

FCC

EMC

TEST REPORT

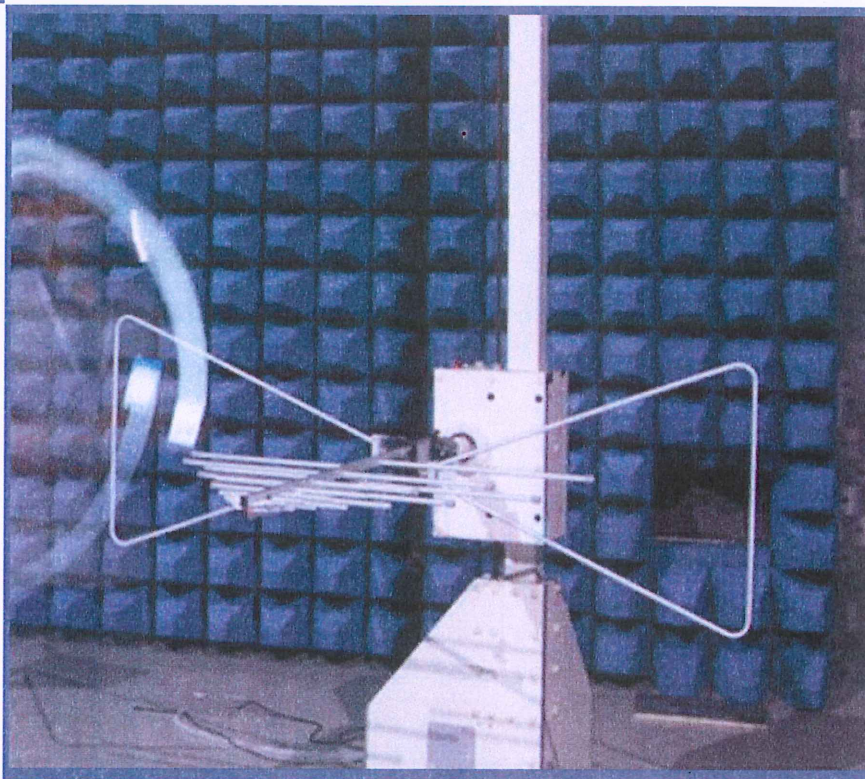
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Outdoor LoRa Gateway

ISSUED TO
Shenzhen RAKwireless Technology Co., Ltd.

Room 506, Bldg B, New Compark, Pingshan First Road, Taoyuan
Street, XiLi town Nanshan District, Shenzhen, China



Tested by: Xia Long

(Engineer)

Date: Apr. 15, 2019

Approved by: Wei Yanquan

(Chief Engineer)

Date: Apr. 15, 2019

Report No.: BL-SZ1920035-401

EUT Name: Outdoor LoRa Gateway

Model Name: RAK7240(refer section 2.4)

Brand Name: RAK

Test Standard: 47 CFR Part 15 Subpart B

FCC ID: 2AF6B-RAK724X

Test Conclusion: Pass

Test Date: Feb. 18, 2019 ~ Mar. 12, 2019

Date of Issue: Apr. 15, 2019

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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Apr. 03, 2019</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>Apr. 15, 2019</u>	<u>Updated model description in section 3.2</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 has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. 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. 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.
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 v6.7.
- (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.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Shenzhen RAKwireless Technology Co.,Ltd.
Address	Room 506, Bldg B, New Compark, Pingshan First Road, Taoyuan Street, XiLi town Nanshan District, Shenzhen, China

2.2 Manufacturer Information

Manufacturer	Shenzhen RAKwireless Technology Co.,Ltd.
Address	Room 506, Bldg B, New Compark, Pingshan First Road, Taoyuan Street, XiLi town Nanshan District, Shenzhen, China

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	Outdoor LoRa Gateway
Model Name Under Test	RAK7240
Series Model Name	RAK7249
Description of Model name differentiation	Only differentiate is that RAK7240 and RAK7249 has different enclosure.
Hardware Version	VA
Software Version	1.1.0024_Release
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Ancillary Equipment

Note: Not applicable.

2.6 Technical Information

Network and Wireless connectivity	3G Network WCDMA Band 2/4/5/8 4G Network FDD LTE Band 2/4/5/12/13 WIFI, GPS, Lora
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3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	FCC 47 CFR Part 15 Subpart B (10-1-17 Edition)	Unintentional Radiators
2	ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low- Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

3.2 Verdict

No.	Description	FCC Rule	Test Verdict	Result
1	Radiated Emission	15.109	Pass	Annex A .1
2	Conducted Emission, AC Ports	15.107	Pass	Annex A .2
Note: Both model RAK7240 and model RAK7249 were tested, but the report only showed the data of the worst model, and model RAK7240 has the worst data.				

