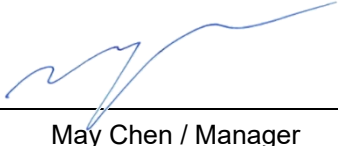


TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)
Report No.: RFBDBG-WTW-P25090011
FCC ID: JNZRR0021
Product: Wireless Presenter
Brand: Logitech, logi, logitech
Model No.: RR0021
Received Date: 2025/9/25
Test Date: 2025/10/8 ~ 2025/10/9
Issued Date: 2025/10/30
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 / 723255 / TW2022
Designation Number:

Approved by:  , **Date:** 2025/10/30
May Chen / Manager

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Prepared by : Claire Kuan / Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBDKG-WTW-P25090011	Original release.	2025/10/30

1 Certificate

Product: Wireless Presenter

Brand: Logitech, logi, logitech

Test Model: RR0021

Sample Status: Engineering sample

Applicant: Logitech Far East Ltd.

Test Date: 2025/10/8 ~ 2025/10/9

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)

Measurement ANSI C63.10-2020

procedure: 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 -8.91 dB at 0.45078 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -4.3 dB at 62.40 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -6.9 dB at 2375.44 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:

Parameter	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	5.1 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.0 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 Presenter
Brand	Logitech, logi, logitech
Test Model	RR0021
Status of EUT	Engineering sample
Power Supply Rating	3.8 Vdc from battery or 5 Vdc from USB interface
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	2.972 mW (4.73 dBm)

Note:

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

Item	Brand	Model	Specification
Wireless USB dongle	Logitech, logi, logitech	CU0029	-
Battery	SYNergy	AHB391323H Hard Pack	Power Rating : 3.8Vdc,100mAh

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
4.1	2.4~2.4835	Inverted F	pogo pin

* 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 can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition. 2. EUT can be powered by: Battery/ AC Adapter/ Laptop. Pre-scan these modes 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. X-axis/ Y-axis/ Z-axis Worst Condition: Z-Axis 2. EUT Worst Condition of powered: Unwanted Emission Test: Laptop AC Conducted Emission Test: Laptop

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 2M	38	GFSK	2Mb/s
	Logi Bolt 2M	38	GFSK	2Mb/s
Unwanted Emissions below 1 GHz	BT-LE 2M	38	GFSK	2Mb/s
	Logi Bolt 2M	38	GFSK	2Mb/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

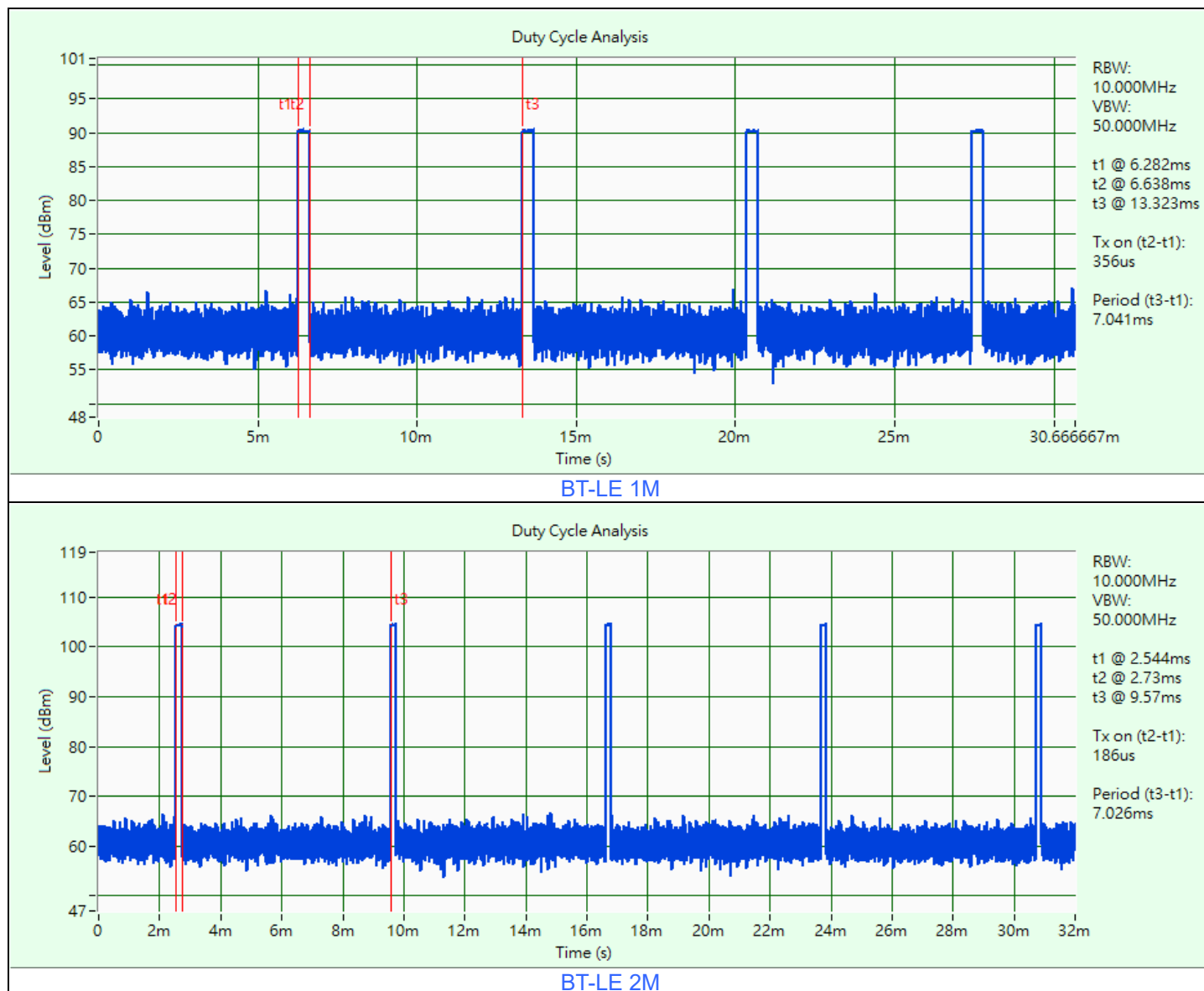
3.5 Duty Cycle of Test Signal

BT-LE 1M: Duty cycle = 0.356 ms / 7.041 ms x 100% = 5.1%

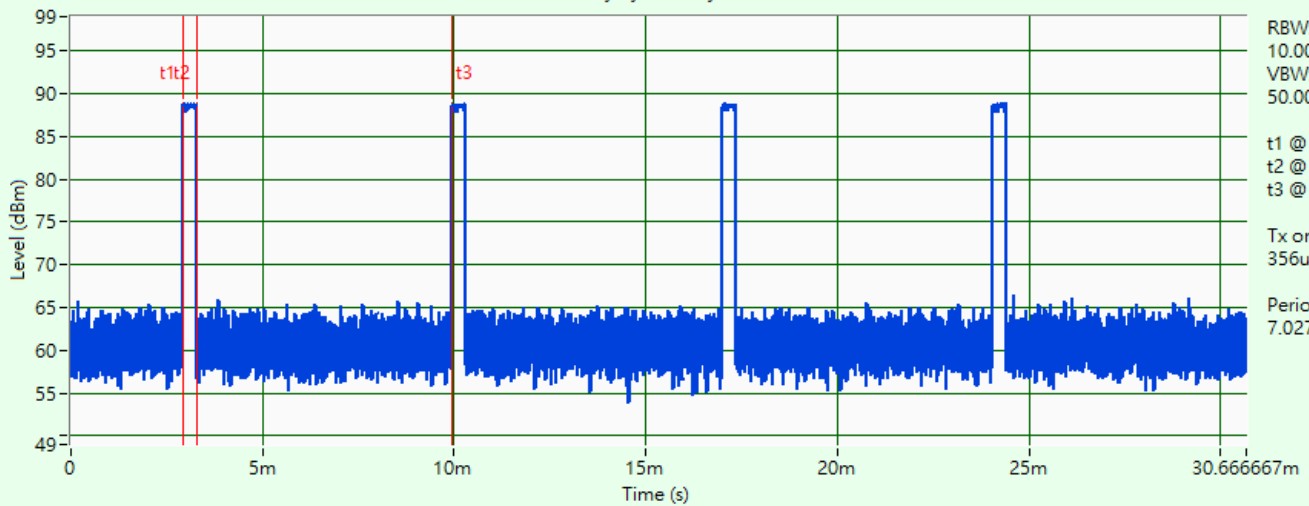
BT-LE 2M: Duty cycle = 0.186 ms / 7.026 ms x 100% = 2.6%

Logi Bolt 1M: Duty cycle = 0.356 ms / 7.027 ms x 100% = 5.1%

Logi Bolt 2M: Duty cycle = 0.186 ms / 7.048 ms x 100% = 2.6%

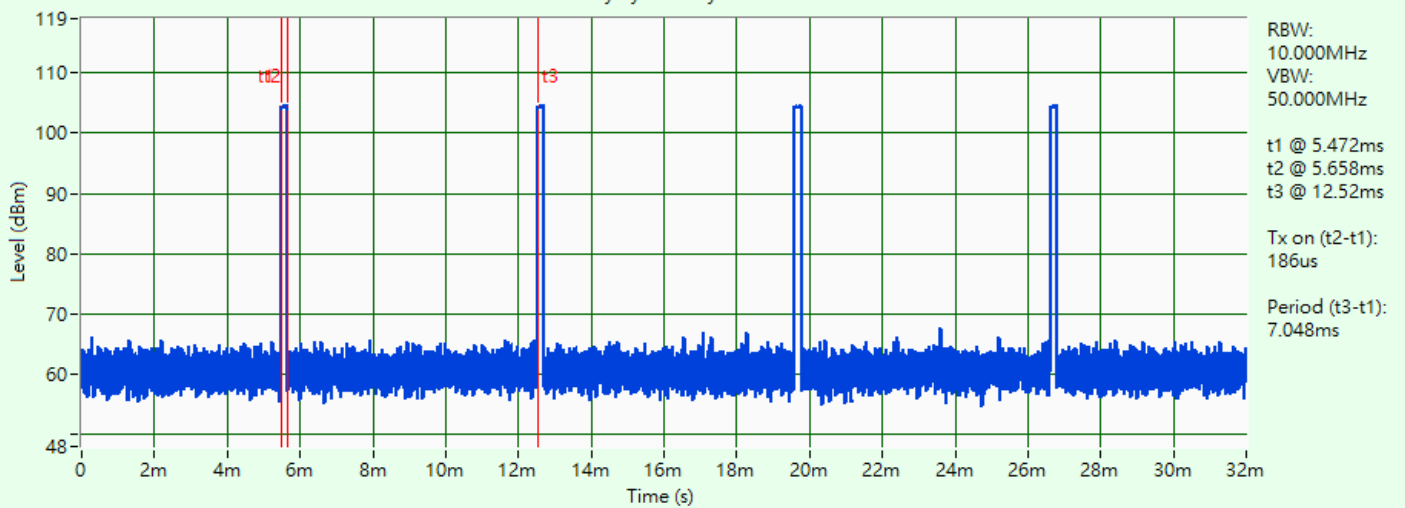


Duty Cycle Analysis



Logi Bolt 1M

Duty Cycle Analysis



Logi Bolt 2M

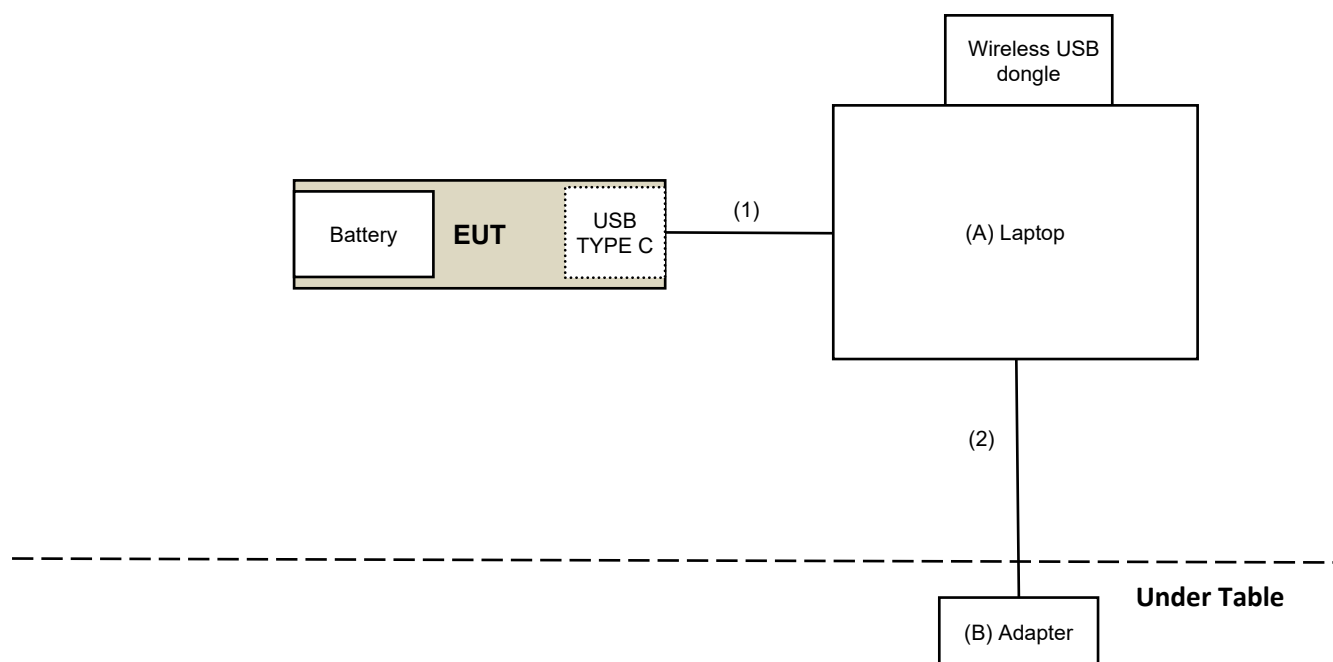
3.6 Test Program Used and Operation Descriptions

Controlling software (RF Sample with Receiver [Number Lock]) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

