

## TEST REPORT

Applicant	Zhenyi Technologies Co., Ltd.
Address	7F-H, Hangsheng Technology Building, No.8 Gaoxin South 6th Road, Nanshan District, Shenzhen, China

Manufacturer or Supplier	SHENZHEN AONI ELECTRONIC CO., LTD.
Address	building 5, Honghui Industrial Park, Baoan District, Shenzhen, China
Product	DejavuCam PT
Additional Product	2K Pan & Tilt Camera, 2K Indoor Pan & Tilt Camera
Brand Name	Kamia
Model	K401
Additional Models & Model Difference	KC145, D2000, see items 3.1 note
Date of tests	Feb. 02, 2021 ~ Mar. 02, 2021

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  
Senior Project Engineer / EMC Department

Approved by Glyn He  
Assistant Manager / EMC Department




Date: Mar. 23, 2021

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Test Report No.: RF2101WDG0363

## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF2101WDG0363	Original release	Mar. 23, 2021

## 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	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	Antenna connector is i-pex not a standard connector.

## 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	2.16dB
	30MHz ~ 1GMHz	3.82dB
	1GHz ~ 18GHz	4.94dB
	18GHz ~ 40GHz	5.07dB

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>	DejavuCam PT
<b>ADDITIONAL PRODUCT</b>	2K Pan & Tilt Camera, 2K Indoor Pan & Tilt Camera
<b>BRAND</b>	Kamia
<b>MODEL NO.</b>	K401
<b>ADDITIONAL NO.</b>	KC145, D2000
<b>FCC ID</b>	2AX4XK401
<b>NOMINAL VOLTAGE</b>	DC 5V from USB Host Unit or Adapter
<b>MODULATION TECHNOLOGY</b>	DSSS, OFDM
<b>MODULATION TYPE</b>	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
<b>OPERATING FREQUENCY</b>	2412-2462MHz for 11b/g/n(HT20), 2422-2452MHz for 11n(HT40)
<b>PEAK OUTPUT POWER</b>	264.241 mW(Maximum)
<b>ANTENNA TYPE</b>	Integral Antenna, with 3dBi gain
<b>I/O PORTS</b>	Refer to user's manual
<b>CABLE SUPPLIED</b>	USB Cable: Unshielded, detachable, 3.0m

#### NOTES:

1. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.
2. Please refer to the EUT photo document (Reference No.: 2101WDG0363) for detailed product photo.
3. Additional models KC145, D2000 are identical with the test model K401 except the model name and model number for marketing purpose.
4. Model Information

Model Name	Model Number
2K Indoor Pan & Tilt Camera	D2000
2K Pan & Tilt Camera	KC145
DejavuCam PT	K401