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)	3.23 dB
Radiated emissions (30 MHz-1 GHz)	4.30 dB
Radiated emissions (1 GHz-18 GHz)	4.81 dB
Radiated emissions (18 GHz-40 GHz)	5.71 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	DC 48V from POE Adapter	50% to 55%	100 kPa to 102 kPa

4.2 Test Equipment List

Radiated Emission Test For Frequency Below 1 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWA RZ	ESRP	101036	2018.06.13	2019.06.12	☒
Test Antenna- Bi-Log	SCHWARZBECK	VULB 9163	9163-977	2017.07.22	2019.07.21	☒
Test Antenna- Horn	SCHWARZBECK	BBHA 9120D	9120D-1600	2018.07.11	2020.07.10	☐
Anechoic Chamber	EMC Electronic Co., Ltd	9m*6m*6m	N/A	2018.08.08	2019.08.07	☒
Test Software	BALUN	BL410_E	V18.626	--	--	☒

Radiated Emission Test For Frequency Above 1 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2018.11.07	2019.11.06	☒
Test Antenna- Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2017.07.22	2019.07.21	☐
Test Antenna- Horn	SCHWARZBECK	BBHA 9120D	9120D-1148	2018.07.11	2020.07.10	☒
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2020.02.20	☒
Test Software	BALUN	BL410_E	V18.626	--	--	☒

Conducted Emission Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWA RZ	ESRP	101036	2018.06.13	2019.06.12	☒
LISN	SCHWARZBECK	NSLK 8127	8127-687	2018.06.13	2019.06.12	☒
ISN	TESEQ	ISN T800	34449	2018.11.16	2019.11.15	☐
Shielded Enclosure	ChangNing	CN-130701	130703	N/A	N/A	☒
Test Software	BALUN	BL410_E	V18.626	--	--	☒

4.3 Test Enclosure list

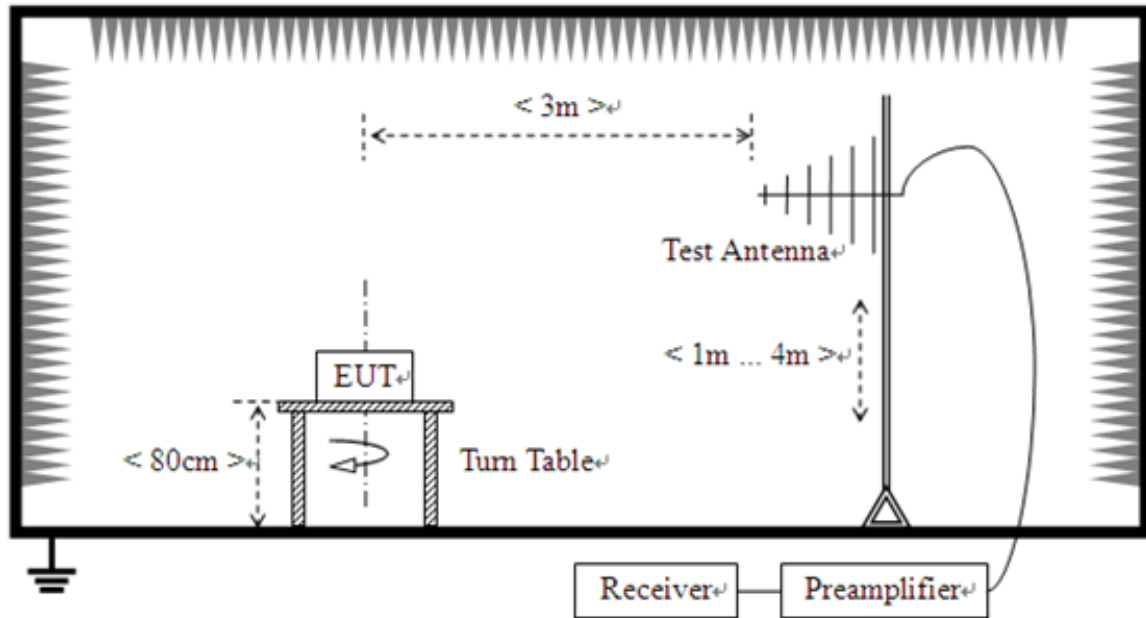
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	☐
Laptop	Lenovo	N/A	N/A	N/A	N/A	☒
Printer	HP	DESKJET 1000	N/A	N/A	N/A	☐
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	☐
Mouse	Logitech	M100	N/A	N/A	N/A	☐
USB disk	Kingston	N/A	N/A	N/A	N/A	☐
TF Card	Kingston	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 2019.06.14	☒
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	☐
RJ45 Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☒
POE Adapter	N/A	N/A	N/A	N/A	N/A	☒
LORA Antenna	N/A	N/A	N/A	N/A	N/A	☒
3/4G Antenna	N/A	N/A	N/A	N/A	N/A	☒
GPS Antenna	N/A	N/A	N/A	N/A	N/A	☒
WIFI Antenna	N/A	N/A	N/A	N/A	N/A	☒

