TEST REPORT

Applicant:	Kohler Co.
Address:	444 Highland Drive, Kohler Wisconsin, United States
Equipment Type:	Based on BG22 series wireless communication module
Model Name:	L-FKMIB01-G0BP4 (refer section 2.4)
Brand Name:	KOHLER
FCC ID:	N82-KOHLER051
Test Standard:	47 CFR Part 15 Subpart C (refer section 3.1)
Test Date:	Sep. 14, 2022 - Sep. 15, 2022
Date of Issue:	Nov. 11, 2022

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Julie zhu **Checked by:** Ye Hongji **Approved by:** Liao Jianming (Technical Director)

Revision History

Version	Issue Date	Revisions
Rev. 01	Nov. 11, 2022	Changed the GFSK to FSK in Section 2.5 and Section A.1, Updated the Transfer Rate in Section 2.5. This report replaces BL-SZ2290339-601 which was issued by BALUN on Nov. 04, 2022, the original report is invalid.

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☑ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☐ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, 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.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Kohler Co.
Address	444 Highland Drive, Kohler Wisconsin, United States

2.2 Manufacturer Information

Manufacturer	Shanghai Kohler Electronics., Ltd.
Address	No.1955, Fengxiang Road, Baoshan Area, Shanghai, PRC Post code:200444

2.3 Factory Information

Factory	Shanghai Kohler Electronics., Ltd.
Address	No.1955, Fengxiang Road, Baoshan Area, Shanghai, PRC Post code:200444

2.4 General Description for Equipment under Test (EUT)

EUT Name	Based on BG22 series wireless communication module
Model Name Under Test	L-FKMIB01-G0BP4
Series Model Name	L-FKMIB01-G0BP4-01, L-FKMIB01-G0BP4-02
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in model name and software function (this information provided by the customer).
Hardware Version	01
Software Version	01
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Technical Information

Network and Wireless connectivity	2.4G ISM Band

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

Modulation Technology	DTS
Modulation Type	FSK
Product Type	☐ Mobile ☒ Portable ☐ Fix Location
Transfer Rate	250 Kbps
Frequency Range	The frequency range used is 2400 MHz to 2483.5 MHz.
Number of channel	10
Tested Channel	Low Channel(2414.5 MHz), Middle Channel(2439.5 MHz), High Channel(2459.5 MHz)
Antenna Type	PCB Antenna
Antenna Gain	-3.8 dBi

Channel List:

Number	Frequency (MHz)	Number	Frequency (MHz)
0	2414.5(Low)	5	2439.5(Middle)
1	2419.5	6	2444.5
2	2424.5	7	2449.5
3	2429.5	8	2454.5
4	2434.5	9	2459.5(High)

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C	Miscellaneous Wireless Communications Services
2	ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

3.2 Test Verdict

No.	Description	FCC Part No.	Test Result	Verdict	Remark
1	Antenna Requirement	15.203	--	Pass	Note [1]
2	20 dB and 99% Bandwidth	15.215(c)	ANNEX A.1	Pass	--
3	AC Conducted Emission	15.207	ANNEX A.2	Pass	--
4	Radiated Spurious Emission	15.249(a)	ANNEX A.3	Pass	--
5	Band Edge(Restricted-band band-edge)	15.249(a)	ANNEX A.4	Pass	--
6	Duty Cycle	--	ANNEX A.1	Pass	--
Note: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.					

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity	36% to 63%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+22.9℃ to +25.0℃
Working Voltage of the EUT	NV (Normal Voltage)	3.3 V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	KEYSIGHT	N9020A	MY46471071	2022.07.26	2023.07.25
Spectrum Analyzer	KEYSIGHT	N9020A	MY52510065	2022.09.06	2023.09.05
Test Antenna-Horn (1-18 GHz)	SCHWARZBECK	BBHA 9120D	01631	2022.02.03	2025.02.02
Test Antenna-Horn (18-40 GHz)	A-INFO	LB-180400KF	J211060273	2021.07.02	2024.07.01
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2021.09.04	2024.09.03
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2021.10.10	2022.10.09
LISN	SCHWARZBECK	NSLK 8127	8127-687	2021.06.08	2022.06.07
LISN	SCHWARZBECK	NSLK 8127	8127-687	2022.06.01	2023.05.31
Shielded Enclosure	YiHeng Electronic Co., Ltd	3.5m*3.1m* 2.8m	N/A	2022.02.19	2025.02.18
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2021.10.10	2022.10.09
Test Antenna-Loop (9 kHz-30 MHz)	SCHWARZBECK	FMZB 1519	1519-037	2021.04.16	2024.04.15
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	N/A	2021.08.15	2024.08.14
EMI Receiver	Agilent	N9038A	MY55330120	2021.10.20	2022.10.19
Amplifier(30-1GHz)	COM-MV	ZT30-1000M	B2017119081	2021.10.20	2022.10.19
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	9168-00867	2022.04.12	2025.04.11
Anechoic Chamber	YiHeng	9m*6m*6m	966#2	2022.02.19	2024.08.18

4.3 Measurement 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.

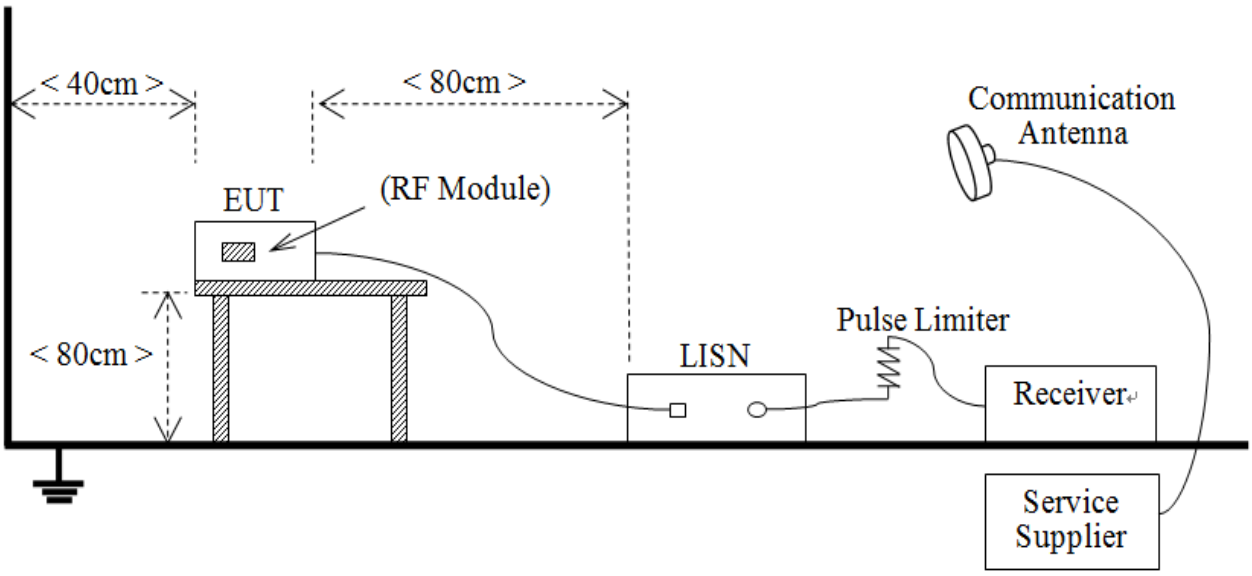
Parameters	Uncertainty
Occupied Channel Bandwidth	2.8%
RF output power, conducted	1.28 dB
Power Spectral Density, conducted	1.30 dB
Unwanted Emissions, conducted	1.84 dB
All emissions, radiated	5.36 dB
Temperature	0.82°C
Humidity	4.1%

