

EMC

TEST REPORT

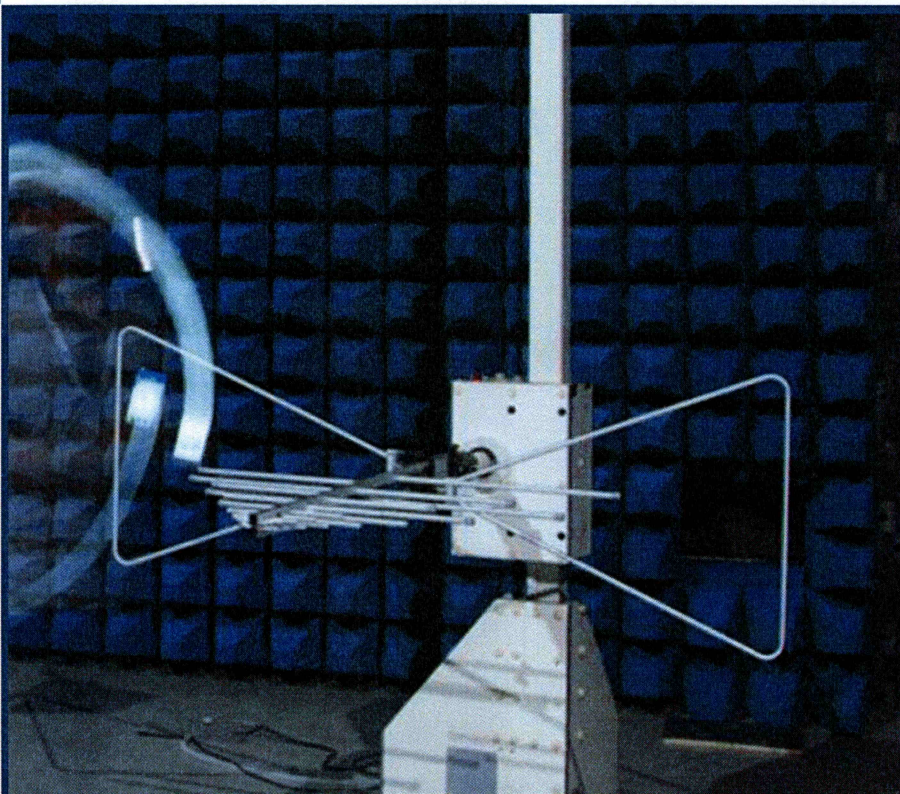
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Mobile Phone

ISSUED TO
vivo Mobile Communication Co., Ltd.

No.168 Jinghai East Rd., Chang'an, Dongguan, Guangdong, China



Tested by: Liu Zhen Xiang

Liu Zhenxiang

Date Jun. 23, 2021

Approved by: Wei Yanquan

Wei Yanquan
(Chief Engineer)

Date Jun. 23, 2021

Report No.: BL-SZ2150617-401

EUT Name: Mobile Phone

Model Name: V2058

Brand Name: vivo

Test Standard: 47 CFR Part 15 Subpart B
(refer section 3.1)

FCC ID: 2AUCY-V2058

Test Conclusion: Pass

Test Date: May 27, 2021 ~ Jun. 01, 2021

Date of Issue: Jun. 23, 2021

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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Jun. 22, 2021</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>Jun. 23, 2021</u>	<u>1.Change the test setup 1 in section 4.5.</u> <u>2.Remove the test setup photos.</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
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	vivo Mobile Communication Co., Ltd.
Address	No.168 Jinghai East Rd., Chang'an, Dongguan, Guangdong, China

2.2 Manufacturer Information

Manufacturer	vivo Mobile Communication Co., Ltd.
Address	No.168 Jinghai East Rd., 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	V2058
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	MP_0.1
Software Version	PD2103BF_EX_A_3.6.4
Dimensions (Approx.)	163.96*75.3*8.495mm
Weight (Approx.)	193g

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	vivo
	Model No.	B-Q8
	Serial No.	N/A
	Capacity	Rated capacity: 4880 mAh/18.88Wh Typical capacity: 5000 mAh/19.35Wh
	Rated Voltage	3.87 V
	Limit Charge Voltage	4.45 V
Ancillary Equipment 2	Adapter 1	
	Brand Name	vivo
	Model No.	V3330L0A1-US(US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.85 A, 50/60 Hz
	Rated Output	5 V= 2 A or 9 V= 2 A or 11 V= 3 A
Ancillary Equipment 3	Adapter 2	
	Brand Name	vivo
	Model No.	V3330L0A1-EU(EU Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.85 A, 50/60 Hz
	Rated Output	5 V= 2 A or 9 V= 2 A or 11 V= 3 A
Ancillary Equipment 4	USB Cable	
	Model No.	BK-C-33
	Length (Approx.)	1.0 m
Ancillary Equipment 5	Headset	
	Model No.	XE160
	Length (Approx.)	1.0 m
Note 1: Letter in () means plug type.		
Note 2: All adapters are tested, only the worst data of V3330L0A1-US(US Plug) shown in this report.		

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 2/4/5/7/12/17/66 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, 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	2.0 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 (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	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&SCHWA RZ	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	--	--	☒

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	☒
Test Antenna-Horn	A-INFOMW	LB-180400KF	J211060273	2021.01.05	2023.01.04	☒
Anechoic Chamber	YIHENG	9m*6m*6m	N/A	2018.07.18	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	MY57110309	2021.06.01	2022.05.31	☒
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

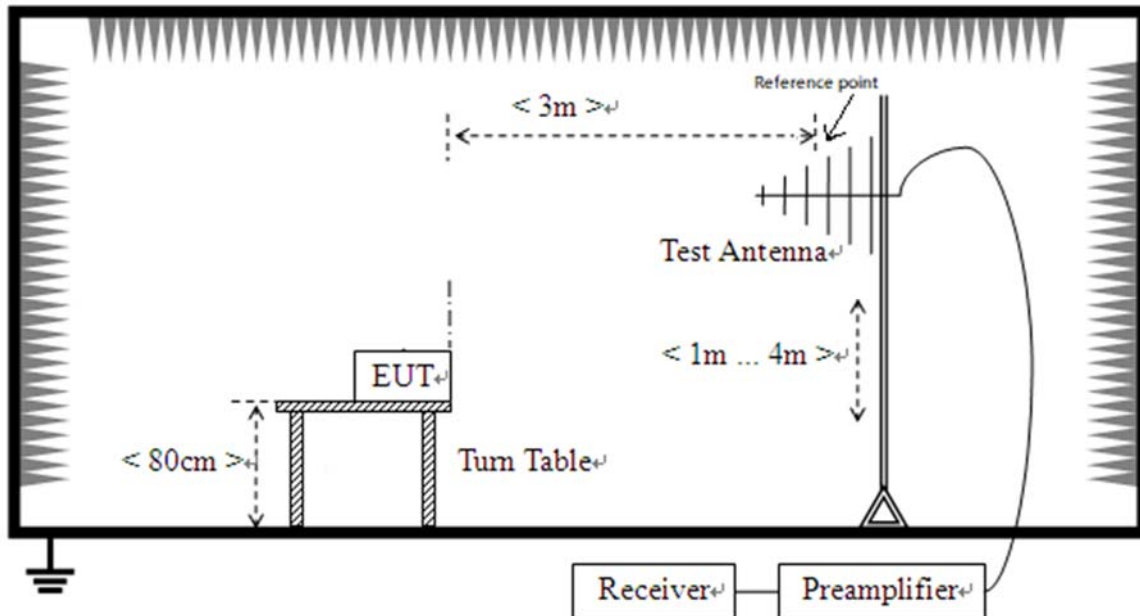
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	☐
Laptop	Apple	A1465	N/A	N/A	N/A	☐
Printer	HP	DESKJET 1000	N/A	N/A	N/A	☐
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	☐
Mouse	Logitech	M100	N/A	N/A	N/A	☐
USB disk	Kingston	N/A	N/A	N/A	N/A	☐
TF Card	Kingston	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 2022.06.07	☒
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 + Headset
TC02	<u>The WCDMA Band 5 RX Test Mode</u> WCDMA Band 5 RX + EUT +Adapter + USB Cable + Battery + Headset
TC03	<u>The FDD LTE Band 5 RX Test Mode</u> LTE Band 5 RX + EUT +Adapter + USB Cable + Battery + Headset
TC04	<u>The FDD LTE Band 12 RX Test Mode</u> LTE Band 12 RX + EUT +Adapter + USB Cable + Battery + Headset
TC05	<u>The FDD LTE Band 17 RX Test Mode</u> LTE Band 17 RX + EUT +Adapter + USB Cable + Battery + Headset
TC06	<u>The Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset
TC07	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset
TC08	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Laptop + Headset