4.4 Test Configurations

Test Configurations (TC) No.	Description
TC01	<u>The WCDMA Band 2 Test Mode</u> EUT + LORA Antenna + 3/4G Antenna + GPS Antenna + WIFI Antenna + POE Adapter + RJ45 Cable + Laptop + WIFI Link + GPS RX + WCDMA Band 2 Link
TC02	<u>The WCDMA Band 4 Test Mode</u> EUT + LORA Antenna + 3/4G Antenna + GPS Antenna + WIFI Antenna + POE Adapter + RJ45 Cable + Laptop + WIFI Link + GPS RX + WCDMA Band 4 Link
TC03	<u>The WCDMA Band 5 Test Mode</u> EUT + LORA Antenna + 3/4G Antenna + GPS Antenna + WIFI Antenna + POE Adapter + RJ45 Cable + Laptop + WIFI Link + GPS RX + WCDMA Band 5 Link
TC04	<u>The FDD LTE Band 2 Test Mode</u> EUT + LORA Antenna + 3/4G Antenna + GPS Antenna + WIFI Antenna + POE Adapter + RJ45 Cable + Laptop + WIFI Link + GPS RX + LTE Band 2 Link
TC05	<u>The FDD LTE Band 4 Test Mode</u> EUT + LORA Antenna + 3/4G Antenna + GPS Antenna + WIFI Antenna + POE Adapter + RJ45 Cable + Laptop + WIFI Link + GPS RX + LTE Band 4 Link
TC06	<u>The FDD LTE Band 5 Test Mode</u> EUT + LORA Antenna + 3/4G Antenna + GPS Antenna + WIFI Antenna + POE Adapter + RJ45 Cable + Laptop + WIFI Link + GPS RX + LTE Band 5 Link
TC07	<u>The FDD LTE Band 12 Test Mode</u> EUT + LORA Antenna + 3/4G Antenna + GPS Antenna + WIFI Antenna + POE Adapter + RJ45 Cable + Laptop + WIFI Link + GPS RX + LTE Band 12 Link
TC08	<u>The FDD LTE Band 13 Test Mode</u> EUT + LORA Antenna + 3/4G Antenna + GPS Antenna + WIFI Antenna + POE Adapter + RJ45 Cable + Laptop + WIFI Link + GPS RX + LTE Band 13 Link
TC09	<u>The LORA Test Mode</u> EUT + LORA Antenna + 3/4G Antenna + GPS Antenna + WIFI Antenna + POE Adapter + RJ45 Cable + Laptop + WIFI Link + GPS RX + LORA

