

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBBUI-WTW-P23110204-3

FCC ID: B94SNPRC235X

Product: 802.11 a/b/g/n/ac/ax WLAN + BT/BLE Radio Module

Brand:



Model No.: SNPRC-2351, SNPRC-2350

Received Date: 2023/11/8

Test Date: 2023/12/22 ~ 2024/3/7

Issued Date: 2024/5/3

Applicant: HP Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory

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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:** 2024/5/3
May Chen / Manager

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Prepared by : Vito Lung / Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBBUI-WTW-P23110204-3	Original release.	2024/5/3

1 Certificate

Product: 802.11 a/b/g/n/ac/ax WLAN + BT/BLE Radio Module

Brand:



Test Model: SNPRC-2351, SNPRC-2350

Sample Status: Engineering sample

Applicant: HP Inc.

Test Date: 2023/12/22 ~ 2024/3/7

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

Measurement ANSI C63.10-2013

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 -10.58 dB at 0.41172 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -8.9 dB at 40.48 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -10.2 dB at 2483.50 MHz
15.203	Antenna Requirement	Pass	Antenna connector is I-PEX, I-PEX 1st not a standard connector.

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	5.1 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	802.11 a/b/g/n/ac/ax WLAN + BT/BLE Radio Module
Brand	
Test Model	SNPRC-2351, SNPRC-2350
Status of EUT	Engineering sample
Power Supply Rating	3.3 Vdc from host equipment
Modulation Type	GFSK
Modulation Technology	DTS
Transfer Rate	Up to 2 Mbps
Operating Frequency	2.4 GHz ~ 2.4835 GHz
Number of Channel	40
Output Power	BT_LE 1M: 5.117 mW (7.09 dBm) BT_LE 2M: 5.272 mW (7.22 dBm)

Note:

1. There are Bluetooth and WLAN (2.4 GHz & 5 GHz) technology used for the EUT.
2. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (5 GHz) _Ant1	Bluetooth _Ant2

3. The EUT has below model names which are identical to each other in all aspects except for the following table:

Product Description	Model Name	Difference
802.11 a/b/g/n/ac/ax WLAN + BT/BLE Radio Module	SNPRC-2350	SDIO Interface
	SNPRC-2351	USB Interface

4. The EUT has the below configurations:

SNPRC-2350	
Part Numbers	Description
0960-5938	milligrid connector, 2 on-board antennas
0960-5936	milligrid connector, 1 on-board antenna + 1 external antenna
0960-5937	FFC connector, 2 on-board antennas
SNPRC-2351	
Part Numbers	Description
0960-5939	milligrid connector, 2 on-board antennas
0960-6141	right angled milligrid connector, 2 on-board antennas
0960-6200	milligrid connector, 1 on-board antenna + 1 external antenna

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 No.	RF Port No.	Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
1 (Internal)	1/2	0/1	HP	SNPRC-2351	3.5	2.4~2.4835	PIFA (on-board)	None	NA
					4.5	5.15~5.85			
2 (Internal)	1/2	0/1	HP	SNPRC-2350	3.5	2.4~2.4835	PIFA (on-board)	None	NA
					4.5	5.15~5.85			
3 (External)	2	1	Yageo	ANTX200P002B24553	0.9	2.4~2.4835	PIFA	I-PEX	200
					2.3	5.15~5.85			
4 (External)	2	1	Yageo	ANTX300P002B24553	0.9	2.4~2.4835	PIFA	I-PEX	300
					2.3	5.15~5.85			
5 (External)	2	1	WNC	81EAB815.G23	2	2.4~2.4835	PIFA	I-PEX 1st	200
					3	5.15~5.85			
6 (External)	2	1	WNC	81EAB815.G24	-0.3	2.4~2.4835	PIFA	I-PEX 1st	300
					1.5	5.15~5.85			

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

3.3 Channel List

BT-LE channels:

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:	- EUT has variant models as various interfaces: SDIO: 0960-5936/ 0960-5937/ 0960-5938, USB: 0960-5939/ 0960-6141/ 0960-6200. Pre-scan these variant models and find the worst case as a representative test condition in various interfaces. - The internal antenna design is identical in variant models/interfaces, and the external antenna models have 0960-5936 and 0960-6200 in various interfaces. Pre-scan this variant model and find the worst case as a representative test condition. - EUT can be used in the following ways of the internal/ external antenna: X-axis, Y-axis, and Z-axis. Pre-scan these ways and find the worst case as a representative test condition of the antenna. - 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&2. EUT worst variant model in various interfaces used in internal/external antenna: ➤ Unwanted Emissions below 1 GHz: SDIO: 0960-5937 (Internal antenna), 0960-5936 (External antenna) USB: 0960-5939 (Internal antenna), 0960-6200 (External antenna) ➤ Unwanted Emissions above 1 GHz: USB: 0960-5939 (Internal antenna), 0960-6200 (External antenna) 3. X-axis/ Y-axis/ Z-axis Worst Condition of the internal/ external antenna: ➤ Internal antenna: X-axis ➤ External antenna: Z-axis

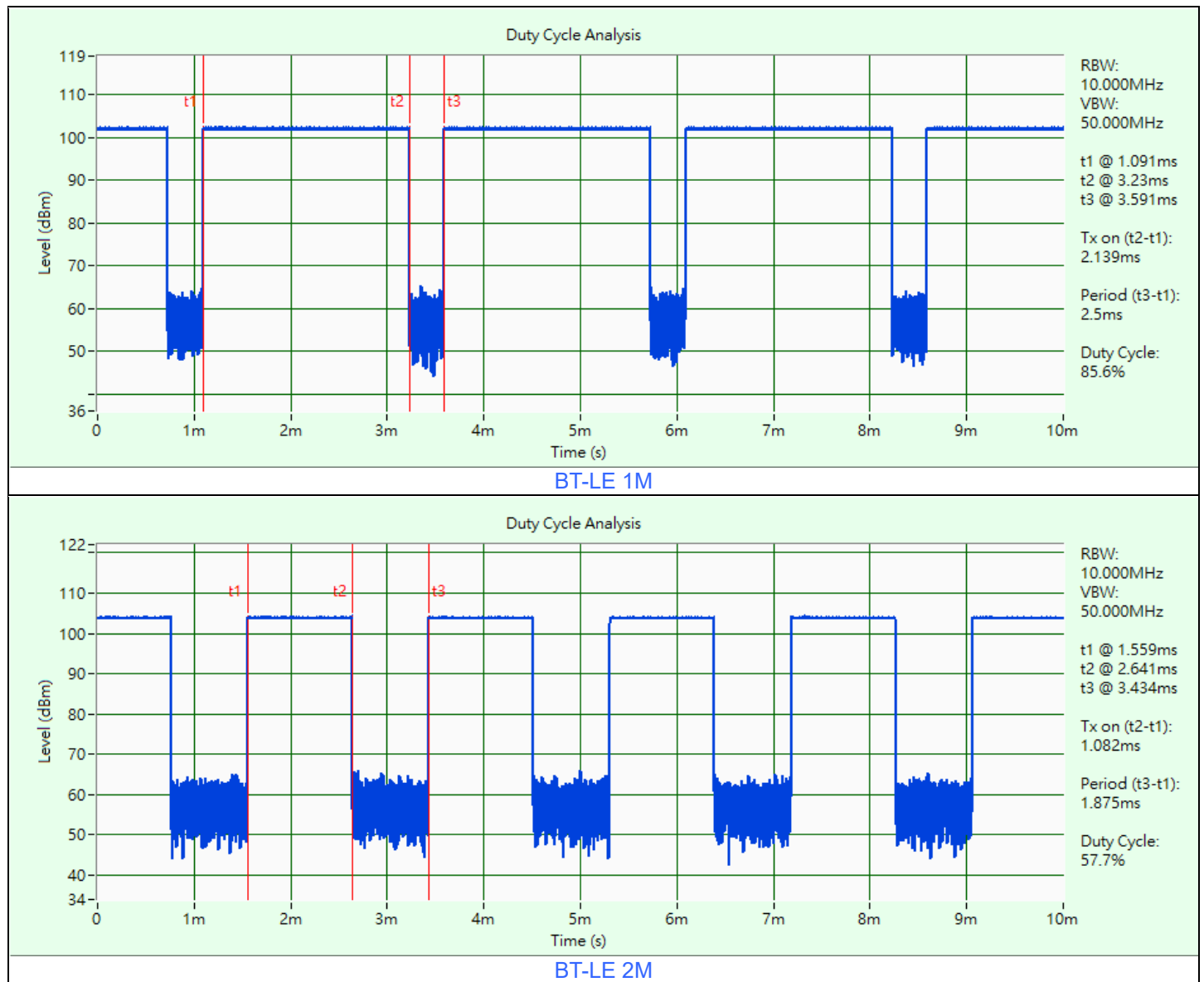
Following channel(s) was (were) selected for the final test as listed below:

Test Item	EUT Configure Mode	Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power / Power Spectral Density	-	BT-LE 1M	0, 19, 39	GFSK	1Mb/s
		BT-LE 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
AC Power Conducted Emissions	A, B, C, D	BT-LE 2M	19	GFSK	2Mb/s
Unwanted Emissions below 1 GHz	A, B, C, D	BT-LE 2M	19	GFSK	2Mb/s
Unwanted Emissions above 1 GHz	C, D	BT-LE 1M	0, 19, 39	GFSK	1Mb/s
		BT-LE 2M	1, 19, 38	GFSK	2Mb/s
EUT Configure Mode:	A	SDIO interface worst variant model using internal antenna No.1			
	B	SDIO interface worst variant model using external antenna No.5			
	C	USB interface worst variant model using internal antenna No.1			
	D	USB interface worst variant model using external antenna No.5			
Note:					
1. Bluetooth technology will fix transmission on Chain 1.					
2. The external antenna will fix transmission on Chain 1.					

3.5 Duty Cycle of Test Signal

BT-LE 1M: Duty cycle = 2.139 ms / 2.5 ms x 100% = 85.6%, duty factor = $10 \cdot \log (1/\text{Duty cycle}) = 0.68 \text{ dB}$

BT-LE 2M: Duty cycle = 1.082 ms / 1.875 ms x 100% = 57.7%, duty factor = $10 \cdot \log (1/\text{Duty cycle}) = 2.39 \text{ dB}$

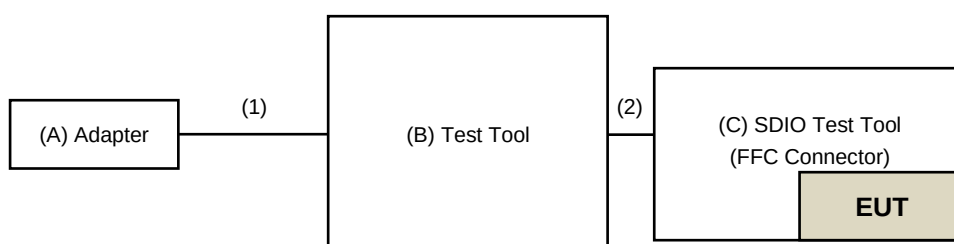


3.6 Test Program Used and Operation Descriptions

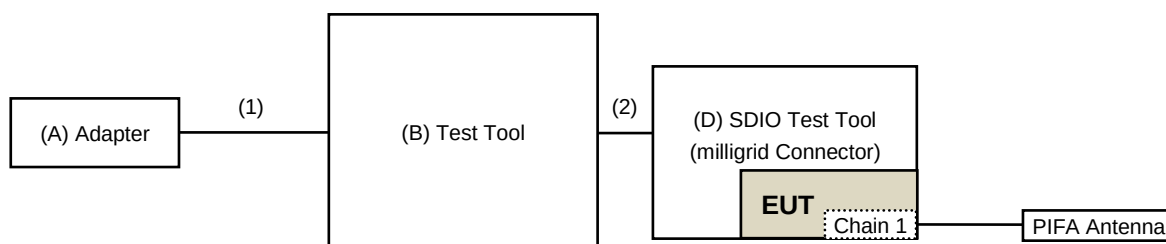
Controlling software (HyperTerminal paste BT command.txt command) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

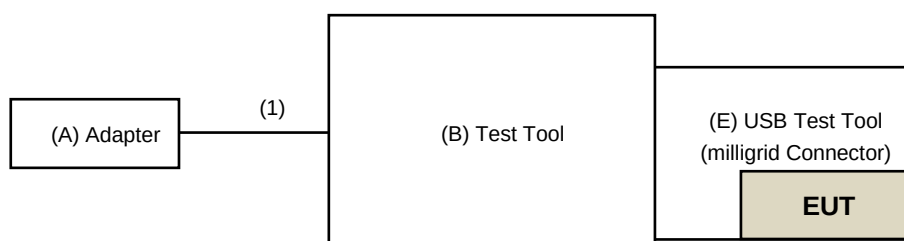
Mode A (P/N: 0960-5937)



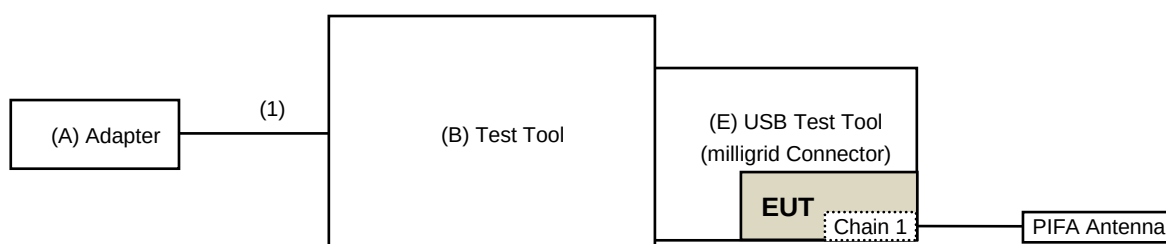
Mode B (P/N: 0960-5936)



Mode C (P/N: 0960-5939)



Mode D (P/N: 0960-6200)



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Adapter	ASUS	EXA1205UA	N/A	N/A	Provided by Lab
B	Test Tool	Realtek	N/A	N/A	N/A	Supplied by applicant
C	SDIO Test Tool (FFC Connector)	Realtek	N/A	N/A	N/A	Supplied by applicant
D	SDIO Test Tool (milligrid Connector)	Realtek	N/A	N/A	N/A	Supplied by applicant
E	USB Test Tool (milligrid Connector)	Realtek	N/A	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	USB Cable	1	1.4	Yes	0	Provided by Lab
2	Data Cable	1	0.05	No	0	Supplied by applicant

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	2023/6/19	2024/6/18
RF Power Meter Anritsu	ML2495A	1529002	2023/6/17	2024/6/16

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2024/2/16

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
MXA Signal Analyzer Keysight	N9020B	MY60112409	2023/2/18	2024/2/17
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: 2024/2/16

4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.4 Conducted Out of Band Emissions

Refer to section 4.2 to get 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	2023/10/20	2024/10/19
EMI Test Receiver R&S	ESCS 30	847124/029	2023/10/18	2024/10/17
Fixed Attenuator STI	STI02-2200-10	005	2024/2/19	2025/2/18
LISN R&S	ESH3-Z5	835239/001	2023/4/6	2024/4/5
		848773/004	2023/10/13	2024/10/12
RF Coaxial Cable JYEBAO	5D-FB	COCCAB-001	2024/2/19	2025/2/18
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: 2024/2/27

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-0842	2023/10/12	2024/10/11
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
EMI Test Receiver R&S	ESR7	102026	2023/4/6	2024/4/5
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	2023/12/12	2024/12/11
Loop Antenna Electro-Metrics	EM-6879	264	2024/2/23	2025/2/22
Preamplifier EMCI	EMC330N	980538	2023/4/6	2024/4/5
	EMC001340	980142	2024/2/19	2025/2/18
PXA Signal Analyzer Keysight	N9030B	MY57141948	2023/5/19	2024/5/18
RF Coaxial Cable JYEBAO	5D-FB	LOOPCAB-002	2024/2/19	2025/2/18
		LOOPCAB-001	2024/2/19	2025/2/18
RF Coaxial Cable PEWC	8D	966-5-1	2023/4/6	2024/4/5
		966-5-2	2023/4/6	2024/4/5
		966-5-3	2023/4/6	2024/4/5
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2024/2/27

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
EMI Test Receiver R&S	ESR7	102026	2023/4/6	2024/4/5
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-1819	2022/11/13 2023/11/12	2023/11/12 2024/11/11
PXA Signal Analyzer Keysight	N9030B	MY57141948	2023/5/19	2024/5/18
Preamplifier EMCI	EMC12630SE	980509	2023/4/7 2024/1/29	2024/4/6 2025/1/28
	EMC184045SE	980387	2023/8/9	2024/8/8
RF Coaxial Cable EMCI	EMC102-KM-KM-4000	200214	2023/2/20 2024/1/29	2024/2/19 2025/1/28
	EMC102-KM-KM-1200	160924	2023/8/9 2024/1/29	2024/8/8 2025/1/28
	EMC104-SM-SM-6000	180506	2023/4/7	2024/4/6
	EMC104-SM-SM-2000	180501	2023/4/7	2024/4/6
	EMC104-SM-SM-1500	180503	2023/4/7	2024/4/6
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2023/12/22 ~ 2024/3/7

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

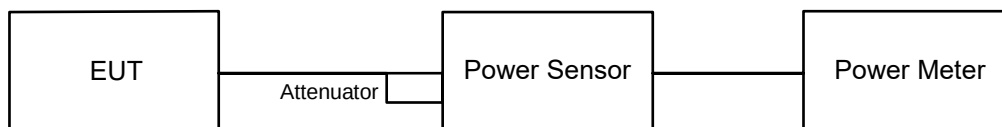
Notes:

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:

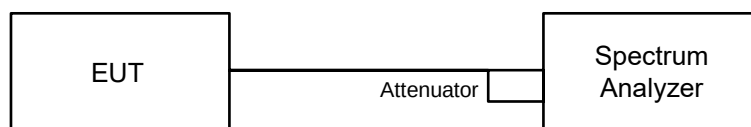
A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

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

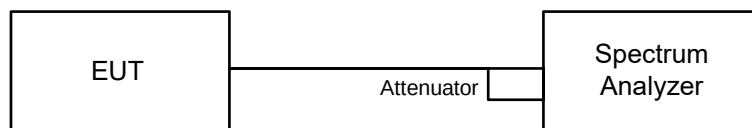


6.2.2 Test Procedure

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: 3 kHz.
- Set the VBW $\geq 3 \times$ RBW.
- Detector = peak.
- Sweep time = auto couple.
- 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

