

# EMC

# TEST REPORT

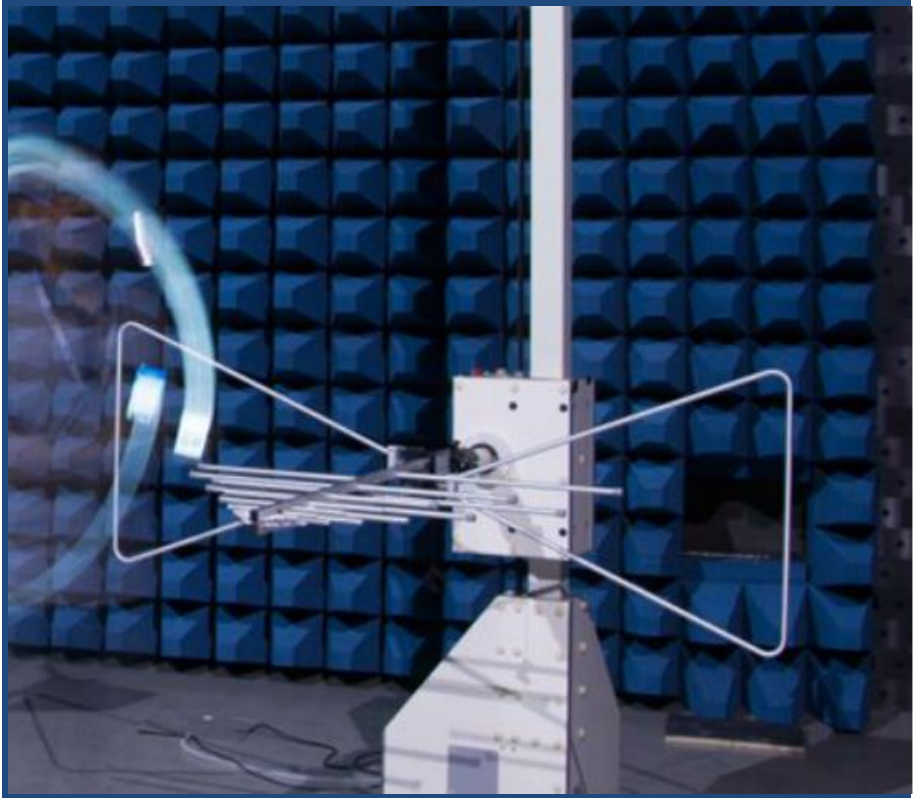
ISSUED BY  
Shenzhen BALUN Technology Co., Ltd.



FOR  
**Mobile Phone**

ISSUED TO  
vivo Mobile Communication Co., Ltd.

No.1, vivo Road, Chang'an, Dongguan, Guangdong, China



Tested by:

Sijie Zheng

Sijie zheng

Date

Feb. 21, 2022

Approved by:

Liao Jianming

Liao Jianming  
(Technical Director)

Date

Feb. 21, 2022

Report No.: BL-SZ2210380-401

EUT Name: Mobile Phone

Model Name: V2110

Brand Name: vivo

Test Standard: 47 CFR Part 15 Subpart B

FCC ID: 2AUCY-V2110V

Test Conclusion: Pass

Test Date: Jan. 13, 2022 ~ Jan. 18, 2022

Date of Issue: Feb. 21, 2022

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**Revision History**

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Feb. 21, 2022</u>	<u>Initial Issue</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	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China

### 2.2 Manufacturer Information

Manufacturer	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China

### 2.3 Factory Information

Factory	N/A
Address	N/A

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

EUT Name	Mobile Phone
Model Name Under Test	V2110
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	MP_0.1
Software Version	PD2138CF_EX_A_3.6.11
Dimensions (Approx.)	164.26*76.08*8.0mm
Weight (Approx.)	180g

## 2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	vivo
	Model No.	B-S2
	Serial No.	N/A
	Capacity	Minimal Capacity: 4910mAh Typical capacity: 5000mAh
	Rated Voltage	3.87 V
	Limit Charge Voltage	4.45 V
	Manufacturer	Huizhou Desay Battery Co., Ltd
Ancillary Equipment 2	Adapter	
	Brand Name	vivo
	Model No.	V1820L0B1-US (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5.0 V- 2.0 A, 9.0 V- 2.0 A
	Manufacturer	Dongguan Aohai Technology Co., Ltd
Ancillary Equipment 3	USB Cable 1	
	Model No.	BK-C-32
	Length (Approx.)	1 m
Ancillary Equipment 4	Earphone	
	Model No.	XE160
	Length (Approx.)	1 m
Note 1: Letter in () means plug type.		

## 2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EGPRS 850/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network FDD LTE Band 2/4/5/7/66 TDD LTE Band 38/41 LTE CA Uplink (UL): CA_7C, CA_38C, CA_41C Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80) U-NII-1/2A/2C/3, GPS, GLONASS, BDS, 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	2.0 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	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 3.87V 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	2021.10.08	2022.10.09	<input type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2022.07.01	<input type="checkbox"/>
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	N/A	2021.08.15	2024.08.14	<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	MY55330120	2021.10.20	2022.10.19	<input checked="" type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2022.07.01	<input checked="" type="checkbox"/>
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2021.09.04	2024.09.03	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input checked="" type="checkbox"/>

Radiated Emission Test For Frequency Above 1 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY55330120	2021.10.20	2022.10.19	<input type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2022.07.01	<input type="checkbox"/>
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2021.09.04	2024.09.03	<input type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input 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	MY55330120	2021.10.20	2022.10.19	<input checked="" type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2022.07.01	<input checked="" type="checkbox"/>
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2021.09.04	2024.09.03	<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	2021.04.01	2022.03.31	<input checked="" type="checkbox"/>
Test Antenna-Horn	A-INFOMW	LB-180400KF	J211060273	2021.07.02	2024.07.01	<input checked="" type="checkbox"/>
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2021.09.04	2024.09.03	<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	MY57110309	2021.10.10	2022.10.09	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NSLK 8127	8127-687	2021.06.08	2022.06.07	<input checked="" type="checkbox"/>
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.4m*3.1m*2.8m	N/A	2021.08.14	2024.08.13	<input checked="" type="checkbox"/>
Test Software	BALUN	BL410_E	V19.918	--	--	<input checked="" type="checkbox"/>

