



BUREAU  
VERITAS

Test Report No.: RF210603W002-5



# 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, China
Product:	Tablet Computer
Brand Name:	Lenovo
Model Name:	Lenovo TB-X6C6NBL
FCC ID:	O57TBX6C6NBL
Date of tests:	Feb. 18, 2021 ~ Jun. 23, 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 Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
Date: Jun. 24, 2021	Date: Jun. 24, 2021

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Test Report No.: RF210603W002-5

## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF210603W002-5	Original release	Jun. 24, 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

<b>PRODUCT</b>	Tablet Computer
<b>BRAND NAME</b>	Lenovo
<b>MODEL NAME</b>	Lenovo TB-X6C6NBL
<b>NOMINAL VOLTAGE</b>	DC12V
<b>MODULATION</b>	DSSS, OFDM, GFSK
<b>TRANSMISSION RATE</b>	802.11b: 11/ 5.5/ 2.0 / 1.0 Mbps 802.11g: 54/ 48/ 36 / 24 / 18 / 9/ 6 Mbps 802.11n20: up to 65 Mbps 802.11n40: up to 135 Mbps BT_LE: 0.125 Mbps /0.5 Mbps /1 Mbps/2 Mbps
<b>OPERATING FREQUENCY</b>	2412-2462MHz for 11b/g/n(HT20) 2422-2452MHz for 11n(HT40) 2402-2480MHz for BT-LE(GFSK)
<b>MAX. OUTPUT POWER</b>	WLAN: 331.89mW (Maximum) BT-LE: 0.69mW (Maximum)
<b>ANTENNA TYPE</b>	PIFA Antenna with -1.58dBi gain
<b>HW VERSION</b>	Lenovo TB-X6C6NBL
<b>SW VERSION</b>	TB-X6C6NBL_RF01_210930
<b>I/O PORTS</b>	Refer to user's manual
<b>CABLE SUPPLIED</b>	N/A



**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.

<b>MODULATION MODE</b>	<b>TX/RX FUNCTION</b>
<b>802.11b</b>	1TX /1RX
<b>802.11g</b>	1TX /1RX
<b>802.11n (20MHz)</b>	1TX /1RX
<b>802.11n (40MHz)</b>	1TX /1RX
<b>BT_LE(1MHz)</b>	1TX /1RX
<b>BT_LE(2MHz)</b>	1TX /1RX
<b>BT_LE(S2)</b>	1TX /1RX
<b>BT_LE(S8)</b>	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.



## 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		

7 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

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
802.11n HT40	3 to 9	3, 6, 9	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
802.11n HT40	3 to 9	3, 6, 9	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
802.11n HT40	3 to 9	3, 6, 9	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 12V	Carl Xie
RE≥1G	23deg. C, 70%RH	DC 12V	Carl Xie
PLC	25deg. C, 52%RH	DC 12V	Chase Zhou
APCM	25deg. C, 60%RH	DC 12V	Chase Zhou



### 2.3 Duty Cycle of Test Signal

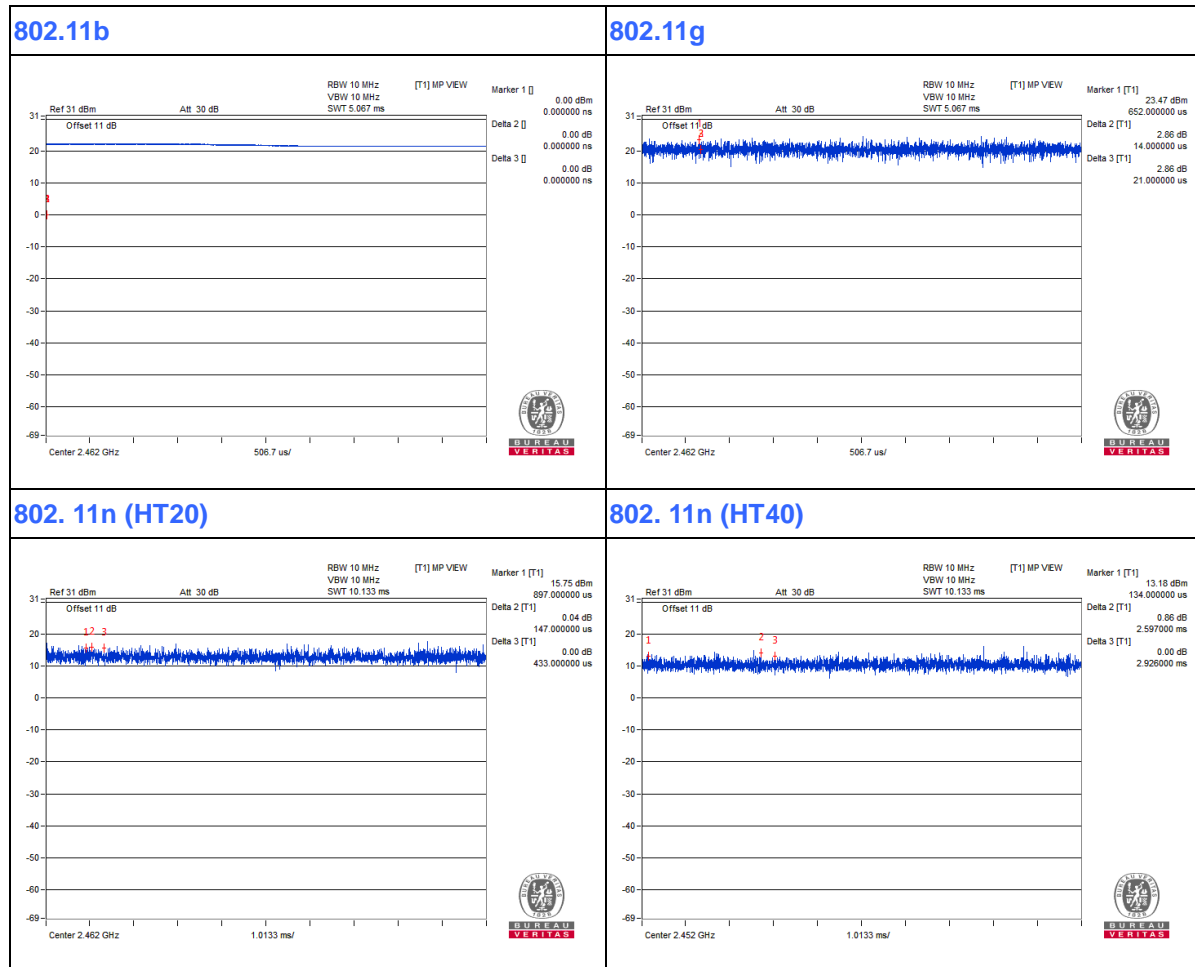
#### WIFI 2.4GHz

**802.11b:** Duty cycle = 100%, Duty factor shall not be considered

**802.11g:** Duty cycle = 100%, Duty factor shall not be considered

**802.11n (HT20):** Duty cycle = 100%, Duty factor shall not be considered

**802.11n (HT40):** Duty cycle = 100%, Duty factor shall not be considered





**BUREAU VERITAS**

**Test Report No.: RF210603W002-5**

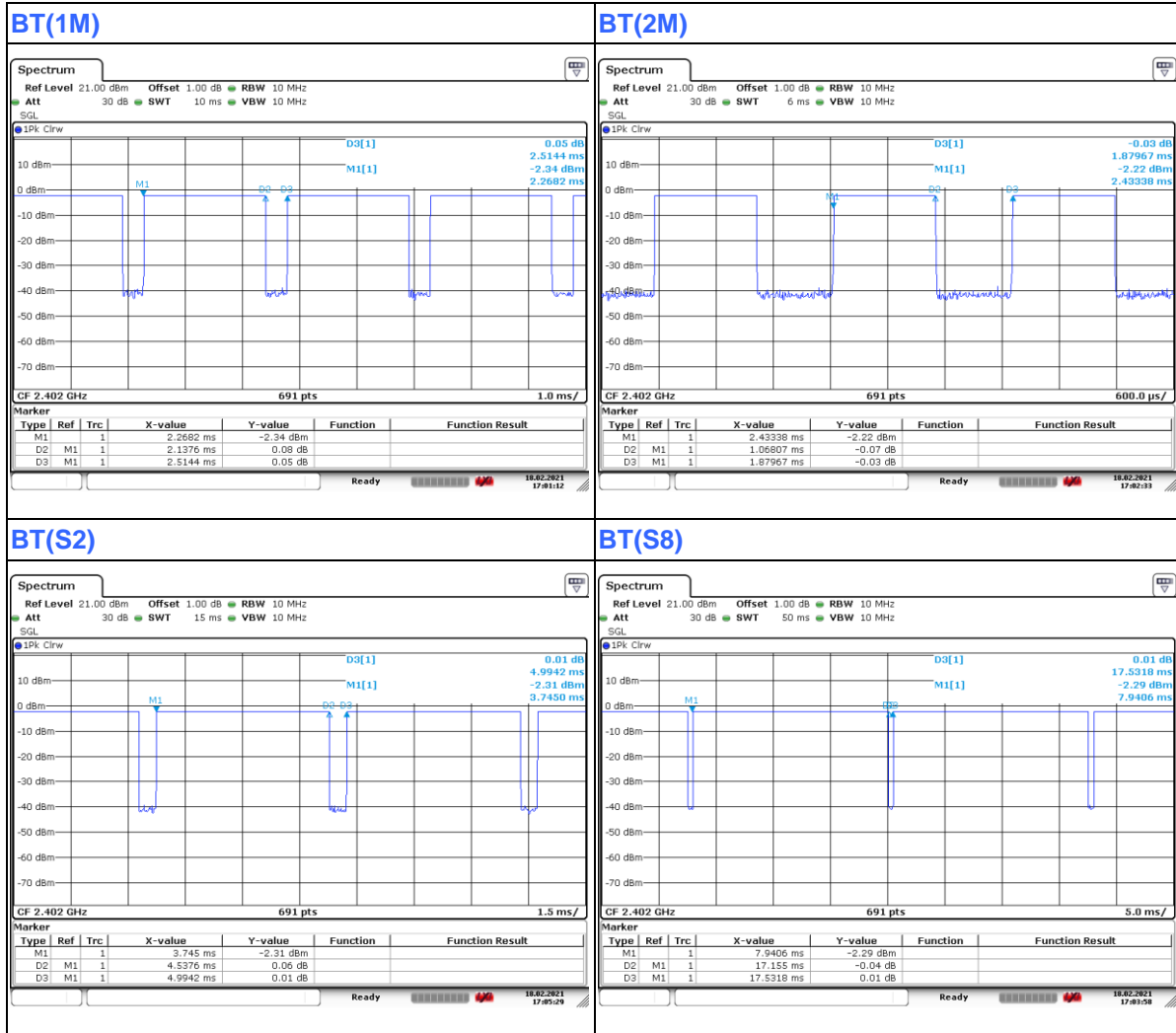
**BT LE**

**BT(1M):** Duty cycle =  $2.138/2.514 = 0.850 < 98\%$ , Duty factor =  $10 * \log(1/0.850) = 0.706$

**BT(2M):** Duty cycle =  $1.068/1.880 = 0.568 < 98\%$ , Duty factor =  $10 * \log(1/0.568) = 2.457$

**BT(S2):** Duty cycle =  $4.538/4.994 = 0.909 < 98\%$ , Duty factor =  $10 * \log(1/0.909) = 0.414$

**BT(S8):** Duty cycle =  $17.155/17.532 = 0.978 < 98\%$ , Duty factor =  $10 * \log(1/0.978) = 0.097$





## 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
4	DC source	Kikusui/JP	PMX18-5A	0000001	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
4	DC Line: Unshielded, Detachable 1.0m



### 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	Mar. 03,21	Mar. 02,22
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Mar. 04,20	Mar. 03,21
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Feb. 25,21	Feb. 24,22
LISN network	Rohde&Schwarz	ENV216	101922	Feb. 26,20	Feb. 25,21
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 26,20	Aug. 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.

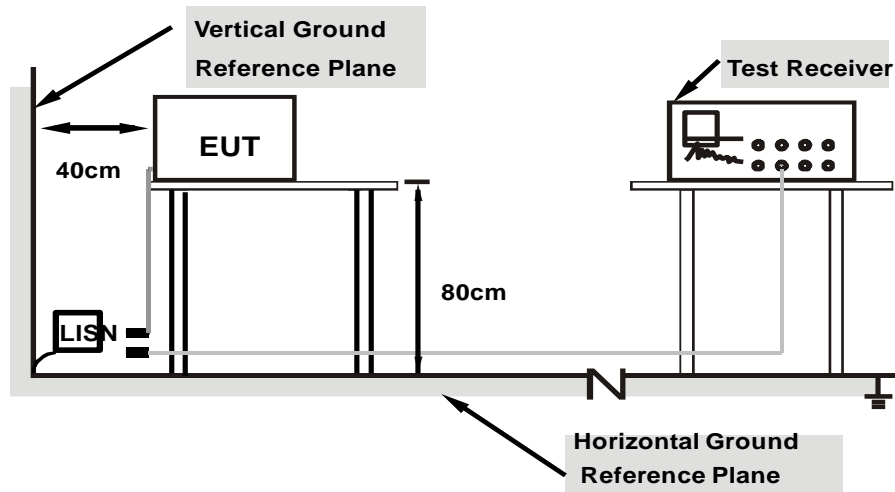
### 3.1.4 DEVIATION FROM TEST STANDARD

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

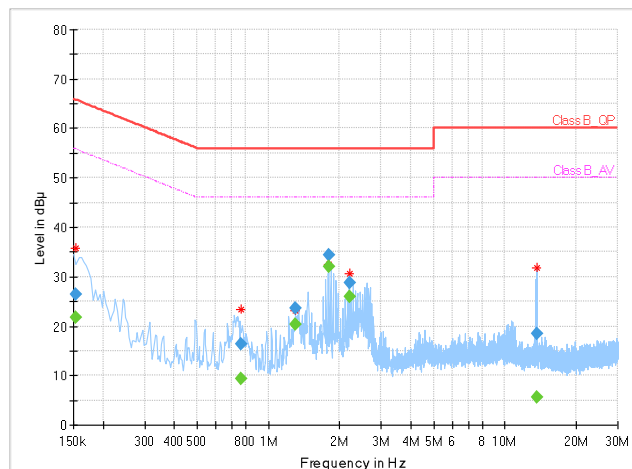
#### CONDUCTED WORST-CASE DATA:

<b>Frequency Range</b>	150KHz ~ 30MHz	<b>Detector Function &amp; Resolution Bandwidth</b>	Quasi-Peak (QP) / Average (AV), 9 kHz
<b>Input Power</b>	120Vac, 60Hz	<b>Environmental Conditions</b>	25deg. C, 55%RH
<b>Tested By</b>	Carl Xie		

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	CAverage (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.154000	---	21.68	55.78	34.11	L1	ON	9.7
0.154000	26.51	---	65.78	39.28	L1	ON	9.7
0.768000	---	9.41	46.00	36.59	L1	ON	9.7
0.768000	16.39	---	56.00	39.61	L1	ON	9.7
1.300000	---	20.26	46.00	25.74	L1	ON	9.7
1.300000	23.65	---	56.00	32.35	L1	ON	9.7
1.792000	---	32.16	46.00	13.84	L1	ON	9.8
1.792000	34.32	---	56.00	21.68	L1	ON	9.8
2.196000	---	25.87	46.00	20.13	L1	ON	9.8
2.196000	28.87	---	56.00	27.13	L1	ON	9.8
13.604000	---	5.72	50.00	44.28	L1	ON	10.0
13.604000	18.58	---	60.00	41.42	L1	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.

Full Spectrum



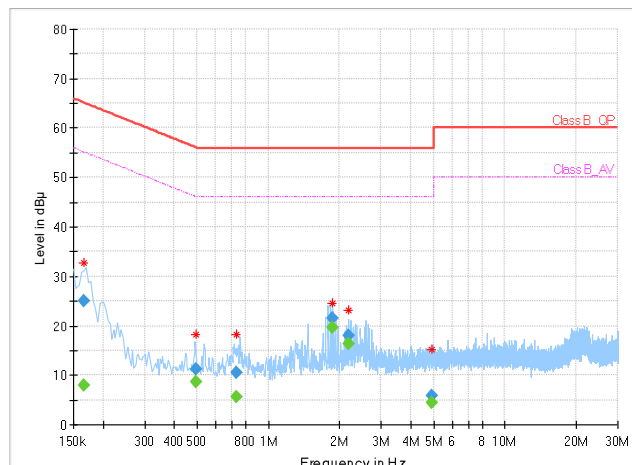


<b>Frequency Range</b>	150KHz ~ 30MHz	<b>Detector Function &amp; Resolution Bandwidth</b>	Quasi-Peak (QP) / Average (AV), 9 kHz
<b>Input Power</b>	120Vac, 60Hz	<b>Environmental Conditions</b>	25deg. C, 55%RH
<b>Tested By</b>	Carl Xie		

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.166000	---	8.02	55.16	47.14	N	ON	9.8
0.166000	24.99	---	65.16	40.17	N	ON	9.8
0.492000	---	8.62	46.13	37.52	N	ON	9.8
0.492000	11.32	---	56.13	44.82	N	ON	9.8
0.736000	---	5.57	46.00	40.43	N	ON	9.8
0.736000	10.43	---	56.00	45.57	N	ON	9.8
1.874000	---	19.74	46.00	26.26	N	ON	9.8
1.874000	21.46	---	56.00	34.54	N	ON	9.8
2.188000	---	16.27	46.00	29.73	N	ON	9.8
2.188000	18.04	---	56.00	37.96	N	ON	9.8
4.928000	---	4.38	46.00	41.62	N	ON	9.9
4.928000	5.86	---	56.00	50.14	N	ON	9.9

- 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.