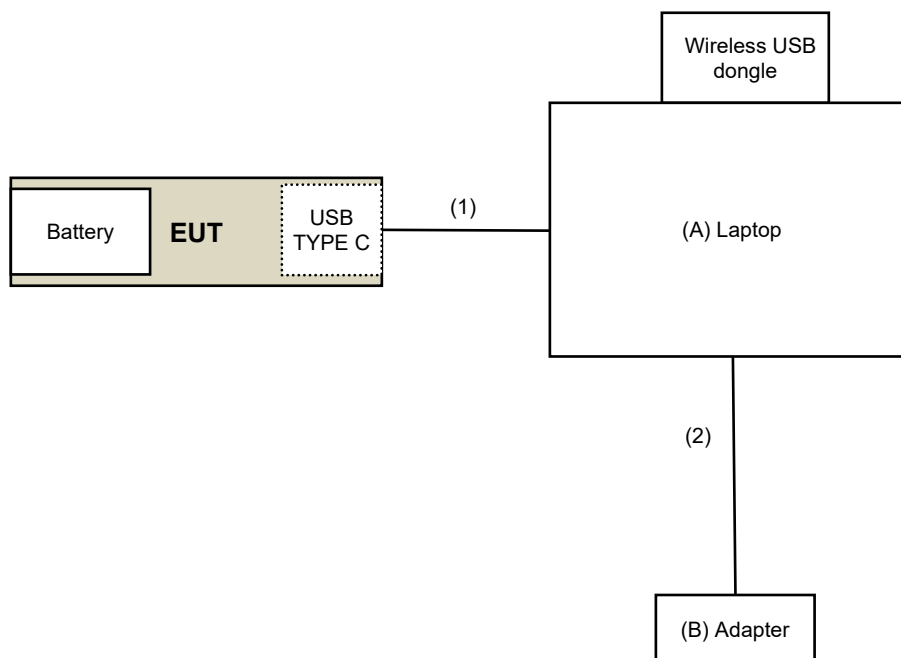
Test Item	Operation Description
RF Output Power Power Spectral Density 6 dB Bandwidth Conducted Out of Band Emissions Unwanted Emissions above 1 GHz	BLE1M TX Modulated 2402MHz BLE1M TX Modulated 2440MHz BLE1M TX Modulated 2480MHz BLE2M TX Modulated 2404MHz BLE2M TX Modulated 2440MHz BLE2M TX Modulated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

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	81A4	YD02YN2A	PD93165NGU	Provided by Lab
B	Adapter	Lenovo	PA-1450-55LL	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	USB to Type-C Cable	1	1.2	Yes	0	Supplied by applicant
2	DC Cable	1	2	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
Fixed Attenuator Woken	00800A1K01A-20	00800A1K01A-20-02	2025/5/23	2026/5/22
Pulse Power Sensor Anritsu	MA2411B	1726434	2025/6/3	2026/6/2
RF Power Meter Anritsu	ML2495A	1529002	2025/6/3	2026/6/2

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2025/10/9

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2025/5/23	2026/5/22
PXA Signal Analyzer Keysight	N9030A	MY55330160	2025/1/16	2026/1/15
Software	ADT_RF Test Software V8	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2025/10/9

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	2025/5/21	2026/5/20
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	2025/10/3	2026/10/2
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: 2025/10/9

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-0942	2025/9/16	2026/9/15
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-01	2025/5/15	2026/5/14
Loop Antenna TESEQ	HLA 6121	63620	2024/10/17	2025/10/16
MXA Signal Analyzer Keysight	N9020B	MY60112410	2025/3/17	2026/3/16
MXE EMI Receiver Keysight	N9038A	MY59050100	2025/6/25	2026/6/24
Preamplifier EMCI	EMC330N	980852	2025/2/8	2026/2/7
	EMC001340	980142	2025/2/17	2026/2/16
RF Coaxial Cable PEWC	8D	966-6-1	2025/5/15	2026/5/14
		966-6-2	2025/5/15	2026/5/14
		966-6-3	2025/5/15	2026/5/14
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 6.
2. Tested Date: 2025/10/9

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-2035	2024/11/10	2025/11/9
	BBHA 9170	BBHA9170519	2024/11/10	2025/11/9
MXA Signal Analyzer Keysight	N9020B	MY60112410	2025/3/17	2026/3/16
MXE EMI Receiver Keysight	N9038A	MY59050100	2025/6/25	2026/6/24
Preamplifier EMCI	EMC12630SE	980385	2025/5/24	2026/5/23
	EMC184045SE	980387	2025/8/7	2026/8/6
RF Coaxial Cable EMCI	EMC104-SM-SM-1300	210205	2025/5/24	2026/5/23
	EMC104-SM-SM-2000	210203	2025/5/24	2026/5/23
	EMC104-SM-SM-8000	221015	2025/5/24	2026/5/23
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 6.
2. Tested Date: 2025/10/8 ~ 2025/10/9

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

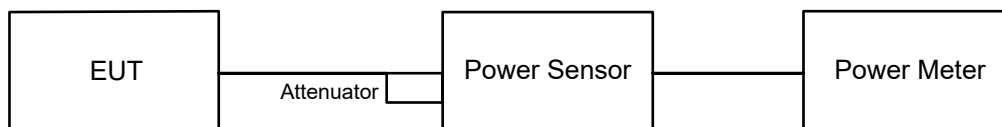
Notes:

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.

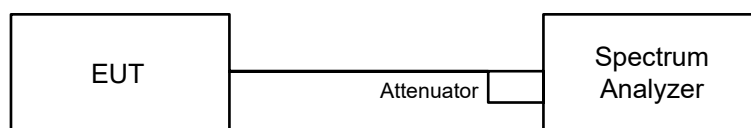
The power meter video bandwidth is greater than or equal to the DTS bandwidth and use a fast responding diode detector.

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

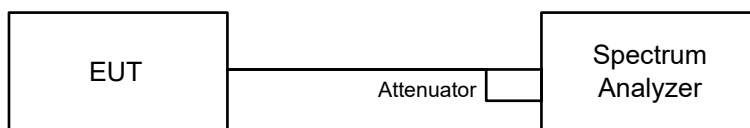


6.2.2 Test Procedure

- Set analyzer center frequency to DTS channel center frequency.
- Set the span > 1.5 times the DTS bandwidth.
- Set the RBW to: 3 kHz.
- Set the VBW $\geq 3 \times$ RBW.
- Detector = peak.
- Sweep time = No faster than coupled (auto) time.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.

6.3 6 dB Bandwidth

6.3.1 Test Setup

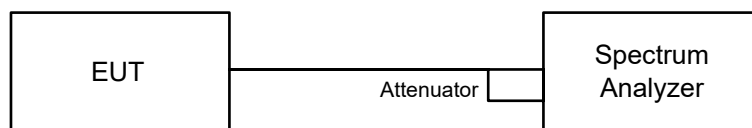


6.3.2 Test Procedure

- Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Trace mode = max-hold.
- Sweep = No faster than coupled (auto) time.
- Allow the trace to stabilize.
- Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-6 dB down amplitude”. If a marker is below this “-6 dB down amplitude” value, then it shall be as close as possible to this value.

6.4 Conducted Out of Band Emissions

6.4.1 Test Setup



6.4.2 Test Procedure

MEASUREMENT PROCEDURE REF

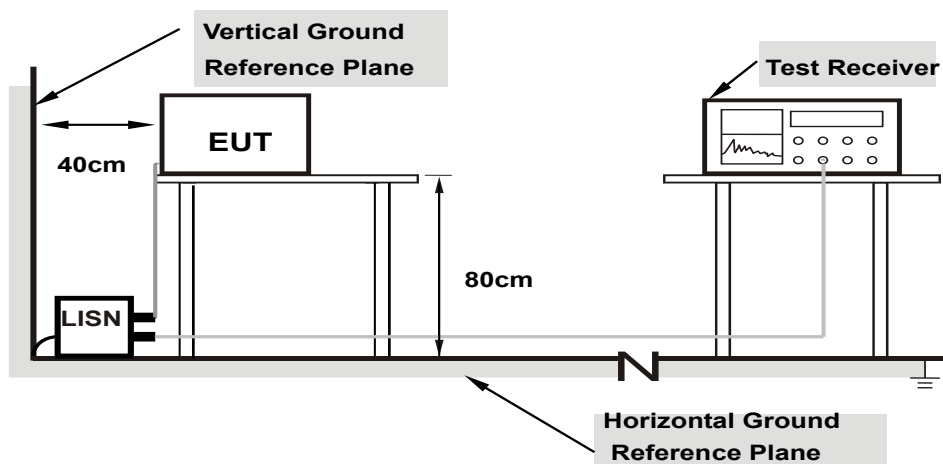
- Set instrument center frequency to DTS channel center frequency.
- Set the span to ≥ 1.5 times the DTS bandwidth.
- Set the RBW = 100 kHz.
- Set the VBW ≥ 300 kHz.
- Detector = peak.
- Sweep time = No faster than coupled (auto) time.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum PSD level.

MEASUREMENT PROCEDURE OOBE

- Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.
- Set RBW = 100 kHz.
- Set VBW ≥ 300 kHz.
- Detector = peak.
- Sweep = No faster than coupled (auto) time.
- Trace Mode = max hold.
- Allow trace to fully stabilize.
- 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

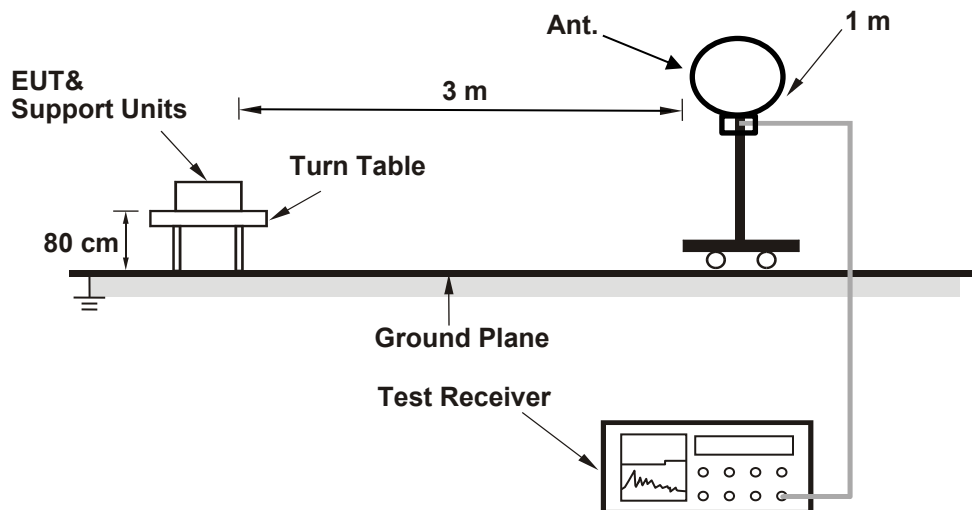
- Exploratory ac power-line conducted emission measurements: The EUT shall be operated on the mid channel and in the mode with highest output power unless the fundamental operates in the AC power-line emission test range then the EUT shall be operated in the range of typical modes of operation.
- The 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.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 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.

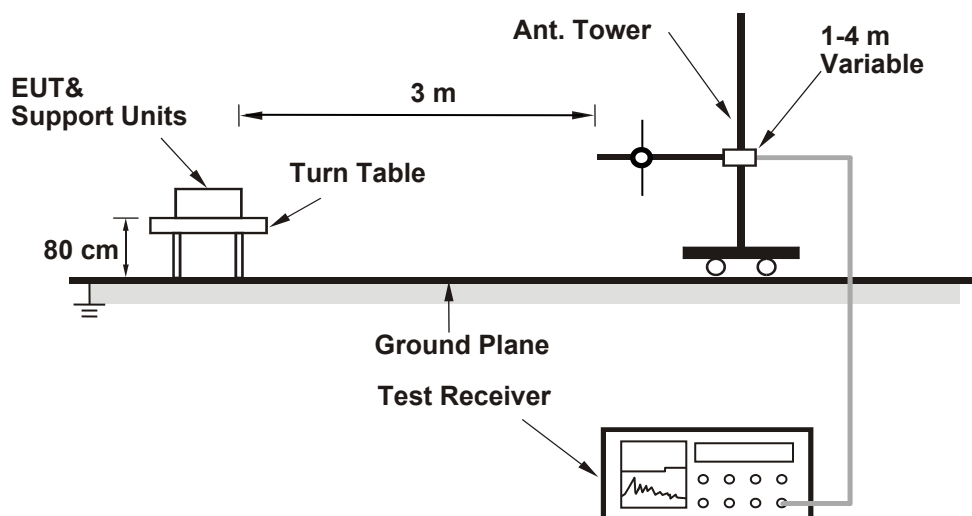
6.6 Unwanted Emissions below 1 GHz

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

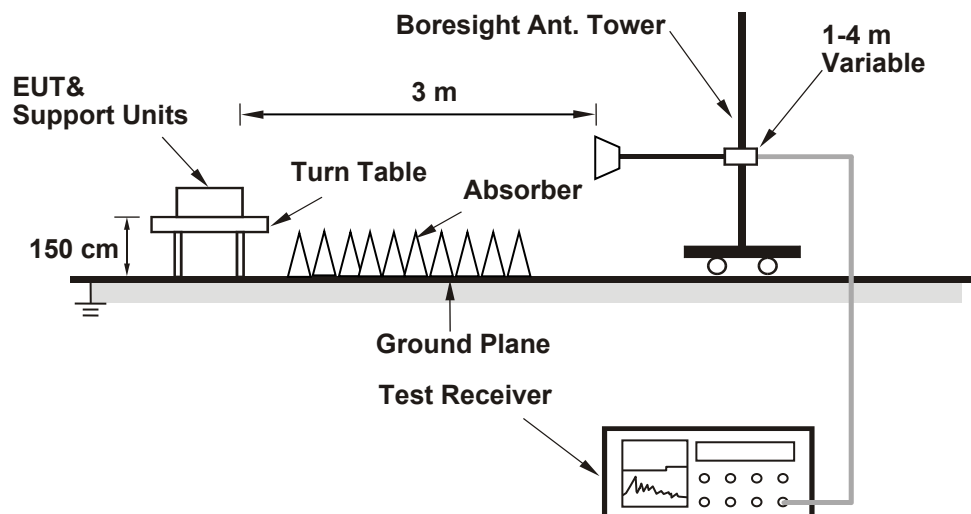
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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(QP) detect function, Average(AV) detect function, Peak(PK) detect function and specified bandwidth with maximum hold mode when the test frequencies less than or equal to 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. 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

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

- 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.
- 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.
- 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:	3.8 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Bella Yeh
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For Peak Power

BT-LE 1M

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
0	2402	2.911	4.64	30	Pass
19	2440	2.951	4.70	30	Pass
39	2480	2.958	4.71	30	Pass

Note: The antenna gain is 4.1 dBi $\leq$ 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	2.904	4.63	30	Pass
19	2440	2.944	4.69	30	Pass
38	2478	2.972	4.73	30	Pass

Note: The antenna gain is 4.1 dBi $\leq$ 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	2.858	4.56	30	Pass
19	2440	2.904	4.63	30	Pass
39	2480	2.911	4.64	30	Pass

Note: The antenna gain is 4.1 dBi $\leq$ 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	2.871	4.58	30	Pass
19	2440	2.884	4.60	30	Pass
38	2478	2.924	4.66	30	Pass

Note: The antenna gain is 4.1 dBi $\leq$ 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	2.844	4.54
19	2440	2.877	4.59
39	2480	2.884	4.60

BT-LE 2M

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2404	2.851	4.55
19	2440	2.877	4.59
38	2478	2.891	4.61

Logi Bolt 1M

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	2.812	4.49
19	2440	2.825	4.51
39	2480	2.818	4.50

Logi Bolt 2M

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2404	2.812	4.49
19	2440	2.825	4.51
38	2478	2.838	4.53

7.2 Power Spectral Density

Input Power:	3.8 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Bella Yeh
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BT-LE 1M

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
0	2402	1.74	8	Pass
19	2440	1.62	8	Pass
39	2480	1.64	8	Pass

Note: The antenna gain is 4.1 dBi $\leq$ 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	-2.22	8	Pass
19	2440	-2.53	8	Pass
38	2478	-2.52	8	Pass

Note: The antenna gain is 4.1 dBi $\leq$ 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	1.34	8	Pass
19	2440	1.34	8	Pass
39	2480	1.24	8	Pass

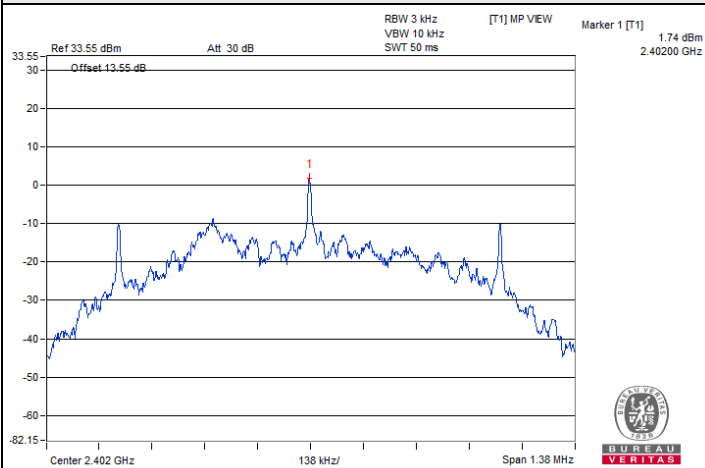
Note: The antenna gain is 4.1 dBi $\leq$ 6 dBi, so the power density limit shall not be reduced.

