

## TEST REPORT

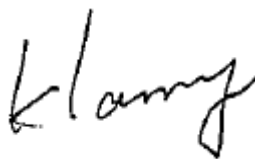

Applicant	TP-Link Technologies Co., Ltd.
Address	Building 24(floors1,3,4,5) and 28(floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China

Manufacturer or Supplier	TP-Link Technologies Co., Ltd.
Address	Building 24(floors1,3,4,5) and 28(floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China
Product	300Mbps Wireless N Ceiling Mount Access Point
Brand Name	tp-link
Model	EAP115
Additional Model & Model Difference	N/A
Date of tests	Nov. 02, 2017 ~ Dec. 14, 2017

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 Harry Li Project Engineer/ EMC Department	Approved by Glyn He Supervisor / EMC Department
	 Date: Dec. 29, 2017

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**BUREAU  
VERITAS**

Test Report No.: RF171102N030

## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF171102N030	Original release	Dec. 29, 2017



# 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	4.66dB
	18GHz ~ 40GHz	4.67dB

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

<b>PRODUCT</b>	300Mbps Wireless N Ceiling Mount Access Point
<b>MODEL NO.</b>	EAP115
<b>ADDITIONAL MODEL</b>	N/A
<b>FCC ID</b>	TE7EAP115V4
<b>NOMINAL VOLTAGE</b>	DC 9V From Adapter
<b>MODULATION TYPE</b>	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
<b>MODULATION TECHNOLOGY</b>	DSSS, OFDM
<b>OPERATING FREQUENCY</b>	2412-2462MHz for 11b/g/n(HT20) 2422-2452MHz for 11n(HT40)
<b>AVERAGE POWER</b>	24.63dBm (Max.)
<b>ANTENNA TYPE</b>	Dipole Antenna; 4dBi gain
<b>I/O PORTS</b>	Refer to user's manual
<b>CABLE SUPPLIED</b>	N/A

**NOTE:**

1. The EUT incorporates a MIMO function. Physically, the EUT provides two transmitters and two receivers.

MODULATION MODE	FUNCTION
802.11b	2TX/2RX
802.11g	2TX/2RX
802.11n (HT20)	2TX/2RX
802.11n (HT40)	2TX/2RX

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.: 171102N030) for detailed product photo.
5. The EUT can be powered by adapter as list as attach:

ADAPTER	
BRAND:	tp-link
MODEL:	T090060-2B1
INPUT:	AC 100-240V 50/60Hz, 0.3A
OUTPUT:	DC 9V/0.6A
DC LINE:	Unshielded, detachable, 150cm



### 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		



### 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	√	√	√	√	<b>2.4G Wifi MIMO mode (Antenna0+1)</b>

Where **RE<1G**: Radiated Emission below 1GHz      **RE≥1G**: Radiated Emission above 1GHz  
**PLC**: Power Line Conducted Emission      **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
A	Powered by Adapter with WIFI 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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS	FUNCTION
802.11g	1 to 11	1	OFDM	BPSK	6.0	X	MIMO





**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. The worst case mode was MIMO transmitting mode.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS	FUNCTION
802.11b	1 to 11	1, 6, 11	CCK	DBPSK	1.0	X	MIMO
802.11g	1 to 11	1,2, 6,10, 11	OFDM	BPSK	6.0	X	MIMO
802.11n HT20	1 to 11	1,2, 6,10, 11	OFDM	BPSK	MCS0	X	MIMO
802.11n HT40	3 to 9	3,4, 6, 8,9	OFDM	BPSK	MCS0	X	MIMO

**The worst case mode was 11g mode CH1**

**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 TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	FUNCTION
802.11b	1 to 11	1, 11	CCK	DBPSK	1.0	MIMO
802.11g	1 to 11	1, 11	OFDM	BPSK	6.0	MIMO
802.11n HT20	1 to 11	1, 11	OFDM	BPSK	MCS0	MIMO
802.11n HT40	3 to 9	3, 9	OFDM	BPSK	MCS0	MIMO



**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.

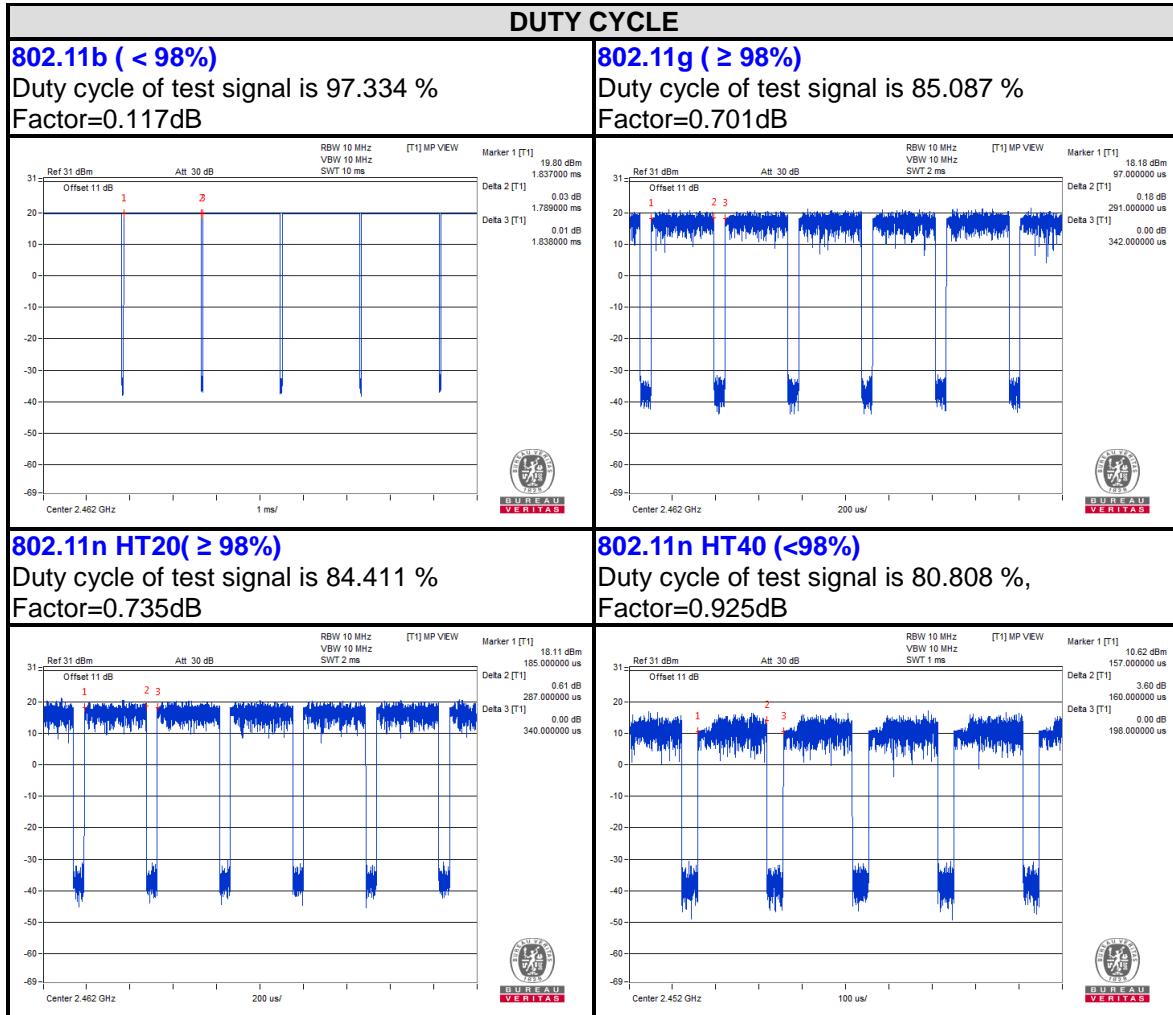
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	FUNCTION
802.11b	1 to 11	1, 6, 11	CCK	DBPSK	1.0	MIMO
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	MIMO
802.11n HT20	1 to 11	1, 6, 11	OFDM	BPSK	MCS0	MIMO
802.11n HT40	3 to 9	3, 6, 9	OFDM	BPSK	MCS0	MIMO

**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE	TESTED BY
RE<1G	25deg. C, 55%RH	DC 9V From Adapter	Arnold
RE≥1G	25deg. C, 55%RH	DC 9V From Adapter	Arnold
PLC	25deg. C, 60%RH	DC 9V From Adapter	Sen He
APCM	20deg. C, 55%RH	DC 9V From Adapter	Harry Li



### 3.3 DUTY CYCLE OF TEST SIGNAL





**POWER SETTING VALUE:**

Test mode	Test Frequency (MHz)	Power setting	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
11b	2412	20	CCK	DBPSK	1.0
	2437	23	CCK	DBPSK	1.0
	2462	19	CCK	DBPSK	1.0
11g	2412	17	OFDM	BPSK	6.0
	2437	24	OFDM	BPSK	6.0
	2462	17	OFDM	BPSK	6.0
11n HT20	2412	16	OFDM	BPSK	MCS0
	2437	24	OFDM	BPSK	MCS0
	2462	17	OFDM	BPSK	MCS0
11n HT40	2422	14	OFDM	BPSK	MCS0
	2437	18	OFDM	BPSK	MCS0
	2452	15	OFDM	BPSK	MCS0



### 3.4 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 v04**

**ANSI C63.10:2013**

**KDB 662911 D01 Multiple Transmitter Output v02r01**

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

**NOTE:** It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B(DoC). The test report has been issued separately.

### 3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together without other necessary accessories or support units.



## 4 TEST TYPES AND RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 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.

#### 4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Apr. 05,17	Apr. 04,18
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Mar. 06,17	Mar. 05,18
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Apr. 05,17	Apr. 04,18
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Jan. 04,17	Jan. 03,18
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.

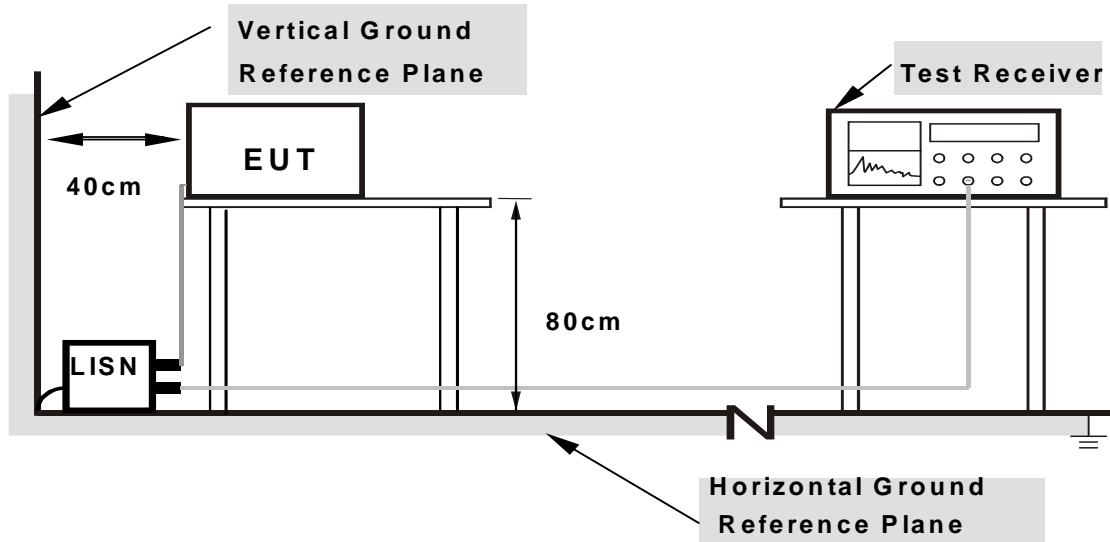
**NOTE:** All modes of operation were investigated and the worst-case emissions are reported.

#### 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.





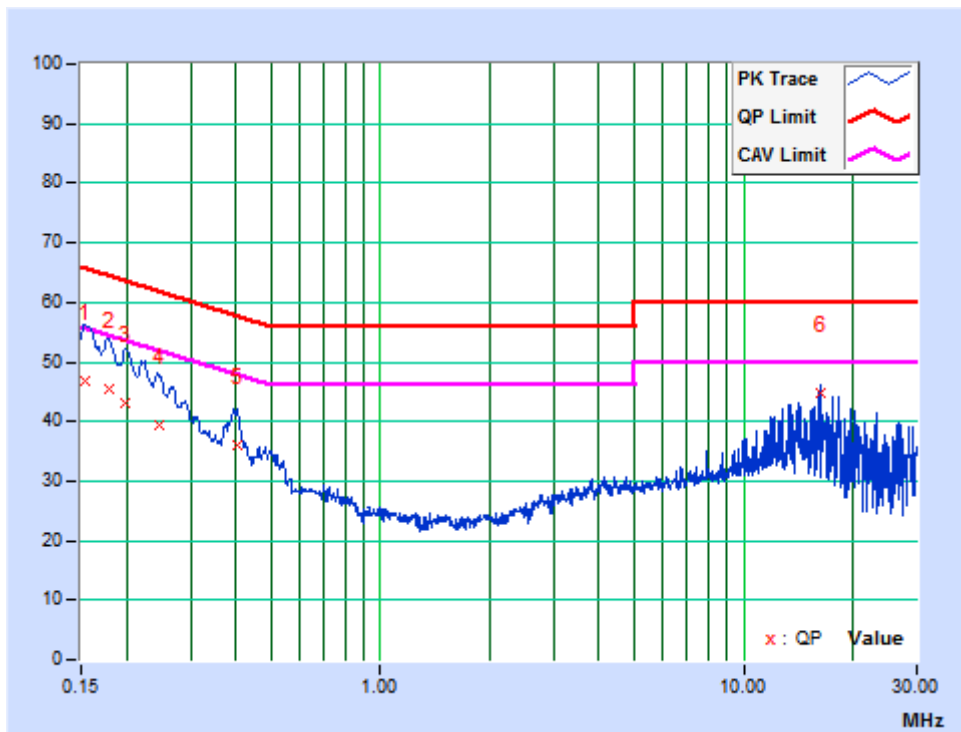
### 4.1.7 TEST RESULTS

**CONDUCTED WORST-CASE DATA: WIFI link mode**

<b>PHASE</b>	Line	<b>6dB BANDWIDTH</b>	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	0.15450	9.83	36.93	17.86	46.76	27.69	65.75	55.75	-19.00	-28.07
2	0.17925	9.83	35.59	16.14	45.42	25.97	64.52	54.52	-19.10	-28.55
3	0.19721	9.84	33.34	14.83	43.18	24.67	63.73	53.73	-20.55	-29.06
4	0.24618	9.89	29.46	13.12	39.35	23.01	61.89	51.89	-22.54	-28.88
5	0.40335	9.88	26.18	17.32	36.06	27.20	57.78	47.78	-21.72	-20.58
6	16.22850	9.96	34.86	30.16	44.82	40.12	60.00	50.00	-15.18	-9.88

- 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.