5. The EUT provides completed transmitters and receivers:

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

6. The EUT was powered by the following adapter:

ADAPTER	
BRAND:	N/A
MODEL:	KA06E-0501000US
INPUT:	AC 100-240V, 50/60Hz 0.25A Max
OUTPUT:	DC 5V, 1000mA
DC LINE:	N/A

### 3.2 DESCRIPTION OF TEST MODES

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

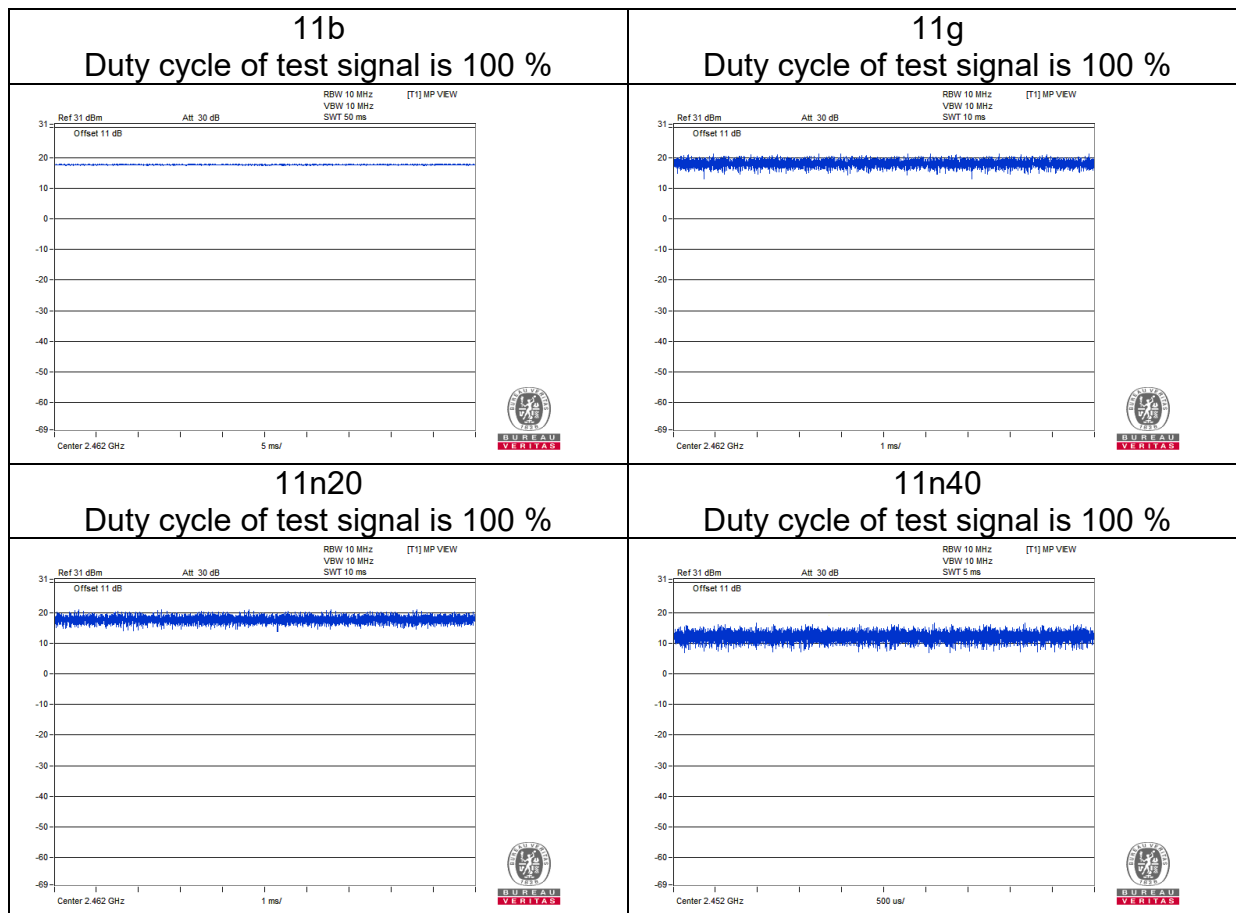
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

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		



### DUTY CYCLE OF SIGNAL



**Note: 802.11b/g/n20/n40:** Duty cycle of test signal >98%, duty cycle factor is not required.

### 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, power supply voltage range 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	
<b>A</b>	√	√	√	√	<b>Powered by adapter with WIFI function</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	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)
A	802.11b	1 to 11	1	DSSS	DBPSK	1.0

For the test results, only the worst case was shown in test report.

**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)
A	802.11b	1 to 11	1, 6, 11	DSSS	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, 9	OFDM	BPSK	13.5

**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	DSSS	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

**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER(POE)	TESTED BY
RE<1G	25deg. C, 53%RH	DC5V from Adapter Input AC 120V/60Hz	Vincent
RE≥1G	25deg. C, 53%RH	DC5V from Adapter Input AC 120V/60Hz	Vincent
PLC	20deg. C, 56%RH	DC5V from Adapter Input AC 120V/60Hz	Daniel
APCM	25deg. C, 60%RH	DC5V from Adapter Input AC 120V/60Hz	Daniel



Test Report No.: RF2101WDG0363

### 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 15.247 Meas Guidance v05r02**

**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 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 (dB $\mu$ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

- NOTES:**
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.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Mar. 17,21
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Mar. 17,21
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Mar. 17,21
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Sep. 23,21
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A