### 4.3 Test Enclosure list

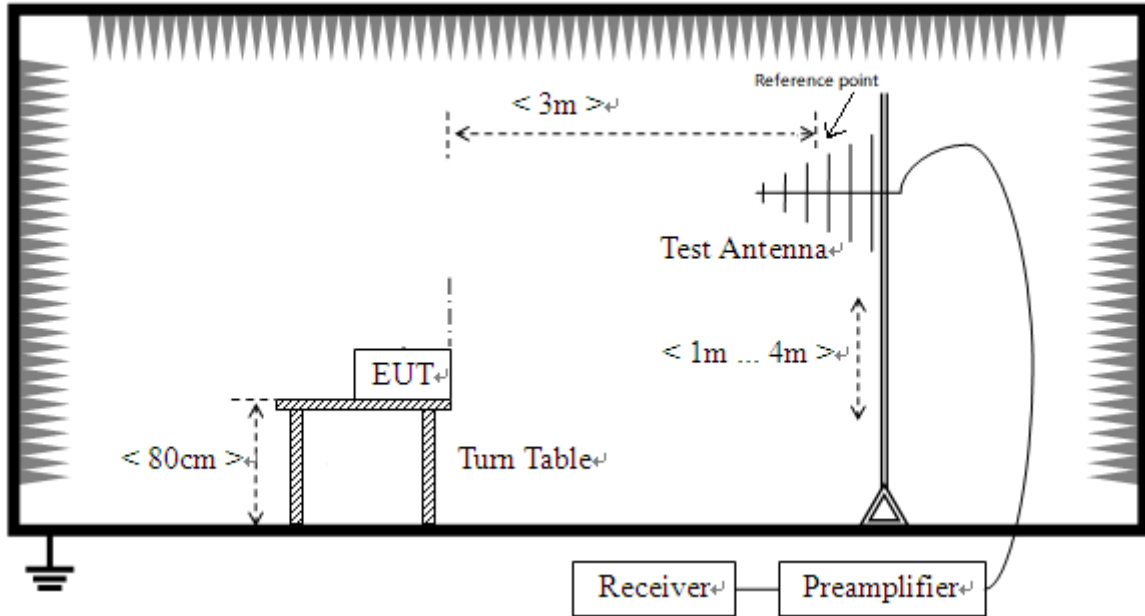
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	<input type="checkbox"/>
Laptop	Apple	A1465	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Laptop	Honor	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Printer	HP	DESKJET 1000	N/A	N/A	N/A	<input 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 type="checkbox"/>
Wireless Communication s Test Set	R&S	CMW500	142028	N/A	Cal. Due 2022.01.13	<input checked="" 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 + Headset
TC02	<u>The EGPRS 850 MHz RX Test Mode</u> EGPRS 850 MHz RX + EUT +Adapter + USB Cable + Battery + Headset
TC03	<u>The WCDMA Band 5 RX Test Mode</u> WCDMA Band 5 RX + EUT +Adapter + USB Cable + Battery + Headset
TC04	<u>The FDD LTE Band 5 RX Test Mode</u> LTE Band 5 RX + EUT +Adapter + USB Cable + Battery + Headset
TC05	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
TC06	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
TC07	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Laptop+ Headset + TF Card

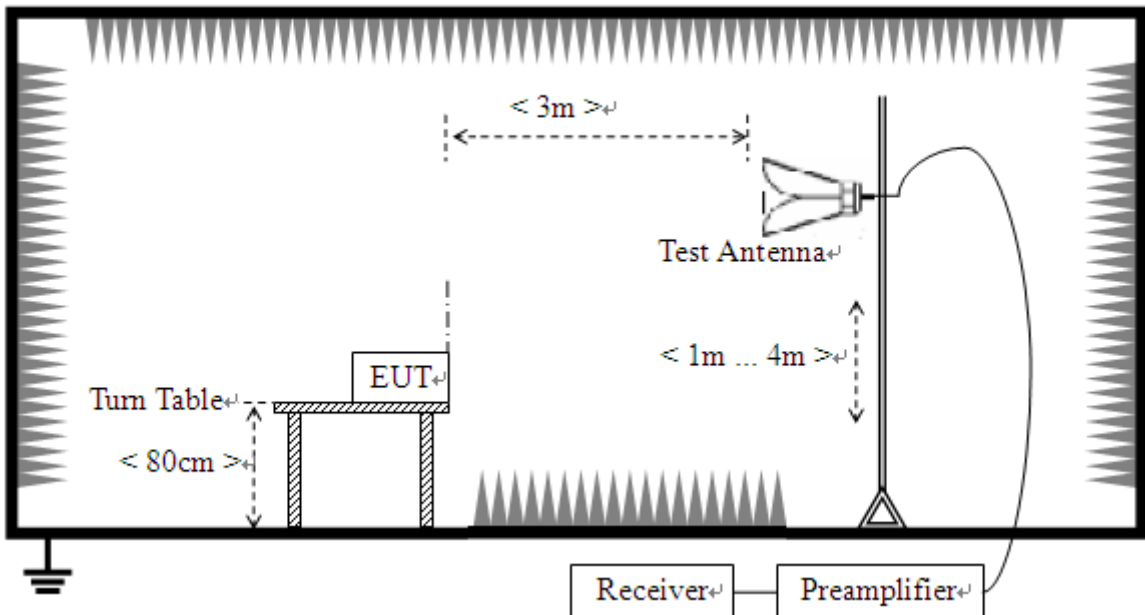
## 4.5 Test Setups

### Test Setup 1



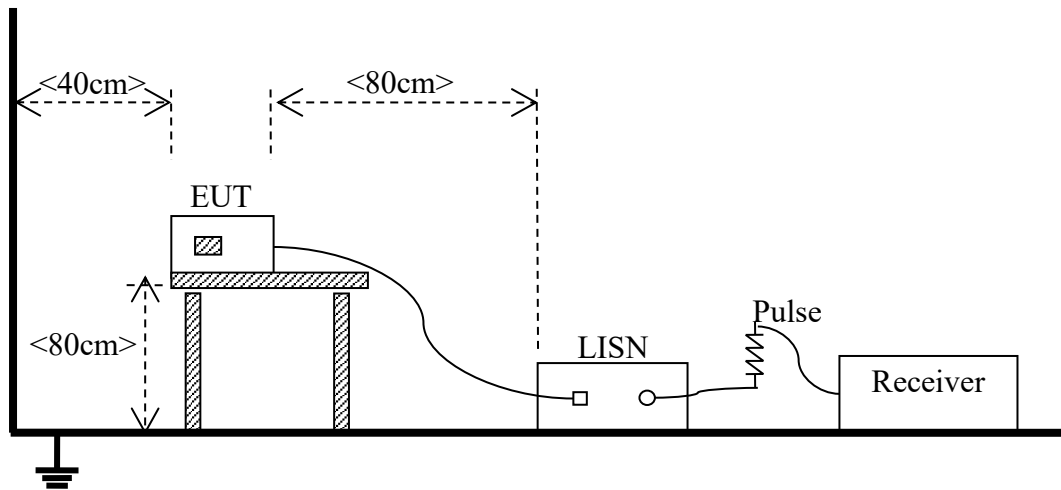
(For Radiated Emission Test (30 MHz-1 GHz))

### 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~TC07 <sup>Note</sup>
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC07 <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 ( $\text{dB}\mu\text{V/m}$ ) + 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. Results (dBuV) = Reading (dBuV) + Factor (dB)

