TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart C (Section 15.247)**
Report No.:	RFBWIN-WTW-P23020421-3
FCC ID:	J9C-QCNCM825
Product:	Qualcomm WiFi 7/BT Combo module
Brand:	Qualcomm
Model No.:	QCNCM825
Received Date:	2023/2/13
Test Date:	2023/4/13 ~ 2023/5/12
Issued Date:	2023/6/30
Applicant:	Qualcomm Technologies, Inc.
Address:	5775 Morehouse Drive, San Diego, CA 92121-1714
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Approved by: _____ , **Date:** **2023/6/30**

May Chen / Manager

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Prepared by : Vito Lung / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBWIN-WTW-P23020421-3	Original release.	2023/6/30

1 Certificate

Product:	Qualcomm WiFi 7/BT Combo module
Brand:	Qualcomm
Test Model:	QCNCM825
Sample Status:	Engineering sample
Applicant:	Qualcomm Technologies, Inc.
Test Date:	2023/4/13 ~ 2023/5/12
Standard:	47 CFR FCC Part 15, Subpart C (Section 15.247)
Measurement procedure:	ANSI C63.10-2013 KDB 558074 D01 15.247 Meas Guidance v05r02 KDB 662911 D01 Multiple Transmitter Output v02r01

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 -9.47 dB at 0.56917 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -4.3 dB at 311.54 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -17.2 dB at 7320.00 MHz
15.203	Antenna Requirement	Pass	Antenna connector is MHF 4L 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) (±)
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.5 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	Qualcomm WiFi 7/BT Combo module
Brand	Qualcomm
Test Model	QCNCM825
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	2.402 GHz ~ 2.48 GHz
Number of Channel	40
Output Power	25.177 mW (14.01 dBm)

Note:

1. There are Bluetoothand WLAN (2.4 GHz & 5 GHz & 6 GHz) technology used for the EUT.
2. Simultaneously transmission condition.

Condition	Technology	
1	WLAN(2.4 GHz)_Ant 0+1	WLAN(5 GHz)_Ant 0+1
2	WLAN(2.4 GHz)_Ant 0+1	WLAN(6 GHz)_Ant 0+1
3	WLAN(5 GHz)_Ant 0+1	Bluetooth_Ant 0
4	WLAN(5 GHz)_Ant 0+1	Bluetooth_Ant 1
5	WLAN(5 GHz)_Ant 0+1	Bluetooth_Ant 0+1
6	WLAN(6 GHz)_Ant 0+1	Bluetooth_Ant 0
7	WLAN(6 GHz)_Ant 0+1	Bluetooth_Ant 1
8	WLAN(6 GHz)_Ant 0+1	Bluetooth_Ant 0+1
9	WLAN(2.4 GHz)_Ant 0	Bluetooth_Ant 1
10	WLAN(2.4 GHz)_Ant 1	Bluetooth_Ant 0

3. 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 Set	RF Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range	Cable Loss (dB)	Antenna Type	Connector Type	Cable Length (mm)
1	Chain0/1	Hong-Bo	260-25094	3.53 3.06 3.07 4.81 4.2	2.4~2.4835 GHz 5.15~5.25 GHz 5.25~5.35 GHz 5.47~5.725 GHz 5.725~5.850 GHz	0.74 1.16 1.18 1.26 1.28	PIFA	MHF 4L	300
2	Chain0/1	Hong-Bo	260-25083	5.09 5.14 5.09 5.16 5.12	5.850~5.895 GHz 5.925~6.425 GHz 6.425~6.525 GHz 6.525~6.875 GHz 6.875~7.125 GHz	1.29 1.35 1.38 1.45 1.50	PIFA	MHF 4L	300
3	Chain0/1	Hong-Bo	260-25084	3.22 3.35 3.42 4.77 4.72 4.71 4.75 4.29 4.81 4.74	2.4~2.4835 GHz 5.150~5.250 GHz 5.250~5.350 GHz 5.470~5.725 GHz 5.725~5.850 GHz 5.850~5.895 GHz 5.925~6.425 GHz 6.425~6.525 GHz 6.525~6.875 GHz 6.875~7.125 GHz	0.49 0.76 0.77 0.80 0.84 0.84 0.86 0.91 0.96 0.98	Monopole	MHF 4L	200

Note:
1. Bluetooth has diversity function and transmit chain 0 and chain 1 have been evaluated, the chain 0 will be used as representative test.
2. Max. gain was selected for the final test.

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

3.3 Channel List

40 channels are provided for BT-LE:

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

3.4 Test Mode Applicability and Tested Channel Detail

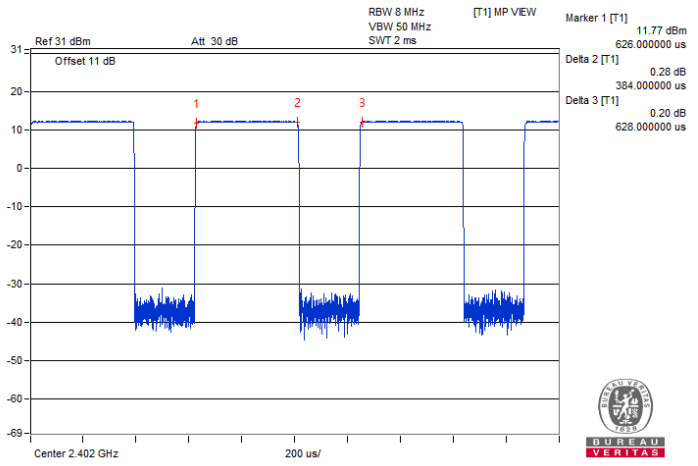
Pre-Scan:	1. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

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

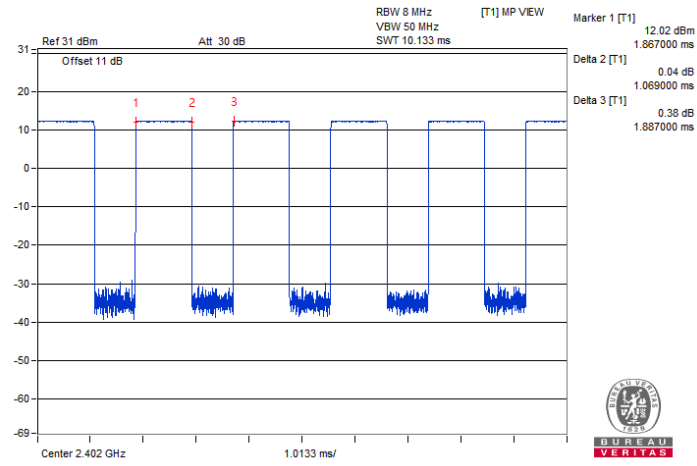
Test Item	EUT Configure Mode	Mode	Tested Channel	Tx Antenna	Modulation	Data Rate Parameter
RF Output Power / Power Spectral Density	A	BT-LE 1M	0, 19, 39	1TX, 2TX	GFSK	1Mb/s
		BT-LE 2M	0, 19, 39	1TX, 2TX	GFSK	2Mb/s
6 dB Bandwidth / Conducted Out of Band Emissions	A	BT-LE 1M	0, 19, 39	1TX, 2TX	GFSK	1Mb/s
		BT-LE 2M	0, 19, 39	1TX, 2TX	GFSK	2Mb/s
AC Power Conducted Emissions	B	BT-LE 1M	19	1TX	GFSK	1Mb/s
Unwanted Emissions below 1 GHz	A, B	BT-LE 1M	19	1TX	GFSK	1Mb/s
Unwanted Emissions above 1 GHz	A, B	BT-LE 1M	0, 19, 39	1TX, 2TX	GFSK	1Mb/s
		BT-LE 2M	0, 19, 39	1TX, 2TX	GFSK	2Mb/s
EUT Configure Mode:	A	EUT only (w/o antenna)				
	B	EUT with 50 ohm terminator				

3.5 Duty Cycle of Test Signal

BT-LE 1M: Duty cycle = 0.384 ms / 0.628 ms x 100% = 61.1%, duty factor = 10 * log (1/Duty cycle) = 2.14 dB
BT-LE 2M: Duty cycle = 1.069 ms / 1.887 ms x 100% = 56.7%, duty factor = 10 * log (1/Duty cycle) = 2.47 dB



BT-LE 1M



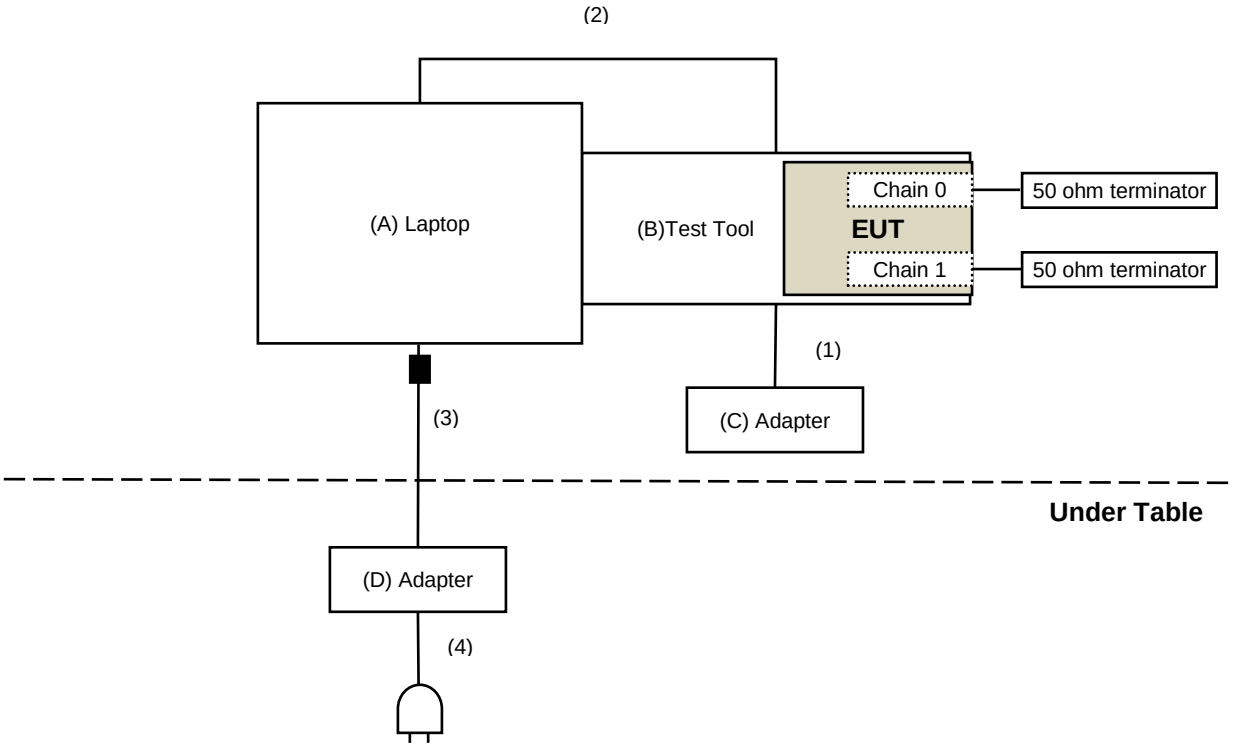
BT-LE 2M

3.6 Test Program Used and Operation Descriptions

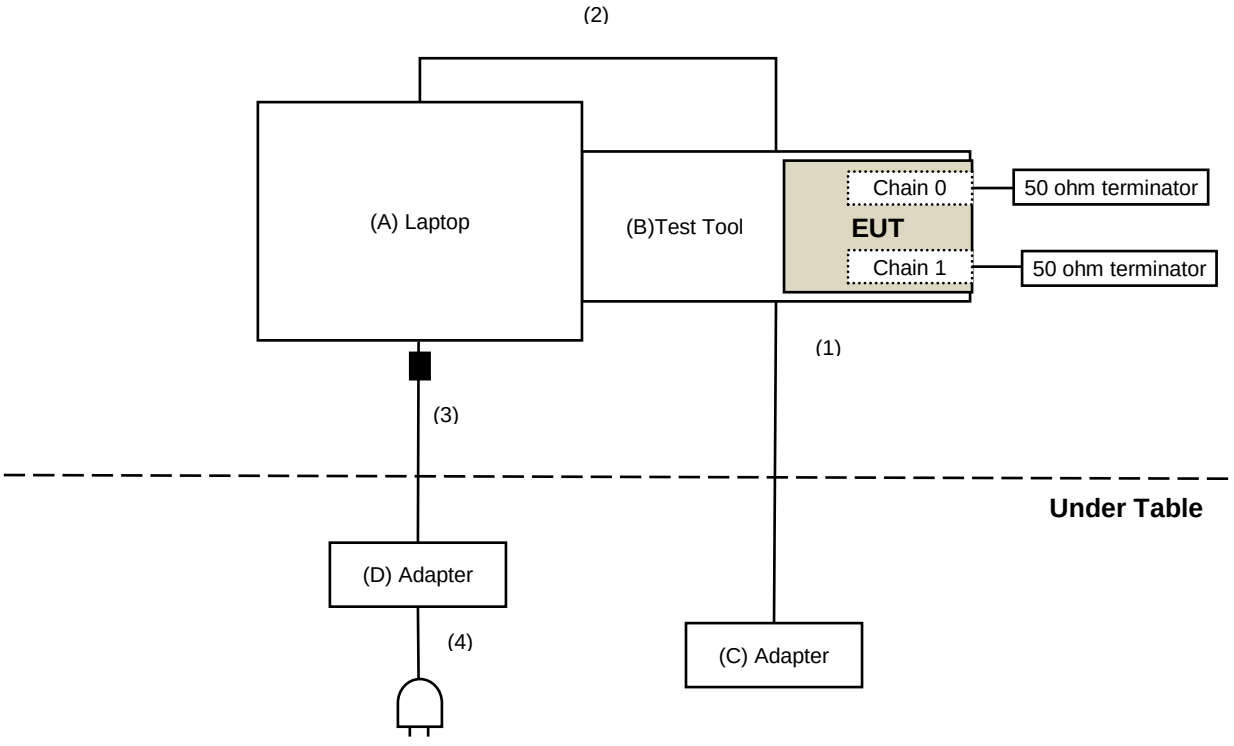
Controlling software (QRCT 4.0.00159.1) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

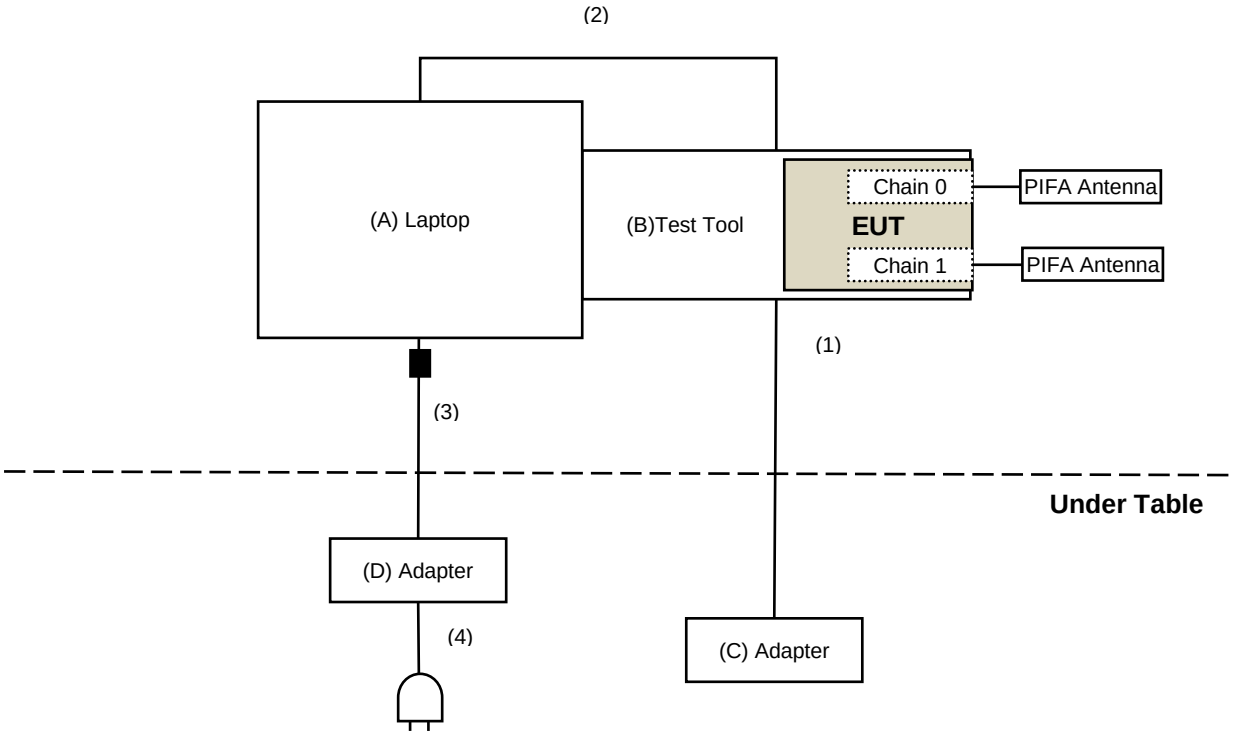
For AC Power Conducted Emission test



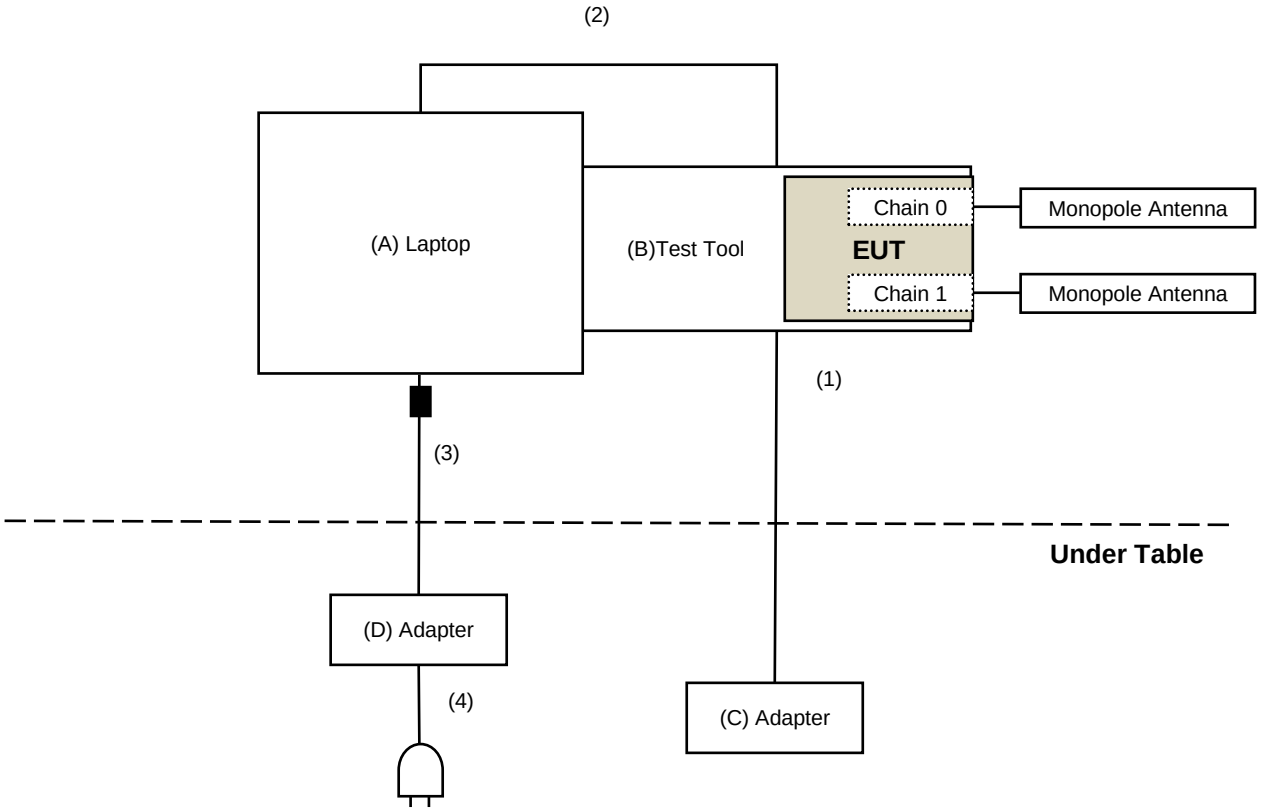
For Unwanted Emission test



For Unwanted Emission Above 1GHz with Antenna A test



For Unwanted Emission Above 1GHz with Antenna C test



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Dell	E5420	6FGHKV1	N/A	Provided by Lab
B	Test Tool	Qualcomm	N/A	N/A	N/A	Supplied by applicant
C	Adapter	PHIHONG	PSAA12A-120L6	N/A	N/A	Supplied by applicant
D	Adapter	Dell	LLA65NS2-01	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	1.2	NO	0	Supplied by applicant
2	Micro USB Cable	1	0.6	Yes	0	Provided by Lab
3	DC Cable	1	1.8	NO	1	Provided by Lab
4	AC Cable	1	1.5	NO	0	Provided by Lab

3.9 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	DELL	Latitude E6420	N/A	N/A	Supplied by applicant
B	Test tool	Qualcomm	Y6570	N/A	N/A	Supplied by applicant
C	Adapter	DELL	LA90PM111	N/A	N/A	Supplied by applicant
D	Adapter	PHIHONG	PSAA12A-120L6	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	1.8	No	1	Supplied by applicant
2	DC Cable	1	1.2	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
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2023/3/27	2024/3/26
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-02	2023/3/27	2024/3/26
Power Meter Anritsu	ML2495A	1529002	2022/6/22	2023/6/21
Pulse Power Sensor Anritsu	MA2411B	1726434	2022/6/22	2023/6/21

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/5/2

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2023/3/27	2024/3/26
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-02	2023/3/27	2024/3/26
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112409	2023/2/18	2024/2/17

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/5/2

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	N/A	EMC-01	2022/9/27	2023/9/26
Fixed attenuator STI	STI02-2200-10	005	2022/8/24	2023/8/23
LISN R&S	ESH3-Z5	848773/004	2022/10/18	2023/10/17
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2022/8/24	2023/8/23
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A
TEST RECEIVER R&S	ESCS 30	847124/029	2022/10/14	2023/10/13

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2023/5/10

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bilog Antenna Schwarzbeck	VULB 9168	9168-0842	2022/10/24	2023/10/23
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	2022/12/28	2023/12/27
LOOP ANTENNA Electro-Metrics	EM-6879	264	2023/2/21	2024/2/20
Pre_Amplifier Agilent	8447D	2944A10636	2023/3/12	2024/3/11
Pre_Amplifier EMCI	EMC330N	980538	2023/4/6	2024/4/5
RF Coaxial Cable COMMATE/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
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/12/19	2023/12/18
		LOOPCAB-002	2022/12/19	2023/12/18
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112410	2023/3/6	2024/3/5
Spectrum Analyzer KEYSIGHT	N9030B	MY57141948	2022/5/13	2023/5/12
Test Receiver R&S	ESR3	102528	2023/2/10	2024/2/9

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2023/4/13

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2023/3/27	2024/3/26
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-02	2023/3/27	2024/3/26
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-1819	2022/11/13	2023/11/12
	BBHA 9170	9170-739	2022/11/13	2023/11/12
Pre_Amplifier EMCI	EMC12630SE	980509	2023/4/7	2024/4/6
	EMC184045SE	980387	2022/12/28	2023/12/27
RF Cable-Frequency range: 1-40GHz EMCI	EMC102-KM-KM-1200	160924	2022/12/28	2023/12/27
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2023/2/20	2024/2/19
	EMC104-SM-SM-1500	180503	2023/4/7	2024/4/6
	EMC104-SM-SM-2000	180501	2023/4/7	2024/4/6
	EMC104-SM-SM-6000	180506	2023/4/7	2024/4/6
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112410	2023/3/6	2024/3/5
Test Receiver R&S	ESR3	102528	2023/2/10	2024/2/9

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2023/5/12

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)

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

5.2 Power Spectral Density

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

5.3 6 dB Bandwidth

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

5.4 Conducted Out of Band Emissions

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

5.5 AC Power Conducted Emissions

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

Notes:

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

5.6 Unwanted Emissions below 1 GHz

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

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Notes:

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

5.7 Unwanted Emissions above 1 GHz

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

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

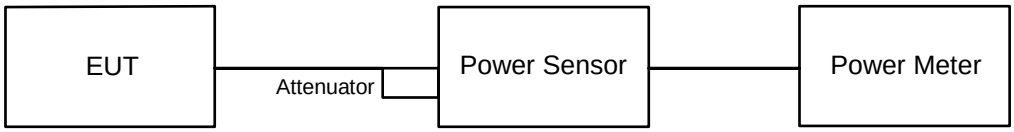
Notes:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup



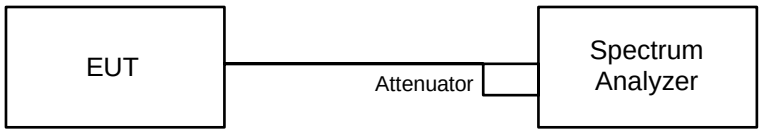
6.1.2 Test Procedure

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

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

6.2 Power Spectral Density

6.2.1 Test Setup

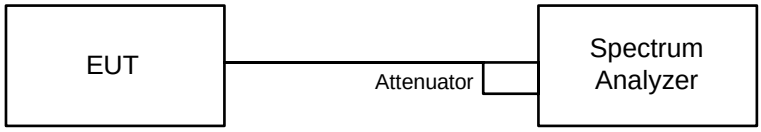


6.2.2 Test Procedure

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

6.3 6 dB Bandwidth

6.3.1 Test Setup

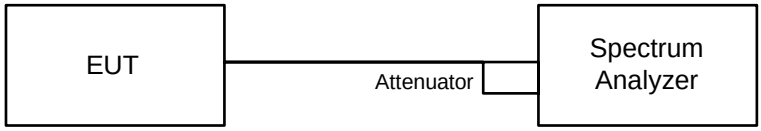


6.3.2 Test Procedure

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

6.4 Conducted Out of Band Emissions

6.4.1 Test Setup



6.4.2 Test Procedure

MEASUREMENT PROCEDURE REF

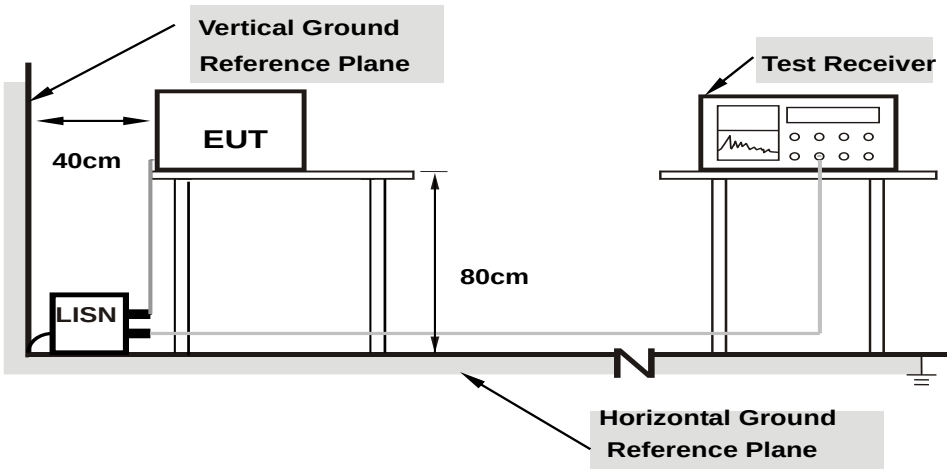
a. Set the RBW = 100 kHz.
b. Set the VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep time = auto couple.
e. Trace mode = max hold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

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

6.5 AC Power Conducted Emissions

6.5.1 Test Setup



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

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

6.5.2 Test Procedure

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

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

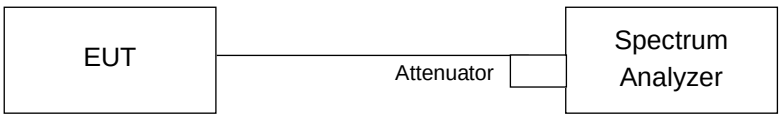
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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

6.6 Unwanted Emissions below 1 GHz

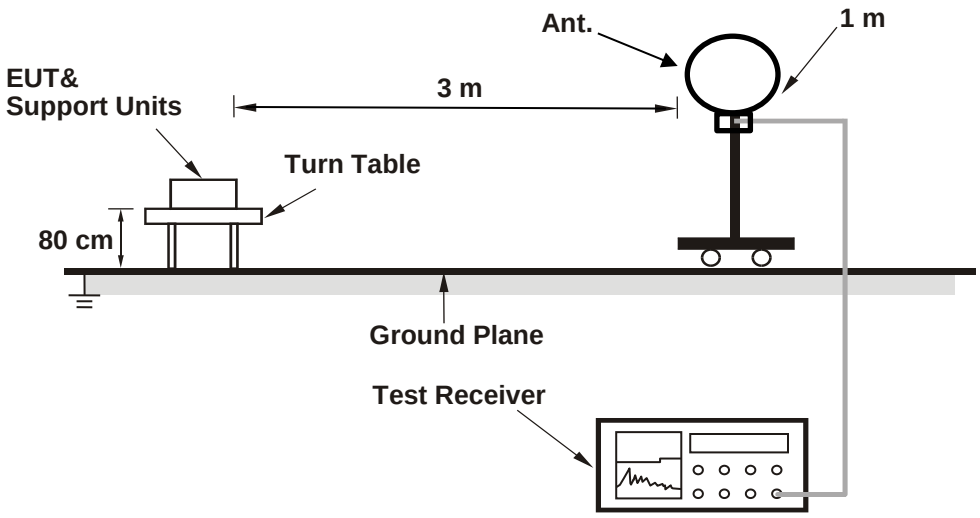
6.6.1 Test Setup

For Conducted Configuration:

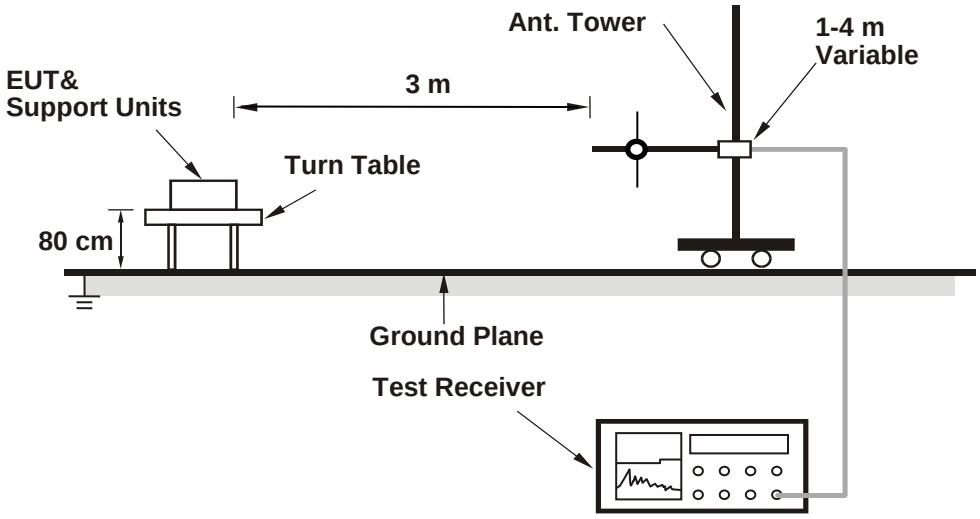


For Radiated Configuration:

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

Radiated versus Conducted Measurement.
The unwanted emission limits in both the restricted and non-restricted bands are based on antenna-port conducted measurements in conjunction with cabinet emissions tests are permitted to demonstrate compliance.
The following steps was performed:

a. Cabinet emissions measurements. Radiated measurement was performed to ensure that cabinet emissions are below the emission limits. For the cabinet-emission measurements the antenna was replaced by a termination matching the nominal impedance of the antenna.

b. Conducted tests was performed using equipment that matches the nominal impedance of the antenna assembly used with the EUT.

c. EIRP calculation. A value representative of an upper bound on out-of-band antenna gain (in dBi) shall be added to the measured antenna-port conducted emission power to compute EIRP within the specified measurement bandwidth. (For emissions in the restricted bands, additional calculations are required to convert EIRP to field strength at the specified distance.) The upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands or 2 dBi, whichever is greater.

d. EIRP adjustments for multiple outputs. (Follow the procedures specified in FCC KDB Publication 662911)

e. For all of Radiation emission test

For Radiated emission below 30 MHz

e-1.1. 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.

e-1.2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

e-1.3. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

e-1.4. 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-1.5. 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.
4. KDB 414788 OATS and Chamber Correlation Justification

   -Based on FCC 15.31(f)(2):measurements may be performed at a distance closer than that specified in the regulations; however, an attempts should be made to avoid making measurements in the near field.

   -OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

For Radiated emission above 30 MHz

e-2.1. 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.

e-2.2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

e-2.3. 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.

e-2.4. 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-2.5. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

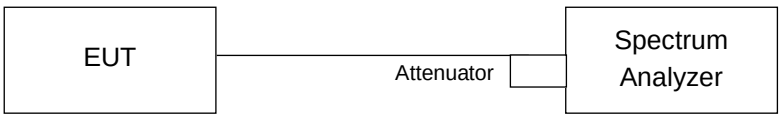
Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP), Average detection (AV), Peak detection (PK) at frequency (30MHz to 1 GHz).
2. All modes of operation were investigated and the worst-case emissions are reported.

