TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart C (Section 15.247)**
Report No.:	RFBDKG-WTW-P25030716
FCC ID:	JNZMR0118
Product:	Wireless Mouse
Brand:	Logitech, logi, logitech
Model No.:	MR0118
Received Date:	2025/3/27
Test Date:	2025/4/9 ~ 2025/4/18
Issued Date:	2025/5/8
Applicant:	Logitech Far East Ltd.
Address:	#2 Creation Rd. 4, Science-Based Ind. Park Hsinchu Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Approved by: _____ , **Date:** **2025/5/8**

May Chen / Manager

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Prepared by: Vito Lung / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBDKG-WTW-P25030716	Original release.	2025/5/8

1 Certificate

Product:	Wireless Mouse
Brand:	Logitech, logi, logitech
Test Model:	MR0118
Sample Status:	Engineering sample
Applicant:	Logitech Far East Ltd.
Test Date:	2025/4/9 ~ 2025/4/18
Standard:	47 CFR FCC Part 15, Subpart C (Section 15.247)
Measurement procedure:	ANSI C63.10-2013 KDB 558074 D01 15.247 Meas Guidance v05r02

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
Standard / Clause	Test Item	Result	Remark
15.247(b)	RF Output Power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.247(a)(2)	6 dB Bandwidth	Pass	Meet the requirement of limit.
15.247(d)	Conducted Out of Band Emissions	Pass	Meet the requirement of limit.
15.207	AC Power Conducted Emissions	Pass	Minimum passing margin is -13.10 dB at 0.56797 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -10.6 dB at 50.95 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -6.4 dB at 2483.50 MHz
15.203	Antenna Requirement	Pass	No antenna connector is used.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Specification	Expanded Uncertainty (k=2) (±)
RF Output Power	-	1.1 dB
Power Spectral Density	-	1.3 dB
6 dB Bandwidth	-	1050.00 Hz
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.6 dB
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.5 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.1 dB
	18 GHz ~ 40 GHz	5.3 dB

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description

Product	Wireless Mouse
Brand	Logitech, logi, logitech
Test Model	MR0118
Status of EUT	Engineering sample
Power Supply Rating	5 Vdc from interface or 3.85 Vdc from battery
Modulation Type	GFSK
Modulation Technology	DTS
Transfer Rate	Up to 2 Mbps (Note 1)
Operating Frequency	2.402 GHz ~ 2.48 GHz (Note 1)
Number of Channel	40 (Note 1)
Output Power	**BT-LE 1M:** 6.138 mW (7.88 dBm) **BT-LE 2M:** 6.109 mW (7.86 dBm) **logi bolt 1M:** 6.109 mW (7.86 dBm) **logi bolt 2M:** 6.095 mW (7.85 dBm)

Note:

1. BT-LE technique supports 1Mbps and 2Mbps data rates, both have been evaluated in this test report. Refer to **"section 3.3 Channel List"** for more detail specification.
2. The EUT may have a lot of colors for marketing requirement.
3. This device has BT-LE and logi bolt functions. logi bolt is the same technology as BT-LE then enhancement secure protocol.
4. The EUT uses following accessories.

Item	Brand	Model	Specification
Battery 1	Highpower	642733	Power Rating: 3.85 V, 650 mAh
Battery 2	Synergy	AHB602732W Hard Pack	Power Rating: 3.85 V, 650 mAh
Battery 3	Exquisite Power	642733	Power Rating: 3.85 V, 650 mAh

5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna Net Gain(dBi)	Frequency Range (GHz)	Antenna Type	Connector Type
1.25	2.4~2.4835	PIFA	None

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

3.3 Channel List

40 channels are provided for BT-LE, logi bolt:

RF Channel	RF Center Frequency	Channel Index	Channels Type for BT 5.x		Channels Type for BT 4.x
			Maximum Data Rate 2Mbps	Maximum Data Rate 1Mbps	Maximum Data Rate 1Mbps
0	2402 MHz	37		●	●
1	2404 MHz	0	●		●
2	2406 MHz	1	●		●
3	2408 MHz	2	●		●
4	2410 MHz	3	●		●
5	2412 MHz	4	●		●
6	2414 MHz	5	●		●
7	2416 MHz	6	●		●
8	2418 MHz	7	●		●
9	2420 MHz	8	●		●
10	2422 MHz	9	●		●
11	2424 MHz	10	●		●
12	2426 MHz	38		●	●
13	2428 MHz	11	●		●
14	2430 MHz	12	●		●
15	2432 MHz	13	●		●
16	2434 MHz	14	●		●
17	2436 MHz	15	●		●
18	2438 MHz	16	●		●
19	2440 MHz	17	●		●
20	2442 MHz	18	●		●
21	2444 MHz	19	●		●
22	2446 MHz	20	●		●
23	2448 MHz	21	●		●
24	2450 MHz	22	●		●
25	2452 MHz	23	●		●
26	2454 MHz	24	●		●
27	2456 MHz	25	●		●
28	2458 MHz	26	●		●
29	2460 MHz	27	●		●
30	2462 MHz	28	●		●
31	2464 MHz	29	●		●
32	2466 MHz	30	●		●
33	2468 MHz	31	●		●
34	2470 MHz	32	●		●
35	2472 MHz	33	●		●
36	2474 MHz	34	●		●
37	2476 MHz	35	●		●
38	2478 MHz	36	●		●
39	2480 MHz	39		●	●

3.4 Test Mode Applicability and Tested Channel Detail

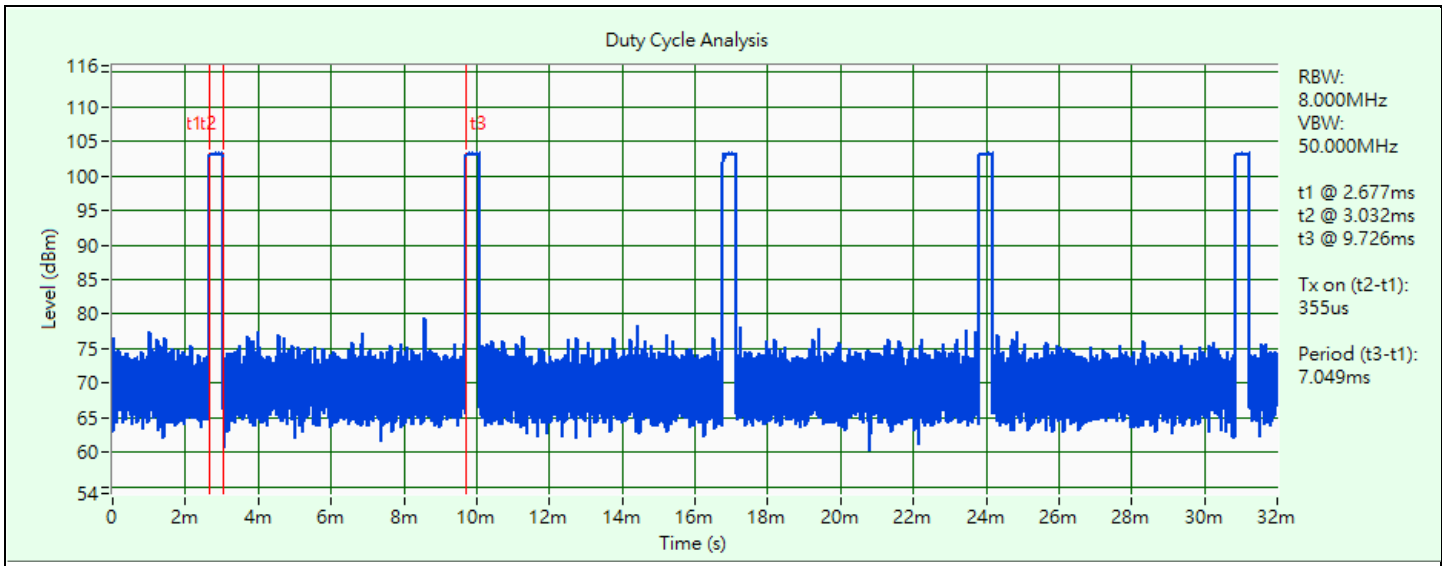
Pre-Scan:	1. EUT has support multiple power sources: USB-C/ Battery. Pre-scan these sources and find the worst case as a representative test condition. 2. The Battery has the following models: Battery1 Highpower / Battery2 Synergy / Battery3 Exquisite Power. Pre-scan these models of batteries and find the worst case as a representative test condition. 3. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
Worst Case:	1. Test item the worst condition of power sources: Unwanted emission test item: USB-C Mode AC conducted emission test item: USB-C Mode 2. The battery worst condition: Battery 2 (Brand: Synergy)

Following channel(s) was (were) selected for the final test as listed below:

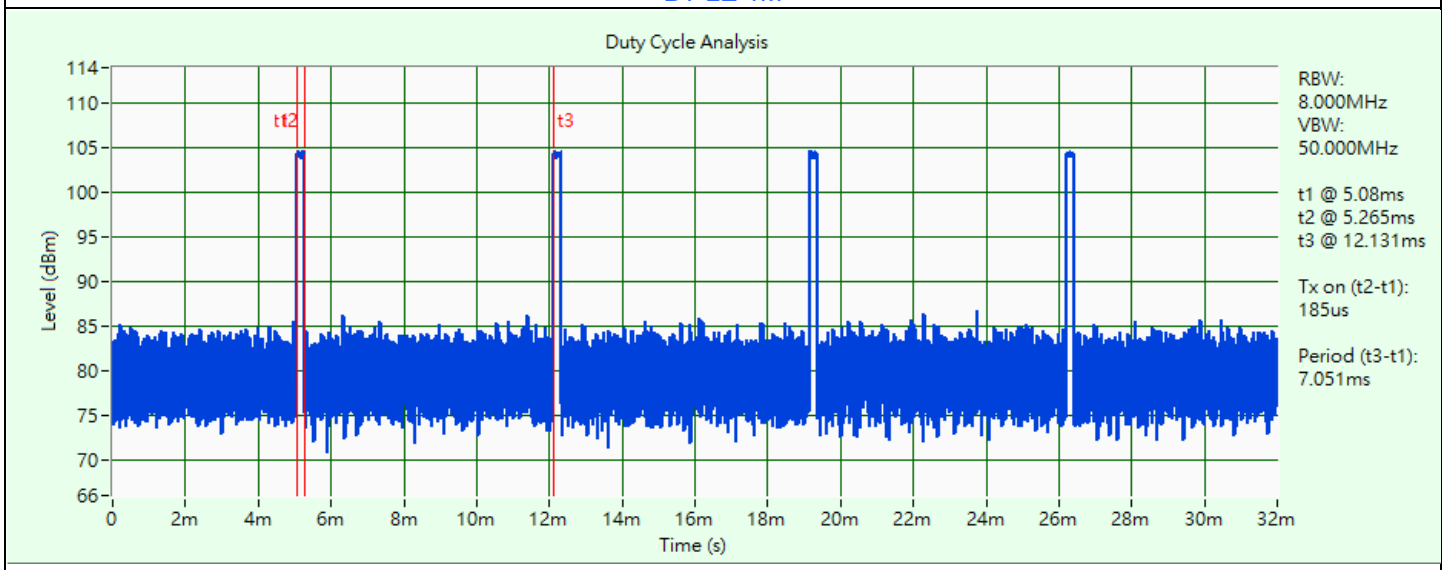
Test Item	Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	BT-LE 1M	0, 19, 39	GFSK	1Mb/s
	BT-LE 2M	1, 19, 38	GFSK	2Mb/s
	logi bolt 1M	0, 19, 39	GFSK	1Mb/s
	logi bolt 2M	1, 19, 38	GFSK	2Mb/s
Power Spectral Density	BT-LE 1M	0, 19, 39	GFSK	1Mb/s
	BT-LE 2M	1, 19, 38	GFSK	2Mb/s
	logi bolt 1M	0, 19, 39	GFSK	1Mb/s
	logi bolt 2M	1, 19, 38	GFSK	2Mb/s
6 dB Bandwidth / Conducted Out of Band Emissions	BT-LE 1M	0, 19, 39	GFSK	1Mb/s
	BT-LE 2M	1, 19, 38	GFSK	2Mb/s
	logi bolt 1M	0, 19, 39	GFSK	1Mb/s
	logi bolt 2M	1, 19, 38	GFSK	2Mb/s
AC Power Conducted Emissions	BT-LE 1M	0	GFSK	1Mb/s
	logi bolt 1M	0	GFSK	1Mb/s
Unwanted Emissions below 1 GHz	BT-LE 1M	0	GFSK	1Mb/s
	logi bolt 1M	0	GFSK	1Mb/s
Unwanted Emissions above 1 GHz	BT-LE 1M	0, 19, 39	GFSK	1Mb/s
	BT-LE 2M	1, 19, 38	GFSK	2Mb/s
	logi bolt 1M	0, 19, 39	GFSK	1Mb/s
	logi bolt 2M	1, 19, 38	GFSK	2Mb/s

3.5 Duty Cycle of Test Signal

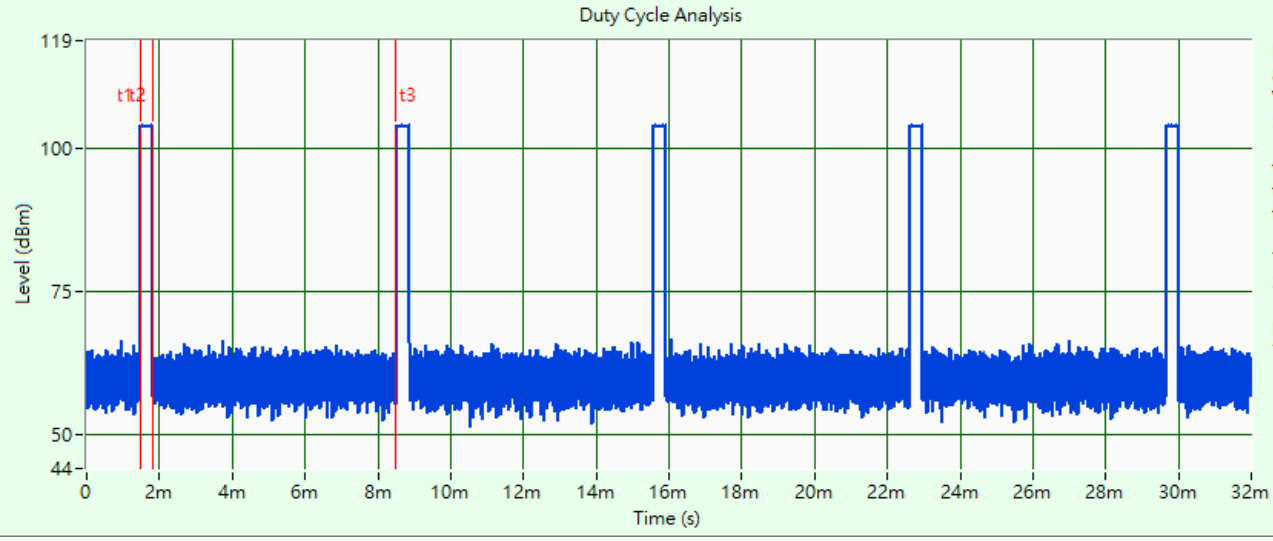
BT-LE 1M: Duty cycle = 0.355 ms / 7.049 ms x 100% = 5.0%, duty factor = 10 * log (1/Duty cycle) = 12.98 dB
BT-LE 2M: Duty cycle = 0.185 ms / 7.051 ms x 100% = 2.6%, duty factor = 10 * log (1/Duty cycle) = 15.81 dB
logi bolt 1M: Duty cycle = 0.355 ms / 7.012 ms x 100% = 5.1%, duty factor = 10 * log (1/Duty cycle) = 12.96 dB
logi bolt 2M: Duty cycle = 0.184 ms / 7.046 ms x 100% = 2.6%, duty factor = 10 * log (1/Duty cycle) = 15.83 dB