Full Spectrum





### 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**

<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Last Cal.</b>	<b>Next Cal.</b>
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 19,21
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,21	May. 19,22
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 26,21	Mar. 25,22
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
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 03,21	Jun. 02,22
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Apr. 27,20	Apr. 26,21
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Apr. 27,21	Apr. 26,22
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,20	Jun. 01,21
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,21	Jun. 01,22
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 02,20	Jun. 01,21
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 02,21	Jun. 01,22
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 30,20	Apr. 29,21
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 30,21	Apr. 29,22
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 26,20	Aug. 25,21

- 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 ( $10 \log(1/\text{duty cycle})$ ).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

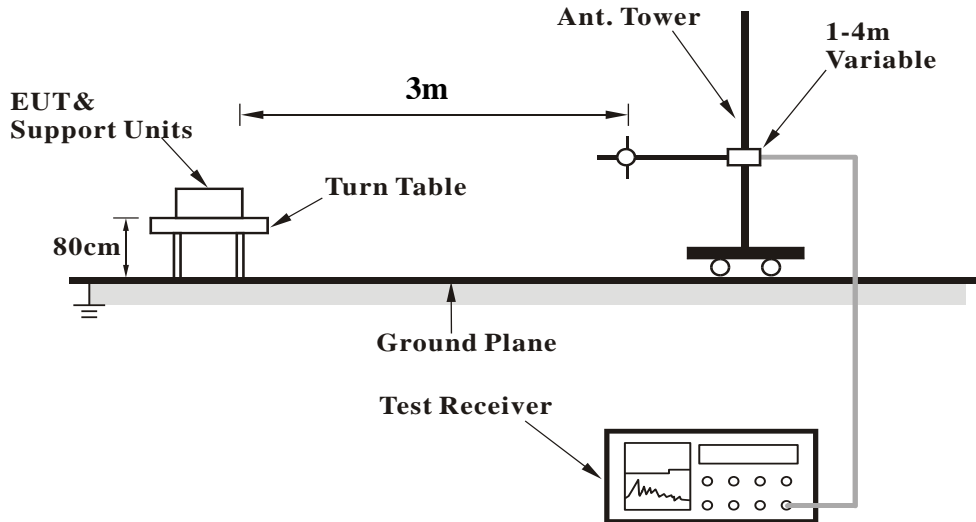
### 3.2.4 DEVIATION FROM TEST STANDARD

No deviation

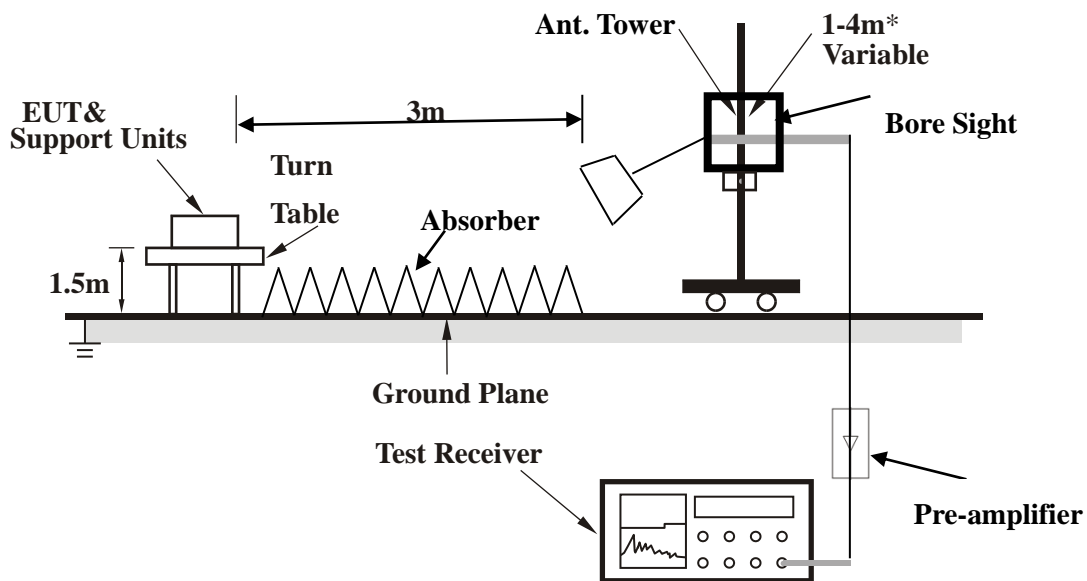


### 3.2.5 TEST SETUP

< 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:

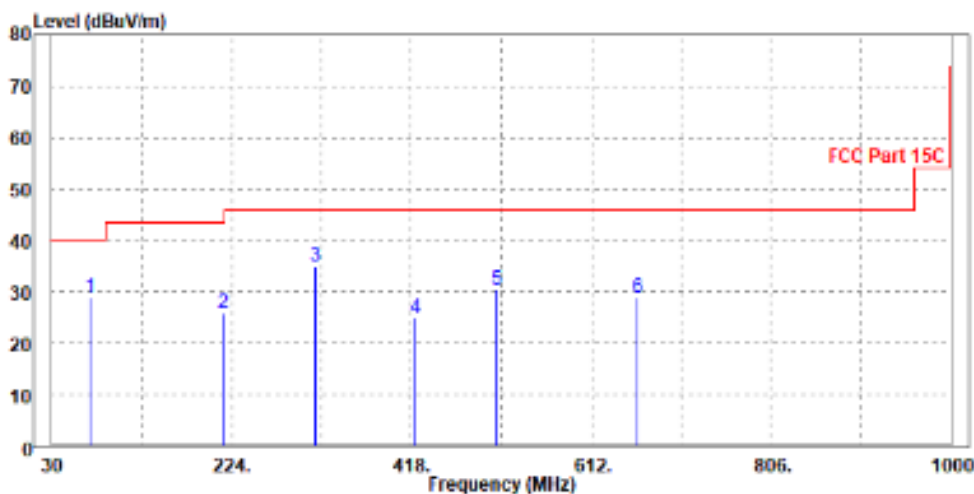
802.11n (40MHz)

<b>CHANNEL</b>	TX Channel 9	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	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
71.71	28.82	57.33	40	-11.18	7.73	1.09	37.33	200	0	Peak
214.3	25.72	48.81	43.5	-17.78	11.63	1.86	36.58	200	0	Peak
314.21	35.09	55.19	46	-10.91	14.41	2.25	36.76	200	0	Peak
422.85	25.01	41.93	46	-20.99	17.31	2.64	36.87	200	0	Peak
510.15	30.34	45.52	46	-15.66	18.9	2.96	37.04	200	0	Peak
662.44	28.82	40.91	46	-17.18	21.95	3.43	37.47	200	0	Peak

#### REMARKS:

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



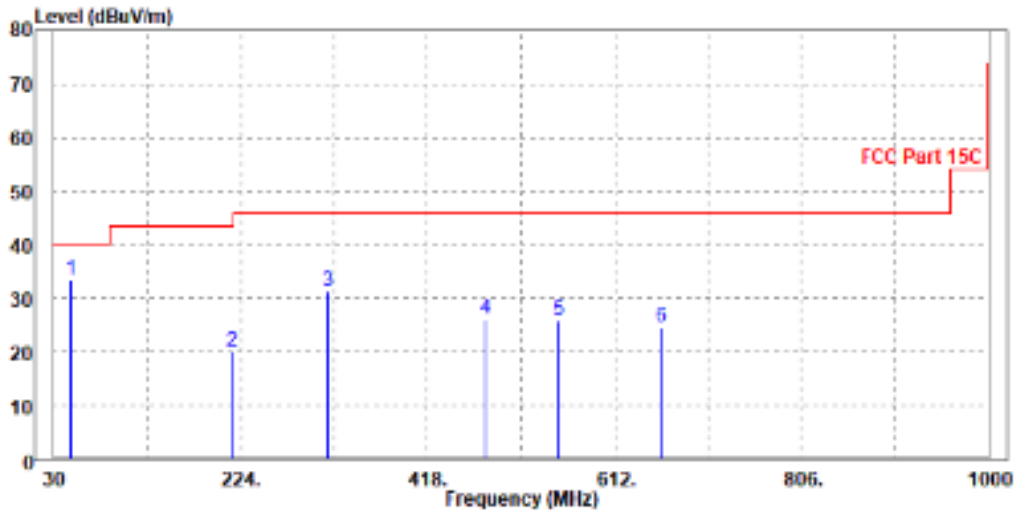


<b>CHANNEL</b>	TX Channel 9	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

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
47.46	33.49	60.16	40	-6.51	9.81	0.89	37.37	200	0	Peak
214.3	20.16	42.72	43.5	-23.34	12.16	1.86	36.58	200	0	Peak
314.21	31.18	50.38	46	-14.82	15.31	2.25	36.76	200	0	Peak
478.14	26.05	41.49	46	-19.95	18.68	2.84	36.96	200	0	Peak
553.8	25.78	39.83	46	-20.22	20.07	3.08	37.2	200	0	Peak
660.5	24.58	36.88	46	-21.42	21.75	3.42	37.47	200	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)
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	52.64	61.4	74	-21.36	31.75	5.86	46.37	180	300	Peak
2390	42.92	51.68	54	-11.08	31.75	5.86	46.37	180	300	Average
2412	85.81	94.47			31.82	5.89	46.37	180	300	Peak
2412	83.99	92.65			31.82	5.89	46.37	180	300	Average
2483.5	50.19	58.52	74	-23.81	32.05	5.99	46.37	180	300	Peak
2483.5	43.03	51.36	54	-10.97	32.05	5.99	46.37	180	300	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	52.16	60.53	74	-21.84	32.14	5.86	46.37	100	240	Peak
2390	43.73	52.1	54	-10.27	32.14	5.86	46.37	100	240	Average
2412	86	94.29			32.19	5.89	46.37	100	240	Peak
2412	83.71	92			32.19	5.89	46.37	100	240	Average
2483.5	52.16	60.18	74	-21.84	32.36	5.99	46.37	100	240	Peak
2483.5	43.21	51.23	54	-10.79	32.36	5.99	46.37	100	240	Average

REMARKS:

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



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

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>										
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	50.15	58.91	74	-23.85	31.75	5.86	46.37	176	300	Peak
2390	43.37	52.13	54	-10.63	31.75	5.86	46.37	176	300	Average
2437	86.83	95.37			31.9	5.93	46.37	176	300	Peak
2437	84.89	93.43			31.9	5.93	46.37	176	300	Average
2483.5	50.25	58.58	74	-23.75	32.05	5.99	46.37	176	300	Peak
2483.5	43.35	51.68	54	-10.65	32.05	5.99	46.37	176	300	Average
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>										
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	50.6	58.97	74	-23.4	32.14	5.86	46.37	100	300	Peak
2390	43.75	52.12	54	-10.25	32.14	5.86	46.37	100	300	Average
2437	86.79	94.98			32.25	5.93	46.37	100	300	Peak
2437	84.89	93.08			32.25	5.93	46.37	100	300	Average
2483.5	51.53	59.55	74	-22.47	32.36	5.99	46.37	100	300	Peak
2483.5	43.92	51.94	54	-10.08	32.36	5.99	46.37	100	300	Average

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	51.29	60.05	74	-22.71	31.75	5.86	46.37	195	300	Peak
2390	43.28	52.04	54	-10.72	31.75	5.86	46.37	195	300	Average
2462	107.07	115.5			31.98	5.96	46.37	195	300	Peak
2462	105.8	114.23			31.98	5.96	46.37	195	300	Average
2483.5	51.53	59.86	74	-22.47	32.05	5.99	46.37	195	300	Peak
2483.5	45.24	53.57	54	-8.76	32.05	5.99	46.37	195	300	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	50.45	58.82	74	-23.55	32.14	5.86	46.37	100	260	Peak
2390	43.59	51.96	54	-10.41	32.14	5.86	46.37	100	260	Average
2462	107.52	115.62			32.31	5.96	46.37	100	260	Peak
2462	106.26	114.36			32.31	5.96	46.37	100	260	Average
2483.5	52.79	60.81	74	-21.21	32.36	5.99	46.37	100	260	Peak
2483.5	46.26	54.28	54	-7.74	32.36	5.99	46.37	100	260	Average

**REMARKS:**

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



**802.11g**

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

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>										
<b>FREQ. (MHz)</b>	<b>EMISSION LEVEL (dBuV/m)</b>	<b>READ LEVEL (dBuV)</b>	<b>LIMIT (dBuV/m)</b>	<b>MARGIN (dB)</b>	<b>ANTENNA FACTOR (dB /m)</b>	<b>CABLE LOSS (dB)</b>	<b>PREAMP FACTOR (dB)</b>	<b>ANTENNA HEIGHT (cm)</b>	<b>TABLE ANGLE (Degree)</b>	<b>REMARK</b>
2390	51.08	59.84	74	-22.92	31.75	5.86	46.37	180	300	Peak
2390	43.96	52.72	54	-10.04	31.75	5.86	46.37	180	300	Average
2412	89.4	98.06			31.82	5.89	46.37	180	300	Peak
2412	82.24	90.9			31.82	5.89	46.37	180	300	Average
2483.5	50.91	59.24	74	-23.09	32.05	5.99	46.37	180	300	Peak
2483.5	43.59	51.92	54	-10.41	32.05	5.99	46.37	180	300	Average
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>										
<b>FREQ. (MHz)</b>	<b>EMISSION LEVEL (dBuV/m)</b>	<b>READ LEVEL (dBuV)</b>	<b>LIMIT (dBuV/m)</b>	<b>MARGIN (dB)</b>	<b>ANTENNA FACTOR (dB /m)</b>	<b>CABLE LOSS (dB)</b>	<b>PREAMP FACTOR (dB)</b>	<b>ANTENNA HEIGHT (cm)</b>	<b>TABLE ANGLE (Degree)</b>	<b>REMARK</b>
2390	50.56	58.93	74	-23.44	32.21	4.88	46.37	135	269	Peak
2390	44.50	52.87	54	-9.50	32.21	4.88	46.37	135	269	Average
2412	89.36	97.65	/	/	32.27	4.9	46.37	135	269	Peak
2412	82.04	90.33	/	/	32.27	4.9	46.37	135	269	Average
2483.5	51.79	59.81	74	-22.21	32.46	4.98	46.37	135	269	Peak
2483.5	44.05	52.07	54	-9.95	32.46	4.98	46.37	135	269	Average

**REMARKS:**

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



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

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>										
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	50.73	59.49	74	-23.27	31.75	5.86	46.37	180	320	Peak
2390	43.21	51.97	54	-10.79	31.75	5.86	46.37	180	320	Average
2437	85.8	94.34			31.9	5.93	46.37	180	320	Peak
2437	77.02	85.56			31.9	5.93	46.37	180	320	Average
2483.5	51.13	59.46	74	-22.87	32.05	5.99	46.37	180	320	Peak
2483.5	43.37	51.7	54	-10.63	32.05	5.99	46.37	180	320	Average
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>										
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	51.44	59.81	74	-22.56	32.14	5.86	46.37	100	260	Peak
2390	43.87	52.24	54	-10.13	32.14	5.86	46.37	100	260	Average
2437	92.36	100.55			32.25	5.93	46.37	100	260	Peak
2437	84.78	92.97			32.25	5.93	46.37	100	260	Average
2483.5	51.57	59.59	74	-22.43	32.36	5.99	46.37	100	260	Peak
2483.5	44.33	52.35	54	-9.67	32.36	5.99	46.37	100	260	Average

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	50.21	58.97	74	-23.79	31.75	5.86	46.37	180	300	Peak
2390	43.04	51.8	54	-10.96	31.75	5.86	46.37	180	300	Average
2462	106.54	114.97			31.98	5.96	46.37	180	300	Peak
2462	99.09	107.52			31.98	5.96	46.37	180	300	Average
2483.5	59.24	67.57	74	-14.76	32.05	5.99	46.37	180	300	Peak
2483.5	48.99	57.32	54	-5.01	32.05	5.99	46.37	180	300	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	50.41	58.78	74	-23.59	32.14	5.86	46.37	100	270	Peak
2390	43.14	51.51	54	-10.86	32.14	5.86	46.37	100	270	Average
2462	109.61	117.71			32.31	5.96	46.37	100	270	Peak
2462	102.55	110.65			32.31	5.96	46.37	100	270	Average
2483.5	62.86	70.88	74	-11.14	32.36	5.99	46.37	100	270	Peak
2483.5	52.28	60.3	54	-1.72	32.36	5.99	46.37	100	270	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)**

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

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>										
<b>FREQ. (MHz)</b>	<b>EMISSION LEVEL (dBuV/m)</b>	<b>READ LEVEL (dBuV)</b>	<b>LIMIT (dBuV/m)</b>	<b>MARGIN (dB)</b>	<b>ANTENNA FACTOR (dB /m)</b>	<b>CABLE LOSS (dB)</b>	<b>PREAMP FACTOR (dB)</b>	<b>ANTENNA HEIGHT (cm)</b>	<b>TABLE ANGLE (Degree)</b>	<b>REMARK</b>
2390	64.83	73.59	74	-9.17	31.75	5.86	46.37	180	300	Peak
2390	52.5	61.26	54	-1.5	31.75	5.86	46.37	180	300	Average
2412	107.59	116.25			31.82	5.89	46.37	180	300	Peak
2412	100.82	109.48			31.82	5.89	46.37	180	300	Average
2483.5	51.95	60.28	74	-22.05	32.05	5.99	46.37	180	300	Peak
2483.5	44.39	52.72	54	-9.61	32.05	5.99	46.37	180	300	Average
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>										
<b>FREQ. (MHz)</b>	<b>EMISSION LEVEL (dBuV/m)</b>	<b>READ LEVEL (dBuV)</b>	<b>LIMIT (dBuV/m)</b>	<b>MARGIN (dB)</b>	<b>ANTENNA FACTOR (dB /m)</b>	<b>CABLE LOSS (dB)</b>	<b>PREAMP FACTOR (dB)</b>	<b>ANTENNA HEIGHT (cm)</b>	<b>TABLE ANGLE (Degree)</b>	<b>REMARK</b>
2390	64.19	72.56	74	-9.81	32.14	5.86	46.37	100	260	Peak
2390	51.46	59.83	54	-2.54	32.14	5.86	46.37	100	260	Average
2412	107.83	116.12			32.19	5.89	46.37	100	260	Peak
2412	101.28	109.57			32.19	5.89	46.37	100	260	Average
2483.5	52.04	60.06	74	-21.96	32.36	5.99	46.37	100	260	Peak
2483.5	45.16	53.18	54	-8.84	32.36	5.99	46.37	100	260	Average

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	52.07	60.83	74	-21.93	31.75	5.86	46.37	176	300	Peak
2390	44.57	53.33	54	-9.43	31.75	5.86	46.37	176	300	Average
2437	108.14	116.68			31.9	5.93	46.37	176	300	Peak
2437	101.37	109.91			31.9	5.93	46.37	176	300	Average
2483.5	52.98	61.31	74	-21.02	32.05	5.99	46.37	176	300	Peak
2483.5	46.46	54.79	54	-7.54	32.05	5.99	46.37	176	300	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	51.94	60.31	74	-22.06	32.14	5.86	46.37	100	260	Peak
2390	44.21	52.58	54	-9.79	32.14	5.86	46.37	100	260	Average
2437	109.41	117.6			32.25	5.93	46.37	100	260	Peak
2437	102.01	110.2			32.25	5.93	46.37	100	260	Average
2483.5	54.63	62.65	74	-19.37	32.36	5.99	46.37	100	260	Peak
2483.5	45.85	53.87	54	-8.15	32.36	5.99	46.37	100	260	Average

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	50.95	59.71	74	-23.05	31.75	5.86	46.37	180	300	Peak
2390	43.58	52.34	54	-10.42	31.75	5.86	46.37	180	300	Average
2462	106.04	114.47			31.98	5.96	46.37	180	300	Peak
2462	99.05	107.48			31.98	5.96	46.37	180	300	Average
2483.5	61.52	69.85	74	-12.48	32.05	5.99	46.37	180	300	Peak
2483.5	51.21	59.54	54	-2.79	32.05	5.99	46.37	180	300	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	60.37	74	-22	32.14	5.86	46.37	100	260	Peak
2390	45.02	53.39	54	-8.98	32.14	5.86	46.37	100	260	Average
2462	108.11	116.21			32.31	5.96	46.37	100	260	Peak
2462	101.04	109.14			32.31	5.96	46.37	100	260	Average
2483.5	64.54	72.56	74	-9.46	32.36	5.99	46.37	100	260	Peak
2483.5	54.03	62.05	54	0.03	32.36	5.99	46.37	100	260	Average

**REMARKS:**

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



**802.11n (40MHz)**

<b>CHANNEL</b>	TX Channel 3	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	61.41	70.17	74	-12.59	31.75	5.86	46.37	180	300	Peak
2390	51.07	59.83	54	-2.93	31.75	5.86	46.37	180	300	Average
2422	103.24	111.85			31.85	5.91	46.37	180	300	Peak
2422	95.13	103.74			31.85	5.91	46.37	180	300	Average
2483.5	53.49	61.82	74	-20.51	32.05	5.99	46.37	180	300	Peak
2483.5	44.48	52.81	54	-9.52	32.05	5.99	46.37	180	300	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	60.95	69.32	74	-13.05	32.14	5.86	46.37	100	260	Peak
2390	50.14	58.51	54	-3.86	32.14	5.86	46.37	100	260	Average
2422	104.29	112.54			32.21	5.91	46.37	100	260	Peak
2422	97	105.25			32.21	5.91	46.37	100	260	Average
2483.5	55.02	63.04	74	-18.98	32.36	5.99	46.37	100	260	Peak
2483.5	45.74	53.76	54	-8.26	32.36	5.99	46.37	100	260	Average

