

TEST REPORT

Applicant	Mr. Christmas Ltd.
Address	Flat/Rm.901-3,9/F.,Railway Plaza, 39 Chatham Road South, Tsim sha Tsui, Kowloon, Hong kong

Manufacturer or Supplier	Mr. Christmas Ltd.
Address	Flat/Rm.901-3,9/F.,Railway Plaza, 39 Chatham Road South, Tsim sha Tsui, Kowloon, Hong kong
Product	Mr. Drive-in Complete Outdoor Home Theatre
Brand Name	N/A
Model	61353
Additional Model & Model Difference	N/A
Date of tests	Mar. 09, 2018 ~ Apr. 24, 2018

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

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

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

Tested by Breeze Jiang Project Engineer / EMC Department	Approved by Glyn He Supervisor / EMC Department
	 Date: Apr. 26, 2018

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Test Report No.: RF180309N010

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF180309N010	Original release	Apr. 26, 2018

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	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted Output power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used

2 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.70dB
Radiated emissions	9KHz ~ 30MHz	2.90dB
	30MHz ~ 1GMHz	3.83dB
	1GHz ~ 18GHz	4.93dB
	18GHz ~ 40GHz	4.80dB

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

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Mr. Drive-in Complete Outdoor Home Theatre
MODEL NO.	61353
FCC ID	SHV61353
NOMINAL VOLTAGE	DC 12V from Adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS, 64QAM, 16QAM, QPSK, BPSK for OFDM, BT-LE for GFSK
MODULATION TECHNOLOGY	DSSS, OFDM, GFSK
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n(HT20), 2422-2452MHz for 11n(HT40), 2402-2480MHz for BT-LE(GFSK)
PEAK OUTPUT POWER	WLAN: 15.71dBm (Maximum) BT-LE: 5.74dBm (Maximum)
ANTENNA TYPE	FPCB Antenna, 2.0dBi Gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	AC Line: Unshielded, Detachable, 1.8m; Mouse USB Line: Unshielded, Non-detachable, 1.1m.

NOTE:

1. The EUT incorporates a SIMO function. Physically, the EUT provides one transmitter and one receiver.

MODULATION MODE	FUNCTION
802.11b	1TX/1RX
802.11g	1TX/1RX
802.11n (HT20)	1TX/1RX
802.11n (HT40)	1TX/1RX
BT-LE	1TX/1RX

2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
4. Please refer to the EUT photo document (Reference No.: 180309N010) for detailed product photo.
5. The EUT was powered by the following adapter:

Adapter1	
BRAND:	
MODEL:	XY60S-1205000L-UP
INPUT:	AC 120V 60Hz 1.5A Max.
OUTPUT:	DC 12V 5A
DC LINE:	Unshielded, Non-detachable, 1.8m, with one core.

3.2 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

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

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

3.2.2 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 X 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	
A	√	√	√	√	Powered by Adapter with (WIFI + BT) function

Where **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

RE≥1G: Radiated Emission above 1GHz
APCM: Antenna Port Conducted Measurement

POWER LINE CONDUCTED EMISSION TEST:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	TESTED CONDITION
-	BT Link+ WIFI (2.4G) Link

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, XYZ axis and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
A	802.11b	1 to 11	1	OFDM	DBPSK	6.0	X
A	BT-LE	0 to 39	39	GFSK	GFSK	1.0	X

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, XYZ axis and antenna ports (if EUT with antenna diversity architecture).

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
A	802.11b	1 to 11	1, 6, 11	CCK	DBPSK	1.0	X
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	X
A	802.11n HT20	1 to 11	1, 6, 11	OFDM	BPSK	6.5	X
A	802.11n HT40	3 to 9	3, 6, 9	OFDM	BPSK	13.5	X
A	BT-LE	0 to 39	0,19, 39	GFSK	GFSK	1.0	X

ANTENNA PORT CONDUCTED MEASUREMENT:

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

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

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	CCK	DBPSK	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A	802.11n HT20	1 to 11	1, 6, 11	OFDM	BPSK	6.5
A	802.11n HT40	3 to 9	3, 6, 9	OFDM	BPSK	13.5
A	BT-LE	0 to 39	0,19, 39	GFSK	GFSK	1.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE	TESTED BY
RE<1G	26deg. C, 50%RH	DC 12V from Adapter	Arnold
RE≥1G	26deg. C, 50%RH	DC 12V from Adapter	Arnold
PLC	25deg. C, 60%RH	DC 12V from Adapter	Dragon
APCM	20deg. C, 55%RH	DC 12V from Adapter	Sen He

3.3 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 v04

ANSI C63.10-2013

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

3.4 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	Notebook	DELL	Inspiron 14-3442	4Q3WB12	N/A
2	Printer	Lenovo	LJ2200L	LP02857415 48001408	N/A
3	Mouse	DELL	L100	9GTRNB1400003724	N/A
4	BT Speaker	Jin hong	M9	N/A	N/A
5	DVD	Pioneer	DV-420V-G	JAKD014992CN	N/A

NO.	DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded, Detachable 0.8m, DC Line: Unshielded, Detachable 1.8m, VGA Line: Shielded, Detachable 1.5m, with two core, HDMI Line: Shielded, Detachable 1.5m, with two core.
2	AC Line: Unshielded, Detachable 1.5m, USB Line: Unshielded, Detachable 1.5m.
3	USB Line: Unshielded, Detachable 1.8m.
4	N/A
5	AC Line: Unshielded, Detachable 0.8m, AV Line: Unshielded, Detachable 1.5m, with one core.

4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	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.

4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Apr. 05,18	Apr. 04,19
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Mar. 03,18	Mar. 02,19
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Apr. 05,18	Apr. 04,19
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Jan. 17,18	Jan. 16,19
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A	N/A

- NOTE:**
1. The test was performed in shielded room 553.
 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.

4.1.3 TEST PROCEDURES

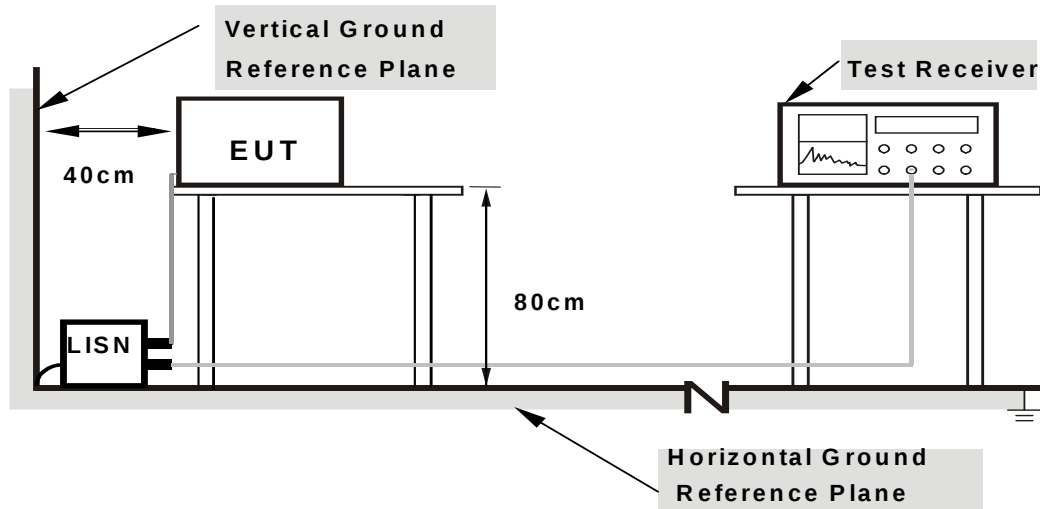
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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) were not recorded.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



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).

4.1.6 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.

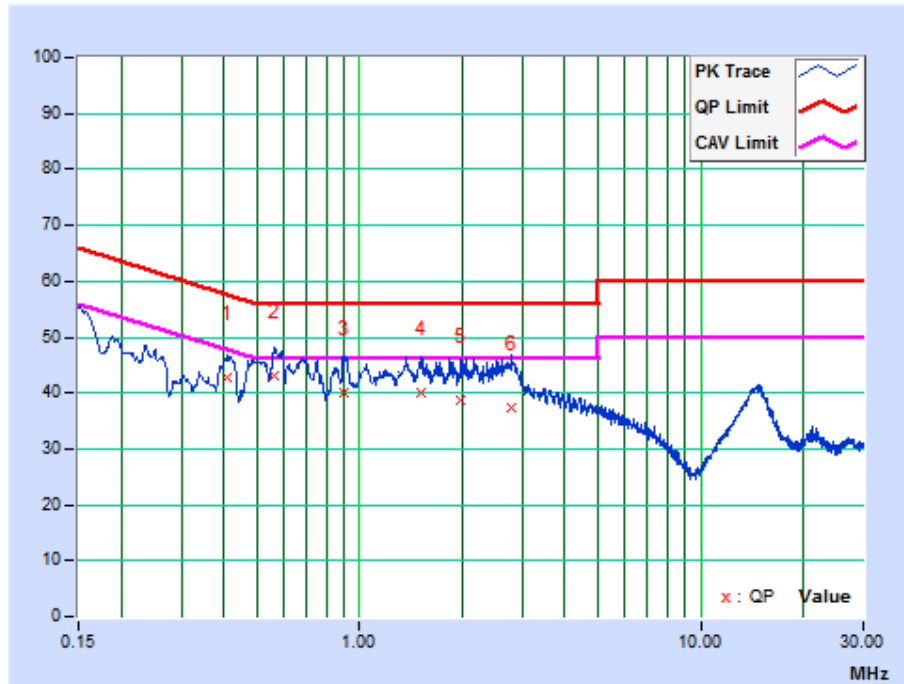
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: BT+WIFI

PHASE	Line	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.41087	10.22	32.64	20.94	42.86	31.16	57.63	47.63	-14.77	-16.47
2	0.56404	10.22	32.85	20.29	43.07	30.51	56.00	46.00	-12.93	-15.49
3	0.89532	10.23	29.95	16.49	40.18	26.72	56.00	46.00	-15.82	-19.28
4	1.51350	10.22	29.74	18.04	39.96	28.26	56.00	46.00	-16.04	-17.74
5	1.97690	10.22	28.36	17.27	38.58	27.49	56.00	46.00	-17.42	-18.51
6	2.79150	10.22	27.26	16.92	37.48	27.14	56.00	46.00	-18.52	-18.86