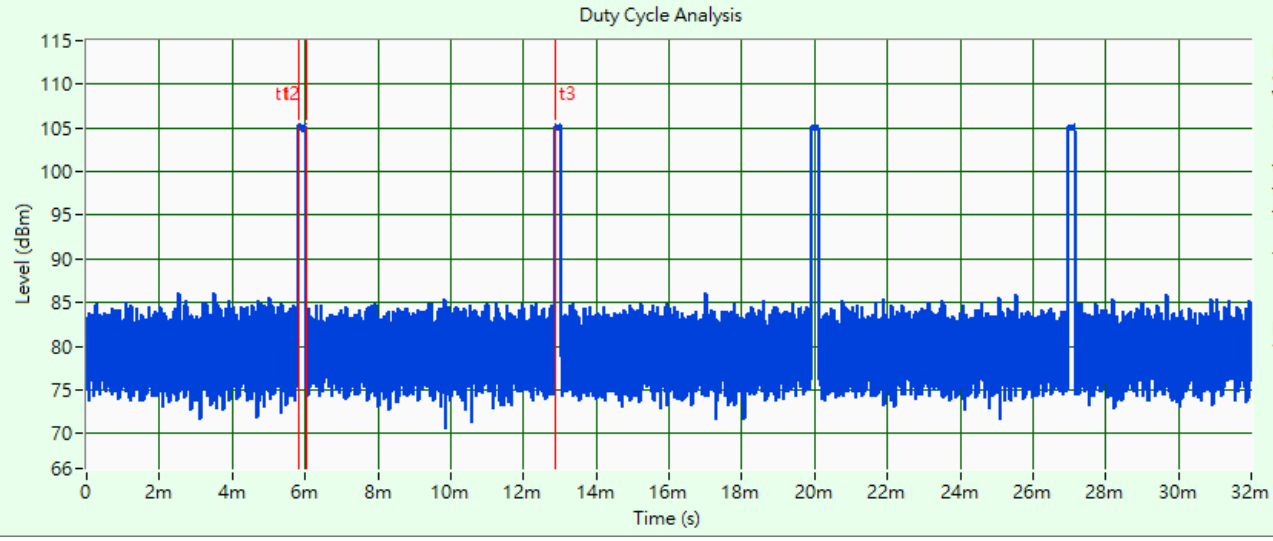
BT-LE 1M



BT-LE 2M



Logi Bolt 1M



Logi Bolt 2M

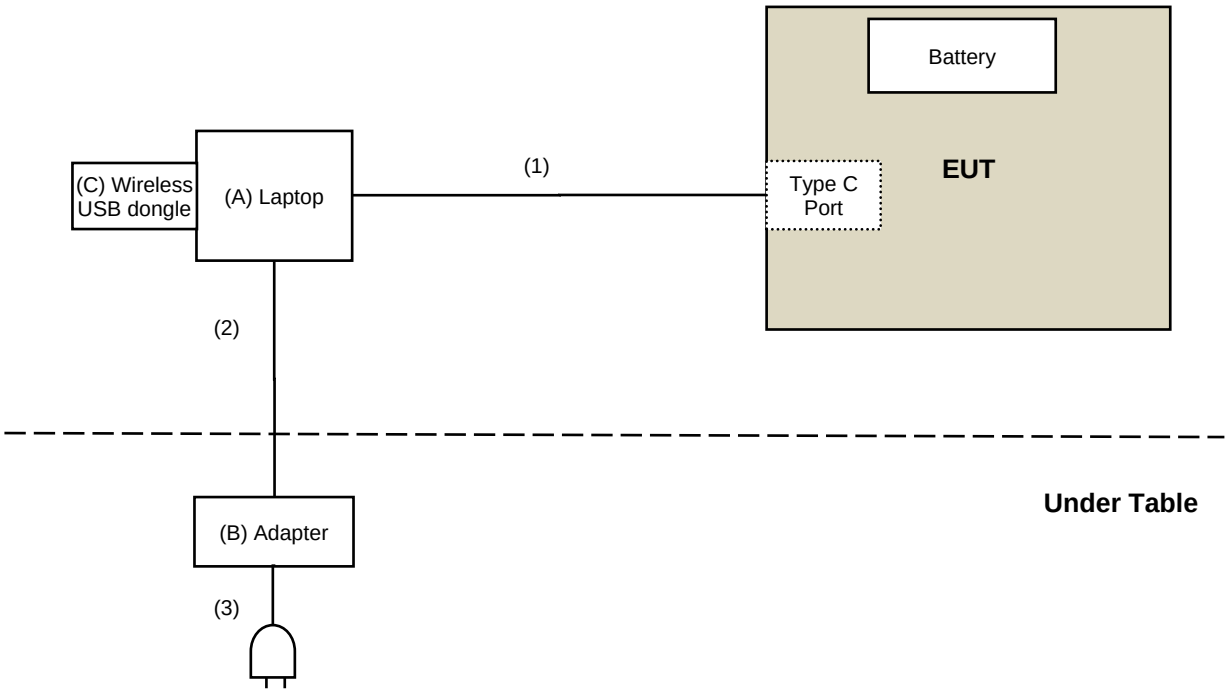
3.6 Test Program Used and Operation Descriptions

RF sample has been activated through the dongle [plug to laptop and press NumLock key into specific mode] to set the EUT under transmission condition continuously at the specific test frequency.

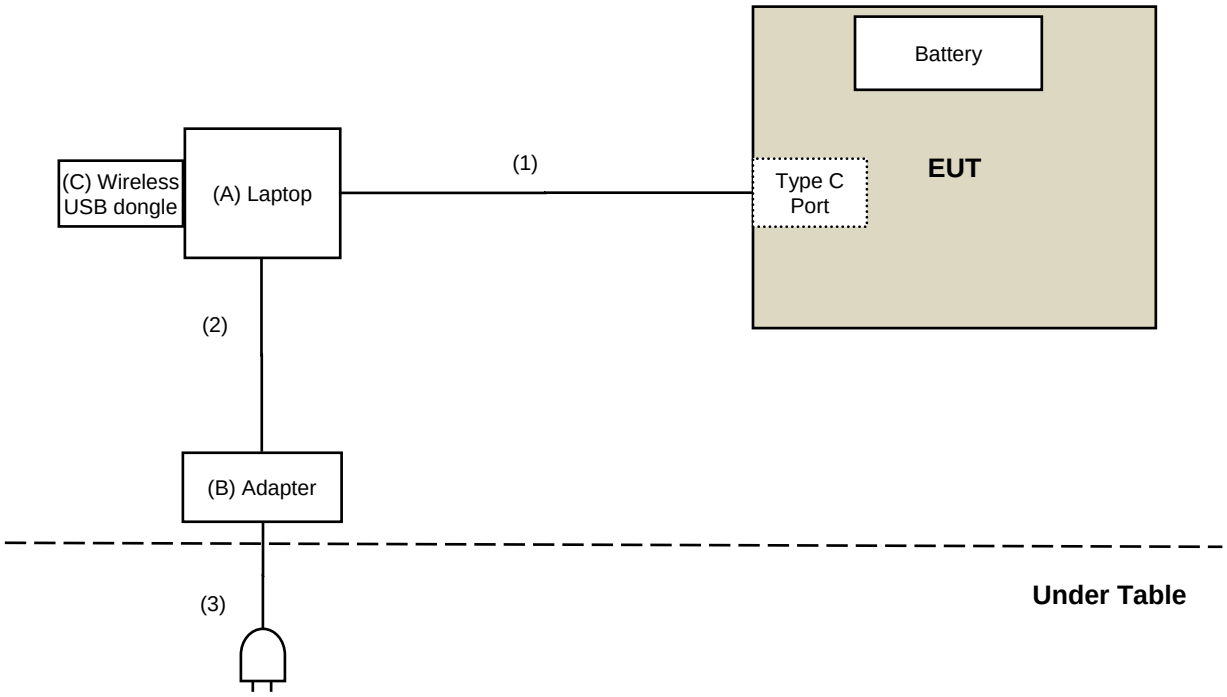
Test Item	Operation Description
RF Output Power Power Spectral Density 6 dB Bandwidth Conducted Out of Band Emissions Unwanted Emissions above 1 GHz	BLE1M TX Modulated 2402MHz BLE1M TX Modulated 2440MHz BLE1M TX Modulated 2480MHz BLE2M TX Modulated 2404MHz BLE2M TX Modulated 2440MHz BLE2M TX Modulated 2478MHz
AC Power Conducted Emissions Unwanted Emissions below 1 GHz	BLE1M TX Modulated 2402MHz

3.7 Connection Diagram of EUT and Peripheral Devices

For Unwanted Emissions test:



For AC Power Conducted Emission test:



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	N/A	Provided by Lab
B	Adapter	Lenovo	ADLX45YLC3D	N/A	N/A	Provided by Lab
C	Wireless USB dongle	Logitech	CU0028	N/A	N/A	Provided by Client

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	USB Cable	1	2.2	Yes	0	Supplied by applicant
2	DC Cable	1	1.8	No	0	Provided by Lab
3	AC Cable	1	0.9	No	0	Provided by Lab

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Pulse Power Sensor Anritsu	MA2411B	1726434	2024/6/7	2025/6/6
RF Power Meter Anritsu	ML2495A	1529002	2024/6/7	2025/6/6

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2025/4/18

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
PXA Signal Analyzer Keysight	N9030A	MY55410176	2024/6/12	2025/6/11
Software	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2025/4/18

4.3 6 dB Bandwidth

Refer to section 4.2 to get the tested date and information of the instruments.

4.4 Conducted Out of Band Emissions

Refer to section 4.2 to get the tested date and information of the instruments.

4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance Telegartner	50 ohm	3	2024/11/1	2025/10/31
EMI Test Receiver R&S	ESCS 30	100375	2024/5/20	2025/5/19
Fixed Attenuator STI	STI02-2200-10	005	2025/2/17	2026/2/16
LISN R&S	ESH3-Z5	835239/001	2025/3/27	2026/3/26
		848773/004	2024/10/7	2025/10/6
RF Coaxial Cable JYEBAO	5D-FB	COCCAB-001	2025/2/17	2026/2/16
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2025/4/14

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-406	2024/10/8	2025/10/7
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-03	2025/2/15	2026/2/14
Loop Antenna TESEQ	HLA 6121	63620	2024/10/17	2025/10/16
MXE EMI Receiver Agilent	N9038A	MY51210202	2024/7/29	2025/7/28
Preamplifier EMCI	EMC330N	980701	2025/2/15	2026/2/14
	EMC001340	980142	2025/2/17	2026/2/16
RF Coaxial Cable mTJ	100100-CFD400LW-200	CFD400-200	2025/2/15	2026/2/14
	100100-CFD400LW-400	CFD400-400	2025/2/15	2026/2/14
	100100-CFD400LW-800	CFD400-800	2025/2/15	2026/2/14
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 4.
2. Tested Date: 2025/4/14

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-783	2024/11/10	2025/11/9
	BBHA 9170	9170-739	2024/11/10	2025/11/9
MXE EMI Receiver Keysight	N9038A	MY55420137	2024/5/8	2025/5/7
Preamplifier EMCI	EMC12630SE	980688	2024/8/8	2025/8/7
	EMC184045SE	980387	2024/8/8	2025/8/7
RF Coaxial Cable EMCI	EMC102-KM-KM-1200	160924	2025/1/24	2026/1/23
	EMC102-KM-KM-4000	200214	2025/1/24	2026/1/23
	EMC104-SM-SM-1200	160922	2025/1/14	2026/1/13
	EMC104-SM-SM-2000	180502	2025/1/14	2026/1/13
	EMC104-SM-SM-6000	210704	2024/10/30	2025/10/29
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 4.
2. Tested Date: 2025/4/9 ~ 2025/4/14

5 Limits of Test Items

5.1 RF Output Power

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30 dBm)

5.2 Power Spectral Density

The Maximum of Power Spectral Density Measurement is 8 dBm in any 3 kHz.

5.3 6 dB Bandwidth

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

5.4 Conducted Out of Band Emissions

Below 20 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

5.5 AC Power Conducted Emissions

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Notes:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

5.6 Unwanted Emissions below 1 GHz

Radiated emissions up to 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
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

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

5.7 Unwanted Emissions above 1 GHz

Radiated emissions above 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

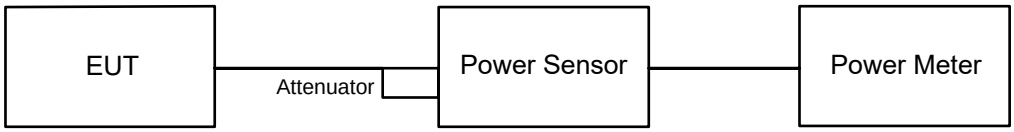
Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup



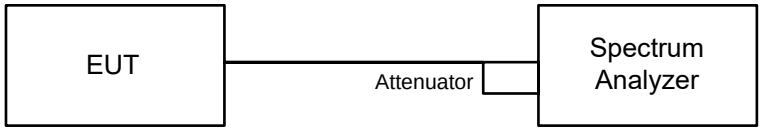
6.1.2 Test Procedure

Peak Power:
A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

Average Power:
Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

6.2 Power Spectral Density

6.2.1 Test Setup

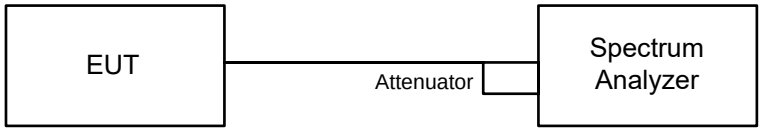


6.2.2 Test Procedure

a. Set analyzer center frequency to DTS channel center frequency.
b. Set the span to 1.5 times the DTS bandwidth.
c. Set the RBW to: 3 kHz.
d. Set the VBW ≥ 3 × RBW.
e. Detector = peak.
f. Sweep time = auto couple.
g. Trace mode = max hold.
h. Allow trace to fully stabilize.
i. Use the peak marker function to determine the maximum amplitude level within the RBW.

6.3 6 dB Bandwidth

6.3.1 Test Setup

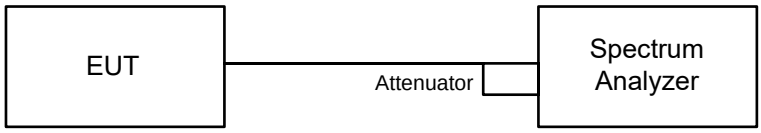


6.3.2 Test Procedure

a. Set resolution bandwidth (RBW) = 100 kHz.
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.4 Conducted Out of Band Emissions

6.4.1 Test Setup



6.4.2 Test Procedure

MEASUREMENT PROCEDURE REF

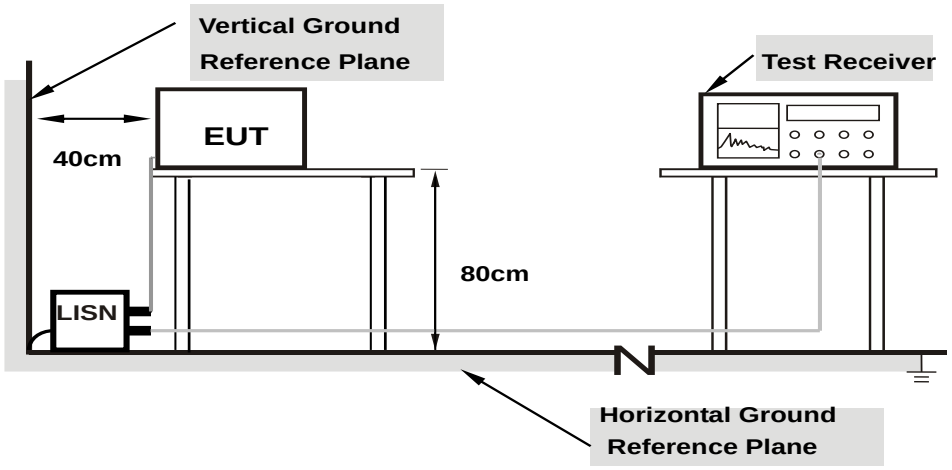
a. Set the RBW = 100 kHz.
b. Set the VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep time = auto couple.
e. Trace mode = max hold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

a. Set RBW = 100 kHz.
b. Set VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep = auto couple.
e. Trace Mode = max hold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum amplitude level.

6.5 AC Power Conducted Emissions

6.5.1 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.5.2 Test Procedure

a. The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

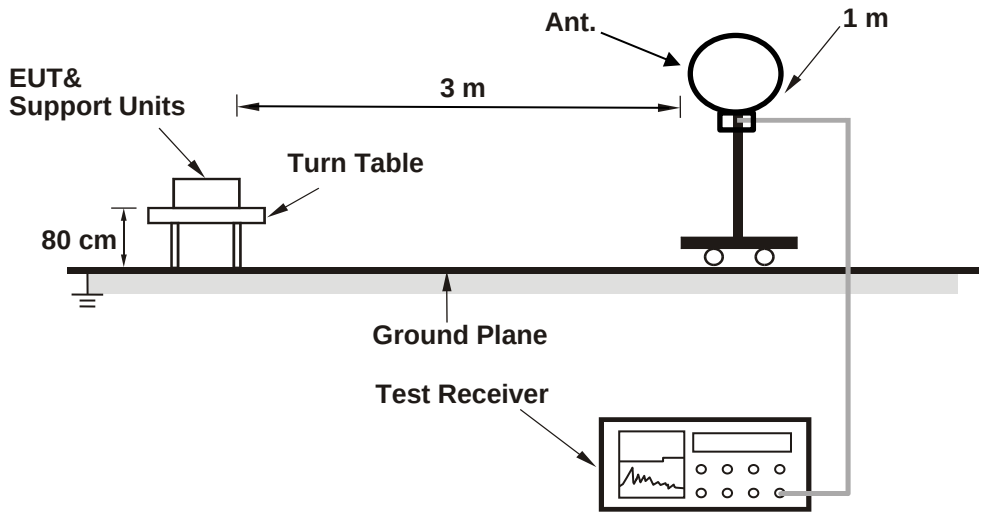
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz-30 MHz.

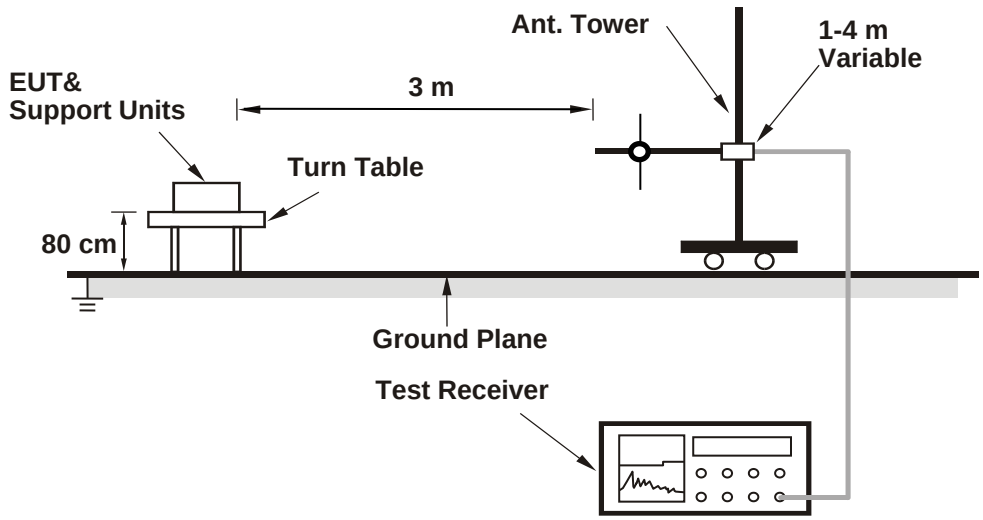
6.6 Unwanted Emissions below 1 GHz

6.6.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.6.2 Test Procedure

For Radiated emission below 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

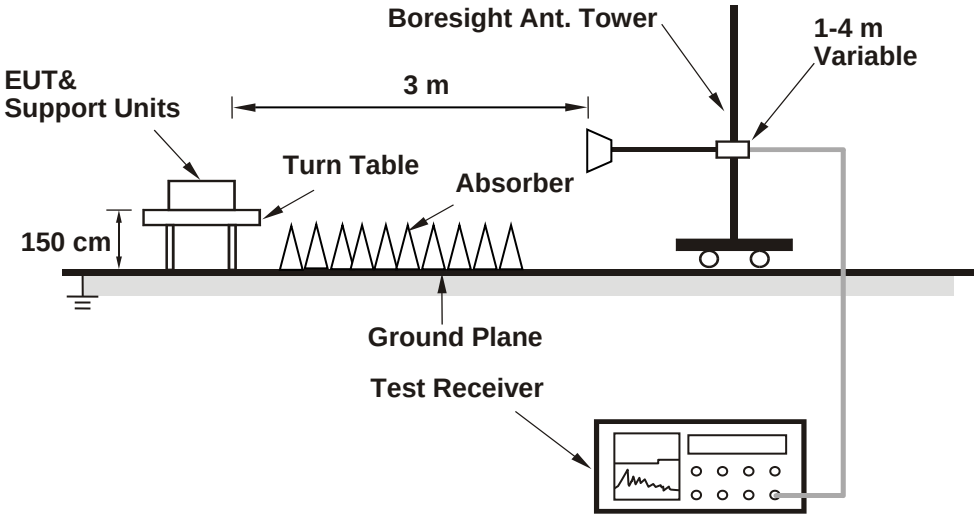
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2.
3. All modes of operation were investigated and the worst-case emissions are reported.

