

FCC

EMC

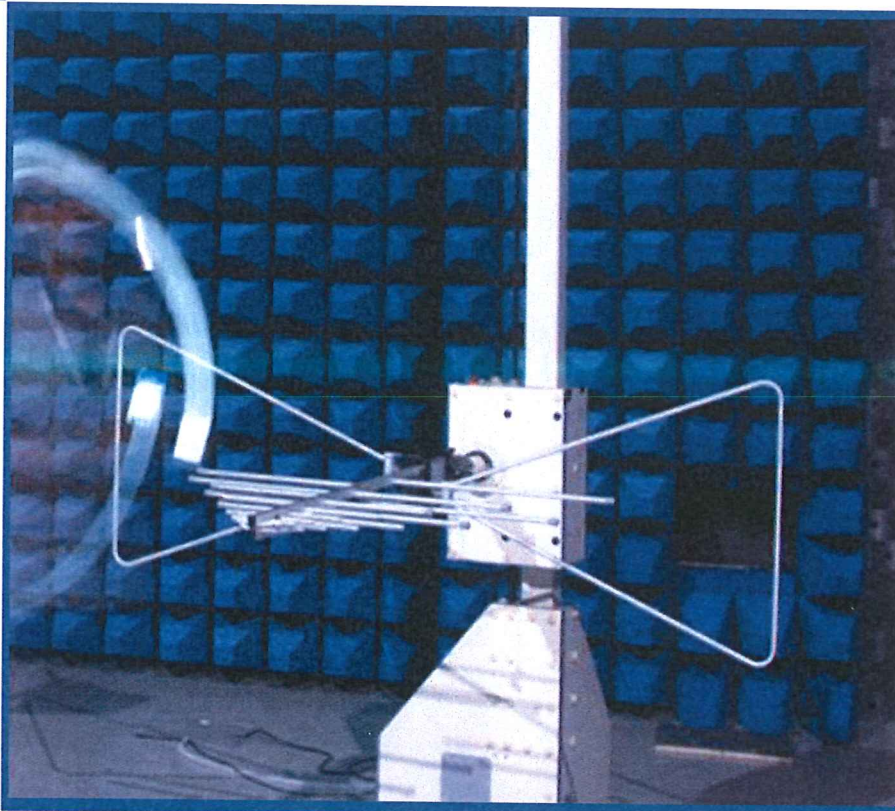
TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Mobile Phone

ISSUED TO
Realme Chongqing Mobile Telecommunications Corp., Ltd.
No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing, China



Tested by: Liu Zhenxiang
Liu Zhenxiang
Date: Mar. 19, 2021

Approved by: Liao Jianming
(Technical Director)
Date: Mar. 19, 2021



Report No.: BL-SZ2120375-401
EUT Name: Mobile Phone
Model Name: RMX3231
Brand Name: realme
Test Standard: 47 CFR Part 15 Subpart B
FCC ID: 2AUYFRMX3231

Test Conclusion: Pass
Test Date: Feb. 24, 2021 ~ Feb. 26, 2021
Date of Issue: Mar. 19, 2021

NOTE: This test report of test results only related to testing samples, which can be duplicated completely for the legal use with the approval of the applicant; it shall not be reproduced except in full, without the written approval of Shenzhen BALUN Technology Co., Ltd. Any objections should be raised within thirty days from the date of issue. To validate the report, please contact us.

Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Mar. 19, 2021</u>	<u>Initial Issue</u>

TABLE OF CONTENTS

1	GENERAL INFORMATION	4
1.1	Identification of the Testing Laboratory	4
1.2	Identification of the Responsible Testing Location	4
1.3	Laboratory Condition	4
1.4	Announce	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
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	Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address	No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing, China

2.2 Manufacturer Information

Manufacturer	Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address	No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing, China

2.3 Factory Information

Factory	Realme Chongqing Mobile Telecommunications Corp., Ltd.
Address	No.178 Yulong Avenue, Yufengshan, Yubei District, Chongqing, China

2.4 General Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Model Name Under Test	RMX3231
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	AA984
Software Version	Android 11
Dimensions (Approx.)	165.2x76.4x8.9(mm)
Weight (Approx.)	190g(with battery)

2.5 Ancillary Equipment

Ancillary Equipment 1	Li-Polymer Battery 1	
	Brand Name	realme
	Model No.	BLP729
	Serial No.	N/A
	Capacitance	Rated: 4880mAh/18.88Wh Typical: 5000mAh/19.35Wh
	Rated Voltage	3.87 V
	Limited Voltage	4.45 V
	Manufacturer	Huizhou Desay Battery Co., LTD
Ancillary Equipment 2	Li-Polymer Battery alternative) 2	
	Brand Name	realme
	Model No.	BLP729
	Serial No.	N/A
	Capacitance	Rated: 4880mAh/18.88Wh Typical: 5000mAh/19.35Wh
	Rated Voltage	3.87 V
	Limited Voltage	4.45 V
	Manufacturer	NingDe Amperex Technology Limited
Ancillary Equipment 3	Li-Polymer Battery alternative) 3	
	Brand Name	realme
	Model No.	BLP729
	Serial No.	N/A
	Capacitance	Rated: 4880mAh/18.88Wh Typical: 5000mAh/19.35Wh
	Rated Voltage	3.87 V
	Limited Voltage	4.45 V
	Manufacturer	TWS Technology (Guangzhou) Limited
Ancillary Equipment 4	Li-Polymer Battery alternative) 4	
	Brand Name	realme
	Model No.	BLP729
	Serial No.	N/A
	Capacitance	Rated: 4880mAh/18.88Wh Typical: 5000mAh/19.35Wh
	Rated Voltage	3.87 V
	Limited Voltage	4.45 V
	Manufacturer	SUNWODA Electronic Co., Ltd.
Ancillary Equipment 5	Power Supply Unit(alternative) 1	
	Brand Name	realme
	Model No.	OP52KAUH
	Serial No.	N/A
	Rated Input	100-240V~ 50/60Hz 0.4A
	Rated Output	5.0VDC 2A (US Plug)

Ancillary Equipment 6	Power Supply Unit(alternative) 2	
	Brand Name	realme
	Model No.	OP52YAUH
	Serial No.	N/A
	Rated Input	100-240V~ 50/60Hz 0.4A
	Rated Output	5.0VDC 2A (US Plug)
Ancillary Equipment 7	Power Supply Unit(alternative) 3	
	Brand Name	realme
	Model No.	OP52JAUH
	Serial No.	N/A
	Rated Input	100-240V~ 50/60Hz 0.4A
	Rated Output	5.0VDC 2A (US Plug)
Ancillary Equipment 8	USB Cable	
	Model No.	DL122
	Length (Approx.)	1.0 m
Note 1: Letter in () means plug type.		
Note 2: All adapters are tested, only the worst data of OP52KAUH (EU Plug 100-240VAC) shown in this report.		
Note 3: All batteries are tested, only the worst data of BLP729 (TWS) 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 FDD LTE Band 2/4/5/7/12/17/26/66 TDD LTE Band 38/41 Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) GPS, GLONASS, BDS, Galileo
-----------------------------------	--

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

The Highest Speed of Processor	1.6 GHz
--------------------------------	---------

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

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

3.2 Verdict

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

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 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	2020.06.09	2021.06.08	☒
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	9168-0883	2020.05.11	2022.05.10	☒
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	N/A	2018.08.08	2021.08.07	☒
Test Software	BALUN	BL410_E	V19.918	--	--	☒