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

2. Factor = Insertion loss + Cable loss

3. Over limit = Results – Limit.



# ANNEX A TEST RESULTS

## A.1 Radiated Emission

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

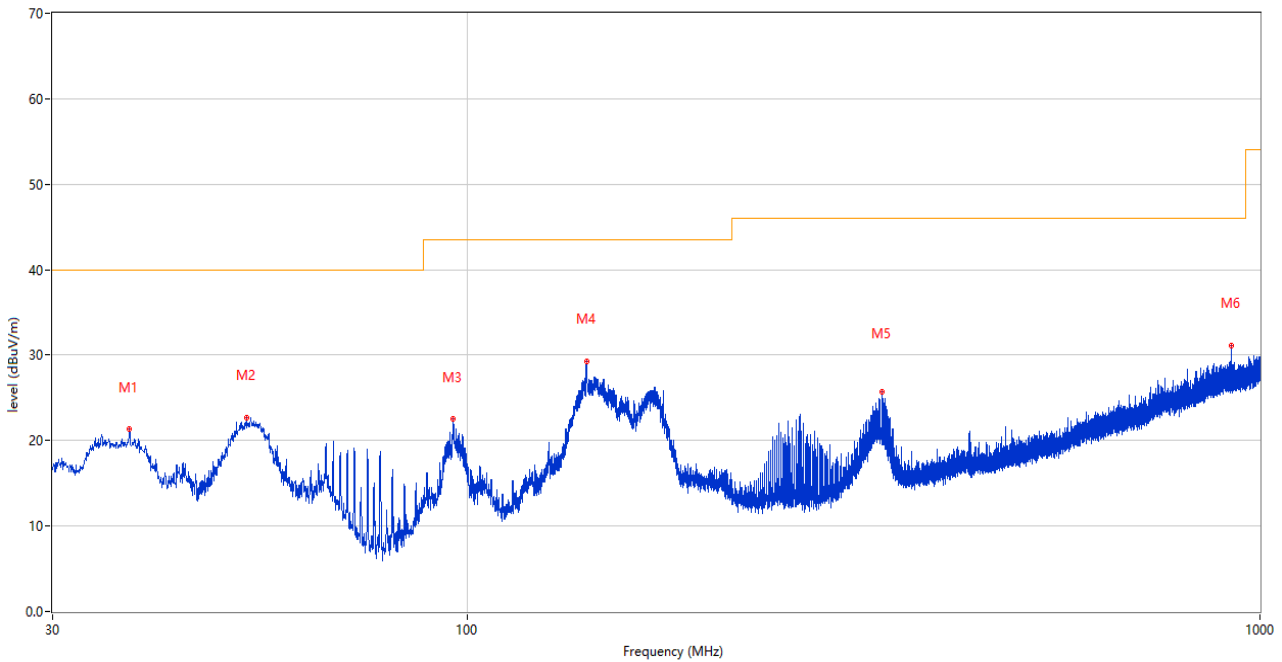
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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

### Test Data and Plots

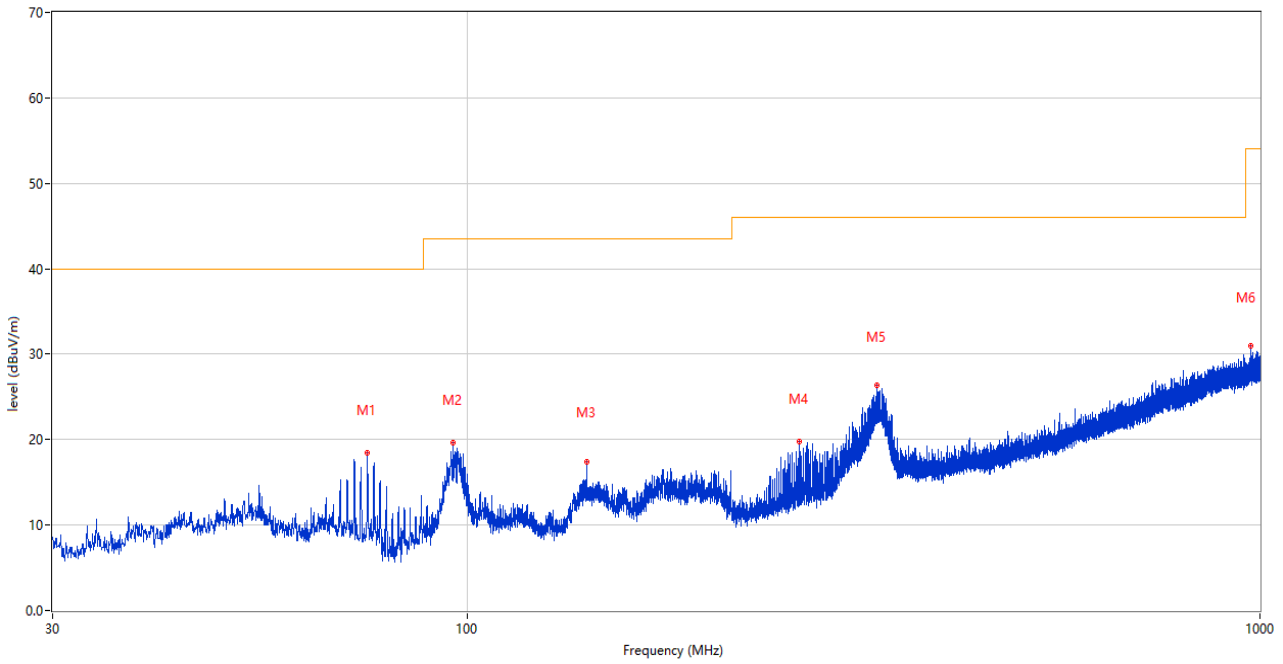
#### The Camera Test Mode

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



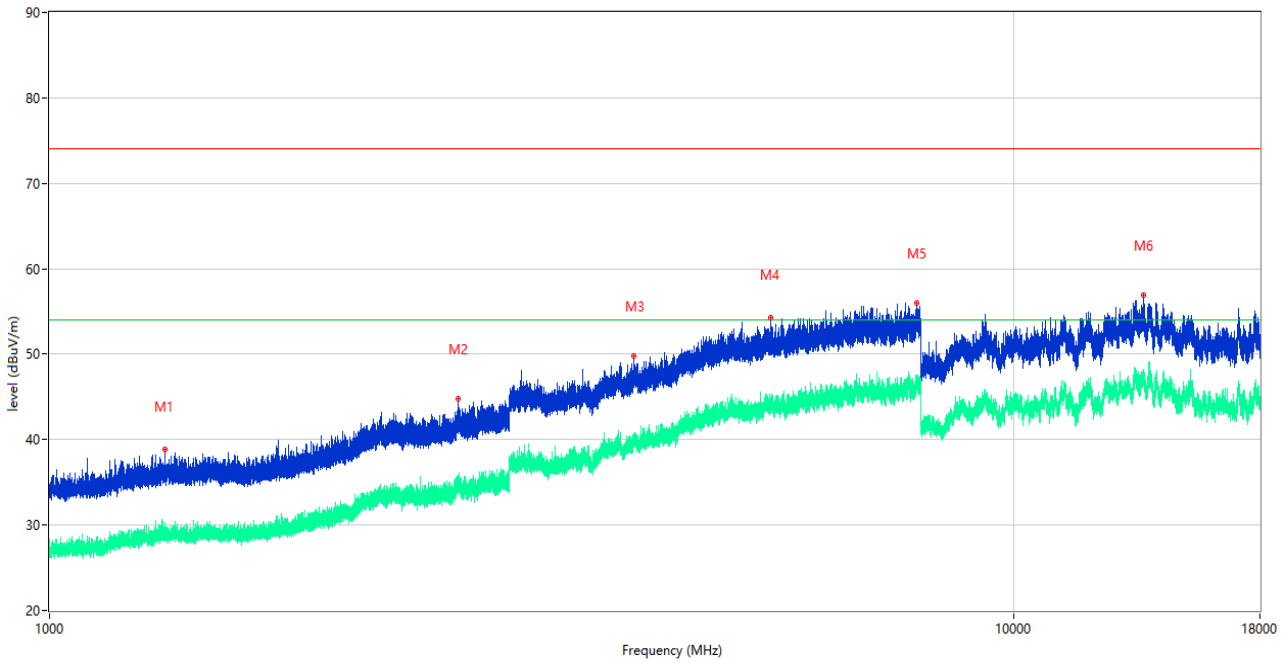
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	37.517	21.29	-27.41	40.0	-18.71	Peak	3.00	100	Vertical	Pass
2	52.698	22.73	-25.49	40.0	-17.27	Peak	137.00	100	Vertical	Pass
3	96.057	22.48	-27.37	43.5	-21.02	Peak	354.00	100	Vertical	Pass
4	141.550	29.24	-30.28	43.5	-14.26	Peak	232.00	100	Vertical	Pass
5	333.319	25.73	-22.58	46.0	-20.27	Peak	31.00	100	Vertical	Pass
6	921.575	31.06	-9.73	46.0	-14.94	Peak	59.00	100	Vertical	Pass