6.7 Unwanted Emissions above 1 GHz

6.7.1 Test Setup



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.7.2 Test Procedure

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver/spectrum analyzer was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Notes:

1. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
2.
3. For fundamental and harmonic signal measurement, according to KDB 558074 D01 15.247 Meas Guidance v05r02 section 8.1(c)(3). The spectrum analyzer settings meet the requirements of 11.12.2.4 in ANSI C63.10 for making a Peak measurement, the average value = Peak value + duty cycle correction factor. The duty cycle measurement refers to FCC 47 CFR Part 15C section 15.35 (c). For duty cycle correction factor values, see the Test Signal Duty Cycle section in this report.
4. All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	3.85 Vdc	Environmental Conditions:	26°C, 58% RH	Tested By:	Dolly Chung

For Peak Power

BT-LE 1M

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
0	2402	6.138	7.88	30	Pass
19	2440	6.053	7.82	30	Pass
39	2480	5.794	7.63	30	Pass

Note: The antenna gain is 1.25 dBi < 6 dBi, so the output power limit shall not be reduced.

BT-LE 2M

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
1	2404	6.109	7.86	30	Pass
19	2440	6.012	7.79	30	Pass
38	2478	5.834	7.66	30	Pass

Note: The antenna gain is 1.25 dBi < 6 dBi, so the output power limit shall not be reduced.

logi bolt 1M

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
0	2402	6.109	7.86	30	Pass
19	2440	5.984	7.77	30	Pass
39	2480	5.768	7.61	30	Pass

Note: The antenna gain is 1.25 dBi < 6 dBi, so the output power limit shall not be reduced.

logi bolt 2M

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
1	2404	6.095	7.85	30	Pass
19	2440	5.957	7.75	30	Pass
38	2478	5.754	7.60	30	Pass

Note: The antenna gain is 1.25 dBi < 6 dBi, so the output power limit shall not be reduced.

For Average Power

BT-LE 1M

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	5.998	7.78
19	2440	5.888	7.70
39	2480	5.649	7.52

BT-LE 2M

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2404	5.957	7.75
19	2440	5.848	7.67
38	2478	5.649	7.52

logi bolt 1M

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	5.97	7.76
19	2440	5.834	7.66
39	2480	5.623	7.50

logi bolt 2M

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2404	5.929	7.73
19	2440	5.808	7.64
38	2478	5.61	7.49

7.2 Power Spectral Density

Input Power:	3.85 Vdc	Environmental Conditions:	26°C, 58% RH	Tested By:	Dolly Chung

BT-LE 1M

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
0	2402	4.95	8	Pass
19	2440	4.94	8	Pass
39	2480	4.70	8	Pass

Note: The antenna gain is 1.25 dBi < 6 dBi, so the power density limit shall not be reduced.

BT-LE 2M

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
1	2404	0.85	8	Pass
19	2440	0.68	8	Pass
38	2478	0.34	8	Pass

Note: The antenna gain is 1.25 dBi < 6 dBi, so the power density limit shall not be reduced.

logi bolt 1M

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
0	2402	4.13	8	Pass
19	2440	3.99	8	Pass
39	2480	3.81	8	Pass

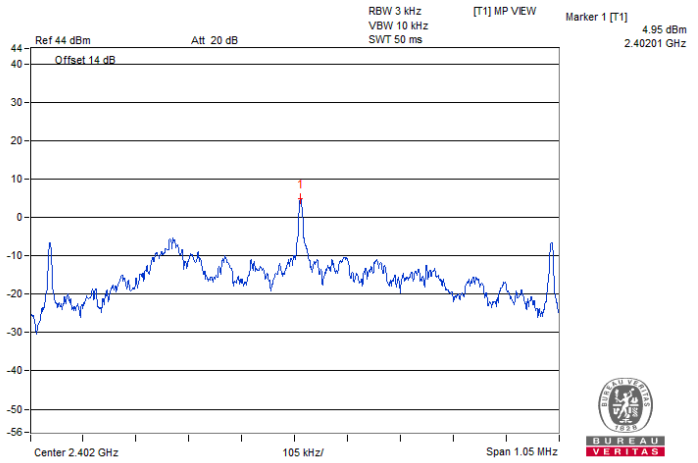
Note: The antenna gain is 1.25 dBi < 6 dBi, so the power density limit shall not be reduced.

logi bolt 2M

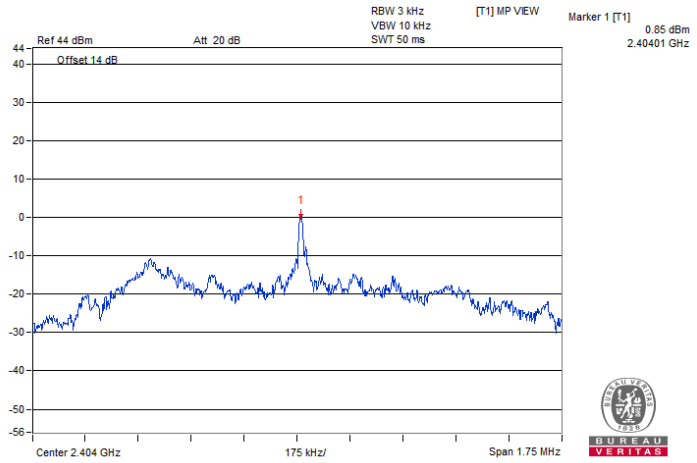
Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
1	2404	-0.16	8	Pass
19	2440	-0.23	8	Pass
38	2478	-0.51	8	Pass

Note: The antenna gain is 1.25 dBi < 6 dBi, so the power density limit shall not be reduced.

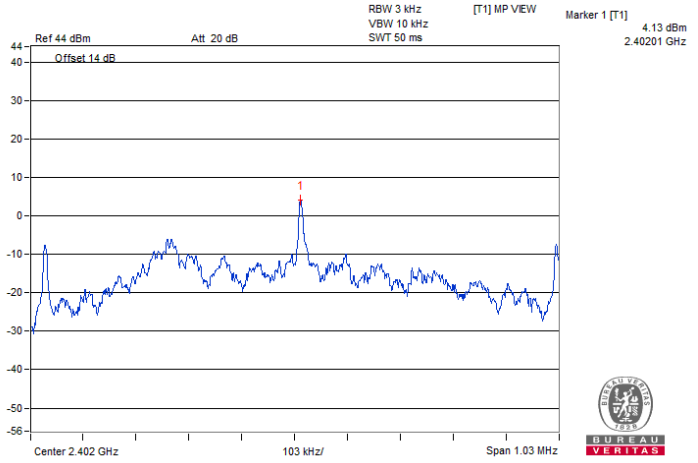
Spectrum Plot of Maximum Value



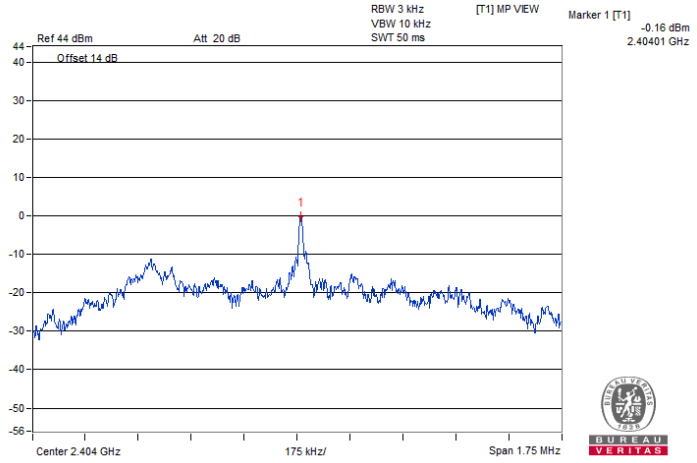
BT-LE 1M : CH 0



BT-LE 2M : CH 1



logi bolt 1M : CH 0



logi bolt 2M : CH 1

7.3 6 dB Bandwidth

Input Power:	3.85 Vdc	Environmental Conditions:	26°C, 58% RH	Tested By:	Dolly Chung

BT-LE 1M

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
0	2402	0.7	0.5	Pass
19	2440	0.69	0.5	Pass
39	2480	0.7	0.5	Pass

BT-LE 2M

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
1	2404	1.17	0.5	Pass
19	2440	1.19	0.5	Pass
38	2478	1.19	0.5	Pass

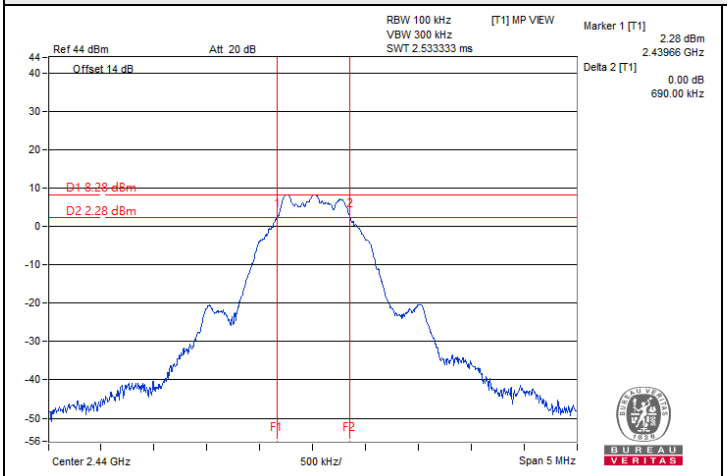
Logi bolt 1M

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
0	2402	0.69	0.5	Pass
19	2440	0.7	0.5	Pass
39	2480	0.69	0.5	Pass

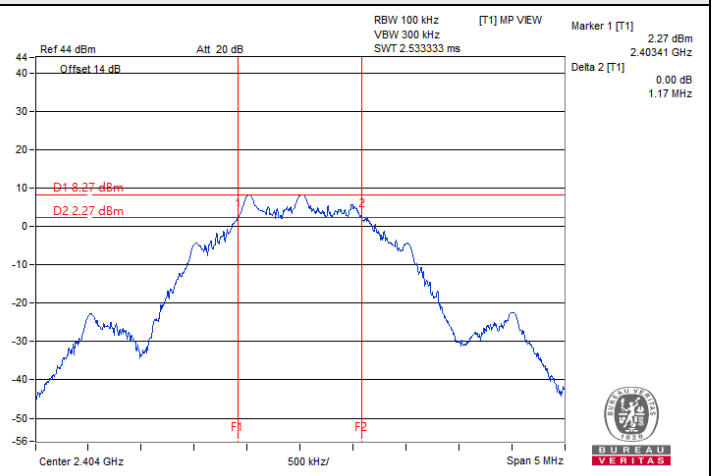
Logi bolt 2M

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
1	2404	1.17	0.5	Pass
19	2440	1.16	0.5	Pass
38	2478	1.2	0.5	Pass

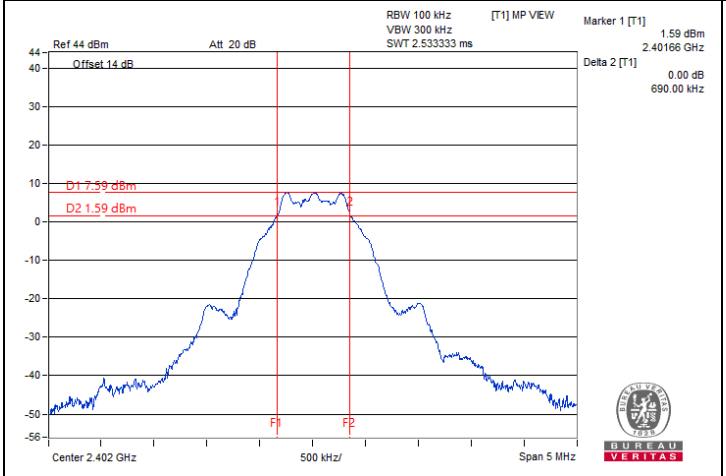
Spectrum Plot of Minimum Value



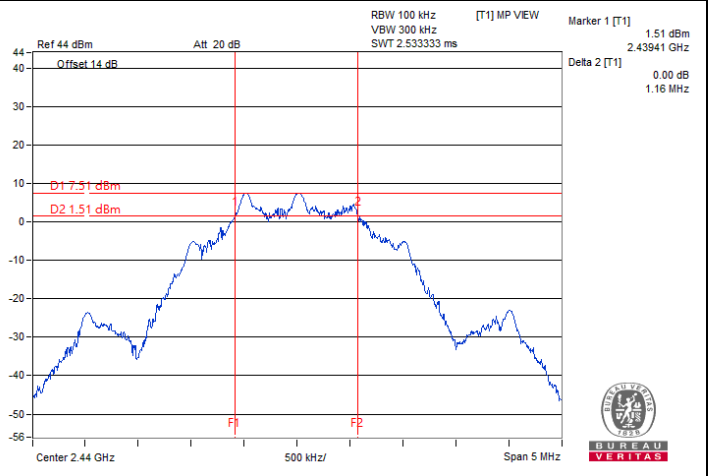
BT-LE 1M : CH 19



BT-LE 2M : CH 1



Logi bolt 1M : CH 0

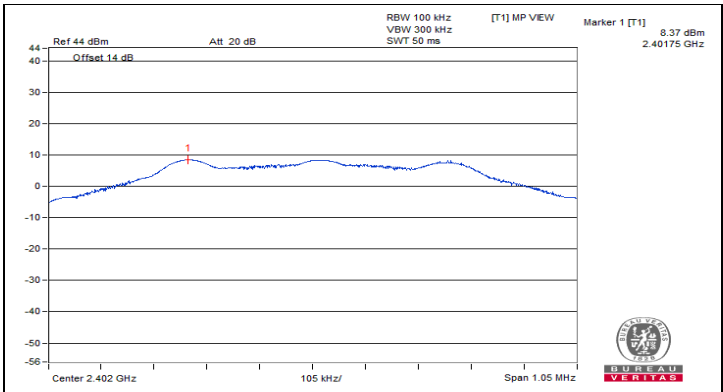


Logi bolt 2M : CH 19

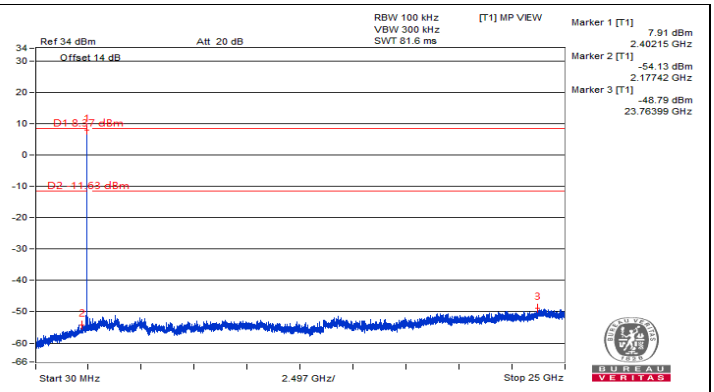
7.4 Conducted Out of Band Emissions

Input Power:	3.85 Vdc	Environmental Conditions:	26°C, 58% RH	Tested By:	Dolly Chung

