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Test Report No.: W7L-P21090022RF02



FCC TEST REPORT (Part 15, Subpart C)

Applicant:	PAX Technology Limited
Address:	Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Hong Kong China

Manufacturer or Supplier:	PAX Computer Technology (Shenzhen) Co., Ltd.
Address:	4/F, No.3 Building, Software Park, Second Central Science-Tech Road, High-Tech industrial Park, Shenzhen, Guangdong, P.R.C.
Product:	Pay Tablet
Brand Name:	PAX
Model Name:	M8
FCC ID:	V5PM8
Date of tests:	Sep. 19, 2021 ~ Oct. 12, 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: Oct. 13, 2021	Date: Oct. 13, 2021

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P21090022RF02	Original release	Oct. 13, 2021



1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

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

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

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

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



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Pay Tablet
BRAND NAME	PAX
MODEL NAME	M8
NOMINAL VOLTAGE	5Vdc /9Vdc /12Vdc (adapter) 3.85Vdc (Rechargeable Li-ion, battery)
MODULATION	CCK, OFDM, GFSK
TRANSMISSION RATE	802.11b: 11/ 5.5/ 2.0 / 1.0 Mbps 802.11g: 54/ 48/ 36 / 24 / 18 / 9/ 6 Mbps 802.11n20: up to 65 Mbps 802.11n40: up to 135 Mbps BT_LE: 0.125 Mbps /0.5 Mbps /1 Mbps/2 Mbps
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n(HT20) 2422-2452MHz for 11n(HT40) 2402-2480MHz for BT-LE(GFSK)
MAX. OUTPUT POWER	WLAN: 283.14mW (Maximum) BT-LE: 0.76mW (Maximum)
ANTENNA TYPE	PIFA Antenna with 1dBi gain
HW VERSION	M8-XXX-XXX-XXXX
SW VERSION	V0.0.0.1
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: unshielded without ferrite, 1.0meter



NOTE:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one transmitter and one receiver.

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

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

List of Accessory:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
Battery	IES	ICS021NA	Capacity : 3.85vdc 6300mAh
AC Adapter	/	GLH-PD18W-U	I/P:100-240Vac, 0.5A O/P: 5Vdc, 3A/9Vdc, 2A/12Vdc, 1.5A
USB Cable	/	HJ-20010506CC444	Shielded, 1meter



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, 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 3.85V	Carl Xie
RE≥1G	23deg. C, 70%RH	DC 3.85V	Carl Xie
PLC	25deg. C, 52%RH	DC 3.85V	Lily Zhao
APCM	25deg. C, 60%RH	DC 3.85V	Lily Zhao



2.3 Duty Cycle of Test Signal

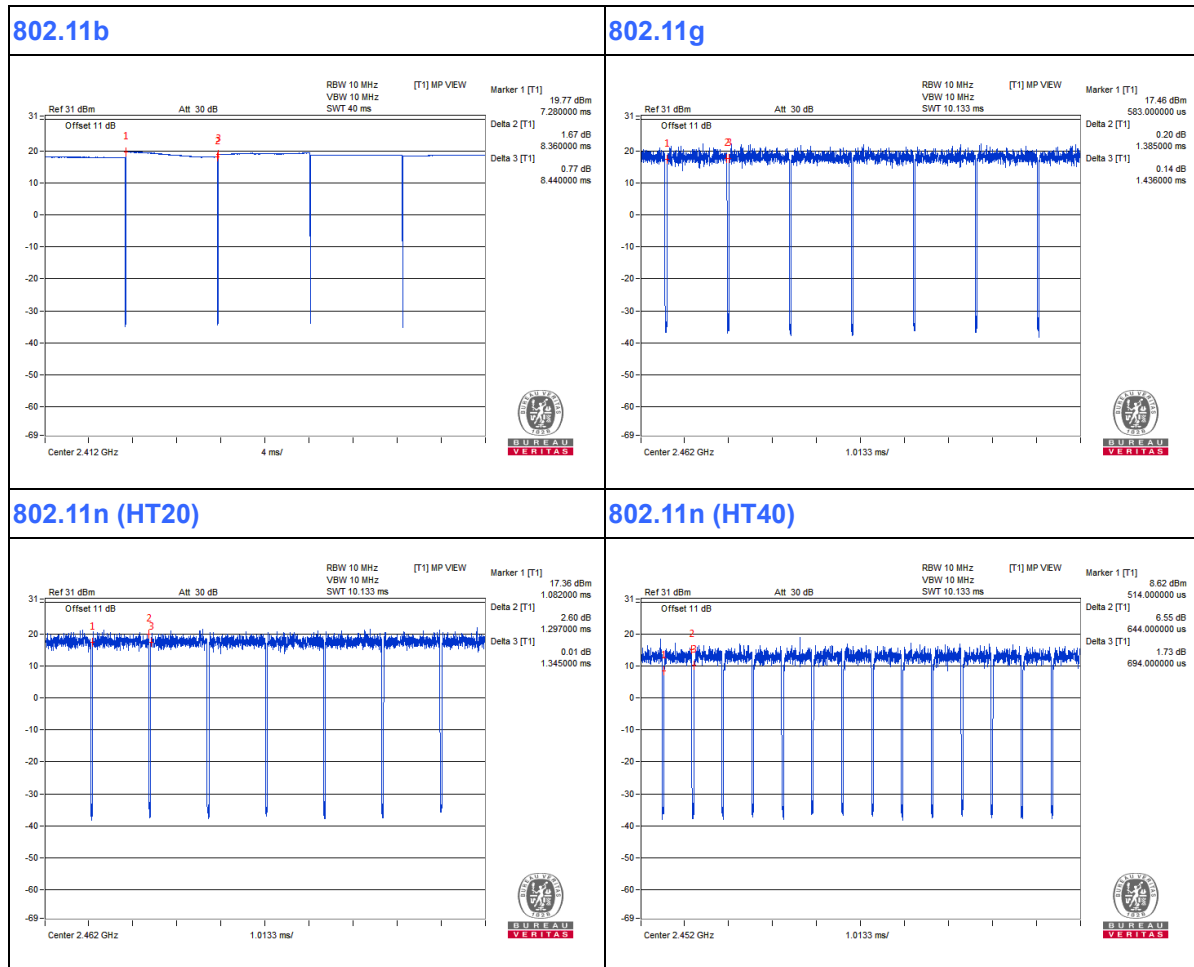
WIFI 2.4GHz

802.11b: Duty cycle = 8.36/8.44=0.99, Duty factor shall not be considered

802.11g: Duty cycle = 1.385/1.436=0.96 < 98%, Duty factor = 10 * log(1/0.96) = 0.17

802.11n (HT20): Duty cycle = 1.297/1.345=0.96 < 98%, Duty factor = 10 * log(1/0.96) = 0.17

802.11n (HT40): Duty cycle = 0.644/0.694=0.93 < 98%, Duty factor = 10 * log(1/0.93) = 0.31





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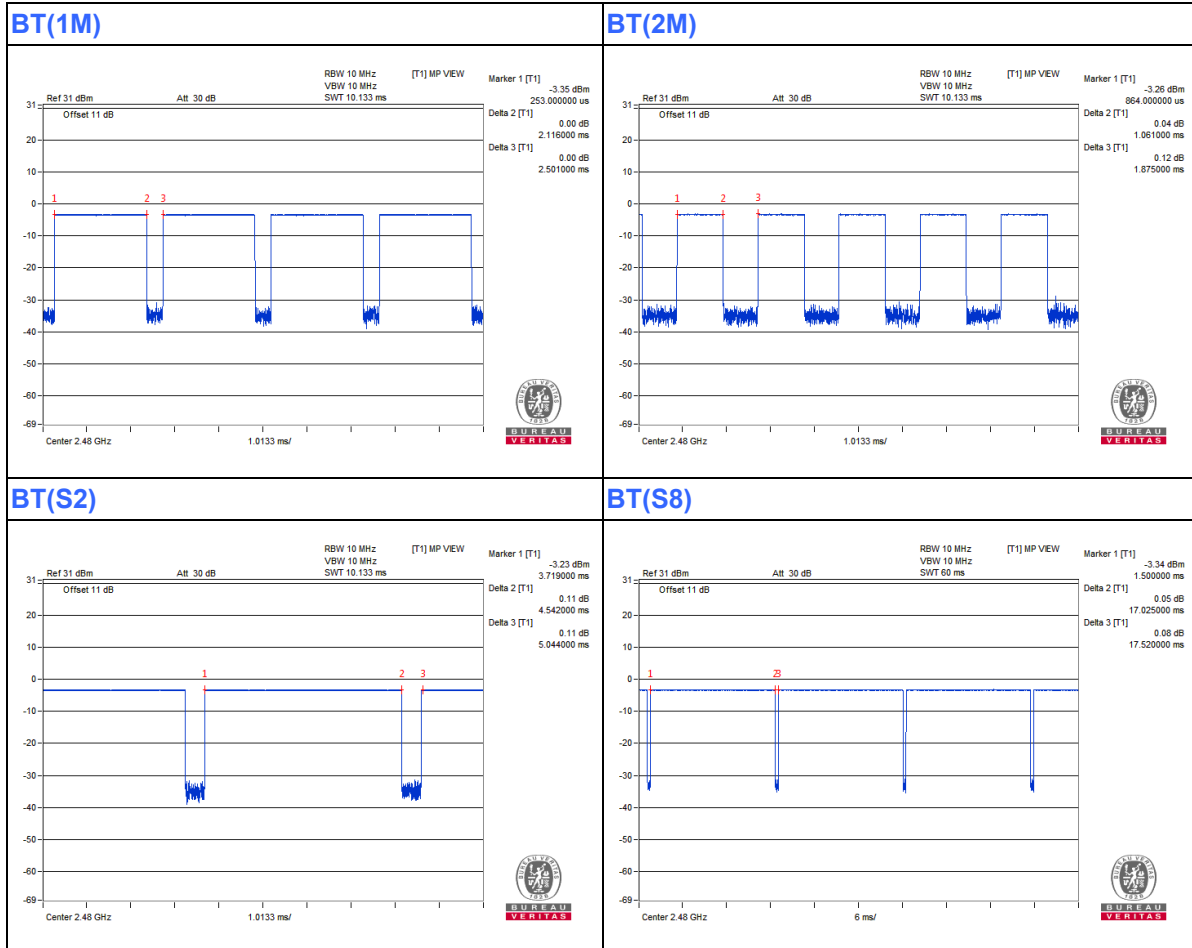
BT LE

BLE -1M: Duty cycle = $2.116/2.501 = 0.85 < 98\%$, Duty factor = $10 * \log(1/0.85) = 0.73$

BLE -2M: Duty cycle = $1.061/1.875 = 0.57 < 98\%$, Duty factor = $10 * \log(1/0.57) = 2.5$

BLE -S2: Duty cycle = $4.542/5.044 = 0.9 < 98\%$, Duty factor = $10 * \log(1/0.9) = 0.46$

BLE -S8: Duty cycle = $17.025/17.520 = 0.97 < 98\%$, Duty factor = $10 * \log(1/0.97) = 0.12$





2.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C, Section 15.247

KDB 558074 D01 DTS Meas Guidance v05r02

ANSI C63.10-2013

Note :

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

2.5 DESCRIPTION OF SUPPORT UNITS

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

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

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



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
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Feb. 22,21	Feb. 21,22

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



3.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

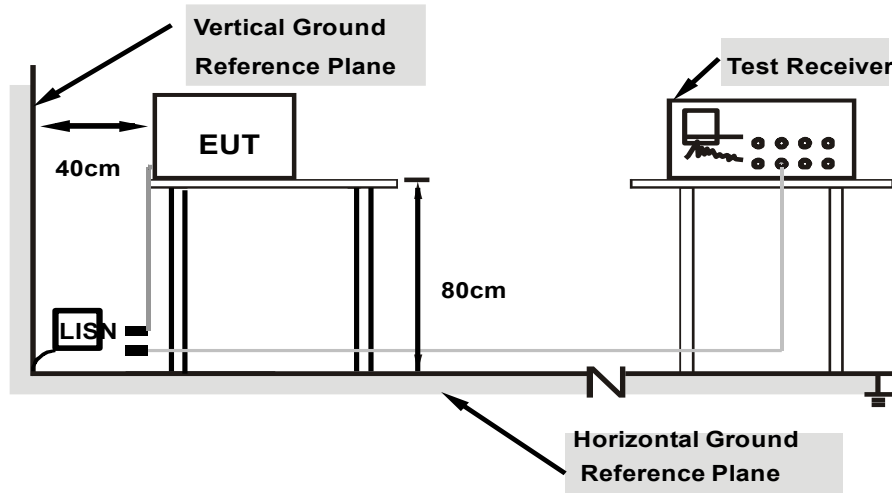
NOTE: All modes of operation were investigated and the worst-case emissions are reported.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation.



3.1.5 TEST SETUP



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

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

3.1.6 EUT OPERATING CONDITIONS

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



3.1.7 TEST RESULTS

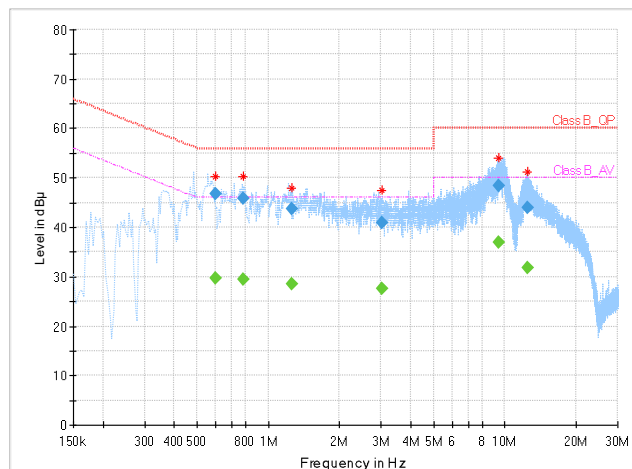
CONDUCTED WORST-CASE DATA:

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

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.596000	---	29.79	46.00	16.21	L1	ON	9.7
0.596000	46.72	---	56.00	9.28	L1	ON	9.7
0.784000	---	29.36	46.00	16.64	L1	ON	9.7
0.784000	45.86	---	56.00	10.14	L1	ON	9.7
1.260000	---	28.46	46.00	17.54	L1	ON	9.7
1.260000	43.79	---	56.00	12.21	L1	ON	9.7
3.028000	---	27.64	46.00	18.36	L1	ON	9.7
3.028000	40.94	---	56.00	15.06	L1	ON	9.7
9.372000	---	37.04	50.00	12.96	L1	ON	9.7
9.372000	48.49	---	60.00	11.51	L1	ON	9.7
12.424000	---	31.83	50.00	18.17	L1	ON	9.8
12.424000	44.01	---	60.00	15.99	L1	ON	9.8

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

Full Spectrum





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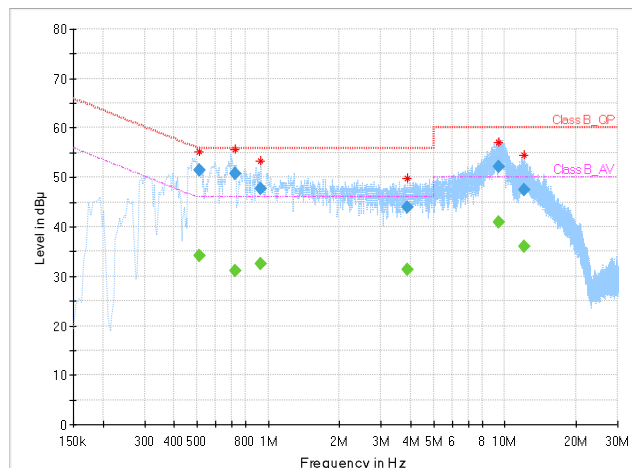
Test Report No.: W7L-P21090022RF02

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

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.512000	---	34.05	46.00	11.95	N	ON	9.7
0.512000	51.49	---	56.00	4.51	N	ON	9.7
0.728000	---	31.08	46.00	14.92	N	ON	9.7
0.728000	50.74	---	56.00	5.26	N	ON	9.7
0.928000	---	32.55	46.00	13.45	N	ON	9.7
0.928000	47.78	---	56.00	8.22	N	ON	9.7
3.884000	---	31.33	46.00	14.67	N	ON	9.8
3.884000	43.95	---	56.00	12.05	N	ON	9.8
9.424000	---	40.84	50.00	9.16	N	ON	9.8
9.424000	52.17	---	60.00	7.83	N	ON	9.8
12.024000	---	36.06	50.00	13.94	N	ON	9.8
12.024000	47.44	---	60.00	12.56	N	ON	9.8

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Limit value - Emission level
 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

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 18,23
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 05,21	Mar. 04,22
Horn Antenna	ETS-LINDGREN	3117	00168728	Aug. 21,21	Aug. 20,22
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 26, 21	Aug. 25, 22
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 26, 21	Aug. 25, 22
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. 03,21	Jun. 02,22
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Apr. 22,21	Apr. 21,22
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,21	Jun. 01,22
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 03,21	Jun. 02,22
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 22,21	Apr. 21,22

- 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.