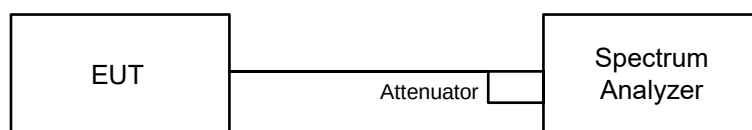


6.3.2 Test Procedure

- Set resolution bandwidth (RBW) = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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

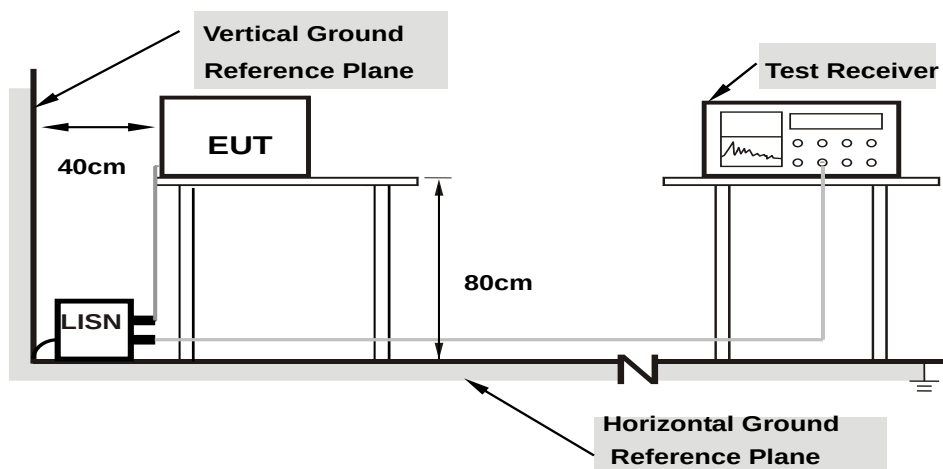
- Set the RBW = 100 kHz.
- Set the VBW ≥ 300 kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

- Set RBW = 100 kHz.
- Set VBW ≥ 300 kHz.
- Detector = peak.
- Sweep = auto couple.
- 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

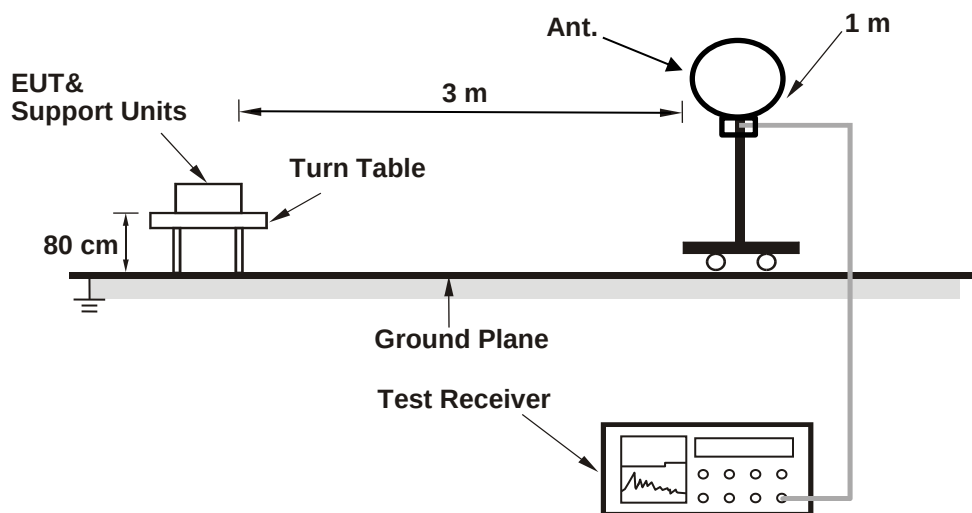
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The 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.

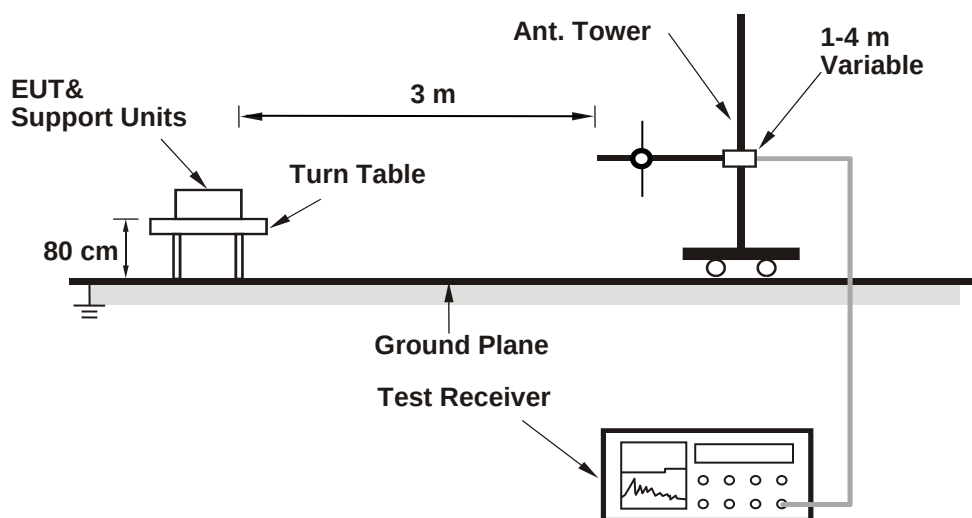
6.6 Unwanted Emissions below 1 GHz

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

- 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- 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.
- 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:

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

For Radiated emission above 30 MHz

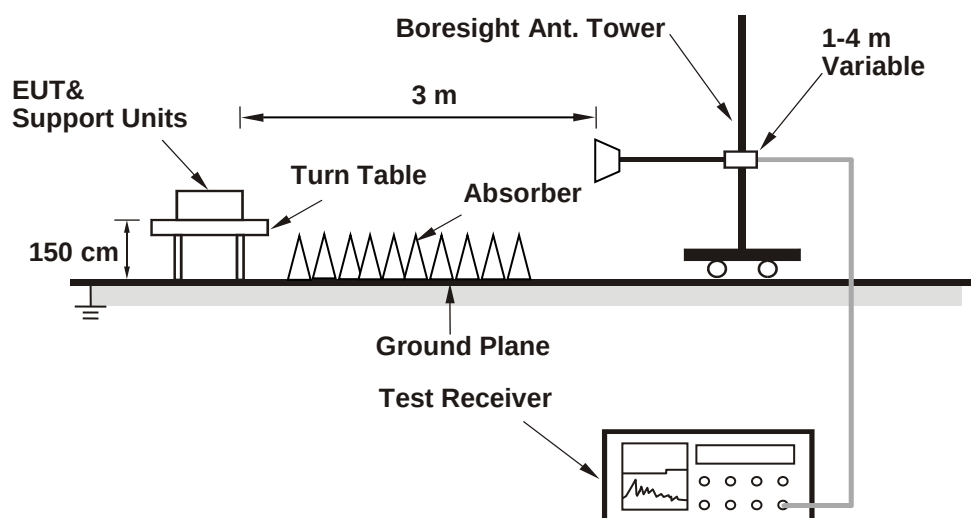
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top 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 system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
- 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 harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10 Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1 GHz.
- 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:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko
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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	5.117	7.09	30	Pass
19	2440	4.842	6.85	30	Pass
39	2480	4.764	6.78	30	Pass

Note: The antenna gain is 3.5 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	5.188	7.15	30	Pass
19	2440	5.272	7.22	30	Pass
38	2478	4.764	6.78	30	Pass

Note: The antenna gain is 3.5 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	4.365	6.40
19	2440	4.102	6.13
39	2480	4.027	6.05

BT-LE 2M

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2404	4.217	6.25
19	2440	4.385	6.42
38	2478	4.036	6.06

7.2 Power Spectral Density

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko
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BT-LE 1M

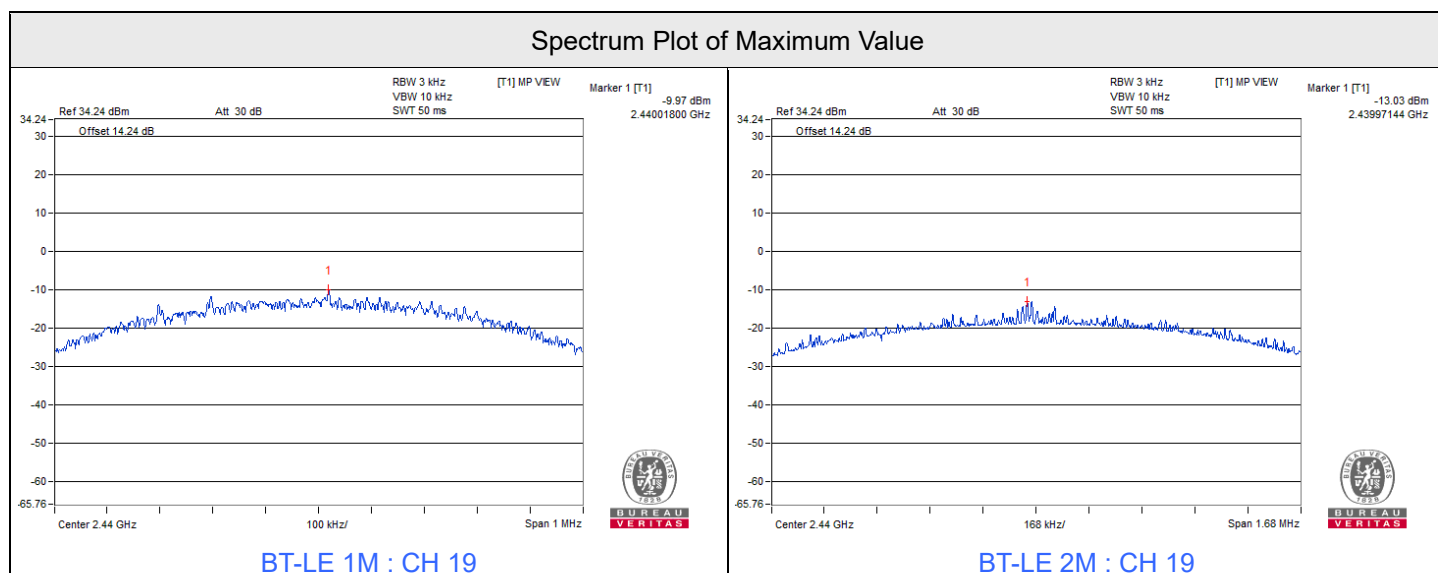
Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
0	2402	-11.68	8	Pass
19	2440	-9.97	8	Pass
39	2480	-11.72	8	Pass

Note: The antenna gain is 3.5 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	-13.10	8	Pass
19	2440	-13.03	8	Pass
38	2478	-13.64	8	Pass

Note: The antenna gain is 3.5 dBi < 6 dBi, so the power density limit shall not be reduced.



7.3 6 dB Bandwidth

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko
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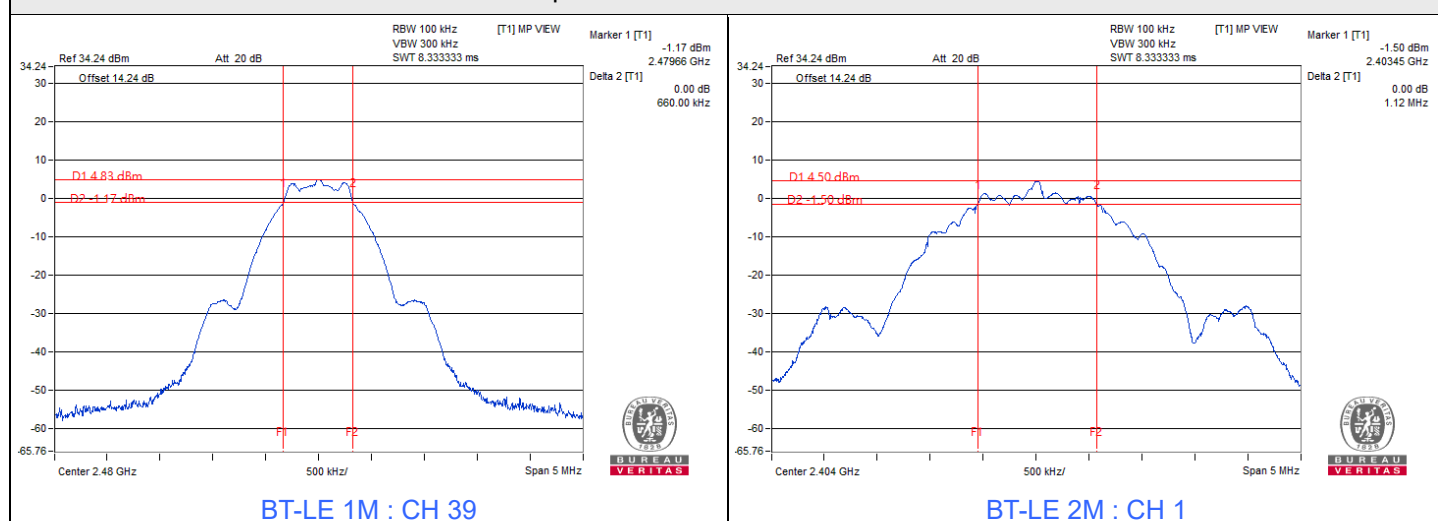
BT-LE 1M

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
0	2402	0.67	0.5	Pass
19	2440	0.67	0.5	Pass
39	2480	0.66	0.5	Pass

BT-LE 2M

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
1	2404	1.12	0.5	Pass
19	2440	1.12	0.5	Pass
38	2478	1.12	0.5	Pass