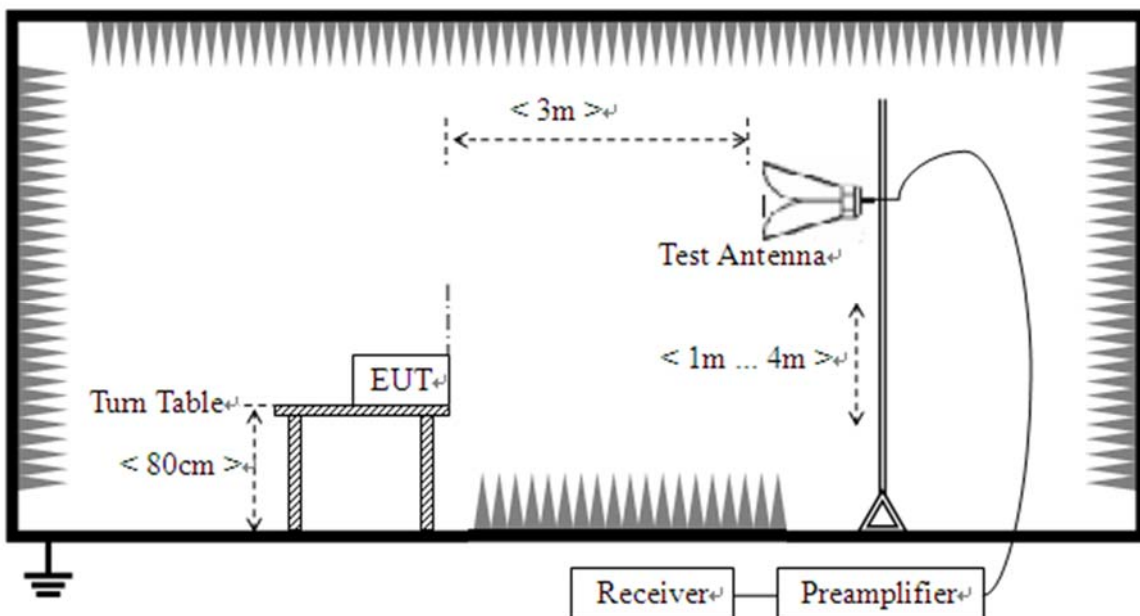
4.5 Test Setups

Test Setup 1



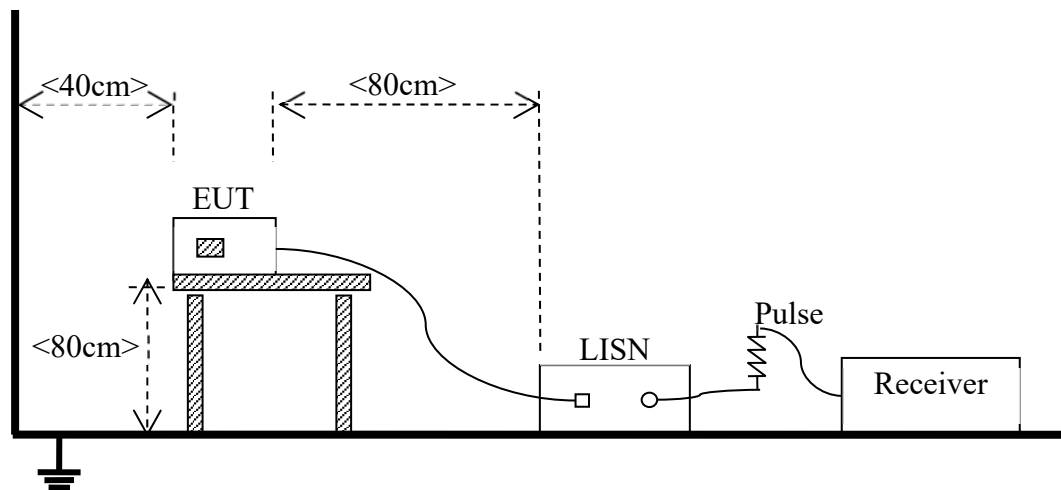
(For Radiated Emission Test (30 MHz-1 GHz))

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~TC08 ^{Note}
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC08 ^{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 (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.

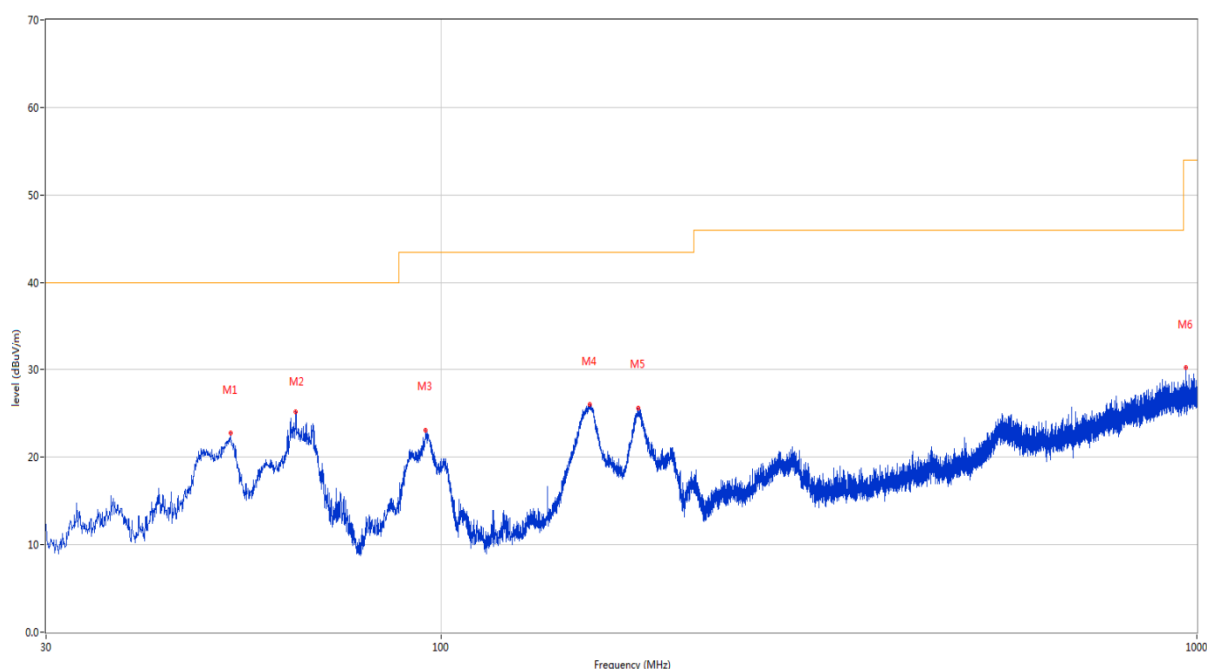
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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

