FCC Test Report

Report No.:	RFBHQC-WTW-P22030336-3
FCC ID:	2AQ68RLP0003
Test Model:	RLP0003
Received Date:	Mar. 08, 2022
Test Date:	May 09, 2022 ~ Jun. 23, 2022
Issued Date:	Jun. 23, 2022
Applicant:	Hon Lin Technology Co., Ltd.
Address:	11F, No. 32, Jihu Rd., Neihu Dist., Taipei City 114, Taiwan R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
RFBHQC-WTW-P22030336-3	Original Release	Jun. 23, 2022

1 Certificate of Conformity

Product:	Wi-Fi 6E BT5.2 WLAN Module
Brand:	Foxconn
Test Model:	RLP0003
Sample Status:	Engineering Sample
Applicant:	Hon Lin Technology Co., Ltd.
Test Date:	May 09, 2022 ~ Jun. 23, 2022
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) ANSI C63.10:2013

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.

Prepared by : Vera Huang , **Date:** Jun. 23, 2022

Vera Huang / Specialist

Approved by : Jeremy Lin , **Date:** Jun. 23, 2022

Jeremy Lin / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -4.54dB at 0.23800MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.54dB at 1967.18MHz.
15.247(d)	Antenna Port Emission	Pass	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	Pass	Meet the requirement of limit.
15.247(b)	Conducted power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is i-pex (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:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wi-Fi 6E BT5.2 WLAN Module
Brand	Foxconn
Test Model	RLP0003
Sample Status	Engineering Sample
Power Supply Rating	3.3Vdc from host equipment
Modulation Type	GFSK
Transfer Rate	Bluetooth LE 4.0: 1Mbps Bluetooth LE 5.0: 2Mbps
Operating Frequency	2402 ~ 2480MHz
Number of Channel	40
Output Power	LE 4.0: 10.715 mW LE 5.0: 10.617 mW
Antenna Type	Refer to section 3.2
Antenna Connector	Refer to section 3.2
Accessory Device	NA
Cable Supplied	NA

Note:

1. This report is prepared for FCC class II permissive change. The difference compared with the original report (BV CPS report no.: RF201119E01-3) are changed FCC ID, applicant, brand name, model name and added antenna. Therefore, the EUT with new antenna is re-tested and recorded in this report.
2. This device of WLAN (2.4GHz & 5GHz U-NII-1 Band) can support hotspot mode.
3. Simultaneously transmission condition.

Condition	Technology	
1	WLAN(2.4GHz)	WLAN(6GHz)
2	WLAN(2.4GHz)	WLAN(5GHz)
3	WLAN(6GHz)	Bluetooth
4	WLAN(5GHz)	Bluetooth
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

4. The device of WLAN (2.4GHz) and Bluetooth technology can't transmit simultaneously, it was used timely shared coexistence technology.
5. The module has two variant designs as following table:

SKU No.	Description
SKU #1	M.2 2230 E-key
SKU #2	M.2 2230 AE-key
From the above variants designs, the worst case was found in SKU #1. Therefore only the test data of the mode was recorded in this report.	

6. The product provides option to depopulate external LNA (Low-Noise amplifier) from 5GHz/6GHz receive path. This test report covers variation of with/without external LNA and test was conducted to confirm not change in RF compliance and EMC. And worst case was found in without external LNA.
7. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Description of Antenna

The antenna gain was declared by client; please refer to the following table:

Antenna Set	RF Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range (GHz)	Cable Loss (dB)	Antenna Type	Connector Type	Cable Length
1	Chain0/1	HONGBO	260-25094	3.53 3.06 3.07 4.81 4.20	2.40~2.4835 5.150~5.250 5.250~5.350 5.470~5.725 5.725~5.850	0.76 1.16 1.18 1.2 1.27	PIFA	i-pex (MHF 4L)	300mm
2	Chain0/1	HONGBO	260-25083	5.09 5.14 5.09 5.16 5.12	5.850~5.895 5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	1.29 1.32 1.35 1.4 1.45	PIFA	i-pex (MHF 4L)	300mm
3	Chain0/1	HONGBO	260-25084	3.22 3.35 3.42 4.77 4.72 4.71 4.75 4.29 4.81 4.74	2.40~2.4835 5.150~5.250 5.250~5.350 5.470~5.725 5.725~5.850 5.850~5.895 5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	0.5 0.76 0.78 0.81 0.85 0.86 0.87 0.91 0.96 0.98	Monopole	i-pex (MHF 4L)	200mm
4	**Chain0/1**	**Auden**	**ANTRG6U123-1801 / ANTRG6U123-1802**	**5.13 / 4.64** **2.70 / 3.36** **2.70 / 3.07** **2.50 / 1.08** **2.68 / 0.42** **2.18 / 1.20** **1.98 / 0.59** **2.42 / 1.72** **1.48 / 0.62**	**2.40~2.4835** **5.150~5.250** **5.250~5.350** **5.470~5.725** **5.725~5.850** **5.925~6.425** **6.425~6.525** **6.525~6.875** **6.875~7.125**	**-**	**PIFA (Slot)**	i-pex (MHF 4L)	**460mm / 740mm**

Note:

1. Antenna Set 4 is the new antenna to be applied for this time.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.3 Description of Test Modes

40 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (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

3.3.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where RE≥1G: Radiated Emission above 1GHz & Bandedge Measurement RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission APCM: Antenna Port Conducted Measurement

Note: Radiated emission test (below 1GHz) and power line conducted emission test items chosen the worst maximum power.

Radiated Emission Test (Above 1GHz):

☒ 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.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
-	0 to 39	0, 19, 39	GFSK	1
-	0 to 39	0, 19, 39	GFSK	2

Radiated Emission Test (Below 1GHz):

☒ 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.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
-	0 to 39	39	GFSK	1

Power Line Conducted Emission Test:

☒ 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.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
-	0 to 39	39	GFSK	1

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ 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.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
-	0 to 39	0, 19, 39	GFSK	1
-	0 to 39	0, 19, 39	GFSK	2

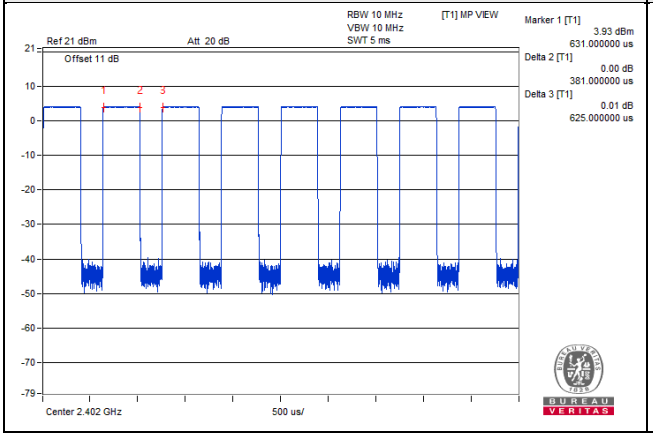
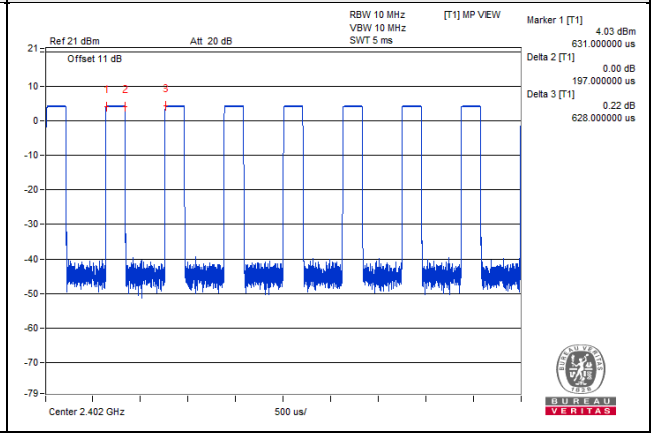
Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	19 deg. C, 68% RH	120Vac, 60Hz	Thomas Cheng
RE<1G	25 deg. C, 60% RH	120Vac, 60Hz	Jisyong Wang
	23 deg. C, 64% RH	120Vac, 60Hz	Thomas Cheng
PLC	25 deg. C, 75 RH	120Vac, 60Hz	Rex Wang
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Jisyong Wang

3.4 Duty Cycle of Test Signal

Duty cycle of test signal is < 98%.

BT LE 4.0: Duty cycle = 0.381/0.625 = 0.61, Duty factor = 10 * log (1/0.61) = 2.15
BT LE 5.0: Duty cycle = 0.197/0.628 = 0.314, Duty factor = 10 * log (1/0.314) = 5.03

BT LE 4.0	BT LE 5.0
	

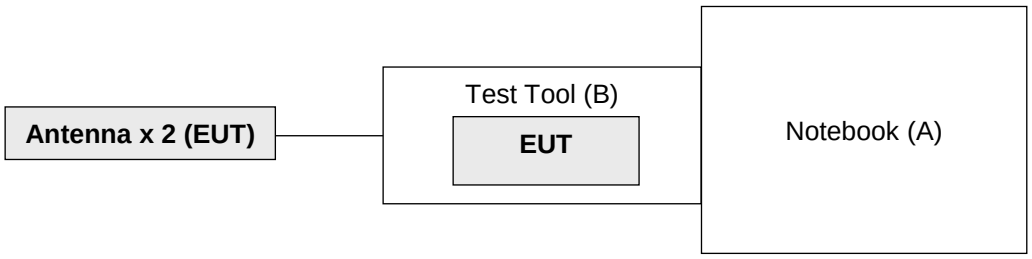
3.5 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	Tongfang	GK5NPFO	NA	FCC DoC Approved	Provided by client
B.	Test Tool	Foxconn	N/A	N/A	N/A	Provided by client

Note: All power cords of the above support units are non-shielded (1.8m).

3.5.1 Configuration of System under Test



3.6 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

Test standard:
FCC Part 15, Subpart C (15.247)
ANSI C63.10:2013

All test items have been performed and recorded as per the above standards.

References Test Guidance:
KDB 558074 D01 15.247 Meas Guidance v05r02

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB 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

Note:

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 1000MHz, 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 20dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer Agilent	N9010A	MY52220314	Dec. 03, 2021	Dec. 02, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 11, 2022	Apr. 10, 2023
Broadband Horn Antenna SCHWARZBECK	BBHA 9170	148	Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 14, 2021	Nov. 13, 2022
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Oct. 28, 2021	Oct. 27, 2022
Fixed Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	Apr. 05, 2022	Apr. 04, 2023
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 25, 2021	Nov. 24, 2022
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier EMCI	EMC001340	980201	Sep. 15, 2021	Sep. 14, 2022
Preamplifier EMCI	EMC 012645	980115	Oct. 05, 2021	Oct. 04, 2022
Preamplifier EMCI	EMC 184045	980116	Oct. 05, 2021	Oct. 04, 2022
Preamplifier EMCI	EMC 330H	980112	Oct. 05, 2021	Oct. 04, 2022
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	Jan. 18, 2022	Jan. 17, 2023
Wideband Power Sensor KEYSIGHT	N1923A	MY58020002	Jan. 17, 2022	Jan. 16, 2023
RF Coaxial Cable EMCI	EMC104-SM-SM-8000	171005	Oct. 05, 2021	Oct. 04, 2022
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1000 (140807)	Oct. 05, 2021	Oct. 04, 2022
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 05, 2021	Oct. 04, 2022
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.