**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 2422MHz: Fundamental frequency.



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

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>										
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	52.14	60.9	74	-21.86	31.75	5.86	46.37	100	160	Peak
2390	43.56	52.32	54	-10.44	31.75	5.86	46.37	100	160	Average
2437	100.75	109.29			31.9	5.93	46.37	100	160	Peak
2437	91.07	99.61			31.9	5.93	46.37	100	160	Average
2483.5	51.71	60.04	74	-22.29	32.05	5.99	46.37	100	160	Peak
2483.5	45.87	54.2	54	-8.13	32.05	5.99	46.37	100	160	Average
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>										
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	51.54	59.91	74	-22.46	32.14	5.86	46.37	100	195	Peak
2390	43.99	52.36	54	-10.01	32.14	5.86	46.37	100	195	Average
2437	99.24	107.43			32.25	5.93	46.37	100	195	Peak
2437	90.6	98.79			32.25	5.93	46.37	100	195	Average
2483.5	54.98	63	74	-19.02	32.36	5.99	46.37	100	195	Peak
2483.5	48.97	56.99	54	-5.03	32.36	5.99	46.37	100	195	Average

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 9	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>										
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	50.87	59.63	74	-23.13	31.75	5.86	46.37	185	120	Peak
2390	42.75	51.51	54	-11.25	31.75	5.86	46.37	185	120	Average
2452	99.46	107.93			31.95	5.95	46.37	185	120	Peak
2452	91.63	100.1			31.95	5.95	46.37	185	120	Average
2483.5	59.66	67.99	74	-14.34	32.05	5.99	46.37	185	120	Peak
2483.5	49.24	57.57	54	-4.76	32.05	5.99	46.37	185	120	Average
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>										
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	52.13	60.5	74	-21.87	32.14	5.86	46.37	100	200	Peak
2390	43.11	51.48	54	-10.89	32.14	5.86	46.37	100	200	Average
2452	97.61	105.75			32.28	5.95	46.37	100	200	Peak
2452	88.3	96.44			32.28	5.95	46.37	100	200	Average
2483.5	57.92	65.94	74	-16.08	32.36	5.99	46.37	100	200	Peak
2483.5	46.7	54.72	54	-7.3	32.36	5.99	46.37	100	200	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:**

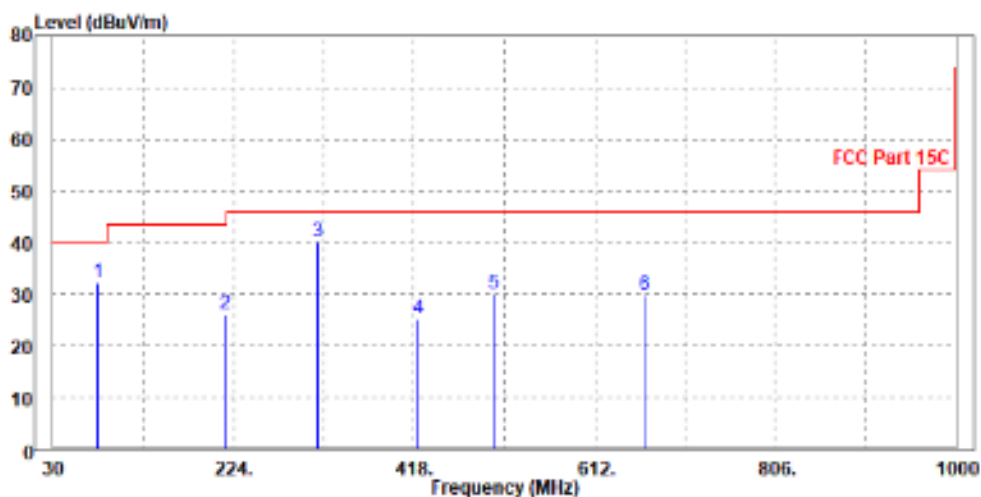
**BT-LE \_1M**

<b>CHANNEL</b>	TX Channel 39	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	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
78.5	32.24	60.58	40	-7.76	7.87	1.13	37.34	100	0	Peak
214.3	26.26	49.35	43.5	-17.24	11.63	1.86	36.58	100	0	Peak
314.21	40.02	60.12	46	-5.98	14.41	2.25	36.76	100	0	Peak
422.85	25.22	42.14	46	-20.78	17.31	2.64	36.87	100	0	Peak
503.36	30.01	45.31	46	-15.99	18.77	2.94	37.01	100	0	Peak
665.35	29.9	41.92	46	-16.1	22.01	3.44	37.47	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



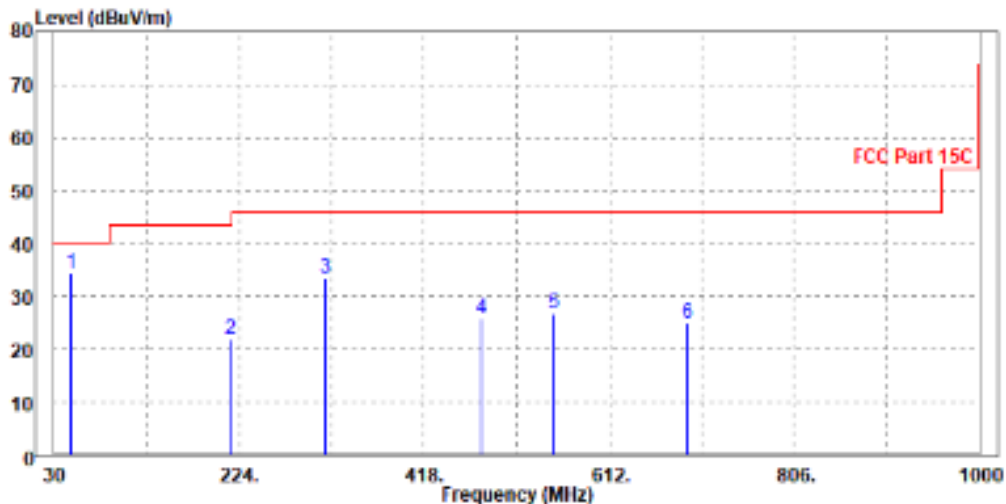


<b>CHANNEL</b>	TX Channel 39	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

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
48.43	34.3	61.26	40	-5.7	9.5	0.89	37.35	200	0	Peak
214.3	21.77	44.33	43.5	-21.73	12.16	1.86	36.58	200	0	Peak
314.21	33.61	52.81	46	-12.39	15.31	2.25	36.76	200	0	Peak
478.14	25.84	41.28	46	-20.16	18.68	2.84	36.96	200	0	Peak
553.8	26.62	40.67	46	-19.38	20.07	3.08	37.2	200	0	Peak
693.48	24.86	36.64	46	-21.14	22.21	3.53	37.52	200	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







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)
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	50.44	59.2	74	-23.56	31.75	5.86	46.37	100	175	Peak
2390	42.43	51.19	54	-11.57	31.75	5.86	46.37	100	175	Average
2402	88.5	97.2			31.79	5.88	46.37	100	175	Peak
2402	87.74	96.44			31.79	5.88	46.37	100	175	Average
2483.5	50.51	58.84	74	-23.49	32.05	5.99	46.37	100	175	Peak
2483.5	43.41	51.74	54	-10.59	32.05	5.99	46.37	100	175	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	51.22	59.59	74	-22.78	32.14	5.86	46.37	100	140	Peak
2390	43.99	52.36	54	-10.01	32.14	5.86	46.37	100	140	Average
2402	91.2	99.53			32.16	5.88	46.37	100	140	Peak
2402	90.67	99			32.16	5.88	46.37	100	140	Average
2483.5	51.12	59.14	74	-22.88	32.36	5.99	46.37	100	140	Peak
2483.5	43.27	51.29	54	-10.73	32.36	5.99	46.37	100	140	Average

REMARKS:

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



<b>CHANNEL</b>	TX Channel 19	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	52.89	61.82	74	-21.11	32.56	4.88	46.37	143	125	Peak
2390	39.64	48.57	54	-14.36	32.56	4.88	46.37	143	125	Average
2440	93.69	102.54			32.58	4.94	46.37	143	125	Peak
2440	91.44	100.29			32.58	4.94	46.37	143	125	Average
2483.5	52.3	61.1	74	-21.7	32.59	4.98	46.37	143	125	Peak
2483.5	40.2	49	54	-13.8	32.59	4.98	46.37	143	125	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	51.72	61	74	-22.28	32.21	4.88	46.37	105	210	Peak
2390	39.2	48.48	54	-14.8	32.21	4.88	46.37	105	210	Average
2440	87.81	96.9			32.34	4.94	46.37	105	210	Peak
2440	85.45	94.54			32.34	4.94	46.37	105	210	Average
2483.5	52.1	61.03	74	-21.9	32.46	4.98	46.37	105	210	Peak
2483.5	40	48.93	54	-14	32.46	4.98	46.37	105	210	Average

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 39	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	52.06	60.99	74	-21.94	32.56	4.88	46.37	143	125	Peak
2390	39.51	48.44	54	-14.49	32.56	4.88	46.37	143	125	Average
2480	90.77	99.57			32.59	4.98	46.37	143	125	Peak
2480	88.36	97.16			32.59	4.98	46.37	143	125	Average
2483.5	52.34	61.14	74	-21.66	32.59	4.98	46.37	143	125	Peak
2483.5	40.03	48.83	54	-13.97	32.59	4.98	46.37	143	125	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	51.94	61.22	74	-22.06	32.21	4.88	46.37	105	210	Peak
2390	39.19	48.47	54	-14.81	32.21	4.88	46.37	105	210	Average
2480	85.04	93.98			32.45	4.98	46.37	105	210	Peak
2480	82.52	91.46			32.45	4.98	46.37	105	210	Average
2483.5	52.41	61.34	74	-21.59	32.46	4.98	46.37	105	210	Peak
2483.5	39.96	48.89	54	-14.04	32.46	4.98	46.37	105	210	Average

**REMARKS:**

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



**BT-LE\_2M**

<b>CHANNEL</b>	TX Channel 0	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	52.28	61.21	74	-21.72	32.56	4.88	46.37	143	125	Peak
2390	39.88	48.81	54	-14.12	32.56	4.88	46.37	143	125	Average
2402	92.79	101.71			32.56	4.89	46.37	143	125	Peak
2402	85.39	94.31			32.56	4.89	46.37	143	125	Average
2483.5	52.35	61.15	74	-21.65	32.59	4.98	46.37	143	125	Peak
2483.5	40.01	48.81	54	-13.99	32.59	4.98	46.37	143	125	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	51.67	60.95	74	-22.33	32.21	4.88	46.37	105	210	Peak
2390	39.44	48.72	54	-14.56	32.21	4.88	46.37	105	210	Average
2402	86.78	96.01			32.25	4.89	46.37	105	210	Peak
2402	79.56	88.79			32.25	4.89	46.37	105	210	Average
2483.5	52.13	61.06	74	-21.87	32.46	4.98	46.37	105	210	Peak
2483.5	40.02	48.95	54	-13.98	32.46	4.98	46.37	105	210	Average

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 19	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	49.72	58.48	74	-24.28	31.75	5.86	46.37	100	175	Peak
2390	42.68	51.44	54	-11.32	31.75	5.86	46.37	100	175	Average
2440	90.21	98.74			31.91	5.93	46.37	100	175	Peak
2440	88.39	96.92			31.91	5.93	46.37	100	175	Average
2483.5	51.44	59.77	74	-22.56	32.05	5.99	46.37	100	175	Peak
2483.5	42.79	51.12	54	-11.21	32.05	5.99	46.37	100	175	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	50.49	58.86	74	-23.51	32.14	5.86	46.37	130	305	Peak
2390	43.4	51.77	54	-10.6	32.14	5.86	46.37	130	305	Average
2440	92.03	100.21			32.26	5.93	46.37	130	305	Peak
2440	90.16	98.34			32.26	5.93	46.37	130	305	Average
2483.5	50.29	58.31	74	-23.71	32.36	5.99	46.37	130	305	Peak
2483.5	43.57	51.59	54	-10.43	32.36	5.99	46.37	130	305	Average

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 39	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	52.39	61.32	74	-21.61	32.56	4.88	46.37	143	125	Peak
2390	40.46	49.39	54	-13.54	32.56	4.88	46.37	143	125	Average
2480	89.77	98.57			32.59	4.98	46.37	143	125	Peak
2480	84.61	93.41			32.59	4.98	46.37	143	125	Average
2483.5	53.05	61.85	74	-20.95	32.59	4.98	46.37	143	125	Peak
2483.5	40.44	49.24	54	-13.56	32.59	4.98	46.37	143	125	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	52.33	61.61	74	-21.67	32.21	4.88	46.37	105	210	Peak
2390	40.12	49.4	54	-13.88	32.21	4.88	46.37	105	210	Average
2480	84.06	93			32.45	4.98	46.37	105	210	Peak
2480	78.71	87.65			32.45	4.98	46.37	105	210	Average
2483.5	52.54	61.47	74	-21.46	32.46	4.98	46.37	105	210	Peak
2483.5	40.1	49.03	54	-13.9	32.46	4.98	46.37	105	210	Average

REMARKS:

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



**BT-LE\_S2**

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

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>										
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	51.49	60.25	74	-22.51	31.75	5.86	46.37	180	55	Peak
2390	44.61	53.37	54	-9.39	31.75	5.86	46.37	180	55	Average
2402	93.07	101.77			31.79	5.88	46.37	180	55	Peak
2402	92.73	101.43			31.79	5.88	46.37	180	55	Average
2483.5	52.02	60.35	74	-21.98	32.05	5.99	46.37	180	55	Peak
2483.5	45.33	53.66	54	-8.67	32.05	5.99	46.37	180	55	Average

<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>										
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	52.42	60.79	74	-21.58	32.14	5.86	46.37	115	140	Peak
2390	46.34	54.71	54	-7.66	32.14	5.86	46.37	115	140	Average
2402	93.14	101.47			32.16	5.88	46.37	115	140	Peak
2402	92.89	101.22			32.16	5.88	46.37	115	140	Average
2483.5	52.41	60.43	74	-21.59	32.36	5.99	46.37	115	140	Peak
2483.5	45.77	53.79	54	-8.23	32.36	5.99	46.37	115	140	Average

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 19	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	51.25	60.18	74	-22.75	32.56	4.88	46.37	110	30	Peak
2390	39.09	48.02	54	-14.91	32.56	4.88	46.37	110	30	Average
2440	87.71	96.56			32.58	4.94	46.37	110	30	Peak
2440	85.91	94.76			32.58	4.94	46.37	110	30	Average
2483.5	51.92	60.72	74	-22.08	32.59	4.98	46.37	110	30	Peak
2483.5	39.46	48.26	54	-14.54	32.59	4.98	46.37	110	30	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	50.65	59.93	74	-23.35	32.21	4.88	46.37	115	10	Peak
2390	39.37	48.65	54	-14.63	32.21	4.88	46.37	115	10	Average
2440	89.93	99.02			32.34	4.94	46.37	115	10	Peak
2440	88.21	97.3			32.34	4.94	46.37	115	10	Average
2483.5	52.2	61.13	74	-21.8	32.46	4.98	46.37	115	10	Peak
2483.5	39.73	48.66	54	-14.27	32.46	4.98	46.37	115	10	Average

**REMARKS:**

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





<b>CHANNEL</b>	TX Channel 39	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	51.89	60.82	74	-22.11	32.56	4.88	46.37	110	30	Peak
2390	39.58	48.51	54	-14.42	32.56	4.88	46.37	110	30	Average
2480	92.19	100.99			32.59	4.98	46.37	110	30	Peak
2480	89.57	98.37			32.59	4.98	46.37	110	30	Average
2483.5	53.64	62.44	74	-20.36	32.59	4.98	46.37	110	30	Peak
2483.5	39.64	48.44	54	-14.36	32.59	4.98	46.37	110	30	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	51.47	60.75	74	-22.53	32.21	4.88	46.37	115	10	Peak
2390	39.39	48.67	54	-14.61	32.21	4.88	46.37	115	10	Average
2480	90.76	99.7			32.45	4.98	46.37	115	10	Peak
2480	89.01	97.95			32.45	4.98	46.37	115	10	Average
2483.5	52.05	60.98	74	-21.95	32.46	4.98	46.37	115	10	Peak
2483.5	39.74	48.67	54	-14.26	32.46	4.98	46.37	115	10	Average

**REMARKS:**

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



BT-LE\_S8

<b>CHANNEL</b>	TX Channel 0	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	51.53	60.46	74	-22.47	32.56	4.88	46.37	110	30	Peak
2390	39.09	48.02	54	-14.91	32.56	4.88	46.37	110	30	Average
2402	82.63	91.55			32.56	4.89	46.37	110	30	Peak
2402	80.29	89.21			32.56	4.89	46.37	110	30	Average
2483.5	52.14	60.94	74	-21.86	32.59	4.98	46.37	110	30	Peak
2483.5	39.79	48.59	54	-14.21	32.59	4.98	46.37	110	30	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	60.69	69.97	74	-13.31	32.21	4.88	46.37	110	125	Peak
2390	41.01	50.29	54	-12.99	32.21	4.88	46.37	110	125	Average
2402	92.56	101.79			32.25	4.89	46.37	110	125	Peak
2402	90.69	99.92			32.25	4.89	46.37	110	125	Average
2483.5	51.71	60.64	74	-22.29	32.46	4.98	46.37	110	125	Peak
2483.5	39.87	48.8	54	-14.13	32.46	4.98	46.37	110	125	Average

REMARKS:

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



<b>CHANNEL</b>	TX Channel 19	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	50.97	59.36	74	-23.03	33.1	4.88	46.37	110	125	Peak
2390	42.12	50.51	54	-11.88	33.1	4.88	46.37	110	125	Average
2440	95.94	104.18			33.19	4.94	46.37	110	125	Peak
2440	95.04	103.28			33.19	4.94	46.37	110	125	Average
2483.5	52.92	61.04	74	-21.08	33.27	4.98	46.37	110	125	Peak
2483.5	40.08	48.2	54	-13.92	33.27	4.98	46.37	110	125	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	50.18	59.46	74	-23.82	32.21	4.88	46.37	115	10	Peak
2390	42.21	51.49	54	-11.79	32.21	4.88	46.37	115	10	Average
2440	91.02	100.11			32.34	4.94	46.37	115	10	Peak
2440	88.34	97.43			32.34	4.94	46.37	115	10	Average
2483.5	51.24	60.17	74	-22.76	32.46	4.98	46.37	115	10	Peak
2483.5	39.19	48.12	54	-14.81	32.46	4.98	46.37	115	10	Average

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 39	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	52.86	61.62	74	-21.14	31.75	5.86	46.37	113	125	Peak
2390	45.23	53.99	54	-8.77	31.75	5.86	46.37	113	125	Average
2480	94.37	102.72			32.04	5.98	46.37	113	125	Peak
2480	93.76	102.11			32.04	5.98	46.37	113	125	Average
2483.5	53.27	61.6	74	-20.73	32.05	5.99	46.37	113	125	Peak
2483.5	46.09	54.42	54	-7.91	32.05	5.99	46.37	113	125	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	52.64	61.01	74	-21.36	32.14	5.86	46.37	100	305	Peak
2390	45.99	54.36	54	-8.01	32.14	5.86	46.37	100	305	Average
2480	92.44	100.48			32.35	5.98	46.37	100	305	Peak
2480	91.95	99.99			32.35	5.98	46.37	100	305	Average
2483.5	53.61	61.63	74	-20.39	32.36	5.99	46.37	100	305	Peak
2483.5	45.51	53.53	54	-8.49	32.36	5.99	46.37	100	305	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 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. 25,21	Feb. 24,22
Power Meter	ANRITSU	ML2495A	1506002	Feb. 26,20	Feb. 25,21
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 25,21	Feb. 24,22
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 26,20	Feb. 25,21
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Apr. 27,20	Apr. 26,21
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Apr. 27,21	Apr. 26,22
Power Sensor	ANRITSU	MA2411B	1339352	Feb. 25,21	Feb. 24,22
Power Sensor	ANRITSU	MA2411B	1339352	Feb. 26,20	Feb. 25,21
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 26,20	Aug. 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