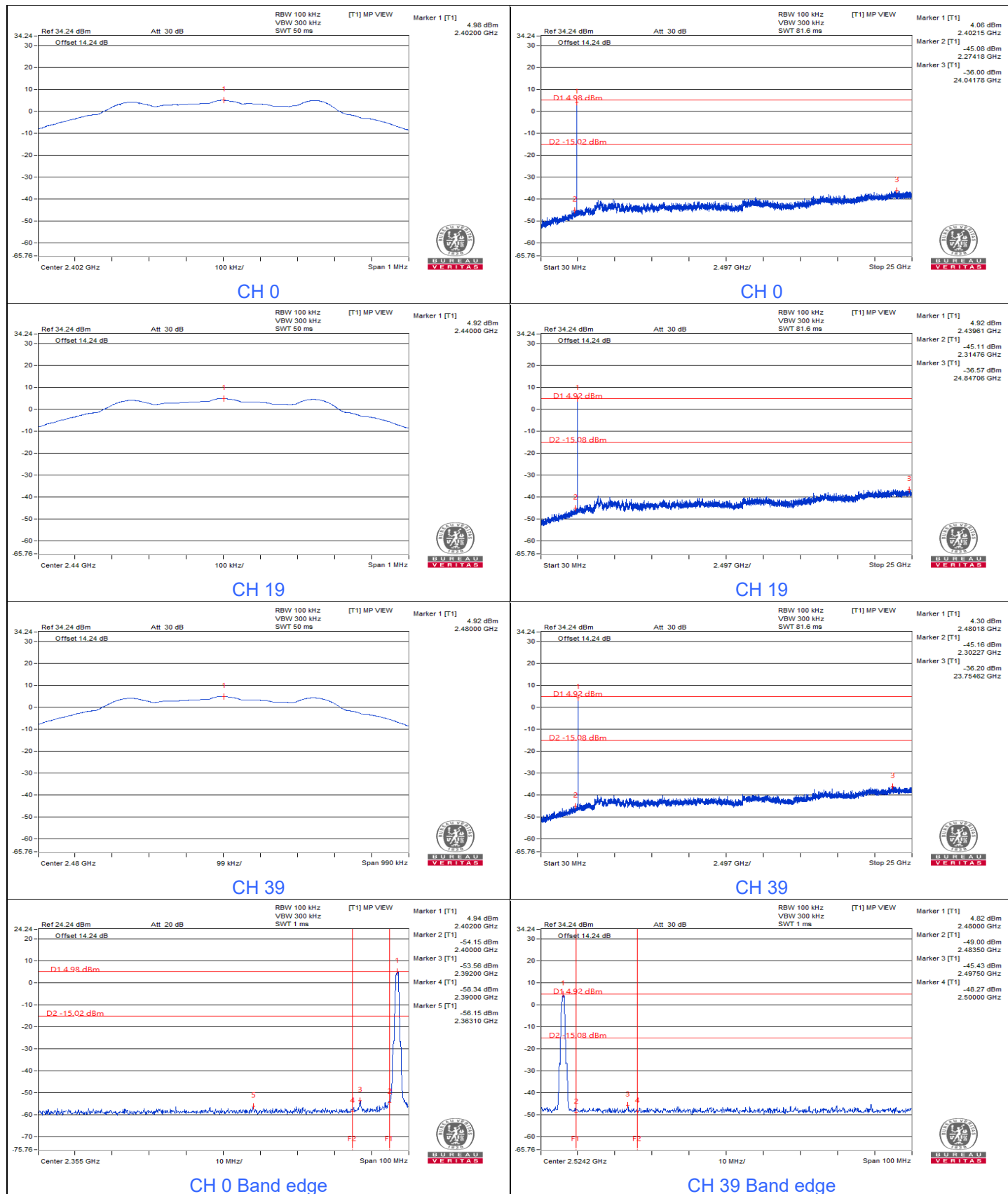
Spectrum Plot of Minimum Value



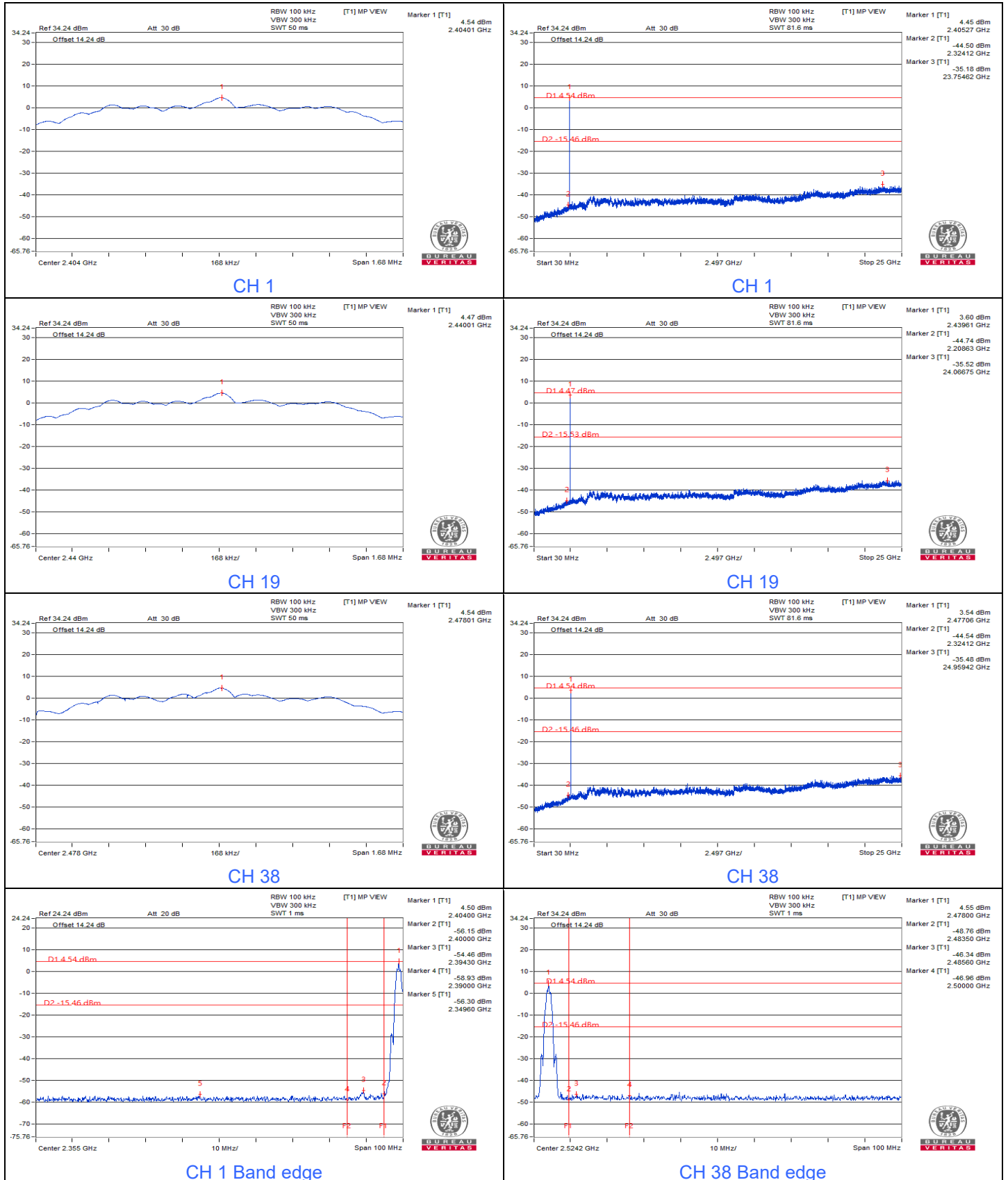
7.4 Conducted Out of Band Emissions

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko
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BT-LE 1M



BT-LE 2M



7.5 AC Power Conducted Emissions

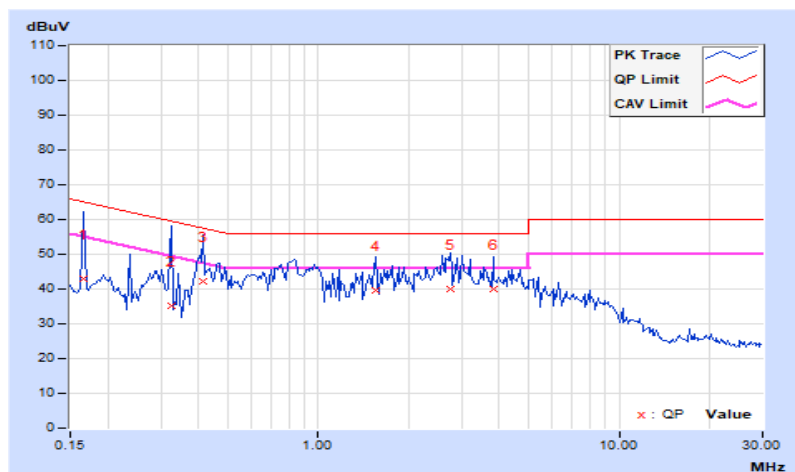
Mode A (SDIO interface using internal antenna)

RF Mode	BT-LE 2M	Channel	CH 19 : 2440 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	23°C, 71% 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	0.16562	9.93	32.92	17.47	42.85	27.40	65.18	55.18	-22.33	-27.78
2	0.32578	9.94	25.34	17.54	35.28	27.48	59.56	49.56	-24.28	-22.08
3	0.41563	9.94	32.21	26.86	42.15	36.80	57.54	47.54	-15.39	-10.74
4	1.54688	10.00	29.45	22.17	39.45	32.17	56.00	46.00	-16.55	-13.83
5	2.74219	10.06	30.01	22.83	40.07	32.89	56.00	46.00	-15.93	-13.11
6	3.80859	10.11	29.95	21.59	40.06	31.70	56.00	46.00	-15.94	-14.30

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

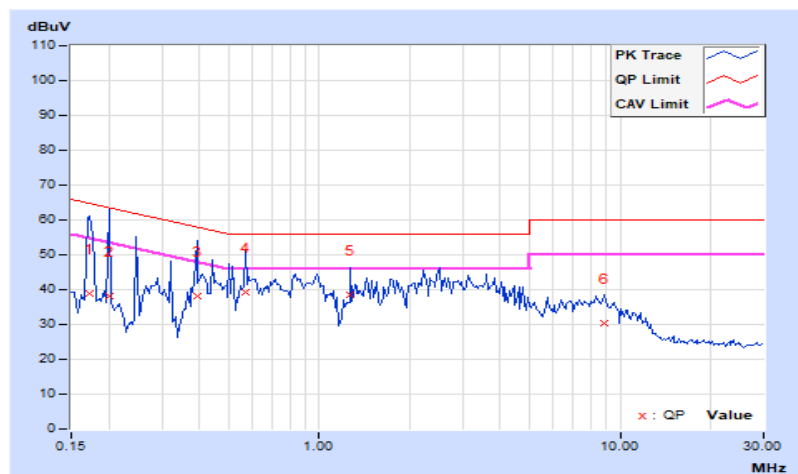


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	23°C, 71% RH
Tested By	Louis Yang		

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	0.17344	9.99	29.02	15.20	39.01	25.19	64.79	54.79	-25.78	-29.60
2	0.20078	9.99	28.16	16.75	38.15	26.74	63.58	53.58	-25.43	-26.84
3	0.39219	10.00	28.24	21.51	38.24	31.51	58.02	48.02	-19.78	-16.51
4	0.56797	10.01	29.25	21.95	39.26	31.96	56.00	46.00	-16.74	-14.04
5	1.27344	10.04	28.66	16.80	38.70	26.84	56.00	46.00	-17.30	-19.16
6	8.87500	10.37	20.05	12.04	30.42	22.41	60.00	50.00	-29.58	-27.59

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



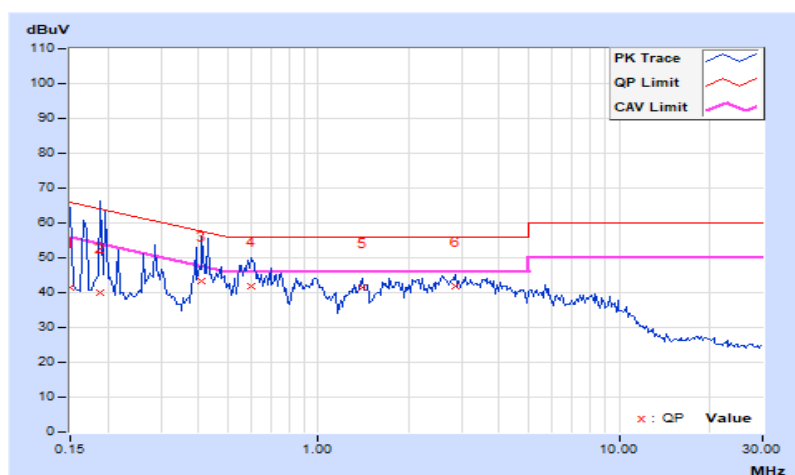
Mode B (SDIO interface using external antenna)

RF Mode	BT-LE 2M	Channel	CH 19 : 2440 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	23°C, 71% 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	0.15000	9.92	31.51	15.71	41.43	25.63	66.00	56.00	-24.57	-30.37
2	0.18906	9.93	30.06	23.06	39.99	32.99	64.08	54.08	-24.09	-21.09
3	0.41172	9.94	33.50	27.09	43.44	37.03	57.61	47.61	-14.17	-10.58
4	0.59922	9.95	31.99	24.24	41.94	34.19	56.00	46.00	-14.06	-11.81
5	1.40625	10.00	31.53	23.54	41.53	33.54	56.00	46.00	-14.47	-12.46
6	2.85938	10.06	31.83	23.80	41.89	33.86	56.00	46.00	-14.11	-12.14

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

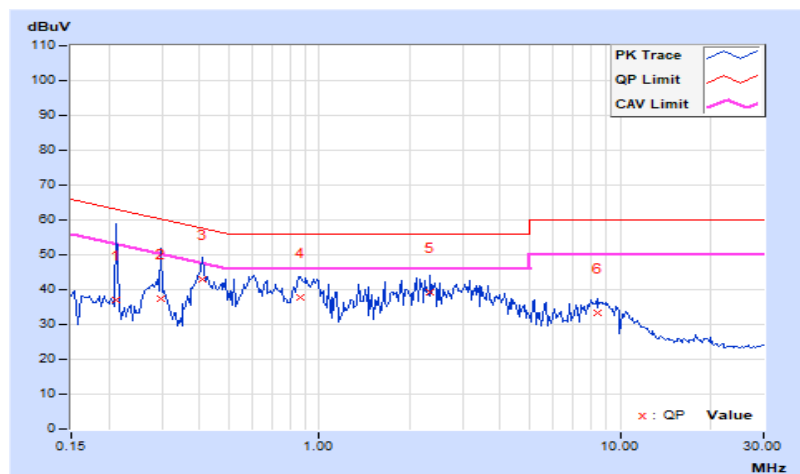


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	23°C, 71% RH
Tested By	Louis Yang		

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	0.21250	9.99	26.96	13.33	36.95	23.32	63.11	53.11	-26.16	-29.79
2	0.29844	9.99	27.41	21.13	37.40	31.12	60.29	50.29	-22.89	-19.17
3	0.40781	10.00	32.99	25.61	42.99	35.61	57.69	47.69	-14.70	-12.08
4	0.86875	10.02	27.67	17.77	37.69	27.79	56.00	46.00	-18.31	-18.21
5	2.34375	10.09	29.31	21.11	39.40	31.20	56.00	46.00	-16.60	-14.80
6	8.40234	10.35	22.98	14.02	33.33	24.37	60.00	50.00	-26.67	-25.63

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



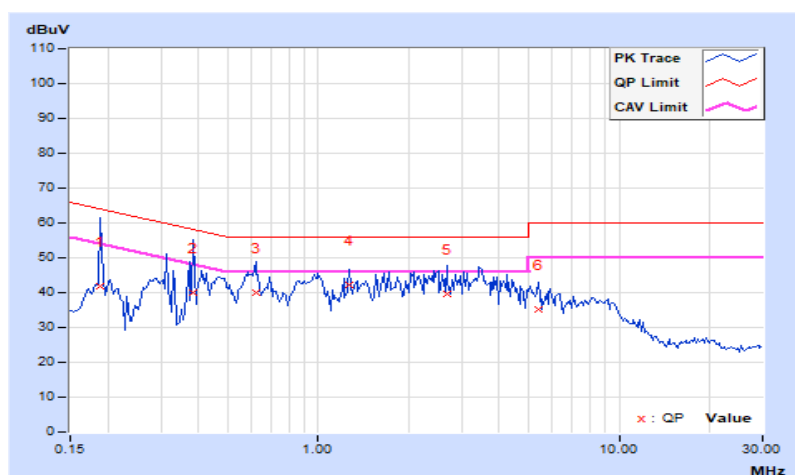
Mode C (USB interface using internal antenna)

RF Mode	BT-LE 2M	Channel	CH 19 : 2440 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	23°C, 71% 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	9.93	32.09	23.64	42.02	33.57	64.08	54.08	-22.06	-20.51
2	0.38438	9.94	30.04	17.82	39.98	27.76	58.18	48.18	-18.20	-20.42
3	0.61875	9.95	30.20	21.90	40.15	31.85	56.00	46.00	-15.85	-14.15
4	1.26563	9.99	32.41	23.87	42.40	33.86	56.00	46.00	-13.60	-12.14
5	2.68359	10.05	29.63	22.20	39.68	32.25	56.00	46.00	-16.32	-13.75
6	5.41797	10.20	25.05	16.03	35.25	26.23	60.00	50.00	-24.75	-23.77

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

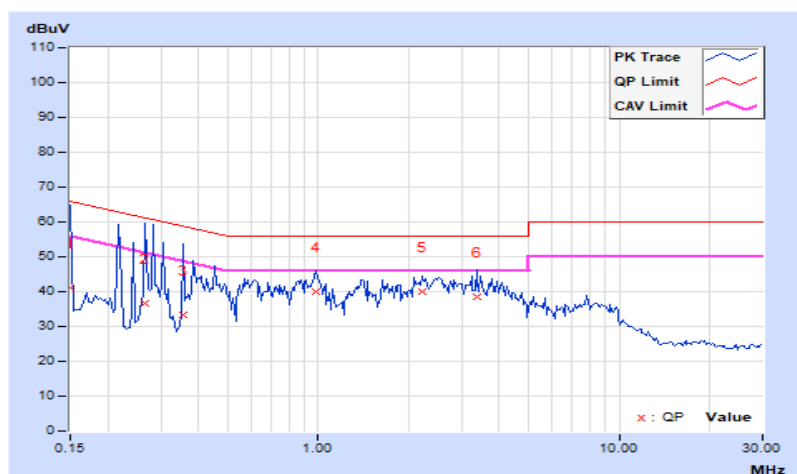


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	23°C, 71% RH
Tested By	Louis Yang		

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	0.15000	9.98	31.18	12.66	41.16	22.64	66.00	56.00	-24.84	-33.36
2	0.26719	9.99	26.58	16.25	36.57	26.24	61.20	51.20	-24.63	-24.96
3	0.35703	10.00	23.26	7.81	33.26	17.81	58.80	48.80	-25.54	-30.99
4	0.98594	10.03	30.03	22.51	40.06	32.54	56.00	46.00	-15.94	-13.46
5	2.23047	10.08	29.83	21.55	39.91	31.63	56.00	46.00	-16.09	-14.37
6	3.37109	10.13	28.24	21.67	38.37	31.80	56.00	46.00	-17.63	-14.20

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



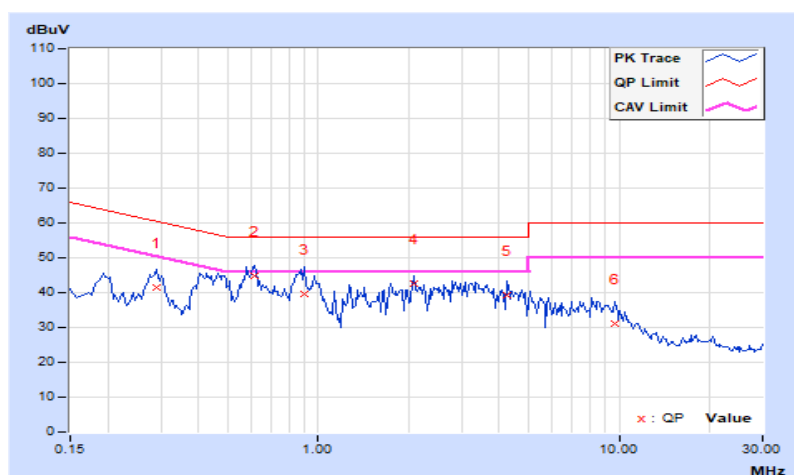
Mode D (USB interface using external antenna)

RF Mode	BT-LE 2M	Channel	CH 19 : 2440 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	23°C, 71% 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	0.29063	9.93	31.38	28.01	41.31	37.94	60.51	50.51	-19.20	-12.57
2	0.61094	9.95	34.91	24.88	44.86	34.83	56.00	46.00	-11.14	-11.17
3	0.90391	9.97	29.54	20.70	39.51	30.67	56.00	46.00	-16.49	-15.33
4	2.07813	10.02	32.47	25.18	42.49	35.20	56.00	46.00	-13.51	-10.80
5	4.24219	10.13	28.96	20.43	39.09	30.56	56.00	46.00	-16.91	-15.44
6	9.67969	10.45	20.60	15.44	31.05	25.89	60.00	50.00	-28.95	-24.11

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

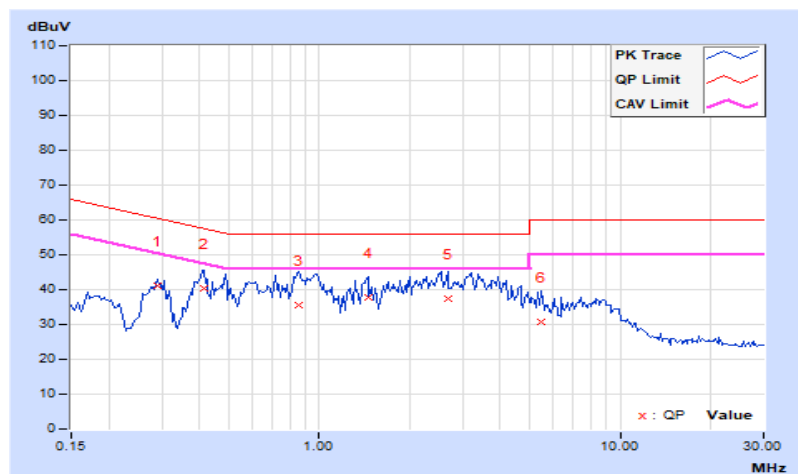


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	23°C, 71% RH
Tested By	Louis Yang		