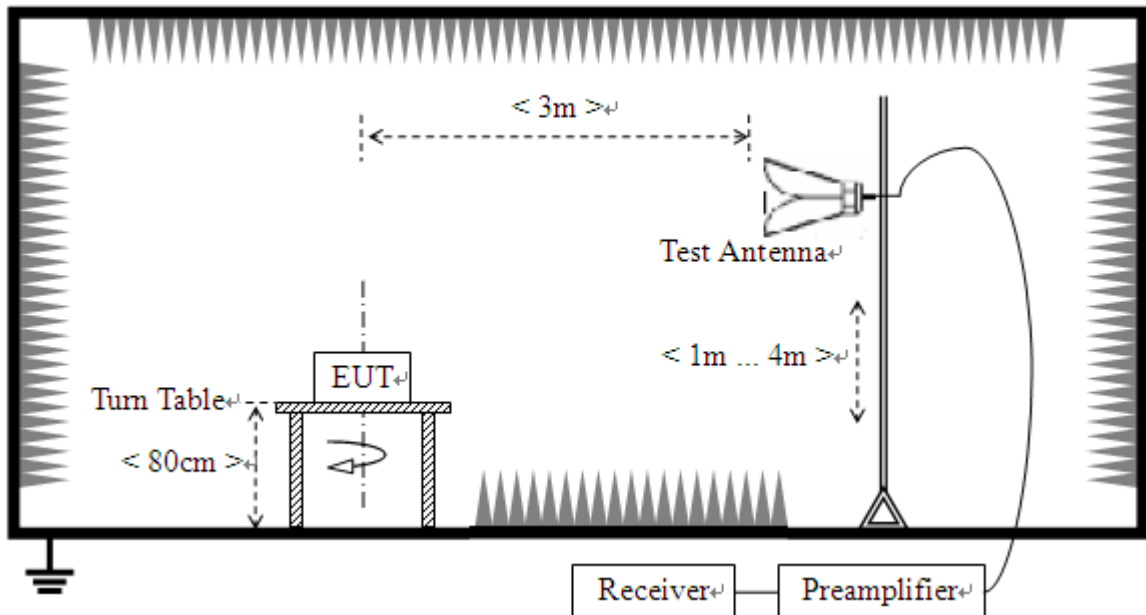
4.5 Test Setups

Test Setup 1



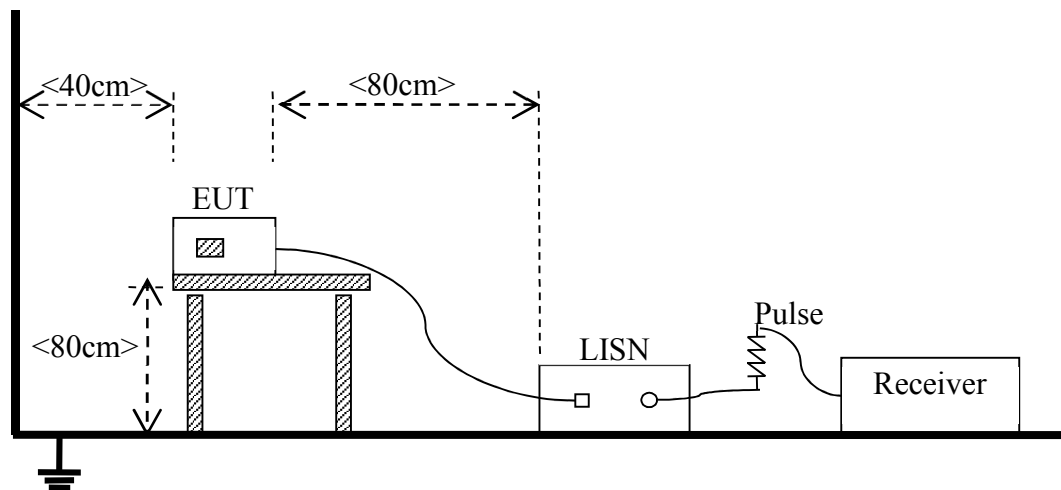
(For Radiated Emission Test (30 MHz-1 GHz))

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 WCDMA Band 2 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.

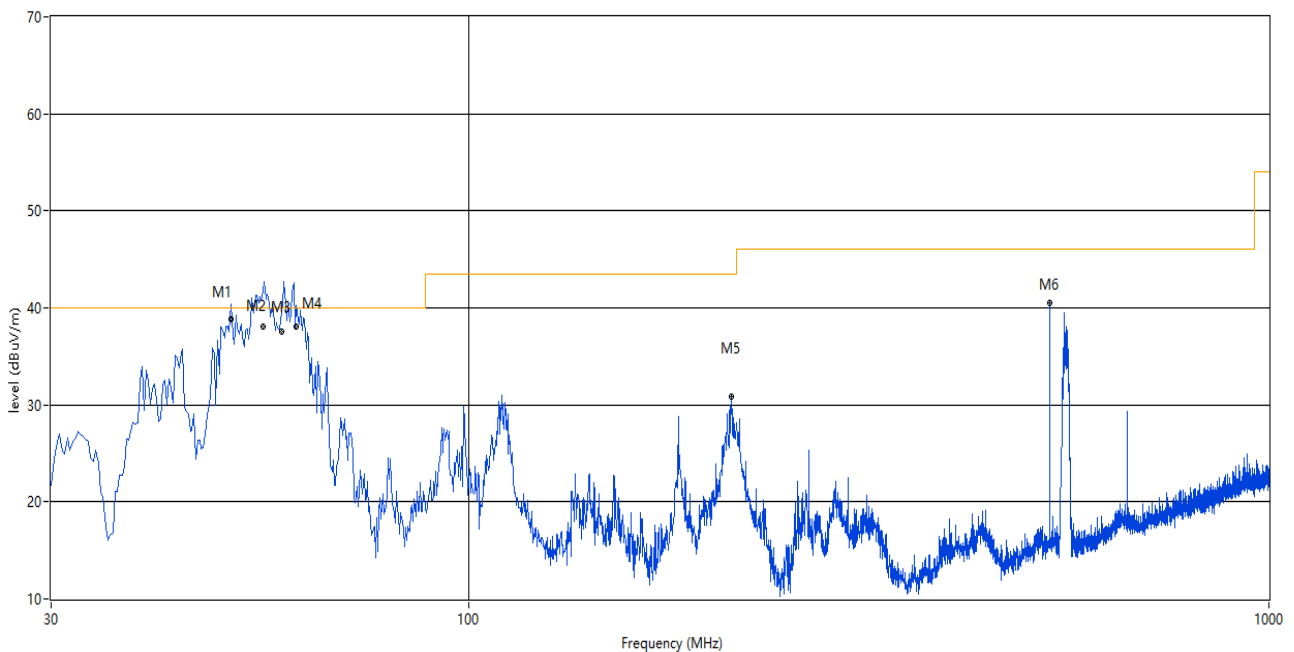
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note 3: The marked spikes near 2400 MHz with circle should be ignored because they are WIFI carrier frequency.