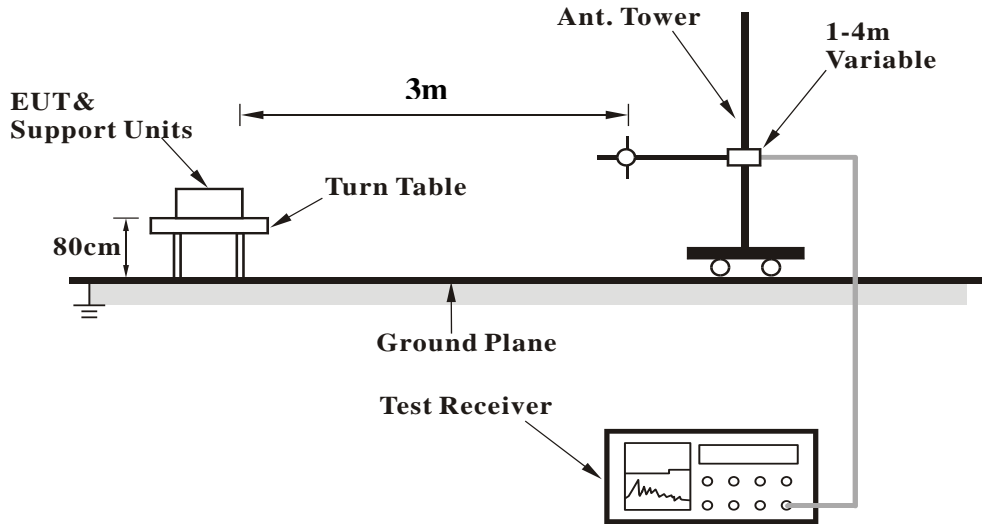
3.2.4 DEVIATION FROM TEST STANDARD

No deviation

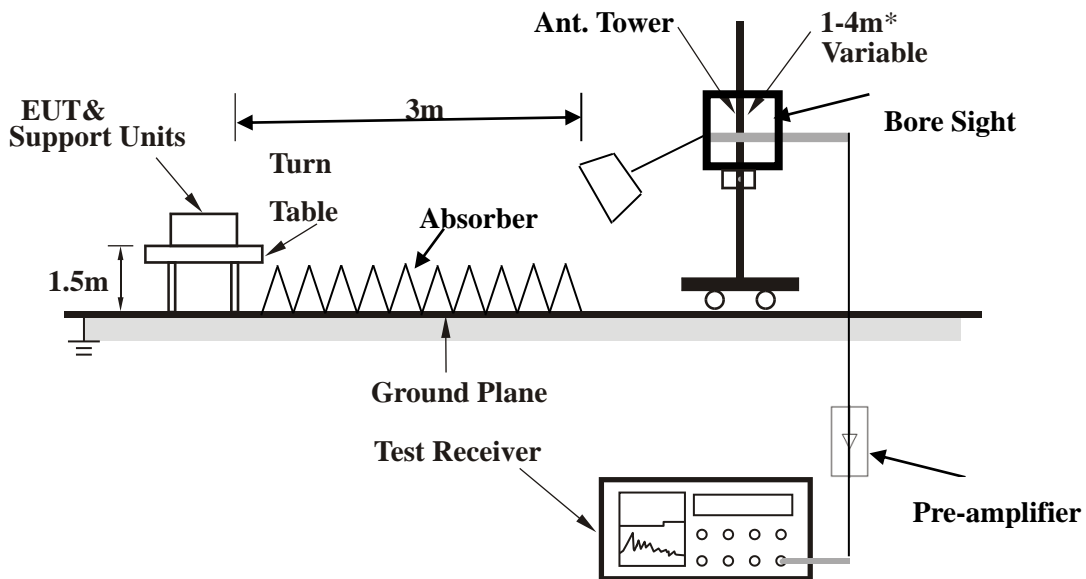


3.2.5 TEST SETUP

< 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).



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VERITAS**

Test Report No.: W7L-P21090022RF02

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:

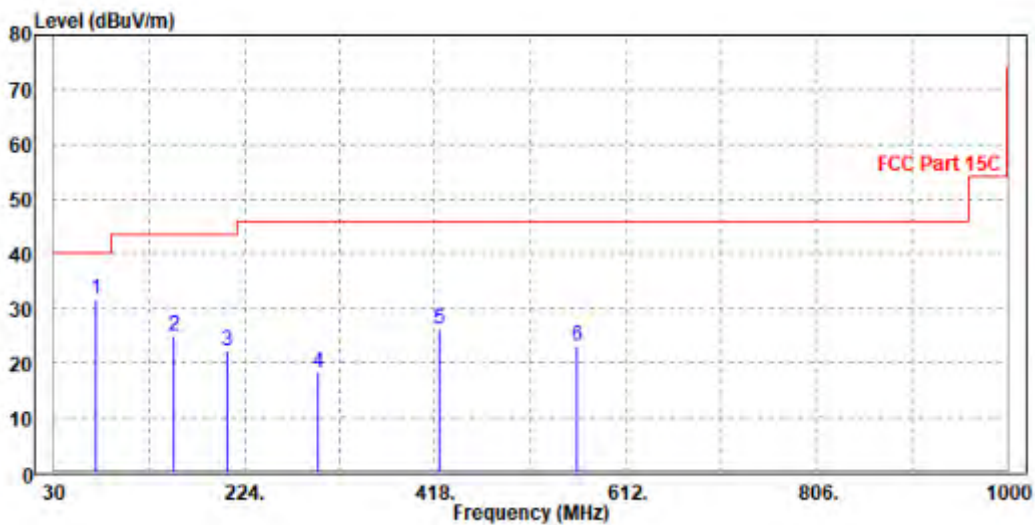
802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
72.68	31.51	59.99	40	-8.49	7.75	1.1	37.33	200	360	Peak
152.22	24.79	50.12	43.5	-18.71	9.89	1.58	36.8	200	360	Peak
206.54	22.19	45.64	43.5	-21.31	11.29	1.82	36.56	200	360	Peak
298.69	18.3	38.87	46	-27.7	13.98	2.2	36.75	200	360	Peak
422.85	26.04	42.96	46	-19.96	17.31	2.64	36.87	200	360	Peak
562.53	23	37.17	46	-23	19.95	3.11	37.23	200	360	Peak

REMARKS:

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





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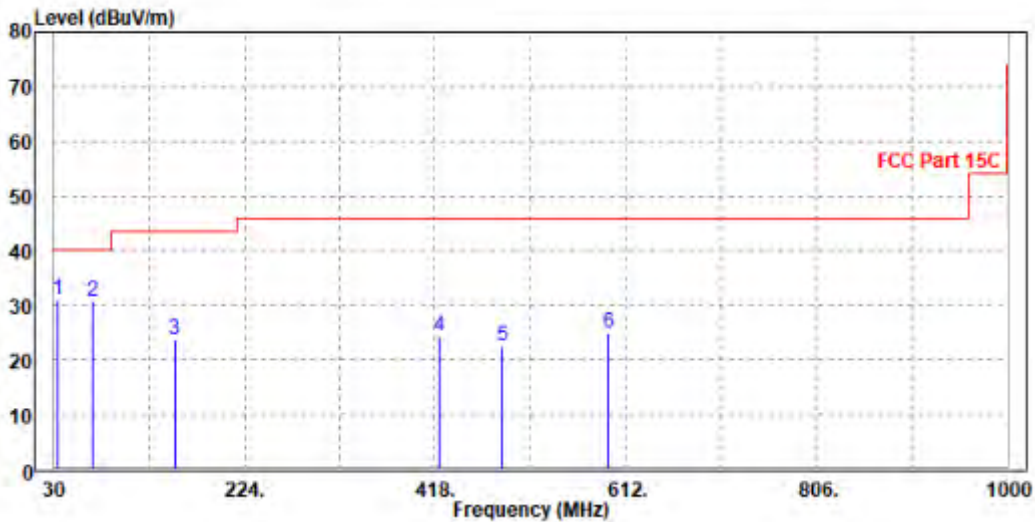
Test Report No.: W7L-P21090022RF02

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

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
33.88	30.93	49.23	40	-9.07	18.49	0.74	37.53	300	360	Peak
69.77	30.87	59.22	40	-9.13	7.9	1.08	37.33	300	360	Peak
153.19	23.86	48.59	43.5	-19.64	10.48	1.58	36.79	300	360	Peak
422.85	24.2	40.8	46	-21.8	17.63	2.64	36.87	300	360	Peak
486.87	22.56	37.81	46	-23.44	18.85	2.88	36.98	300	360	Peak
594.54	25.02	38.37	46	-20.98	20.8	3.2	37.35	300	360	Peak

REMARKS:

- 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	52.46	61.22	74	-21.54	31.75	5.86	46.37	120	225	Peak
2390	43.77	52.53	54	-10.23	31.75	5.86	46.37	120	225	Average
2412	102.5	111.16	-	-	31.82	5.89	46.37	120	225	Peak
2412	100.05	108.71	-	-	31.82	5.89	46.37	120	225	Average
2483.5	51.54	59.87	74	-22.46	32.05	5.99	46.37	120	225	Peak
2483.5	44.28	52.61	54	-9.72	32.05	5.99	46.37	120	225	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	51.5	59.87	74	-22.5	32.14	5.86	46.37	100	125	Peak
2390	44.11	52.48	54	-9.89	32.14	5.86	46.37	100	125	Average
2412	96.31	104.6	-	-	32.19	5.89	46.37	100	125	Peak
2412	92.81	101.1	-	-	32.19	5.89	46.37	100	125	Average
2483.5	51.67	59.69	74	-22.33	32.36	5.99	46.37	100	125	Peak
2483.5	44.59	52.61	54	-9.41	32.36	5.99	46.37	100	125	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.18	58.94	74	-23.82	31.75	5.86	46.37	120	225	Peak
2390	43.61	52.37	54	-10.39	31.75	5.86	46.37	120	225	Average
2437	101.04	109.58	-	-	31.9	5.93	46.37	120	225	Peak
2437	99.03	107.57	-	-	31.9	5.93	46.37	120	225	Average
2483.5	51.12	59.45	74	-22.88	32.05	5.99	46.37	120	225	Peak
2483.5	44.81	53.14	54	-9.19	32.05	5.99	46.37	120	225	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.61	59.98	74	-22.39	32.14	5.86	46.37	190	125	Peak
2390	43.94	52.31	54	-10.06	32.14	5.86	46.37	190	125	Average
2437	93.92	102.11	-	-	32.25	5.93	46.37	190	125	Peak
2437	91.06	99.25	-	-	32.25	5.93	46.37	190	125	Average
2483.5	51.8	59.82	74	-22.2	32.36	5.99	46.37	190	125	Peak
2483.5	44.54	52.56	54	-9.46	32.36	5.99	46.37	190	125	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.57	59.33	74	-23.43	31.75	5.86	46.37	187	225	Peak
2390	42.86	51.62	54	-11.14	31.75	5.86	46.37	187	225	Average
2462	101.74	110.17	-	-	31.98	5.96	46.37	187	225	Peak
2462	100.24	108.67	-	-	31.98	5.96	46.37	187	225	Average
2483.5	54.01	62.34	74	-19.99	32.05	5.99	46.37	187	225	Peak
2483.5	44.78	53.11	54	-9.22	32.05	5.99	46.37	187	225	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	50.23	58.6	74	-23.77	32.14	5.86	46.37	100	125	Peak
2390	43.24	51.61	54	-10.76	32.14	5.86	46.37	100	125	Average
2462	93	101.1	-	-	32.31	5.96	46.37	100	125	Peak
2462	90.83	98.93	-	-	32.31	5.96	46.37	100	125	Average
2483.5	51.5	59.52	74	-22.5	32.36	5.99	46.37	100	125	Peak
2483.5	44.29	52.31	54	-9.71	32.36	5.99	46.37	100	125	Average

REMARKS:

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



802.11g

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	54.21	62.97	74	-19.79	31.75	5.86	46.37	122	225	Peak
2390	44.27	53.03	54	-9.73	31.75	5.86	46.37	122	225	Average
2412	105.95	114.61	-	-	31.82	5.89	46.37	122	225	Peak
2412	97.81	106.47	-	-	31.82	5.89	46.37	122	225	Average
2483.5	50.54	58.87	74	-23.46	32.05	5.99	46.37	122	225	Peak
2483.5	44.01	52.34	54	-9.99	32.05	5.99	46.37	122	225	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	50.38	58.75	74	-23.62	32.14	5.86	46.37	100	125	Peak
2390	43.53	51.9	54	-10.47	32.14	5.86	46.37	100	125	Average
2412	96.79	105.08	-	-	32.19	5.89	46.37	100	125	Peak
2412	89.56	97.85	-	-	32.19	5.89	46.37	100	125	Average
2483.5	49.66	57.68	74	-24.34	32.36	5.99	46.37	100	125	Peak
2483.5	43.66	51.68	54	-10.34	32.36	5.99	46.37	100	125	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.91	58.67	74	-24.09	31.75	5.86	46.37	190	225	Peak
2390	43.33	52.09	54	-10.67	31.75	5.86	46.37	190	225	Average
2437	103.22	111.76	-	-	31.9	5.93	46.37	190	225	Peak
2437	95.33	103.87	-	-	31.9	5.93	46.37	190	225	Average
2483.5	51.31	59.64	74	-22.69	32.05	5.99	46.37	190	225	Peak
2483.5	43.55	51.88	54	-10.45	32.05	5.99	46.37	190	225	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	52.27	60.64	74	-21.73	32.14	5.86	46.37	100	125	Peak
2390	43.37	51.74	54	-10.63	32.14	5.86	46.37	100	125	Average
2437	95.66	103.85	-	-	32.25	5.93	46.37	100	125	Peak
2437	87.14	95.33	-	-	32.25	5.93	46.37	100	125	Average
2483.5	51.29	59.31	74	-22.71	32.36	5.99	46.37	100	125	Peak
2483.5	43.83	51.85	54	-10.17	32.36	5.99	46.37	100	125	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.67	59.43	74	-23.33	31.75	5.86	46.37	135	225	Peak
2390	43.58	52.34	54	-10.42	31.75	5.86	46.37	135	225	Average
2462	104.31	112.74	-	-	31.98	5.96	46.37	135	225	Peak
2462	96.82	105.25	-	-	31.98	5.96	46.37	135	225	Average
2483.5	57.22	65.55	74	-16.78	32.05	5.99	46.37	135	225	Peak
2483.5	47.66	55.99	54	-6.34	32.05	5.99	46.37	135	225	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	50.25	58.62	74	-23.75	32.14	5.86	46.37	100	125	Peak
2390	43.56	51.93	54	-10.44	32.14	5.86	46.37	100	125	Average
2462	95.18	103.28	-	-	32.31	5.96	46.37	100	125	Peak
2462	87.4	95.5	-	-	32.31	5.96	46.37	100	125	Average
2483.5	52.18	60.2	74	-21.82	32.36	5.99	46.37	100	125	Peak
2483.5	44.36	52.38	54	-9.64	32.36	5.99	46.37	100	125	Average

REMARKS:

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



802.11n (20MHz)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
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	54.1	62.86	74	-19.9	31.75	5.86	46.37	122	220	Peak
2390	44.48	53.24	54	-9.52	31.75	5.86	46.37	122	220	Average
2412	106.92	115.58	-	-	31.82	5.89	46.37	122	220	Peak
2412	99.97	108.63	-	-	31.82	5.89	46.37	122	220	Average
2483.5	52.34	60.67	74	-21.66	32.05	5.99	46.37	122	220	Peak
2483.5	44.72	53.05	54	-9.28	32.05	5.99	46.37	122	220	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	51.96	60.33	74	-22.04	32.14	5.86	46.37	100	125	Peak
2390	44.24	52.61	54	-9.76	32.14	5.86	46.37	100	125	Average
2412	97.83	106.12	-	-	32.19	5.89	46.37	100	125	Peak
2412	90.23	98.52	-	-	32.19	5.89	46.37	100	125	Average
2483.5	52.63	60.65	74	-21.37	32.36	5.99	46.37	100	125	Peak
2483.5	44.94	52.96	54	-9.06	32.36	5.99	46.37	100	125	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	53.89	62.65	74	-20.11	31.75	5.86	46.37	122	220	Peak
2390	44.22	52.98	54	-9.78	31.75	5.86	46.37	122	220	Average
2437	104.9	113.44	-	-	31.9	5.93	46.37	122	220	Peak
2437	97.2	105.74	-	-	31.9	5.93	46.37	122	220	Average
2483.5	53.81	62.14	74	-20.19	32.05	5.99	46.37	122	220	Peak
2483.5	44.95	53.28	54	-9.05	32.05	5.99	46.37	122	220	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	53.49	61.86	74	-20.51	32.14	5.86	46.37	100	125	Peak
2390	44.93	53.3	54	-9.07	32.14	5.86	46.37	100	125	Average
2437	97.21	105.4	-	-	32.25	5.93	46.37	100	125	Peak
2437	89.8	97.99	-	-	32.25	5.93	46.37	100	125	Average
2483.5	52.58	60.6	74	-21.42	32.36	5.99	46.37	100	125	Peak
2483.5	44.98	53	54	-9.02	32.36	5.99	46.37	100	125	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: W7L-P21090022RF02

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.6	61.36	74	-21.4	31.75	5.86	46.37	105	220	Peak
2390	44.5	53.26	54	-9.5	31.75	5.86	46.37	105	220	Average
2462	107.16	115.59	-	-	31.98	5.96	46.37	105	220	Peak
2462	99.58	108.01	-	-	31.98	5.96	46.37	105	220	Average
2483.5	60.33	68.66	74	-13.67	32.05	5.99	46.37	105	220	Peak
2483.5	49.32	57.65	54	-4.68	32.05	5.99	46.37	105	220	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	51.54	59.91	74	-22.46	32.14	5.86	46.37	170	145	Peak
2390	44.45	52.82	54	-9.55	32.14	5.86	46.37	170	145	Average
2462	100.76	108.86	-	-	32.31	5.96	46.37	170	145	Peak
2462	93.87	101.97	-	-	32.31	5.96	46.37	170	145	Average
2483.5	55.57	63.59	74	-18.43	32.36	5.99	46.37	170	145	Peak
2483.5	46.24	54.26	54	-7.76	32.36	5.99	46.37	170	145	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 (40MHz)

CHANNEL	TX Channel 3	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	60.02	68.78	74	-13.98	31.75	5.86	46.37	105	220	Peak
2390	48.05	56.81	54	-5.95	31.75	5.86	46.37	105	220	Average
2422	104.42	113.03	-	-	31.85	5.91	46.37	105	220	Peak
2422	96.53	105.14	-	-	31.85	5.91	46.37	105	220	Average
2483.5	53.45	61.78	74	-20.55	32.05	5.99	46.37	105	220	Peak
2483.5	44.73	53.06	54	-9.27	32.05	5.99	46.37	105	220	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	56.26	64.63	74	-17.74	32.14	5.86	46.37	137	145	Peak
2390	46.44	54.81	54	-7.56	32.14	5.86	46.37	137	145	Average
2422	98.7	106.95	-	-	32.21	5.91	46.37	137	145	Peak
2422	90.27	98.52	-	-	32.21	5.91	46.37	137	145	Average
2483.5	42.21	50.23	74	-31.79	32.36	5.99	46.37	137	145	Peak
2483.5	45.34	53.36	54	-8.66	32.36	5.99	46.37	137	145	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.3	60.06	74	-22.7	31.75	5.86	46.37	154	220	Peak
2390	44.14	52.9	54	-9.86	31.75	5.86	46.37	154	220	Average
2437	101.38	109.92	-	-	31.9	5.93	46.37	154	220	Peak
2437	94.06	102.6	-	-	31.9	5.93	46.37	154	220	Average
2483.5	58.41	66.74	74	-15.59	32.05	5.99	46.37	154	220	Peak
2483.5	48.21	56.54	54	-5.79	32.05	5.99	46.37	154	220	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	52.12	60.49	74	-21.88	32.14	5.86	46.37	135	145	Peak
2390	45.05	53.42	54	-8.95	32.14	5.86	46.37	135	145	Average
2437	94.34	102.53	-	-	32.25	5.93	46.37	135	145	Peak
2437	87.02	95.21	-	-	32.25	5.93	46.37	135	145	Average
2483.5	52.88	60.9	74	-21.12	32.36	5.99	46.37	135	145	Peak
2483.5	45.41	53.43	54	-8.59	32.36	5.99	46.37	135	145	Average

REMARKS:

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



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Test Report No.: W7L-P21090022RF02