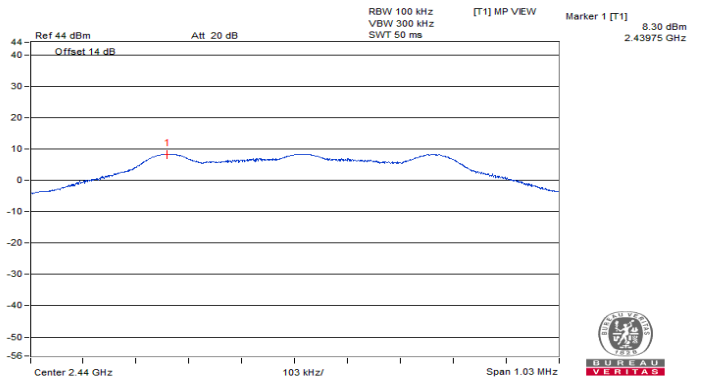
BT-LE 1M



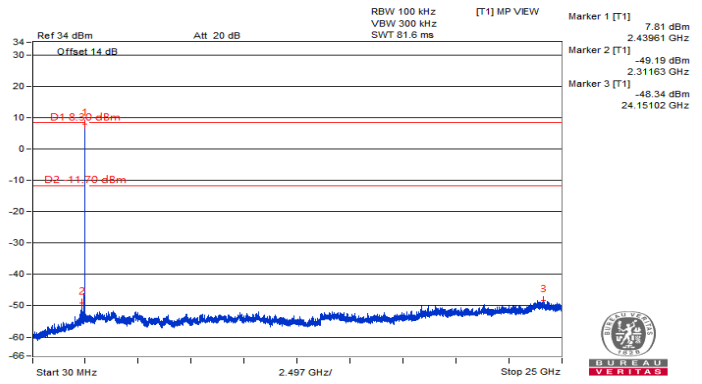
CH 0



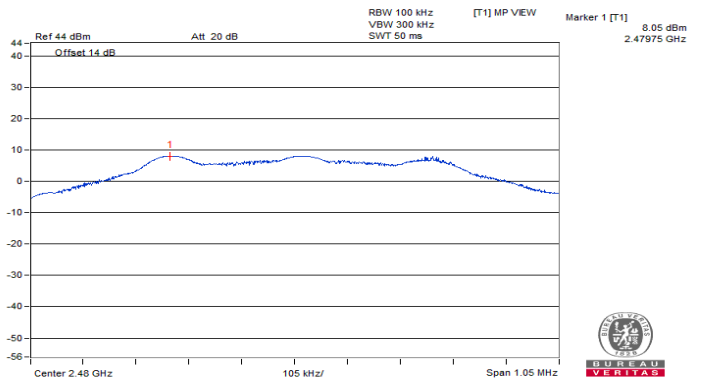
CH 0



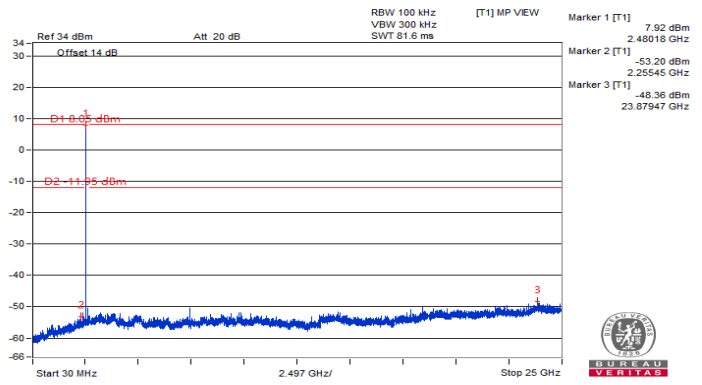
CH 19



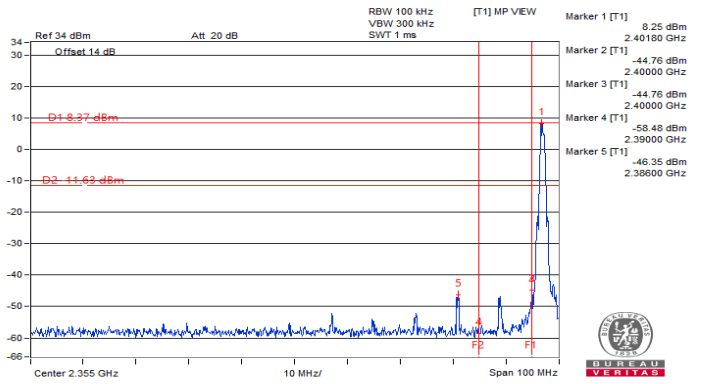
CH 19



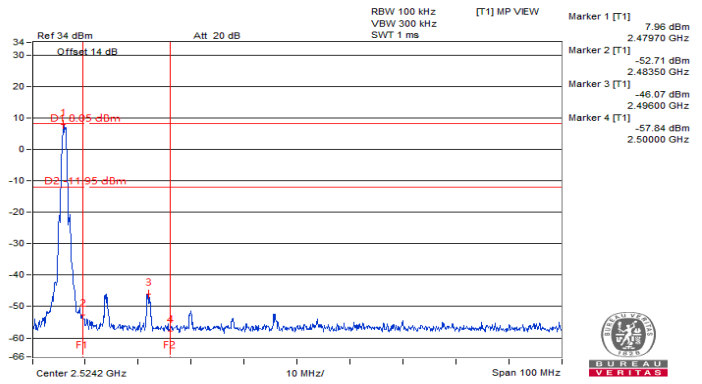
CH 39



CH 39

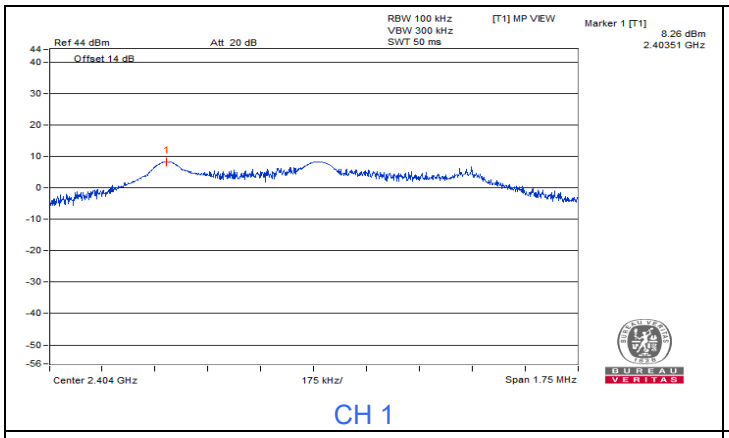


CH 0 Band edge

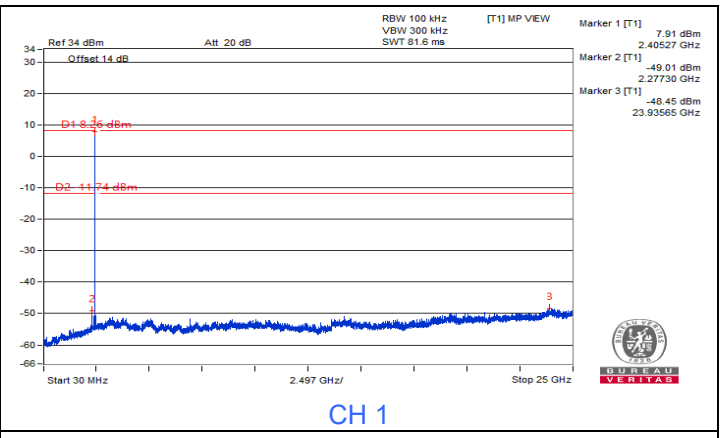


CH 39 Band edge

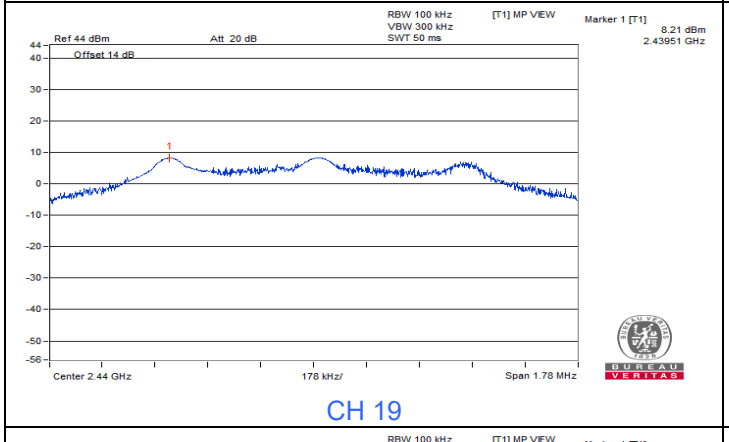
BT-LE 2M



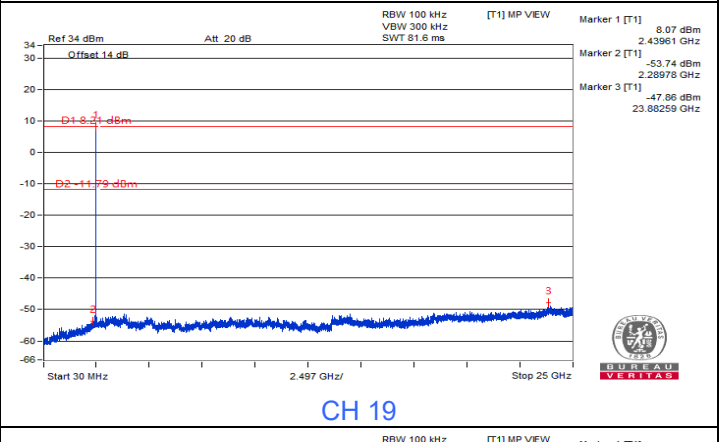
CH 1



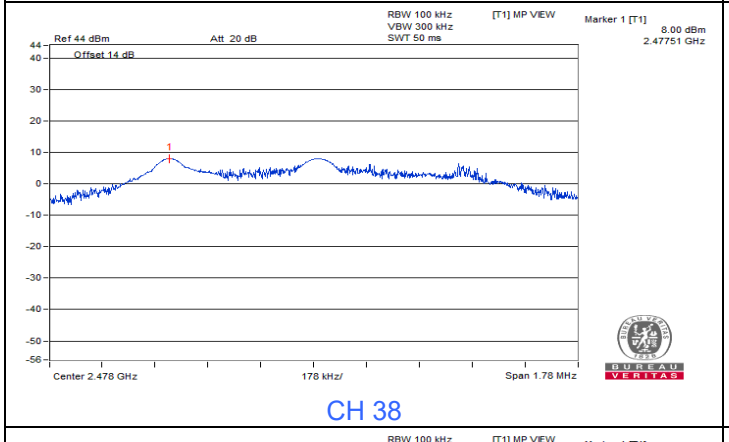
CH 1



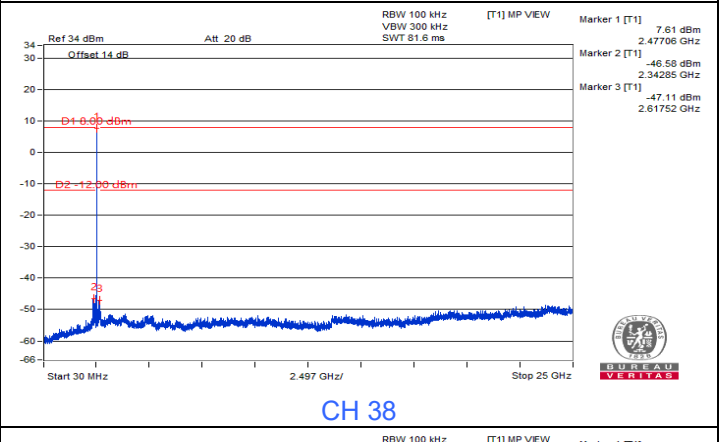
CH 19



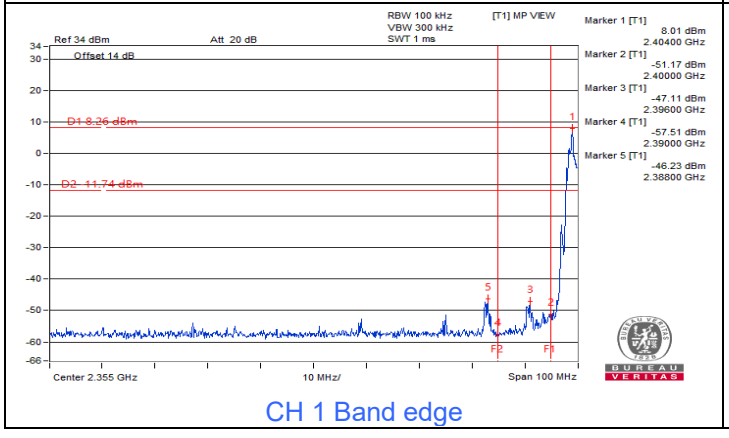
CH 19



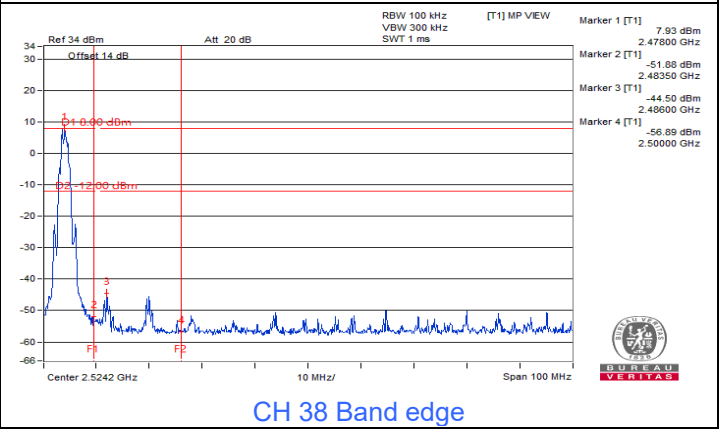
CH 38



CH 38

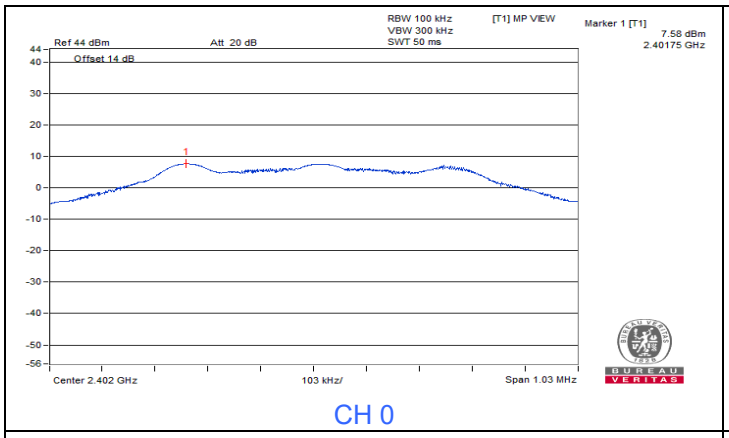


CH 1 Band edge

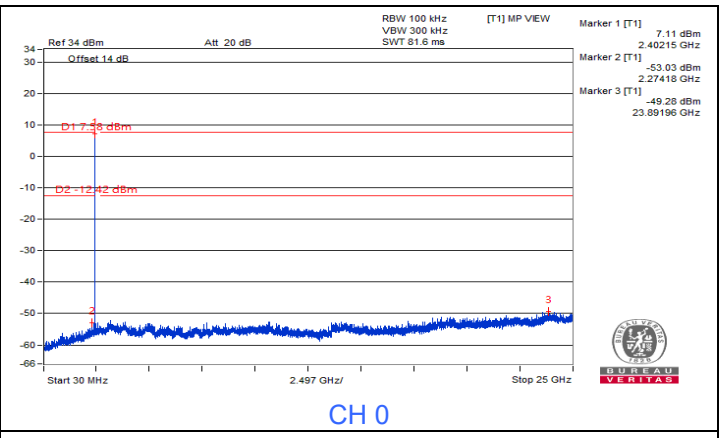


CH 38 Band edge

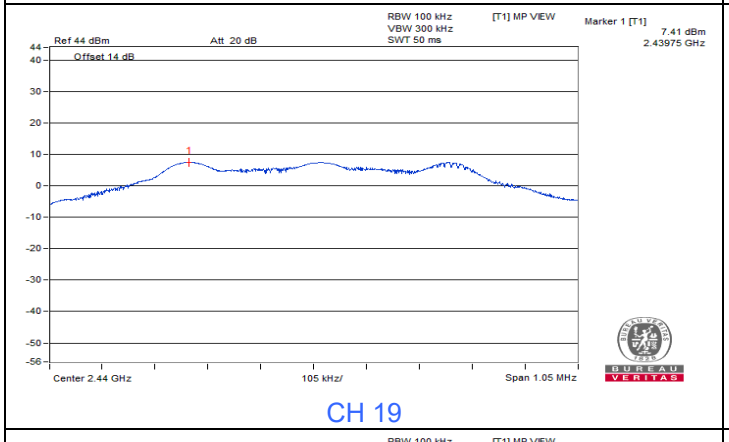
logi bolt 1M



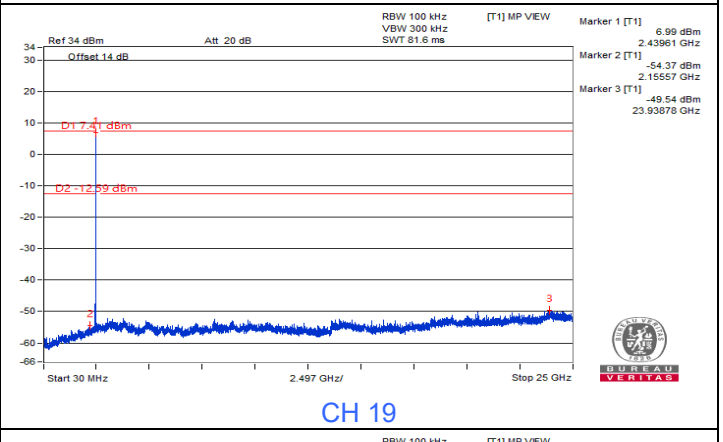
CH 0



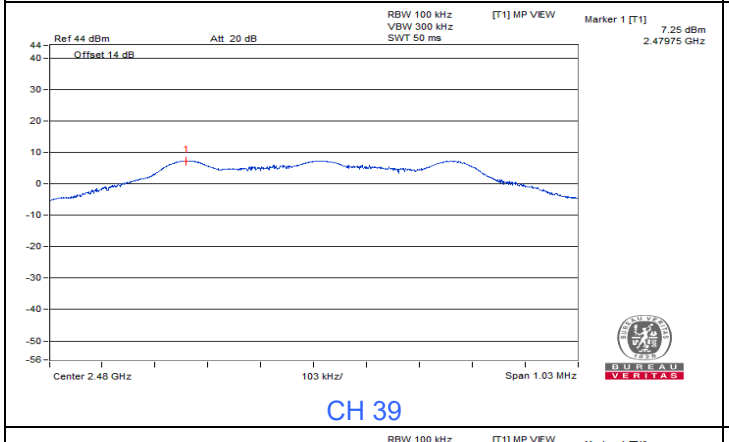
CH 0



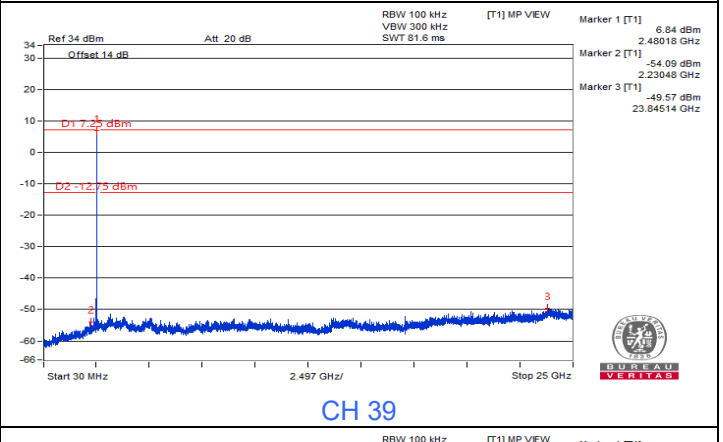
CH 19



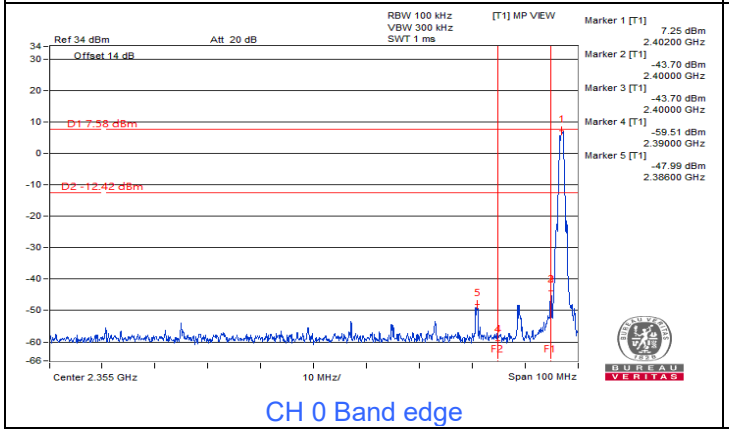
CH 19



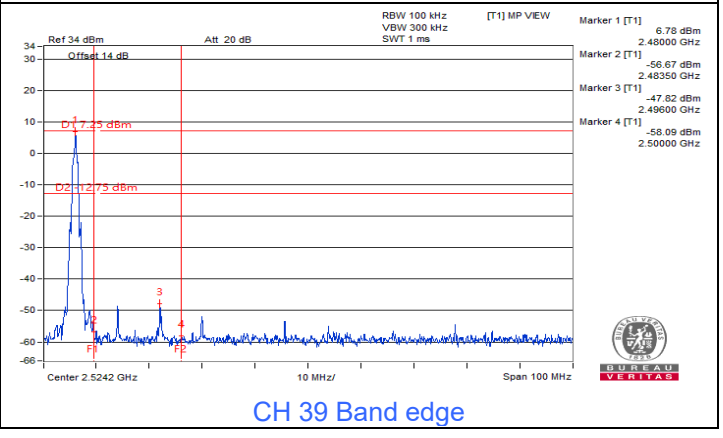
CH 39



CH 39

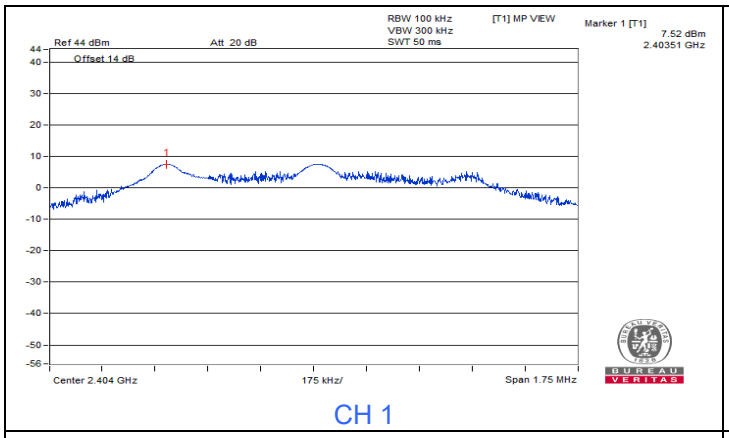


CH 0 Band edge

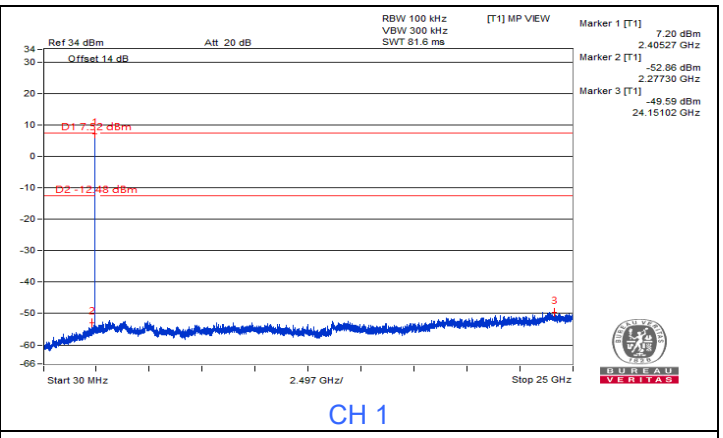


CH 39 Band edge

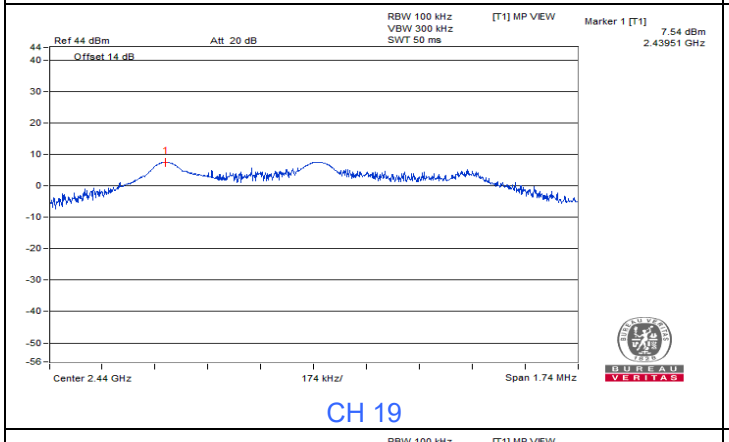
logi bolt 2M



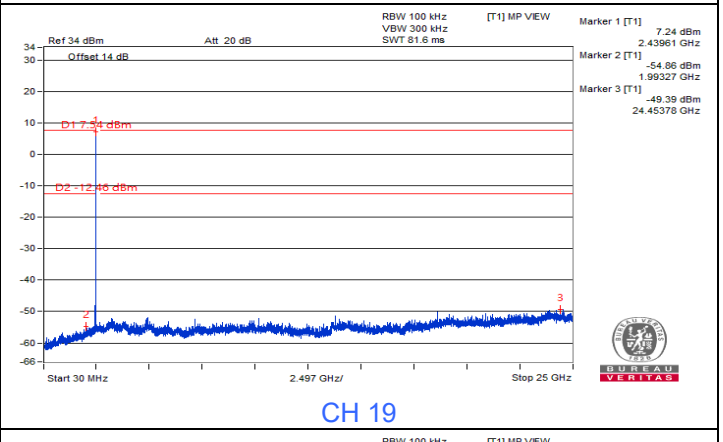
CH 1



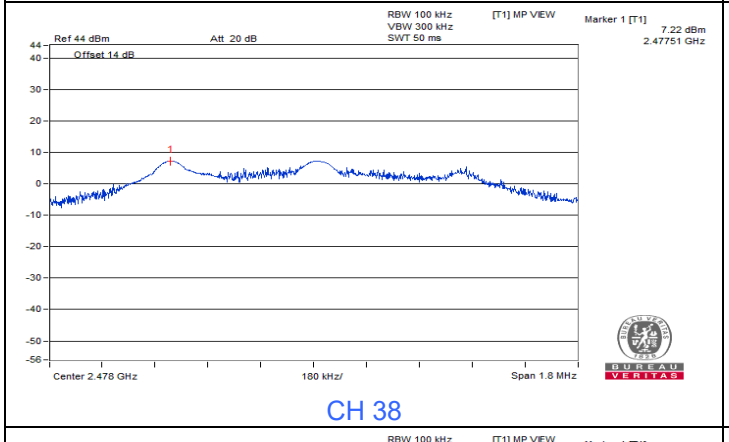
CH 1



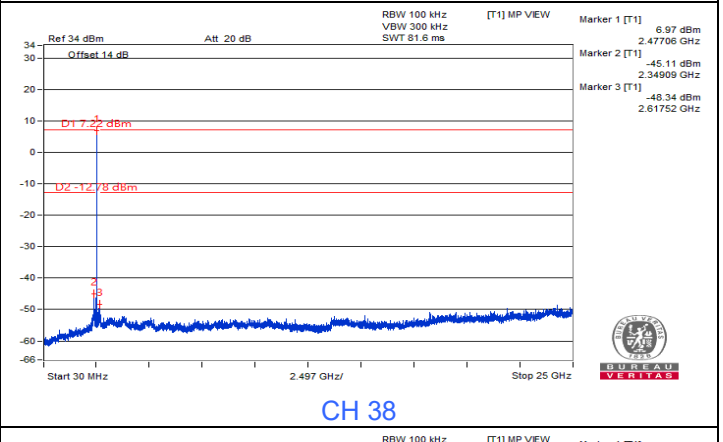
CH 19



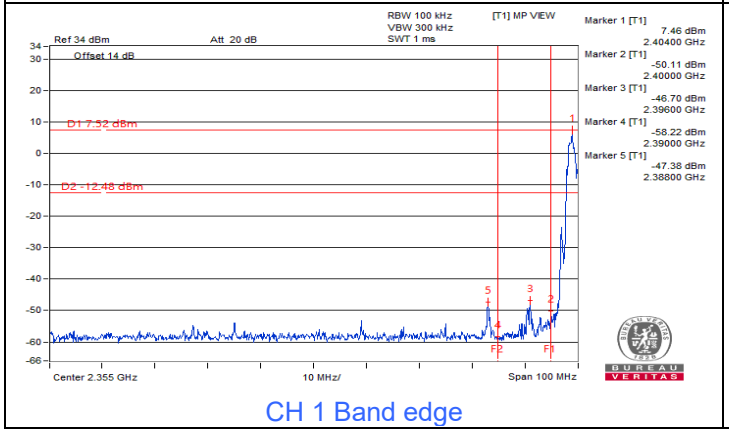
CH 19



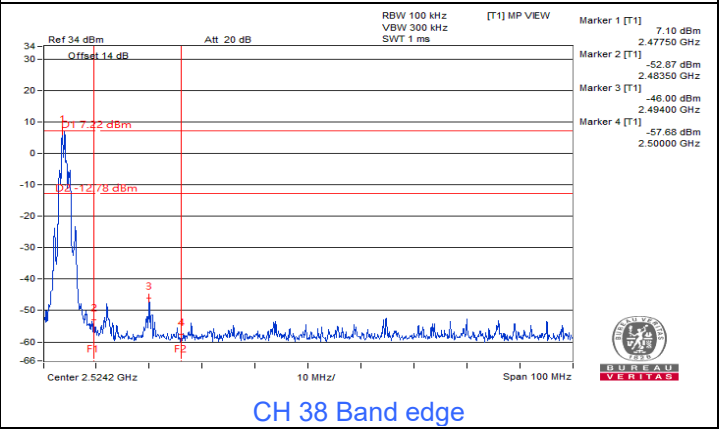
CH 38



CH 38



CH 1 Band edge



CH 38 Band edge

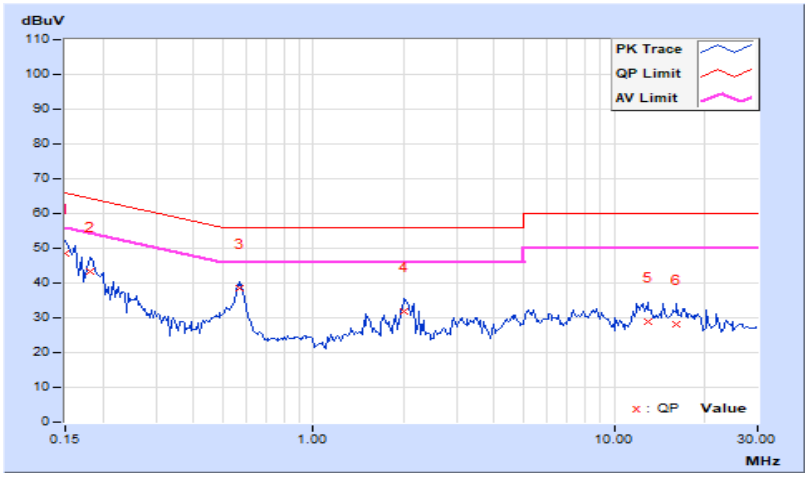
7.5 AC Power Conducted Emissions

RF Mode	BT-LE 1M	**Channel**	CH 0：2402 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25 °C, 75 % RH
Tested By	Tank Wu		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15026	9.96	38.69	22.88	48.65	32.84	65.99	55.99	-17.34	-23.15
2	0.18125	9.98	33.35	17.41	43.33	27.39	64.43	54.43	-21.10	-27.04