4.4 Description of Test Setup

4.4.1 For Antenna Port Test

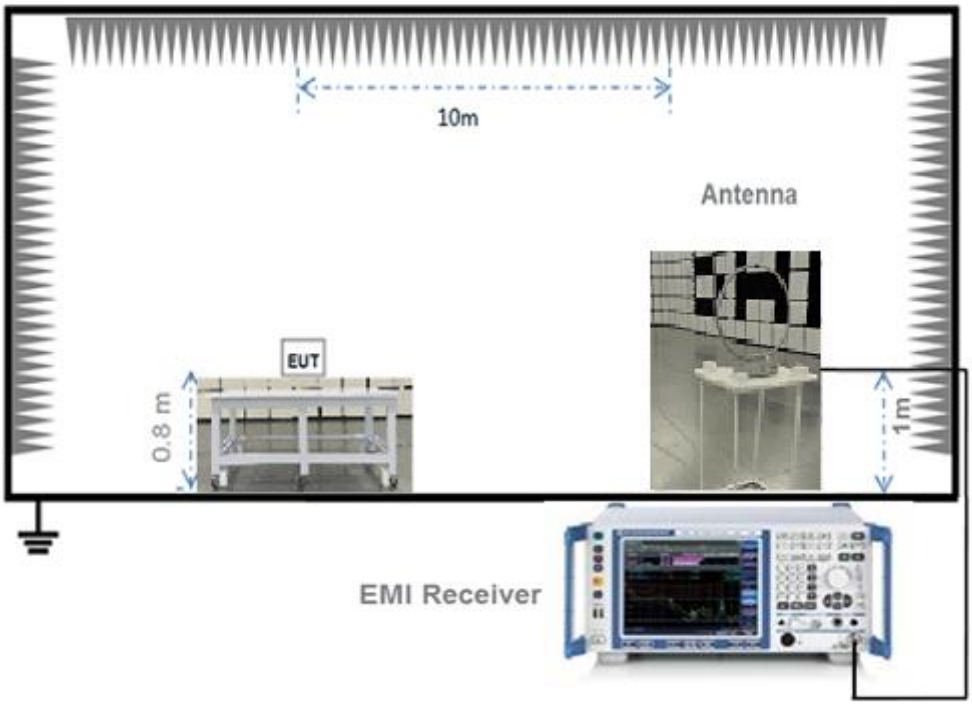
(Diagram 1)

4.4.2 For AC Power Supply Port Test



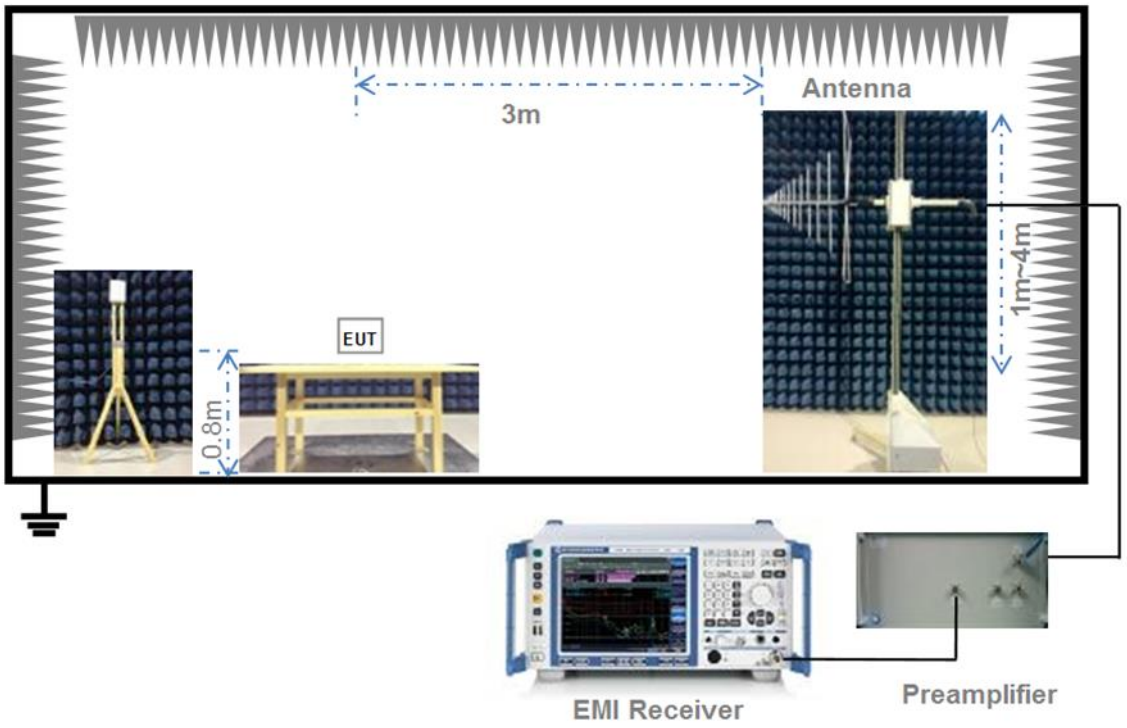
(Diagram 2)

