Certificate # 3939.01

FCC TEST REPORT

(Part 15, Subpart C)

Applicant:	Lenovo (Shanghai) Electronics Technology Co., Ltd.
Address:	Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone

Manufacturer or Supplier:	Lenovo PC HK Limited
Address:	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong, P.R.China
Product:	Portable Tablet Computer
Brand Name:	Lenovo
Model Name:	Lenovo TB-7306X
FCC ID:	O57TB7306X
Date of tests:	Jan. 05, 2021 ~ Jan. 16, 2021

The tests have been carried out according to the requirements of the following standard:

☒ **FCC Part 15, Subpart C, Section 15.247**

☒ **ANSI C63.10-2013**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Simon Wang	Approved by Luke Lu
Engineer / Mobile Department	Manager / Mobile Department
Simon	Luke Lu
Date: Jan. 18, 2021	Date: Jan. 18, 2021

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RFA20210104W001-2	Original release	Jan. 18, 2021

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)		
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**
15.207	AC Power Conducted Emission	Compliance
15.205 15.209	Radiated Emissions	Compliance
15.247(d)	Out of band Emission Measurement	Compliance
15.247(a)(2)	6dB bandwidth	Compliance
15.247(b)	Conducted Output power	Compliance
15.247(e)	Power Spectral Density	Compliance
15.203	Antenna Requirement	Compliance

1.1 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	UNCERTAINTY
AC Power Conducted emissions	±2.70dB
Radiated emissions (30MHz~1GMHz)	±4.98dB
Radiated emissions (1GMHz ~6GMHz)	±4.70dB
Radiated emissions (6GMHz ~18GMHz)	±4.60dB
Radiated emissions (18GMHz ~40GMHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Power Spectral Density	±0.85 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Portable Tablet Computer
BRAND NAME	Lenovo
MODEL NAME	Lenovo TB-7306X
NOMINAL VOLTAGE	5.0Vdc (adapter or host equipment) 3.86Vdc (Li-ion, battery)
MODULATION	DSSS, OFDM, GFSK
TRANSMISSION RATE	802.11b: 11/ 5.5/ 2.0 / 1.0 Mbps 802.11g: 54/ 48/ 36 / 24 / 18 / 9/ 6 Mbps 802.11n: up to 65 Mbps BT_LE: 0.125 Mbps /0.5 Mbps /1 Mbps/2 Mbps
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n(HT20) 2402-2480MHz for BT-LE(GFSK)
MAX. OUTPUT POWER	WLAN: 247.17mW (Maximum) BT-LE: 0.69mW (Maximum)
ANTENNA TYPE	PIFA Antenna with -1.6dBi gain
HW VERSION	Lenovo Tablet TB-7306X
SW VERSION	TB-7306X_RF01_201218
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: shielded, detachable,1meter

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. The EUT incorporates a SISO function. Physically, the EUT provides one transmitter and one receiver.

MODULATION MODE	TX/RX FUNCTION
802.11b	1TX /1RX
802.11g	1TX /1RX
802.11n (20MHz)	1TX /1RX
BT_LE(1MHz)	1TX /1RX
BT_LE(2MHz)	1TX /1RX
BT_LE(S2)	1TX /1RX
BT_LE(S8)	1TX /1RX

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

List of Accessory:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
Battery 1	Sunwoda	L20D1P32	Capacity：3.86vdc 3750mAh
Battery 2	NAT	L20D1P32	Capacity：3.86vdc 3750mAh
AC Adapter 1	Acbel	SC-41	I/P:100-240Vac, 0.3A O/P: 5Vdc, 2A
AC Adapter 2	Salom	SC-41	I/P:100-240Vac, 0.3A O/P: 5Vdc, 2A
USB Cable 1	liqi	L62B-052000100	Shielded, 1.0meter
USB Cable 2	saibao	S62B-052000100	Shielded, 1.0meter

2.2 DESCRIPTION OF TEST MODES

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

40 channels are provided for BT-LE (GFSK):

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

2.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Please see section 5 photographs of the test configuration for reference.

2.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports.
The worst case was found when positioned on Y axis for radiated emission. Following test modes were selected for the final test, and the final worst case is marked in boldface and recorded in the report:

EUT CONFIGURE MODE	APPLICABLE TO				MODE
	RE<1G	RE≥1G	PLC	APCM	
-	√	√	√	√	-

Where **RE<1G:** Radiated Emission below 1GHz **RE≥1G:** Radiated Emission above 1GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

NOTE: No need to concern of Conducted Emission due to the EUT is powered by battery.

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11n HT20	1 to 11	11	OFDM	MCS0
BT-LE	0 to 39	39	GFSK	2.0

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1.0
802.11g	1 to 11	1, 6, 11	OFDM	6.0
802.11n HT20	1 to 11	1, 6, 11	OFDM	MCS0
BT-LE	0 to 39	0,19, 39	GFSK	0.125&0.5&1&2

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11n HT20	1 to 11	11	OFDM	MCS0

BANDEDGE MEASUREMENT:

☒ 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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 11	DSSS	1.0
802.11g	1 to 11	1, 11	OFDM	6.0
802.11n HT20	1 to 11	1, 11	OFDM	MCS0
BT-LE	0 to 39	0, 39	GFSK	0.125&0.5&1&2

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	CCK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	6.0
802.11n HT20	1 to 11	1, 6, 11	OFDM	MCS0
BT-LE	0 to 39	0,19, 39	GFSK	0.125&0.5&1&2

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE	TESTED BY
RE<1G	23deg. C, 70%RH	DC 5VV By Adapter	Star Le
RE≥1G	23deg. C, 70%RH	DC5V By Adapter	Star Le
PLC	25deg. C, 52%RH	DC5V By Adapter	Chase Zhou
APCM	25deg. C, 60%RH	DC 3.86V By Battery	Chase Zhou

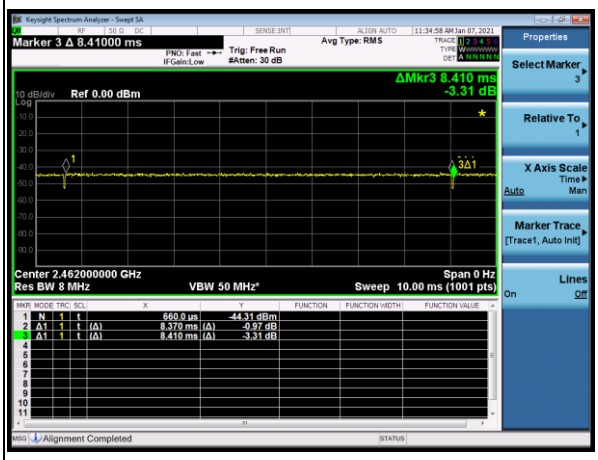
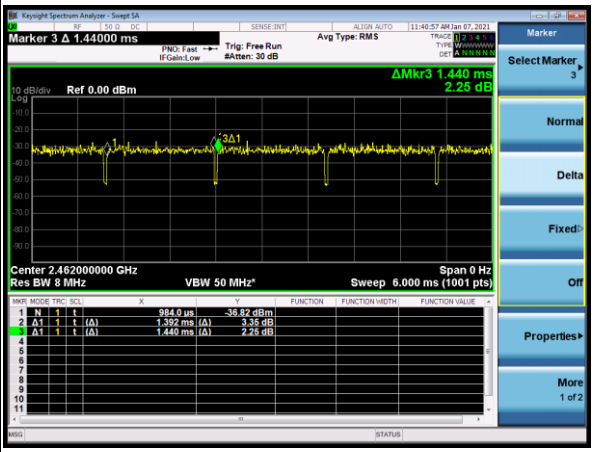
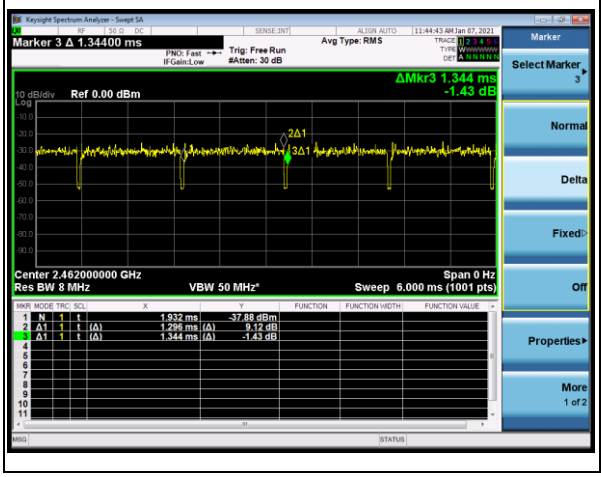
2.3 Duty Cycle of Test Signal

WIFI 2.4GHz

802.11b: Duty cycle = 8.370/8.410 = 0.995 < 98%, Duty factor = 10 * log(1/ 0.995) = 0.021

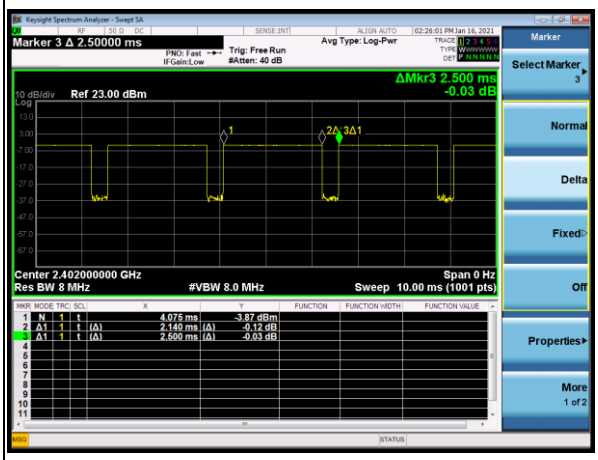
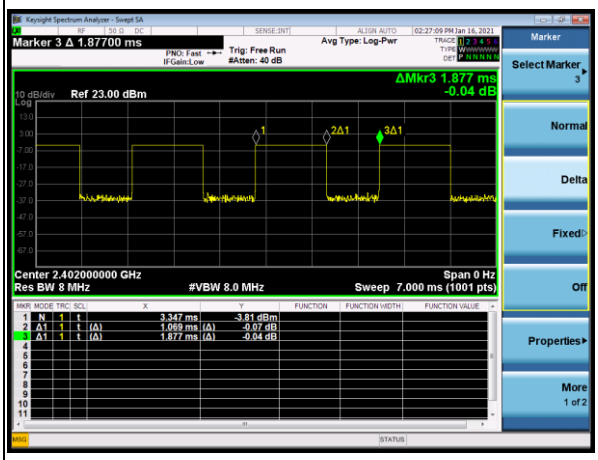
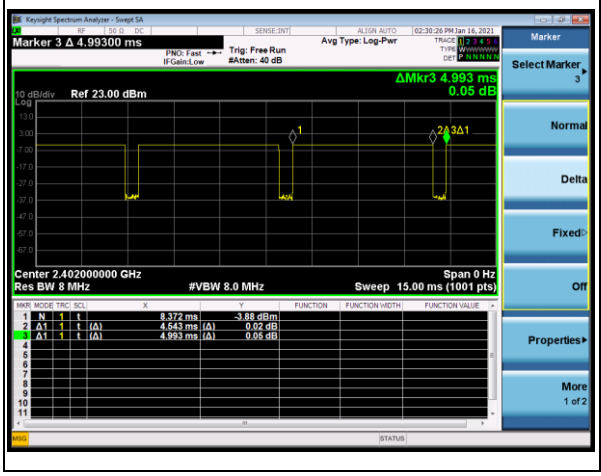
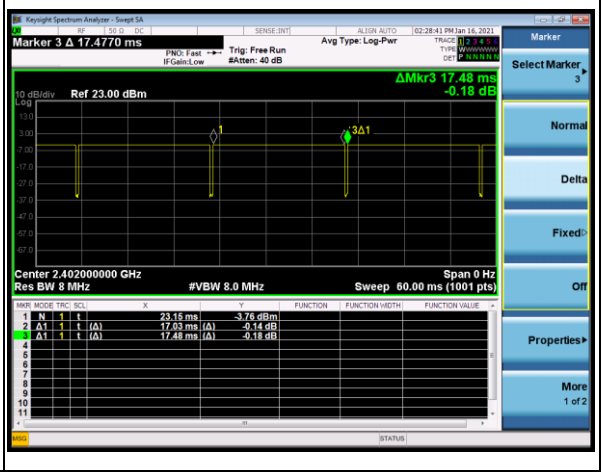
802.11g: Duty cycle = 1.392/1.440 = 0.967< 98%, Duty factor = 10 * log(1/ 0.967) = 0.147

802.11n (HT20): Duty cycle = 1.296/1.344 =0.964 < 98%, Duty factor = 10 * log(1/ 0.964) = 0.158

802.11b	802.11g
	
802. 11n (HT20)	
	

BT LE

BT(1M): Duty cycle =2.140 /2.500 =0.856 < 98%, Duty factor = 10 * log(1/0.856) = 0.675
BT(2M): Duty cycle = 1.069 /1.877 =0.570 < 98%, Duty factor = 10 * log(1/0.570) = 2.445
BT(S2): Duty cycle = 4.543 /4.993 =0.910 < 98%, Duty factor = 10 * log(1/0.910) = 0.410
BT(S8): Duty cycle = 17.03 /17.48 =0.974< 98%, Duty factor = 10 * log(1/0.974) = 0.113

BT(1M)	BT(2M)
	
BT(S2)	**BT(S8)**
	

2.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C, Section 15.247

KDB 558074 D01 DTS Meas Guidance v05r02

ANSI C63.10-2013

Note：

1. All test items have been performed and recorded as per the above standards.
2. The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (Certification). The test report has been issued separately.

2.5 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.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Desktop	Lenovo	M73 SFF	PC04GRQV	N/A
2	Desktop	Lenovo	M73 SFF	PC06CS27	N/A
3	Laptop	Lenovo	Thnikpad T450	PC-049PT1	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded, Detachable 1.5m
2	AC Line: Unshielded, Detachable 1.5m
3	AC Line: Unshielded, Detachable 1.5m

3 TEST TYPES AND RESULTS

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	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.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

3.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Feb. 26,20	Feb. 25,21
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Feb. 26,20	Feb. 25,21

NOTE:

1. The test was performed in CE shielded room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

3.1.3 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.

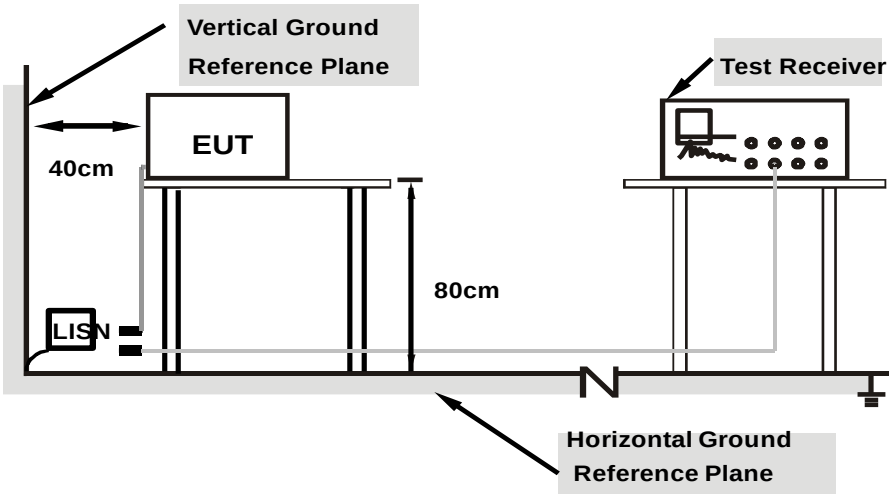
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation.