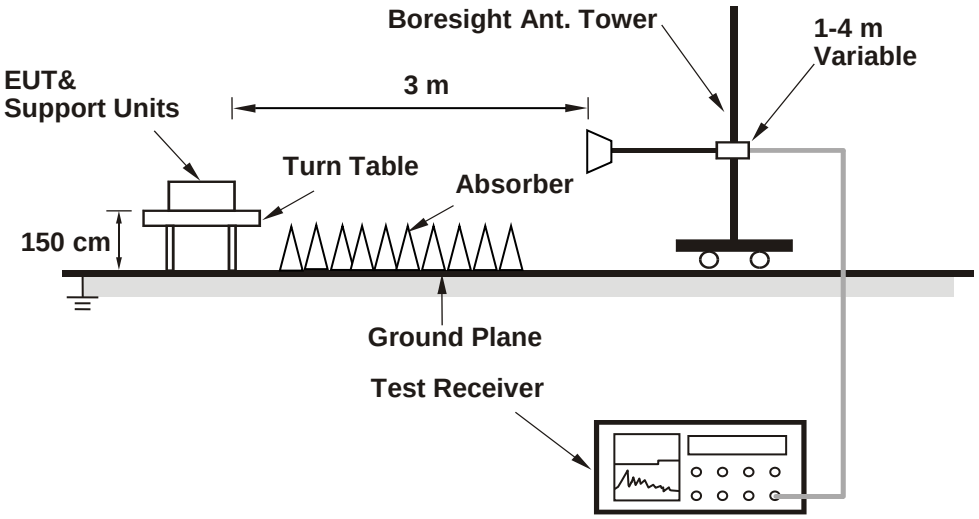
6.7 Unwanted Emissions above 1 GHz

6.7.1 Test Setup

For Conducted Configuration:



For Radiated Configuration:



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

6.7.2 Test Procedure

Radiated versus Conducted Measurement.
The unwanted emission limits in both the restricted and non-restricted bands are based on antenna-port conducted measurements in conjunction with cabinet emissions tests are permitted to demonstrate compliance.
The following steps was performed:

a. Cabinet emissions measurements. Radiated measurement was performed to ensure that cabinet emissions are below the emission limits. For the cabinet-emission measurements the antenna was replaced by a termination matching the nominal impedance of the antenna.

b. Conducted tests was performed using equipment that matches the nominal impedance of the antenna assembly used with the EUT.

c. EIRP calculation. A value representative of an upper bound on out-of-band antenna gain (in dBi) shall be added to the measured antenna-port conducted emission power to compute EIRP within the specified measurement bandwidth. (For emissions in the restricted bands, additional calculations are required to convert EIRP to field strength at the specified distance.) The upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands or 2 dBi, whichever is greater.

d. EIRP adjustments for multiple outputs. (Follow the procedures specified in FCC KDB Publication 662911)

e. For all of Radiation emission test

e-1. 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.

e-2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

e-3. 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.

e-4. 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-5. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Notes:

1. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
2. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10 Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1 GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 RF Output Power

Mode A

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko

For Peak Power

BT-LE 1M 1TX

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
0	2402	23.442	13.70	30	Pass
19	2440	25.177	14.01	30	Pass
39	2480	20.417	13.10	30	Pass

Note: The antenna gain is 3.53 dBi < 6 dBi, so the output power limit shall not be reduced.

BT-LE 2M 1TX

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
0	2402	23.768	13.76	30	Pass
19	2440	25.119	14.00	30	Pass
39	2480	20.797	13.18	30	Pass

Note: The antenna gain is 3.53 dBi < 6 dBi, so the output power limit shall not be reduced.

BT-LE 1M 2TX

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
0	2402	8.92	10.12	18.078	12.57	29.46	Pass
19	2440	9.35	10.51	19.856	12.98	29.46	Pass
39	2480	8.33	9.48	15.679	11.95	29.46	Pass

Notes:

1. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
2. The directional gain is 6.54 dBi > 6 dBi, so the output power limit shall be reduced to 30-(6.54-6) = 29.46 dBm.

BT-LE 2M 2TX

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
0	2402	8.95	10.47	18.995	12.79	29.46	Pass
19	2440	9.42	10.56	20.126	13.04	29.46	Pass
39	2480	8.40	9.48	15.79	11.98	29.46	Pass

Notes:

1. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
2. The directional gain is 6.54 dBi > 6 dBi, so the output power limit shall be reduced to 30-(6.54-6) = 29.46 dBm.

For Average Power

BT-LE 1M 1TX

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	22.439	13.51
19	2440	24.322	13.86
39	2480	19.543	12.91

BT-LE 2M 1TX

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	22.439	13.51
19	2440	24.266	13.85
39	2480	19.815	12.97

BT-LE 1M 2TX

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
0	2402	8.70	9.84	17.051	12.32
19	2440	9.22	10.33	19.145	12.82
39	2480	8.21	9.29	15.114	11.79

BT-LE 2M 2TX

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
0	2402	8.70	10.19	17.86	12.52
19	2440	9.22	10.32	19.121	12.82
39	2480	8.22	9.30	15.149	11.80

7.2 Power Spectral Density

Mode A

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko

BT-LE 1M 1TX

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
0	2402	-3.31	8	Pass
19	2440	-2.22	8	Pass
39	2480	-3.50	8	Pass

Note: The antenna gain is 3.53 dBi < 6 dBi, so the power density limit shall not be reduced.

BT-LE 2M 1TX

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
0	2402	-7.17	8	Pass
19	2440	-6.12	8	Pass
39	2480	-7.34	8	Pass

Note: The antenna gain is 3.53 dBi < 6 dBi, so the power density limit shall not be reduced.

BT-LE 1M 2TX

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
0	2402	-6.62	-5.55	-3.04	7.46	Pass
19	2440	-6.03	-5.06	-2.51	7.46	Pass
39	2480	-7.03	-6.20	-3.59	7.46	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 6.54 dBi > 6 dBi, so the power density limit shall be reduced to 8-(6.54-6) = 7.46 dBm/3kHz.

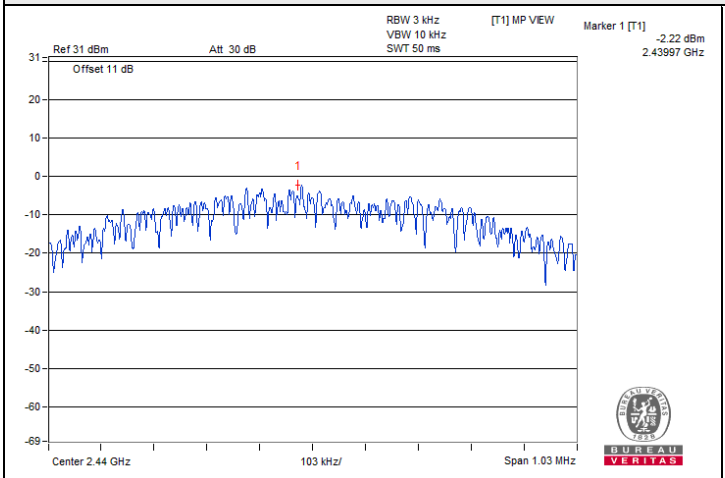
BT-LE 2M 2TX

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
0	2402	-10.14	-9.46	-6.78	7.46	Pass
19	2440	-9.86	-8.98	-6.39	7.46	Pass
39	2480	-10.89	-10.04	-7.43	7.46	Pass

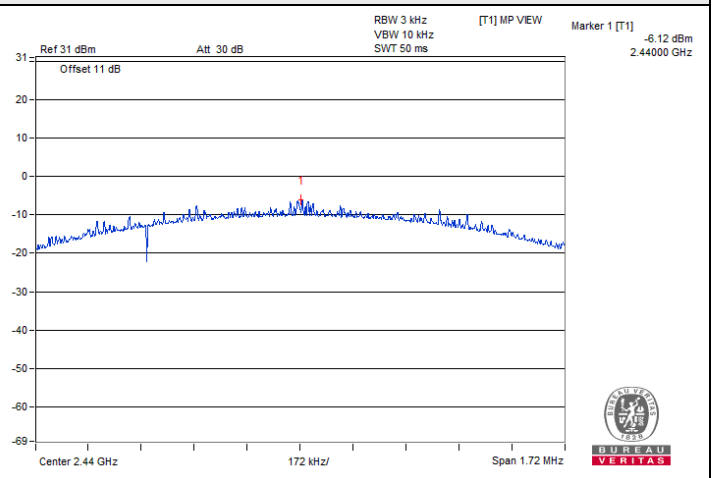
Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 6.54 dBi > 6 dBi, so the power density limit shall be reduced to 8-(6.54-6) = 7.46 dBm/3kHz.

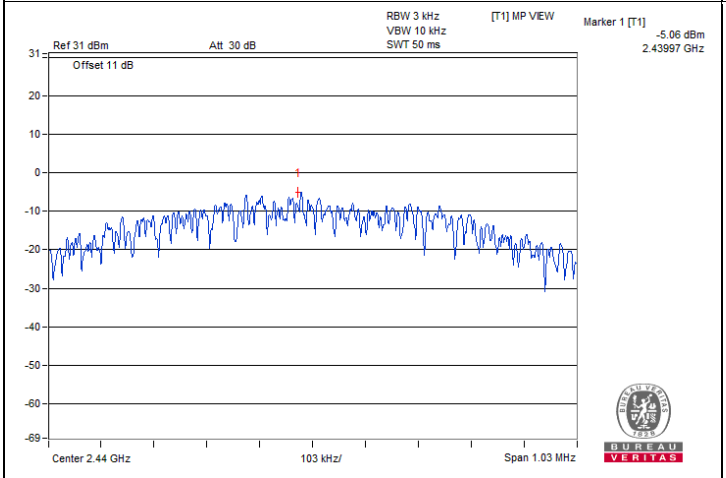
Spectrum Plot of Maximum Value



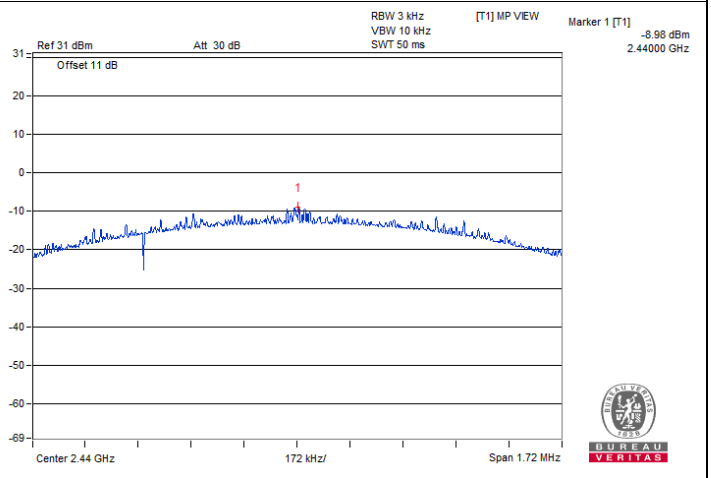
BT-LE 1M 1TX : CH 19



BT-LE 2M 1TX : CH 19



BT-LE 1M 2TX / Chain 1 : CH 19



BT-LE 2M 2TX / Chain 1 : CH 19

7.3 6 dB Bandwidth

Mode A

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko

BT-LE 1M 1TX

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

BT-LE 2M 1TX

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
0	2402	1.15	0.5	Pass
19	2440	1.15	0.5	Pass
39	2480	1.15	0.5	Pass

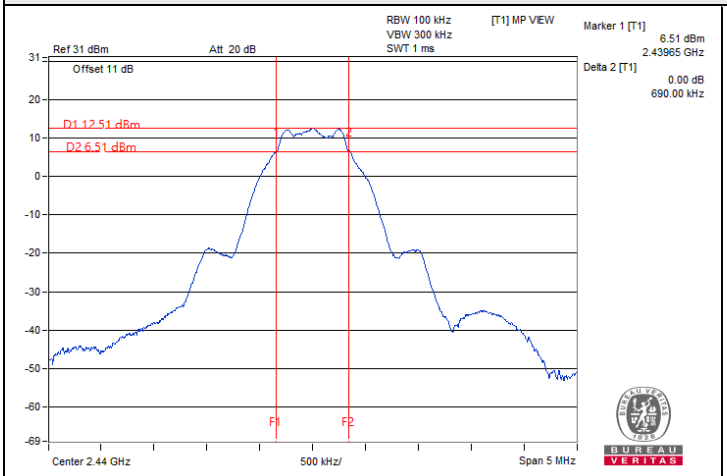
BT-LE 1M 2TX

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
0	2402	0.69	0.69	0.5	Pass
19	2440	0.69	0.69	0.5	Pass
39	2480	0.69	0.70	0.5	Pass

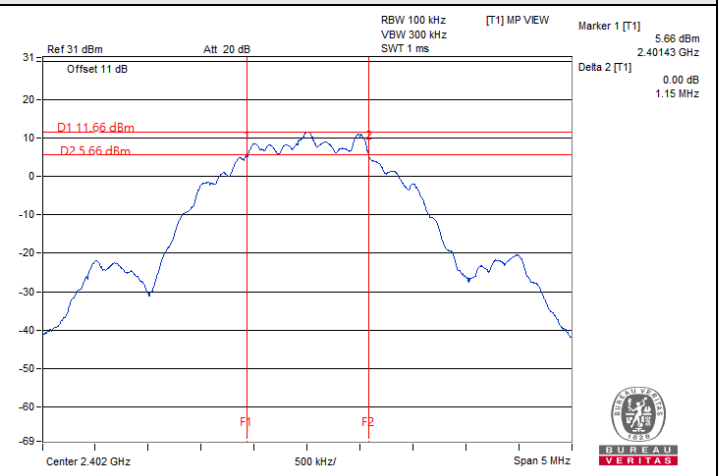
BT-LE 2M 2TX

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
0	2402	1.15	1.15	0.5	Pass
19	2440	1.16	1.15	0.5	Pass
39	2480	1.15	1.15	0.5	Pass

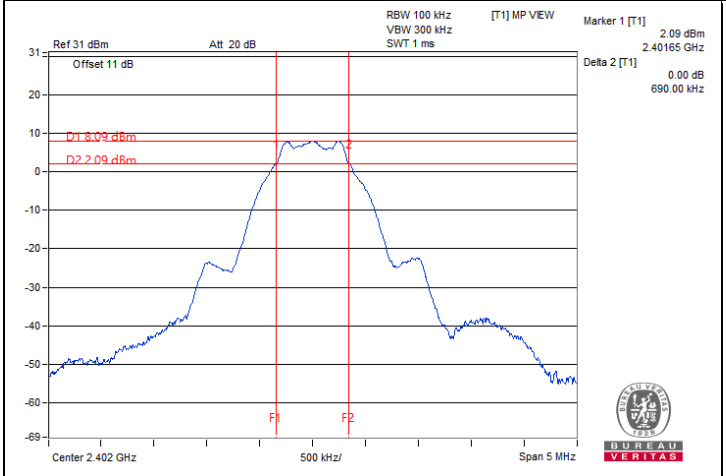
Spectrum Plot of Minimum Value



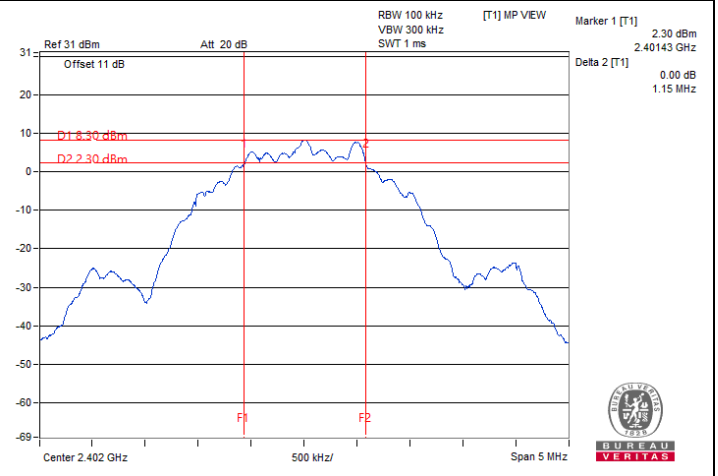
BT-LE 1M 1TX : CH 19



BT-LE 2M 1TX : CH 0



BT-LE 1M 2TX / Chain 0 : CH 0



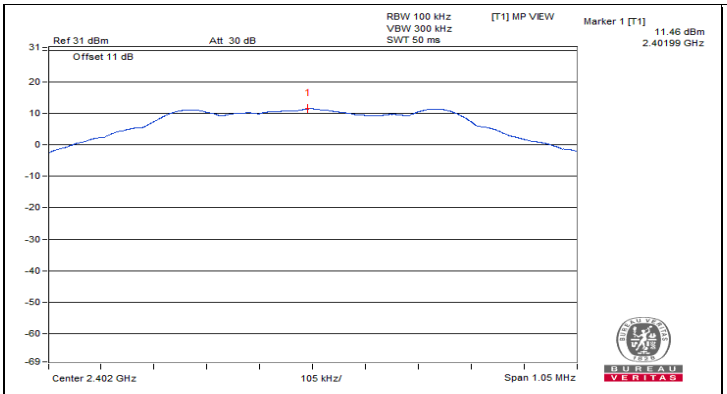
BT-LE 2M 2TX / Chain 0 : CH 0

7.4 Conducted Out of Band Emissions

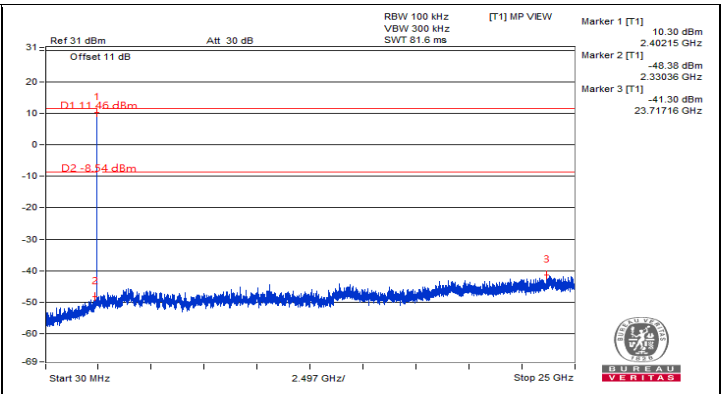
Mode A

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko

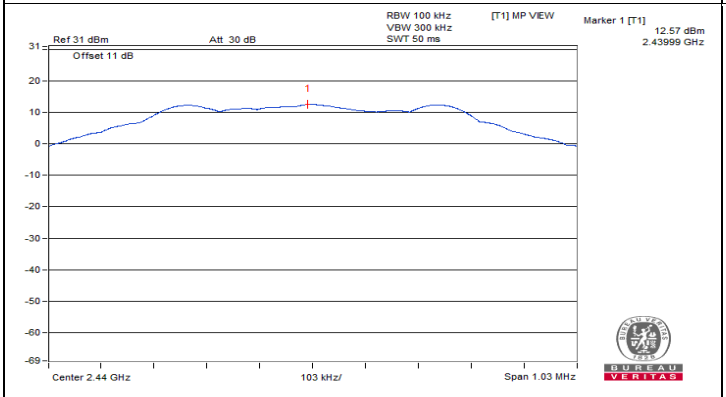
BT-LE 1M 1TX



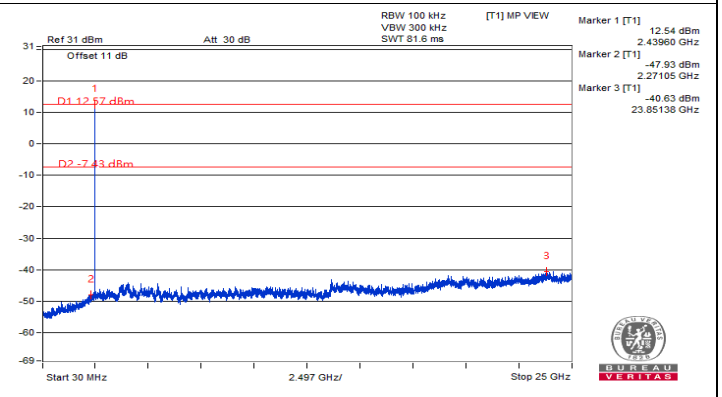
CH 0



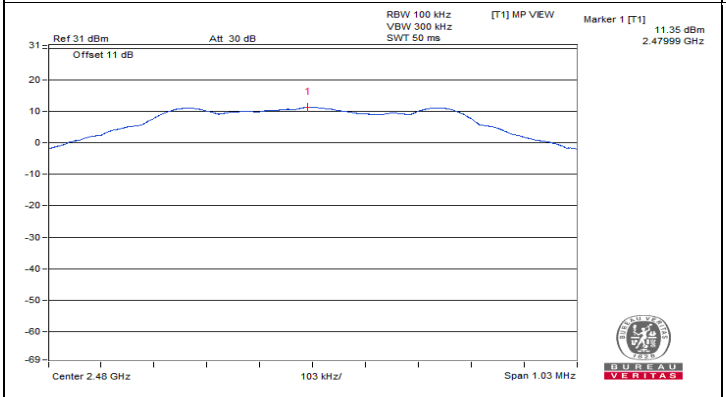
CH 0



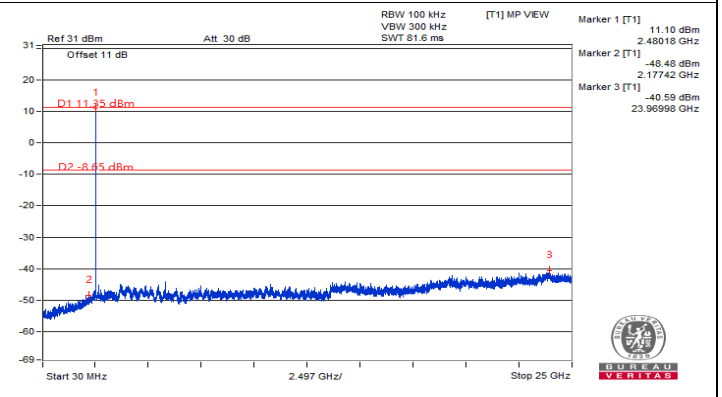
CH 19



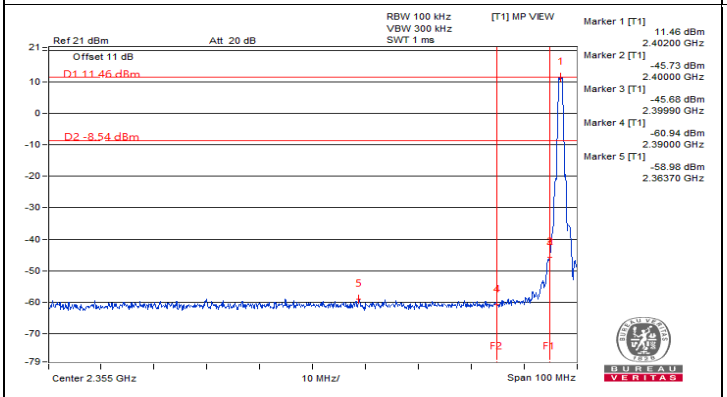
CH 19



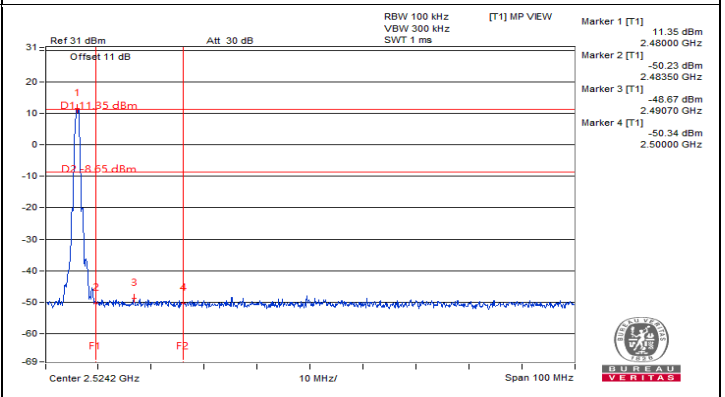
CH 39



CH 39

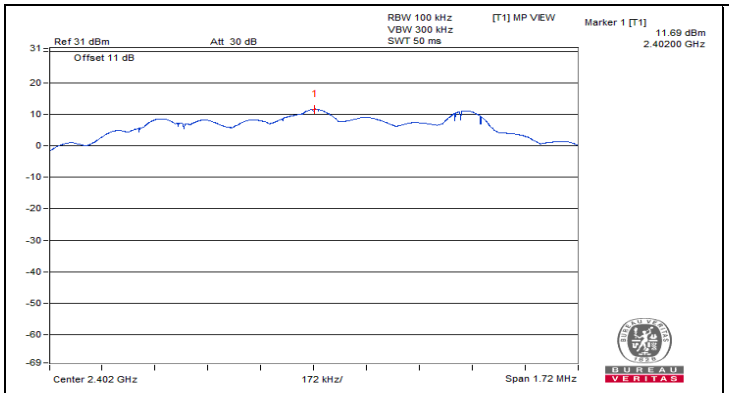


CH 0 Band edge

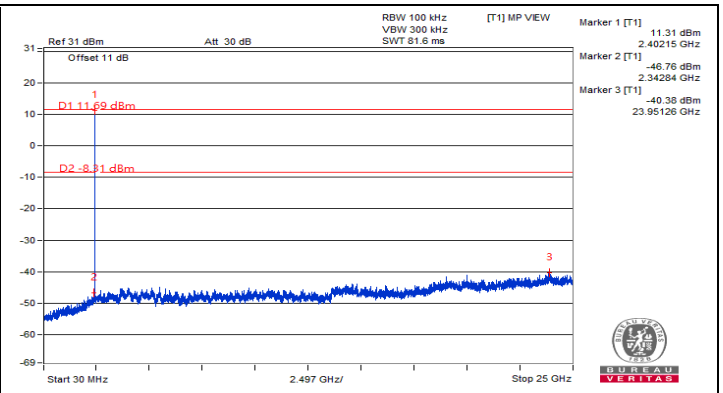


CH 39 Band edge

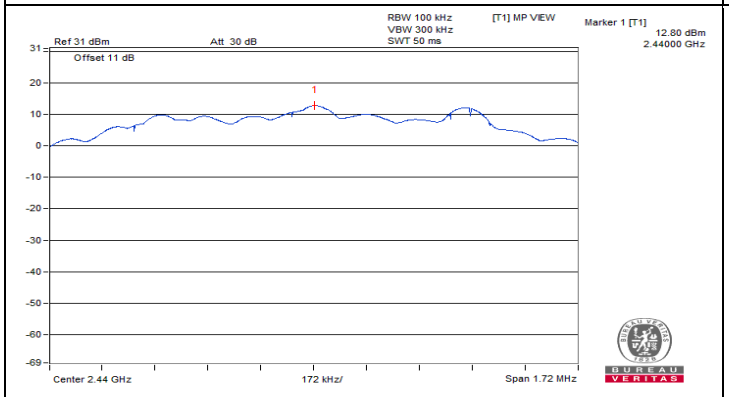
BT-LE 2M 1TX



CH 0



CH 0



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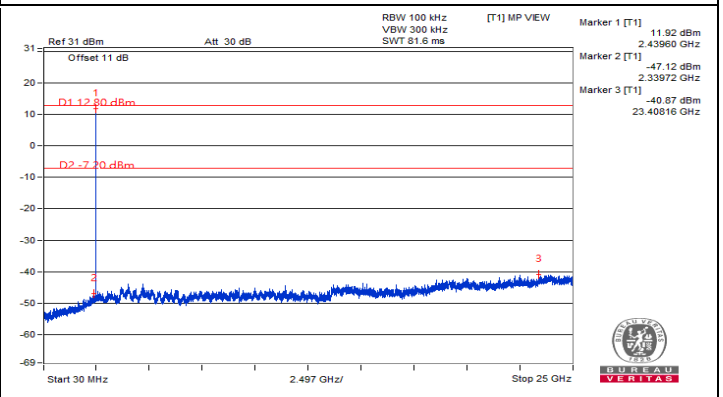

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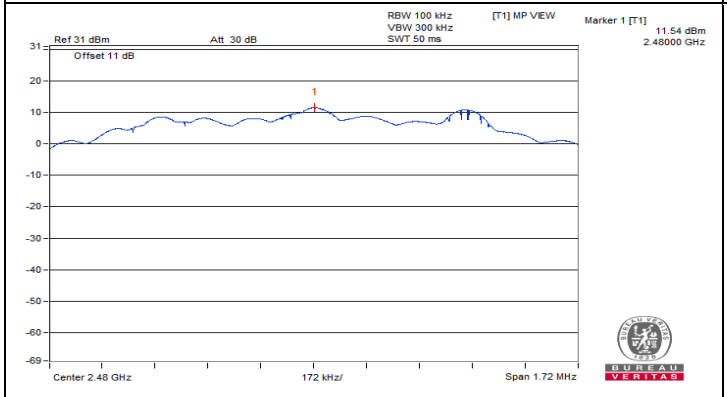

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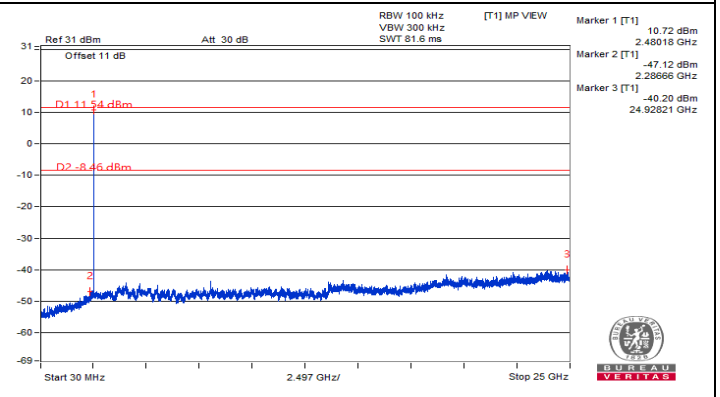

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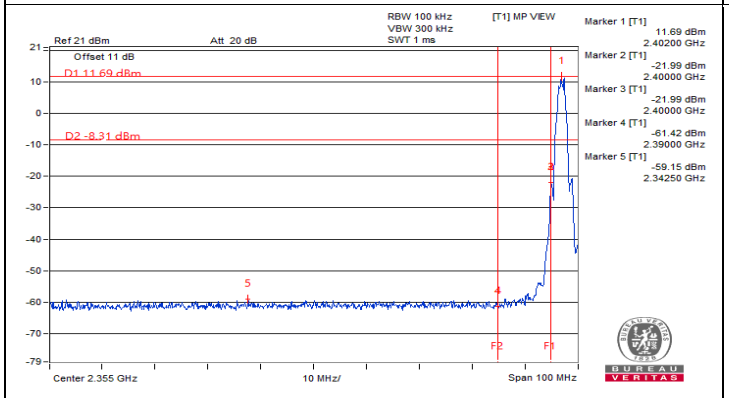
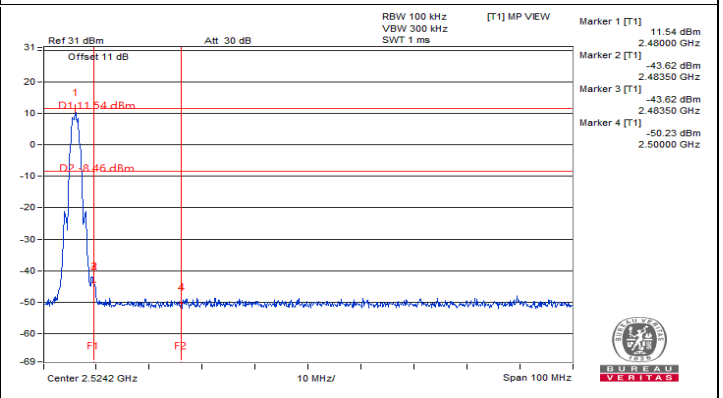


CH 0 Band edge



CH 39 Band edge

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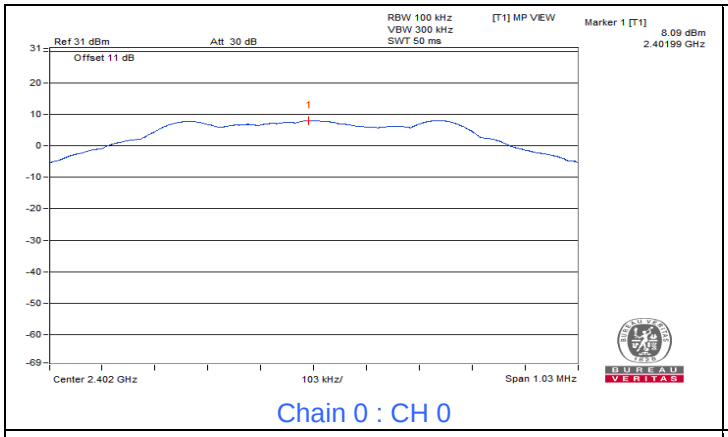
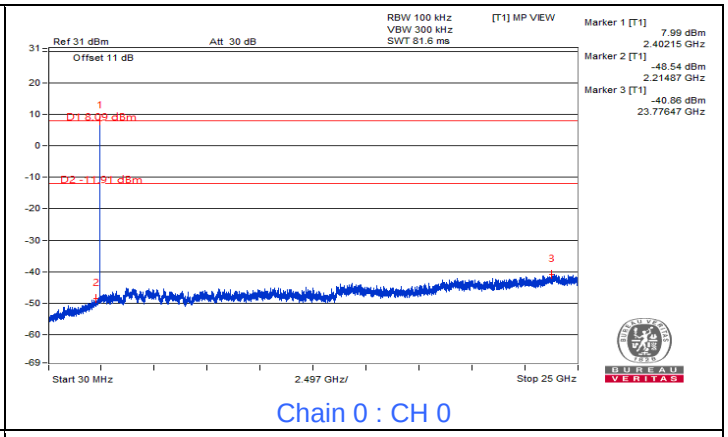