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



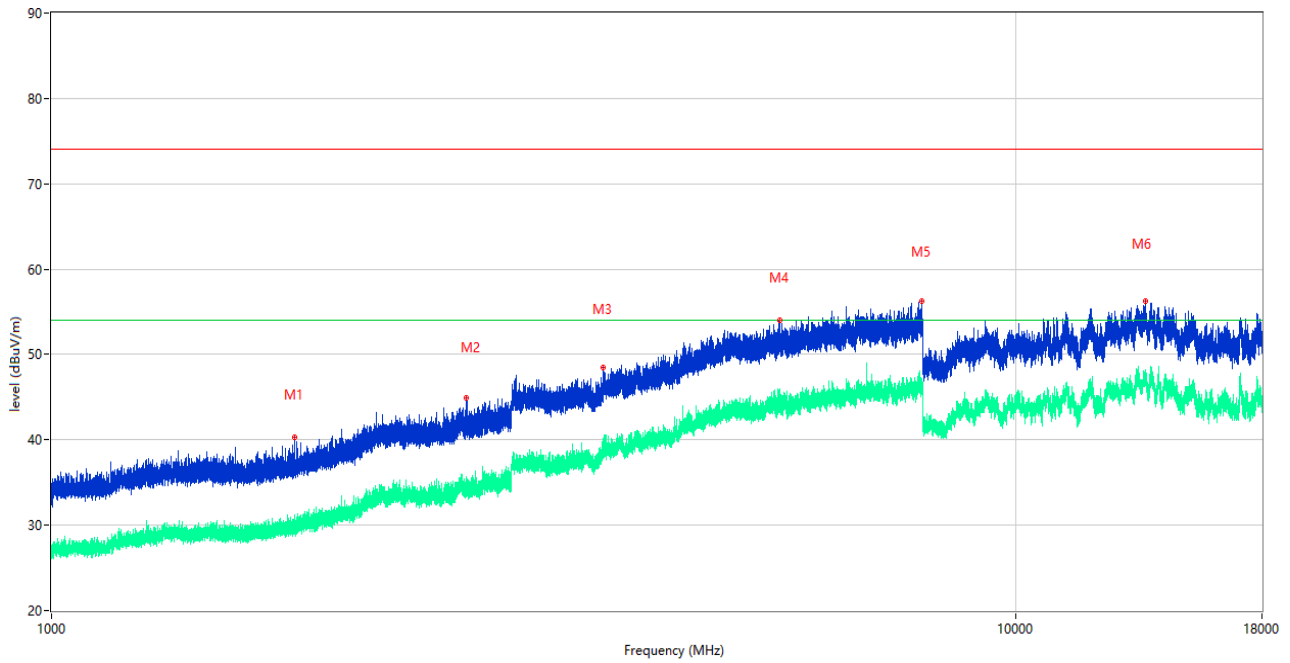
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	74.863	18.42	-30.85	40.0	-21.58	Peak	317.00	200	Horizontal	Pass
2	95.960	19.68	-27.39	43.5	-23.82	Peak	234.00	200	Horizontal	Pass
3	141.453	17.39	-30.29	43.5	-26.11	Peak	183.00	200	Horizontal	Pass
4	262.655	19.76	-24.55	46.0	-26.24	Peak	186.00	200	Horizontal	Pass
5	329.197	26.37	-22.82	46.0	-19.63	Peak	202.00	100	Horizontal	Pass
6	973.956	30.96	-8.80	54.0	-23.04	Peak	165.00	200	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	1317.300	38.89	-16.49	74.0	-35.11	Peak	125.00	150	Vertical	Pass
1**	1317.300	29.14	-16.49	54.0	-24.86	AV	125.00	150	Vertical	Pass
2	2654.000	44.76	-9.60	74.0	-29.24	Peak	0.00	150	Vertical	Pass
2**	2654.000	34.17	-9.60	54.0	-19.83	AV	0.00	150	Vertical	Pass
3	4036.000	49.78	-3.09	74.0	-24.22	Peak	4.00	150	Vertical	Pass
3**	4036.000	39.38	-3.09	54.0	-14.62	AV	4.00	150	Vertical	Pass
4	5597.000	54.21	0.69	74.0	-19.79	Peak	136.00	150	Vertical	Pass
4**	5597.000	43.52	0.69	54.0	-10.48	AV	136.00	150	Vertical	Pass
5	7937.250	55.96	3.32	74.0	-18.04	Peak	124.00	150	Vertical	Pass
5**	7937.250	46.36	3.32	54.0	-7.64	AV	124.00	150	Vertical	Pass
6	13639.000	56.88	5.04	74.0	-17.12	Peak	152.00	150	Vertical	Pass
6**	13639.000	47.23	5.04	54.0	-6.77	AV	152.00	150	Vertical	Pass