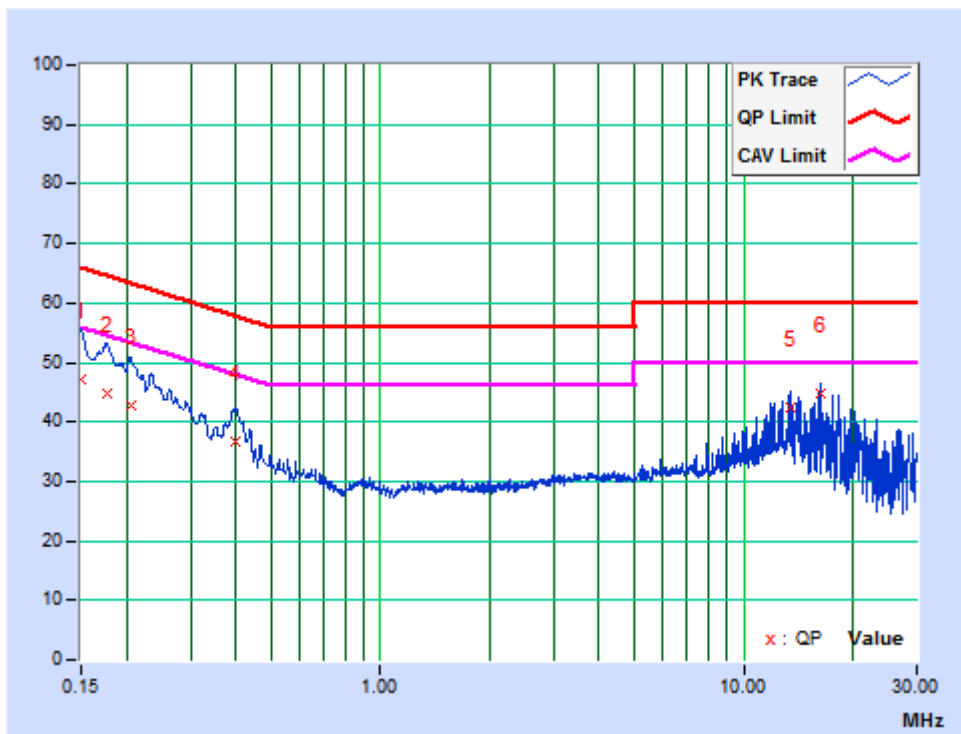




<b>PHASE</b>	Neutral	<b>6dB BANDWIDTH</b>	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.66	37.33	19.06	46.99	28.72	66.00	56.00	-19.01	-27.28
2	0.17605	9.63	35.24	17.82	44.87	27.45	64.67	54.67	-19.80	-27.22
3	0.20518	9.73	33.13	15.77	42.86	25.50	63.40	53.40	-20.54	-27.90
4	0.39701	9.80	26.87	20.87	36.67	30.67	57.92	47.92	-21.25	-17.25
5	13.41825	9.95	32.39	27.25	42.34	37.20	60.00	50.00	-17.66	-12.80
<b>6</b>	<b>16.22850</b>	<b>9.89</b>	<b>34.94</b>	<b>30.43</b>	<b>44.83</b>	<b>40.32</b>	<b>60.00</b>	<b>50.00</b>	<b>-15.17</b>	<b>-9.68</b>

- 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**

<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Last Cal.</b>	<b>Next Cal.</b>
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 12,17	Mar. 11,18
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Bilog Antenna (30MHz~1GHz)	Teseq	CBL 6111D	30643	Jul. 14, 17	Jul. 13, 18
Loop antenna (9KHz ~30MHz)	Daze	ZN30900A	0708	Mar. 12,17	Mar. 11,18
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 18,17	May 17,18
GPS Generator+ Antenna	TOJOIN	GNSS-5000A	E1-010119	Aug. 08, 17	Aug. 07, 18
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Mar. 12,17	Mar. 11,18
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
Horn Antenna (18GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170242	Mar. 15,17	Mar. 14,18
Amplifier (9kHz-1GHz)	SONOMA	310D	186955	Mar. 04,17	Mar. 03, 18
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	Mar. 09,17	Mar. 08,18
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 04,17	Nov. 03,18
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A

**NOTE:**

1. The test was performed in 966 Chamber.
2. The calibration interval of the above test instruments are 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 above1GHz 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. 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 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.

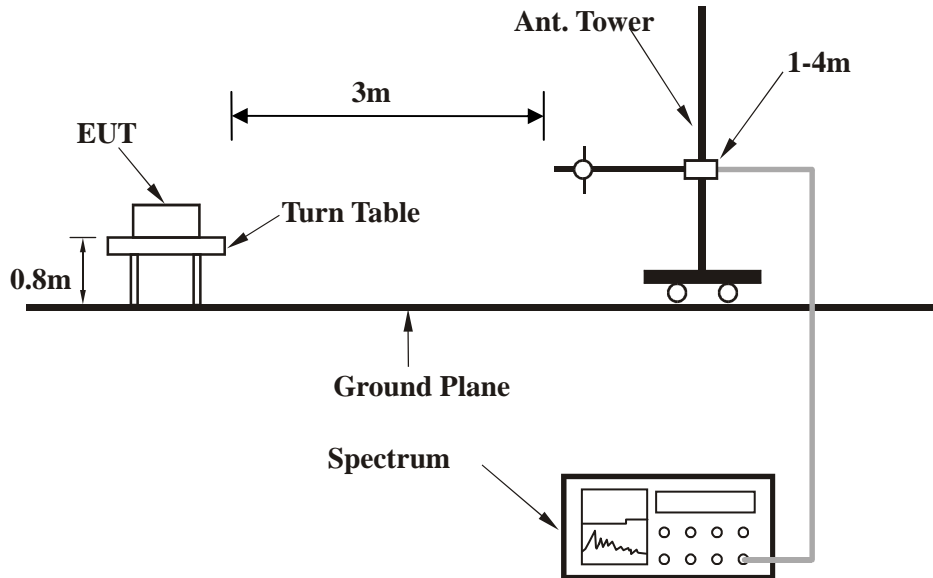
#### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation.



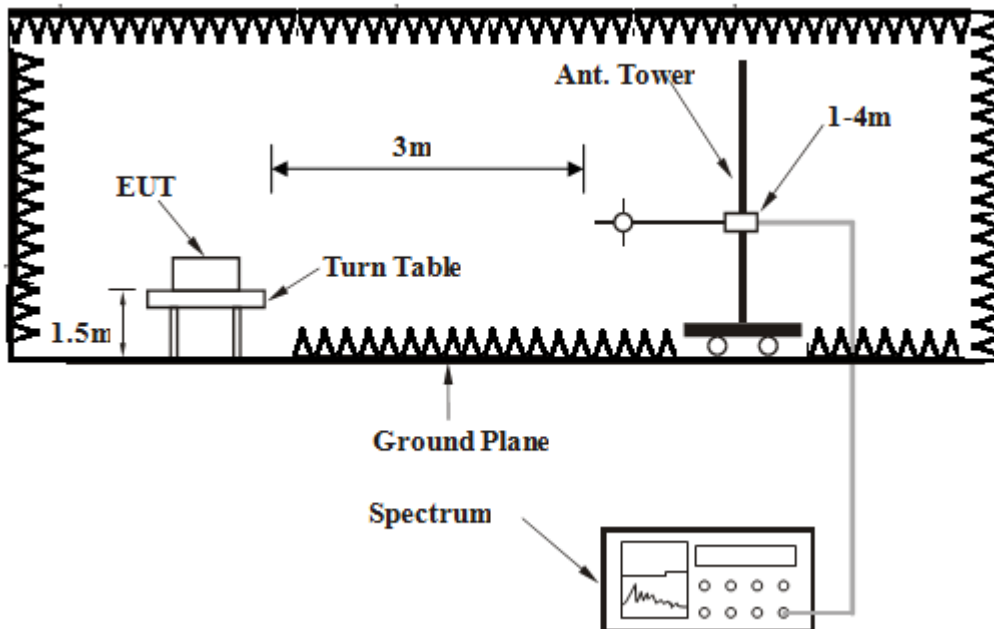
#### 4.2.5 TEST SETUP

##### Below 1GHz test setup



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

##### 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

- 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.



### 4.2.7 TEST RESULTS

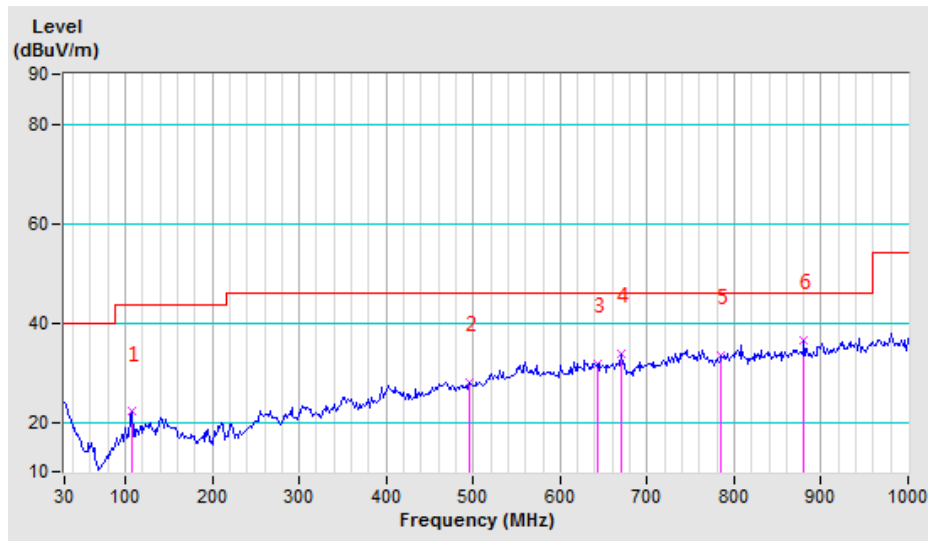
#### BELOW 1GHz WORST-CASE DATA:

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	107.72	22.05 QP	43.50	-21.45	1.00 H	79	34.10	-12.05
2	494.79	27.90 QP	46.00	-18.10	1.00 H	203	28.76	-0.86
3	642.47	31.71 QP	46.00	-14.29	1.00 H	41	28.55	3.16
4	670.45	33.69 QP	46.00	-12.31	1.00 H	282	30.31	3.38
5	785.48	33.41 QP	46.00	-12.59	1.00 H	0	28.49	4.92
6	880.30	36.53 QP	46.00	-9.47	1.00 H	173	31.07	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.





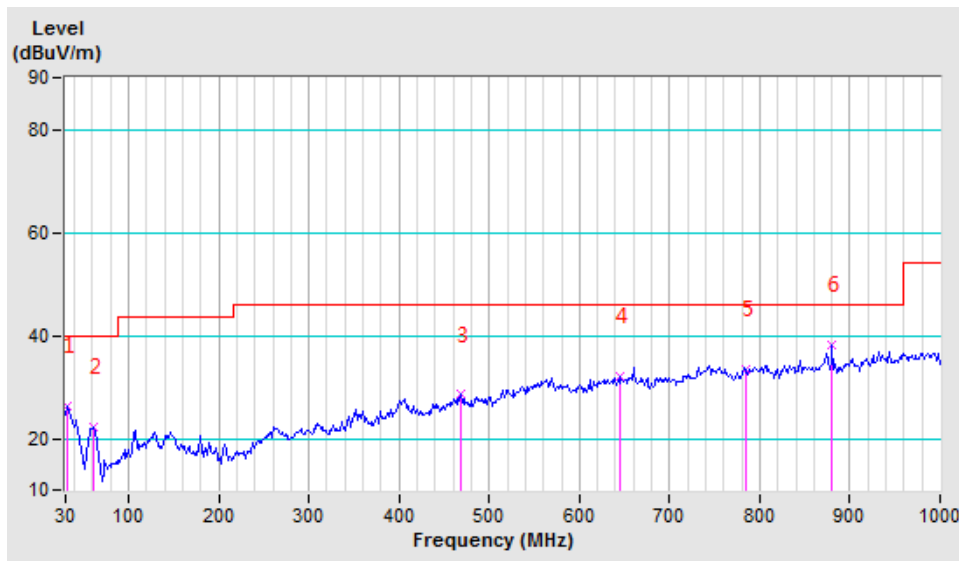


<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	9KHz ~ 1GHz		

<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	31.55	26.32 QP	40.00	-13.68	1.00 V	132	32.63	-6.31
2	61.09	22.32 QP	40.00	-17.68	1.00 V	93	40.97	-18.65
3	468.37	28.48 QP	46.00	-17.52	1.00 V	352	29.66	-1.18
4	644.02	32.13 QP	46.00	-13.87	1.00 V	140	28.97	3.16
5	785.48	33.43 QP	46.00	-12.57	1.00 V	176	28.51	4.92
6	880.30	38.18 QP	46.00	-7.82	1.00 V	34	32.72	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 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	58.86 PK	74.00	-15.14	2.30 H	59	20.86	38.00
2	2390.00	52.31 AV	54.00	-1.69	2.30 H	59	14.31	38.00
3	*2412.00	106.57 PK			2.30 H	18	68.51	38.06
4	*2412.00	103.41 AV			2.30 H	18	65.35	38.06
5	4824.00	50.01 PK	74.00	-23.99	1.52 H	98	44.05	5.96
6	4824.00	38.92 AV	54.00	-15.08	1.52 H	98	32.96	5.96
7	#7236.00	55.29 PK	74.00	-18.71	1.28 H	230	42.98	12.31
8	#7236.00	41.09 AV	54.00	-12.91	1.28 H	230	28.78	12.31

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	57.89 PK	74.00	-16.11	1.00 V	132	19.89	38.00
2	2390.00	52.71 AV	54.00	-1.29	1.00 V	132	14.71	38.00
3	*2412.00	102.10 PK			1.42 V	263	64.04	38.06
4	*2412.00	99.73 AV			1.42 V	263	61.67	38.06
5	4824.00	49.59 PK	74.00	-24.41	1.25 V	201	43.63	5.96
6	4824.00	37.85 AV	54.00	-16.15	1.25 V	201	31.89	5.96
7	#7236.00	55.29 PK	74.00	-18.71	1.00 V	78	42.98	12.31
8	#7236.00	42.37 AV	54.00	-11.63	1.00 V	78	30.06	12.31

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	2390.00	57.67 PK	74.00	-16.33	1.36 H	200	19.67	38.00
2	2390.00	42.89 AV	54.00	-11.11	1.36 H	200	4.89	38.00
3	*2437.00	108.19 PK			1.35 H	48	70.05	38.14
4	*2437.00	105.18 AV			1.35 H	48	67.04	38.14
5	2483.50	55.77 PK	74.00	-18.23	1.62 H	320	17.49	38.28
6	2483.50	42.90 AV	54.00	-11.10	1.62 H	320	4.62	38.28
7	4874.00	50.12 PK	74.00	-23.88	1.24 H	109	44.07	6.05
8	4874.00	36.91 AV	54.00	-17.09	1.24 H	109	30.86	6.05
9	7311.00	56.27 PK	74.00	-17.73	1.20 H	67	43.63	12.64
10	7311.00	42.04 AV	54.00	-11.96	1.20 H	67	29.40	12.64

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	55.36 PK	74.00	-18.64	1.62 V	223	17.36	38.00
2	2390.00	42.36 AV	54.00	-11.64	1.62 V	223	4.36	38.00
3	*2437.00	104.40 PK			1.62 V	223	66.26	38.14
4	*2437.00	101.62 AV			1.62 V	223	63.48	38.14
5	2483.50	57.22 PK	74.00	-16.78	1.63 V	249	18.94	38.28
6	2483.50	43.19 AV	54.00	-10.81	1.63 V	249	4.91	38.28
7	4874.00	49.89 PK	74.00	-24.11	1.54 V	264	43.84	6.05
8	4874.00	38.08 AV	54.00	-15.92	1.54 V	264	32.03	6.05
9	7311.00	55.76 PK	74.00	-18.24	1.02 V	85	43.12	12.64
10	7311.00	42.57 AV	54.00	-11.43	1.02 V	85	29.93	12.64