4.4.3 For Radiated Test (Below 30 MHz)



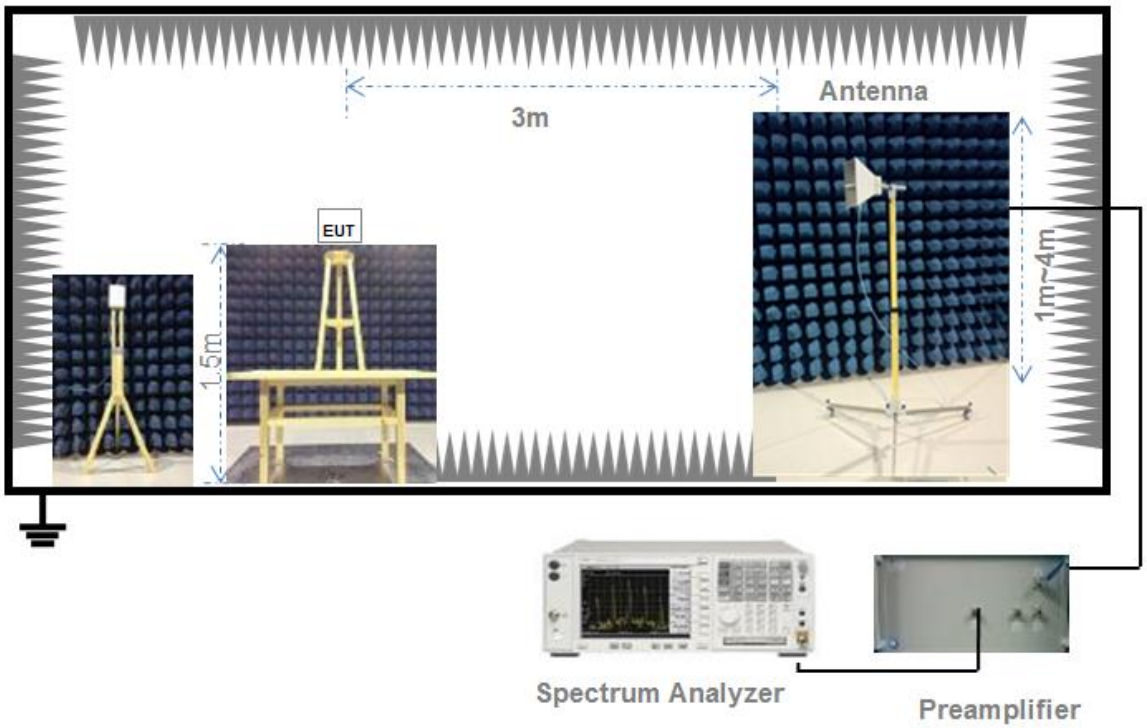
(Diagram 3)

4.4.4 For Radiated Test (30 MHz-1 GHz)



(Diagram 4)

4.4.5 For Radiated Test (Above 1 GHz)



(Diagram 5)

5 TEST ITEMS

5.1 Antenna Requirements

5.1.1 Relevant Standards

FCC §15.203 & 15.247(b)

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

Protected Method	Description
The antenna is embedded in the product.	An embedded-in antenna design is used.

Reference Documents	Item
Photo	Please refer to the EUT Photo documents.

5.1.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

5.2 20 dB and 99% Bandwidth

5.2.1 Limit

FCC §15.215(c)

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

RSS-Gen 6.6

The emission bandwidth (×dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated × dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3× the resolution bandwidth.

When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth, as calculated or measured

5.2.2 Test Setups

See section 4.4.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel

RBW ≥ 1% of the 20 dB bandwidth

VBW ≥ RBW

Sweep = auto

Detector function = peak

Trace = max hold

5.2.4 Test Result

Please refer to ANNEX A.1.

5.3 AC Conducted Emission

5.3.1 Limit

FCC §15.207

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

5.3.2 Test Setups

See section 4.4.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels 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.

5.3.4 Test Result

Please refer to ANNEX A.2.

5.4 Radiated Spurious Emission

5.4.1 Limit

FCC §15.249(a)

Except as provided in paragraph (a) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Frequency (MHz)	Field Strength of Fundamental (mV/m)	Field Strength of Harmonics (μV/m)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note:

1. For Above 1000 MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

2. For above 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

5.4.2 Test Setups

See section 4.4.2-4.4.5 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented. The power of the EUT transmitting frequency should be ignored.

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.
Use the following spectrum analyzer settings:
Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

5.4.4 Test Result

Please refer to ANNEX A.3.

5.5 Band Edge (Restricted-band band-edge)

5.5.1 Limit

FCC §15.249(a)

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

5.5.2 Test Setups

See section 4.4.3 to 4.4.5 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

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.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported, Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

5.5.4 Test Result

Please refer to ANNEX A.4.

ANNEX A TEST RESULT

A.1 20 dB and 99% Bandwidth

Test Data

Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
2414.5	0.277100	0.267102
2439.5	0.279297	0.267124
2459.5	0.278076	0.267526