CHANNEL	TX Channel 9	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	51.53	60.29	74	-22.47	31.75	5.86	46.37	154	220	Peak
2390	44.46	53.22	54	-9.54	31.75	5.86	46.37	154	220	Average
2452	103.41	111.88	-	-	31.95	5.95	46.37	154	220	Peak
2452	95.69	104.16	-	-	31.95	5.95	46.37	154	220	Average
2483.5	63.86	72.19	74	-10.14	32.05	5.99	46.37	154	220	Peak
2483.5	50.53	58.86	54	-3.47	32.05	5.99	46.37	154	220	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	53.93	62.3	74	-20.07	32.14	5.86	46.37	170	145	Peak
2390	44.46	52.83	54	-9.54	32.14	5.86	46.37	170	145	Average
2452	98.32	106.46	-	-	32.28	5.95	46.37	170	145	Peak
2452	90.42	98.56	-	-	32.28	5.95	46.37	170	145	Average
2483.5	56.81	64.83	74	-17.19	32.36	5.99	46.37	170	145	Peak
2483.5	46.6	54.62	54	-7.4	32.36	5.99	46.37	170	145	Average

REMARKS:

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



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Test Report No.: W7L-P21090022RF02

BELOW 1GHz WORST-CASE DATA:

30 MHz – 1GHz data:

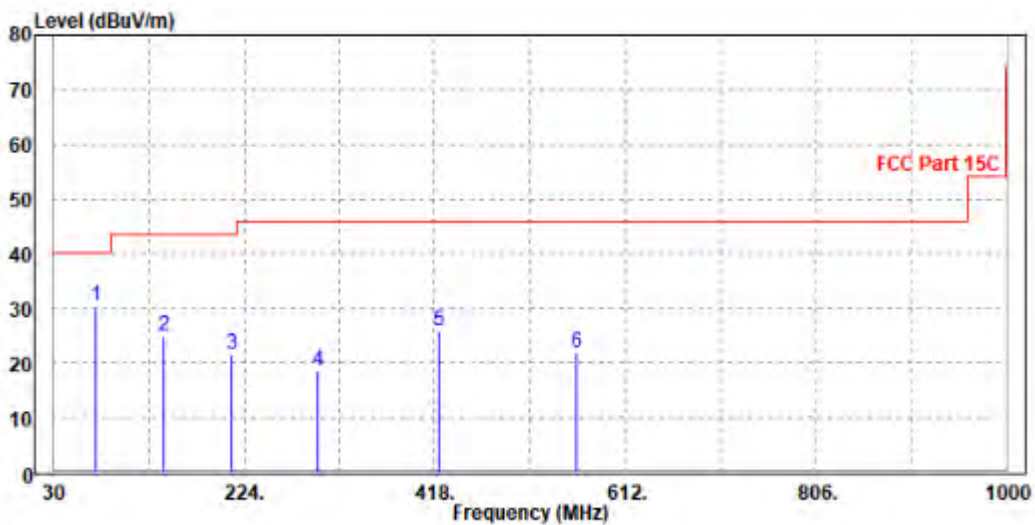
BT-LE_2M

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
72.68	30.48	58.96	40	-9.52	7.75	1.1	37.33	300	360	Peak
142.52	24.85	51.67	43.5	-18.65	8.55	1.52	36.89	300	360	Peak
211.39	21.53	44.75	43.5	-21.97	11.5	1.85	36.57	300	360	Peak
298.69	18.69	39.26	46	-27.31	13.98	2.2	36.75	300	360	Peak
422.85	25.82	42.74	46	-20.18	17.31	2.64	36.87	300	360	Peak
562.53	21.78	35.95	46	-24.22	19.95	3.11	37.23	300	360	Peak

REMARKS:

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



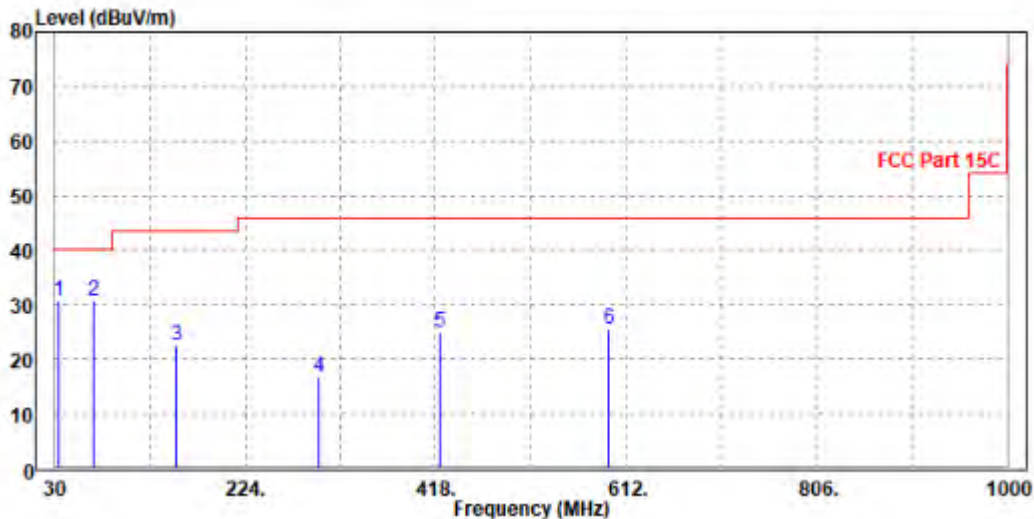


CHANNEL	TX Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
34.85	30.61	49.38	40	-9.39	18.07	0.75	37.59	200	360	Peak
69.77	30.59	58.94	40	-9.41	7.9	1.08	37.33	200	360	Peak
154.16	22.58	47.16	43.5	-20.92	10.62	1.58	36.78	200	360	Peak
298.69	16.79	36.37	46	-29.21	14.97	2.2	36.75	200	360	Peak
422.85	24.81	41.41	46	-21.19	17.63	2.64	36.87	200	360	Peak
594.54	25.49	38.84	46	-20.51	20.8	3.2	37.35	200	360	Peak

REMARKS:

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





ABOVE 1GHz TEST DATA

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

BT-LE_1M

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
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	51.87	60.63	74	-22.13	31.75	5.86	46.37	135	60	Peak
2390	44.09	52.85	54	-9.91	31.75	5.86	46.37	135	60	Average
2402	90.81	99.51	-	-	31.79	5.88	46.37	135	60	Peak
2402	89.3	98	-	-	31.79	5.88	46.37	135	60	Average
2483.5	52.89	61.22	74	-21.11	32.05	5.99	46.37	135	60	Peak
2483.5	44.63	52.96	54	-9.37	32.05	5.99	46.37	135	60	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	52.7	61.07	74	-21.3	32.14	5.86	46.37	100	30	Peak
2390	44.51	52.88	54	-9.49	32.14	5.86	46.37	100	30	Average
2402	86.99	95.32	-	-	32.16	5.88	46.37	100	30	Peak
2402	84.91	93.24	-	-	32.16	5.88	46.37	100	30	Average
2483.5	51.9	59.92	74	-22.1	32.36	5.99	46.37	100	30	Peak
2483.5	44.86	52.88	54	-9.14	32.36	5.99	46.37	100	30	Average

REMARKS:

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



CHANNEL	TX Channel 19	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	52.19	60.95	74	-21.81	31.75	5.86	46.37	117	60	Peak
2390	44.24	53	54	-9.76	31.75	5.86	46.37	117	60	Average
2440	90.54	99.07	-	-	31.91	5.93	46.37	117	60	Peak
2440	90.28	98.81	-	-	31.91	5.93	46.37	117	60	Average
2483.5	51.66	59.99	74	-22.34	32.05	5.99	46.37	117	60	Peak
2483.5	45.18	53.51	54	-8.82	32.05	5.99	46.37	117	60	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	52.81	61.18	74	-21.19	32.14	5.86	46.37	145	55	Peak
2390	44.8	53.17	54	-9.2	32.14	5.86	46.37	145	55	Average
2440	86.17	94.35	-	-	32.26	5.93	46.37	145	55	Peak
2440	85.82	94	-	-	32.26	5.93	46.37	145	55	Average
2483.5	52.28	60.3	74	-21.72	32.36	5.99	46.37	145	55	Peak
2483.5	44.78	52.8	54	-9.22	32.36	5.99	46.37	145	55	Average

REMARKS:

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



CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
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	50.85	59.61	74	-23.15	31.75	5.86	46.37	145	60	Peak
2390	44.15	52.91	54	-9.85	31.75	5.86	46.37	145	60	Average
2480	90.64	98.99	-	-	32.04	5.98	46.37	145	60	Peak
2480	88.25	96.6	-	-	32.04	5.98	46.37	145	60	Average
2483.5	53.19	61.52	74	-20.81	32.05	5.99	46.37	145	60	Peak
2483.5	44.95	53.28	54	-9.05	32.05	5.99	46.37	145	60	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	52.95	61.32	74	-21.05	32.14	5.86	46.37	145	55	Peak
2390	44.7	53.07	54	-9.3	32.14	5.86	46.37	145	55	Average
2480	87.94	95.98	-	-	32.35	5.98	46.37	145	55	Peak
2480	85.24	93.28	-	-	32.35	5.98	46.37	145	55	Average
2483.5	52.68	60.7	74	-21.32	32.36	5.99	46.37	145	55	Peak
2483.5	44.8	52.82	54	-9.2	32.36	5.99	46.37	145	55	Average

REMARKS:

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



BT-LE_2M

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	51.74	60.5	74	-22.26	31.75	5.86	46.37	150	60	Peak
2390	44.41	53.17	54	-9.59	31.75	5.86	46.37	150	60	Average
2402	90.1	98.8	-	-	31.79	5.88	46.37	150	60	Peak
2402	87.19	95.89	-	-	31.79	5.88	46.37	150	60	Average
2483.5	52.63	60.96	74	-21.37	32.05	5.99	46.37	150	60	Peak
2483.5	44.1	52.43	54	-9.9	32.05	5.99	46.37	150	60	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	52.4	60.77	74	-21.6	32.14	5.86	46.37	100	32	Peak
2390	44.64	53.01	54	-9.36	32.14	5.86	46.37	100	32	Average
2402	86.48	94.81	-	-	32.16	5.88	46.37	100	32	Peak
2402	82.87	91.2	-	-	32.16	5.88	46.37	100	32	Average
2483.5	52.51	60.53	74	-21.49	32.36	5.99	46.37	100	32	Peak
2483.5	44.86	52.88	54	-9.14	32.36	5.99	46.37	100	32	Average

REMARKS:

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



CHANNEL	TX Channel 19	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	51.26	60.02	74	-22.74	31.75	5.86	46.37	118	60	Peak
2390	44.1	52.86	54	-9.9	31.75	5.86	46.37	118	60	Average
2440	90.58	99.11	-	-	31.91	5.93	46.37	118	60	Peak
2440	88.61	97.14	-	-	31.91	5.93	46.37	118	60	Average
2483.5	52.82	61.15	74	-21.18	32.05	5.99	46.37	118	60	Peak
2483.5	45.04	53.37	54	-8.96	32.05	5.99	46.37	118	60	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.89	60.26	74	-22.11	32.14	5.86	46.37	100	55	Peak
2390	44.71	53.08	54	-9.29	32.14	5.86	46.37	100	55	Average
2440	85.93	94.11	-	-	32.26	5.93	46.37	100	55	Peak
2440	83.99	92.17	-	-	32.26	5.93	46.37	100	55	Average
2483.5	52.41	60.43	74	-21.59	32.36	5.99	46.37	100	55	Peak
2483.5	44.94	52.96	54	-9.06	32.36	5.99	46.37	100	55	Average

REMARKS:

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



CHANNEL	TX Channel 39	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	51.39	60.15	74	-22.61	31.75	5.86	46.37	147	97	Peak
2390	44.04	52.8	54	-9.96	31.75	5.86	46.37	147	97	Average
2480	89.04	97.39	-	-	32.04	5.98	46.37	147	97	Peak
2480	87.05	95.4	-	-	32.04	5.98	46.37	147	97	Average
2483.5	52.15	60.48	74	-21.85	32.05	5.99	46.37	147	97	Peak
2483.5	44.45	52.78	54	-9.55	32.05	5.99	46.37	147	97	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	52.01	60.38	74	-21.99	32.14	5.86	46.37	143	55	Peak
2390	44.57	52.94	54	-9.43	32.14	5.86	46.37	143	55	Average
2480	85.81	93.85	-	-	32.35	5.98	46.37	143	55	Peak
2480	83.25	91.29	-	-	32.35	5.98	46.37	143	55	Average
2483.5	52.84	60.86	74	-21.16	32.36	5.99	46.37	143	55	Peak
2483.5	45.85	53.87	54	-8.15	32.36	5.99	46.37	143	55	Average

REMARKS:

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



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Test Report No.: W7L-P21090022RF02

BT-LE_S2

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	52.03	60.79	74	-21.97	31.75	5.86	46.37	135	58	Peak
2390	44.12	52.88	54	-9.88	31.75	5.86	46.37	135	58	Average
2402	89	97.7	-	-	31.79	5.88	46.37	135	58	Peak
2402	88.64	97.34	-	-	31.79	5.88	46.37	135	58	Average
2483.5	51.94	60.27	74	-22.06	32.05	5.99	46.37	135	58	Peak
2483.5	44.62	52.95	54	-9.38	32.05	5.99	46.37	135	58	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	51.79	60.16	74	-22.21	32.14	5.86	46.37	100	30	Peak
2390	44.48	52.85	54	-9.52	32.14	5.86	46.37	100	30	Average
2402	84.71	93.04	-	-	32.16	5.88	46.37	100	30	Peak
2402	84.38	92.71	-	-	32.16	5.88	46.37	100	30	Average
2483.5	52.26	60.28	74	-21.74	32.36	5.99	46.37	100	30	Peak
2483.5	44.47	52.49	54	-9.53	32.36	5.99	46.37	100	30	Average

REMARKS:

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



CHANNEL	TX Channel 19	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	52.36	61.12	74	-21.64	31.75	5.86	46.37	135	58	Peak
2390	44.73	53.49	54	-9.27	31.75	5.86	46.37	135	58	Average
2440	89.28	97.81	-	-	31.91	5.93	46.37	135	58	Peak
2440	89.01	97.54	-	-	31.91	5.93	46.37	135	58	Average
2483.5	52.24	60.57	74	-21.76	32.05	5.99	46.37	135	58	Peak
2483.5	44.66	52.99	54	-9.34	32.05	5.99	46.37	135	58	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	51.37	59.74	74	-22.63	32.14	5.86	46.37	100	53	Peak
2390	44.79	53.16	54	-9.21	32.14	5.86	46.37	100	53	Average
2440	85.82	94	-	-	32.26	5.93	46.37	100	53	Peak
2440	85.56	93.74	-	-	32.26	5.93	46.37	100	53	Average
2483.5	51.77	59.79	74	-22.23	32.36	5.99	46.37	100	53	Peak
2483.5	44.79	52.81	54	-9.21	32.36	5.99	46.37	100	53	Average

REMARKS:

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



CHANNEL	TX Channel 39	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	51.36	60.12	74	-22.64	31.75	5.86	46.37	115	60	Peak
2390	43.98	52.74	54	-10.02	31.75	5.86	46.37	115	60	Average
2480	91.08	99.43	-	-	32.04	5.98	46.37	115	60	Peak
2480	90.25	98.6	-	-	32.04	5.98	46.37	115	60	Average
2483.5	51.97	60.3	74	-22.03	32.05	5.99	46.37	115	60	Peak
2483.5	44.78	53.11	54	-9.22	32.05	5.99	46.37	115	60	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	52.4	60.77	74	-21.6	32.14	5.86	46.37	100	60	Peak
2390	44.43	52.8	54	-9.57	32.14	5.86	46.37	100	60	Average
2480	85.72	93.76	-	-	32.35	5.98	46.37	100	60	Peak
2480	83.95	91.99	-	-	32.35	5.98	46.37	100	60	Average
2483.5	53.14	61.16	74	-20.86	32.36	5.99	46.37	100	60	Peak
2483.5	44.77	52.79	54	-9.23	32.36	5.99	46.37	100	60	Average

REMARKS:

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



BT-LE_S8

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	52.04	60.8	74	-21.96	31.75	5.86	46.37	135	55	Peak
2390	44.52	53.28	54	-9.48	31.75	5.86	46.37	135	55	Average
2402	90.96	99.66	-	-	31.79	5.88	46.37	135	55	Peak
2402	89.15	97.85	-	-	31.79	5.88	46.37	135	55	Average
2483.5	51.19	59.52	74	-22.81	32.05	5.99	46.37	135	55	Peak
2483.5	45.1	53.43	54	-8.9	32.05	5.99	46.37	135	55	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	52.88	61.25	74	-21.12	32.14	5.86	46.37	100	53	Peak
2390	44.98	53.35	54	-9.02	32.14	5.86	46.37	100	53	Average
2402	85.16	93.49	-	-	32.16	5.88	46.37	100	53	Peak
2402	84.04	92.37	-	-	32.16	5.88	46.37	100	53	Average
2483.5	52.23	60.25	74	-21.77	32.36	5.99	46.37	100	53	Peak
2483.5	44.63	52.65	54	-9.37	32.36	5.99	46.37	100	53	Average

REMARKS:

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



CHANNEL	TX Channel 19	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	51.91	60.67	74	-22.09	31.75	5.86	46.37	118	60	Peak
2390	44.78	53.54	54	-9.22	31.75	5.86	46.37	118	60	Average
2440	91.92	100.45	-	-	31.91	5.93	46.37	118	60	Peak
2440	91.17	99.7	-	-	31.91	5.93	46.37	118	60	Average
2483.5	51.7	60.03	74	-22.3	32.05	5.99	46.37	118	60	Peak
2483.5	44.59	52.92	54	-9.41	32.05	5.99	46.37	118	60	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	53.39	61.76	74	-20.61	32.14	5.86	46.37	100	53	Peak
2390	44.75	53.12	54	-9.25	32.14	5.86	46.37	100	53	Average
2440	87.2	95.38	-	-	32.26	5.93	46.37	100	53	Peak
2440	86.5	94.68	-	-	32.26	5.93	46.37	100	53	Average
2483.5	52.26	60.28	74	-21.74	32.36	5.99	46.37	100	53	Peak
2483.5	44.91	52.93	54	-9.09	32.36	5.99	46.37	100	53	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.65	61.41	74	-21.35	31.75	5.86	46.37	118	60	Peak
2390	44.18	52.94	54	-9.82	31.75	5.86	46.37	118	60	Average
2480	90.65	99	-	-	32.04	5.98	46.37	118	60	Peak
2480	89.17	97.52	-	-	32.04	5.98	46.37	118	60	Average
2483.5	52.59	60.92	74	-21.41	32.05	5.99	46.37	118	60	Peak
2483.5	44.83	53.16	54	-9.17	32.05	5.99	46.37	118	60	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	51.9	60.27	74	-22.1	32.14	5.86	46.37	143	55	Peak
2390	44.46	52.83	54	-9.54	32.14	5.86	46.37	143	55	Average
2480	85.83	93.87	-	-	32.35	5.98	46.37	143	55	Peak
2480	85.12	93.16	-	-	32.35	5.98	46.37	143	55	Average
2483.5	52.11	60.13	74	-21.89	32.36	5.99	46.37	143	55	Peak
2483.5	44.61	52.63	54	-9.39	32.36	5.99	46.37	143	55	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	Apr. 07,21	Apr. 06,22
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 25,21	Feb. 24,22
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 03,21	Jun. 02,22
Power Sensor	ANRITSU	MA2411B	1339352	Feb. 25,21	Feb. 24,22
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 26,20	Aug. 25,21
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 26,21	Aug. 25,22