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	0.29063	9.99	31.26	24.78	41.25	34.77	60.51	50.51	-19.26	-15.74
2	0.41563	10.00	30.54	24.28	40.54	34.28	57.54	47.54	-17.00	-13.26
3	0.85313	10.02	25.50	17.77	35.52	27.79	56.00	46.00	-20.48	-18.21
4	1.44922	10.05	27.90	21.11	37.95	31.16	56.00	46.00	-18.05	-14.84
5	2.69141	10.10	27.39	21.49	37.49	31.59	56.00	46.00	-18.51	-14.41
6	5.48047	10.22	20.38	11.16	30.60	21.38	60.00	50.00	-29.40	-28.62

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

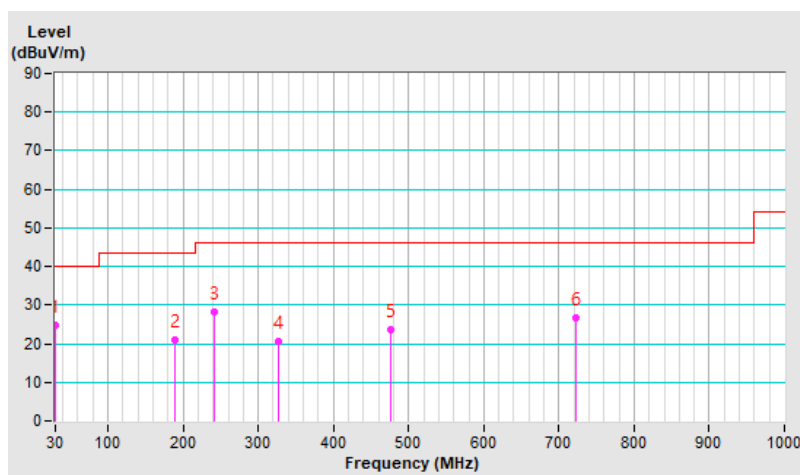
Mode A (SDIO interface using internal antenna)

RF Mode	BT-LE 2M	Channel	CH 19 : 2440 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	20°C, 61% RH
Tested By	Clark Lo		

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	30.00	24.8 QP	40.0	-15.2	1.00 H	1	43.6	-18.8
2	188.55	20.9 QP	43.5	-22.6	1.50 H	317	41.2	-20.3
3	242.15	28.3 QP	46.0	-17.7	1.50 H	152	47.4	-19.1
4	326.98	20.5 QP	46.0	-25.5	1.00 H	360	36.7	-16.2
5	475.93	23.7 QP	46.0	-22.3	2.00 H	61	36.3	-12.6
6	722.42	26.7 QP	46.0	-19.3	1.00 H	127	34.7	-8.0

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.

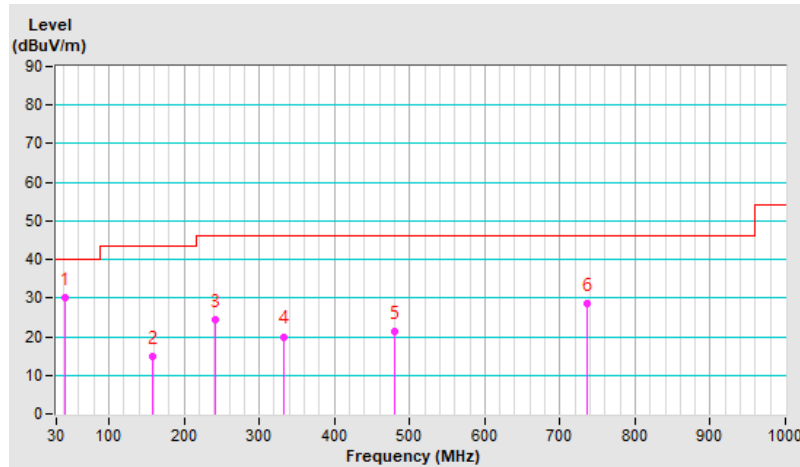


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	20°C, 61% RH
Tested By	Clark Lo		

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	40.82	30.2 QP	40.0	-9.8	1.00 V	204	48.2	-18.0
2	158.73	15.0 QP	43.5	-28.5	1.00 V	300	32.4	-17.4
3	242.10	24.3 QP	46.0	-21.7	2.00 V	341	43.4	-19.1
4	331.73	20.0 QP	46.0	-26.0	2.00 V	280	36.1	-16.1
5	480.78	21.5 QP	46.0	-24.5	1.00 V	289	34.0	-12.5
6	736.73	28.6 QP	46.0	-17.4	1.50 V	360	36.2	-7.6

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.



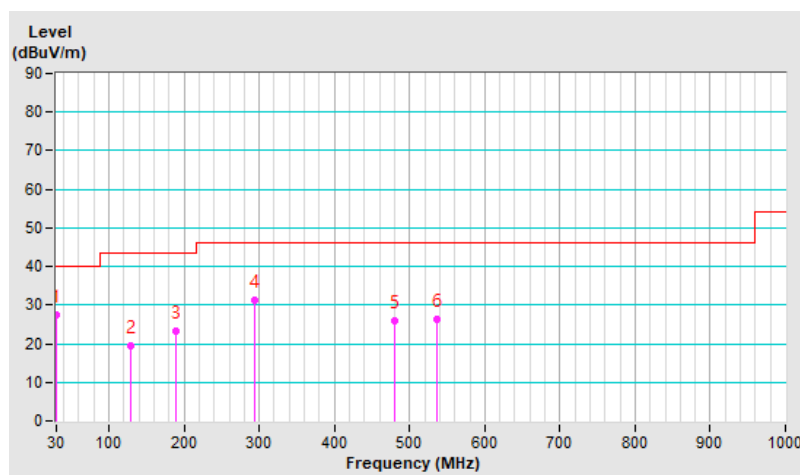
Mode B (SDIO interface using external antenna)

RF Mode	BT-LE 2M	Channel	CH 19 : 2440 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	20°C, 61% RH
Tested By	Clark Lo		

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	30.58	27.3 QP	40.0	-12.7	1.00 H	261	46.2	-18.9
2	129.24	19.3 QP	43.5	-24.2	1.50 H	275	38.3	-19.0
3	188.85	23.1 QP	43.5	-20.4	1.50 H	348	43.5	-20.4
4	292.93	31.3 QP	46.0	-14.7	1.50 H	1	48.5	-17.2
5	480.01	26.0 QP	46.0	-20.0	2.00 H	293	38.5	-12.5
6	535.98	26.2 QP	46.0	-19.8	1.50 H	293	37.8	-11.6

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.

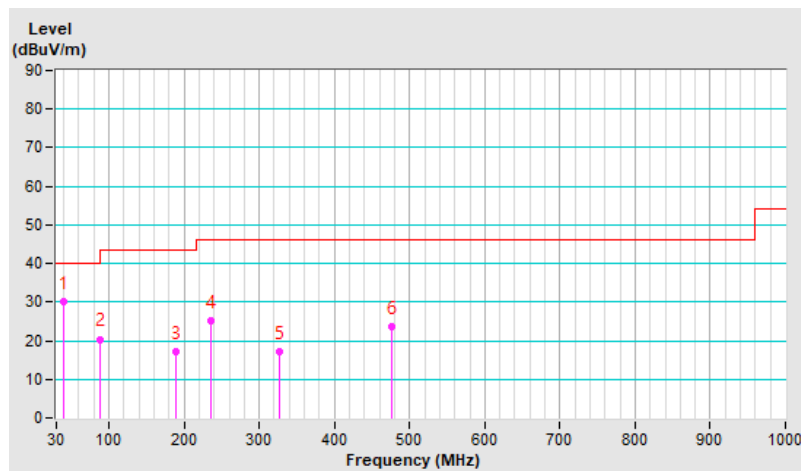


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	20°C, 61% RH
Tested By	Clark Lo		

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	40.19	30.2 QP	40.0	-9.8	1.00 V	239	48.3	-18.1
2	89.12	20.4 QP	43.5	-23.1	1.50 V	94	43.8	-23.4
3	188.55	17.1 QP	43.5	-26.4	1.00 V	149	37.4	-20.3
4	236.23	25.3 QP	46.0	-20.7	1.00 V	208	44.9	-19.6
5	326.88	17.1 QP	46.0	-28.9	2.00 V	273	33.3	-16.2
6	475.98	23.5 QP	46.0	-22.5	1.00 V	292	36.1	-12.6

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.



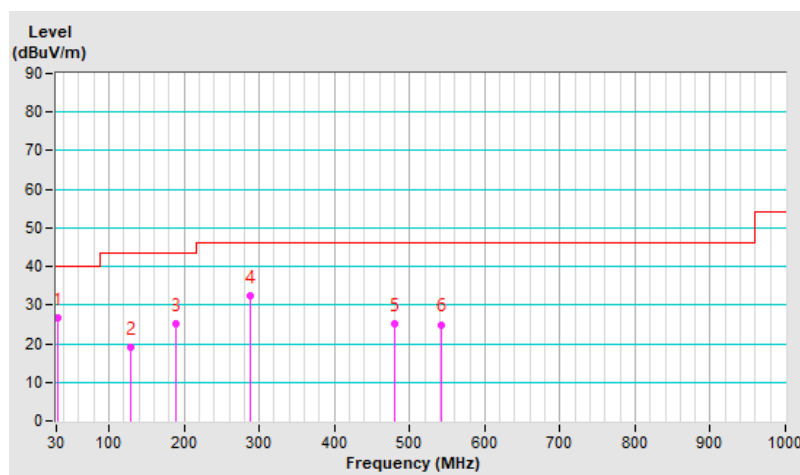
Mode C (USB interface using internal antenna)

RF Mode	BT-LE 2M	Channel	CH 19 : 2440 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	20°C, 61% RH
Tested By	Clark Lo		

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	31.07	26.5 QP	40.0	-13.5	1.00 H	113	45.5	-19.0
2	129.19	19.1 QP	43.5	-24.4	1.50 H	113	38.1	-19.0
3	188.89	25.2 QP	43.5	-18.3	1.50 H	339	45.6	-20.4
4	288.66	32.5 QP	46.0	-13.5	1.00 H	184	49.7	-17.2
5	479.18	25.1 QP	46.0	-20.9	2.00 H	275	37.7	-12.6
6	542.14	25.0 QP	46.0	-21.0	1.50 H	299	36.5	-11.5

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.

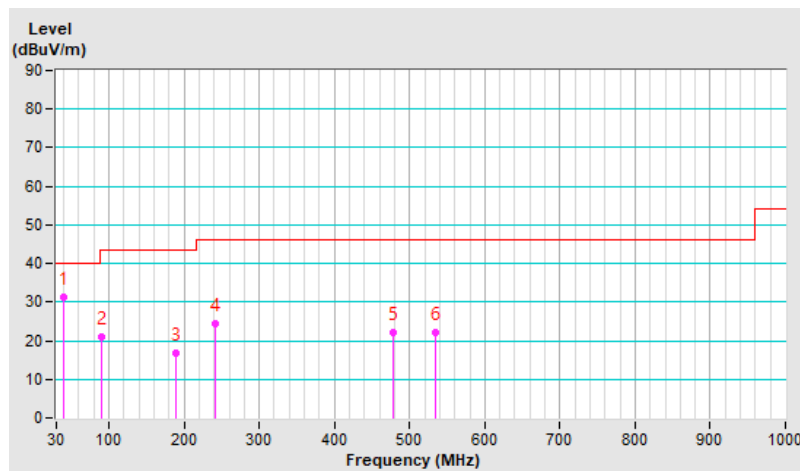


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	20°C, 61% RH
Tested By	Clark Lo		

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	40.48	31.1 QP	40.0	-8.9	1.50 V	323	49.1	-18.0
2	89.17	20.9 QP	43.5	-22.6	1.50 V	229	44.3	-23.4
3	188.60	16.8 QP	43.5	-26.7	2.00 V	360	37.1	-20.3
4	242.39	24.3 QP	46.0	-21.7	1.00 V	222	43.4	-19.1
5	478.36	22.0 QP	46.0	-24.0	1.00 V	298	34.6	-12.6
6	533.75	22.1 QP	46.0	-23.9	1.00 V	304	33.7	-11.6

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.



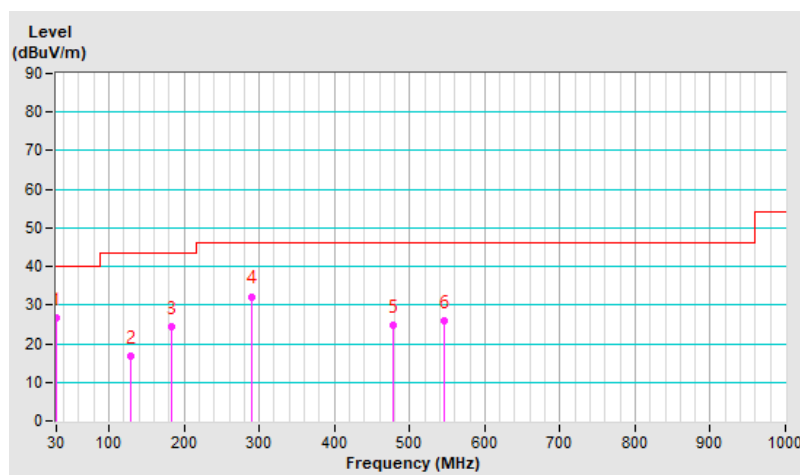
Mode D (USB interface using external antenna)

RF Mode	BT-LE 2M	Channel	CH 19 : 2440 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	20°C, 61% RH
Tested By	Clark Lo		

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	30.63	26.5 QP	40.0	-13.5	1.00 H	360	45.5	-19.0
2	129.28	16.8 QP	43.5	-26.7	2.00 H	86	35.8	-19.0
3	182.83	24.4 QP	43.5	-19.1	1.50 H	6	44.0	-19.6
4	289.97	32.2 QP	46.0	-13.8	1.50 H	1	49.4	-17.2
5	477.58	24.8 QP	46.0	-21.2	2.00 H	112	37.4	-12.6
6	545.29	26.0 QP	46.0	-20.0	1.50 H	303	37.4	-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 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.

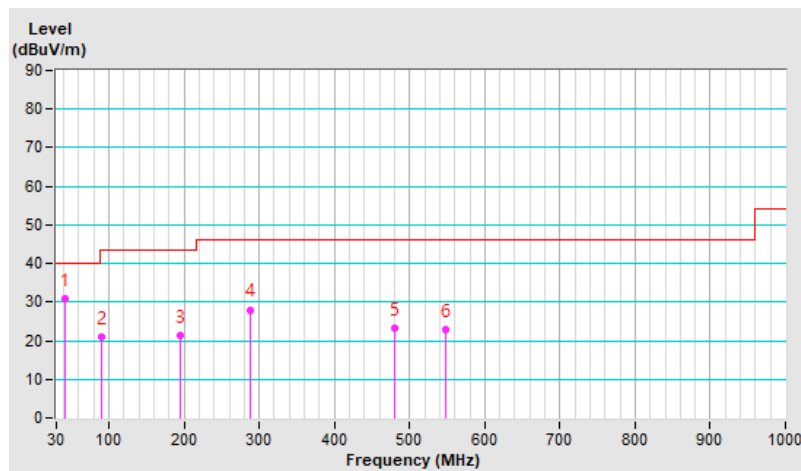


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	20°C, 61% RH
Tested By	Clark Lo		

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	41.59	31.0 QP	40.0	-9.0	1.00 V	244	48.9	-17.9
2	89.17	20.9 QP	43.5	-22.6	1.50 V	199	44.3	-23.4
3	194.52	21.2 QP	43.5	-22.3	1.50 V	132	42.0	-20.8
4	288.71	28.0 QP	46.0	-18.0	1.50 V	185	45.2	-17.2
5	479.18	23.2 QP	46.0	-22.8	2.00 V	248	35.8	-12.6
6	548.73	22.7 QP	46.0	-23.3	1.00 V	360	34.1	-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 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

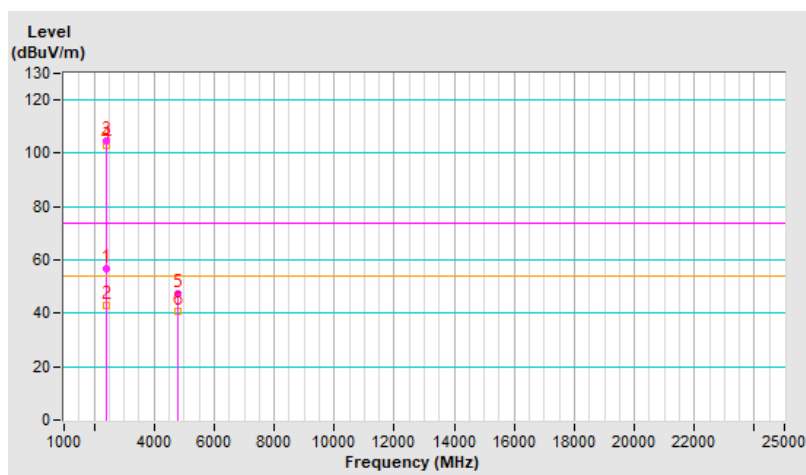
Mode C (USB interface using internal antenna)

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=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% 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	2390.00	56.9 PK	74.0	-17.1	1.00 H	145	59.7	-2.8
2	2390.00	43.1 AV	54.0	-10.9	1.00 H	145	45.9	-2.8
3	*2402.00	104.6 PK			1.00 H	145	107.5	-2.9
4	*2402.00	103.1 AV			1.00 H	145	106.0	-2.9
5	4804.00	47.2 PK	74.0	-26.8	1.50 H	148	44.9	2.3
6	4804.00	40.5 AV	54.0	-13.5	1.50 H	148	38.2	2.3