4.1.3 Test Procedures

Following FCC KDB 558074 D01 DTS Meas. Guidance:
Radiated versus Conducted Measurements.
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 30MHz

e-1.1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.
2. 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 30MHz

e-2.1. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) 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.

e-2.6. 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.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

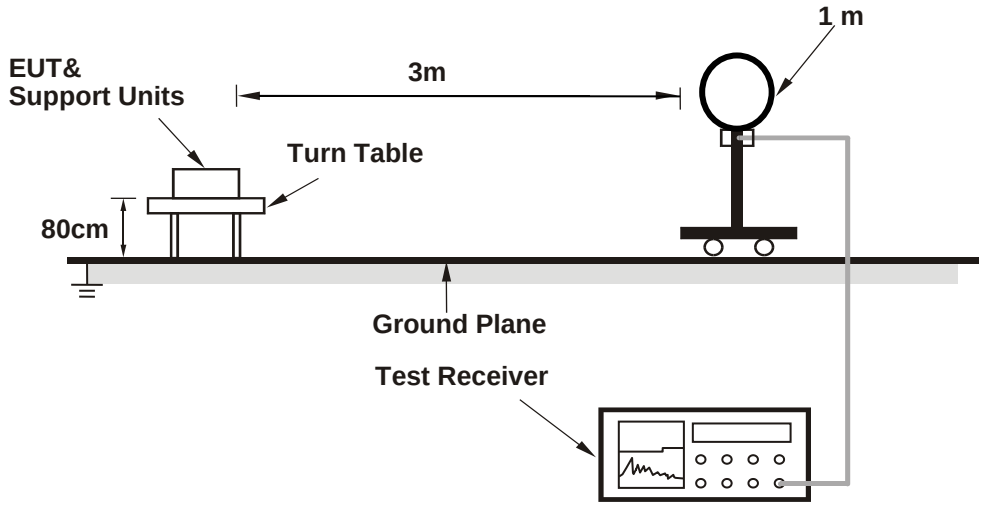
4.1.4 Deviation from Test Standard

No deviation.

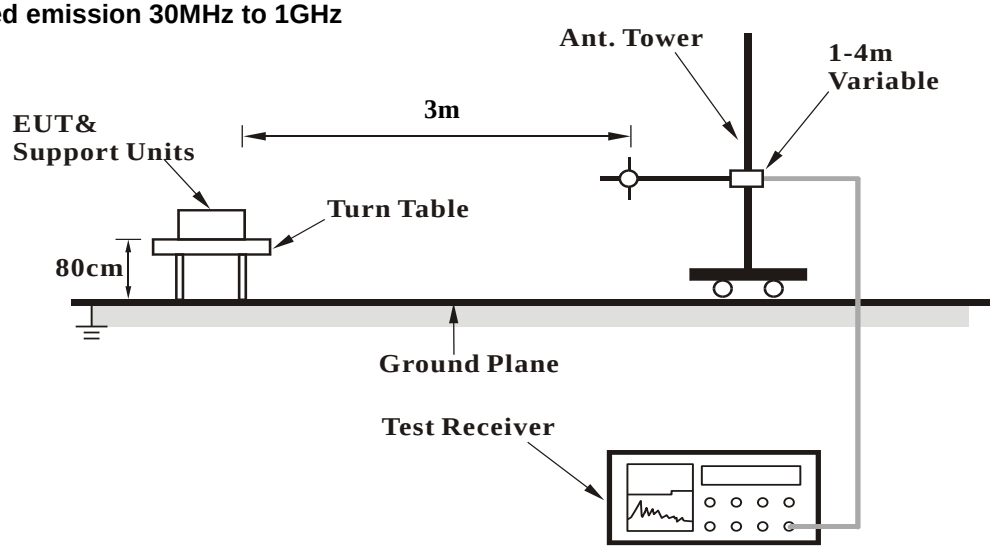
4.1.5 Test Setup

For Radiated Configuration:

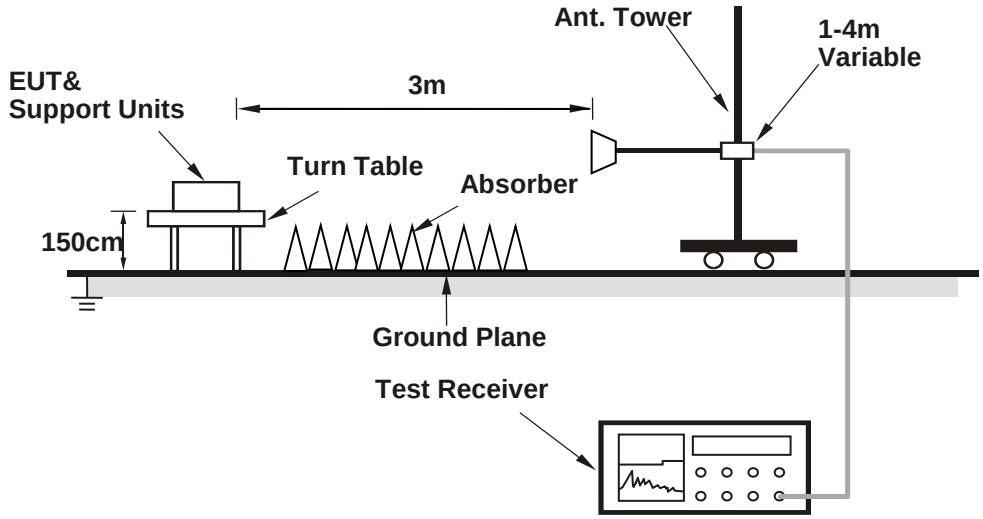
For Radiated emission below 30MHz



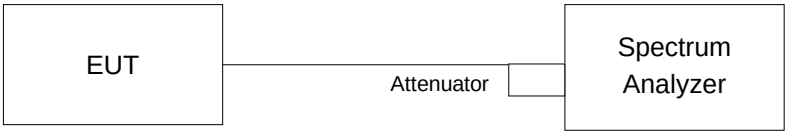
For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For Conducted Configuration:



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

4.1.6 EUT Operating Conditions

a. Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results (Radiated Measurement)

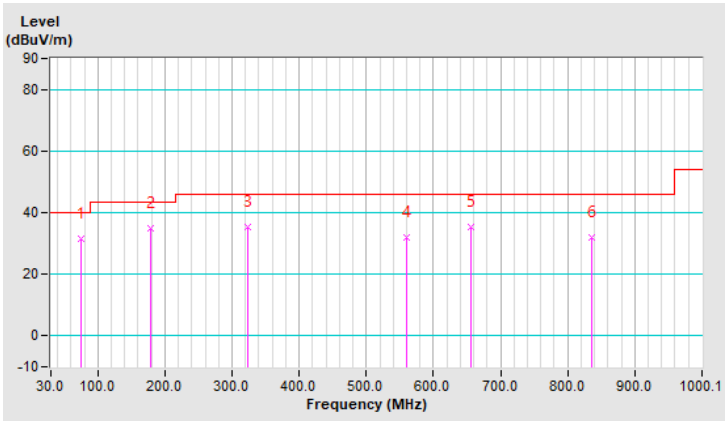
Radiated versus Conducted Measurement	
☐ Conducted measurement	☒ Radiated measurement
For Radiated measurement: The level of unwanted emissions was measured when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation) For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

RF Mode	TX BT-LE 1M	Channel	CH 39：2480 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	74.62	31.4 QP	40.0	-8.6	1.56 H	339	47.5	-16.1
2	178.43	35.0 QP	43.5	-8.5	1.15 H	197	49.1	-14.1
3	323.94	35.4 QP	46.0	-10.6	3.69 H	180	46.5	-11.1
4	560.64	31.8 QP	46.0	-14.2	1.36 H	208	36.7	-4.9
5	656.68	35.4 QP	46.0	-10.6	1.86 H	271	38.0	-2.6
6	835.18	32.0 QP	46.0	-14.0	2.69 H	238	30.9	1.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

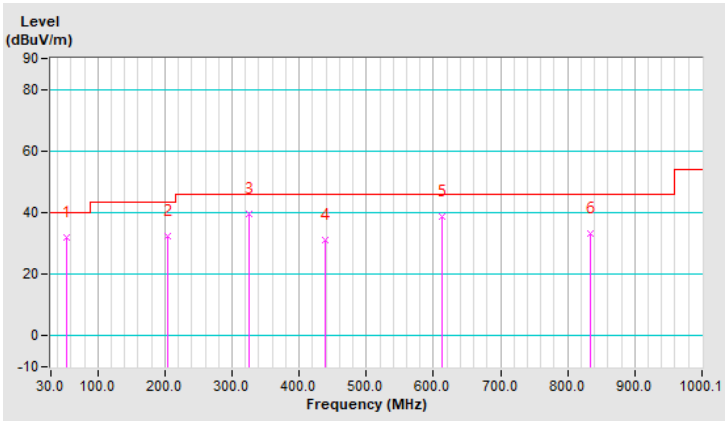


RF Mode	TX BT-LE 1M	Channel	CH 39：2480 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	54.25	32.1 QP	40.0	-7.9	1.68 V	98	45.0	-12.9
2	204.62	32.4 QP	43.5	-11.1	2.05 V	179	48.5	-16.1
3	324.91	39.6 QP	46.0	-6.4	3.53 V	194	50.7	-11.1
4	438.41	31.2 QP	46.0	-14.8	2.60 V	95	38.8	-7.6
5	612.06	38.6 QP	46.0	-7.4	1.12 V	318	41.8	-3.2
6	833.24	33.1 QP	46.0	-12.9	2.56 V	253	32.1	1.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.1.8 Test Results (Conducted Measurement)

Radiated versus Conducted Measurement	
☒ Conducted measurement	☐ Radiated 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 Measurement Factor
a. The composite gain will be used when signal support the correlated signal. b. For the out of band spurious the gain for the specific band may have been used rather than the highest gain across all bands. c. For the band edge the gain for the specific band may have been used. d. In restricted bands below 1000 MHz, add upper bound on ground plane reflection: For f = 30 – 1000 MHz, add 4.7 dB. Note: The conducted emission test was considered some factor to compute test result.