- NOTES:**
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

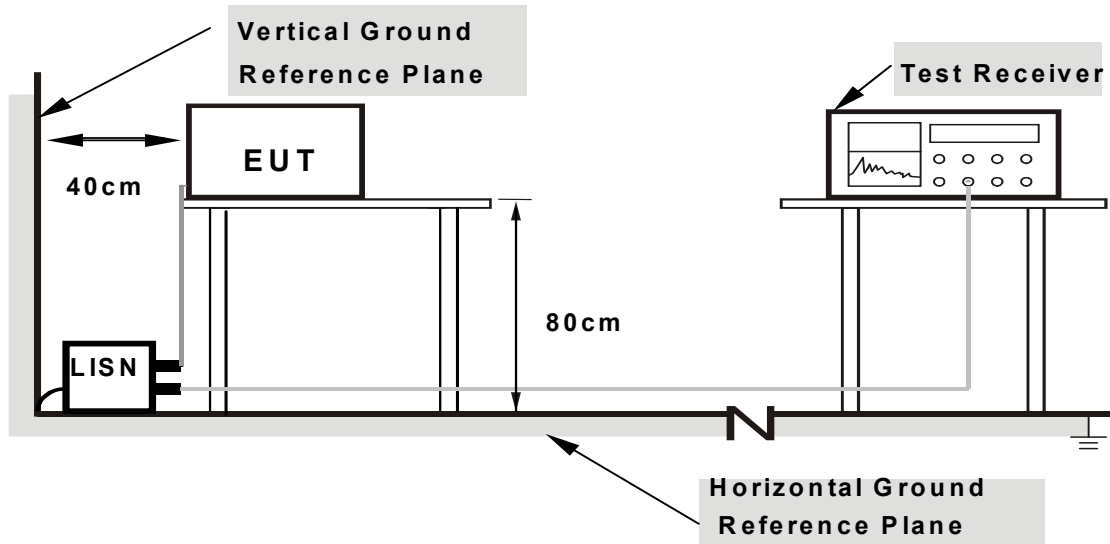
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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) was 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 cm 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

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

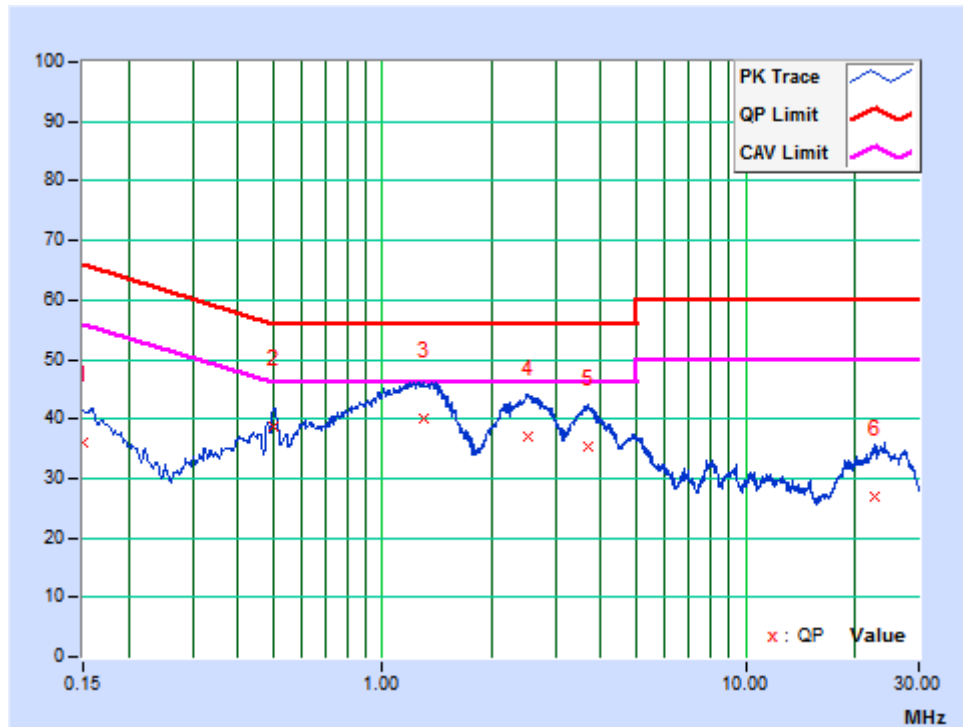
#### 4.1.7 TEST RESULTS

##### CONDUCTED WORST-CASE DATA:

PHASE	Line	6dB BANDWIDTH	9kHz
-------	------	---------------	------

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	9.77	26.27	11.80	36.04	21.57	66.00	56.00	-29.96	-34.43
2	0.50218	9.86	28.79	16.14	38.65	26.00	56.00	46.00	-17.35	-20.00
3	1.29573	9.84	30.15	19.62	39.99	29.46	56.00	46.00	-16.01	-16.54
4	2.51381	9.86	27.33	16.53	37.19	26.39	56.00	46.00	-18.81	-19.61
5	3.67800	9.86	25.59	14.81	35.45	24.67	56.00	46.00	-20.55	-21.33
6	22.82100	10.37	16.59	7.21	26.96	17.58	60.00	50.00	-33.04	-32.42

- 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.