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

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

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	☒
LISN	SCHWARZBECK	NSLK 8127	8127-687	2020.06.09	2021.06.08	☒
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.4m*3.1m*2 .8m	N/A	2018.08.16	2021.08.15	☒
Test Software	BALUN	BL410_E	V19.918	--	--	☒

4.3 Test Enclosure list

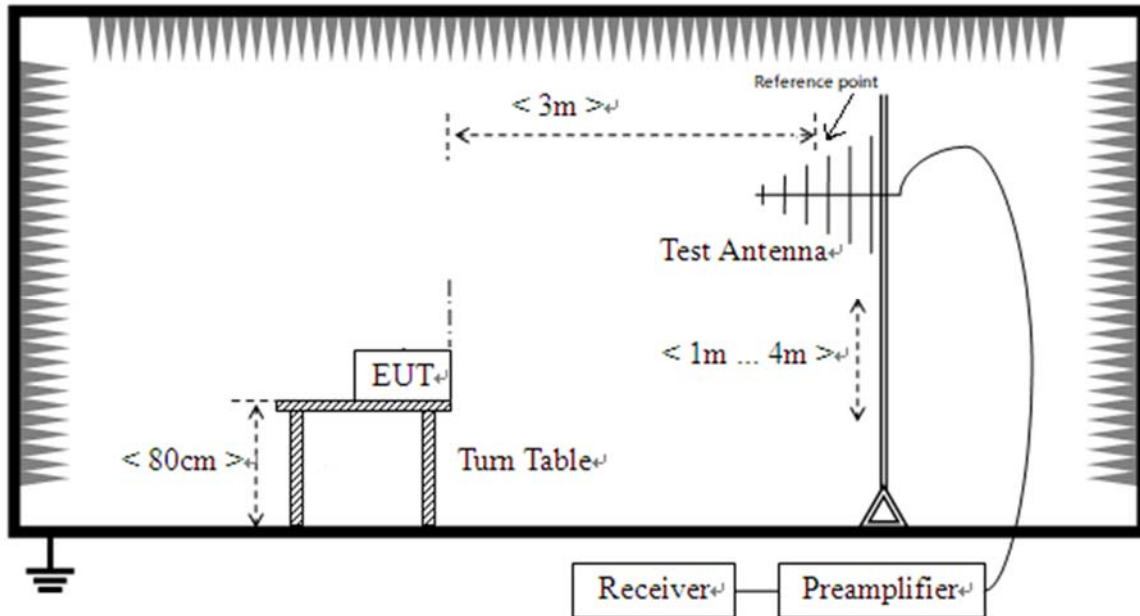
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	☐
Laptop	Apple	A1465	N/A	N/A	N/A	☒
Printer	HP	DESKJET 1000	N/A	N/A	N/A	☐
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	☐
Mouse	Logitech	M100	N/A	N/A	N/A	☐
USB disk	Kingston	N/A	N/A	N/A	N/A	☐
TF Card	Kingston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

4.4 Test Configurations

Test Configurations (TC) No.	Description
TC01	<u>The GSM 850 MHz RX Test Mode</u> GSM 850 MHz RX + EUT +Adapter + USB Cable + Battery + Earphone + TF card
TC02	<u>The WCDMA Band 5 RX Test Mode</u> WCDMA Band 5 RX + EUT +Adapter + USB Cable + Battery + Earphone + TF card
TC03	<u>The FDD LTE Band 5 RX Test Mode</u> LTE Band 5 RX + EUT +Adapter + USB Cable + Battery + Earphone + TF card
TC04	<u>The FDD LTE Band 12 RX Test Mode</u> LTE Band 12 RX + EUT +Adapter + USB Cable + Battery + Earphone + TF card
TC05	<u>The FDD LTE Band 17 RX Test Mode</u> LTE Band 17 RX + EUT +Adapter + USB Cable + Battery + Earphone + TF card
TC06	<u>The FDD LTE Band 26 RX Test Mode</u> LTE Band 26 RX + EUT +Adapter + USB Cable + Battery + Earphone + TF card
TC07	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Earphone + TF Card
TC08	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery + Earphone + TF Card
TC09	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Laptop+ Earphone + TF Card

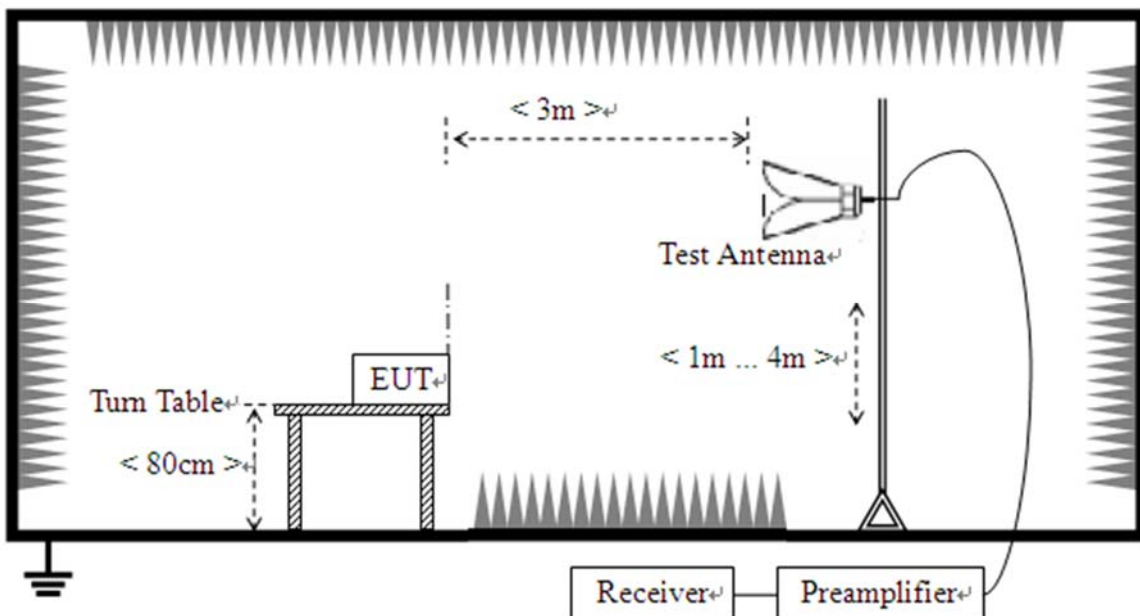
4.5 Test Setups

Test Setup 1



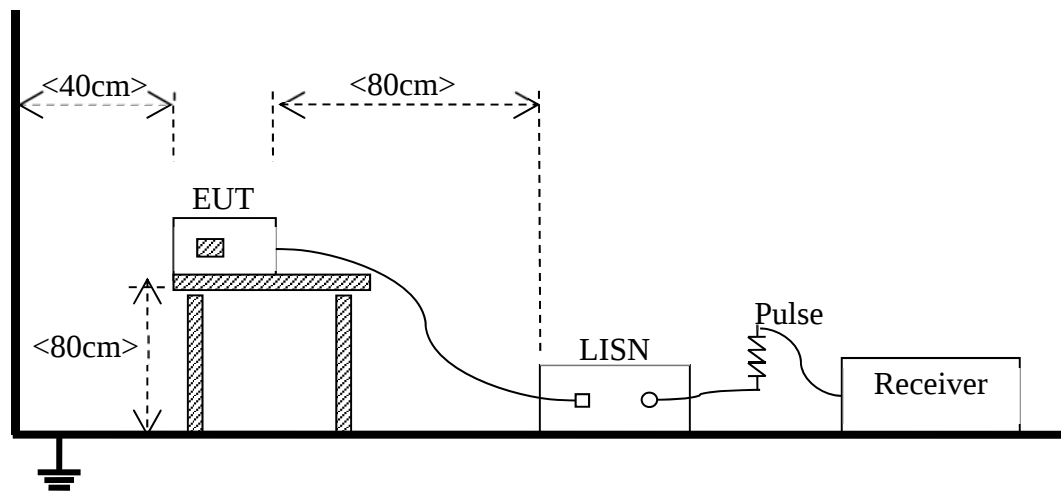
(For Radiated Emission Test (30 MHz-1 GHz))

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~TC09 ^{Note}
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC09 ^{Note}
Note: Based on client request, all normal using modes of the normal function were tested but only the worst test data of the worst mode is reported by this report. The Camera Test Mode is the worst mode in this report.		