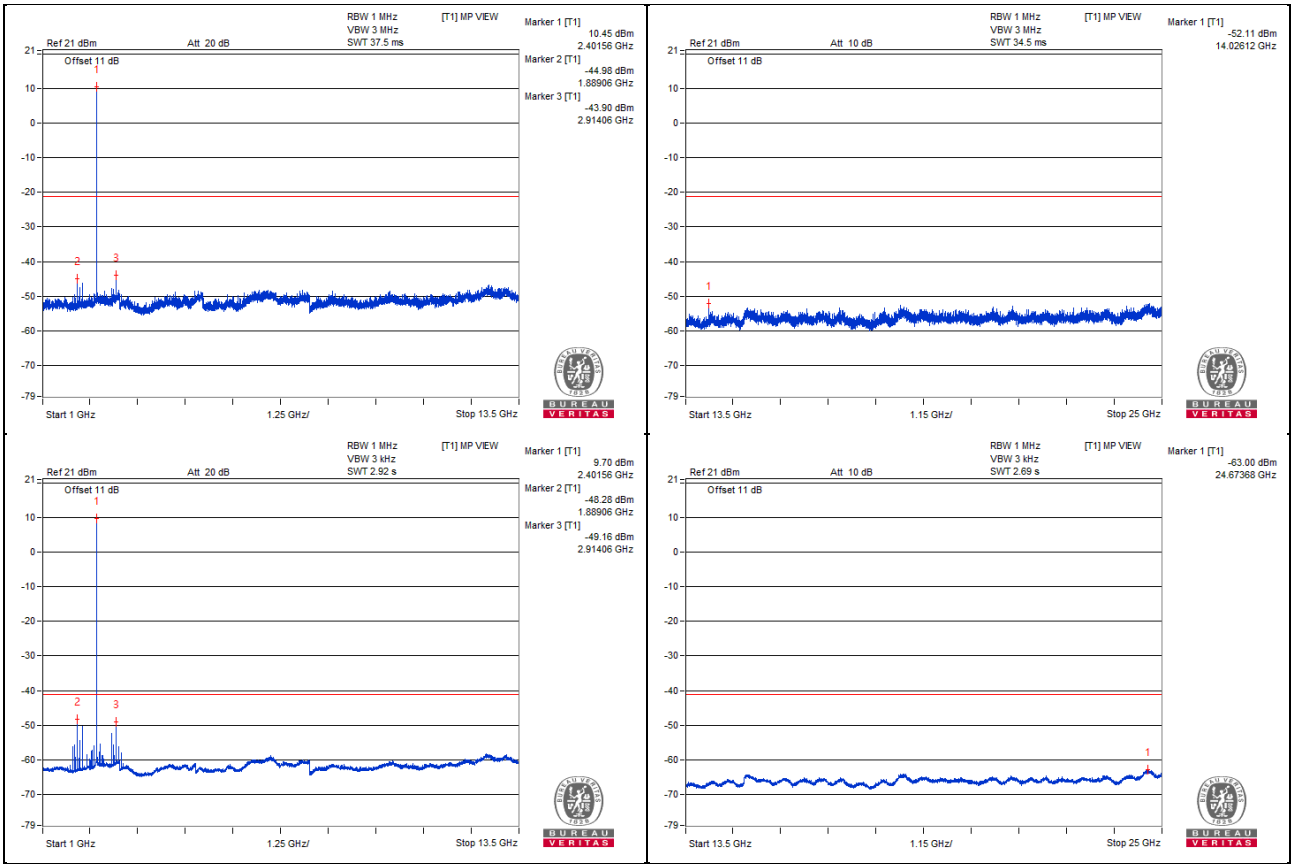
Above 1 GHz Data:

BT-LE 1M - 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	4798.43	50.23 PK	74	-23.77	-50.16	5.13	-45.03
2	4803.12	38.37 AV	54	-15.63	-62.02	5.13	-56.89
3	1889.06	55.41 PK	74	-18.59	-44.98	5.13	-39.85
4	1889.06	52.11 AV	54	-1.89	-48.28	5.13	-43.15

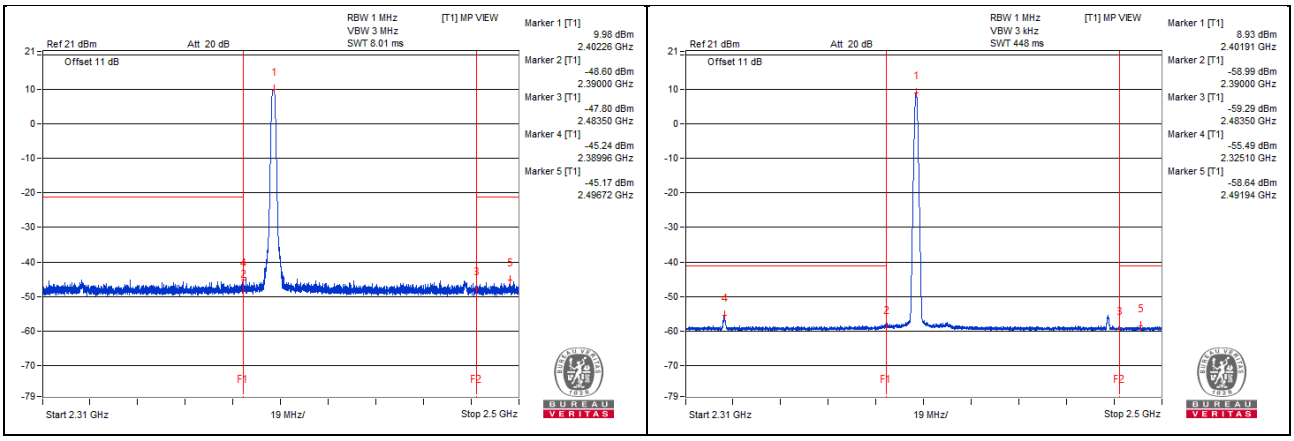
Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.
2. Non-restricted frequency, the limit was restricted at the conducted out of band emission.



Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2344.77	55.15 PK	74	-18.85	-45.24	5.13	-40.11
2	2325.1	44.9 AV	54	-9.1	-55.49	5.13	-50.36
3	2496.72	55.22 PK	74	-18.78	-45.17	5.13	-40.04
4	2491.94	41.75 AV	54	-12.25	-58.64	5.13	-53.51

Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.

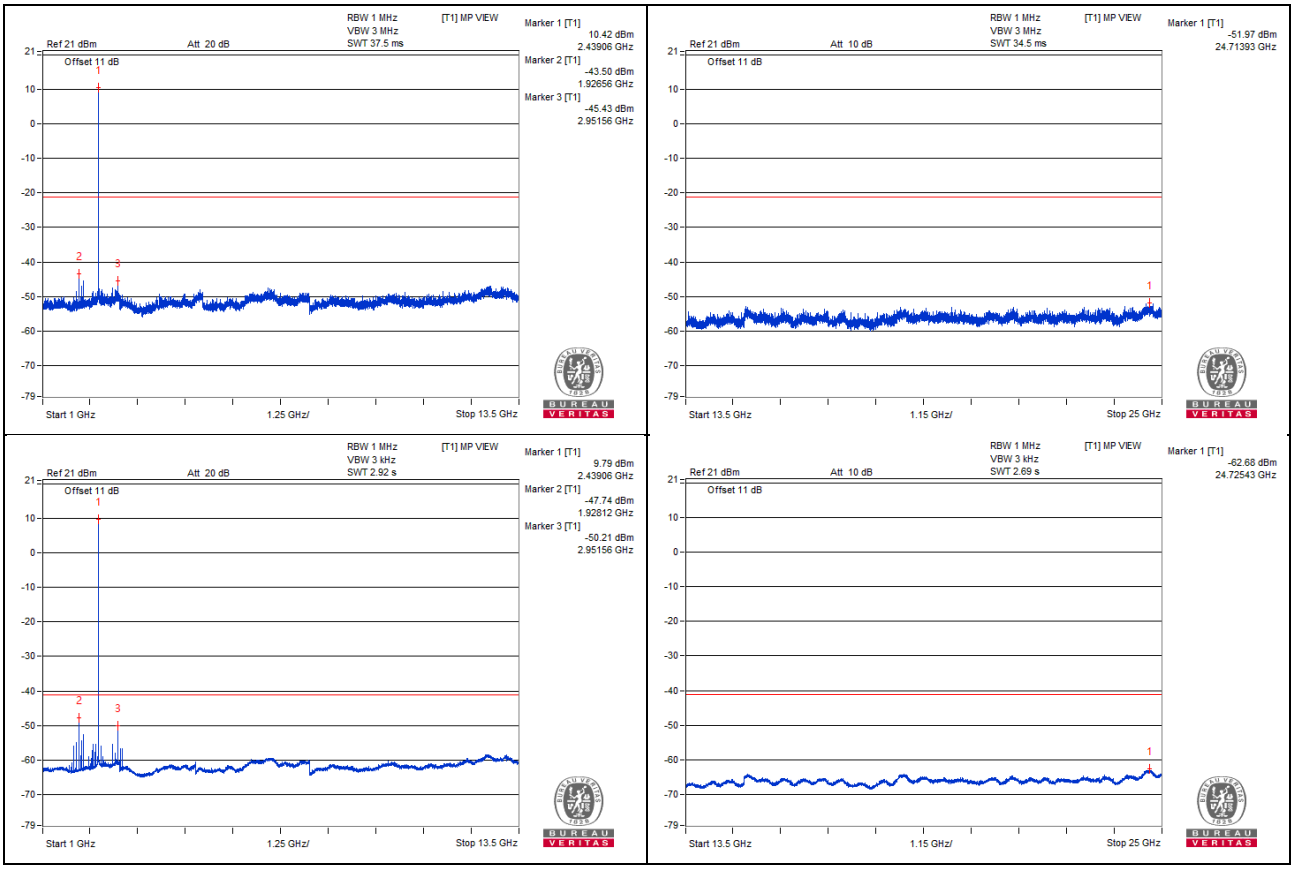


BT-LE 1M - Channel 19

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	4873.43	48.88 PK	74	-25.12	-51.51	5.13	-46.38
2	4887.5	38.54 AV	54	-15.46	-61.85	5.13	-56.72
3	7328.12	50.6 PK	74	-23.4	-49.79	5.13	-44.66
4	7326.56	39.52 AV	54	-14.48	-60.87	5.13	-55.74
5	1926.56	56.89 PK	74	-17.11	-43.5	5.13	-38.37
6	1928.12	52.65 AV	54	-1.35	-47.74	5.13	-42.61

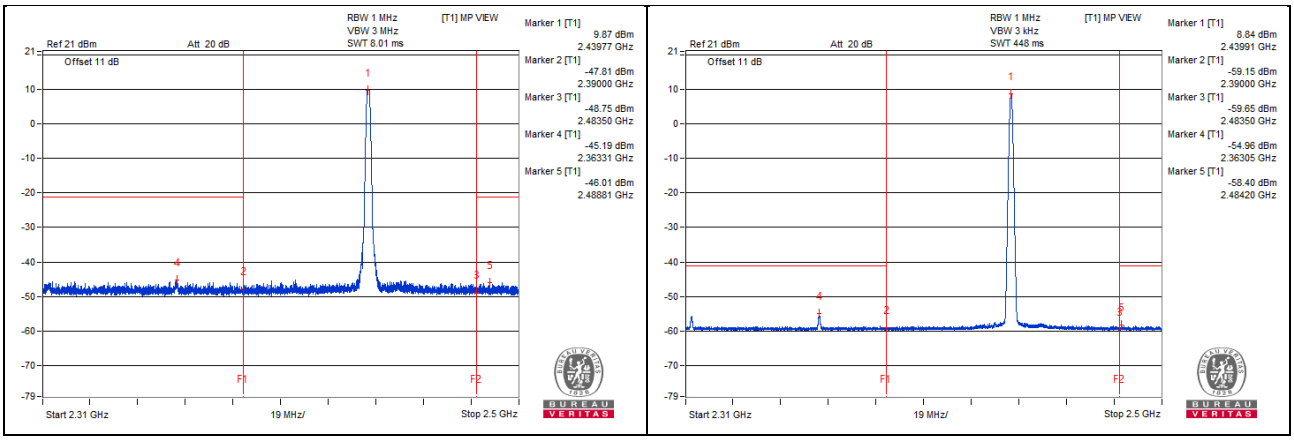
Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.
2. Non-restricted frequency, the limit was restricted at the conducted out of band emission.



Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2363.31	55.2 PK	74	-18.8	-45.19	5.13	-40.06
2	2363.05	45.43 AV	54	-8.57	-54.96	5.13	-49.83
3	2488.81	54.38 PK	74	-19.62	-46.01	5.13	-40.88
4	2484.2	41.99 AV	54	-12.01	-58.4	5.13	-53.27

Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.

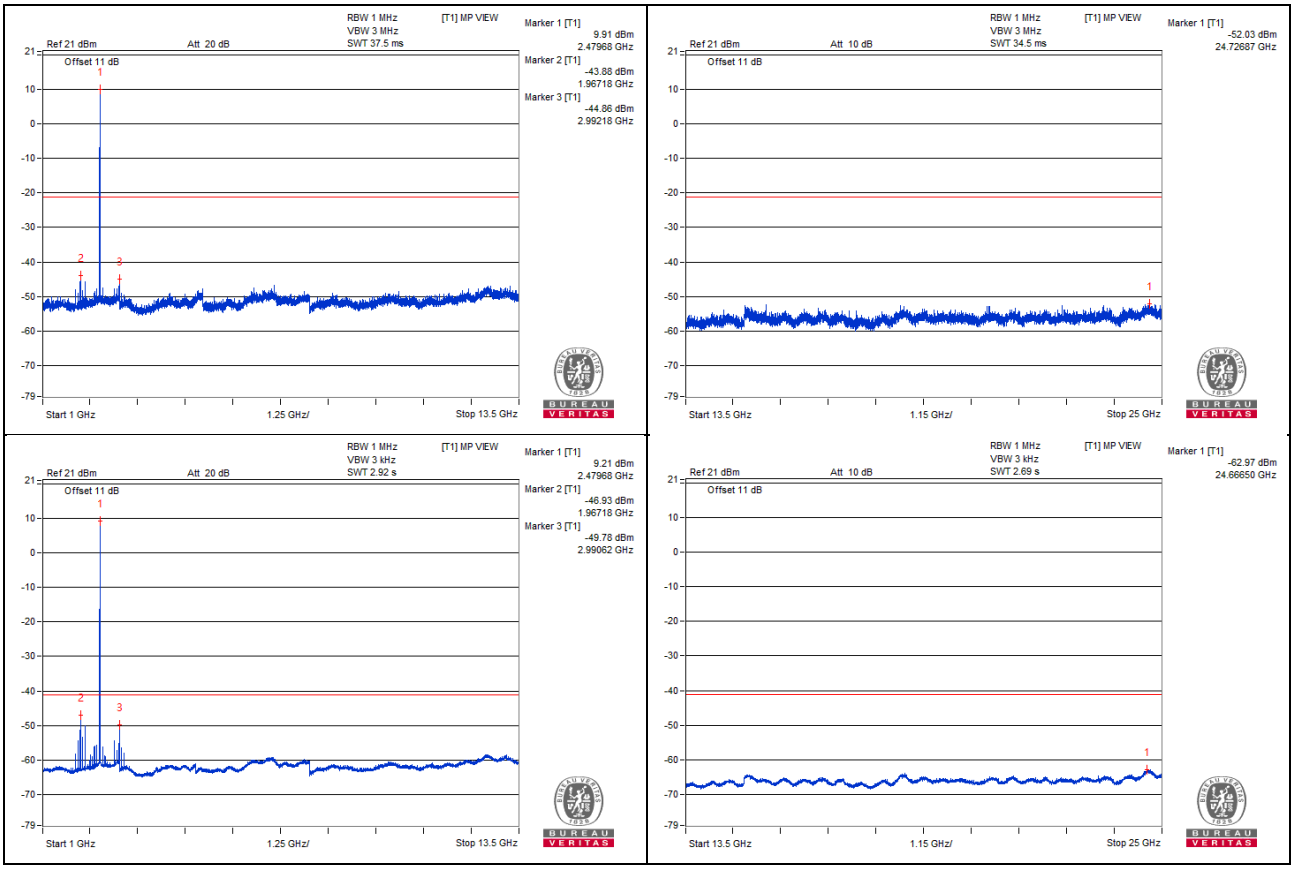


BT-LE 1M - Channel 39

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	4950	50.01 PK	74	-23.99	-50.38	5.13	-45.25
2	4957.81	39.06 AV	54	-14.94	-61.33	5.13	-56.20
3	7435.93	50.01 PK	74	-23.99	-50.38	5.13	-45.25
4	7434.37	39.63 AV	54	-14.37	-60.76	5.13	-55.63
5	1967.18	56.51 PK	74	-17.49	-43.88	5.13	-38.75
6	**1967.18**	**53.46 AV**	**54**	**-0.54**	**-46.93**	**5.13**	**-41.80**

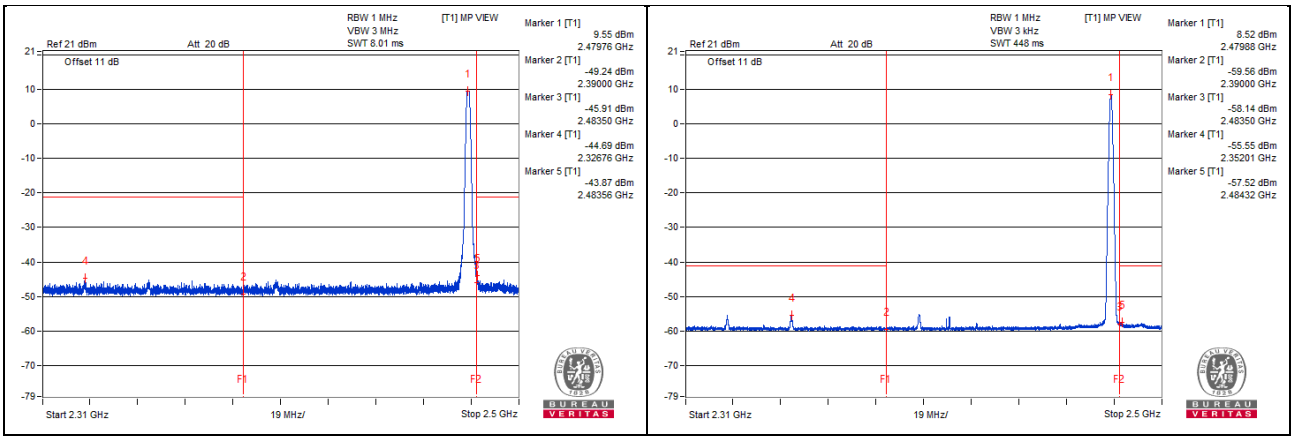
Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.
2. Non-restricted frequency, the limit was restricted at the conducted out of band emission.



Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2326.76	55.7 PK	74	-18.3	-44.69	5.13	-39.56
2	2352.01	44.84 AV	54	-9.16	-55.55	5.13	-50.42
3	2483.56	56.52 PK	74	-17.48	-43.87	5.13	-38.74
4	2484.32	42.87 AV	54	-11.13	-57.52	5.13	-52.39

Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.

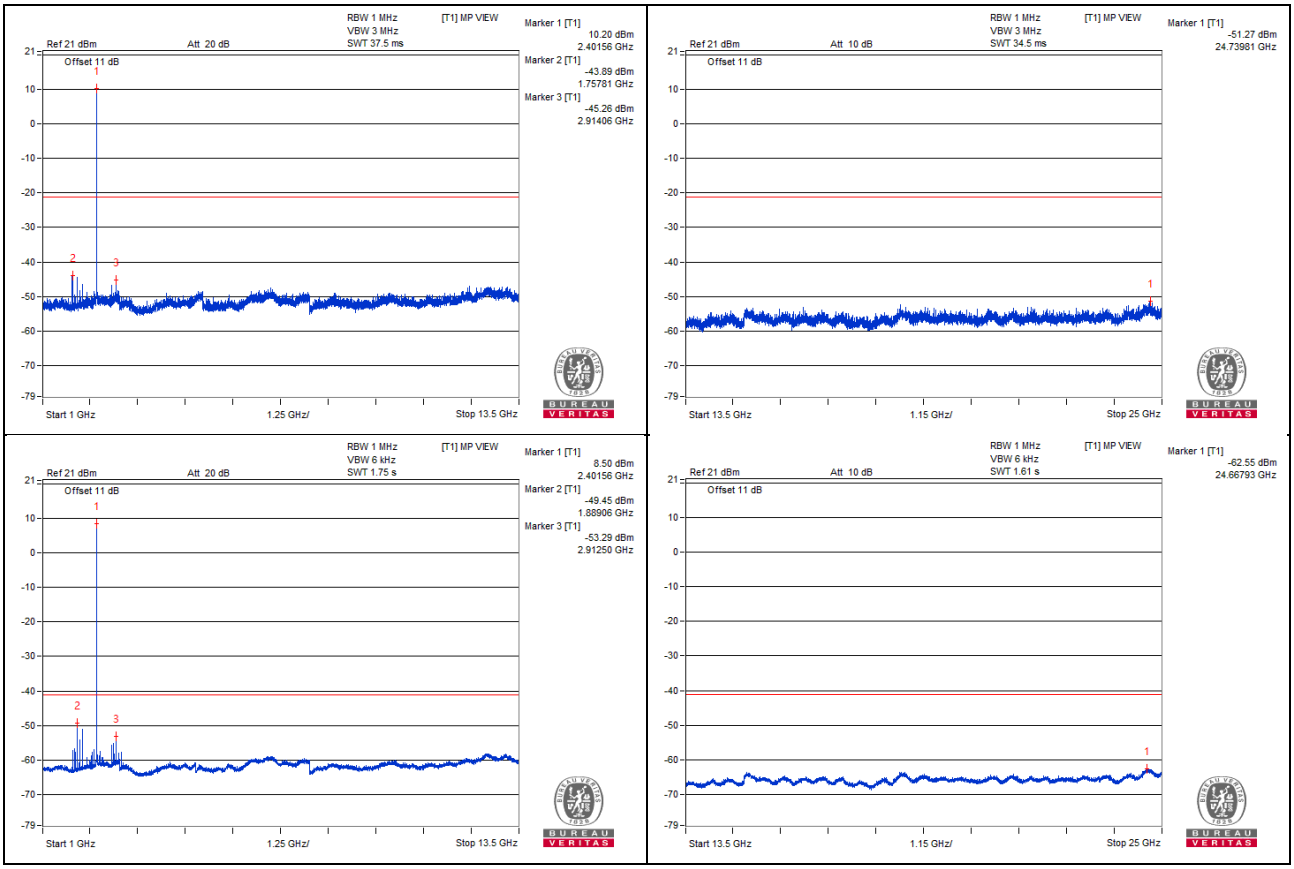


BT-LE 2M - Channel 0

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	4887.5	49.05 PK	74	-24.95	-51.34	5.13	-46.21
2	4889.06	38.22 AV	54	-15.78	-62.17	5.13	-57.04
3	7310.93	49.97 PK	74	-24.03	-50.42	5.13	-45.29
4	7323.43	40.28 AV	54	-13.72	-60.11	5.13	-54.98
5	1757.81	56.5 PK	74	-17.5	-43.89	5.13	-38.76
6	1889.06	50.94 AV	54	-3.06	-49.45	5.13	-44.32