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

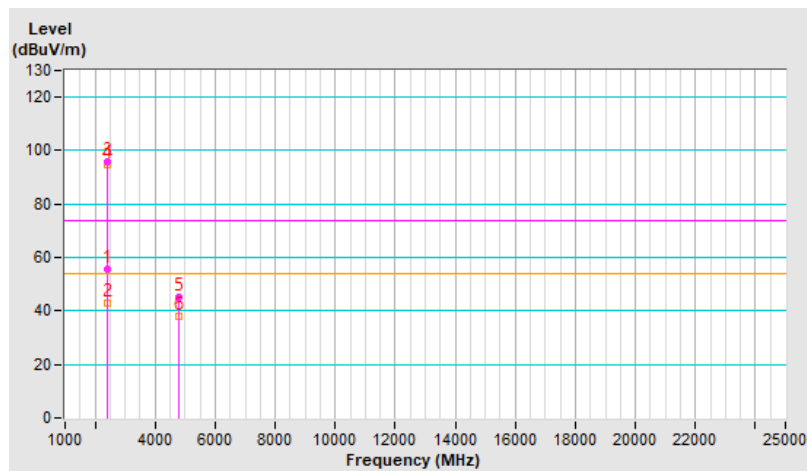


RF Mode	BT-LE 1M	Channel	CH 0 : 2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	2390.00	55.7 PK	74.0	-18.3	1.21 V	206	58.5	-2.8
2	2390.00	42.9 AV	54.0	-11.1	1.21 V	206	45.7	-2.8
3	*2402.00	95.6 PK			1.21 V	206	98.5	-2.9
4	*2402.00	94.5 AV			1.21 V	206	97.4	-2.9
5	4804.00	45.3 PK	74.0	-28.7	3.72 V	77	43.0	2.3
6	4804.00	38.2 AV	54.0	-15.8	3.72 V	77	35.9	2.3

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

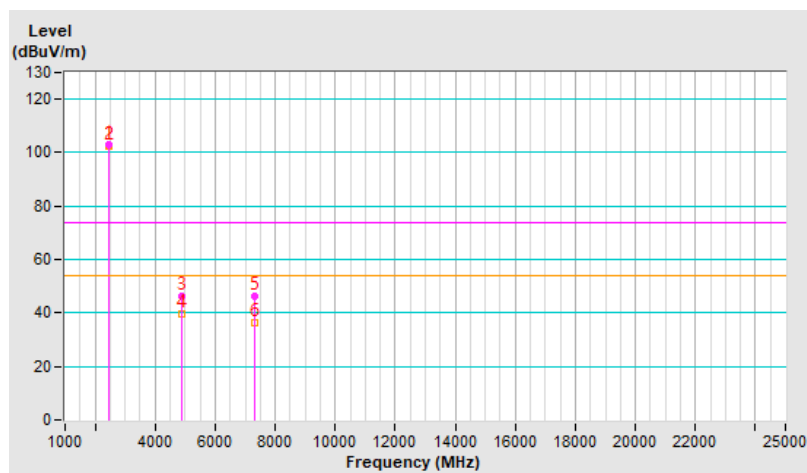


RF Mode	BT-LE 1M	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	103.2 PK			1.04 H	133	106.0	-2.8
2	*2440.00	102.2 AV			1.04 H	133	105.0	-2.8
3	4880.00	46.5 PK	74.0	-27.5	1.01 H	148	44.3	2.2
4	4880.00	39.4 AV	54.0	-14.6	1.01 H	148	37.2	2.2
5	7320.00	46.4 PK	74.0	-27.6	1.04 H	157	38.6	7.8
6	7320.00	36.5 AV	54.0	-17.5	1.04 H	157	28.7	7.8

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.

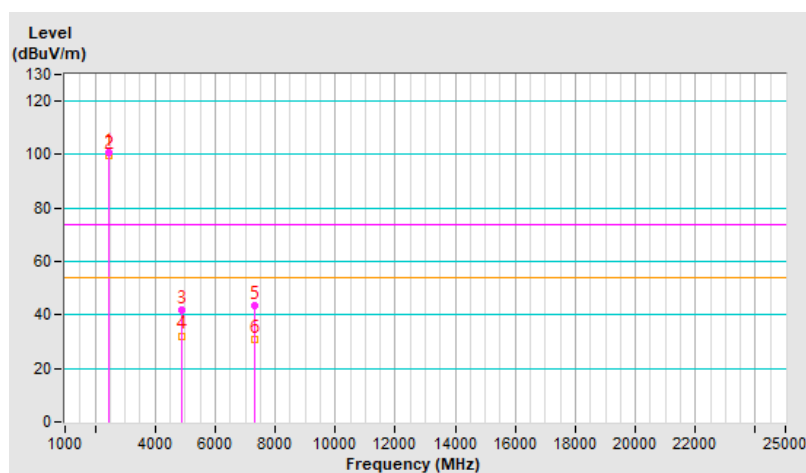


RF Mode	BT-LE 1M	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	*2440.00	100.8 PK			1.12 V	159	103.6	-2.8
2	*2440.00	99.7 AV			1.12 V	159	102.5	-2.8
3	4880.00	41.6 PK	74.0	-32.4	1.68 V	198	39.4	2.2
4	4880.00	32.2 AV	54.0	-21.8	1.68 V	198	30.0	2.2
5	7320.00	43.7 PK	74.0	-30.3	1.47 V	165	35.9	7.8
6	7320.00	30.6 AV	54.0	-23.4	1.47 V	165	22.8	7.8

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.

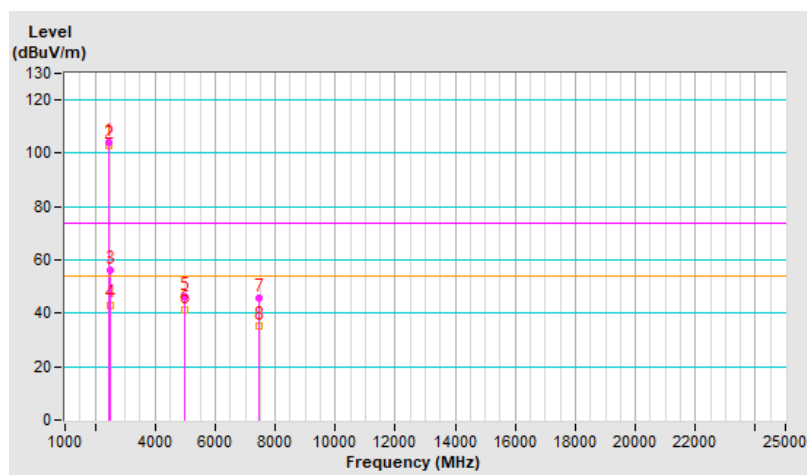


RF Mode	BT-LE 1M	Channel	CH 39 : 2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	103.9 PK			2.59 H	317	106.6	-2.7
2	*2480.00	102.8 AV			2.59 H	317	105.5	-2.7
3	2483.50	56.0 PK	74.0	-18.0	2.59 H	317	58.7	-2.7
4	2483.50	43.2 AV	54.0	-10.8	2.59 H	317	45.9	-2.7
5	4960.00	46.4 PK	74.0	-27.6	1.04 H	150	44.1	2.3
6	4960.00	41.1 AV	54.0	-12.9	1.04 H	150	38.8	2.3
7	7440.00	45.9 PK	74.0	-28.1	1.06 H	158	38.1	7.8
8	7440.00	35.1 AV	54.0	-18.9	1.06 H	158	27.3	7.8

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.

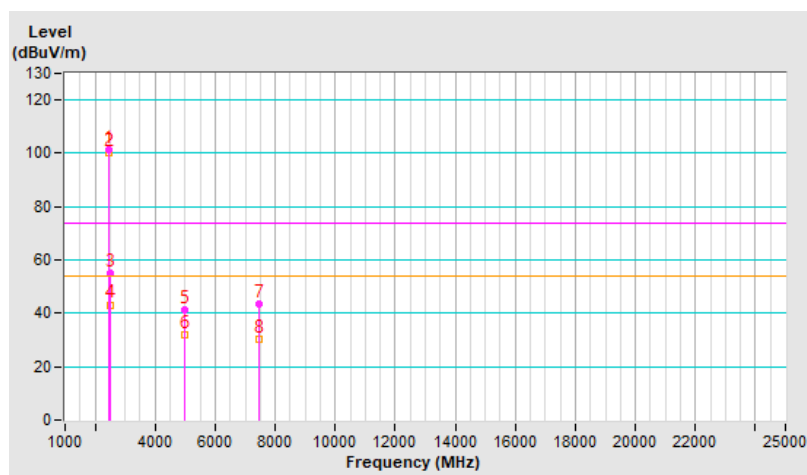


RF Mode	BT-LE 1M	Channel	CH 39 : 2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	*2480.00	101.2 PK			3.97 V	24	103.9	-2.7
2	*2480.00	100.2 AV			3.97 V	24	102.9	-2.7
3	2483.50	55.2 PK	74.0	-18.8	3.97 V	24	57.9	-2.7
4	2483.50	43.2 AV	54.0	-10.8	3.97 V	24	45.9	-2.7
5	4960.00	41.2 PK	74.0	-32.8	1.01 V	225	38.9	2.3
6	4960.00	31.8 AV	54.0	-22.2	1.01 V	225	29.5	2.3
7	7440.00	43.5 PK	74.0	-30.5	1.49 V	139	35.7	7.8
8	7440.00	30.2 AV	54.0	-23.8	1.49 V	139	22.4	7.8

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.

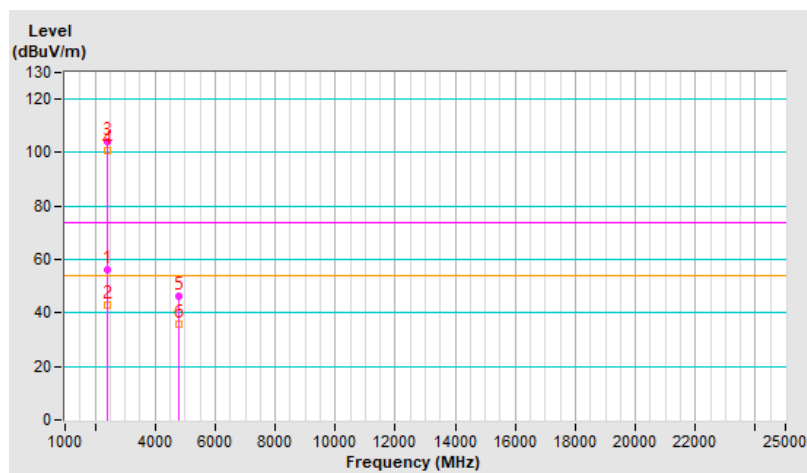


RF Mode	BT-LE 2M	Channel	CH 1 : 2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	2390.00	56.0 PK	74.0	-18.0	1.47 H	284	58.8	-2.8
2	2390.00	42.8 AV	54.0	-11.2	1.47 H	284	45.6	-2.8
3	*2404.00	104.1 PK			1.47 H	284	107.0	-2.9
4	*2404.00	101.0 AV			1.47 H	284	103.9	-2.9
5	4808.00	46.4 PK	74.0	-27.6	1.03 H	162	44.1	2.3
6	4808.00	35.8 AV	54.0	-18.2	1.03 H	162	33.5	2.3

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

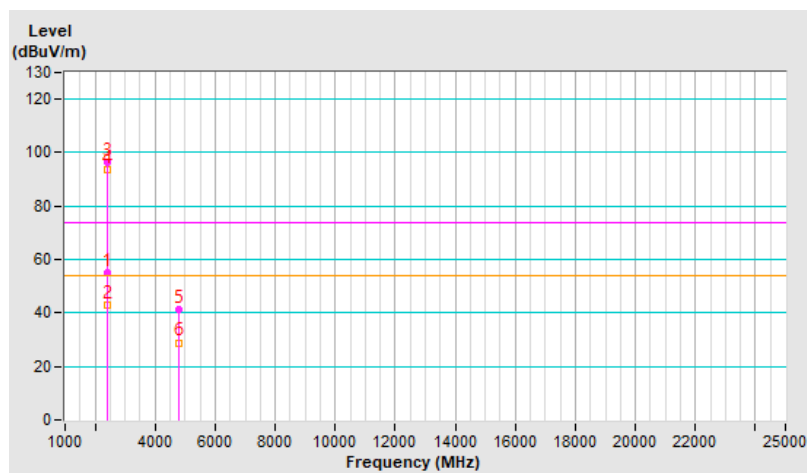


RF Mode	BT-LE 2M	Channel	CH 1 : 2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	2390.00	55.3 PK	74.0	-18.7	1.22 V	208	58.1	-2.8
2	2390.00	42.8 AV	54.0	-11.2	1.22 V	208	45.6	-2.8
3	*2404.00	96.6 PK			1.22 V	208	99.5	-2.9
4	*2404.00	93.5 AV			1.22 V	208	96.4	-2.9
5	4808.00	41.5 PK	74.0	-32.5	1.12 V	177	39.2	2.3
6	4808.00	28.9 AV	54.0	-25.1	1.12 V	177	26.6	2.3

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

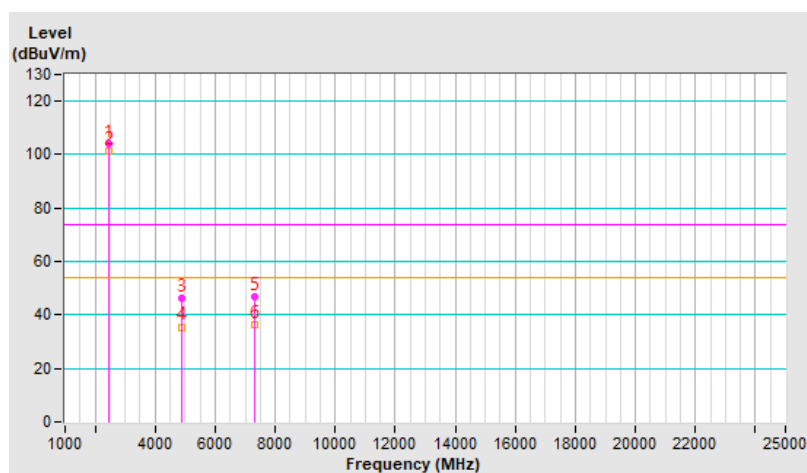


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	104.2 PK			1.04 H	134	107.0	-2.8
2	*2440.00	101.1 AV			1.04 H	134	103.9	-2.8
3	4880.00	46.2 PK	74.0	-27.8	1.00 H	146	44.0	2.2
4	4880.00	35.5 AV	54.0	-18.5	1.00 H	146	33.3	2.2
5	7320.00	47.0 PK	74.0	-27.0	1.08 H	159	39.2	7.8
6	7320.00	36.5 AV	54.0	-17.5	1.08 H	159	28.7	7.8

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.

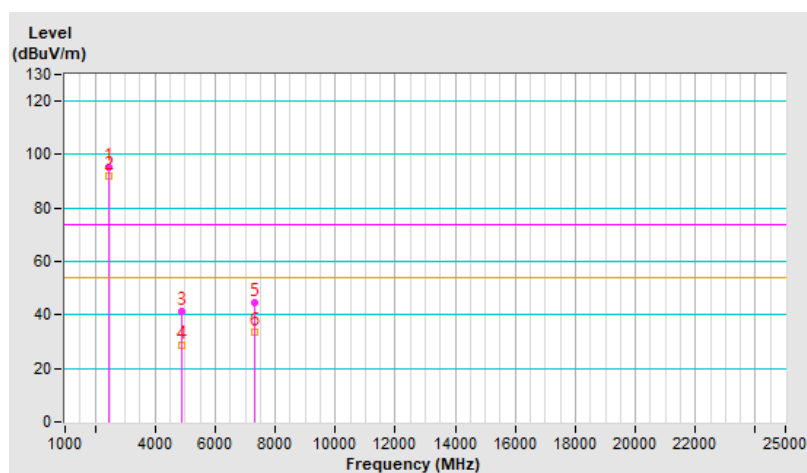


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	*2440.00	95.1 PK			1.67 V	179	97.9	-2.8
2	*2440.00	92.1 AV			1.67 V	179	94.9	-2.8
3	4880.00	41.2 PK	74.0	-32.8	1.06 V	176	39.0	2.2
4	4880.00	28.8 AV	54.0	-25.2	1.06 V	176	26.6	2.2
5	7320.00	44.8 PK	74.0	-29.2	4.00 V	42	37.0	7.8
6	7320.00	33.5 AV	54.0	-20.5	4.00 V	42	25.7	7.8

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.

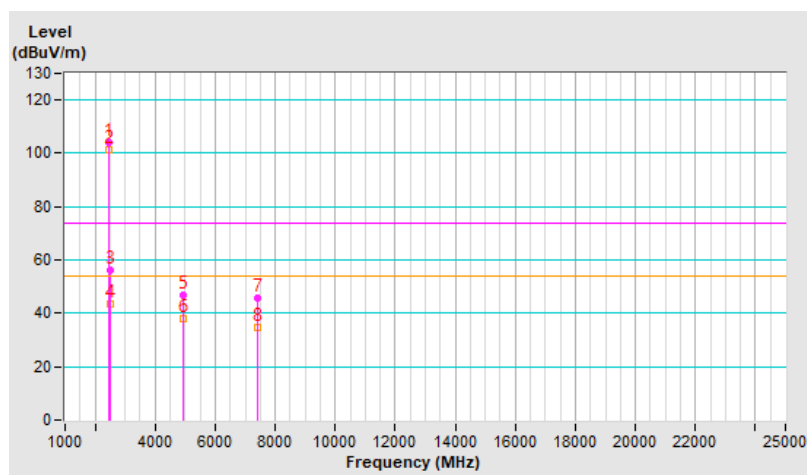


RF Mode	BT-LE 2M	Channel	CH 38 : 2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	104.3 PK			2.59 H	315	107.0	-2.7
2	*2478.00	101.1 AV			2.59 H	315	103.8	-2.7
3	2483.50	56.0 PK	74.0	-18.0	2.59 H	315	58.7	-2.7
4	2483.50	43.5 AV	54.0	-10.5	2.59 H	315	46.2	-2.7
5	4956.00	46.6 PK	74.0	-27.4	1.03 H	151	44.3	2.3
6	4956.00	37.9 AV	54.0	-16.1	1.03 H	151	35.6	2.3
7	7434.00	45.9 PK	74.0	-28.1	1.01 H	160	38.1	7.8
8	7434.00	34.7 AV	54.0	-19.3	1.01 H	160	26.9	7.8

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.