Chain 0 : CH 0



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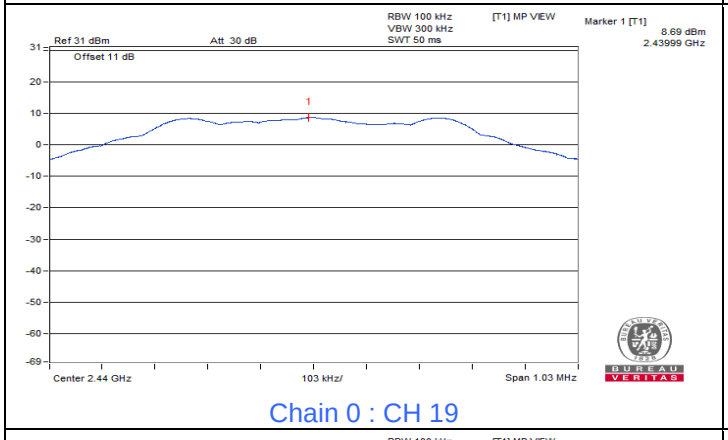

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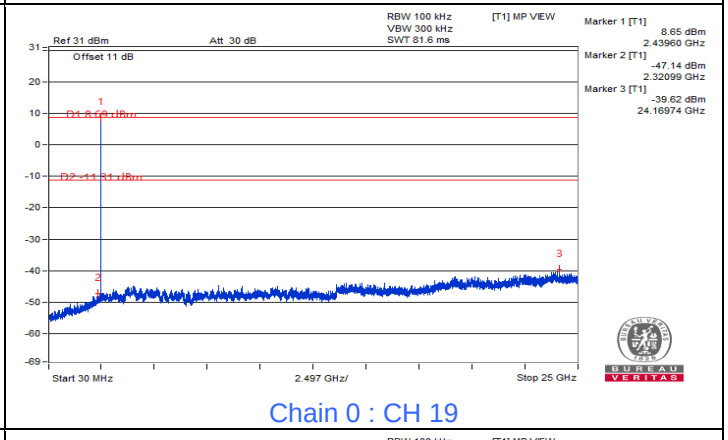

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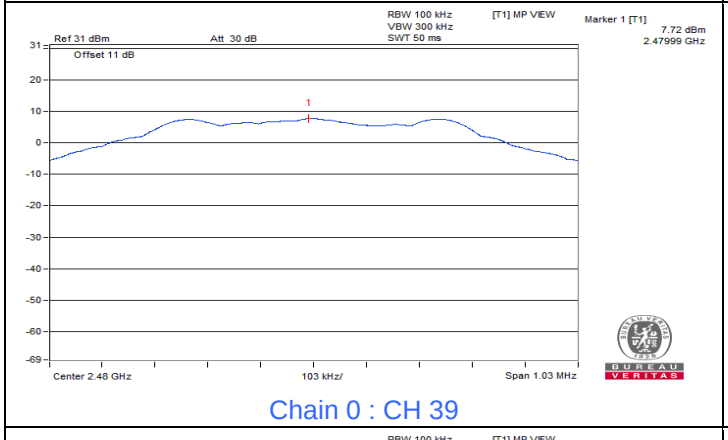

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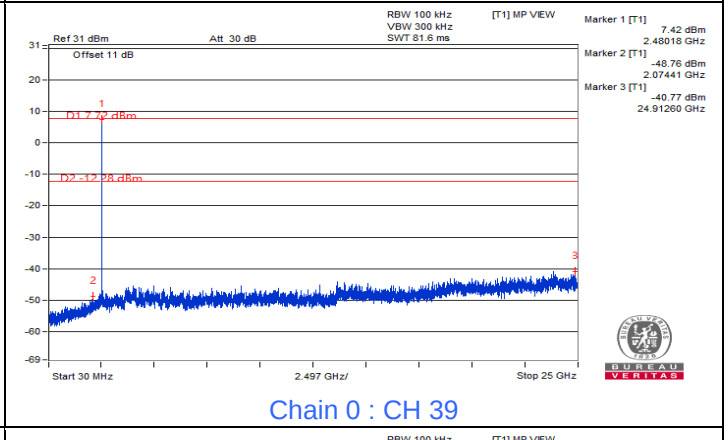

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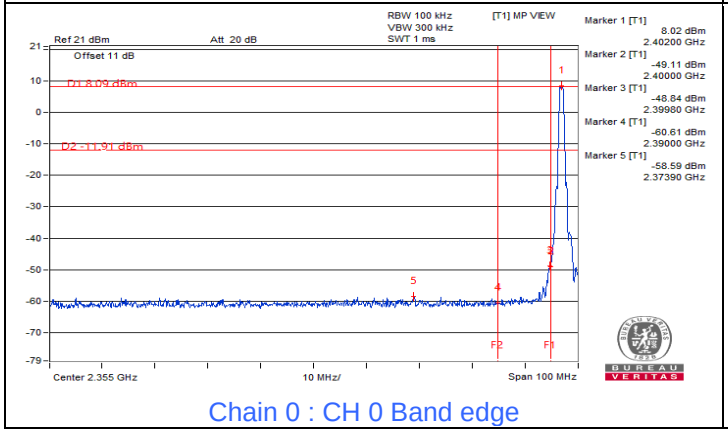
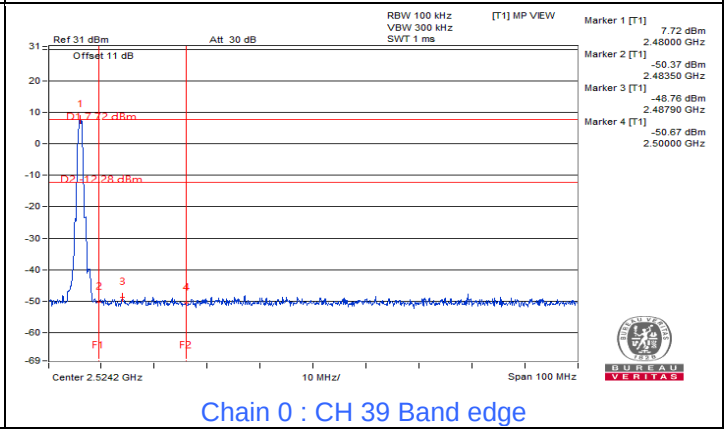
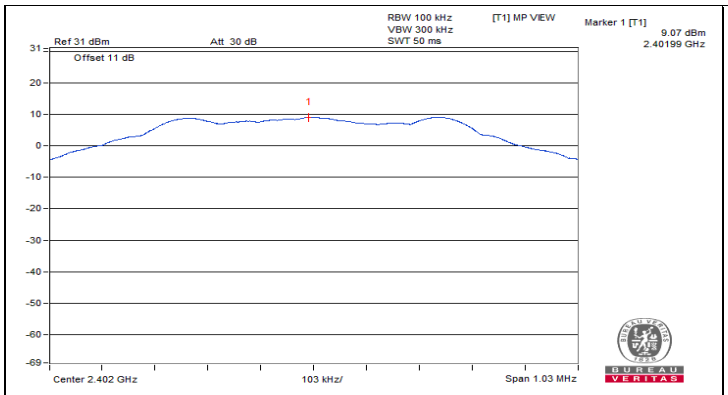


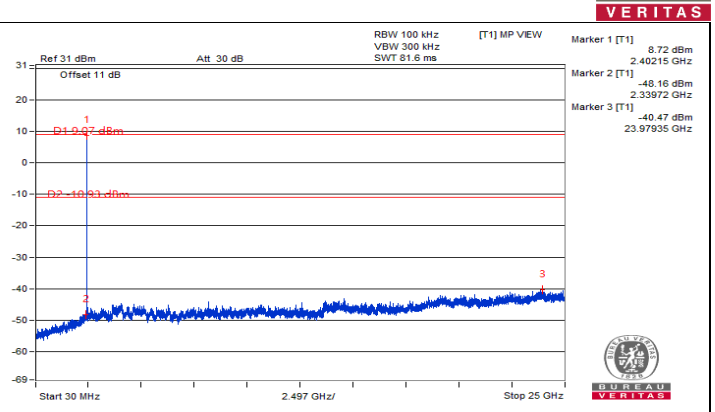
Chain 0 : CH 0 Band edge



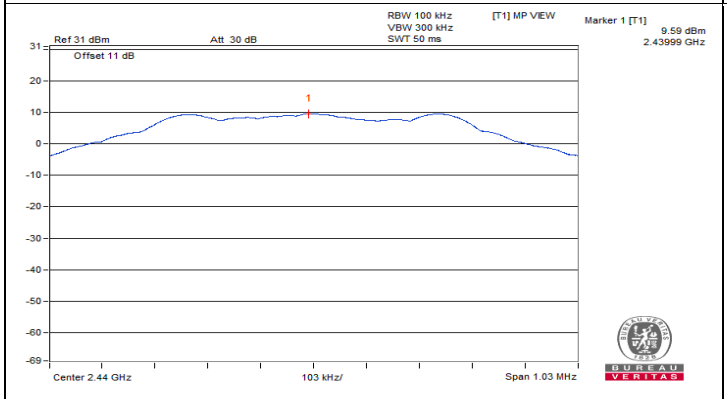
Chain 0 : CH 39 Band edge



Chain 1 : CH 0



Chain 1 : CH 0



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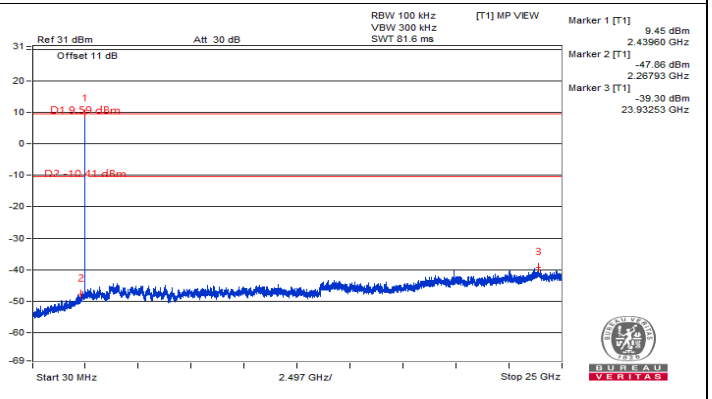

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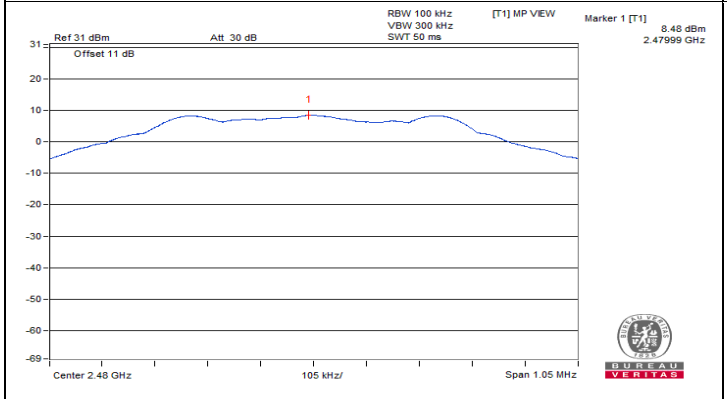

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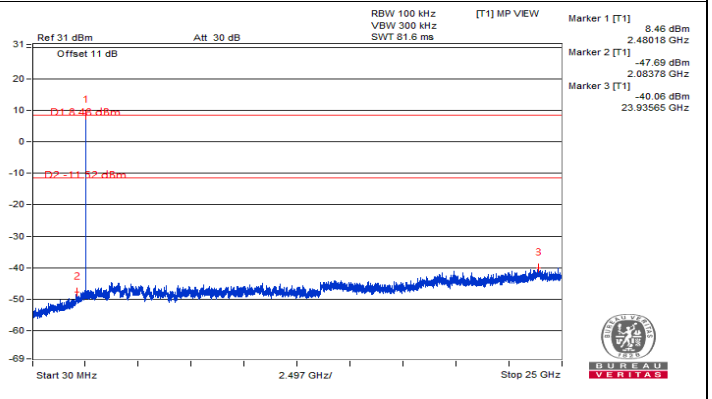
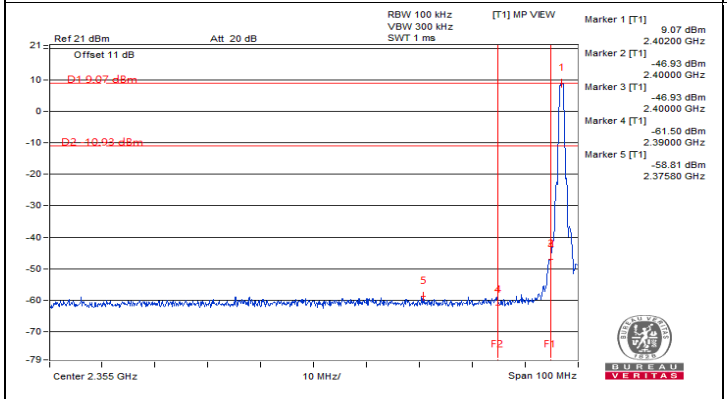
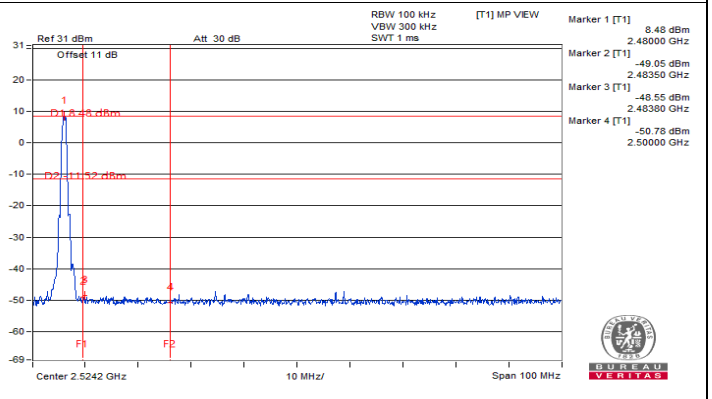


Chain 1 : CH 39

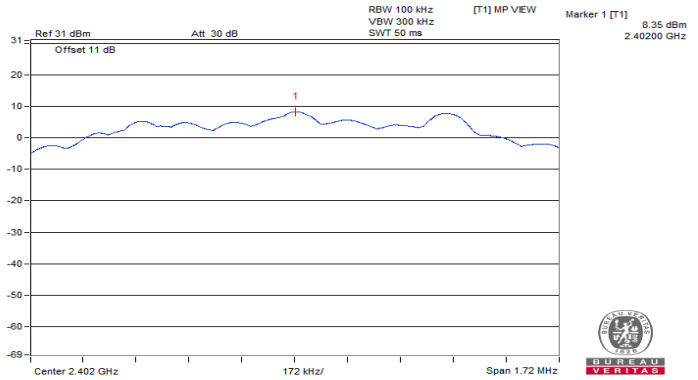


Chain 1 : CH 0 Band edge

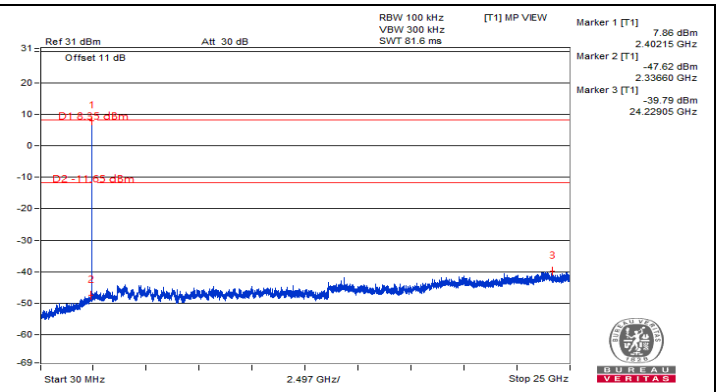


Chain 1 : CH 39 Band edge

BT-LE 2M 2TX



Chain 0 : CH 0



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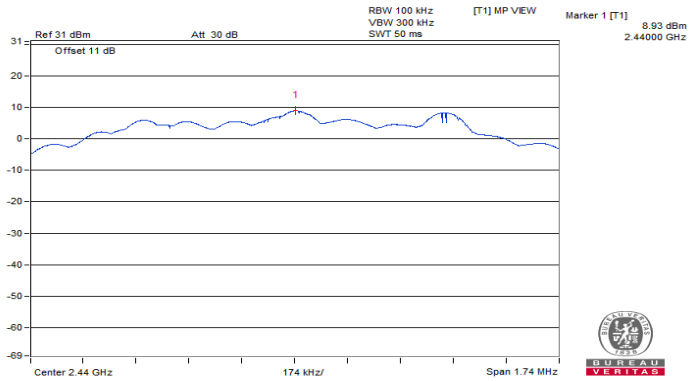

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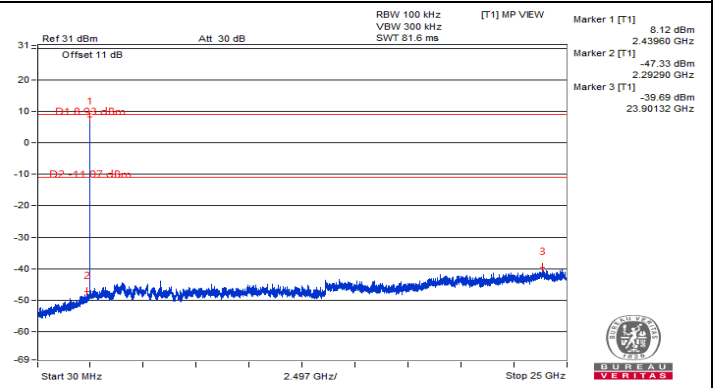

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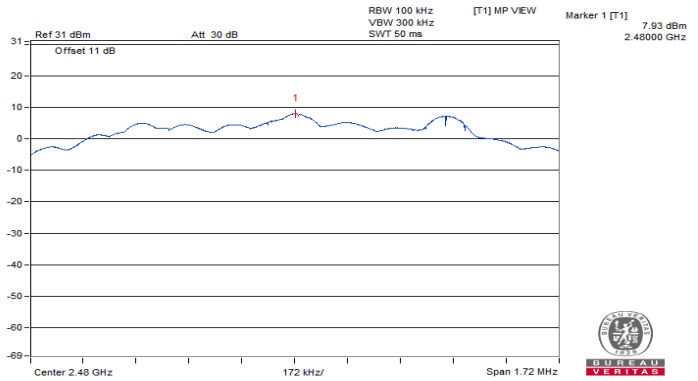

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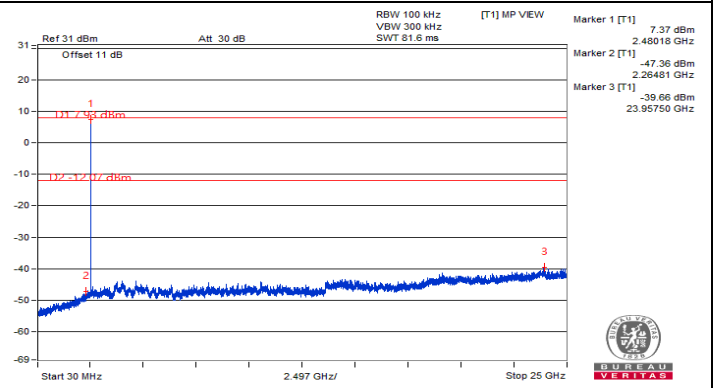
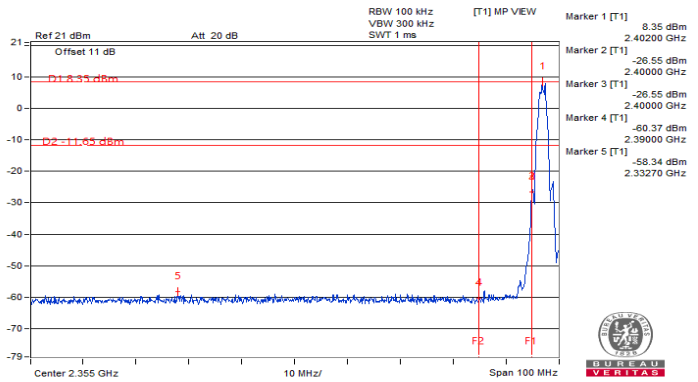
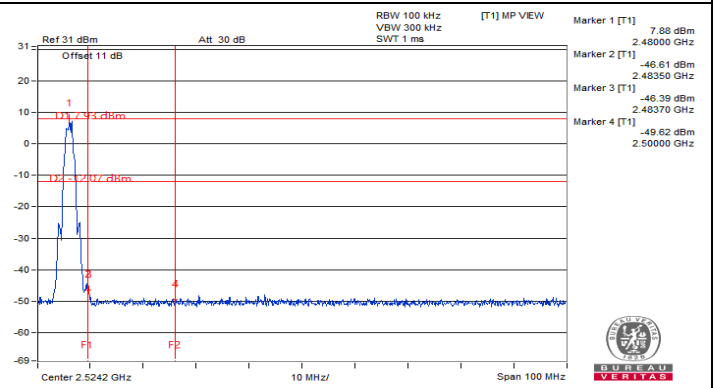


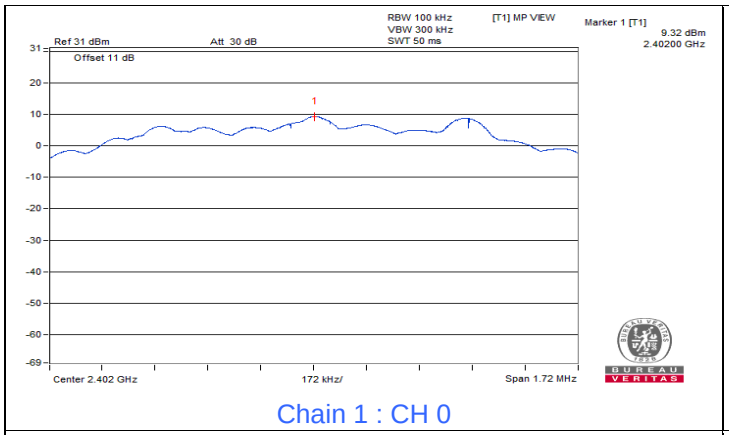
Chain 0 : CH 39



Chain 0 : CH 0 Band edge



Chain 0 : CH 39 Band edge



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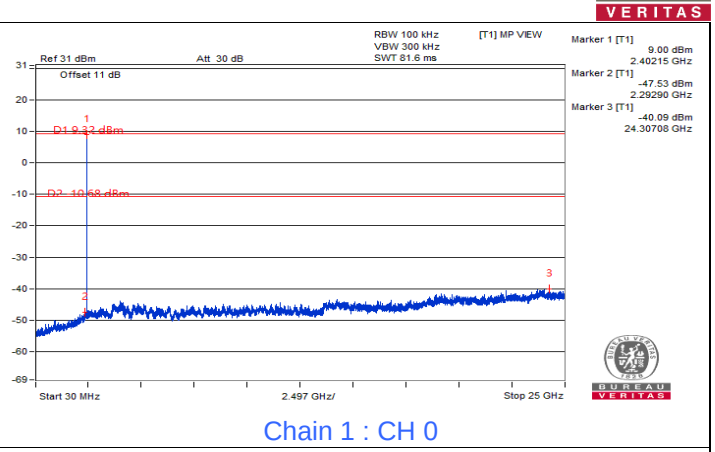

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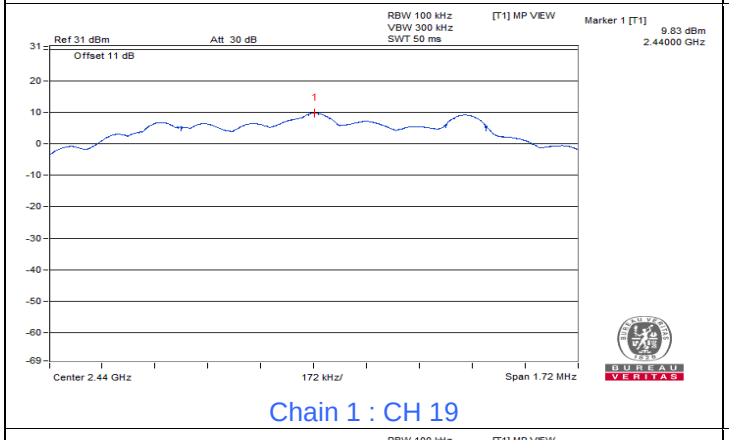

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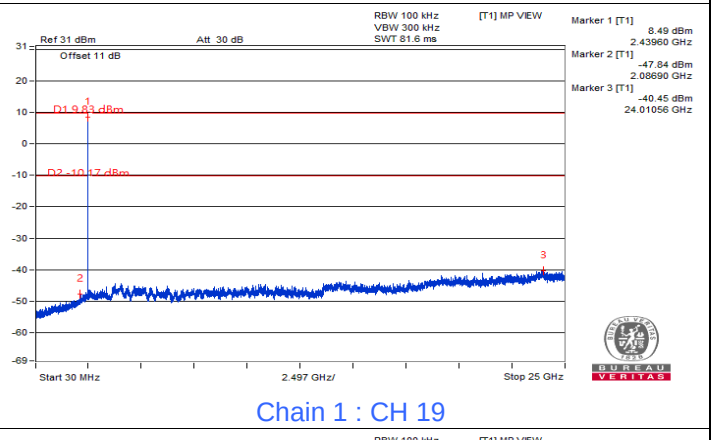

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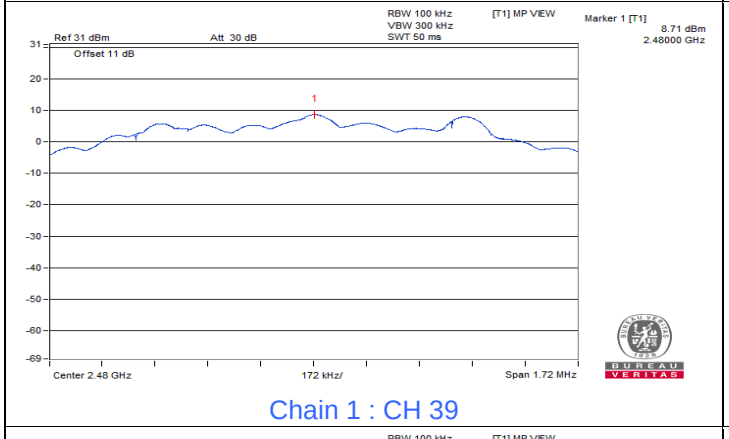
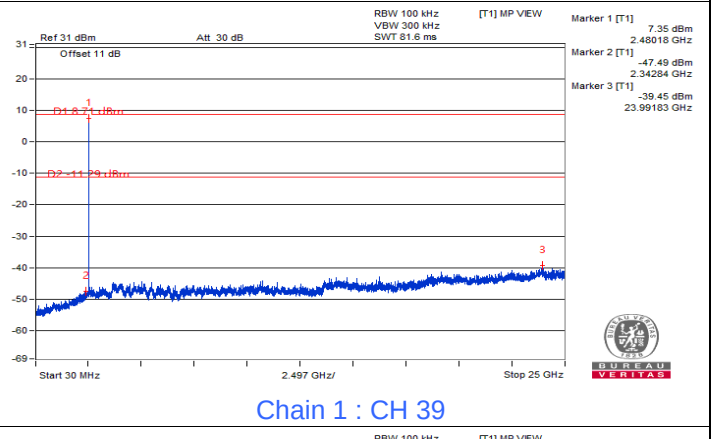
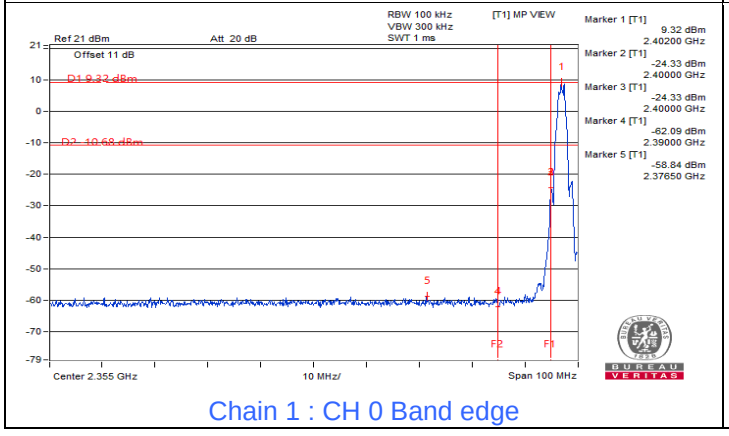


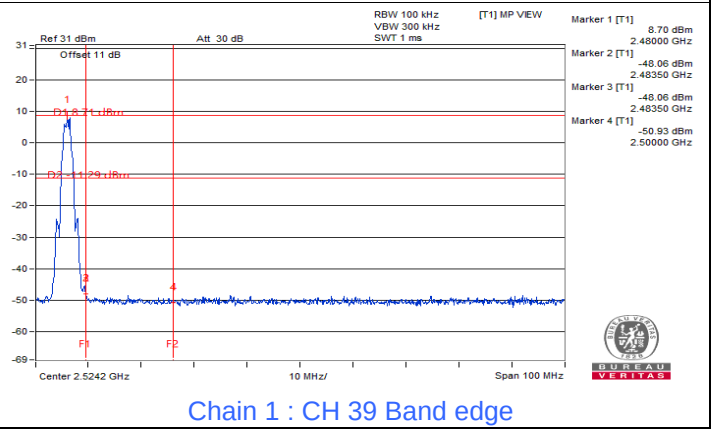
Chain 1 : CH 39



Chain 1 : CH 39



Chain 1 : CH 0 Band edge



Chain 1 : CH 39 Band edge

7.5 AC Power Conducted Emissions

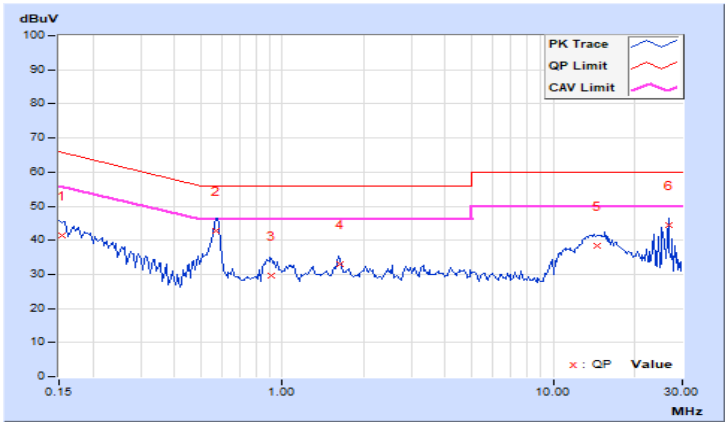
Mode B

RF Mode	BT-LE 1M	**Channel**	CH 19：2440 MHz
Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Tom 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	0.15431	9.97	31.37	24.58	41.34	34.55	65.76	55.76	-24.42	-21.21
2	**0.56917**	**9.99**	**32.65**	**26.54**	**42.64**	**36.53**	**56.00**	**46.00**	**-13.36**	**-9.47**
3	0.91055	10.01	19.47	16.68	29.48	26.69	56.00	46.00	-26.52	-19.31
4	1.63174	10.04	22.92	18.28	32.96	28.32	56.00	46.00	-23.04	-17.68
5	14.55894	10.72	27.61	20.36	38.33	31.08	60.00	50.00	-21.67	-18.92
6	26.63711	11.22	33.06	28.53	44.28	39.75	60.00	50.00	-15.72	-10.25

Remarks:

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

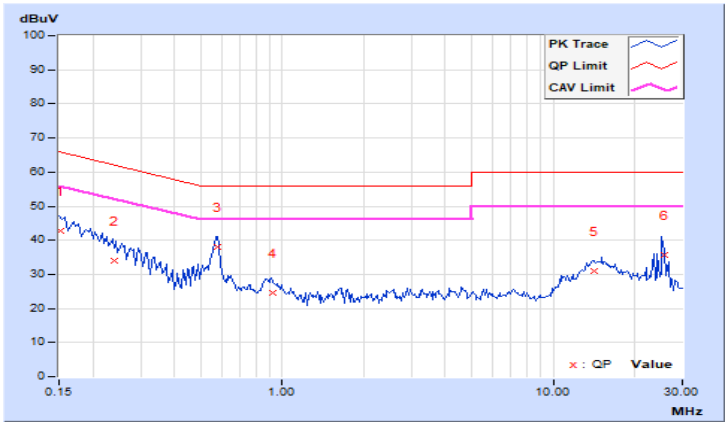


RF Mode	BT-LE 1M	**Channel**	CH 19：2440 MHz
Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Tom Yang		

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	0.15234	10.01	32.66	19.79	42.67	29.80	65.87	55.87	-23.20	-26.07
2	0.24153	10.02	24.15	10.43	34.17	20.45	62.04	52.04	-27.87	-31.59
3	0.57817	10.04	27.96	18.88	38.00	28.92	56.00	46.00	-18.00	-17.08
4	0.92175	10.06	14.64	2.99	24.70	13.05	56.00	46.00	-31.30	-32.95
5	14.17653	10.61	20.38	13.03	30.99	23.64	60.00	50.00	-29.01	-26.36
6	25.90083	10.89	24.92	18.45	35.81	29.34	60.00	50.00	-24.19	-20.66

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

Radiated versus Conducted Measurement
For Radiated measurement: The level of unwanted emissions was measured when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation) For Conducted measurement: The level of unwanted emissions was measured as their power in a specified load (conducted spurious emissions).