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

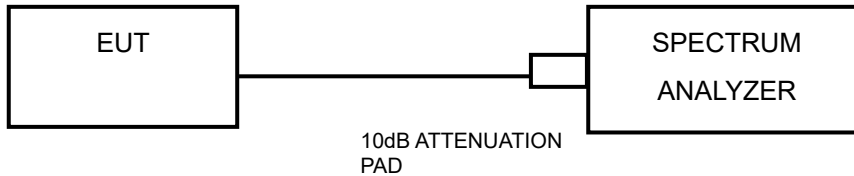
1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points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

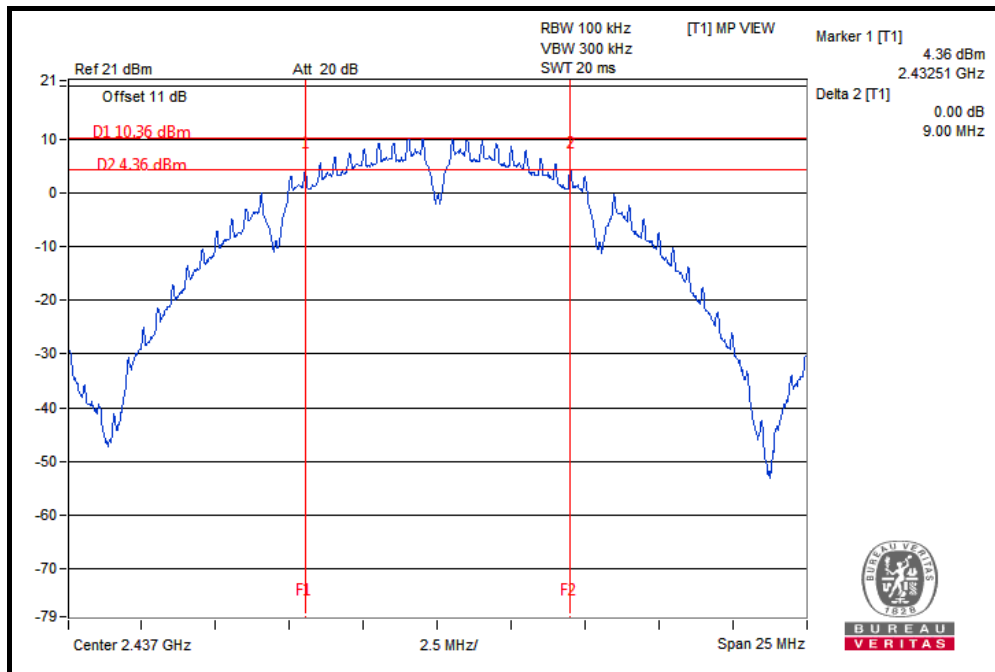
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



3.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.04	0.5	PASS
6	2437	9.00	0.5	PASS
11	2462	8.03	0.5	PASS



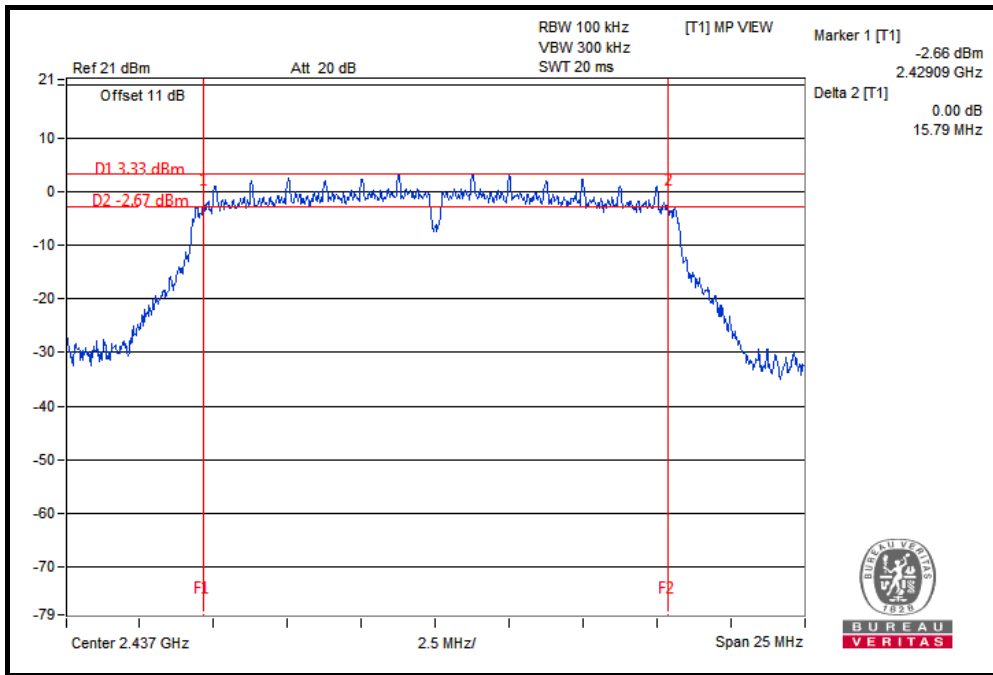


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Test Report No.: W7L-P21090022RF02

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	14.21	0.5	PASS
6	2437	15.79	0.5	PASS
11	2462	15.08	0.5	PASS



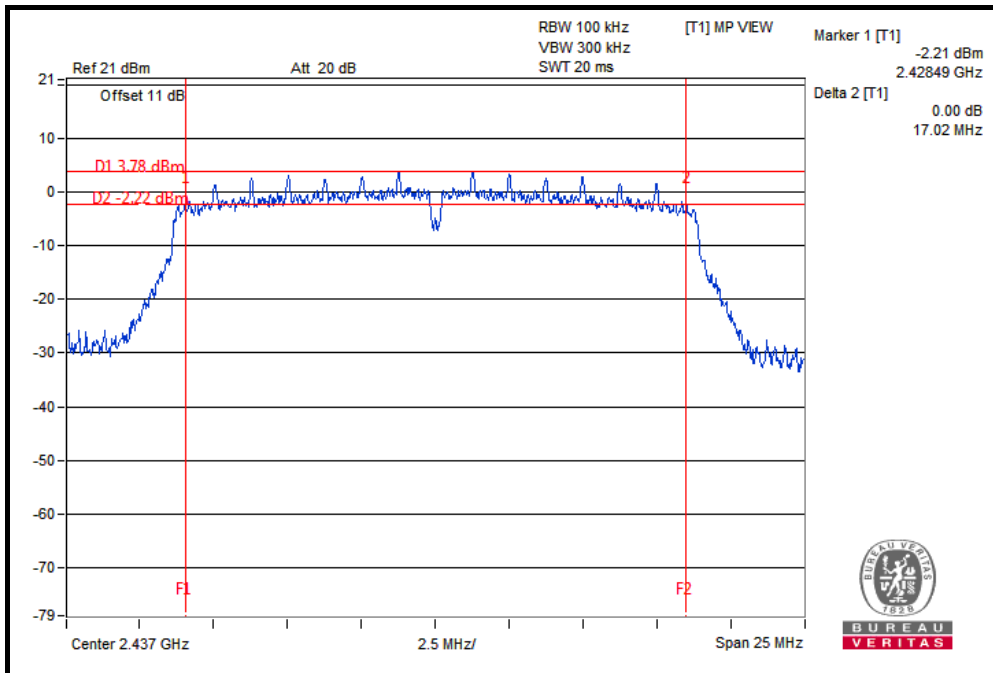


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Test Report No.: W7L-P21090022RF02

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	14.05	0.5	PASS
6	2437	17.02	0.5	PASS
11	2462	15.07	0.5	PASS



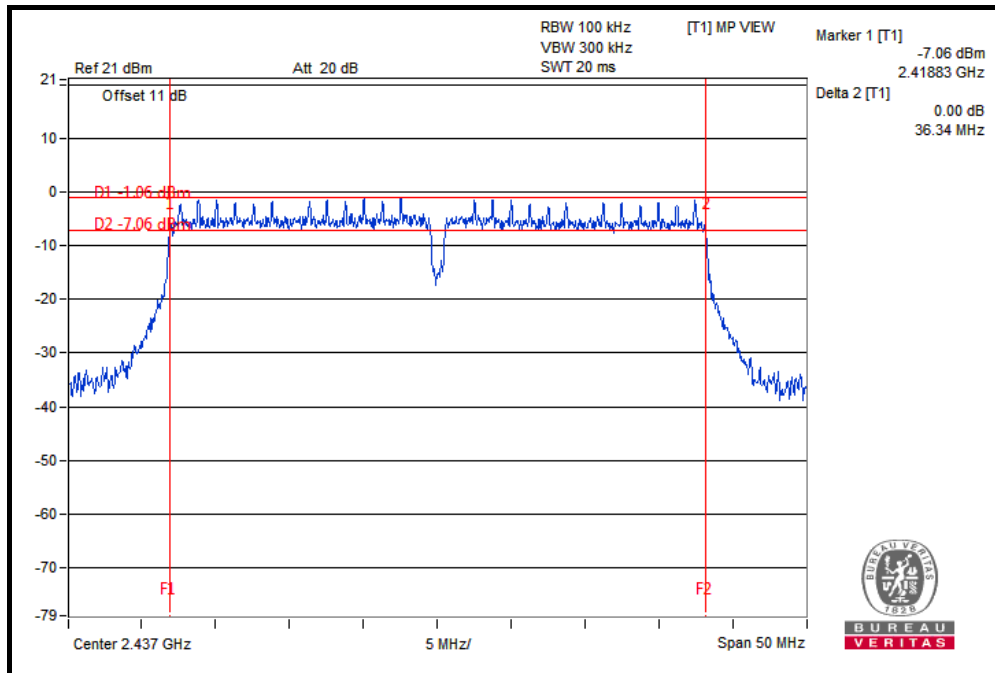


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Test Report No.: W7L-P21090022RF02

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	26.33	0.5	PASS
6	2437	36.34	0.5	PASS
9	2452	28.81	0.5	PASS



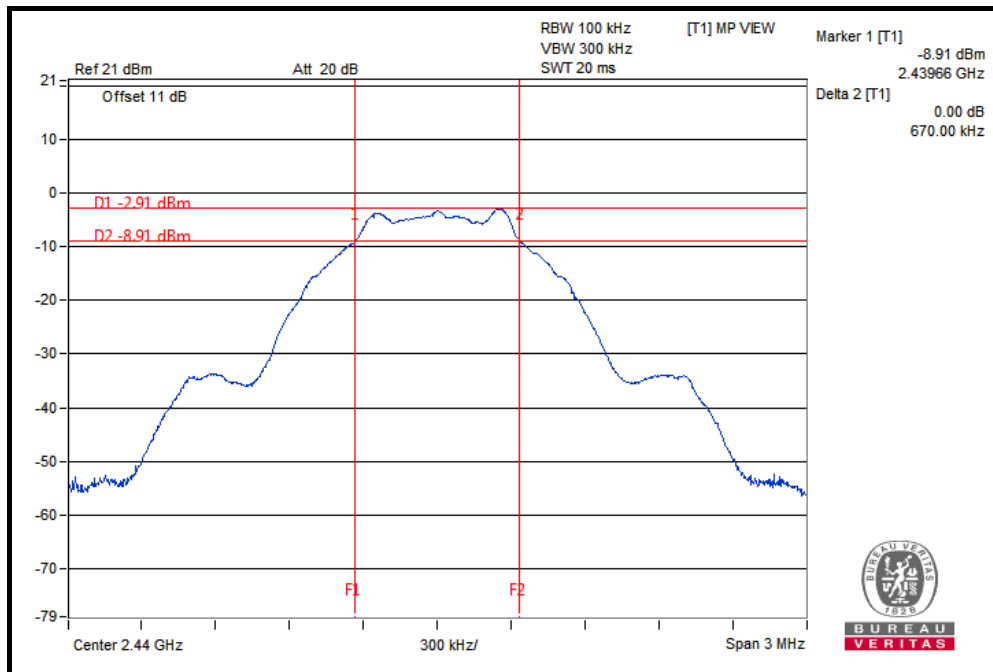


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Test Report No.: W7L-P21090022RF02

BT-LE (1MHz)

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



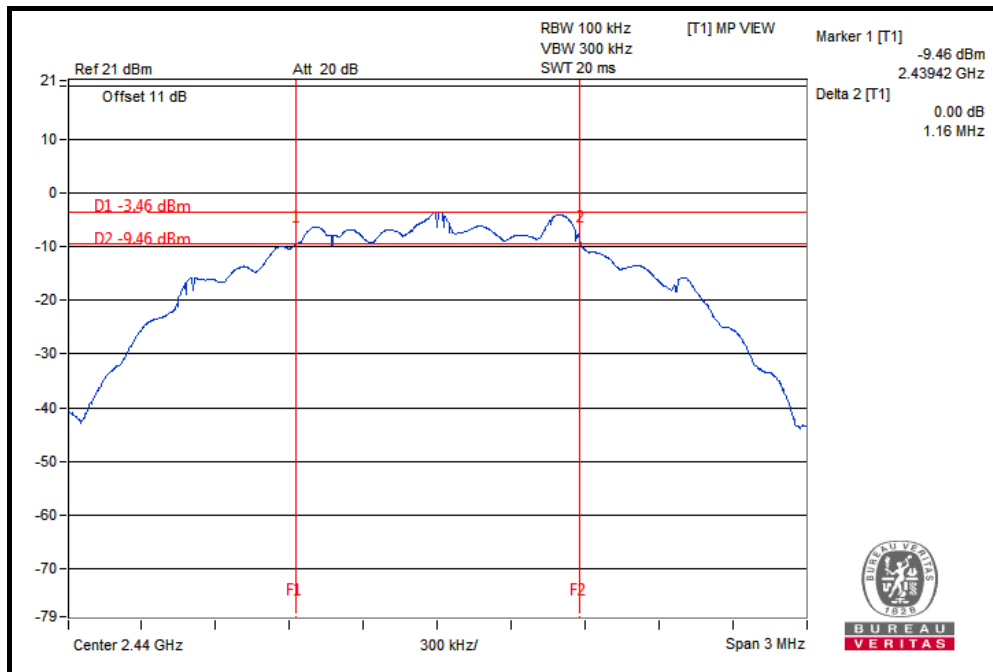


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VERITAS**

Test Report No.: W7L-P21090022RF02

BT-LE (2MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	1.15	0.5	PASS
19	2440	1.16	0.5	PASS
39	2480	1.16	0.5	PASS



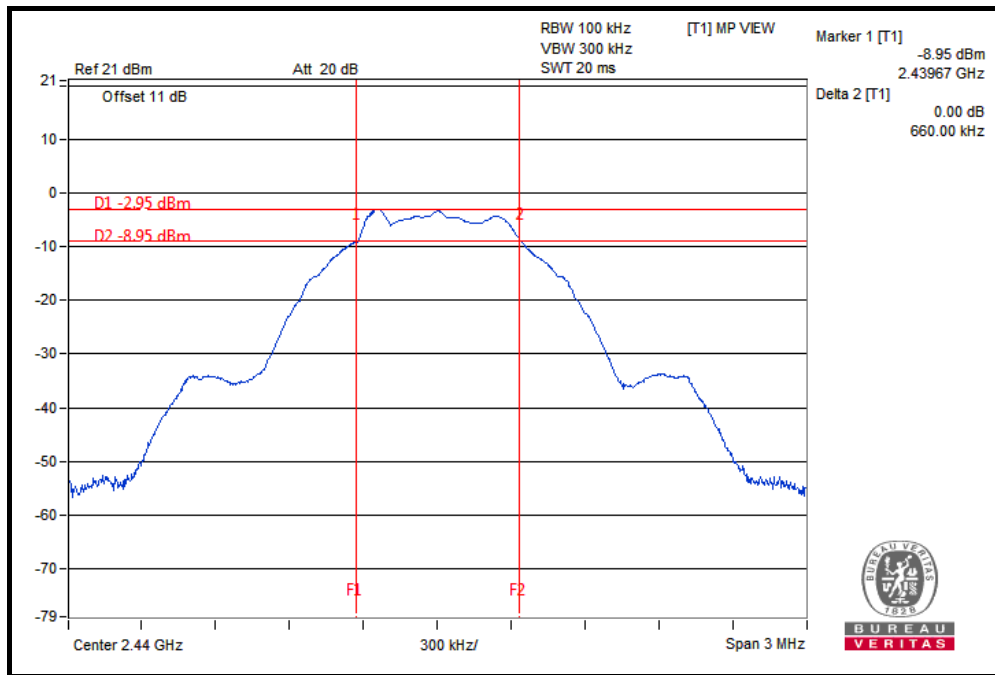


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VERITAS**

Test Report No.: W7L-P21090022RF02

BT-LE (S2)

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



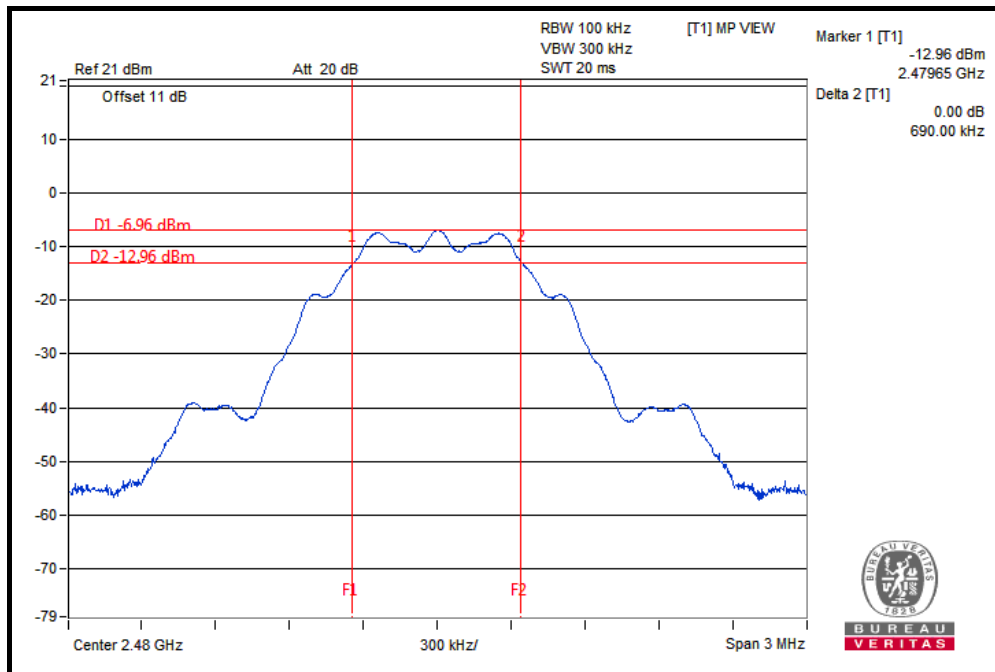


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Test Report No.: W7L-P21090022RF02