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	106.44 PK			1.63 H	30	68.22	38.22
2	*2462.00	103.32 AV			1.63 H	30	65.10	38.22
3	2483.50	59.35 PK	74.00	-14.65	1.62 H	254	21.07	38.28
4	2483.50	52.66 AV	54.00	-1.34	1.62 H	254	14.38	38.28
5	4924.00	50.74 PK	74.00	-23.26	1.52 H	201	44.61	6.13
6	4924.00	36.29 AV	54.00	-17.71	1.52 H	201	30.16	6.13
7	7386.00	56.01 PK	74.00	-17.99	1.52 H	231	43.05	12.96
8	7386.00	42.69 AV	54.00	-11.31	1.52 H	231	29.73	12.96
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	102.48 PK			1.32 V	289	64.26	38.22
2	*2462.00	99.75 AV			1.32 V	289	61.53	38.22
3	2483.50	58.17 PK	74.00	-15.83	1.62 V	210	19.89	38.28
4	2483.50	48.64 AV	54.00	-5.36	1.62 V	210	10.36	38.28
5	4924.00	49.87 PK	74.00	-24.13	1.04 V	201	43.74	6.13
6	4924.00	37.61 AV	54.00	-16.39	1.04 V	201	31.48	6.13
7	7386.00	56.28 PK	74.00	-17.72	1.00 V	67	43.32	12.96
8	7386.00	42.75 AV	54.00	-11.25	1.00 V	67	29.79	12.96

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

<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	67.79 PK	74.00	-6.21	1.35 H	58	29.79	38.00
2	2390.00	53.38 AV	54.00	-0.62	1.35 H	58	15.38	38.00
3	*2412.00	104.72 PK			1.62 H	130	66.66	38.06
4	*2412.00	92.65 AV			1.62 H	130	54.59	38.06
5	4824.00	49.91 PK	74.00	-24.09	1.48 H	301	43.95	5.96
6	4824.00	36.59 AV	54.00	-17.41	1.48 H	301	30.63	5.96
7	#7236.00	56.38 PK	74.00	-17.62	2.01 H	151	44.07	12.31
8	#7236.00	42.40 AV	54.00	-11.60	2.01 H	151	30.09	12.31
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	67.30 PK	74.00	-6.70	1.63 V	130	29.30	38.00
2	2390.00	52.93 AV	54.00	-1.07	1.63 V	130	14.93	38.00
3	*2412.00	104.13 PK			1.62 V	30	66.07	38.06
4	*2412.00	92.59 AV			1.62 V	30	54.53	38.06
5	4824.00	50.17 PK	74.00	-23.83	1.06 V	87	44.21	5.96
6	4824.00	35.89 AV	54.00	-18.11	1.06 V	87	29.93	5.96
7	#7236.00	56.29 PK	74.00	-17.71	1.34 V	172	43.98	12.31
8	#7236.00	42.85 AV	54.00	-11.15	1.34 V	172	30.54	12.31

**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	2390.00	61.56 PK	74.00	-12.44	1.64 H	294	23.56	38.00
2	2390.00	46.65 AV	54.00	-7.35	1.64 H	294	8.65	38.00
3	*2437.00	112.73 PK			1.32 H	264	74.59	38.14
4	*2437.00	99.81 AV			1.32 H	264	61.67	38.14
5	2483.50	61.76 PK	74.00	-12.24	1.41 H	120	23.48	38.28
6	2483.50	47.60 AV	54.00	-6.40	1.41 H	120	9.32	38.28
7	4874.00	52.21 PK	74.00	-21.79	1.52 H	204	46.16	6.05
8	4874.00	37.56 AV	54.00	-16.44	1.52 H	204	31.51	6.05
9	7311.00	56.39 PK	74.00	-17.61	1.06 H	86	43.75	12.64
10	7311.00	43.25 AV	54.00	-10.75	1.06 H	86	30.61	12.64

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	60.89 PK	74.00	-13.11	1.59 V	254	22.89	38.00
2	2390.00	46.65 AV	54.00	-7.35	1.59 V	254	8.65	38.00
3	*2437.00	108.34 PK			1.02 V	78	70.20	38.14
4	*2437.00	96.31 AV			1.02 V	78	58.17	38.14
5	2483.50	60.42 PK	74.00	-13.58	1.20 V	112	22.14	38.28
6	2483.50	45.40 AV	54.00	-8.60	1.20 V	112	7.12	38.28
7	4874.00	49.21 PK	74.00	-24.79	1.20 V	231	43.16	6.05
8	4874.00	36.84 AV	54.00	-17.16	1.20 V	231	30.79	6.05
9	7311.00	56.94 PK	74.00	-17.06	1.69 V	351	44.30	12.64
10	7311.00	42.12 AV	54.00	-11.88	1.69 V	351	29.48	12.64

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	108.60 PK			1.62 H	120	70.38	38.22
2	*2462.00	96.37 AV			1.62 H	120	58.15	38.22
3	2483.50	67.04 PK	74.00	-6.96	1.62 H	284	28.76	38.28
4	2483.50	52.83 AV	54.00	-1.17	1.62 H	284	14.55	38.28
5	4924.00	41.69 PK	74.00	-32.31	1.30 H	291	35.56	6.13
6	4924.00	36.51 AV	54.00	-17.49	1.30 H	291	30.38	6.13
7	7386.00	56.49 PK	74.00	-17.51	2.01 H	107	43.53	12.96
8	7386.00	41.39 AV	54.00	-12.61	2.01 H	107	28.43	12.96
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	104.34 PK			1.56 V	41	66.12	38.22
2	*2462.00	92.33 AV			1.56 V	41	54.11	38.22
3	2483.50	66.60 PK	74.00	-7.40	2.30 V	89	28.32	38.28
4	2483.50	50.80 AV	54.00	-3.20	2.30 V	89	12.52	38.28
5	4924.00	51.03 PK	74.00	-22.97	1.20 V	279	44.90	6.13
6	4924.00	36.45 AV	54.00	-17.55	1.20 V	279	30.32	6.13
7	7386.00	56.43 PK	74.00	-17.57	1.65 V	258	43.47	12.96
8	7386.00	43.59 AV	54.00	-10.41	1.65 V	258	30.63	12.96

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 (HT20)

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	65.53 PK	74.00	-8.47	1.63 H	46	27.53	38.00
2	2390.00	52.80 AV	54.00	-1.20	1.63 H	46	14.80	38.00
3	*2412.00	107.66 PK			1.62 H	94	69.60	38.06
4	*2412.00	94.99 AV			1.62 H	94	56.93	38.06
5	4824.00	49.62 PK	74.00	-24.38	1.08 H	261	43.66	5.96
6	4824.00	36.91 AV	54.00	-17.09	1.08 H	261	30.95	5.96
7	#7236.00	56.92 PK	74.00	-17.08	1.32 H	260	44.61	12.31
8	#7236.00	42.69 AV	54.00	-11.31	1.32 H	260	30.38	12.31

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	63.89 PK	74.00	-10.11	1.52 V	263	25.89	38.00
2	2390.00	51.69 AV	54.00	-2.31	1.52 V	263	13.69	38.00
3	*2412.00	105.01 PK			1.20 V	77	66.95	38.06
4	*2412.00	93.18 AV			1.20 V	77	55.12	38.06
5	4824.00	49.85 PK	74.00	-24.15	1.65 V	297	43.89	5.96
6	4824.00	36.59 AV	54.00	-17.41	1.65 V	297	30.63	5.96
7	#7236.00	56.39 PK	74.00	-17.61	1.03 V	98	44.08	12.31
8	#7236.00	42.81 AV	54.00	-11.19	1.03 V	98	30.50	12.31

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.





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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

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	63.51 PK	74.00	-10.49	2.65 H	56	25.51	38.00
2	2390.00	47.51 AV	54.00	-6.49	2.65 H	56	9.51	38.00
3	*2437.00	111.80 PK			1.20 H	50	73.66	38.14
4	*2437.00	98.74 AV			1.20 H	50	60.60	38.14
5	2483.50	62.49 PK	74.00	-11.51	1.80 H	97	24.21	38.28
6	2483.50	46.49 AV	54.00	-7.51	1.80 H	97	8.21	38.28
7	4874.00	50.31 PK	74.00	-23.69	1.52 H	245	44.26	6.05
8	4874.00	36.91 AV	54.00	-17.09	1.52 H	245	30.86	6.05
9	7311.00	57.24 PK	74.00	-16.76	1.02 H	231	44.60	12.64
10	7311.00	43.62 AV	54.00	-10.38	1.02 H	231	30.98	12.64

**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	62.32 PK	74.00	-11.68	1.62 V	351	24.32	38.00
2	2390.00	46.74 AV	54.00	-7.26	1.62 V	351	8.74	38.00
3	*2437.00	110.69 PK			1.41 V	285	72.55	38.14
4	*2437.00	97.88 AV			1.41 V	285	59.74	38.14
5	2483.50	55.97 PK	74.00	-18.03	1.62 V	284	17.69	38.28
6	2483.50	44.66 AV	54.00	-9.34	1.62 V	284	6.38	38.28
7	4874.00	50.16 PK	74.00	-23.84	1.52 V	246	44.11	6.05
8	4874.00	36.92 AV	54.00	-17.08	1.52 V	246	30.87	6.05
9	7311.00	56.37 PK	74.00	-17.63	1.03 V	93	43.73	12.64
10	7311.00	43.05 AV	54.00	-10.95	1.03 V	93	30.41	12.64

**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	108.21 PK			1.20 H	34	69.99	38.22
2	*2462.00	95.25 AV			1.20 H	34	57.03	38.22
3	2483.50	64.22 PK	74.00	-9.78	2.64 H	91	25.94	38.28
4	2483.50	50.52 AV	54.00	-3.48	2.64 H	91	12.24	38.28
5	4924.00	50.00 PK	74.00	-24.00	1.36 H	259	43.87	6.13
6	4924.00	36.02 AV	54.00	-17.98	1.36 H	259	29.89	6.13
7	7386.00	55.83 PK	74.00	-18.17	1.02 H	186	42.87	12.96
8	7386.00	42.31 AV	54.00	-11.69	1.02 H	186	29.35	12.96

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	105.88 PK			1.63 V	297	67.66	38.22
2	*2462.00	94.14 AV			1.63 V	297	55.92	38.22
3	2483.50	62.69 PK	74.00	-11.31	1.24 V	60	24.41	38.28
4	2483.50	50.04 AV	54.00	-3.96	1.24 V	60	11.76	38.28
5	4924.00	50.23 PK	74.00	-23.77	1.20 V	203	44.10	6.13
6	4924.00	36.91 AV	54.00	-17.09	1.20 V	203	30.78	6.13
7	7386.00	56.94 PK	74.00	-17.06	1.32 V	264	43.98	12.96
8	7386.00	43.07 AV	54.00	-10.93	1.32 V	264	30.11	12.96

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)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
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	66.58 PK	74.00	-7.42	2.65 H	39	28.58	38.00
2	2390.00	53.32 AV	54.00	-0.68	2.65 H	39	15.32	38.00
3	*2422.00	99.25 PK			1.63 H	69	61.16	38.09
4	*2422.00	83.75 AV			1.63 H	69	45.66	38.09
5	4844.00	50.39 PK	74.00	-23.61	1.34 H	89	44.40	5.99
6	4844.00	36.97 AV	54.00	-17.03	1.34 H	89	30.98	5.99
7	7266.00	56.35 PK	74.00	-17.65	1.63 H	320	43.91	12.44
8	7266.00	43.07 AV	54.00	-10.93	1.63 H	320	30.63	12.44

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	61.01 PK	74.00	-12.99	2.54 V	266	23.01	38.00
2	2390.00	52.24 AV	54.00	-1.76	2.54 V	266	14.24	38.00
3	*2422.00	98.86 PK			1.68 V	54	60.77	38.09
4	*2422.00	84.08 AV			1.68 V	54	45.99	38.09
5	4844.00	50.61 PK	74.00	-23.39	1.34 V	265	44.62	5.99
6	4844.00	36.91 AV	54.00	-17.09	1.34 V	265	30.92	5.99
7	7266.00	56.83 PK	74.00	-17.17	1.62 V	301	44.39	12.44
8	7266.00	43.26 AV	54.00	-10.74	1.62 V	301	30.82	12.44

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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
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	65.10 PK	74.00	-8.90	2.69 H	30	27.10	38.00
2	2390.00	51.27 AV	54.00	-2.73	2.69 H	30	13.27	38.00
3	*2437.00	103.61 PK			1.20 H	69	65.47	38.14
4	*2437.00	86.72 AV			1.20 H	69	48.58	38.14
5	2483.50	65.93 PK	74.00	-8.07	1.03 H	37	27.65	38.28
6	2483.50	48.80 AV	54.00	-5.20	1.03 H	37	10.52	38.28
7	4874.00	50.01 PK	74.00	-23.99	1.62 H	217	43.96	6.05
8	4874.00	36.95 AV	54.00	-17.05	1.62 H	217	30.90	6.05
9	7311.00	56.32 PK	74.00	-17.68	1.02 H	252	43.68	12.64
10	7311.00	42.81 AV	54.00	-11.19	1.02 H	252	30.17	12.64

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	64.81 PK	74.00	-9.19	1.00 V	267	26.81	38.00
2	2390.00	51.35 AV	54.00	-2.65	1.00 V	267	13.35	38.00
3	*2437.00	103.09 PK			1.68 V	67	64.95	38.14
4	*2437.00	87.60 AV			1.68 V	67	49.46	38.14
5	2483.50	63.41 PK	74.00	-10.59	1.25 V	60	25.13	38.28
6	2483.50	48.96 AV	54.00	-5.04	1.25 V	60	10.68	38.28
7	4874.00	50.32 PK	74.00	-23.68	1.26 V	284	44.27	6.05
8	4874.00	36.58 AV	54.00	-17.42	1.26 V	284	30.53	6.05
9	7311.00	51.39 PK	74.00	-22.61	1.52 V	360	38.75	12.64
10	7311.00	41.02 AV	54.00	-12.98	1.52 V	360	28.38	12.64

**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 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	*2452.00	102.75 PK			1.36 H	40	64.56	38.19
2	*2452.00	87.44 AV			1.36 H	40	49.25	38.19
3	2483.50	64.70 PK	74.00	-9.30	1.98 H	45	26.42	38.28
4	2483.50	51.95 AV	54.00	-2.05	1.98 H	45	13.67	38.28
5	4904.00	50.32 PK	74.00	-23.68	1.52 H	246	44.22	6.10
6	4904.00	36.92 AV	54.00	-17.08	1.52 H	246	30.82	6.10
7	7356.00	56.39 PK	74.00	-17.61	1.02 H	246	43.56	12.83
8	7356.00	43.28 AV	54.00	-10.72	1.02 H	246	30.45	12.83
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	100.93 PK			1.20 V	297	62.74	38.19
2	*2452.00	86.48 AV			1.20 V	297	48.29	38.19
3	2483.50	63.49 PK	74.00	-10.51	1.52 V	69	25.21	38.28
4	2483.50	52.17 AV	54.00	-1.83	1.52 V	69	13.89	38.28
5	4904.00	50.23 PK	74.00	-23.77	1.22 V	103	44.13	6.10
6	4904.00	46.88 AV	54.00	-7.12	1.22 V	103	40.78	6.10
7	7356.00	56.36 PK	74.00	-17.64	1.62 V	305	43.53	12.83
8	7356.00	43.01 AV	54.00	-10.99	1.62 V	305	30.18	12.83

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.