3.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

3.1.6 EUT OPERATING CONDITIONS

a. Turned on the power and connected of all equipment.
b. EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

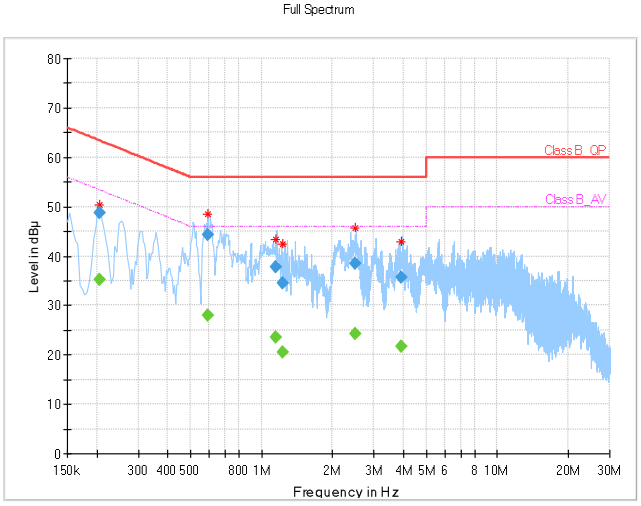
3.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA:

Frequency Range	150KHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	**Environmental Conditions**	24deg. C, 55%RH
Tested By	Chase Zhou		

Frequency (MHz)	QuasiPeak (dB¦ÌV)	CAverage (dB¦ÌV)	Limit (dB¦ÌV)	Margin (dB)	Line	Filter	Corr. (dB)
0.206000	---	35.21	53.37	-18.16	L	ON	9.7
0.206000	48.71	---	63.37	-14.65	L	ON	9.7
0.592000	---	27.98	46.00	-18.02	L	ON	9.7
0.592000	44.24	---	56.00	-11.76	L	ON	9.7
1.144000	---	23.63	46.00	-22.37	L	ON	9.7
1.144000	37.70	---	56.00	-18.30	L	ON	9.7
1.228000	---	20.63	46.00	-25.37	L	ON	9.7
1.228000	34.59	---	56.00	-21.41	L	ON	9.7
2.504000	---	24.19	46.00	-21.81	L	ON	9.8
2.504000	38.54	---	56.00	-17.46	L	ON	9.8
3.936000	---	21.81	46.00	-24.19	L	ON	9.8
3.936000	35.73	---	56.00	-20.27	L	ON	9.8

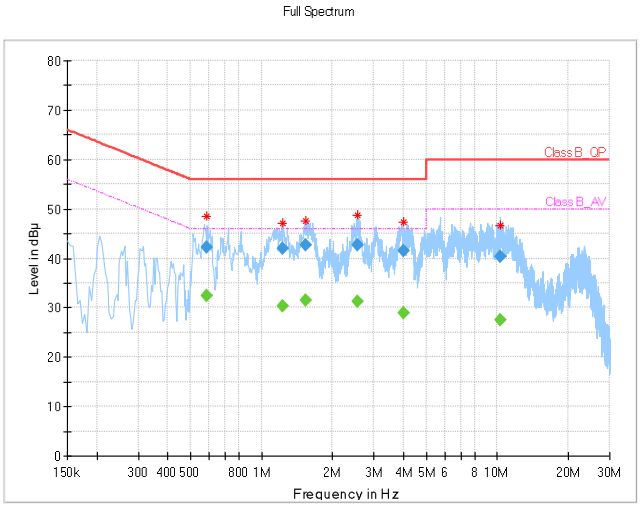
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	24deg. C, 55%RH
Tested By	Chase Zhou		

Frequency (MHz)	QuasiPeak (dB¦ìV)	CAverage (dB¦ìV)	Limit (dB¦ìV)	Margin (dB)	Line	Filter	Corr. (dB)
0.584000	---	32.48	46.00	-13.52	N	ON	9.8
0.584000	42.11	---	56.00	-13.89	N	ON	9.8
1.230000	---	30.34	46.00	-15.66	N	ON	9.8
1.230000	42.01	---	56.00	-13.99	N	ON	9.8
1.540000	---	31.42	46.00	-14.58	N	ON	9.8
1.540000	42.58	---	56.00	-13.42	N	ON	9.8
2.564000	---	31.17	46.00	-14.83	N	ON	9.8
2.564000	42.79	---	56.00	-13.21	N	ON	9.8
4.004000	---	28.81	46.00	-17.19	N	ON	9.9
4.004000	41.48	---	56.00	-14.52	N	ON	9.9
10.312000	---	27.53	50.00	-22.47	N	ON	10.0
10.312000	40.37	---	60.00	-19.63	N	ON	10.0

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

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. As shown in 15.35(b), 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.

3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 18,23
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 27,20	Mar. 26,21
Horn Antenna	ETS-LINDGREN	3117	00168728	Nov. 24, 20	Nov. 23, 21
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Nov. 24, 20	Nov. 23, 21
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 03,20	Jun. 02,21
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Apr. 27,20	Apr. 26,21
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,20	Jun. 01,21
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 02,20	Jun. 01,21
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 30,20	Apr. 29,21

NOTE: 1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Chamber.

3. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

3.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 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.

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

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

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

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

Note:

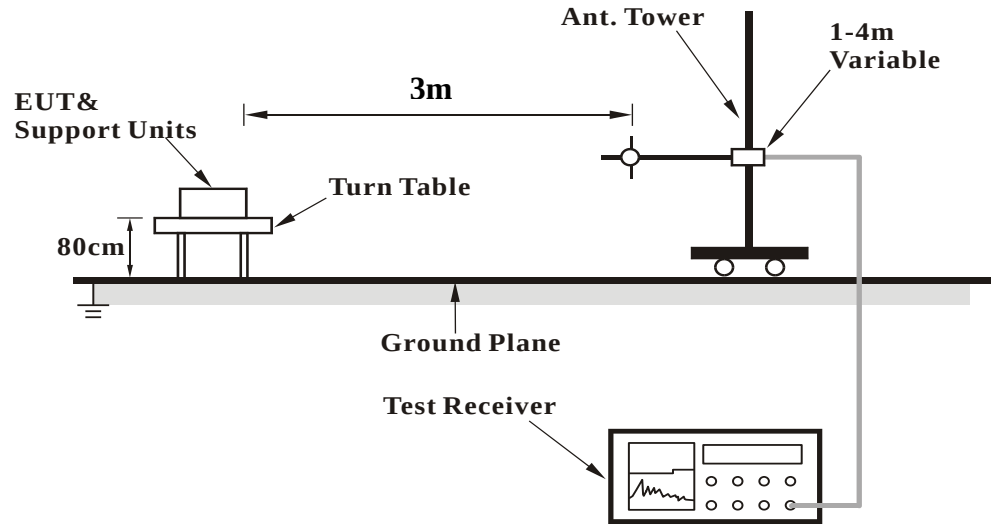
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

3.2.4 DEVIATION FROM TEST STANDARD

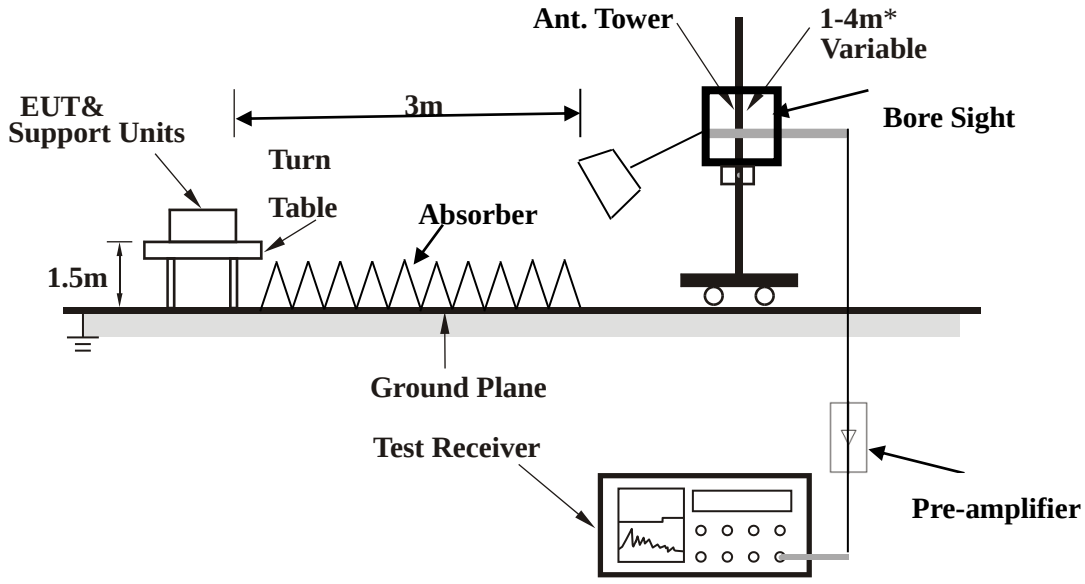
No deviation

3.2.5 TEST SETUP

< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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

3.2.6 EUT OPERATING CONDITIONS

a. Set the EUT under full load condition and placed them on a testing table.

b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.

c. The necessary accessories enable the EUT in full functions.

3.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA :

30 MHz – 1GHz data:

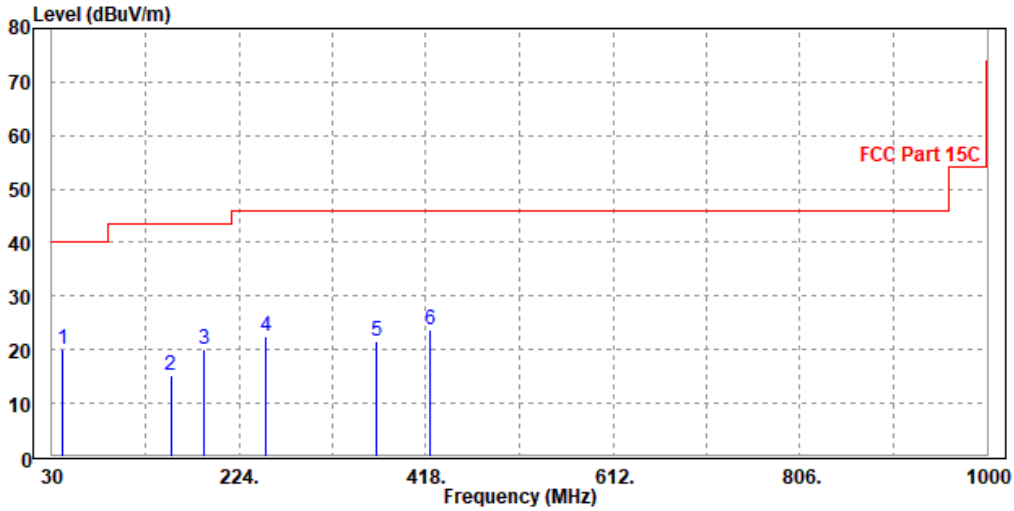
802.11n (20MHz)

CHANNEL	TX Channel 11	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
40.67	19.96	43.28	40	-20.04	13.25	0.93	37.5	100	0	Peak
153.19	15.31	40.49	43.5	-28.19	10.02	1.59	36.79	100	0	Peak
187.14	20.04	44.98	43.5	-23.46	9.94	1.73	36.61	100	0	Peak
251.16	22.64	43.75	46	-23.36	13.5	2.04	36.65	100	0	Peak
366.59	21.7	40.29	46	-24.3	15.73	2.48	36.8	100	0	Peak
422.85	23.61	40.43	46	-22.39	17.35	2.7	36.87	100	0	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.

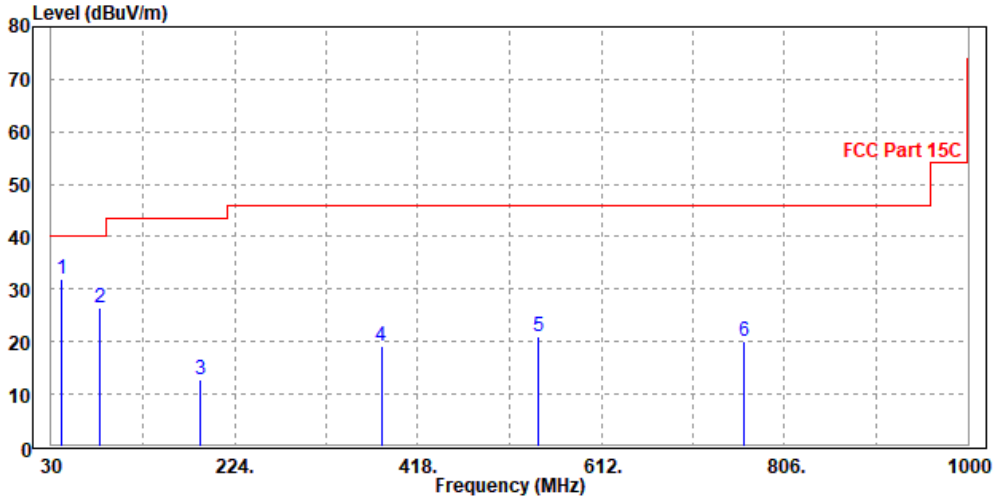


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
40.67	32.09	55.41	40	-7.91	13.25	0.93	37.5	100	0	Peak
81.41	26.48	54.99	40	-13.52	7.61	1.21	37.33	100	0	Peak
187.14	12.82	37.76	43.5	-30.68	9.94	1.73	36.61	100	0	Peak
379.2	19.09	37.24	46	-26.91	16.13	2.53	36.81	100	0	Peak
545.07	20.87	35.45	46	-25.13	19.52	3.07	37.17	100	0	Peak
762.35	20.02	30.67	46	-25.98	23.24	3.75	37.64	100	0	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.



ABOVE 1GHz WORST-CASE DATA:

Note: For higher frequency, the emission is too low to be detected.

802.11b:

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	**EMISSION LEVEL (dBuV/m)**	**READ LEVEL (dBuV)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA FACTOR (dB /m)**	**CABLE LOSS (dB)**	**PREAMP FACTOR (dB)**	**ANTENNA HEIGHT (cm)**	**TABLE ANGLE (Degree)**	**REMARK**
2390	54.12	62.71	74	-19.88	32.56	4.88	46.03	100	15	Peak
2390	42.37	50.96	54	-11.63	32.56	4.88	46.03	100	15	Average
2412	104.51	113.06			32.56	4.9	46.01	100	15	Peak
2412	101.3	109.85			32.56	4.9	46.01	100	15	Average
2483.5	54.15	62.56	74	-19.85	32.59	4.98	45.98	100	15	Peak
2483.5	42.13	50.54	54	-11.87	32.59	4.98	45.98	100	15	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	**EMISSION LEVEL (dBuV/m)**	**READ LEVEL (dBuV)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA FACTOR (dB /m)**	**CABLE LOSS (dB)**	**PREAMP FACTOR (dB)**	**ANTENNA HEIGHT (cm)**	**TABLE ANGLE (Degree)**	**REMARK**
2390	52.49	61.08	74	-21.51	32.56	4.88	46.03	105	285	Peak
2390	41.89	50.48	54	-12.11	32.56	4.88	46.03	105	285	Average
2412	104.01	112.56			32.56	4.9	46.01	105	285	Peak
2412	101.84	110.39			32.56	4.9	46.01	105	285	Average
2483.5	51.65	60.06	74	-22.35	32.59	4.98	45.98	105	285	Peak
2483.5	41.61	50.02	54	-12.39	32.59	4.98	45.98	105	285	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.72	61.31	74	-21.28	32.56	4.88	46.03	100	16	Peak
2390	42.64	51.23	54	-11.36	32.56	4.88	46.03	100	16	Average
2437	103.85	112.35			32.57	4.93	46	100	16	Peak
2437	101.13	109.63			32.57	4.93	46	100	16	Average
2483.5	52.31	60.72	74	-21.69	32.59	4.98	45.98	100	16	Peak
2483.5	41.86	50.27	54	-12.14	32.59	4.98	45.98	100	16	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.65	61.24	74	-21.35	32.56	4.88	46.03	106	288	Peak
2390	42.39	50.98	54	-11.61	32.56	4.88	46.03	106	288	Average
2437	103.16	111.66			32.57	4.93	46	106	288	Peak
2437	100.3	108.8			32.57	4.93	46	106	288	Average
2483.5	52.45	60.86	74	-21.55	32.59	4.98	45.98	106	288	Peak
2483.5	42.27	50.68	54	-11.73	32.59	4.98	45.98	106	288	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
   2. 2437MHz: Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.65	61.24	74	-21.35	32.56	4.88	46.03	100	18	Peak
2390	42.29	50.88	54	-11.71	32.56	4.88	46.03	100	18	Average
2462	104.8	113.25			32.58	4.96	45.99	100	18	Peak
2462	101.13	109.58			32.58	4.96	45.99	100	18	Average
2483.5	52.49	60.9	74	-21.51	32.59	4.98	45.98	100	18	Peak
2483.5	42.08	50.49	54	-11.92	32.59	4.98	45.98	100	18	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.36	60.95	74	-21.64	32.56	4.88	46.03	108	288	Peak
2390	41.89	50.48	54	-12.11	32.56	4.88	46.03	108	288	Average
2462	104	112.45			32.58	4.96	45.99	108	288	Peak
2462	100.12	108.57			32.58	4.96	45.99	108	288	Average
2483.5	52.75	61.16	74	-21.25	32.59	4.98	45.98	108	288	Peak
2483.5	42.83	51.24	54	-11.17	32.59	4.98	45.98	108	288	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2462MHz: Fundamental frequency.

802.11g

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	61.19	69.78	74	-12.81	32.56	4.88	46.03	100	21	Peak
2390	45.77	54.36	54	-8.23	32.56	4.88	46.03	100	21	Average
2412	105.41	113.96			32.56	4.9	46.01	100	21	Peak
2412	95.02	103.57			32.56	4.9	46.01	100	21	Average
2483.5	52.14	60.55	74	-21.86	32.59	4.98	45.98	100	21	Peak
2483.5	41.88	50.29	54	-12.12	32.59	4.98	45.98	100	21	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	65.24	73.83	74	-8.76	32.56	4.88	46.03	105	287	Peak
2390	45.86	54.45	54	-8.14	32.56	4.88	46.03	105	287	Average
2412	105.88	114.43			32.56	4.9	46.01	105	287	Peak
2412	96.21	104.76			32.56	4.9	46.01	105	287	Average
2483.5	52.62	61.03	74	-21.38	32.59	4.98	45.98	105	287	Peak
2483.5	42.17	50.58	54	-11.83	32.59	4.98	45.98	105	287	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.93	61.52	74	-21.07	32.56	4.88	46.03	100	25	Peak
2390	42.77	51.36	54	-11.23	32.56	4.88	46.03	100	25	Average
2437	104.77	113.27			32.57	4.93	46	100	25	Peak
2437	94.63	103.13			32.57	4.93	46	100	25	Average
2483.5	53.18	61.59	74	-20.82	32.59	4.98	45.98	100	25	Peak
2483.5	42.65	51.06	54	-11.35	32.59	4.98	45.98	100	25	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.28	60.87	74	-21.72	32.56	4.88	46.03	109	290	Peak
2390	42.73	51.32	54	-11.27	32.56	4.88	46.03	109	290	Average
2437	104.2	112.7			32.57	4.93	46	109	290	Peak
2437	93.36	101.86			32.57	4.93	46	109	290	Average
2483.5	52.81	61.22	74	-21.19	32.59	4.98	45.98	109	290	Peak
2483.5	42.49	50.9	54	-11.51	32.59	4.98	45.98	109	290	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
   2. 2437MHz: Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	53.19	61.78	74	-20.81	32.56	4.88	46.03	100	160	Peak
2390	43.1	51.69	54	-10.9	32.56	4.88	46.03	100	160	Average
2462	106.11	114.56			32.58	4.96	45.99	100	160	Peak
2462	95.76	104.21			32.58	4.96	45.99	100	160	Average
2483.5	67.81	76.22	74	-6.19	32.59	4.98	45.98	100	160	Peak
2483.5	49.95	58.36	54	-4.05	32.59	4.98	45.98	100	160	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	53	61.59	74	-21	32.56	4.88	46.03	115	291	Peak
2390	42.62	51.21	54	-11.38	32.56	4.88	46.03	115	291	Average
2462	105.05	113.5			32.58	4.96	45.99	115	291	Peak
2462	94.53	102.98			32.58	4.96	45.99	115	291	Average
2483.5	69.05	77.46	74	-4.95	32.59	4.98	45.98	115	291	Peak
2483.5	50.16	58.57	54	-3.84	32.59	4.98	45.98	115	291	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2462MHz: Fundamental frequency.