Conducted Emission Convert Formula
a. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8 d = measurement distance in 3 meters. b. EIRP Level (dBm) = Raw Value(dBm) + Correction Factor(dB) c. Correction Factor is directional gain, and the composite gain will be used when signal support the correlated signal For the out of band spurious the gain for the specific band may have been used rather than the highest gain across all bands. For the band edge the gain for the specific band may have been used. Notes: 1. In restricted bands below 1000 MHz, add upper bound on ground plane reflection: For f = 30 – 1000 MHz, add 4.7 dB. 2. The conducted emission test was considered some factor to compute test result.

Mode A

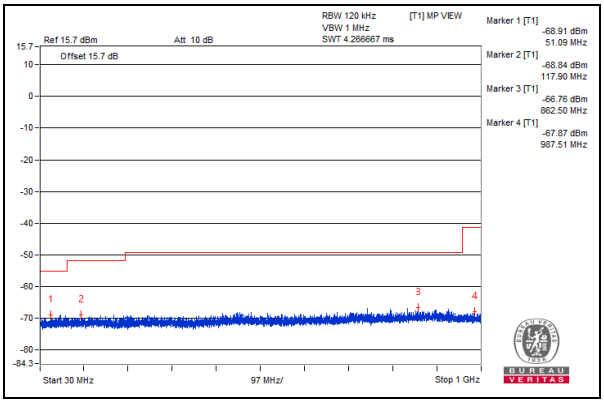
BT-LE 1M 1TX - Channel 19

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	51.09	31.51	40	-8.49	-68.91	5.16	-63.75
2	117.9	31.58	43.5	-11.92	-68.84	5.16	-63.68
3	219.15	31.22	46	-14.78	-69.2	5.16	-64.04
4	495.11	32.32	46	-13.68	-68.1	5.16	-62.94
5	751.31	33.54	46	-12.46	-66.88	5.16	-61.72
6	862.5	33.66	46	-12.34	-66.76	5.16	-61.60

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.



Mode B

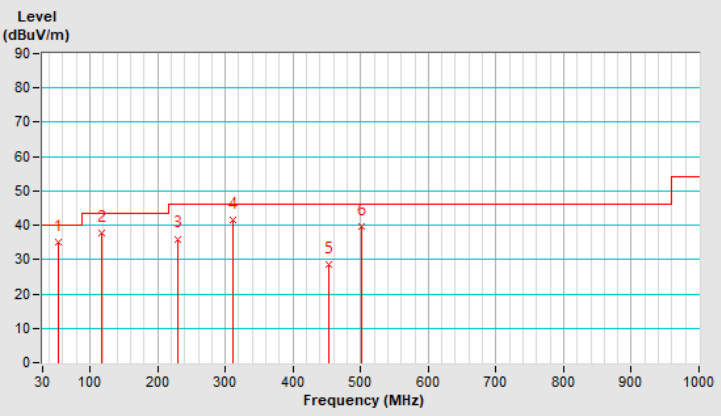
1TX

RF Mode	BT-LE 1M	Channel	CH 19：2440 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°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	52.83	34.9 QP	40.0	-5.1	1.00 H	65	48.6	-13.7
2	117.28	37.7 QP	43.5	-5.8	2.00 H	132	53.5	-15.8
3	230.51	36.0 QP	46.0	-10.0	1.50 H	90	52.1	-16.1
4	**311.54**	**41.7 QP**	**46.0**	**-4.3**	**1.50 H**	**191**	**54.0**	**-12.3**
5	452.37	28.7 QP	46.0	-17.3	1.50 H	75	37.3	-8.6
6	501.88	39.5 QP	46.0	-6.5	2.00 H	245	47.4	-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 emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

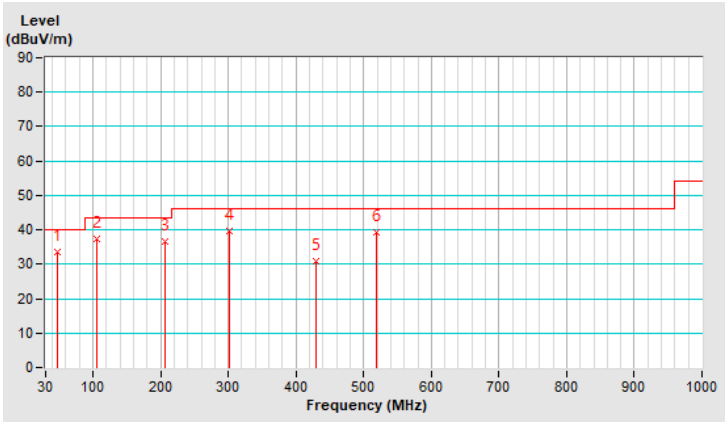


RF Mode	BT-LE 1M	**Channel**	CH 19：2440 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	46.58	33.6 QP	40.0	-6.4	1.00 V	169	47.2	-13.6
2	105.51	37.2 QP	43.5	-6.3	2.00 V	266	54.4	-17.2
3	207.39	36.5 QP	43.5	-7.0	2.00 V	90	53.3	-16.8
4	301.30	39.8 QP	46.0	-6.2	1.50 V	126	52.5	-12.7
5	429.16	30.7 QP	46.0	-15.3	1.00 V	169	40.0	-9.3
6	519.18	39.3 QP	46.0	-6.7	2.00 V	239	46.8	-7.5

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 emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



7.7 Unwanted Emissions above 1 GHz

Radiated versus Conducted Measurement
For Radiated measurement: The level of unwanted emissions was measured when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation) For Conducted measurement: The level of unwanted emissions was measured as their power in a specified load (conducted spurious emissions).

Conducted Emission Convert Formula
a. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8 d = measurement distance in 3 meters. b. EIRP Level (dBm) = Raw Value(dBm) + Correction Factor(dB) c. Correction Factor is directional gain, and the composite gain will be used when signal support the correlated signal For the out of band spurious the gain for the specific band may have been used rather than the highest gain across all bands. For the band edge the gain for the specific band may have been used. Notes: The conducted emission test was considered some factor to compute test result.

Mode A

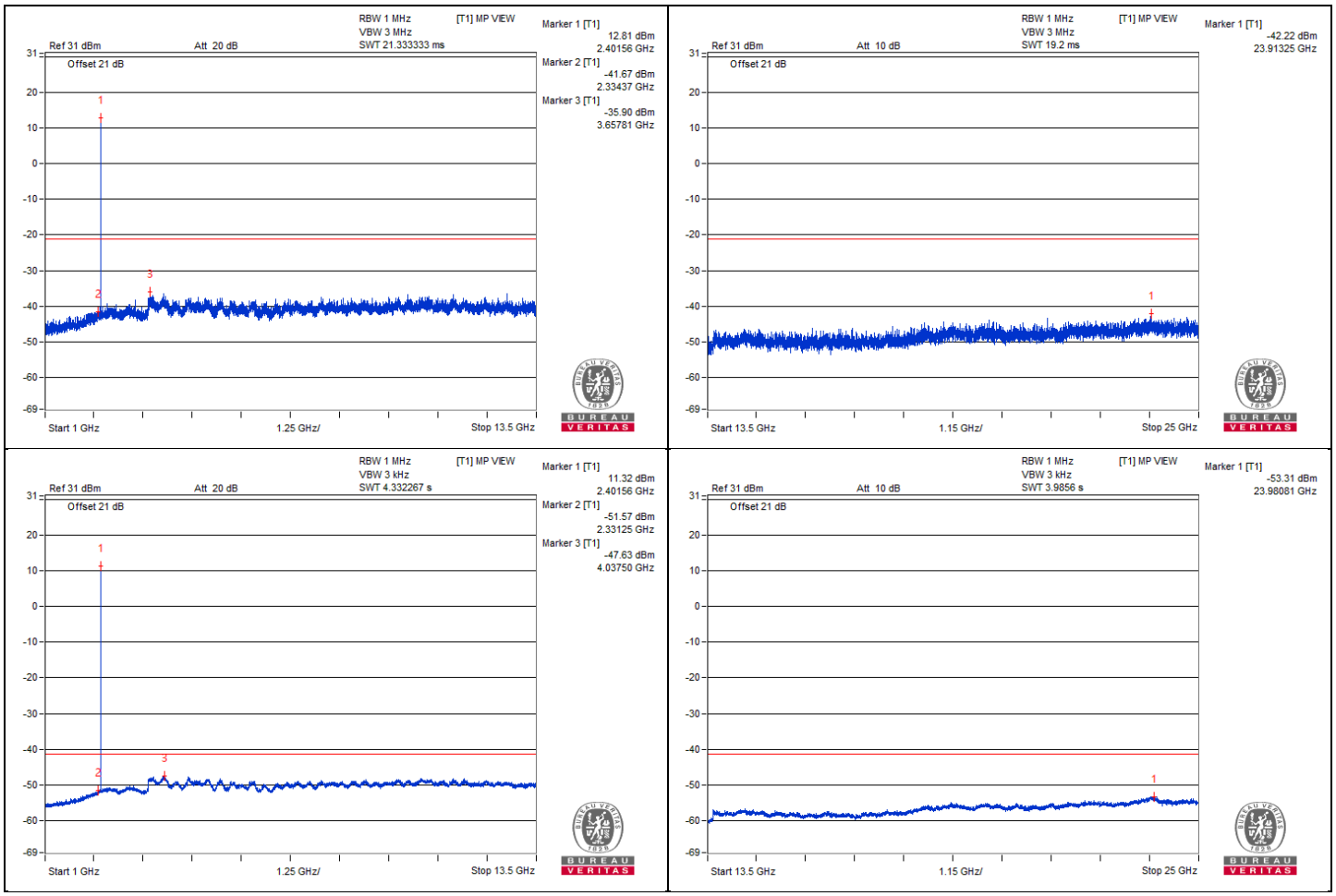
BT-LE 1M 1TX - Channel 0

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	4803.12	61.19 PK	74	-12.81	-39.23	5.16	-34.07
2	4804.68	51.62 AV	54	-2.38	-48.8	5.16	-43.64

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

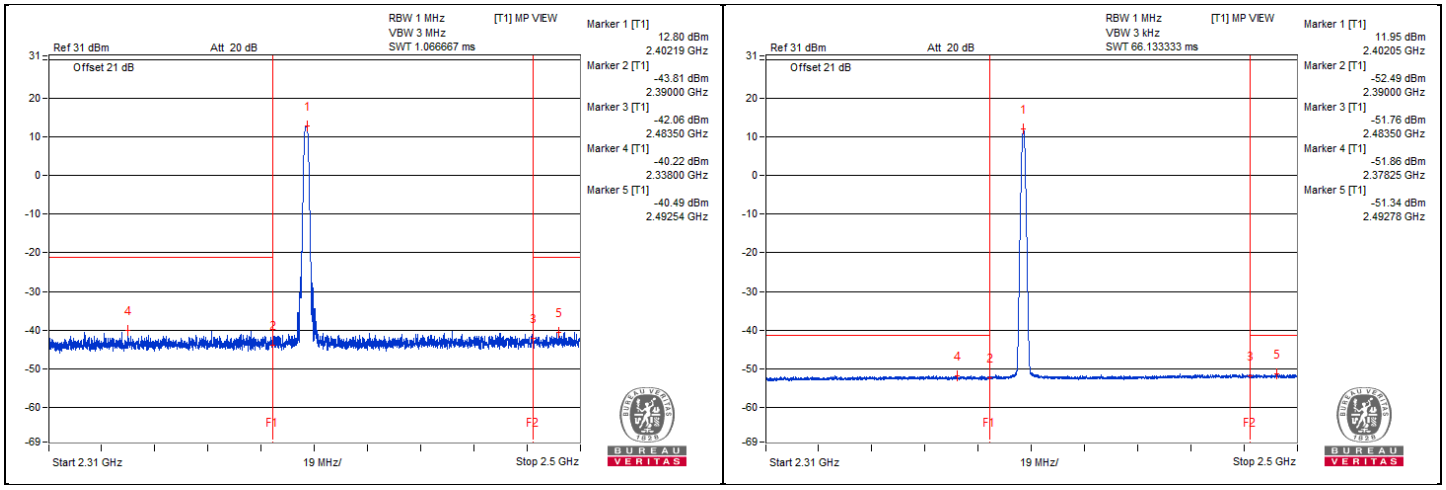


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2338	58.57 PK	74	-15.43	-40.22	3.53	-36.69
2	2378.25	46.93 AV	54	-7.07	-51.86	3.53	-48.33
3	2492.54	58.3 PK	74	-15.7	-40.49	3.53	-36.96
4	2492.78	47.45 AV	54	-6.55	-51.34	3.53	-47.81

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.



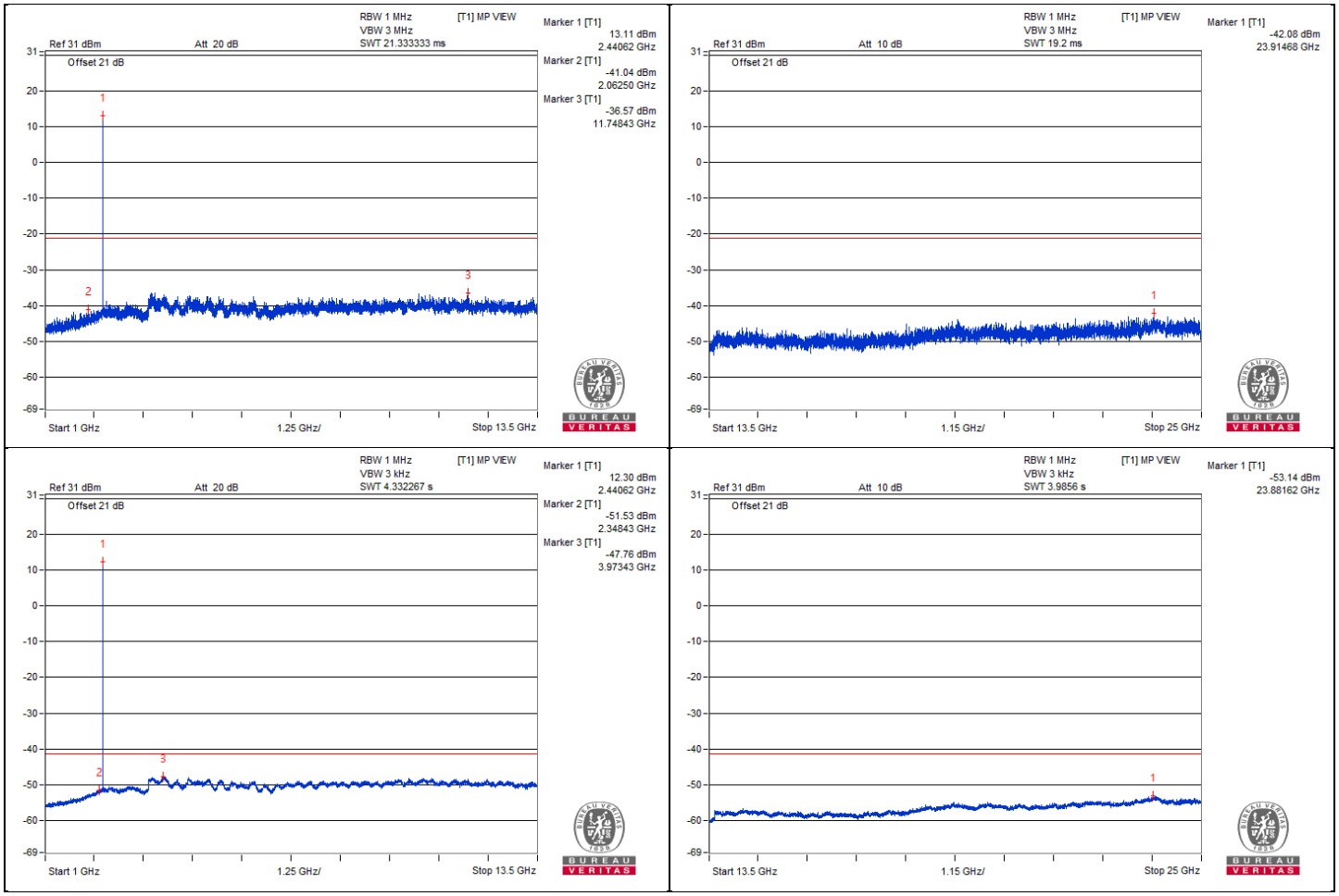
BT-LE 1M 1TX - Channel 19

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	4868.75	62.55 PK	74	-11.45	-37.87	5.16	-32.71
2	4867.18	51.59 AV	54	-2.41	-48.83	5.16	-43.67
3	7310.93	60.98 PK	74	-13.02	-39.44	5.16	-34.28
4	7339.06	50.46 AV	54	-3.54	-49.96	5.16	-44.80

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

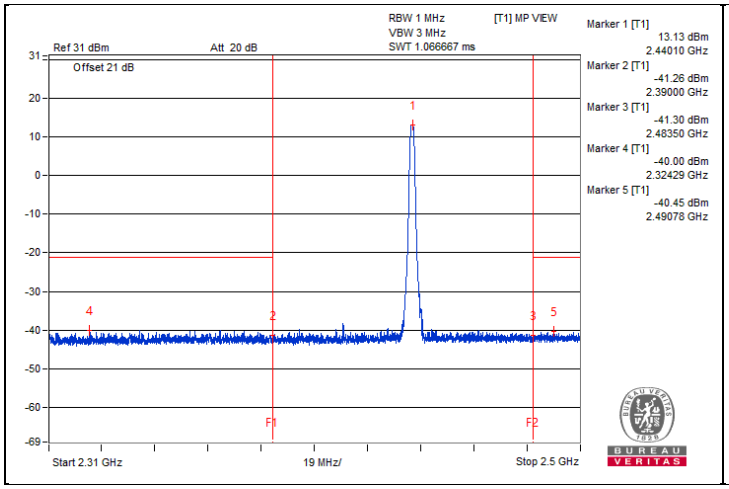


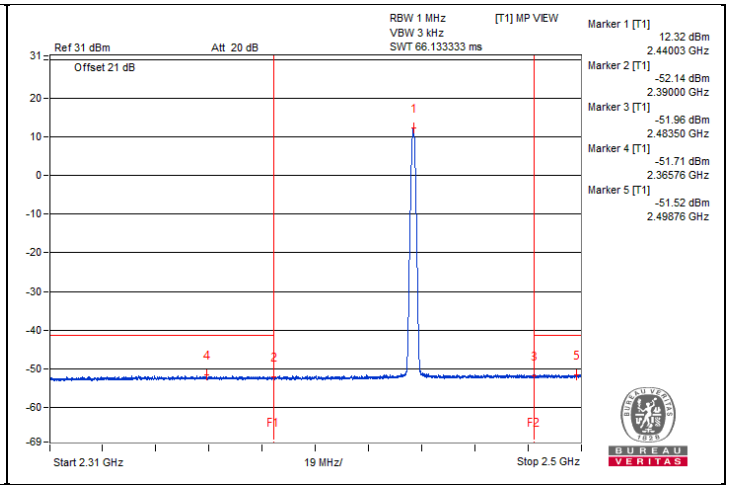
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2324.29	58.79 PK	74	-15.21	-40	3.53	-36.47
2	2365.76	47.08 AV	54	-6.92	-51.71	3.53	-48.18
3	2490.76	58.34 PK	74	-15.66	-40.45	3.53	-36.92
4	2498.76	47.27 AV	54	-6.73	-51.52	3.53	-47.99

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.





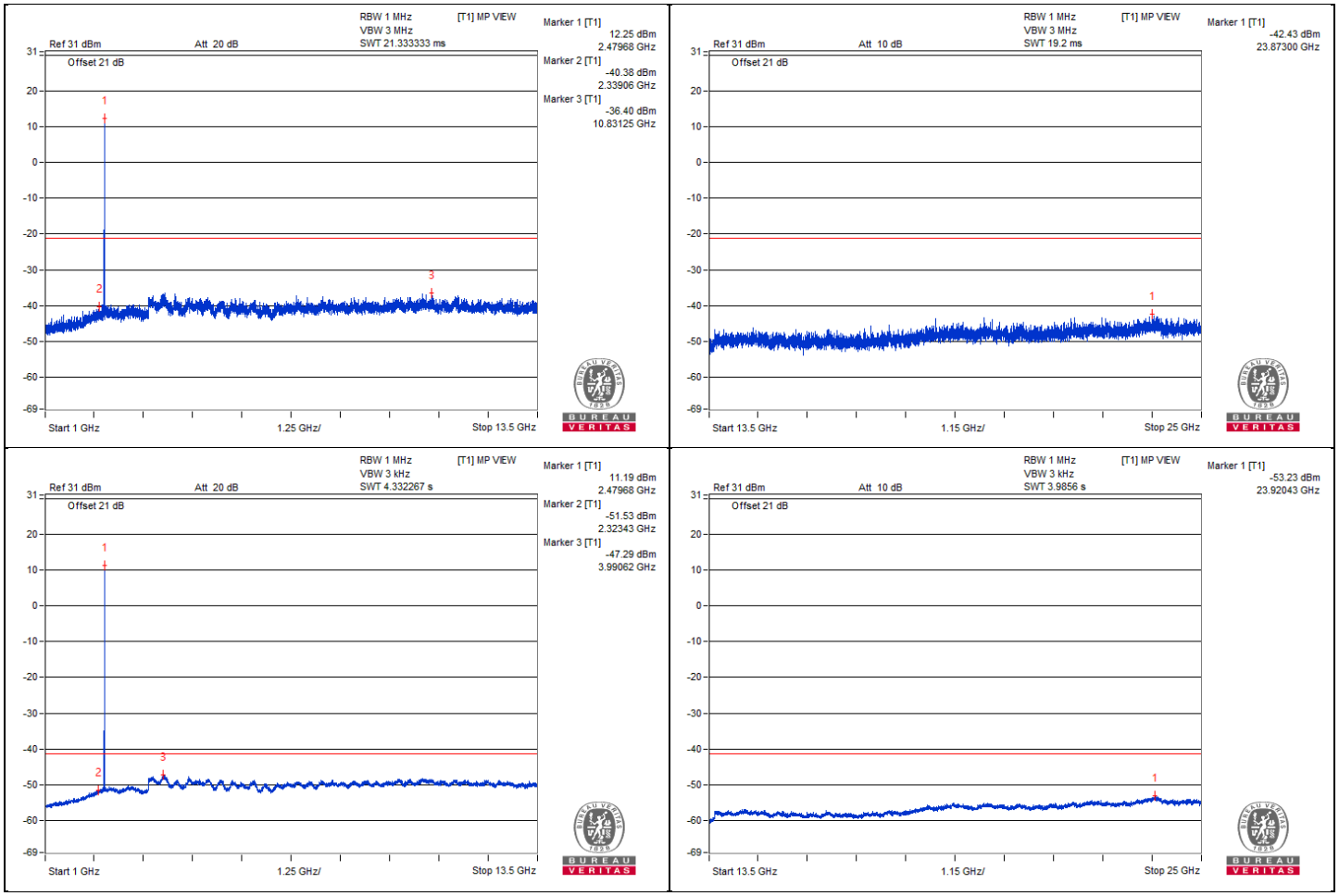
BT-LE 1M 1TX - Channel 39

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	4942.18	62.46 PK	74	-11.54	-37.96	5.16	-32.80
2	4945.31	50.88 AV	54	-3.12	-49.54	5.16	-44.38
3	7421.87	62.04 PK	74	-11.96	-38.38	5.16	-33.22
4	7443.75	51.22 AV	54	-2.78	-49.2	5.16	-44.04

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

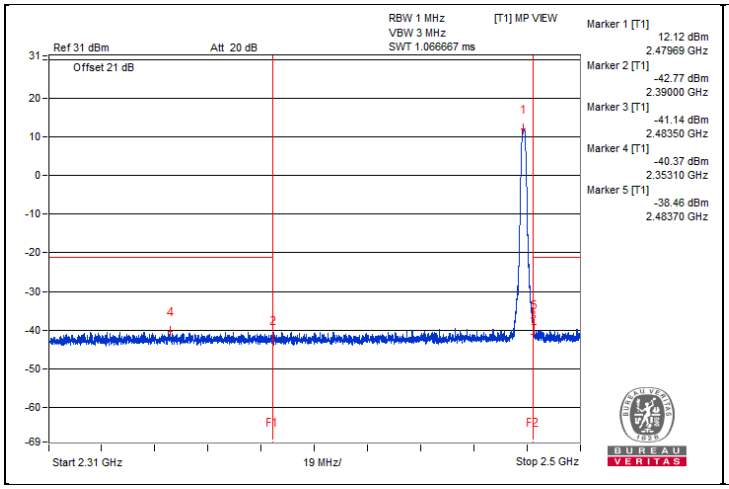


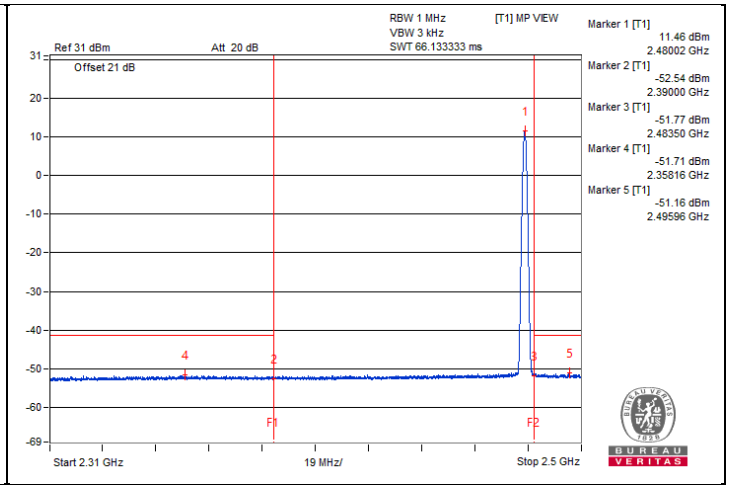
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2353.1	58.42 PK	74	-15.58	-40.37	3.53	-36.84
2	2358.16	47.08 AV	54	-6.92	-51.71	3.53	-48.18
3	2483.7	60.33 PK	74	-13.67	-38.46	3.53	-34.93
4	2495.96	47.63 AV	54	-6.37	-51.16	3.53	-47.63

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.





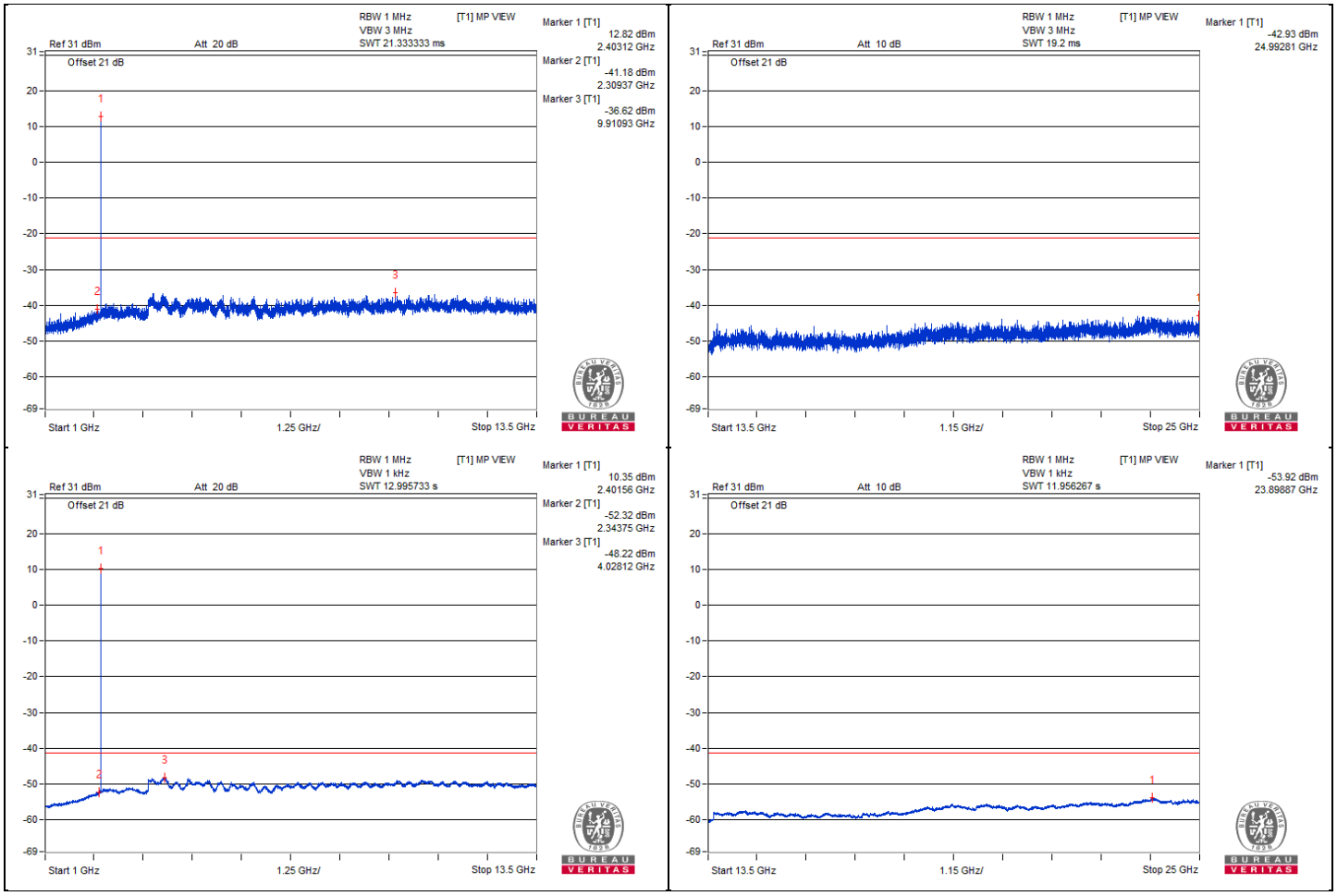
BT-LE 2M 1TX - Channel 0

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	4821.87	61.77 PK	74	-12.23	-38.65	5.16	-33.49
2	4820.31	50.64 AV	54	-3.36	-49.78	5.16	-44.62

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

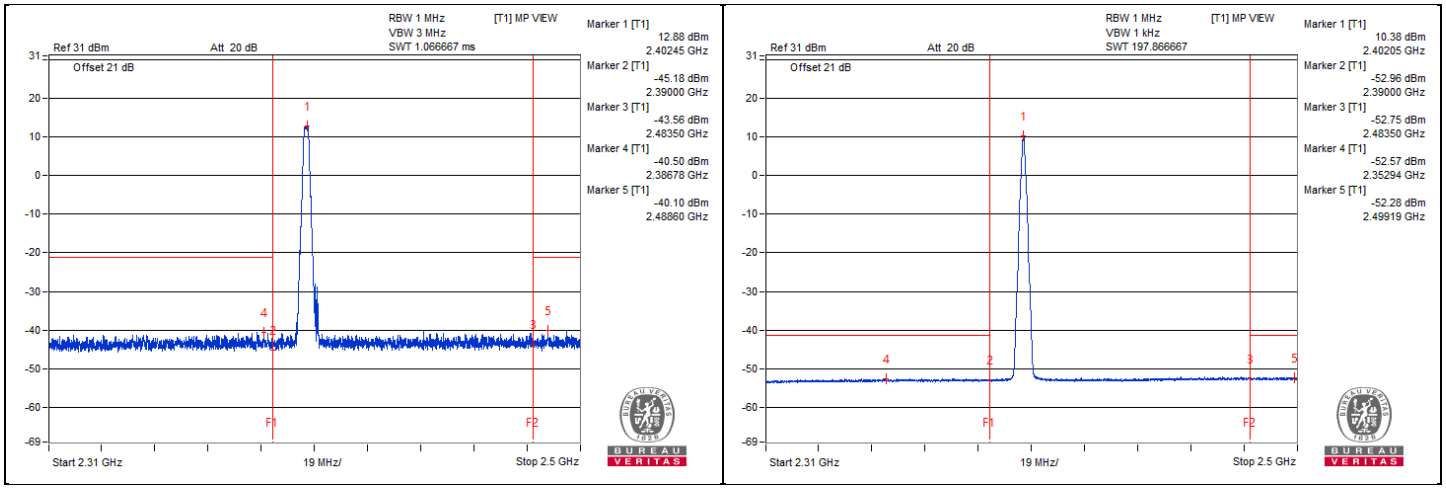


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2386.78	58.29 PK	74	-15.71	-40.5	3.53	-36.97
2	2352.94	46.22 AV	54	-7.78	-52.57	3.53	-49.04
3	2488.6	58.69 PK	74	-15.31	-40.1	3.53	-36.57
4	2483.75	46.51 AV	54	-7.49	-52.28	3.53	-48.75

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.