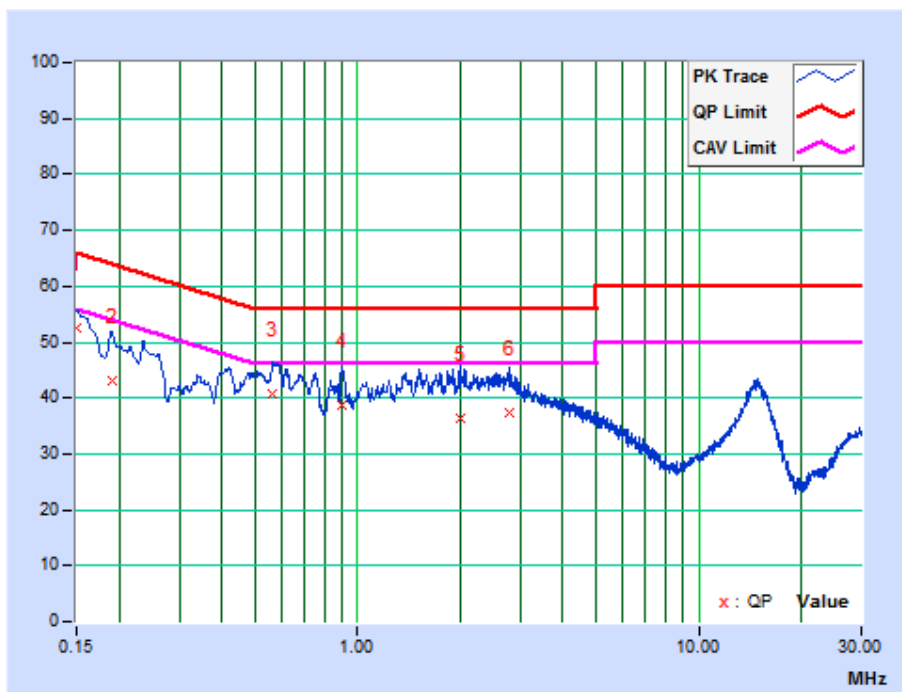
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



PHASE	Neutral	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.01	42.52	26.73	52.53	36.74	66.00	56.00	-13.47	-19.26
2	0.19005	10.01	33.08	15.43	43.09	25.44	64.03	54.03	-20.94	-28.59
3	0.56255	10.02	30.78	18.40	40.80	28.42	56.00	46.00	-15.20	-17.58
4	0.90244	10.02	28.84	15.16	38.86	25.18	56.00	46.00	-17.14	-20.82
5	1.99500	10.01	26.45	16.35	36.46	26.36	56.00	46.00	-19.54	-19.64
6	2.77125	10.03	27.34	16.46	37.37	26.49	56.00	46.00	-18.63	-19.51

- 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.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 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.

4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 11,18	Mar. 10,19
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Active Loop Antenna (9KHz -30MHz)	SCHWARZBECK	FMZB 1519B	1519B-045	May 31,17	May 30,18
Amplifier (9KHz -1GHz)	Burgeon	BPA-530	100210	Apr. 05,18	Apr. 04,19
Bilog Antenna (20MHz -2GHz)	Teseq	CBL 6111D	30643	Jul. 28, 17	Jul. 27, 18
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 19,17	May 18,18
Horn Antenna (18GHz -40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170242	Mar. 15,18	Mar. 14,19
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Mar. 06,18	Mar. 05,19
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	Mar. 06,18	Mar. 05,19
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 08,17	Nov. 07,18
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug. 10,17	Aug. 09,18

NOTE:

1. The test was performed in 966 Chamber.
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. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 749762.

4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 1.5 meters (above 1GHz) and 0.8 meters (below 1GHz) above the ground at a 3 meters semi-anechoic chamber. 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. For below 1GHz was used bilog antenna, and above 1GHz was used horn 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. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
- a. 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 at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes, the worst-case test configuration was reported on the file test setup photo.

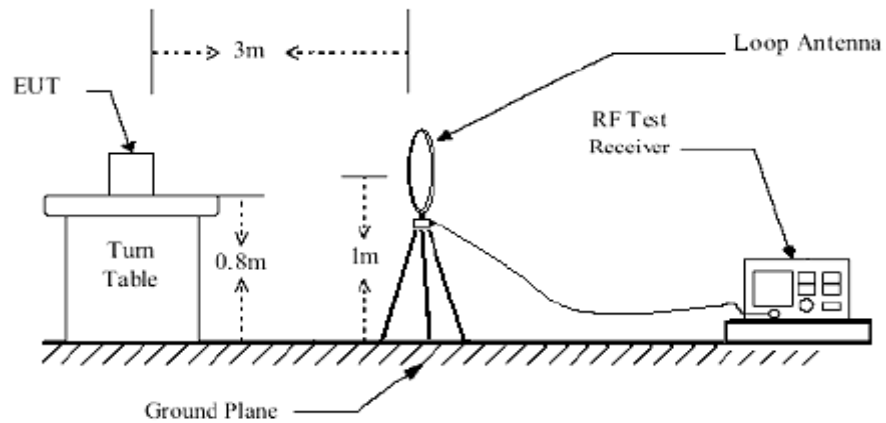


4.2.4 DEVIATION FROM TEST STANDARD

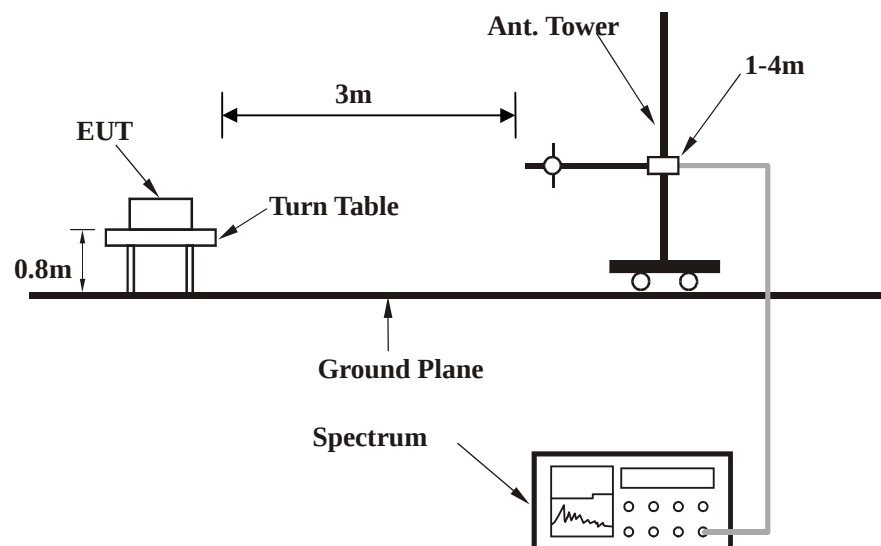
No deviation.

4.2.5 TEST SETUP

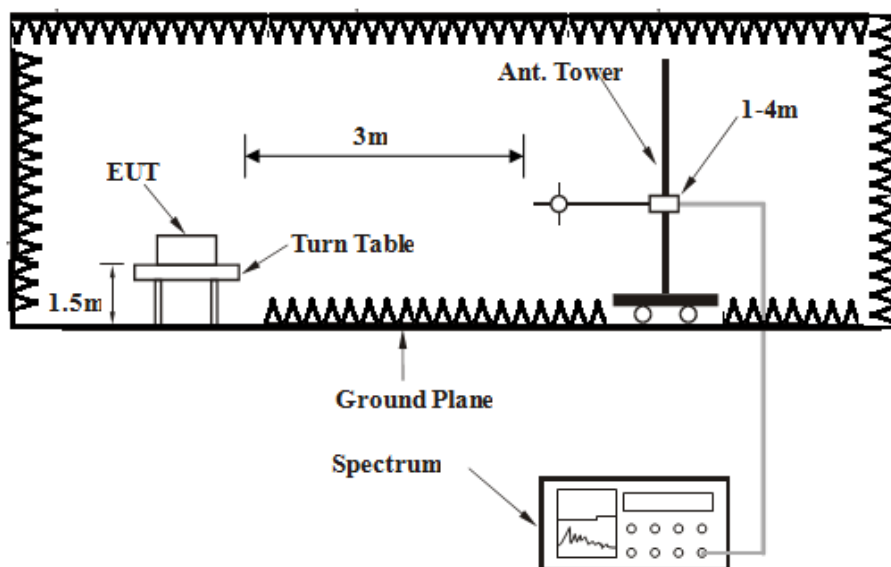
Below 30MHz test setup



Below 1GHz test setup



Above 1GHz test setup



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

4.2.6 EUT OPERATING CONDITIONS

- Set the EUT under full load condition and placed them on a testing table.
- Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the EUT in full functions.

4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA:

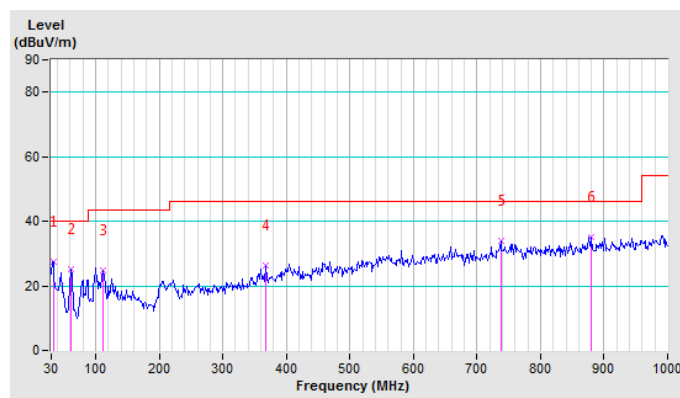
802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.11	27.33 QP	40.00	-12.67	1.00 H	160	34.38	-7.05
2	61.09	25.04 QP	40.00	-14.96	1.00 H	104	43.69	-18.65
3	110.83	24.75 QP	43.50	-18.75	1.00 H	64	36.50	-11.75
4	367.32	26.15 QP	46.00	-19.85	1.00 H	249	31.12	-4.97
5	737.29	33.78 QP	46.00	-12.22	1.00 H	80	28.84	4.94
6	880.30	35.09 QP	46.00	-10.91	1.00 H	0	29.63	5.46

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.

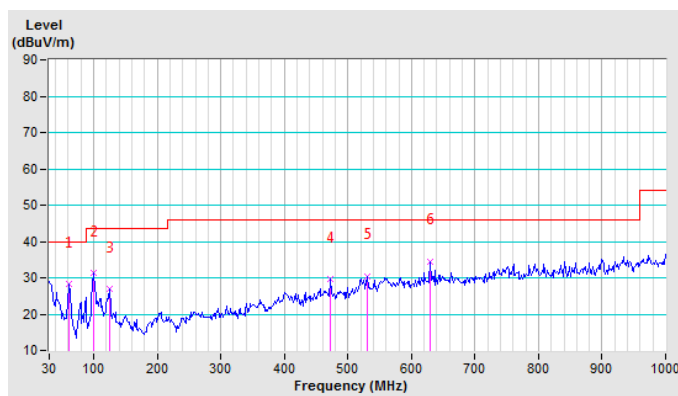


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	61.09	28.18 QP	40.00	-11.82	1.00 V	185	46.83	-18.65
2	99.95	31.20 QP	43.50	-12.30	1.00 V	108	43.90	-12.70
3	124.82	26.81 QP	43.50	-16.69	1.00 V	130	37.72	-10.91
4	473.03	29.57 QP	46.00	-16.43	1.00 V	30	30.79	-1.22
5	530.54	30.38 QP	46.00	-15.62	1.00 V	160	29.88	0.50
6	630.03	34.56 QP	46.00	-11.44	1.00 V	192	31.41	3.15

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.