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

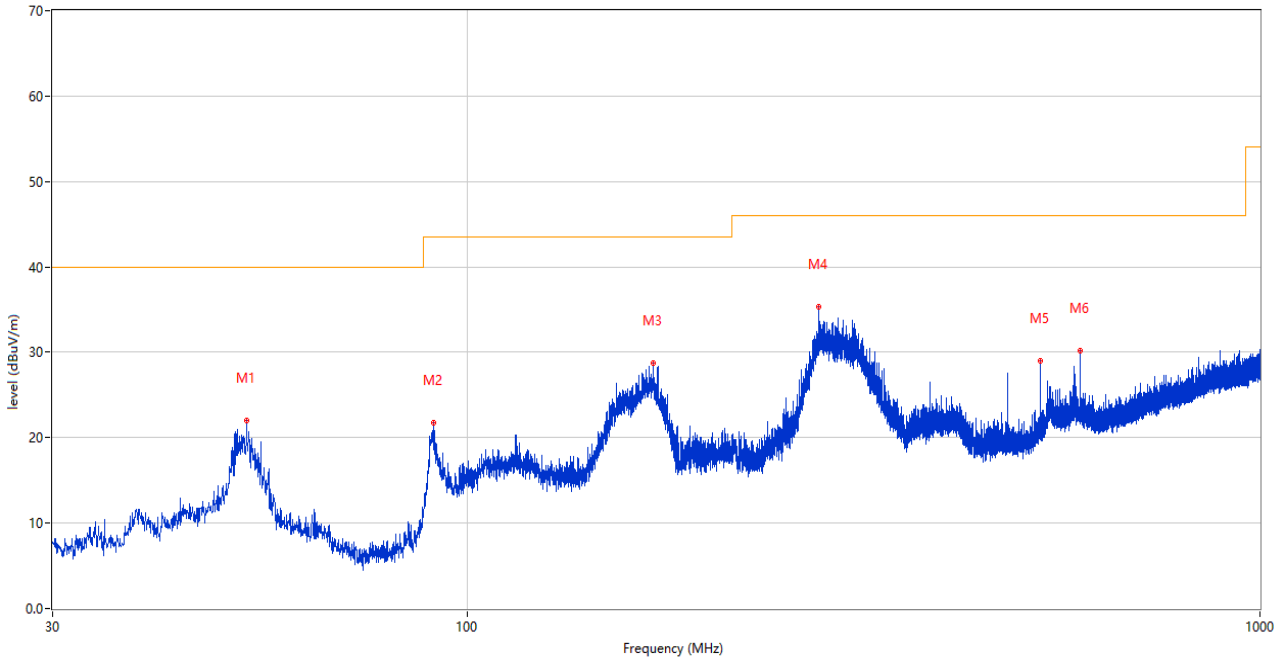


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1787.700	40.25	-16.17	74.0	-33.75	Peak	77.00	150	Horizontal	Pass
1**	1787.700	29.67	-16.17	54.0	-24.33	AV	77.00	150	Horizontal	Pass
2	2692.800	44.87	-9.70	74.0	-29.13	Peak	339.00	150	Horizontal	Pass
2**	2692.800	35.19	-9.70	54.0	-18.81	AV	339.00	150	Horizontal	Pass
3	3733.750	48.43	-4.17	74.0	-25.57	Peak	356.00	150	Horizontal	Pass
3**	3733.750	38.53	-4.17	54.0	-15.47	AV	356.00	150	Horizontal	Pass
4	5688.000	53.97	0.67	74.0	-20.03	Peak	141.00	150	Horizontal	Pass
4**	5688.000	43.70	0.67	54.0	-10.30	AV	141.00	150	Horizontal	Pass
5	7983.250	56.22	2.13	74.0	-17.78	Peak	93.00	150	Horizontal	Pass
5**	7983.250	47.05	2.13	54.0	-6.95	AV	93.00	150	Horizontal	Pass
6	13646.500	56.20	5.10	74.0	-17.80	Peak	345.00	150	Horizontal	Pass
6**	13646.500	48.08	5.10	54.0	-5.92	AV	345.00	150	Horizontal	Pass

Test Data and Plots

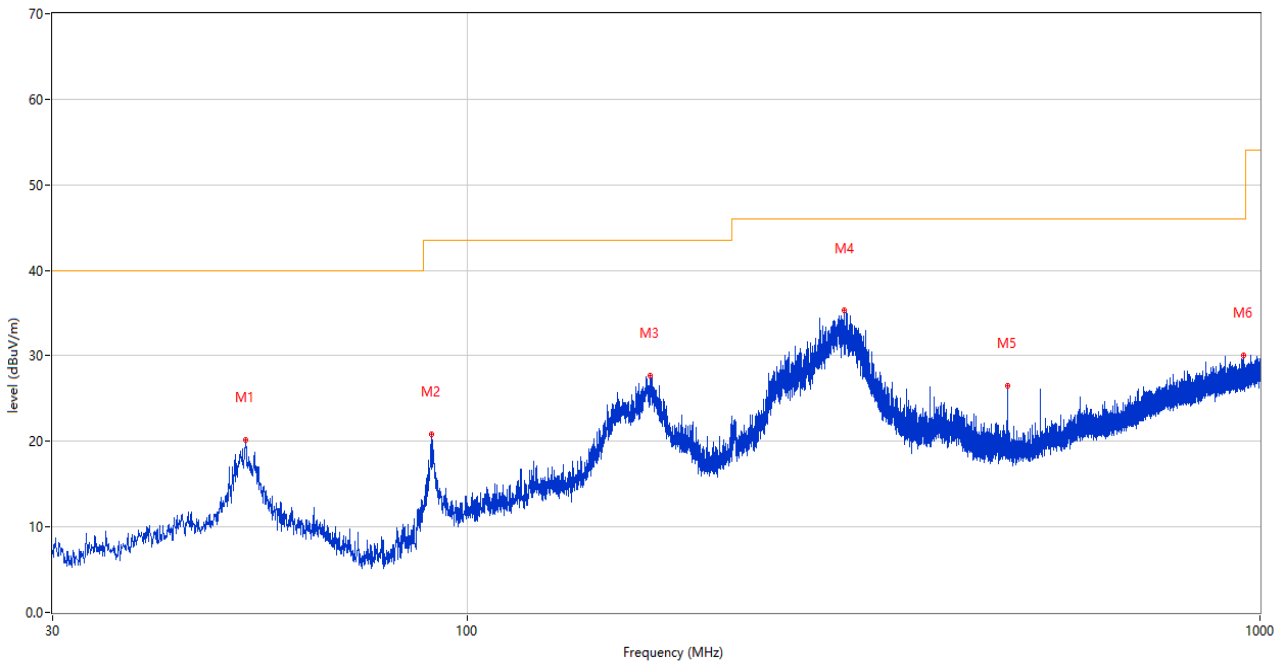
The USB Test Mode

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



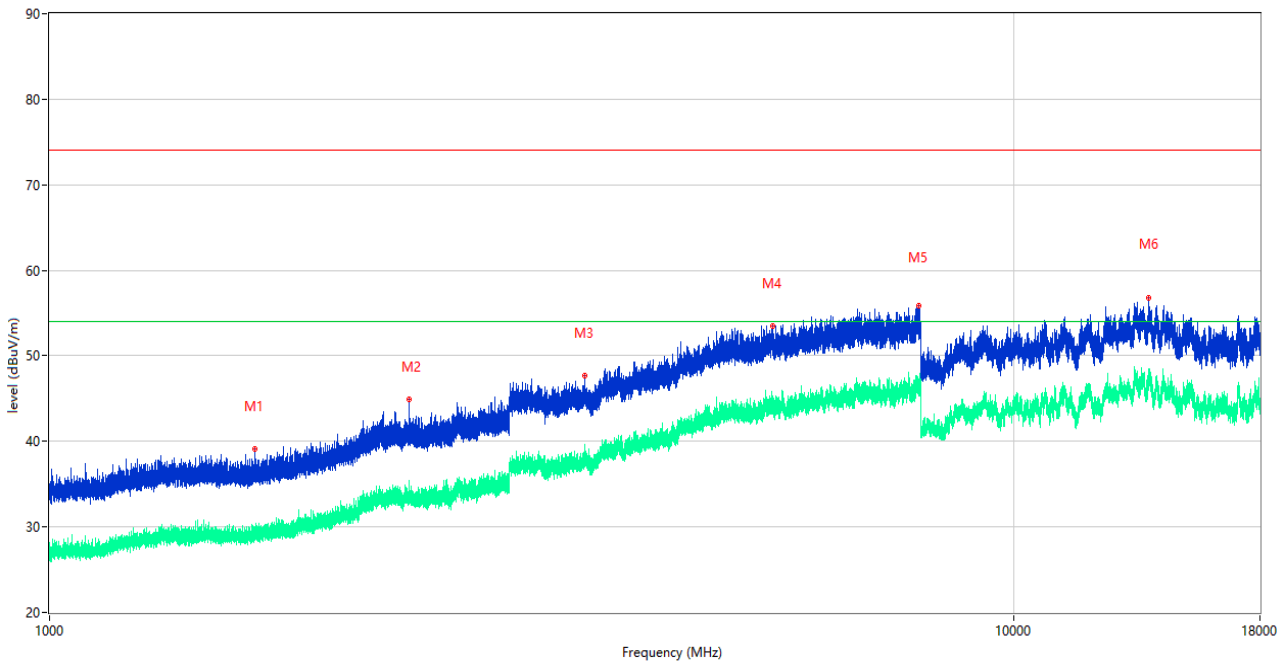
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	52.698	22.02	-25.49	40.0	-17.98	Peak	24.00	100	Vertical	Pass
2	90.625	21.73	-28.38	43.5	-21.77	Peak	106.00	100	Vertical	Pass
3	171.572	28.72	-29.09	43.5	-14.78	Peak	307.00	100	Vertical	Pass
4	277.350	35.32	-24.31	46.0	-10.68	Peak	34.00	200	Vertical	Pass
5	527.998	29.04	-17.95	46.0	-16.96	Peak	0.00	200	Vertical	Pass
6	593.958	30.13	-16.07	46.0	-15.87	Peak	360.00	100	Vertical	Pass