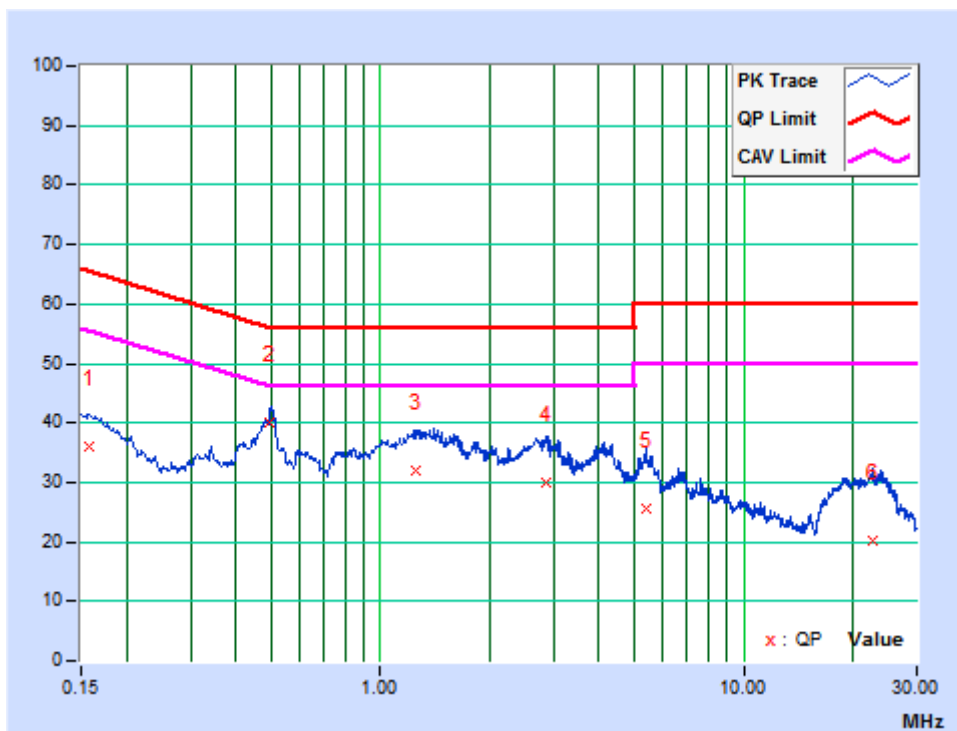




<b>PHASE</b>	Neutral	<b>6dB BANDWIDTH</b>	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15715	9.70	26.34	13.03	36.04	22.73	65.61	55.61	-29.57	-32.88
2	0.49822	9.81	30.29	18.66	40.10	28.47	56.03	46.03	-15.93	-17.56
3	1.24575	9.80	22.23	12.54	32.03	22.34	56.00	46.00	-23.97	-23.66
4	2.87025	9.80	20.25	11.89	30.05	21.69	56.00	46.00	-25.95	-24.31
5	5.37000	9.83	15.67	9.45	25.50	19.28	60.00	50.00	-34.50	-30.72
6	22.58475	10.41	9.78	3.80	20.19	14.21	60.00	50.00	-39.81	-35.79

- 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

#### NOTES:

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>Next Cal.</b>
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 17,21
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	May 13, 21
Active Loop Antenna (9KHz -30MHz)	SCHWARZBECK	FMZB 1519B	1519B-045	May 27,21
Amplifier (9KHz -1GHz)	Burgeon	BPA-530	100210	Mar. 14,21
Bilog Antenna (20MHz -2GHz)	Teseq	CBL 6111D	30643	May 29,21
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 29,21
Horn Antenna (18GHz -40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	May 09, 21
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	May 22,21
Test Software	ADT	ADT_Radiated_V 7.6.15.9.2	N/A	N/A
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	May 08,21
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Mar. 03,22
Test Software	ADT	ADT_Radiated_V 7.6.15.9.2	N/A	N/A
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	May 19,21

**NOTES:**

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.
- g. 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.