5 TEST ITEMS

5.1 Emission Tests

5.1.1 Radiated Emission

5.1.1.1 Limit

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

NOTE:

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

5.1.1.2 Test Setup

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

5.1.1.3 Test Procedure

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

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

5.1.1.4 Test Result

Please refer to ANNEX A.1.

NOTE:

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

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

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

3. Over limit = Results – Limit.

5.1.2 Conducted Emission

5.1.2.1 Test Limit

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

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

NOTE:

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

5.1.2.2 Test Setup

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

5.1.2.3 Test Procedure

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

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

5.1.2.4 Test Result

Please refer to ANNEX A.2.

NOTE:

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

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

2. Factor = Insertion loss + Cable loss

3. Over limit = Results – Limit.

ANNEX A TEST RESULTS

A.1 Radiated Emission

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

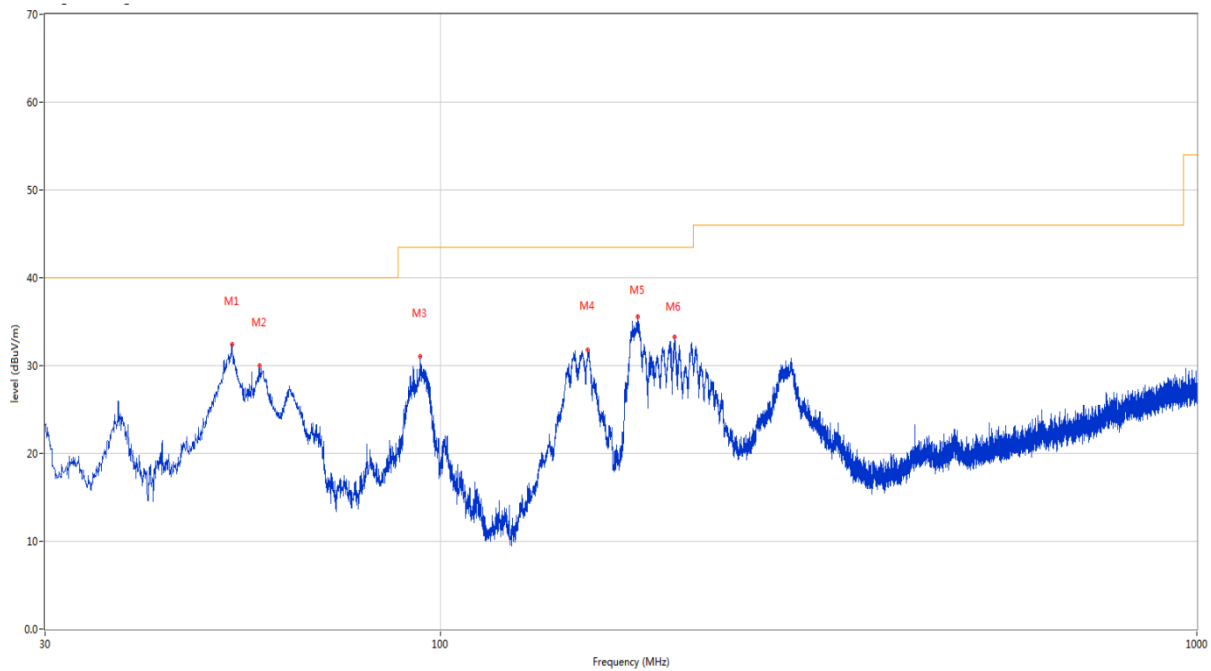
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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