802.11n (20MHz)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	63.97	72.56	74	-10.03	32.56	4.88	46.03	100	150	Peak
2390	48.95	57.54	54	-5.05	32.56	4.88	46.03	100	150	Average
2412	105.14	113.69			32.56	4.9	46.01	100	150	Peak
2412	94.82	103.37			32.56	4.9	46.01	100	150	Average
2483.5	52.45	60.86	74	-21.55	32.59	4.98	45.98	100	150	Peak
2483.5	41.84	50.25	54	-12.16	32.59	4.98	45.98	100	150	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	63.95	72.54	74	-10.05	32.56	4.88	46.03	100	335	Peak
2390	48.09	56.68	54	-5.91	32.56	4.88	46.03	100	335	Average
2412	102.78	111.33			32.56	4.9	46.01	100	335	Peak
2412	92.51	101.06			32.56	4.9	46.01	100	335	Average
2483.5	52.18	60.59	74	-21.82	32.59	4.98	45.98	100	335	Peak
2483.5	42.35	50.76	54	-11.65	32.59	4.98	45.98	100	335	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.19	60.78	74	-21.81	32.56	4.88	46.03	100	155	Peak
2390	42.05	50.64	54	-11.95	32.56	4.88	46.03	100	155	Average
2437	103.15	111.65			32.57	4.93	46	100	155	Peak
2437	91.75	100.25			32.57	4.93	46	100	155	Average
2483.5	53.14	61.55	74	-20.86	32.59	4.98	45.98	100	155	Peak
2483.5	41.72	50.13	54	-12.28	32.59	4.98	45.98	100	155	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.86	61.45	74	-21.14	32.56	4.88	46.03	100	325	Peak
2390	42.69	51.28	54	-11.31	32.56	4.88	46.03	100	325	Average
2437	102.05	110.55			32.57	4.93	46	100	325	Peak
2437	93.09	101.59			32.57	4.93	46	100	325	Average
2483.5	52.31	60.72	74	-21.69	32.59	4.98	45.98	100	325	Peak
2483.5	42.22	50.63	54	-11.78	32.59	4.98	45.98	100	325	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
   2. 2437MHz: Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.16	60.75	74	-21.84	32.56	4.88	46.03	100	155	Peak
2390	42.05	50.64	54	-11.95	32.56	4.88	46.03	100	155	Average
2462	103.31	111.76			32.58	4.96	45.99	100	155	Peak
2462	92.78	101.23			32.58	4.96	45.99	100	155	Average
2483.5	67.2	75.61	74	-6.8	32.59	4.98	45.98	100	155	Peak
2483.5	50.5	58.91	54	-3.5	32.59	4.98	45.98	100	155	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.89	60.48	74	-22.11	32.56	4.88	46.03	100	336	Peak
2390	41.83	50.42	54	-12.17	32.56	4.88	46.03	100	336	Average
2462	102.33	110.78			32.58	4.96	45.99	100	336	Peak
2462	91.77	100.22			32.58	4.96	45.99	100	336	Average
2483.5	62.24	70.65	74	-11.76	32.59	4.98	45.98	100	336	Peak
2483.5	47.47	55.88	54	-6.53	32.59	4.98	45.98	100	336	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2462MHz: Fundamental frequency.

BELOW 1GHz WORST-CASE DATA:

30 MHz – 1GHz data:

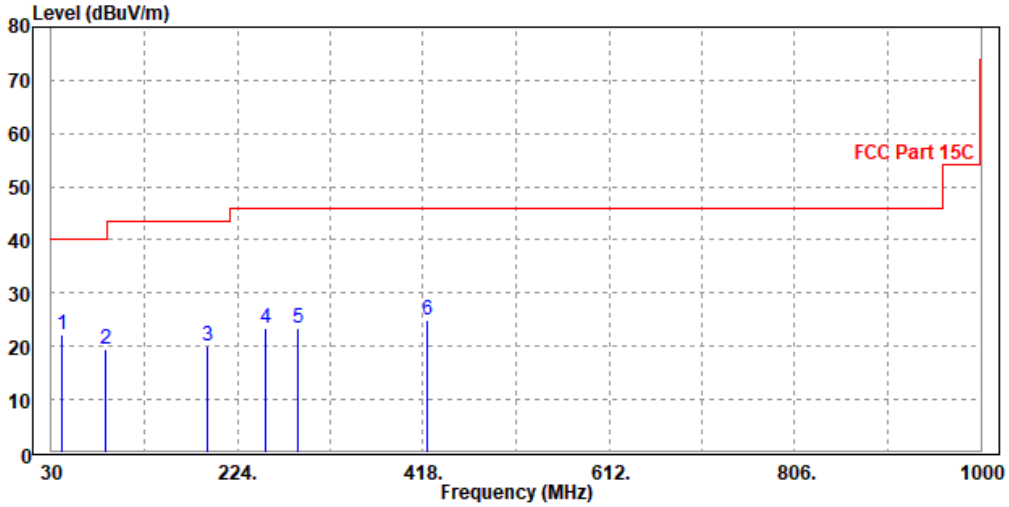
BT-LE _2M

CHANNEL	TX Channel 39	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
40.67	22.07	45.39	40	-17.93	13.25	0.93	37.5	100	0	Peak
86.26	19.36	47.39	40	-20.64	8	1.25	37.28	100	0	Peak
192.96	20.17	45.03	43.5	-23.33	9.96	1.76	36.58	100	0	Peak
253.1	23.57	44.67	46	-22.43	13.51	2.05	36.66	100	0	Peak
287.05	23.54	44.52	46	-22.46	13.57	2.17	36.72	100	0	Peak
422.85	24.86	41.68	46	-21.14	17.35	2.7	36.87	100	0	Peak

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

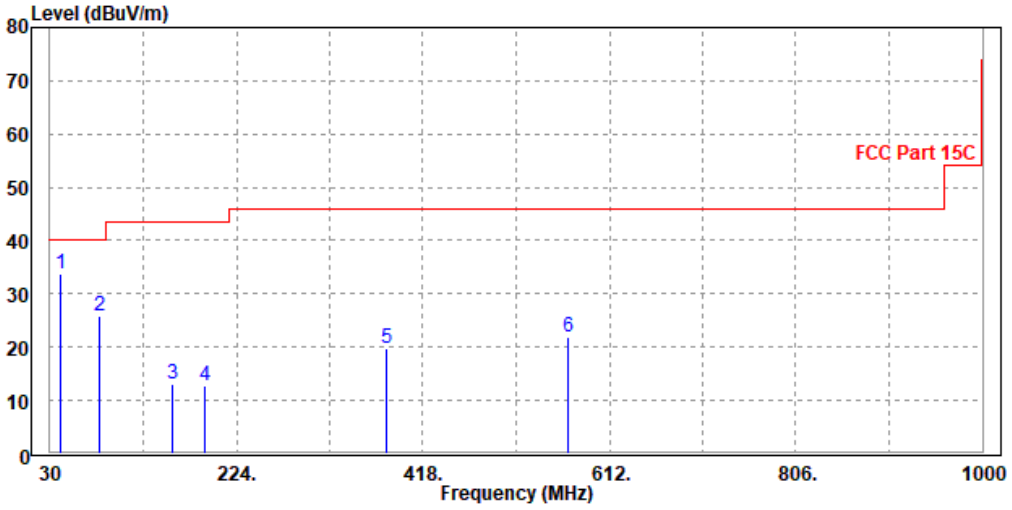


CHANNEL	TX Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
40.67	33.8	57.12	40	-6.2	13.25	0.93	37.5	100	360	Peak
81.41	25.88	54.39	40	-14.12	7.61	1.21	37.33	100	360	Peak
157.07	13.2	37.92	43.5	-30.3	10.41	1.63	36.76	100	360	Peak
191.02	12.84	37.72	43.5	-30.66	9.96	1.75	36.59	100	360	Peak
380.17	19.69	37.79	46	-26.31	16.17	2.54	36.81	100	360	Peak
569.32	21.79	36.25	46	-24.21	19.69	3.11	37.26	100	360	Peak

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



ABOVE 1GHz TEST DATA

Note: For higher frequency, the emission is too low to be detected.

BT-LE _1M

CHANNEL	TX Channel 0	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	**EMISSION LEVEL (dBuV/m)**	**READ LEVEL (dBuV)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA FACTOR (dB /m)**	**CABLE LOSS (dB)**	**PREAMP FACTOR (dB)**	**ANTENNA HEIGHT (cm)**	**TABLE ANGLE (Degree)**	**REMARK**
2390	51.97	60.56	74	-22.03	32.56	4.88	46.03	100	12	Peak
2390	41.73	50.32	54	-12.27	32.56	4.88	46.03	100	12	Average
2402	89.3	97.87			32.56	4.89	46.02	100	12	Peak
2402	86.65	95.22			32.56	4.89	46.02	100	12	Average
2483.5	52.18	60.59	74	-21.82	32.59	4.98	45.98	100	12	Peak
2483.5	41.81	50.22	54	-12.19	32.59	4.98	45.98	100	12	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	**EMISSION LEVEL (dBuV/m)**	**READ LEVEL (dBuV)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA FACTOR (dB /m)**	**CABLE LOSS (dB)**	**PREAMP FACTOR (dB)**	**ANTENNA HEIGHT (cm)**	**TABLE ANGLE (Degree)**	**REMARK**
2390	52.19	60.78	74	-21.81	32.56	4.88	46.03	100	335	Peak
2390	42.43	51.02	54	-11.57	32.56	4.88	46.03	100	335	Average
2402	83.8	92.37			32.56	4.89	46.02	100	335	Peak
2402	80.89	89.46			32.56	4.89	46.02	100	335	Average
2483.5	52.75	61.16	74	-21.25	32.59	4.98	45.98	100	335	Peak
2483.5	42.19	50.6	54	-11.81	32.59	4.98	45.98	100	335	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2402MHz: Fundamental frequency.

CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.76	60.35	74	-22.24	32.56	4.88	46.03	100	25	Peak
2390	41.69	50.28	54	-12.31	32.56	4.88	46.03	100	25	Average
2440	87.38	95.86			32.58	4.94	46	100	25	Peak
2440	82.75	91.23			32.58	4.94	46	100	25	Average
2483.5	52.38	60.79	74	-21.62	32.59	4.98	45.98	100	25	Peak
2483.5	42.09	50.5	54	-11.91	32.59	4.98	45.98	100	25	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.1	60.69	74	-21.9	32.56	4.88	46.03	100	321	Peak
2390	41.52	50.11	54	-12.48	32.56	4.88	46.03	100	321	Average
2440	83.1	91.58			32.58	4.94	46	100	321	Peak
2440	78.63	87.11			32.58	4.94	46	100	321	Average
2483.5	52.35	60.76	74	-21.65	32.59	4.98	45.98	100	321	Peak
2483.5	42.58	50.99	54	-11.42	32.59	4.98	45.98	100	321	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2440MHz: Fundamental frequency.

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.3	60.89	74	-21.7	32.56	4.88	46.03	100	23	Peak
2390	42.65	51.24	54	-11.35	32.56	4.88	46.03	100	23	Average
2480	87.9	96.31			32.59	4.98	45.98	100	23	Peak
2480	83.74	92.15			32.59	4.98	45.98	100	23	Average
2483.5	52.18	60.59	74	-21.82	32.59	4.98	45.98	100	23	Peak
2483.5	42.08	50.49	54	-11.92	32.59	4.98	45.98	100	23	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.82	60.41	74	-22.18	32.56	4.88	46.03	100	325	Peak
2390	42.26	50.85	54	-11.74	32.56	4.88	46.03	100	325	Average
2480	84.84	93.25			32.59	4.98	45.98	100	325	Peak
2480	81.23	89.64			32.59	4.98	45.98	100	325	Average
2483.5	52.58	60.99	74	-21.42	32.59	4.98	45.98	100	325	Peak
2483.5	42.37	50.78	54	-11.63	32.59	4.98	45.98	100	325	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.

BT-LE _2M

CHANNEL	TX Channel 0	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	**EMISSION LEVEL (dBuV/m)**	**READ LEVEL (dBuV)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA FACTOR (dB /m)**	**CABLE LOSS (dB)**	**PREAMP FACTOR (dB)**	**ANTENNA HEIGHT (cm)**	**TABLE ANGLE (Degree)**	**REMARK**
2390	51.76	60.35	74	-22.24	32.56	4.88	46.03	100	12	Peak
2390	42.05	50.64	54	-11.95	32.56	4.88	46.03	100	12	Average
2402	88.96	97.53			32.56	4.89	46.02	100	12	Peak
2402	81.56	90.13			32.56	4.89	46.02	100	12	Average
2483.5	52.39	60.8	74	-21.61	32.59	4.98	45.98	100	12	Peak
2483.5	41.76	50.17	54	-12.24	32.59	4.98	45.98	100	12	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	**EMISSION LEVEL (dBuV/m)**	**READ LEVEL (dBuV)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA FACTOR (dB /m)**	**CABLE LOSS (dB)**	**PREAMP FACTOR (dB)**	**ANTENNA HEIGHT (cm)**	**TABLE ANGLE (Degree)**	**REMARK**
2390	51.99	60.58	74	-22.01	32.56	4.88	46.03	100	236	Peak
2390	42.26	50.85	54	-11.74	32.56	4.88	46.03	100	236	Average
2402	86.55	95.12			32.56	4.89	46.02	100	236	Peak
2402	78.89	87.46			32.56	4.89	46.02	100	236	Average
2483.5	52.11	60.52	74	-21.89	32.59	4.98	45.98	100	236	Peak
2483.5	41.88	50.29	54	-12.12	32.59	4.98	45.98	100	236	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2402MHz: Fundamental frequency.

CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.73	61.32	74	-21.27	32.56	4.88	46.03	100	18	Peak
2390	42.1	50.69	54	-11.9	32.56	4.88	46.03	100	18	Average
2440	88.4	96.88			32.58	4.94	46	100	18	Peak
2440	79.99	88.47			32.58	4.94	46	100	18	Average
2483.5	52.58	60.99	74	-21.42	32.59	4.98	45.98	100	18	Peak
2483.5	42.31	50.72	54	-11.69	32.59	4.98	45.98	100	18	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.8	60.39	74	-22.2	32.56	4.88	46.03	100	256	Peak
2390	42.62	51.21	54	-11.38	32.56	4.88	46.03	100	256	Average
2440	86.16	94.64			32.58	4.94	46	100	256	Peak
2440	78.06	86.54			32.58	4.94	46	100	256	Average
2483.5	52.38	60.79	74	-21.62	32.59	4.98	45.98	100	256	Peak
2483.5	42.54	50.95	54	-11.46	32.59	4.98	45.98	100	256	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2440MHz: Fundamental frequency.

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.89	60.48	74	-22.11	32.56	4.88	46.03	100	10	Peak
2390	42.07	50.66	54	-11.93	32.56	4.88	46.03	100	10	Average
2480	89.74	98.15			32.59	4.98	45.98	100	10	Peak
2480	81.84	90.25			32.59	4.98	45.98	100	10	Average
2483.5	52.48	60.89	74	-21.52	32.59	4.98	45.98	100	10	Peak
2483.5	42.91	51.32	54	-11.09	32.59	4.98	45.98	100	10	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.76	61.35	74	-21.24	32.56	4.88	46.03	100	251	Peak
2390	42.64	51.23	54	-11.36	32.56	4.88	46.03	100	251	Average
2480	86.81	95.22			32.59	4.98	45.98	100	251	Peak
2480	78.99	87.4			32.59	4.98	45.98	100	251	Average
2483.5	53.12	61.53	74	-20.88	32.59	4.98	45.98	100	251	Peak
2483.5	42.84	51.25	54	-11.16	32.59	4.98	45.98	100	251	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.

BT-LE _S2

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.62	61.21	74	-21.38	32.56	4.88	46.03	100	20	Peak
2390	41.77	50.36	54	-12.23	32.56	4.88	46.03	100	20	Average
2402	92.69	101.26			32.56	4.89	46.02	100	20	Peak
2402	90.75	99.32			32.56	4.89	46.02	100	20	Average
2483.5	52.14	60.55	74	-21.86	32.59	4.98	45.98	100	20	Peak
2483.5	41.73	50.14	54	-12.27	32.59	4.98	45.98	100	20	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.18	61.46	74	-21.82	32.21	4.88	46.37	135	275	Peak
2390	39.69	48.97	54	-14.31	32.21	4.88	46.37	135	275	Average
2402	90.41	99.64			32.25	4.89	46.37	135	275	Peak
2402	87.74	96.97			32.25	4.89	46.37	135	275	Average
2483.5	51.65	60.58	74	-22.35	32.46	4.98	46.37	135	275	Peak
2483.5	41.7	50.63	54	-12.3	32.46	4.98	46.37	135	275	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2402MHz: Fundamental frequency.

CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.76	61.35	74	-21.24	32.56	4.88	46.03	100	21	Peak
2390	42.64	51.23	54	-11.36	32.56	4.88	46.03	100	21	Average
2440	92.2	100.68			32.58	4.94	46	100	21	Peak
2440	89.19	97.67			32.58	4.94	46	100	21	Average
2483.5	52.38	60.79	74	-21.62	32.59	4.98	45.98	100	21	Peak
2483.5	42.01	50.42	54	-11.99	32.59	4.98	45.98	100	21	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.32	61.26	74	-21.68	32.21	4.88	46.03	100	278	Peak
2390	41.39	50.33	54	-12.61	32.21	4.88	46.03	100	278	Average
2440	90.73	99.45			32.34	4.94	46	100	278	Peak
2440	86.4	95.12			32.34	4.94	46	100	278	Average
2483.5	52.21	60.75	74	-21.79	32.46	4.98	45.98	100	278	Peak
2483.5	41.74	50.28	54	-12.26	32.46	4.98	45.98	100	278	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2440MHz: Fundamental frequency.

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.09	60.68	74	-21.91	32.56	4.88	46.03	136	23	Peak
2390	42.1	50.69	54	-11.9	32.56	4.88	46.03	136	23	Average
2480	92.82	101.23			32.59	4.98	45.98	136	23	Peak
2480	90.13	98.54			32.59	4.98	45.98	136	23	Average
2483.5	52.31	60.72	74	-21.69	32.59	4.98	45.98	136	23	Peak
2483.5	41.89	50.3	54	-12.11	32.59	4.98	45.98	136	23	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.43	60.37	74	-22.57	32.21	4.88	46.03	135	285	Peak
2390	41.85	50.79	54	-12.15	32.21	4.88	46.03	135	285	Average
2480	90.76	99.31			32.45	4.98	45.98	135	285	Peak
2480	87.97	96.52			32.45	4.98	45.98	135	285	Average
2483.5	52.74	61.28	74	-21.26	32.46	4.98	45.98	135	285	Peak
2483.5	42.69	51.23	54	-11.31	32.46	4.98	45.98	135	285	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.

BT-LE _S8

CHANNEL	TX Channel 0	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	**EMISSION LEVEL (dBuV/m)**	**READ LEVEL (dBuV)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA FACTOR (dB /m)**	**CABLE LOSS (dB)**	**PREAMP FACTOR (dB)**	**ANTENNA HEIGHT (cm)**	**TABLE ANGLE (Degree)**	**REMARK**
2390	51.64	60.23	74	-22.36	32.56	4.88	46.03	100	25	Peak
2390	41.53	50.12	54	-12.47	32.56	4.88	46.03	100	25	Average
2402	91.1	99.67			32.56	4.89	46.02	100	25	Peak
2402	88.95	97.52			32.56	4.89	46.02	100	25	Average
2483.5	51.92	60.33	74	-22.08	32.59	4.98	45.98	100	25	Peak
2483.5	42.24	50.65	54	-11.76	32.59	4.98	45.98	100	25	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	**EMISSION LEVEL (dBuV/m)**	**READ LEVEL (dBuV)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA FACTOR (dB /m)**	**CABLE LOSS (dB)**	**PREAMP FACTOR (dB)**	**ANTENNA HEIGHT (cm)**	**TABLE ANGLE (Degree)**	**REMARK**
2390	51.39	60.33	74	-22.61	32.21	4.88	46.03	132	288	Peak
2390	40.32	49.26	54	-13.68	32.21	4.88	46.03	132	288	Average
2402	88.8	97.68			32.25	4.89	46.02	132	288	Peak
2402	86.24	95.12			32.25	4.89	46.02	132	288	Average
2483.5	52.31	60.85	74	-21.69	32.46	4.98	45.98	132	288	Peak
2483.5	41.59	50.13	54	-12.41	32.46	4.98	45.98	132	288	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2402MHz: Fundamental frequency.

CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.76	60.35	74	-22.24	32.56	4.88	46.03	100	21	Peak
2390	42.2	50.79	54	-11.8	32.56	4.88	46.03	100	21	Average
2440	91.1	99.58			32.58	4.94	46	100	21	Peak
2440	87.83	96.31			32.58	4.94	46	100	21	Average
2483.5	52.18	60.59	74	-21.82	32.59	4.98	45.98	100	21	Peak
2483.5	42.02	50.43	54	-11.98	32.59	4.98	45.98	100	21	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.33	60.27	74	-22.67	32.21	4.88	46.03	136	275	Peak
2390	40.76	49.7	54	-13.24	32.21	4.88	46.03	136	275	Average
2440	87.8	96.52			32.34	4.94	46	136	275	Peak
2440	84.93	93.65			32.34	4.94	46	136	275	Average
2483.5	51.94	60.48	74	-22.06	32.46	4.98	45.98	136	275	Peak
2483.5	40.62	49.16	54	-13.38	32.46	4.98	45.98	136	275	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2440MHz: Fundamental frequency.

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.53	60.12	74	-22.47	32.56	4.88	46.03	100	25	Peak
2390	42.1	50.69	54	-11.9	32.56	4.88	46.03	100	25	Average
2480	91.8	100.21			32.59	4.98	45.98	100	25	Peak
2480	89.44	97.85			32.59	4.98	45.98	100	25	Average
2483.5	52.83	61.24	74	-21.17	32.59	4.98	45.98	100	25	Peak
2483.5	42.38	50.79	54	-11.62	32.59	4.98	45.98	100	25	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.61	60.55	74	-22.39	32.21	4.88	46.03	125	289	Peak
2390	41.22	50.16	54	-12.78	32.21	4.88	46.03	125	289	Average
2480	88.81	97.36			32.45	4.98	45.98	125	289	Peak
2480	86.69	95.24			32.45	4.98	45.98	125	289	Average
2483.5	52.82	61.36	74	-21.18	32.46	4.98	45.98	125	289	Peak
2483.5	42.44	50.98	54	-11.56	32.46	4.98	45.98	125	289	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.

3.3 6 dB BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

3.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Feb. 26,20	Feb. 25,21
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Mar. 10,20	Mar. 09,21
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 03,20	Jun. 02,21
Power Sensor	ANRITSU	MA2411B	1339352	Feb. 26,20	Feb. 25,21

NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in RF Oven room.

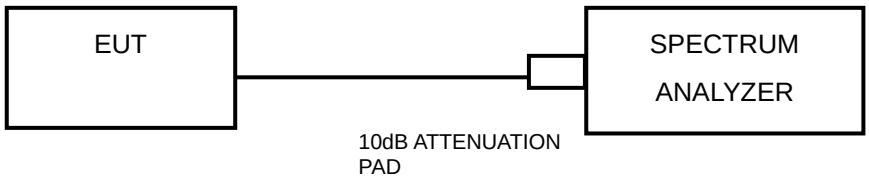
3.3.3 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.3.4 DEVIATION FROM TEST STANDARD

No deviation.

3.3.5 TEST SETUP



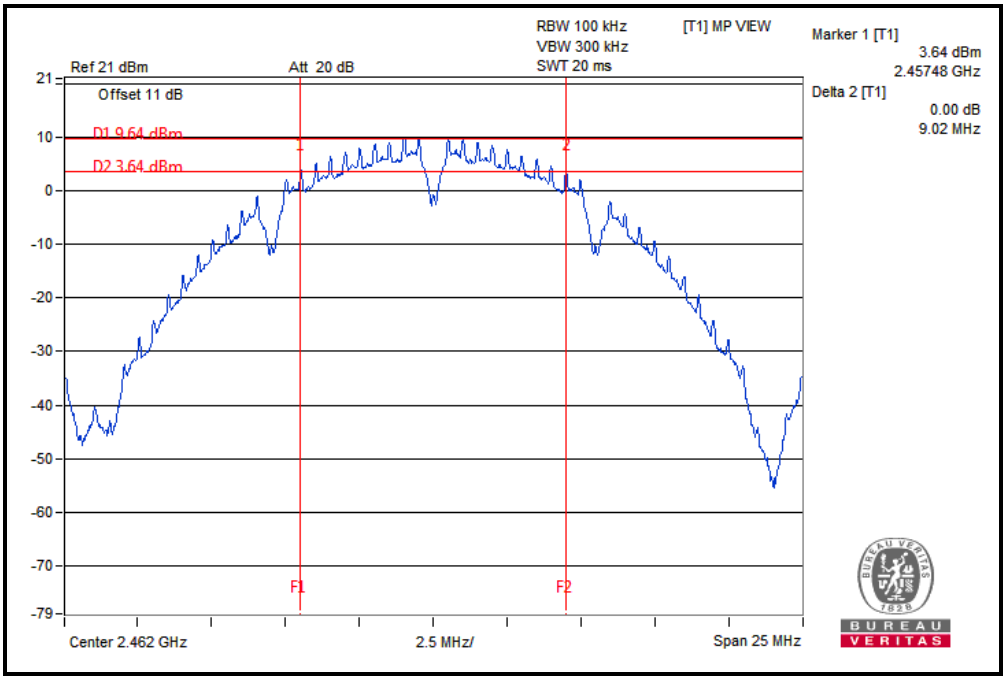
3.3.6 EUT OPERATING CONDITIONS

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

3.3.7 TEST RESULTS

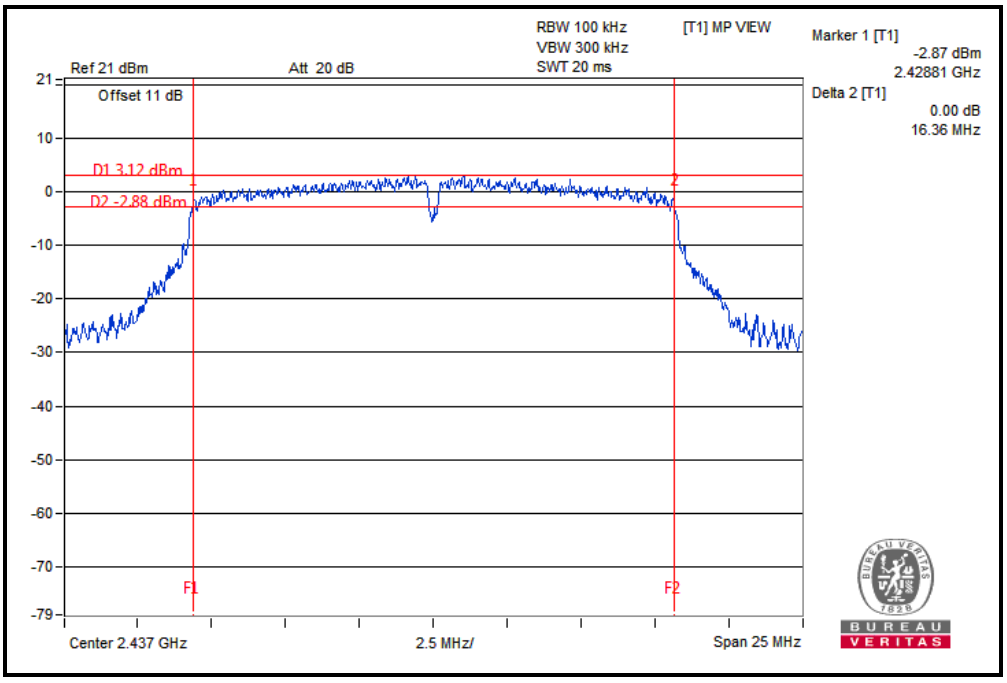
802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.55	0.5	PASS
6	2437	8.08	0.5	PASS
11	2462	9.02	0.5	PASS



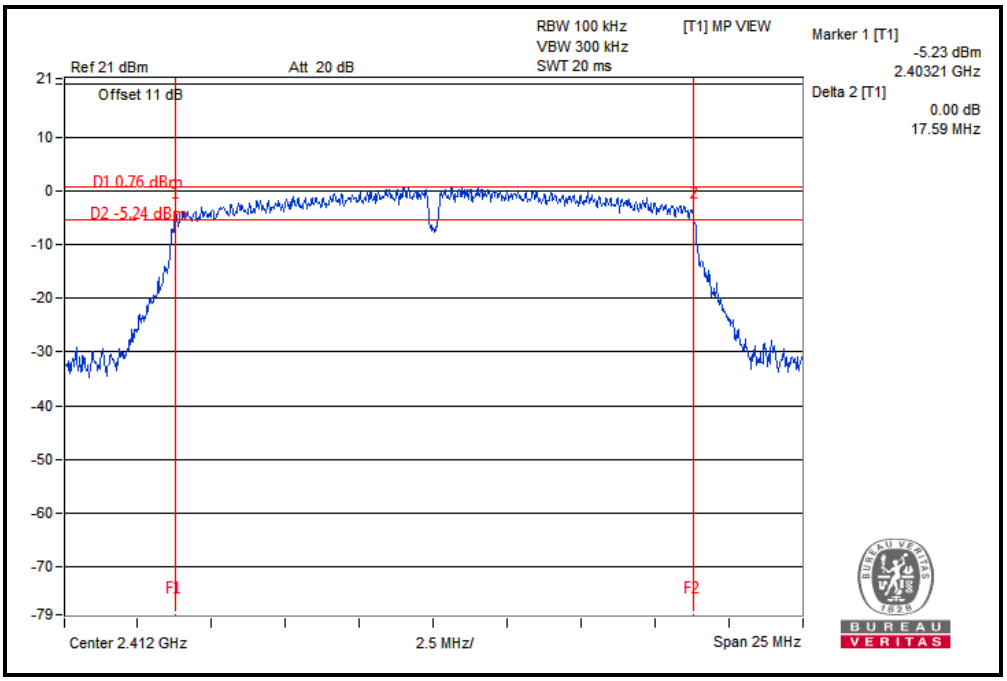
802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.35	0.5	PASS
6	2437	16.36	0.5	PASS
11	2462	16.35	0.5	PASS



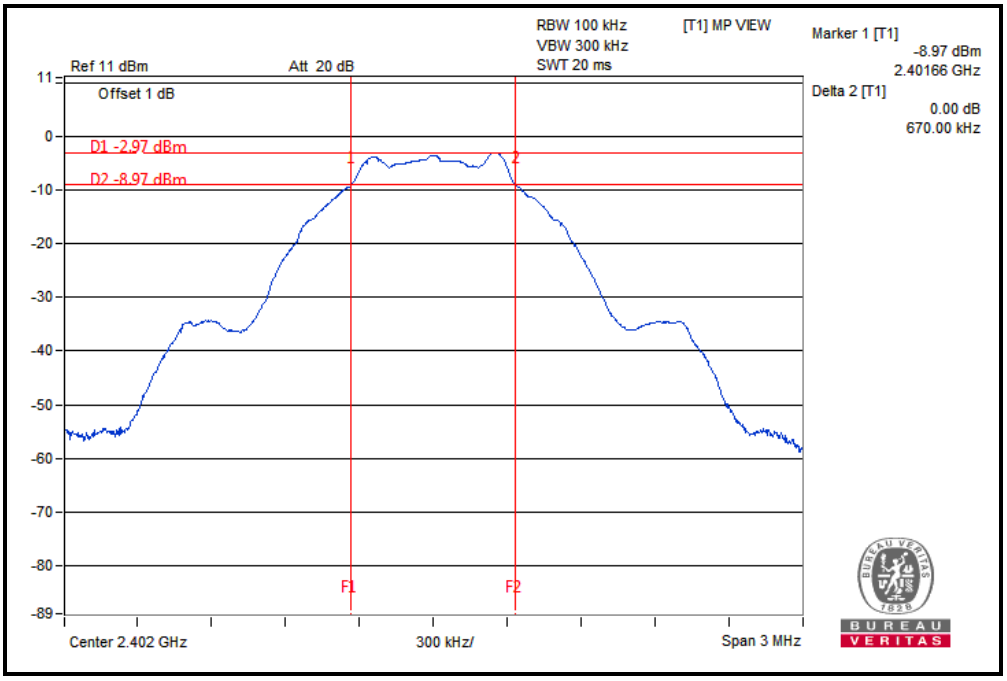
802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.59	0.5	PASS
6	2437	17.58	0.5	PASS
11	2462	17.58	0.5	PASS



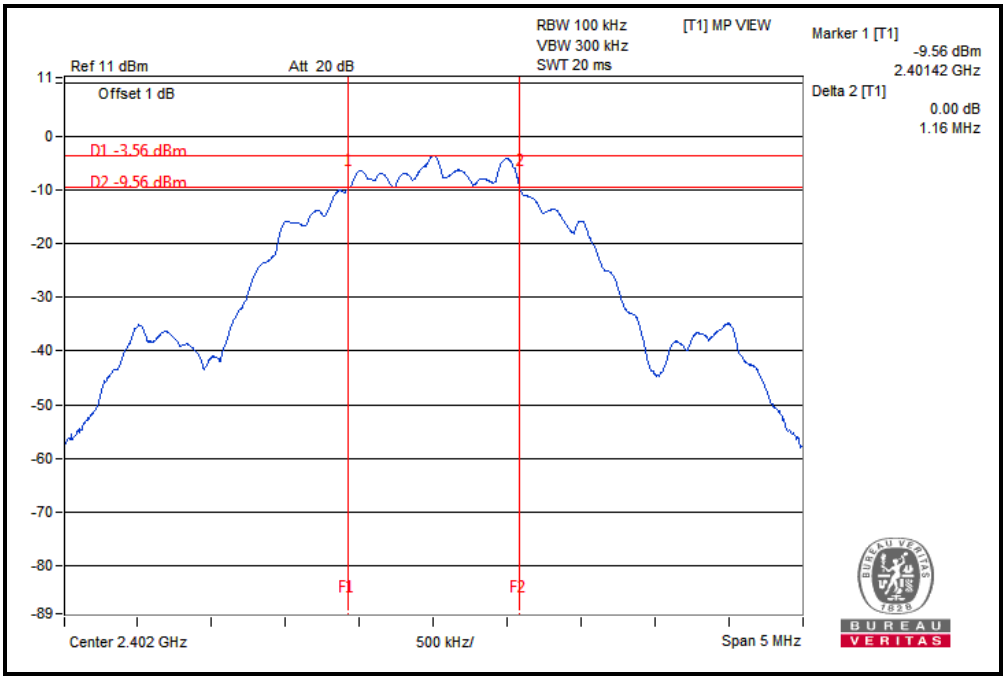
BT-LE (1MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.67	0.5	PASS
19	2440	0.67	0.5	PASS
39	2480	0.66	0.5	PASS