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



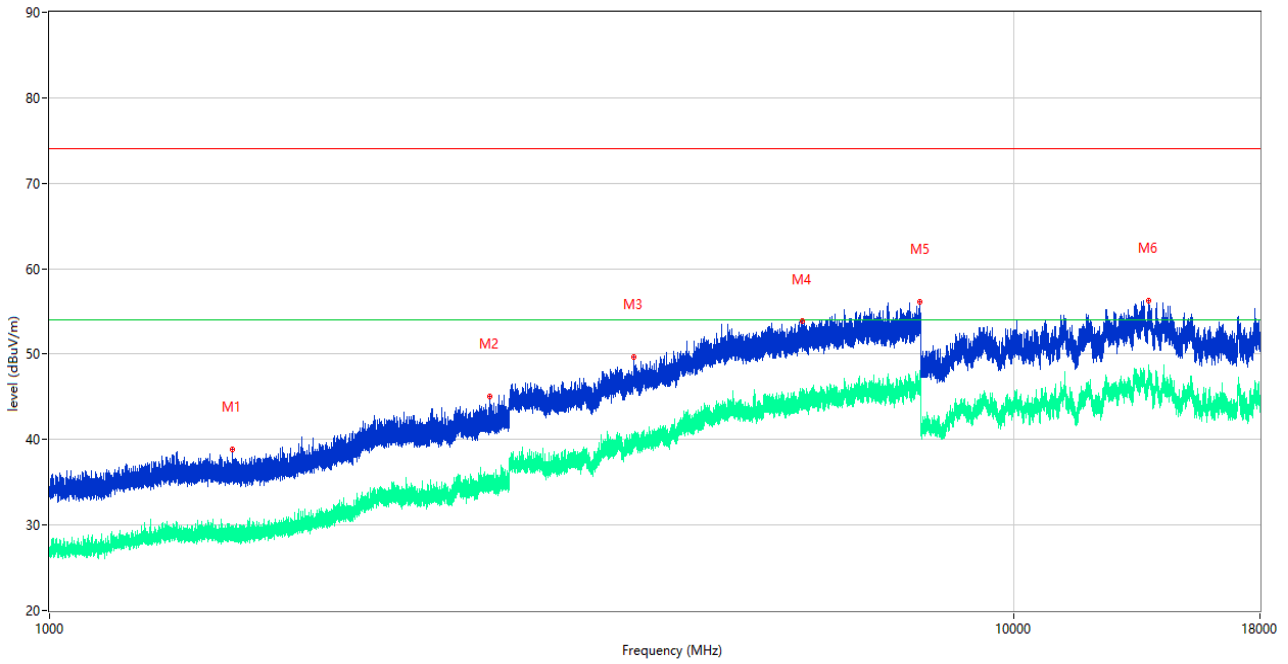
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	52.553	20.14	-25.47	40.0	-19.86	Peak	141.00	200	Horizontal	Pass
2	90.140	20.86	-28.47	43.5	-22.64	Peak	29.00	200	Horizontal	Pass
3	170.310	27.74	-29.17	43.5	-15.76	Peak	0.00	200	Horizontal	Pass
4	298.836	35.30	-23.76	46.0	-10.70	Peak	105.00	100	Horizontal	Pass
5	479.983	26.47	-19.19	46.0	-19.53	Peak	211.00	100	Horizontal	Pass
6	953.391	30.03	-9.34	46.0	-15.97	Peak	0.00	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	1634.400	39.08	-16.70	74.0	-34.92	Peak	313.00	150	Vertical	Pass
1**	1634.400	29.10	-16.70	54.0	-24.90	AV	313.00	150	Vertical	Pass
2	2360.800	44.87	-11.16	74.0	-29.13	Peak	196.00	150	Vertical	Pass
2**	2360.800	33.92	-11.16	54.0	-20.08	AV	196.00	150	Vertical	Pass
3	3588.000	47.66	-5.09	74.0	-26.34	Peak	161.00	150	Vertical	Pass
3**	3588.000	37.57	-5.09	54.0	-16.43	AV	161.00	150	Vertical	Pass
4	5617.000	53.51	0.62	74.0	-20.49	Peak	340.00	150	Vertical	Pass
4**	5617.000	44.39	0.62	54.0	-9.61	AV	340.00	150	Vertical	Pass
5	7960.750	55.92	2.69	74.0	-18.08	Peak	150.00	150	Vertical	Pass
5**	7960.750	46.47	2.69	54.0	-7.53	AV	150.00	150	Vertical	Pass
6	13802.000	56.80	5.79	74.0	-17.20	Peak	174.00	150	Vertical	Pass
6**	13802.000	47.54	5.79	54.0	-6.46	AV	174.00	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	1546.200	38.85	-16.66	74.0	-35.15	Peak	76.00	150	Horizontal	Pass
1**	1546.200	28.82	-16.66	54.0	-25.18	AV	76.00	150	Horizontal	Pass
2	2862.400	45.05	-9.19	74.0	-28.95	Peak	0.00	150	Horizontal	Pass
2**	2862.400	34.96	-9.19	54.0	-19.04	AV	0.00	150	Horizontal	Pass
3	4038.250	49.64	-2.85	74.0	-24.36	Peak	9.00	150	Horizontal	Pass
3**	4038.250	39.84	-2.85	54.0	-14.16	AV	9.00	150	Horizontal	Pass
4	6038.500	53.93	1.14	74.0	-20.07	Peak	140.00	150	Horizontal	Pass
4**	6038.500	44.53	1.14	54.0	-9.47	AV	140.00	150	Horizontal	Pass
5	7983.000	56.13	2.12	74.0	-17.87	Peak	44.00	150	Horizontal	Pass
5**	7983.000	45.18	2.12	54.0	-8.82	AV	44.00	150	Horizontal	Pass
6	13809.000	56.22	5.70	74.0	-17.78	Peak	241.00	150	Horizontal	Pass
6**	13809.000	47.27	5.70	54.0	-6.73	AV	241.00	150	Horizontal	Pass