Test Data and Plots

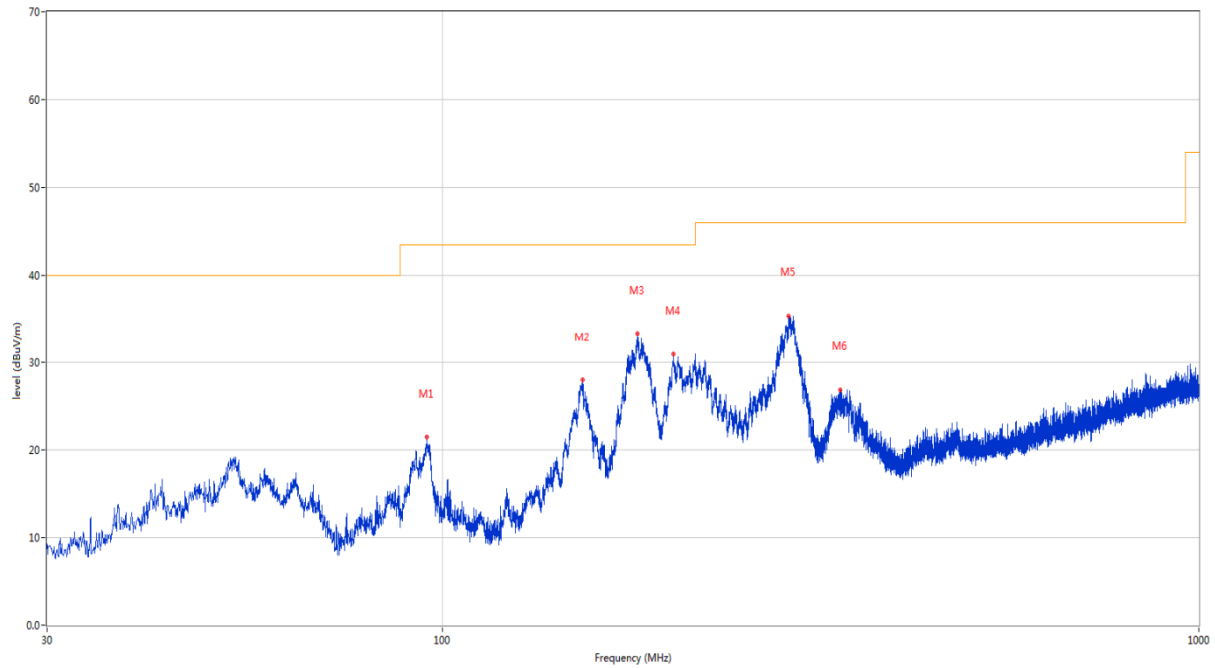
The Camera Test Mode

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



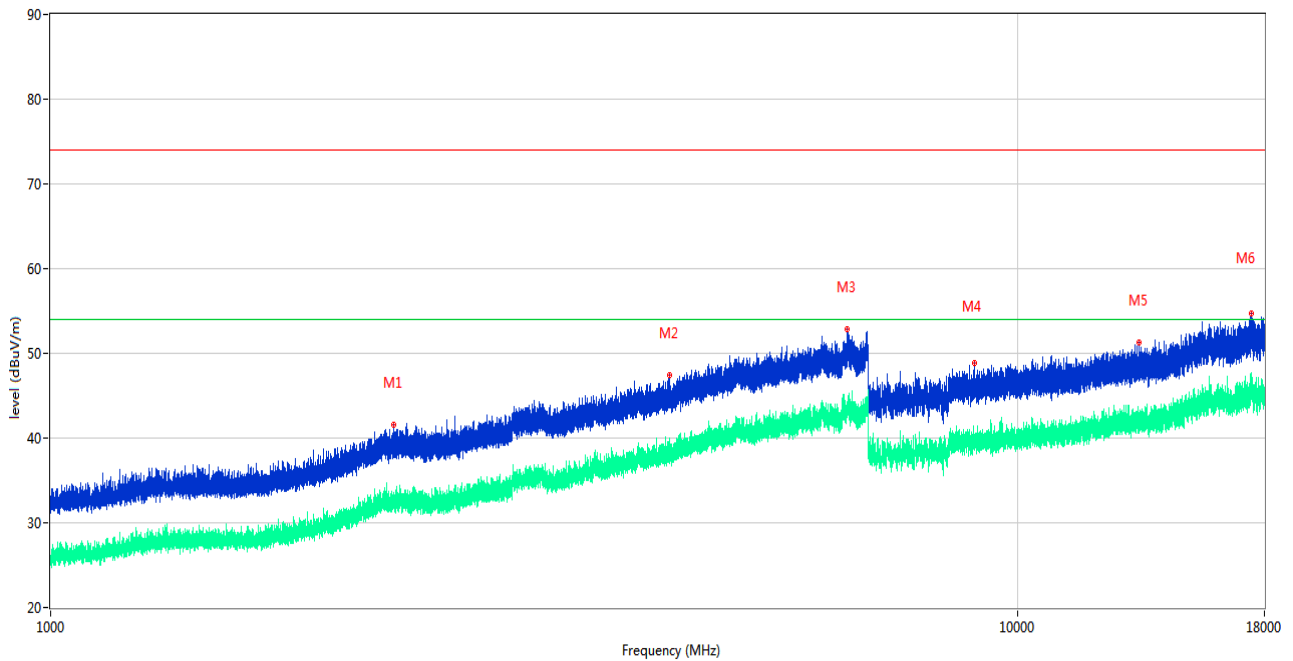
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	52.989	32.37	-23.00	40.0	-7.63	Peak	360.00	200	Vertical	Pass
2	57.596	30.03	-24.08	40.0	-9.97	Peak	264.50	100	Vertical	Pass
3	94.020	31.08	-25.31	43.5	-12.42	Peak	24.10	100	Vertical	Pass
4	156.440	31.78	-27.47	43.5	-11.72	Peak	360.00	200	Vertical	Pass
5	182.290	35.60	-25.51	43.5	-7.90	Peak	96.30	100	Vertical	Pass
6	203.776	33.28	-23.74	43.5	-10.22	Peak	141.70	100	Vertical	Pass

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



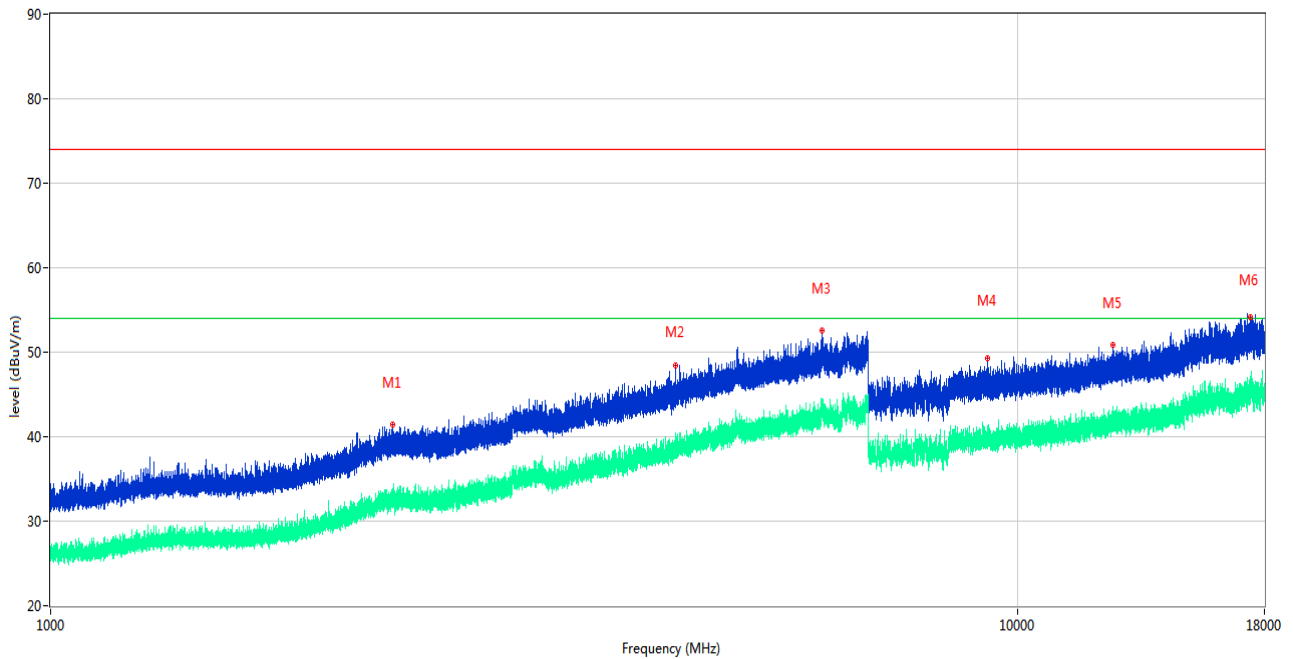
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	95.232	21.52	-24.94	43.5	-21.98	Peak	247.10	200	Horizontal	Pass
2	153.093	27.95	-27.58	43.5	-15.55	Peak	358.00	200	Horizontal	Pass
3	181.029	33.35	-25.91	43.5	-10.15	Peak	110.90	200	Horizontal	Pass
4	201.932	30.97	-23.80	43.5	-12.53	Peak	116.40	100	Horizontal	Pass
5	287.002	35.37	-22.04	46.0	-10.63	Peak	268.10	100	Horizontal	Pass
6	335.986	26.82	-20.27	46.0	-19.18	Peak	301.60	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	2263.400	41.59	-12.67	74.0	-32.41	Peak	61.00	150	Vertical	Pass
1**	2263.400	33.50	-12.67	54.0	-20.50	AV	61.00	150	Vertical	Pass
2	4369.800	47.36	-4.36	74.0	-26.64	Peak	195.00	150	Vertical	Pass
2**	4369.800	37.25	-4.36	54.0	-16.75	AV	195.00	150	Vertical	Pass
3	6667.200	52.82	-0.87	74.0	-21.18	Peak	283.00	150	Vertical	Pass
3**	6667.200	43.51	-0.87	54.0	-10.49	AV	283.00	150	Vertical	Pass
4	9019.112	48.82	-0.49	74.0	-25.18	Peak	233.00	150	Vertical	Pass
4**	9019.112	39.32	-0.49	54.0	-14.68	AV	233.00	150	Vertical	Pass
5	13340.888	51.24	1.06	74.0	-22.76	Peak	340.00	150	Vertical	Pass
5**	13340.888	41.37	1.06	54.0	-12.63	AV	340.00	150	Vertical	Pass
6	17432.214	54.72	3.37	74.0	-19.28	Peak	99.00	150	Vertical	Pass
6**	17432.214	45.95	3.37	54.0	-8.05	AV	99.00	150	Vertical	Pass