3	0.57188	10.00	28.50	19.52	38.50	29.52	56.00	46.00	-17.50	-16.48
4	2.01563	10.08	21.70	8.63	31.78	18.71	56.00	46.00	-24.22	-27.29
5	13.01172	10.60	18.33	13.16	28.93	23.76	60.00	50.00	-31.07	-26.24
6	16.13281	10.74	17.56	9.91	28.30	20.65	60.00	50.00	-31.70	-29.35

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



RF Mode	BT-LE 1M	Channel	CH 0：2402 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15012	10.01	40.79	24.00	50.80	34.01	65.99	55.99	-15.19	-21.98
2	0.16172	10.01	39.07	19.85	49.08	29.86	65.38	55.38	-16.30	-25.52
3	0.57969	10.01	30.24	21.34	40.25	31.35	56.00	46.00	-15.75	-14.65
4	2.14453	10.11	23.50	12.70	33.61	22.81	56.00	46.00	-22.39	-23.19
5	8.33203	10.34	19.61	14.34	29.95	24.68	60.00	50.00	-30.05	-25.32
6	12.18359	10.50	22.95	15.63	33.45	26.13	60.00	50.00	-26.55	-23.87

Remarks:

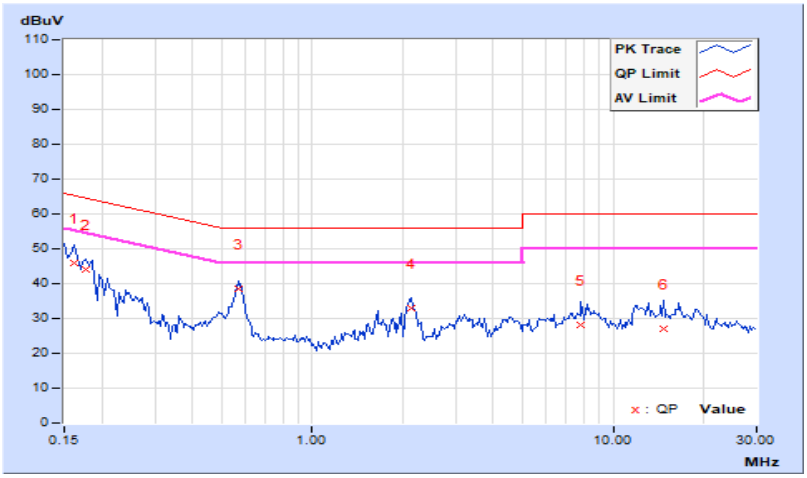
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

RF Mode	logi bolt 1M	Channel	CH 0：2402 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16172	9.96	36.13	18.39	46.09	28.35	65.38	55.38	-19.29	-27.03
2	0.17734	9.97	34.03	18.26	44.00	28.23	64.61	54.61	-20.61	-26.38
3	0.57188	10.00	28.61	19.44	38.61	29.44	56.00	46.00	-17.39	-16.56
4	2.13281	10.09	22.79	8.48	32.88	18.57	56.00	46.00	-23.12	-27.43
5	7.81641	10.36	17.66	11.37	28.02	21.73	60.00	50.00	-31.98	-28.27
6	14.74609	10.68	16.38	10.18	27.06	20.86	60.00	50.00	-32.94	-29.14

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



RF Mode	logi bolt 1M	**Channel**	CH 0：2402 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25 °C, 75 % RH
Tested By	Tank Wu		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15391	10.01	39.73	23.79	49.74	33.80	65.79	55.79	-16.05	-21.99
2	0.18125	10.01	35.57	19.07	45.58	29.08	64.43	54.43	-18.85	-25.35
3	**0.56797**	**10.01**	**30.28**	**22.89**	**40.29**	**32.90**	**56.00**	**46.00**	**-15.71**	**-13.10**
4	2.09766	10.10	24.66	13.67	34.76	23.77	56.00	46.00	-21.24	-22.23
5	8.45703	10.35	20.18	14.50	30.53	24.85	60.00	50.00	-29.47	-25.15
6	12.19922	10.50	22.71	15.74	33.21	26.24	60.00	50.00	-26.79	-23.76