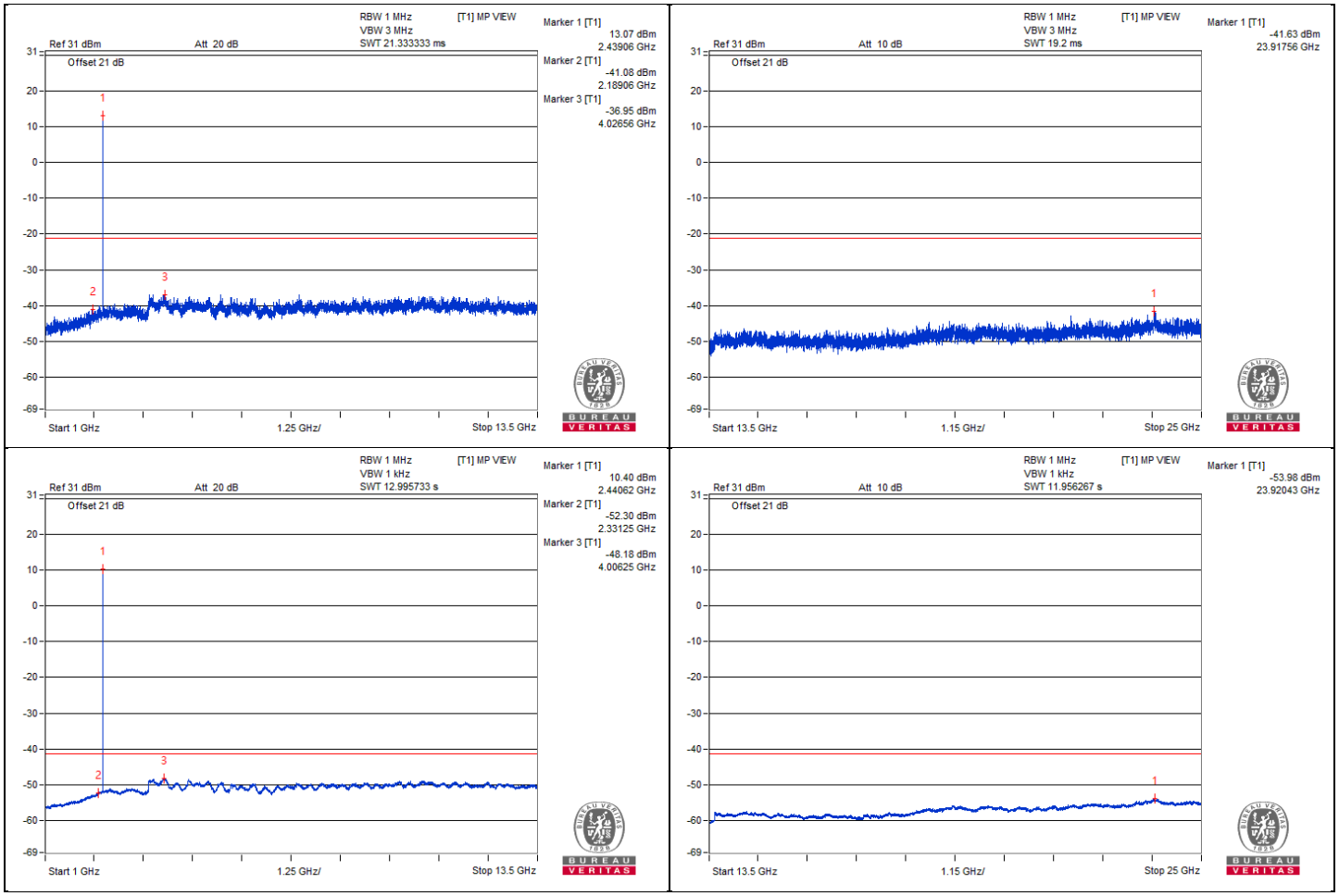
BT-LE 2M 1TX - Channel 19

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	4865.62	62.12 PK	74	-11.88	-38.3	5.16	-33.14
2	4864.06	50.89 AV	54	-3.11	-49.53	5.16	-44.37
3	7334.37	60.9 PK	74	-13.1	-39.52	5.16	-34.36
4	7337.5	49.91 AV	54	-4.09	-50.51	5.16	-45.35

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

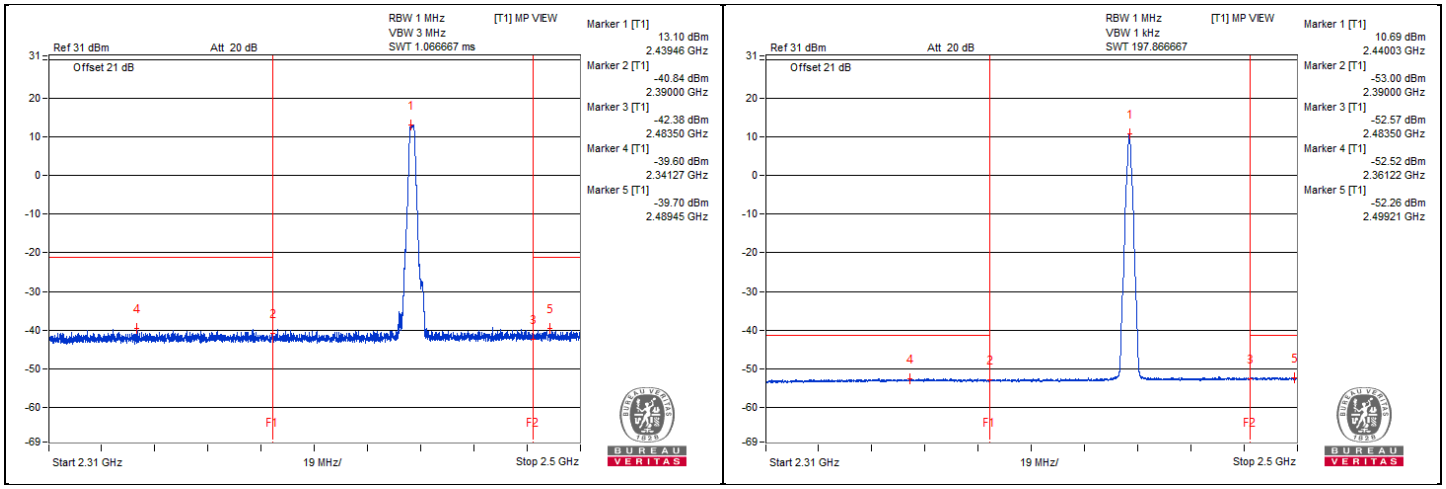


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2341.27	59.19 PK	74	-14.81	-39.6	3.53	-36.07
2	2361.22	46.27 AV	54	-7.73	-52.52	3.53	-48.99
3	2489.45	59.09 PK	74	-14.91	-39.7	3.53	-36.17
4	2499.21	46.53 AV	54	-7.47	-52.26	3.53	-48.73

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.



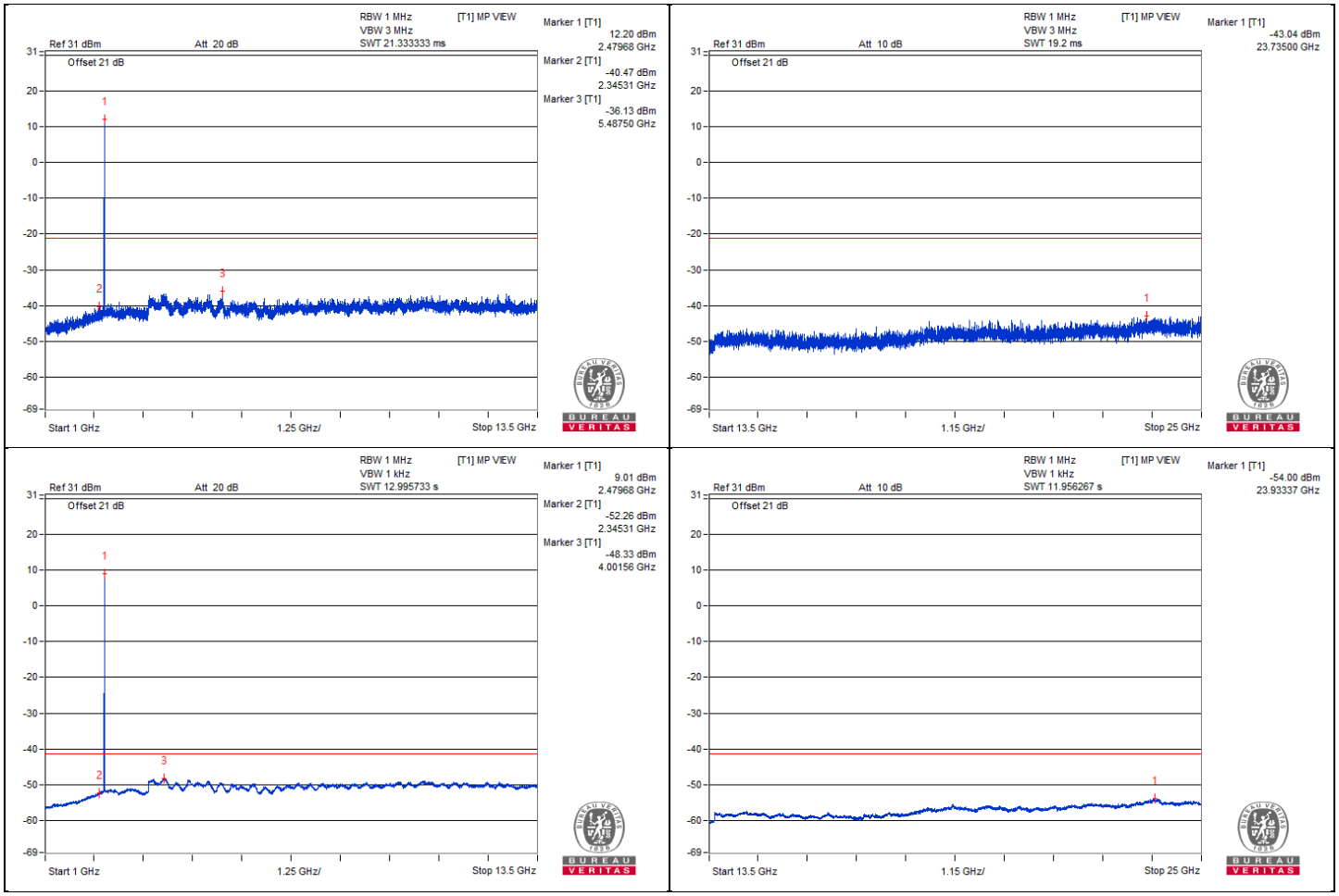
BT-LE 2M 1TX - Channel 39

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	4962.5	61.97 PK	74	-12.03	-38.45	5.16	-33.29
2	4965.62	50.53 AV	54	-3.47	-49.89	5.16	-44.73
3	7429.68	62.36 PK	74	-11.64	-38.06	5.16	-32.90
4	7425	50.91 AV	54	-3.09	-49.51	5.16	-44.35

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

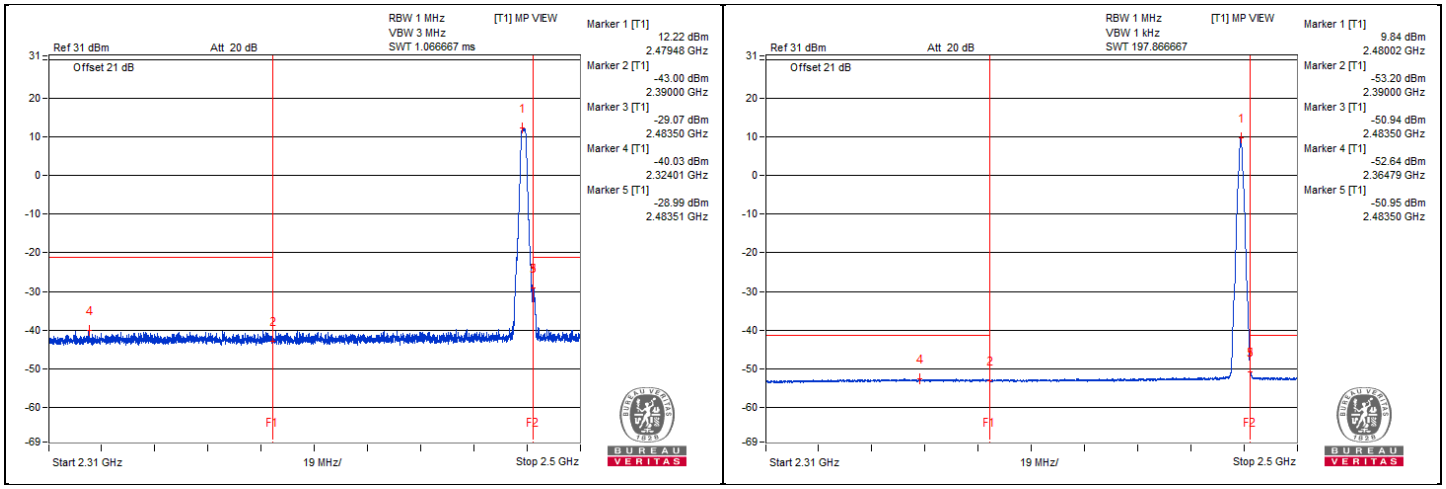


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2324.01	58.76 PK	74	-15.24	-40.03	3.53	-36.50
2	2364.79	46.15 AV	54	-7.85	-52.64	3.53	-49.11
3	2483.51	69.8 PK	74	-4.2	-28.99	3.53	-25.46
4	2483.51	47.82 AV	54	-6.18	-50.97	3.53	-47.44

Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.



BT-LE 1M 2TX - Channel 0

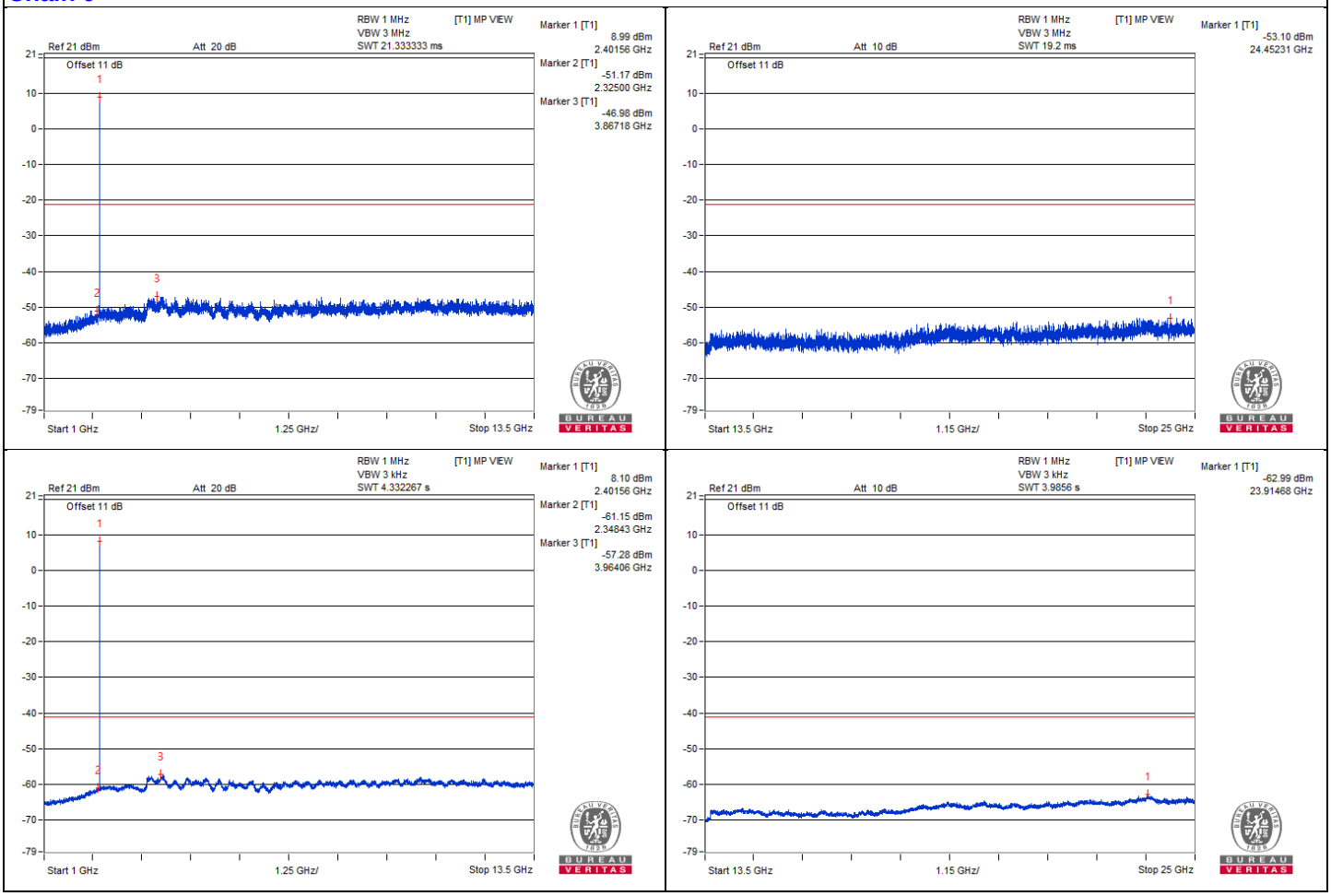
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	4800	57.63 PK	74	-16.37	-49.87	-47.96	8.17	-37.63
2	4823.43	47.12 AV	54	-6.88	-59.21	-59.43	8.17	-48.14

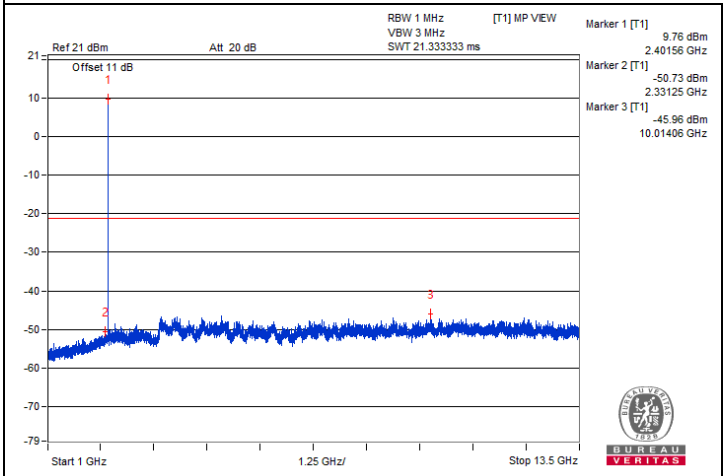
Remarks:

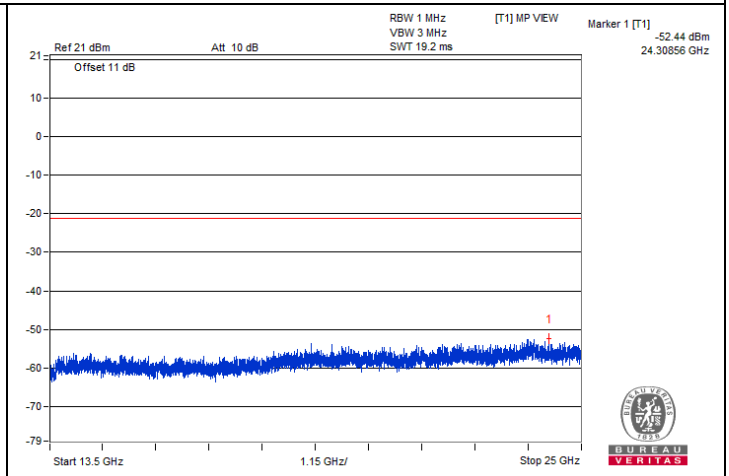
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

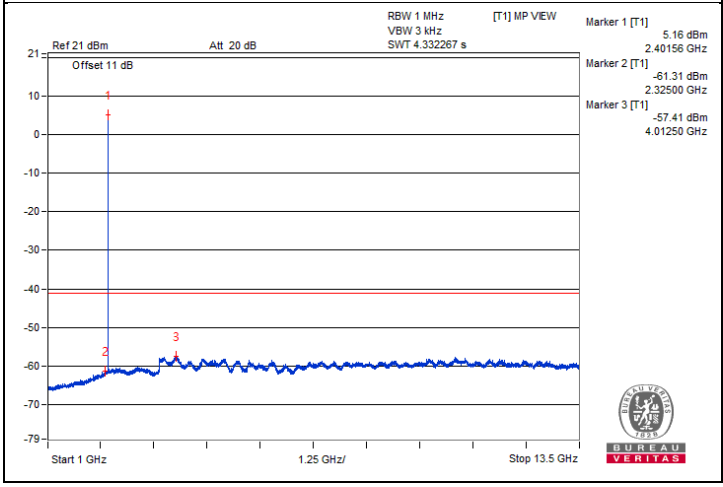
Chain 0

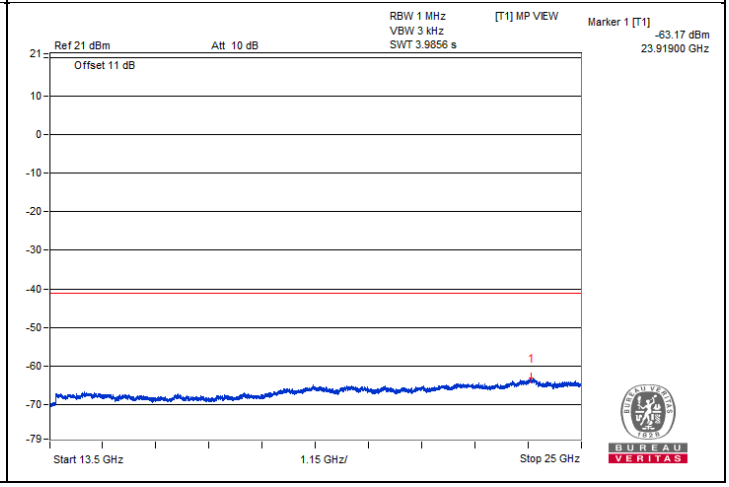


Chain 1


RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
9.76 dBm
2.40156 GHz
Marker 2 [T1]
-50.73 dBm
2.33125 GHz
Marker 3 [T1]
-45.96 dBm
10.01406 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.2 ms
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-52.44 dBm
24.30856 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 3 kHz
SWT 4.332267 s
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
5.16 dBm
2.40156 GHz
Marker 2 [T1]
-61.31 dBm
2.32500 GHz
Marker 3 [T1]
-57.41 dBm
4.01250 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 kHz
SWT 3.9856 s
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-63.17 dBm
23.91900 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

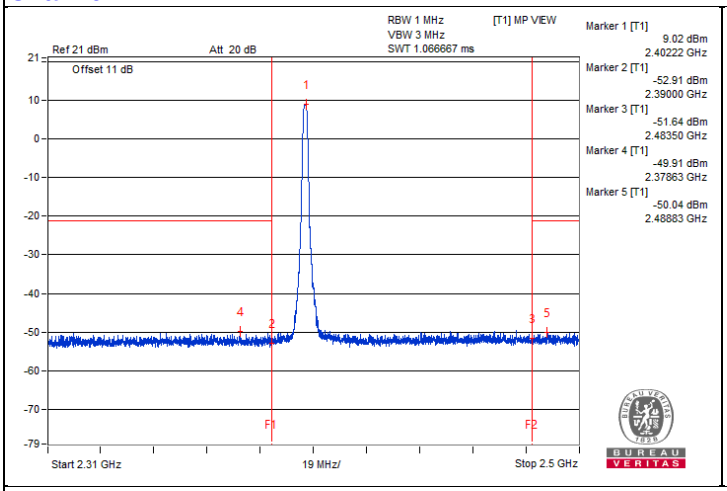
Bandedge table

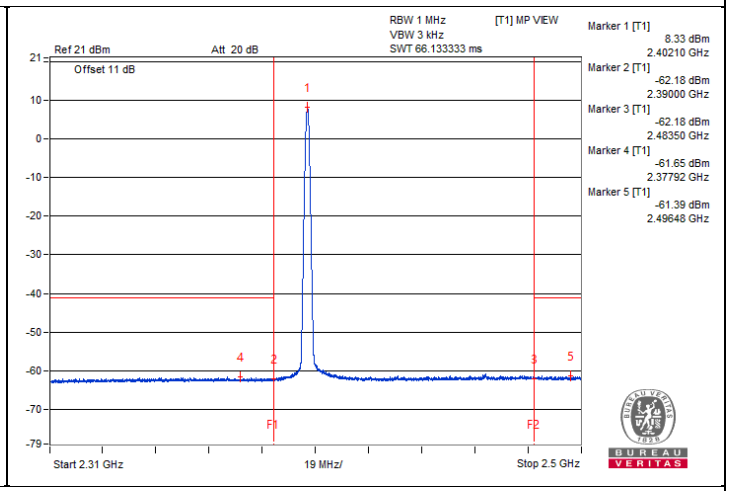
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	2368.52	53.94 PK	74	-20.06	-51.15	-50.6	6.54	-41.32
2	2377.92	42.85 AV	54	-11.15	-61.65	-62.29	6.54	-52.41
3	2494.53	55.22 PK	74	-18.78	-51.52	-48.26	6.54	-40.04
4	2498.02	43.2 AV	54	-10.8	-61.9	-61.33	6.54	-52.06

Remarks:

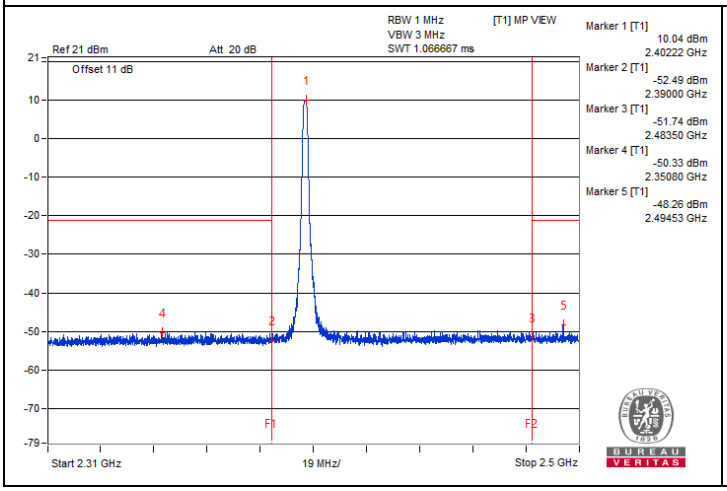
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

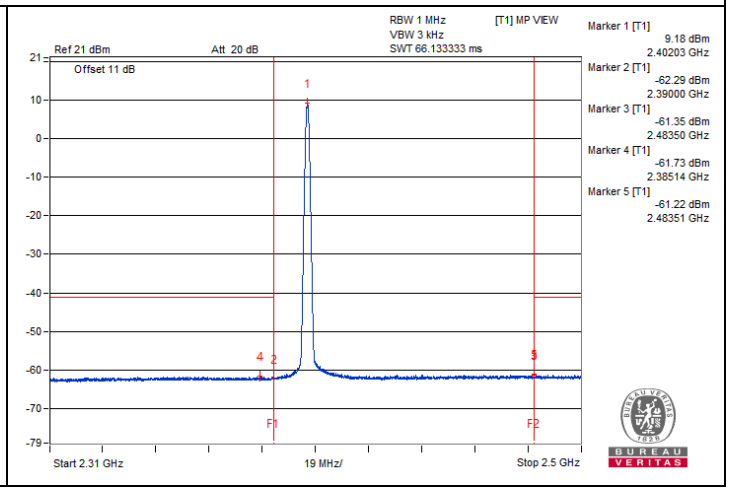
Chain 0





Chain 1





BT-LE 1M 2TX - Channel 19

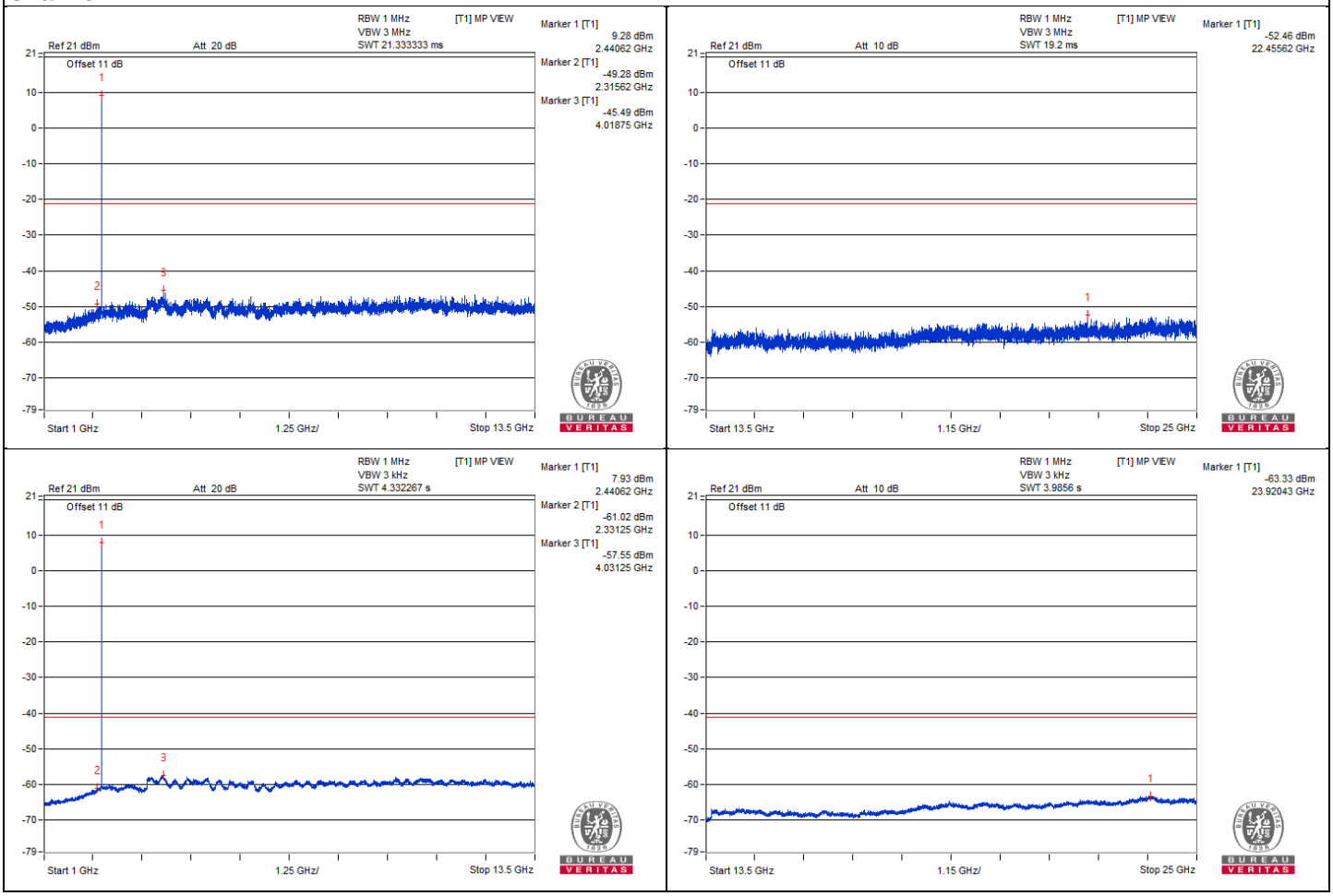
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	4879.68	57.66 PK	74	-16.34	-47.85	-49.96	8.17	-37.60
2	4873.43	47.46 AV	54	-6.54	-59.03	-58.94	8.17	-47.80
3	7306.25	56.58 PK	74	-17.42	-51.21	-48.83	8.17	-38.68
4	7303.12	46.65 AV	54	-7.35	-59.68	-59.9	8.17	-48.61

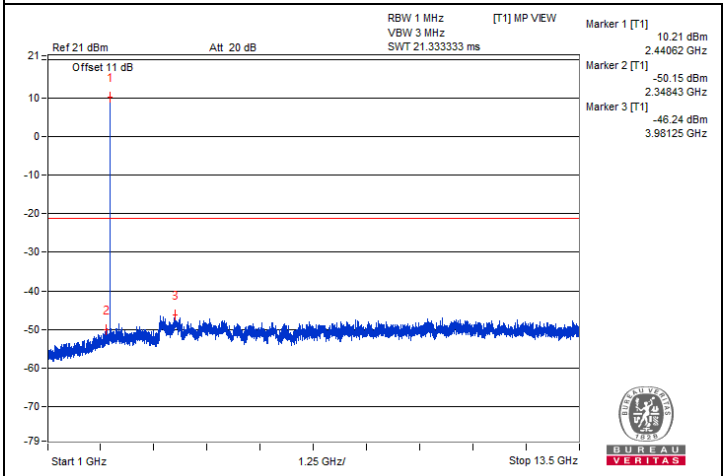
Remarks:

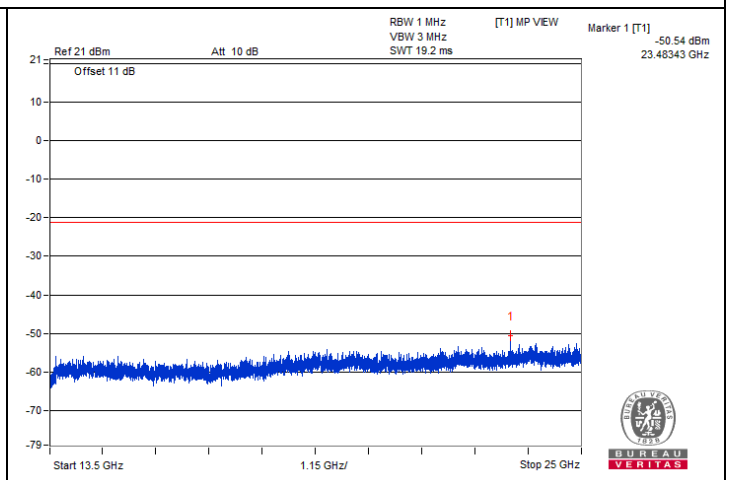
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

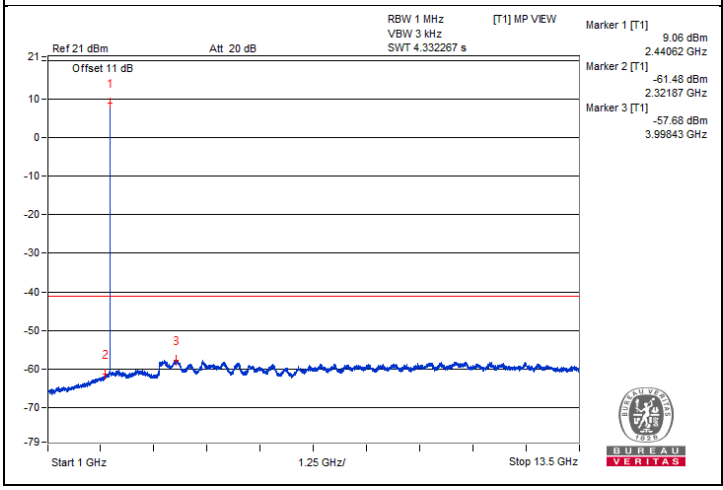
Chain 0

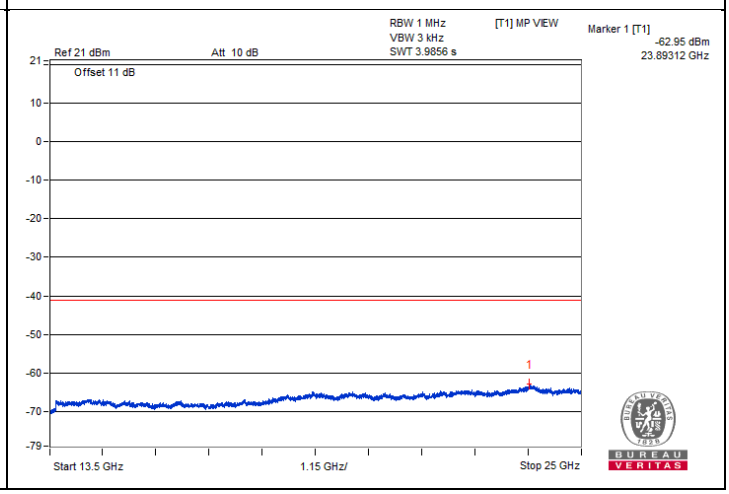


Chain 1


RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
10.21 dBm
2.44062 GHz
Marker 2 [T1]
-50.15 dBm
2.34843 GHz
Marker 3 [T1]
-46.24 dBm
3.98125 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.2 ms
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-50.54 dBm
23.48343 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 3 kHz
SWT 4.332267 s
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
9.06 dBm
2.44062 GHz
Marker 2 [T1]
-61.48 dBm
2.32187 GHz
Marker 3 [T1]
-57.68 dBm
3.99843 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 kHz
SWT 3.9856 s
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-62.95 dBm
23.89312 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

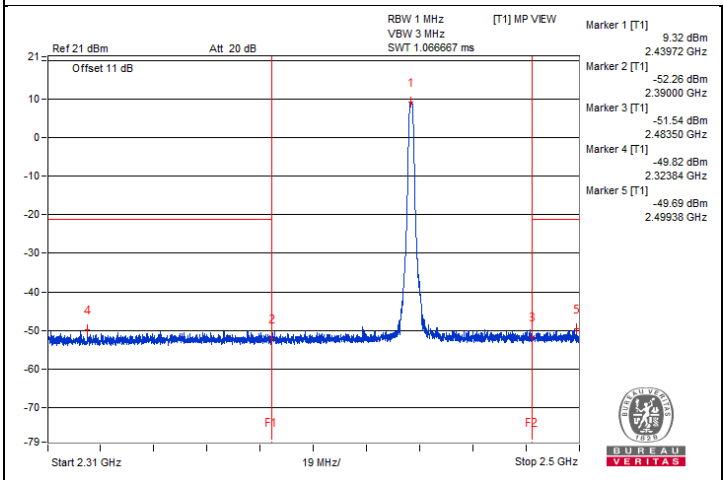
Bandedge table

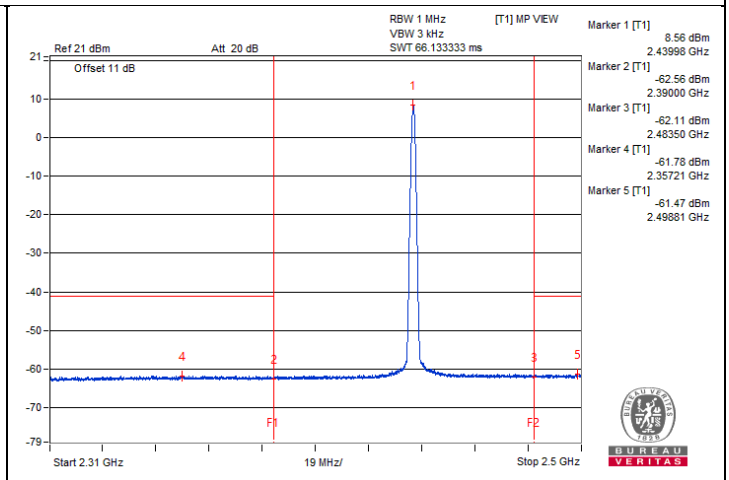
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	2373.03	54.14 PK	74	-19.86	-52.19	-49.55	6.54	-41.12
2	2357.21	42.9 AV	54	-11.1	-61.78	-62.04	6.54	-52.36
3	2496.62	54.28 PK	74	-19.72	-50.4	-50.67	6.54	-40.98
4	2491.52	43.32 AV	54	-10.68	-61.59	-61.39	6.54	-51.94

Remarks:

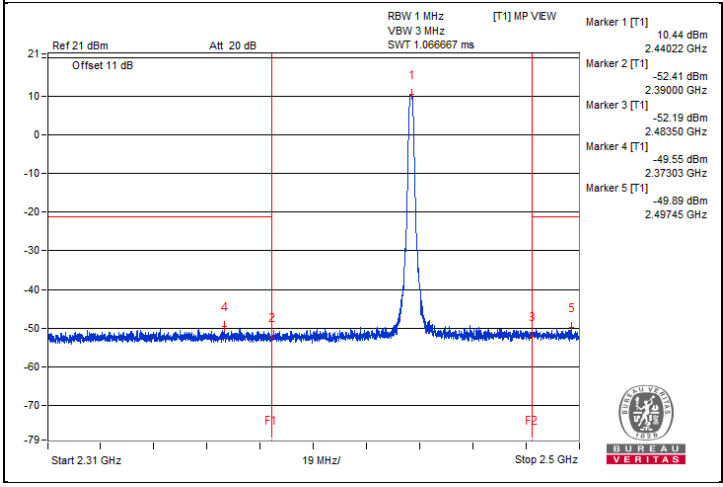
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

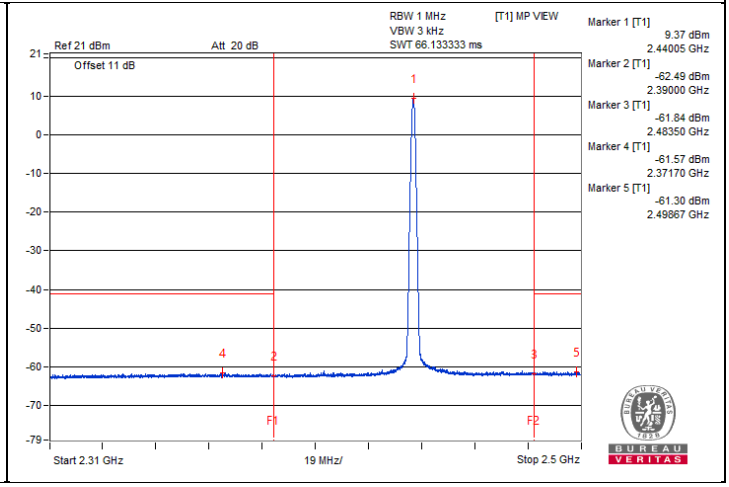
Chain 0





Chain 1





BT-LE 1M 2TX - Channel 39

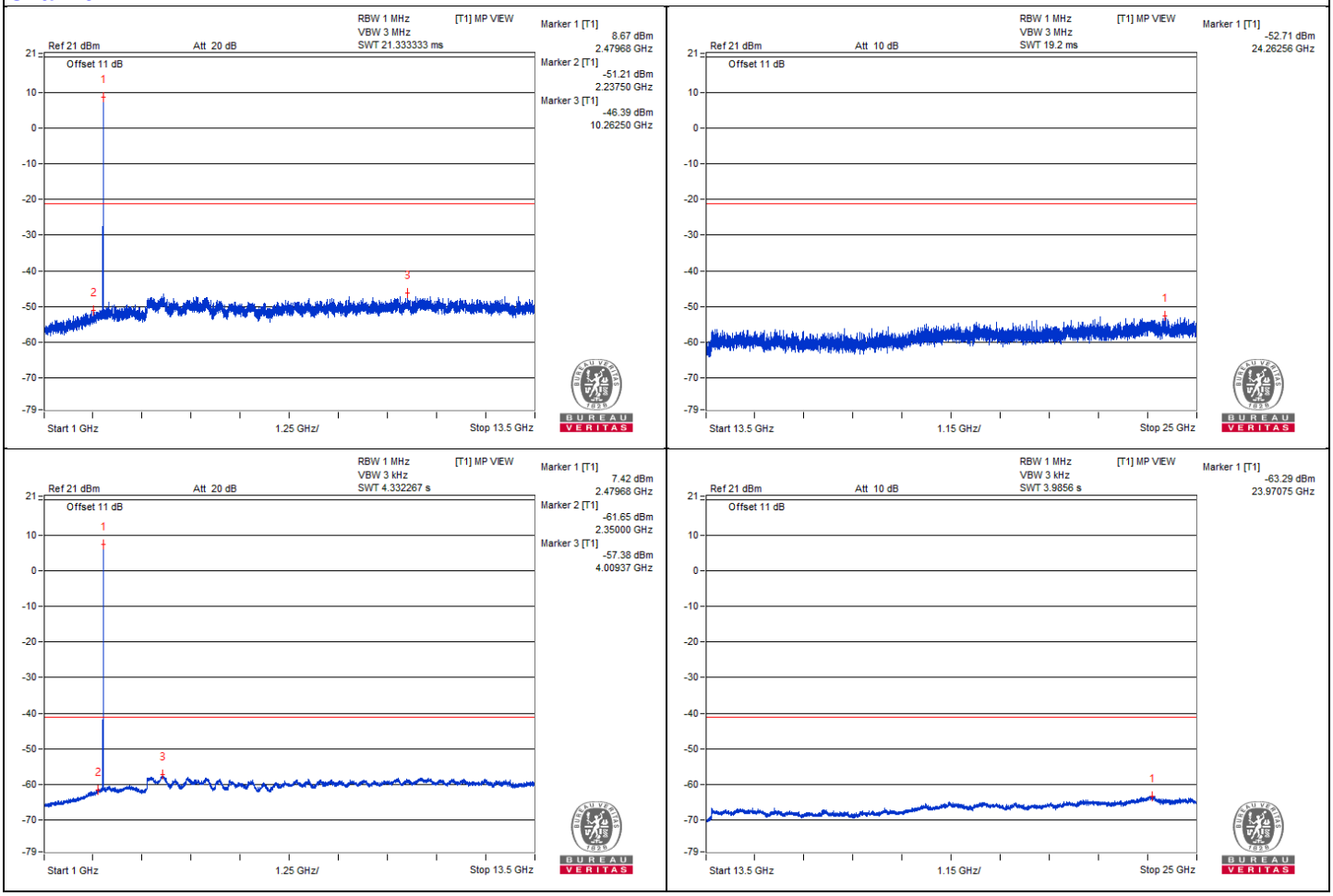
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	4973.43	57.19 PK	74	-16.81	-49.17	-49.34	8.17	-38.07
2	4943.75	47.3 AV	54	-6.7	-59.22	-59.06	8.17	-47.96
3	7456.25	57.76 PK	74	-16.24	-49.71	-47.85	8.17	-37.50
4	7423.43	47.38 AV	54	-6.62	-59.26	-58.86	8.17	-47.88

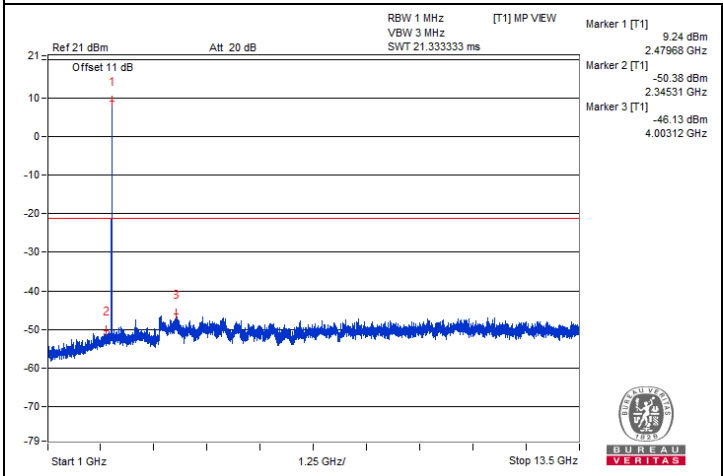
Remarks:

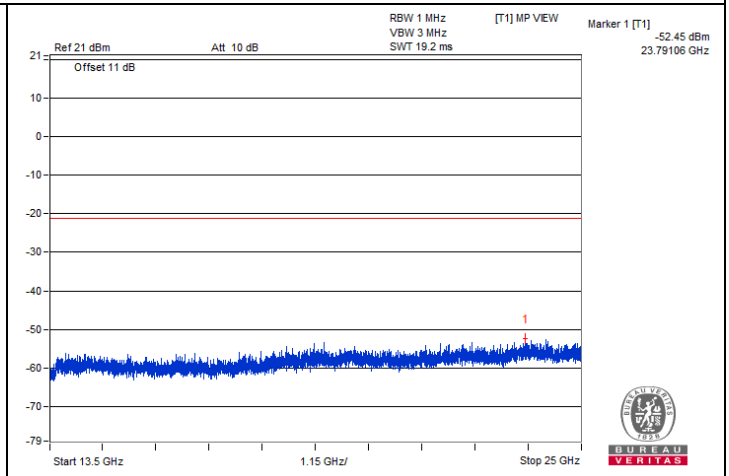
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

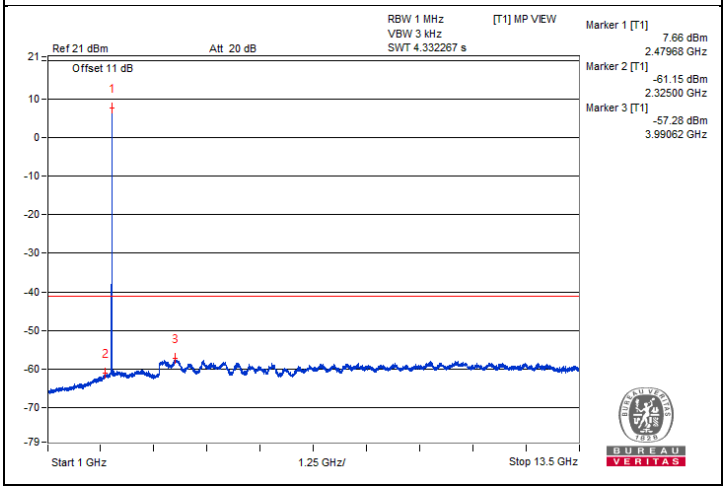
Chain 0

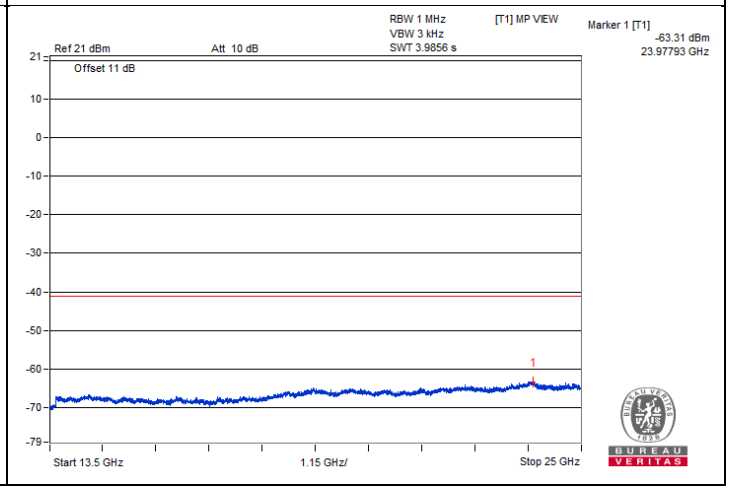


Chain 1


RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
9.24 dBm
2.47968 GHz
Marker 2 [T1]
-50.38 dBm
2.34531 GHz
Marker 3 [T1]
-46.13 dBm
4.00312 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.2 ms
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-52.45 dBm
23.79106 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 3 kHz
SWT 4.332267 s
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
7.66 dBm
2.47968 GHz
Marker 2 [T1]
-61.15 dBm
2.32500 GHz
Marker 3 [T1]
-57.28 dBm
3.99062 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 kHz
SWT 3.9856 s
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-63.31 dBm
23.97793 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

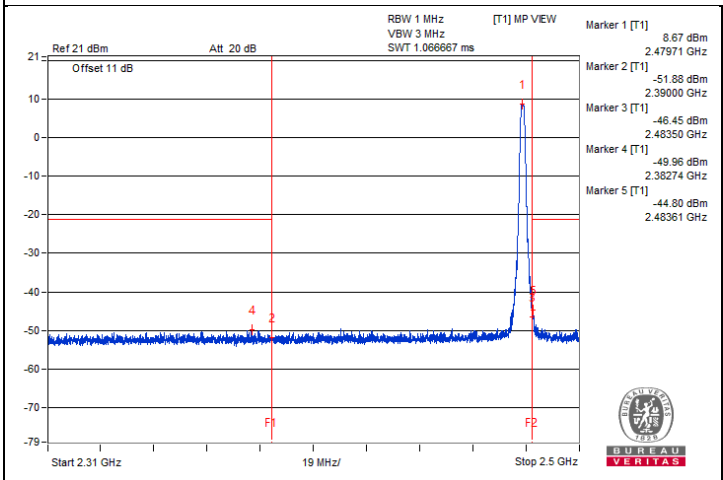
Bandedge table

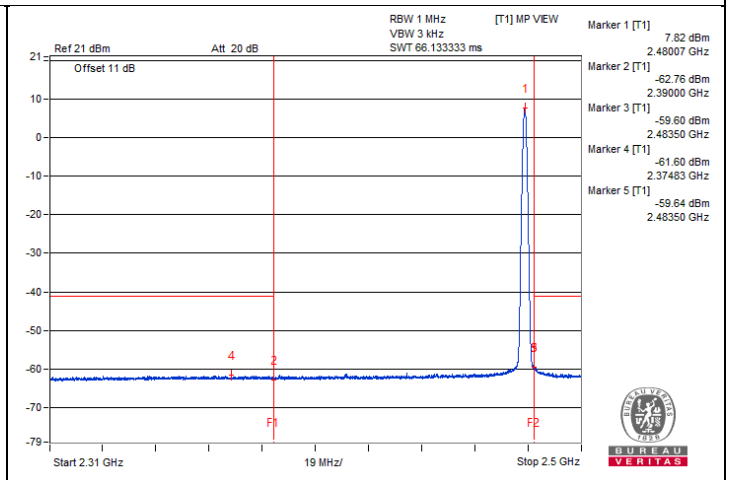
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	2352.77	54.69 PK	74	-19.31	-51.95	-48.83	6.54	-40.57
2	2370.25	42.89 AV	54	-11.11	-62.08	-61.76	6.54	-52.37
3	2483.68	60.46 PK	74	-13.54	-45	-43.78	6.54	-34.80
4	2483.56	45.06 AV	54	-8.94	-59.79	-59.72	6.54	-50.20

Remarks:

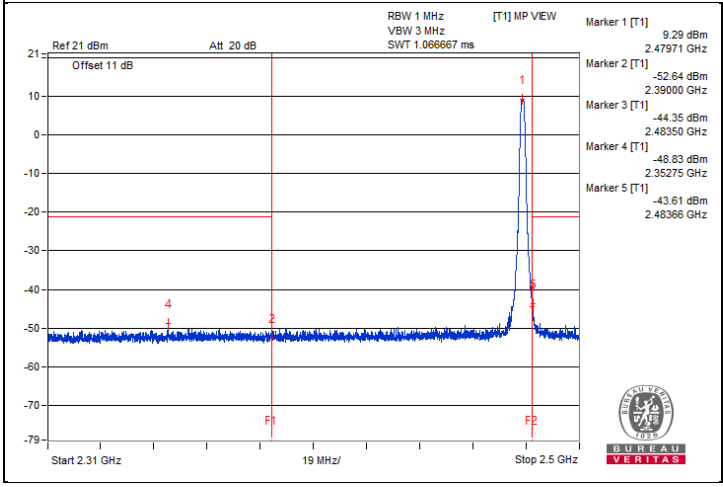
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

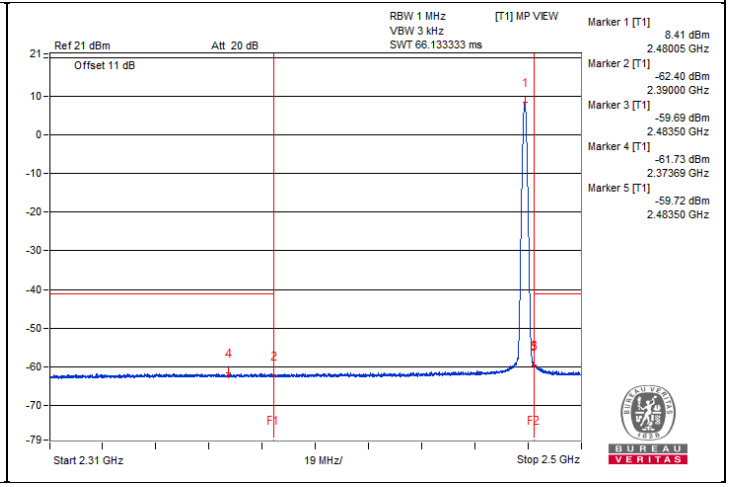
Chain 0





Chain 1





BT-LE 2M 2TX - Channel 0

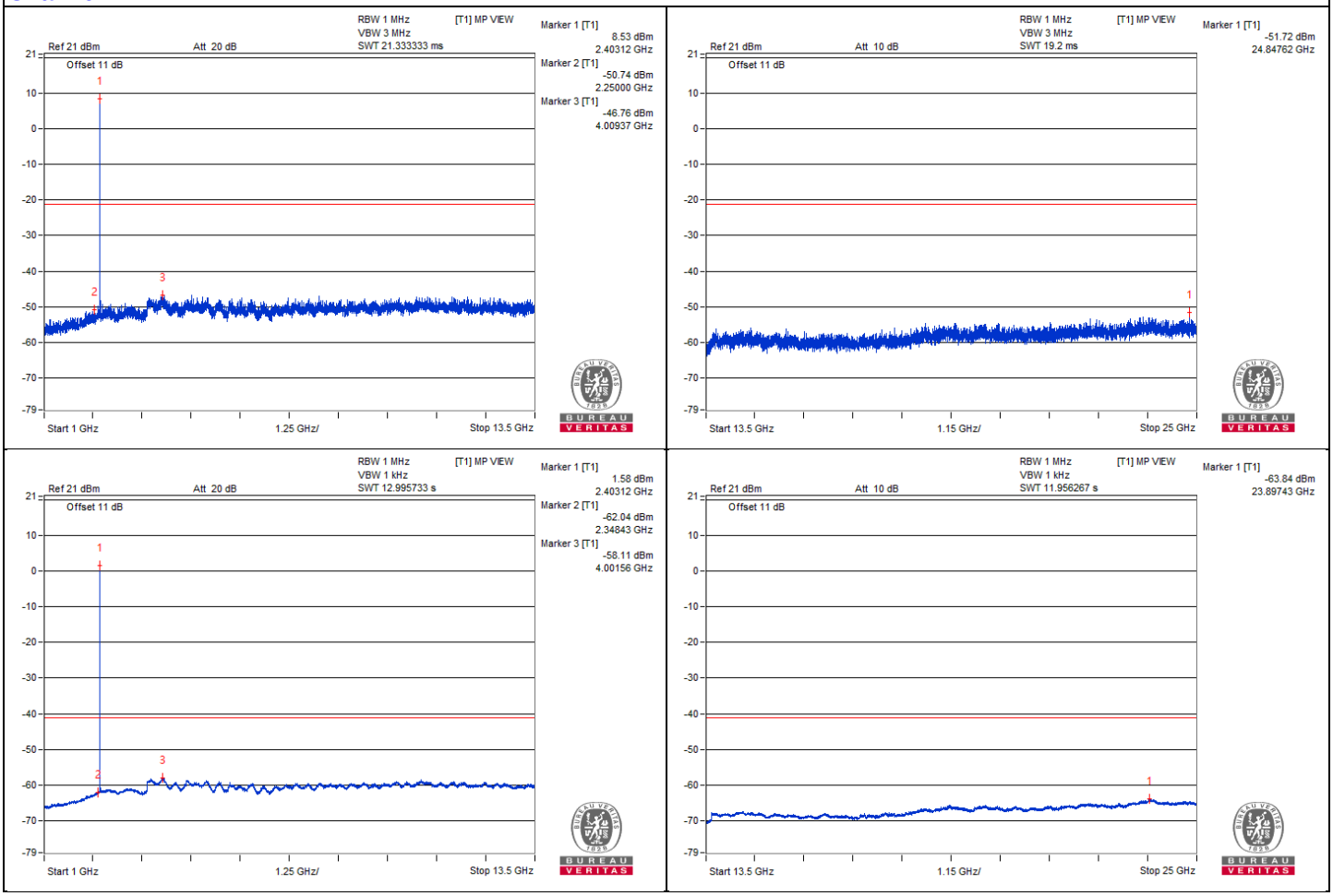
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	4803.12	57.41 PK	74	-16.59	-48.33	-49.86	8.17	-37.85
2	4821.87	46.85 AV	54	-7.15	-59.59	-59.6	8.17	-48.41

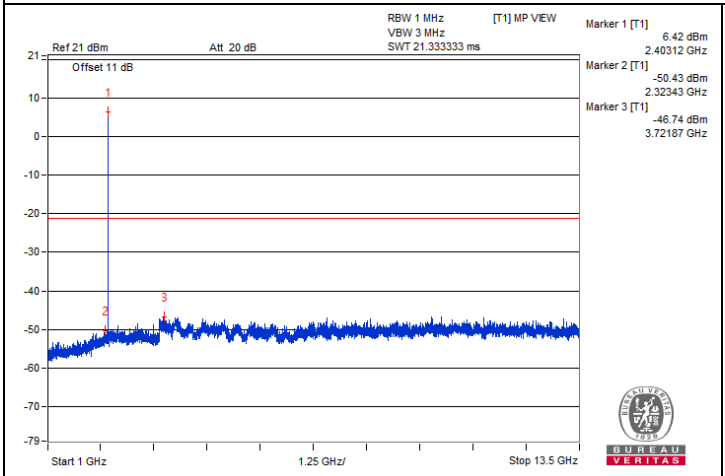
Remarks:

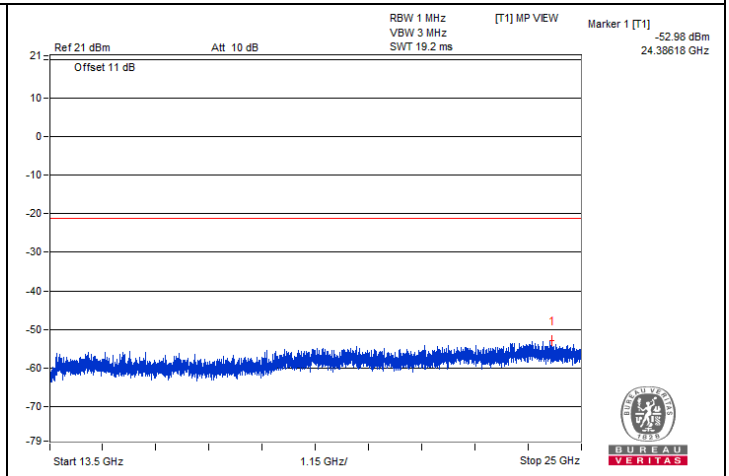
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

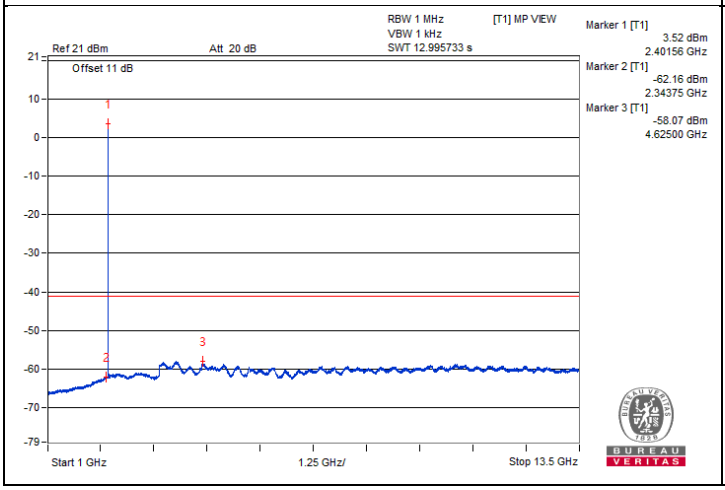
Chain 0

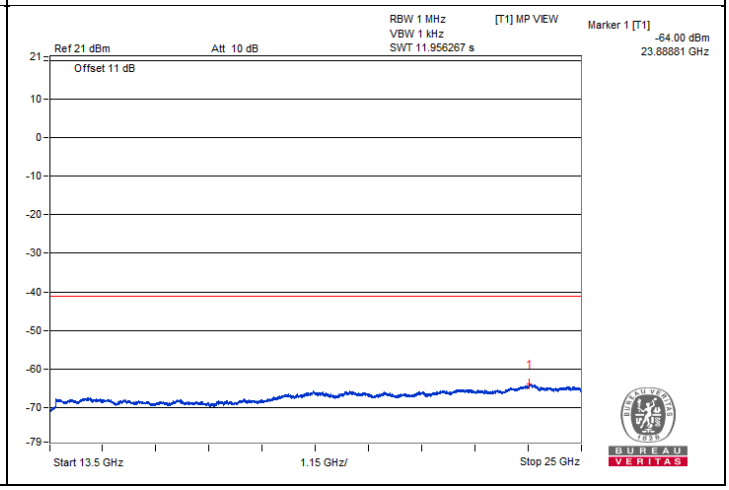


Chain 1


RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
6.42 dBm
2.40312 GHz
Marker 2 [T1]
-50.43 dBm
2.32343 GHz
Marker 3 [T1]
-46.74 dBm
3.72187 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.2 ms
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-52.98 dBm
24.38618 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 1 kHz
SWT 12.995733 s
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
3.52 dBm
2.40156 GHz
Marker 2 [T1]
-62.16 dBm
2.34375 GHz
Marker 3 [T1]
-58.07 dBm
4.62500 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 1 kHz
SWT 11.956267 s
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-64.00 dBm
23.88881 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