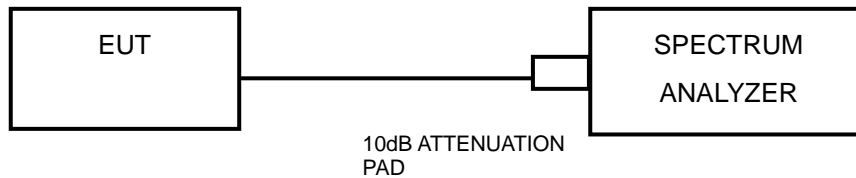
1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points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

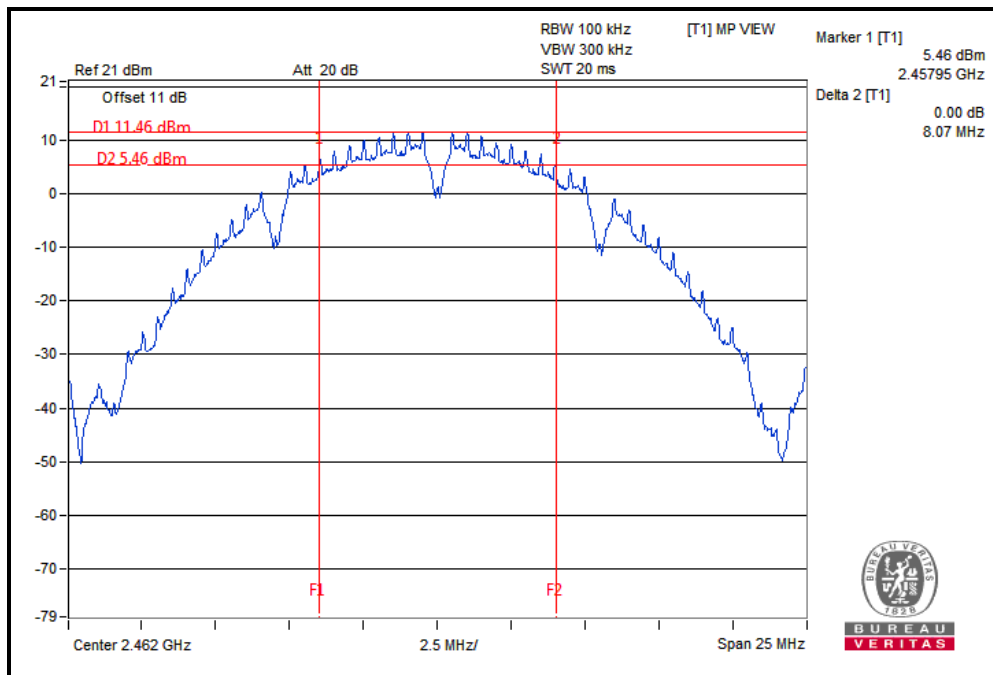
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



### 3.3.7 TEST RESULTS

#### 802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.06	0.5	PASS
6	2437	8.54	0.5	PASS
11	2462	8.07	0.5	PASS



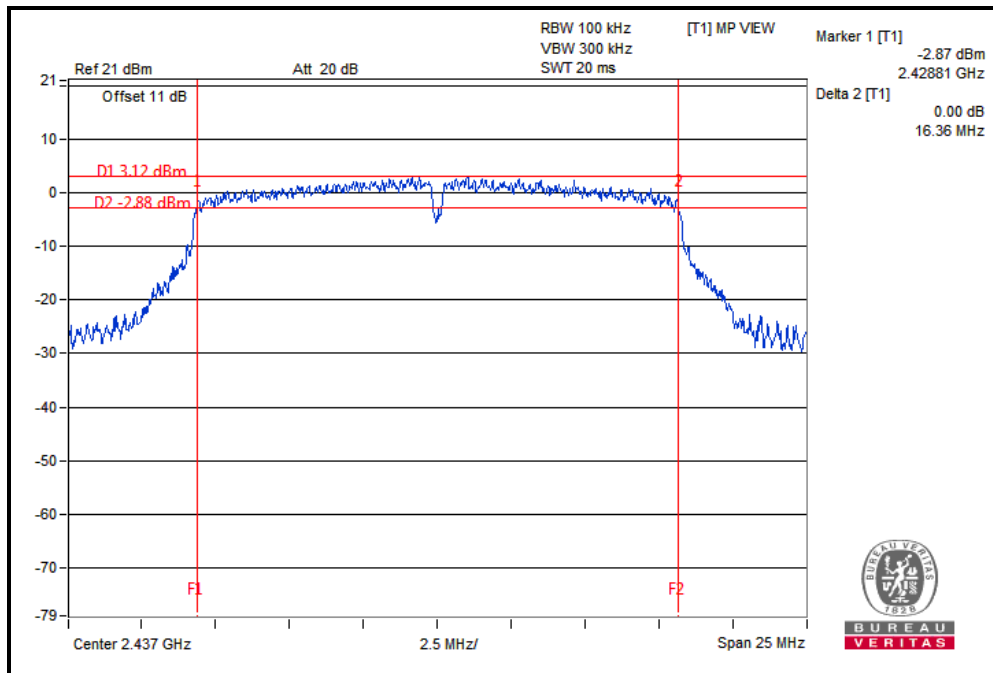


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Test Report No.: RF210603W002-5

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.42	0.5	PASS
6	2437	16.46	0.5	PASS
11	2462	15.67	0.5	PASS





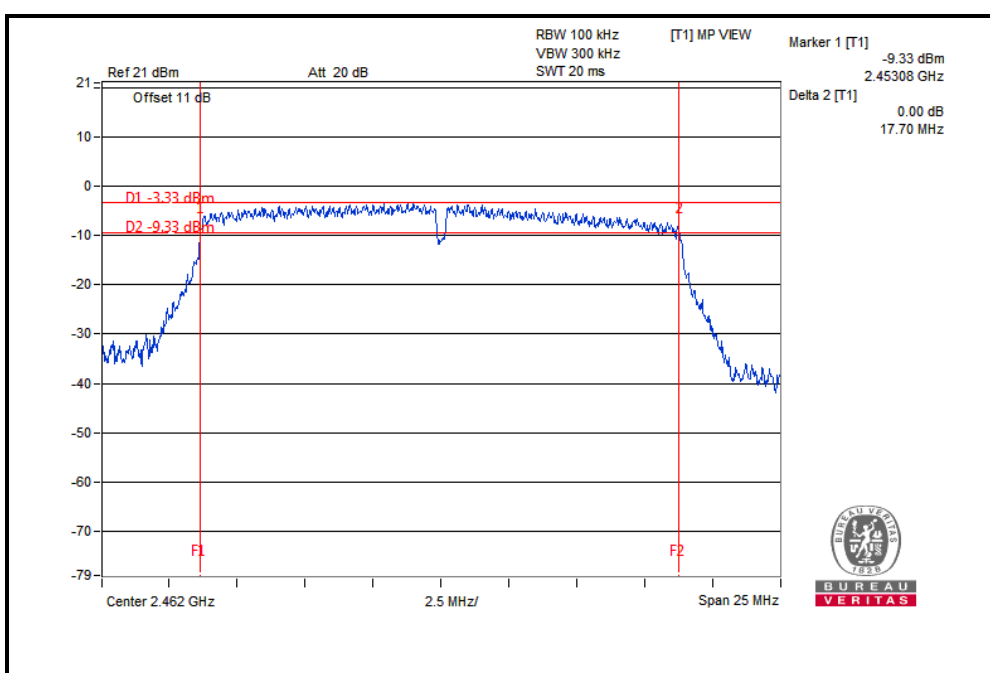


**BUREAU  
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Test Report No.: RF210603W002-5

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.40	0.5	PASS
6	2437	17.69	0.5	PASS
11	2462	17.70	0.5	PASS



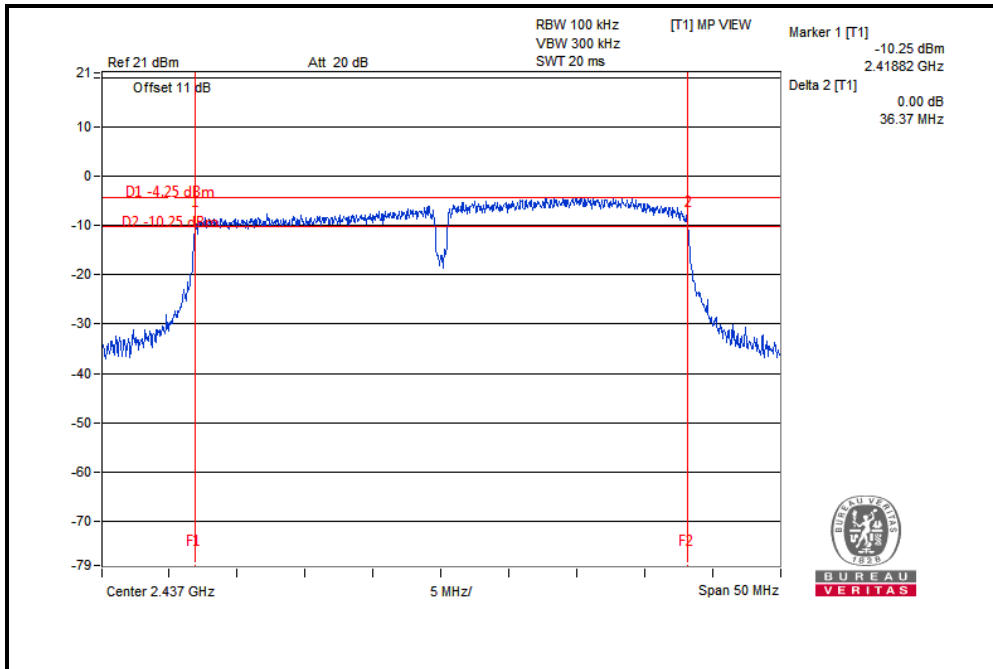


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Test Report No.: RF210603W002-5

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	32.52	0.5	PASS
6	2437	36.37	0.5	PASS
9	2452	25.58	0.5	PASS



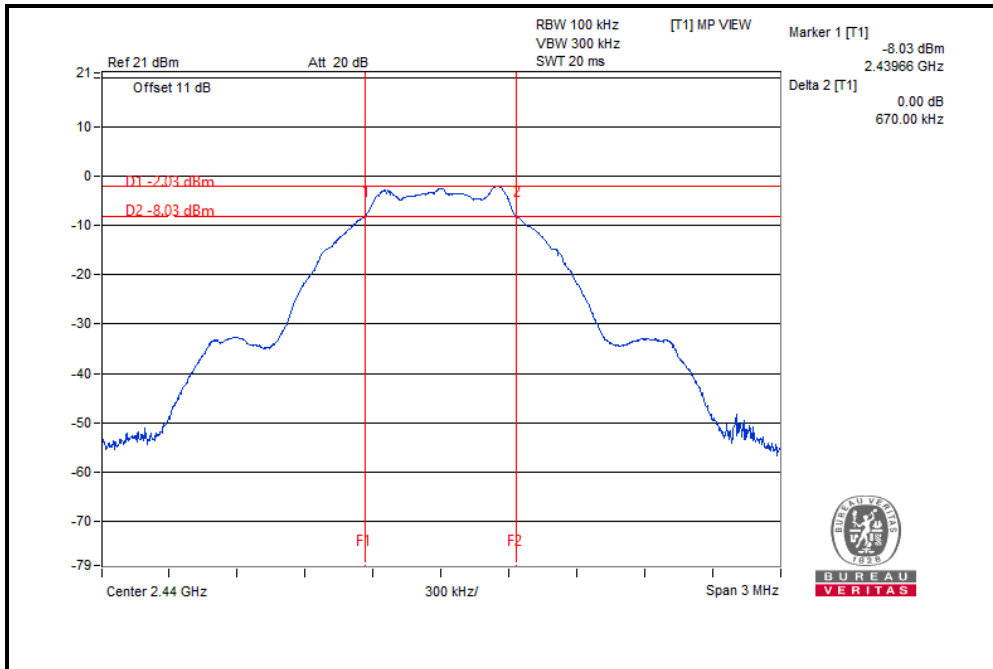


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Test Report No.: RF210603W002-5

**BT-LE (1MHz)**

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



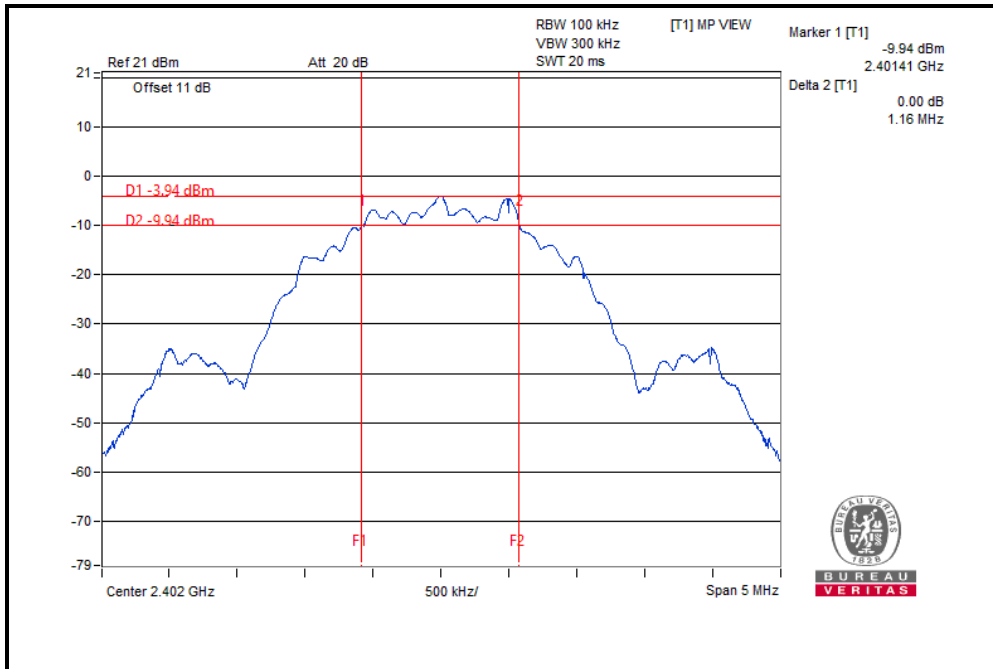


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Test Report No.: RF210603W002-5

**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



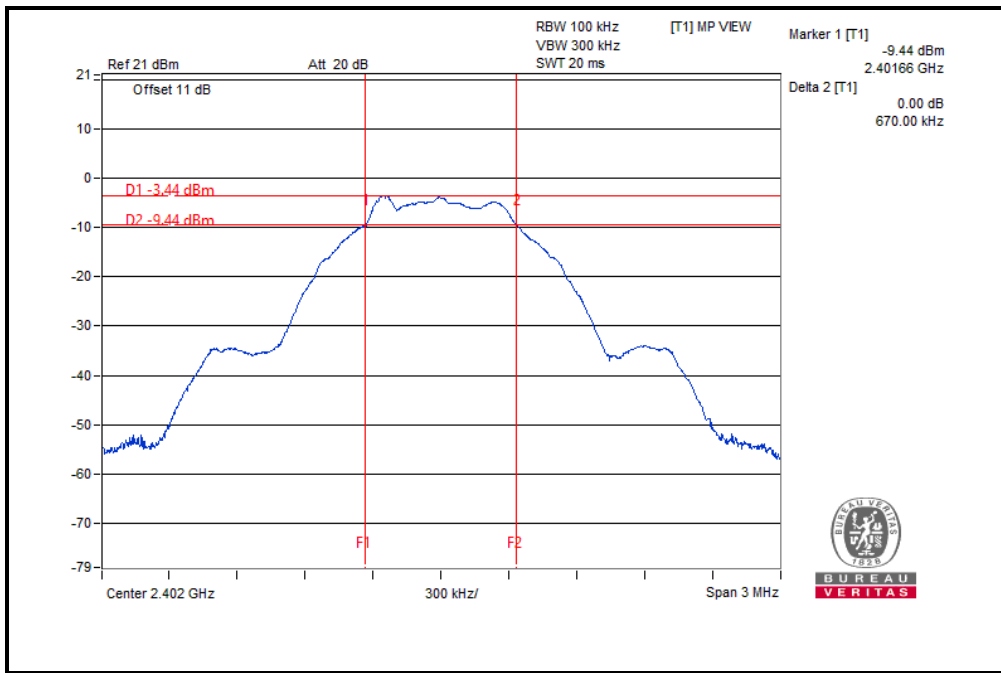


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Test Report No.: RF210603W002-5

**BT-LE (S2)**

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	0.67	0.5	PASS



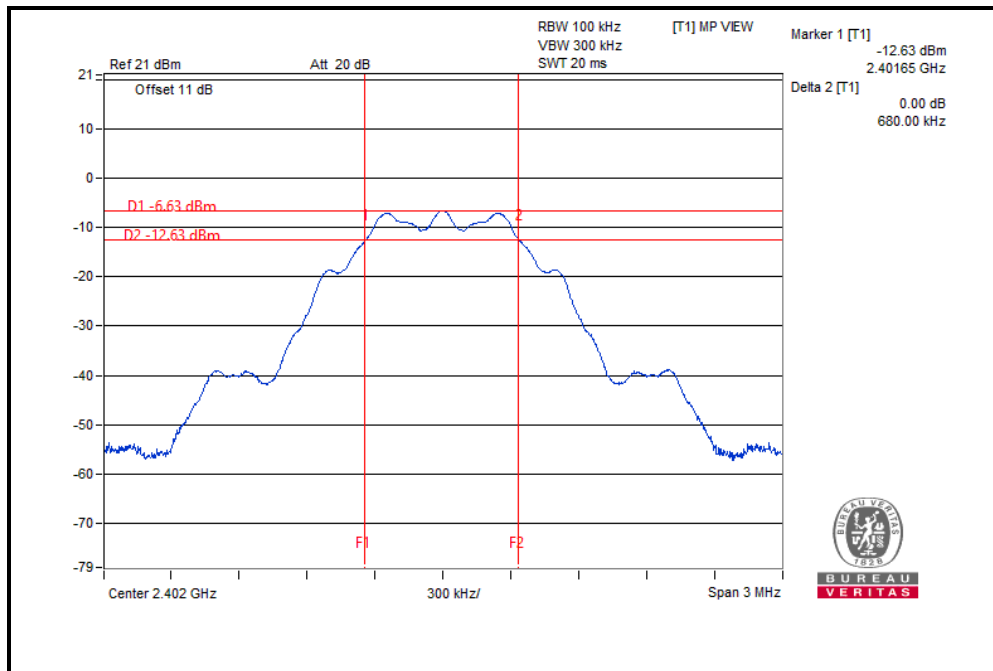


**BUREAU VERITAS**

Test Report No.: RF210603W002-5

**BT-LE (S8)**

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.68	0.5	PASS
19	2440	0.68	0.5	PASS
39	2480	0.68	0.5	PASS