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

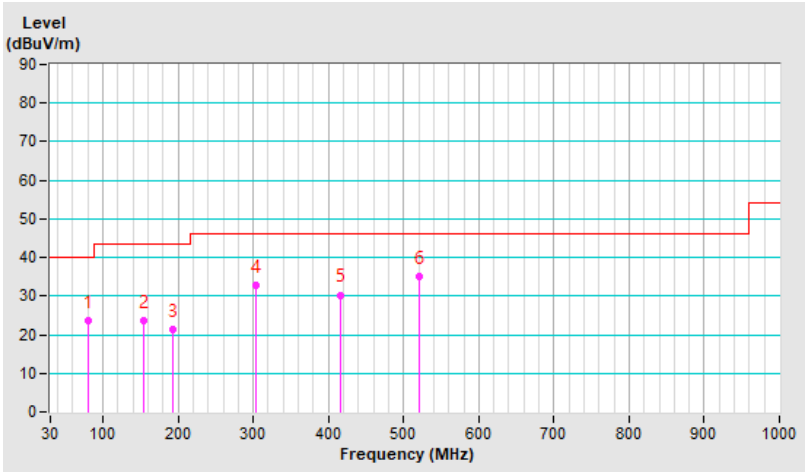
7.6 Unwanted Emissions below 1 GHz

RF Mode	BT-LE 1M	Channel	CH 0：2402 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	80.03	23.5 QP	40.0	-16.5	2.00 H	50	41.5	-18.0
2	154.31	23.7 QP	43.5	-19.8	2.00 H	303	36.5	-12.8
3	192.16	21.5 QP	43.5	-22.0	1.50 H	182	37.6	-16.1
4	303.20	32.8 QP	46.0	-13.2	1.00 H	253	45.0	-12.2
5	415.99	30.3 QP	46.0	-15.7	1.00 H	181	39.6	-9.3
6	520.00	34.9 QP	46.0	-11.1	2.00 H	221	41.9	-7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

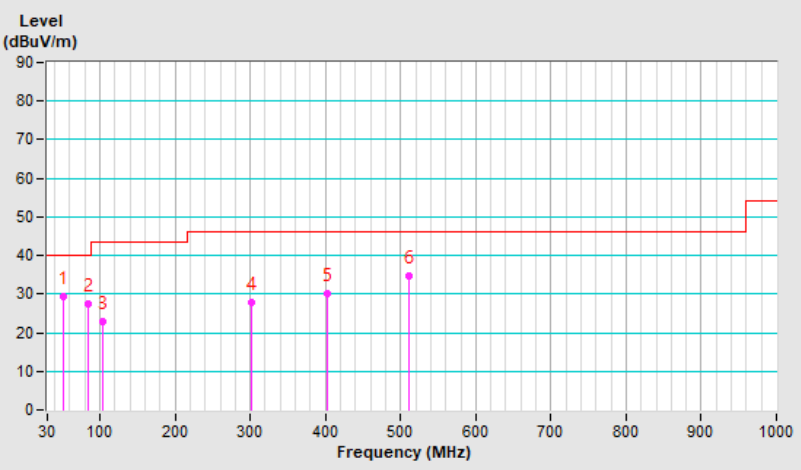


RF Mode	BT-LE 1M	Channel	CH 0：2402 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	**50.95**	**29.4 QP**	**40.0**	**-10.6**	**1.50 V**	**330**	**42.3**	**-12.9**
2	83.76	27.4 QP	40.0	-12.6	1.50 V	257	46.1	-18.7
3	104.54	22.8 QP	43.5	-20.7	1.50 V	146	39.1	-16.3
4	302.13	27.9 QP	46.0	-18.1	1.00 V	199	40.2	-12.3
5	403.04	30.0 QP	46.0	-16.0	1.00 V	218	39.7	-9.7
6	512.02	34.8 QP	46.0	-11.2	1.00 V	178	41.9	-7.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

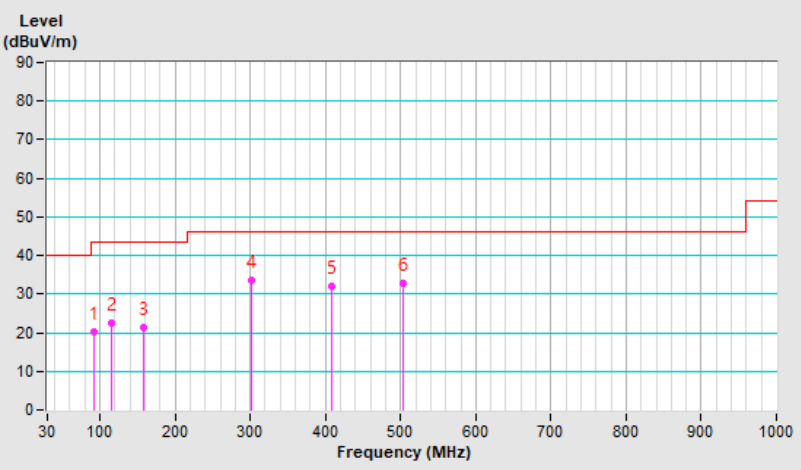


RF Mode	logi bolt 1M	Channel	CH 0：2402 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	92.42	20.3 QP	43.5	-23.2	2.00 H	358	38.8	-18.5
2	114.39	22.4 QP	43.5	-21.1	3.00 H	175	37.6	-15.2
3	157.56	21.3 QP	43.5	-22.2	3.00 H	302	34.2	-12.9
4	302.47	33.6 QP	46.0	-12.4	1.00 H	242	45.9	-12.3
5	407.98	31.9 QP	46.0	-14.1	1.00 H	178	41.4	-9.5
6	503.99	32.9 QP	46.0	-13.1	2.00 H	215	40.2	-7.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

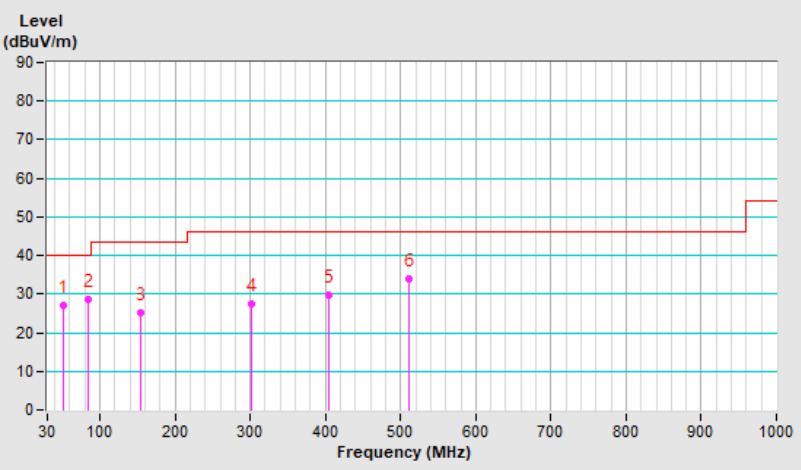


RF Mode	logi bolt 1M	**Channel**	CH 0：2402 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	51.00	27.2 QP	40.0	-12.8	2.00 V	347	40.1	-12.9
2	83.52	28.4 QP	40.0	-11.6	1.00 V	244	47.1	-18.7
3	154.33	25.0 QP	43.5	-18.5	1.00 V	278	37.8	-12.8
4	302.42	27.5 QP	46.0	-18.5	1.50 V	224	39.8	-12.3
5	404.37	29.6 QP	46.0	-16.4	1.00 V	2	39.2	-9.6
6	512.02	33.9 QP	46.0	-12.1	1.00 V	134	41.0	-7.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



7.7 Unwanted Emissions above 1 GHz

RF Mode	BT-LE 1M	**Channel**	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25 °C, 75 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	2390.00	57.6 PK	74.0	-16.4	1.25 H	156	58.0	-0.4
2	2390.00	46.4 AV	54.0	-7.6	1.25 H	156	46.8	-0.4
3	*2402.00	104.9 PK			1.25 H	156	105.5	-0.6
4	*2402.00	78.9 AV			1.25 H	156	79.5	-0.6
5	4804.00	50.5 PK	74.0	-23.5	1.11 H	146	46.3	4.2
6	4804.00	24.5 AV	54.0	-29.5	1.11 H	146	20.3	4.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	2390.00	56.9 PK	74.0	-17.1	1.38 V	199	57.3	-0.4
2	2390.00	44.1 AV	54.0	-9.9	1.38 V	199	44.5	-0.4
3	*2402.00	97.2 PK			1.38 V	199	97.8	-0.6
4	*2402.00	71.2 AV			1.38 V	199	71.8	-0.6
5	4804.00	48.4 PK	74.0	-25.6	1.35 V	319	44.2	4.2
6	4804.00	22.4 AV	54.0	-31.6	1.35 V	319	18.2	4.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.355 ms / 7.049 ms) = -26.0 dB

RF Mode	BT-LE 1M	Channel	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	104.6 PK			1.24 H	162	105.1	-0.5
2	*2440.00	78.6 AV			1.24 H	162	79.1	-0.5
3	4880.00	50.8 PK	74.0	-23.2	1.05 H	158	46.4	4.4
4	4880.00	24.8 AV	54.0	-29.2	1.05 H	158	20.4	4.4
5	7320.00	56.9 PK	74.0	-17.1	1.43 H	155	46.0	10.9
6	7320.00	30.9 AV	54.0	-23.1	1.43 H	155	20.0	10.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	97.5 PK			1.34 V	202	98.0	-0.5
2	*2440.00	71.5 AV			1.34 V	202	72.0	-0.5
3	4880.00	48.3 PK	74.0	-25.7	1.35 V	313	43.9	4.4
4	4880.00	22.3 AV	54.0	-31.7	1.35 V	313	17.9	4.4
5	7320.00	55.9 PK	74.0	-18.1	1.37 V	238	45.0	10.9
6	7320.00	29.9 AV	54.0	-24.1	1.37 V	238	19.0	10.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.355 ms / 7.049 ms) = -26.0 dB

RF Mode	BT-LE 1M	Channel	CH 39：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	104.7 PK			1.55 H	172	105.4	-0.7
2	*2480.00	78.7 AV			1.55 H	172	79.4	-0.7
3	2483.50	57.9 PK	74.0	-16.1	1.55 H	172	58.6	-0.7
4	**2483.50**	**47.6 AV**	**54.0**	**-6.4**	**1.55 H**	**172**	**48.3**	**-0.7**
5	4960.00	50.2 PK	74.0	-23.8	1.06 H	165	45.6	4.6
6	4960.00	24.2 AV	54.0	-29.8	1.06 H	165	19.6	4.6
7	7440.00	56.7 PK	74.0	-17.3	1.40 H	156	45.3	11.4
8	7440.00	30.7 AV	54.0	-23.3	1.40 H	156	19.3	11.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	97.7 PK			1.02 V	185	98.4	-0.7
2	*2480.00	71.7 AV			1.02 V	185	72.4	-0.7
3	2483.50	54.4 PK	74.0	-19.6	1.02 V	185	55.1	-0.7
4	2483.50	44.8 AV	54.0	-9.2	1.02 V	185	45.5	-0.7
5	4960.00	48.1 PK	74.0	-25.9	1.38 V	319	43.5	4.6
6	4960.00	22.1 AV	54.0	-31.9	1.38 V	319	17.5	4.6
7	7440.00	55.8 PK	74.0	-18.2	1.41 V	237	44.4	11.4
8	7440.00	29.8 AV	54.0	-24.2	1.41 V	237	18.4	11.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.355 ms / 7.049 ms) = -26.0 dB

RF Mode	BT-LE 2M	Channel	CH 1：2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	56.1 PK	74.0	-17.9	1.08 H	184	56.5	-0.4
2	2390.00	44.9 AV	54.0	-9.1	1.08 H	184	45.3	-0.4
3	*2404.00	104.7 PK			1.08 H	184	105.3	-0.6
4	*2404.00	73.1 AV			1.08 H	184	73.7	-0.6
5	4808.00	49.8 PK	74.0	-24.2	1.08 H	180	45.6	4.2
6	4808.00	18.2 AV	54.0	-35.8	1.08 H	180	14.0	4.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	55.1 PK	74.0	-18.9	1.04 V	177	55.5	-0.4
2	2390.00	43.1 AV	54.0	-10.9	1.04 V	177	43.5	-0.4
3	*2404.00	97.6 PK			1.04 V	177	98.2	-0.6
4	*2404.00	66.0 AV			1.04 V	177	66.6	-0.6
5	4808.00	47.6 PK	74.0	-26.4	1.35 V	312	43.4	4.2
6	4808.00	16.0 AV	54.0	-38.0	1.35 V	312	11.8	4.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.185 ms / 7.051 ms) = -31.6 dB

RF Mode	BT-LE 2M	Channel	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	104.9 PK			1.13 H	181	105.4	-0.5
2	*2440.00	73.3 AV			1.13 H	181	73.8	-0.5
3	4880.00	49.6 PK	74.0	-24.4	1.11 H	180	45.2	4.4
4	4880.00	18.0 AV	54.0	-36.0	1.11 H	180	13.6	4.4
5	7320.00	56.7 PK	74.0	-17.3	1.35 H	145	45.8	10.9
6	7320.00	25.1 AV	54.0	-28.9	1.35 H	145	14.2	10.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	97.8 PK			1.33 V	179	98.3	-0.5
2	*2440.00	66.2 AV			1.33 V	179	66.7	-0.5
3	4880.00	47.9 PK	74.0	-26.1	1.35 V	320	43.5	4.4
4	4880.00	16.3 AV	54.0	-37.7	1.35 V	320	11.9	4.4
5	7320.00	56.1 PK	74.0	-17.9	1.36 V	227	45.2	10.9
6	7320.00	24.5 AV	54.0	-29.5	1.36 V	227	13.6	10.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.185 ms / 7.051 ms) = -31.6 dB

RF Mode	BT-LE 2M	Channel	CH 38：2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2478.00	105.1 PK			1.38 H	178	105.8	-0.7
2	*2478.00	73.5 AV			1.38 H	178	74.2	-0.7
3	2483.50	57.6 PK	74.0	-16.4	1.38 H	178	58.3	-0.7
4	2483.50	46.5 AV	54.0	-7.5	1.38 H	178	47.2	-0.7
5	4956.00	49.5 PK	74.0	-24.5	1.09 H	183	45.0	4.5
6	4956.00	17.9 AV	54.0	-36.1	1.09 H	183	13.4	4.5
7	7434.00	57.1 PK	74.0	-16.9	1.35 H	146	45.7	11.4
8	7434.00	25.5 AV	54.0	-28.5	1.35 H	146	14.1	11.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2478.00	97.4 PK			1.29 V	174	98.1	-0.7
2	*2478.00	65.8 AV			1.29 V	174	66.5	-0.7
3	2483.50	55.1 PK	74.0	-18.9	1.29 V	174	55.8	-0.7
4	2483.50	44.3 AV	54.0	-9.7	1.29 V	174	45.0	-0.7
5	4956.00	47.4 PK	74.0	-26.6	1.33 V	307	42.9	4.5
6	4956.00	15.8 AV	54.0	-38.2	1.33 V	307	11.3	4.5
7	7434.00	55.9 PK	74.0	-18.1	1.40 V	232	44.5	11.4
8	7434.00	24.3 AV	54.0	-29.7	1.40 V	232	12.9	11.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.185 ms / 7.051 ms) = -31.6 dB

RF Mode	logi bolt 1M	Channel	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	56.1 PK	74.0	-17.9	1.06 H	149	56.5	-0.4
2	2390.00	45.9 AV	54.0	-8.1	1.06 H	149	46.3	-0.4
3	*2402.00	104.3 PK			1.06 H	149	104.9	-0.6
4	*2402.00	78.4 AV			1.06 H	149	79.0	-0.6
5	4804.00	50.3 PK	74.0	-23.7	1.16 H	152	46.1	4.2
6	4804.00	24.4 AV	54.0	-29.6	1.16 H	152	20.2	4.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	55.3 PK	74.0	-18.7	1.06 V	210	55.7	-0.4
2	2390.00	43.1 AV	54.0	-10.9	1.06 V	210	43.5	-0.4
3	*2402.00	96.8 PK			1.06 V	210	97.4	-0.6
4	*2402.00	70.9 AV			1.06 V	210	71.5	-0.6
5	4804.00	48.1 PK	74.0	-25.9	1.33 V	317	43.9	4.2
6	4804.00	22.2 AV	54.0	-31.8	1.33 V	317	18.0	4.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.355 ms / 7.012 ms) = -25.9 dB

RF Mode	logi bolt 1M	Channel	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	104.1 PK			1.27 H	154	104.6	-0.5
2	*2440.00	78.2 AV			1.27 H	154	78.7	-0.5
3	4880.00	48.8 PK	74.0	-25.2	1.12 H	173	44.4	4.4
4	4880.00	22.9 AV	54.0	-31.1	1.12 H	173	18.5	4.4
5	7320.00	56.9 PK	74.0	-17.1	1.31 H	142	46.0	10.9
6	7320.00	31.0 AV	54.0	-23.0	1.31 H	142	20.1	10.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	96.7 PK			1.29 V	206	97.2	-0.5
2	*2440.00	70.8 AV			1.29 V	206	71.3	-0.5
3	4880.00	47.4 PK	74.0	-26.6	1.41 V	317	43.0	4.4
4	4880.00	21.5 AV	54.0	-32.5	1.41 V	317	17.1	4.4
5	7320.00	56.1 PK	74.0	-17.9	1.39 V	215	45.2	10.9
6	7320.00	30.2 AV	54.0	-23.8	1.39 V	215	19.3	10.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.355 ms / 7.012 ms) = -25.9 dB

RF Mode	logi bolt 1M	Channel	CH 39：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	104.1 PK			1.06 H	152	104.8	-0.7
2	*2480.00	78.2 AV			1.06 H	152	78.9	-0.7
3	2483.50	57.3 PK	74.0	-16.7	1.06 H	152	58.0	-0.7
4	2483.50	47.1 AV	54.0	-6.9	1.06 H	152	47.8	-0.7
5	4960.00	48.7 PK	74.0	-25.3	1.15 H	188	44.1	4.6
6	4960.00	22.8 AV	54.0	-31.2	1.15 H	188	18.2	4.6
7	7440.00	56.6 PK	74.0	-17.4	1.36 H	157	45.2	11.4
8	7440.00	30.7 AV	54.0	-23.3	1.36 H	157	19.3	11.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	96.3 PK			1.16 V	177	97.0	-0.7
2	*2480.00	70.4 AV			1.16 V	177	71.1	-0.7
3	2483.50	55.5 PK	74.0	-18.5	1.16 V	177	56.2	-0.7
4	2483.50	43.4 AV	54.0	-10.6	1.16 V	177	44.1	-0.7
5	4960.00	47.1 PK	74.0	-26.9	1.36 V	331	42.5	4.6
6	4960.00	21.2 AV	54.0	-32.8	1.36 V	331	16.6	4.6
7	7440.00	56.5 PK	74.0	-17.5	1.32 V	230	45.1	11.4
8	7440.00	30.6 AV	54.0	-23.4	1.32 V	230	19.2	11.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.355 ms / 7.012 ms) = -25.9 dB