Test Data and Plots

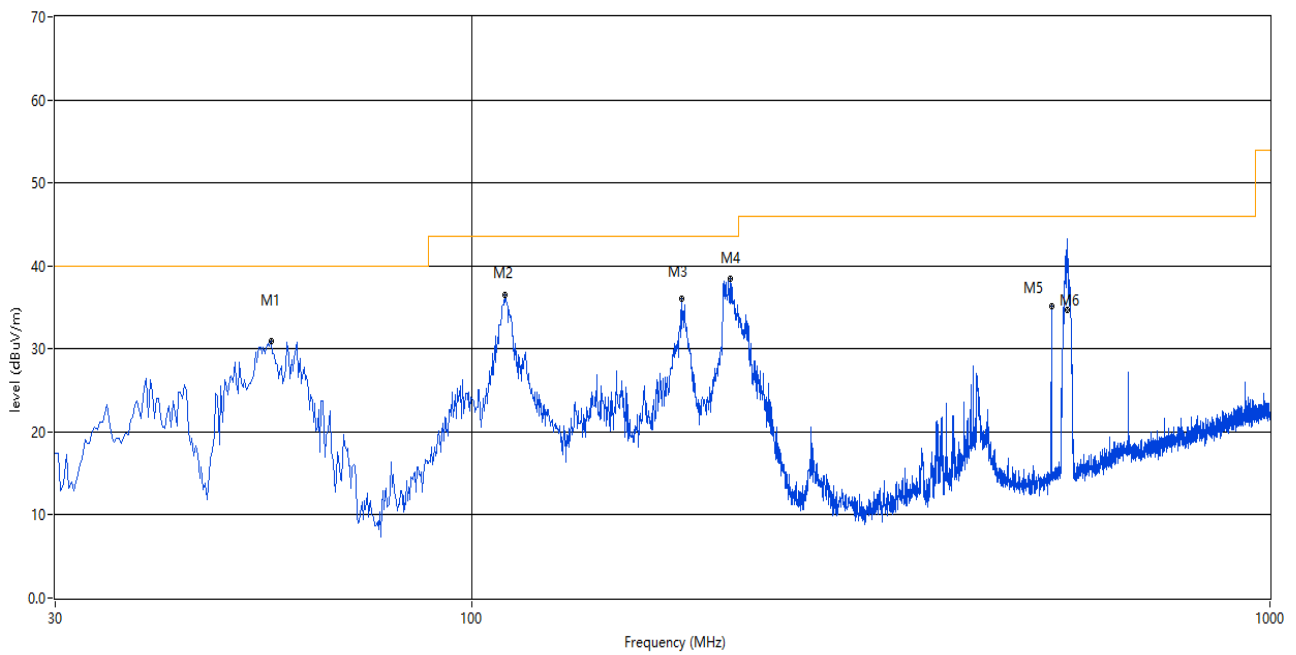
The WCDMA Band 2 Test Mode

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



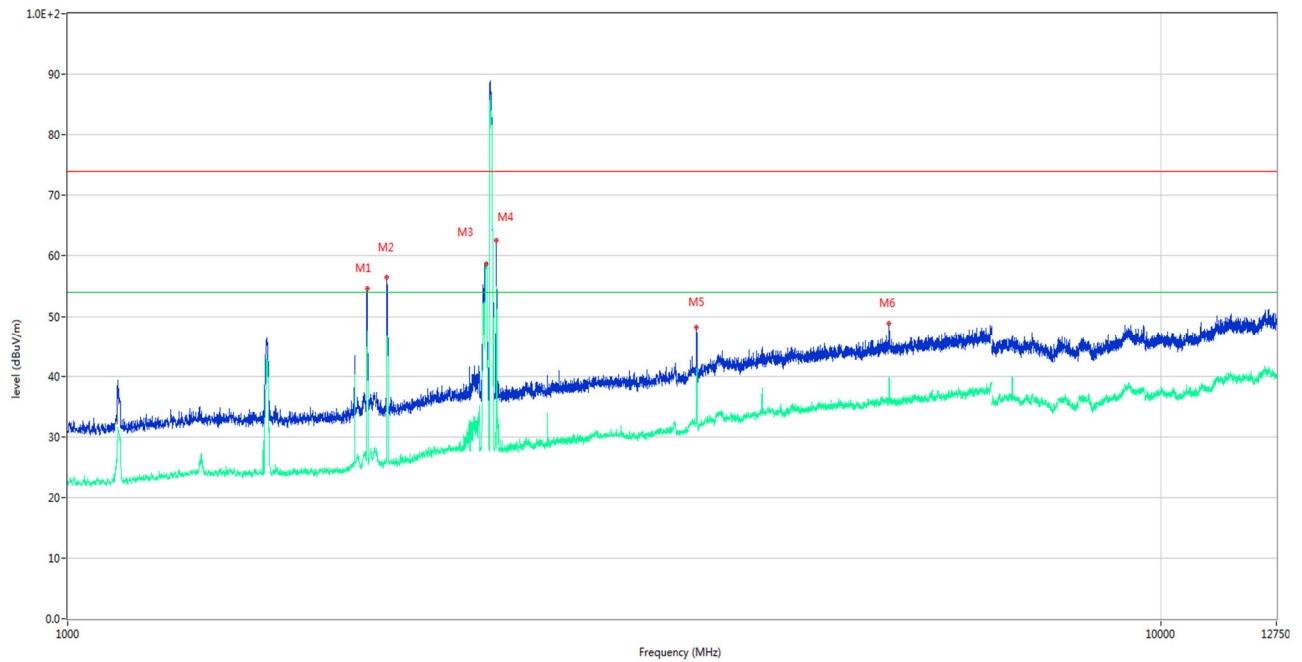
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	50.424	41.37	-23.63	40.0	1.37	Peak	230.00	100	V	N/A
1*	50.424	38.83	-23.63	40.0	-1.17	QP	230.00	100	V	Pass
2	55.148	40.83	-23.80	40.0	0.83	Peak	180.00	121	V	N/A
2*	55.148	38.01	-23.80	40.0	-1.99	QP	180.00	121	V	Pass
3	58.239	41.42	-24.00	40.0	1.42	Peak	184.00	100	V	N/A
3*	58.239	37.54	-24.00	40.0	-2.46	QP	184.00	100	V	Pass
4	60.805	40.22	-24.08	40.0	0.22	Peak	226.00	100	V	N/A
4*	60.805	38.12	-24.08	40.0	-1.88	QP	226.00	100	V	Pass
5	212.602	30.82	-25.05	43.5	-12.68	Peak	242.00	200	V	Pass
6	531.975	40.52	-15.04	46.0	-5.48	Peak	0.00	200	V	Pass