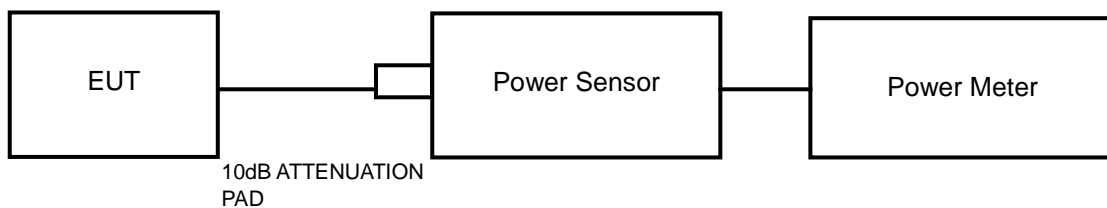


### 3.4 CONDUCTED OUTPUT POWER

#### 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



#### 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	22.02	159.22	1	PASS
6	2437	20.64	115.88	1	PASS
11	2462	21.28	134.28	1	PASS

##### 802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
1	2412	24.76	299.23	1	PASS
6	2437	25.10	323.59	1	PASS
11	2462	24.08	255.86	1	PASS

##### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
1	2412	24.86	306.20	1	PASS
6	2437	25.21	<b>331.89</b>	1	PASS
11	2462	24.45	278.61	1	PASS

##### 802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
3	2422	25.21	331.89	1	PASS
6	2437	24.58	287.08	1	PASS
9	2452	22.75	188.36	1	PASS





**BT-LE (1MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.46	0.57	1	PASS
19	2440	-1.64	<b>0.69</b>	1	PASS
39	2480	-2.06	0.62	1	PASS

**BT-LE (2MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.56	0.55	1	PASS
19	2440	-1.68	0.68	1	PASS
39	2480	-2.02	0.63	1	PASS

**BT-LE (S2)**

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.58	0.55	1	PASS
19	2440	-1.68	0.68	1	PASS
39	2480	-2.08	0.62	1	PASS

**BT-LE (S8)**

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.51	0.56	1	PASS
19	2440	-1.62	0.69	1	PASS
39	2480	-1.98	0.63	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	19.82	N/A
6	2437	19.04	N/A
11	2462	19.12	N/A

#### 802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	17.12	N/A
6	2437	17.68	N/A
11	2462	15.18	N/A

#### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	17.08	N/A
6	2437	16.70	N/A
11	2462	14.58	N/A

#### 802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
3	2422	15.40	N/A
6	2437	14.26	N/A
9	2452	11.92	N/A



**BT-LE (1MHz)**

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>AVERAGE POWER (dBm)</b>	<b>PASS/FAIL</b>
0	2402	-4.32	N/A
19	2440	-3.25	N/A
39	2480	-3.76	N/A

**BT-LE (2MHz)**

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>AVERAGE POWER (dBm)</b>	<b>PASS/FAIL</b>
0	2402	-5.82	N/A
19	2440	-4.87	N/A
39	2480	-5.26	N/A

**BT-LE (S2)**

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>AVERAGE POWER (dBm)</b>	<b>PASS/FAIL</b>
0	2402	-4.28	N/A
19	2440	-2.92	N/A
39	2480	-3.65	N/A

**BT-LE (S8)**

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>AVERAGE POWER (dBm)</b>	<b>PASS/FAIL</b>
0	2402	-3.85	N/A
19	2440	-2.66	N/A
39	2480	-3.22	N/A

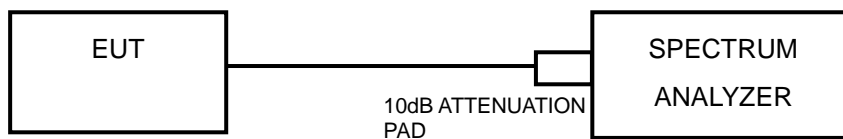


### 3.5 POWER SPECTRAL DENSITY MEASUREMENT

#### 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  $\geq 3 \times$  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

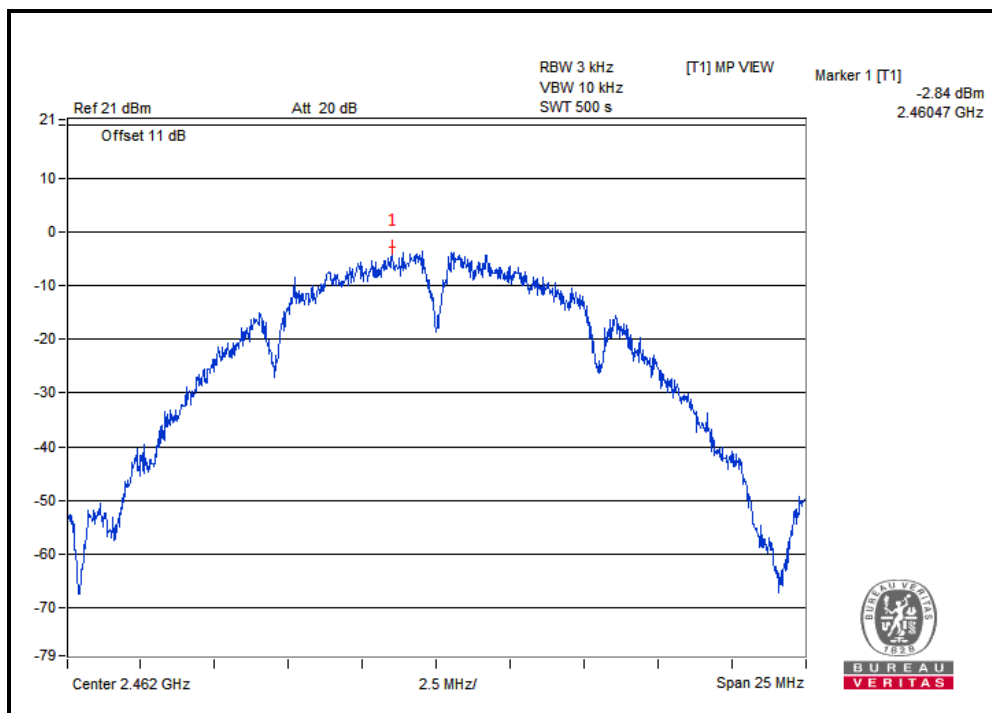
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



### 3.5.7 TEST RESULTS

#### 802.11b

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-3.19	8	PASS
6	2437	-4.89	8	PASS
11	2462	-2.84	8	PASS

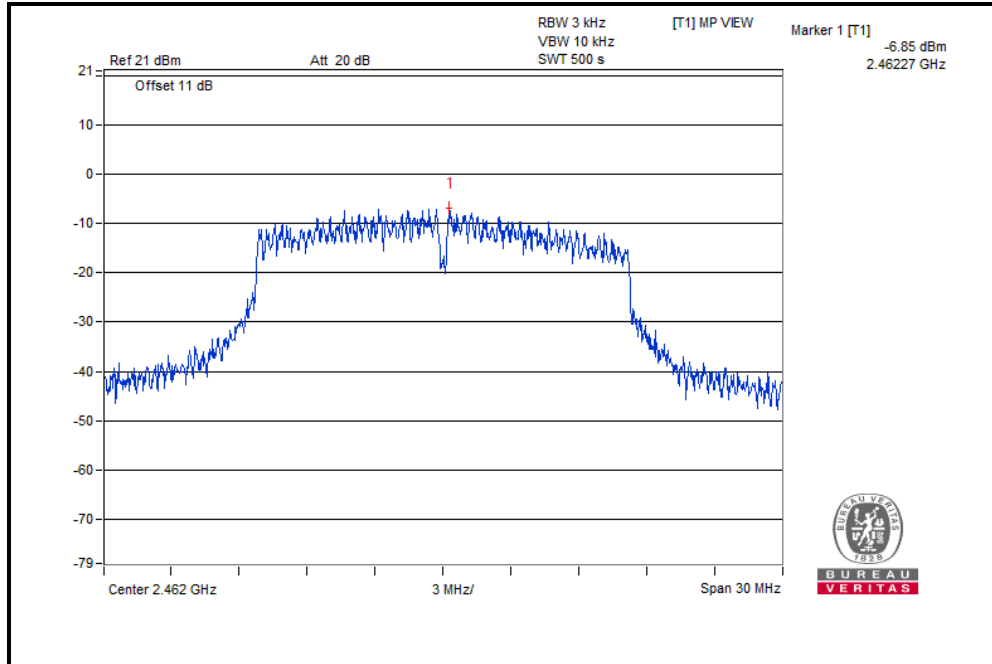




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802.11g

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Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-6.86	8	PASS
6	2437	-7.50	8	PASS
11	2462	-6.85	8	PASS



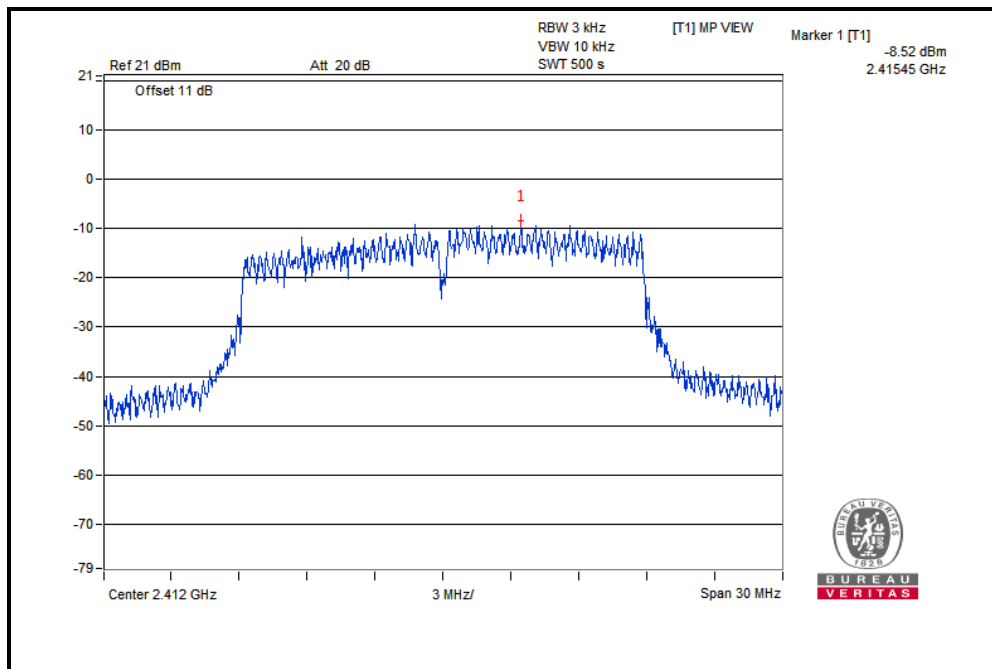


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VERITAS**

Test Report No.: RF210603W002-5

802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-8.52	8	PASS
6	2437	-8.58	8	PASS
11	2462	-15.72	8	PASS



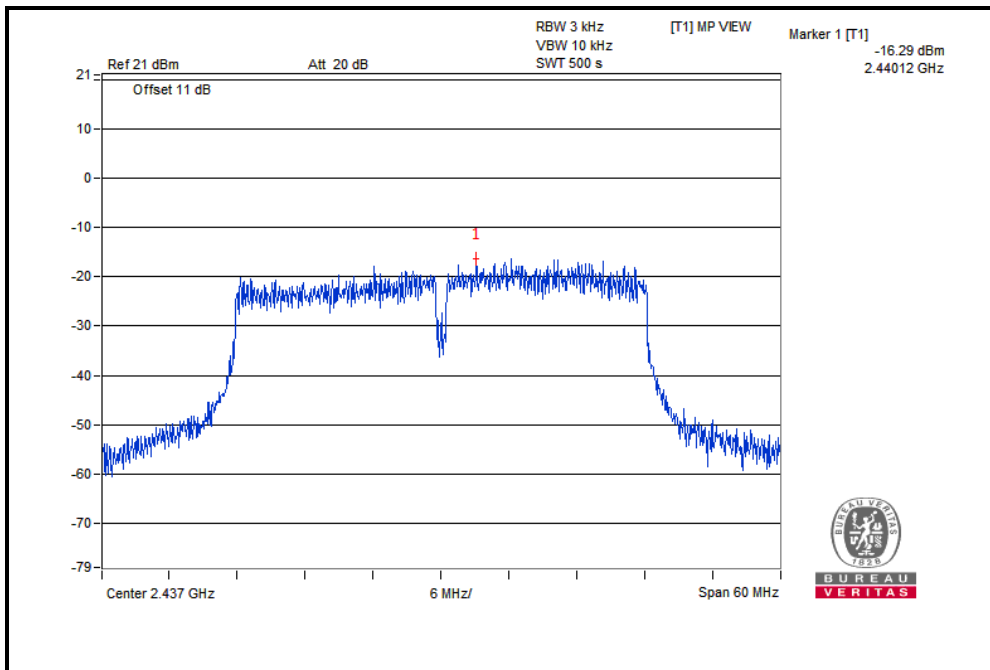


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VERITAS**

**Test Report No.: RF210603W002-5**

**802.11n (40MHz)**

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-16.69	8	PASS
6	2437	-16.29	8	PASS
9	2452	-17.89	8	PASS





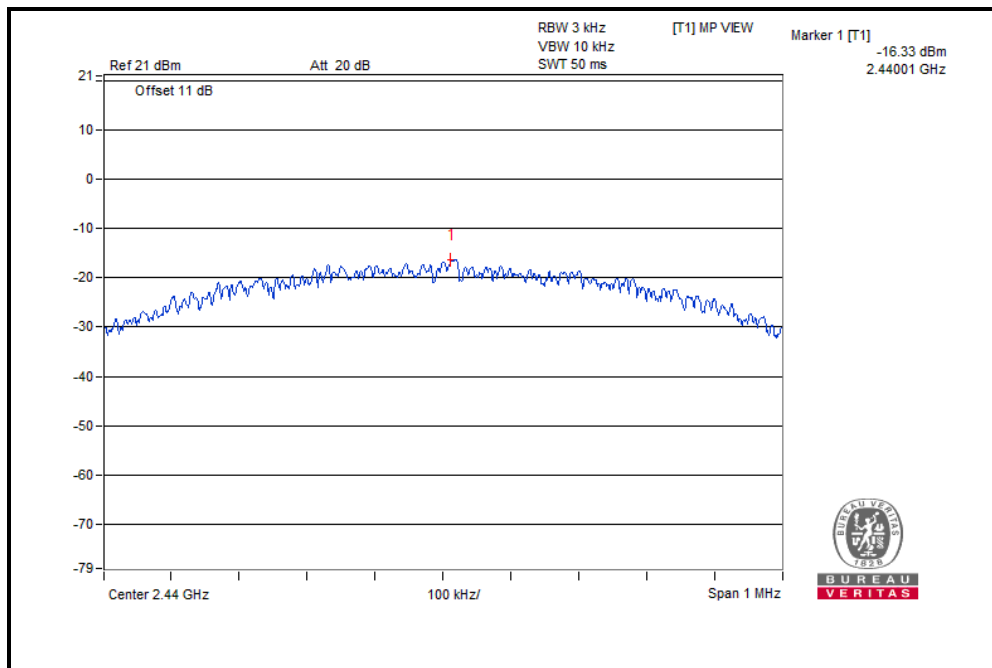


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**BT-LE (1MHz)**

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-17.68	8	PASS
19	2440	-16.33	8	PASS
39	2480	-17.03	8	PASS



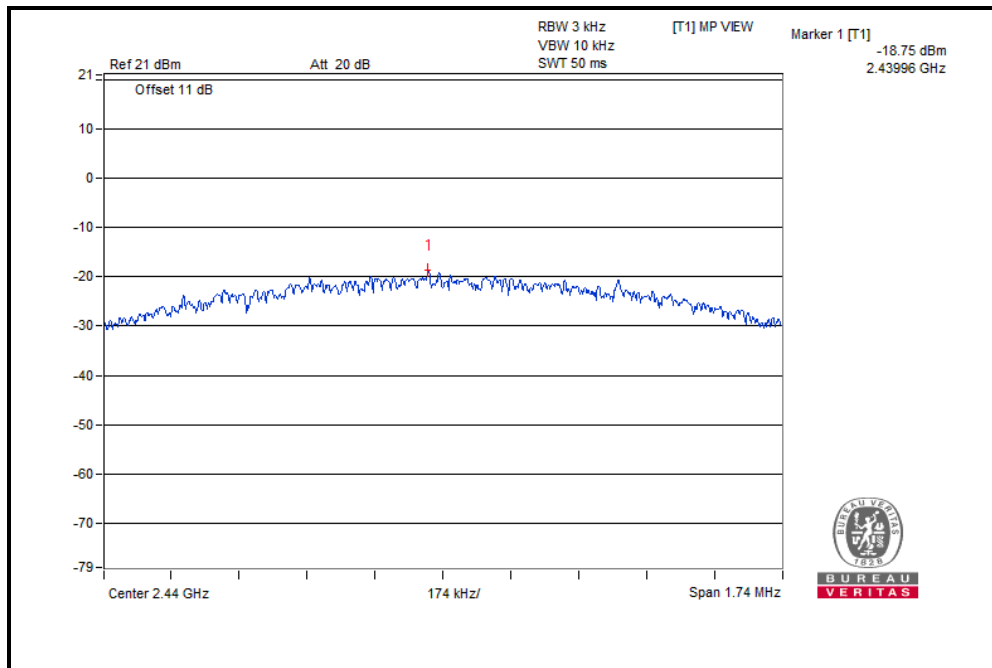


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VERITAS**

**Test Report No.: RF210603W002-5**

**BT-LE (2MHz)**

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-20.04	8	PASS
19	2440	-18.75	8	PASS
39	2480	-19.42	8	PASS



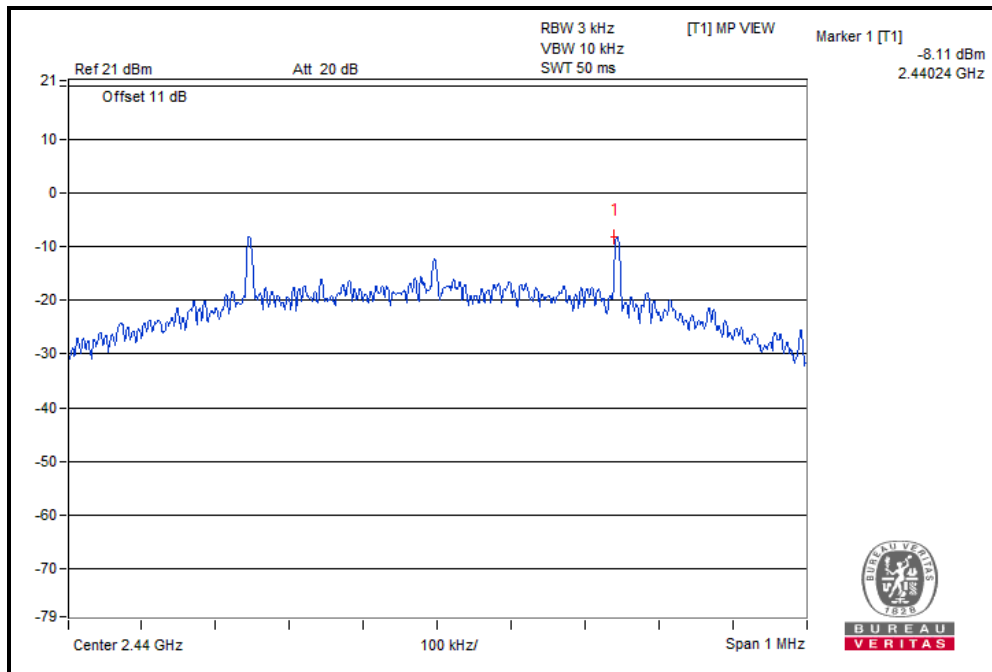


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VERITAS**

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**BT-LE (S2)**

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-9.44	8	PASS
19	2440	-8.11	8	PASS
39	2480	-8.81	8	PASS