Logi Bolt 2M

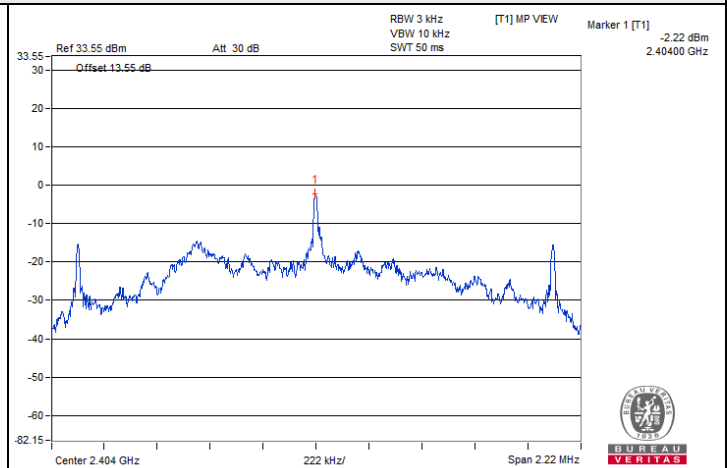
Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
1	2404	-2.83	8	Pass
19	2440	-2.68	8	Pass
38	2478	-2.92	8	Pass

Note: The antenna gain is 4.1 dBi $\leq$ 6 dBi, so the power density limit shall not be reduced.

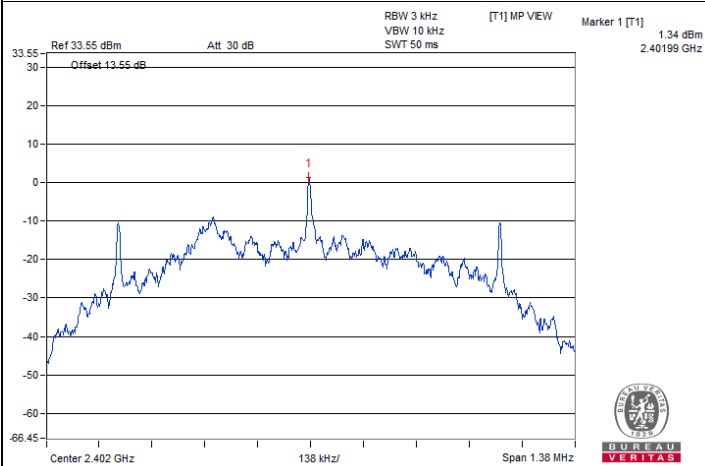
Spectrum Plot of Maximum Value



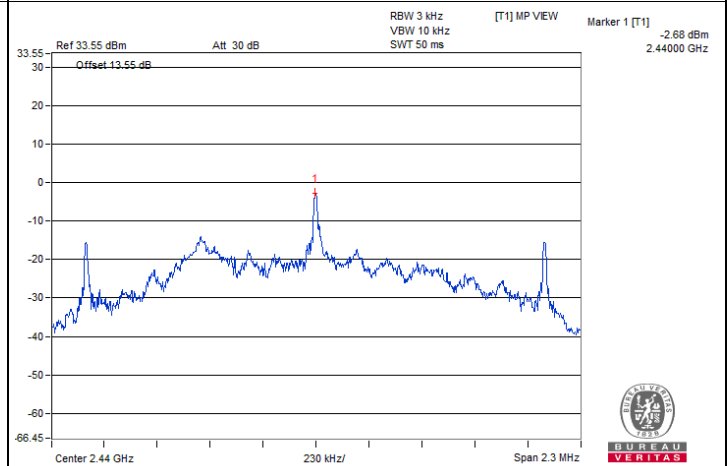
BT-LE 1M : CH 0



BT-LE 2M : CH 1



Logi Bolt 1M : CH 0



Logi Bolt 2M : CH 19

7.3 6 dB Bandwidth

Input Power:	3.8 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Bella Yeh
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BT-LE 1M

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

BT-LE 2M

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
1	2404	1.11	0.5	Pass
19	2440	1.18	0.5	Pass
38	2478	1.16	0.5	Pass

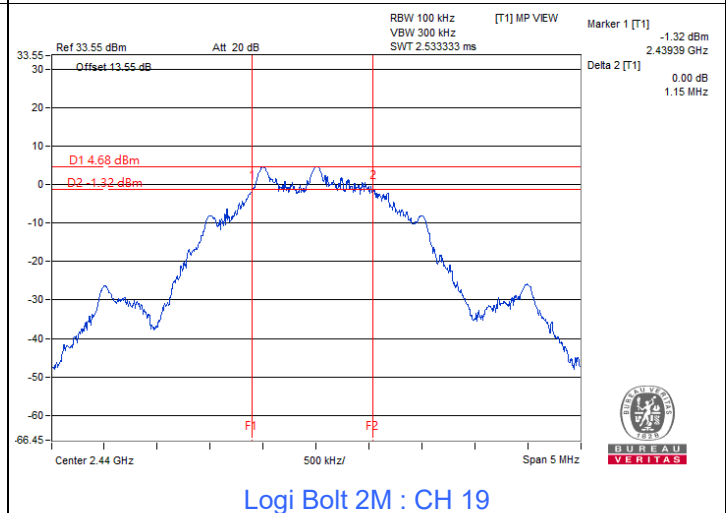
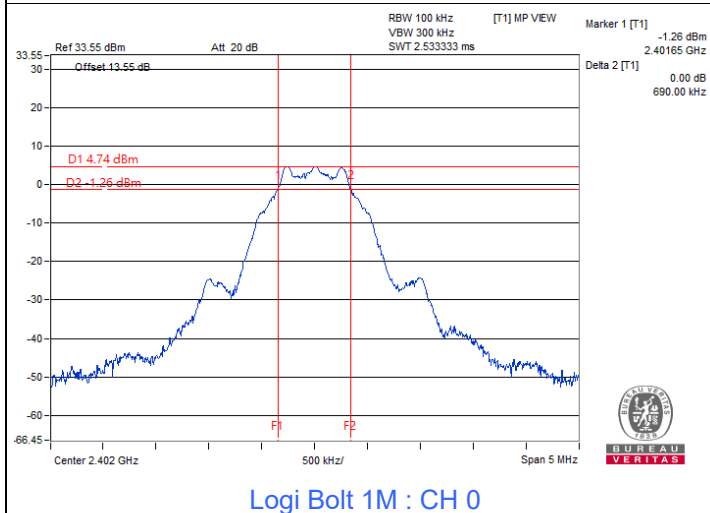
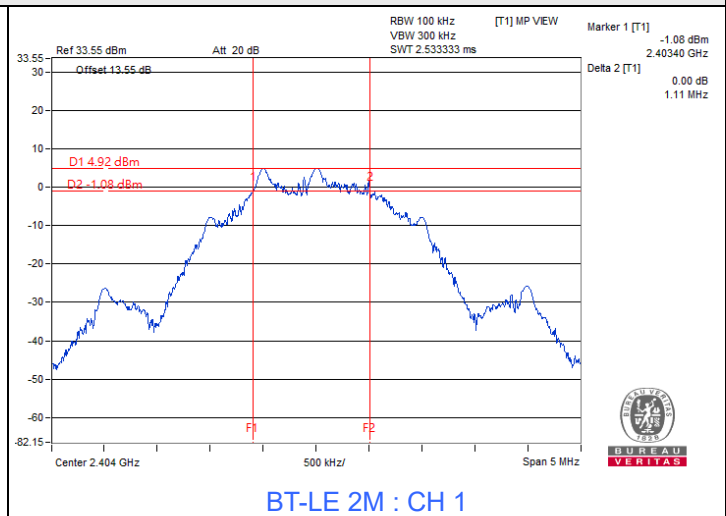
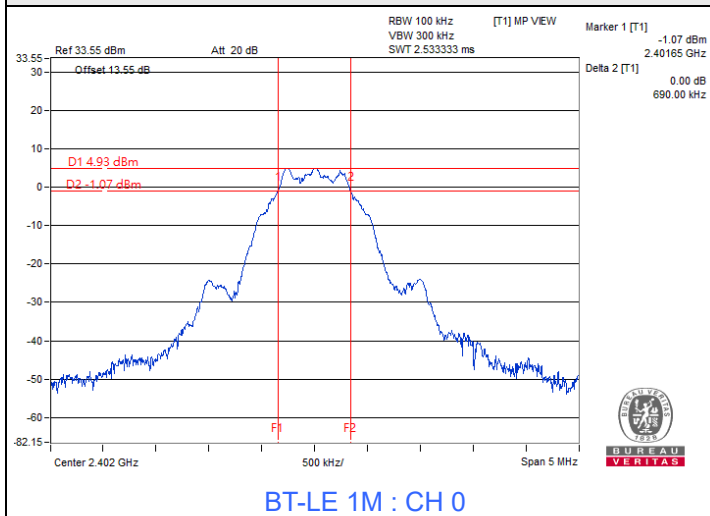
Logi Bolt 1M

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	1.16	0.5	Pass
19	2440	1.15	0.5	Pass
38	2478	1.18	0.5	Pass