Test Data and Plots

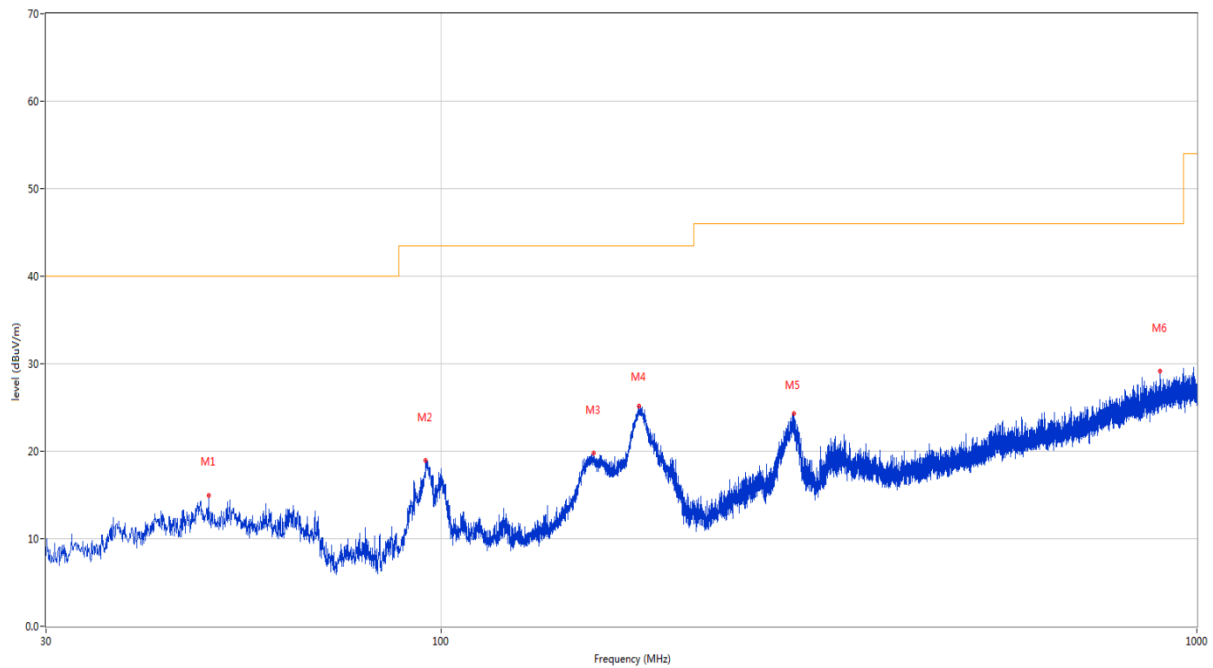
The Camera Test Mode

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



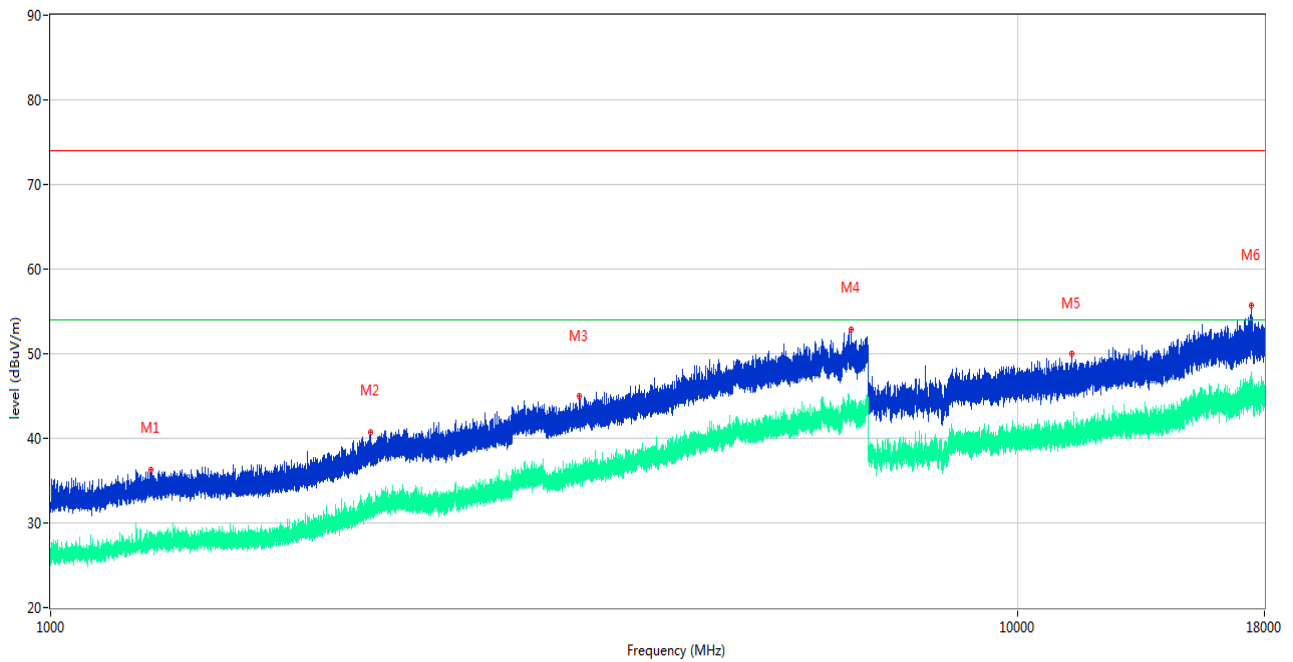
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	52.601	22.72	-23.07	40.0	-17.28	Peak	320.00	100	Vertical	Pass
2	64.241	25.11	-24.96	40.0	-14.89	Peak	119.90	100	Vertical	Pass
3	95.378	23.01	-24.89	43.5	-20.49	Peak	26.50	100	Vertical	Pass
4	157.361	26.01	-27.61	43.5	-17.49	Peak	277.70	100	Vertical	Pass
5	182.290	25.56	-25.51	43.5	-17.94	Peak	56.30	100	Vertical	Pass
6	968.184	30.23	-9.18	54.0	-23.77	Peak	360.00	100	Vertical	Pass