ABOVE 1GHz DATA

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.69 PK	74.00	-15.31	1.20 H	258	55.59	3.10
2	2390.00	45.29 AV	54.00	-8.71	1.20 H	258	42.19	3.10
3	*2412.00	88.51 PK			1.20 H	158	85.34	3.17
4	*2412.00	84.31 AV			1.20 H	158	81.14	3.17
5	4824.00	48.56 PK	74.00	-25.44	1.30 H	269	42.46	6.10
6	4824.00	39.69 AV	54.00	-14.31	1.30 H	269	33.59	6.10
7	#7236.00	54.21 PK	74.00	-19.79	1.02 H	225	42.70	11.51
8	#7236.00	43.26 AV	54.00	-10.74	1.02 H	225	31.75	11.51
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.58 PK	74.00	-13.42	1.02 V	248	57.48	3.10
2	2390.00	49.58 AV	54.00	-4.42	1.02 V	248	46.48	3.10
3	*2412.00	89.83 PK			1.24 V	269	86.66	3.17
4	*2412.00	85.28 AV			1.24 V	269	82.11	3.17
5	4824.00	51.24 PK	74.00	-22.76	1.20 V	258	45.14	6.10
6	4824.00	41.27 AV	54.00	-12.73	1.20 V	258	35.17	6.10
7	#7236.00	55.58 PK	74.00	-18.42	1.02 V	216	44.07	11.51
8	#7236.00	43.57 AV	54.00	-10.43	1.02 V	216	32.06	11.51

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	88.01 PK			1.20 H	258	84.74	3.27
2	*2437.00	84.21 AV			1.20 H	258	80.94	3.27
3	4874.00	51.24 PK	74.00	-22.76	1.02 H	248	45.04	6.20
4	4874.00	39.86 AV	54.00	-14.14	1.02 H	248	33.66	6.20
5	7311.00	53.68 PK	74.00	-20.32	1.02 H	147	41.96	11.72
6	7311.00	42.57 AV	54.00	-11.43	1.02 H	147	30.85	11.72
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	88.69 PK			1.22 V	360	85.42	3.27
2	*2437.00	84.58 AV			1.22 V	360	81.31	3.27
3	4874.00	43.58 PK	74.00	-30.42	1.20 V	254	37.38	6.20
4	4874.00	39.68 AV	54.00	-14.32	1.20 V	254	33.48	6.20
5	7311.00	52.36 PK	74.00	-21.64	1.20 V	154	40.64	11.72
6	7311.00	43.29 AV	54.00	-10.71	1.20 V	154	31.57	11.72

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	87.56 PK			1.20 H	248	84.20	3.36
2	*2462.00	83.85 AV			1.20 H	248	80.49	3.36
3	2483.50	59.94 PK	74.00	-14.06	1.00 H	217	56.50	3.44
4	2483.50	48.35 AV	54.00	-5.65	1.00 H	217	44.91	3.44
5	4924.00	50.24 PK	74.00	-23.76	1.20 H	248	43.93	6.31
6	4924.00	43.68 AV	54.00	-10.32	1.20 H	248	37.37	6.31
7	7386.00	52.34 PK	74.00	-21.66	1.20 H	225	40.41	11.93
8	7386.00	42.03 AV	54.00	-11.97	1.20 H	225	30.10	11.93
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	89.54 PK			1.00 V	333	86.18	3.36
2	*2462.00	84.22 AV			1.00 V	333	80.86	3.36
3	2483.50	59.68 PK	74.00	-14.32	1.20 V	254	56.24	3.44
4	2483.50	49.69 AV	54.00	-4.31	1.20 V	254	46.25	3.44
5	4924.00	51.36 PK	74.00	-22.64	2.54 V	303	45.05	6.31
6	4924.00	46.30 AV	54.00	-7.70	2.54 V	303	39.99	6.31
7	7386.00	54.27 PK	74.00	-19.73	1.00 V	225	42.34	11.93
8	7386.00	42.36 AV	54.00	-11.64	1.00 V	225	30.43	11.93

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": 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								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.96 PK	74.00	-2.04	1.20 H	254	68.86	3.10
2	2390.00	53.64 AV	54.00	-0.36	1.20 H	254	50.54	3.10
3	*2412.00	88.65 PK			1.20 H	248	85.48	3.17
4	*2412.00	79.21 AV			1.20 H	248	76.04	3.17
5	4824.00	46.58 PK	74.00	-27.42	1.20 H	248	40.48	6.10
6	4824.00	35.68 AV	54.00	-18.32	1.20 H	248	29.58	6.10
7	#7236.00	53.68 PK	74.00	-20.32	1.00 H	360	42.17	11.51
8	#7236.00	40.57 AV	54.00	-13.43	1.00 H	360	29.06	11.51
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.95 PK	74.00	-1.05	1.20 V	247	69.85	3.10
2	2390.00	53.69 AV	54.00	-0.31	1.20 V	247	50.59	3.10
3	*2412.00	87.58 PK			1.30 V	269	84.41	3.17
4	*2412.00	77.86 AV			1.30 V	269	74.69	3.17
5	4824.00	48.57 PK	74.00	-25.43	1.00 V	247	42.47	6.10
6	4824.00	37.58 AV	54.00	-16.42	1.00 V	247	31.48	6.10
7	#7236.00	51.24 PK	74.00	-22.76	1.20 V	247	39.73	11.51
8	#7236.00	41.27 AV	54.00	-12.73	1.20 V	247	29.76	11.51

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	86.58 PK			1.20 H	248	83.31	3.27
2	*2437.00	76.98 AV			1.20 H	248	73.71	3.27
3	4874.00	48.98 PK	74.00	-25.02	1.00 H	247	42.78	6.20
4	4874.00	37.85 AV	54.00	-16.15	1.00 H	247	31.65	6.20
5	7311.00	53.57 PK	74.00	-20.43	1.54 H	249	41.85	11.72
6	7311.00	42.74 AV	54.00	-11.26	1.54 H	249	31.02	11.72
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	85.7 PK			1.00 V	60	83.03	2.65
2	*2437.00	75.7 AV			1.00 V	60	73.00	2.65
3	4874.00	44.3 PK	74.0	-29.7	1.00 V	79	36.45	7.85
4	4874.00	29.7 AV	54.0	-24.3	1.00 V	79	21.85	7.85
5	7311.00	51.1 PK	74.0	-22.9	1.00 V	60	37.47	13.61
6	7311.00	36.9 AV	54.0	-17.1	1.00 V	60	23.24	13.61

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	87.89 PK			1.00 H	258	84.53	3.36
2	*2462.00	77.96 AV			1.00 H	258	74.60	3.36
3	2483.50	70.55 PK	74.00	-3.45	1.02 H	247	67.11	3.44
4	2483.50	51.84 AV	54.00	-2.16	1.02 H	247	48.40	3.44
5	4924.00	49.65 PK	74.00	-24.35	1.00 H	247	43.34	6.31
6	4924.00	38.68 AV	54.00	-15.32	1.00 H	247	32.37	6.31
7	7386.00	54.54 PK	74.00	-19.46	1.35 H	268	42.61	11.93
8	7386.00	42.68 AV	54.00	-11.32	1.35 H	268	30.75	11.93
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	88.24 PK			1.20 V	247	84.88	3.36
2	*2462.00	75.65 AV			1.20 V	247	72.29	3.36
3	2483.50	71.95 PK	74.00	-2.05	1.68 V	324	68.51	3.44
4	2483.50	53.65 AV	54.00	-0.35	1.68 V	324	50.21	3.44
5	4924.00	48.57 PK	74.00	-25.43	1.30 V	269	42.26	6.31
6	4924.00	41.02 AV	54.00	-12.98	1.30 V	269	34.71	6.31
7	7386.00	55.58 PK	74.00	-18.42	1.35 V	268	43.65	11.93
8	7386.00	42.40 AV	54.00	-11.60	1.35 V	268	30.47	11.93

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.63 PK	74.00	-3.37	1.20 H	215	67.53	3.10
2	2390.00	50.09 AV	54.00	-3.91	1.20 H	215	46.99	3.10
3	*2412.00	85.71 PK			1.25 H	248	82.54	3.17
4	*2412.00	76.12 AV			1.25 H	248	72.95	3.17
5	4824.00	49.06 PK	74.00	-24.94	1.20 H	321	42.96	6.10
6	4824.00	36.68 AV	54.00	-17.32	1.20 H	321	30.58	6.10
7	#7236.00	54.24 PK	74.00	-19.76	1.35 H	269	42.73	11.51
8	#7236.00	41.57 AV	54.00	-12.43	1.35 H	269	30.06	11.51
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.63 PK	74.00	-1.37	1.45 V	322	69.53	3.10
2	2390.00	52.56 AV	54.00	-1.44	1.45 V	322	49.46	3.10
3	*2412.00	87.21 PK			1.65 V	323	84.04	3.17
4	*2412.00	76.60 AV			1.65 V	323	73.43	3.17
5	4824.00	48.51 PK	74.00	-25.49	1.25 V	247	42.41	6.10
6	4824.00	36.68 AV	54.00	-17.32	1.25 V	247	30.58	6.10
7	#7236.00	53.68 PK	74.00	-20.32	1.35 V	248	42.17	11.51
8	#7236.00	41.27 AV	54.00	-12.73	1.35 V	248	29.76	11.51

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	87.12 PK			1.20 H	236	83.85	3.27
2	*2437.00	77.24 AV			1.20 H	236	73.97	3.27
3	4874.00	48.96 PK	74.00	-25.04	1.20 H	301	42.76	6.20
4	4874.00	37.21 AV	54.00	-16.79	1.20 H	301	31.01	6.20
5	7311.00	53.69 PK	74.00	-20.31	1.02 H	157	41.97	11.72
6	7311.00	41.27 AV	54.00	-12.73	1.02 H	157	29.55	11.72
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	90.58 PK			1.20 V	258	87.31	3.27
2	*2437.00	81.09 AV			1.20 V	258	77.82	3.27
3	4874.00	49.68 PK	74.00	-24.32	1.20 V	342	43.48	6.20
4	4874.00	36.98 AV	54.00	-17.02	1.20 V	342	30.78	6.20
5	7311.00	54.21 PK	74.00	-19.79	1.02 V	321	42.49	11.72
6	7311.00	41.57 AV	54.00	-12.43	1.02 V	321	29.85	11.72