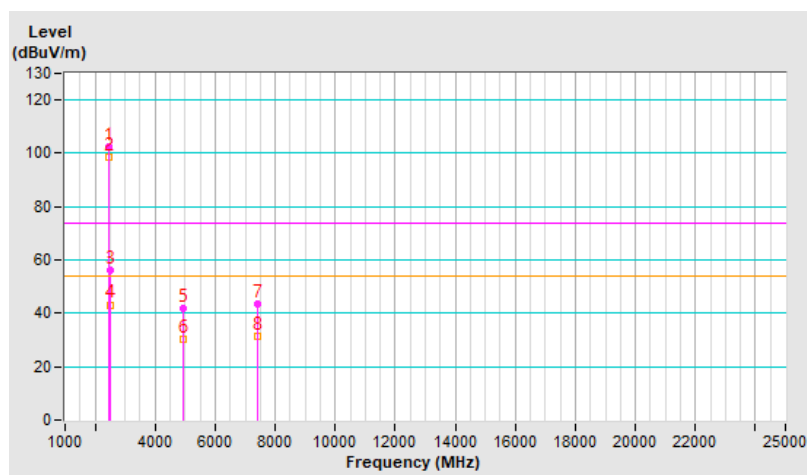


RF Mode	BT-LE 2M	Channel	CH 38 : 2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	*2478.00	102.2 PK			3.98 V	24	104.9	-2.7
2	*2478.00	98.4 AV			3.98 V	24	101.1	-2.7
3	2483.50	56.0 PK	74.0	-18.0	3.98 V	24	58.7	-2.7
4	2483.50	43.2 AV	54.0	-10.8	3.98 V	24	45.9	-2.7
5	4956.00	41.6 PK	74.0	-32.4	1.02 V	182	39.3	2.3
6	4956.00	30.2 AV	54.0	-23.8	1.02 V	182	27.9	2.3
7	7434.00	43.6 PK	74.0	-30.4	3.78 V	59	35.8	7.8
8	7434.00	31.5 AV	54.0	-22.5	3.78 V	59	23.7	7.8

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.



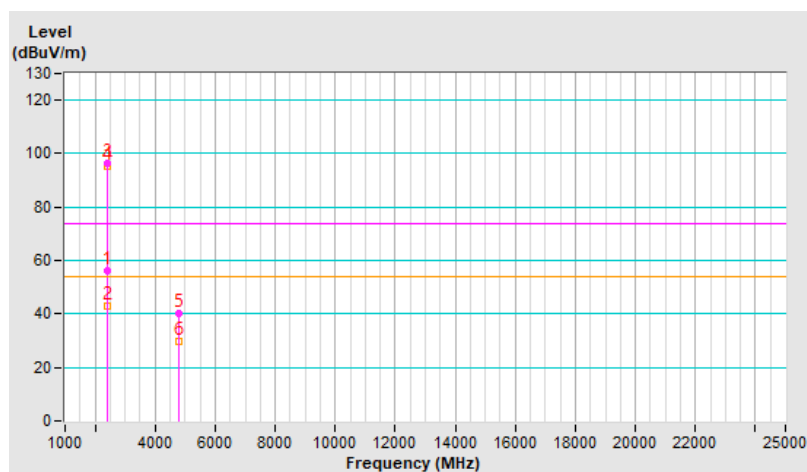
Mode D (USB interface using external antenna)

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=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% 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	2390.00	56.1 PK	74.0	-17.9	1.04 H	201	58.9	-2.8
2	2390.00	42.7 AV	54.0	-11.3	1.04 H	201	45.5	-2.8
3	*2402.00	96.5 PK			1.04 H	201	99.4	-2.9
4	*2402.00	95.5 AV			1.04 H	201	98.4	-2.9
5	4804.00	40.4 PK	74.0	-33.6	2.46 H	20	38.1	2.3
6	4804.00	29.6 AV	54.0	-24.4	2.46 H	20	27.3	2.3

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

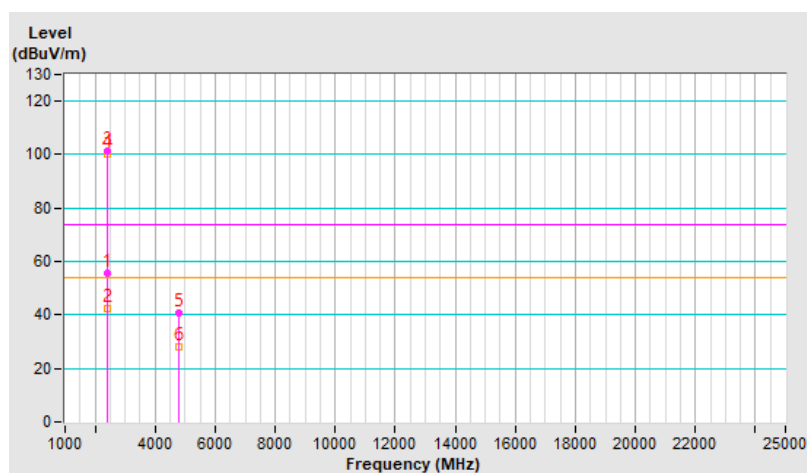


RF Mode	BT-LE 1M	Channel	CH 0 : 2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	2390.00	55.8 PK	74.0	-18.2	1.21 V	44	58.6	-2.8
2	2390.00	42.6 AV	54.0	-11.4	1.21 V	44	45.4	-2.8
3	*2402.00	101.1 PK			1.21 V	44	104.0	-2.9
4	*2402.00	100.0 AV			1.21 V	44	102.9	-2.9
5	4804.00	40.5 PK	74.0	-33.5	2.26 V	118	38.2	2.3
6	4804.00	28.3 AV	54.0	-25.7	2.26 V	118	26.0	2.3

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

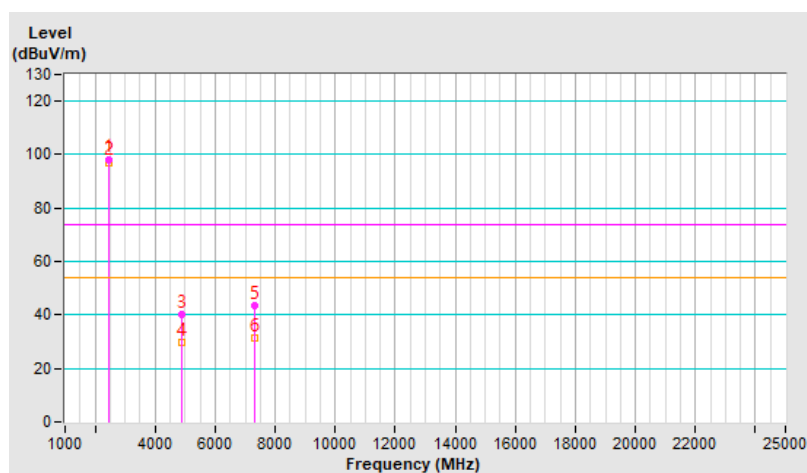


RF Mode	BT-LE 1M	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	98.3 PK			3.75 H	201	101.1	-2.8
2	*2440.00	97.2 AV			3.75 H	201	100.0	-2.8
3	4880.00	40.3 PK	74.0	-33.7	2.45 H	34	38.1	2.2
4	4880.00	29.8 AV	54.0	-24.2	2.45 H	34	27.6	2.2
5	7320.00	43.5 PK	74.0	-30.5	1.12 H	356	35.7	7.8
6	7320.00	31.2 AV	54.0	-22.8	1.12 H	356	23.4	7.8

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.

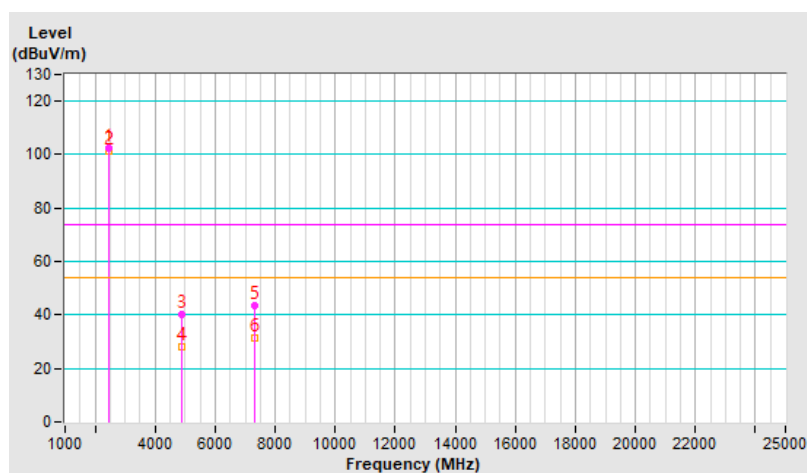


RF Mode	BT-LE 1M	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	*2440.00	102.2 PK			1.41 V	169	105.0	-2.8
2	*2440.00	101.1 AV			1.41 V	169	103.9	-2.8
3	4880.00	40.1 PK	74.0	-33.9	2.32 V	134	37.9	2.2
4	4880.00	28.2 AV	54.0	-25.8	2.32 V	134	26.0	2.2
5	7320.00	43.3 PK	74.0	-30.7	1.25 V	276	35.5	7.8
6	7320.00	31.3 AV	54.0	-22.7	1.25 V	276	23.5	7.8

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.

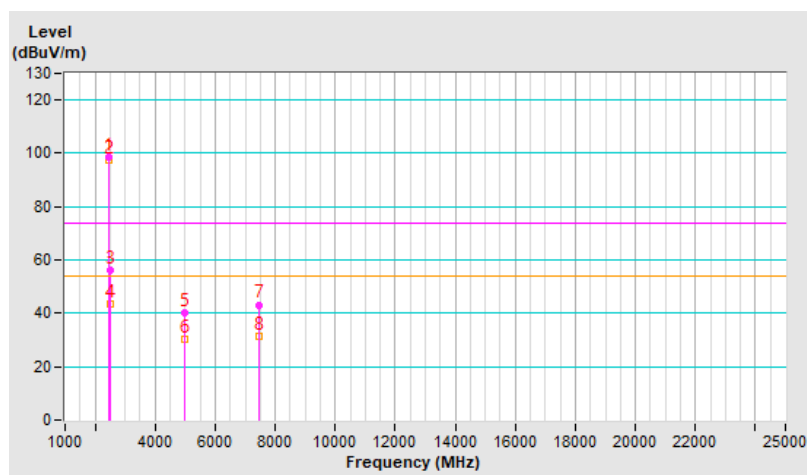


RF Mode	BT-LE 1M	Channel	CH 39 : 2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	98.7 PK			3.84 H	183	101.4	-2.7
2	*2480.00	97.5 AV			3.84 H	183	100.2	-2.7
3	2483.50	56.1 PK	74.0	-17.9	3.84 H	183	58.8	-2.7
4	2483.50	43.4 AV	54.0	-10.6	3.84 H	183	46.1	-2.7
5	4960.00	40.2 PK	74.0	-33.8	1.52 H	34	37.9	2.3
6	4960.00	30.1 AV	54.0	-23.9	1.52 H	34	27.8	2.3
7	7440.00	43.2 PK	74.0	-30.8	1.01 H	332	35.4	7.8
8	7440.00	31.5 AV	54.0	-22.5	1.01 H	332	23.7	7.8

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.

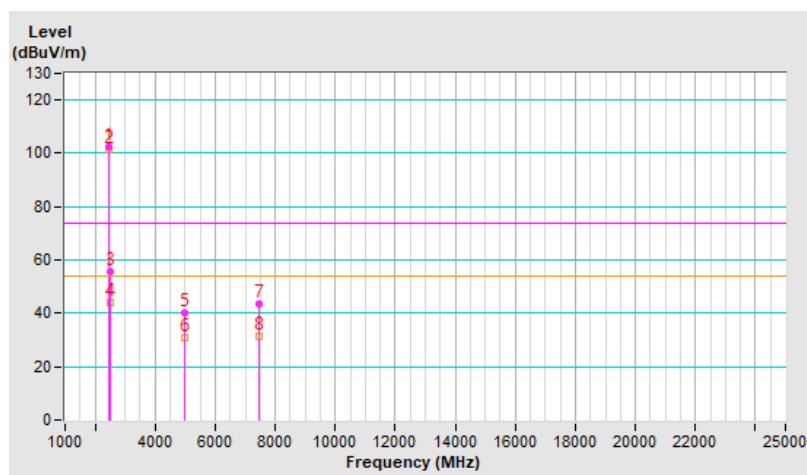


RF Mode	BT-LE 1M	Channel	CH 39 : 2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	*2480.00	102.6 PK			1.40 V	142	105.3	-2.7
2	*2480.00	101.5 AV			1.40 V	142	104.2	-2.7
3	2483.50	55.8 PK	74.0	-18.2	1.40 V	142	58.5	-2.7
4	2483.50	43.8 AV	54.0	-10.2	1.40 V	142	46.5	-2.7
5	4960.00	40.4 PK	74.0	-33.6	1.56 V	304	38.1	2.3
6	4960.00	30.6 AV	54.0	-23.4	1.56 V	304	28.3	2.3
7	7440.00	43.6 PK	74.0	-30.4	1.02 V	286	35.8	7.8
8	7440.00	31.4 AV	54.0	-22.6	1.02 V	286	23.6	7.8

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.

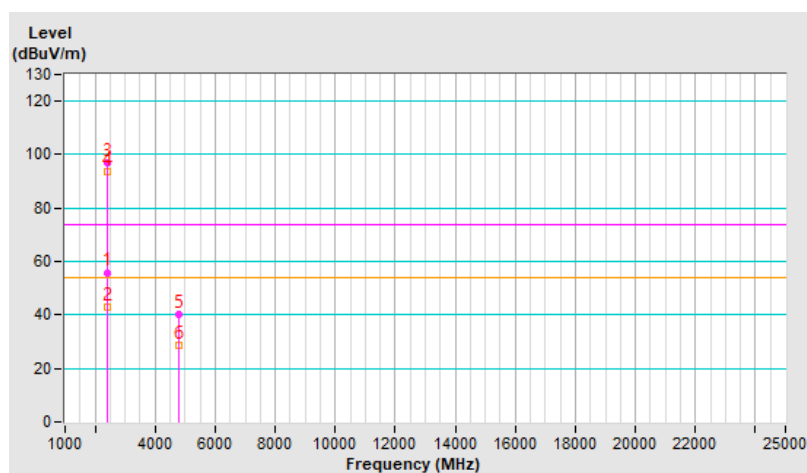


RF Mode	BT-LE 2M	Channel	CH 1 : 2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	2390.00	55.9 PK	74.0	-18.1	1.03 H	201	58.7	-2.8
2	2390.00	42.9 AV	54.0	-11.1	1.03 H	201	45.7	-2.8
3	*2404.00	96.9 PK			1.03 H	201	99.8	-2.9
4	*2404.00	93.8 AV			1.03 H	201	96.7	-2.9
5	4808.00	40.2 PK	74.0	-33.8	1.02 H	42	37.9	2.3
6	4808.00	28.7 AV	54.0	-25.3	1.02 H	42	26.4	2.3

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

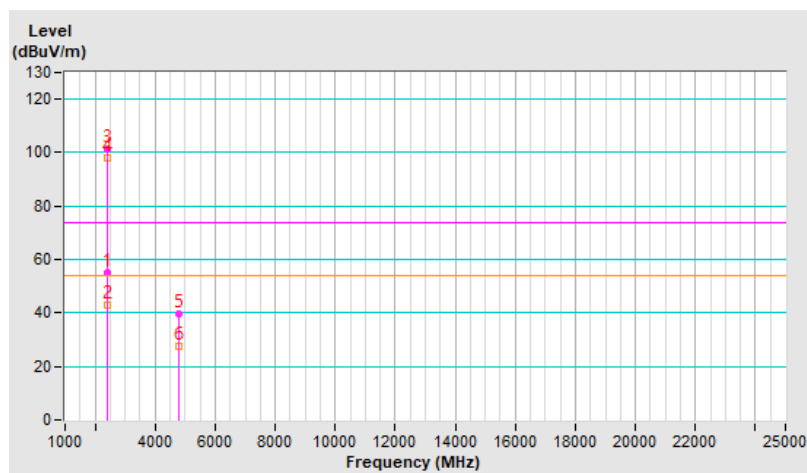


RF Mode	BT-LE 2M	Channel	CH 1 : 2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	2390.00	55.2 PK	74.0	-18.8	1.20 V	360	58.0	-2.8
2	2390.00	42.9 AV	54.0	-11.1	1.20 V	360	45.7	-2.8
3	*2404.00	101.2 PK			1.20 V	360	104.1	-2.9
4	*2404.00	98.2 AV			1.20 V	360	101.1	-2.9
5	4808.00	39.8 PK	74.0	-34.2	1.71 V	301	37.5	2.3
6	4808.00	27.4 AV	54.0	-26.6	1.71 V	301	25.1	2.3

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

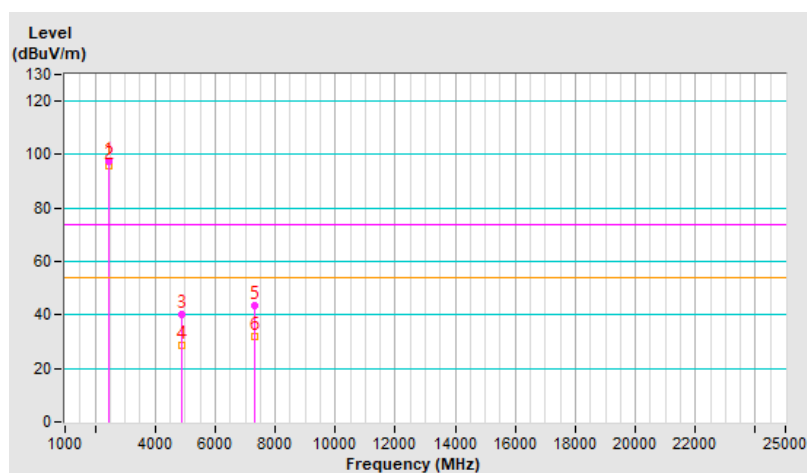


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	97.4 PK			1.08 H	213	100.2	-2.8
2	*2440.00	95.8 AV			1.08 H	213	98.6	-2.8
3	4880.00	40.4 PK	74.0	-33.6	1.00 H	40	38.2	2.2
4	4880.00	28.8 AV	54.0	-25.2	1.00 H	40	26.6	2.2
5	7320.00	43.4 PK	74.0	-30.6	1.51 H	360	35.6	7.8
6	7320.00	31.7 AV	54.0	-22.3	1.51 H	360	23.9	7.8

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.