RF Mode	logi bolt 2M	Channel	CH 1：2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	56.6 PK	74.0	-17.4	1.44 H	181	57.0	-0.4
2	2390.00	46.5 AV	54.0	-7.5	1.44 H	181	46.9	-0.4
3	*2404.00	104.5 PK			1.44 H	181	105.1	-0.6
4	*2404.00	72.8 AV			1.44 H	181	73.4	-0.6
5	4808.00	49.1 PK	74.0	-24.9	1.01 H	198	44.9	4.2
6	4808.00	17.4 AV	54.0	-36.6	1.01 H	198	13.2	4.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	56.2 PK	74.0	-17.8	1.31 V	162	56.6	-0.4
2	2390.00	43.1 AV	54.0	-10.9	1.31 V	162	43.5	-0.4
3	*2404.00	96.1 PK			1.31 V	162	96.7	-0.6
4	*2404.00	64.4 AV			1.31 V	162	65.0	-0.6
5	4808.00	47.2 PK	74.0	-26.8	1.43 V	335	43.0	4.2
6	4808.00	15.5 AV	54.0	-38.5	1.43 V	335	11.3	4.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.184 ms / 7.046 ms) = -31.7 dB

RF Mode	logi bolt 2M	Channel	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	104.1 PK			1.47 H	171	104.6	-0.5
2	*2440.00	72.4 AV			1.47 H	171	72.9	-0.5
3	4880.00	49.3 PK	74.0	-24.7	1.05 H	191	44.9	4.4
4	4880.00	17.6 AV	54.0	-36.4	1.05 H	191	13.2	4.4
5	7320.00	56.2 PK	74.0	-17.8	1.38 H	161	45.3	10.9
6	7320.00	24.5 AV	54.0	-29.5	1.38 H	161	13.6	10.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	96.3 PK			1.25 V	159	96.8	-0.5
2	*2440.00	64.6 AV			1.25 V	159	65.1	-0.5
3	4880.00	47.6 PK	74.0	-26.4	1.40 V	329	43.2	4.4
4	4880.00	15.9 AV	54.0	-38.1	1.40 V	329	11.5	4.4
5	7320.00	55.9 PK	74.0	-18.1	1.37 V	228	45.0	10.9
6	7320.00	24.2 AV	54.0	-29.8	1.37 V	228	13.3	10.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.184 ms / 7.046 ms) = -31.7 dB

RF Mode	logi bolt 2M	Channel	CH 38：2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Tank Wu		

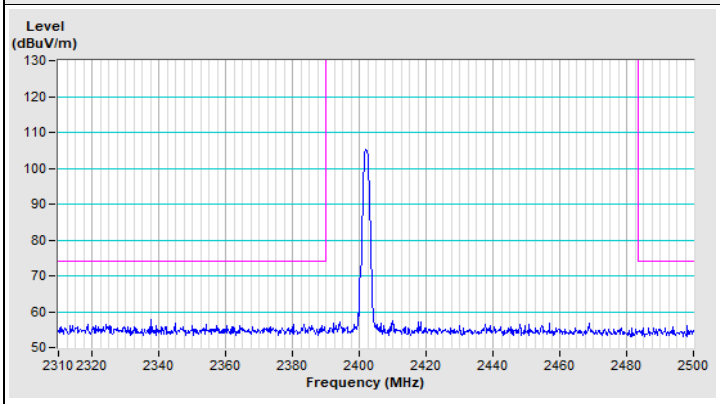
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2478.00	104.2 PK			1.08 H	170	104.9	-0.7
2	*2478.00	72.5 AV			1.08 H	170	73.2	-0.7
3	2483.50	56.8 PK	74.0	-17.2	1.08 H	170	57.5	-0.7
4	2483.50	46.2 AV	54.0	-7.8	1.08 H	170	46.9	-0.7
5	4956.00	49.6 PK	74.0	-24.4	1.06 H	202	45.1	4.5
6	4956.00	17.9 AV	54.0	-36.1	1.06 H	202	13.4	4.5
7	7434.00	56.5 PK	74.0	-17.5	1.34 H	177	45.1	11.4
8	7434.00	24.8 AV	54.0	-29.2	1.34 H	177	13.4	11.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2478.00	96.1 PK			1.71 V	193	96.8	-0.7
2	*2478.00	64.4 AV			1.71 V	193	65.1	-0.7
3	2483.50	56.3 PK	74.0	-17.7	1.71 V	193	57.0	-0.7
4	2483.50	42.3 AV	54.0	-11.7	1.71 V	193	43.0	-0.7
5	4956.00	47.3 PK	74.0	-26.7	1.34 V	337	42.8	4.5
6	4956.00	15.6 AV	54.0	-38.4	1.34 V	337	11.1	4.5
7	7434.00	55.6 PK	74.0	-18.4	1.33 V	216	44.2	11.4
8	7434.00	23.9 AV	54.0	-30.1	1.33 V	216	12.5	11.4

Remarks:

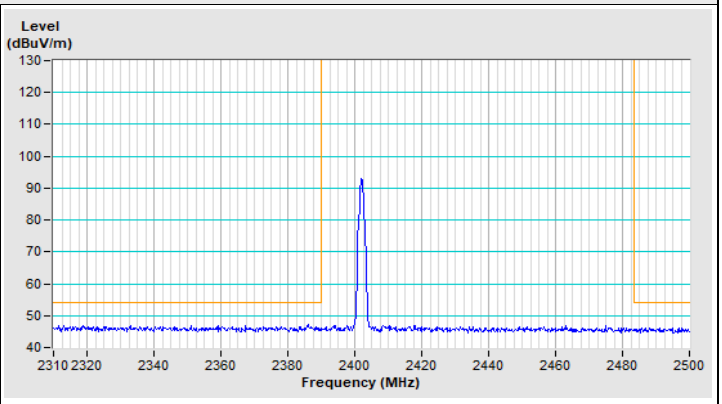
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(0.184 ms / 7.046 ms) = -31.7 dB

Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS

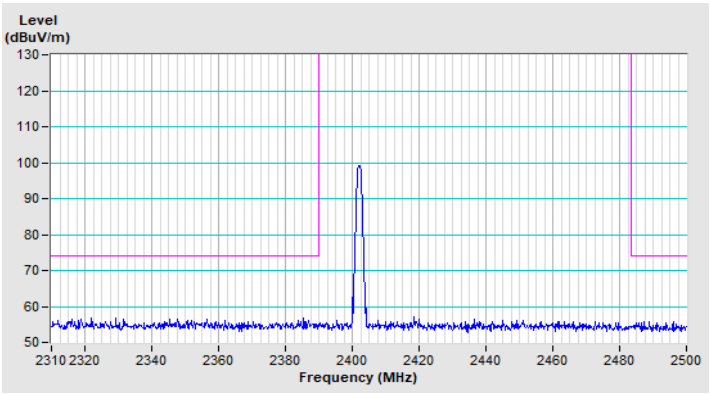
BT-LE 1M Channel 0



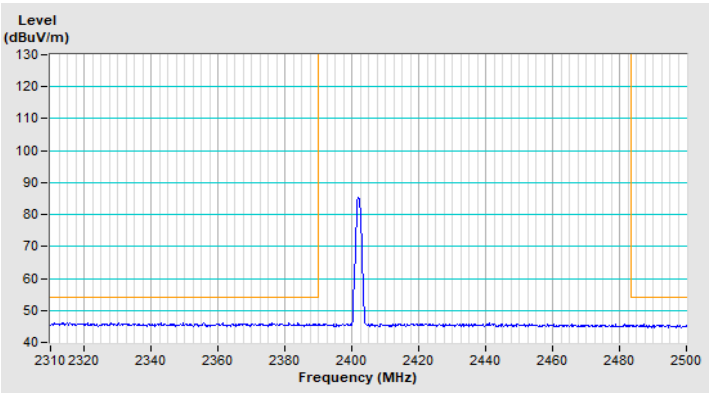
Horizontal (Peak)



Horizontal (Average)

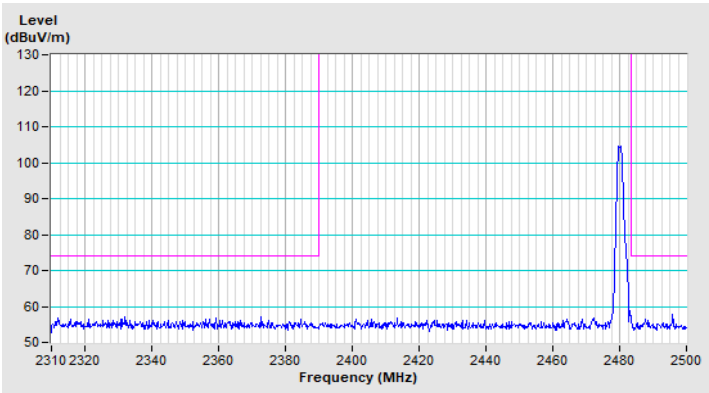


Vertical (Peak)

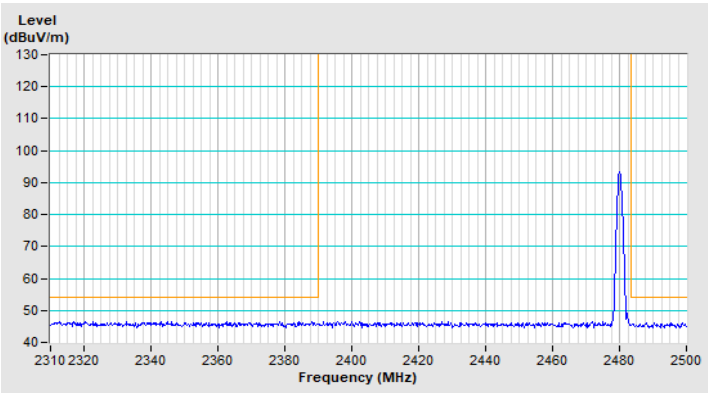


Vertical (Average)

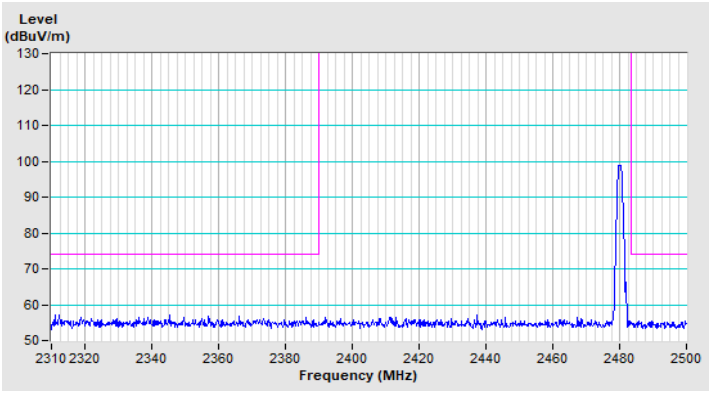
BT-LE 1M Channel 39



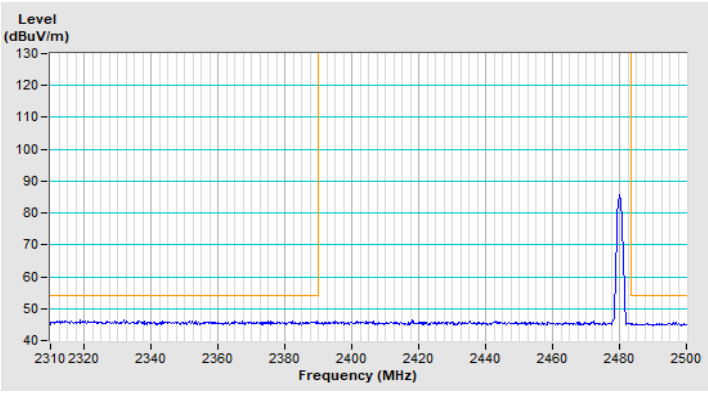
Horizontal (Peak)



Horizontal (Average)



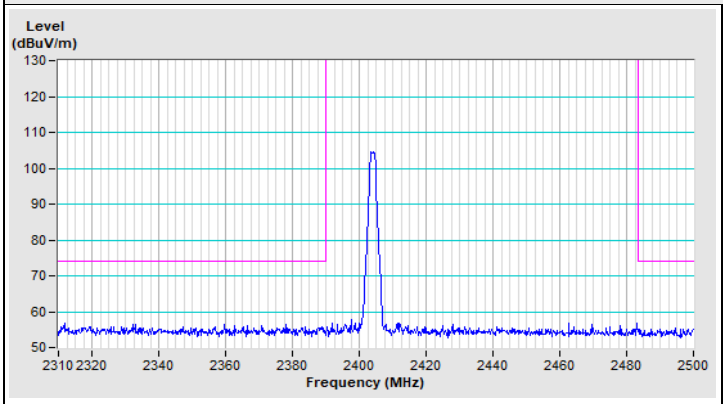
Vertical (Peak)



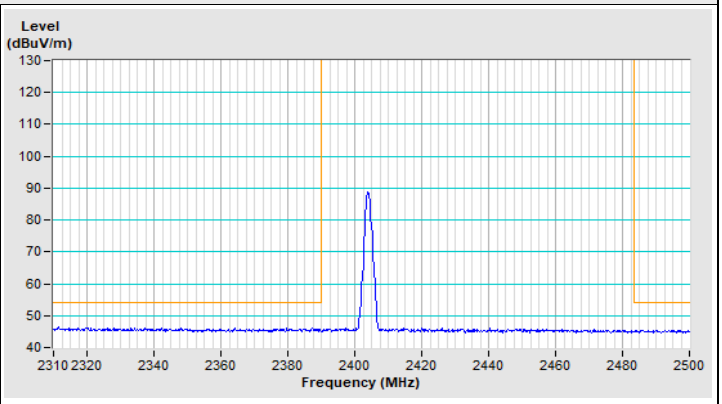
Vertical (Average)

Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS

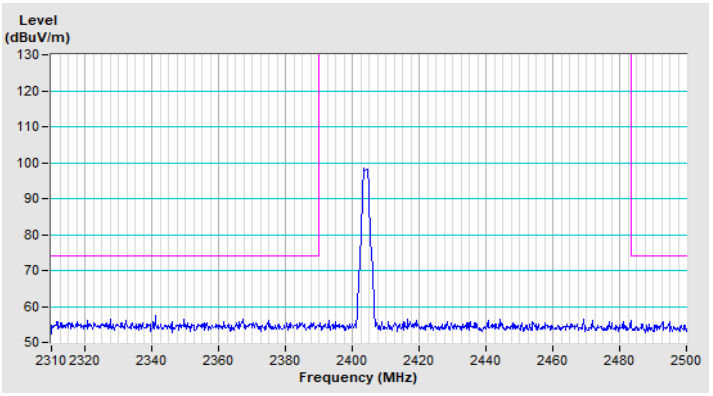
BT-LE 2M Channel 1



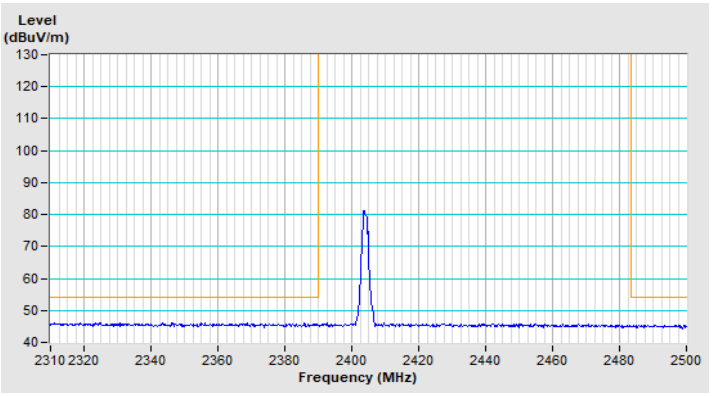
Horizontal (Peak)



Horizontal (Average)

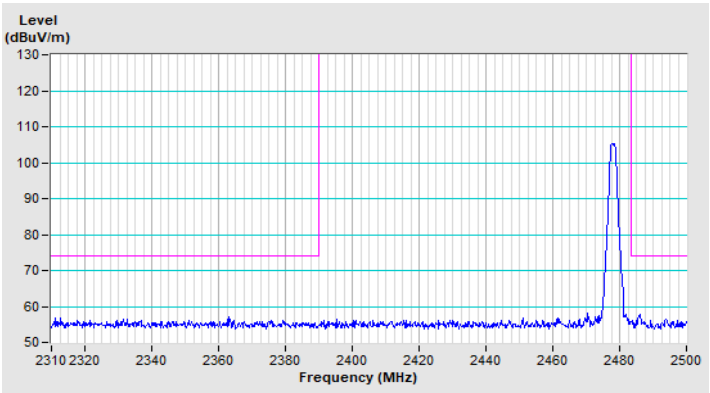


Vertical (Peak)

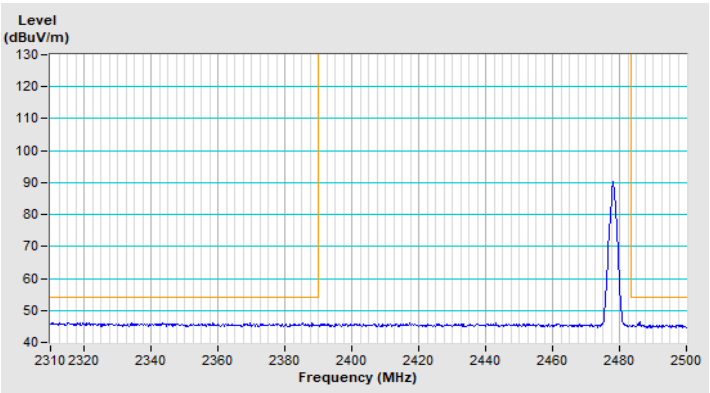


Vertical (Average)