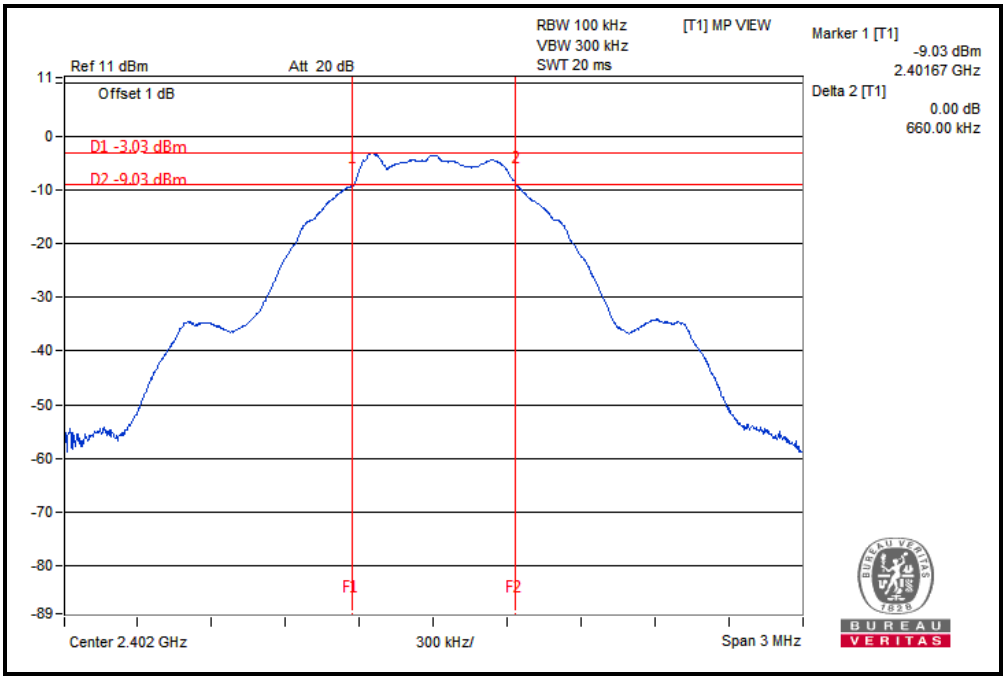
BT-LE (2MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	1.16	0.5	PASS
19	2440	1.16	0.5	PASS
39	2480	1.16	0.5	PASS



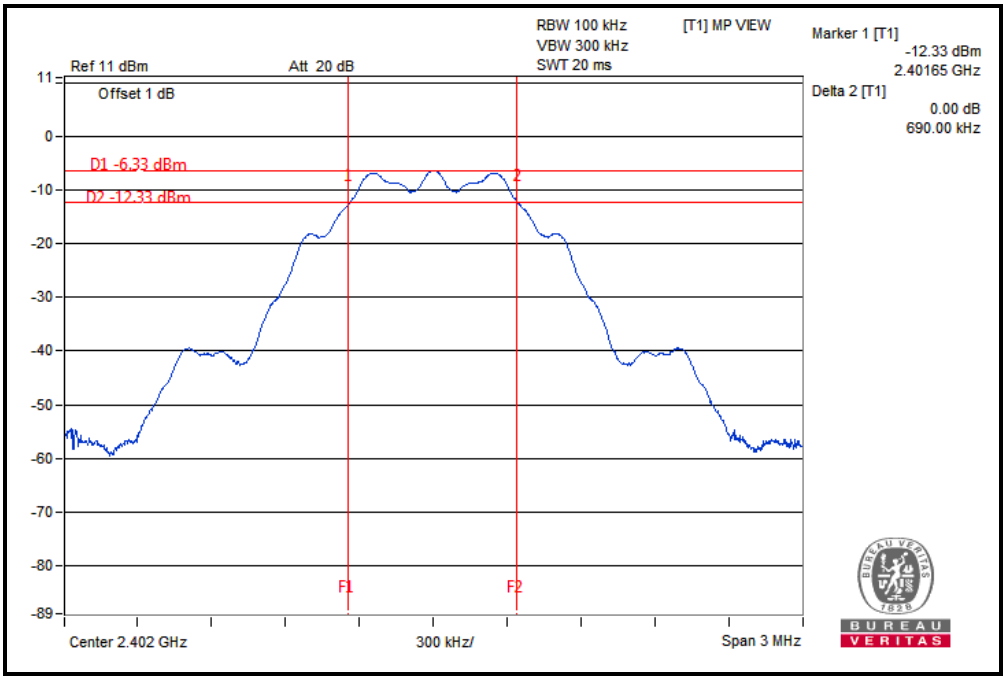
BT-LE (S2)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.66	0.5	PASS
19	2440	0.66	0.5	PASS
39	2480	0.66	0.5	PASS



BT-LE (S8)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.69	0.5	PASS
19	2440	0.69	0.5	PASS
39	2480	0.69	0.5	PASS

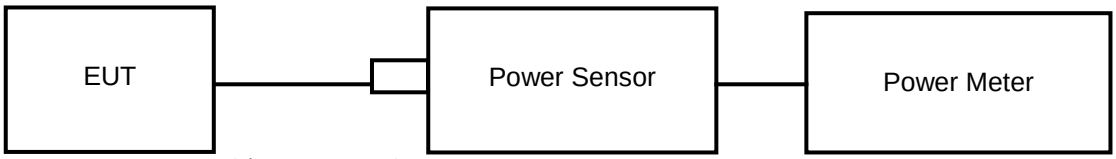


3.4 CONDUCTED OUTPUT POWER

3.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

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

3.4.2 TEST SETUP



10dB ATTENUATION PAD

3.4.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.4.4 TEST PROCEDURES

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.

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

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

3.4.7 TEST RESULTS

3.4.7.1 MAXIMUM PEAK OUTPUT POWER

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
1	2412	21.83	152.41	1	PASS
6	2437	21.86	153.46	1	PASS
11	2462	21.43	139.00	1	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
1	2412	20.26	106.17	1	PASS
6	2437	20.25	105.93	1	PASS
11	2462	20.15	103.51	1	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
1	2412	23.93	**247.17**	1	PASS
6	2437	23.42	219.79	1	PASS
11	2462	22.68	185.35	1	PASS

BT-LE (1MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.28	0.59	1	PASS
19	2440	-1.64	**0.69**	1	PASS
39	2480	-2.53	0.56	1	PASS

BT-LE (2MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.28	0.59	1	PASS
19	2440	-1.63	0.69	1	PASS
39	2480	-2.53	0.56	1	PASS

BT-LE (S2)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.28	0.59	1	PASS
19	2440	-1.64	0.69	1	PASS
39	2480	-2.55	0.56	1	PASS

BT-LE (S8)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.33	0.58	1	PASS
19	2440	-1.67	0.68	1	PASS
39	2480	-2.58	0.55	1	PASS

3.4.7.2 AVERAGE OUTPUT POWER (FOR REFERENCE)

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

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	18.61	N/A
6	2437	18.45	N/A
11	2462	18.65	N/A

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	16.09	N/A
6	2437	15.84	N/A
11	2462	16.17	N/A

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	14.95	N/A
6	2437	14.83	N/A
11	2462	15.08	N/A

BT-LE (1MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	-3.19	N/A
19	2440	-2.57	N/A
39	2480	-3.50	N/A

BT-LE (2MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	-4.92	N/A
19	2440	-4.12	N/A
39	2480	-5.12	N/A

BT-LE (S2)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	-2.99	N/A
19	2440	-2.28	N/A
39	2480	-3.23	N/A

BT-LE (S8)

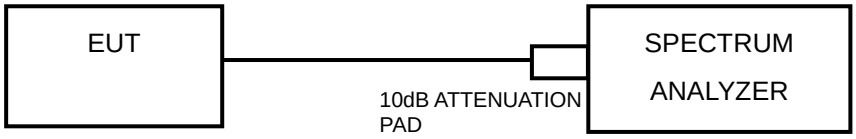
CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	-2.71	N/A
19	2440	-1.98	N/A
39	2480	-2.91	N/A

3.5 POWER SPECTRAL DENSITY MEASUREMENT

3.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

3.5.2 TEST SETUP



3.5.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.5.4 TEST PROCEDURE

1. Set the span to 1.5 times the DTS bandwidth
2. Set the RBW = 3 kHz, VBW ≥ 3 x RBW, Detector = peak.
3. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

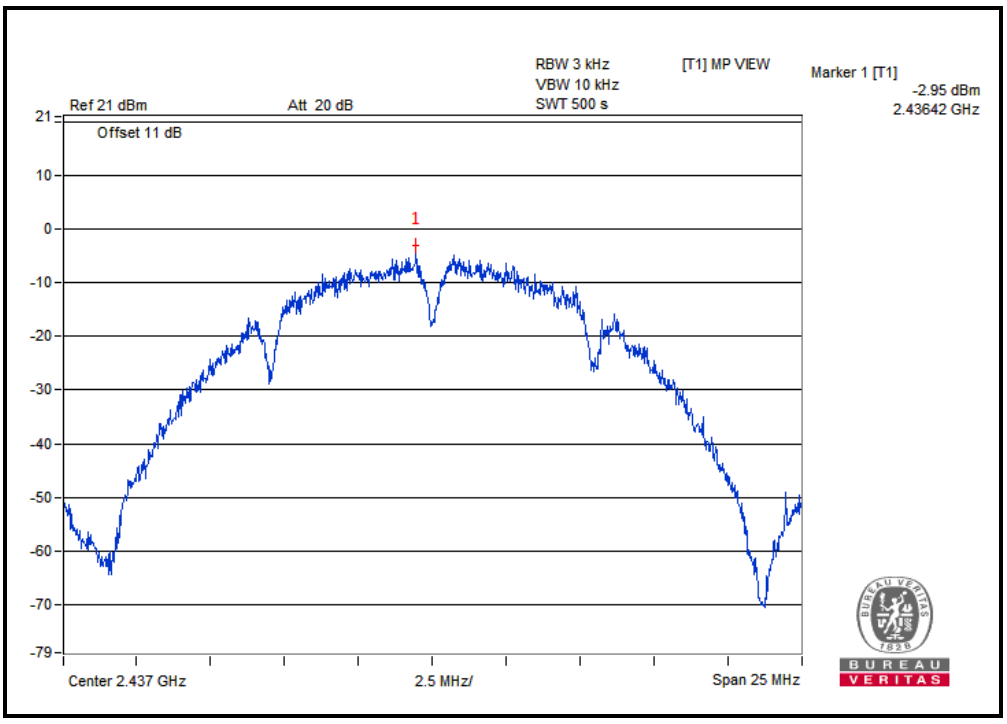
3.5.6 EUT OPERATING CONDITION

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

3.5.7 TEST RESULTS

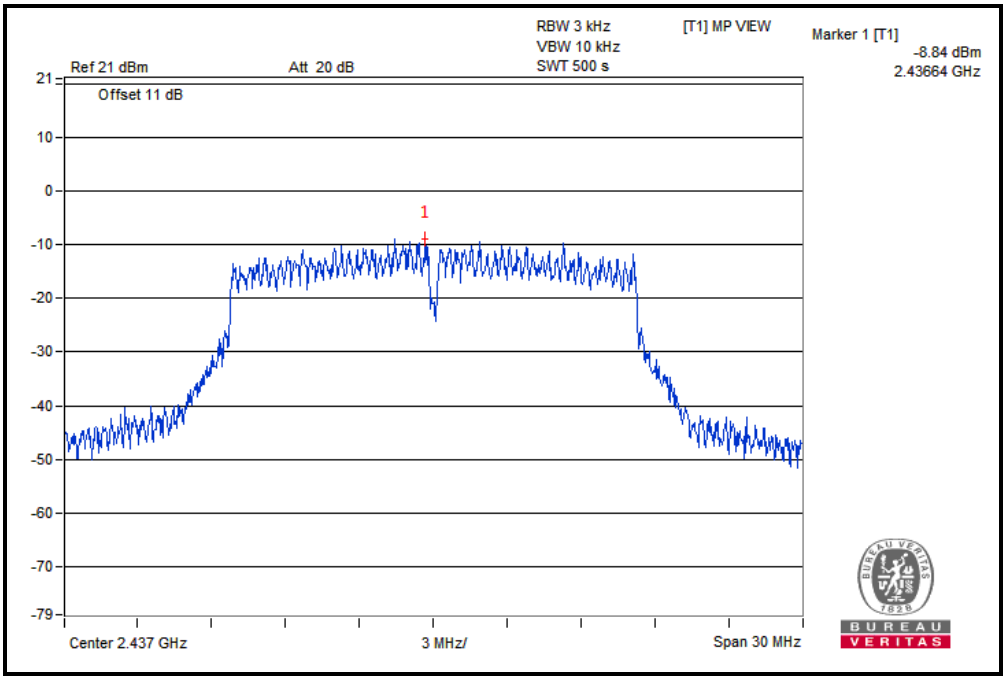
802.11b

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-4.22	8	PASS
6	2437	-2.95	8	PASS
11	2462	-4.60	8	PASS



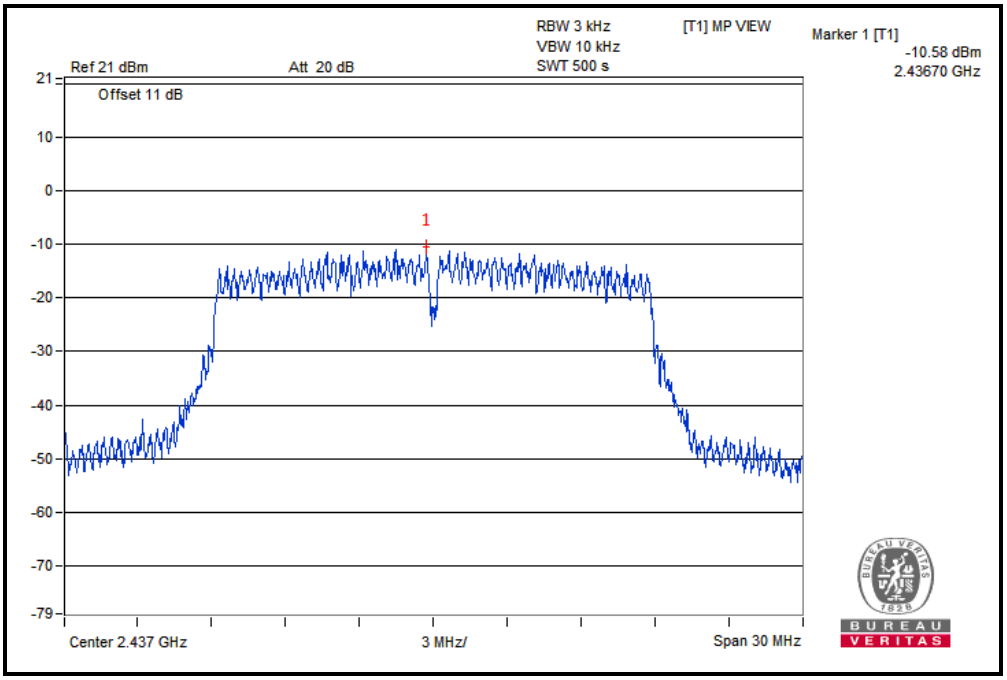
802.11g

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-9.05	8	PASS
6	2437	-8.84	8	PASS
11	2462	-9.91	8	PASS



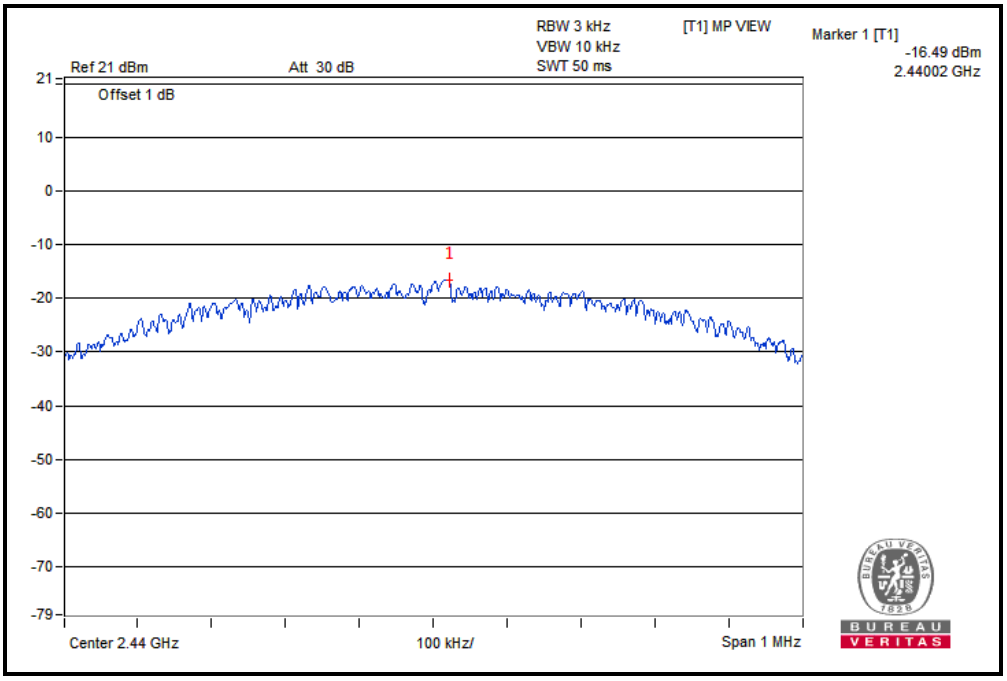
802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-10.87	8	PASS
6	2437	-10.58	8	PASS
11	2462	-11.03	8	PASS