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



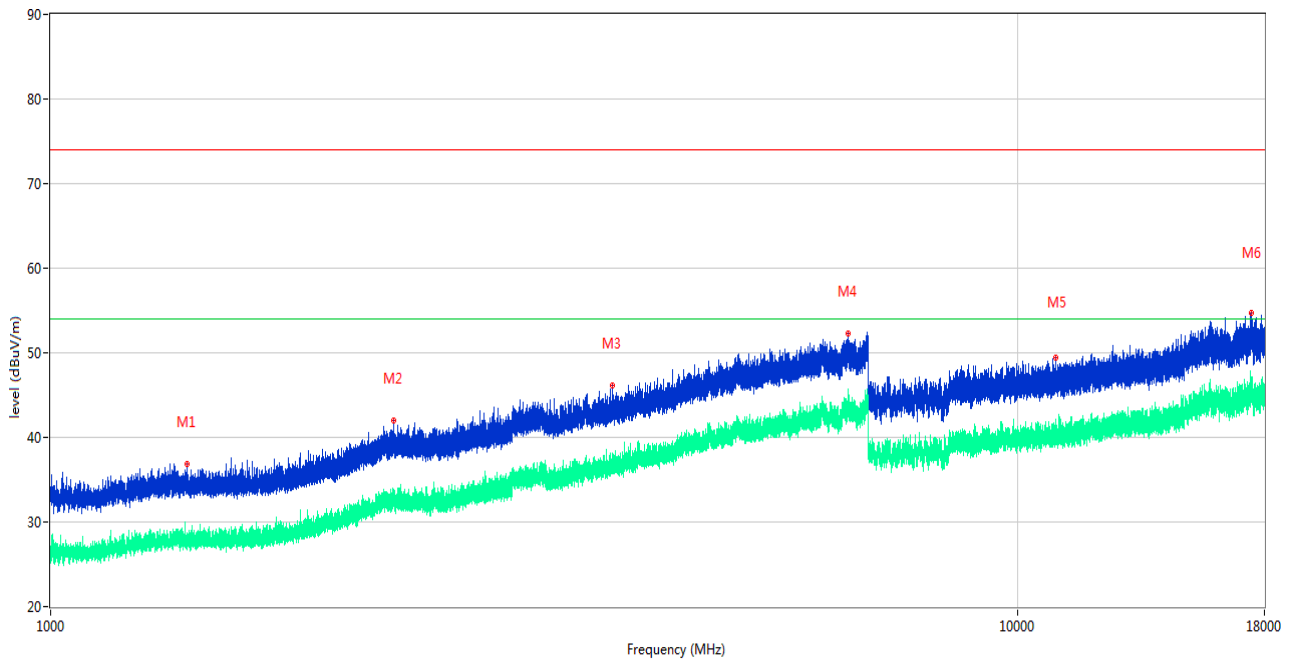
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	49.255	14.94	-22.44	40.0	-25.06	Peak	276.20	100	Horizontal	Pass
2	95.329	18.96	-24.91	43.5	-24.54	Peak	291.10	200	Horizontal	Pass
3	159.107	19.81	-27.46	43.5	-23.69	Peak	66.00	200	Horizontal	Pass
4	182.824	25.15	-25.34	43.5	-18.35	Peak	77.30	100	Horizontal	Pass
5	293.112	24.34	-21.75	46.0	-21.66	Peak	98.30	100	Horizontal	Pass
6	893.542	29.21	-9.86	46.0	-16.79	Peak	303.70	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	1269.600	36.25	-17.41	74.0	-37.75	Peak	82.00	150	Vertical	Pass
1**	1269.600	27.21	-17.41	54.0	-26.79	AV	82.00	150	Vertical	Pass
2	2141.200	40.77	-13.87	74.0	-33.23	Peak	218.00	150	Vertical	Pass
2**	2141.200	30.99	-13.87	54.0	-23.01	AV	218.00	150	Vertical	Pass
3	3521.800	45.03	-6.57	74.0	-28.97	Peak	57.00	150	Vertical	Pass
3**	3521.800	36.05	-6.57	54.0	-17.95	AV	57.00	150	Vertical	Pass
4	6732.800	52.83	-0.49	74.0	-21.17	Peak	314.00	150	Vertical	Pass
4**	6732.800	42.54	-0.49	54.0	-11.46	AV	314.00	150	Vertical	Pass
5	11383.800	49.99	-0.26	74.0	-24.01	Peak	162.00	150	Vertical	Pass
5**	11383.800	41.02	-0.26	54.0	-12.98	AV	162.00	150	Vertical	Pass
6	17466.599	55.70	2.89	74.0	-18.30	Peak	305.00	150	Vertical	Pass
6**	17466.599	45.65	2.89	54.0	-8.35	AV	305.00	150	Vertical	Pass