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	85.89 PK			1.24 H	158	82.53	3.36
2	*2462.00	76.71 AV			1.24 H	158	73.35	3.36
3	2483.50	72.98 PK	74.00	-1.02	1.20 H	247	69.54	3.44
4	2483.50	51.28 AV	54.00	-2.72	1.20 H	247	47.84	3.44
5	4924.00	49.69 PK	74.00	-24.31	1.30 H	360	43.38	6.31
6	4924.00	38.54 AV	54.00	-15.46	1.30 H	360	32.23	6.31
7	7386.00	53.57 PK	74.00	-20.43	1.20 H	325	41.64	11.93
8	7386.00	42.16 AV	54.00	-11.84	1.20 H	325	30.23	11.93
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	86.28 PK			1.02 V	258	82.92	3.36
2	*2462.00	76.60 AV			1.02 V	258	73.24	3.36
3	2483.50	73.70 PK	74.00	-0.30	1.20 V	323	70.26	3.44
4	2483.50	51.72 AV	54.00	-2.28	1.20 V	323	48.28	3.44
5	4924.00	48.57 PK	74.00	-25.43	1.00 V	214	42.26	6.31
6	4924.00	36.98 AV	54.00	-17.02	1.00 V	214	30.67	6.31
7	7386.00	54.58 PK	74.00	-19.42	1.20 V	254	42.65	11.93
8	7386.00	42.58 AV	54.00	-11.42	1.20 V	254	30.65	11.93

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

802.11n HT40

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.28 PK	74.00	-7.72	1.20 H	248	63.18	3.10
2	2390.00	49.69 AV	54.00	-4.31	1.20 H	248	46.59	3.10
3	*2422.00	80.58 PK			1.32 H	214	77.37	3.21
4	*2422.00	72.68 AV			1.32 H	214	69.47	3.21
5	4844.00	54.36 PK	74.00	-19.64	1.20 H	302	48.22	6.14
6	4844.00	38.95 AV	54.00	-15.05	1.20 H	302	32.81	6.14
7	7266.00	53.27 PK	74.00	-20.73	1.20 H	248	41.68	11.59
8	7266.00	41.69 AV	54.00	-12.31	1.20 H	248	30.10	11.59
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.06 PK	74.00	-5.94	1.20 V	254	64.96	3.10
2	2390.00	51.87 AV	54.00	-2.13	1.20 V	254	48.77	3.10
3	*2422.00	83.24 PK			1.20 V	325	80.03	3.21
4	*2422.00	72.58 AV			1.20 V	325	69.37	3.21
5	4844.00	49.67 PK	74.00	-24.33	1.30 V	269	43.53	6.14
6	4844.00	38.54 AV	54.00	-15.46	1.30 V	269	32.40	6.14
7	7266.00	54.39 PK	74.00	-19.61	1.00 V	360	42.80	11.59
8	7266.00	42.57 AV	54.00	-11.43	1.00 V	360	30.98	11.59

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	87.59 PK			1.30 H	269	84.32	3.27
2	*2437.00	77.28 AV			1.30 H	269	74.01	3.27
3	4874.00	49.68 PK	74.00	-24.32	1.35 H	249	43.48	6.20
4	4874.00	36.98 AV	54.00	-17.02	1.35 H	249	30.78	6.20
5	7311.00	54.02 PK	74.00	-19.98	1.20 H	248	42.30	11.72
6	7311.00	43.69 AV	54.00	-10.31	1.20 H	248	31.97	11.72
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	87.85 PK			1.02 V	216	84.58	3.27
2	*2437.00	77.85 AV			1.02 V	216	74.58	3.27
3	4874.00	51.27 PK	74.00	-22.73	1.02 V	24	45.07	6.20
4	4874.00	40.28 AV	54.00	-13.72	1.02 V	24	34.08	6.20
5	7311.00	54.69 PK	74.00	-19.31	1.30 V	269	42.97	11.72
6	7311.00	43.57 AV	54.00	-10.43	1.30 V	269	31.85	11.72

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	82.38 PK			1.20 H	248	79.06	3.32
2	*2452.00	73.24 AV			1.20 H	248	69.92	3.32
3	2483.50	69.31 PK	74.00	-4.69	1.20 H	40	65.87	3.44
4	2483.50	52.67 AV	54.00	-1.33	1.20 H	40	49.23	3.44
5	4904.00	49.60 PK	74.00	-24.40	1.32 H	258	43.33	6.27
6	4904.00	40.01 AV	54.00	-13.99	1.32 H	258	33.74	6.27
7	7356.00	55.27 PK	74.00	-18.73	1.00 H	221	43.43	11.84
8	7356.00	41.96 AV	54.00	-12.04	1.00 H	221	30.12	11.84
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	82.69 PK			1.20 V	248	79.37	3.32
2	*2452.00	73.65 AV			1.20 V	248	70.33	3.32
3	2483.50	70.96 PK	74.00	-3.04	1.20 V	158	67.52	3.44
4	2483.50	53.76 AV	54.00	-0.24	1.20 V	158	50.32	3.44
5	4904.00	49.68 PK	74.00	-24.32	1.24 V	265	43.41	6.27
6	4904.00	37.85 AV	54.00	-16.15	1.24 V	265	31.58	6.27
7	7356.00	54.57 PK	74.00	-19.43	1.20 V	136	42.73	11.84
8	7356.00	42.54 AV	54.00	-11.46	1.20 V	136	30.70	11.84

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

BELOW 1GHz WORST-CASE DATA:

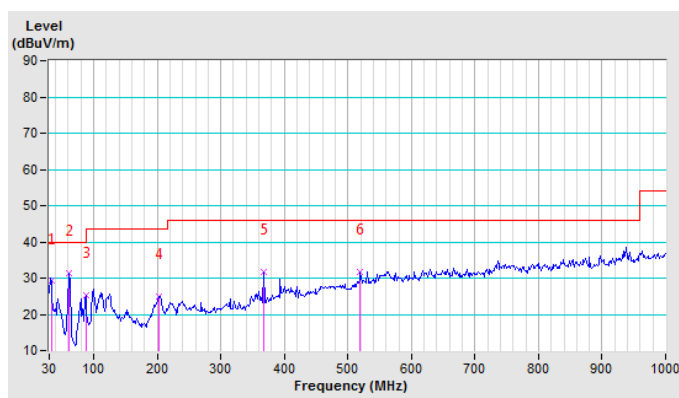
BT-LE (GFSK)

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.11	29.17 QP	40.00	-10.83	1.00 H	240	36.22	-7.05
2	61.09	31.31 QP	40.00	-8.69	1.00 H	174	49.96	-18.65
3	87.52	25.36 QP	40.00	-14.64	1.00 H	27	39.28	-13.92
4	202.55	25.03 QP	43.50	-18.47	1.00 H	68	37.88	-12.85
5	367.32	31.63 QP	46.00	-14.37	1.00 H	140	36.60	-4.97
6	519.66	31.66 QP	46.00	-14.34	1.00 H	75	31.24	0.42

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.

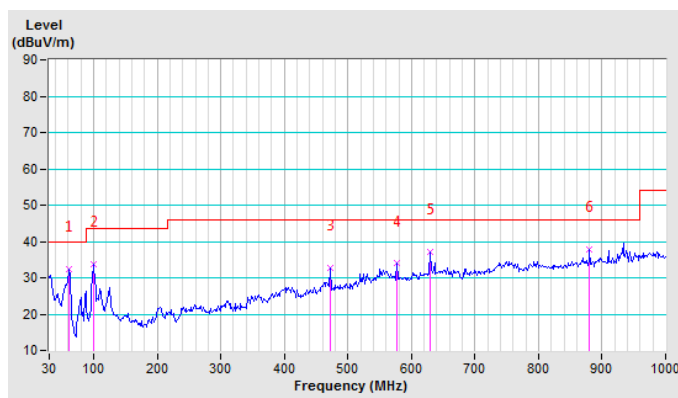


CHANNEL	TX Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	61.09	32.36 QP	40.00	-7.64	1.00 V	117	51.01	-18.65
2	99.95	33.79 QP	43.50	-9.71	1.00 V	240	46.49	-12.70
3	471.47	32.63 QP	46.00	-13.37	1.00 V	27	33.82	-1.19
4	577.18	33.91 QP	46.00	-12.09	1.00 V	99	32.20	1.71
5	630.03	37.16 QP	46.00	-8.84	1.00 V	46	34.01	3.15
6	880.30	37.81 QP	46.00	-8.19	1.00 V	106	32.35	5.46

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.



ABOVE 1GHz TEST DATA:

BT-LE (GFSK)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.69 PK	74.00	-18.31	N/A H	N/A	52.59	3.10
2	2390.00	38.54 AV	54.00	-15.46	N/A H	N/A	35.44	3.10
3	*2402.00	81.51 PK			1.30 H	269	78.37	3.14
4	*2402.00	71.36 AV			1.30 H	269	68.22	3.14
5	4804.00	49.69 PK	74.00	-24.31	1.00 H	239	43.63	6.06
6	4804.00	37.30 AV	54.00	-16.70	1.00 H	239	31.24	6.06
7	#7206.00	53.69 PK	74.00	-20.31	1.20 H	169	42.27	11.42
8	#7206.00	42.08 AV	54.00	-11.92	1.20 H	169	30.66	11.42
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.36 PK	74.00	-16.64	1.30 V	269	54.26	3.10
2	2390.00	39.68 AV	54.00	-14.32	1.30 V	269	36.58	3.10
3	*2402.00	80.32 PK			1.30 V	268	77.18	3.14
4	*2402.00	75.36 AV			1.30 V	268	72.22	3.14
5	4804.00	48.65 PK	74.00	-25.35	1.20 V	247	42.59	6.06
6	4804.00	38.55 AV	54.00	-15.45	1.20 V	247	32.49	6.06
7	#7206.00	54.59 PK	74.00	-19.41	1.30 V	269	43.17	11.42
8	#7206.00	42.36 AV	54.00	-11.64	1.30 V	269	30.94	11.42

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2440.00	83.65 PK			1.20 H	269	80.37	3.28
2	*2440.00	78.65 AV			1.20 H	269	75.37	3.28
3	4880.00	48.79 PK	74.00	-25.21	1.20 H	216	42.58	6.21
4	4880.00	36.68 AV	54.00	-17.32	1.20 H	216	30.47	6.21
5	7320.00	53.84 PK	74.00	-20.16	1.20 H	147	42.10	11.74
6	7320.00	41.72 AV	54.00	-12.28	1.20 H	147	29.98	11.74
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2440.00	82.06 PK			1.20 V	248	78.78	3.28
2	*2440.00	76.75 AV			1.20 V	248	73.47	3.28
3	4880.00	48.67 PK	74.00	-25.33	1.32 V	254	42.46	6.21
4	4880.00	37.59 AV	54.00	-16.41	1.32 V	254	31.38	6.21
5	7320.00	53.28 PK	74.00	-20.72	1.20 V	269	41.54	11.74
6	7320.00	41.27 AV	54.00	-12.73	1.20 V	269	29.53	11.74