Test Plots

20 dB Bandwidth

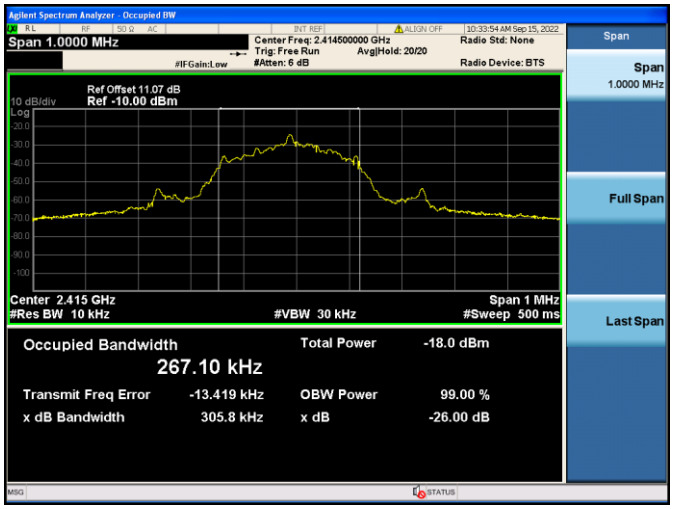
LOW CHANNEL

MIDDLE CHANNEL

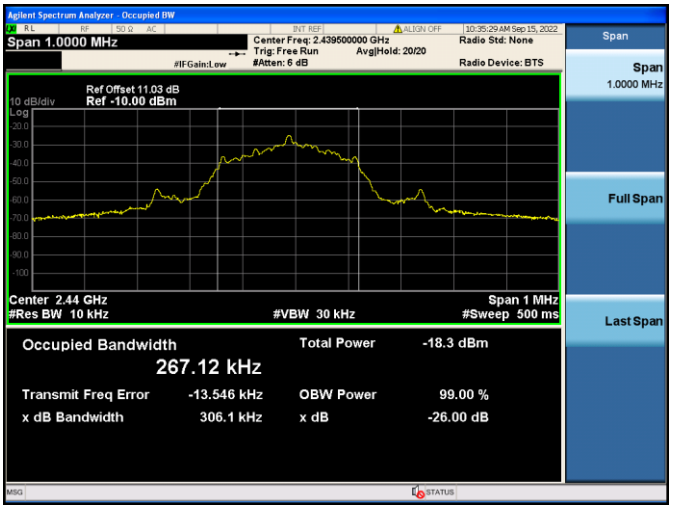
HIGH CHANNEL

99% Bandwidth

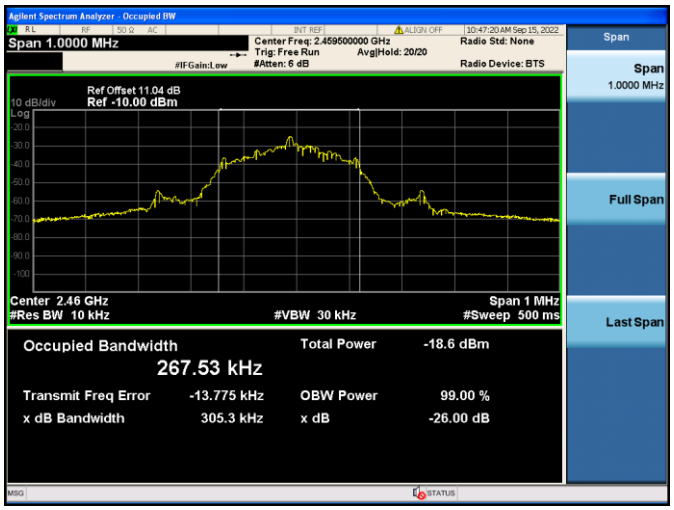
LOW CHANNEL



MIDDLE CHANNEL



HIGH CHANNEL

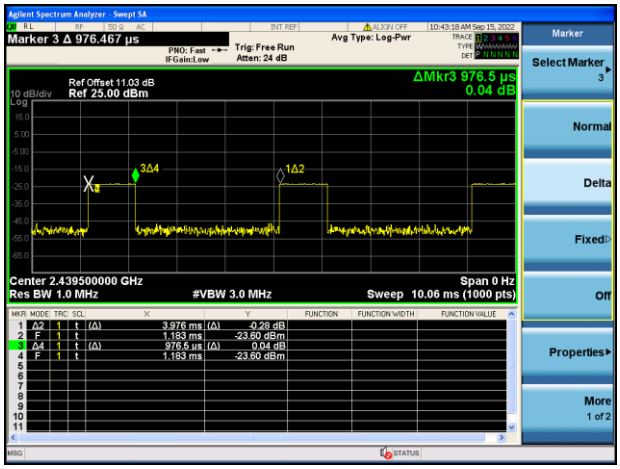


Duty Cycle Test Data

Band	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)
FSK	0.9765	3.976	24.56%

Test Plots

FSK

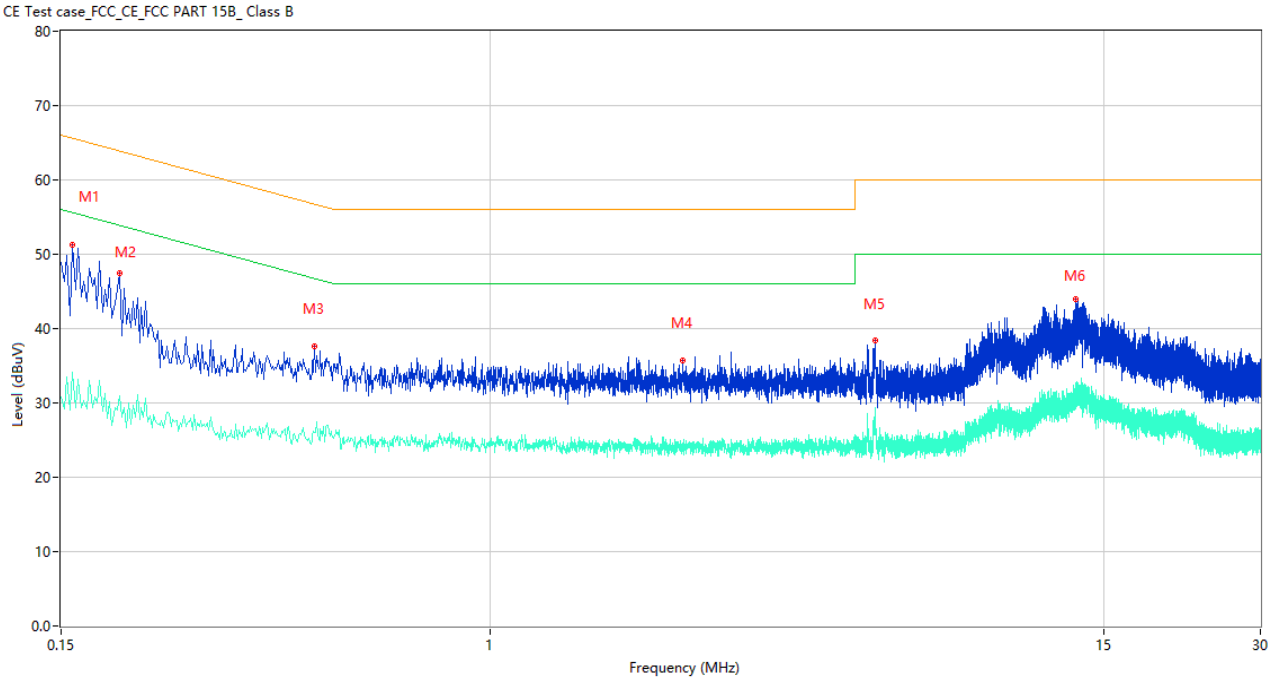


A.2 AC Conducted Emissions

Note [1]: The EUT is working in the Normal link mode. All modes have been tested and normal link mode is worst.