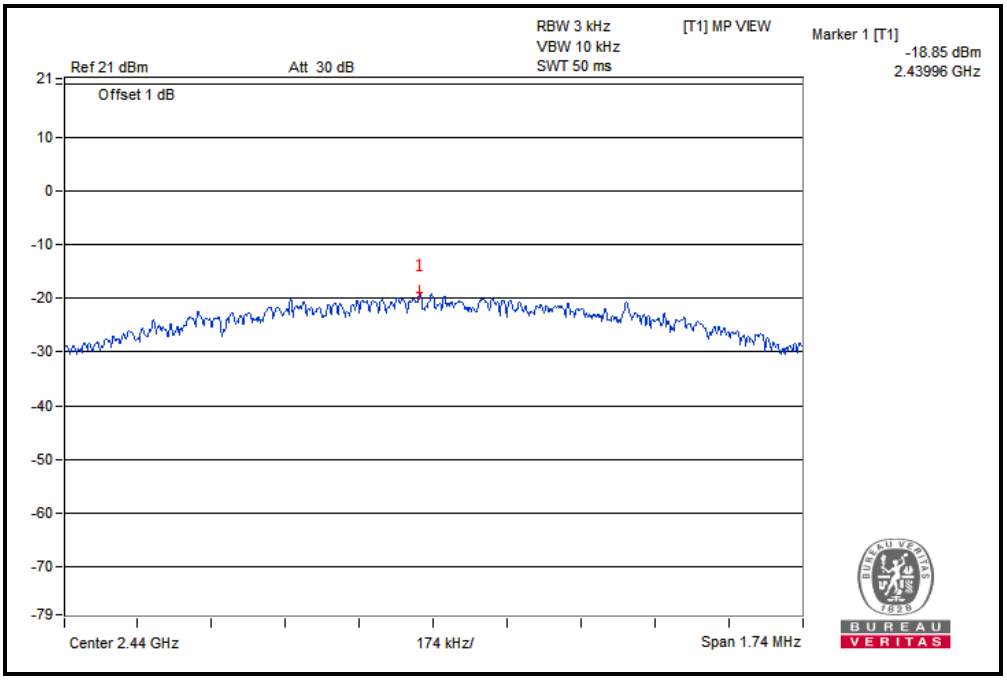
BT-LE (1MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-17.20	8	PASS
19	2440	-16.49	8	PASS
39	2480	-17.45	8	PASS



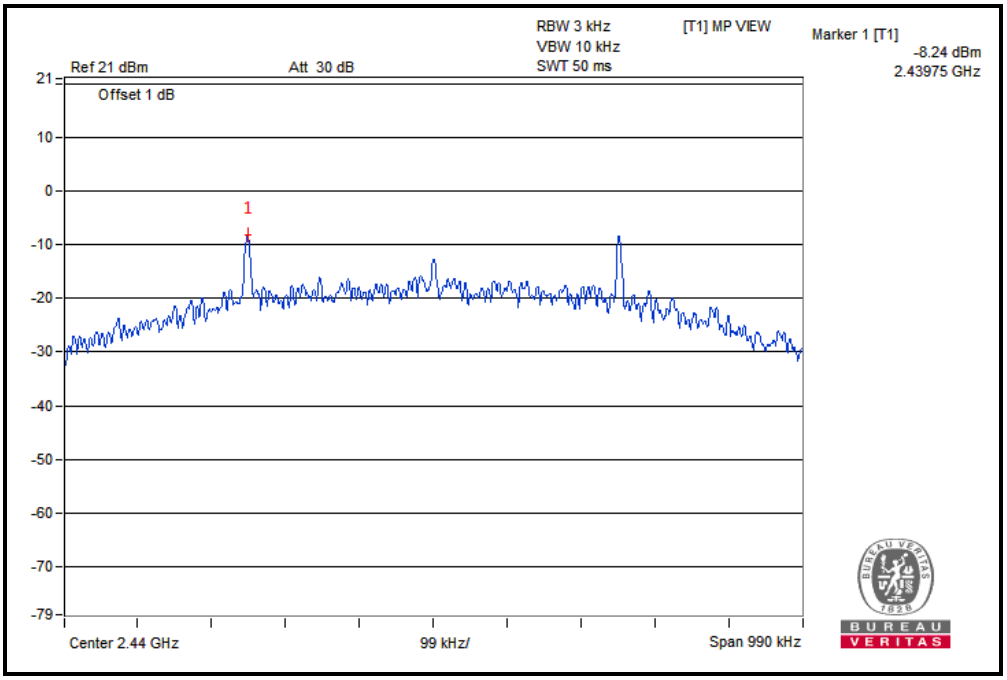
BT-LE (2MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-19.75	8	PASS
19	2440	-18.85	8	PASS
39	2480	-19.83	8	PASS



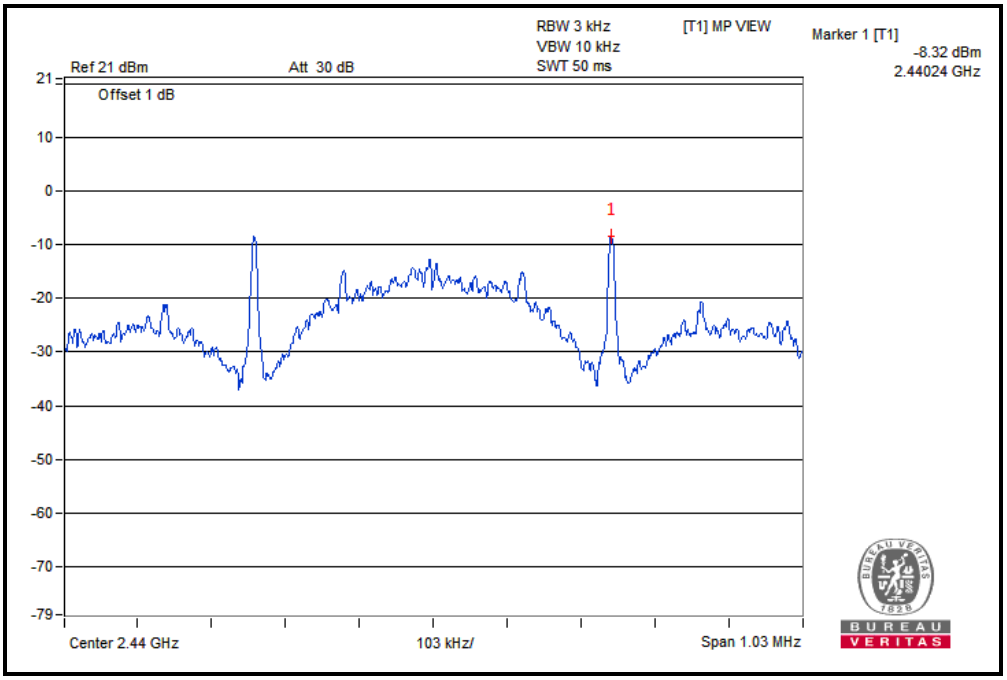
BT-LE (S2)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-8.97	8	PASS
19	2440	-8.24	8	PASS
39	2480	-9.26	8	PASS



BT-LE (S8)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-9.14	8	PASS
19	2440	-8.32	8	PASS
39	2480	-9.33	8	PASS

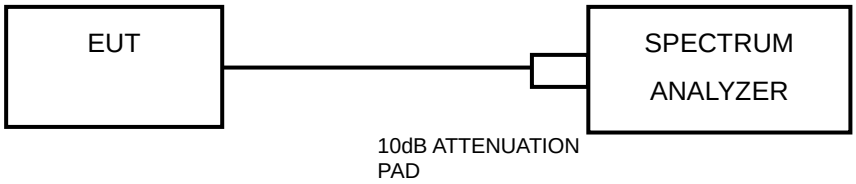


3.6 OUT OF BAND EMISSION MEASUREMENT

3.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

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

3.6.2 TEST SETUP



3.6.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

3.6.5 DEVIATION FROM TEST STANDARD

No deviation.

3.6.6 EUT OPERATING CONDITION

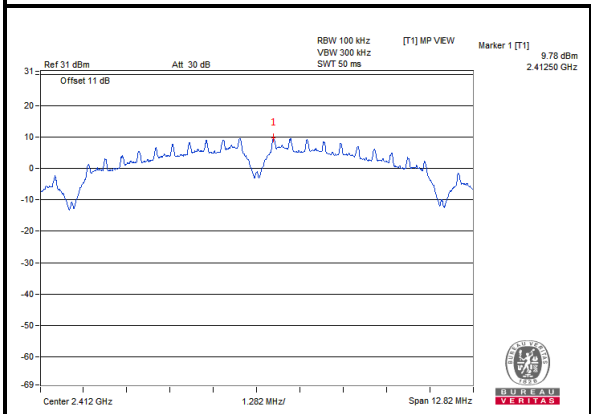
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

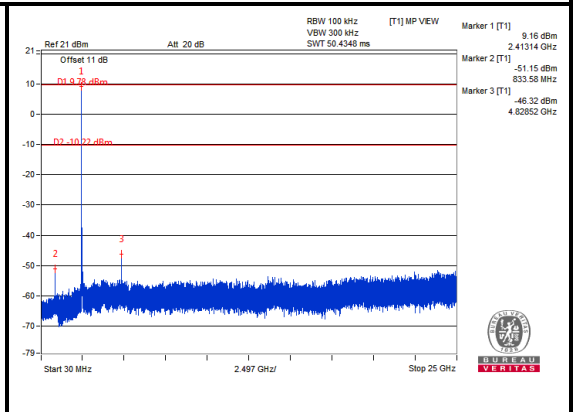
3.6.7 TEST RESULTS

The spectrum plots are attached on the following images. D1 line indicates the highest level. D2 line indicates the 20dB offset below D1. It shows compliance to the requirement.

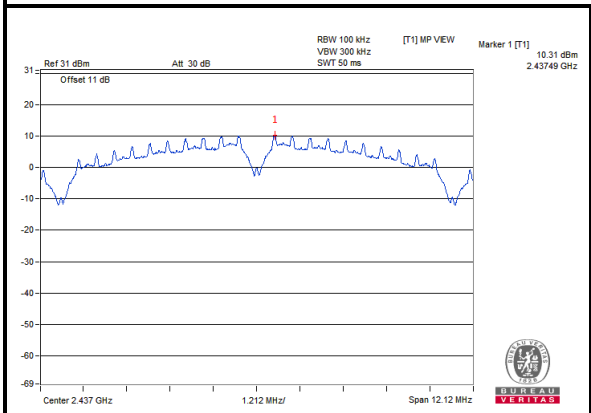
802.11b

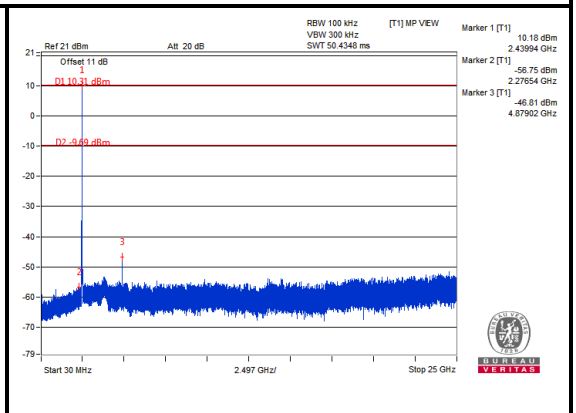
CH 1



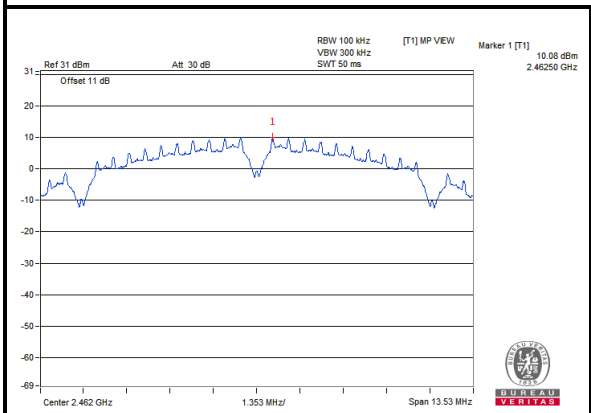


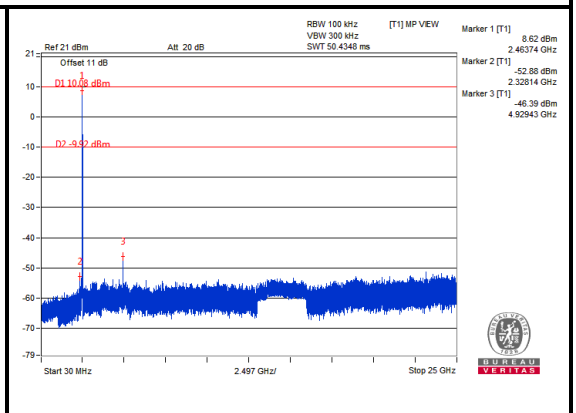
CH 6

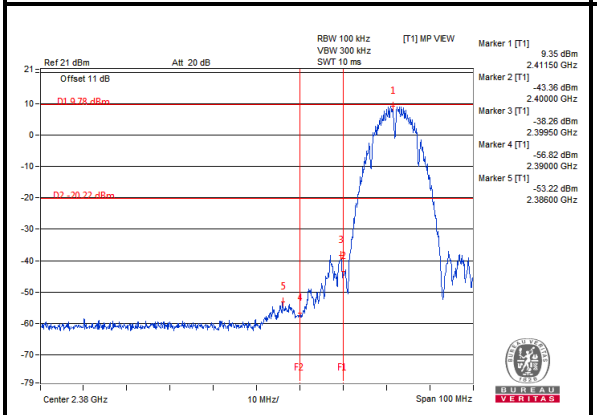
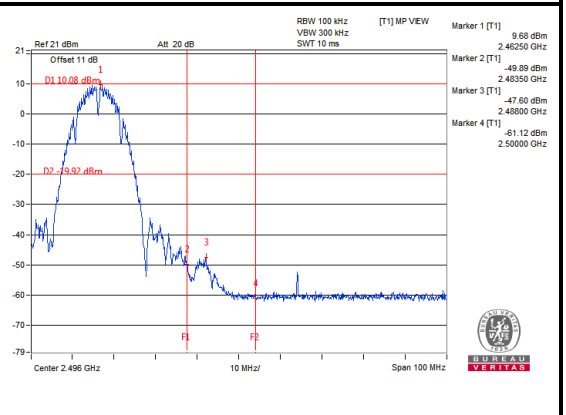