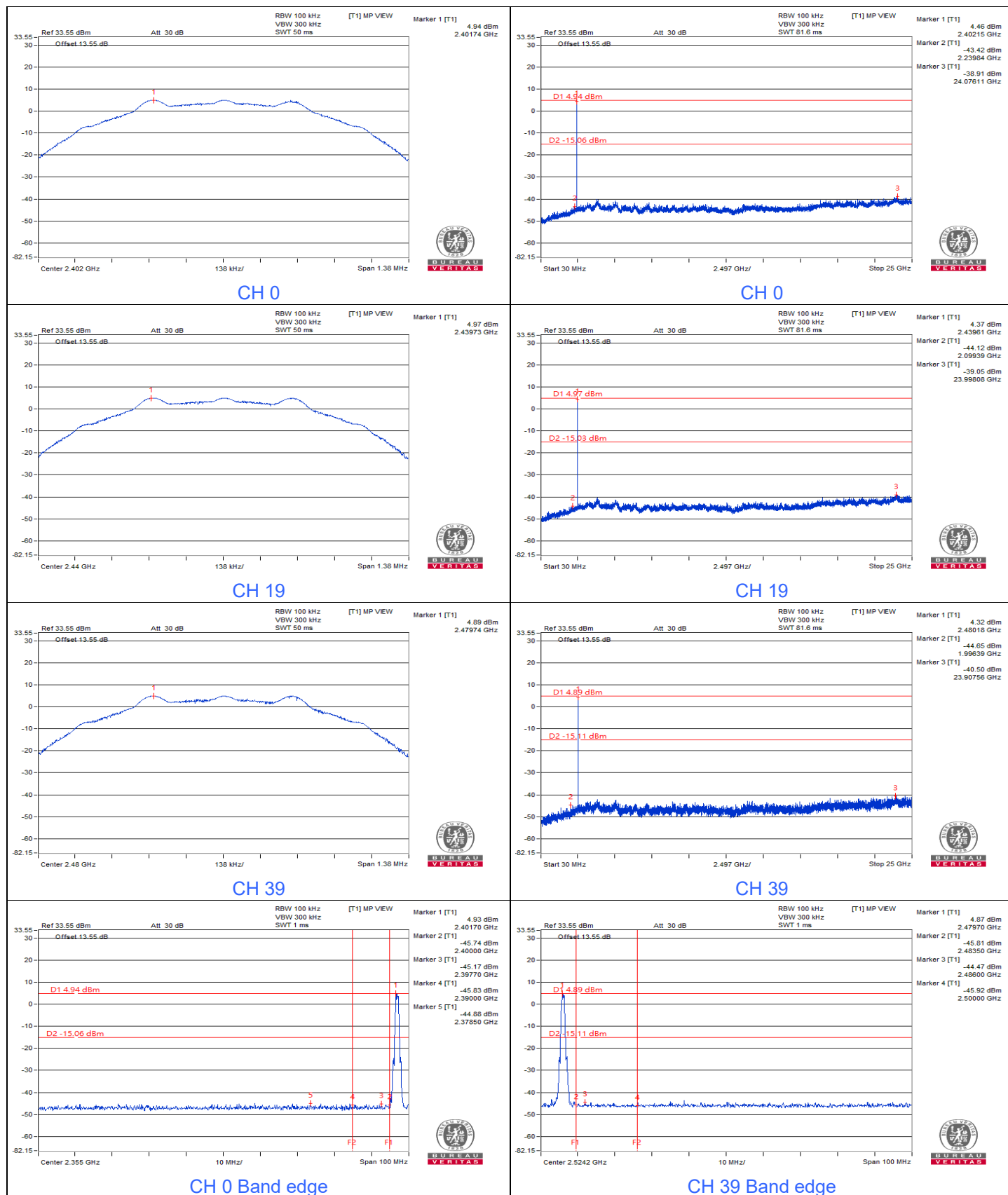
Spectrum Plot of Minimum Value



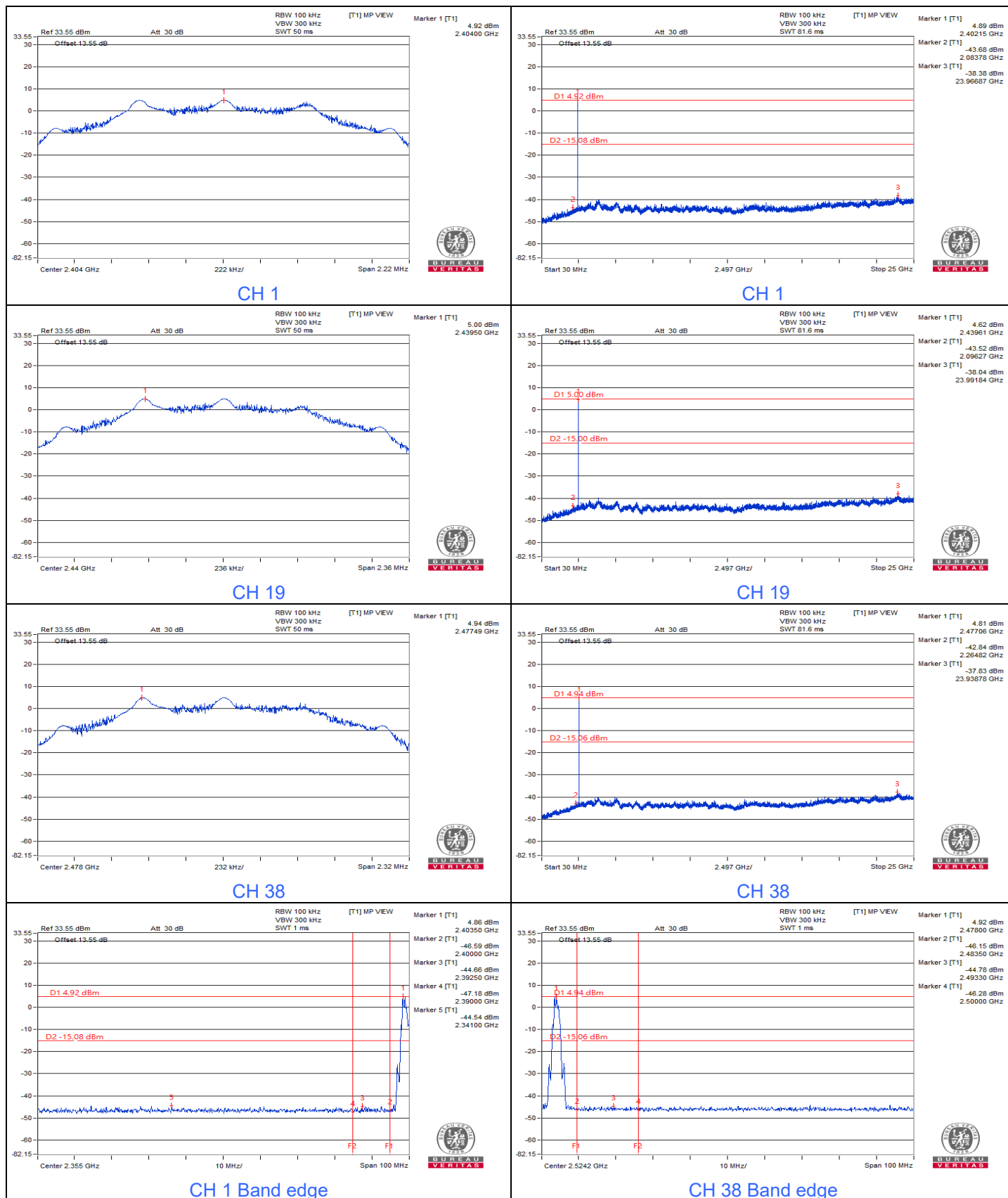
7.4 Conducted Out of Band Emissions

Input Power:	3.8 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Bella Yeh
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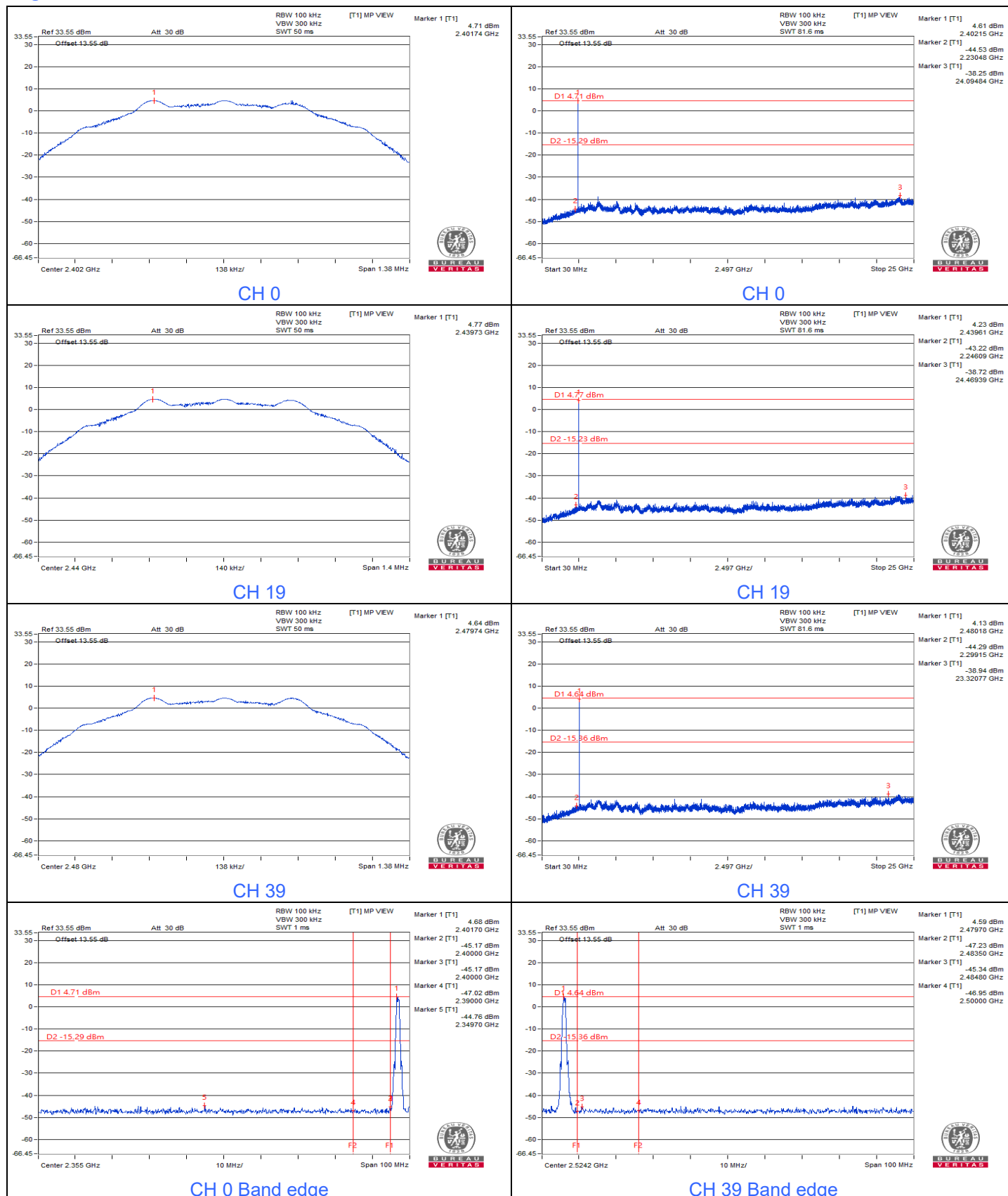
BT-LE 1M



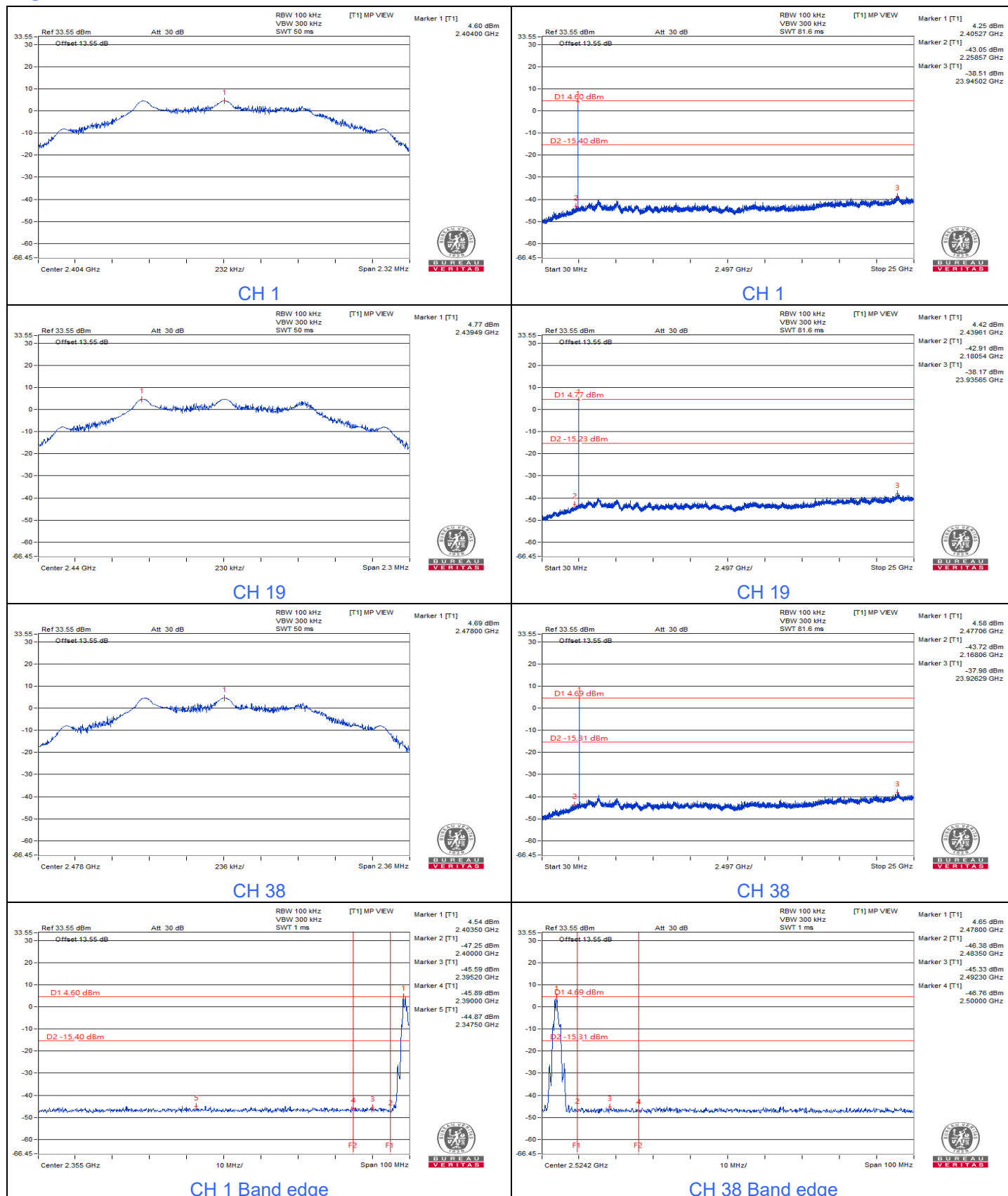
BT-LE 2M



Logi Bolt 1M



Logi Bolt 2M



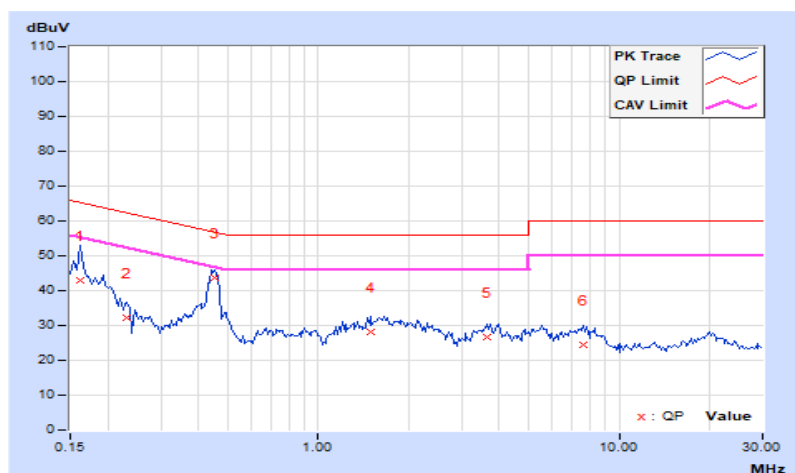
7.5 AC Power Conducted Emissions

RF Mode	BT LE-2M	Channel	CH 38 : 2478 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	26 °C, 70% RH
Tested By	Louis Yang		

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	10.00	32.98	20.65	42.98	30.65	65.38	55.38	-22.40	-24.73
2	0.23203	10.03	22.08	5.93	32.11	15.96	62.38	52.38	-30.27	-36.42
3	0.45078	10.04	33.81	27.87	43.85	37.91	56.86	46.86	-13.01	-8.95
4	1.49219	10.12	18.20	11.63	28.32	21.75	56.00	46.00	-27.68	-24.25
5	3.64453	10.28	16.41	10.48	26.69	20.76	56.00	46.00	-29.31	-25.24
6	7.60547	10.53	13.84	7.07	24.37	17.60	60.00	50.00	-35.63	-32.40

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

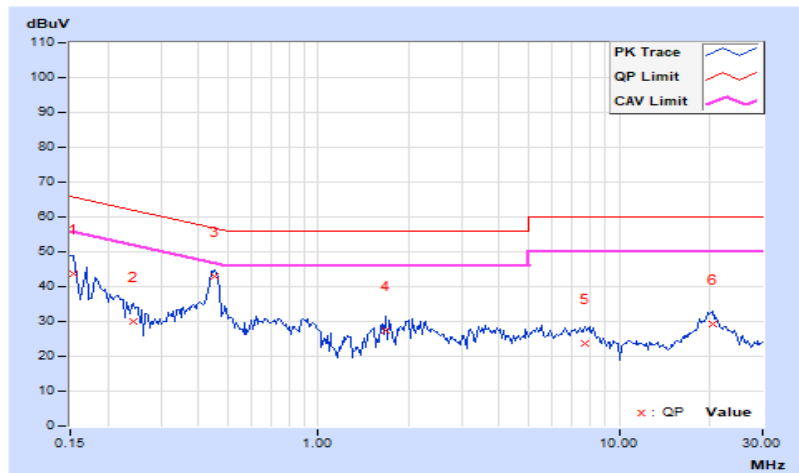


RF Mode	BT LE-2M	Channel	CH 38 : 2478 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	26 °C, 70% RH
Tested By	Louis Yang		