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

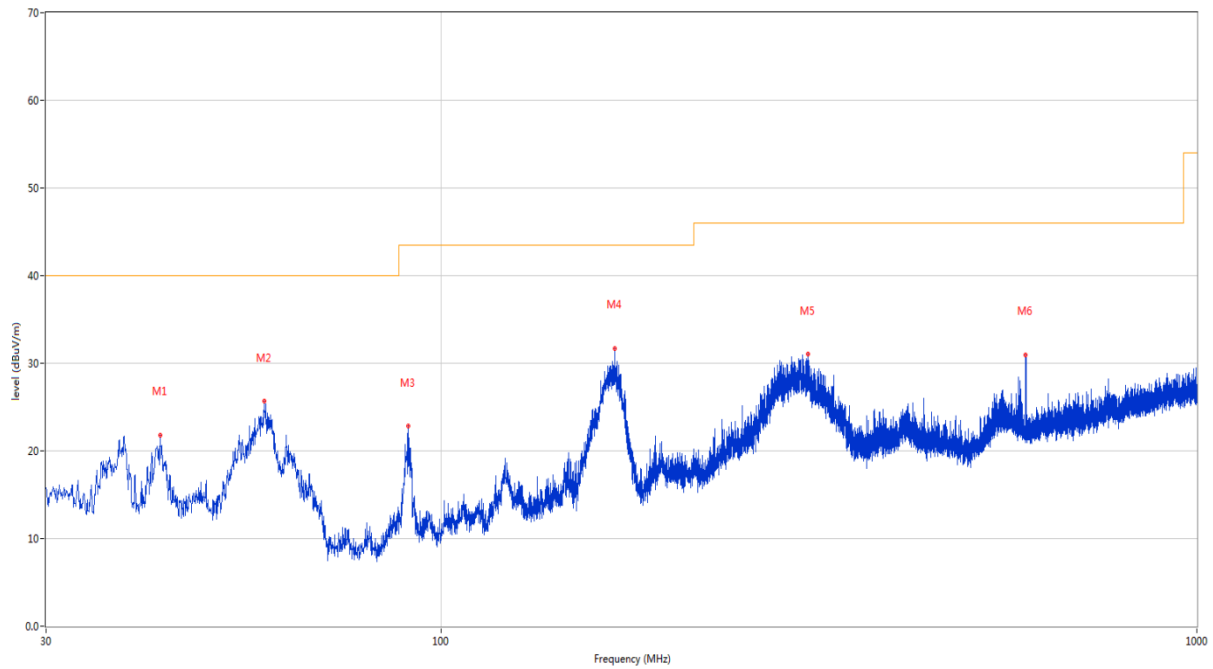


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1382.400	36.83	-17.35	74.0	-37.17	Peak	211.00	150	Horizontal	Pass
1**	1382.400	27.05	-17.35	54.0	-26.95	AV	211.00	150	Horizontal	Pass
2	2262.900	42.00	-12.68	74.0	-32.00	Peak	27.00	150	Horizontal	Pass
2**	2262.900	32.31	-12.68	54.0	-21.69	AV	27.00	150	Horizontal	Pass
3	3807.600	46.15	-5.47	74.0	-27.85	Peak	114.00	150	Horizontal	Pass
3**	3807.600	36.45	-5.47	54.0	-17.55	AV	114.00	150	Horizontal	Pass
4	6686.800	52.22	-0.22	74.0	-21.78	Peak	126.00	150	Horizontal	Pass
4**	6686.800	43.49	-0.22	54.0	-10.51	AV	126.00	150	Horizontal	Pass
5	10959.737	49.39	-0.41	74.0	-24.61	Peak	271.00	150	Horizontal	Pass
5**	10959.737	39.78	-0.41	54.0	-14.22	AV	271.00	150	Horizontal	Pass
6	17470.276	54.65	2.90	74.0	-19.35	Peak	88.00	150	Horizontal	Pass
6**	17470.276	46.89	2.90	54.0	-7.11	AV	88.00	150	Horizontal	Pass

Test Data and Plots

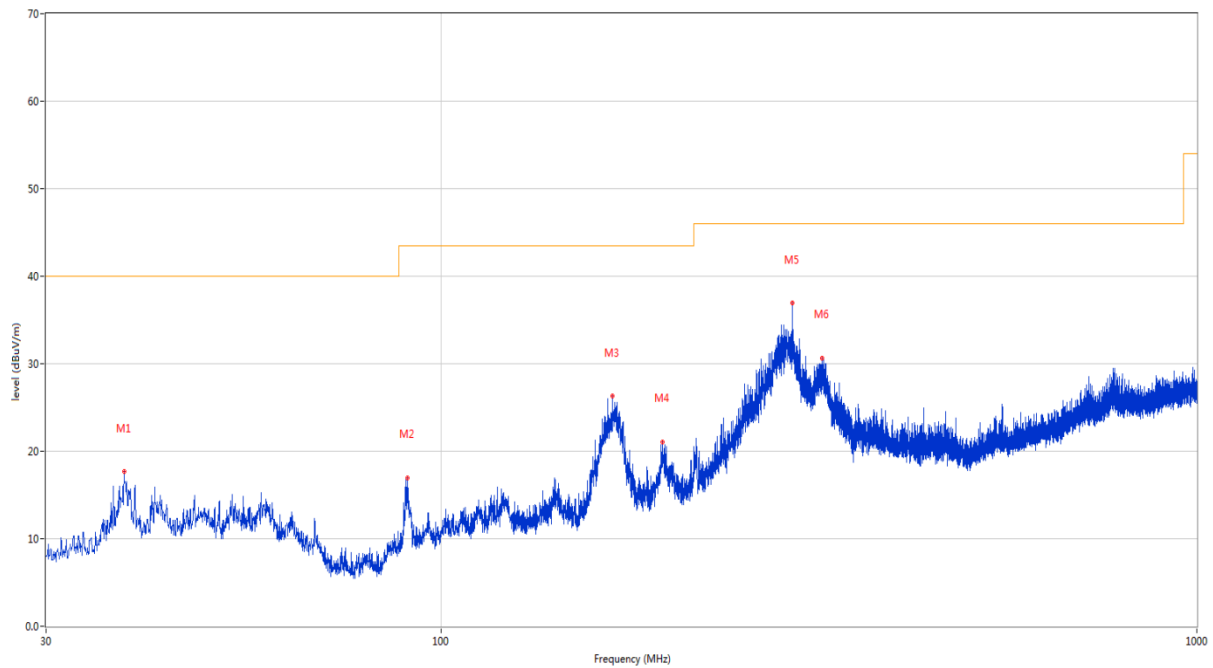
The USB Test Mode

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



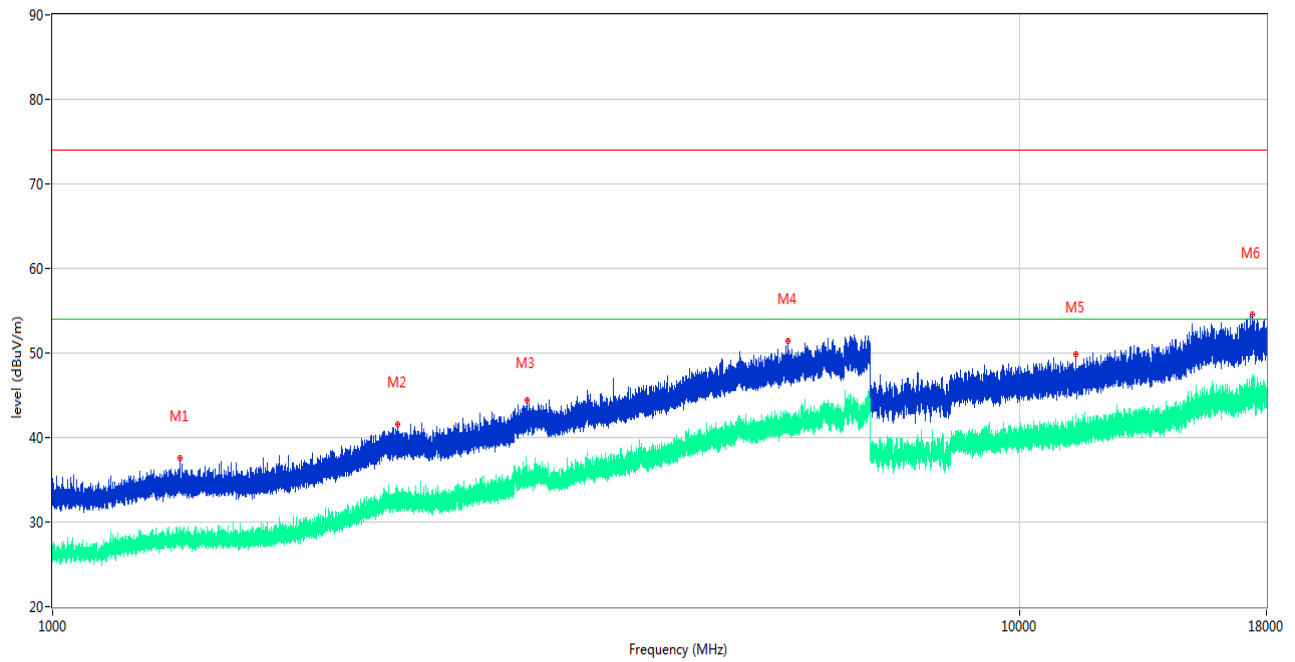
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	42.513	21.81	-23.42	40.0	-18.19	Peak	123.10	100	Vertical	Pass
2	58.324	25.67	-24.08	40.0	-14.33	Peak	67.10	100	Vertical	Pass
3	90.528	22.79	-25.99	43.5	-20.71	Peak	0.00	200	Vertical	Pass
4	169.632	31.73	-26.85	43.5	-11.77	Peak	280.70	100	Vertical	Pass
5	305.722	31.07	-21.28	46.0	-14.93	Peak	0.00	200	Vertical	Pass
6	594.006	30.98	-14.68	46.0	-15.02	Peak	208.20	100	Vertical	Pass