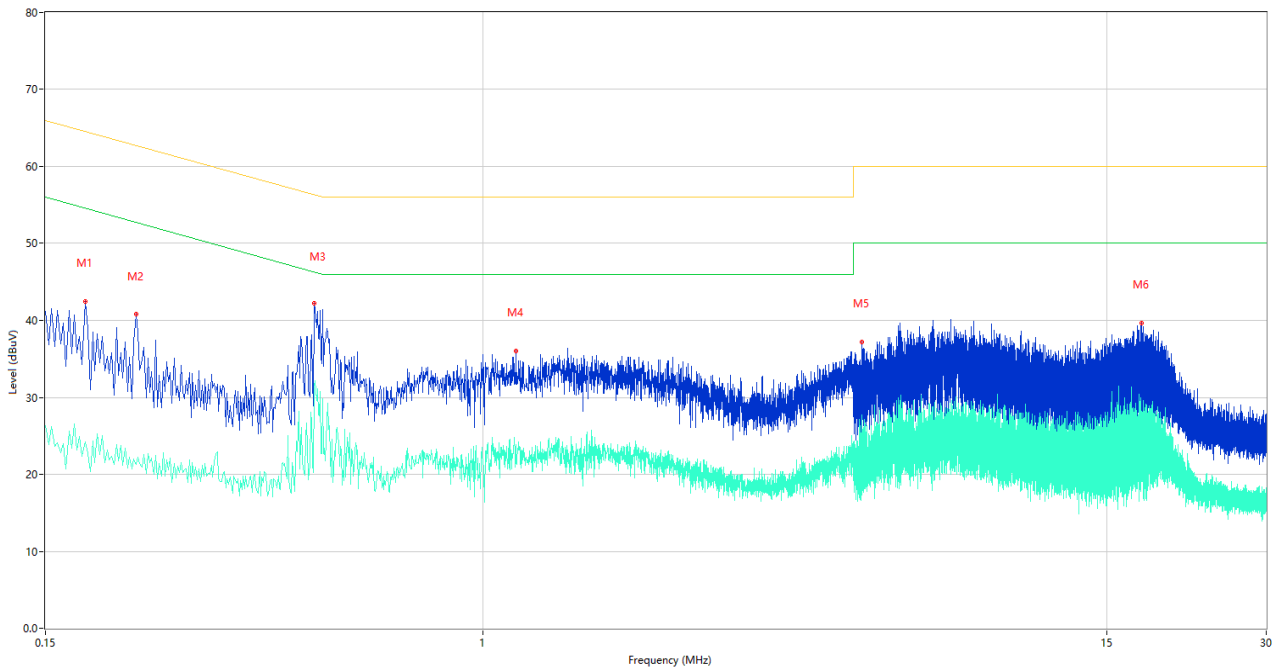
## A.2 Conducted Emission

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

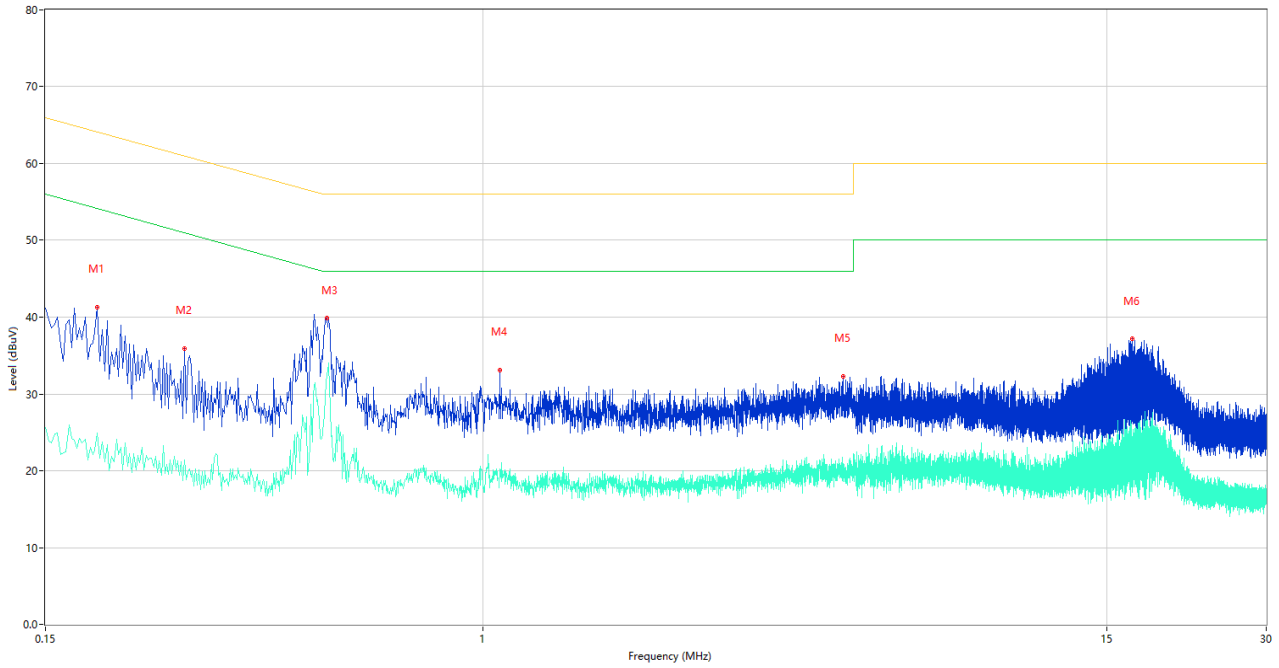
#### The Camera Test Mode

##### A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.178	42.43	10.14	64.58	-22.15	Peak	L	Pass
1**	0.178	24.16	10.14	54.58	-30.42	AV	L	Pass
2	0.222	40.77	10.09	62.74	-21.97	Peak	L	Pass
2**	0.222	21.25	10.09	52.74	-31.49	AV	L	Pass
3	0.482	42.18	10.11	56.30	-14.12	Peak	L	Pass
3**	0.482	31.46	10.11	46.30	-14.84	AV	L	Pass
4	1.156	36.05	10.00	56.00	-19.95	Peak	L	Pass
4**	1.156	23.90	10.00	46.00	-22.10	AV	L	Pass
5	5.194	37.15	9.96	60.00	-22.85	Peak	L	Pass
5**	5.194	27.73	9.96	50.00	-22.27	AV	L	Pass
6	17.490	39.62	10.18	60.00	-20.38	Peak	L	Pass
6**	17.490	26.72	10.18	50.00	-23.28	AV	L	Pass