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

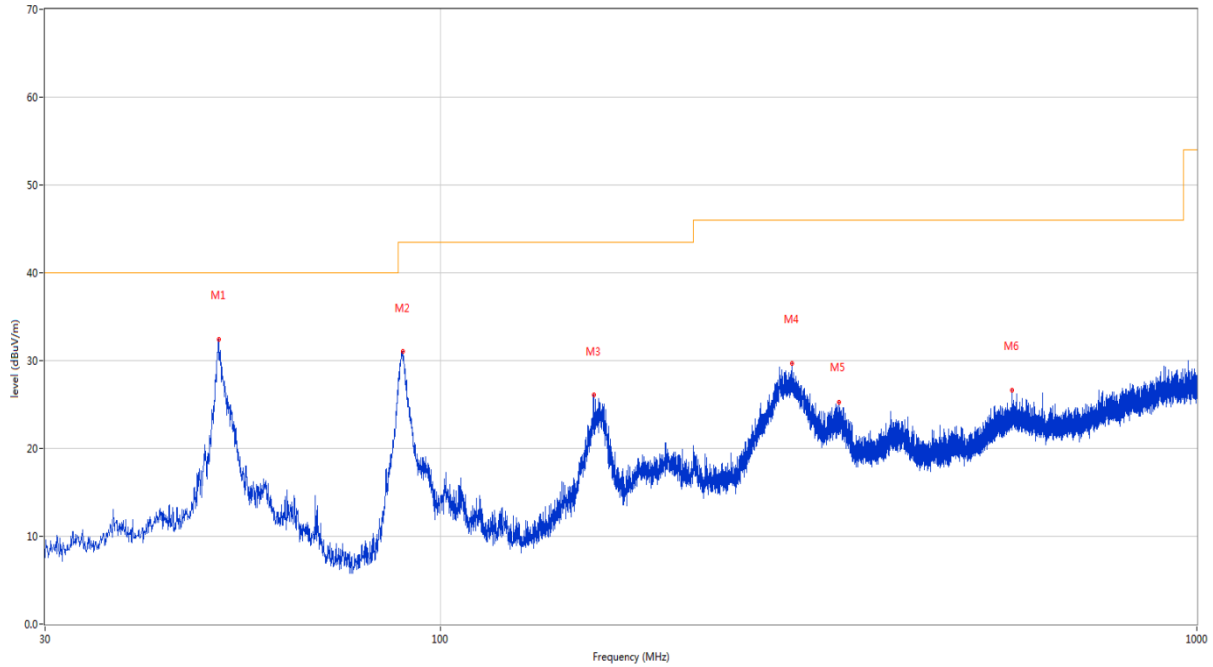


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2259.900	41.39	-12.70	74.0	-32.61	Peak	294.00	150	Horizontal	Pass
1**	2259.900	33.26	-12.70	54.0	-20.74	AV	294.00	150	Horizontal	Pass
2	4427.000	48.46	-4.83	74.0	-25.54	Peak	278.00	150	Horizontal	Pass
2**	4427.000	36.92	-4.83	54.0	-17.08	AV	278.00	150	Horizontal	Pass
3	6272.400	52.59	-0.22	74.0	-21.41	Peak	84.00	150	Horizontal	Pass
3**	6272.400	43.27	-0.22	54.0	-10.73	AV	84.00	150	Horizontal	Pass
4	9319.550	49.25	-0.94	74.0	-24.75	Peak	52.00	150	Horizontal	Pass
4**	9319.550	39.14	-0.94	54.0	-14.86	AV	52.00	150	Horizontal	Pass
5	12563.700	50.86	1.70	74.0	-23.14	Peak	90.00	150	Horizontal	Pass
5**	12563.700	41.84	1.70	54.0	-12.16	AV	90.00	150	Horizontal	Pass
6	17421.976	54.14	3.70	74.0	-19.86	Peak	301.00	150	Horizontal	Pass
6**	17421.976	45.98	3.70	54.0	-8.02	AV	301.00	150	Horizontal	Pass