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



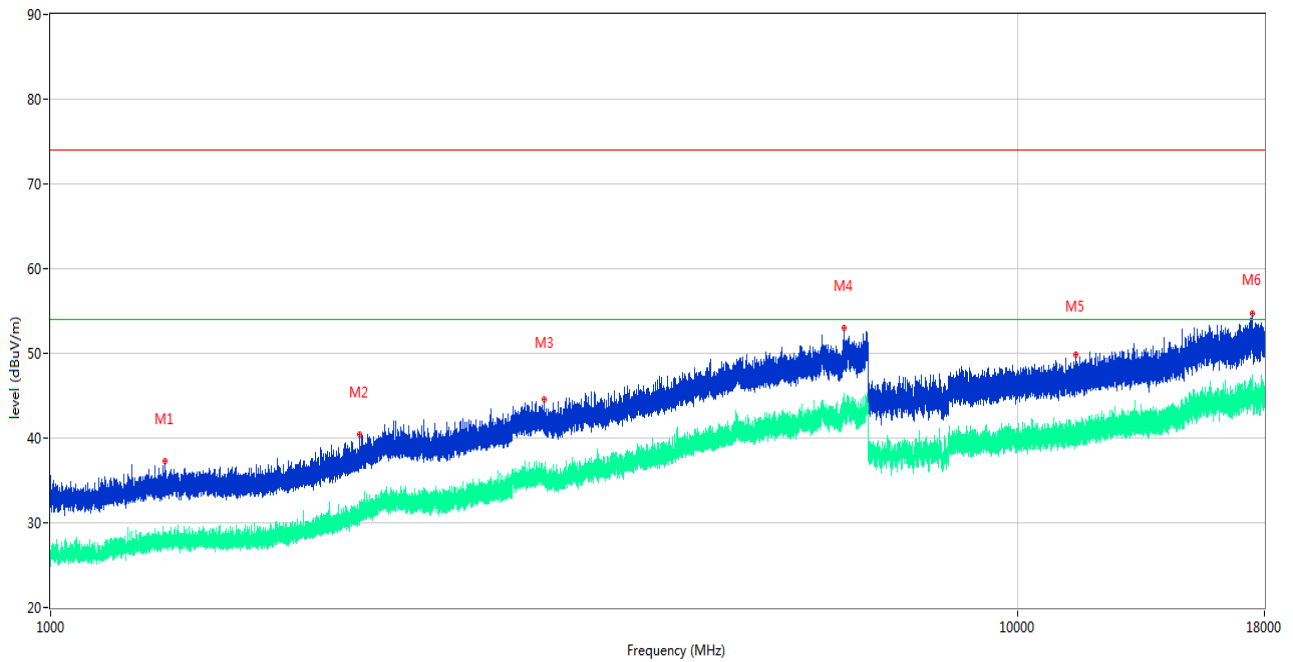
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	38.051	17.63	-24.49	40.0	-22.37	Peak	184.90	200	Horizontal	Pass
2	90.140	16.99	-26.09	43.5	-26.51	Peak	278.00	200	Horizontal	Pass
3	168.662	26.35	-27.09	43.5	-17.15	Peak	269.40	200	Horizontal	Pass
4	196.355	21.09	-24.29	43.5	-22.41	Peak	0.00	200	Horizontal	Pass
5	291.851	36.95	-21.60	46.0	-9.05	Peak	122.60	100	Horizontal	Pass
6	319.302	30.60	-21.24	46.0	-15.40	Peak	5.10	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	1355.700	37.52	-17.38	74.0	-36.48	Peak	328.00	150	Vertical	Pass
1**	1355.700	27.42	-17.38	54.0	-26.58	AV	328.00	150	Vertical	Pass
2	2273.100	41.62	-13.00	74.0	-32.38	Peak	115.00	150	Vertical	Pass
2**	2273.100	31.76	-13.00	54.0	-22.24	AV	115.00	150	Vertical	Pass
3	3093.400	44.38	-8.36	74.0	-29.62	Peak	0.00	150	Vertical	Pass
3**	3093.400	35.77	-8.36	54.0	-18.23	AV	0.00	150	Vertical	Pass
4	5765.000	51.41	-1.88	74.0	-22.59	Peak	155.00	150	Vertical	Pass
4**	5765.000	41.37	-1.88	54.0	-12.63	AV	155.00	150	Vertical	Pass
5	11446.187	49.87	-0.03	74.0	-24.13	Peak	74.00	150	Vertical	Pass
5**	11446.187	40.53	-0.03	54.0	-13.47	AV	74.00	150	Vertical	Pass
6	17425.650	54.56	3.60	74.0	-19.44	Peak	305.00	150	Vertical	Pass
6**	17425.650	45.00	3.60	54.0	-9.00	AV	305.00	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	1313.100	37.27	-17.27	74.0	-36.73	Peak	91.00	150	Horizontal	Pass
1**	1313.100	27.44	-17.27	54.0	-26.56	AV	91.00	150	Horizontal	Pass
2	2087.800	40.39	-14.25	74.0	-33.61	Peak	13.00	150	Horizontal	Pass
2**	2087.800	31.07	-14.25	54.0	-22.93	AV	13.00	150	Horizontal	Pass
3	3240.200	44.53	-8.19	74.0	-29.47	Peak	166.00	150	Horizontal	Pass
3**	3240.200	35.15	-8.19	54.0	-18.85	AV	166.00	150	Horizontal	Pass
4	6611.400	52.96	0.19	74.0	-21.04	Peak	215.00	150	Horizontal	Pass
4**	6611.400	43.63	0.19	54.0	-10.37	AV	215.00	150	Horizontal	Pass
5	11493.338	49.89	0.06	74.0	-24.11	Peak	184.00	150	Horizontal	Pass
5**	11493.338	40.96	0.06	54.0	-13.04	AV	184.00	150	Horizontal	Pass
6	17474.474	54.67	2.83	74.0	-19.33	Peak	50.00	150	Horizontal	Pass
6**	17474.474	45.49	2.83	54.0	-8.51	AV	50.00	150	Horizontal	Pass