A.2.2 N Phase

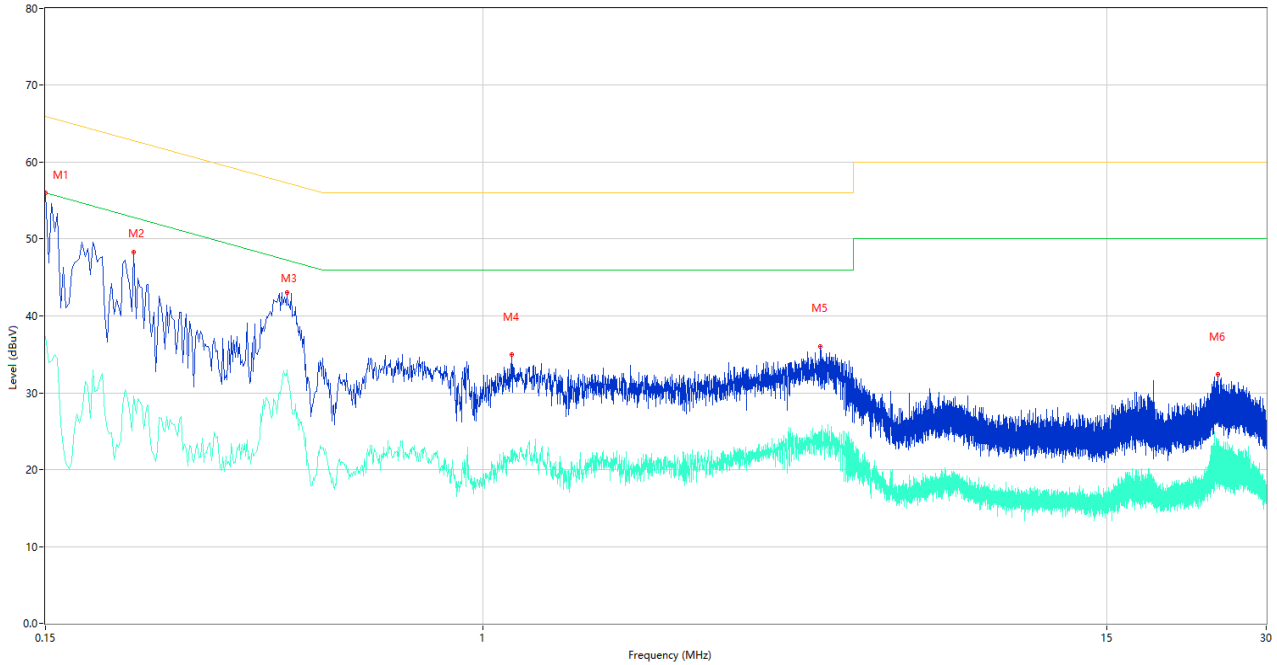


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.188	41.33	10.12	64.12	-22.79	Peak	N	Pass
1**	0.188	24.92	10.12	54.12	-29.20	AV	N	Pass
2	0.274	35.94	10.07	61.00	-25.06	Peak	N	Pass
2**	0.274	21.45	10.07	51.00	-29.55	AV	N	Pass
3	0.508	39.89	10.11	56.00	-16.11	Peak	N	Pass
3**	0.508	32.68	10.11	46.00	-13.32	AV	N	Pass
4	1.076	33.11	10.02	56.00	-22.89	Peak	N	Pass
4**	1.076	19.94	10.02	46.00	-26.06	AV	N	Pass
5	4.782	32.30	9.96	56.00	-23.70	Peak	N	Pass
5**	4.782	20.61	9.96	46.00	-25.39	AV	N	Pass
6	16.768	37.18	10.18	60.00	-22.82	Peak	N	Pass
6**	16.768	24.48	10.18	50.00	-25.52	AV	N	Pass

Test Data and Plots

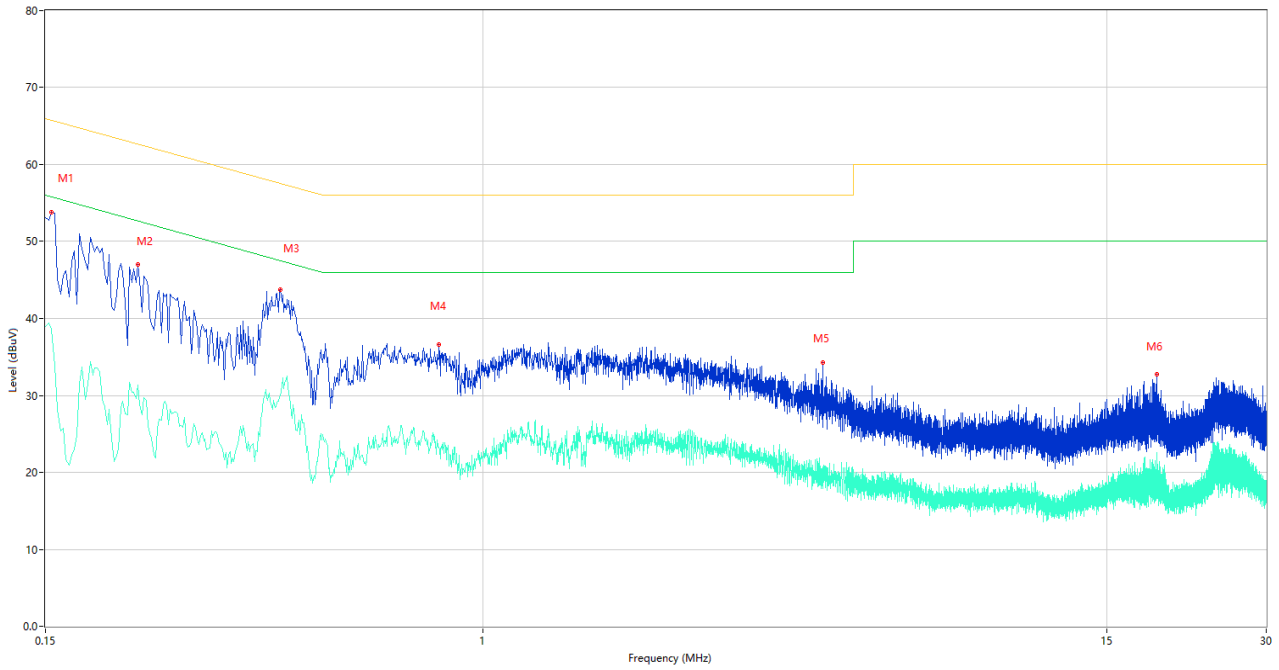
The USB Test Mode

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	55.92	10.19	66.00	-10.08	Peak	L	Pass
1**	0.150	37.27	10.19	56.00	-18.73	AV	L	Pass
2	0.220	48.28	10.09	62.82	-14.54	Peak	L	Pass
2**	0.220	29.58	10.09	52.82	-23.24	AV	L	Pass
3	0.428	43.05	10.10	57.29	-14.24	Peak	L	Pass
3**	0.428	33.04	10.10	47.29	-14.25	AV	L	Pass
4	1.136	34.98	10.01	56.00	-21.02	Peak	L	Pass
4**	1.136	22.62	10.01	46.00	-23.38	AV	L	Pass
5	4.328	35.99	10.04	56.00	-20.01	Peak	L	Pass
5**	4.328	24.13	10.04	46.00	-21.87	AV	L	Pass
6	24.302	32.42	10.16	60.00	-27.58	Peak	L	Pass
6**	24.302	23.68	10.16	50.00	-26.32	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	52.74	10.19	65.89	-13.15	Peak	N	Pass
1**	0.152	39.46	10.19	55.89	-16.43	AV	N	Pass
2	0.224	47.05	10.09	62.67	-15.62	Peak	N	Pass
2**	0.224	31.40	10.09	52.67	-21.27	AV	N	Pass
3	0.416	43.72	10.09	57.53	-13.81	Peak	N	Pass
3**	0.416	29.98	10.09	47.53	-17.55	AV	N	Pass
4	0.828	36.62	10.06	56.00	-19.38	Peak	N	Pass
4**	0.828	23.31	10.06	46.00	-22.69	AV	N	Pass
5	4.372	34.25	10.03	56.00	-21.75	Peak	N	Pass
5**	4.372	20.72	10.03	46.00	-25.28	AV	N	Pass
6	18.656	32.75	10.21	60.00	-27.25	Peak	N	Pass
6**	18.656	20.03	10.21	50.00	-29.97	AV	N	Pass

## **ANNEX B TEST SETUP PHOTOS**

Please refer the document "BL-SZ2210380-AE-1.PDF".

## **ANNEX C EUT EXTERNAL PHOTOS**

Please refer the document "BL-SZ2210380-AW.PDF".

## **ANNEX D EUT INTERNAL PHOTOS**

Please refer the document "BL-SZ2210380-AI.PDF".

--END OF REPORT--