Additional test for other channel of radiated emission

Above 1GHz data

802.11b

<b>CHANNEL</b>		TX Channel 2			<b>DETECTOR FUNCTION</b>		Peak (PK)	
<b>FREQUENCY RANGE</b>		1GHz ~ 25GHz			<b>DETECTOR FUNCTION</b>		Average (AV)	
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	56.45 PK	74.00	-17.55	1.00 H	254	18.45	38.00
2	2390.00	43.59 AV	54.00	-10.41	1.00 H	254	5.59	38.00
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	64.59 PK	74.00	-9.41	1.00 V	155	26.59	38.00
2	2390.00	53.22 AV	54.00	-0.78	1.00 V	155	15.22	38.00

<b>CHANNEL</b>		TX Channel 10			<b>DETECTOR FUNCTION</b>		Peak (PK)	
<b>FREQUENCY RANGE</b>		1GHz ~ 25GHz			<b>DETECTOR FUNCTION</b>		Average (AV)	
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	2483.50	58.21 PK	74	-15.79	1.50 H	295	19.93	38.28
2	2483.50	46.87 AV	54	-7.13	1.50 H	295	8.59	38.28
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	2483.50	61.36 PK	74	-12.64	1.10 V	174	23.08	38.28
2	2483.50	51.59 AV	54	-2.41	1.10 V	174	13.31	38.28

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



802.11g

<b>CHANNEL</b>		TX Channel 2			<b>DETECTOR FUNCTION</b>		Peak (PK)	
<b>FREQUENCY RANGE</b>		1GHz ~ 25GHz					Average (AV)	
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	57.82 PK	74	-16.18	2.15 H	300	19.82	38.00
2	2390.00	45.79 AV	54	-8.21	2.15 H	300	7.79	38.00
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	71.33 PK	74.00	-2.67	1.00 V	5	33.33	38.00
2	2390.00	50.82 AV	54.00	-3.18	1.00 V	5	12.82	38.00

<b>CHANNEL</b>		TX Channel 10			<b>DETECTOR FUNCTION</b>		Peak (PK)	
<b>FREQUENCY RANGE</b>		1GHz ~ 25GHz					Average (AV)	
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	2483.50	59.47 PK	74	-14.53	1.80 H	83	21.19	38.28
2	2483.50	46.02 AV	54	-7.98	1.80 H	83	7.74	38.28
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	2483.50	65.42 PK	74	-8.58	1.20 V	173	27.14	38.28
2	2483.50	51.36 AV	54	-2.64	1.20 V	173	13.08	38.28

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



802.11n (HT20)

<b>CHANNEL</b>		TX Channel 2			<b>DETECTOR FUNCTION</b>		Peak (PK)	
<b>FREQUENCY RANGE</b>		1GHz ~ 25GHz					Average (AV)	
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	56.04 PK	74	-17.96	1.80 H	42	18.04	38.00
2	2390.00	42.49 AV	54	-11.51	1.80 H	42	4.49	38.00
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	66.83 PK	74	-7.17	1.50 V	193	28.83	38.00
2	2390.00	52.01 AV	54	-1.99	1.50 V	193	14.01	38.00

<b>CHANNEL</b>		TX Channel 10			<b>DETECTOR FUNCTION</b>		Peak (PK)	
<b>FREQUENCY RANGE</b>		1GHz ~ 25GHz					Average (AV)	
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	2483.50	56.21 PK	74	-17.79	1.75 H	148	17.93	38.28
2	2483.50	43.67 AV	54	-10.33	1.75 H	148	5.39	38.28
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	2483.50	68.32 PK	74	-5.68	2.20 V	263	30.04	38.28
2	2483.50	51.87 AV	54	-2.13	2.20 V	263	13.59	38.28

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





802.11n (HT40)

<b>CHANNEL</b>		TX Channel 4			<b>DETECTOR FUNCTION</b>		Peak (PK)	
<b>FREQUENCY RANGE</b>		1GHz ~ 25GHz					Average (AV)	
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	56.93 PK	74	-17.07	1.20 H	294	18.93	38.00
2	2390.00	44.64 AV	54	-9.36	1.20 H	294	6.64	38.00
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	69.71 PK	74	-4.29	1.90 V	109	31.71	38.00
2	2390.00	52.47 AV	54	-1.53	1.90 V	109	14.47	38.00

<b>CHANNEL</b>		TX Channel 8			<b>DETECTOR FUNCTION</b>		Peak (PK)	
<b>FREQUENCY RANGE</b>		1GHz ~ 25GHz					Average (AV)	
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	2483.50	58.19 PK	74	-15.81	1.50 H	283	19.91	38.28
2	2483.50	44.12 AV	54	-9.88	1.50 H	283	5.84	38.28
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	2483.50	68.62 PK	74	-5.38	1.40 V	130	30.34	38.28
2	2483.50	53.29 AV	54	-0.71	1.40 V	130	15.01	38.28

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



### 4.3 6dB BANDWIDTH MEASUREMENT

#### 4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

#### 4.3.2 TEST 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
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 13, 17	Oct.12, 18
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.05,17	Sep. 04,18
Oscilloscope	Agilent	DSO9254A	MY51260160	Nov. 04,17	Nov. 03,18
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Signal Generator	Agilent	N5183A	MY50140980	Nov. 04,17	Nov. 03,18
Agile Signal Generator	Agilent	8645A	Agilent	Aug.08, 17	Aug.07, 18
Spectrum Analyzer	Keysight	N9020A	MY55400499	Apr. 10,17	Apr. 09,18
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Dec.05, 17	Dec. 04, 18
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug.08, 17	Aug.07, 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

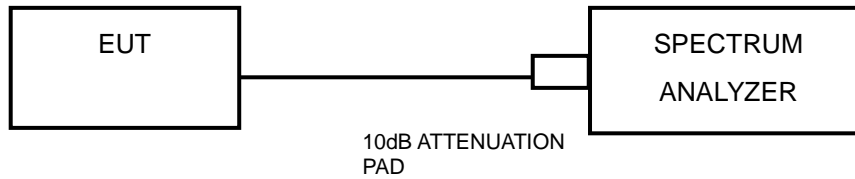
1. Set resolution bandwidth (RBW) = 100KHz
2. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that 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	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	10.09	10.09	0.5	PASS
6	2437	10.13	10.11	0.5	PASS
11	2462	10.05	10.05	0.5	PASS

#### 802.11g

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	15.16	15.16	0.5	PASS
6	2437	15.18	15.18	0.5	PASS
11	2462	15.17	15.14	0.5	PASS



802.11n HT20

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	15.17	15.16	0.5	PASS
6	2437	15.34	15.18	0.5	PASS
11	2462	15.17	15.16	0.5	PASS

802.11n HT40

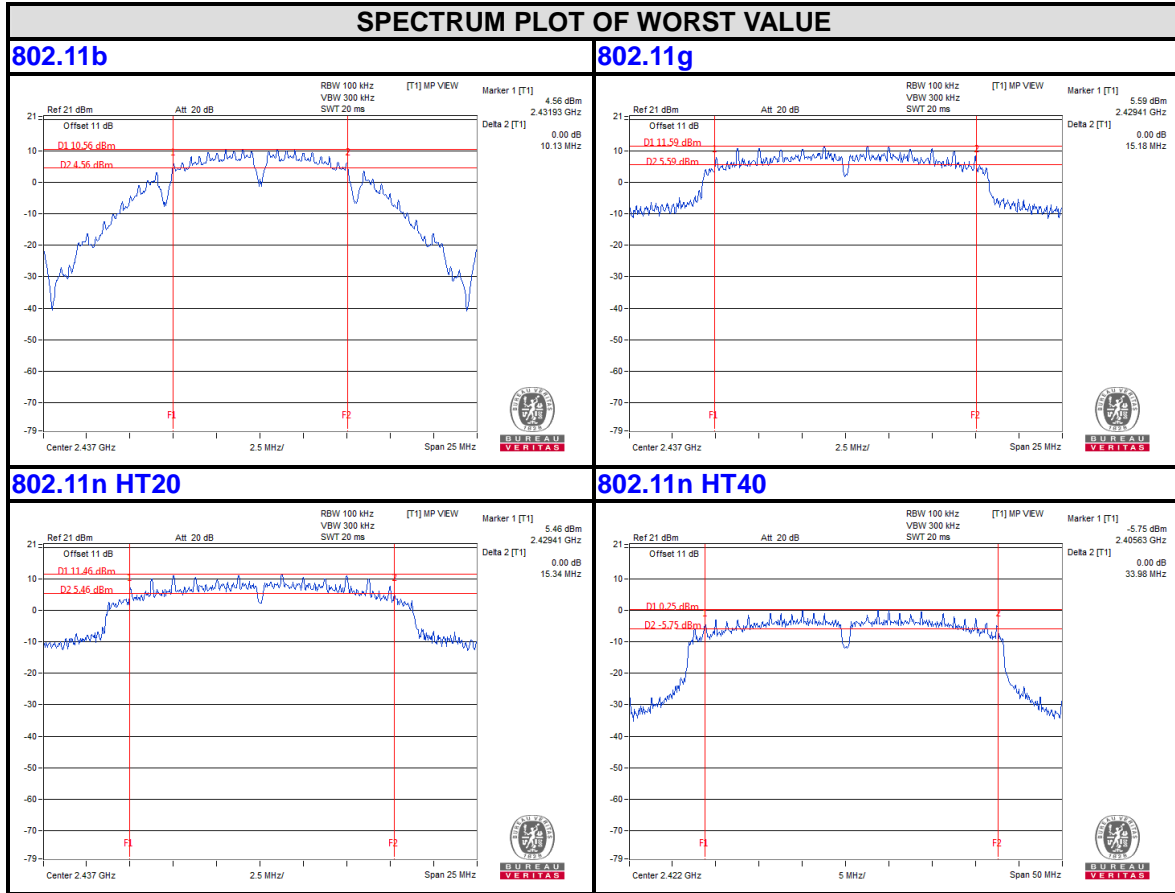
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	33.98	33.96	0.5	PASS
6	2437	33.95	33.95	0.5	PASS
9	2452	33.96	32.70	0.5	PASS



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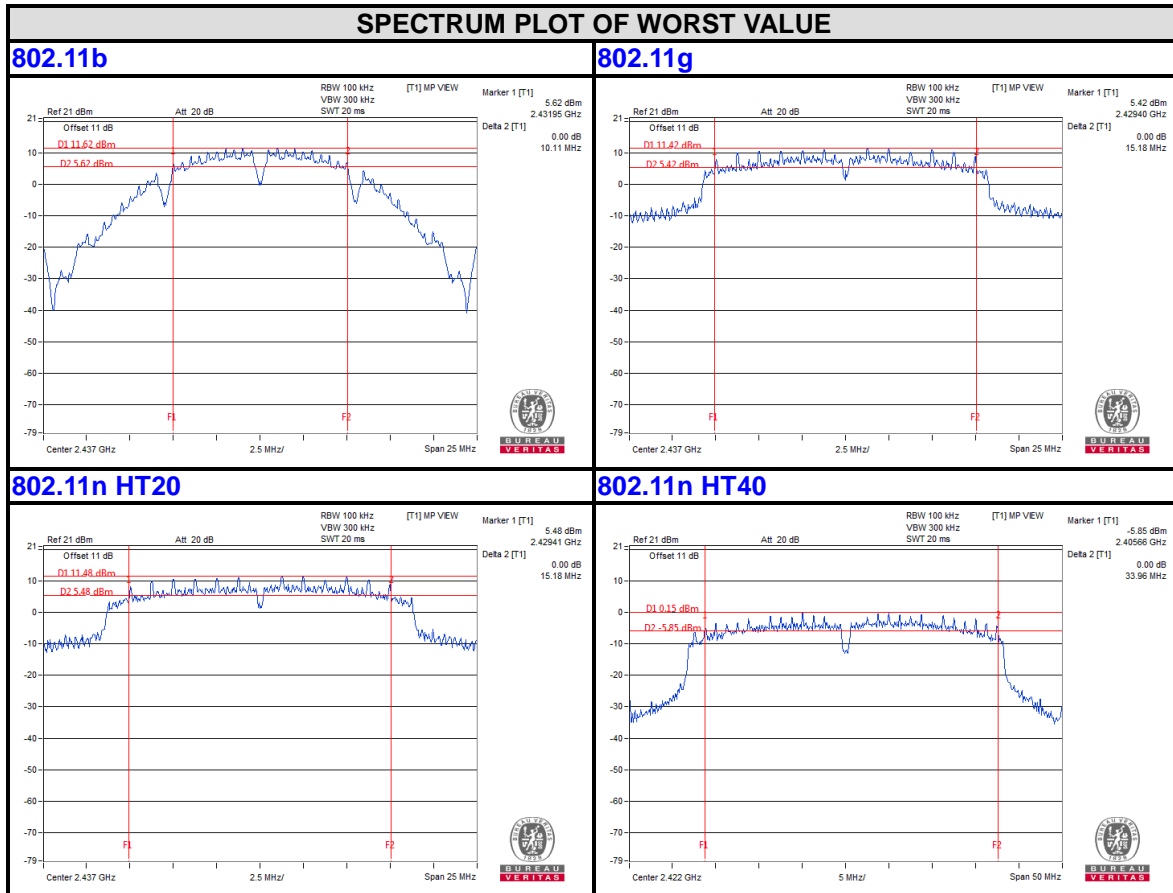
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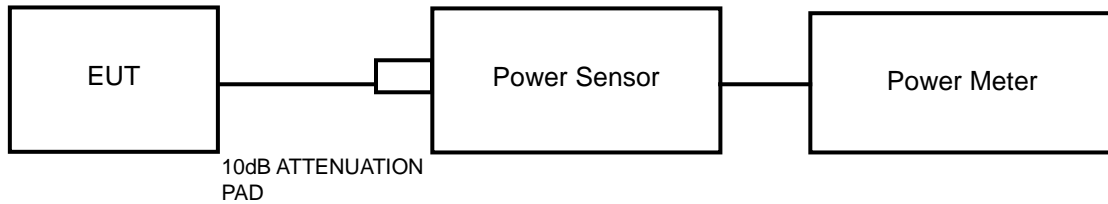


#### 4.4 CONDUCTED OUTPUT POWER

##### 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
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 13, 17	Oct.12, 18
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.05,17	Sep. 04,18
Oscilloscope	Agilent	DSO9254A	MY51260160	Nov. 04,17	Nov. 03,18
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 04,17	Nov. 03,18
Signal Generator	Agilent	N5183A	MY50140980	Nov. 04,17	Nov. 03,18
Agile Signal Generator	Agilent	8645A	Agilent	Aug.08, 17	Aug.07, 18
Spectrum Analyzer	Keysight	N9020A	MY55400499	Apr. 10,17	Apr. 09,18
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Dec.05, 17	Dec. 04, 18
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug.08, 17	Aug.07, 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