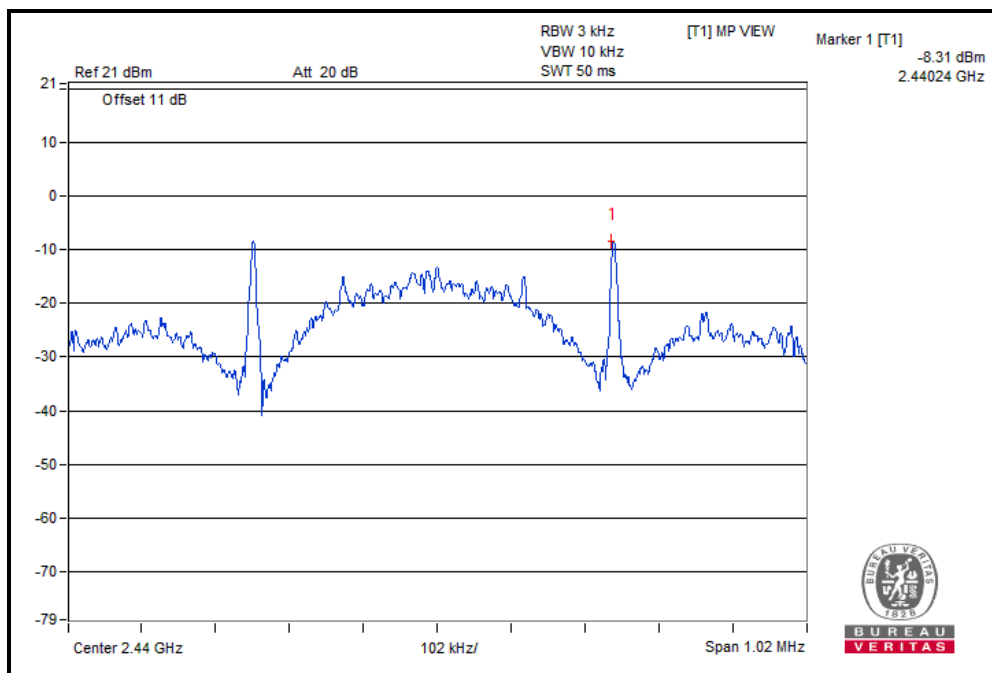


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VERITAS**

Test Report No.: RF210603W002-5

**BT-LE (S8)**

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-9.52	8	PASS
19	2440	-8.31	8	PASS
39	2480	-8.92	8	PASS



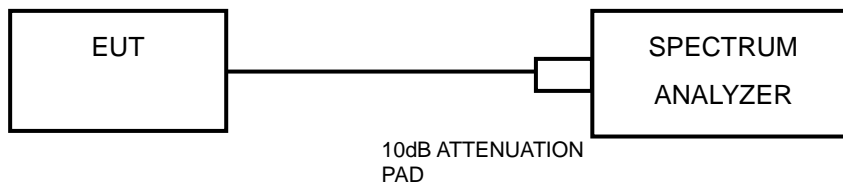


### 3.6 OUT OF BAND EMISSION MEASUREMENT

#### 3.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

Below  $-20\text{dB}$  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  $\geq$  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 OOB

1. Set RBW = 100 kHz.
2. Set VBW  $\geq$  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.

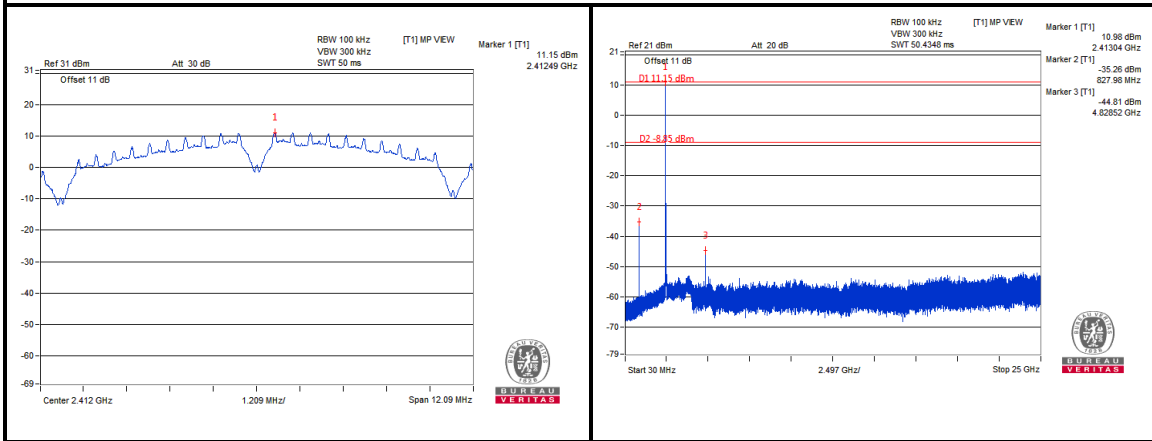


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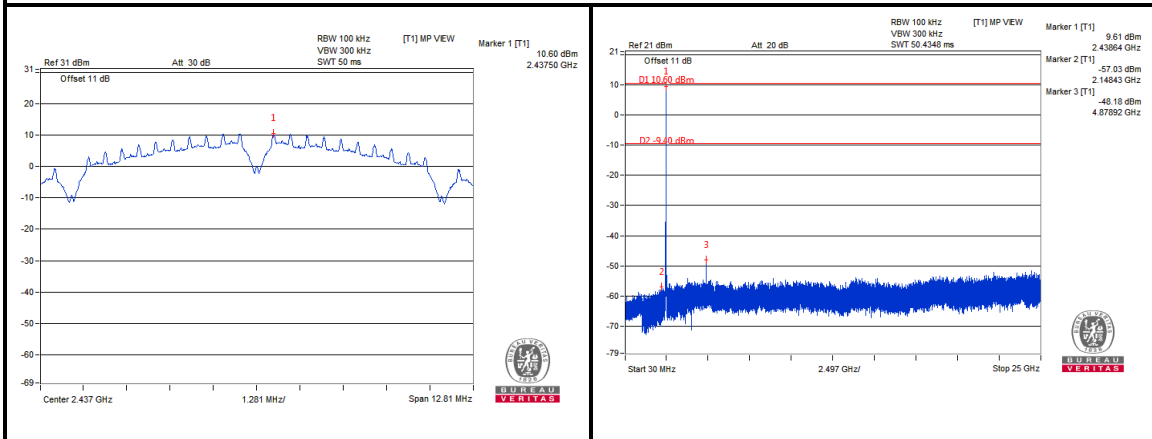
Test Report No.: RF210603W002-5

### 802.11b

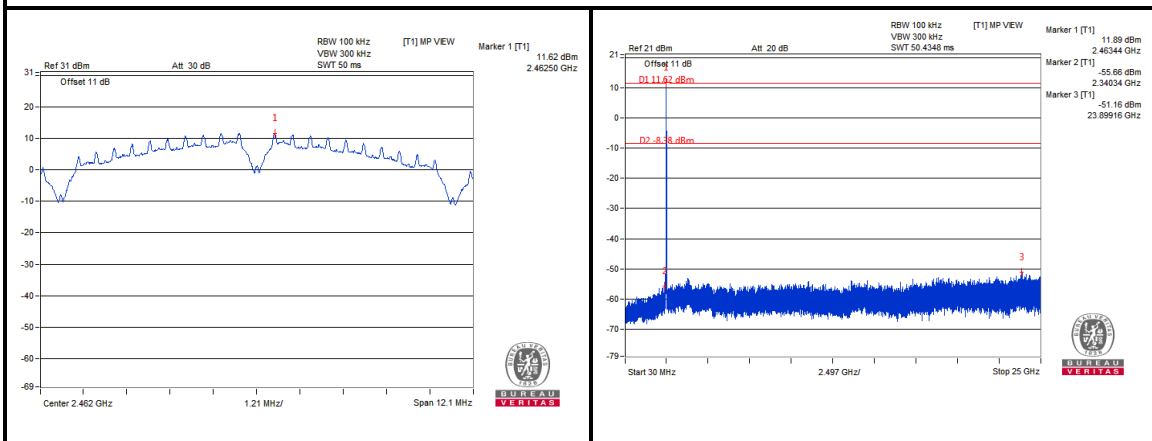
#### CH 1



#### CH 6



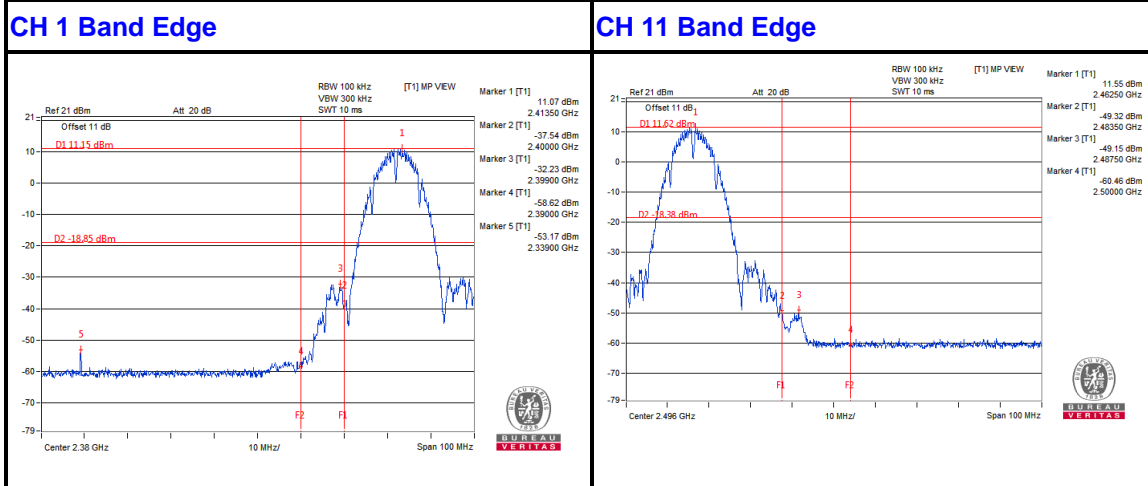
#### CH 11





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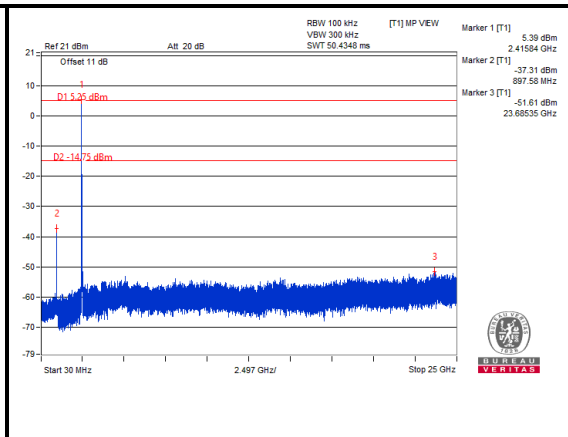
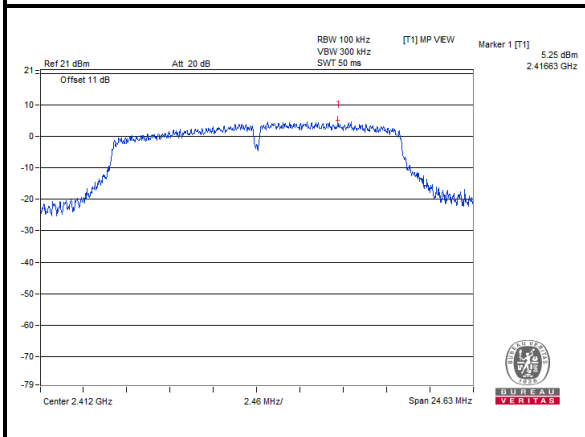


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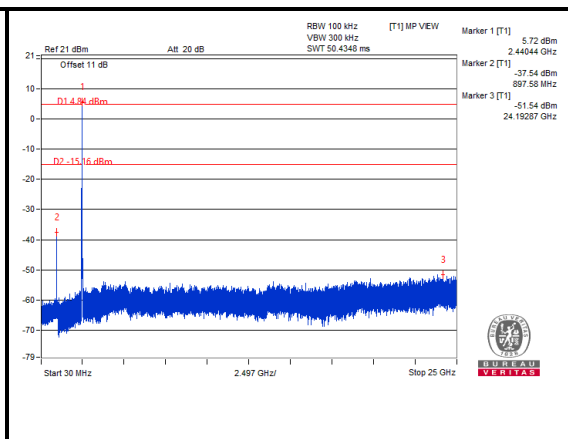
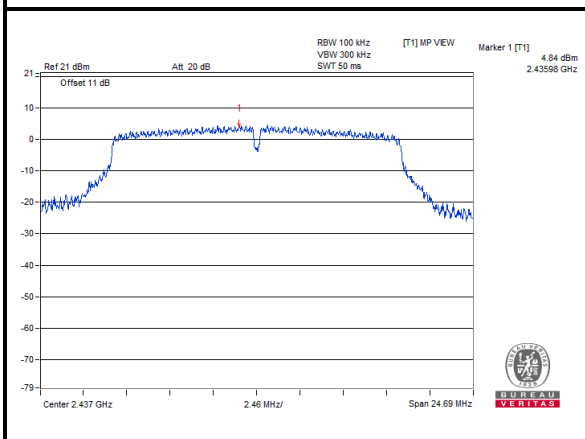
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### 802.11g

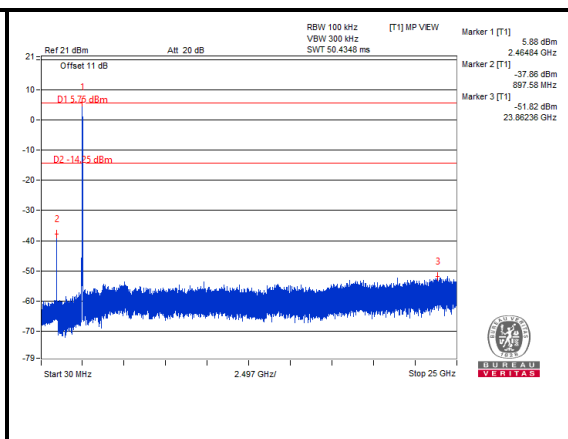
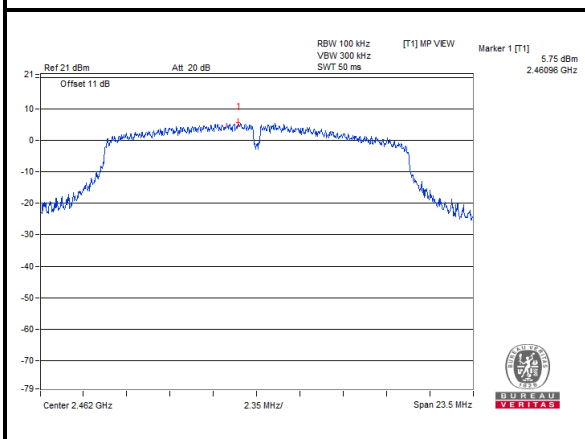
#### CH 1



#### CH 6



#### CH 11

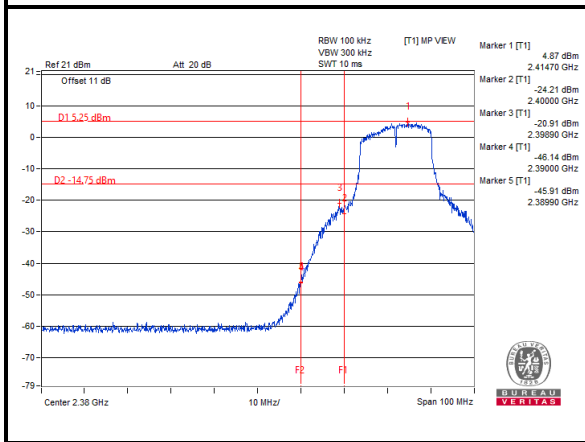




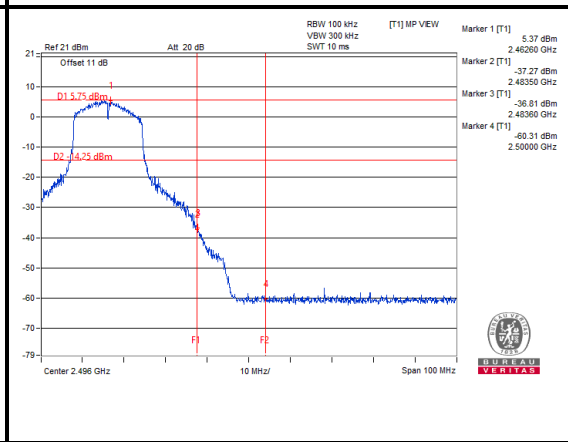
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Test Report No.: RF210603W002-5