CH 11

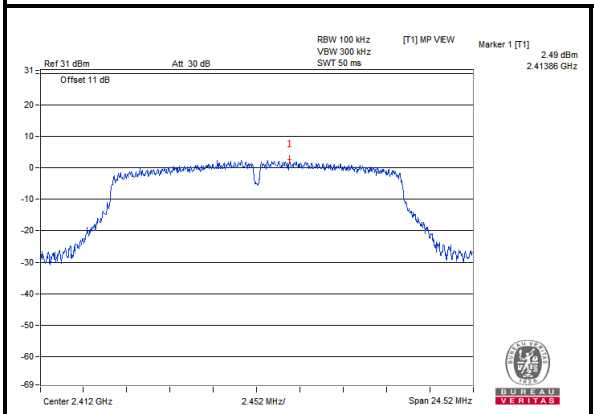


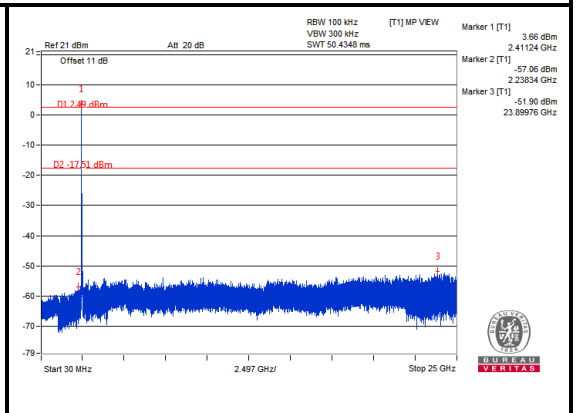


CH 1 Band Edge	CH 11 Band Edge
	

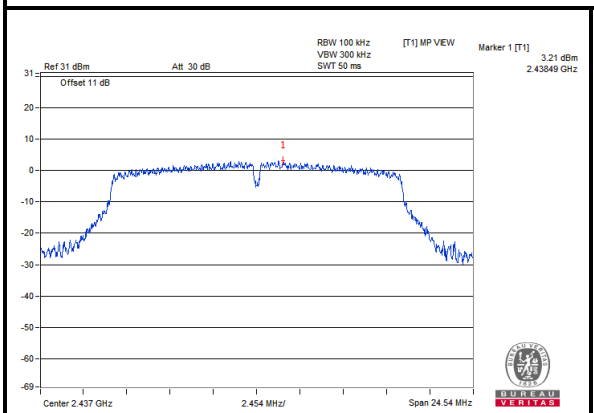
802.11g

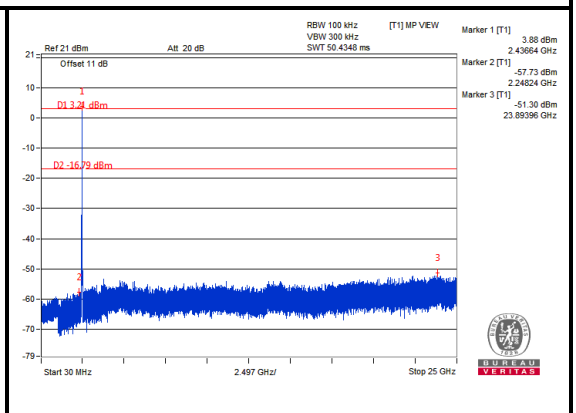
CH 1



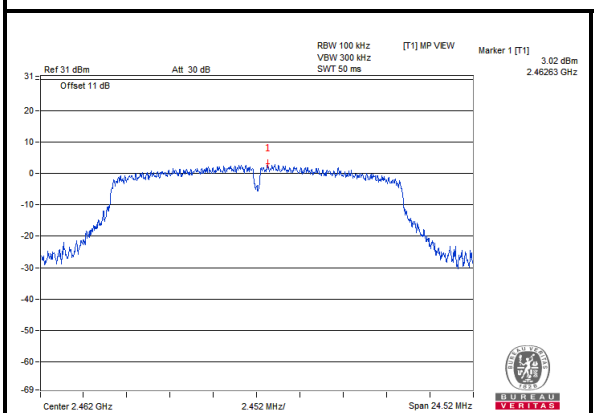


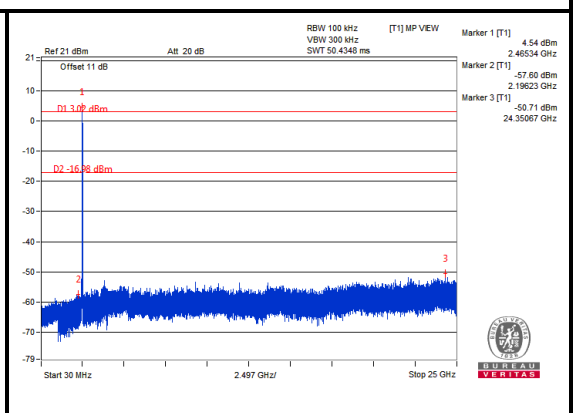
CH 6

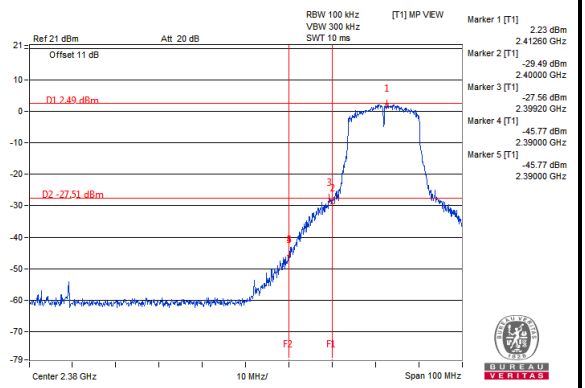
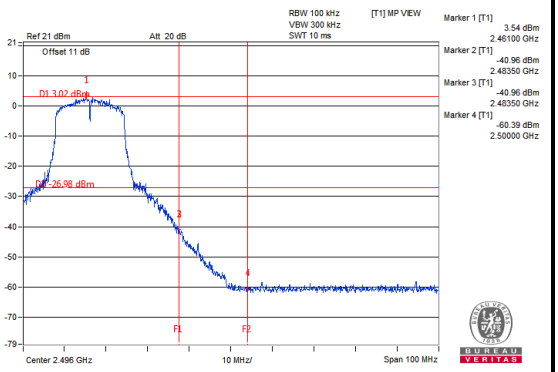




CH 11

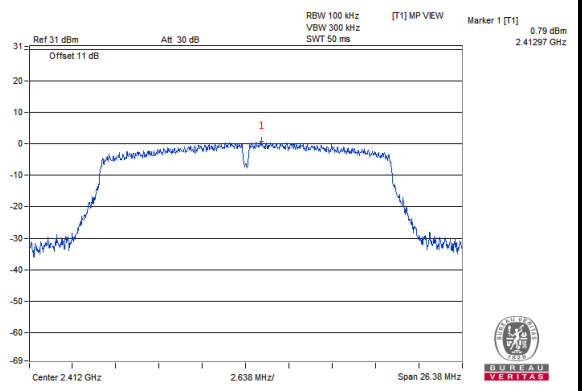


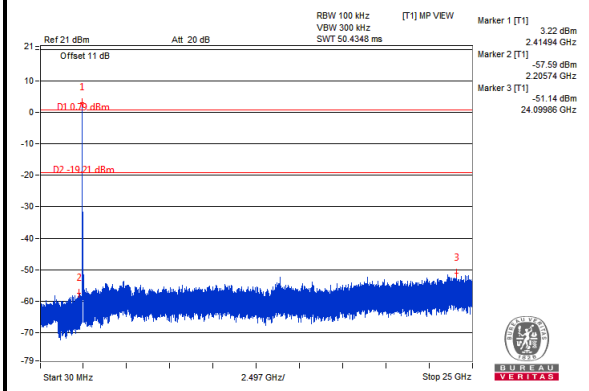


CH 1 Band Edge	CH 11 Band Edge
	

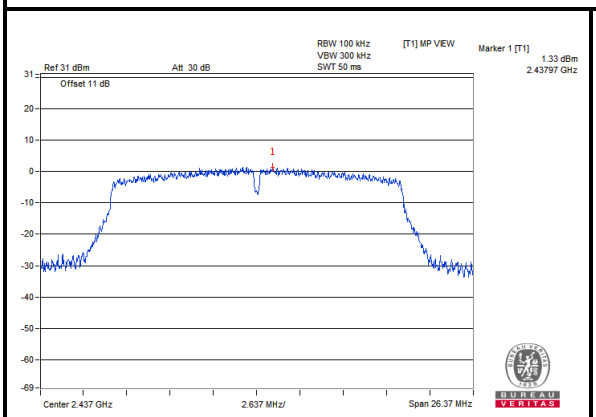
802.11n (20MHz)

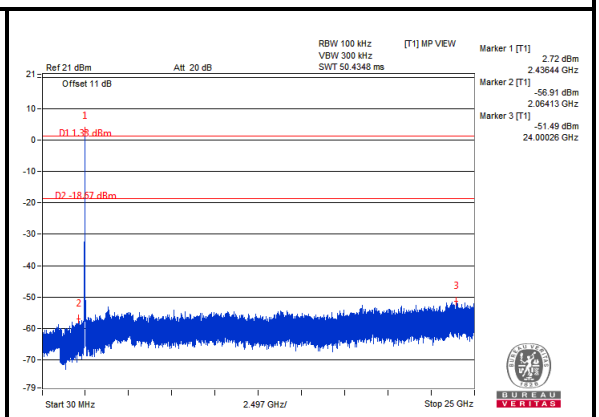
CH 1



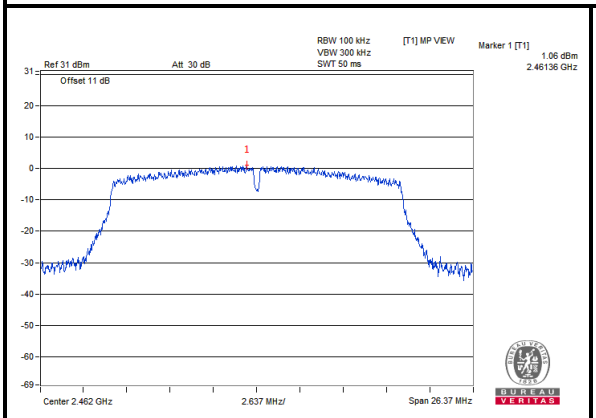


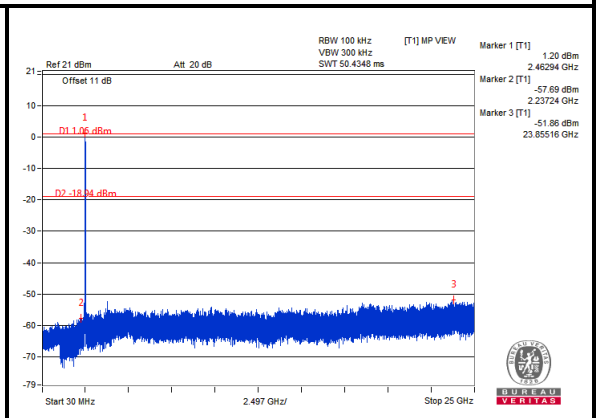
CH 6

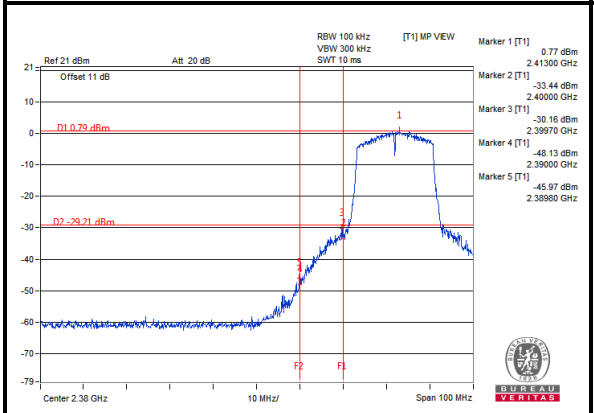
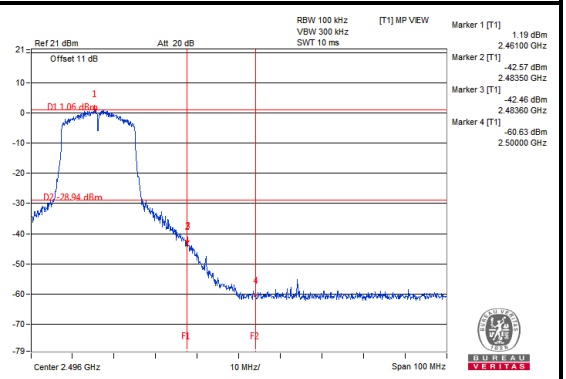




CH 11

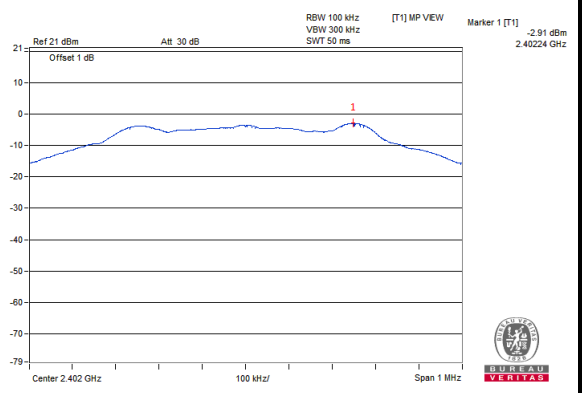


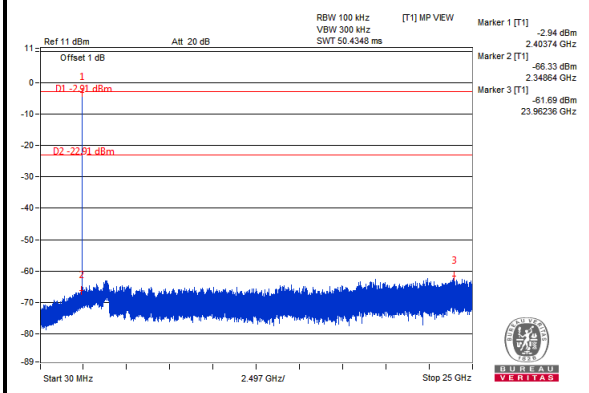


CH 1 Band Edge	CH 11 Band Edge
	

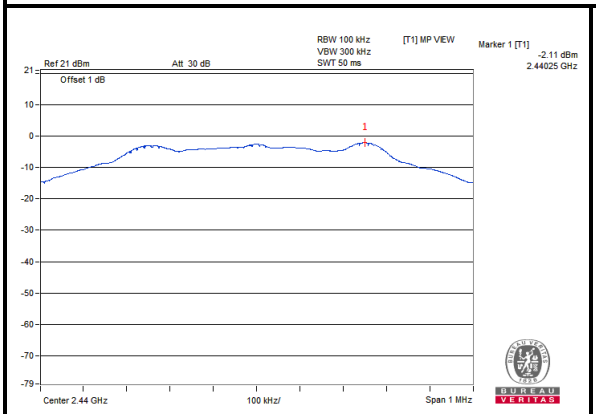
BT-LE (1MHz)

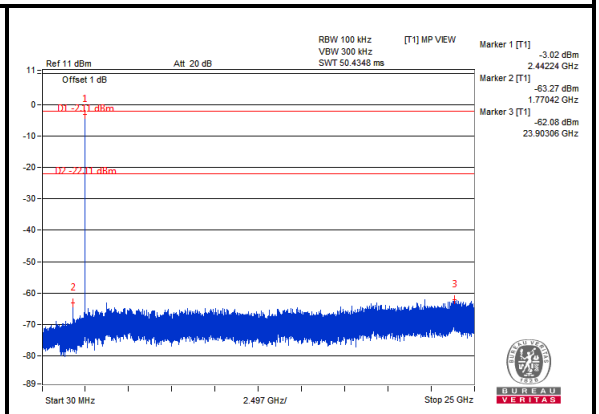
CH 0



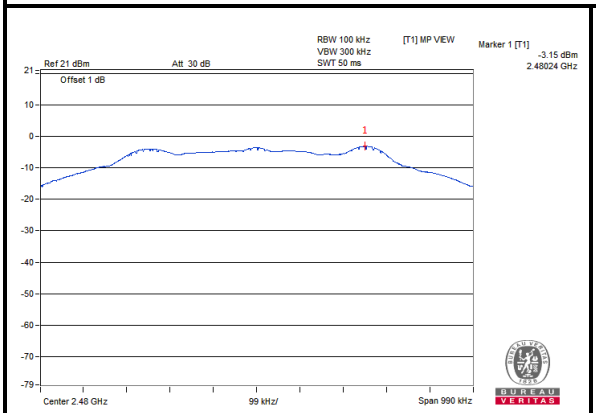


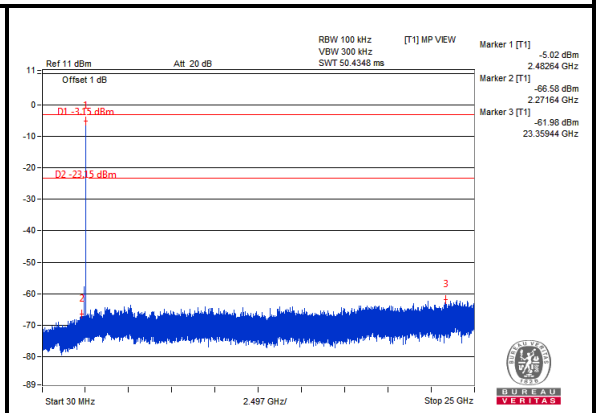
CH 19

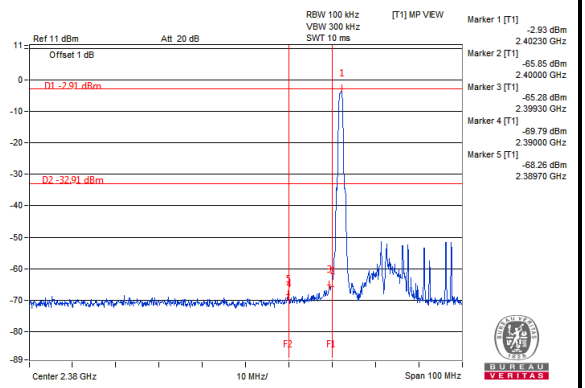
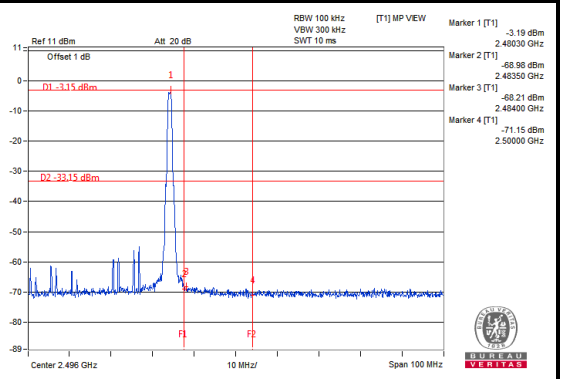




CH 39

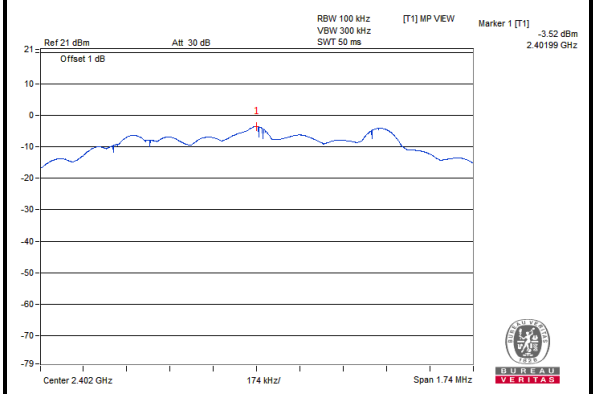


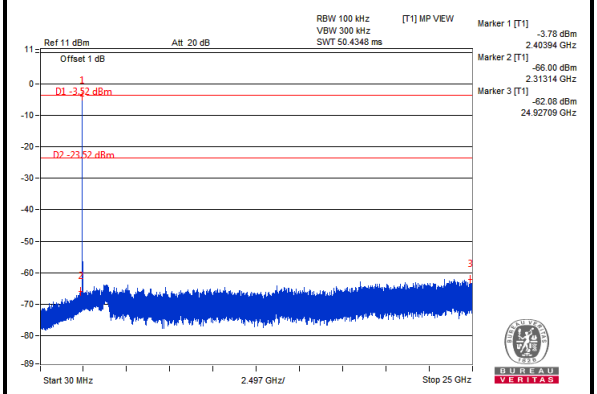


CH 0 Band Edge	CH 39 Band Edge
	

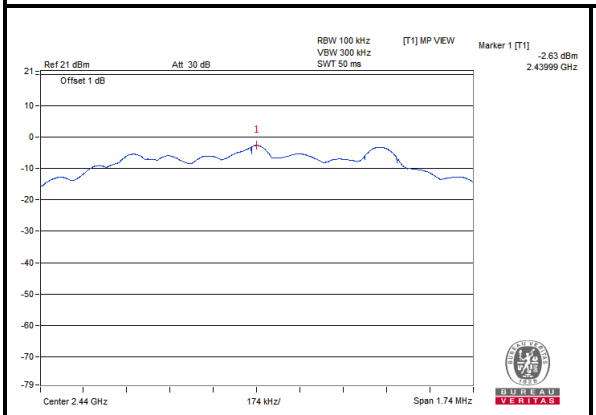
BT-LE (2MHz)