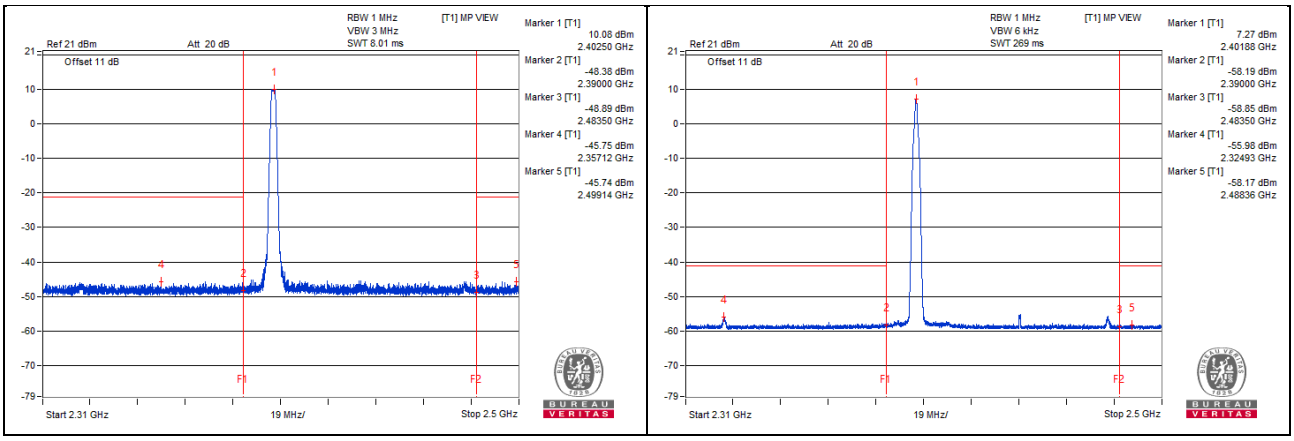
Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.
2. Non-restricted frequency, the limit was restricted at the conducted out of band emission.



Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2357.12	54.64 PK	74	-19.36	-45.75	5.13	-40.62
2	2324.93	44.41 AV	54	-9.59	-55.98	5.13	-50.85
3	2499.14	54.65 PK	74	-19.35	-45.74	5.13	-40.61
4	2488.36	42.22 AV	54	-11.78	-58.17	5.13	-53.04

Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.

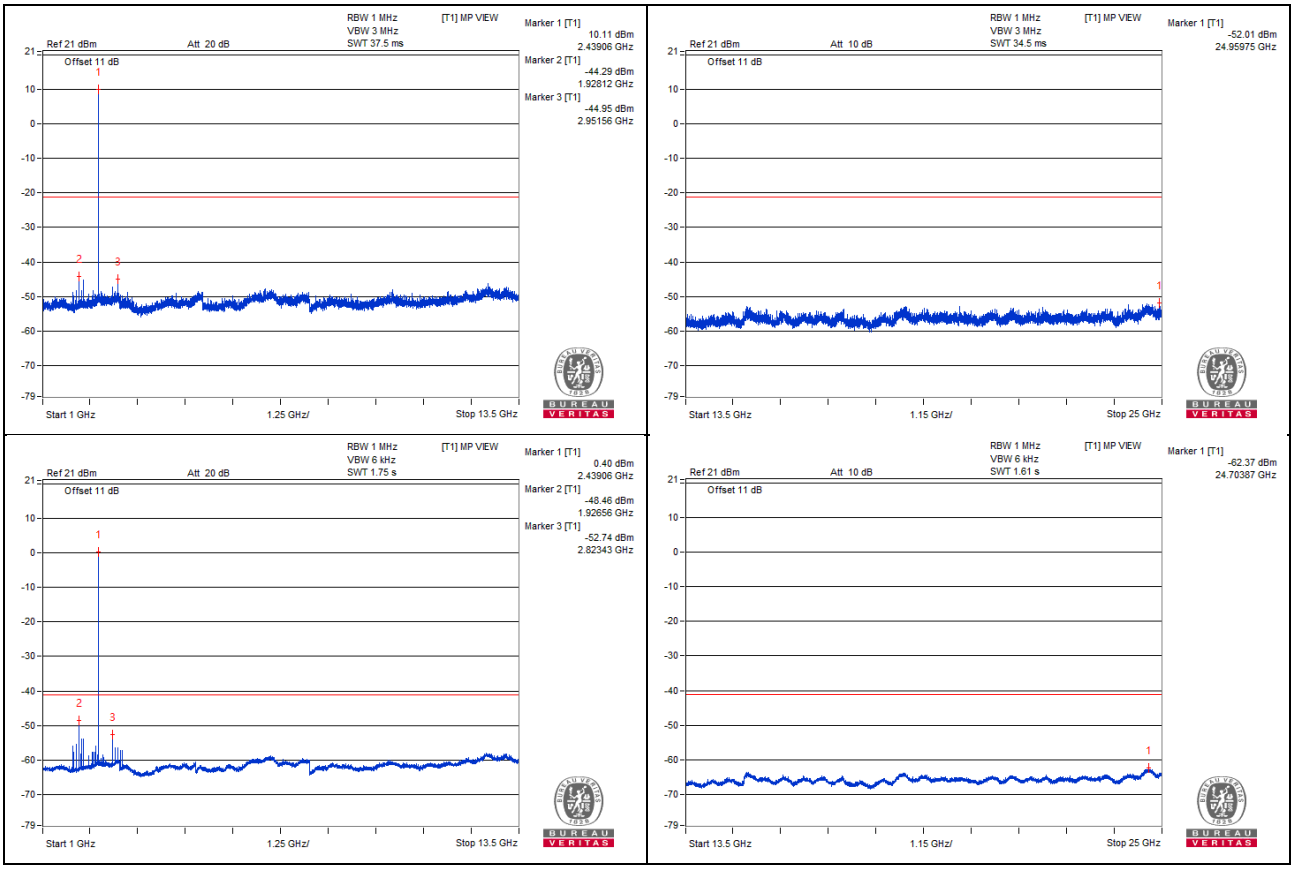


BT-LE 2M - Channel 19

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	4885.93	49.73 PK	74	-24.27	-50.66	5.13	-45.53
2	4879.68	38.29 AV	54	-15.71	-62.1	5.13	-56.97
3	7317.18	49.77 PK	74	-24.23	-50.62	5.13	-45.49
4	7318.75	40.47 AV	54	-13.53	-59.92	5.13	-54.79
5	1928.12	56.1 PK	74	-17.9	-44.29	5.13	-39.16
6	1926.56	51.93 AV	54	-2.07	-48.46	5.13	-43.33

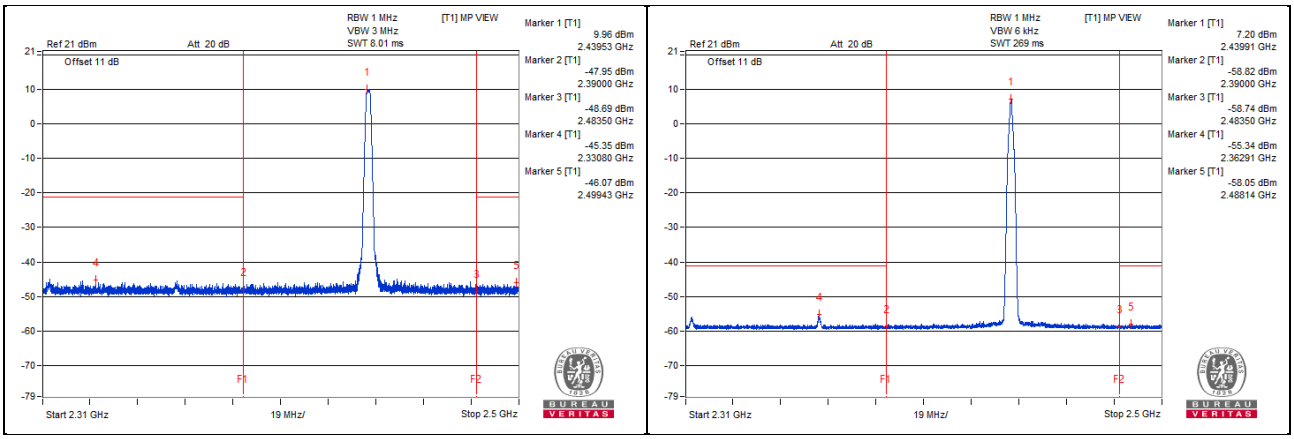
Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.
2. Non-restricted frequency, the limit was restricted at the conducted out of band emission.



Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2312.32	55.32 PK	74	-18.68	-45.07	5.13	-39.94
2	2362.91	45.05 AV	54	-8.95	-55.34	5.13	-50.21
3	2499.43	54.32 PK	74	-19.68	-46.07	5.13	-40.94
4	2488.14	42.34 AV	54	-11.66	-58.05	5.13	-52.92

Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.

