46.00	-14.44	AV	L	Pass
5	1.696	44.38	10.26	56.00	-11.62	Peak	L	Pass
5**	1.696	30.00	10.26	46.00	-16.00	AV	L	Pass
6	2.166	44.68	10.27	56.00	-11.32	Peak	L	Pass
6**	2.166	31.17	10.27	46.00	-14.83	AV	L	Pass

## A.2.2 N Phase

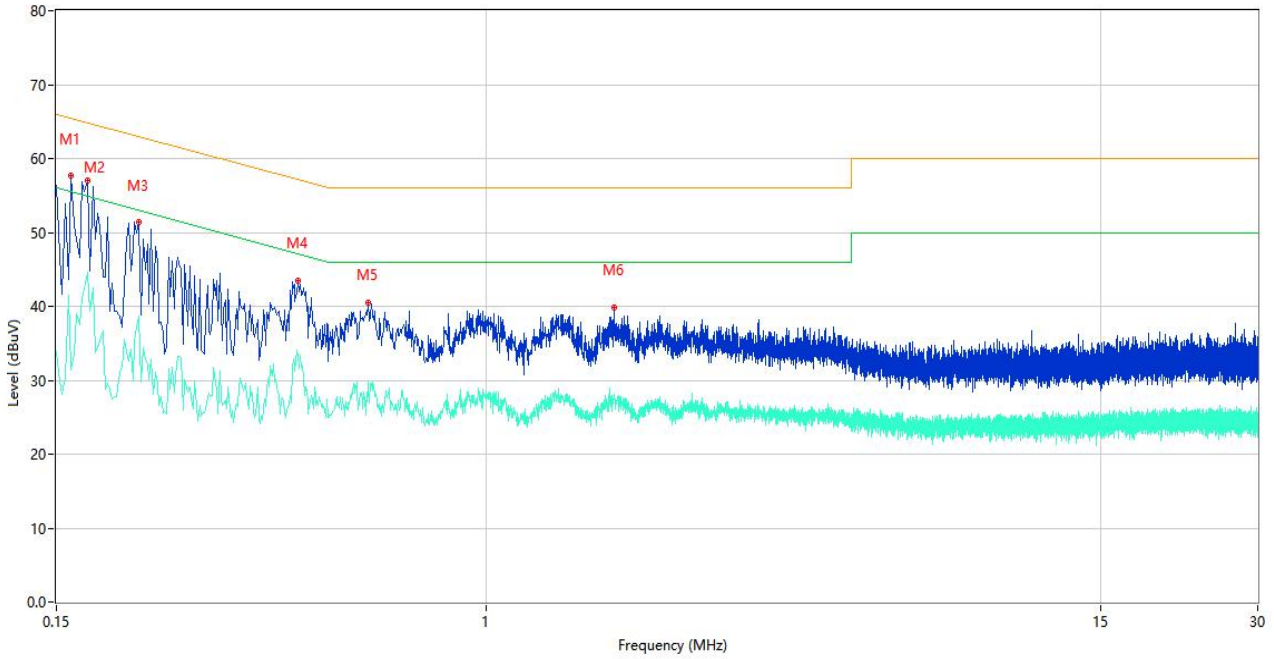


No.	Frequency (MHz)	Results (dBUV)	Factor (dB)	Limit (dBUV)	Over Limit (dB)	Detector	Line	Verdict
1	0.206	43.34	10.38	63.37	-20.03	Peak	N	Pass
1**	0.206	28.86	10.38	53.37	-24.51	AV	N	Pass
2	0.258	42.83	10.34	61.50	-18.67	Peak	N	Pass
2**	0.258	27.03	10.34	51.50	-24.47	AV	N	Pass
3	0.582	44.08	10.27	56.00	-11.92	Peak	N	Pass
3**	0.582	33.42	10.27	46.00	-12.58	AV	N	Pass
4	1.096	42.46	10.23	56.00	-13.54	Peak	N	Pass
4**	1.096	29.52	10.23	46.00	-16.48	AV	N	Pass
5	1.700	41.74	10.26	56.00	-14.26	Peak	N	Pass
5**	1.700	27.71	10.26	46.00	-18.29	AV	N	Pass
6	2.540	40.56	10.28	56.00	-15.44	Peak	N	Pass
6**	2.540	27.75	10.28	46.00	-18.25	AV	N	Pass