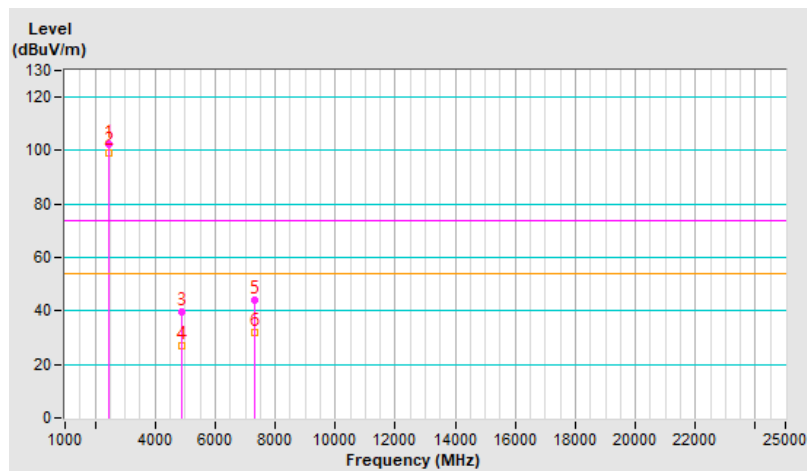


RF Mode	BT-LE 2M	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	*2440.00	102.6 PK			1.39 V	170	105.4	-2.8
2	*2440.00	99.4 AV			1.39 V	170	102.2	-2.8
3	4880.00	39.7 PK	74.0	-34.3	1.76 V	304	37.5	2.2
4	4880.00	27.2 AV	54.0	-26.8	1.76 V	304	25.0	2.2
5	7320.00	43.9 PK	74.0	-30.1	1.01 V	238	36.1	7.8
6	7320.00	31.8 AV	54.0	-22.2	1.01 V	238	24.0	7.8

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.

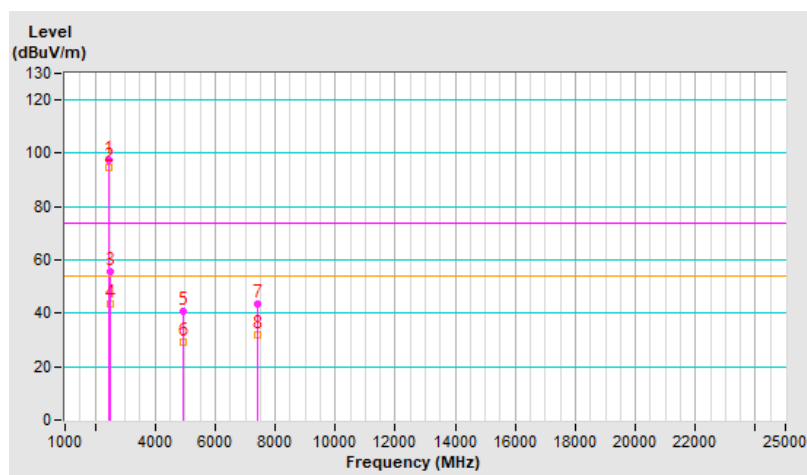


RF Mode	BT-LE 2M	Channel	CH 38 : 2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	97.7 PK			1.11 H	203	100.4	-2.7
2	*2478.00	94.6 AV			1.11 H	203	97.3	-2.7
3	2483.50	55.7 PK	74.0	-18.3	1.11 H	203	58.4	-2.7
4	2483.50	43.3 AV	54.0	-10.7	1.11 H	203	46.0	-2.7
5	4956.00	40.6 PK	74.0	-33.4	1.00 H	33	38.3	2.3
6	4956.00	29.4 AV	54.0	-24.6	1.00 H	33	27.1	2.3
7	7434.00	43.6 PK	74.0	-30.4	1.45 H	360	35.8	7.8
8	7434.00	31.8 AV	54.0	-22.2	1.45 H	360	24.0	7.8

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.

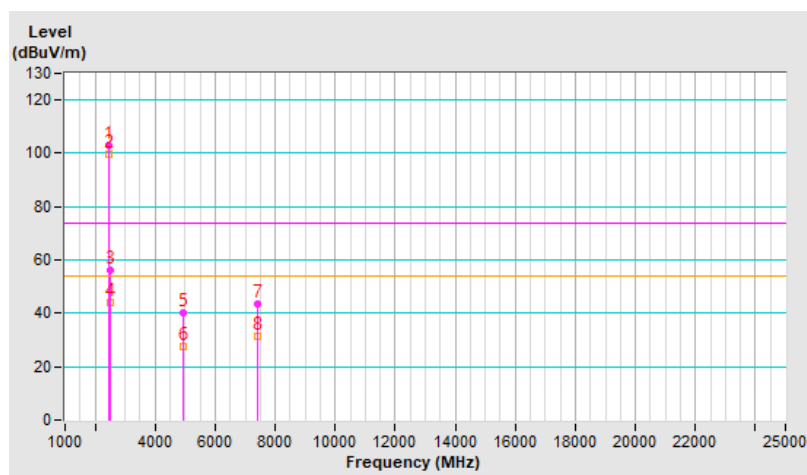


RF Mode	BT-LE 2M	Channel	CH 38 : 2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 69% RH
Tested By	Louis Yang		

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	*2478.00	102.8 PK			1.41 V	141	105.5	-2.7
2	*2478.00	99.7 AV			1.41 V	141	102.4	-2.7
3	2483.50	56.3 PK	74.0	-17.7	1.41 V	141	59.0	-2.7
4	2483.50	43.8 AV	54.0	-10.2	1.41 V	141	46.5	-2.7
5	4956.00	40.3 PK	74.0	-33.7	1.79 V	319	38.0	2.3
6	4956.00	27.7 AV	54.0	-26.3	1.79 V	319	25.4	2.3
7	7434.00	43.5 PK	74.0	-30.5	1.00 V	247	35.7	7.8
8	7434.00	31.6 AV	54.0	-22.4	1.00 V	247	23.8	7.8

Remarks:

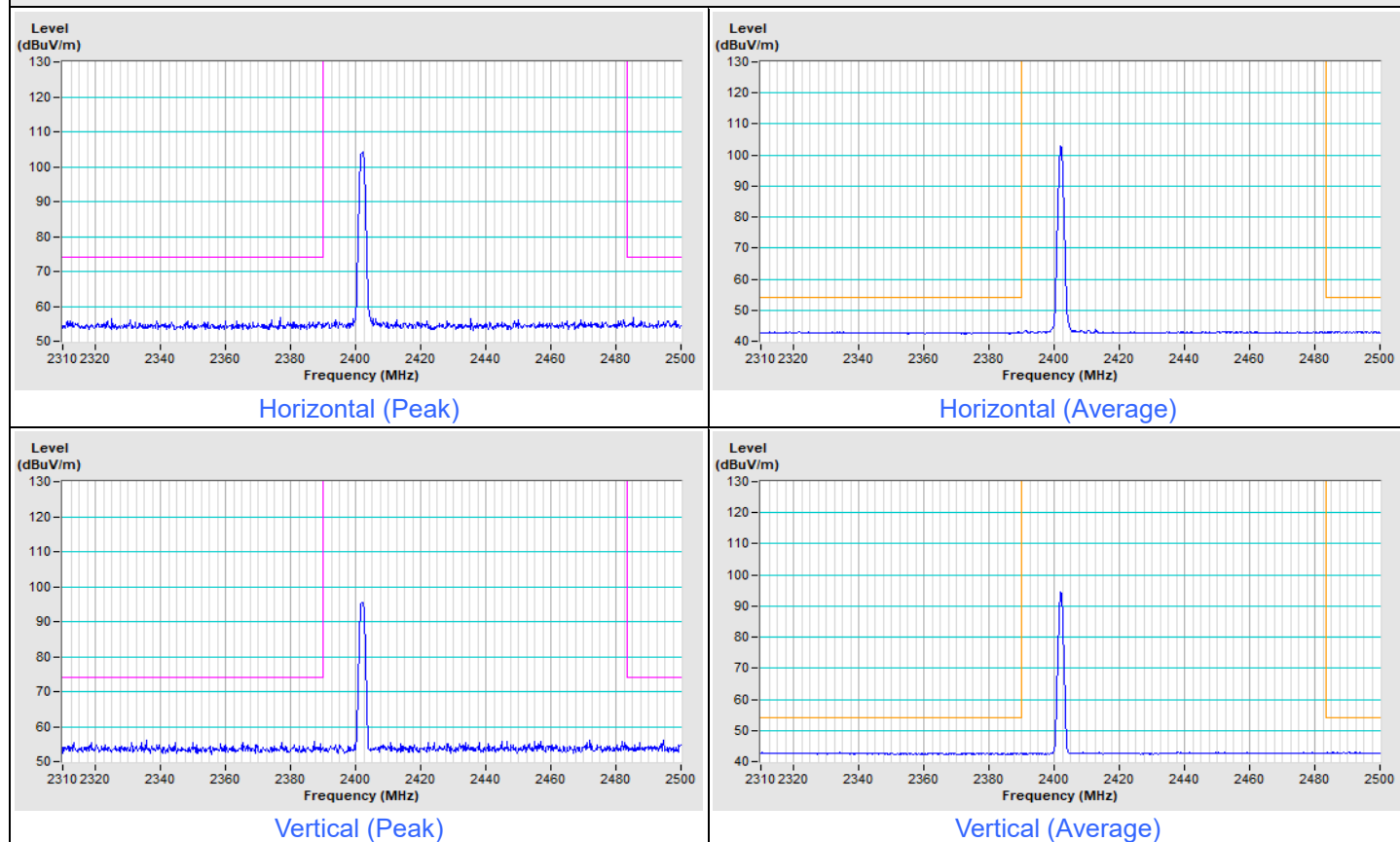
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

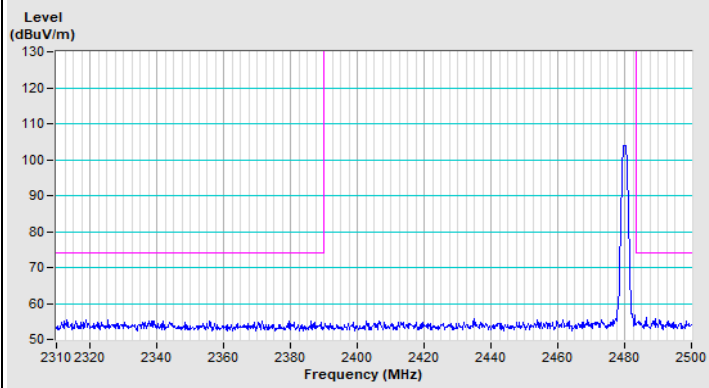


Plot of Band Edge
Mode C (USB interface using internal antenna)

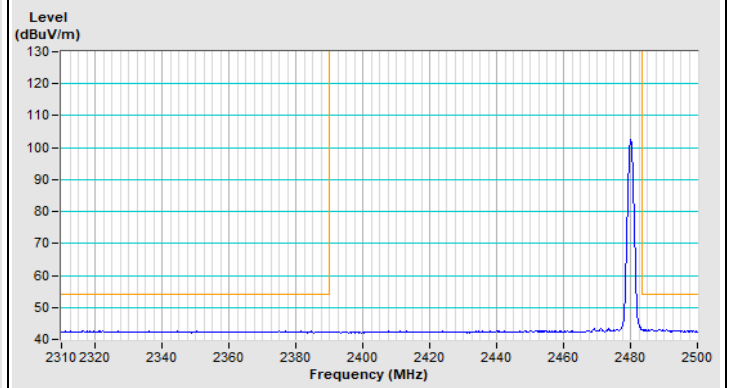
Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
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BT-LE 1M Channel 0

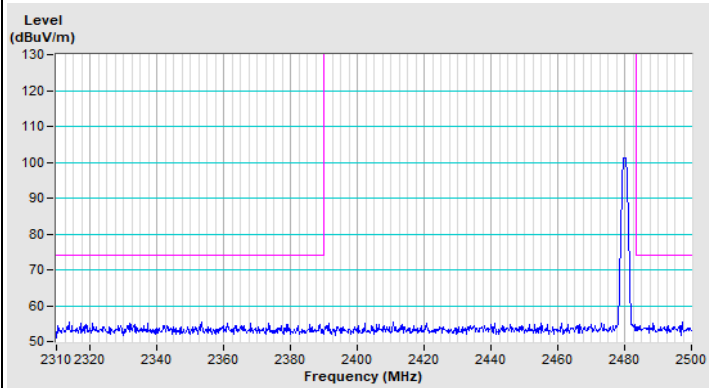


BT-LE 1M Channel 39

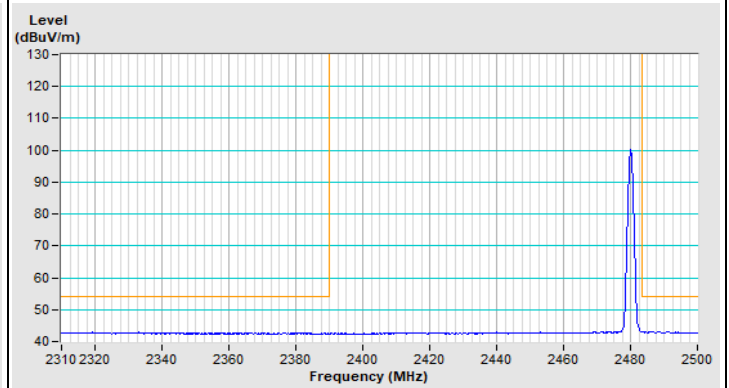
Horizontal (Peak)



Horizontal (Average)



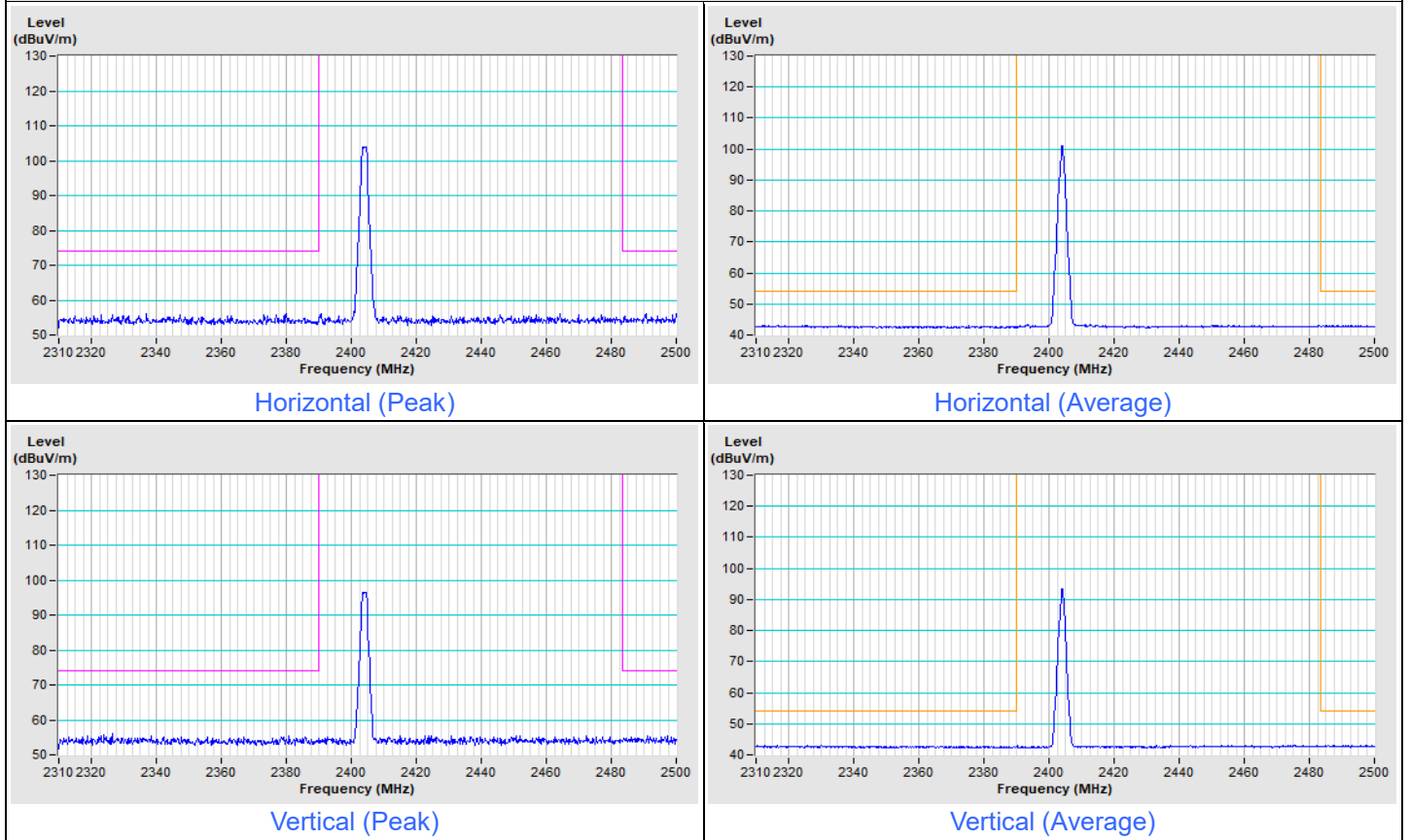
Vertical (Peak)



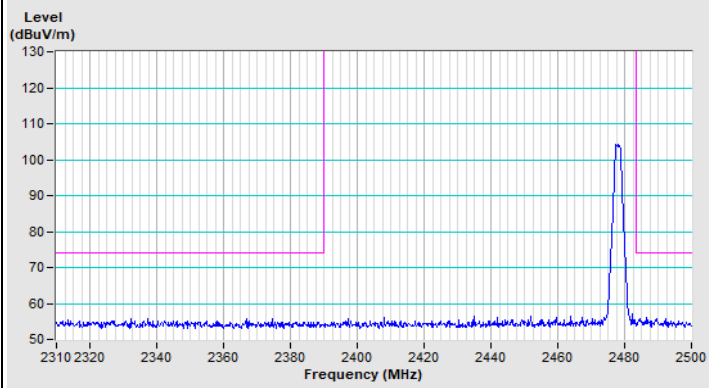
Vertical (Average)