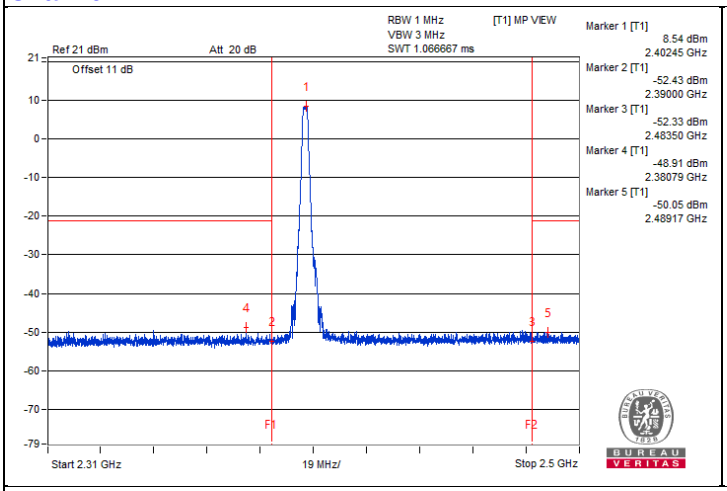
Bandedge table

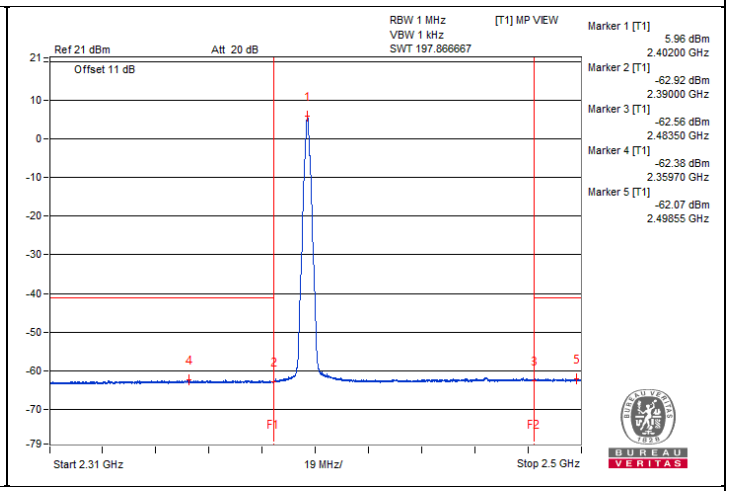
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	2380.82	54.27 PK	74	-19.73	-49.13	-52.65	6.54	-40.99
2	2365.81	42.21 AV	54	-11.79	-62.67	-62.54	6.54	-53.05
3	2488.05	54.48 PK	74	-19.52	-50.05	-50.62	6.54	-40.78
4	2484.89	42.58 AV	54	-11.42	-62.2	-62.26	6.54	-52.68

Remarks:

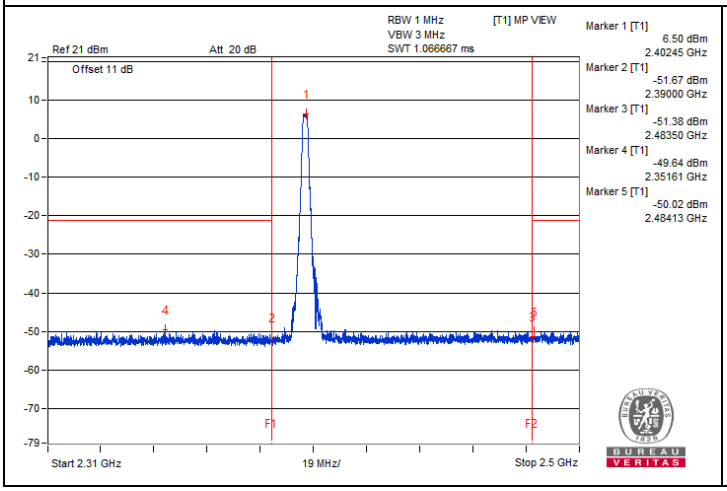
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

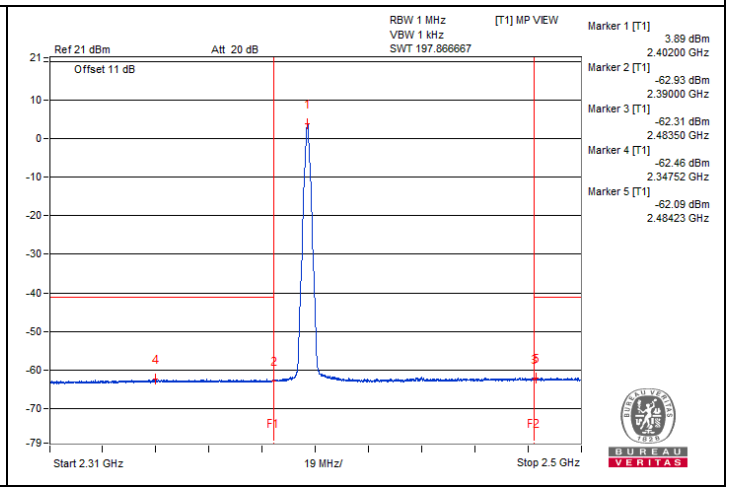
Chain 0





Chain 1





BT-LE 2M 2TX - Channel 19

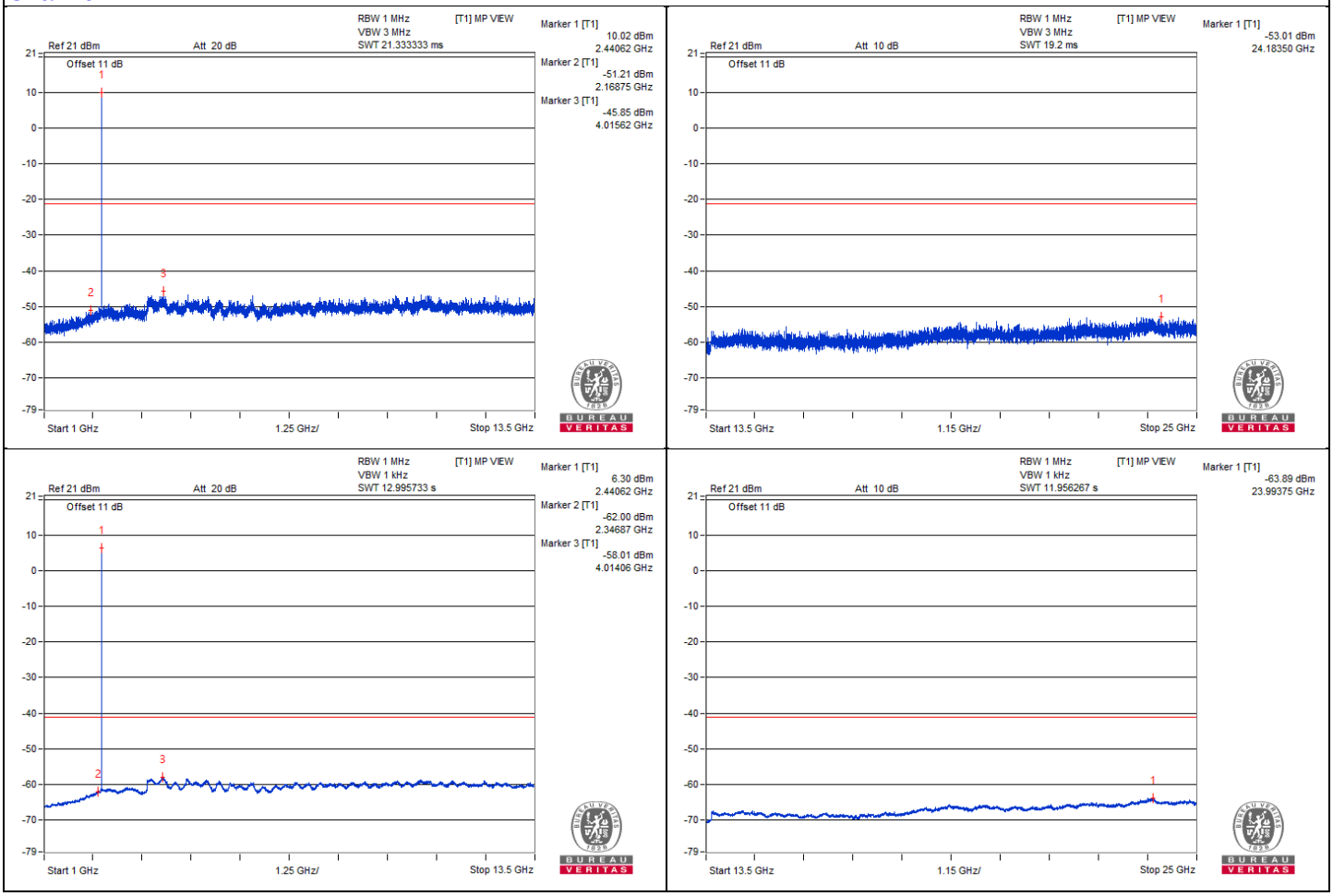
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	4867.18	57.66 PK	74	-16.34	-48.44	-49.15	8.17	-37.60
2	4876.56	47.04 AV	54	-6.96	-59.55	-59.25	8.17	-48.22
3	7339.06	56.64 PK	74	-17.36	-48.71	-51.25	8.17	-38.62
4	7332.81	45.92 AV	54	-8.08	-60.58	-60.46	8.17	-49.34

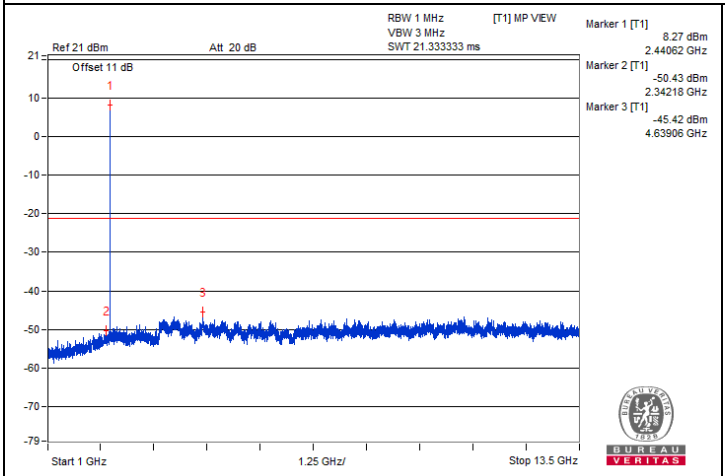
Remarks:

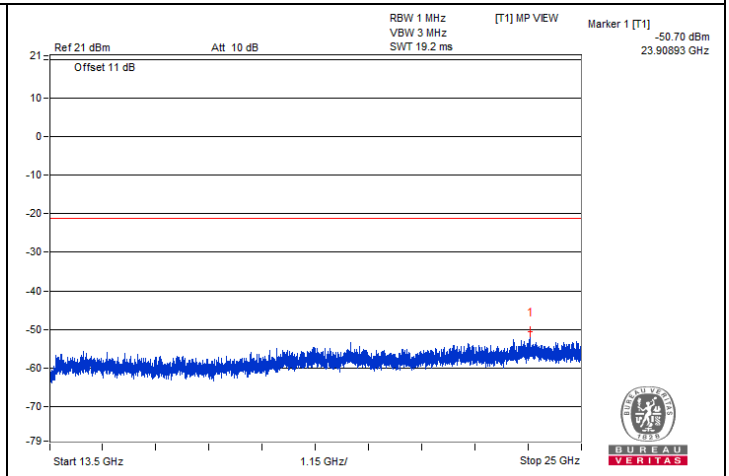
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

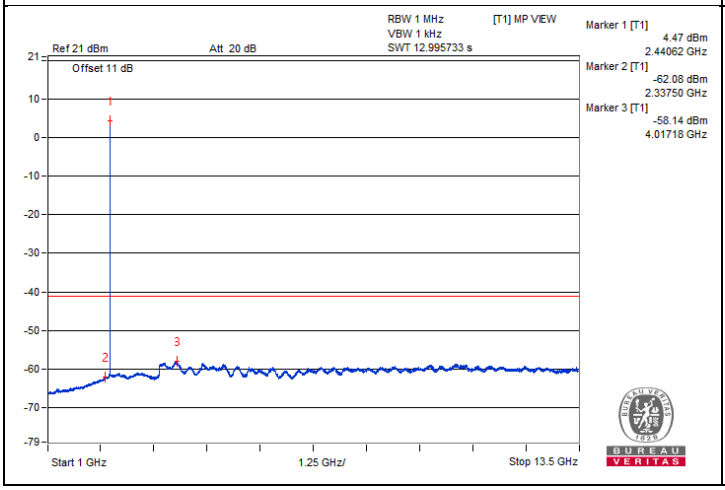
Chain 0

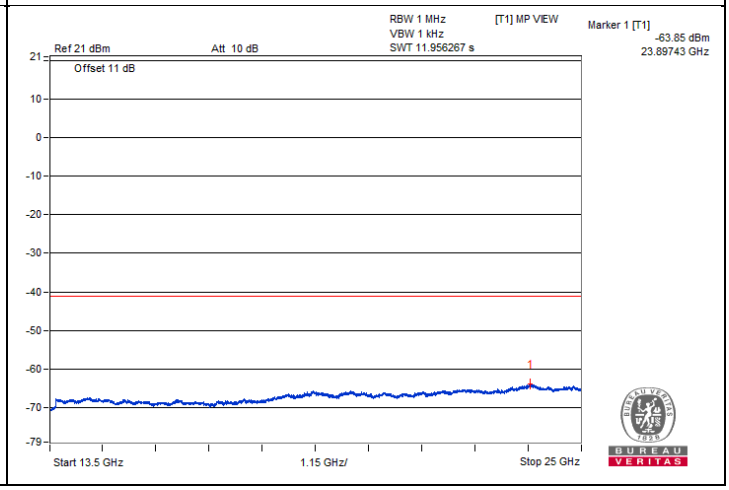


Chain 1


RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
8.27 dBm
2.44062 GHz
Marker 2 [T1]
-50.43 dBm
2.34218 GHz
Marker 3 [T1]
-45.42 dBm
4.63906 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.2 ms
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-50.70 dBm
23.90893 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 1 kHz
SWT 12.995733 s
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
4.47 dBm
2.44062 GHz
Marker 2 [T1]
-62.08 dBm
2.33750 GHz
Marker 3 [T1]
-58.14 dBm
4.01718 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 1 kHz
SWT 11.956267 s
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-63.85 dBm
23.89743 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

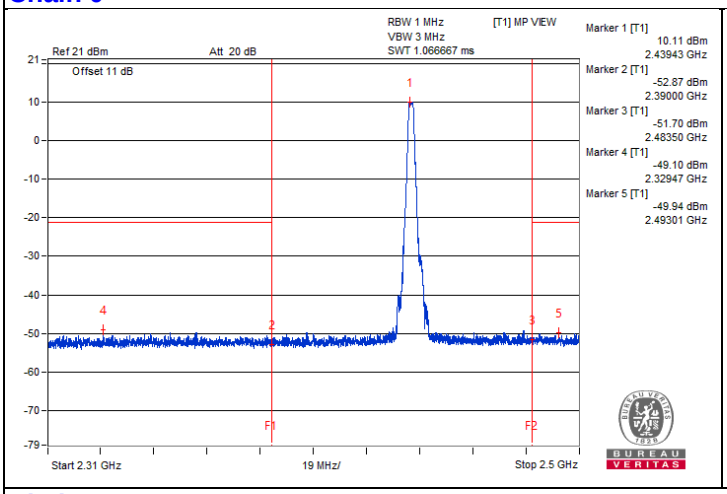
Bandedge table

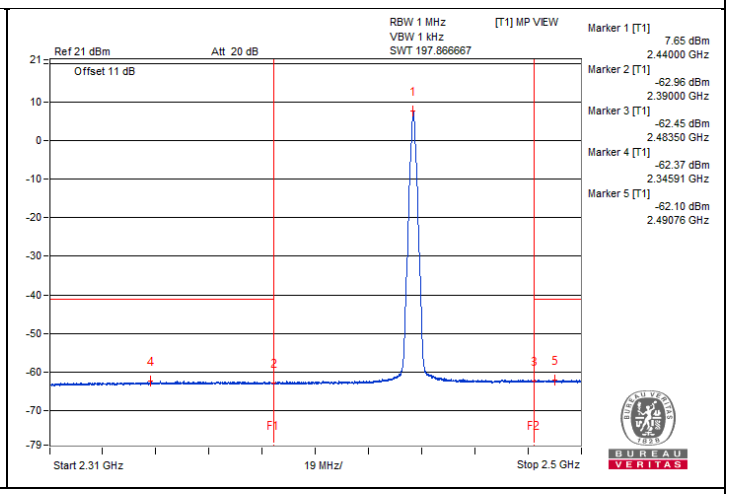
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	2346.38	55 PK	74	-19	-50.19	-49.47	6.54	-40.26
2	2386.47	42.2 AV	54	-11.8	-62.6	-62.62	6.54	-53.06
3	2489.55	54.41 PK	74	-19.59	-51.36	-49.61	6.54	-40.85
4	2484.37	42.6 AV	54	-11.4	-62.35	-62.07	6.54	-52.66

Remarks:

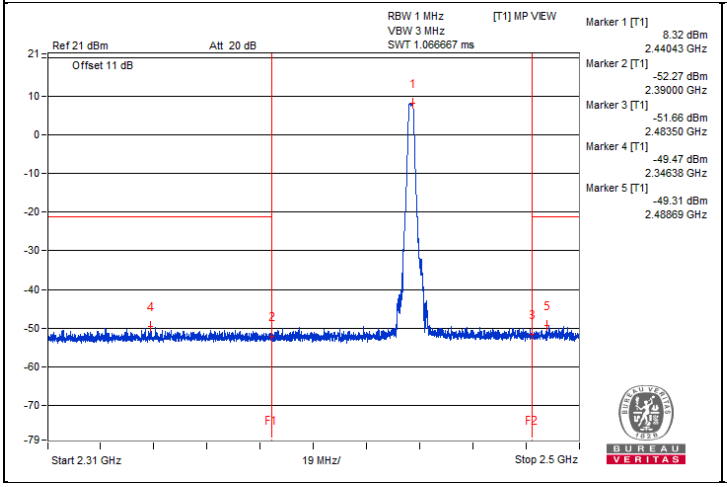
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

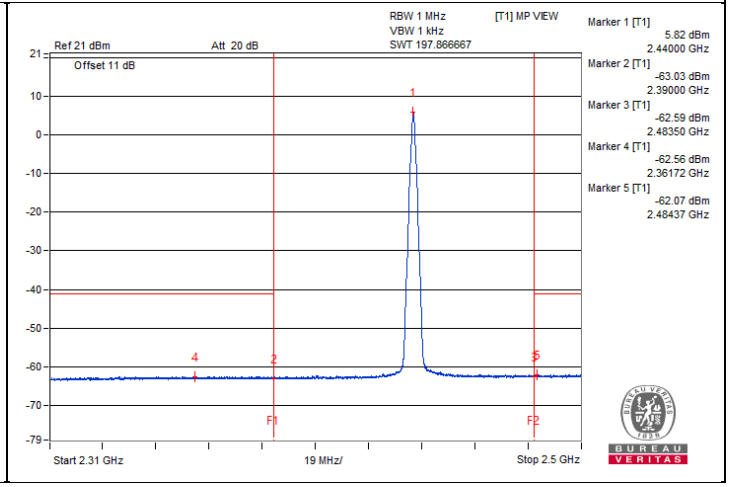
Chain 0





Chain 1





BT-LE 2M 2TX - Channel 39

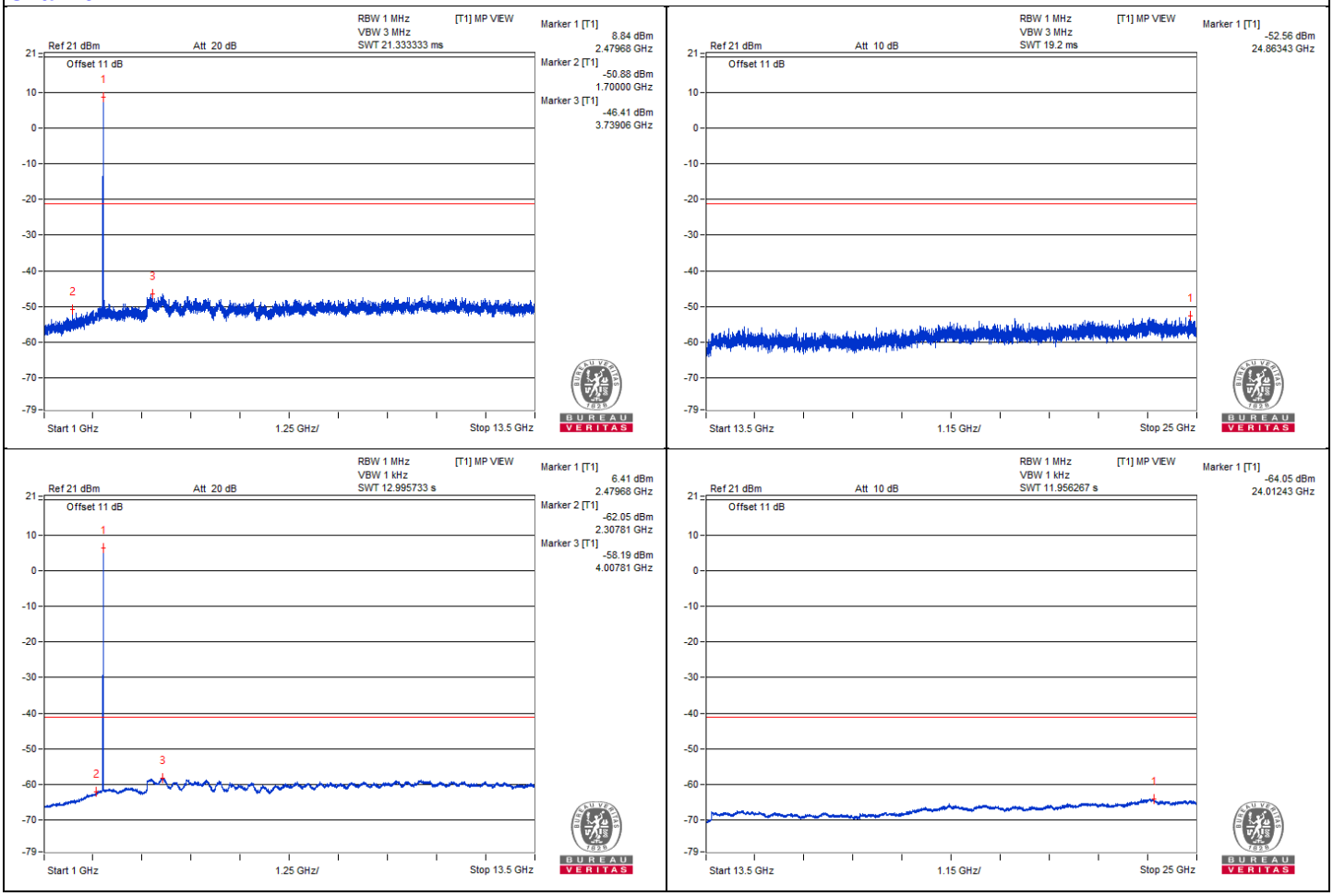
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	4953.12	57.74 PK	74	-16.26	-48.91	-48.5	8.17	-37.52
2	4950	46.44 AV	54	-7.56	-60.15	-59.86	8.17	-48.82
3	7443.75	57.97 PK	74	-16.03	-48.7	-48.25	8.17	-37.29
4	7446.87	46.78 AV	54	-7.22	-59.38	-59.97	8.17	-48.48

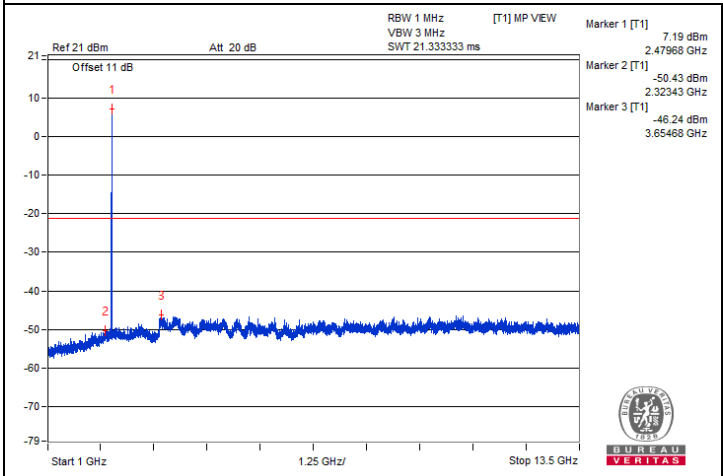
Remarks:

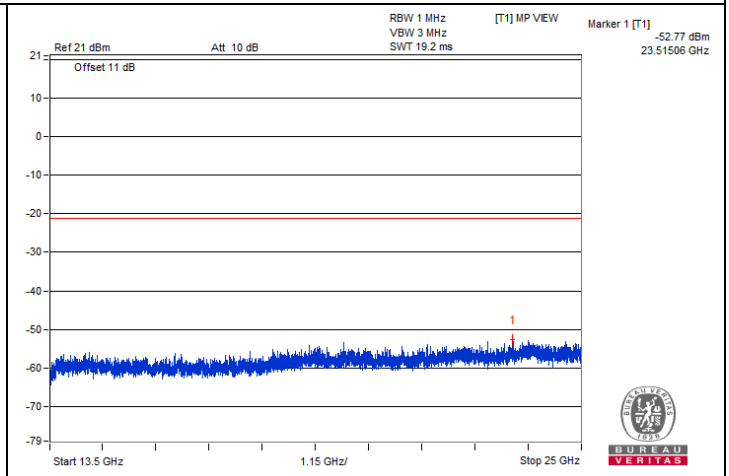
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

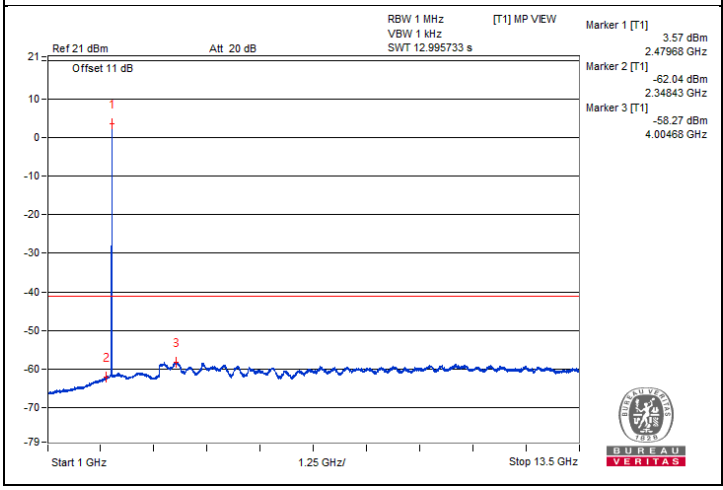
Chain 0

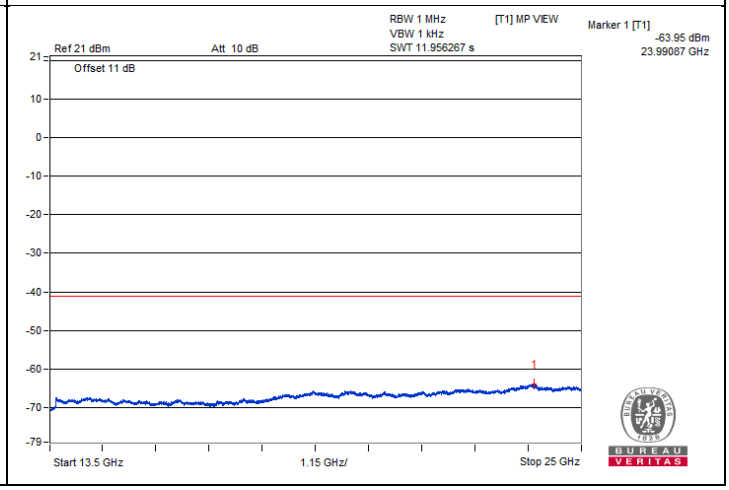


Chain 1


RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
7.19 dBm
2.47968 GHz
Marker 2 [T1]
-50.43 dBm
2.32343 GHz
Marker 3 [T1]
-46.24 dBm
3.65468 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.2 ms
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-52.77 dBm
23.51506 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 1 kHz
SWT 12.995733 s
[T1] MP VIEW
Ref 21 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
3.57 dBm
2.47968 GHz
Marker 2 [T1]
-62.04 dBm
2.34843 GHz
Marker 3 [T1]
-58.27 dBm
4.00468 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 1 kHz
SWT 11.956267 s
[T1] MP VIEW
Ref 21 dBm
Att 10 dB
Offset 11 dB
Marker 1 [T1]
-63.95 dBm
23.99087 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

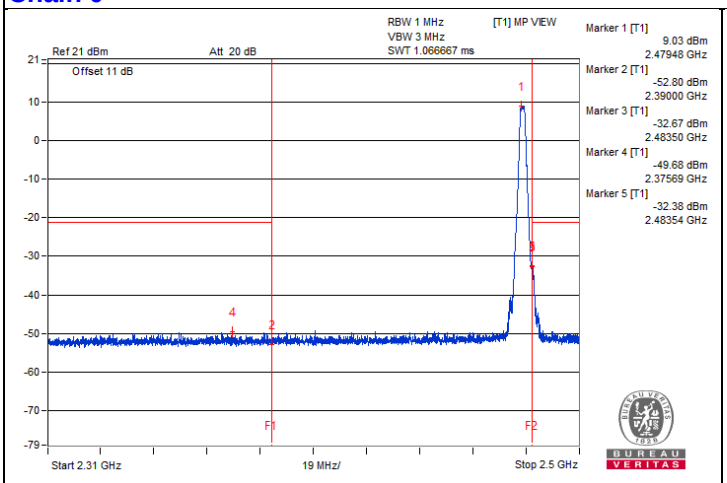
Bandedge table

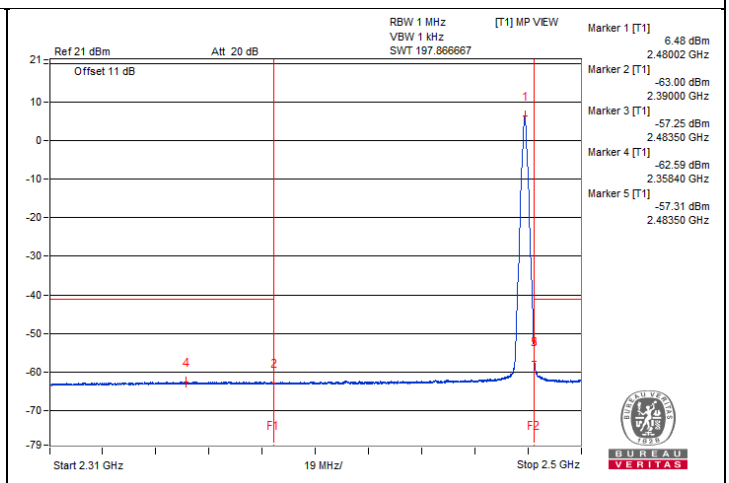
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	2356.71	54.25 PK	74	-19.75	-49.96	-51.26	6.54	-41.01
2	2377.49	42.2 AV	54	-11.8	-62.7	-62.53	6.54	-53.06
3	2483.54	71.38 PK	74	-2.62	-32.38	-34.83	6.54	-23.88
4	2483.51	46.88 AV	54	-7.12	-57.45	-58.46	6.54	-48.38

Remarks:

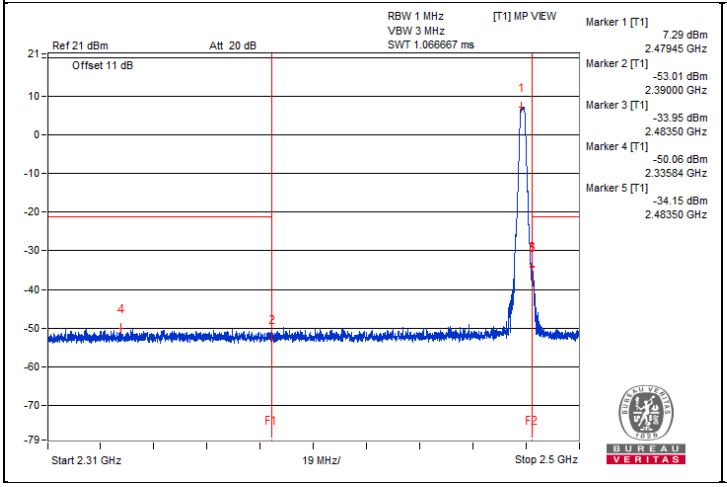
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

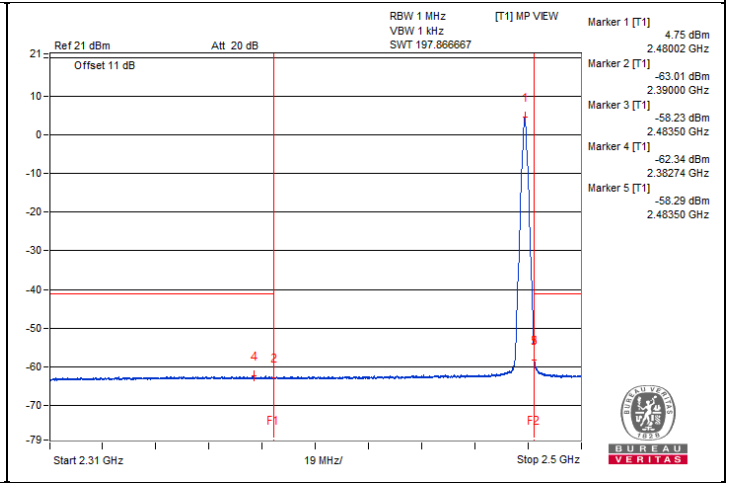
Chain 0





Chain 1





Mode B

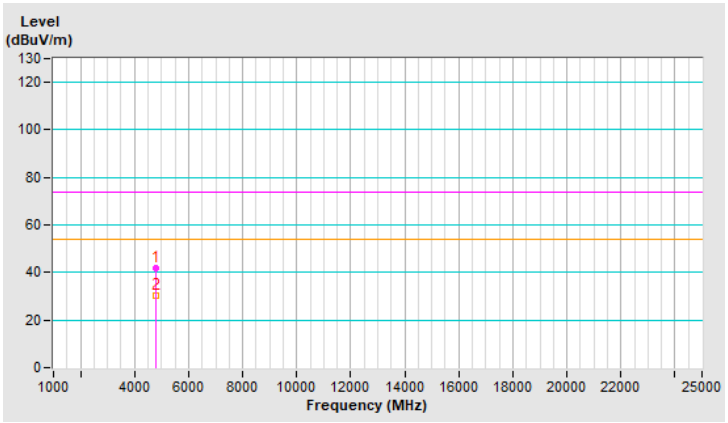
1TX

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 (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°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	4804.00	41.7 PK	74.0	-32.3	1.61 H	273	40.3	1.4
2	4804.00	30.4 AV	54.0	-23.6	1.61 H	273	29.0	1.4

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.