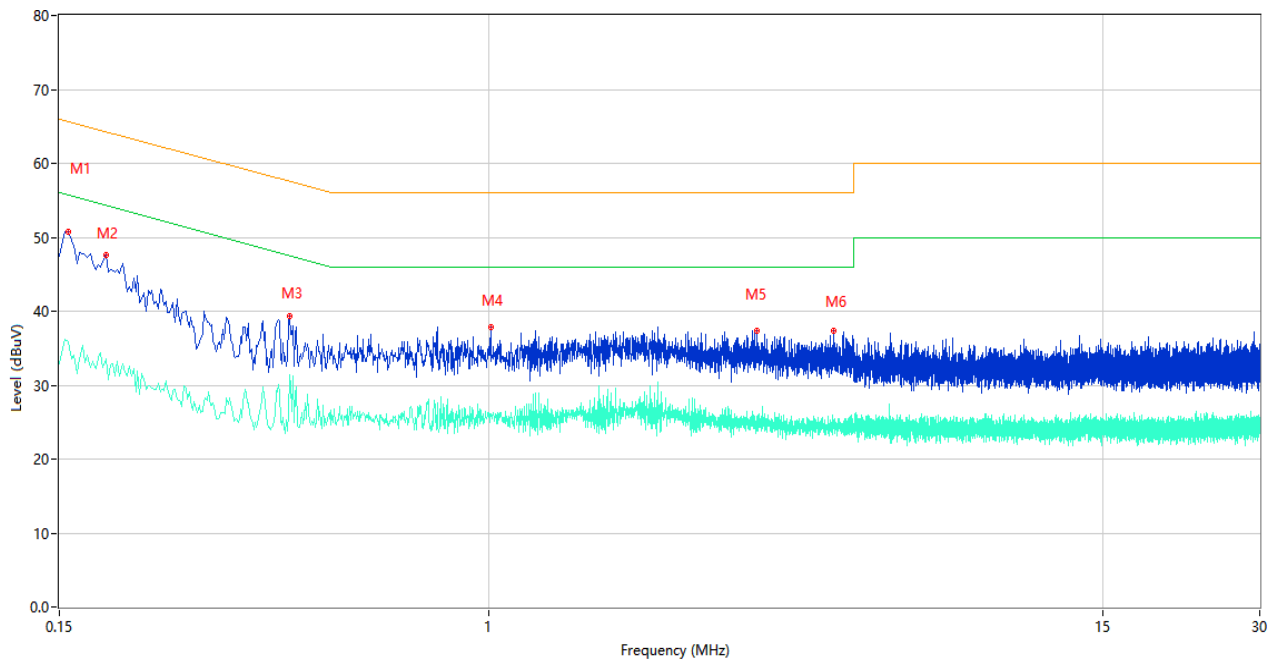
A.2 Conducted Emission

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

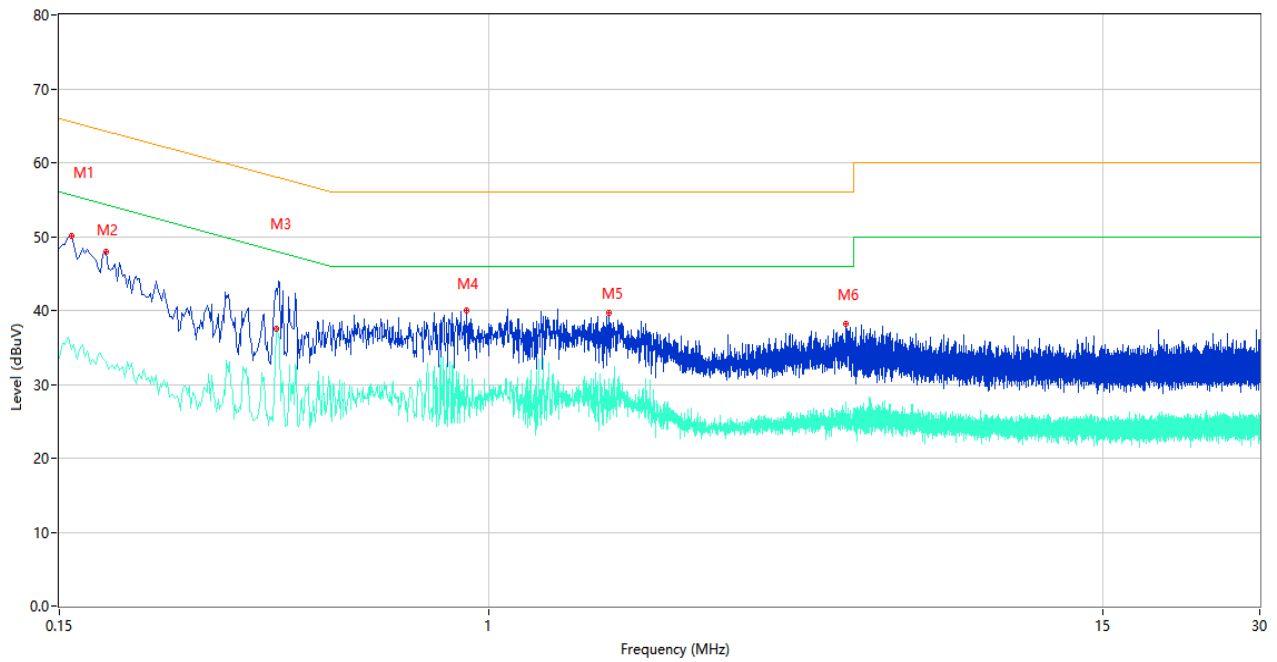
The Camera Test Mode

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.156	50.71	10.41	65.67	-14.96	Peak	L	Pass
1**	0.156	35.94	10.41	55.67	-19.73	AV	L	Pass
2	0.184	47.61	10.39	64.30	-16.69	Peak	L	Pass
2**	0.184	33.48	10.39	54.30	-20.82	AV	L	Pass
3	0.414	39.29	10.31	57.57	-18.28	Peak	L	Pass
3**	0.414	31.47	10.31	47.57	-16.10	AV	L	Pass
4	1.006	37.78	10.23	56.00	-18.22	Peak	L	Pass
4**	1.006	26.20	10.23	46.00	-19.80	AV	L	Pass
5	3.260	37.28	10.30	56.00	-18.72	Peak	L	Pass
5**	3.260	25.23	10.30	46.00	-20.77	AV	L	Pass
6	4.566	37.27	10.32	56.00	-18.73	Peak	L	Pass
6**	4.566	24.41	10.32	46.00	-21.59	AV	L	Pass