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	0.69	0.5	PASS



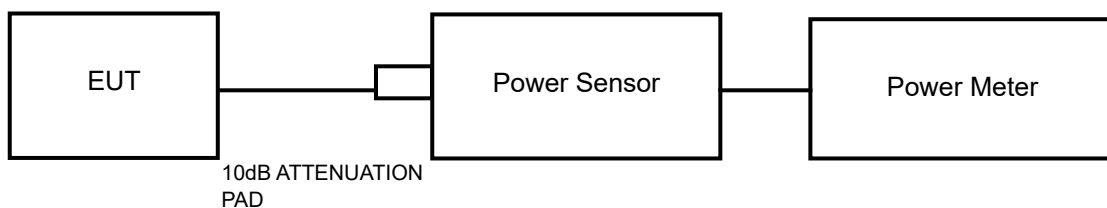


3.4 CONDUCTED OUTPUT POWER

3.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

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

3.4.2 TEST SETUP



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	17.75	59.57	1	PASS
6	2437	17.45	55.59	1	PASS
11	2462	17.54	56.75	1	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
1	2412	23.20	208.93	1	PASS
6	2437	23.12	205.12	1	PASS
11	2462	23.32	214.78	1	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
1	2412	24.52	283.14	1	PASS
6	2437	23.88	244.34	1	PASS
11	2462	24.18	261.82	1	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
3	2422	24.20	263.03	1	PASS
6	2437	24.00	251.19	1	PASS
9	2452	23.45	221.31	1	PASS



BT-LE (1MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.61	0.55	1	PASS
19	2440	-1.56	0.70	1	PASS
39	2480	-2.00	0.63	1	PASS

BT-LE (2MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.19	0.60	1	PASS
19	2440	-1.17	0.76	1	PASS
39	2480	-1.69	0.68	1	PASS

BT-LE (S2)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.75	0.53	1	PASS
19	2440	-1.82	0.66	1	PASS
39	2480	-2.46	0.57	1	PASS

BT-LE (S8)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	-2.97	0.50	1	PASS
19	2440	-1.99	0.63	1	PASS
39	2480	-2.52	0.56	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	15.22	N/A
6	2437	15.08	N/A
11	2462	15.04	N/A

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	14.02	N/A
6	2437	13.90	N/A
11	2462	13.98	N/A

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	13.92	N/A
6	2437	14.25	N/A
11	2462	14.12	N/A

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
3	2422	13.28	N/A
6	2437	12.91	N/A
9	2452	12.98	N/A



BT-LE (1MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	-4.54	N/A
19	2440	-3.24	N/A
39	2480	-3.91	N/A

BT-LE (2MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	-5.59	N/A
19	2440	-4.09	N/A
39	2480	-5.06	N/A

BT-LE (S2)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	-4.38	N/A
19	2440	-2.91	N/A
39	2480	-3.82	N/A

BT-LE (S8)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	-4.33	N/A
19	2440	-3.02	N/A
39	2480	-3.85	N/A

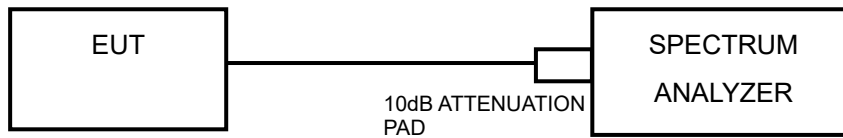


3.5 POWER SPECTRAL DENSITY MEASUREMENT

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 x RBW, Detector = peak.
3. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

3.5.6 EUT OPERATING CONDITION

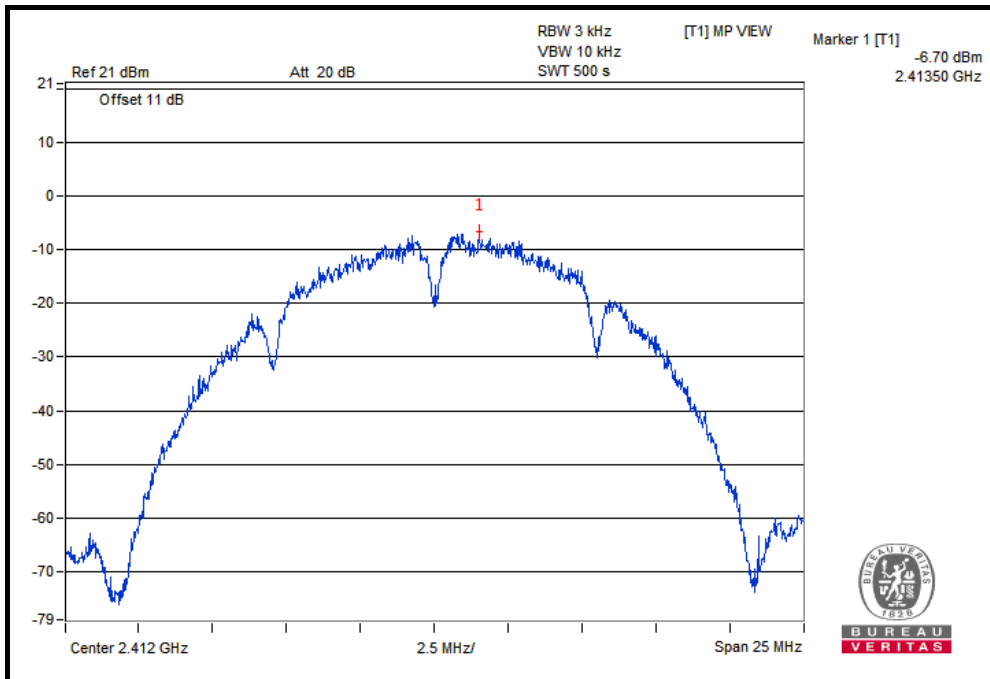
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



3.5.7 TEST RESULTS

802.11b

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-6.70	8	PASS
6	2437	-7.74	8	PASS
11	2462	-7.13	8	PASS



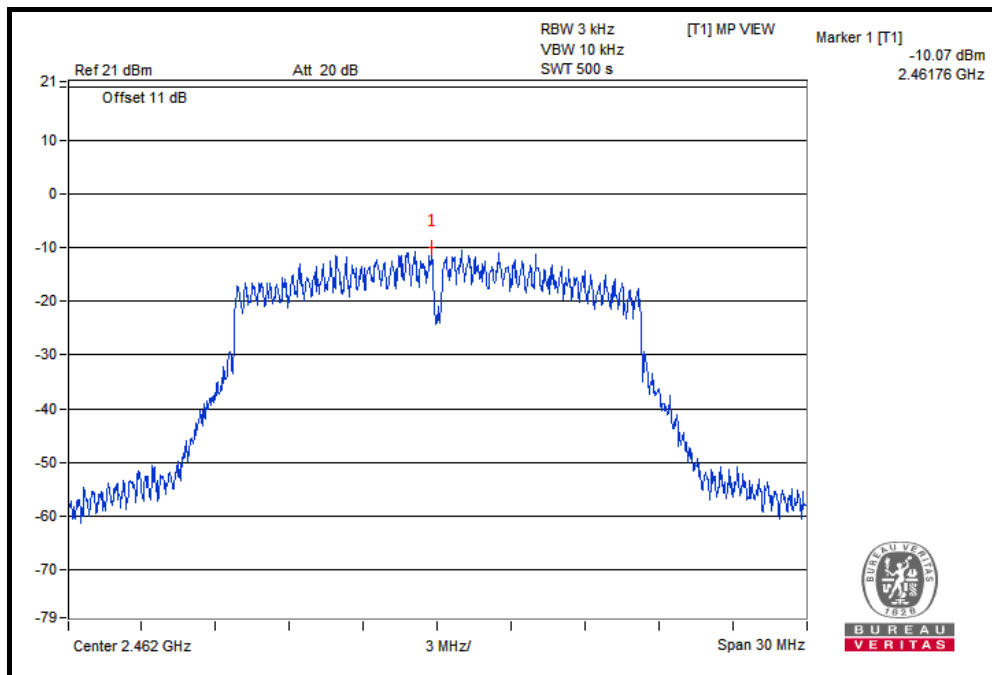


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802.11g

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-10.23	8	PASS
6	2437	-10.88	8	PASS
11	2462	-10.07	8	PASS



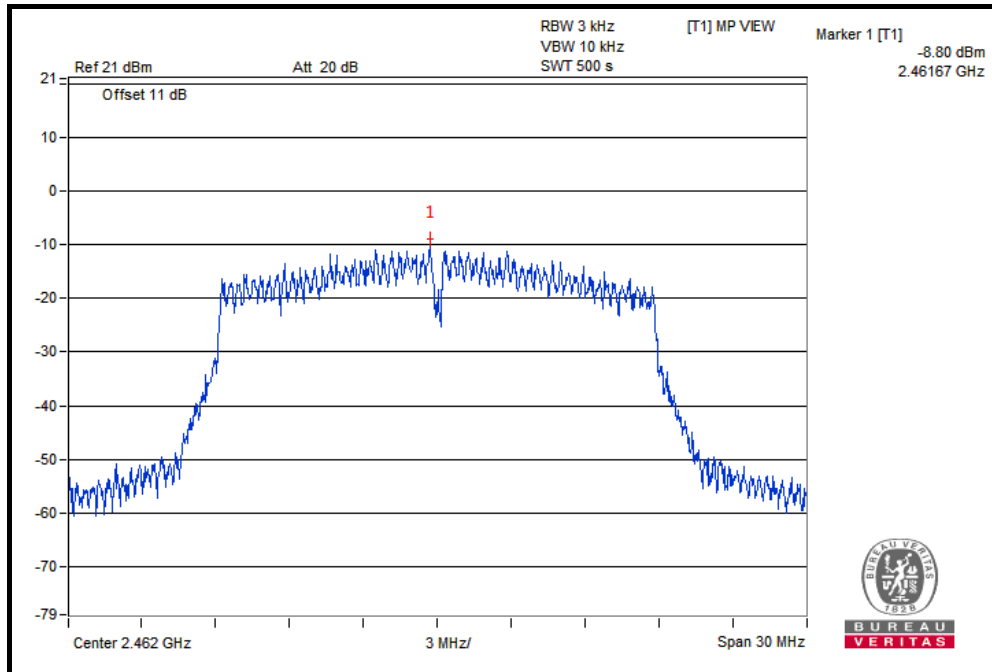


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Test Report No.: W7L-P21090022RF02

802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-10.02	8	PASS
6	2437	-11.03	8	PASS
11	2462	-8.8	8	PASS



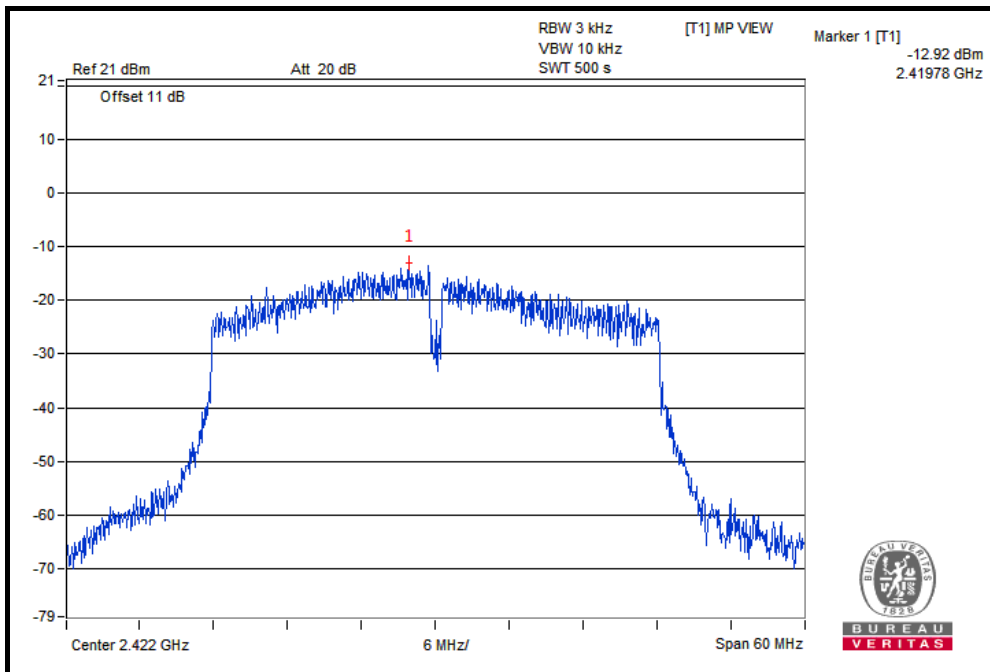


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Test Report No.: W7L-P21090022RF02

802.11n (40MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-12.92	8	PASS
6	2437	-15.07	8	PASS
9	2452	-13.89	8	PASS



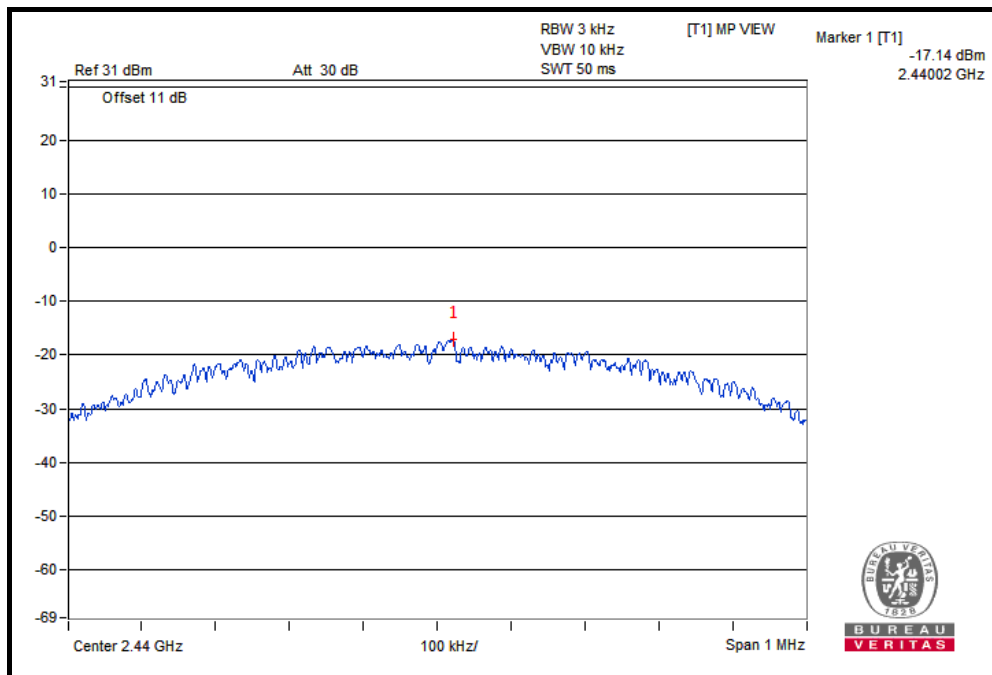


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Test Report No.: W7L-P21090022RF02

BT-LE (1MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-18.58	8	PASS
19	2440	-17.14	8	PASS
39	2480	-18.03	8	PASS



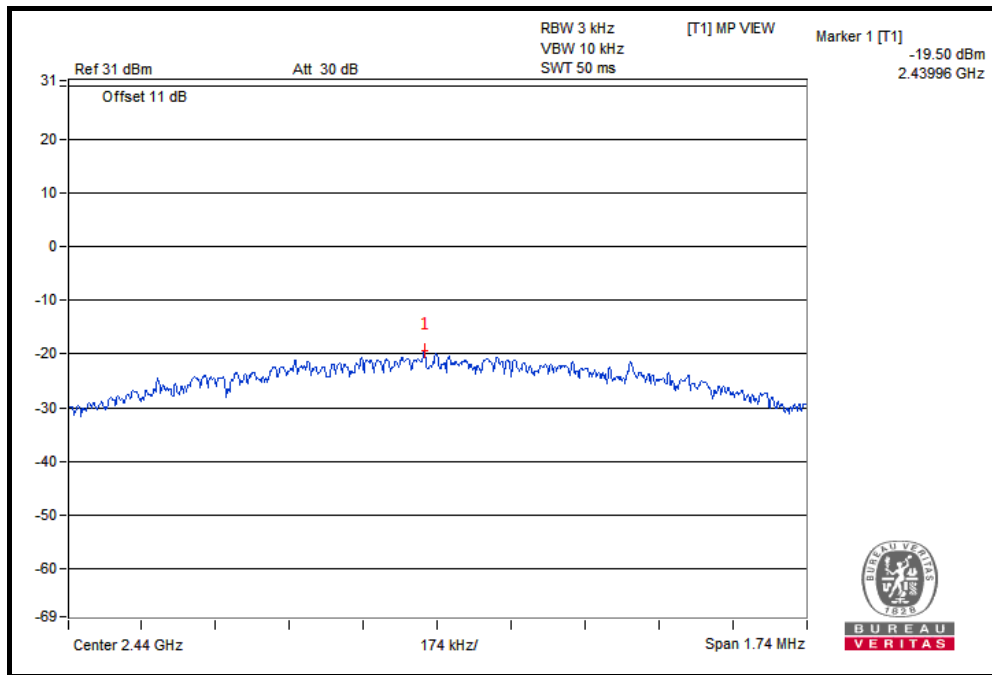


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Test Report No.: W7L-P21090022RF02

BT-LE (2MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-21.10	8	PASS
19	2440	-19.50	8	PASS
39	2480	-20.28	8	PASS