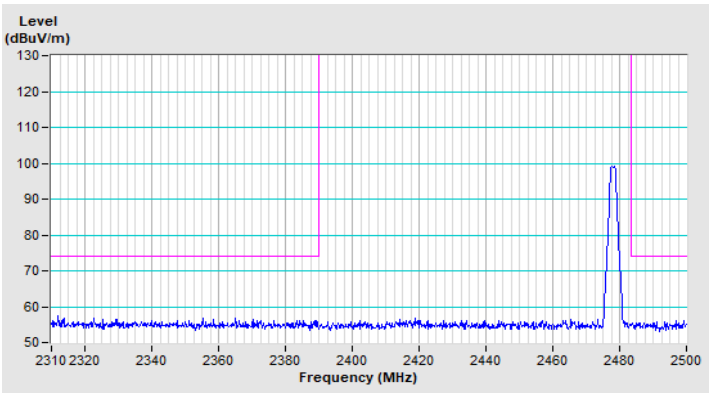
BT-LE 2M Channel 38



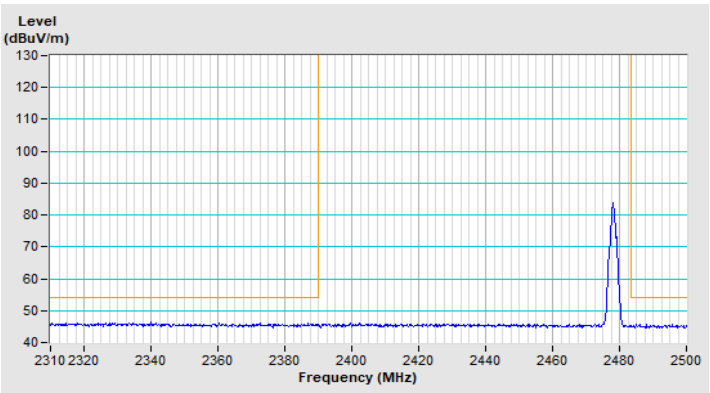
Horizontal (Peak)



Horizontal (Average)



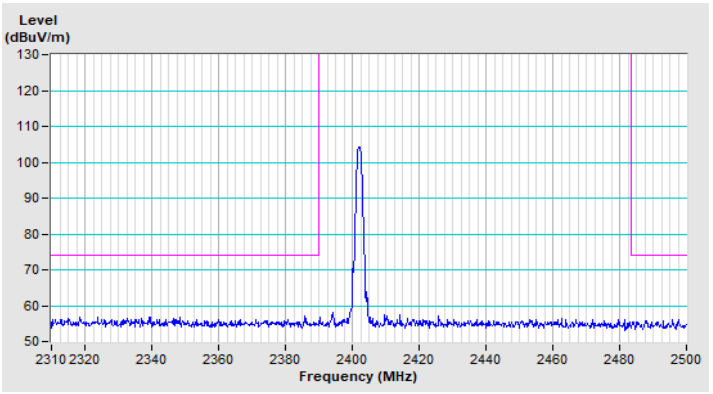
Vertical (Peak)



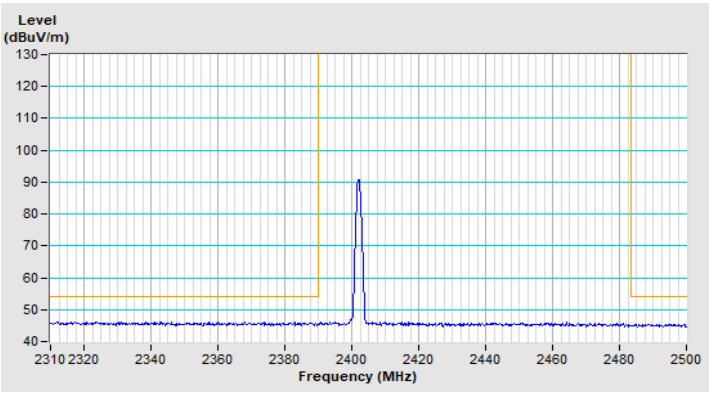
Vertical (Average)

Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS

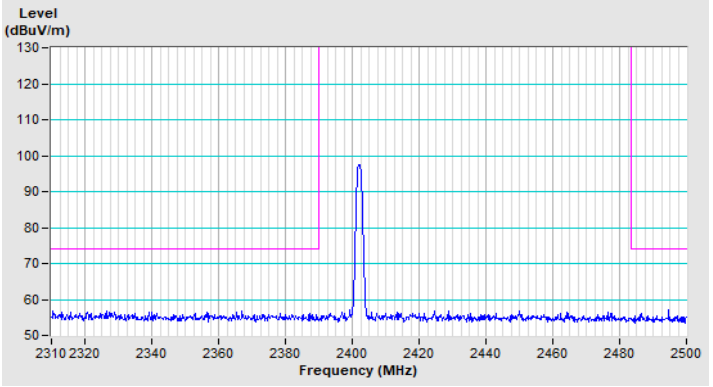
logi bolt 1M Channel 0



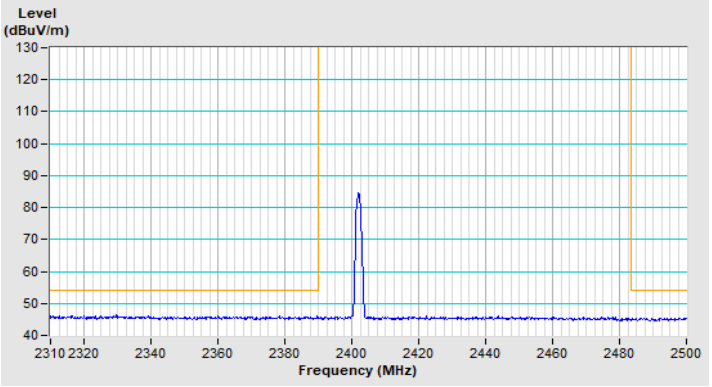
Horizontal (Peak)



Horizontal (Average)

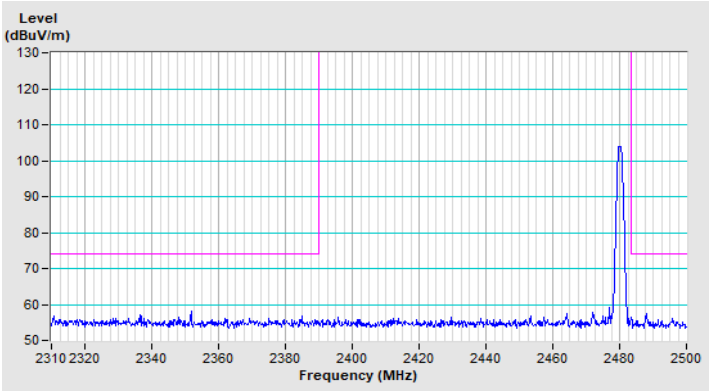


Vertical (Peak)

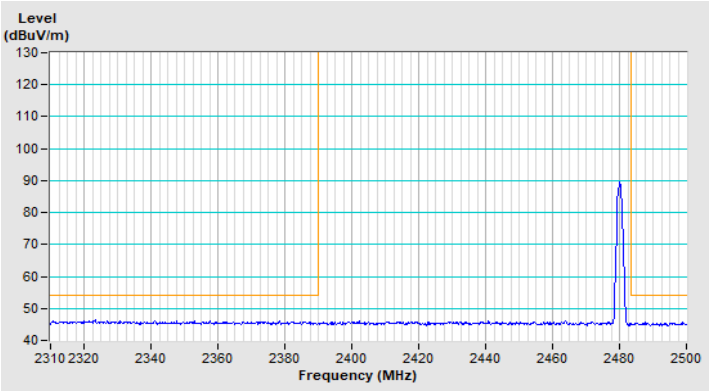


Vertical (Average)

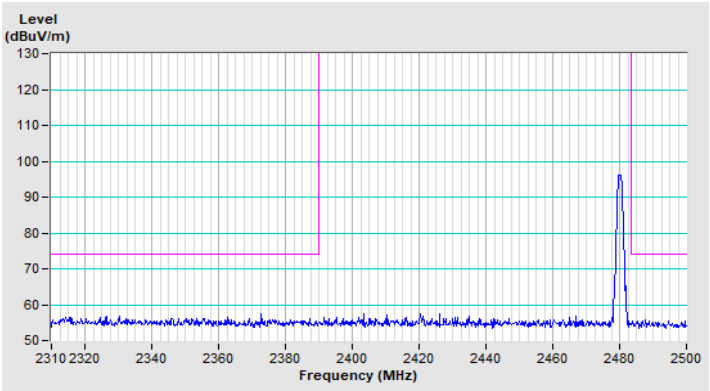
logi bolt 1M Channel 39



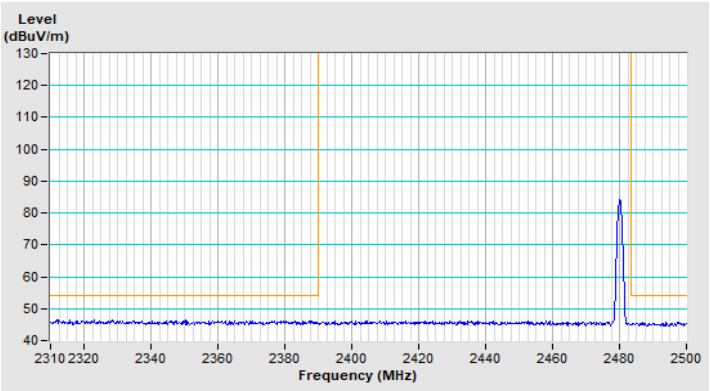
Horizontal (Peak)



Horizontal (Average)



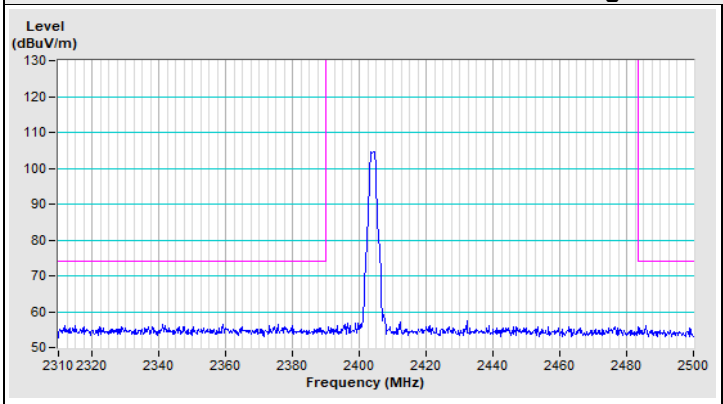
Vertical (Peak)



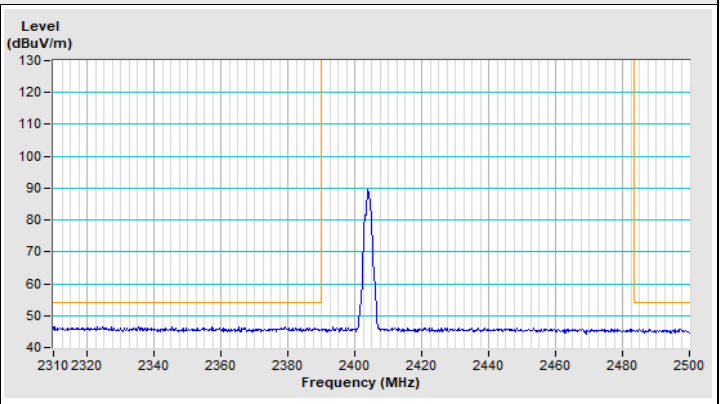
Vertical (Average)

Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS

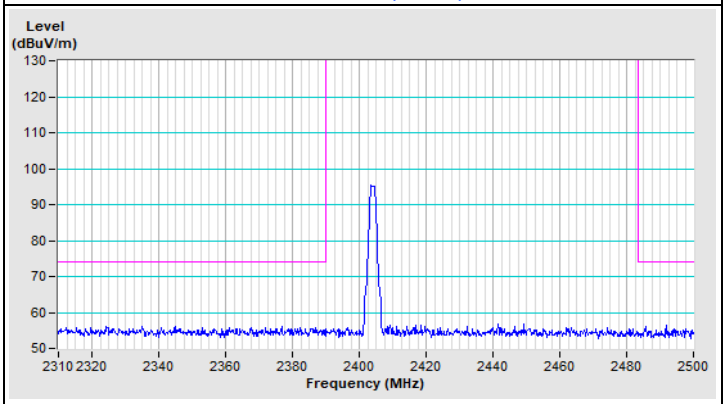
logi bolt 2M Channel 1



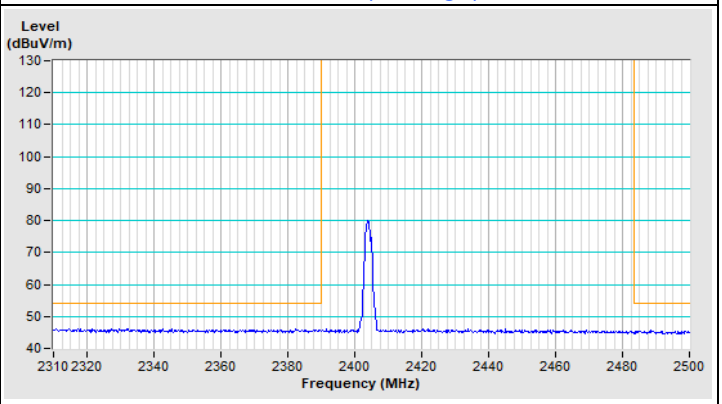
Horizontal (Peak)



Horizontal (Average)

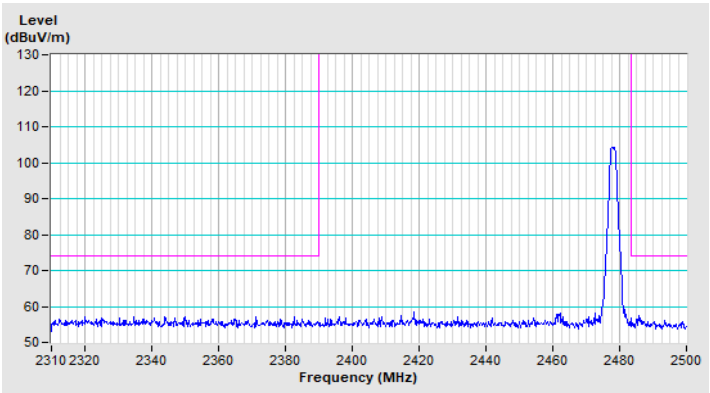


Vertical (Peak)

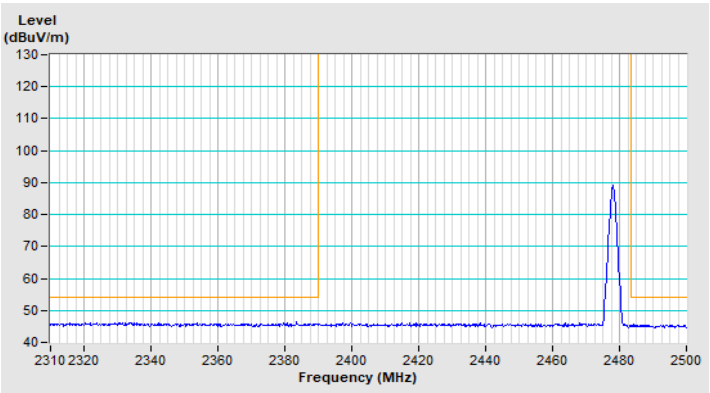


Vertical (Average)

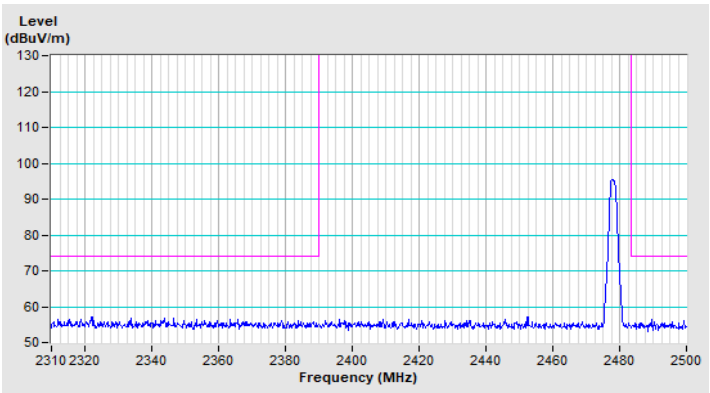
logi bolt 2M Channel 38



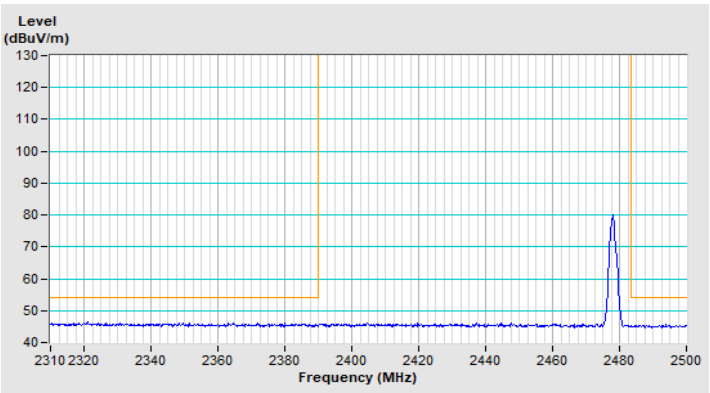
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)



Vertical (Average)

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Email: service.adt@bureauveritas.com
Web Site: http://ee.bureauveritas.com.tw

The address and road map of all our labs can be found in our web site also.

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