Test Data and Plots

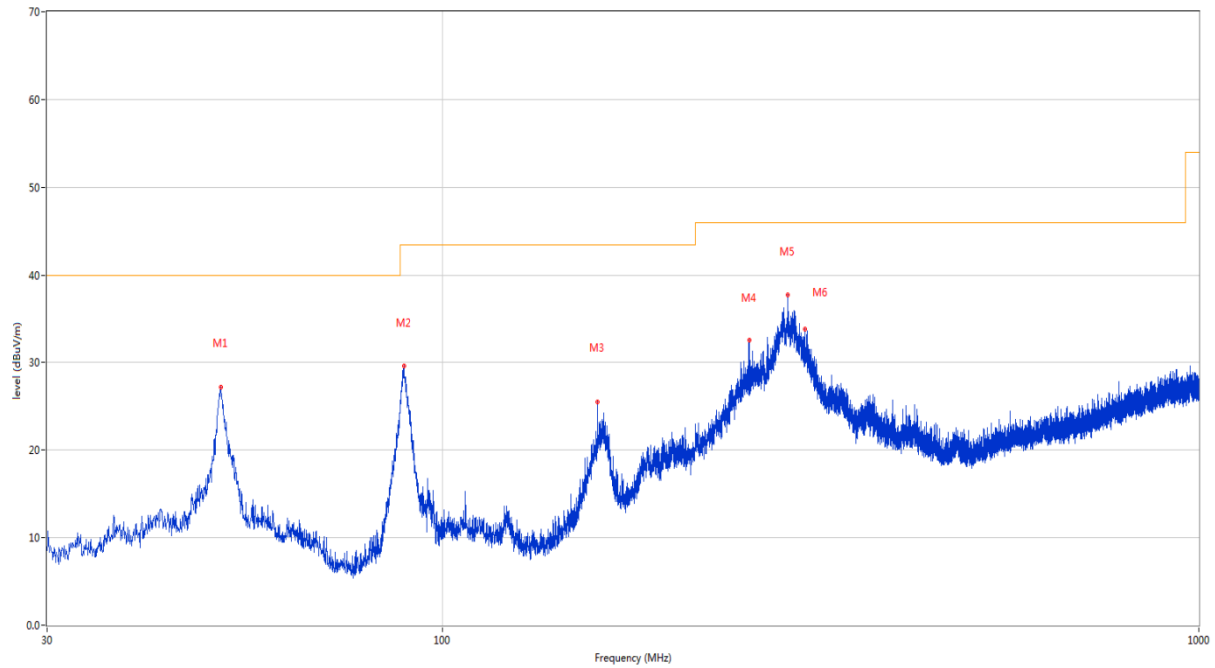
The USB Test Mode

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



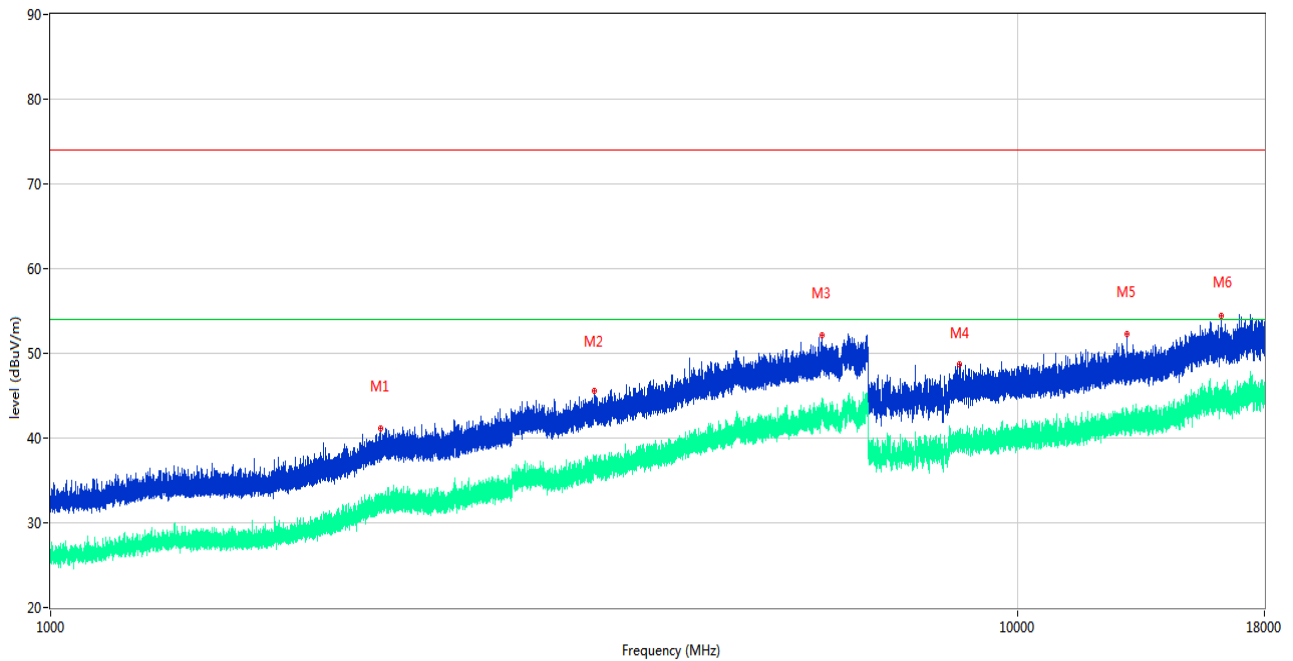
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	50.904	32.45	-23.17	40.0	-7.55	Peak	134.80	100	Vertical	Pass
2	89.121	31.06	-26.33	43.5	-12.44	Peak	194.60	100	Vertical	Pass
3	159.350	26.07	-27.44	43.5	-17.43	Peak	271.40	100	Vertical	Pass
4	291.270	29.72	-21.57	46.0	-16.28	Peak	359.10	200	Vertical	Pass
5	336.666	25.26	-20.22	46.0	-20.74	Peak	360.00	200	Vertical	Pass
6	569.999	26.67	-14.97	46.0	-19.33	Peak	360.00	200	Vertical	Pass

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



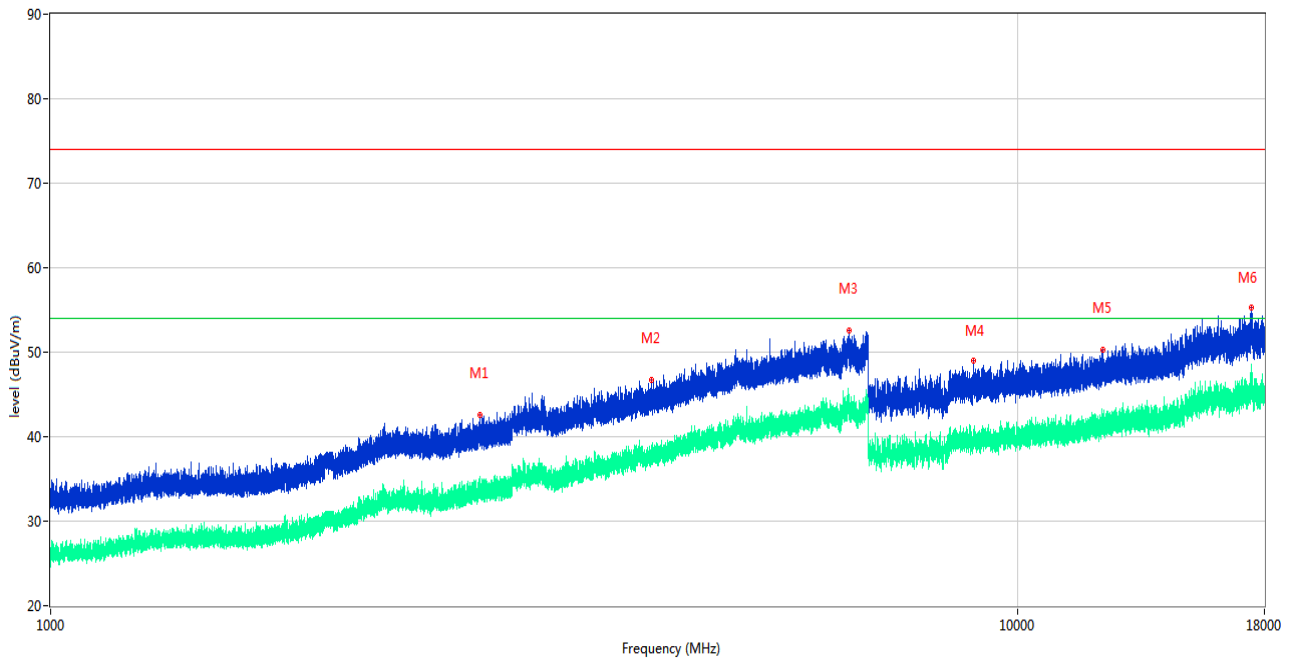
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	50.904	27.16	-23.17	40.0	-12.84	Peak	10.10	200	Horizontal	Pass
2	88.879	29.59	-26.36	43.5	-13.91	Peak	269.10	200	Horizontal	Pass
3	160.174	25.43	-27.33	43.5	-18.07	Peak	243.20	100	Horizontal	Pass
4	254.652	32.53	-22.62	46.0	-13.47	Peak	158.70	100	Horizontal	Pass
5	286.226	37.76	-22.09	46.0	-8.24	Peak	124.80	100	Horizontal	Pass
6	301.164	33.90	-21.63	46.0	-12.10	Peak	133.10	100	Horizontal	Pass

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



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2194.900	41.21	-13.25	74.0	-32.79	Peak	360.00	150	Vertical	Pass
1**	2194.900	31.88	-13.25	54.0	-22.12	AV	360.00	150	Vertical	Pass
2	3650.200	45.54	-6.19	74.0	-28.46	Peak	0.00	150	Vertical	Pass
2**	3650.200	36.17	-6.19	54.0	-17.83	AV	0.00	150	Vertical	Pass
3	6277.400	52.09	-0.21	74.0	-21.91	Peak	52.00	150	Vertical	Pass
3**	6277.400	43.22	-0.21	54.0	-10.78	AV	52.00	150	Vertical	Pass
4	8706.600	48.74	-1.83	74.0	-25.26	Peak	191.00	150	Vertical	Pass
4**	8706.600	38.95	-1.83	54.0	-15.05	AV	191.00	150	Vertical	Pass
5	12983.888	52.31	1.03	74.0	-21.69	Peak	322.00	150	Vertical	Pass
5**	12983.888	40.72	1.03	54.0	-13.28	AV	322.00	150	Vertical	Pass
6	16240.987	54.40	1.37	74.0	-19.60	Peak	279.00	150	Vertical	Pass
6**	16240.987	44.19	1.37	54.0	-9.81	AV	279.00	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	2776.500	42.64	-10.45	74.0	-31.36	Peak	157.00	150	Horizontal	Pass
1**	2776.500	33.47	-10.45	54.0	-20.53	AV	157.00	150	Horizontal	Pass
2	4186.800	46.71	-4.93	74.0	-27.29	Peak	320.00	150	Horizontal	Pass
2**	4186.800	37.98	-4.93	54.0	-16.02	AV	320.00	150	Horizontal	Pass
3	6688.800	52.54	-0.25	74.0	-21.46	Peak	1.00	150	Horizontal	Pass
3**	6688.800	44.06	-0.25	54.0	-9.94	AV	1.00	150	Horizontal	Pass
4	9011.063	48.96	-0.58	74.0	-25.04	Peak	203.00	150	Horizontal	Pass
4**	9011.063	39.60	-0.58	54.0	-14.40	AV	203.00	150	Horizontal	Pass
5	12265.850	50.24	1.32	74.0	-23.76	Peak	330.00	150	Horizontal	Pass
5**	12265.850	41.43	1.32	54.0	-12.57	AV	330.00	150	Horizontal	Pass
6	17464.238	55.34	2.88	74.0	-18.66	Peak	0.00	150	Horizontal	Pass
6**	17464.238	46.51	2.88	54.0	-7.49	AV	0.00	150	Horizontal	Pass