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



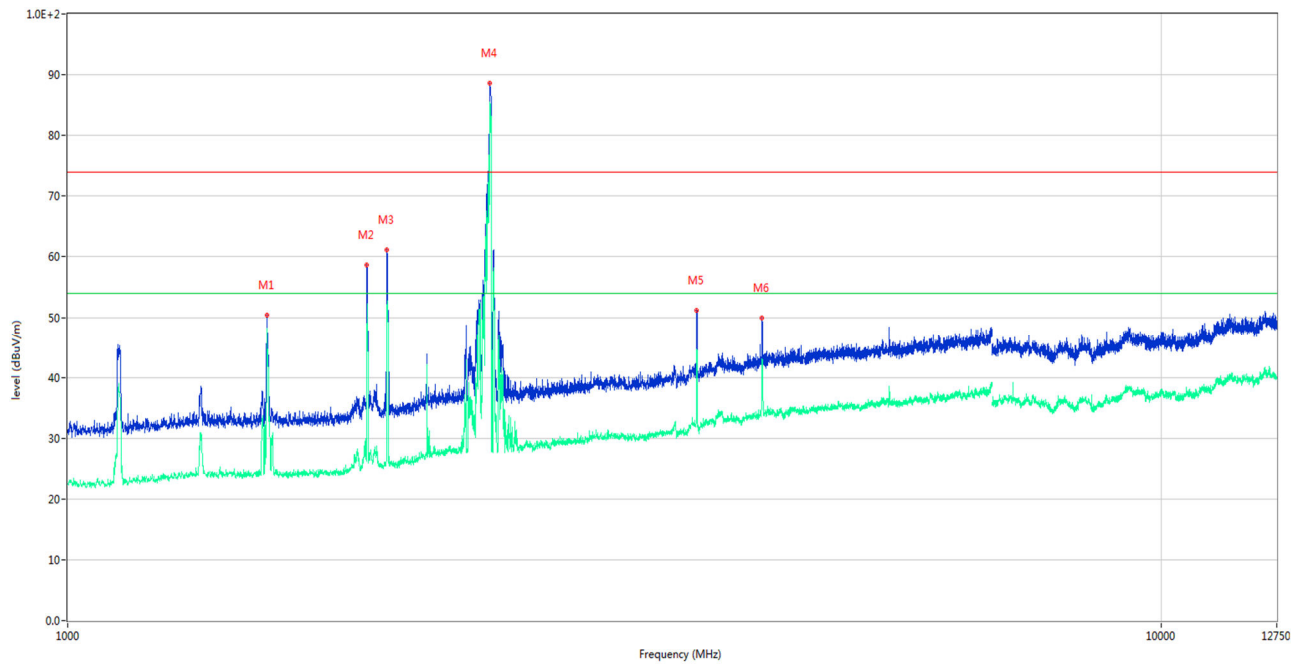
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	55.947	30.91	-23.86	40.0	-9.09	Peak	270.00	100	H	Pass
2	109.783	36.54	-25.47	43.5	-6.96	Peak	279.00	200	H	Pass
3	183.018	36.09	-24.62	43.5	-7.41	Peak	279.00	200	H	Pass
4	210.905	38.52	-25.31	43.5	-4.98	Peak	270.00	100	H	Pass
5	531.975	35.10	-15.04	46.0	-10.90	Peak	279.00	200	H	Pass
6	556.873	43.58	-14.23	46.0	-2.42	Peak	286.00	100	H	N/A
6*	556.873	34.64	-14.23	46.0	-11.36	QP	286.00	100	H	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 (o)	Height (cm)	ANT	Verdict
1**	1878.500	46.54	-15.79	54.0	-7.46	AV	319.40	100	V	N/A
1	1878.500	54.60	-15.79	74.0	-19.40	Peak	319.40	100	V	N/A
2**	1959.000	46.72	-17.23	54.0	-7.28	AV	189.90	100	V	N/A
2	1959.000	56.43	-17.23	74.0	-17.57	Peak	189.90	100	V	N/A
3**	2406.500	53.42	-14.73	54.0	-0.58	AV	161.00	100	V	N/A
3	2406.500	58.38	-14.73	74.0	-15.62	Peak	161.00	100	V	N/A
4**	2464.500	50.31	-15.21	54.0	-3.69	AV	89.20	100	V	N/A
4	2464.500	62.47	-15.21	74.0	-11.53	Peak	89.20	100	V	N/A
5**	3760.000	41.40	-6.79	54.0	-12.60	AV	320.70	100	V	Pass
5	3760.000	48.17	-6.79	74.0	-25.83	Peak	320.70	100	V	Pass
6**	5637.000	38.80	-4.67	54.0	-15.20	AV	7.20	100	V	N/A
6	5637.000	48.81	-4.67	74.0	-25.19	Peak	7.20	100	V	N/A