### CH 1 Band Edge

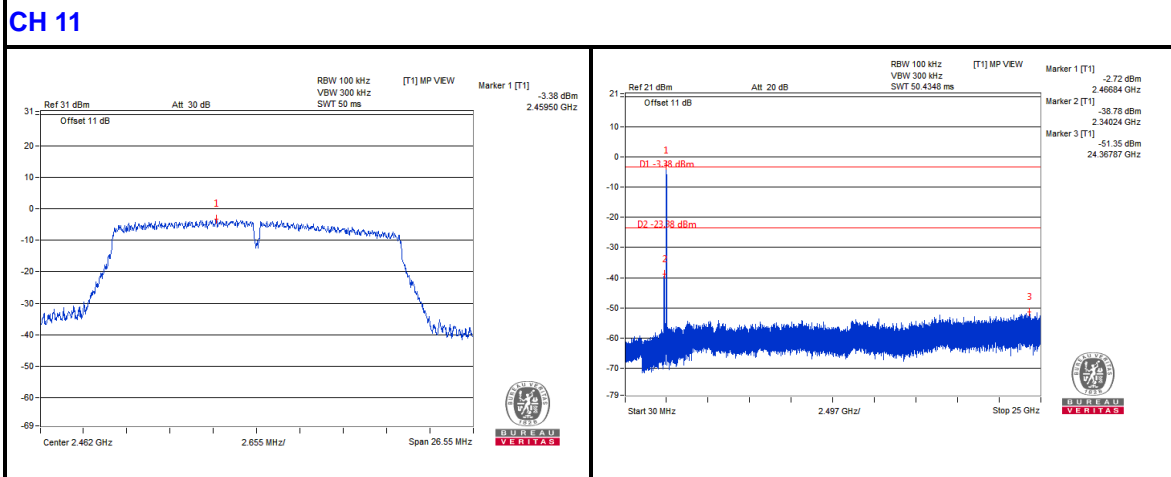
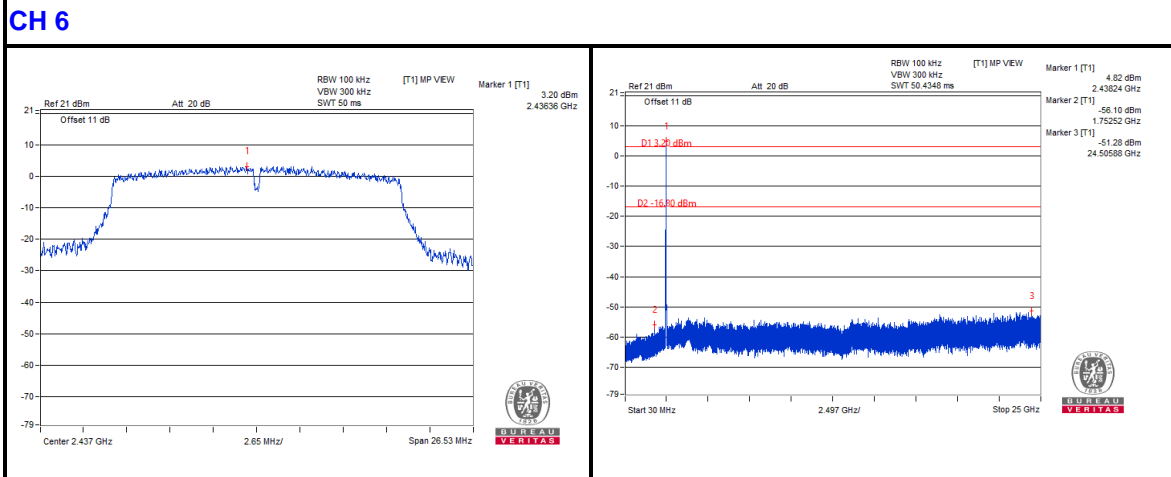
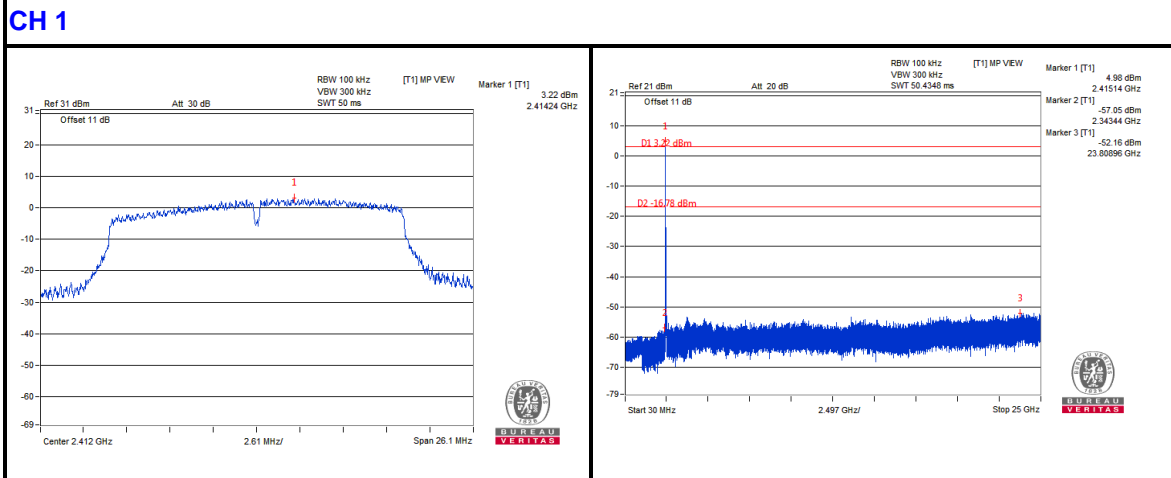


### CH 11 Band Edge





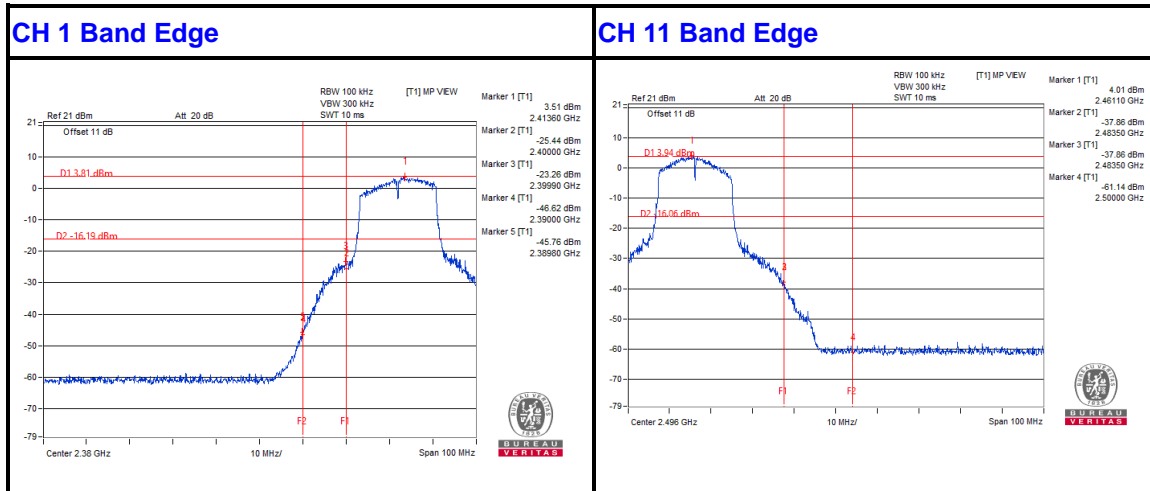
### 802.11n (20MHz)





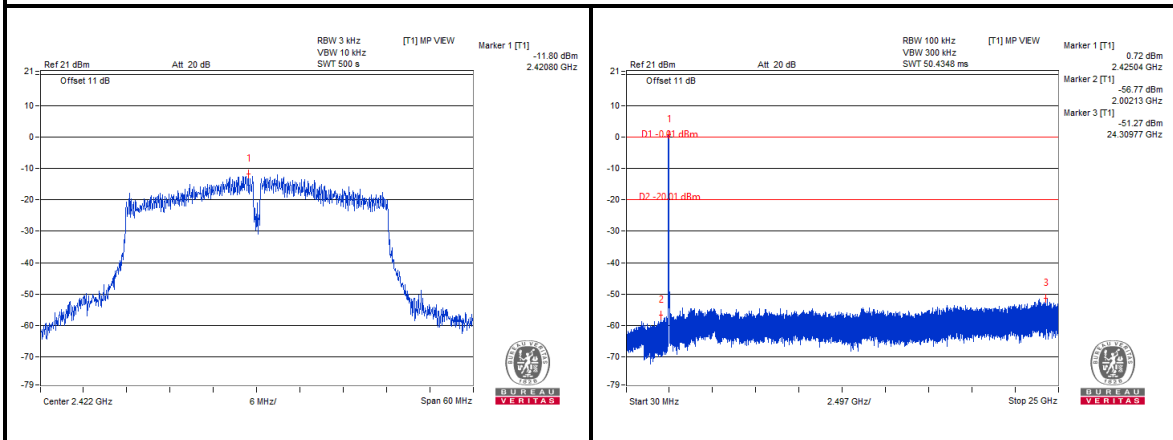
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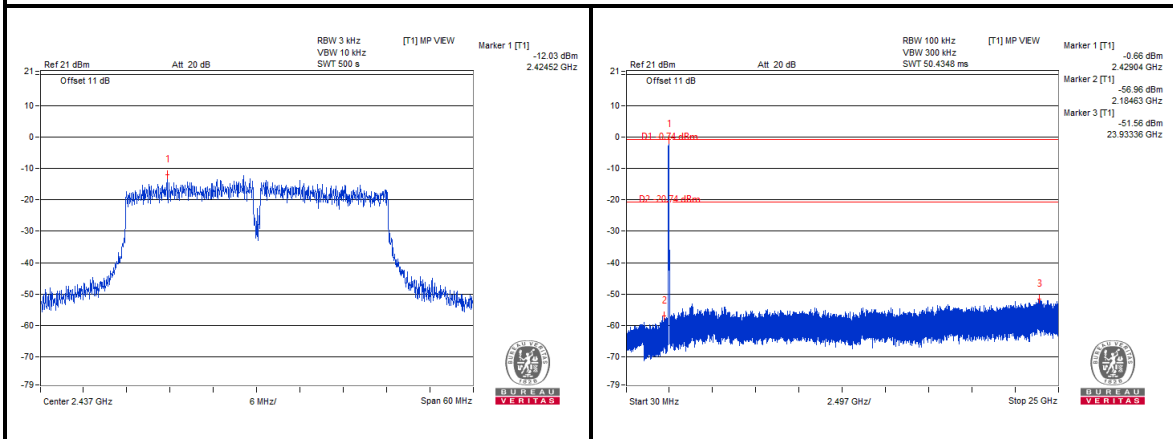




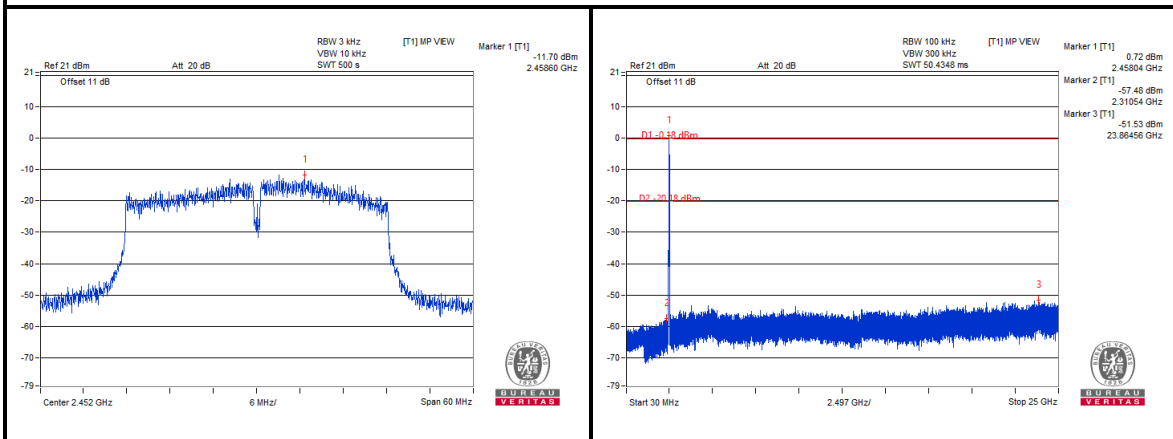
**CH 3**



**CH 6**



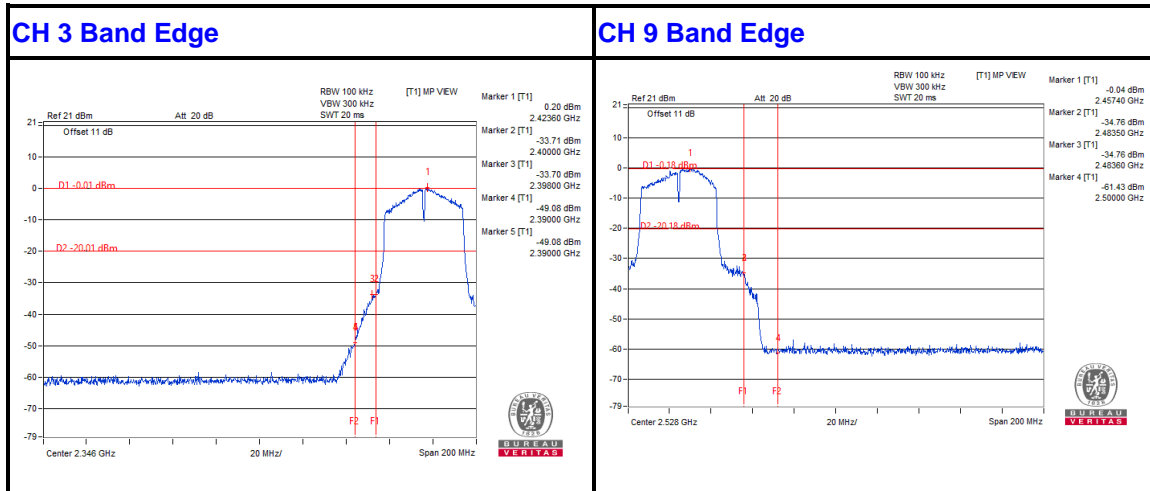
**CH 9**





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Test Report No.: RF210603W002-5



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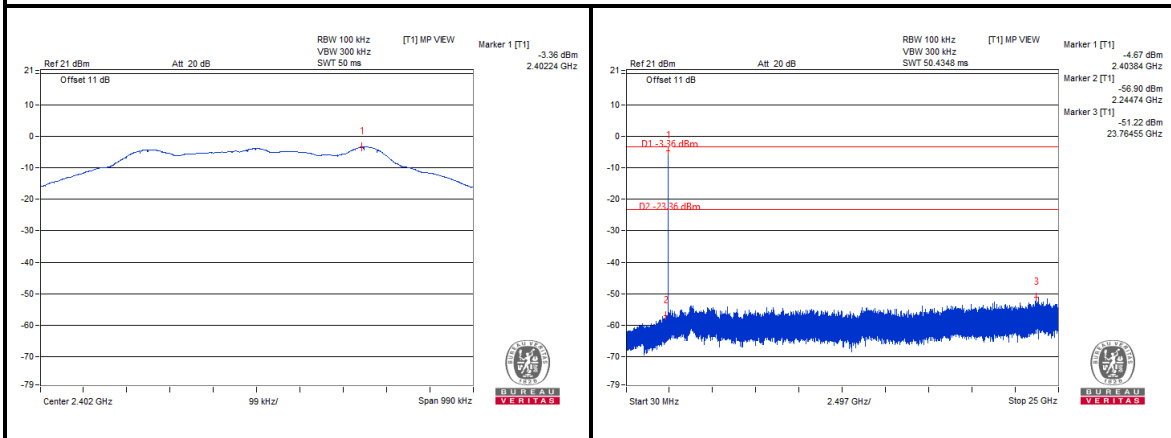


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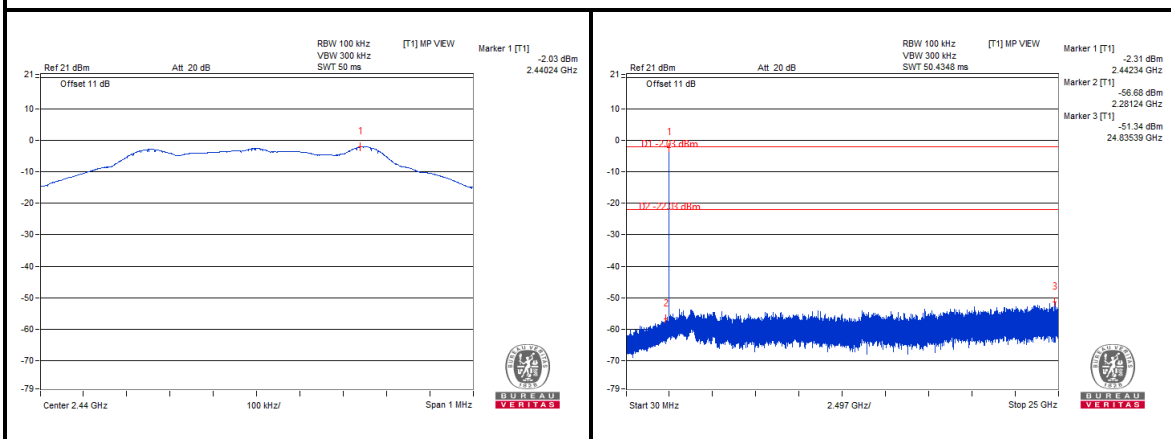
Test Report No.: RF210603W002-5

### BT-LE (1MHz)

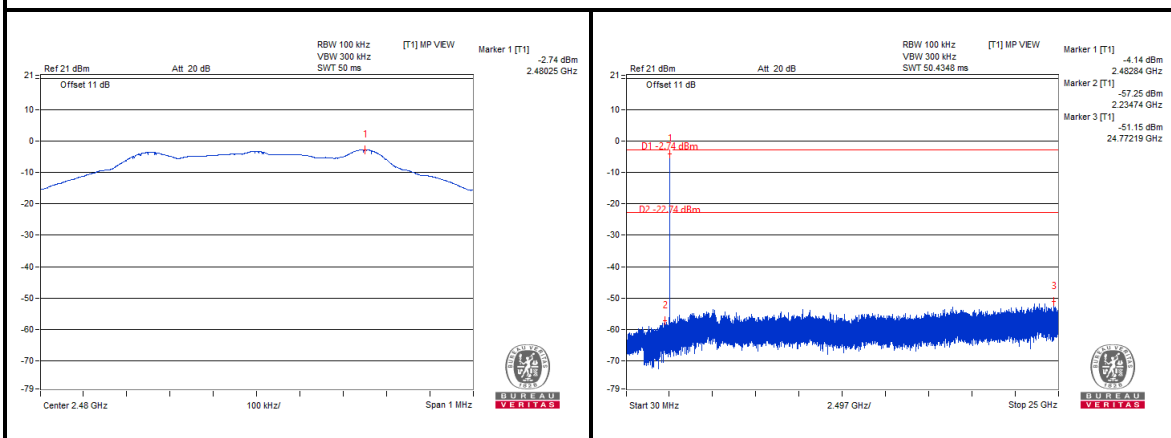
#### CH 0



#### CH 19



#### CH 39

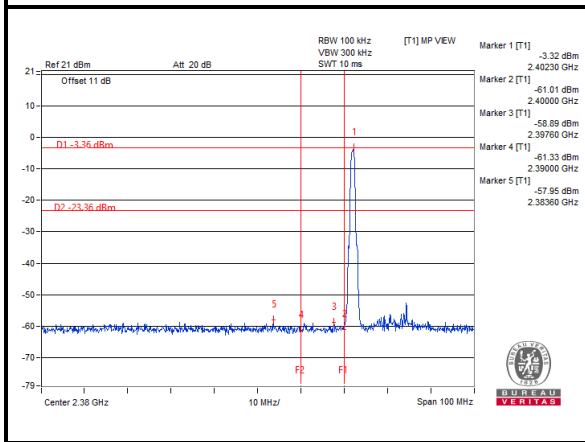




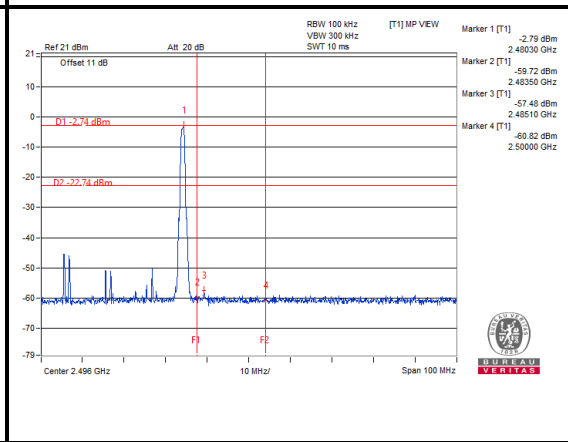
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### CH 0 Band Edge



### CH 39 Band Edge





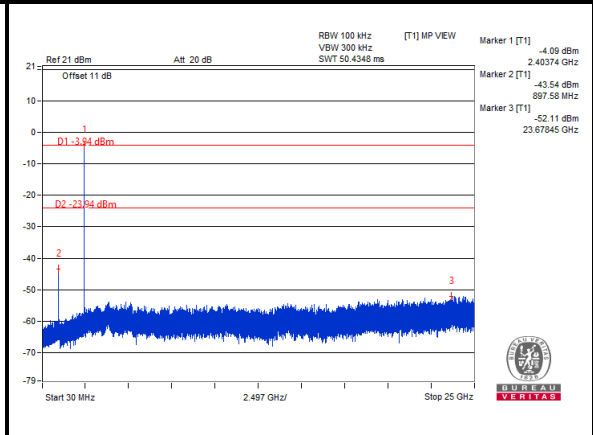
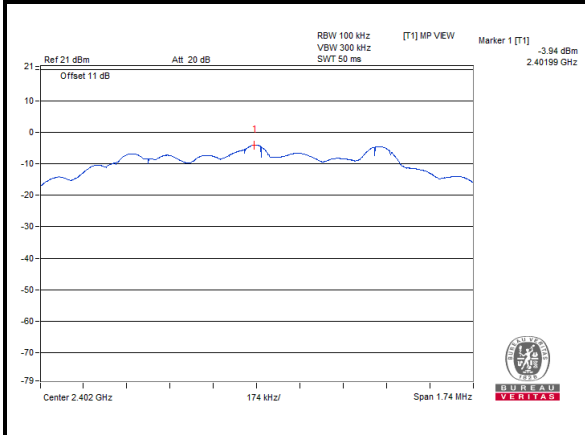