An Average power sensor was used on the output port of the EUT. An Average power meter was used to read the response of the Average power sensor. Record the Average 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

##### 802.11b

CHAN.	FREQ (MHz)	AVG. POWER (dBm)		AVG. POWER (mW)		TOTAL POWER (mW)	TOTAL POWER (dBm)	AVG. POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	2412	19.79	19.62	95.280	91.622	186.902	22.72	30	PASS
6	2437	21.70	21.53	147.911	142.233	<b>290.144</b>	<b>24.63</b>	30	PASS
11	2462	18.49	18.42	70.632	69.502	140.134	21.47	30	PASS

##### 802.11g

CHAN.	FREQ (MHz)	AVG. POWER (dBm)		AVG. POWER (mW)		TOTAL POWER (mW)	TOTAL POWER (dBm)	AVG. POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	2412	17.05	17.23	50.699	52.845	103.544	20.15	30	PASS
6	2437	21.57	21.50	143.549	141.254	284.803	24.55	30	PASS
11	2462	16.62	16.84	45.920	48.306	94.226	19.74	30	PASS



802.11n HT20

CHAN.	FREQ (MHz)	AVG. POWER (dBm)		AVG. POWER (mW)		TOTAL POWER (mW)	TOTAL POWER (dBm)	AVG. POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	2412	16.12	16.17	40.926	41.400	82.326	19.16	30	PASS
6	2437	21.43	21.39	138.995	137.721	276.716	24.42	30	PASS
11	2462	16.54	16.63	45.082	46.026	91.108	19.60	30	PASS

802.11n HT40

CHAN.	FREQ (MHz)	AVG. POWER (dBm)		AVG. POWER (mW)		TOTAL POWER (mW)	TOTAL POWER (dBm)	AVG. POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
3	2422	13.80	13.83	23.988	24.155	48.143	16.83	30	PASS
6	2437	17.50	17.42	56.234	55.208	111.442	20.47	30	PASS
9	2452	14.17	14.34	26.122	27.164	53.286	17.27	30	PASS

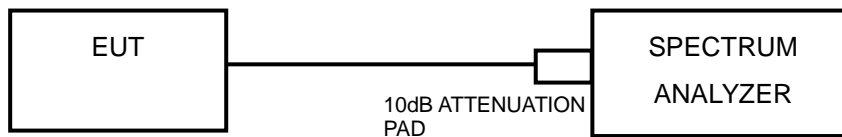


## 4.5 POWER SPECTRAL DENSITY MEASUREMENT

### 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

- a) Set instrument center frequency to DTS channel center frequency.
- b) Set span to at least 1.5 times the OBW.
- c) Set RBW to: 3 kHz.
- d) Set VBW  $\geq 3 \times$  RBW.
- e) Detector = peak
- f) Ensure that the number of measurement points in the sweep  $\geq 2 \times$  span/RBW.
- g) Sweep time = auto couple.
- h) 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

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	TOTAL PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-5.04	3.01	-2.03	6.99	PASS
	6	2437	-4.21	3.01	-1.20	6.99	PASS
	11	2462	-6.28	3.01	-3.27	6.99	PASS
1	1	2412	-5.30	3.01	-2.29	6.99	PASS
	6	2437	-3.16	3.01	-0.15	6.99	PASS
	11	2462	-5.89	3.01	-2.88	6.99	PASS

Remark: Due ANT gain less than 6dBi [ $4 + 10\log(N=2)=7.01 > 6$ ], so the limit need to be changed  $8 + [4 + 10\log(N=2) - 6] = 6.99$ .

##### 802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	TOTAL PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-7.15	3.01	-4.14	6.99	PASS
	6	2437	-3.50	3.01	-0.49	6.99	PASS
	11	2462	-7.84	3.01	-4.83	6.99	PASS
1	1	2412	-8.72	3.01	-5.71	6.99	PASS
	6	2437	-3.62	3.01	-0.61	6.99	PASS
	11	2462	-7.02	3.01	-4.01	6.99	PASS

Remark: Due ANT gain less than 6dBi [ $4 + 10\log(N=2)=7.01 > 6$ ], so the limit need to be changed  $8 + [4 + 10\log(N=2) - 6] = 6.99$ .



802.11n HT20

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	TOTAL PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-8.65	3.01	-5.64	6.99	PASS
	6	2437	-3.69	3.01	-0.68	6.99	PASS
	11	2462	-7.93	3.01	-4.92	6.99	PASS
1	1	2412	-9.84	3.01	-6.83	6.99	PASS
	6	2437	-4.56	3.01	-1.55	6.99	PASS
	11	2462	-7.84	3.01	-4.83	6.99	PASS

Remark: Due ANT gain less than 6dBi [4 +10log(N=2)=7.01>6], so the limit need to be changed 8+[4 +10log(N=2)-6]=6.99.

802.11n HT40

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	TOTAL PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-14.40	3.01	-11.39	6.99	PASS
	6	2437	-10.50	3.01	-7.49	6.99	PASS
	9	2452	-14.26	3.01	-11.25	6.99	PASS
1	3	2422	-14.75	3.01	-11.74	6.99	PASS
	6	2437	-10.54	3.01	-7.53	6.99	PASS
	9	2452	-13.35	3.01	-10.34	6.99	PASS

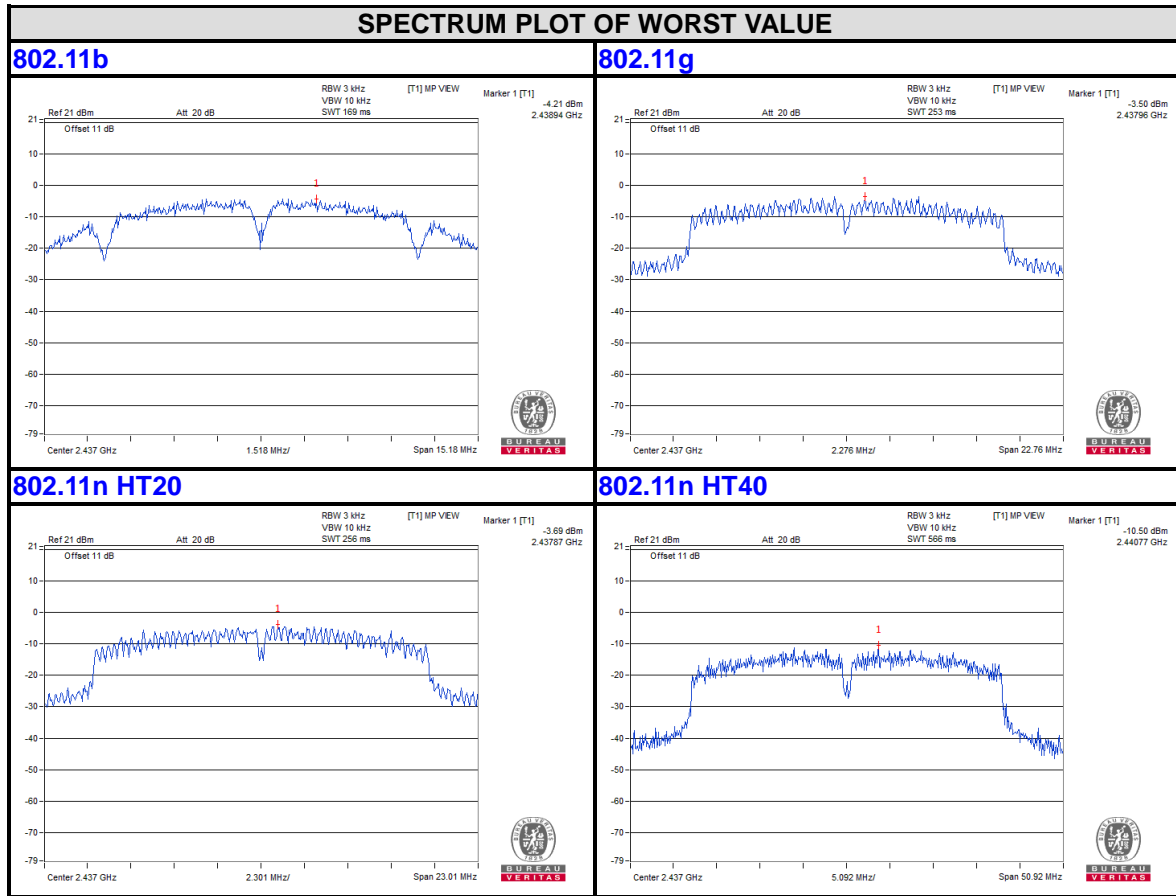
Remark: Due ANT gain less than 6dBi [4 +10log(N=2)=7.01>6], so the limit need to be changed 8+[4 +10log(N=2)-6]=6.99.



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CHAIN 0



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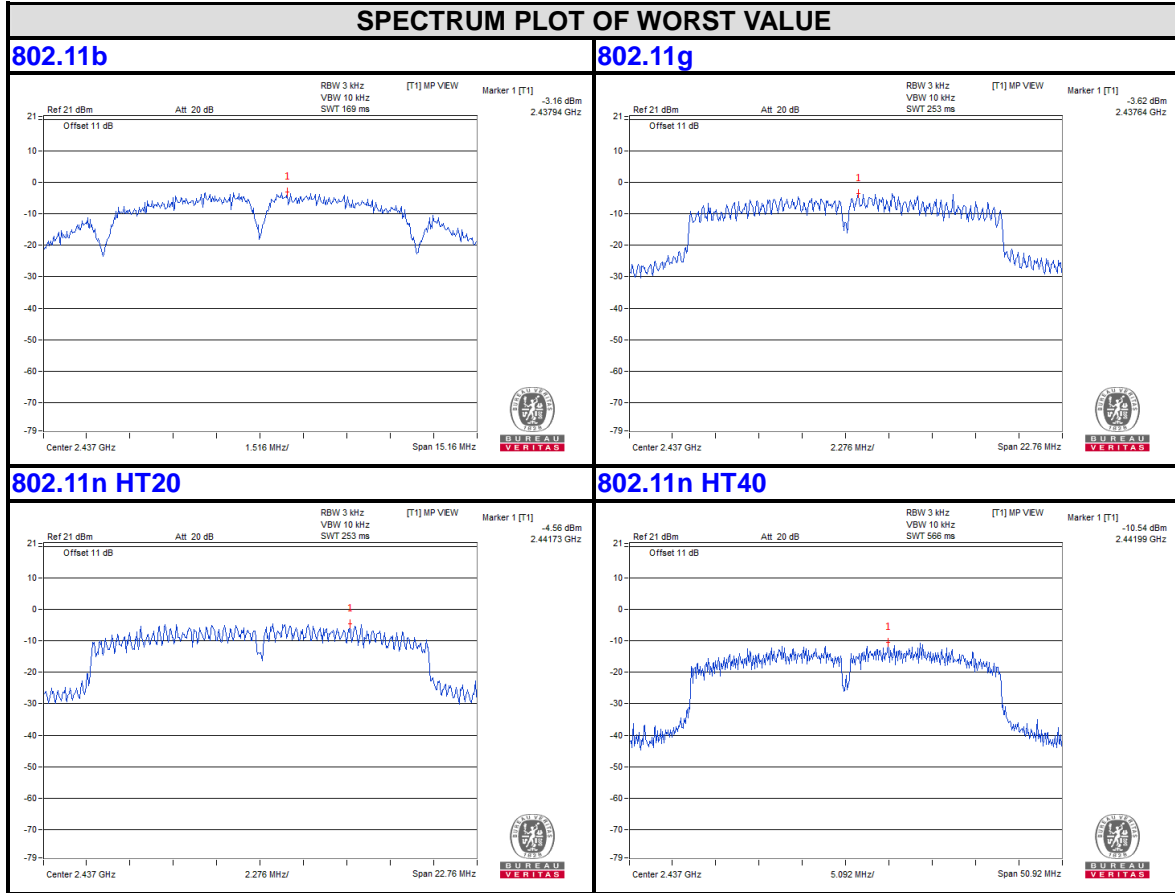
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CHAIN 1



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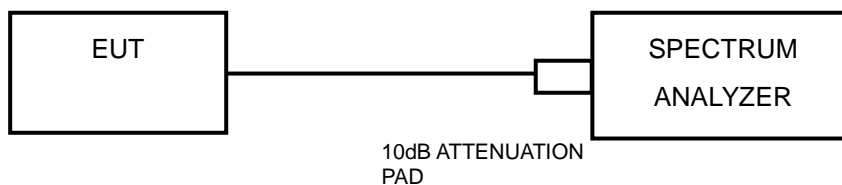