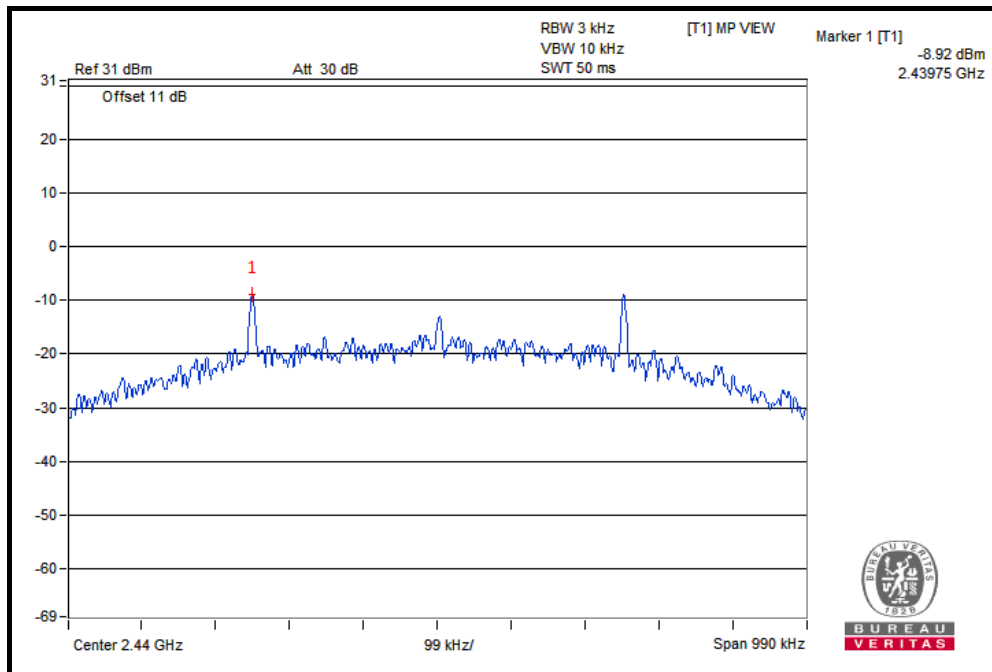


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Test Report No.: W7L-P21090022RF02

BT-LE (S2)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-10.36	8	PASS
19	2440	-8.92	8	PASS
39	2480	-9.85	8	PASS



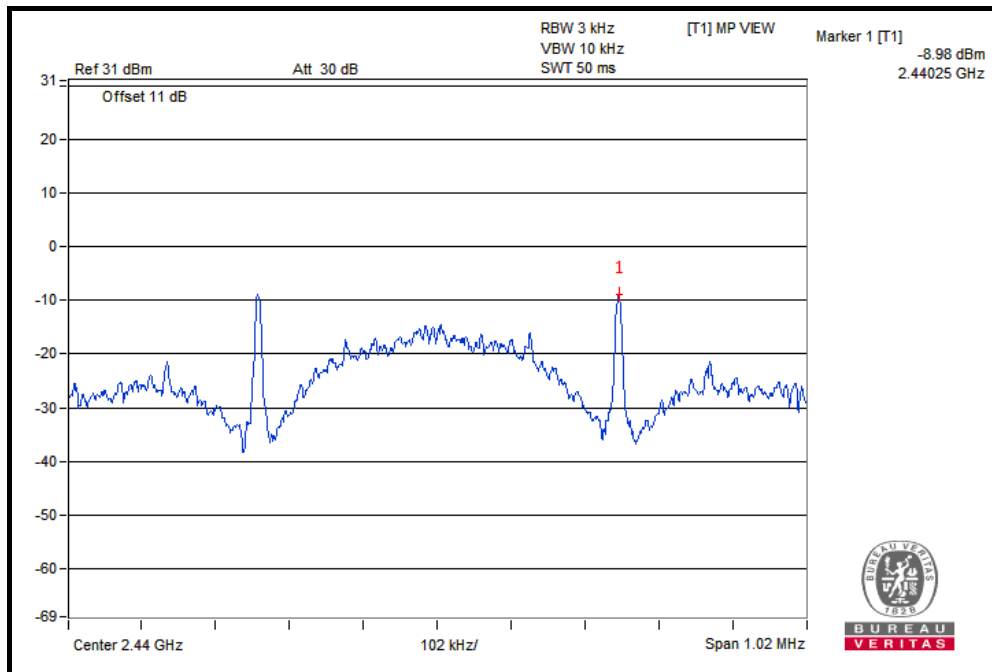


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Test Report No.: W7L-P21090022RF02

BT-LE (S8)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-10.36	8	PASS
19	2440	-8.98	8	PASS
39	2480	-9.77	8	PASS



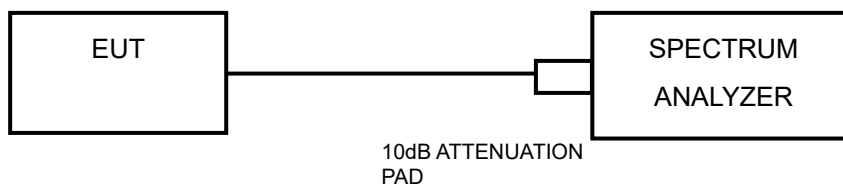


3.6 OUT OF BAND EMISSION MEASUREMENT

3.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

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

3.6.2 TEST SETUP



3.6.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW \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.

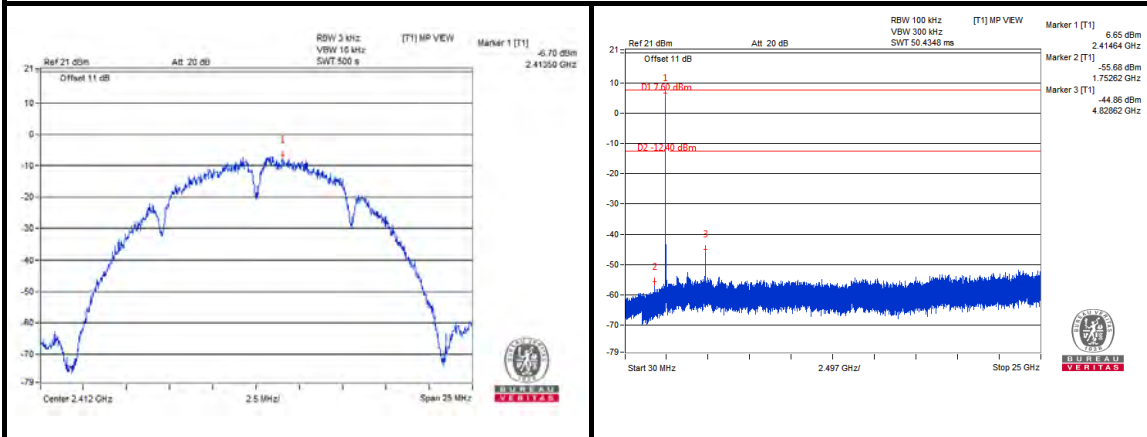


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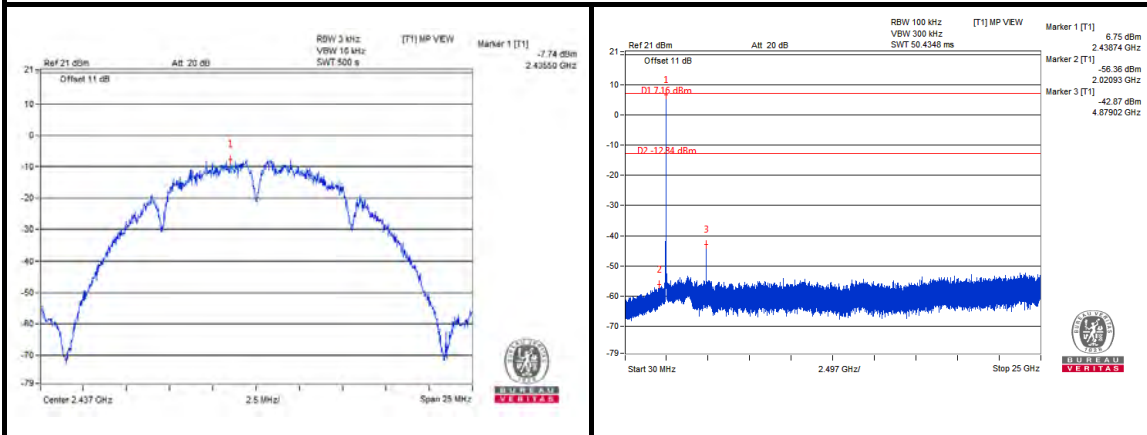
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802.11b

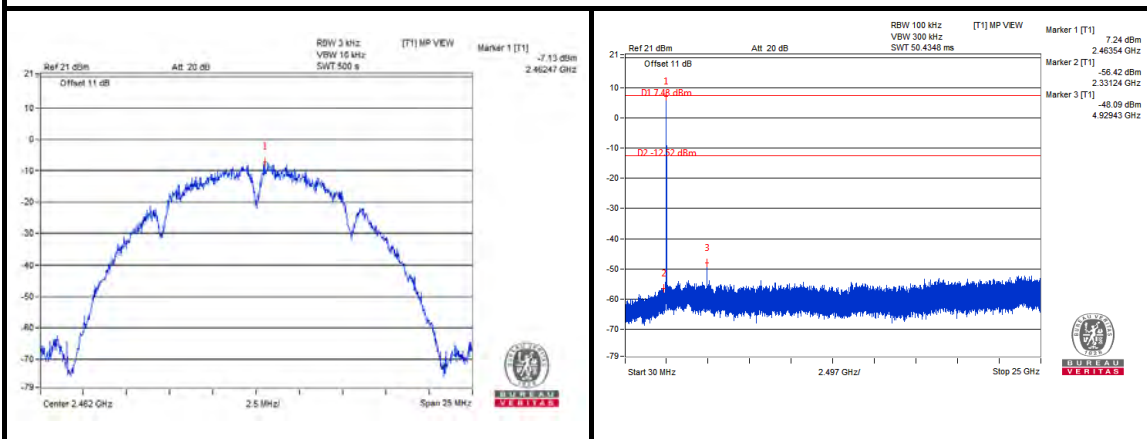
CH 1



CH 6



CH 11

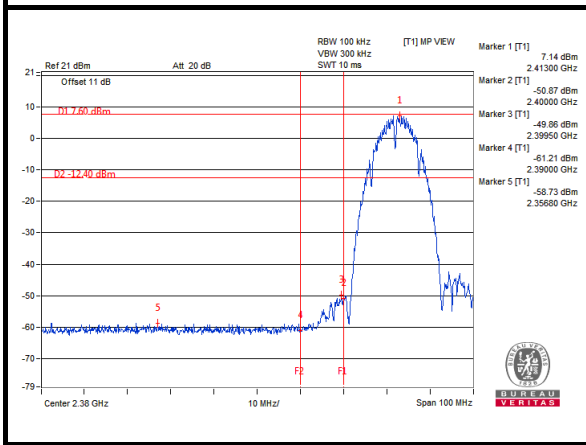




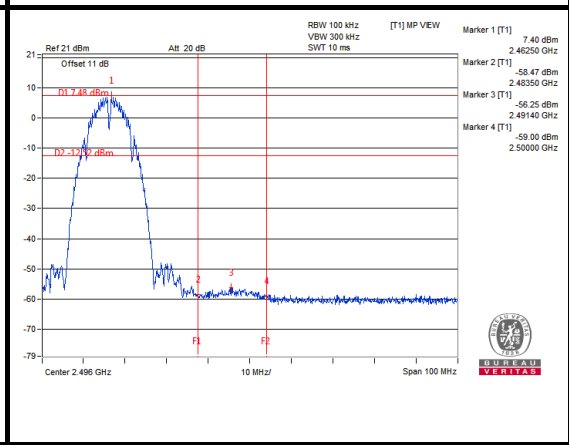
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CH 1 Band Edge



CH 11 Band Edge



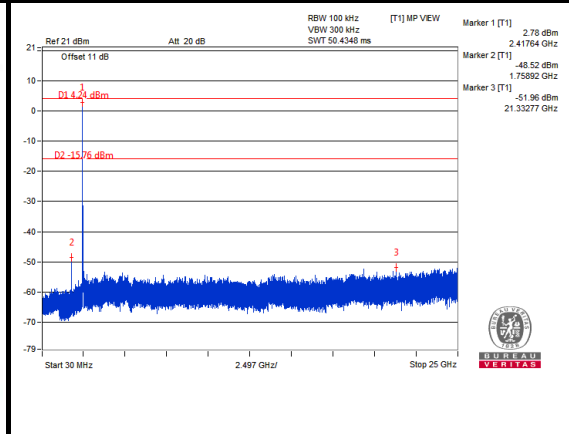
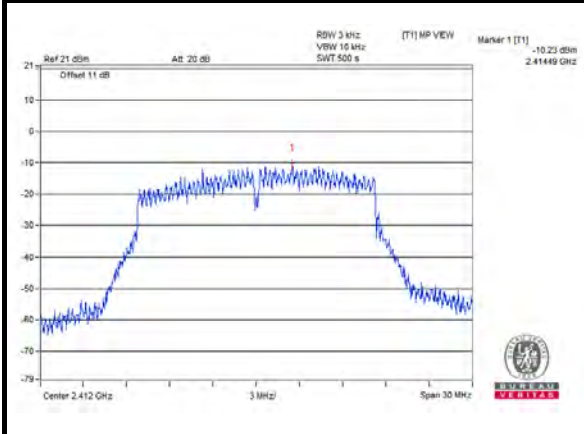


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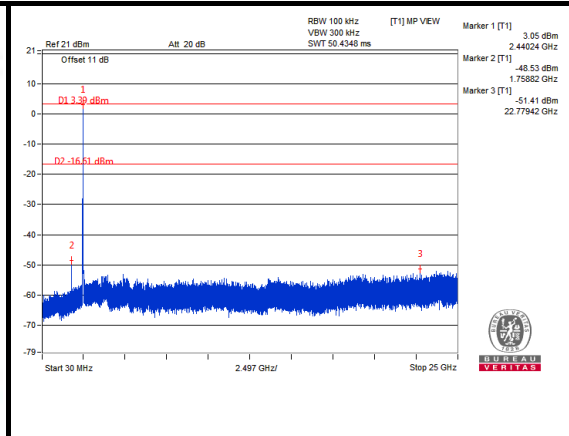
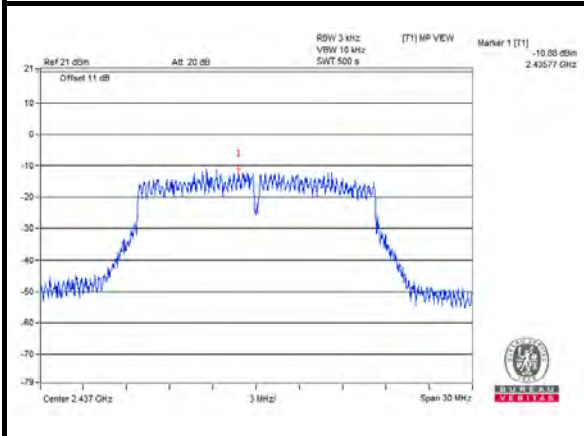
Test Report No.: W7L-P21090022RF02

802.11g

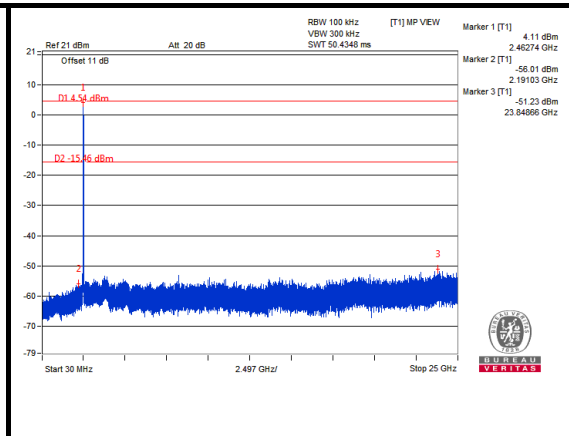
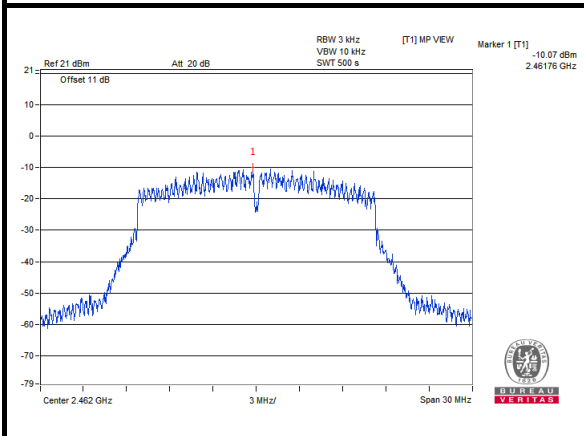
CH 1



CH 6



CH 11

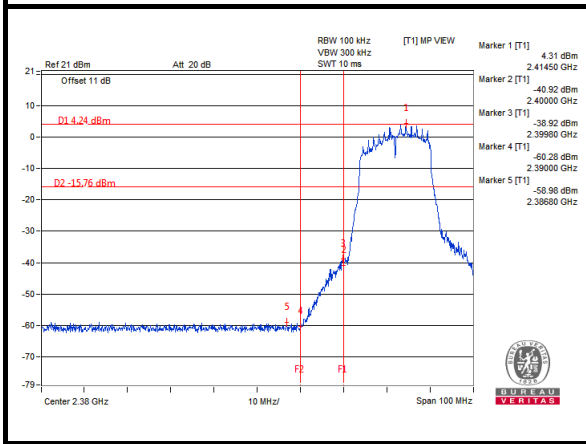




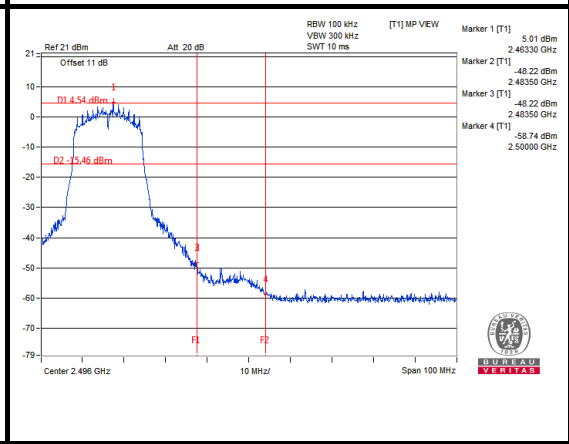
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CH 1 Band Edge