A.2.2 N Phase

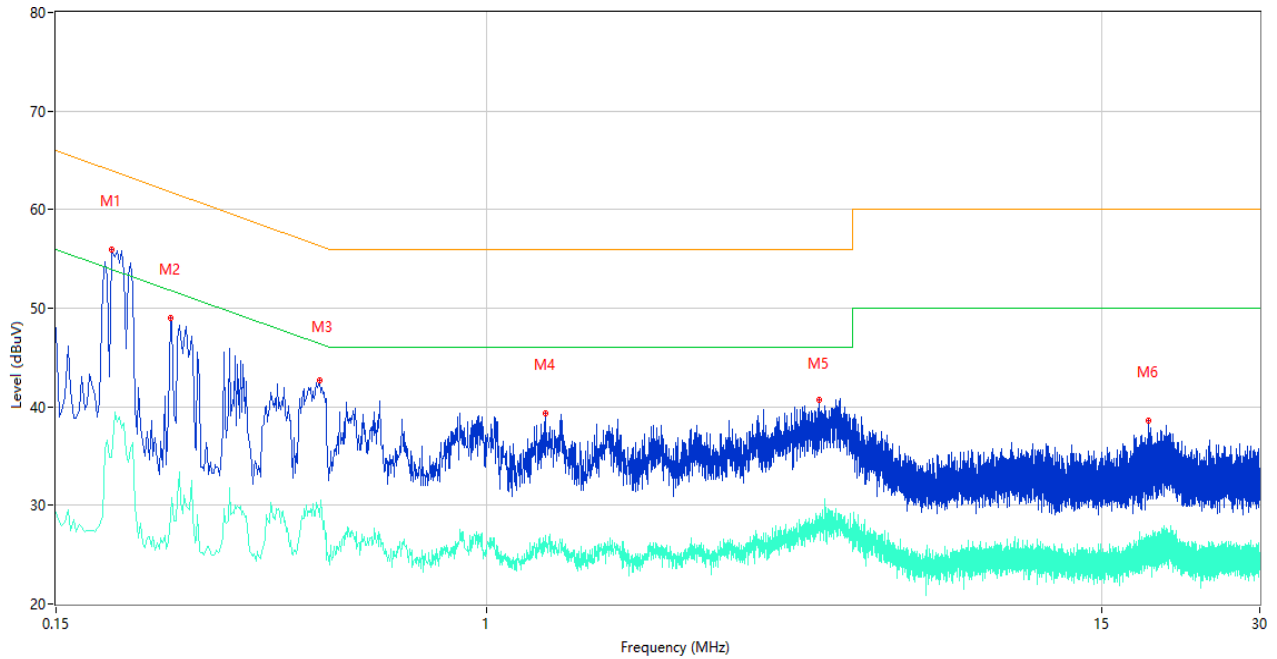


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.158	50.04	10.40	65.57	-15.53	Peak	N	Pass
1**	0.158	34.78	10.40	55.57	-20.79	AV	N	Pass
2	0.184	47.91	10.39	64.30	-16.39	Peak	N	Pass
2**	0.184	33.09	10.39	54.30	-21.21	AV	N	Pass
3	0.390	42.98	10.30	58.06	-15.08	Peak	N	Pass
3**	0.390	37.49	10.30	48.06	-10.57	AV	N	Pass
4	0.906	40.00	10.24	56.00	-16.00	Peak	N	Pass
4**	0.906	29.80	10.24	46.00	-16.20	AV	N	Pass
5	1.694	39.60	10.26	56.00	-16.40	Peak	N	Pass
5**	1.694	29.40	10.26	46.00	-16.60	AV	N	Pass
6	4.830	38.19	10.31	56.00	-17.81	Peak	N	Pass
6**	4.830	25.22	10.31	46.00	-20.78	AV	N	Pass

Test Data and Plots

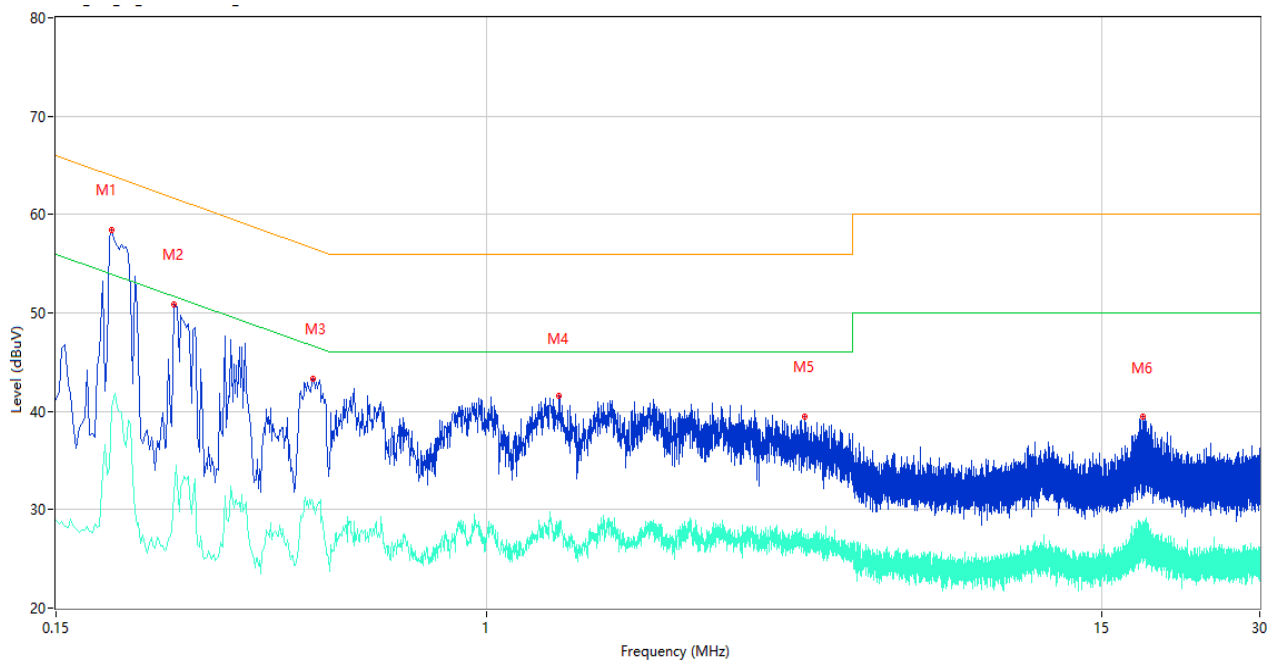
The USB Test Mode

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.192	55.96	10.38	63.95	-7.99	Peak	L	Pass
1**	0.192	34.94	10.38	53.95	-19.01	AV	L	Pass
2	0.248	48.99	10.34	61.82	-12.83	Peak	L	Pass
2**	0.248	28.76	10.34	51.82	-23.06	AV	L	Pass
3	0.478	42.69	10.29	56.37	-13.68	Peak	L	Pass
3**	0.478	28.74	10.29	46.37	-17.63	AV	L	Pass
4	1.292	39.35	10.25	56.00	-16.65	Peak	L	Pass
4**	1.292	26.94	10.25	46.00	-19.06	AV	L	Pass
5	4.324	40.68	10.31	56.00	-15.32	Peak	L	Pass
5**	4.324	28.97	10.31	46.00	-17.03	AV	L	Pass
6	18.428	38.61	10.51	60.00	-21.39	Peak	L	Pass
6**	18.428	26.97	10.51	50.00	-23.03	AV	L	Pass

A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.192	58.39	10.38	63.95	-5.56	Peak	N	N/A
1*	0.192	55.08	10.38	63.95	-8.87	QP	N	Pass
1**	0.192	40.42	10.38	53.95	-13.53	AV	N	Pass
2	0.252	50.83	10.34	61.69	-10.86	Peak	N	Pass
2**	0.252	31.63	10.34	51.69	-20.06	AV	N	Pass
3	0.464	43.29	10.30	56.62	-13.33	Peak	N	Pass
3**	0.464	30.79	10.30	46.62	-15.83	AV	N	Pass
4	1.374	41.53	10.25	56.00	-14.47	Peak	N	Pass
4**	1.374	28.71	10.25	46.00	-17.29	AV	N	Pass
5	4.044	39.47	10.30	56.00	-16.53	Peak	N	Pass
5**	4.044	26.97	10.30	46.00	-19.03	AV	N	Pass
6	17.962	39.49	10.49	60.00	-20.51	Peak	N	Pass
6**	17.962	26.20	10.49	50.00	-23.80	AV	N	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2150617-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2150617-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2150617-AI.PDF”.

--END OF REPORT--