## 4.6 OUT OF BAND EMISSION MEASUREMENT

### 4.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

Below  $-30\text{dB}$  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

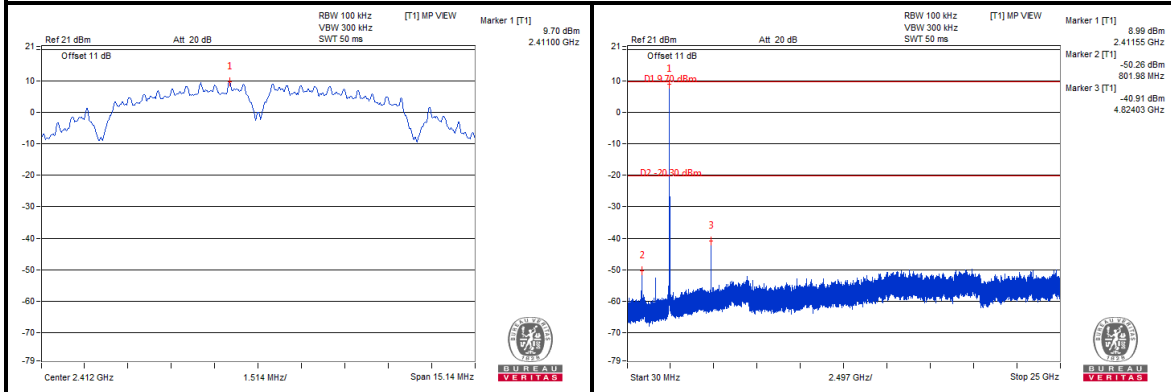


### 4.6.7 TEST RESULTS

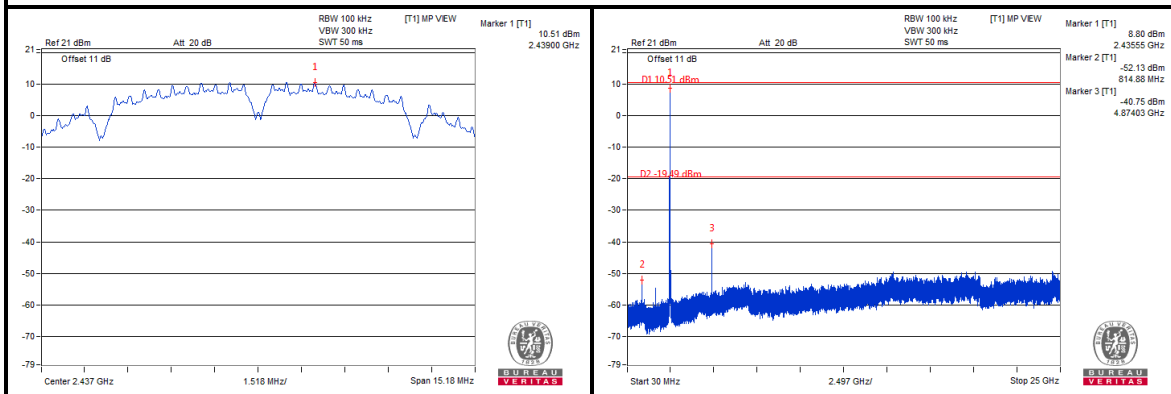
#### 802.11b

#### CHAIN 0

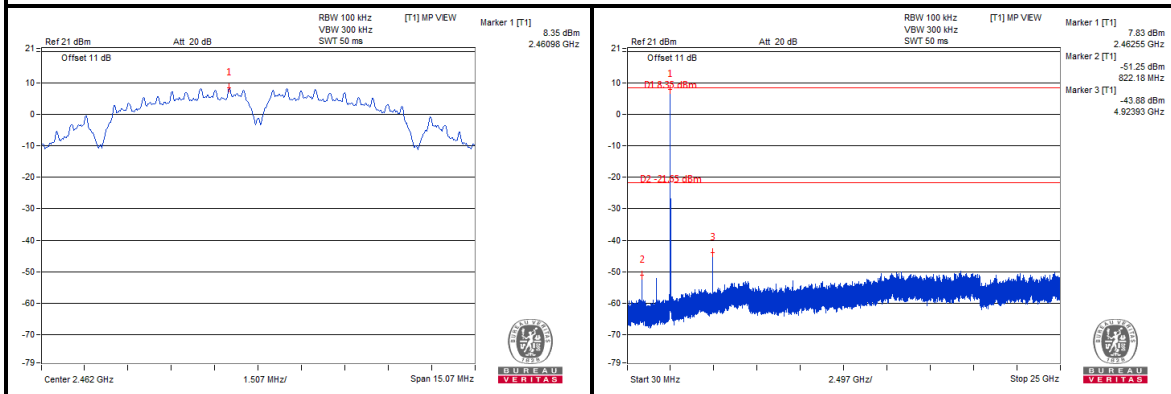
#### CH 1



#### CH 6



#### CH 11



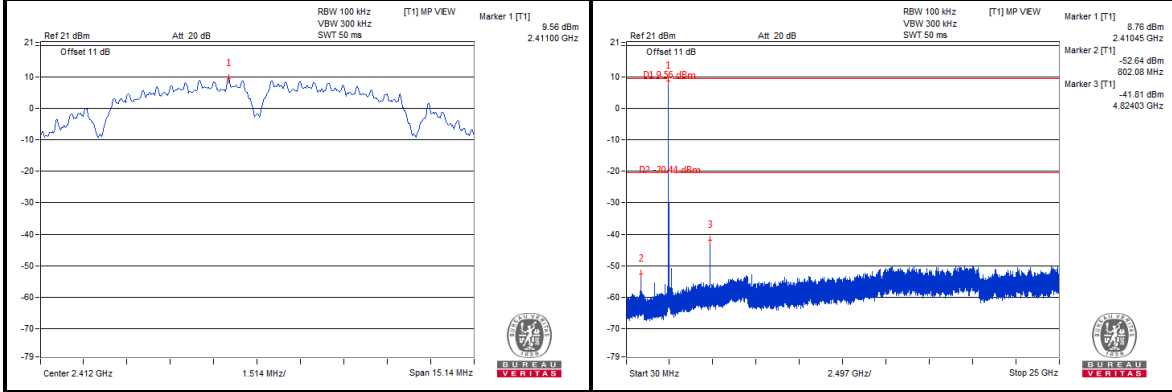


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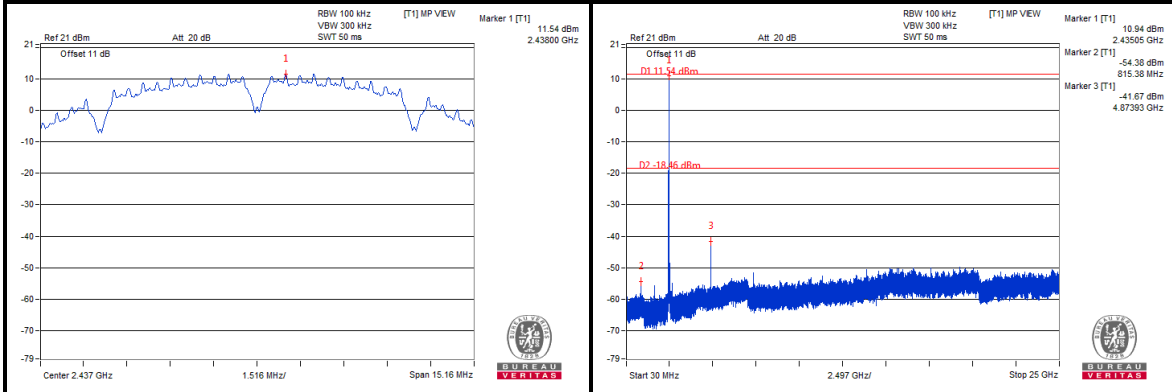
Test Report No.: RF171102N030

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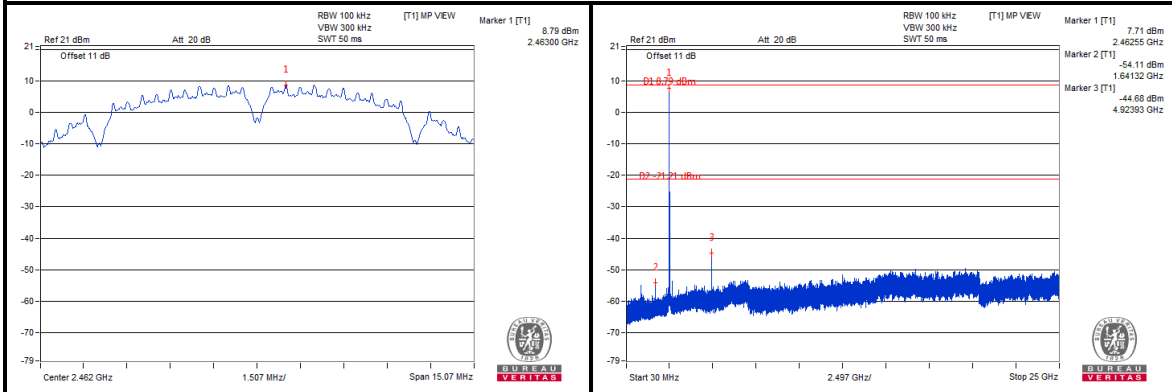
CH 1



CH 6



CH 11



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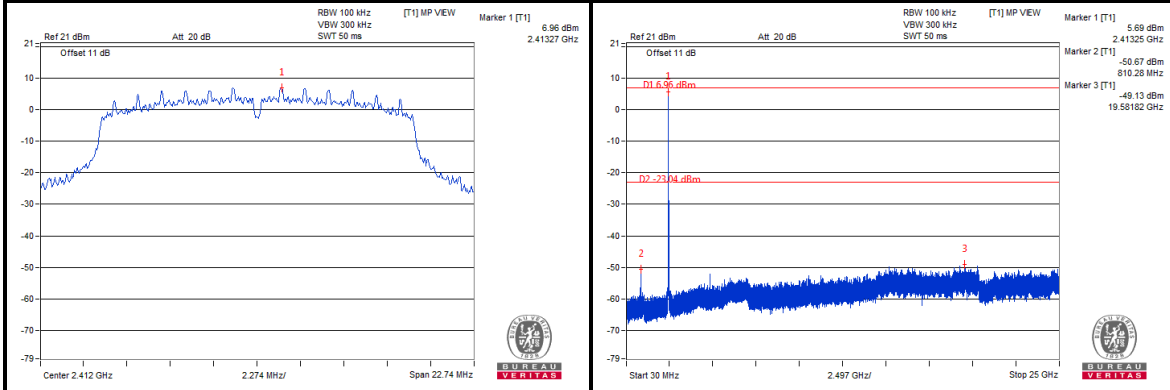
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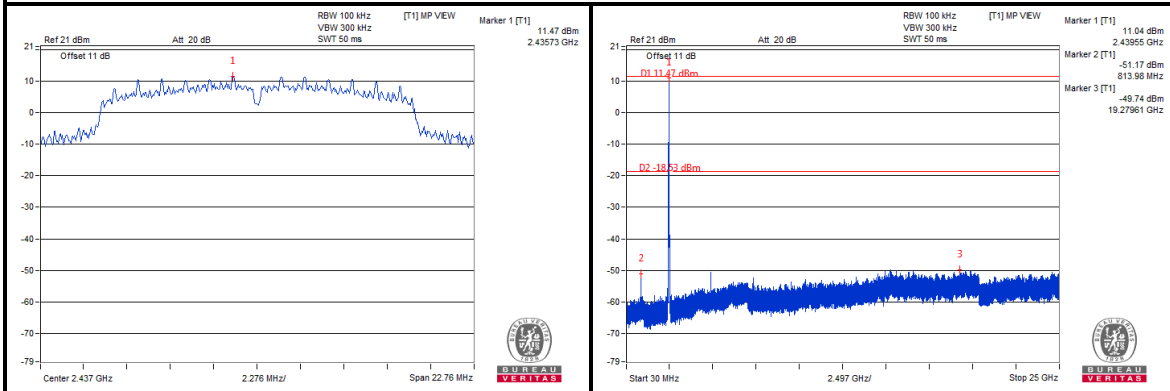
802.11g

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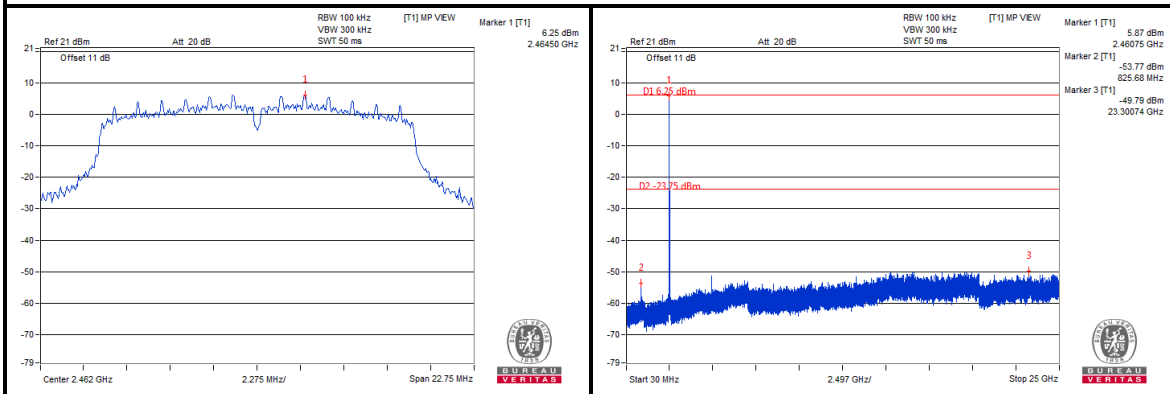
CH 1



CH 6



CH 11



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Fax: +86 769 8593 1080  
Email: [customerservice.dg@cn.bureauveritas.com](mailto:customerservice.dg@cn.bureauveritas.com)

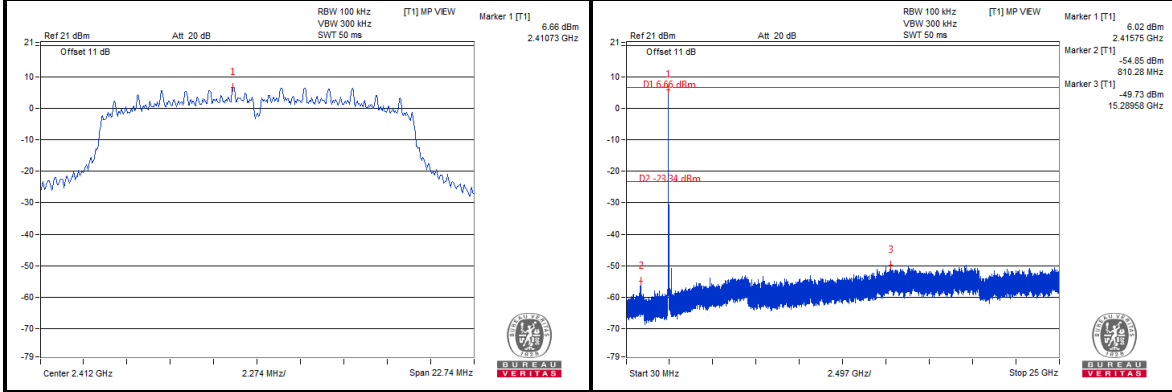


BUREAU VERITAS

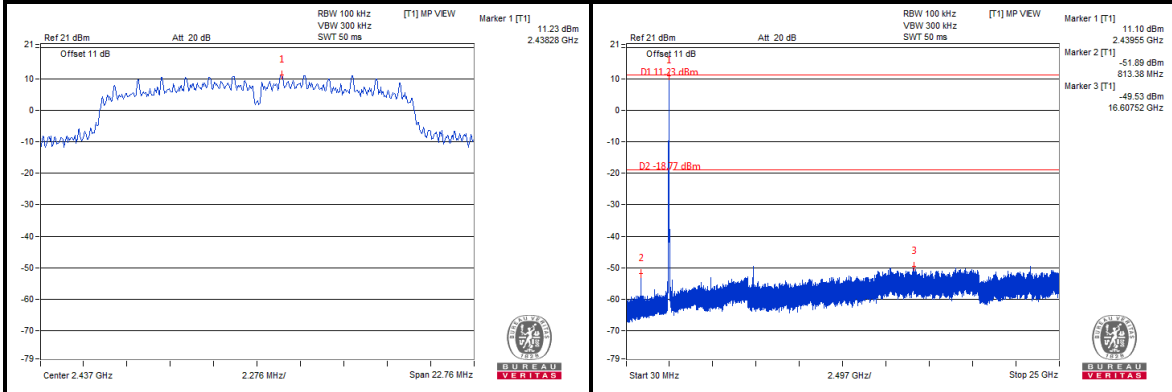
Test Report No.: RF171102N030

CHAIN 1

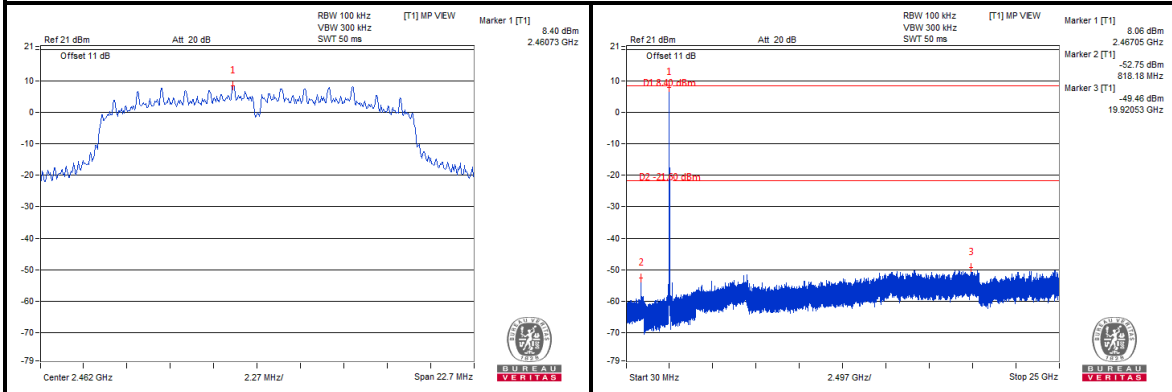
CH 1



CH 6



CH 11



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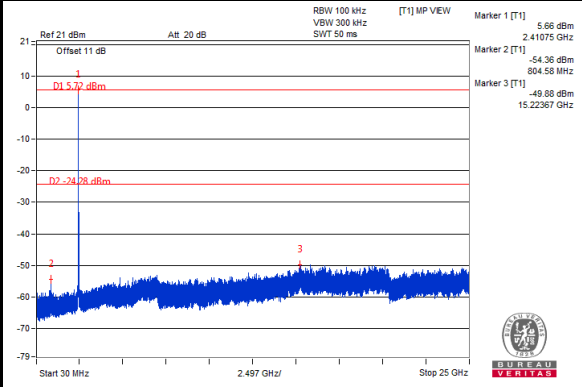
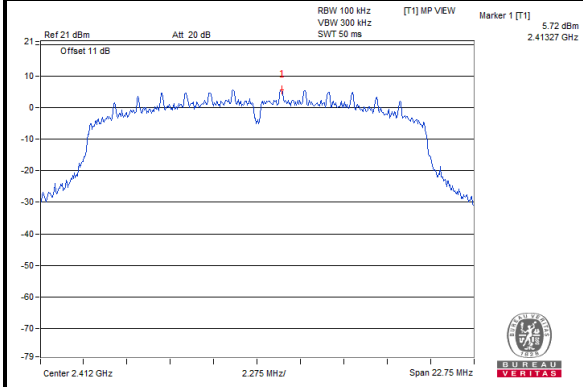
BUREAU VERITAS