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2480.00	72.10 PK			1.20 H	154	68.67	3.43
2	*2480.00	66.95 AV			1.20 H	154	63.52	3.43
3	2483.50	66.46 PK	74.00	-7.54	1.20 H	145	63.02	3.44
4	2483.50	47.95 AV	54.00	-6.05	1.20 H	145	44.51	3.44
5	4960.00	51.03 PK	74.00	-22.97	1.20 H	154	44.65	6.38
6	4960.00	36.69 AV	54.00	-17.31	1.20 H	154	30.31	6.38
7	7440.00	56.69 PK	74.00	-17.31	1.30 H	265	44.61	12.08
8	7440.00	42.58 AV	54.00	-11.42	1.30 H	265	30.50	12.08
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2480.00	68.75 PK			1.20 V	154	65.32	3.43
2	*2480.00	65.39 AV			1.20 V	154	61.96	3.43
3	2483.50	66.98 PK	74.00	-7.02	1.20 V	130	63.54	3.44
4	2483.50	39.98 AV	54.00	-14.02	1.20 V	130	36.54	3.44
5	4960.00	51.26 PK	74.00	-22.74	1.20 V	145	44.88	6.38
6	4960.00	39.68 AV	54.00	-14.32	1.20 V	145	33.30	6.38
7	7440.00	56.69 PK	74.00	-17.31	1.30 V	269	44.61	12.08
8	7440.00	41.26 AV	54.00	-12.74	1.30 V	269	29.18	12.08

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).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	May 19,17	May 18,18
Power Sensor	Keysight	U2021XA	MY55060018	May 19,17	May 18,18
Power Meter	Anritsu	ML2495A	1139001	Nov. 04,17	Nov. 03,18
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 21, 17	Oct.20, 18
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.05,17	Sep. 04,18
Oscilloscope	Agilent	DSO9254A	MY51260160	Nov. 08,17	Nov. 07,18
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19
Agile Signal Generator	Agilent	8645A	Agilent	Sep.01, 17	Aug.31, 18
Spectrum Analyzer	Keysight	N9020A	MY55400499	Apr. 10,18	Apr. 09,19
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Jan. 02,18	Jan. 01,19
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug.10, 17	Aug.09, 18
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A	N/A
DC Source	Keysight	E3642A	MY56146098	N/A	N/A

NOTE:

1. The test was performed in RF Oven 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.

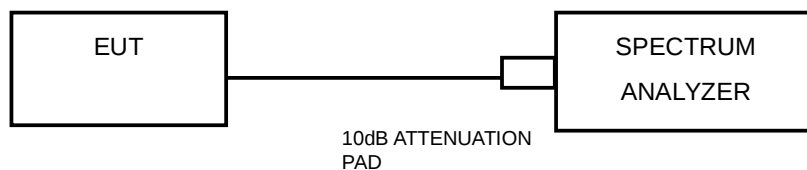
4.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 100KHz
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	10.07	0.5	PASS
6	2437	10.09	0.5	PASS
11	2462	10.09	0.5	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.44	0.5	PASS
6	2437	16.41	0.5	PASS
11	2462	16.41	0.5	PASS

802.11n HT20

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.63	0.5	PASS
6	2437	17.61	0.5	PASS
11	2462	17.63	0.5	PASS

802.11n HT40

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	35.55	0.5	PASS
6	2437	35.60	0.5	PASS
9	2452	35.87	0.5	PASS

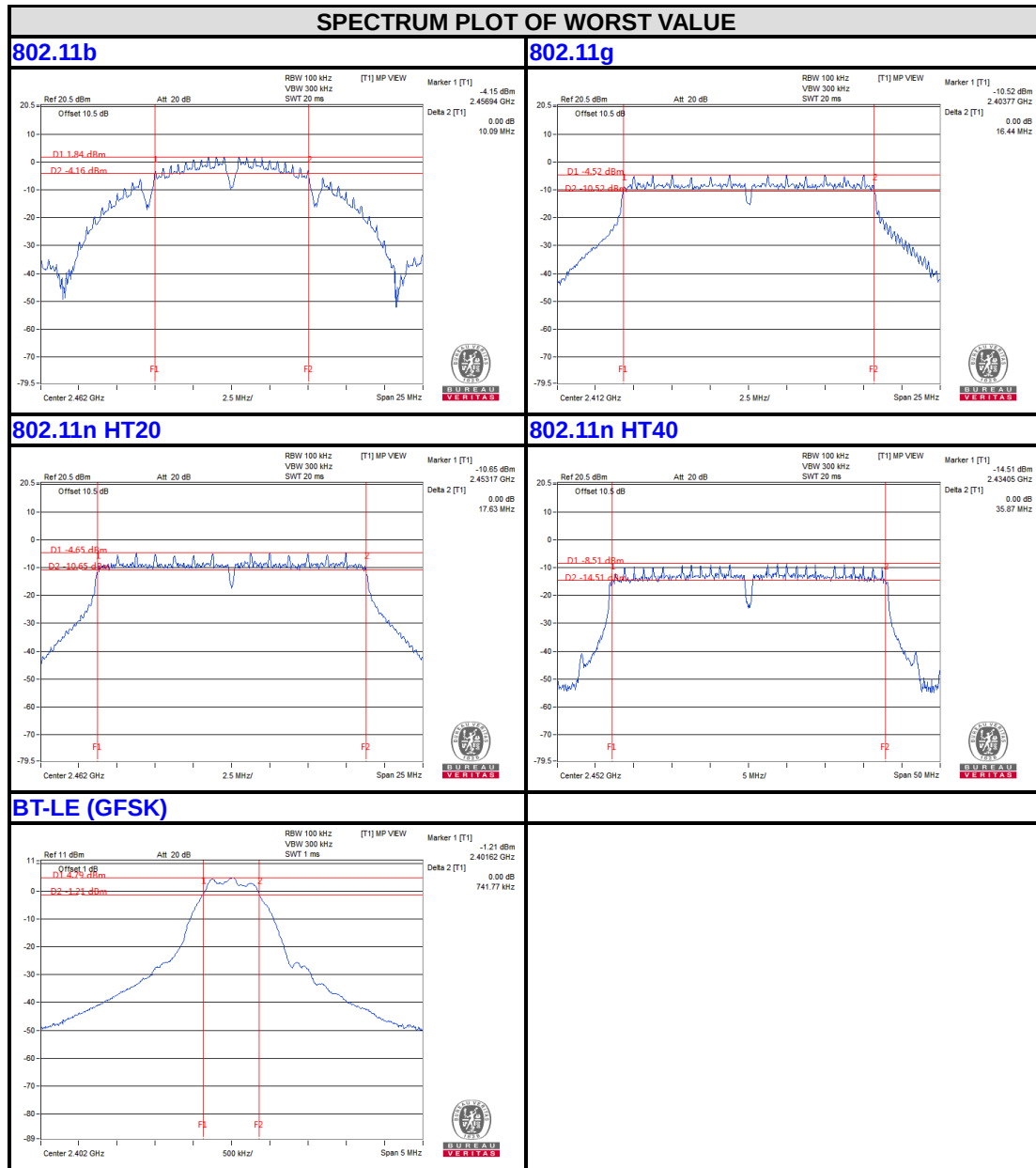
BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.74	0.5	PASS
19	2440	0.74	0.5	PASS
39	2480	0.74	0.5	PASS



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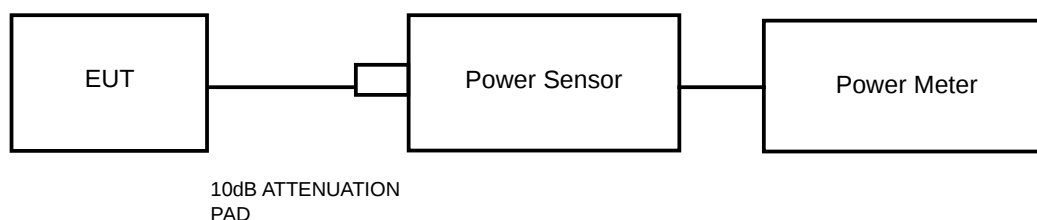


4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	May 19,17	May 18,18
Power Sensor	Keysight	U2021XA	MY55060018	May 19,17	May 18,18
Power Meter	Anritsu	ML2495A	1139001	Nov. 04,17	Nov. 03,18
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 21, 17	Oct.20, 18
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.05,17	Sep. 04,18
Oscilloscope	Agilent	DSO9254A	MY51260160	Nov. 08,17	Nov. 07,18
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Signal Generator	Agilent	N5183A	MY50140980	Jan. 02,18	Jan. 01,19
Agile Signal Generator	Agilent	8645A	Agilent	Sep.01, 17	Aug.31, 18
Spectrum Analyzer	Keysight	N9020A	MY55400499	Apr. 10,18	Apr. 09,19
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Jan. 02,18	Jan. 01,19
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug.10, 17	Aug.09, 18
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A	N/A
DC Source	Keysight	E3642A	MY56146098	N/A	N/A

NOTE:

1. The test was performed in RF Oven 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.

4.4.4 TEST PROCEDURES

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

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

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

4.4.7 TEST RESULTS

MAXIMUM PEAK OUTPUT POWER

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
1	2412	13.56	22.699	1	PASS
6	2437	14.15	26.002	1	PASS
11	2462	14.43	27.733	1	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
1	2412	15.02	31.769	1	PASS
6	2437	15.49	35.400	1	PASS
11	2462	15.71	37.239	1	PASS

802.11n HT20

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
1	2412	14.09	25.645	1	PASS
6	2437	14.83	30.409	1	PASS
11	2462	14.97	31.405	1	PASS

802.11n HT40

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
3	2422	12.99	19.907	1	PASS
6	2437	13.32	21.478	1	PASS
9	2452	13.65	23.174	1	PASS

BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
0	2402	5.73	3.741	1	PASS
19	2440	5.74	3.750	1	PASS
39	2480	5.46	3.516	1	PASS

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)	AVG. POWER (mW)
1	2412	10.35	10.839
6	2437	10.98	12.531
11	2462	11.15	13.032

802.11g

CHANNEL	CHANNEL FREQUENCY(MHz)	AVERAGE POWER (dBm)	AVG. POWER (mW)
1	2412	6.88	4.875
6	2437	7.35	5.433
11	2462	7.64	5.808

802.11n HT20

CHANNEL	CHANNEL FREQUENCY(MHz)	AVERAGE POWER (dBm)	AVG. POWER (mW)
1	2412	6.02	3.999
6	2437	6.42	4.385
11	2462	6.67	4.645

802.11n HT40

CHANNEL	CHANNEL FREQUENCY(MHz)	AVERAGE POWER (dBm)	AVG. POWER (mW)
3	2422	4.84	3.048
6	2437	5.02	3.177
9	2452	5.29	3.381

BT-LE (GFSK)

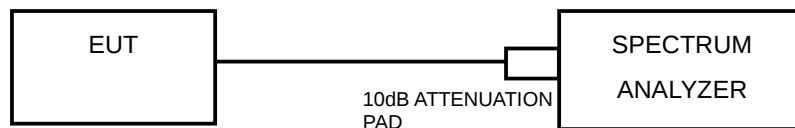
CHANNEL	CHANNEL FREQUENCY(MHz)	AVERAGE POWER (dBm)	AVG. POWER (mW)
0	2402	4.02	2.523
19	2440	3.74	2.366
39	2480	3.32	2.148

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

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

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.3.2 to get information of above instrument.