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	10.02	33.56	20.45	43.58	30.47	65.79	55.79	-22.21	-25.32
2	0.24375	10.03	20.04	8.51	30.07	18.54	61.97	51.97	-31.90	-33.43
3	0.45078	10.03	32.97	26.88	43.00	36.91	56.86	46.86	-13.86	-9.95
4	1.68750	10.12	17.34	11.12	27.46	21.24	56.00	46.00	-28.54	-24.76
5	7.74219	10.49	13.30	7.68	23.79	18.17	60.00	50.00	-36.21	-31.83
6	20.38672	11.01	18.11	13.10	29.12	24.11	60.00	50.00	-30.88	-25.89

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

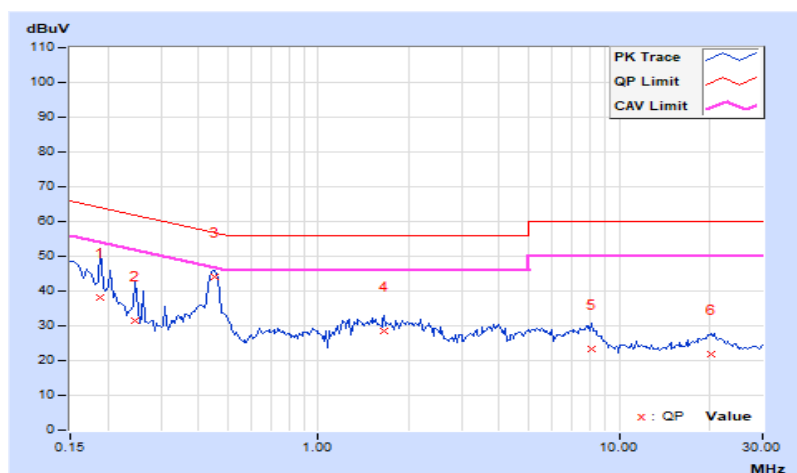


RF Mode	Logi Bolt 2M	Channel	CH 38 : 2478 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	26 °C, 70% RH
Tested By	Louis Yang		

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	0.18906	10.02	28.23	14.98	38.25	25.00	64.08	54.08	-25.83	-29.08
2	0.24766	10.03	21.43	6.92	31.46	16.95	61.84	51.84	-30.38	-34.89
3	0.45078	10.04	33.85	27.91	43.89	37.95	56.86	46.86	-12.97	-8.91
4	1.66016	10.14	18.55	13.12	28.69	23.26	56.00	46.00	-27.31	-22.74
5	8.09375	10.57	12.77	5.59	23.34	16.16	60.00	50.00	-36.66	-33.84
6	20.24219	11.13	10.54	5.14	21.67	16.27	60.00	50.00	-38.33	-33.73

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

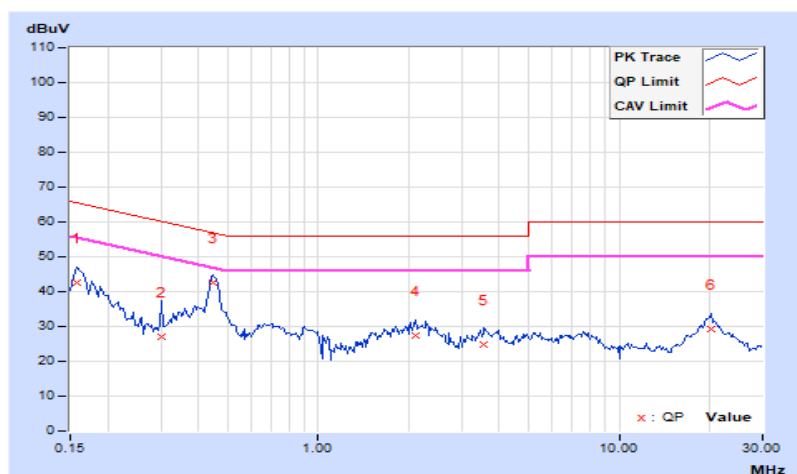


RF Mode	Logi Bolt 2M	Channel	CH 38 : 2478 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	26 °C, 70% RH
Tested By	Louis Yang		

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	0.15781	10.02	32.75	20.47	42.77	30.49	65.58	55.58	-22.81	-25.09
2	0.30234	10.02	17.17	10.04	27.19	20.06	60.18	50.18	-32.99	-30.12
3	0.44688	10.02	32.53	26.40	42.55	36.42	56.93	46.93	-14.38	-10.51
4	2.10547	10.15	17.19	10.51	27.34	20.66	56.00	46.00	-28.66	-25.34
5	3.57031	10.24	14.69	9.16	24.93	19.40	56.00	46.00	-31.07	-26.60
6	20.21094	11.01	18.38	13.17	29.39	24.18	60.00	50.00	-30.61	-25.82

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



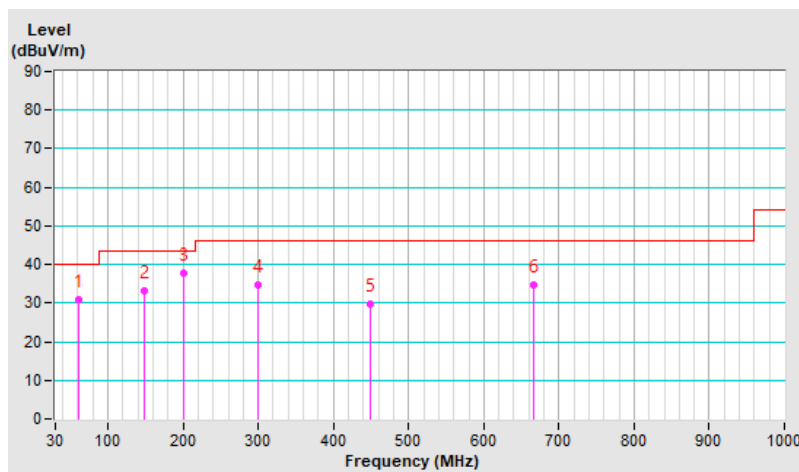
7.6 Unwanted Emissions below 1 GHz

RF Mode	BT LE-2M	Channel	CH 38 : 2478 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Louis Yang		

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	61.48	30.7 QP	40.0	-9.3	2.00 H	144	44.5	-13.8
2	148.44	33.1 QP	43.5	-10.4	2.00 H	100	46.1	-13.0
3	199.87	37.8 QP	43.5	-5.7	1.50 H	260	54.3	-16.5
4	299.88	34.6 QP	46.0	-11.4	1.00 H	240	47.1	-12.5
5	449.84	29.6 QP	46.0	-16.4	2.00 H	48	38.3	-8.7
6	665.81	34.7 QP	46.0	-11.3	1.00 H	134	39.6	-4.9

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 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.

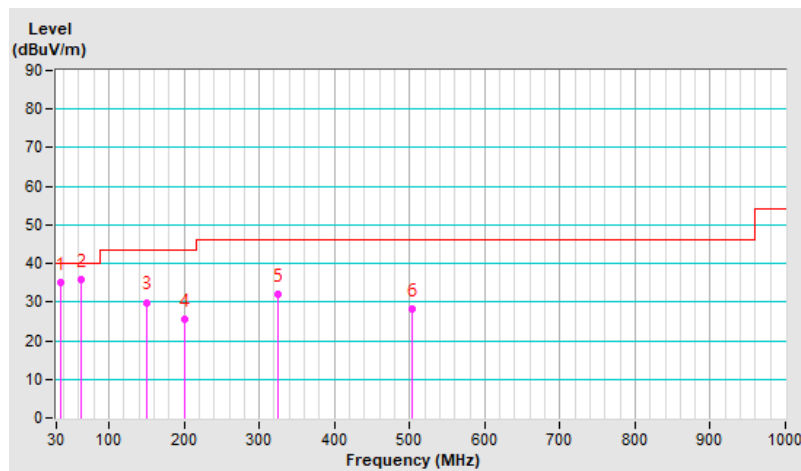


RF Mode	BT LE-2M	Channel	CH 38 : 2478 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Louis Yang		

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	36.21	35.1 QP	40.0	-4.9	1.00 V	36	49.3	-14.2
2	62.40	35.7 QP	40.0	-4.3	1.00 V	120	49.6	-13.9
3	150.52	29.9 QP	43.5	-13.6	1.00 V	195	42.9	-13.0
4	199.77	25.6 QP	43.5	-17.9	2.00 V	334	42.1	-16.5
5	325.32	31.9 QP	46.0	-14.1	1.00 V	145	43.6	-11.7
6	504.01	28.3 QP	46.0	-17.7	1.00 V	7	36.2	-7.9

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 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.

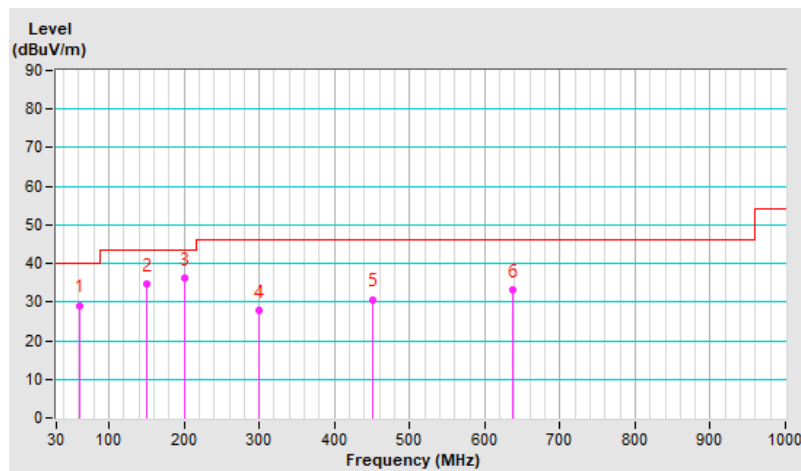


RF Mode	Logi Bolt 2M	Channel	CH 38 : 2478 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Louis Yang		

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	61.48	29.2 QP	40.0	-10.8	3.00 H	314	43.0	-13.8
2	150.26	34.7 QP	43.5	-8.8	2.00 H	114	47.7	-13.0
3	199.97	36.3 QP	43.5	-7.2	1.50 H	267	52.8	-16.5
4	299.83	27.7 QP	46.0	-18.3	1.00 H	51	40.2	-12.5
5	450.20	30.7 QP	46.0	-15.3	2.00 H	39	39.4	-8.7
6	637.22	33.1 QP	46.0	-12.9	1.50 H	284	38.4	-5.3

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.

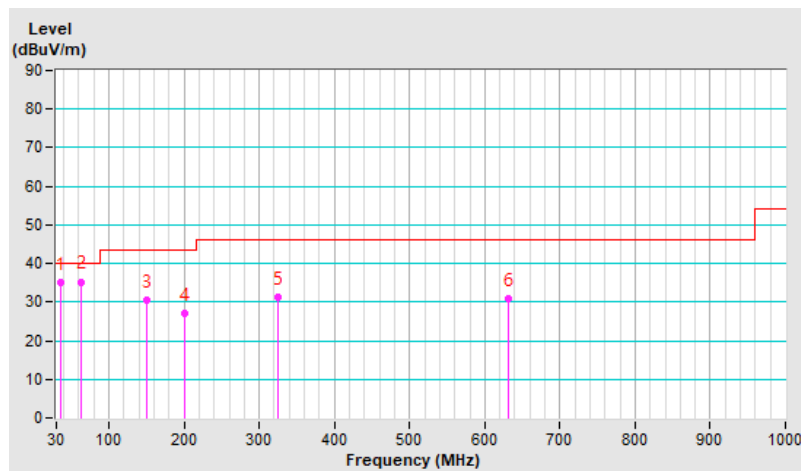


RF Mode	Logi Bolt 2M	Channel	CH 38 : 2478 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Louis Yang		

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	35.77	35.0 QP	40.0	-5.0	1.00 V	124	49.2	-14.2
2	62.35	35.3 QP	40.0	-4.7	1.00 V	156	49.2	-13.9
3	149.60	30.4 QP	43.5	-13.1	1.00 V	342	43.4	-13.0
4	199.90	27.1 QP	43.5	-16.4	1.00 V	226	43.6	-16.5
5	325.27	31.3 QP	46.0	-14.7	1.50 V	166	43.0	-11.7
6	630.82	30.8 QP	46.0	-15.2	1.50 V	172	36.2	-5.4

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 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	24 °C, 75% RH
Tested By	Louis Yang		

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	2382.29	56.0 PK	74.0	-18.0	1.70 H	322	57.2	-1.2
2	2382.29	46.2 AV	54.0	-7.8	1.70 H	322	47.4	-1.2
3	*2402.00	104.1 PK			1.70 H	322	105.5	-1.4
4	*2402.00	78.2 AV			1.70 H	322	79.6	-1.4
5	4804.00	38.7 PK	74.0	-35.3	1.67 H	307	36.0	2.7
6	4804.00	12.8 AV	54.0	-41.2	1.67 H	307	10.1	2.7
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	2369.88	55.8 PK	74.0	-18.2	1.14 V	238	57.0	-1.2
2	2369.88	45.9 AV	54.0	-8.1	1.14 V	238	47.1	-1.2
3	*2402.00	99.5 PK			1.14 V	238	100.9	-1.4
4	*2402.00	73.6 AV			1.14 V	238	75.0	-1.4
5	4804.00	37.9 PK	74.0	-36.1	1.55 V	109	35.2	2.7
6	4804.00	12.0 AV	54.0	-42.0	1.55 V	109	9.3	2.7

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:

$$20 \log(\text{Duty cycle}) = 20 \log(0.356 \text{ ms} / 7.041 \text{ ms}) = -25.9 \text{ dB}$$

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	24 °C, 75% RH
Tested By	Louis Yang		

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	103.3 PK			1.90 H	317	104.8	-1.5
2	*2440.00	77.4 AV			1.90 H	317	78.9	-1.5
3	4880.00	38.8 PK	74.0	-35.2	1.64 H	312	35.9	2.9
4	4880.00	12.9 AV	54.0	-41.1	1.64 H	312	10.0	2.9
5	7320.00	35.4 PK	74.0	-38.6	1.77 H	303	26.0	9.4
6	7320.00	9.5 AV	54.0	-44.5	1.77 H	303	0.1	9.4
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	*2440.00	98.4 PK			3.68 V	246	99.9	-1.5
2	*2440.00	72.5 AV			3.68 V	246	74.0	-1.5
3	4880.00	37.9 PK	74.0	-36.1	1.59 V	120	35.0	2.9
4	4880.00	12.0 AV	54.0	-42.0	1.59 V	120	9.1	2.9
5	7320.00	35.2 PK	74.0	-38.8	1.73 V	149	25.8	9.4
6	7320.00	9.3 AV	54.0	-44.7	1.73 V	149	-0.1	9.4

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:

$$20 \log(\text{Duty cycle}) = 20 \log(0.356 \text{ ms} / 7.041 \text{ ms}) = -25.9 \text{ dB}$$