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 (o)	Height (cm)	ANT	Verdict
1**	1520.500	41.39	-19.21	54.0	-12.61	AV	58.00	100	H	Pass
1	1520.500	50.45	-19.21	74.0	-23.55	Peak	58.00	100	H	Pass
2**	1878.000	46.54	-15.80	54.0	-7.46	AV	4.40	100	H	N/A
2	1878.000	58.63	-15.80	74.0	-15.37	Peak	4.40	100	H	N/A
3**	1958.500	51.47	-17.26	54.0	-2.53	AV	193.90	100	H	N/A
3	1958.500	61.08	-17.26	74.0	-12.92	Peak	193.90	100	H	N/A
4**	2432.500	82.73	-14.48	54.0	28.73	AV	359.60	100	H	N/A
4	2432.500	88.64	-14.48	74.0	14.64	Peak	359.60	100	H	N/A
5**	3760.000	44.36	-6.79	54.0	-9.64	AV	118.60	100	H	Pass
5	3760.000	51.13	-6.79	74.0	-22.87	Peak	118.60	100	H	Pass
6**	4315.000	43.06	-4.52	54.0	-10.94	AV	1.80	100	H	Pass
6	4315.000	49.93	-4.52	74.0	-24.07	Peak	1.80	100	H	Pass