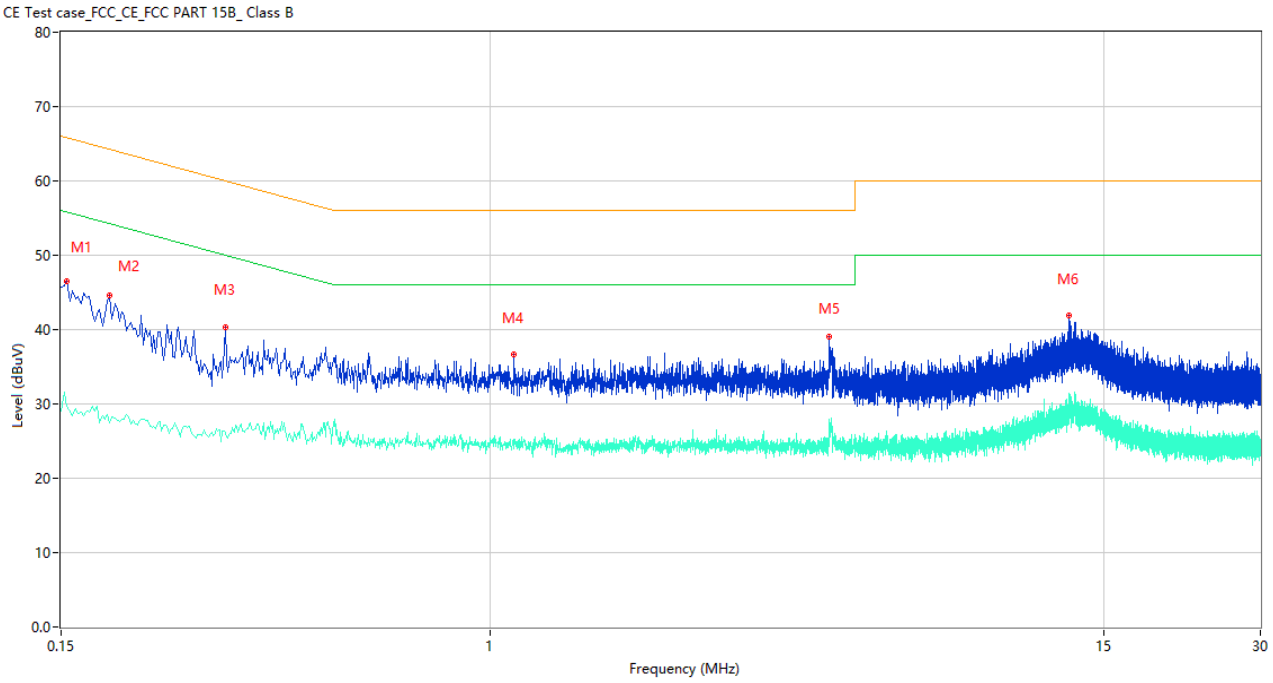
Test Data and Plots

PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.158	51.28	10.08	65.57	-14.29	Peak	L	Pass
1**	0.158	34.15	10.08	55.57	-21.42	AV	L	Pass
2	0.194	47.45	10.06	63.86	-16.41	Peak	L	Pass
2**	0.194	30.93	10.06	53.86	-22.93	AV	L	Pass
3	0.460	37.68	10.22	56.69	-19.01	Peak	L	Pass
3**	0.460	26.05	10.22	46.69	-20.64	AV	L	Pass
4	2.338	35.71	10.13	56.00	-20.29	Peak	L	Pass
4**	2.338	23.74	10.13	46.00	-22.26	AV	L	Pass
5	5.484	38.36	10.33	60.00	-21.64	Peak	L	Pass
5**	5.484	29.33	10.33	50.00	-20.67	AV	L	Pass
6	13.272	43.96	10.40	60.00	-16.04	Peak	L	Pass
6**	13.272	32.66	10.40	50.00	-17.34	AV	L	Pass

PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.154	46.51	10.09	65.78	-19.27	Peak	N	Pass
1**	0.154	29.61	10.09	55.78	-26.17	AV	N	Pass
2	0.186	44.65	10.06	64.21	-19.56	Peak	N	Pass
2**	0.186	27.42	10.06	54.21	-26.79	AV	N	Pass
3	0.310	40.32	10.18	59.97	-19.65	Peak	N	Pass
3**	0.310	26.15	10.18	49.97	-23.82	AV	N	Pass
4	1.110	36.63	10.20	56.00	-19.37	Peak	N	Pass
4**	1.110	25.25	10.20	46.00	-20.75	AV	N	Pass
5	4.466	39.03	10.28	56.00	-16.97	Peak	N	Pass
5**	4.466	27.87	10.28	46.00	-18.13	AV	N	Pass
6	12.890	41.84	10.09	60.00	-18.16	Peak	N	Pass
6**	12.890	30.74	10.09	50.00	-19.26	AV	N	Pass

A.3 Radiated Emission

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

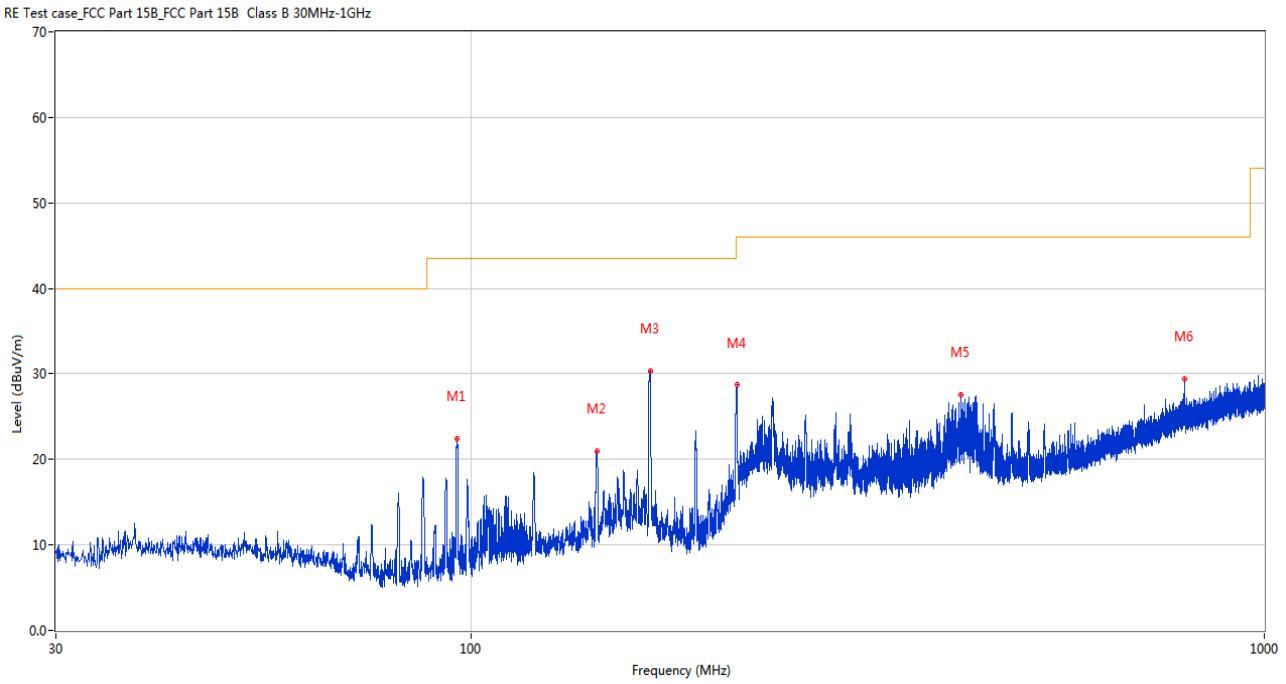
Note [2]: For the test data above 1 GHz，According the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note [3]: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

Note [4]: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and normal link mode is worst.