Test Report No.: RF171102N030

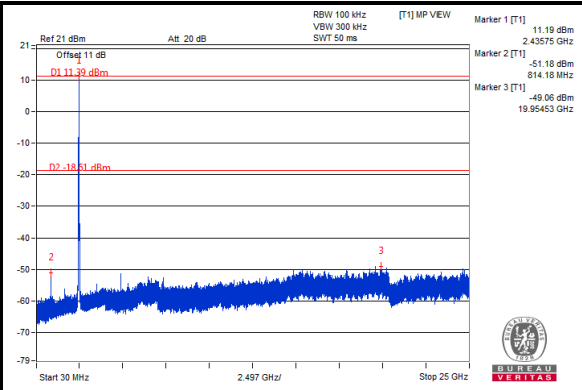
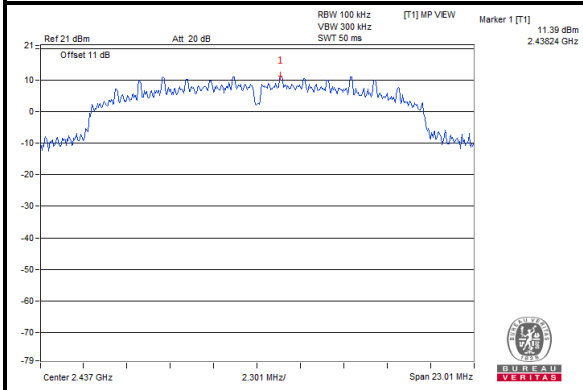
802.11n HT20

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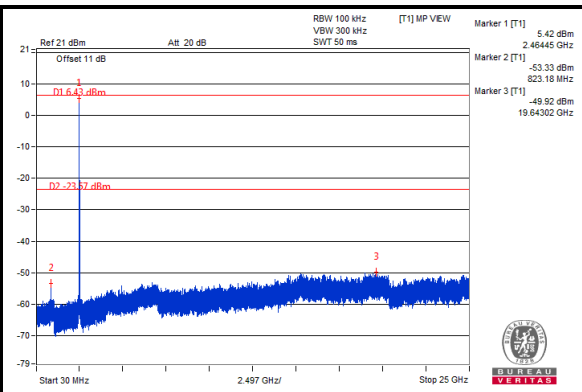
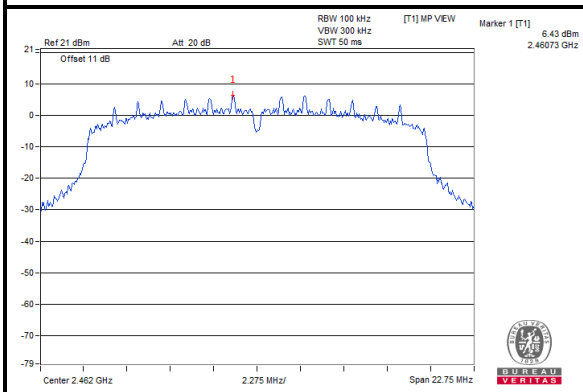
CH 1



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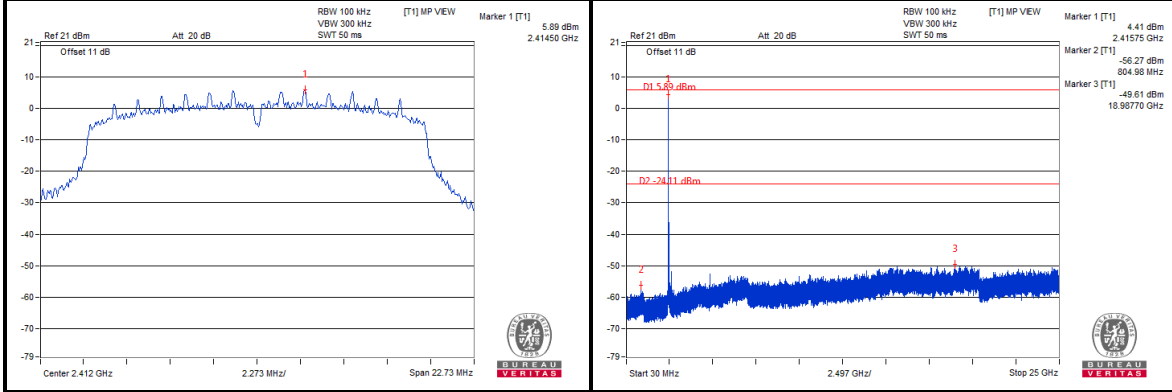


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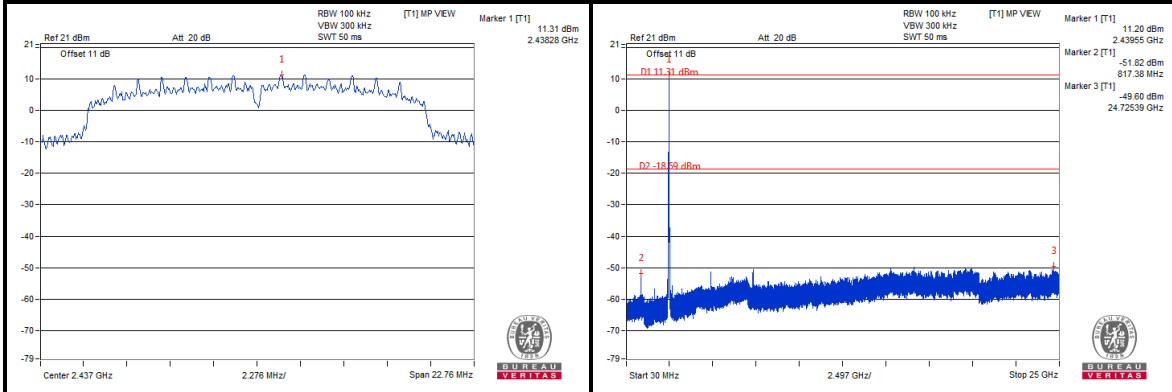
Test Report No.: RF171102N030

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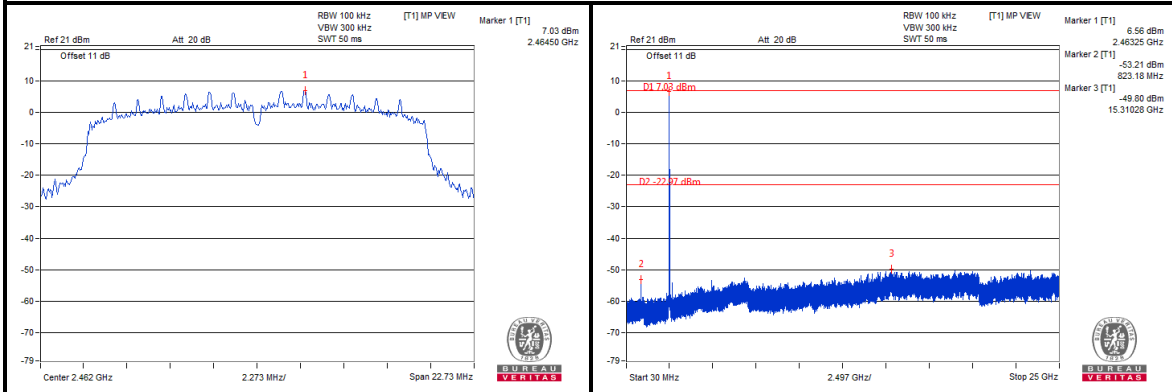
CH 1



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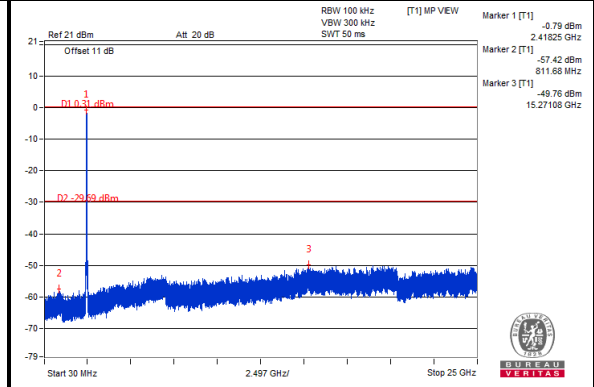
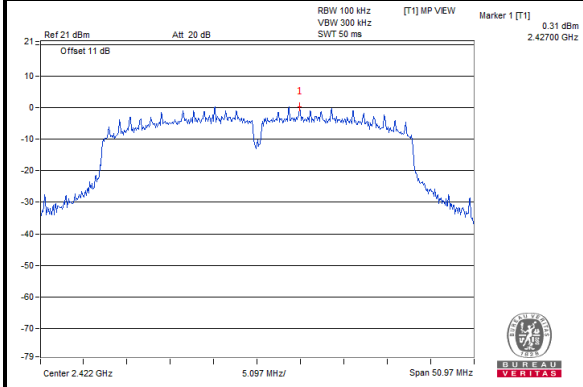
BUREAU VERITAS

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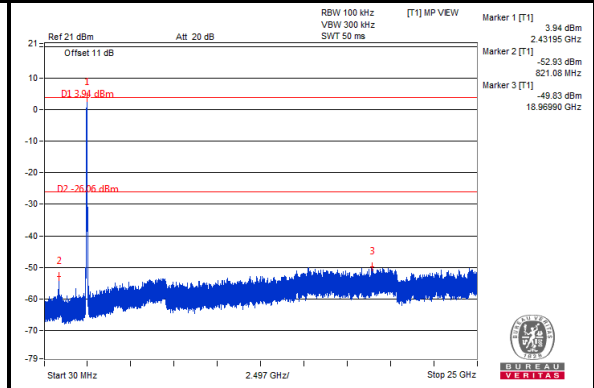
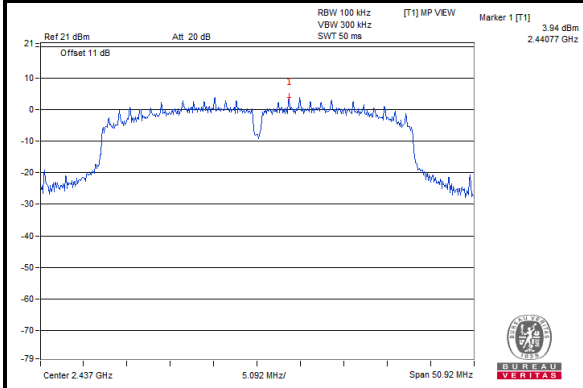
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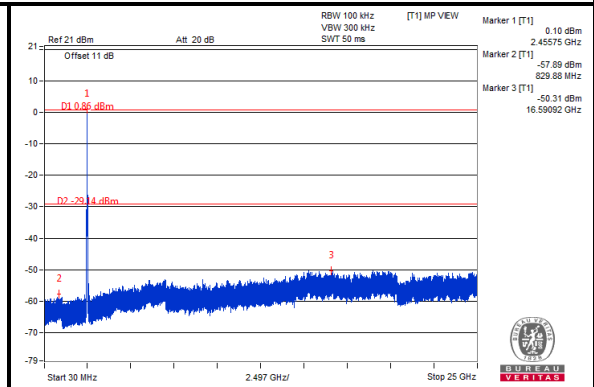
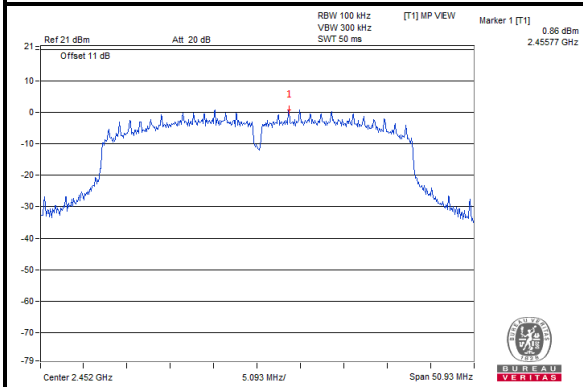
CH 3



CH 6



CH 9



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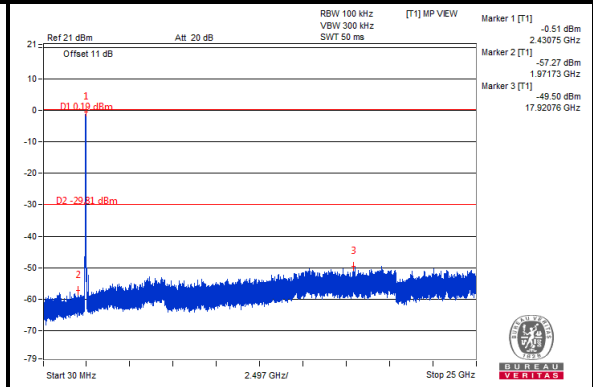
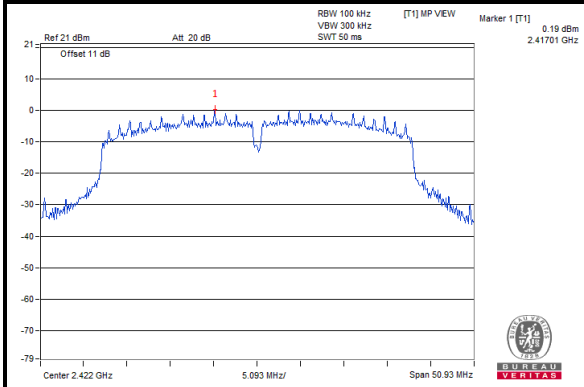