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	24 °C, 75% RH
Tested By	Louis Yang		

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	102.7 PK			2.16 H	312	104.3	-1.6
2	*2480.00	76.8 AV			2.16 H	312	78.4	-1.6
3	2499.22	56.3 PK	74.0	-17.7	2.16 H	312	57.9	-1.6
4	2499.22	45.7 AV	54.0	-8.3	2.16 H	312	47.3	-1.6
5	4960.00	38.5 PK	74.0	-35.5	1.61 H	298	35.4	3.1
6	4960.00	12.6 AV	54.0	-41.4	1.61 H	298	9.5	3.1
7	7440.00	36.0 PK	74.0	-38.0	1.79 H	300	26.3	9.7
8	7440.00	10.1 AV	54.0	-43.9	1.79 H	300	0.4	9.7
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	97.9 PK			1.08 V	238	99.5	-1.6
2	*2480.00	72.0 AV			1.08 V	238	73.6	-1.6
3	2484.07	55.9 PK	74.0	-18.1	1.08 V	238	57.5	-1.6
4	2484.07	45.5 AV	54.0	-8.5	1.08 V	238	47.1	-1.6
5	4960.00	38.1 PK	74.0	-35.9	1.56 V	133	35.0	3.1
6	4960.00	12.2 AV	54.0	-41.8	1.56 V	133	9.1	3.1
7	7440.00	34.9 PK	74.0	-39.1	1.74 V	143	25.2	9.7
8	7440.00	9.0 AV	54.0	-45.0	1.74 V	143	-0.7	9.7

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:

$$20 \log(\text{Duty cycle}) = 20 \log(0.356 \text{ ms} / 7.041 \text{ ms}) = -25.9 \text{ dB}$$

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	24 °C, 75% RH
Tested By	Louis Yang		

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	2372.91	56.5 PK	74.0	-17.5	1.71 H	322	57.7	-1.2
2	2372.91	46.0 AV	54.0	-8.0	1.71 H	322	47.2	-1.2
3	*2404.00	104.3 PK			1.71 H	322	105.7	-1.4
4	*2404.00	72.8 AV			1.71 H	322	74.2	-1.4
5	4808.00	38.3 PK	74.0	-35.7	1.81 H	358	35.6	2.7
6	4808.00	6.8 AV	54.0	-47.2	1.81 H	358	4.1	2.7
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	2375.45	56.1 PK	74.0	-17.9	1.12 V	237	57.3	-1.2
2	2375.45	45.8 AV	54.0	-8.2	1.12 V	237	47.0	-1.2
3	*2404.00	99.6 PK			1.12 V	237	101.0	-1.4
4	*2404.00	68.1 AV			1.12 V	237	69.5	-1.4
5	4808.00	37.9 PK	74.0	-36.1	2.05 V	102	35.2	2.7
6	4808.00	6.4 AV	54.0	-47.6	2.05 V	102	3.7	2.7

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:

$$20 \log(\text{Duty cycle}) = 20 \log(0.186 \text{ ms} / 7.026 \text{ ms}) = -31.5 \text{ dB}$$

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	24 °C, 75% RH
Tested By	Louis Yang		

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	103.3 PK			2.22 H	314	104.8	-1.5
2	*2440.00	71.8 AV			2.22 H	314	73.3	-1.5
3	4880.00	38.4 PK	74.0	-35.6	1.75 H	348	35.5	2.9
4	4880.00	6.9 AV	54.0	-47.1	1.75 H	348	4.0	2.9
5	7320.00	36.2 PK	74.0	-37.8	2.46 H	107	26.8	9.4
6	7320.00	4.7 AV	54.0	-49.3	2.46 H	107	-4.7	9.4
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	*2440.00	98.4 PK			3.66 V	278	99.9	-1.5
2	*2440.00	66.9 AV			3.66 V	278	68.4	-1.5
3	4880.00	38.1 PK	74.0	-35.9	2.10 V	102	35.2	2.9
4	4880.00	6.6 AV	54.0	-47.4	2.10 V	102	3.7	2.9
5	7320.00	34.1 PK	74.0	-39.9	2.57 V	213	24.7	9.4
6	7320.00	2.6 AV	54.0	-51.4	2.57 V	213	-6.8	9.4

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:

$$20 \log(\text{Duty cycle}) = 20 \log(0.186 \text{ ms} / 7.026 \text{ ms}) = -31.5 \text{ dB}$$

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	24 °C, 75% RH
Tested By	Louis Yang		

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	102.5 PK			2.26 H	313	104.1	-1.6
2	*2478.00	71.0 AV			2.26 H	313	72.6	-1.6
3	2492.12	55.6 PK	74.0	-18.4	2.26 H	313	57.2	-1.6
4	2492.12	45.7 AV	54.0	-8.3	2.26 H	313	47.3	-1.6
5	4956.00	38.0 PK	74.0	-36.0	1.74 H	351	34.9	3.1
6	4956.00	6.5 AV	54.0	-47.5	1.74 H	351	3.4	3.1
7	7434.00	36.3 PK	74.0	-37.7	2.47 H	110	26.6	9.7
8	7434.00	4.8 AV	54.0	-49.2	2.47 H	110	-4.9	9.7
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	98.6 PK			1.06 V	240	100.2	-1.6
2	*2478.00	67.1 AV			1.06 V	240	68.7	-1.6
3	2492.12	54.6 PK	74.0	-19.4	1.06 V	240	56.2	-1.6
4	2492.12	45.8 AV	54.0	-8.2	1.06 V	240	47.4	-1.6
5	4956.00	37.5 PK	74.0	-36.5	2.07 V	99	34.4	3.1
6	4956.00	6.0 AV	54.0	-48.0	2.07 V	99	2.9	3.1
7	7434.00	34.3 PK	74.0	-39.7	2.58 V	206	24.6	9.7
8	7434.00	2.8 AV	54.0	-51.2	2.58 V	206	-6.9	9.7

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:

$$20 \log(\text{Duty cycle}) = 20 \log(0.186 \text{ ms} / 7.026 \text{ ms}) = -31.5 \text{ dB}$$

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	24 °C, 75% RH
Tested By	Louis Yang		

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	2377.74	56.3 PK	74.0	-17.7	1.70 H	322	57.5	-1.2
2	2377.74	45.9 AV	54.0	-8.1	1.70 H	322	47.1	-1.2
3	*2402.00	104.1 PK			1.70 H	322	105.5	-1.4
4	*2402.00	78.2 AV			1.70 H	322	79.6	-1.4
5	4804.00	38.6 PK	74.0	-35.4	1.68 H	307	35.9	2.7
6	4804.00	12.7 AV	54.0	-41.3	1.68 H	307	10.0	2.7
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	2368.70	55.2 PK	74.0	-18.8	1.14 V	238	56.4	-1.2
2	2368.70	45.8 AV	54.0	-8.2	1.14 V	238	47.0	-1.2
3	*2402.00	99.8 PK			1.14 V	238	101.2	-1.4
4	*2402.00	73.9 AV			1.14 V	238	75.3	-1.4
5	4804.00	37.3 PK	74.0	-36.7	1.57 V	134	34.6	2.7
6	4804.00	11.4 AV	54.0	-42.6	1.57 V	134	8.7	2.7

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:

$$20 \log(\text{Duty cycle}) = 20 \log(0.356 \text{ ms} / 7.027 \text{ ms}) = -25.9 \text{ dB}$$

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	24 °C, 75% RH
Tested By	Louis Yang		

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	102.5 PK			1.90 H	317	104.0	-1.5
2	*2440.00	76.6 AV			1.90 H	317	78.1	-1.5
3	4880.00	38.6 PK	74.0	-35.4	1.64 H	298	35.7	2.9
4	4880.00	12.7 AV	54.0	-41.3	1.64 H	298	9.8	2.9
5	7320.00	35.5 PK	74.0	-38.5	1.75 H	315	26.1	9.4
6	7320.00	9.6 AV	54.0	-44.4	1.75 H	315	0.2	9.4
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	*2440.00	98.3 PK			3.68 V	246	99.8	-1.5
2	*2440.00	72.4 AV			3.68 V	246	73.9	-1.5
3	4880.00	38.2 PK	74.0	-35.8	1.53 V	128	35.3	2.9
4	4880.00	12.3 AV	54.0	-41.7	1.53 V	128	9.4	2.9
5	7320.00	35.3 PK	74.0	-38.7	1.73 V	155	25.9	9.4
6	7320.00	9.4 AV	54.0	-44.6	1.73 V	155	0.0	9.4

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:

$$20 \log(\text{Duty cycle}) = 20 \log(0.356 \text{ ms} / 7.027 \text{ ms}) = -25.9 \text{ dB}$$

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	24 °C, 75% RH
Tested By	Louis Yang		

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	102.6 PK			2.16 H	312	104.2	-1.6
2	*2480.00	76.7 AV			2.16 H	312	78.3	-1.6
3	2489.54	56.3 PK	74.0	-17.7	2.16 H	312	57.9	-1.6
4	2489.54	45.9 AV	54.0	-8.1	2.16 H	312	47.5	-1.6
5	4960.00	38.9 PK	74.0	-35.1	1.60 H	299	35.8	3.1
6	4960.00	13.0 AV	54.0	-41.0	1.60 H	299	9.9	3.1
7	7440.00	35.9 PK	74.0	-38.1	1.72 H	313	26.2	9.7
8	7440.00	10.0 AV	54.0	-44.0	1.72 H	313	0.3	9.7
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	97.9 PK			1.08 V	238	99.5	-1.6
2	*2480.00	72.0 AV			1.08 V	238	73.6	-1.6
3	2488.28	56.0 PK	74.0	-18.0	1.08 V	238	57.6	-1.6
4	2488.28	45.6 AV	54.0	-8.4	1.08 V	238	47.2	-1.6
5	4960.00	37.9 PK	74.0	-36.1	1.59 V	120	34.8	3.1
6	4960.00	12.0 AV	54.0	-42.0	1.59 V	120	8.9	3.1
7	7440.00	35.3 PK	74.0	-38.7	1.71 V	133	25.6	9.7
8	7440.00	9.4 AV	54.0	-44.6	1.71 V	133	-0.3	9.7

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:

$$20 \log(\text{Duty cycle}) = 20 \log(0.356 \text{ ms} / 7.027 \text{ ms}) = -25.9 \text{ dB}$$

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	24 °C, 75% RH
Tested By	Louis Yang		

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	2375.44	57.3 PK	74.0	-16.7	1.71 H	322	58.5	-1.2
2	2375.44	47.1 AV	54.0	-6.9	1.71 H	322	48.3	-1.2
3	*2404.00	104.2 PK			1.71 H	322	105.6	-1.4
4	*2404.00	72.6 AV			1.71 H	322	74.0	-1.4
5	4808.00	38.9 PK	74.0	-35.1	1.74 H	335	36.2	2.7
6	4808.00	7.3 AV	54.0	-46.7	1.74 H	335	4.6	2.7
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	2384.00	55.9 PK	74.0	-18.1	1.12 V	237	57.2	-1.3
2	2384.00	46.0 AV	54.0	-8.0	1.12 V	237	47.3	-1.3
3	*2404.00	99.4 PK			1.12 V	237	100.8	-1.4
4	*2404.00	67.8 AV			1.12 V	237	69.2	-1.4
5	4808.00	38.0 PK	74.0	-36.0	2.13 V	99	35.3	2.7
6	4808.00	6.4 AV	54.0	-47.6	2.13 V	99	3.7	2.7

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:

$$20 \log(\text{Duty cycle}) = 20 \log(0.186 \text{ ms} / 7.048 \text{ ms}) = -31.6 \text{ dB}$$

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	24 °C, 75% RH
Tested By	Louis Yang		

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	103.3 PK			2.22 H	314	104.8	-1.5
2	*2440.00	71.7 AV			2.22 H	314	73.2	-1.5
3	4880.00	38.2 PK	74.0	-35.8	1.78 H	343	35.3	2.9
4	4880.00	6.6 AV	54.0	-47.4	1.78 H	343	3.7	2.9
5	7320.00	36.3 PK	74.0	-37.7	2.43 H	93	26.9	9.4
6	7320.00	4.7 AV	54.0	-49.3	2.43 H	93	-4.7	9.4
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	*2440.00	98.3 PK			3.66 V	278	99.8	-1.5
2	*2440.00	66.7 AV			3.66 V	278	68.2	-1.5
3	4880.00	37.8 PK	74.0	-36.2	2.11 V	116	34.9	2.9
4	4880.00	6.2 AV	54.0	-47.8	2.11 V	116	3.3	2.9
5	7320.00	33.9 PK	74.0	-40.1	2.52 V	204	24.5	9.4
6	7320.00	2.3 AV	54.0	-51.7	2.52 V	204	-7.1	9.4

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:

$$20 \log(\text{Duty cycle}) = 20 \log(0.186 \text{ ms} / 7.048 \text{ ms}) = -31.6 \text{ dB}$$

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	24 °C, 75% RH
Tested By	Louis Yang		

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	102.5 PK			2.26 H	313	104.1	-1.6
2	*2478.00	70.9 AV			2.26 H	313	72.5	-1.6
3	2487.15	56.4 PK	74.0	-17.6	2.26 H	313	58.0	-1.6
4	2487.15	45.7 AV	54.0	-8.3	2.26 H	313	47.3	-1.6
5	4956.00	37.7 PK	74.0	-36.3	1.71 H	353	34.6	3.1
6	4956.00	6.1 AV	54.0	-47.9	1.71 H	353	3.0	3.1
7	7434.00	36.3 PK	74.0	-37.7	2.51 H	94	26.6	9.7
8	7434.00	4.7 AV	54.0	-49.3	2.51 H	94	-5.0	9.7
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	98.7 PK			1.06 V	240	100.3	-1.6
2	*2478.00	67.1 AV			1.06 V	240	68.7	-1.6
3	2491.86	55.6 PK	74.0	-18.4	1.06 V	240	57.2	-1.6
4	2491.86	45.8 AV	54.0	-8.2	1.06 V	240	47.4	-1.6
5	4956.00	36.4 PK	74.0	-37.6	2.15 V	113	33.3	3.1
6	4956.00	4.8 AV	54.0	-49.2	2.15 V	113	1.7	3.1
7	7434.00	33.6 PK	74.0	-40.4	2.53 V	204	23.9	9.7
8	7434.00	2.0 AV	54.0	-52.0	2.53 V	204	-7.7	9.7