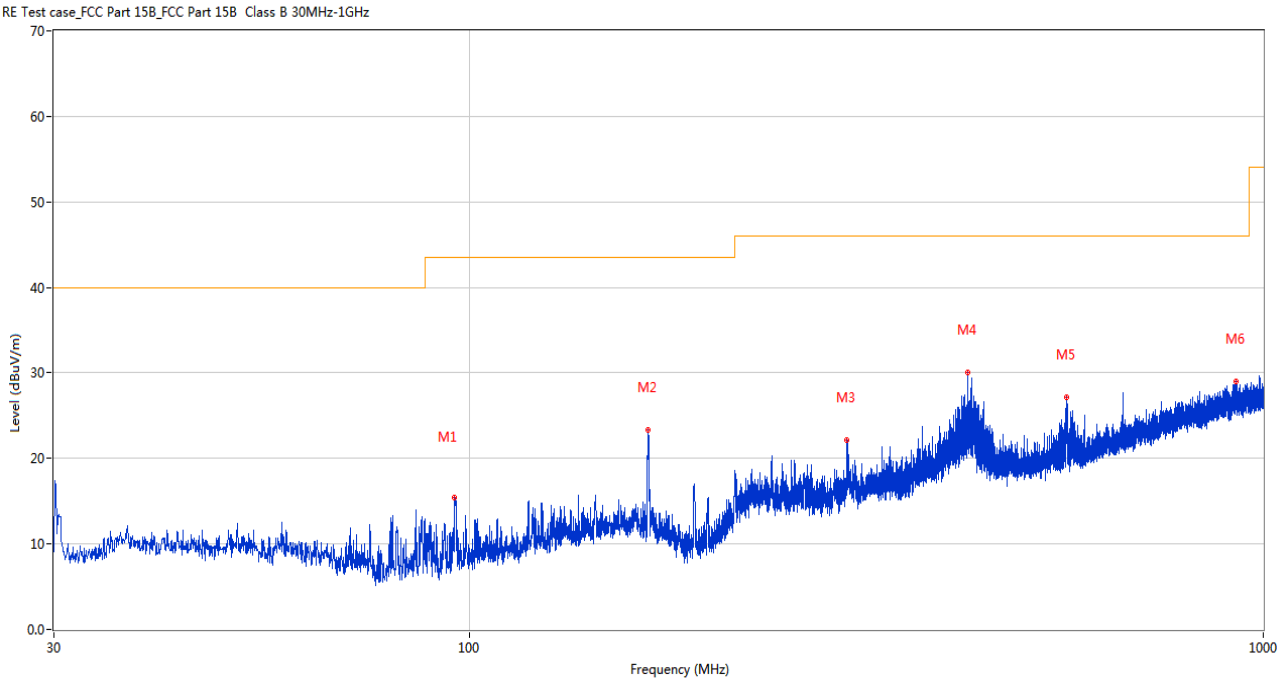
Test Data and Plots

30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	96.008	22.36	-29.79	43.5	-21.14	Peak	172.00	200	Horizontal	Pass
2	144.120	20.91	-25.33	43.5	-22.59	Peak	190.00	200	Horizontal	Pass
3	168.322	30.28	-25.36	43.5	-13.22	Peak	3.00	200	Horizontal	Pass
4	216.434	28.68	-27.79	46.0	-17.32	Peak	212.00	100	Horizontal	Pass
5	414.847	27.58	-20.70	46.0	-18.42	Peak	95.00	100	Horizontal	Pass
6	793.099	29.37	-12.75	46.0	-16.63	Peak	156.00	100	Horizontal	Pass

30 MHz to 1 GHz, ANT V



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	95.911	15.49	-29.81	43.5	-28.01	Peak	246.00	100	Vertical	Pass
2	168.128	23.29	-25.37	43.5	-20.21	Peak	122.00	200	Vertical	Pass
3	298.981	22.14	-24.15	46.0	-23.86	Peak	318.00	200	Vertical	Pass
4	423.966	30.05	-20.70	46.0	-15.95	Peak	201.00	100	Vertical	Pass
5	564.567	27.17	-17.32	46.0	-18.83	Peak	134.00	100	Vertical	Pass
6	924.825	28.96	-10.74	46.0	-17.04	Peak	38.00	100	Vertical	Pass

Note 1: The marked spikes near 2400 MHz with circle should be ignored because they are Fundamental signal.

Note 2: The spurious above 18G is noise only, do not show on the report.

Note 3: The center channel Average Results (dBuV/m) = Peak Results(dBuV/m) + Factor (dB); Duty cycle correction factor=20*log(Duty Cycle) (dB).