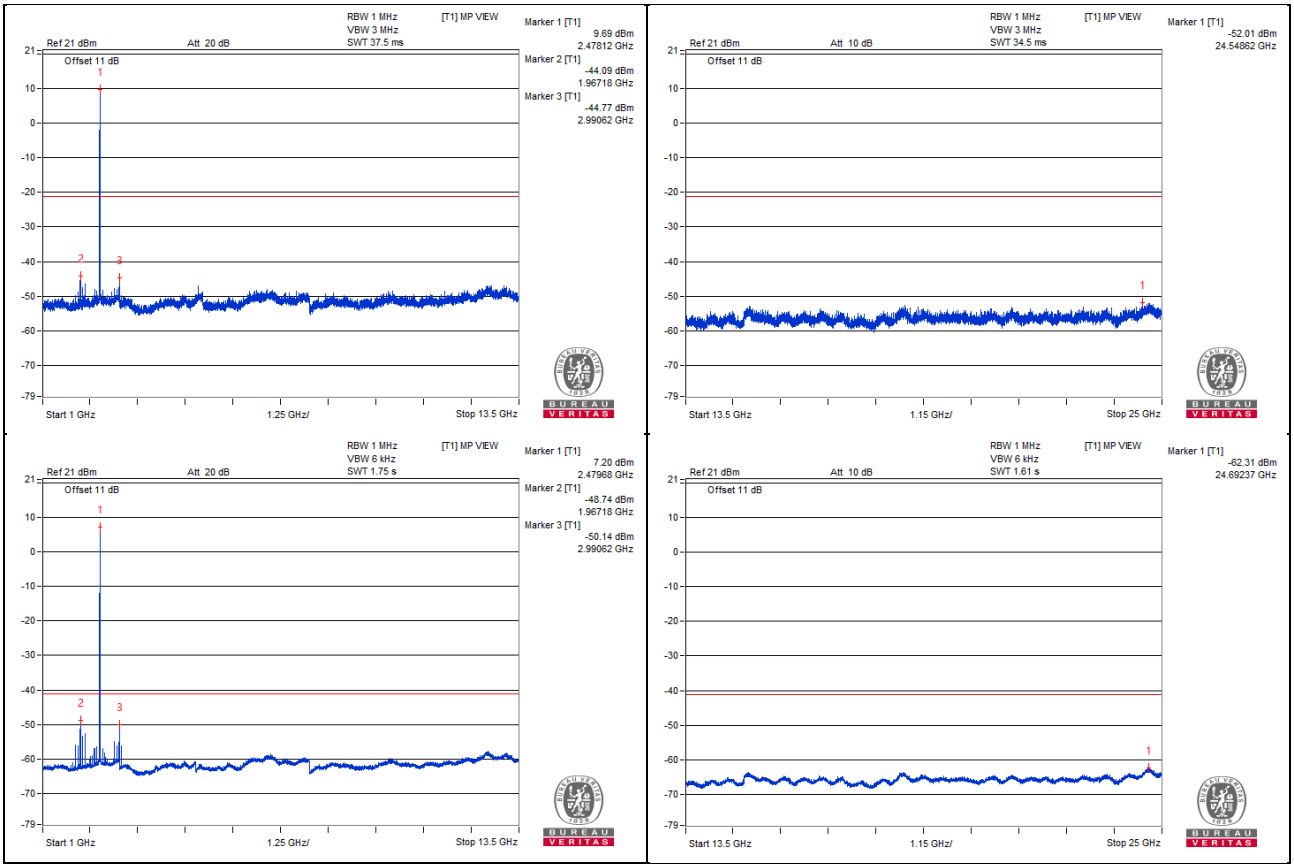


BT-LE 2M - Channel 39

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	4953.12	49.58 PK	74	-24.42	-50.81	5.13	-45.68
2	4951.56	39.36 AV	54	-14.64	-61.03	5.13	-55.90
3	7435.93	50.12 PK	74	-23.88	-50.27	5.13	-45.14
4	7443.75	39.77 AV	54	-14.23	-60.62	5.13	-55.49
5	1967.18	56.3 PK	74	-17.7	-44.09	5.13	-38.96
6	1967.18	51.65 AV	54	-2.35	-48.74	5.13	-43.61
7	2487.5	51.77 PK	74	-22.23	-48.62	5.13	-43.49
8	2484.37	41.91 AV	54	-12.09	-58.48	5.13	-53.35

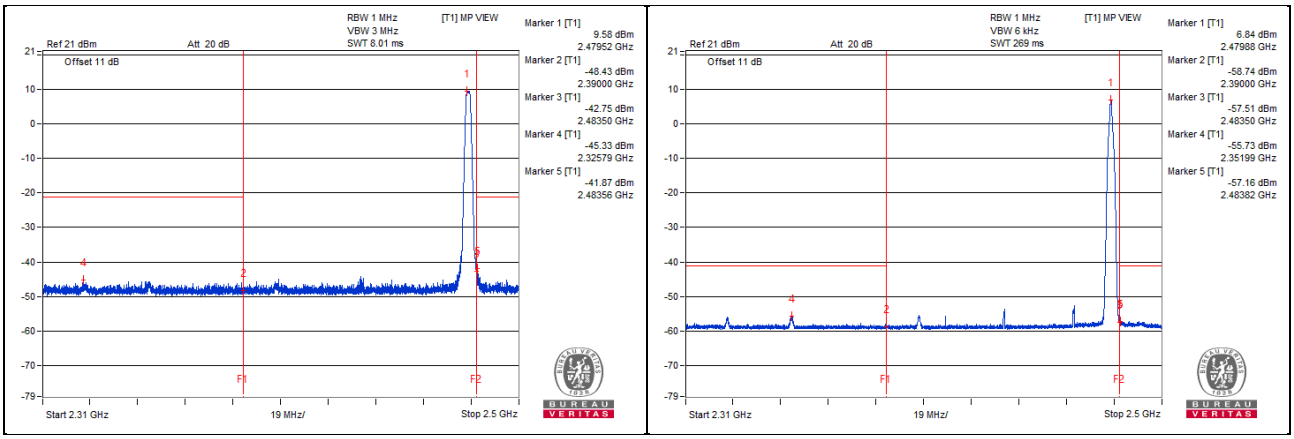
Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.
2. Non-restricted frequency, the limit was restricted at the conducted out of band emission.



Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2325.79	55.06 PK	74	-18.94	-45.33	5.13	-40.20
2	2351.99	44.66 AV	54	-9.34	-55.73	5.13	-50.60
3	2483.56	58.52 PK	74	-15.48	-41.87	5.13	-36.74
4	2483.82	43.23 AV	54	-10.77	-57.16	5.13	-52.03

Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.



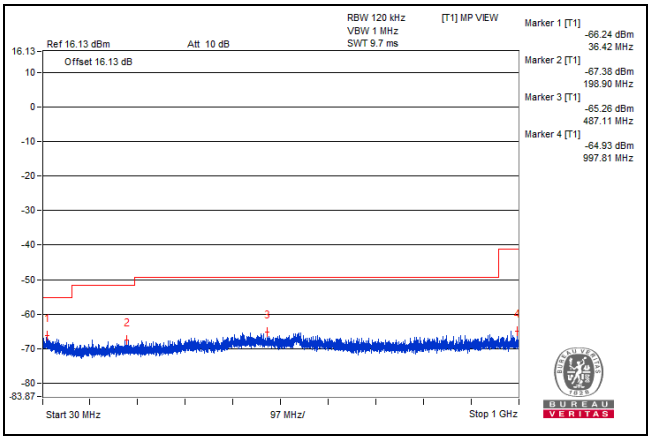
Below 1GHz worst-case data:

BT-LE 1M - 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	36.42	34.15	40	-5.85	-66.24	5.13	-61.11
2	198.9	33.01	43.5	-10.49	-67.38	5.13	-62.25
3	396.29	33.75	46	-12.25	-66.64	5.13	-61.51
4	487.11	35.13	46	-10.87	-65.26	5.13	-60.13
5	799.57	33.71	46	-12.29	-66.68	5.13	-61.55
6	997.81	35.46	54	-18.54	-64.93	5.13	-59.80

Note :
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
   d = measurement distance in 3 meters.
2. Non-restricted frequency, the limit was restricted at the conducted out of band emission.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 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 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102783	Dec. 20, 2021	Dec. 19, 2022
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 04, 2021	Sep. 03, 2022
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Feb. 17, 2022	Feb. 16, 2023
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Sep. 17, 2021	Sep. 16, 2022
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-12047.

4.2.3 Test Procedures

a. The EUT was 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/ 50uH of coupling impedance for the measuring instrument.

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

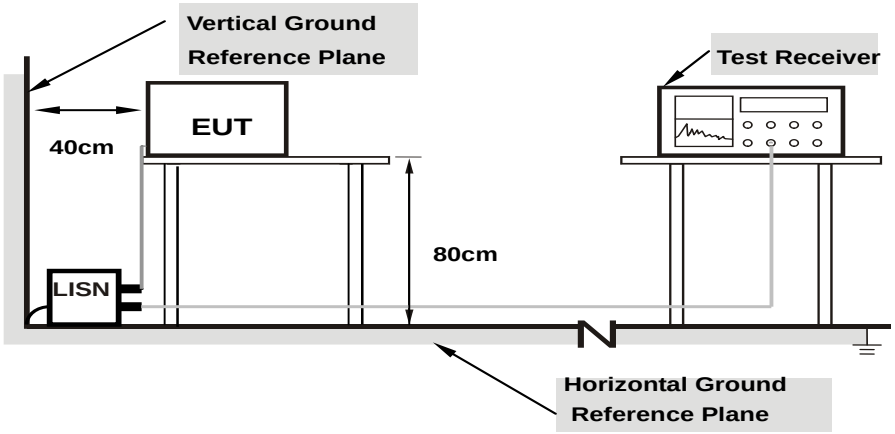
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 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).

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Worst-case data:

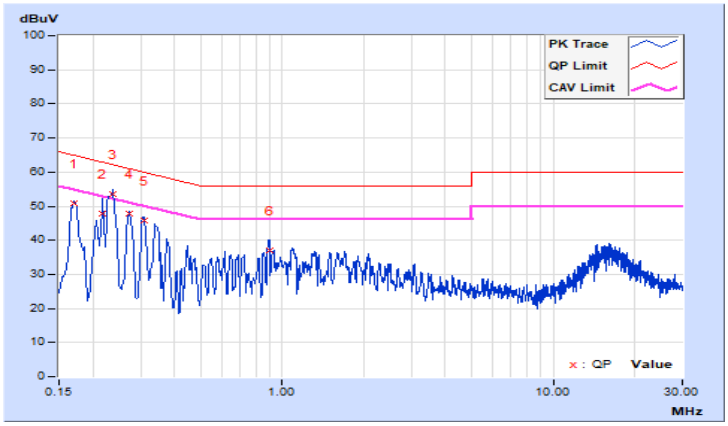
BT-LE 1M - Channel 39

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17000	10.13	40.85	39.39	50.98	49.52	64.96	54.96	-13.98	-5.44
2	0.21800	10.14	37.81	15.36	47.95	25.50	62.89	52.89	-14.94	-27.39
3	**0.23800**	**10.14**	**43.48**	**37.49**	**53.62**	**47.63**	**62.17**	**52.17**	**-8.55**	**-4.54**
4	0.27400	10.15	37.70	36.01	47.85	46.16	61.00	51.00	-13.15	-4.84
5	0.31000	10.15	35.76	32.13	45.91	42.28	59.97	49.97	-14.06	-7.69
6	0.89800	10.18	26.75	16.35	36.93	26.53	56.00	46.00	-19.07	-19.47

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.

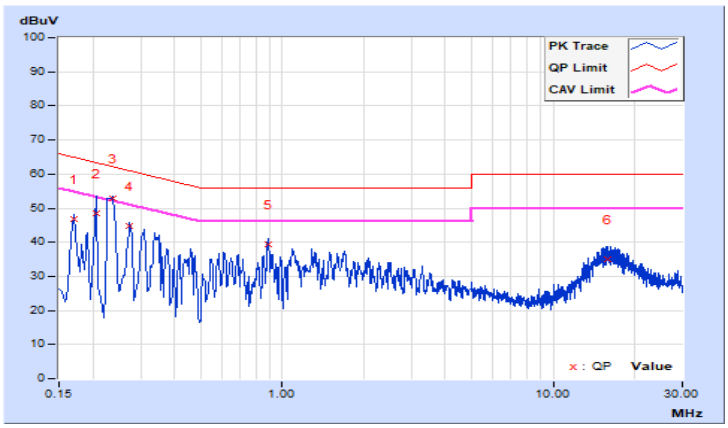


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17000	10.14	36.65	31.90	46.79	42.04	64.96	54.96	-18.17	-12.92
2	0.20600	10.15	38.19	27.78	48.34	37.93	63.37	53.37	-15.03	-15.44
3	0.23723	10.15	42.60	35.77	52.75	45.92	62.19	52.19	-9.44	-6.27
4	0.27400	10.16	34.61	30.37	44.77	40.53	61.00	51.00	-16.23	-10.47
5	0.89400	10.19	29.05	20.30	39.24	30.49	56.00	46.00	-16.76	-15.51
6	15.84600	10.45	24.45	9.83	34.90	20.28	60.00	50.00	-25.10	-29.72

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.