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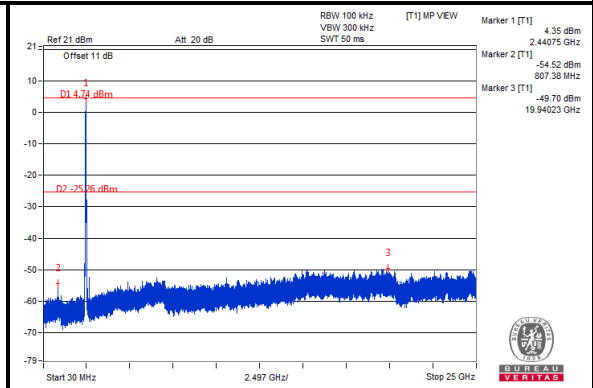
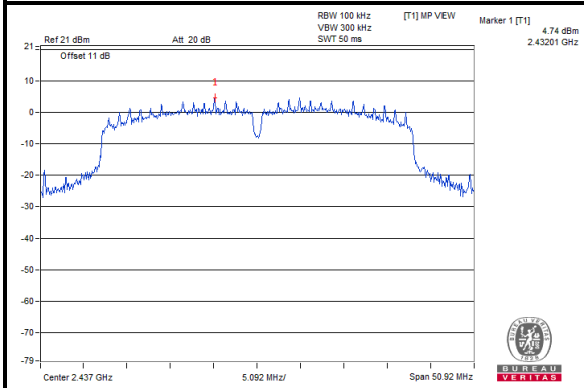
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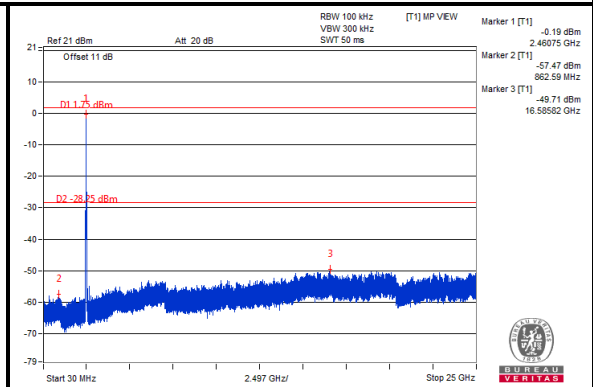
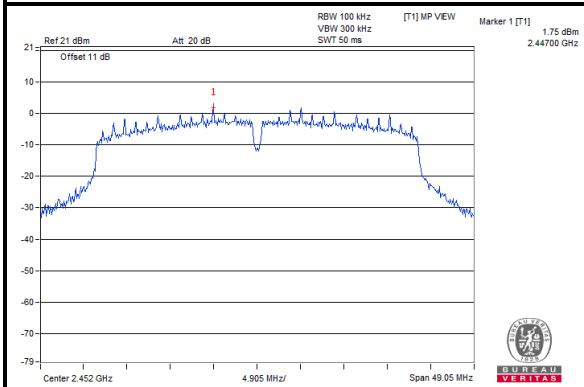
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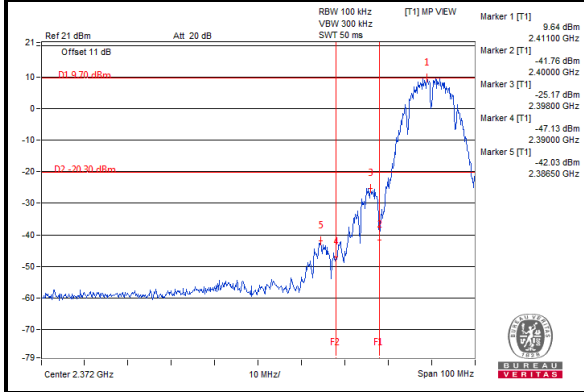
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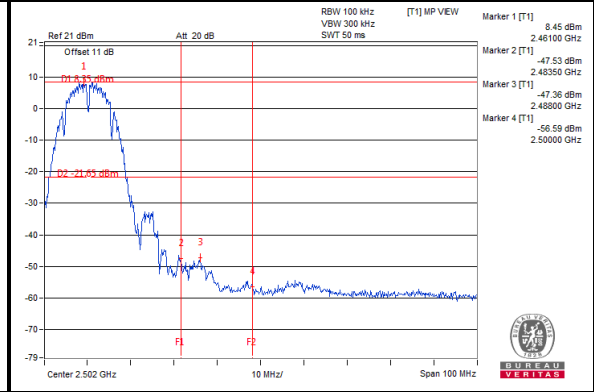
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CHAIN 0

CH 1 Band edge

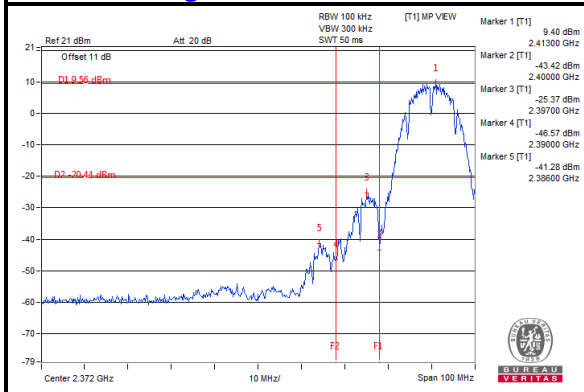


CH 11 Band edge

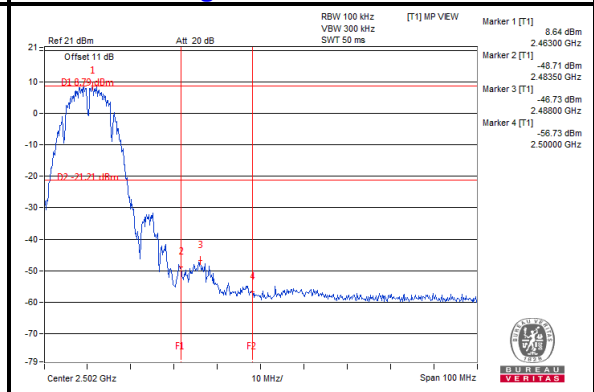


CHAIN 1

CH 1 Band edge



CH 11 Band edge





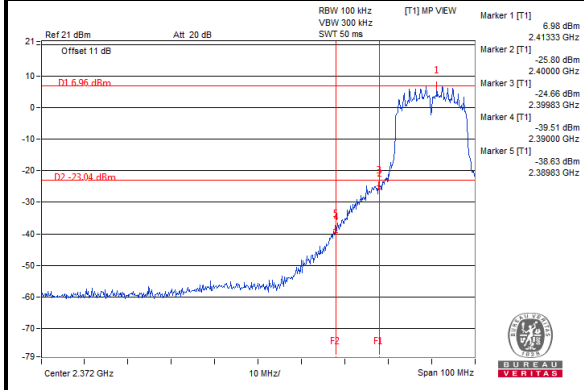
BUREAU VERITAS

Test Report No.: RF171102N030

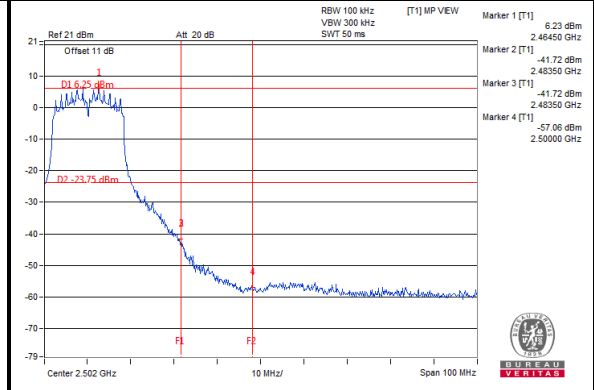
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CHAIN 0

CH 1 Band edge

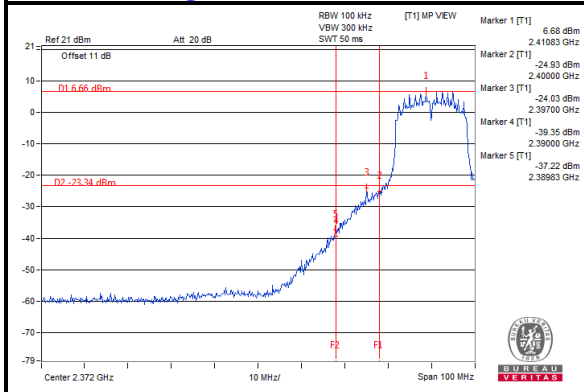


CH 11 Band edge

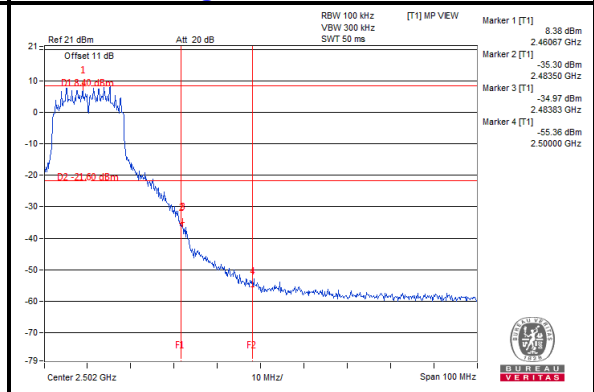


CHAIN 1

CH 1 Band edge



CH 11 Band edge





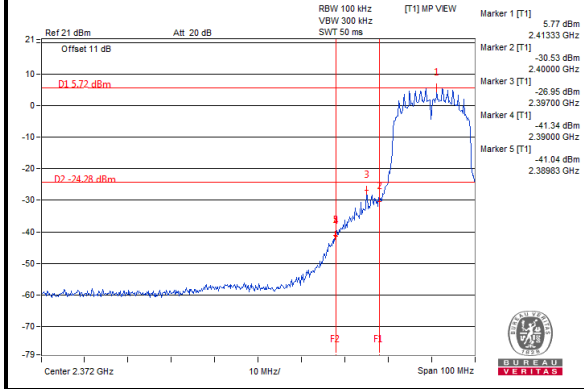
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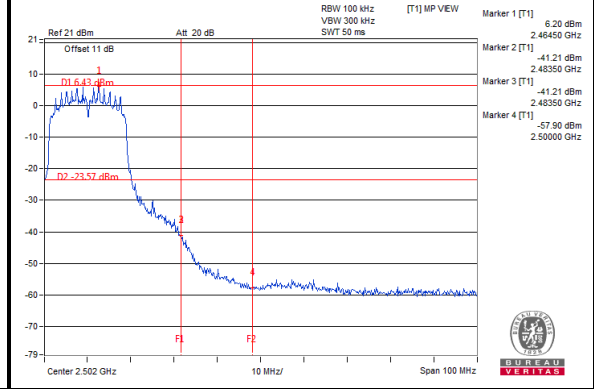
802.11n HT20

CHAIN 0

CH 1 Band edge

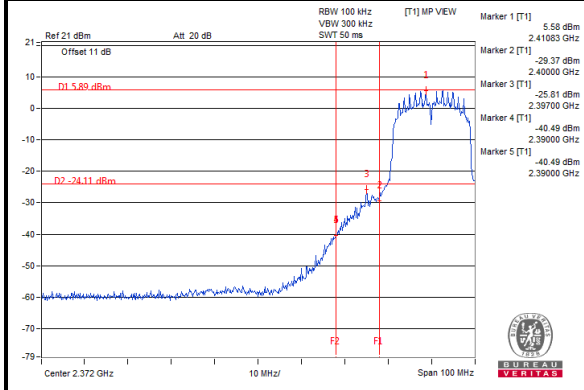


CH 11 Band edge

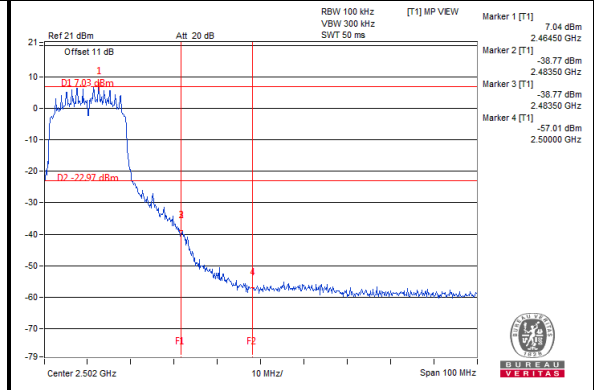


CHAIN 1

CH 1 Band edge



CH 11 Band edge





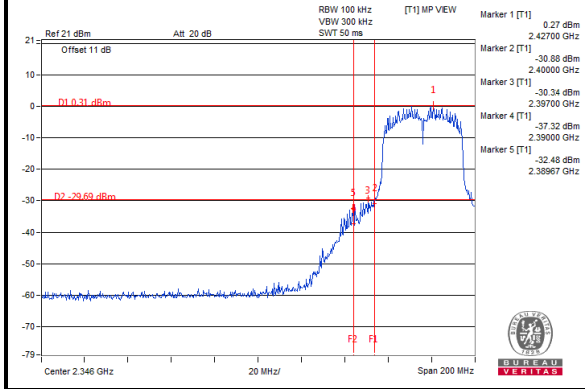
BUREAU VERITAS

Test Report No.: RF171102N030

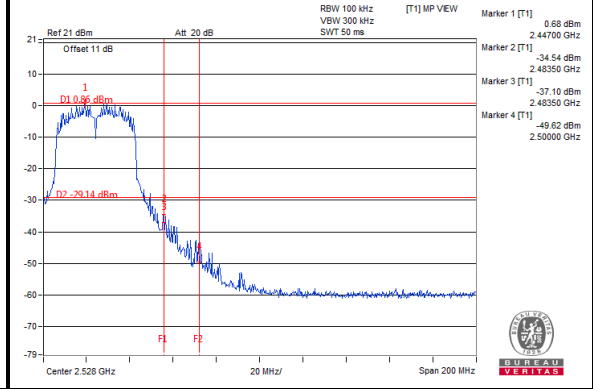
802.11n HT40

CHAIN 0

CH 1 Band edge

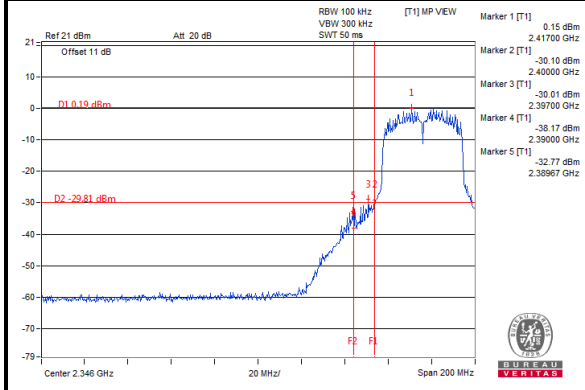


CH 11 Band edge

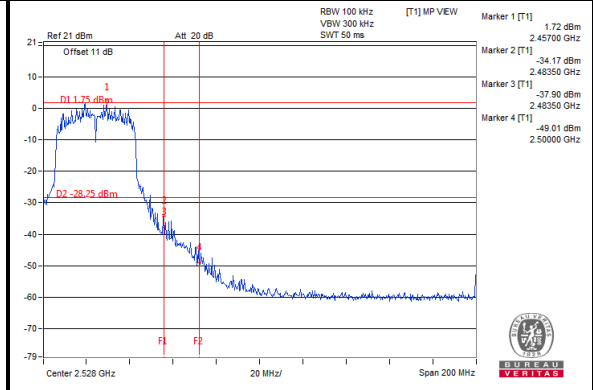


CHAIN 1

CH 1 Band edge



CH 11 Band edge





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## 5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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## **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---**