1 GHz to 18 GHz, ANT H Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1726.400	43.28	-17.05	74.0	-30.72	Peak	265.00	200	Horizontal	Pass
1**	1726.400	29.65	-17.05	54.0	-24.35	AV	265.00	200	Horizontal	Pass
2	2414.500	92.84	-11.50	114.00	-21.16	Peak	154.00	200	Horizontal	N/A
2**	2414.500	80.64	-11.50	94.00	-13.35	AV	154.00	200	Horizontal	N/A
3	4261.400	50.03	-4.43	74.0	-23.97	Peak	233.00	100	Horizontal	Pass
3**	4261.400	41.92	-4.43	54.0	-12.08	AV	233.00	100	Horizontal	Pass
4	4829.000	54.99	-3.20	74.0	-19.01	Peak	132.00	200	Horizontal	Pass
4**	4829.000	52.68	-3.20	54.0	-1.32	AV	132.00	200	Horizontal	Pass
5	6270.600	54.70	0.78	74.0	-19.30	Peak	0.00	300	Horizontal	Pass
5**	6270.600	46.09	0.78	54.0	-7.91	AV	0.00	300	Horizontal	Pass
6	11199.799	51.02	-0.28	74.0	-22.98	Peak	169.00	400	Horizontal	Pass
6**	11199.799	41.00	-0.28	54.0	-13.00	AV	169.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1464.300	45.99	-17.23	74.0	-28.01	Peak	318.00	100	Vertical	Pass
1**	1464.300	36.56	-17.23	54.0	-17.44	AV	318.00	100	Vertical	Pass
2	2414.500	84.14	-11.50	114.00	-29.86	Peak	150.00	200	Vertical	N/A
2**	2414.500	71.94	-11.50	94.00	-22.05	AV	154.00	200	Vertical	N/A
3	4828.400	51.43	-3.22	74.0	-22.57	Peak	169.00	100	Vertical	Pass
3**	4828.400	42.69	-3.22	54.0	-11.31	AV	169.00	100	Vertical	Pass
4	6739.400	54.77	2.22	74.0	-19.23	Peak	199.00	400	Vertical	Pass
4**	6739.400	45.95	2.22	54.0	-8.05	AV	199.00	400	Vertical	Pass
5	10183.200	51.62	0.11	74.0	-22.38	Peak	214.00	400	Vertical	Pass
5**	10183.200	41.88	0.11	54.0	-12.12	AV	214.00	400	Vertical	Pass
6	17195.962	52.06	2.13	74.0	-21.94	Peak	0.00	100	Vertical	Pass
6**	17195.962	45.16	2.13	54.0	-8.84	AV	0.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1199.300	42.78	-17.86	74.0	-31.22	Peak	109.00	200	Horizontal	Pass
1**	1199.300	28.79	-17.86	54.0	-25.21	AV	109.00	200	Horizontal	Pass
2	2439.500	95.36	-11.50	114.00	-18.64	Peak	154.00	200	Horizontal	N/A
2**	2439.500	83.16	-11.50	94.00	-10.83	AV	154.00	200	Horizontal	N/A
3	3193.200	47.78	-7.91	74.0	-26.22	Peak	36.00	100	Horizontal	Pass
3**	3193.200	39.76	-7.91	54.0	-14.24	AV	36.00	100	Horizontal	Pass
4	4879.200	54.51	-2.58	74.0	-19.49	Peak	115.00	200	Horizontal	Pass
4**	4879.200	52.42	-2.58	54.0	-1.58	AV	115.00	200	Horizontal	Pass
5	6288.000	54.37	1.50	74.0	-19.63	Peak	206.00	300	Horizontal	Pass
5**	6288.000	45.52	1.50	54.0	-8.48	AV	206.00	300	Horizontal	Pass
6	17891.324	53.13	3.65	74.0	-20.87	Peak	92.00	400	Horizontal	Pass
6**	17891.324	44.53	3.65	54.0	-9.47	AV	92.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1464.900	44.35	-17.22	74.0	-29.65	Peak	312.00	200	Vertical	Pass
1**	1464.900	29.32	-17.22	54.0	-24.68	AV	312.00	200	Vertical	Pass
2	2439.600	81.86	-11.50	114.00	-32.14	Peak	250.00	200	Vertical	N/A
2**	2439.600	69.66	-11.50	94.00	-24.33	AV	154.00	200	Vertical	N/A
3	4879.200	51.71	-2.58	74.0	-22.29	Peak	121.00	100	Vertical	Pass
3**	4879.200	47.82	-2.58	54.0	-6.18	AV	121.00	100	Vertical	Pass
4	6600.400	55.66	1.08	74.0	-18.34	Peak	19.00	200	Vertical	Pass
4**	6600.400	45.47	1.08	54.0	-8.53	AV	19.00	200	Vertical	Pass
5	11717.875	51.40	0.77	74.0	-22.60	Peak	216.00	300	Vertical	Pass
5**	11717.875	41.64	0.77	54.0	-12.36	AV	216.00	300	Vertical	Pass
6	17313.036	51.78	1.37	74.0	-22.22	Peak	163.00	400	Vertical	Pass
6**	17313.036	42.85	1.37	54.0	-11.15	AV	163.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1198.500	43.13	-17.88	74.0	-30.87	Peak	73.00	400	Horizontal	Pass
1**	1198.500	28.08	-17.88	54.0	-25.92	AV	73.00	400	Horizontal	Pass
2	2459.500	96.69	-11.50	114.00	-17.31	Peak	146.00	150	Horizontal	N/A
2**	2459.500	84.49	-11.50	94.00	-9.50	AV	154.00	150	Horizontal	N/A
3	4919.200	54.96	-2.18	74.0	-19.04	Peak	123.00	100	Horizontal	Pass
3**	4919.200	52.95	-2.18	54.0	-1.05	AV	123.00	100	Horizontal	Pass
4	6286.400	54.80	1.54	74.0	-19.20	Peak	11.00	400	Horizontal	Pass
4**	6286.400	45.42	1.54	54.0	-8.58	AV	11.00	400	Horizontal	Pass
5	7378.062	51.34	-3.71	74.0	-22.66	Peak	122.00	300	Horizontal	Pass
5**	7378.062	43.61	-3.71	54.0	-10.39	AV	122.00	300	Horizontal	Pass
6	13301.775	50.52	0.87	74.0	-23.48	Peak	127.00	400	Horizontal	Pass
6**	13301.775	42.52	0.87	54.0	-11.48	AV	127.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V High Channel