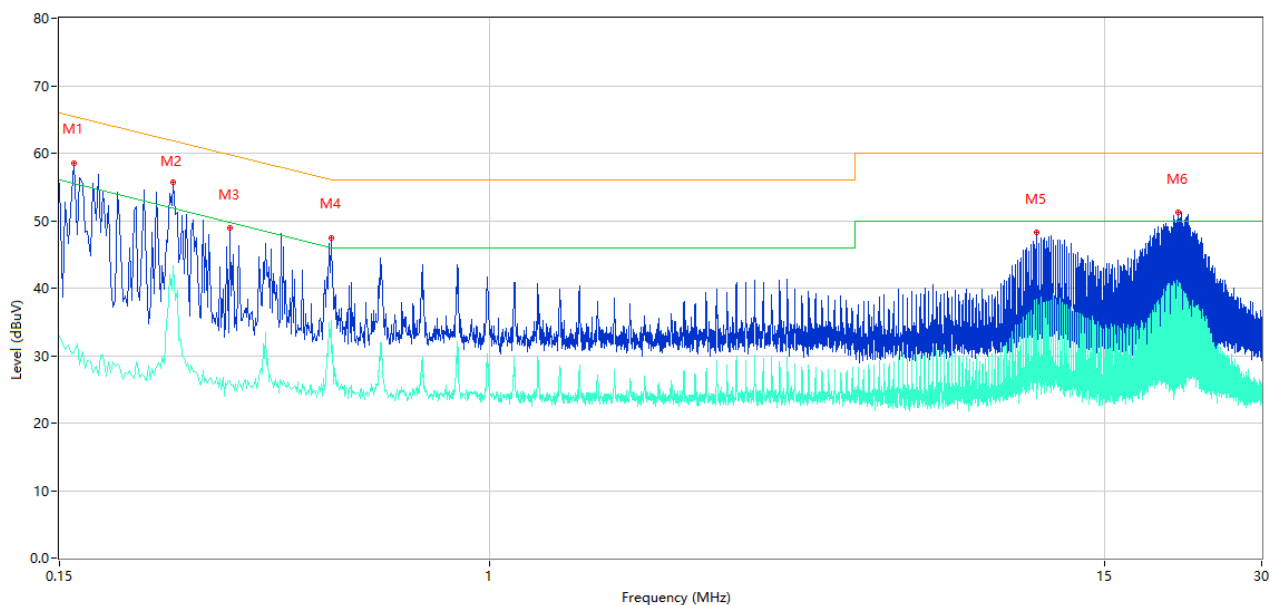
A.2 Conducted Emission

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

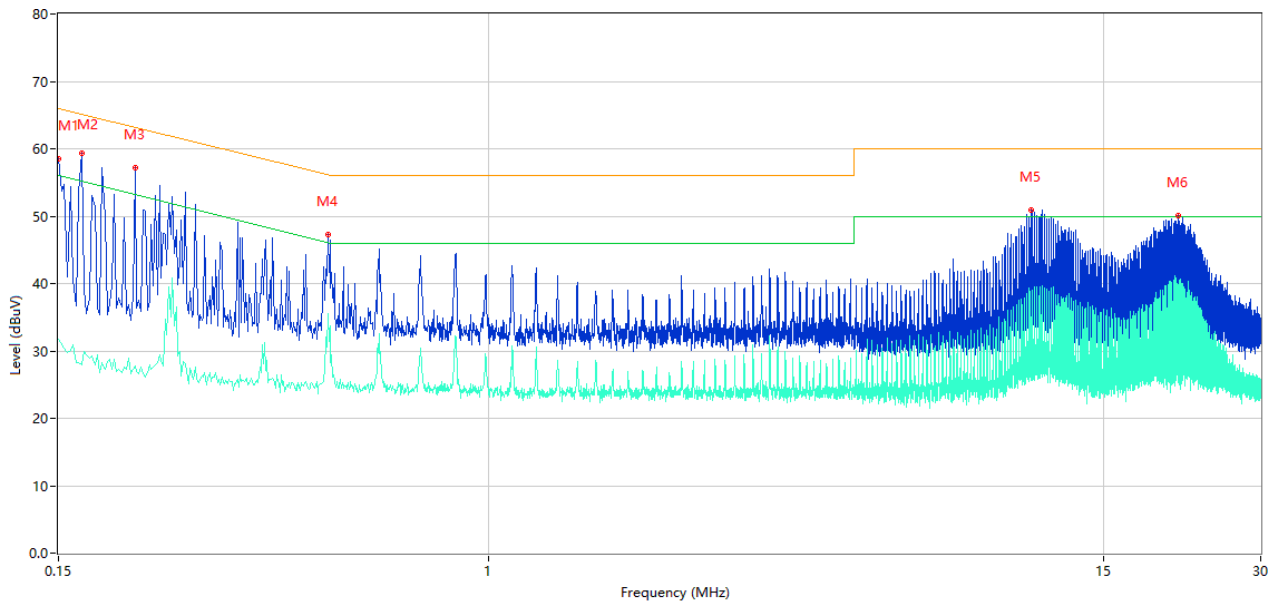
The Camera Test Mode

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.160	58.57	10.40	65.46	-6.89	Peak	L	Pass
1**	0.160	30.44	10.40	55.46	-25.02	AV	L	Pass
2	0.248	55.70	10.34	61.82	-6.12	Peak	L	Pass
2**	0.248	43.34	10.34	51.82	-8.48	AV	L	Pass
3	0.318	48.86	10.33	59.76	-10.90	Peak	L	Pass
3**	0.318	26.33	10.33	49.76	-23.43	AV	L	Pass
4	0.496	47.52	10.29	56.07	-8.55	Peak	L	Pass
4**	0.496	35.15	10.29	46.07	-10.92	AV	L	Pass
5	11.118	48.30	10.38	60.00	-11.70	Peak	L	Pass
5**	11.118	37.02	10.38	50.00	-12.98	AV	L	Pass
6	20.742	51.29	10.57	60.00	-8.71	Peak	L	Pass
6**	20.742	39.90	10.57	50.00	-10.10	AV	L	Pass