CH 11 Band Edge



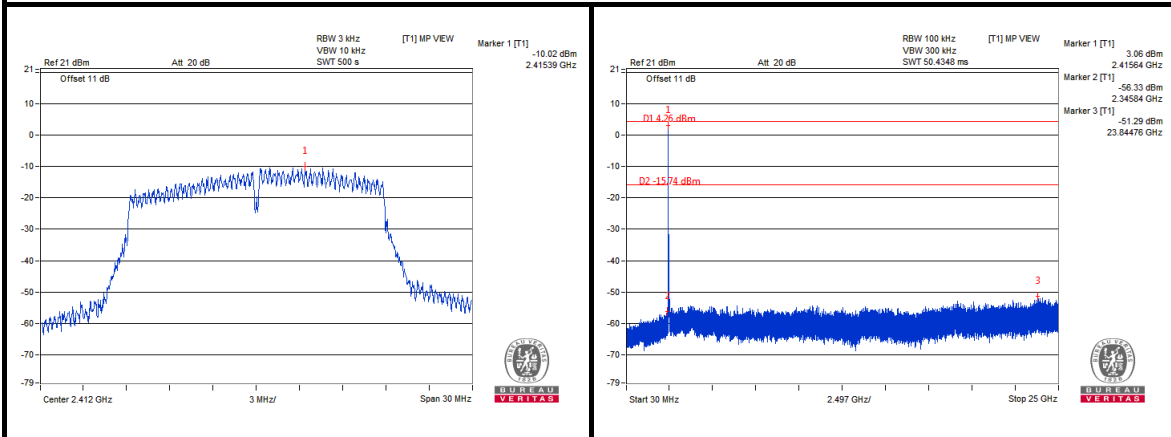


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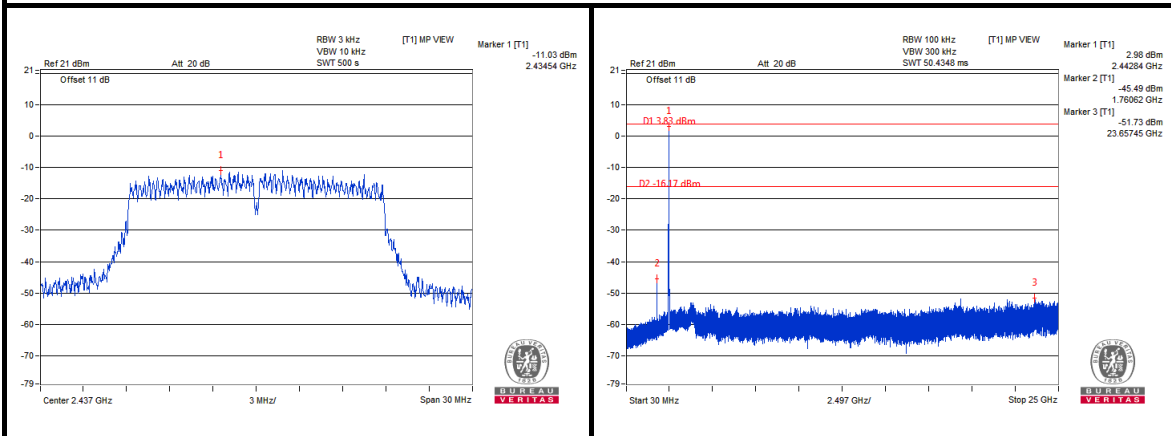
Test Report No.: W7L-P21090022RF02

802.11n (20MHz)

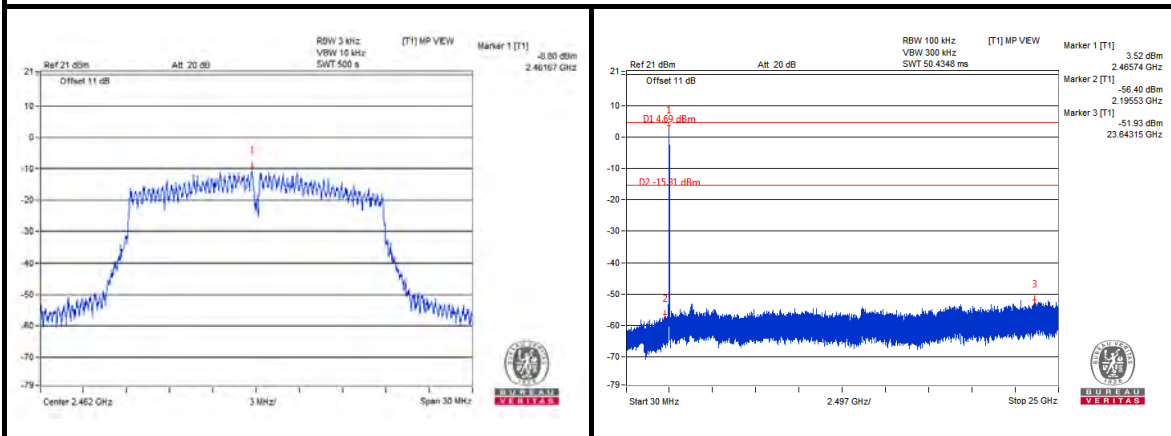
CH 1



CH 6



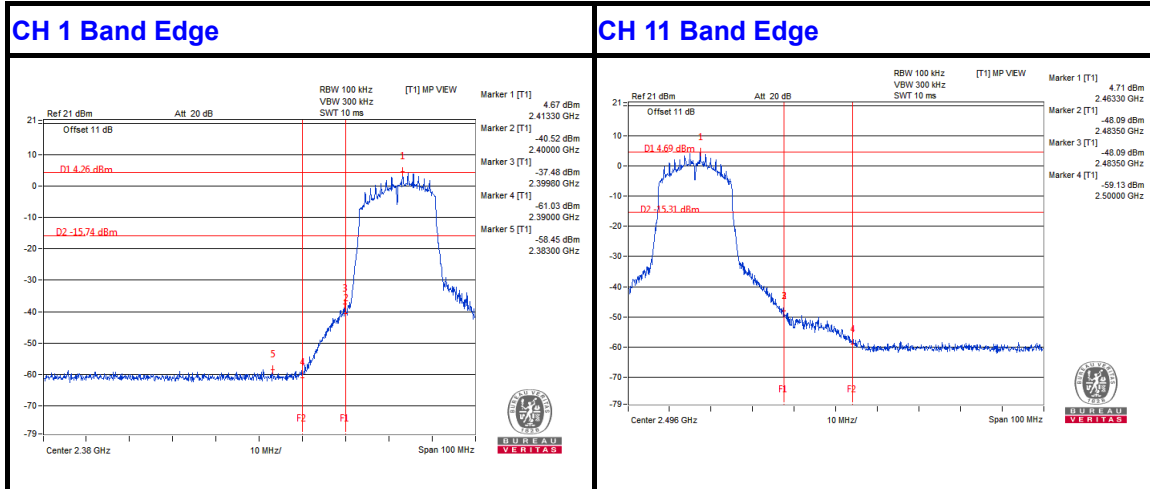
CH 11





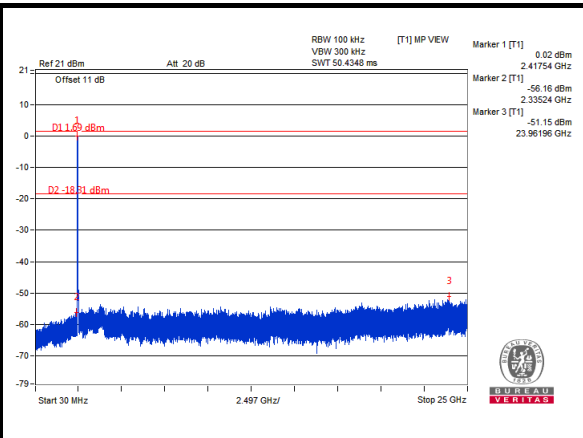
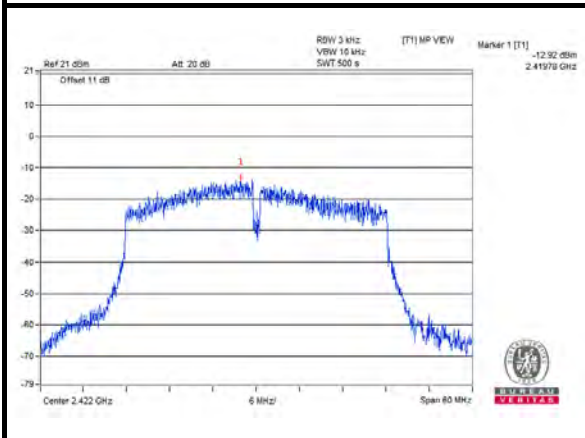
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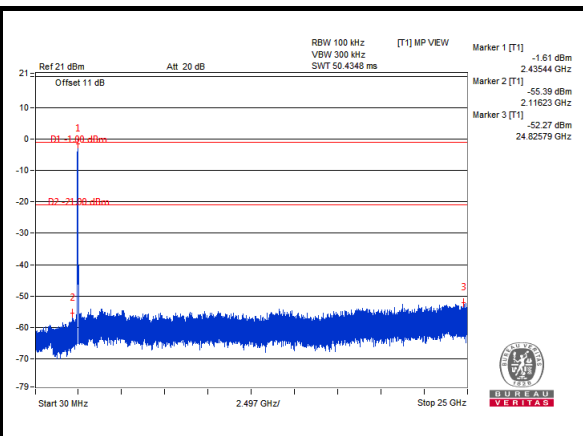
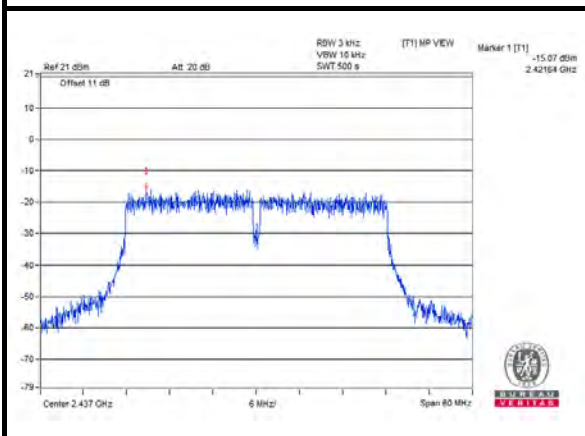




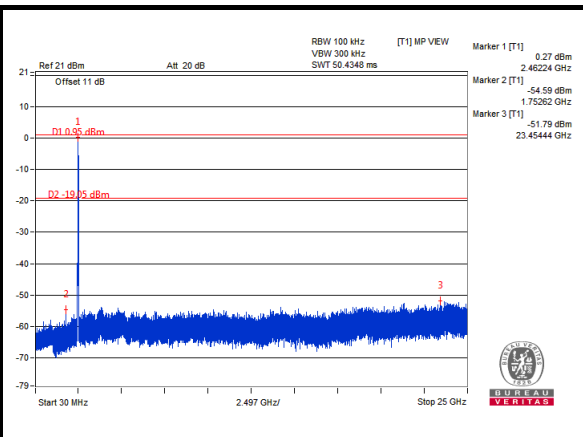
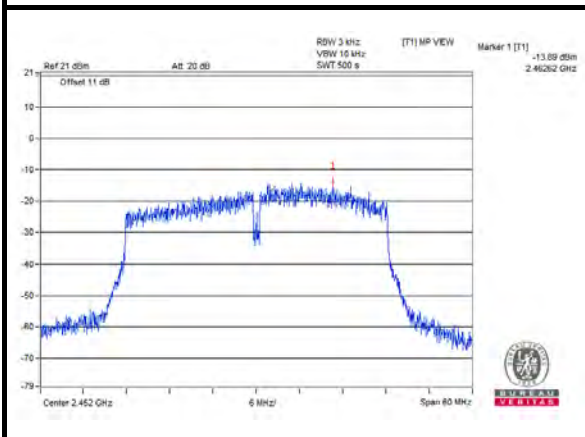
CH 3



CH 6



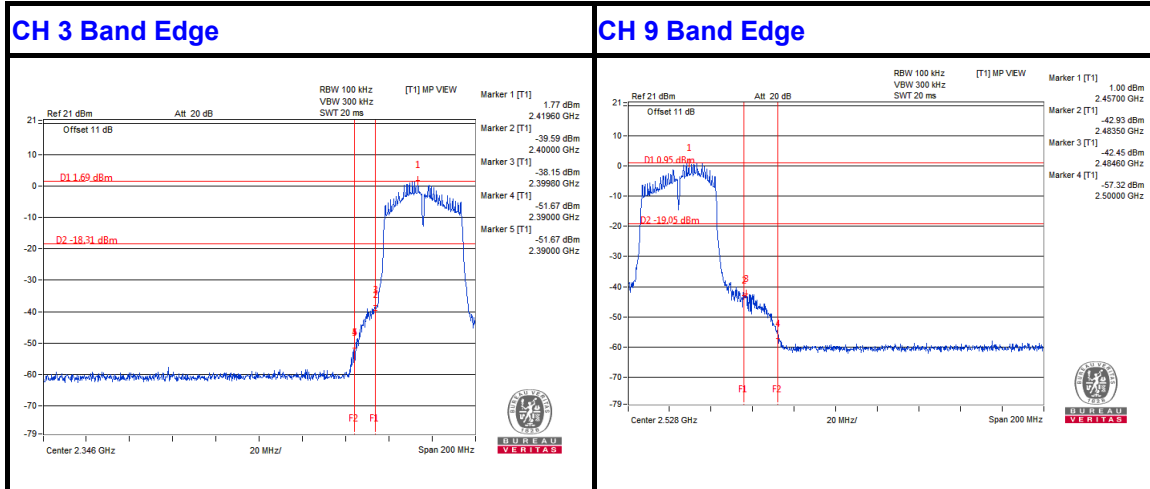
CH 9





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Test Report No.: W7L-P21090022RF02



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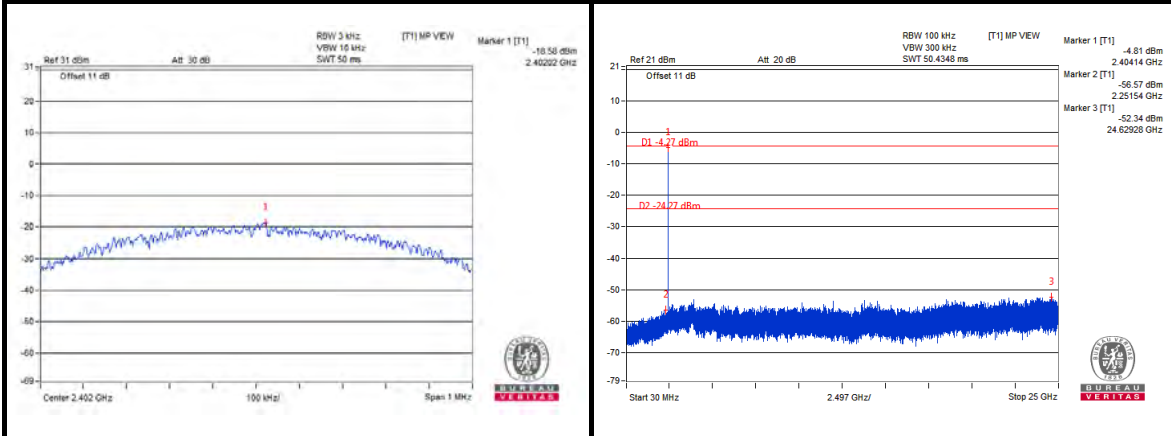


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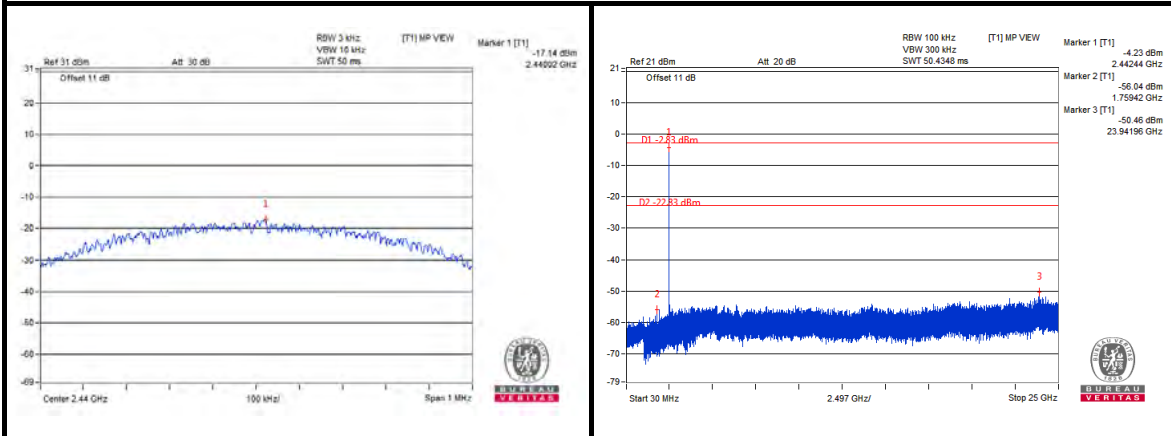
Test Report No.: W7L-P21090022RF02

BT-LE (1MHz)

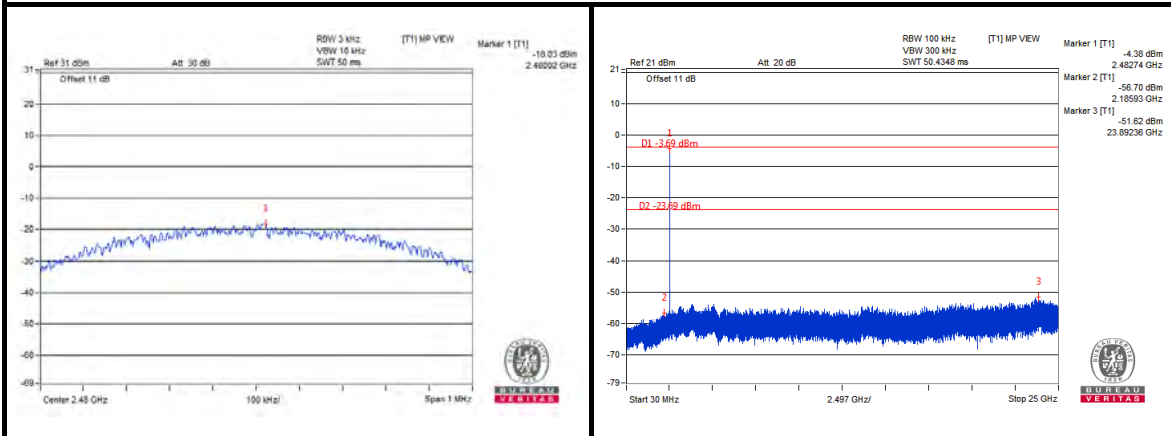
CH 0



CH 19



CH 39

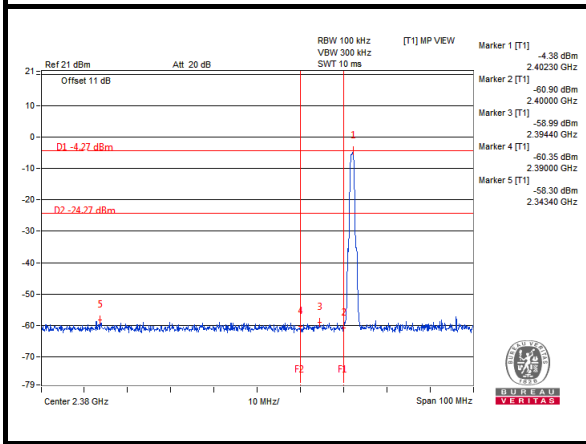




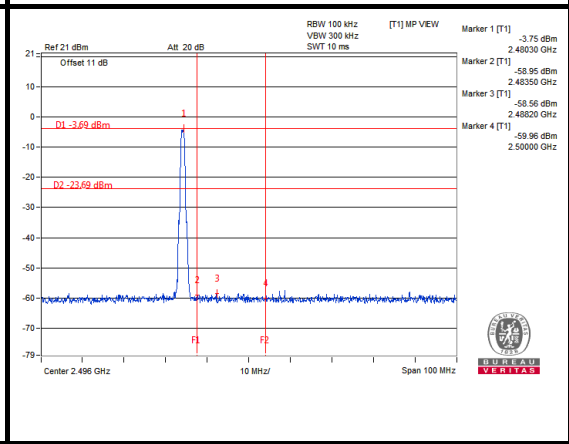
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Test Report No.: W7L-P21090022RF02