#### NOTES:

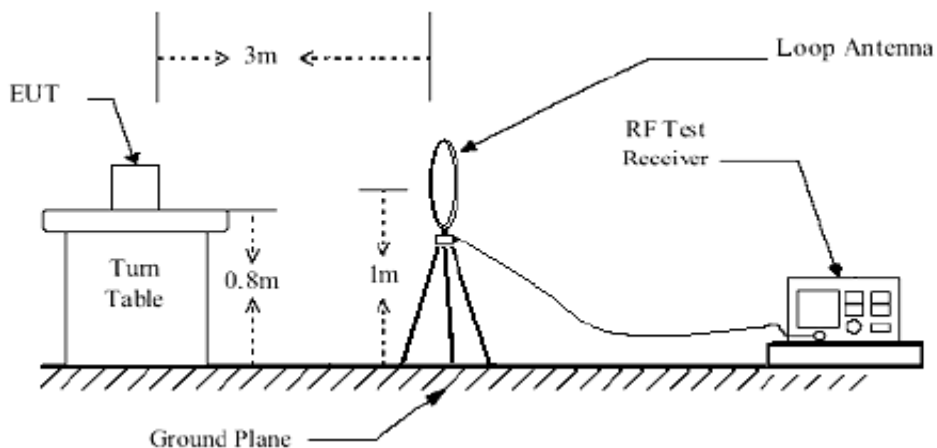
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution 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

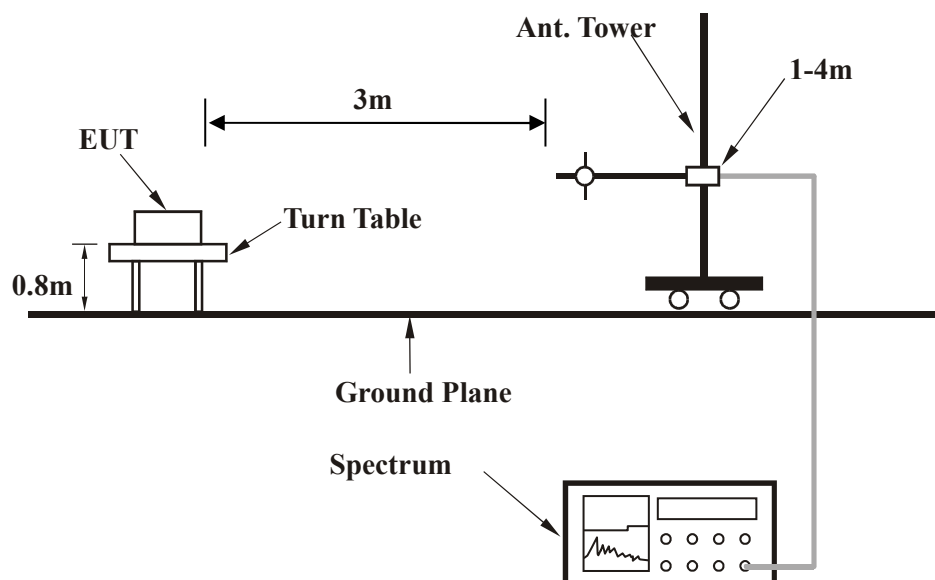
No deviation.

#### 4.2.5 TEST SETUP

##### Below 30MHz test setup

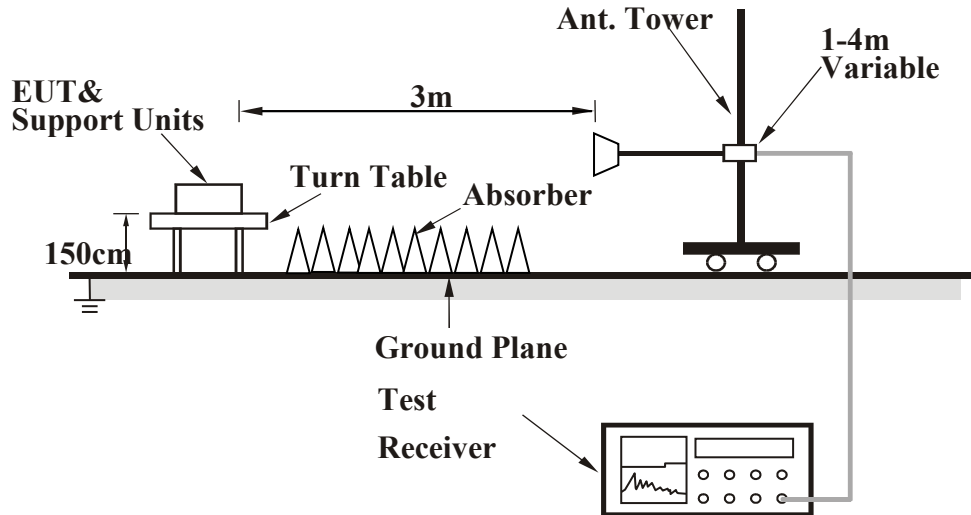


##### Below 1GHz test setup



**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. Placed the EUT 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:

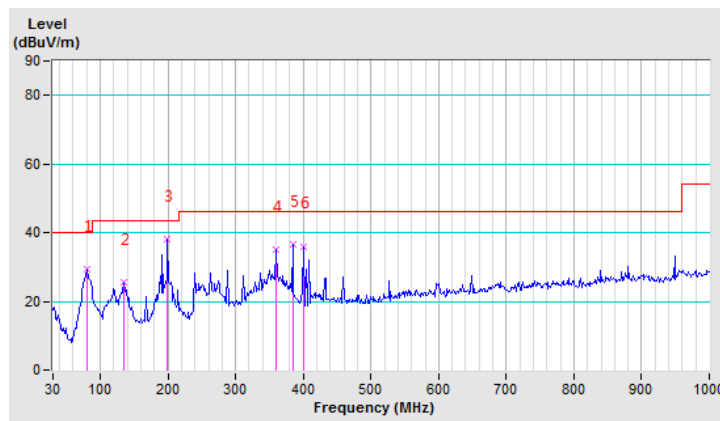
##### 802.11b

<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	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	81.30	29.20 QP	40.00	-10.80	1.00 H	148	51.18	-21.98
2	135.71	25.60 QP	43.50	-17.90	1.00 H	164	44.36	-18.76
<b>3</b>	<b>199.44</b>	<b>38.25 QP</b>	<b>43.50</b>	<b>-5.25</b>	<b>1.00 H</b>	<b>74</b>	<b>57.53</b>	<b>-19.28</b>
4	359.55	35.23 QP	46.00	-10.77	1.00 H	118	47.64	-12.41
5	384.42	36.42 QP	46.00	-9.58	1.00 H	106	48.29	-11.87
6	399.97	36.03 QP	46.00	-9.97	1.00 H	92	47.63	-11.60

#### 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 greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value.

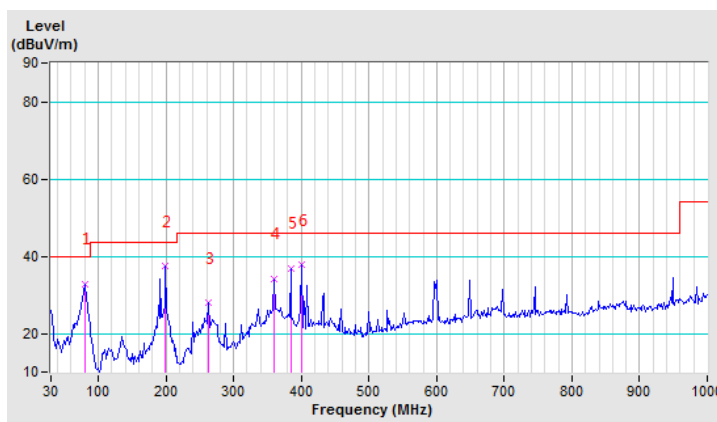


<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	9KHz ~ 1GHz		

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	79.74	32.66 QP	40.00	-7.34	2.00 V	61	54.89	-22.23
2	199.44	37.32 QP	43.50	-6.18	2.00 V	46	56.60	-19.28
3	263.17	27.80 QP	46.00	-18.20	2.00 V	34	43.54	-15.74
4	359.55	34.23 QP	46.00	-11.77	2.00 V	23	46.64	-12.41
5	384.42	36.80 QP	46.00	-9.20	2.00 V	12	48.67	-11.87
6	399.97	37.65 QP	46.00	-8.35	2.00 V	2	49.25	-11.60