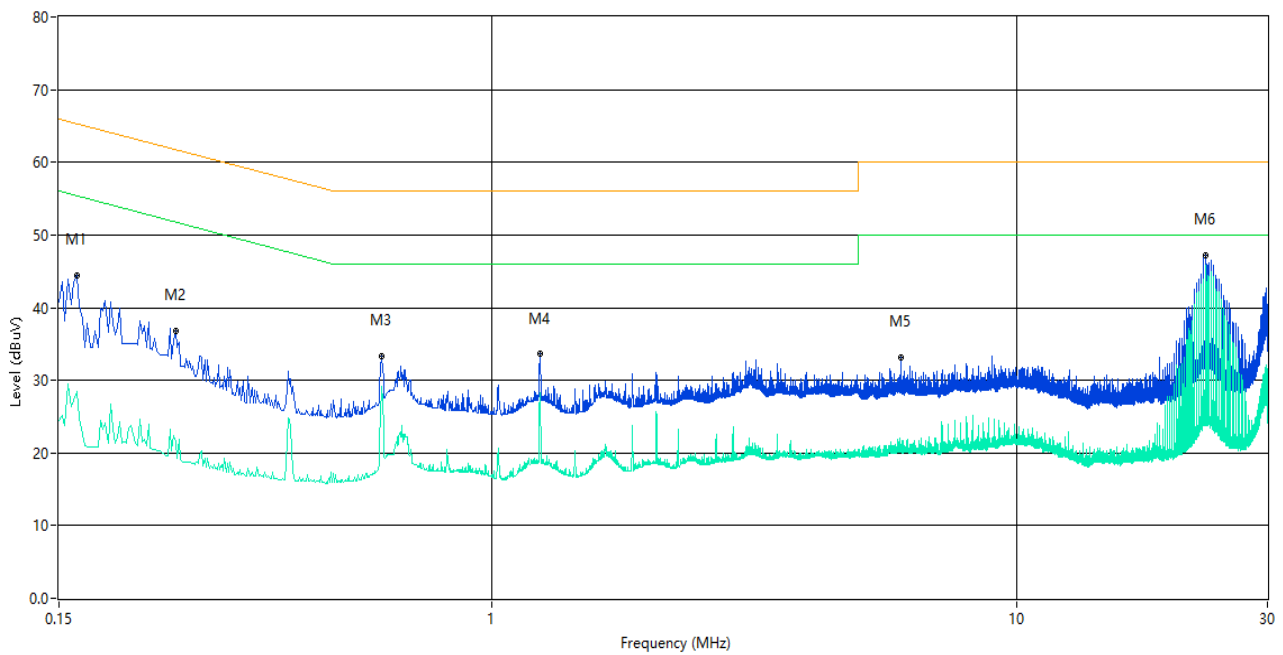
A.2 Conducted Emission

Test Data and Plots

The WCDMA Band 2 Test Mode

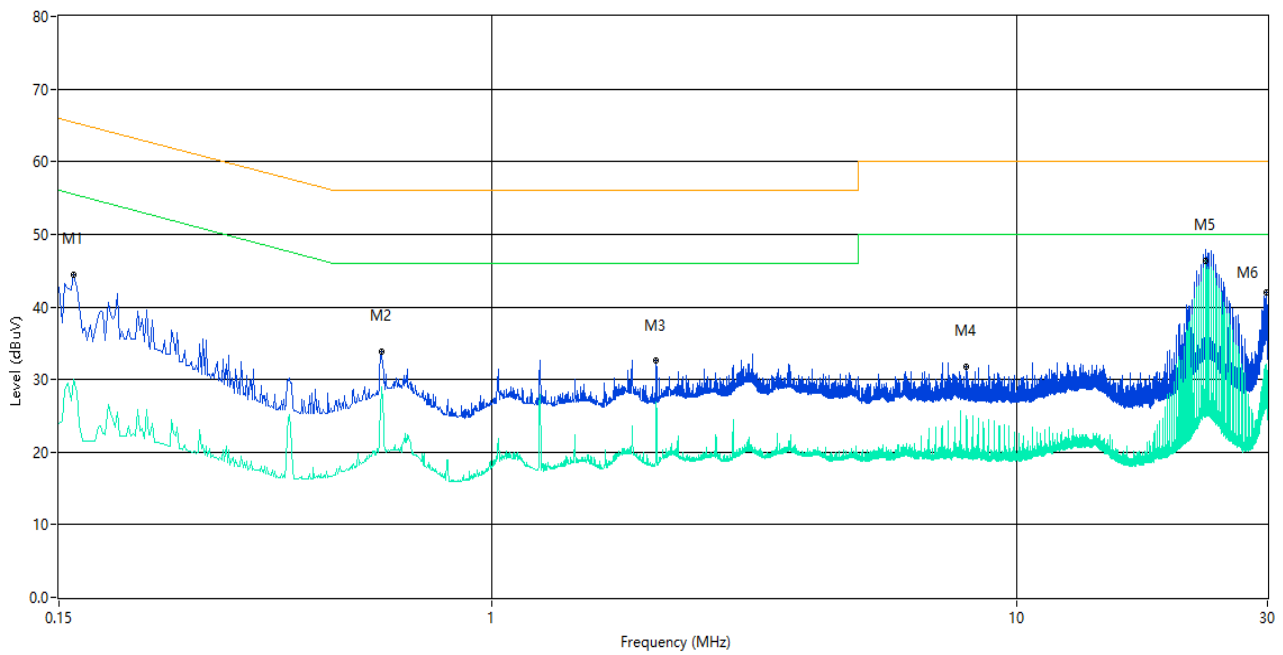
Note: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.162	44.4	10.01	65.4	-21.00	Peak	L Line	Pass
1**	0.162	28.4	10.01	55.4	-27.00	AV	L Line	Pass
2	0.250	36.8	10.00	61.8	-25.00	Peak	L Line	Pass
2**	0.250	21.5	10.00	51.8	-30.30	AV	L Line	Pass
3	0.616	33.3	10.03	56.0	-22.70	Peak	L Line	Pass
3**	0.616	28.3	10.03	46.0	-17.70	AV	L Line	Pass
4	1.234	33.6	10.05	56.0	-22.40	Peak	L Line	Pass
4**	1.234	28.2	10.05	46.0	-17.80	AV	L Line	Pass
5	6.028	33.2	10.13	60.0	-26.80	Peak	L Line	Pass
5**	6.028	21.1	10.13	50.0	-28.90	AV	L Line	Pass
6	22.844	47.2	10.28	60.0	-12.80	Peak	L Line	Pass
6**	22.844	45.8	10.28	50.0	-4.20	AV	L Line	Pass

A.2.2 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.160	44.5	10.01	65.5	-21.00	Peak	N Line	Pass
1**	0.160	30.1	10.01	55.5	-25.40	AV	N Line	Pass
2	0.616	33.9	10.03	56.0	-22.10	Peak	N Line	Pass
2**	0.616	28.5	10.03	46.0	-17.50	AV	N Line	Pass
3	2.058	32.6	10.07	56.0	-23.40	Peak	N Line	Pass
3**	2.058	27.0	10.07	46.0	-19.00	AV	N Line	Pass
4	8.022	31.8	10.15	60.0	-28.20	Peak	N Line	Pass
4**	8.022	21.9	10.15	50.0	-28.10	AV	N Line	Pass
5	22.846	47.7	10.28	60.0	-12.30	Peak	N Line	Pass
5**	22.846	46.3	10.28	50.0	-3.70	AV	N Line	Pass
6	29.798	42.1	10.35	60.0	-17.90	Peak	N Line	Pass
6**	29.798	29.9	10.35	50.0	-20.10	AV	N Line	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ1920035-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ1920035-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ1920035-AI.PDF”.

--END OF REPORT--