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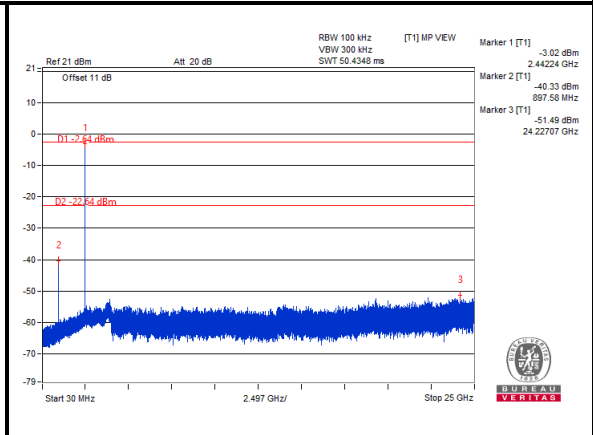
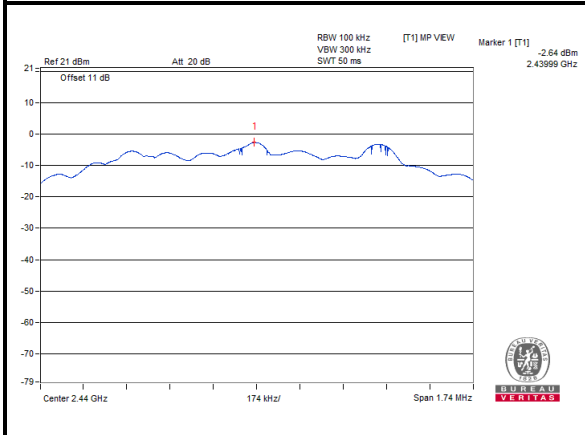
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### BT-LE (2MHz)

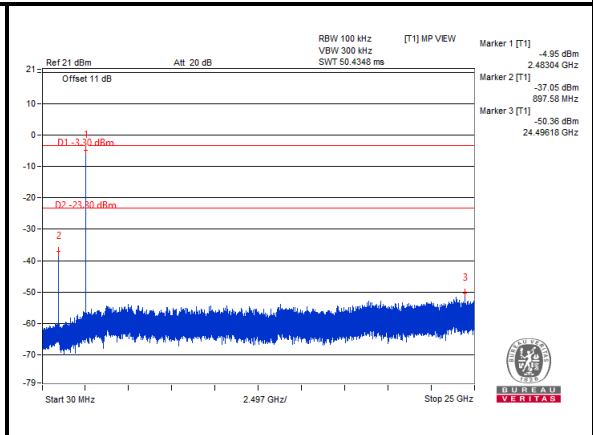
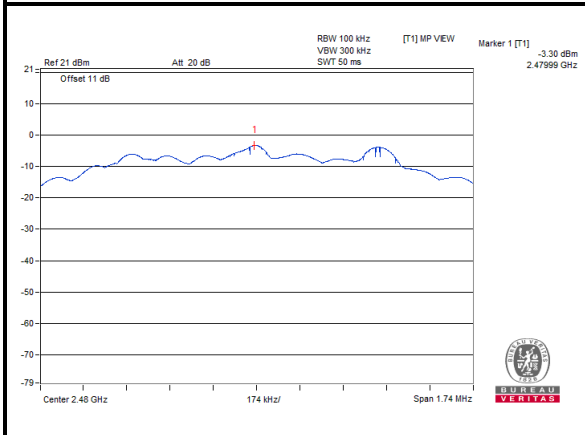
#### CH 0



#### CH 19



#### CH 39

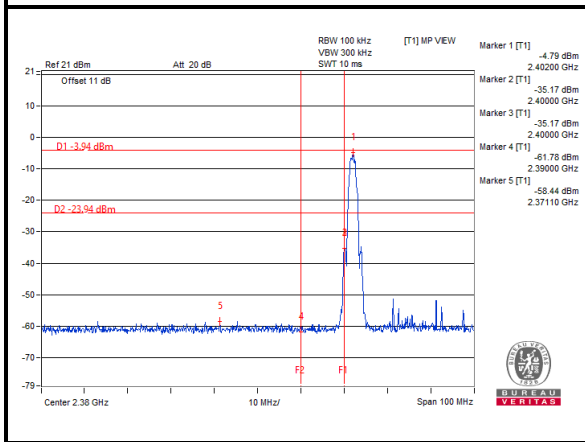




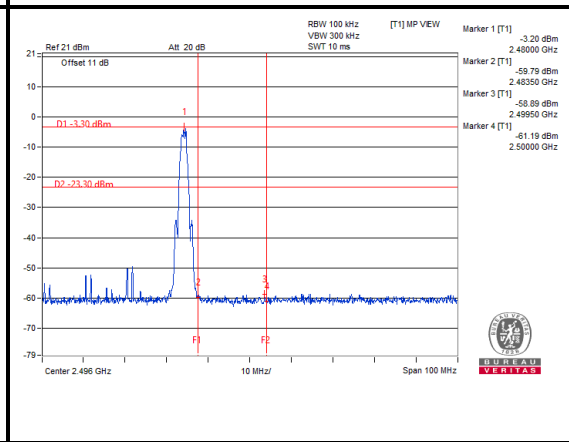
BUREAU VERITAS

Test Report No.: RF210603W002-5

### CH 0 Band Edge



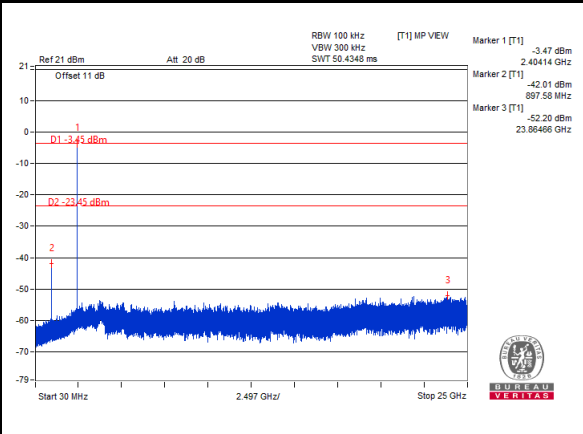
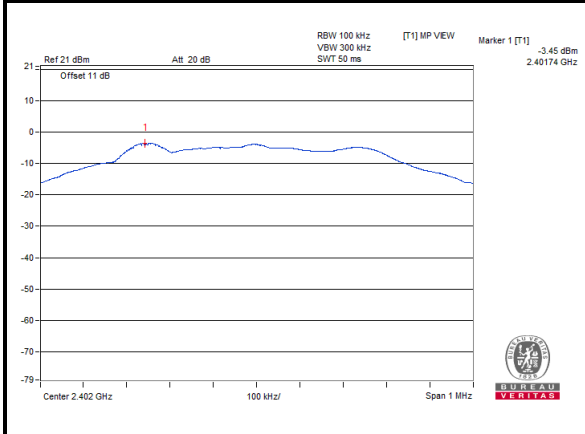
### CH 39 Band Edge



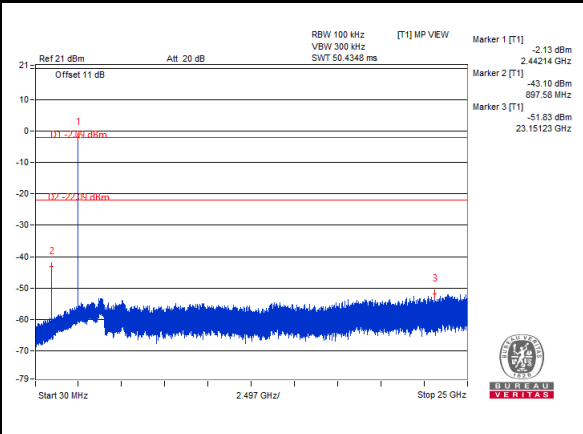
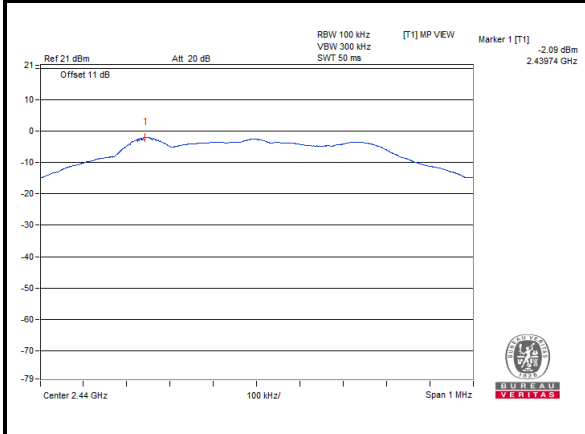


**BT-LE (S2)**

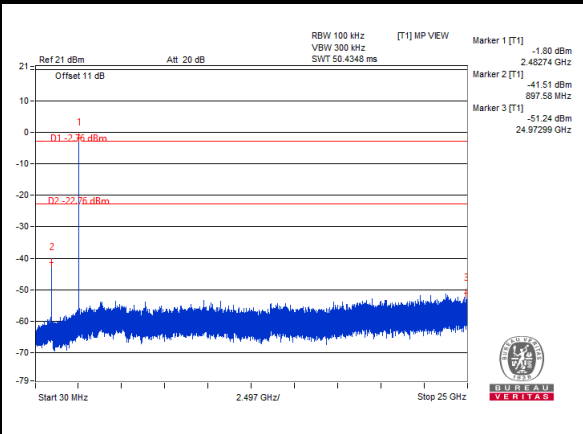
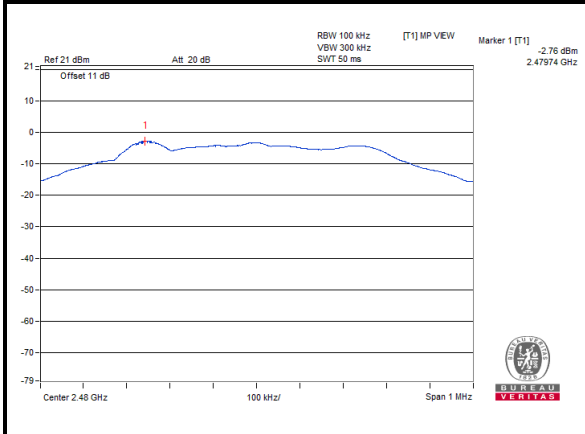
**CH 0**



**CH 19**



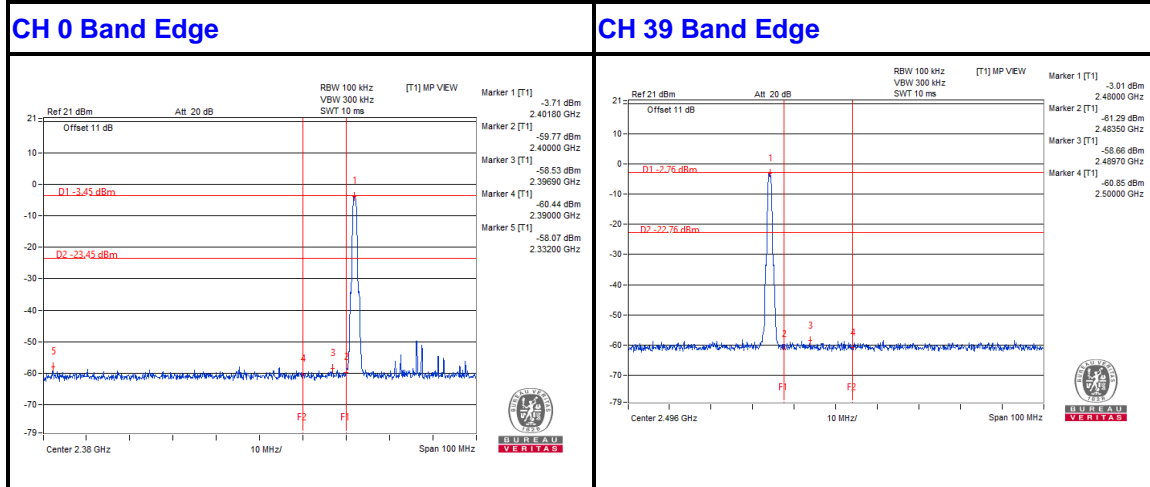
**CH 39**





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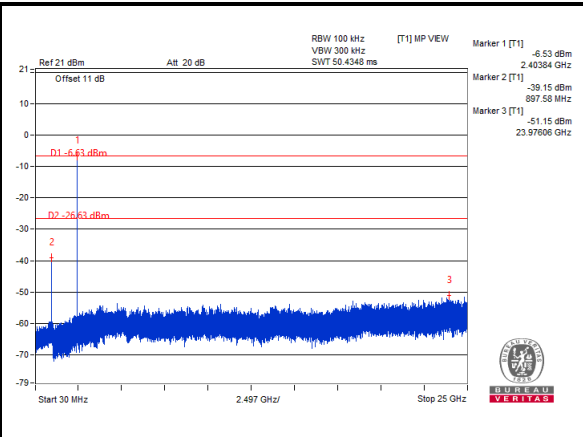
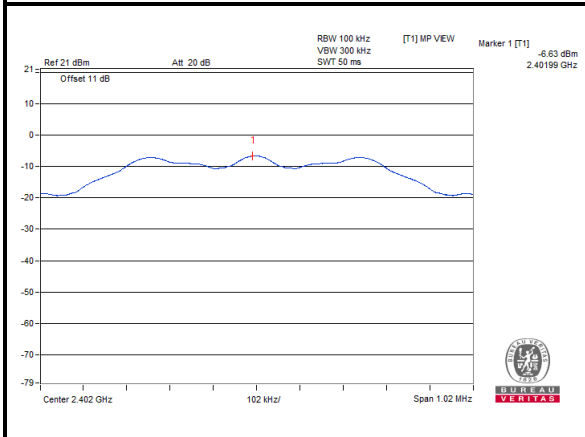


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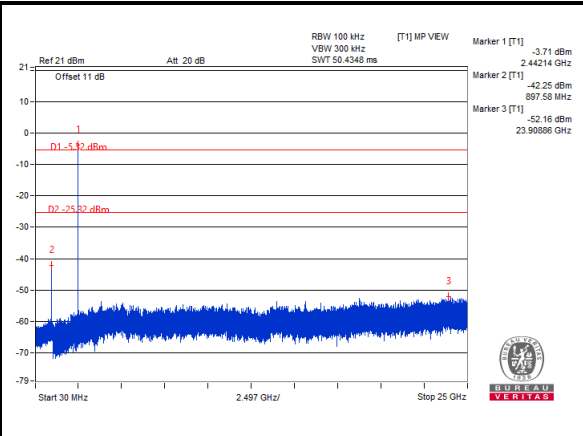
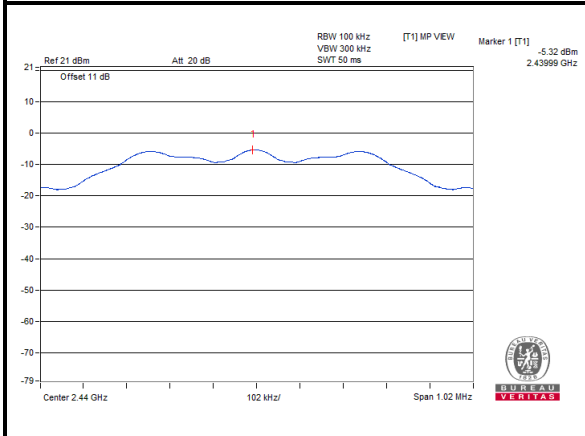
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### BT-LE (S8)

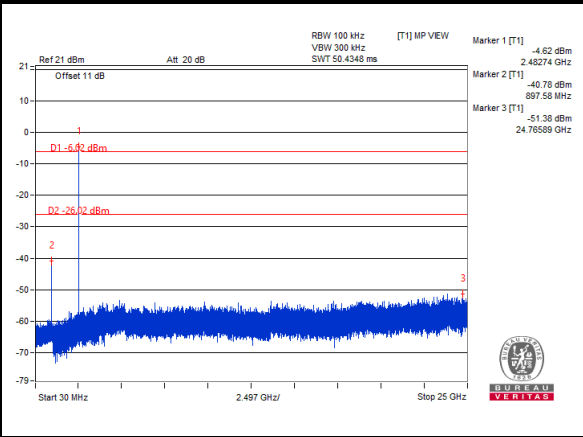
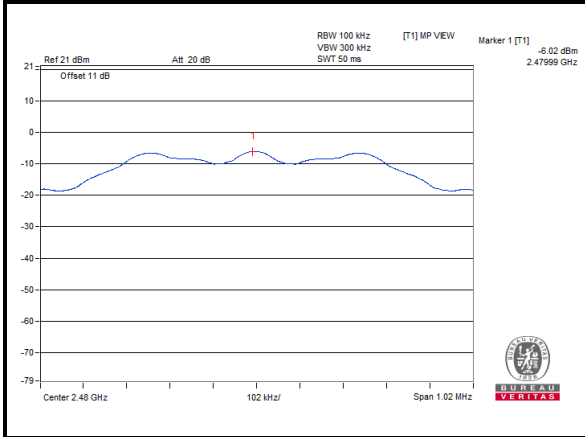
#### CH 0



#### CH 19



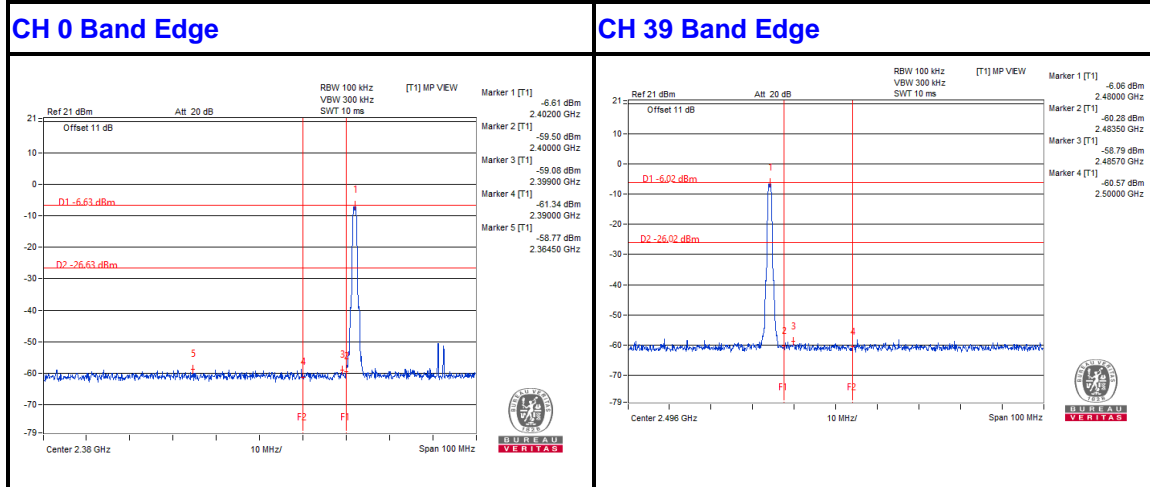
#### CH 39





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## 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---**