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=1 kHz, DET=Peak
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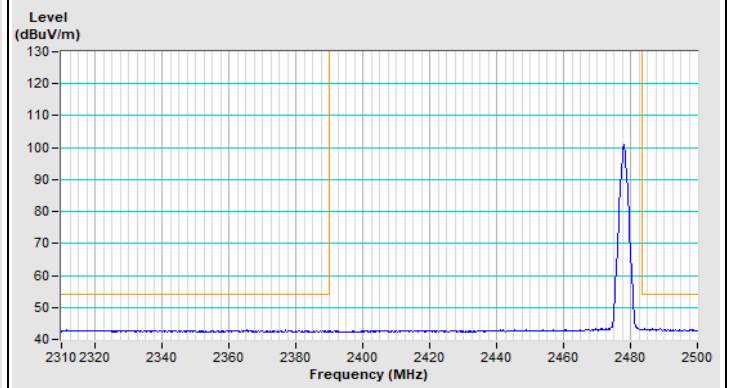
BT-LE 2M Channel 1



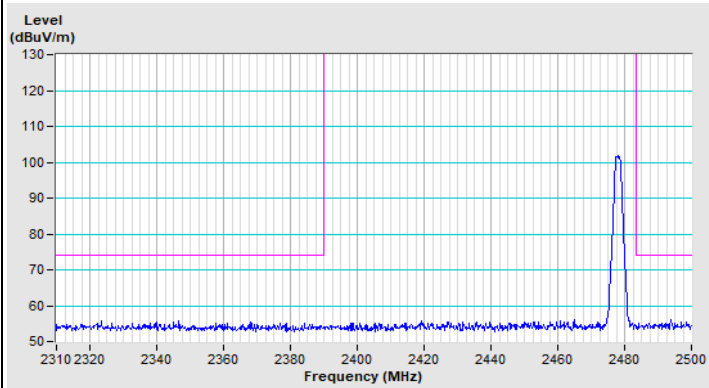
BT-LE 2M Channel 38



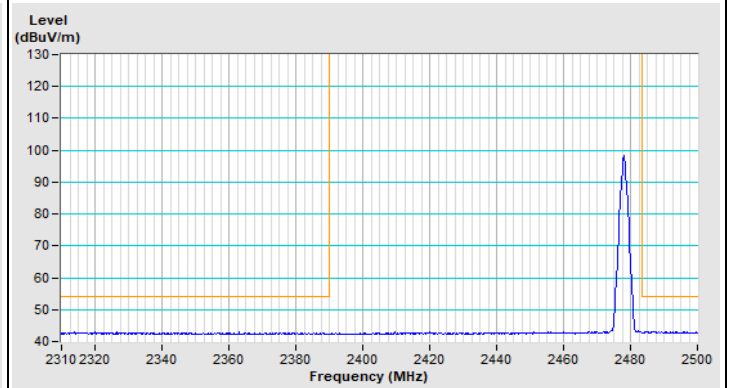
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)

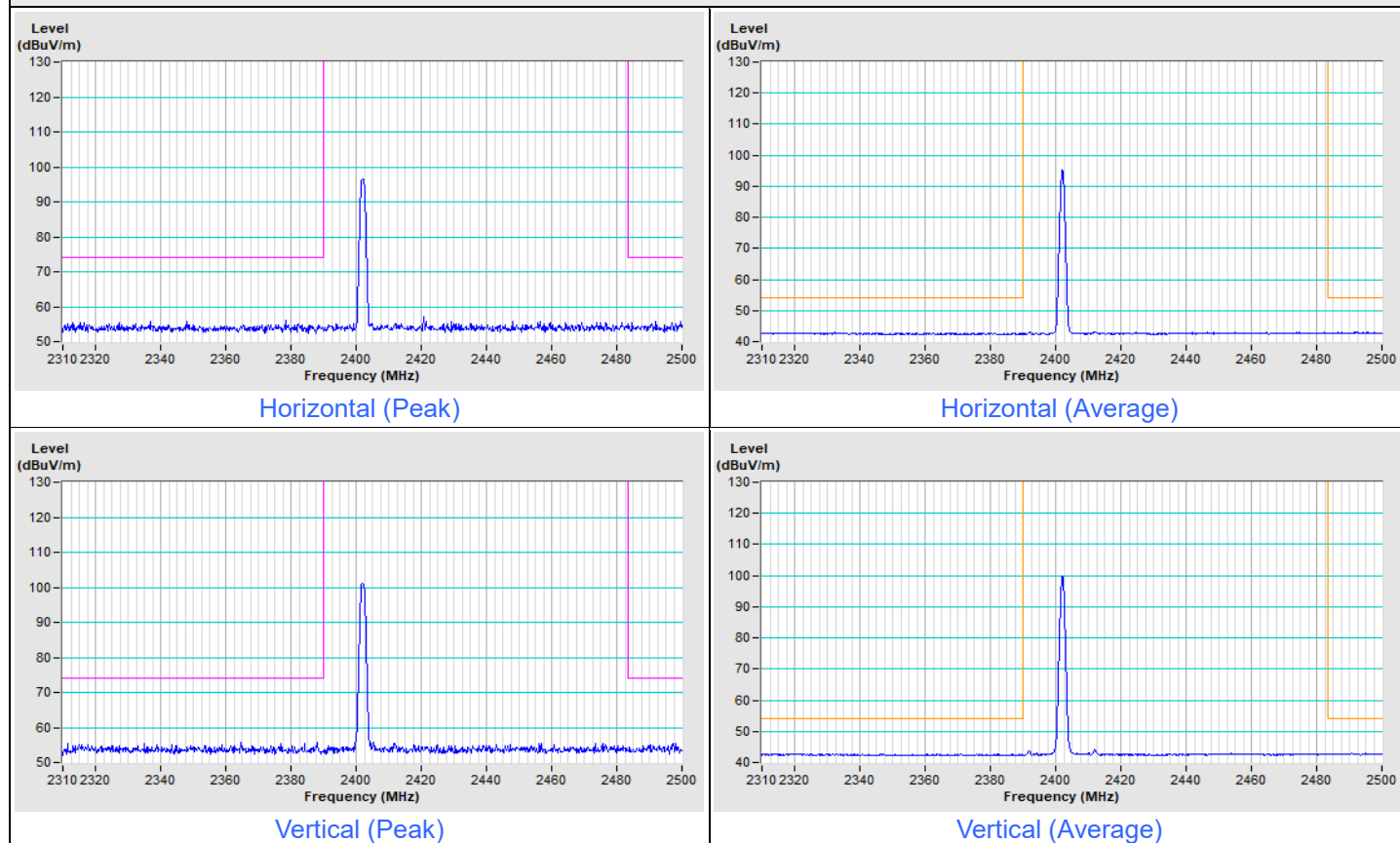


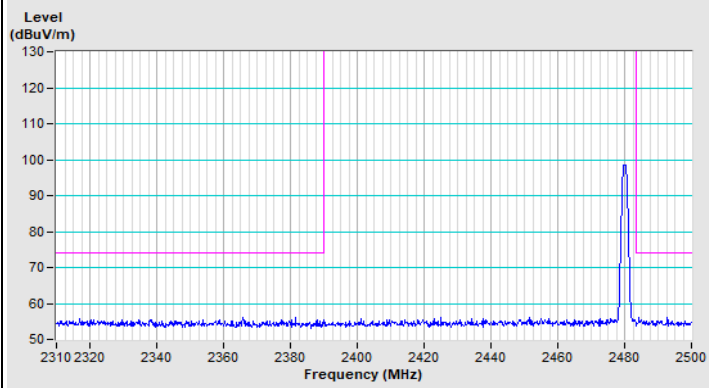
Vertical (Average)

Mode D (USB interface using external antenna)

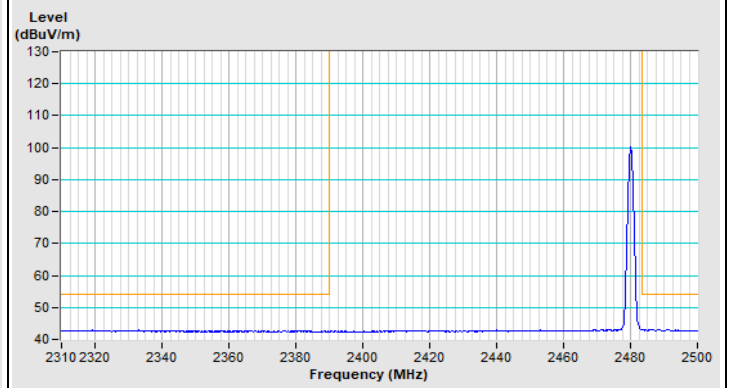
Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=510 Hz, DET=Peak
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BT-LE 1M Channel 0

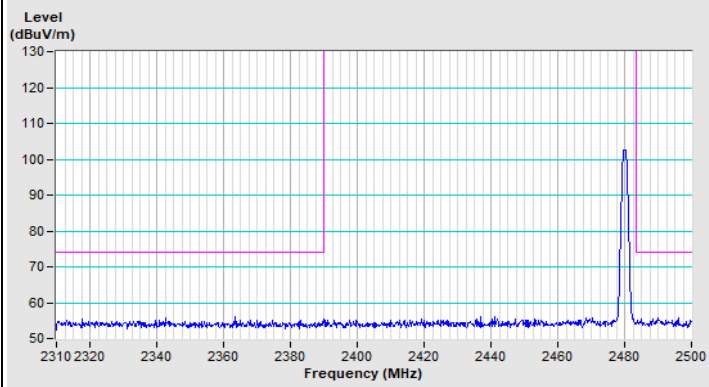


BT-LE 1M Channel 39

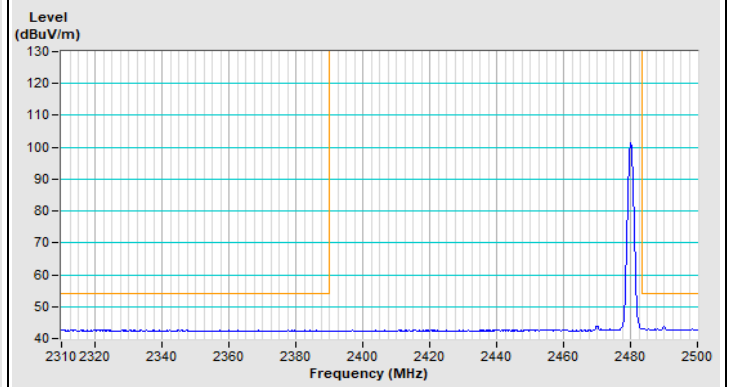
Horizontal (Peak)



Horizontal (Average)



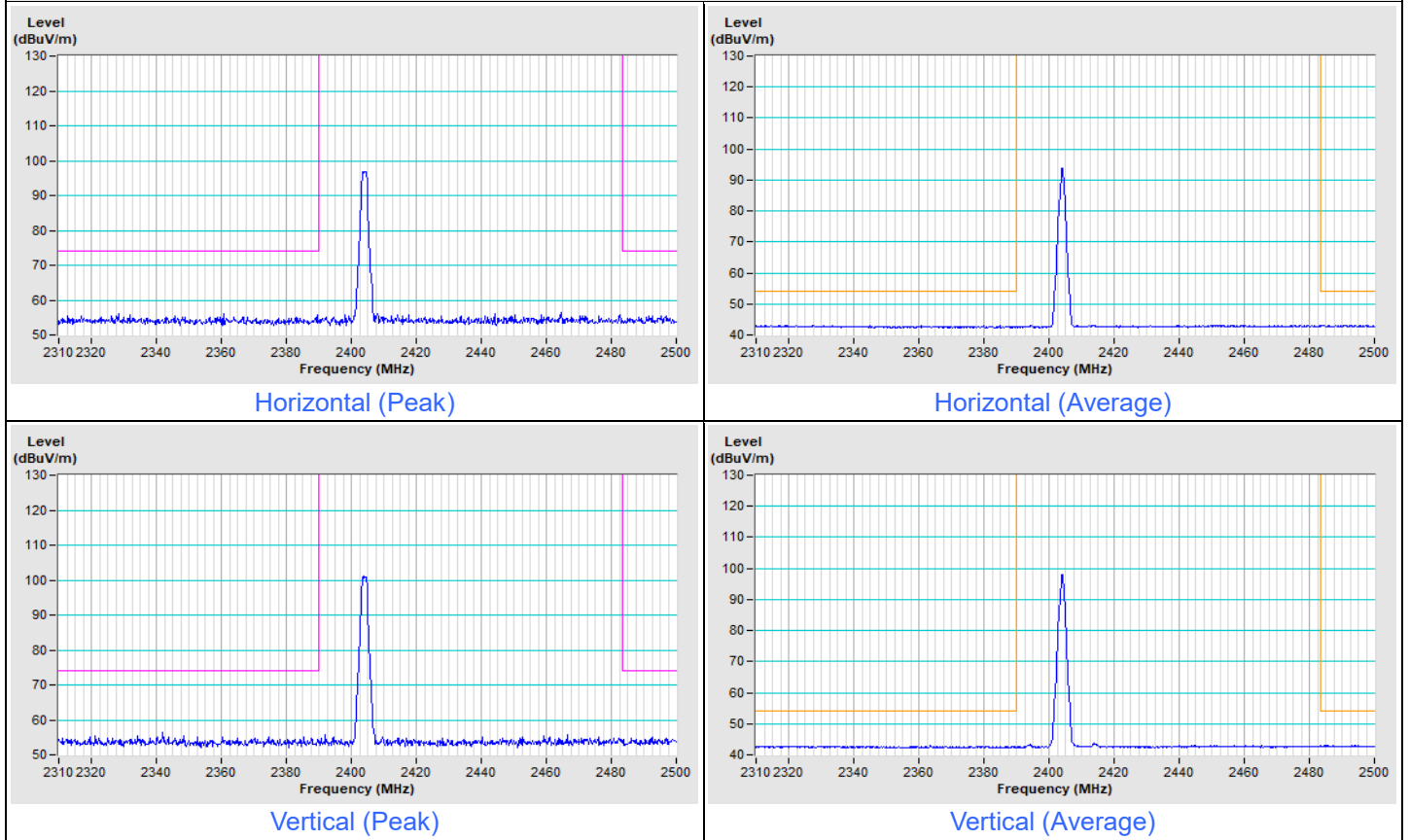
Vertical (Peak)

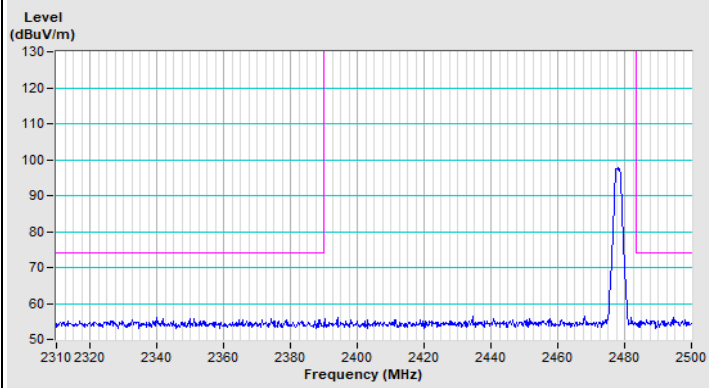


Vertical (Average)

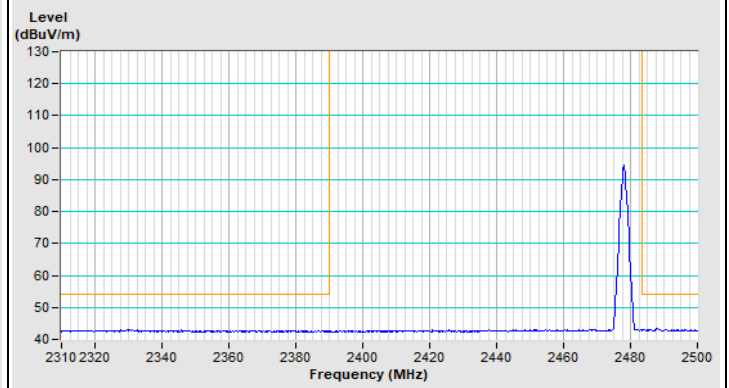
Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
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BT-LE 2M Channel 1

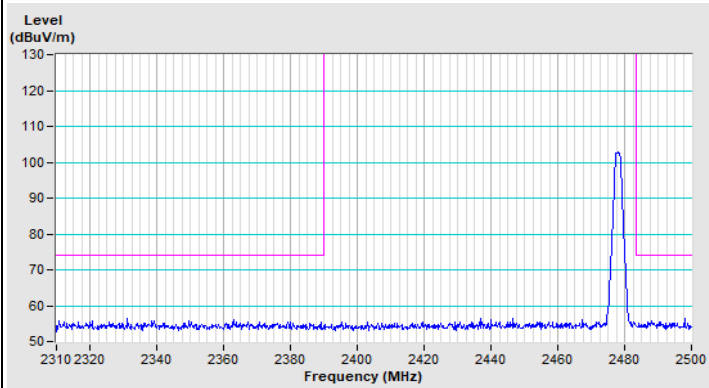


BT-LE 2M Channel 38

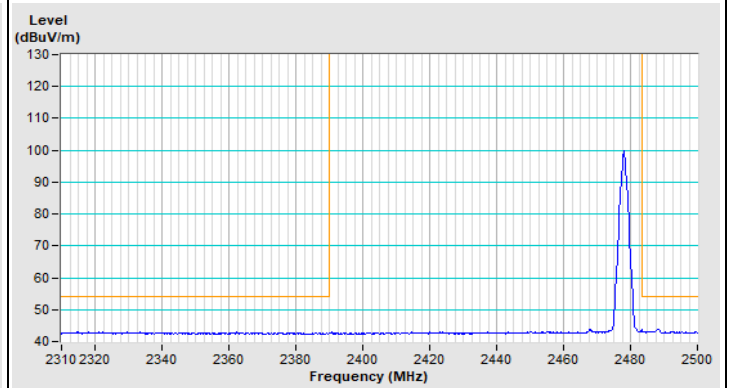
Horizontal (Peak)



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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