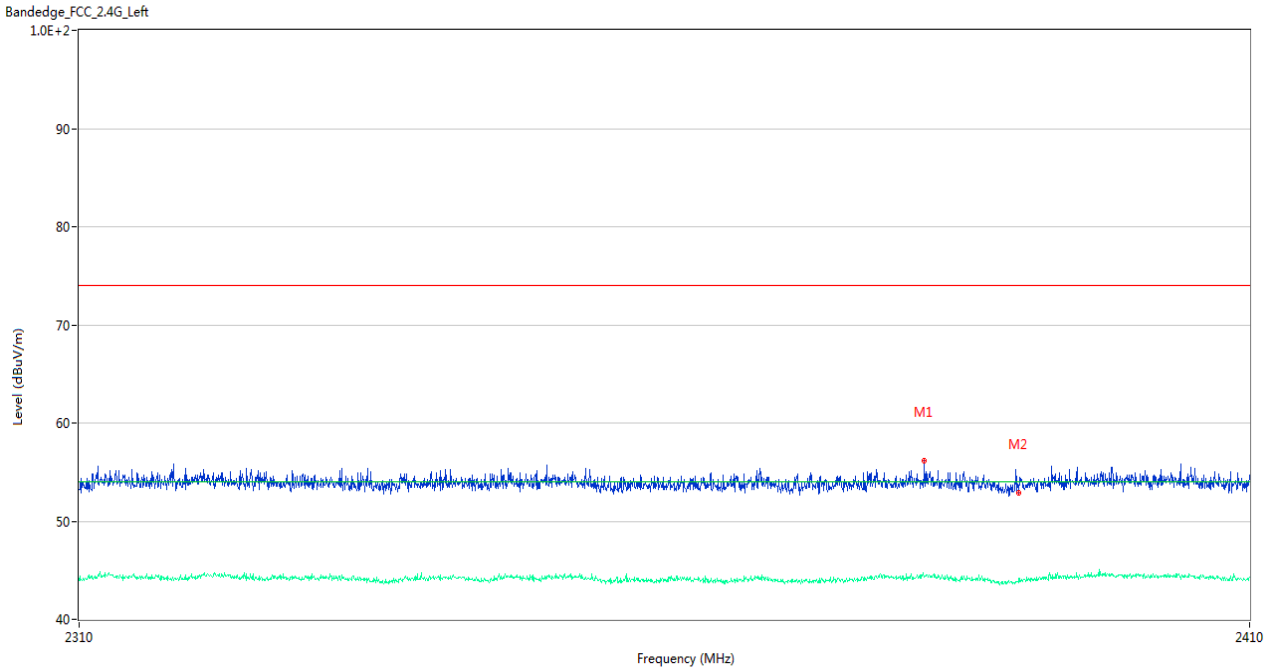
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1395.400	44.10	-17.37	74.0	-29.90	Peak	188.00	400	Vertical	Pass
1**	1395.400	30.97	-17.37	54.0	-23.03	AV	188.00	400	Vertical	Pass
2	2459.500	83.25	-11.50	114.00	-30.75	Peak	98.00	150	Vertical	N/A
2**	2459.500	71.05	-11.50	94.00	-22.94	AV	154.00	150	Vertical	N/A
3	4918.800	52.17	-2.23	74.0	-21.83	Peak	100.00	100	Vertical	Pass
3**	4918.800	46.93	-2.23	54.0	-7.07	AV	100.00	100	Vertical	Pass
4	6619.800	55.64	1.97	74.0	-18.36	Peak	139.00	400	Vertical	Pass
4**	6619.800	45.62	1.97	54.0	-8.38	AV	139.00	400	Vertical	Pass
5	11216.187	51.30	-0.19	74.0	-22.70	Peak	341.00	300	Vertical	Pass
5**	11216.187	42.02	-0.19	54.0	-11.98	AV	341.00	300	Vertical	Pass
6	17207.251	52.06	1.57	74.0	-21.94	Peak	143.00	400	Vertical	Pass
6**	17207.251	44.41	1.57	54.0	-9.59	AV	143.00	400	Vertical	Pass

A.4 Band Edge (Restricted-band band-edge)

Note [1]: The lowest and highest channels are tested to verify the band edge emissions. Please refer to the following the plots for emissions values.
Note [2]: The test data all are tested in the vertical and horizontal antenna which the trace is max hold. So these plots have shown the worst case.
Note [3]: According the ANSI C63.10-2013, 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.

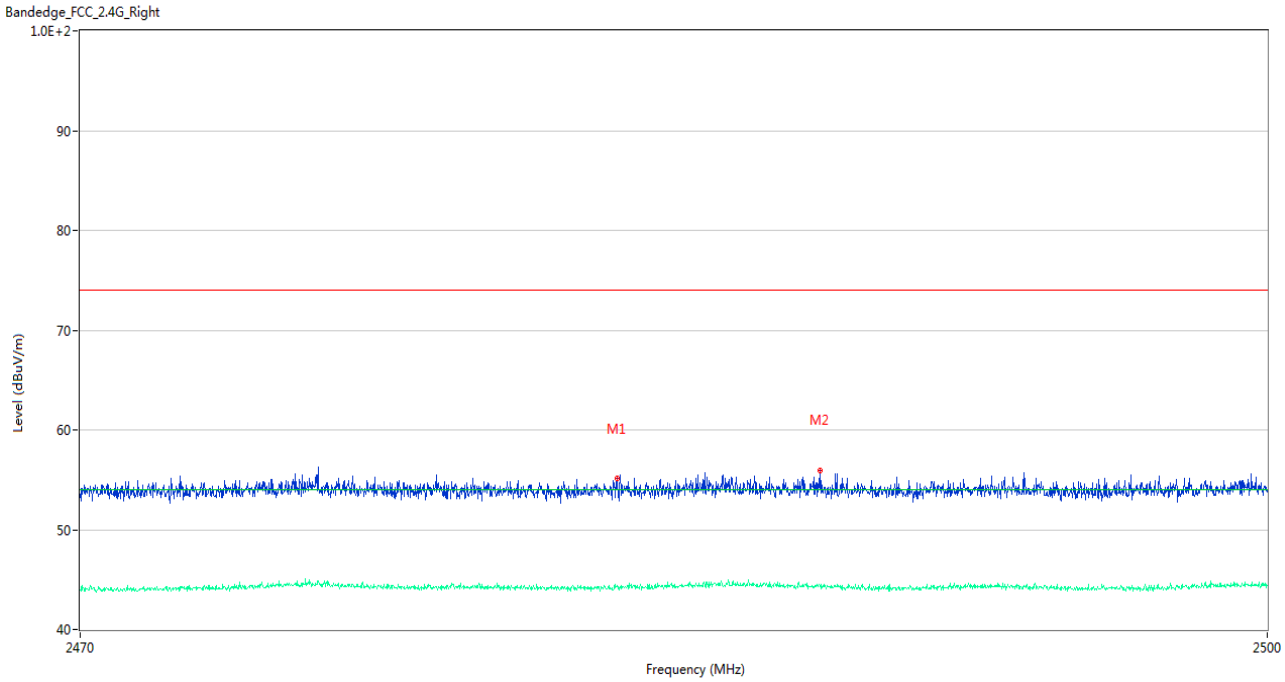
Test Data and Plots

LOW CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2381.800	56.11	-0.29	74.0	-17.89	Peak	60.00	150	Horizontal	Pass
1**	2381.800	44.35	-0.29	54.0	-9.65	AV	60.00	150	Horizontal	Pass
2	2389.950	52.90	-0.59	74.0	-21.10	Peak	20.00	150	Horizontal	Pass
2**	2389.950	44.15	-0.59	54.0	-9.85	AV	20.00	150	Horizontal	Pass

HIGH CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.515	55.16	-0.20	74.0	-18.84	Peak	227.00	200	Horizontal	Pass
1**	2483.515	44.26	-0.20	54.0	-9.74	AV	227.00	200	Horizontal	Pass
2	2488.645	55.99	-0.07	74.0	-18.01	Peak	63.00	200	Horizontal	Pass
2**	2488.645	44.42	-0.07	54.0	-9.58	AV	63.00	200	Horizontal	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2290339-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2290339-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2290339-AI.PDF”.

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--END OF REPORT--