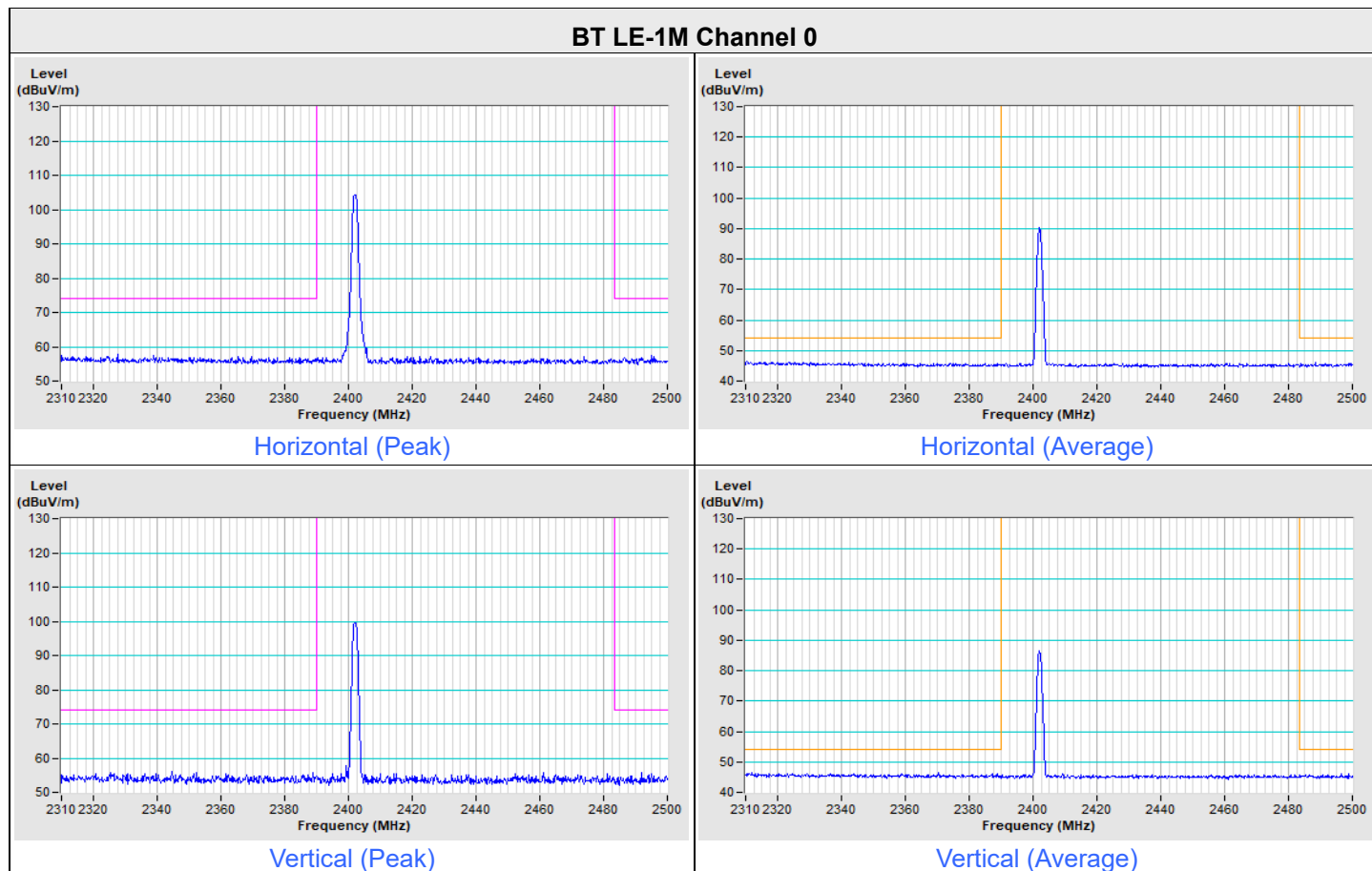
Remarks:

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:

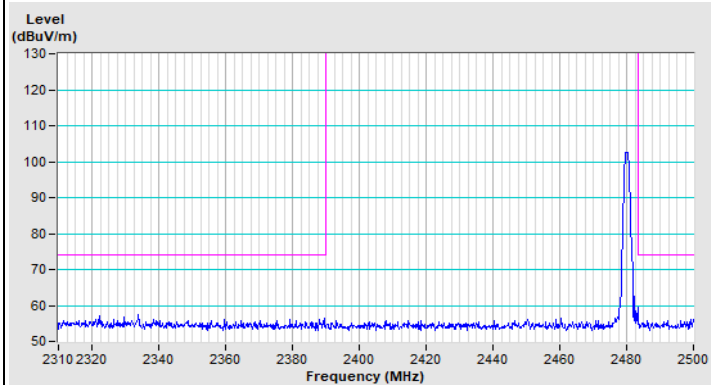
$$20 \log(\text{Duty cycle}) = 20 \log(0.186 \text{ ms} / 7.048 \text{ ms}) = -31.6 \text{ dB}$$

Plot of Band edge

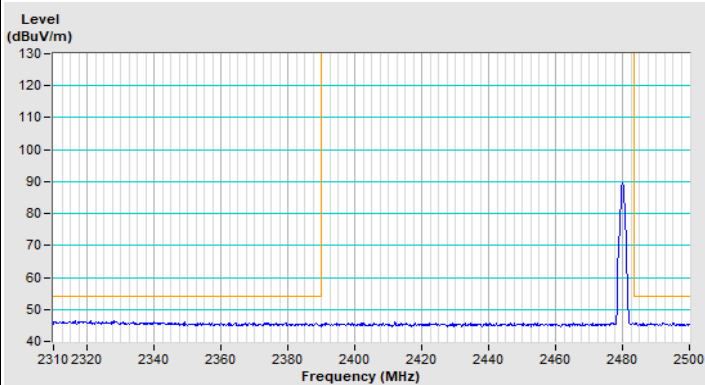
Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
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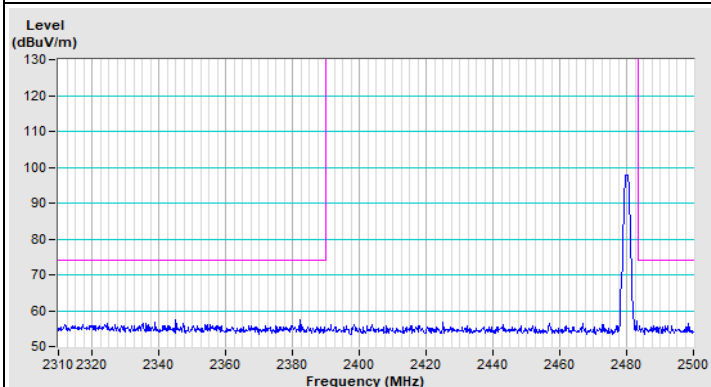
BT LE-1M Channel 39



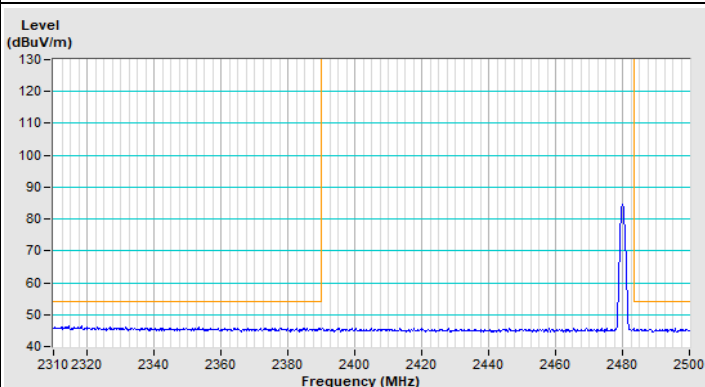
Horizontal (Peak)



Horizontal (Average)



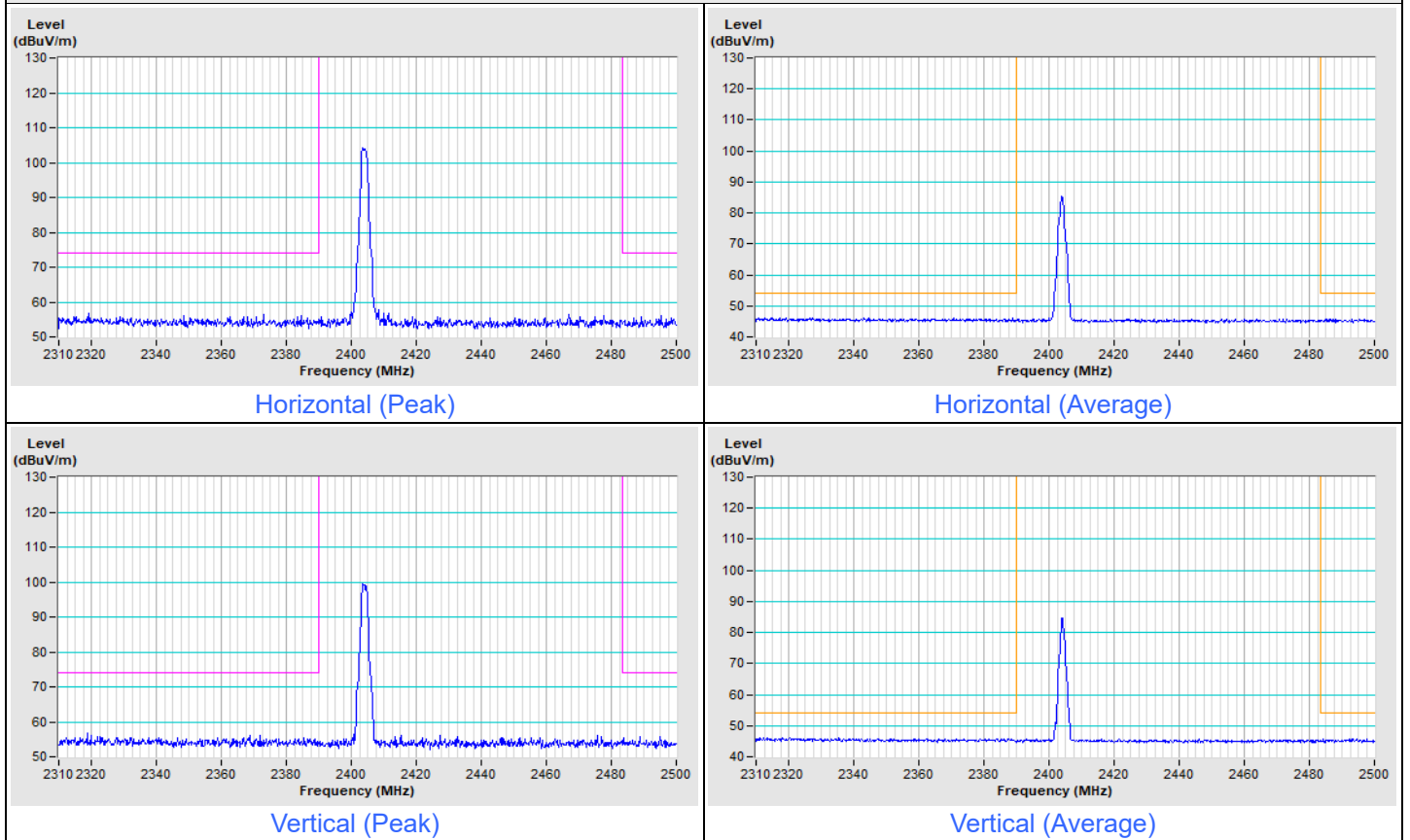
Vertical (Peak)



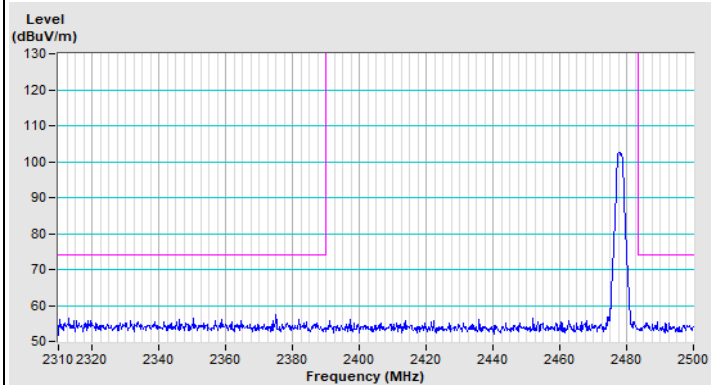
Vertical (Average)

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
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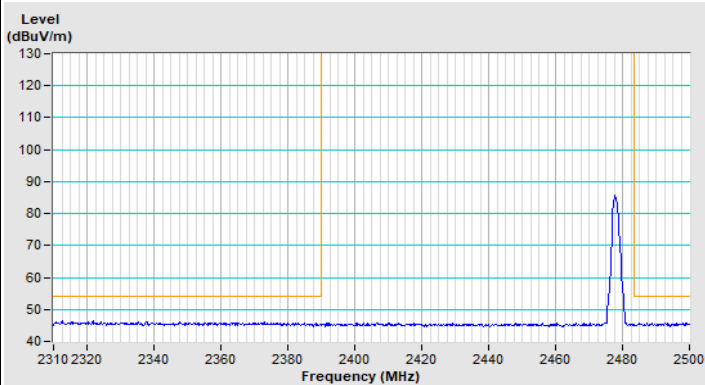
BT LE-2M Channel 1



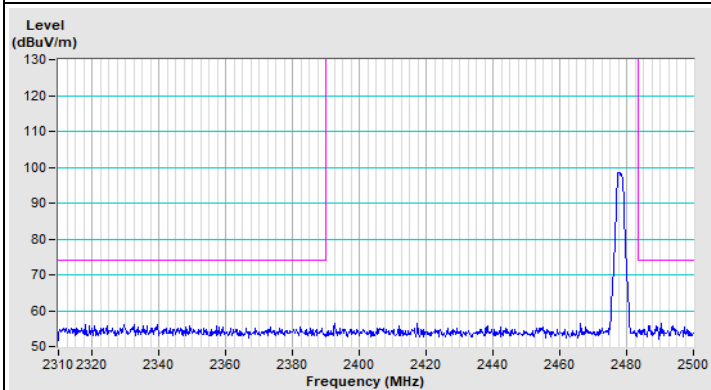
BT LE-2M Channel 38



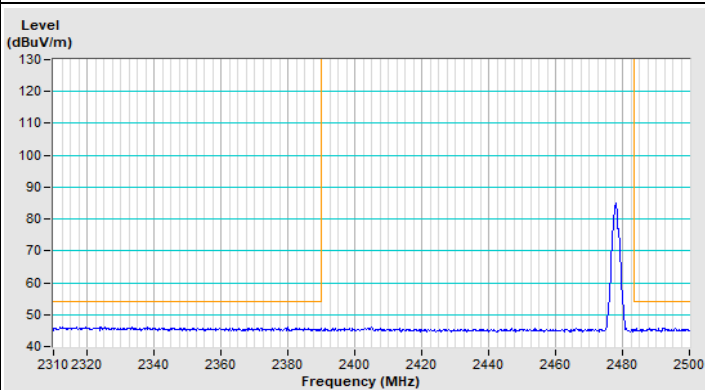
Horizontal (Peak)



Horizontal (Average)