**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 greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value.





**ABOVE 1GHZ DATA**  
**802.11b**

<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	60.52 PK	74.00	-13.48	1.00 H	78	56.99	3.53
2	2390.00	39.85 AV	54.00	-14.15	1.00 H	78	36.32	3.53
3	*2412.00	103.11 PK			1.00 H	78	99.46	3.65
4	*2412.00	93.02 AV			1.00 H	78	89.37	3.65
5	4824.00	56.14 PK	74.00	-17.86	1.00 H	220	48.09	8.05
6	4824.00	42.15 AV	54.00	-11.85	1.00 H	220	34.10	8.05
7	#7236.00	52.11 PK	74.00	-21.89	1.00 H	220	38.54	13.57
8	#7236.00	40.63 AV	54.00	-13.37	1.00 H	220	27.06	13.57
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	63.15 PK	74.00	-10.85	1.00 V	187	59.62	3.53
2	2390.00	40.78 AV	54.00	-13.22	1.00 V	187	37.25	3.53
3	*2412.00	108.35 PK			1.00 V	187	104.70	3.65
4	*2412.00	94.28 AV			1.00 V	187	90.63	3.65
5	4824.00	52.36 PK	74.00	-21.64	1.00 V	112	44.31	8.05
6	4824.00	45.15 AV	54.00	-8.85	1.00 V	112	37.10	8.05
7	#7236.00	54.63 PK	74.00	-19.37	1.00 V	112	41.06	13.57
8	#7236.00	42.18 AV	54.00	-11.82	1.00 V	112	28.61	13.57

**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 greater than 20dB margin.
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	*2437.00	105.48 PK			1.00 H	126	101.71	3.77
2	*2437.00	94.22 AV			1.00 H	126	90.45	3.77
3	4874.00	49.88 PK	74.00	-24.12	1.00 H	100	41.65	8.23
4	4874.00	43.16 AV	54.00	-10.84	1.00 H	100	34.93	8.23
5	7311.00	55.47 PK	74.00	-18.53	1.00 H	130	41.67	13.80
6	7311.00	43.34 AV	54.00	-10.66	1.00 H	130	29.54	13.80
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	110.36 PK			1.00 V	185	106.59	3.77
2	*2437.00	<b>95.47 AV</b>			<b>1.00 V</b>	<b>185</b>	<b>91.70</b>	<b>3.77</b>
3	4874.00	51.26 PK	74.00	-22.74	1.00 V	149	43.03	8.23
4	4874.00	45.69 AV	54.00	-8.31	1.00 V	149	37.46	8.23
5	7311.00	57.45 PK	74.00	-16.55	1.00 V	150	43.65	13.80
6	7311.00	44.75 AV	54.00	-9.25	1.00 V	150	30.95	13.80

**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 greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " \* ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
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	105.63 PK			1.00 H	125	101.74	3.89
2	*2462.00	96.14 AV			1.00 H	125	92.25	3.89
3	2483.50	70.15 PK	74.00	-3.85	1.00 H	125	66.15	4.00
4	2483.50	49.58 AV	54.00	-4.42	1.00 H	125	45.58	4.00
5	4924.00	54.15 PK	74.00	-19.85	1.00 H	136	45.75	8.40
6	4924.00	37.15 AV	54.00	-16.85	1.00 H	136	28.75	8.40
7	7386.00	50.36 PK	74.00	-23.64	1.00 H	136	36.33	14.03
8	7386.00	39.97 AV	54.00	-14.03	1.00 H	136	25.94	14.03
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	112.48 PK			1.00 V	264	108.59	3.89
2	*2462.00	101.03 AV			1.00 V	264	97.14	3.89
3	2483.50	70.58 PK	74.00	-3.42	1.00 V	264	66.58	4.00
4	2483.50	50.02 AV	54.00	-3.98	1.00 V	264	46.02	4.00
5	4924.00	55.45 PK	74.00	-18.55	1.00 V	337	47.05	8.40
6	4924.00	40.12 AV	54.00	-13.88	1.00 V	337	31.72	8.40
7	7386.00	51.47 PK	74.00	-22.53	1.00 V	136	37.44	14.03
8	7386.00	42.28 AV	54.00	-11.72	1.00 V	136	28.25	14.03