A.2.2 N Phase

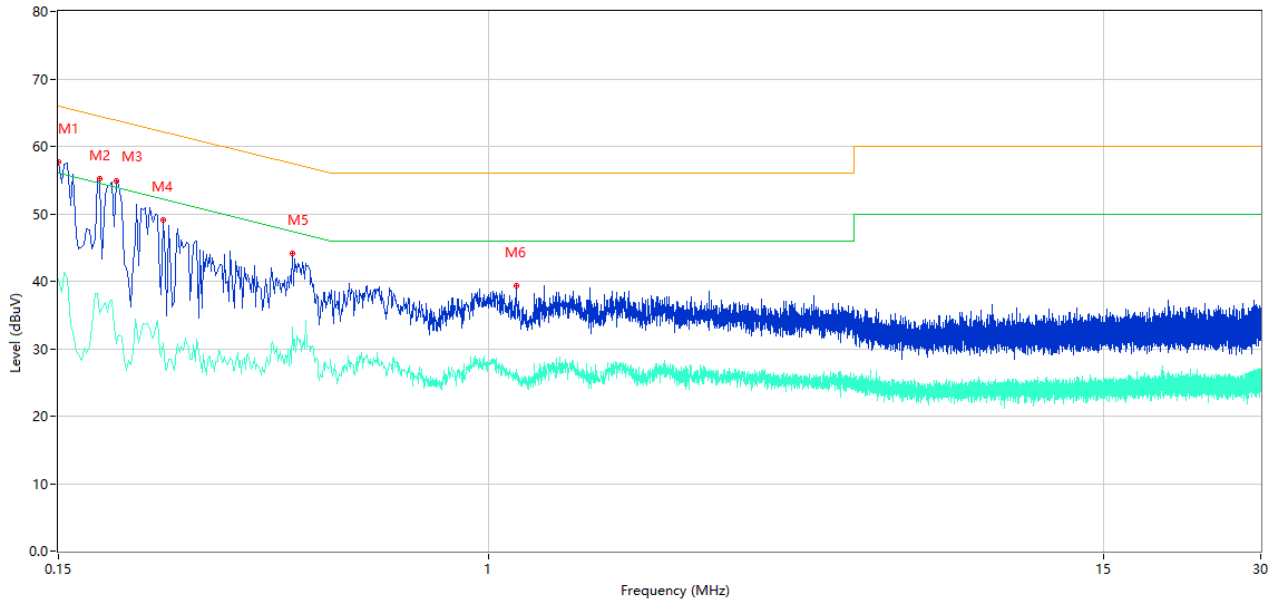


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	58.58	10.41	66.00	-7.42	Peak	N	Pass
1**	0.150	31.70	10.41	56.00	-24.30	AV	N	Pass
2	0.166	60.00	10.40	65.16	-5.16	Peak	N	N/A
2*	0.166	48.04	10.40	65.16	-17.12	QP	N	Pass
2**	0.166	27.99	10.40	55.16	-27.17	AV	N	Pass
3	0.210	57.11	10.38	63.21	-6.10	Peak	N	Pass
3**	0.210	27.72	10.38	53.21	-25.49	AV	N	Pass
4	0.492	47.34	10.29	56.13	-8.79	Peak	N	Pass
4**	0.492	35.60	10.29	46.13	-10.53	AV	N	Pass
5	10.936	50.86	10.37	60.00	-9.14	Peak	N	Pass
5**	10.936	34.61	10.37	50.00	-15.39	AV	N	Pass
6	20.866	50.01	10.57	60.00	-9.99	Peak	N	Pass
6**	20.866	35.18	10.57	50.00	-14.82	AV	N	Pass

Test Data and Plots

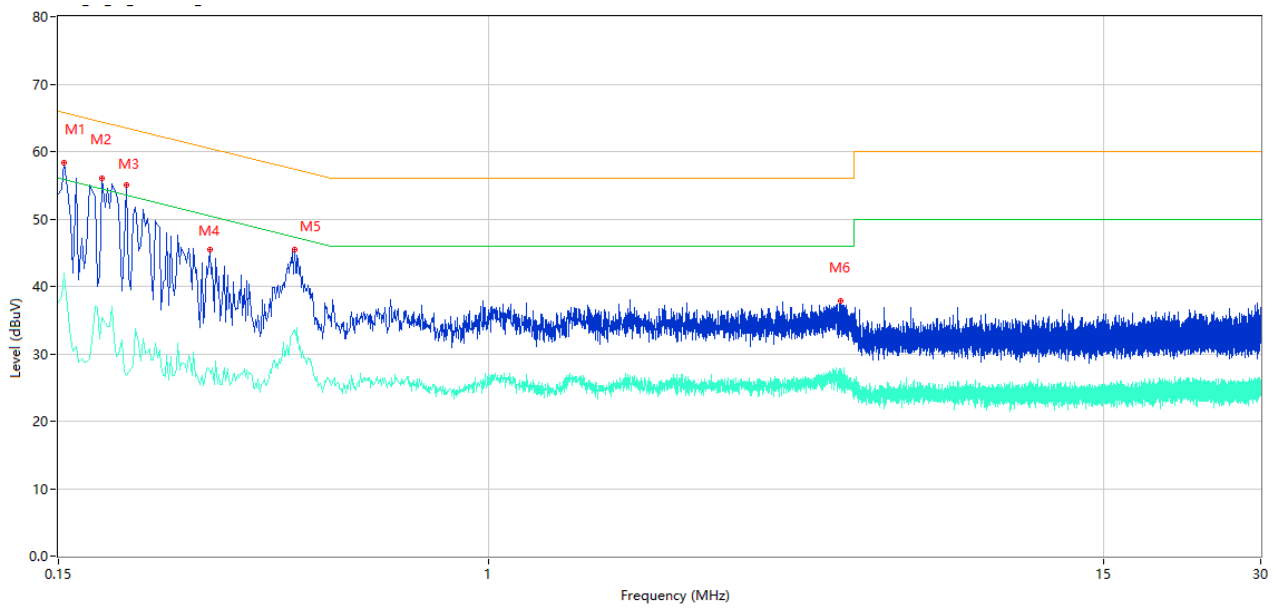
The USB Test Mode

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	57.76	10.41	66.00	-8.24	Peak	L	Pass
1**	0.150	40.38	10.41	56.00	-15.62	AV	L	Pass
2	0.180	55.14	10.39	64.49	-9.35	Peak	L	Pass
2**	0.180	35.22	10.39	54.49	-19.27	AV	L	Pass
3	0.194	54.87	10.38	63.86	-8.99	Peak	L	Pass
3**	0.194	30.80	10.38	53.86	-23.06	AV	L	Pass
4	0.238	49.04	10.35	62.17	-13.13	Peak	L	Pass
4**	0.238	30.94	10.35	52.17	-21.23	AV	L	Pass
5	0.420	44.21	10.31	57.45	-13.24	Peak	L	Pass
5**	0.420	33.30	10.31	47.45	-14.15	AV	L	Pass
6	1.126	39.31	10.24	56.00	-16.69	Peak	L	Pass
6**	1.126	27.01	10.24	46.00	-18.99	AV	L	Pass

A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.154	58.28	10.41	65.78	-7.50	Peak	N	Pass
1**	0.154	41.94	10.41	55.78	-13.84	AV	N	Pass
2	0.182	56.06	10.39	64.39	-8.33	Peak	N	Pass
2**	0.182	35.36	10.39	54.39	-19.03	AV	N	Pass
3	0.202	55.08	10.38	63.53	-8.45	Peak	N	Pass
3**	0.202	26.83	10.38	53.53	-26.70	AV	N	Pass
4	0.292	45.46	10.34	60.47	-15.01	Peak	N	Pass
4**	0.292	27.49	10.34	50.47	-22.98	AV	N	Pass
5	0.424	45.49	10.31	57.37	-11.88	Peak	N	Pass
5**	0.424	33.60	10.31	47.37	-13.77	AV	N	Pass
6	4.702	37.91	10.30	56.00	-18.09	Peak	N	Pass
6**	4.702	27.72	10.30	46.00	-18.28	AV	N	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2120375-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2120375-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2120375-AI.PDF”.

--END OF REPORT--