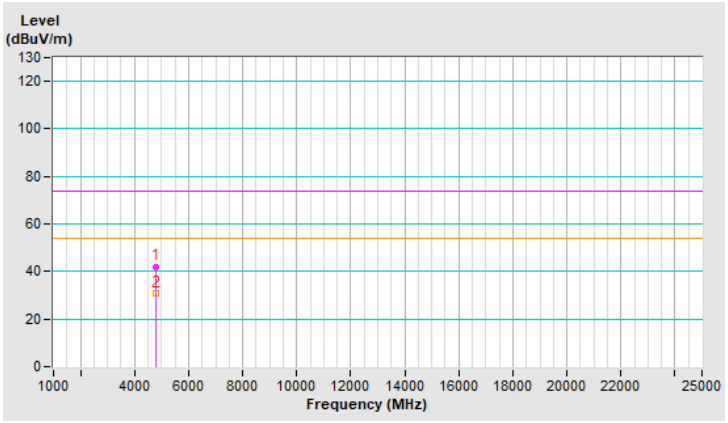


RF Mode	BT-LE 1M	**Channel**	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4804.00	42.1 PK	74.0	-31.9	1.63 V	129	40.7	1.4
2	4804.00	31.0 AV	54.0	-23.0	1.63 V	129	29.6	1.4

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.

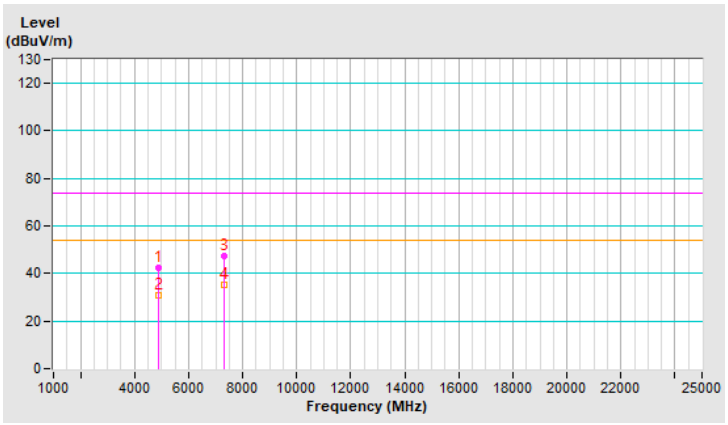


RF Mode	BT-LE 1M	Channel	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°C, 68% RH
Tested By	Louis Yang		

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	4880.00	42.2 PK	74.0	-31.8	1.61 H	260	40.9	1.3
2	4880.00	30.8 AV	54.0	-23.2	1.61 H	260	29.5	1.3
3	7320.00	47.5 PK	74.0	-26.5	1.83 H	181	40.5	7.0
4	7320.00	35.3 AV	54.0	-18.7	1.83 H	181	28.3	7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

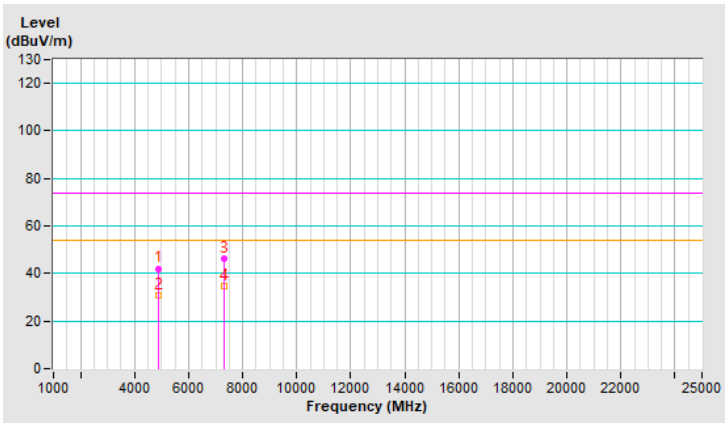


RF Mode	BT-LE 1M	**Channel**	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4880.00	42.1 PK	74.0	-31.9	1.61 V	123	40.8	1.3
2	4880.00	30.9 AV	54.0	-23.1	1.61 V	123	29.6	1.3
3	7320.00	46.4 PK	74.0	-27.6	1.89 V	274	39.4	7.0
4	7320.00	34.6 AV	54.0	-19.4	1.89 V	274	27.6	7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

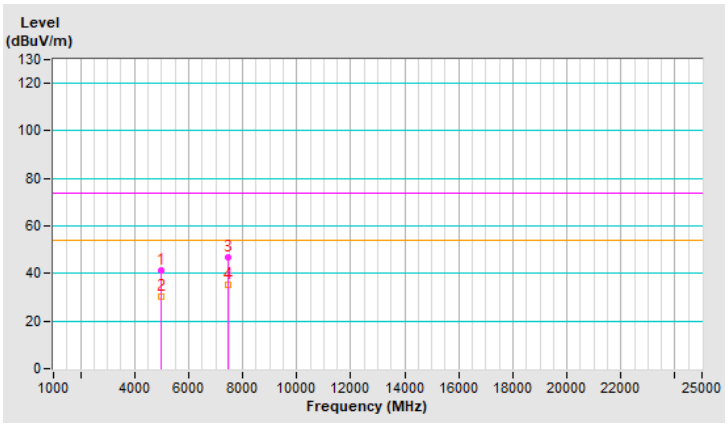


RF Mode	BT-LE 1M	Channel	CH 39：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°C, 68% RH
Tested By	Louis Yang		

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	4960.00	41.5 PK	74.0	-32.5	1.67 H	287	40.1	1.4
2	4960.00	30.3 AV	54.0	-23.7	1.67 H	287	28.9	1.4
3	7440.00	47.0 PK	74.0	-27.0	1.81 H	172	39.6	7.4
4	7440.00	35.1 AV	54.0	-18.9	1.81 H	172	27.7	7.4

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.

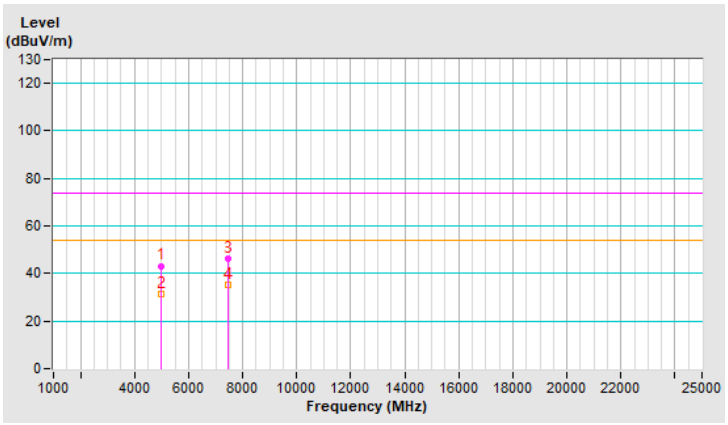


RF Mode	BT-LE 1M	**Channel**	CH 39：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4960.00	43.2 PK	74.0	-30.8	1.65 V	113	41.8	1.4
2	4960.00	31.6 AV	54.0	-22.4	1.65 V	113	30.2	1.4
3	7440.00	46.5 PK	74.0	-27.5	1.93 V	281	39.1	7.4
4	7440.00	35.0 AV	54.0	-19.0	1.93 V	281	27.6	7.4

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.

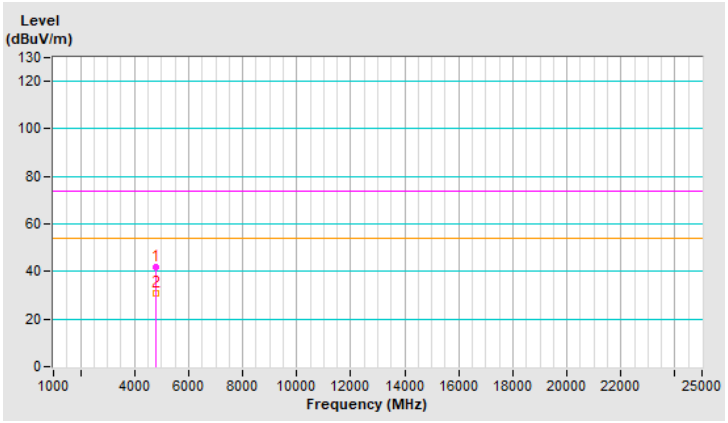


RF Mode	BT-LE 2M	**Channel**	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4804.00	41.8 PK	74.0	-32.2	1.62 H	279	40.4	1.4
2	4804.00	31.0 AV	54.0	-23.0	1.62 H	279	29.6	1.4

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.

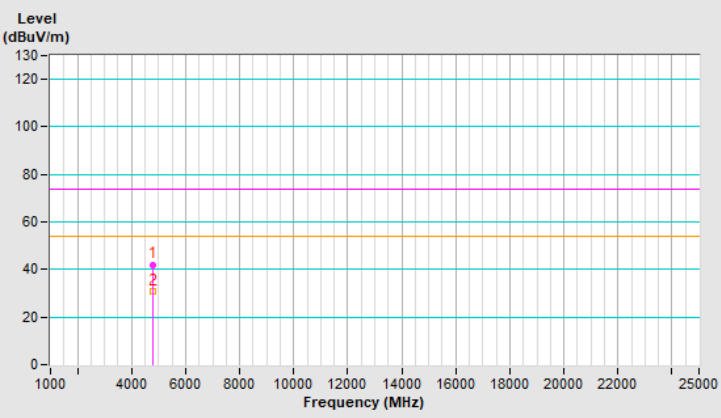


RF Mode	BT-LE 2M	Channel	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°C, 68% RH
Tested By	Louis Yang		

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	4804.00	42.1 PK	74.0	-31.9	1.61 V	115	40.7	1.4
2	4804.00	30.7 AV	54.0	-23.3	1.61 V	115	29.3	1.4

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.

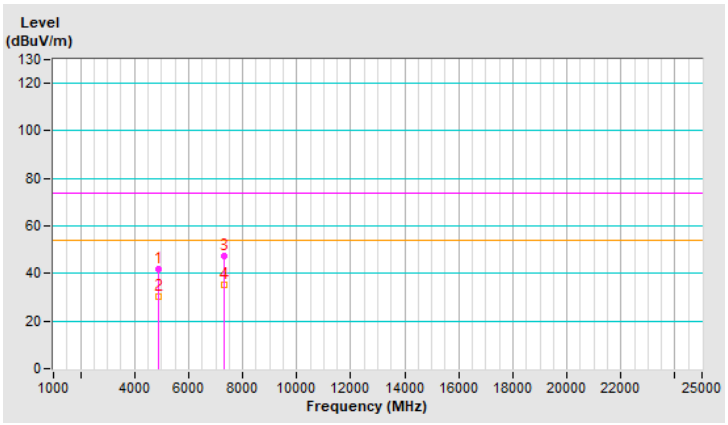


RF Mode	BT-LE 2M	**Channel**	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4880.00	41.6 PK	74.0	-32.4	1.62 H	287	40.3	1.3
2	4880.00	30.5 AV	54.0	-23.5	1.62 H	287	29.2	1.3
3	7320.00	47.5 PK	74.0	-26.5	1.78 H	188	40.5	7.0
4	**7320.00**	**35.4 AV**	**54.0**	**-18.6**	**1.78 H**	**188**	**28.4**	**7.0**

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

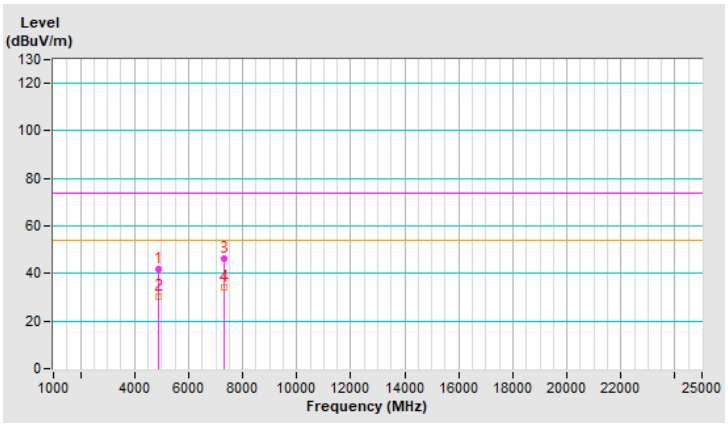


RF Mode	BT-LE 2M	**Channel**	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4880.00	41.7 PK	74.0	-32.3	1.60 V	125	40.4	1.3
2	4880.00	30.5 AV	54.0	-23.5	1.60 V	125	29.2	1.3
3	7320.00	46.4 PK	74.0	-27.6	1.89 V	276	39.4	7.0
4	7320.00	34.3 AV	54.0	-19.7	1.89 V	276	27.3	7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

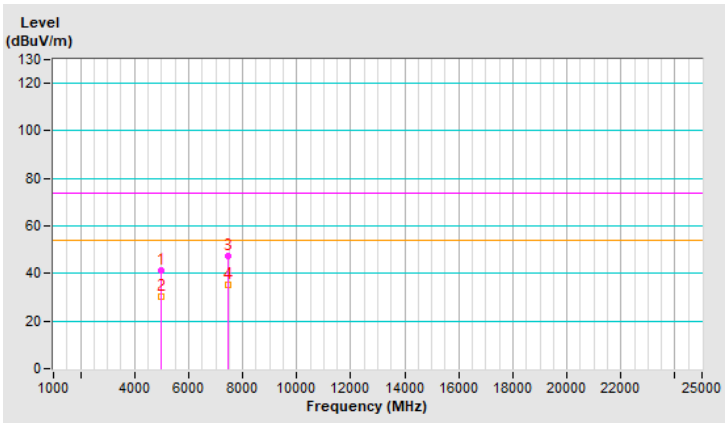


RF Mode	BT-LE 2M	**Channel**	CH 39：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4960.00	41.4 PK	74.0	-32.6	1.62 H	268	40.0	1.4
2	4960.00	30.5 AV	54.0	-23.5	1.62 H	268	29.1	1.4
3	7440.00	47.1 PK	74.0	-26.9	1.81 H	164	39.7	7.4
4	7440.00	35.2 AV	54.0	-18.8	1.81 H	164	27.8	7.4

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.

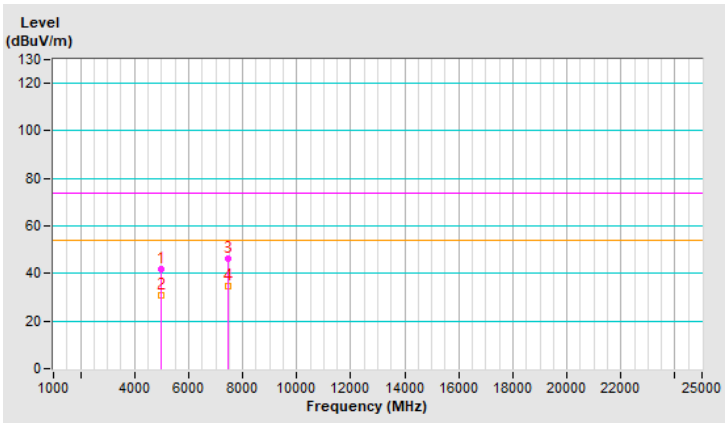


RF Mode	BT-LE 2M	**Channel**	CH 39：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4960.00	41.9 PK	74.0	-32.1	1.64 V	114	40.5	1.4
2	4960.00	30.8 AV	54.0	-23.2	1.64 V	114	29.4	1.4
3	7440.00	46.3 PK	74.0	-27.7	1.86 V	276	38.9	7.4
4	7440.00	34.7 AV	54.0	-19.3	1.86 V	276	27.3	7.4

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.



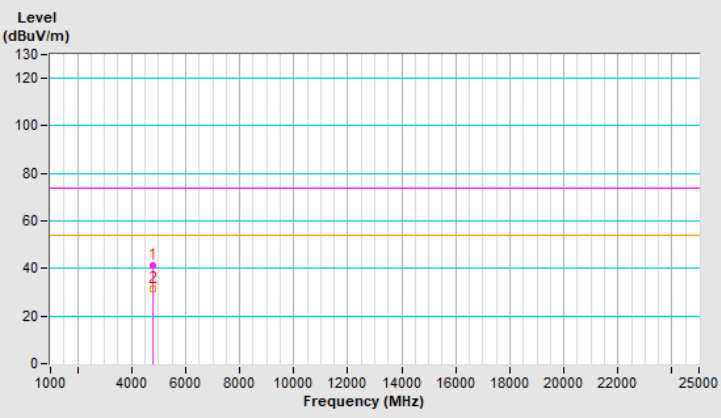
2TX

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 (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°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	4804.00	41.4 PK	74.0	-32.6	1.84 H	266	40.0	1.4
2	4804.00	31.6 AV	54.0	-22.4	1.84 H	266	30.2	1.4

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.

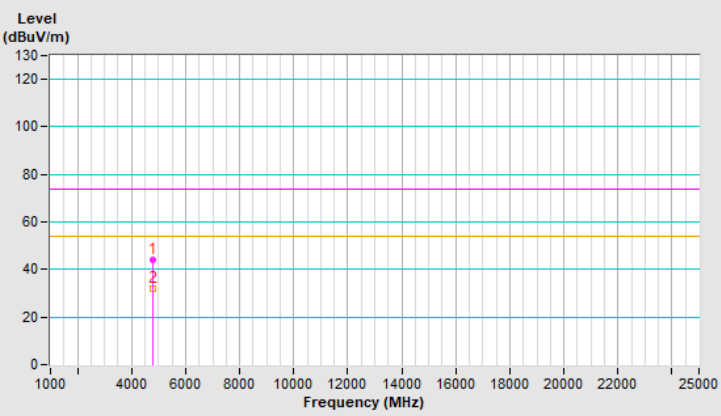


RF Mode	BT-LE 1M	**Channel**	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4804.00	43.9 PK	74.0	-30.1	1.71 V	113	42.5	1.4
2	4804.00	31.9 AV	54.0	-22.1	1.71 V	113	30.5	1.4

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.

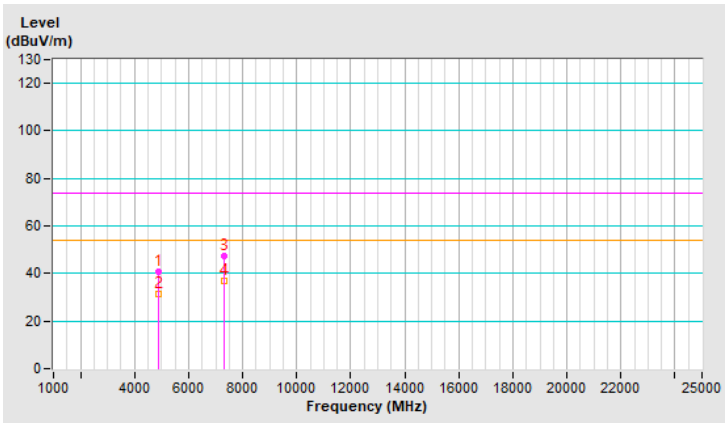


RF Mode	BT-LE 1M	**Channel**	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4880.00	40.8 PK	74.0	-33.2	1.89 H	283	39.5	1.3
2	4880.00	31.2 AV	54.0	-22.8	1.89 H	283	29.9	1.3
3	7320.00	47.6 PK	74.0	-26.4	1.53 H	133	40.6	7.0
4	7320.00	36.7 AV	54.0	-17.3	1.53 H	133	29.7	7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

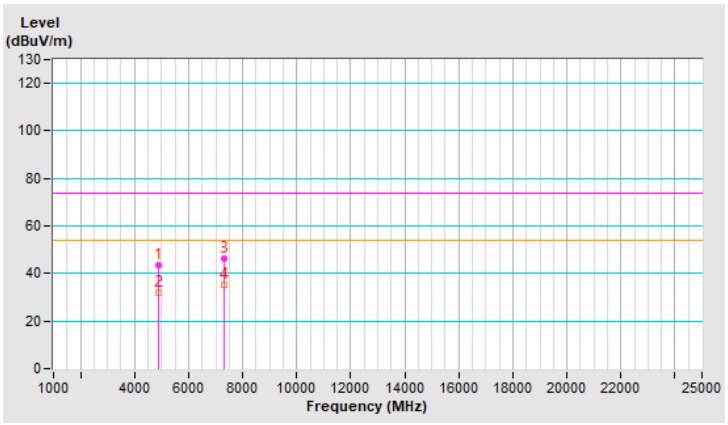


RF Mode	BT-LE 1M	Channel	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°C, 68% RH
Tested By	Louis Yang		

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	4880.00	43.7 PK	74.0	-30.3	1.69 V	123	42.4	1.3
2	4880.00	31.9 AV	54.0	-22.1	1.69 V	123	30.6	1.3
3	7320.00	46.5 PK	74.0	-27.5	1.95 V	284	39.5	7.0
4	7320.00	35.1 AV	54.0	-18.9	1.95 V	284	28.1	7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

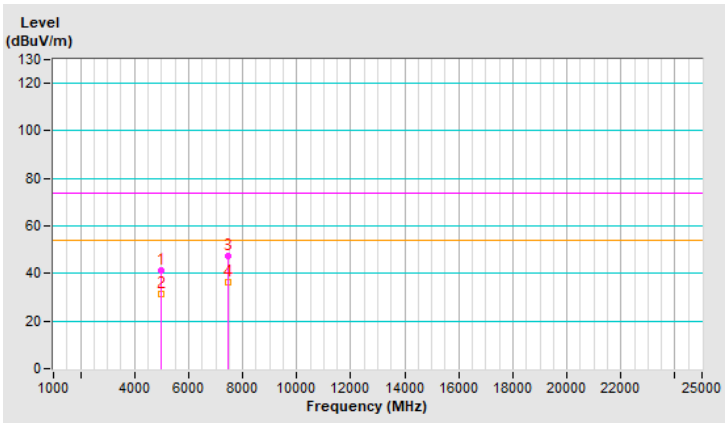


RF Mode	BT-LE 1M	Channel	CH 39：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°C, 68% RH
Tested By	Louis Yang		

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	4960.00	41.1 PK	74.0	-32.9	1.87 H	271	39.7	1.4
2	4960.00	31.6 AV	54.0	-22.4	1.87 H	271	30.2	1.4
3	7440.00	47.5 PK	74.0	-26.5	1.59 H	115	40.1	7.4
4	7440.00	36.3 AV	54.0	-17.7	1.59 H	115	28.9	7.4

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.

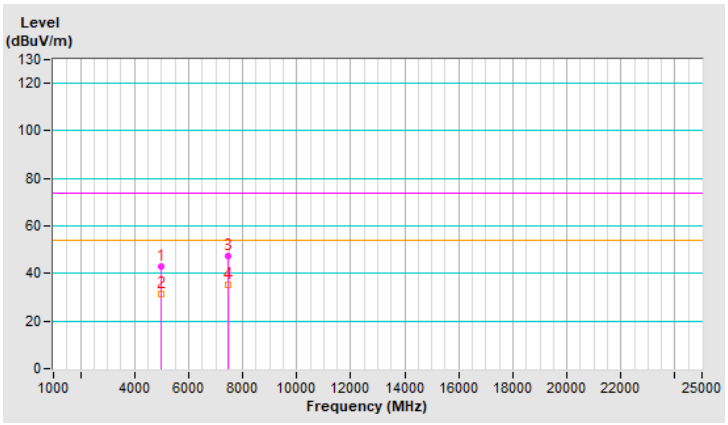


RF Mode	BT-LE 1M	**Channel**	CH 39：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4960.00	42.7 PK	74.0	-31.3	1.73 V	125	41.3	1.4
2	4960.00	31.3 AV	54.0	-22.7	1.73 V	125	29.9	1.4
3	7440.00	47.1 PK	74.0	-26.9	1.88 V	279	39.7	7.4
4	7440.00	35.4 AV	54.0	-18.6	1.88 V	279	28.0	7.4

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.

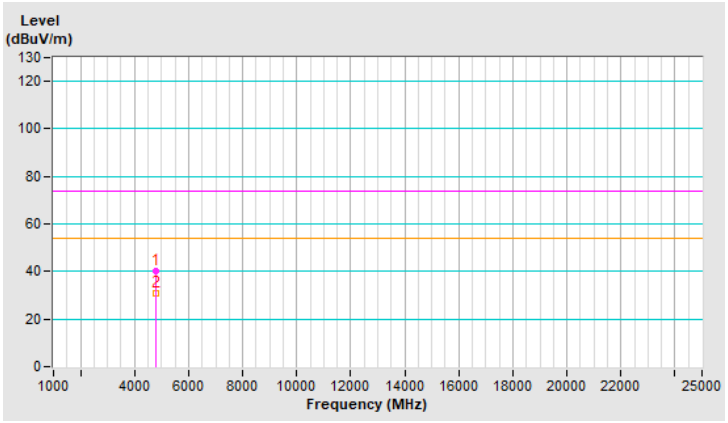


RF Mode	BT-LE 2M	**Channel**	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4804.00	40.1 PK	74.0	-33.9	1.84 H	256	38.7	1.4
2	4804.00	30.7 AV	54.0	-23.3	1.84 H	256	29.3	1.4

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.

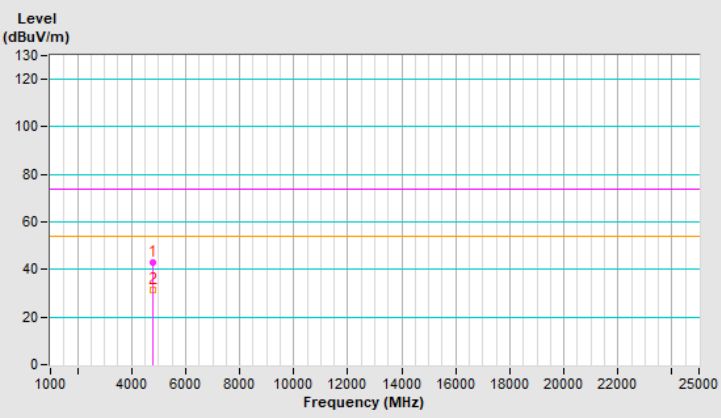


RF Mode	BT-LE 2M	**Channel**	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4804.00	42.9 PK	74.0	-31.1	1.64 V	134	41.5	1.4
2	4804.00	31.2 AV	54.0	-22.8	1.64 V	134	29.8	1.4

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.

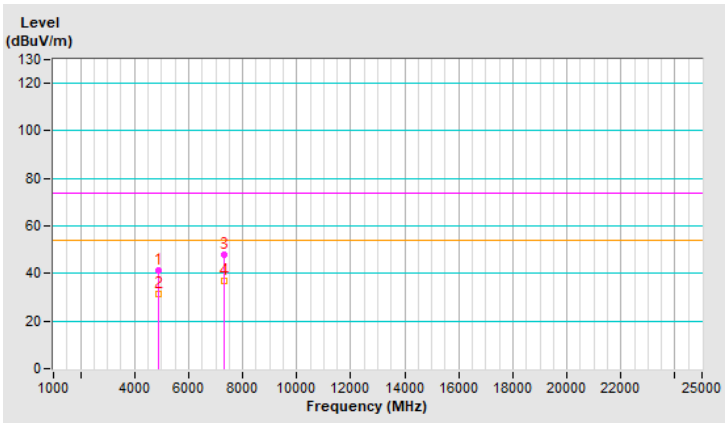


RF Mode	BT-LE 2M	Channel	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°C, 68% RH
Tested By	Louis Yang		

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	4880.00	41.1 PK	74.0	-32.9	1.85 H	252	39.8	1.3
2	4880.00	31.5 AV	54.0	-22.5	1.85 H	252	30.2	1.3
3	7320.00	47.8 PK	74.0	-26.2	1.52 H	130	40.8	7.0
4	**7320.00**	**36.8 AV**	**54.0**	**-17.2**	**1.52 H**	**130**	**29.8**	**7.0**

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

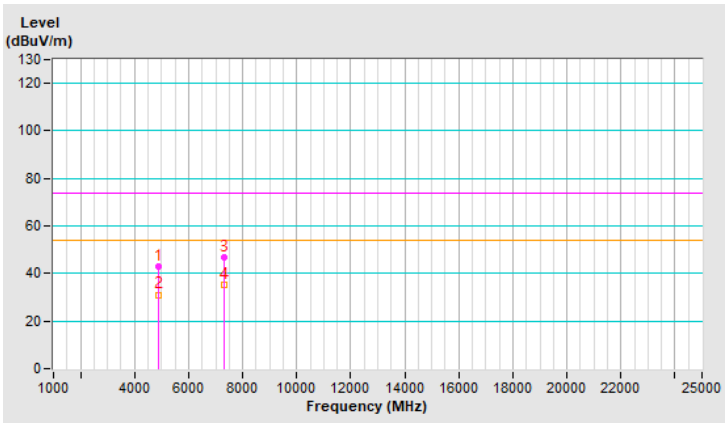


RF Mode	BT-LE 2M	**Channel**	CH 19：2440 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	4880.00	42.9 PK	74.0	-31.1	1.68 V	118	41.6	1.3
2	4880.00	31.1 AV	54.0	-22.9	1.68 V	118	29.8	1.3
3	7320.00	46.8 PK	74.0	-27.2	1.88 V	264	39.8	7.0
4	7320.00	35.4 AV	54.0	-18.6	1.88 V	264	28.4	7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

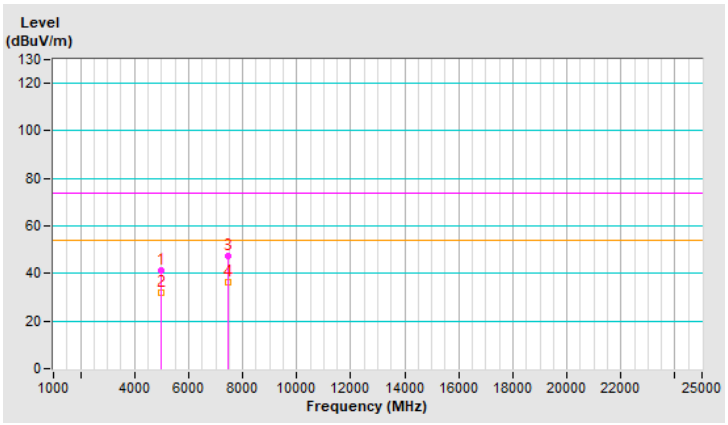


RF Mode	BT-LE 2M	Channel	CH 39：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°C, 68% RH
Tested By	Louis Yang		

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	4960.00	41.3 PK	74.0	-32.7	1.84 H	267	39.9	1.4
2	4960.00	31.8 AV	54.0	-22.2	1.84 H	267	30.4	1.4
3	7440.00	47.2 PK	74.0	-26.8	1.55 H	121	39.8	7.4
4	7440.00	36.3 AV	54.0	-17.7	1.55 H	121	28.9	7.4

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.

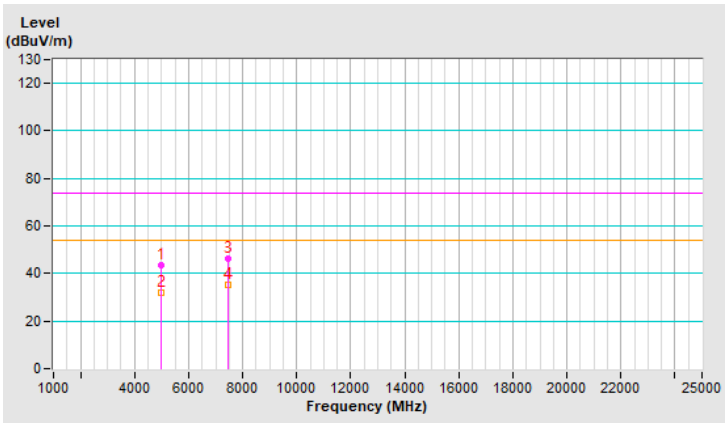


RF Mode	BT-LE 2M	Channel	CH 39：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°C, 68% RH
Tested By	Louis Yang		

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	4960.00	43.4 PK	74.0	-30.6	1.68 V	138	42.0	1.4
2	4960.00	31.7 AV	54.0	-22.3	1.68 V	138	30.3	1.4
3	7440.00	46.3 PK	74.0	-27.7	1.90 V	273	38.9	7.4
4	7440.00	35.0 AV	54.0	-19.0	1.90 V	273	27.6	7.4

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.



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:

Lin Kou EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

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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