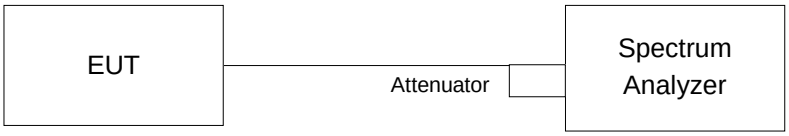


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

a. Set resolution bandwidth (RBW) = 100kHz.

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.

4.3.5 Deviation fromTest Standard

No deviation.

4.3.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

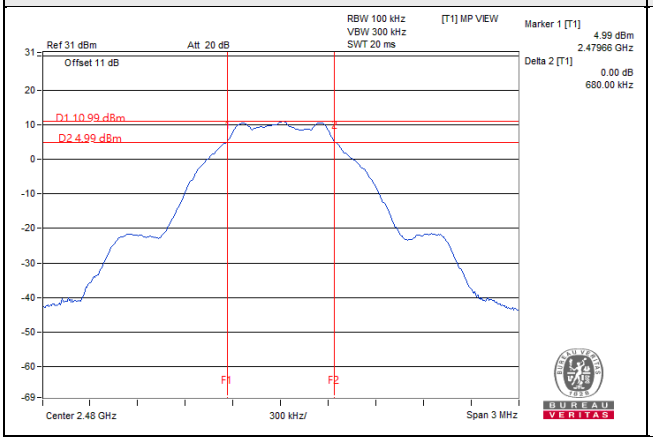
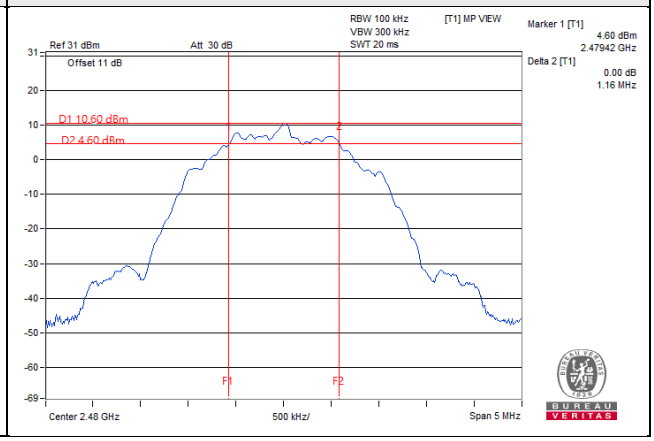
4.3.7 Test Result

BT LE 4.0

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
0	2402	0.68	0.50	Pass
19	2440	0.68	0.50	Pass
39	2480	0.68	0.50	Pass

BT LE 5.0

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
0	2402	1.16	0.50	Pass
19	2440	1.16	0.50	Pass
39	2480	1.16	0.50	Pass

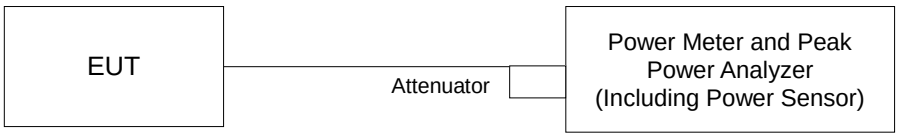
Spectrum Plot of Worst Value	
BT LE 4.0	BT LE 5.0
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

For 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.

For 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.

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as item 4.3.6.

4.4.7 Test Results

For Peak Power

BT LE 4.0

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
0	2402	9.506	9.78	30.00	Pass
19	2440	10.495	10.21	30.00	Pass
39	2480	**10.715**	10.30	30.00	Pass

BT LE 5.0

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
0	2402	9.441	9.75	30.00	Pass
19	2440	10.399	10.17	30.00	Pass
39	2480	**10.617**	10.26	30.00	Pass

For Average Power

BT LE 4.0

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	8.933	9.51
19	2440	9.84	9.93
39	2480	10.116	10.05

BT LE 5.0

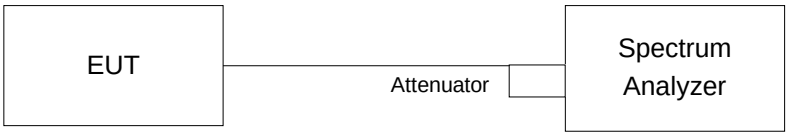
Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	8.872	9.48
19	2440	9.772	9.90
39	2480	10.023	10.01

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 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 ≤ RBW ≤ 100 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.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as item 4.3.6

4.5.7 Test Results

BT LE 4.0

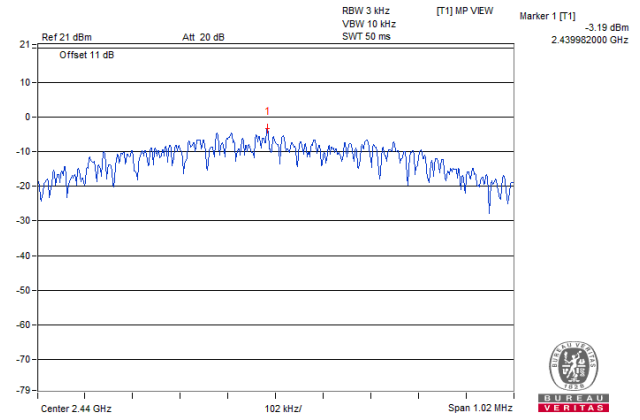
Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	2402	-3.32	8	Pass
19	2440	-3.19	8	Pass
39	2480	-3.39	8	Pass

BT LE 5.0

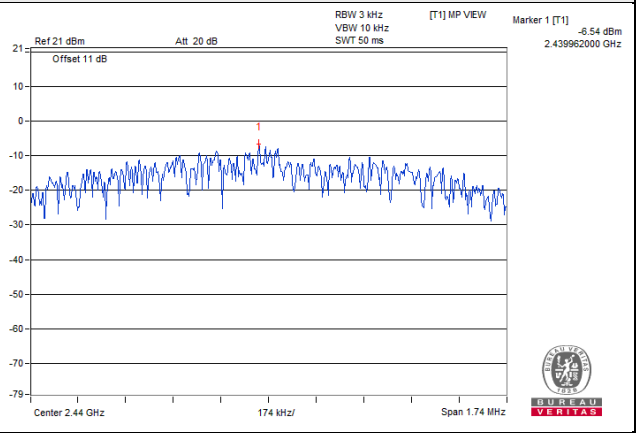
Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	2402	-6.66	8	Pass
19	2440	-6.54	8	Pass
39	2480	-6.73	8	Pass

Spectrum Plot of Worst Value

BT LE 4.0



BT LE 5.0

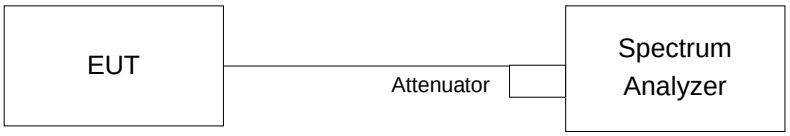


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 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.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