4.5.4 TEST PROCEDURE

- Set instrument center frequency to DTS channel center frequency.
- Set span to at least 1.5 times the OBW. (Set the span to 1.5 times the DTS bandwidth.)
- Set RBW to: 3KHz
- Set VBW $\geq 3 \times$ RBW.
- Detector = peak
- Ensure that the number of measurement points in the sweep $\geq 2 \times$ span/RBW.
- Sweep time = auto couple.
- Use the peak marker function to determine the maximum amplitude level.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as item 4.3.6.

4.5.7 TEST RESULTS

802.11b

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-12.49	8.00	PASS
6	2437	-11.91	8.00	PASS
11	2462	-11.43	8.00	PASS

802.11g

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-18.59	8.00	PASS
6	2437	-17.06	8.00	PASS
11	2462	-16.78	8.00	PASS

802.11n HT20

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-20.17	8.00	PASS
6	2437	-18.79	8.00	PASS
11	2462	-19.11	8.00	PASS

802.11n HT40

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-22.70	8.00	PASS
6	2437	-24.04	8.00	PASS
9	2452	-22.89	8.00	PASS

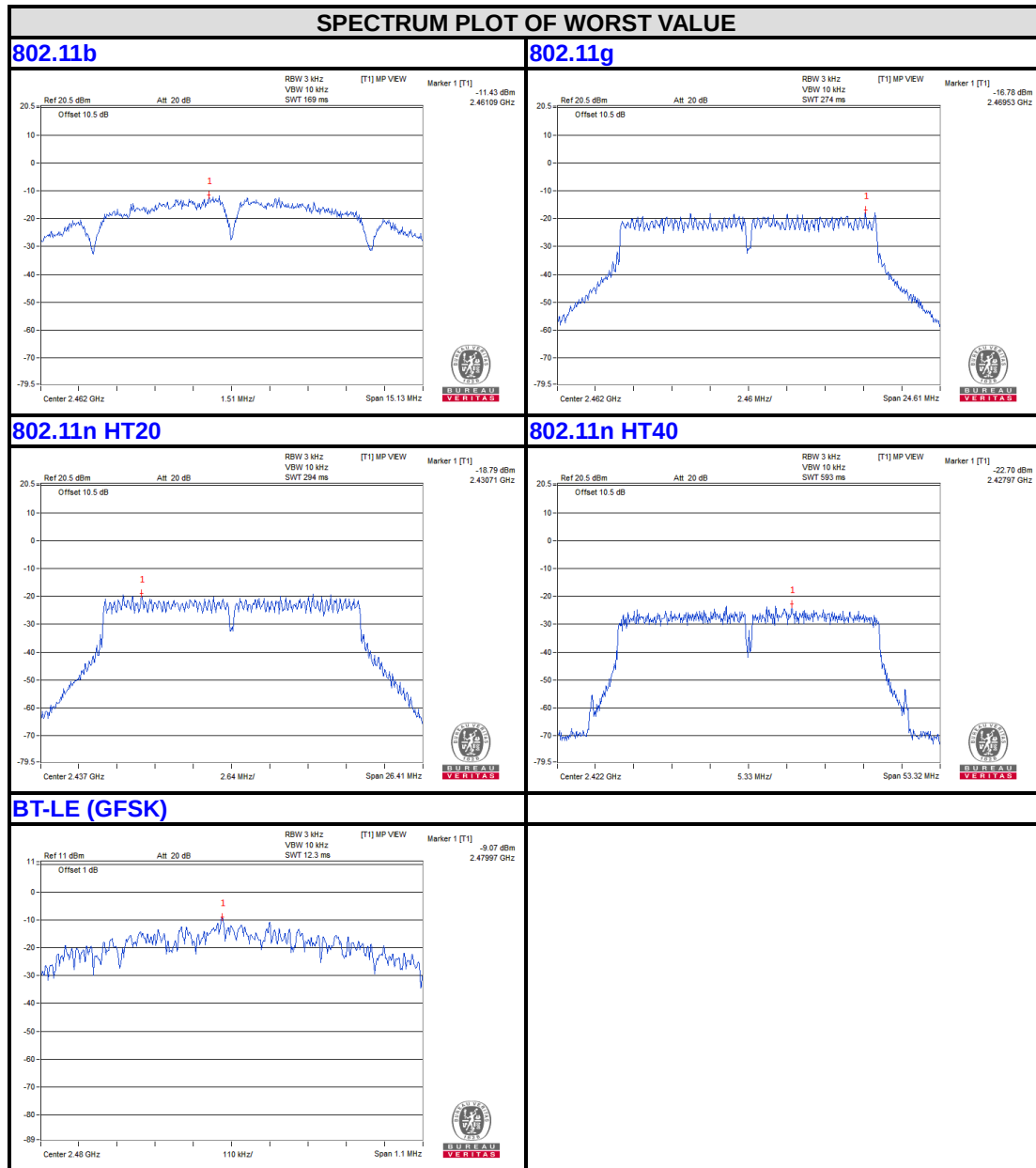
BT-LE (GFSK)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-9.24	8.00	PASS
19	2440	-10.38	8.00	PASS
39	2480	-9.07	8.00	PASS



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4.6 OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

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

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.3.2 to get information of above instrument.

4.6.4 TEST PROCEDURE

Measurement Procedure - Reference Level

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 –Unwanted Emission Level

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.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Same as item 4.3.6



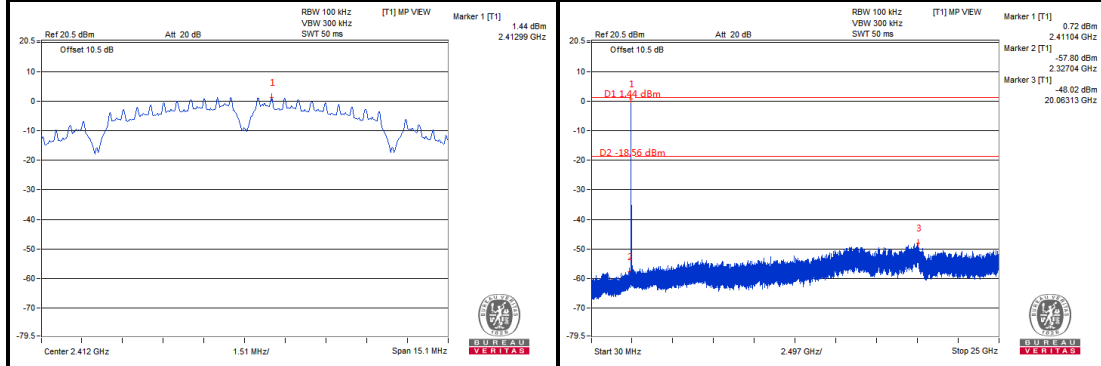
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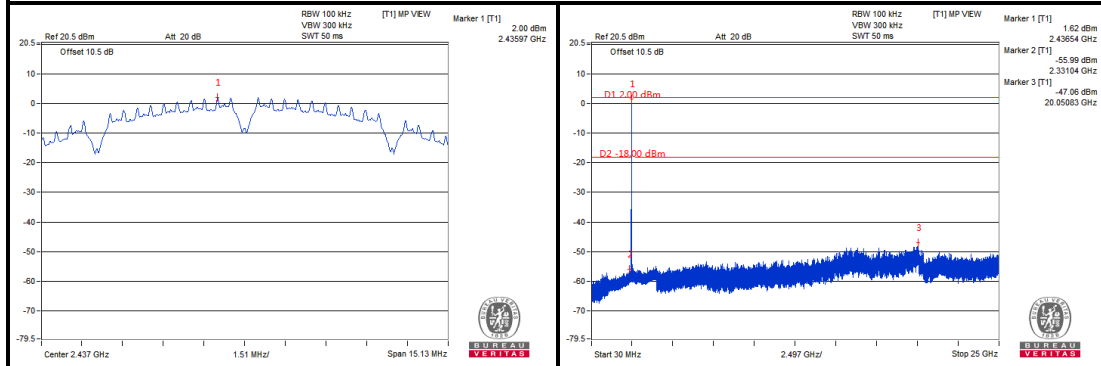
4.6.7 TEST RESULTS

802.11b

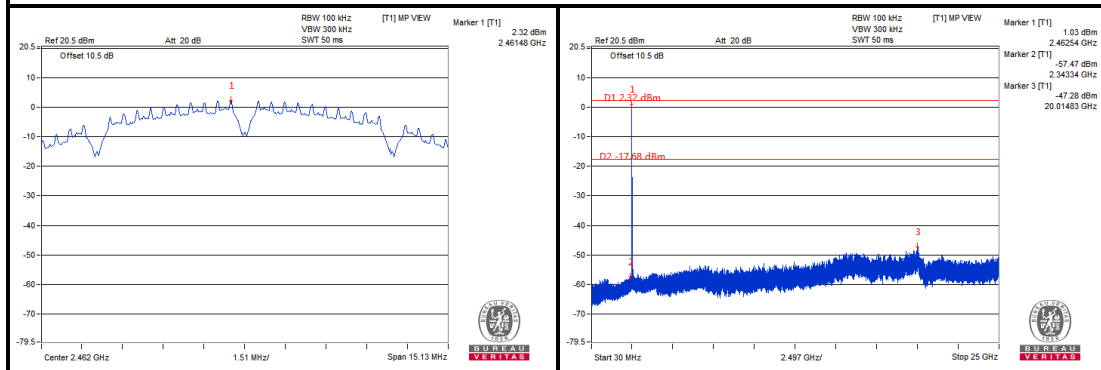
CH 1



CH 6



CH 11



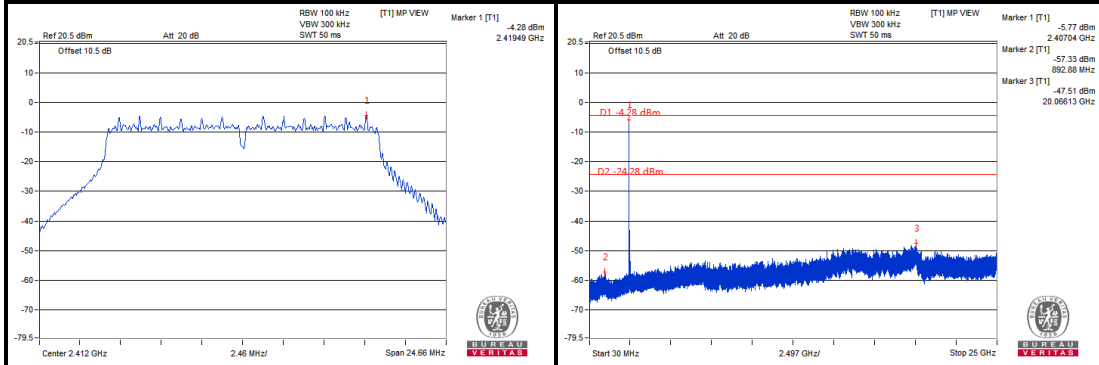


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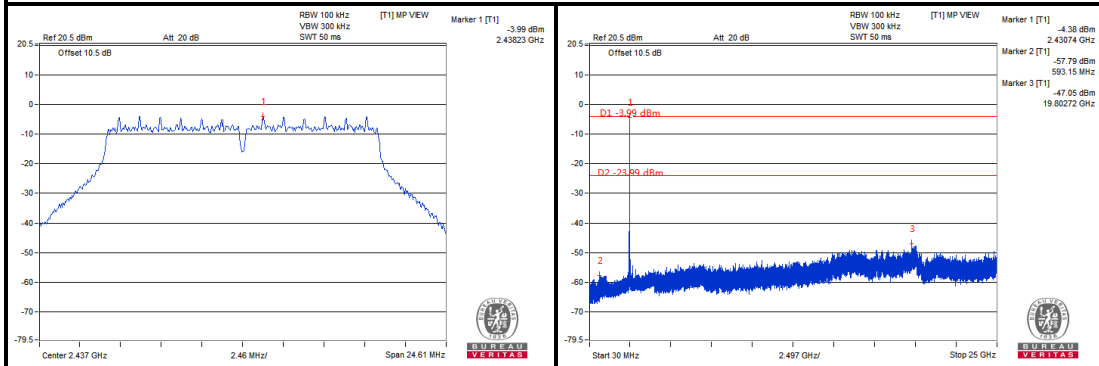
Test Report No.: RF180309N010