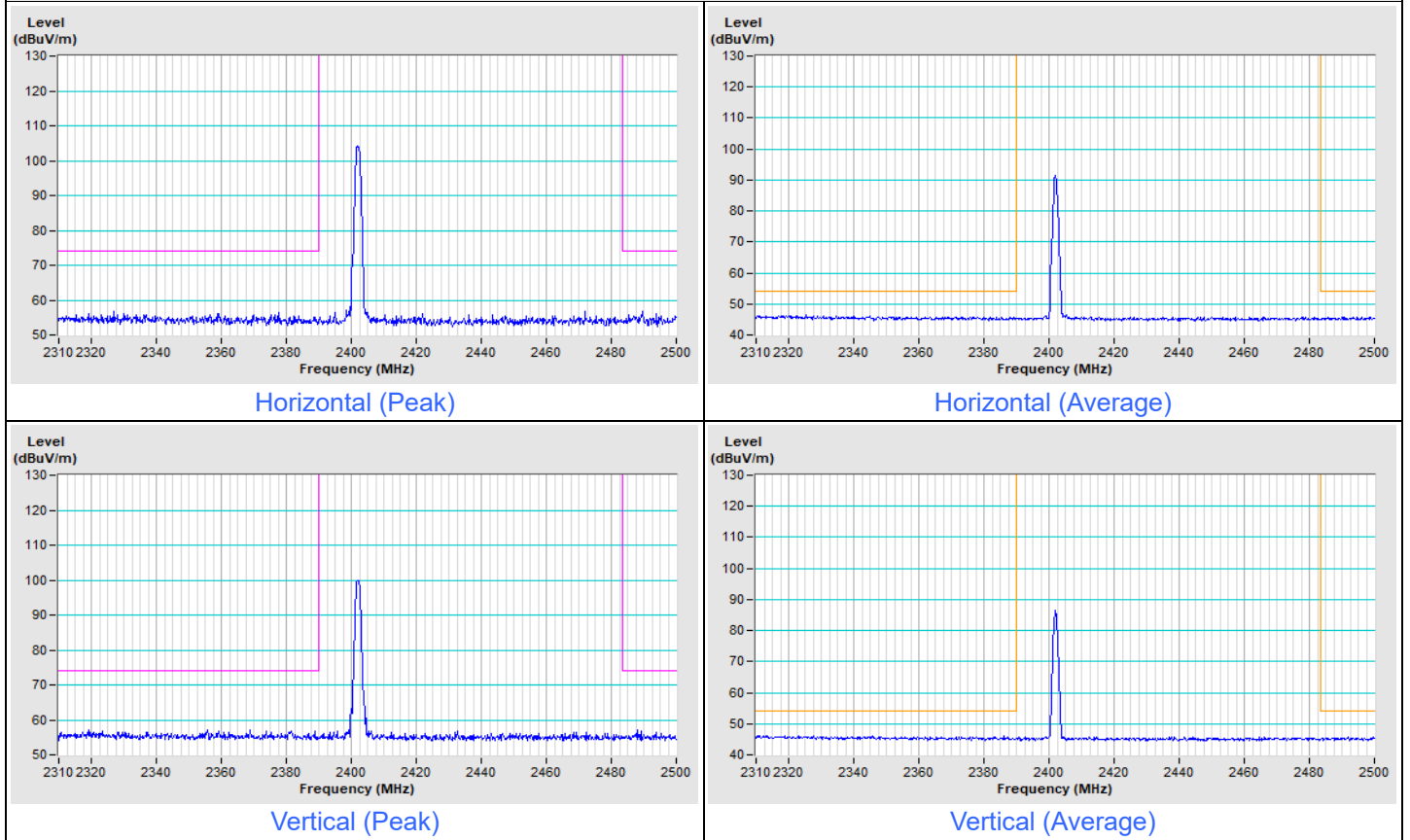
Vertical (Peak)



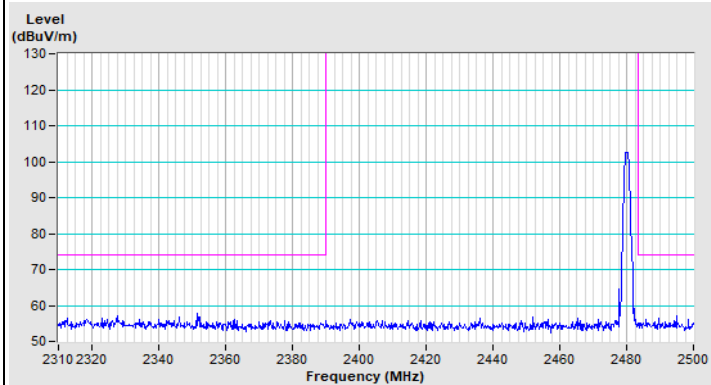
Vertical (Average)

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
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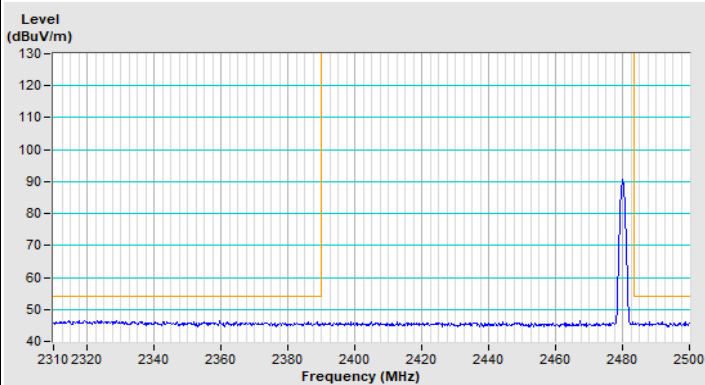
Logi Bolt 1M Channel 0



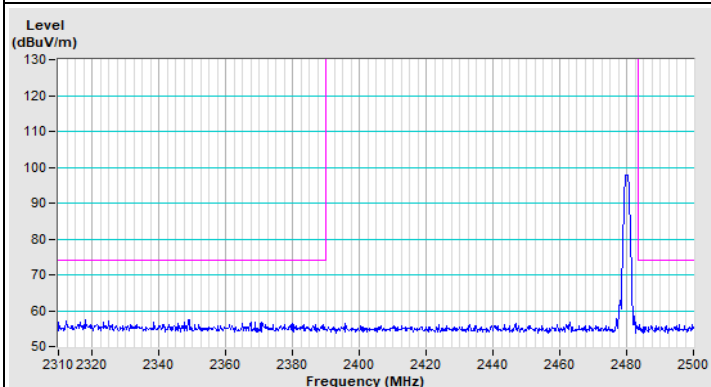
Logi Bolt 1M Channel 39



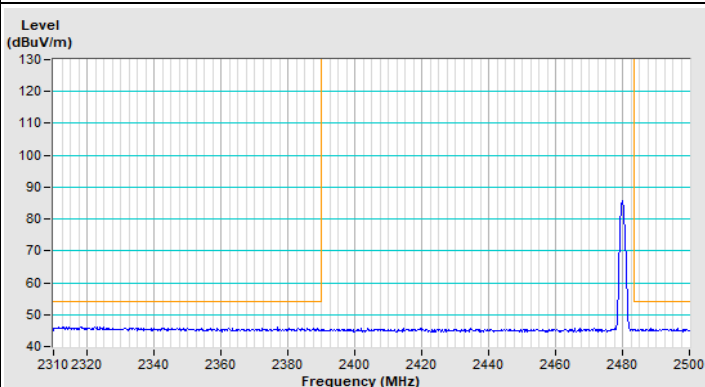
Horizontal (Peak)



Horizontal (Average)



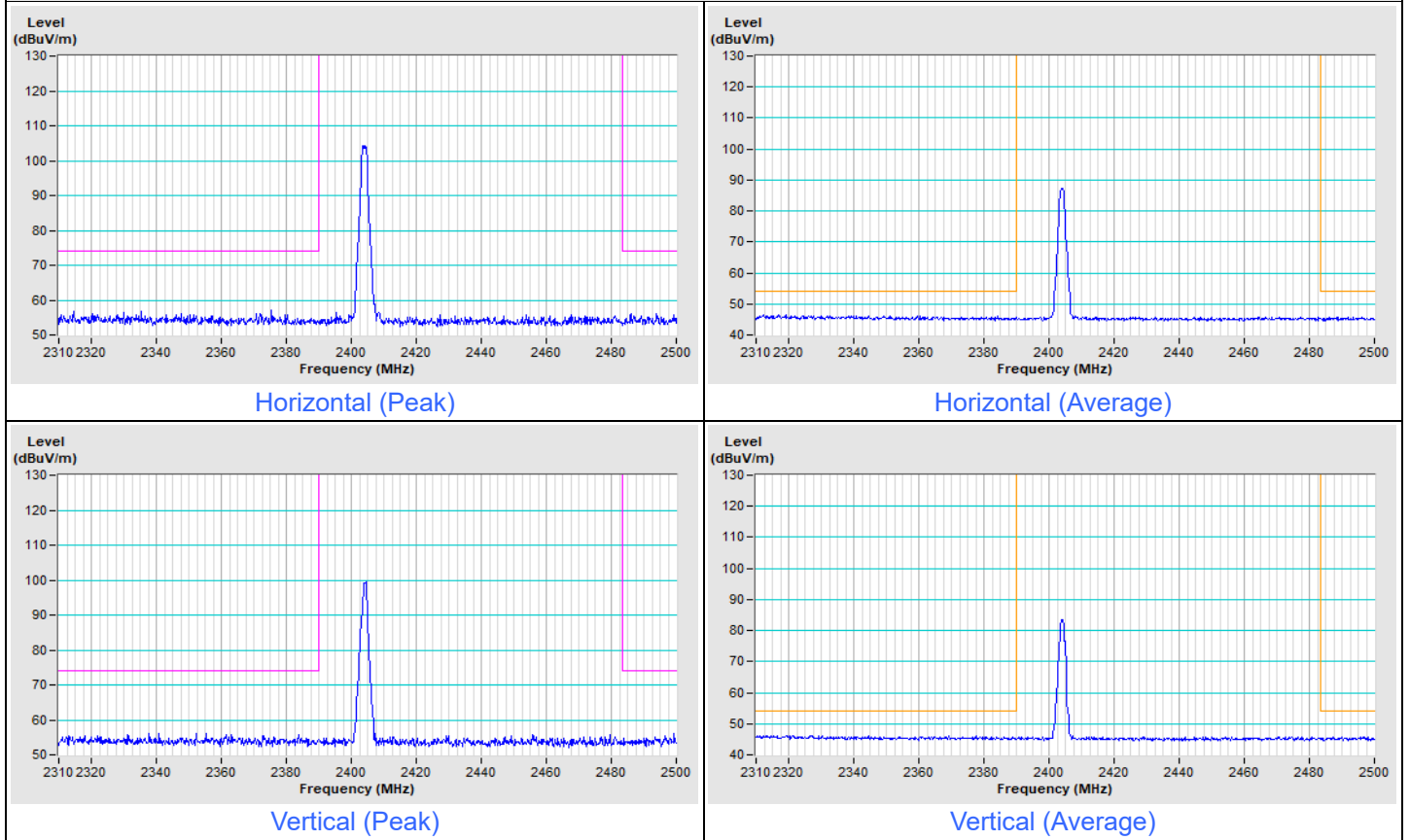
Vertical (Peak)



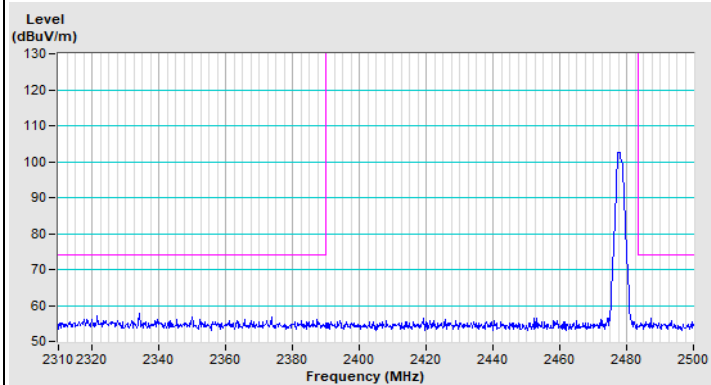
Vertical (Average)

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
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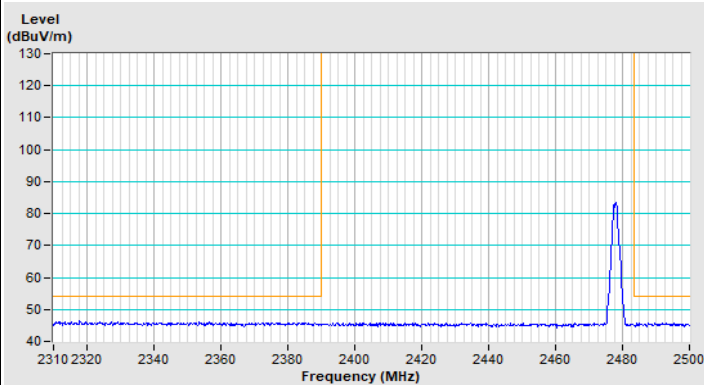
Logi Bolt 2M Channel 1



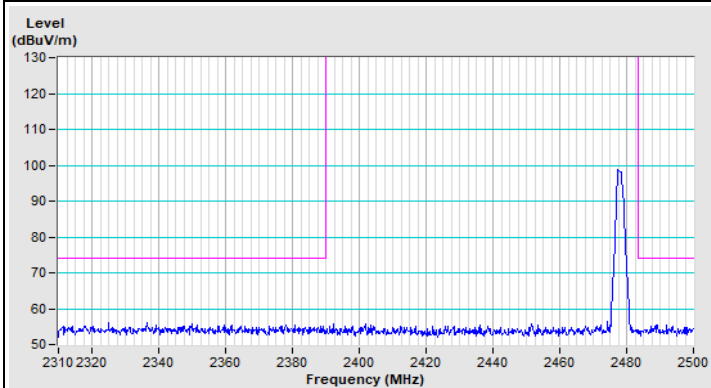
Logi Bolt 2M Channel 38



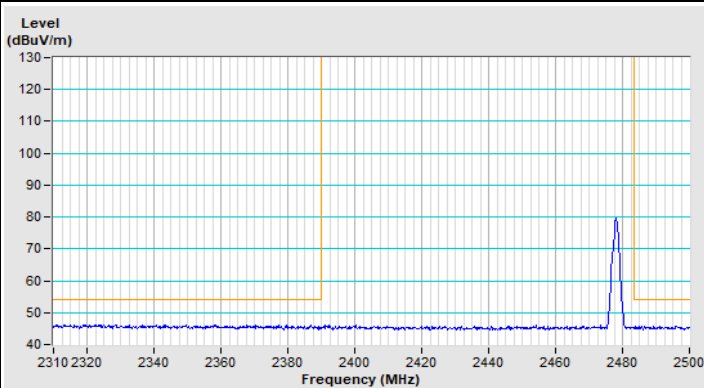
Horizontal (Peak)



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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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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