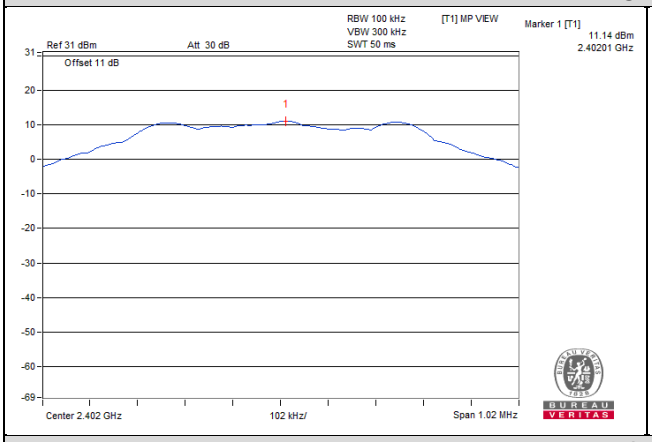
Same as item 4.3.6

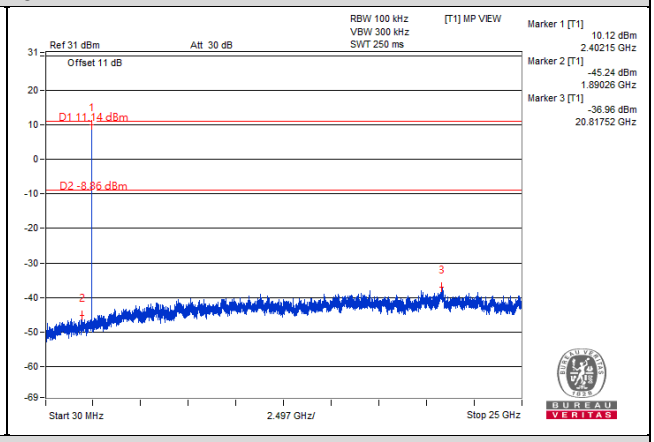
4.6.7 Test Results

The conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

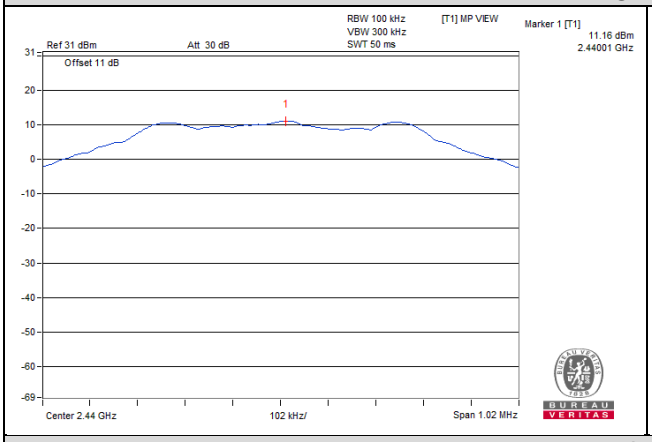
BT LE 4.0

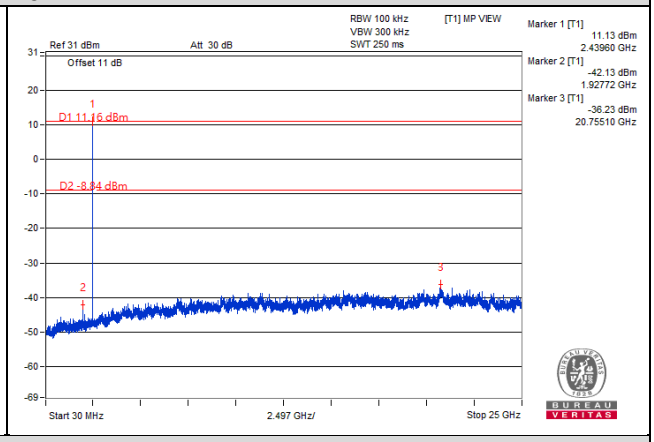
Ch 0



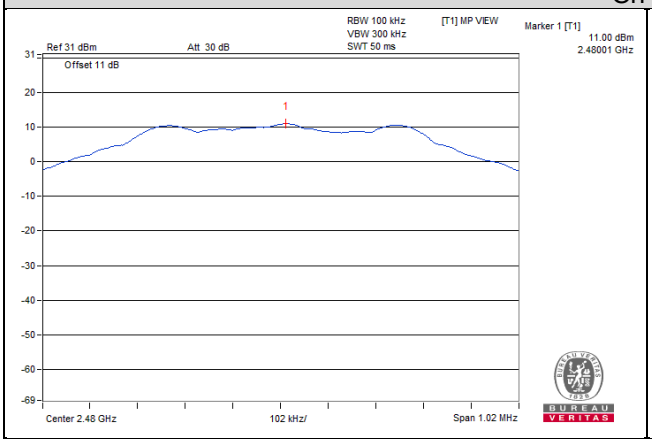


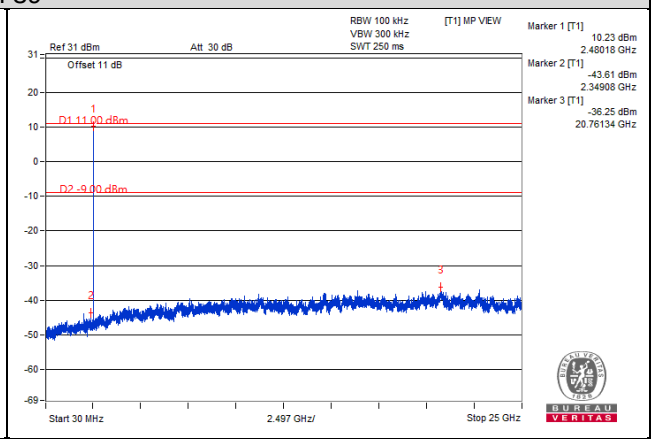
Ch 19

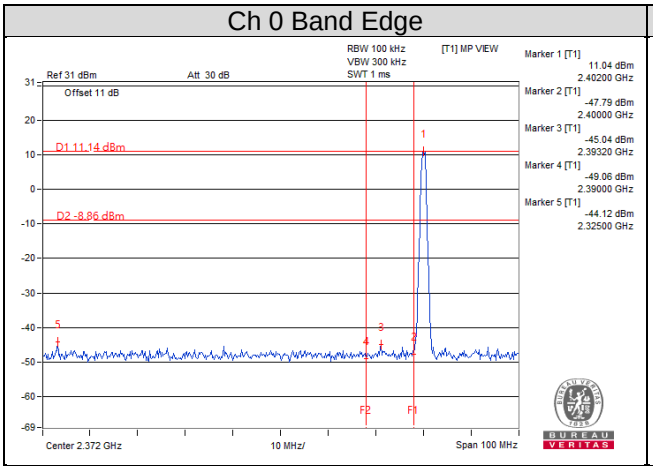
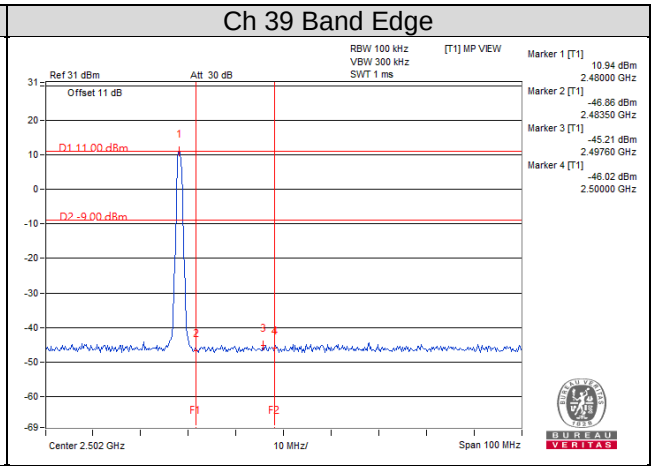




Ch 39

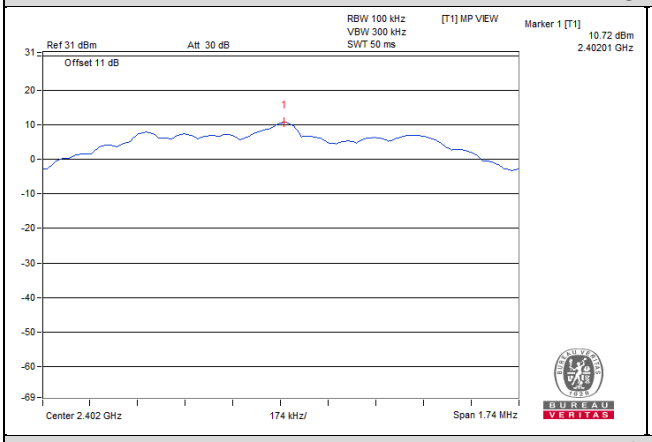


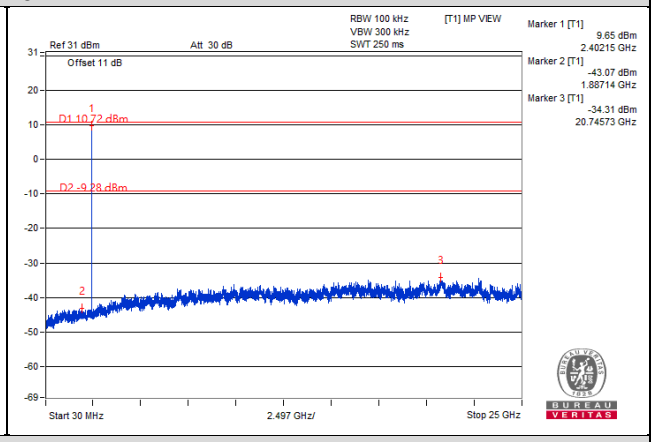


Ch 0 Band Edge	Ch 39 Band Edge
	

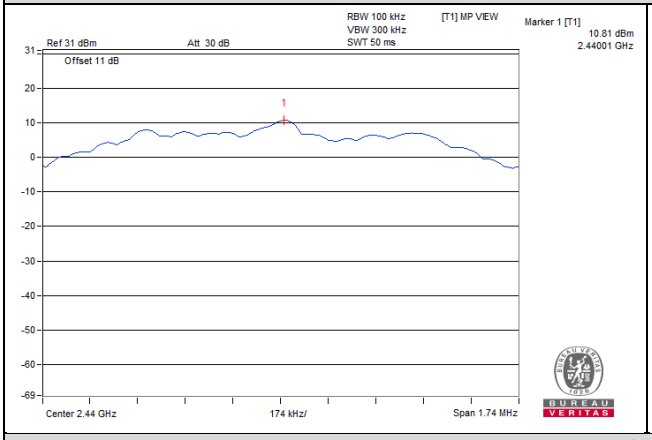
BT LE 5.0

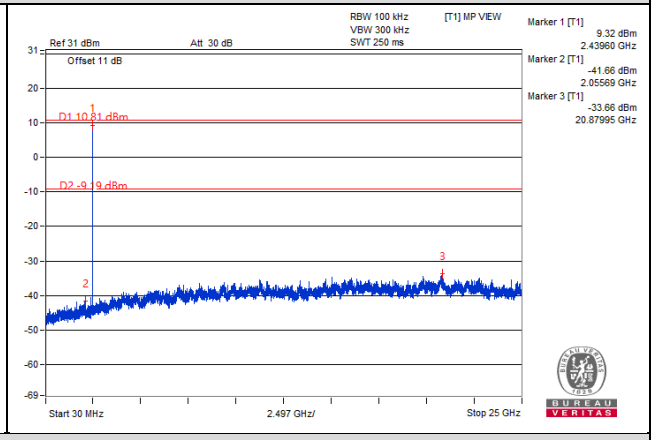
Ch 0



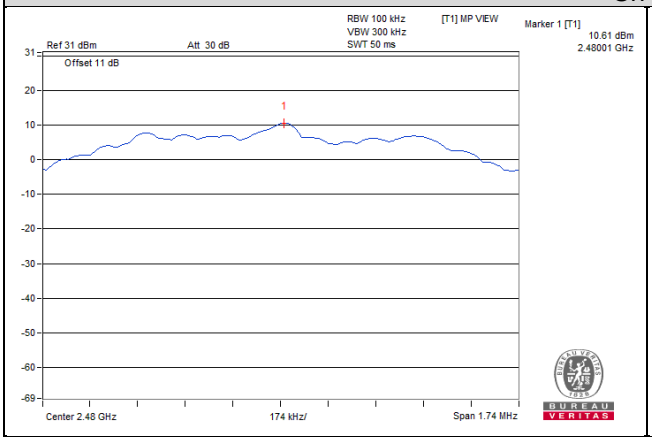


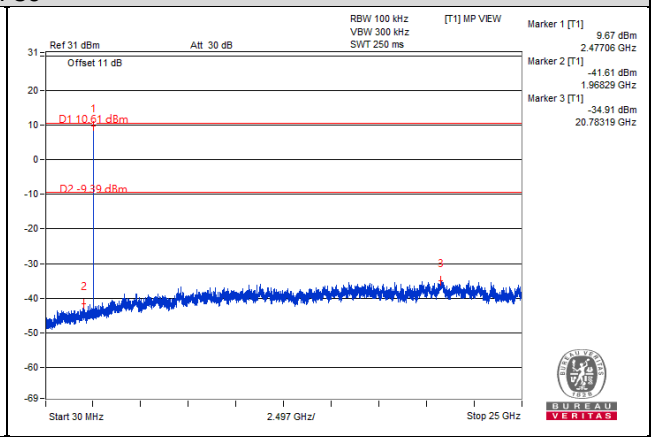
Ch 19

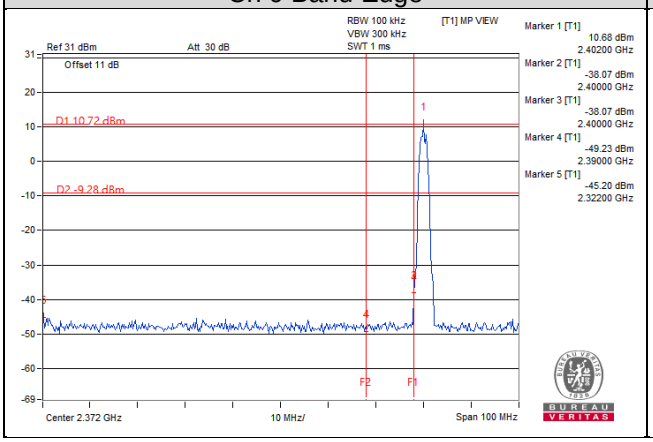
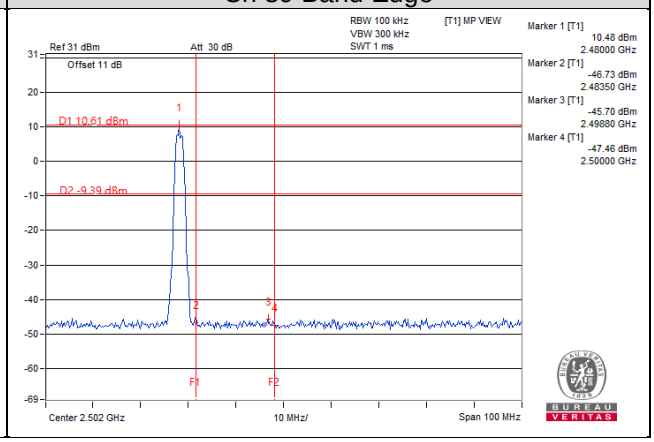




Ch 39





Ch 0 Band Edge	Ch 39 Band Edge
	

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – 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 and approved according to ISO/IEC 17025.

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

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Web Site: www.bureauveritas-adt.com

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

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