802.11g

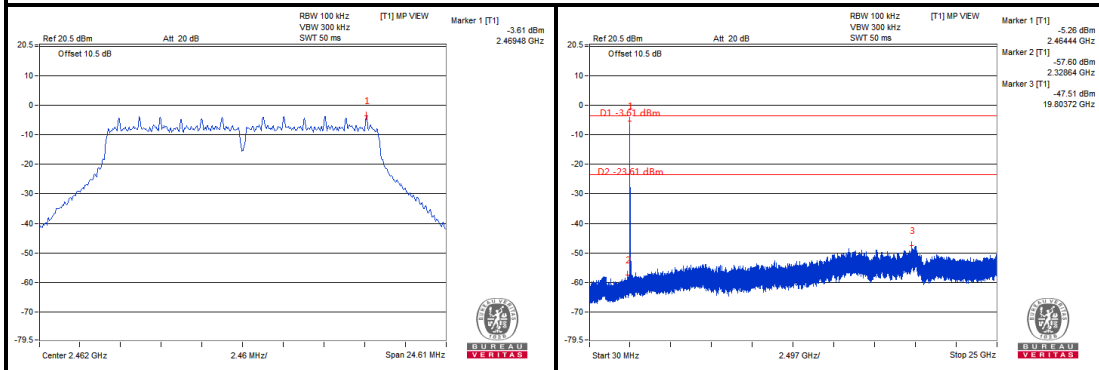
CH 1



CH 6



CH 11



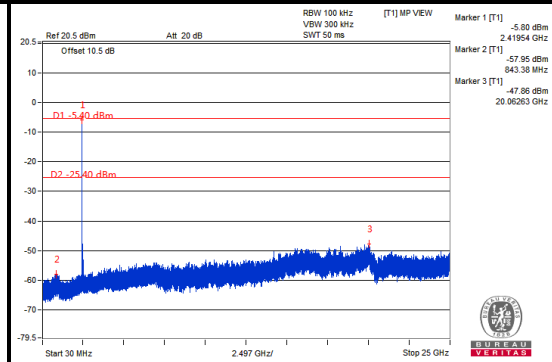
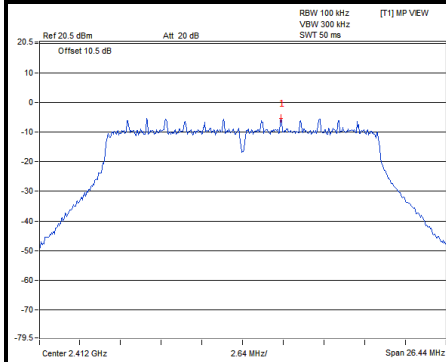


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VERITAS

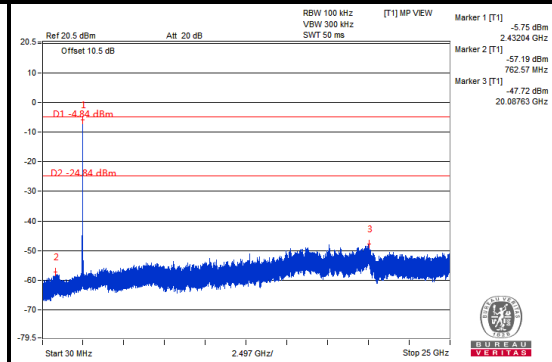
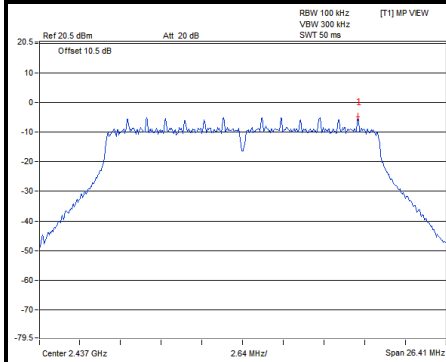
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802.11n (HT20)

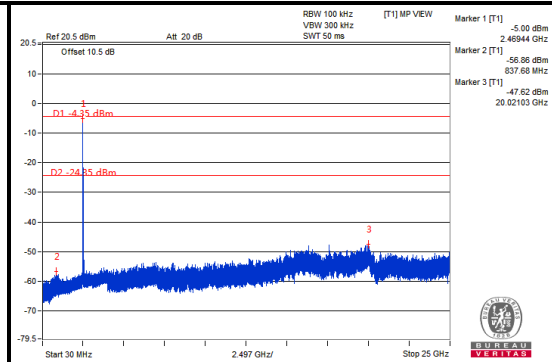
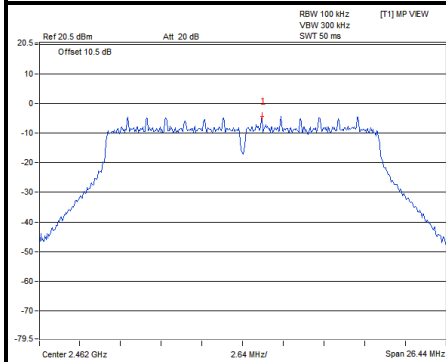
CH 1



CH 6



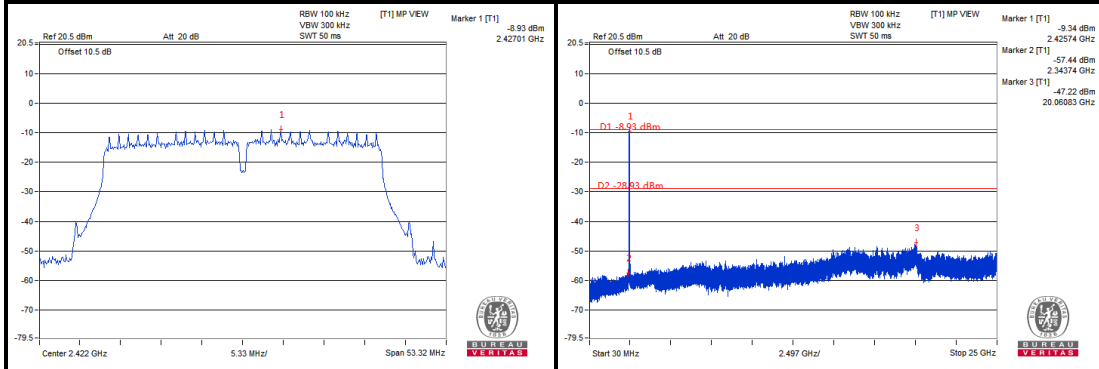
CH 11



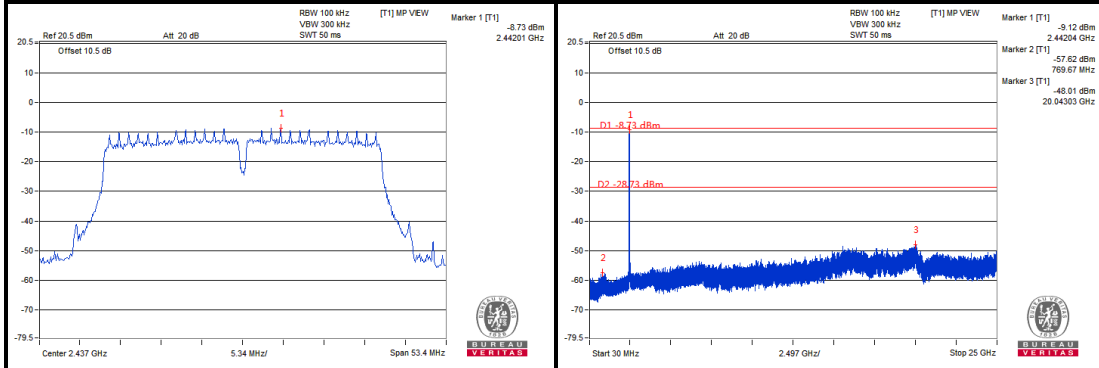


802.11n (HT40)