Test Data and Plots

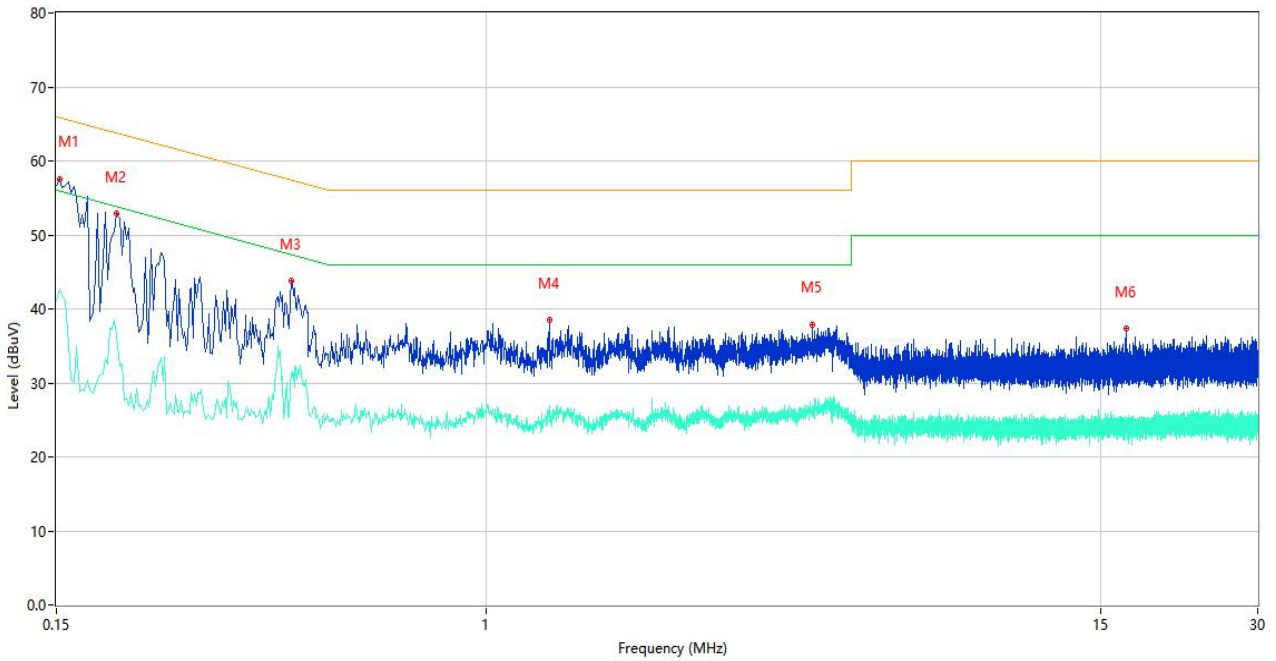
The USB Test Mode

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.160	57.71	10.40	65.46	-7.75	Peak	L	Pass
1**	0.160	31.33	10.40	55.46	-24.13	AV	L	Pass
2	0.172	56.95	10.40	64.86	-7.91	Peak	L	Pass
2**	0.172	44.57	10.40	54.86	-10.29	AV	L	Pass
3	0.216	51.37	10.37	62.97	-11.60	Peak	L	Pass
3**	0.216	38.69	10.37	52.97	-14.28	AV	L	Pass
4	0.436	43.52	10.31	57.14	-13.62	Peak	L	Pass
4**	0.436	33.41	10.31	47.14	-13.73	AV	L	Pass
5	0.594	40.47	10.28	56.00	-15.53	Peak	L	Pass
5**	0.594	28.67	10.28	46.00	-17.33	AV	L	Pass
6	1.760	39.91	10.25	56.00	-16.09	Peak	L	Pass
6**	1.760	27.74	10.25	46.00	-18.26	AV	L	Pass

A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.152	57.50	10.41	65.89	-8.39	Peak	N	Pass
1**	0.152	42.63	10.41	55.89	-13.26	AV	N	Pass
2	0.196	52.90	10.38	63.78	-10.88	Peak	N	Pass
2**	0.196	36.29	10.38	53.78	-17.49	AV	N	Pass
3	0.422	43.73	10.31	57.41	-13.68	Peak	N	Pass
3**	0.422	31.30	10.31	47.41	-16.11	AV	N	Pass
4	1.318	38.50	10.24	56.00	-17.50	Peak	N	Pass
4**	1.318	26.97	10.24	46.00	-19.03	AV	N	Pass
5	4.214	37.91	10.31	56.00	-18.09	Peak	N	Pass
5**	4.214	26.66	10.31	46.00	-19.34	AV	N	Pass
6	16.840	37.36	10.46	60.00	-22.64	Peak	N	Pass
6**	16.840	23.87	10.46	50.00	-26.13	AV	N	Pass



## **ANNEX B TEST SETUP PHOTOS**

Please refer the document "BL-SZ2040775-AE.PDF".

## **ANNEX C EUT EXTERNAL PHOTOS**

Please refer the document "BL-SZ2040775-AW.PDF".

## **ANNEX D EUT INTERNAL PHOTOS**

Please refer the document "BL-SZ2040775-AI.PDF".

--END OF REPORT--