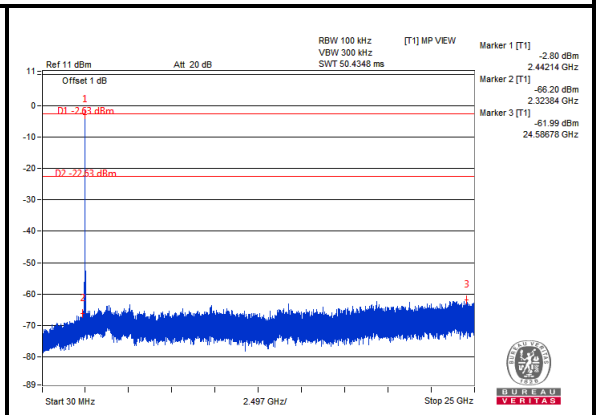
CH 0



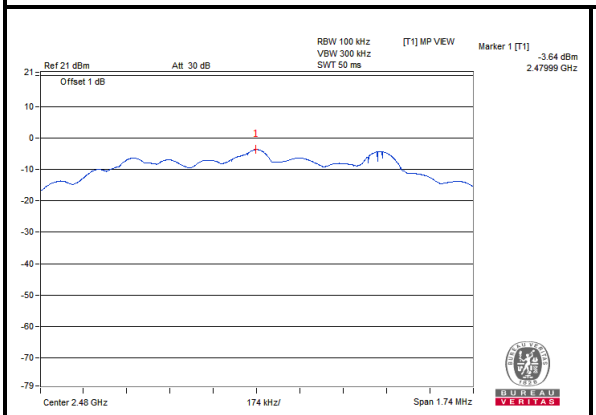


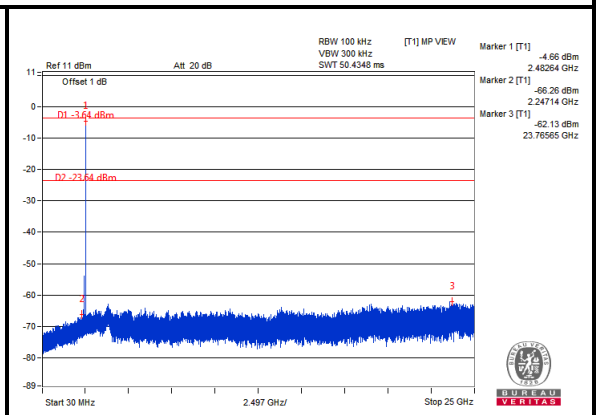
CH 19

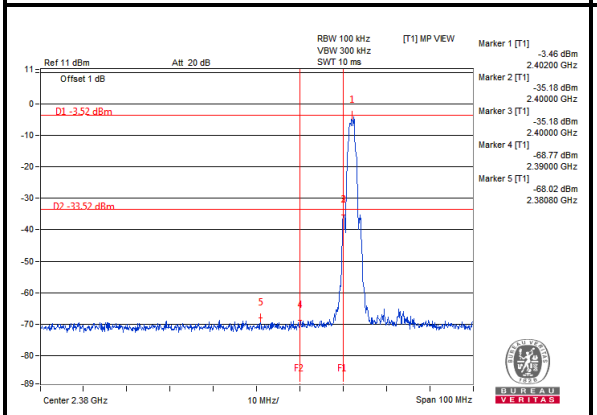
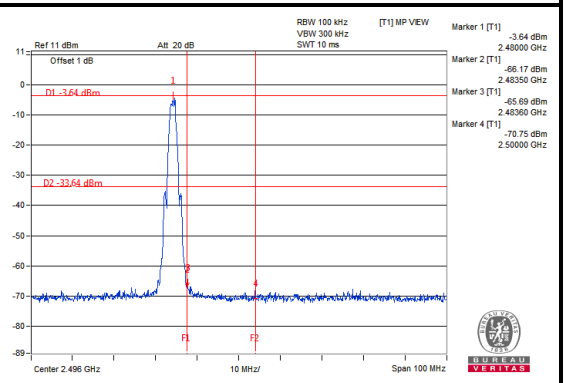




CH 39

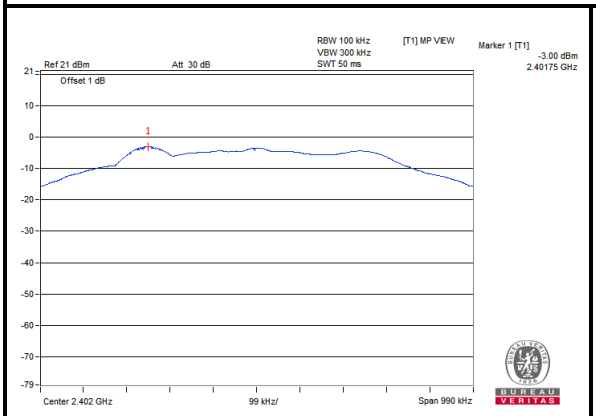


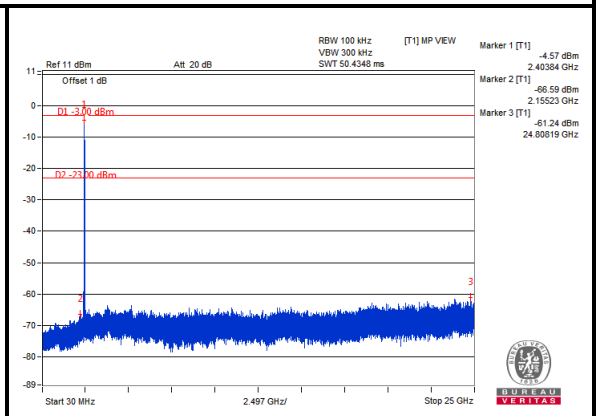


CH 0 Band Edge	CH 39 Band Edge
	

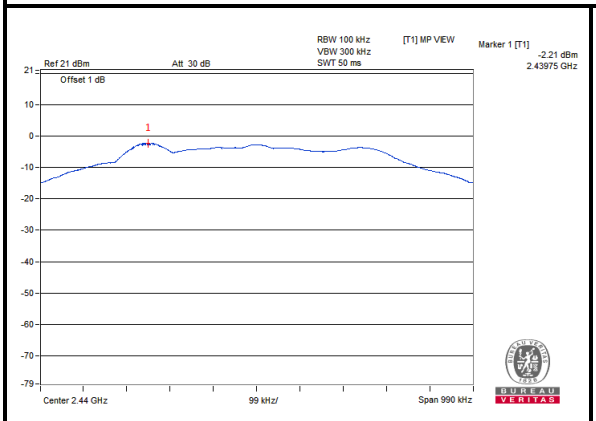
BT-LE (S2)

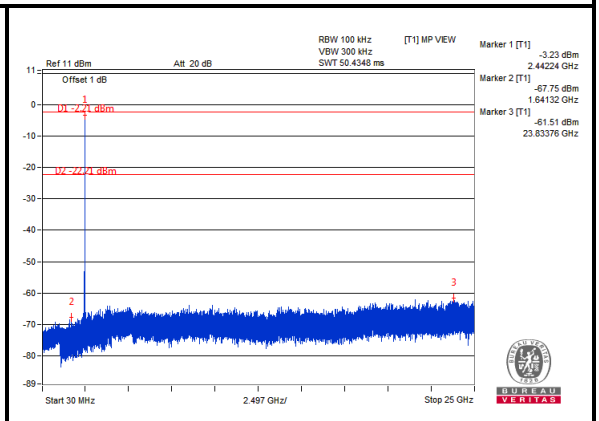
CH 0



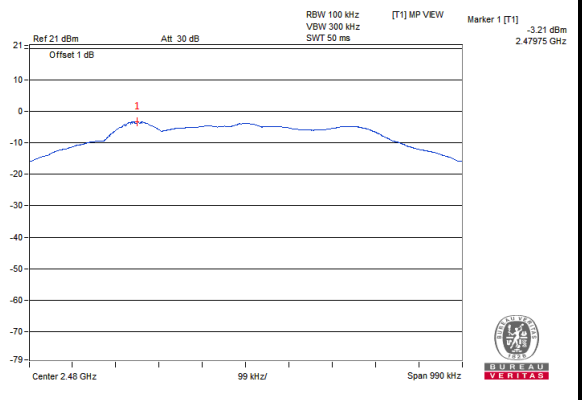


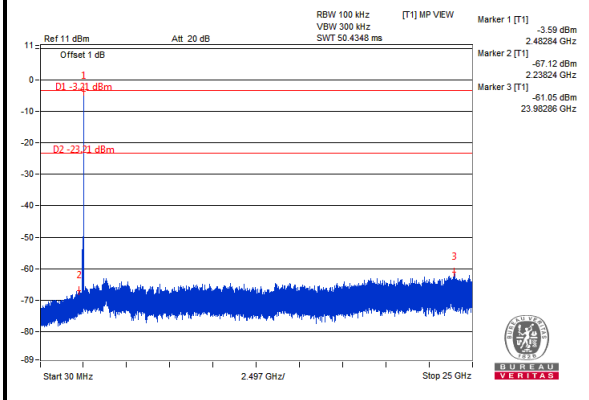
CH 19

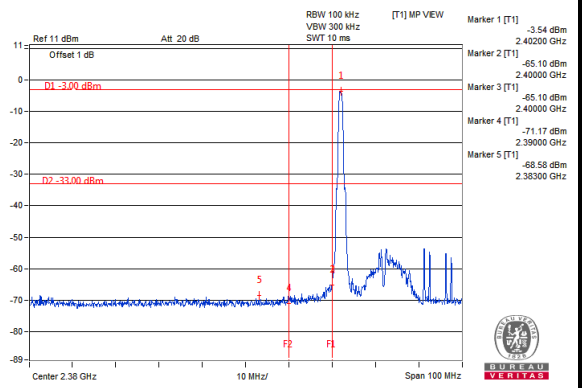
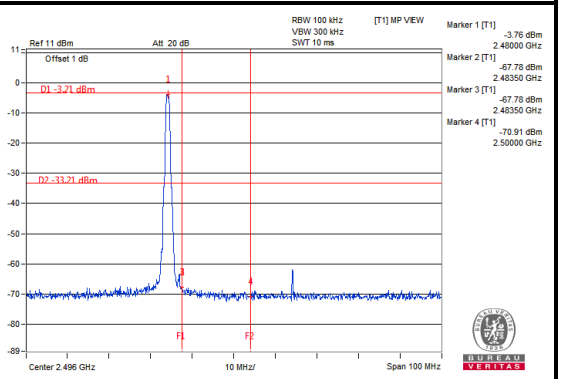




CH 39

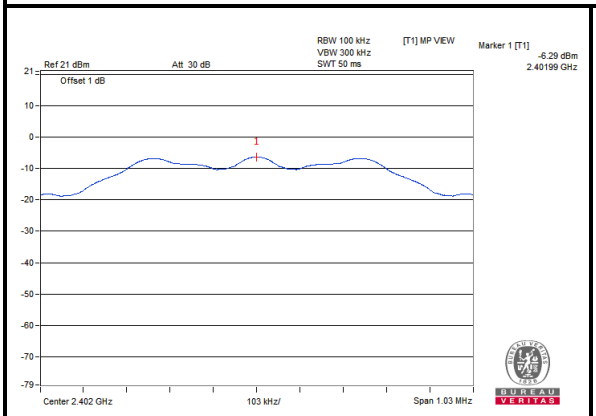


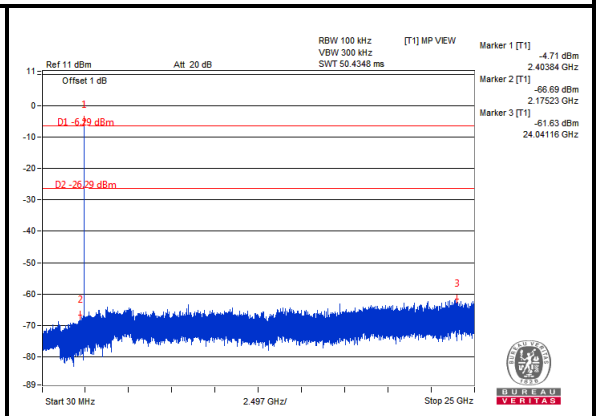


CH 0 Band Edge	CH 39 Band Edge
	

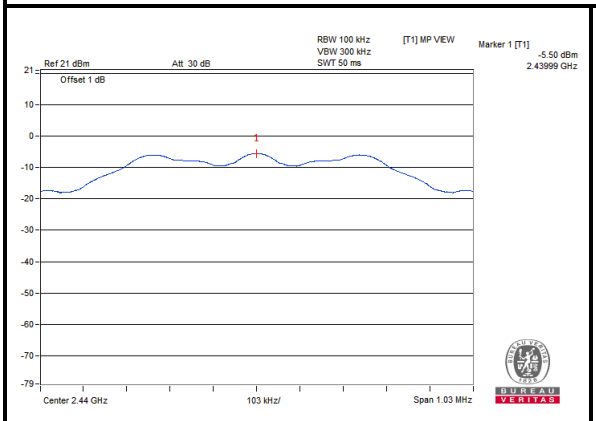
BT-LE (S8)

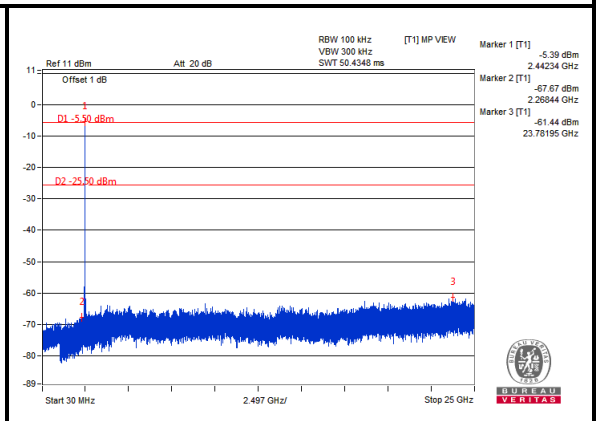
CH 0



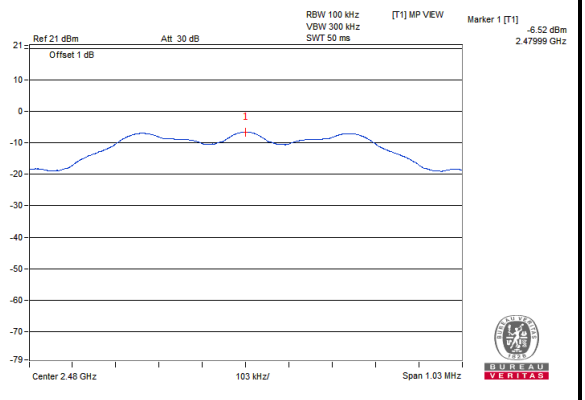


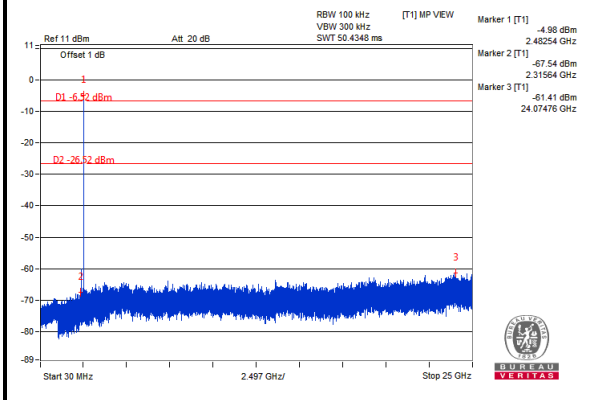
CH 19

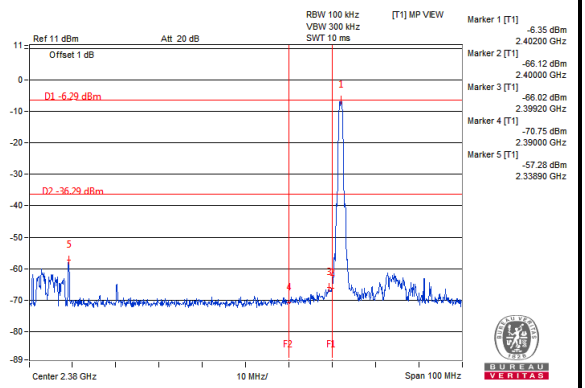
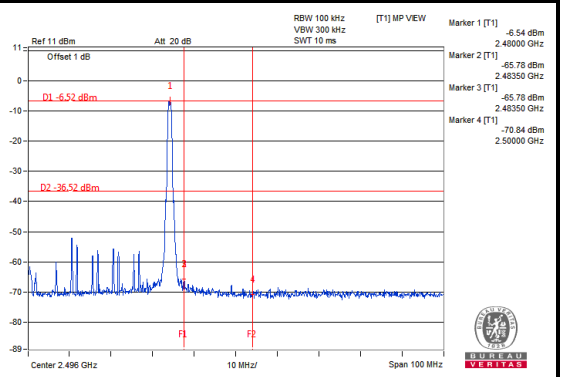




CH 39





CH 0 Band Edge	CH 39 Band Edge
	

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

5 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---