CH 0 Band Edge



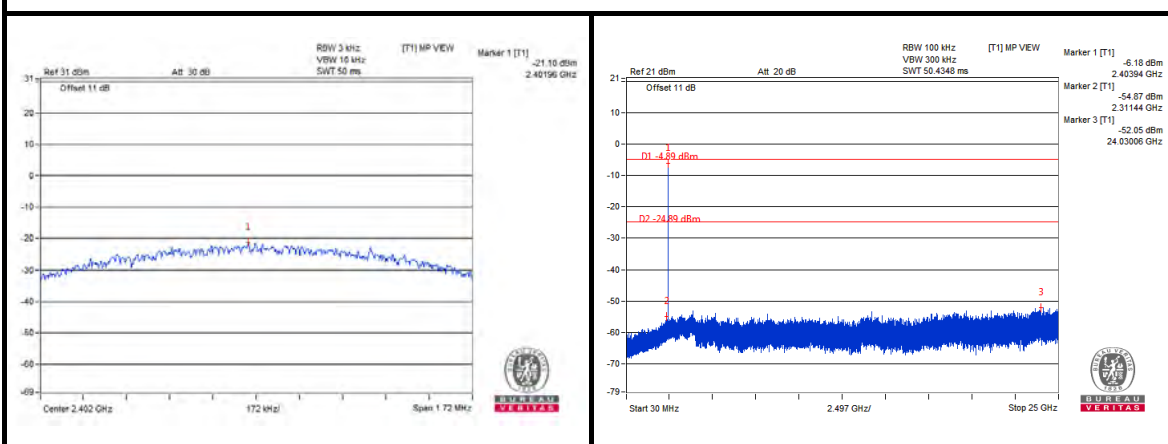
CH 39 Band Edge



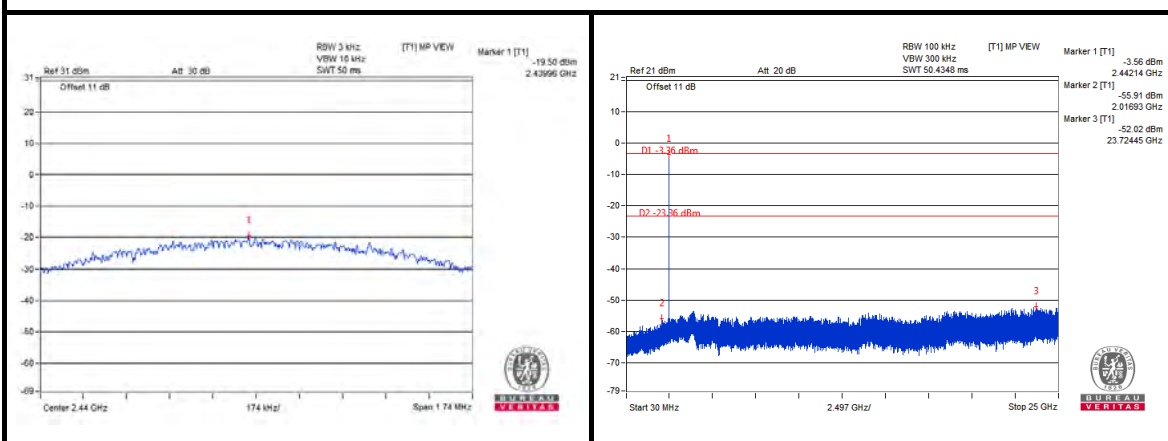


BT-LE (2MHz)

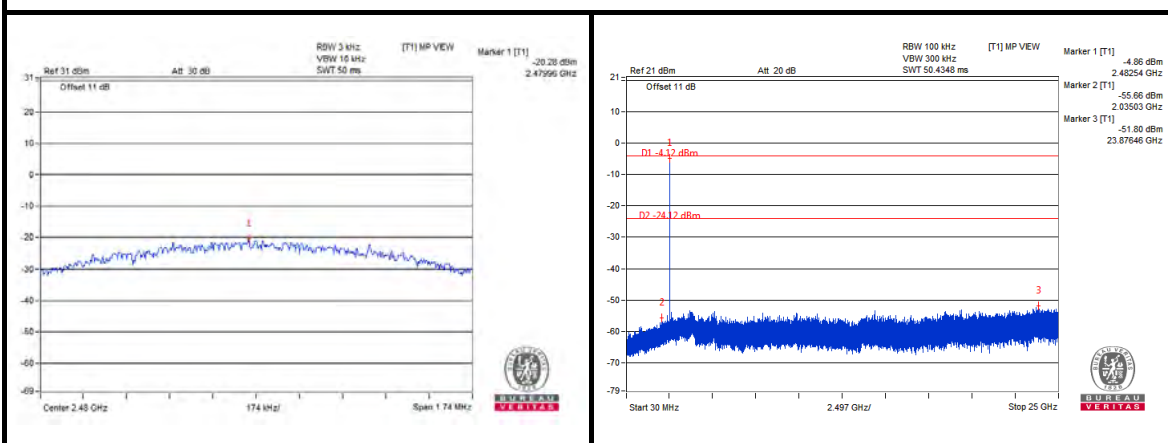
CH 0



CH 19



CH 39

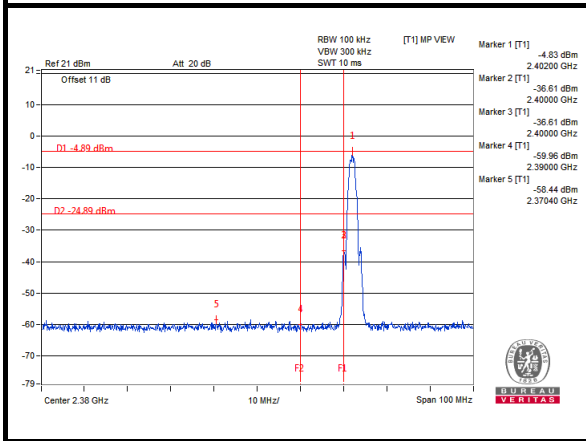




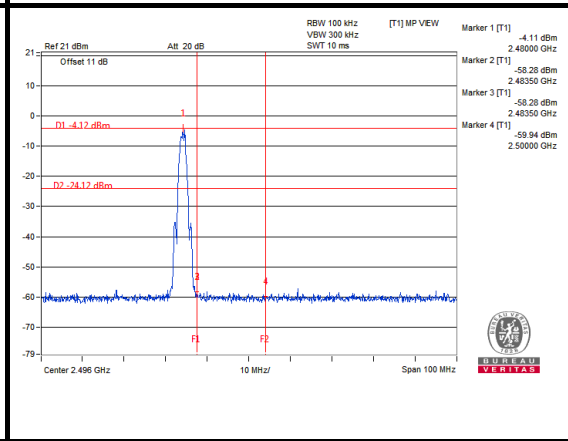
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Test Report No.: W7L-P21090022RF02

CH 0 Band Edge



CH 39 Band Edge



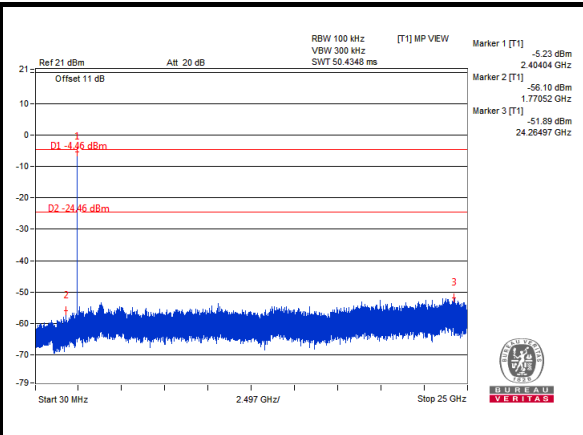
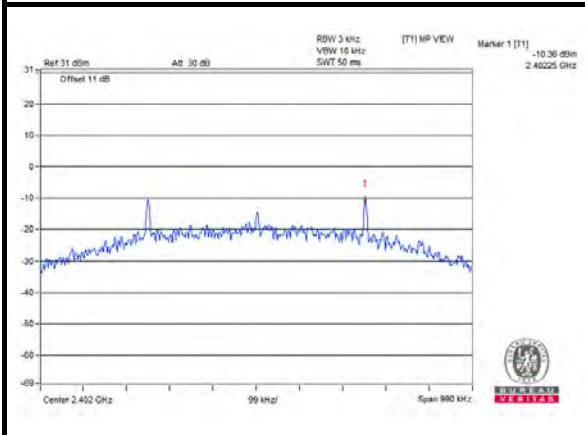


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VERITAS**

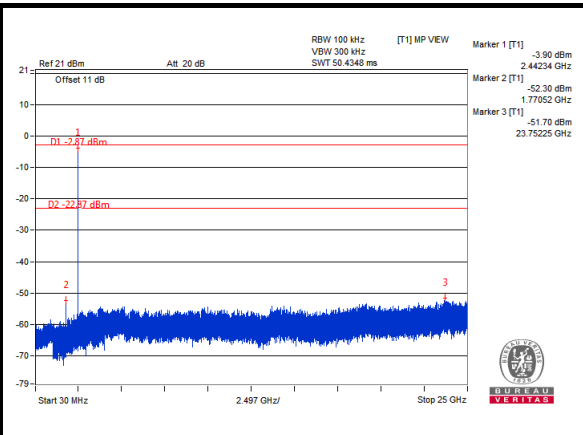
Test Report No.: W7L-P21090022RF02

BT-LE (S2)

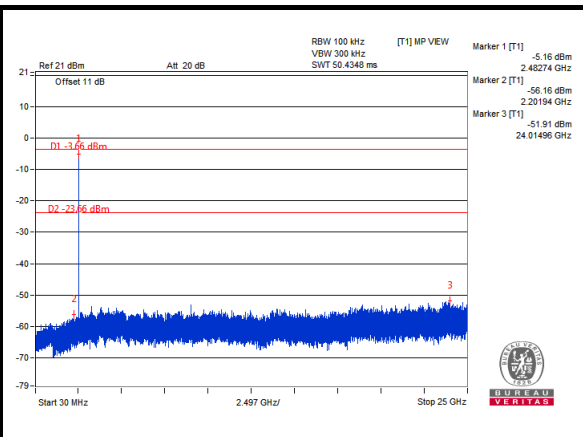
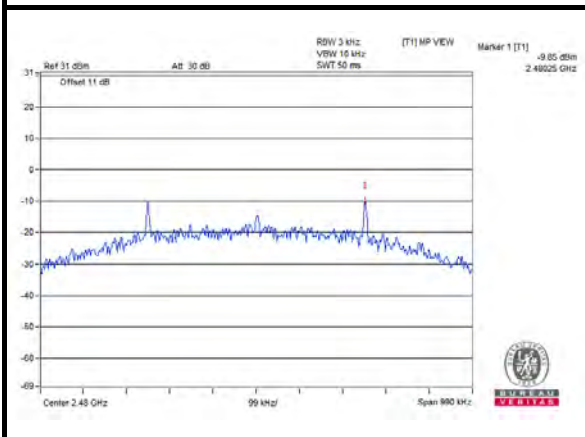
CH 0



CH 19



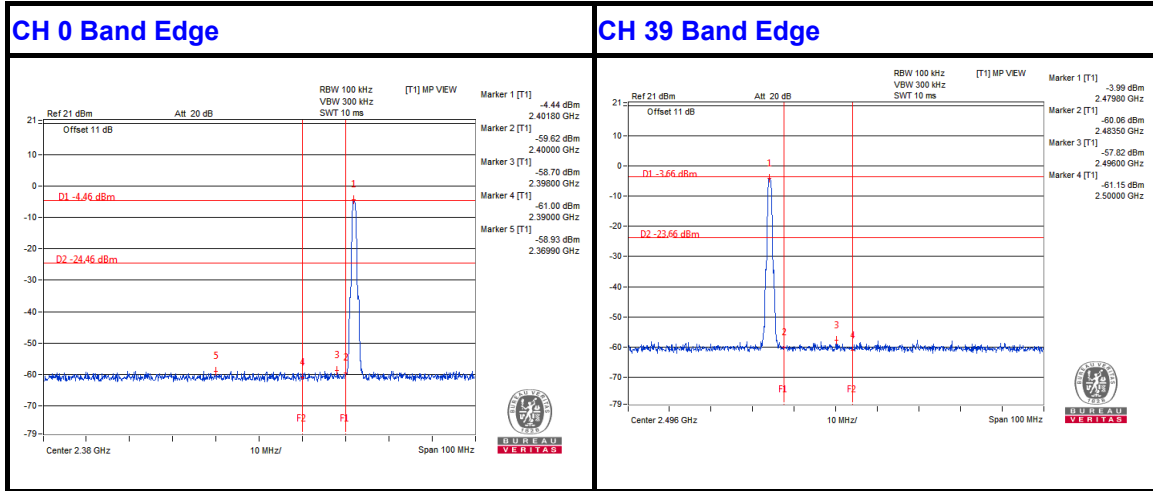
CH 39





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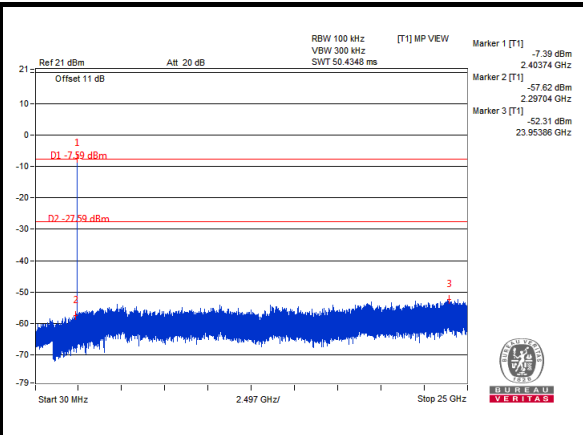


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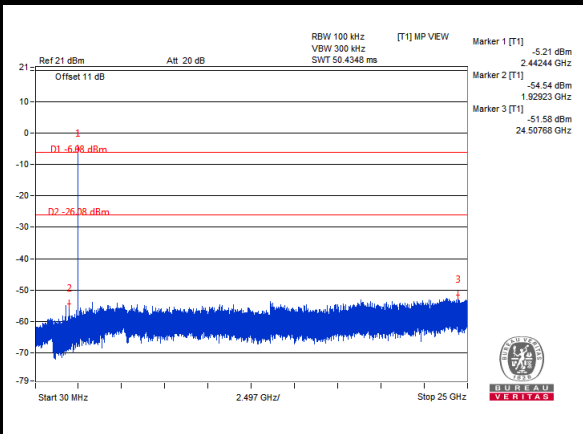
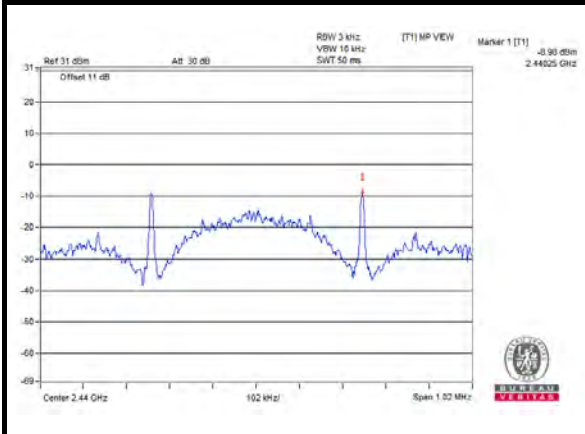
Test Report No.: W7L-P21090022RF02

BT-LE (S8)

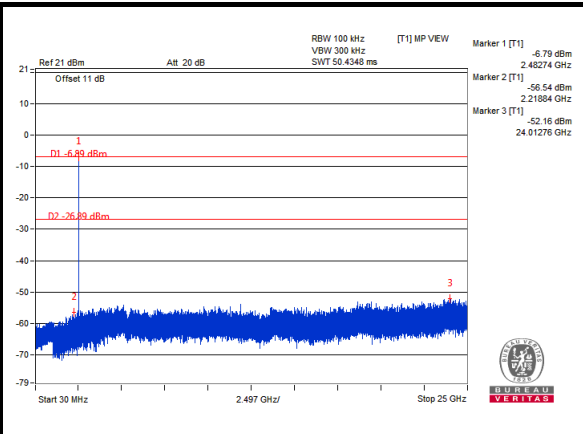
CH 0



CH 19



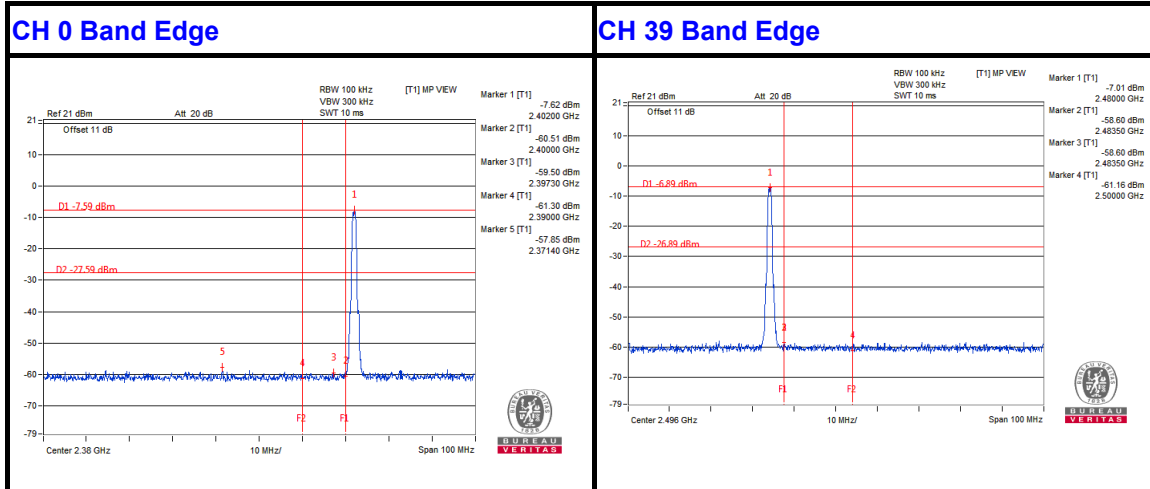
CH 39





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4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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Test Report No.: W7L-P21090022RF02

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---