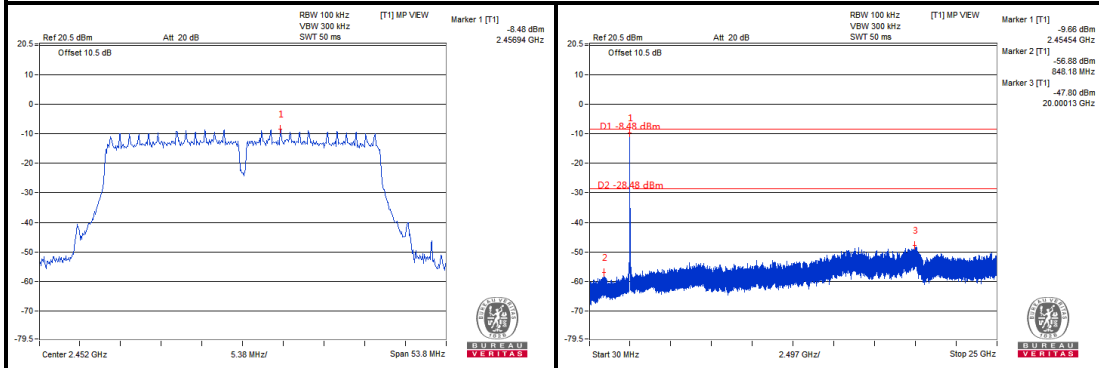
CH 3



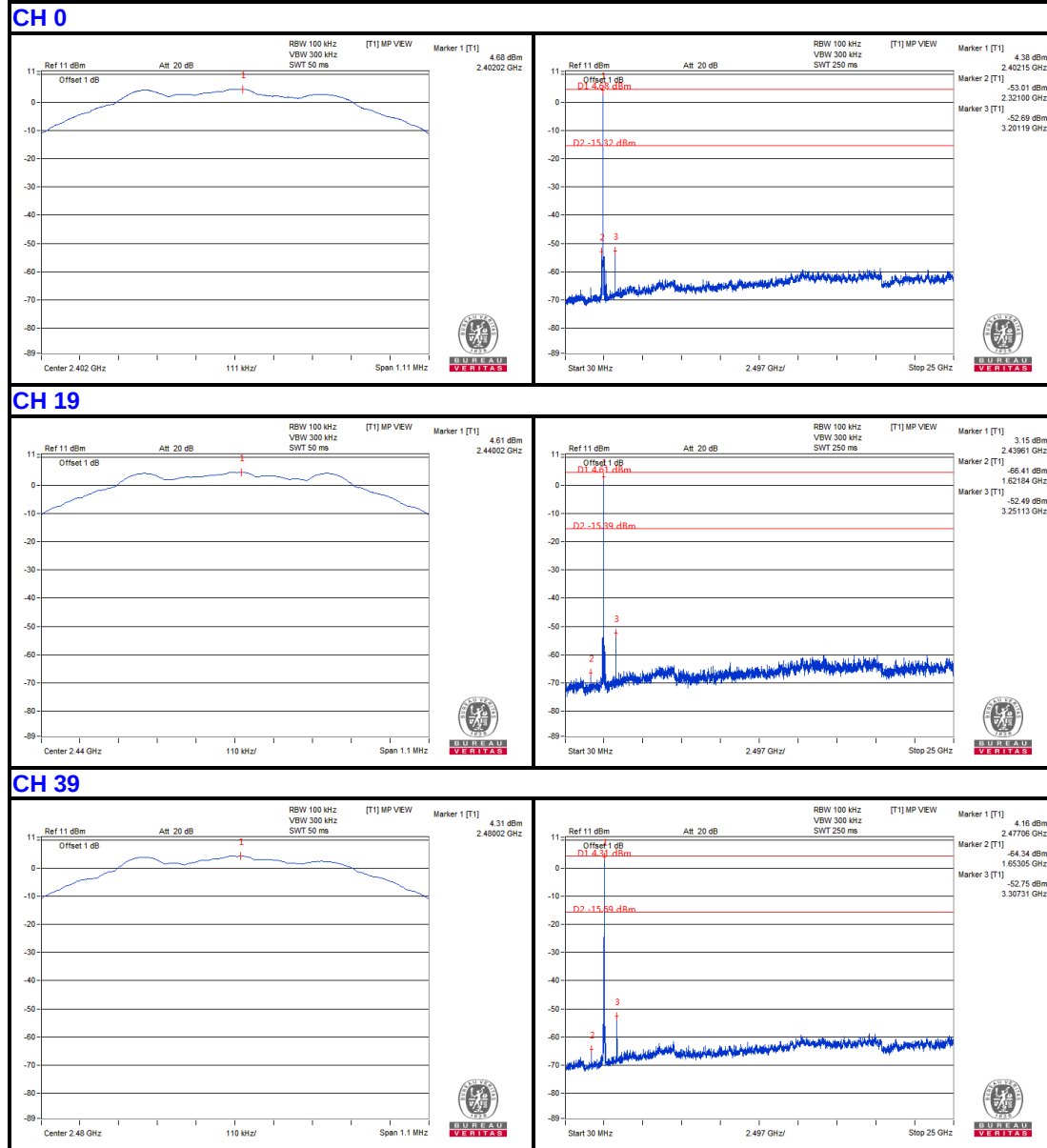
CH 6



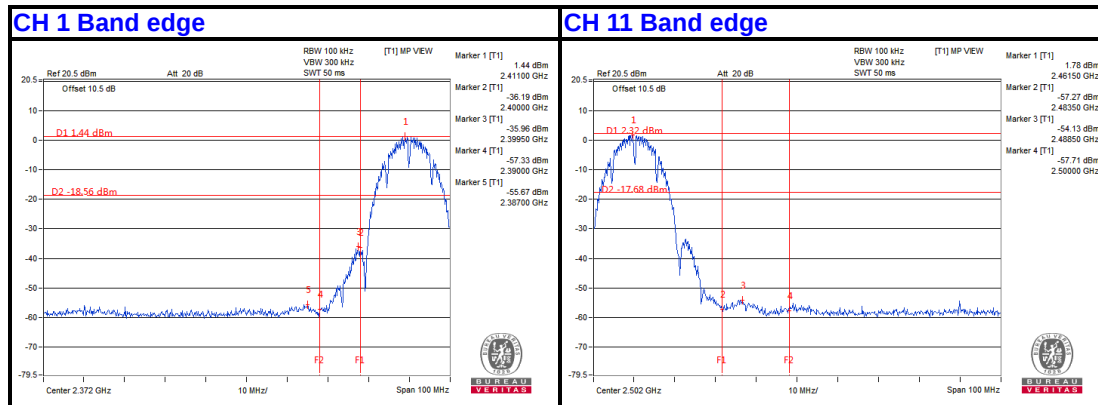
CH 9



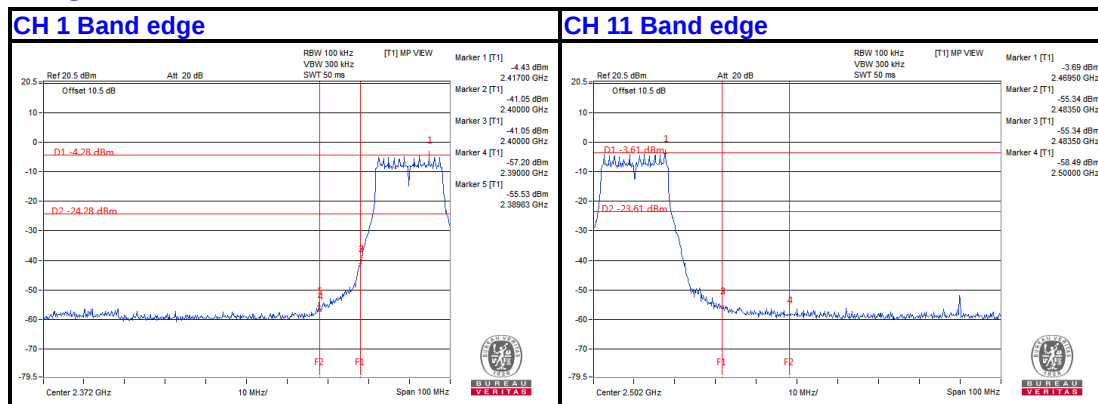
BT-LE (GFSK)



802.11b

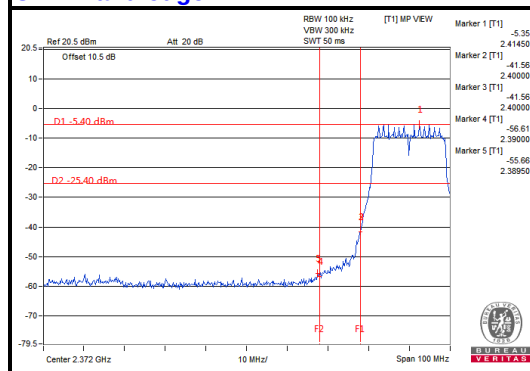


802.11g

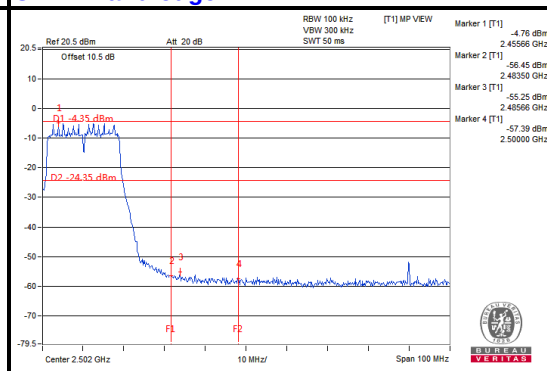


802.11n HT20

CH 1 Band edge

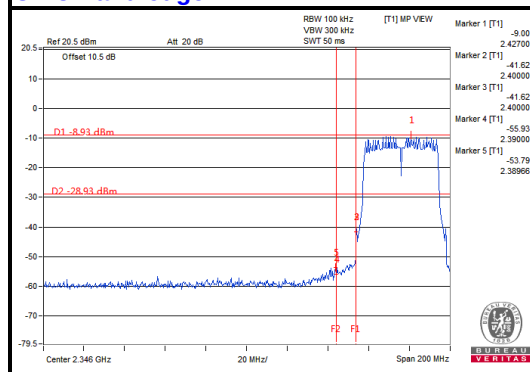


CH 11 Band edge

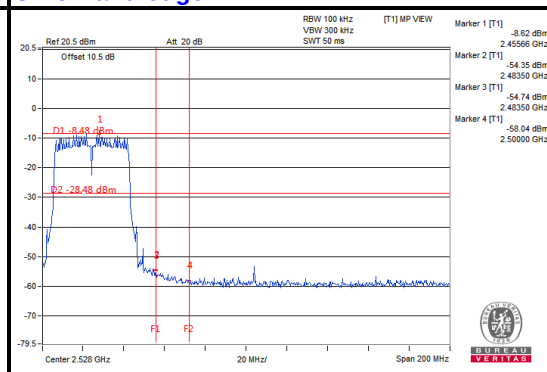


802.11n (HT40)

CH 3 Band edge

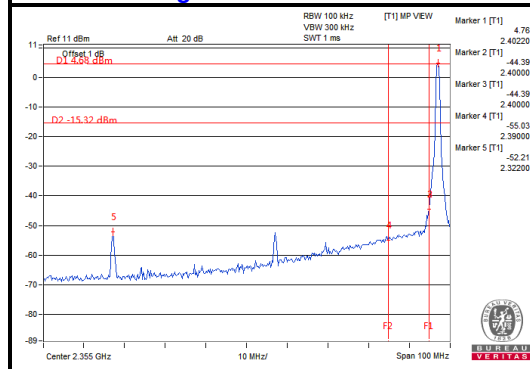


CH 9 Band edge

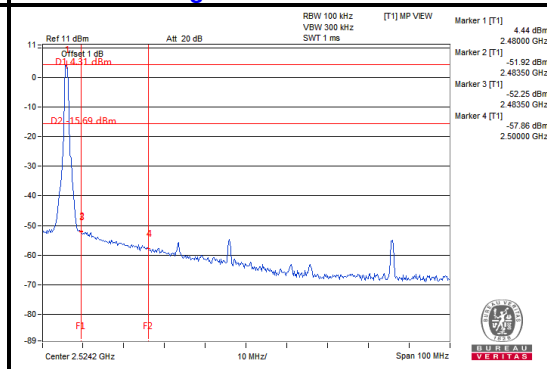


BT-LE (GFSK)

CH 0 Band edge



CH 39 Band edge





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5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6 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---