**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 greater than 20dB margin.
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	55.24 PK	74.00	-18.76	1.00 H	180	51.71	3.53
2	2390.00	39.85 AV	54.00	-14.15	1.00 H	180	36.32	3.53
3	*2412.00	96.45 PK			1.00 H	180	92.80	3.65
4	*2412.00	91.02 AV			1.00 H	180	87.37	3.65
5	4824.00	52.48 PK	74.00	-21.52	1.00 H	85	44.43	8.05
6	4824.00	36.96 AV	54.00	-17.04	1.00 H	85	28.91	8.05
7	#7236.00	49.85 PK	74.00	-24.15	1.00 H	85	36.28	13.57
8	#7236.00	33.15 AV	54.00	-20.85	1.00 H	85	19.58	13.57
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	56.41 PK	74.00	-17.59	1.00 V	162	52.88	3.53
2	2390.00	41.03 AV	54.00	-12.97	1.00 V	162	37.50	3.53
3	*2412.00	98.24 PK			1.00 V	162	94.59	3.65
4	*2412.00	93.14 AV			1.00 V	162	89.49	3.65
5	4824.00	54.63 PK	74.00	-19.37	1.00 V	102	46.58	8.05
6	4824.00	37.49 AV	54.00	-16.51	1.00 V	102	29.44	8.05
7	#7236.00	50.85 PK	74.00	-23.15	1.00 V	102	37.28	13.57
8	#7236.00	35.15 AV	54.00	-18.85	1.00 V	102	21.58	13.57

**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 greater than 20dB margin.
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	*2437.00	100.25 PK			1.00 H	161	96.48	3.77
2	*2437.00	94.15 AV			1.00 H	161	90.38	3.77
3	4874.00	49.85 PK	74.00	-24.15	1.00 H	220	41.62	8.23
4	4874.00	39.01 AV	54.00	-14.99	1.00 H	220	30.78	8.23
5	7311.00	52.14 PK	74.00	-21.86	1.00 H	188	38.34	13.80
6	7311.00	37.72 AV	54.00	-16.28	1.00 H	188	23.92	13.80
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	102.36 PK			1.00 V	162	98.59	3.77
2	*2437.00	91.25 AV			1.00 V	162	87.48	3.77
3	4874.00	54.44 PK	74.00	-19.56	1.00 V	100	46.21	8.23
4	4874.00	42.39 AV	54.00	-11.61	1.00 V	100	34.16	8.23
5	7311.00	51.36 PK	74.00	-22.64	1.00 V	140	37.56	13.80
6	7311.00	40.73 AV	54.00	-13.27	1.00 V	140	26.93	13.80

**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 greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " \* ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
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	105.48 PK			1.00 H	130	101.59	3.89
2	*2462.00	94.15 AV			1.00 H	130	90.26	3.89
3	2483.50	61.36 PK	74.00	-12.64	1.00 H	130	57.36	4.00
4	2483.50	48.62 AV	54.00	-5.38	1.00 H	130	44.62	4.00
5	4924.00	56.25 PK	74.00	-17.75	1.00 H	301	47.85	8.40
6	4924.00	46.52 AV	54.00	-7.48	1.00 H	301	38.12	8.40
7	7386.00	54.15 PK	74.00	-19.85	1.00 H	301	40.12	14.03
8	7386.00	43.26 AV	54.00	-10.74	1.00 H	301	29.23	14.03
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	102.12 PK			1.00 V	95	98.23	3.89
2	*2462.00	91.26 AV			1.00 V	95	87.37	3.89
3	2483.50	60.25 PK	74.00	-13.75	1.00 V	95	56.25	4.00
4	2483.50	42.15 AV	54.00	-11.85	1.00 V	95	38.15	4.00
5	4924.00	53.02 PK	74.00	-20.98	1.00 V	208	44.62	8.40
6	4924.00	41.29 AV	54.00	-12.71	1.00 V	208	32.89	8.40
7	7386.00	54.62 PK	74.00	-19.38	1.00 V	208	40.59	14.03
8	7386.00	38.15 AV	54.00	-15.85	1.00 V	208	24.12	14.03

**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 greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " \* ": Fundamental frequency.

802.11n HT20

<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	62.58 PK	74.00	-11.42	1.00 H	138	57.52	5.06
2	2390.00	47.15 AV	54.00	-6.85	1.00 H	138	42.09	5.06
3	*2412.00	106.26 PK			1.00 H	138	101.07	5.19
4	*2412.00	92.56 AV			1.00 H	138	87.37	5.19
5	4824.00	55.86 PK	74.00	-18.14	1.00 H	105	45.17	10.69
6	4824.00	40.19 AV	54.00	-13.81	1.00 H	105	29.50	10.69
7	#7236.00	46.75 PK	74.00	-27.25	1.00 H	105	29.80	16.95
8	#7236.00	44.75 AV	54.00	-9.25	1.00 H	105	27.80	16.95
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	64.25 PK	74.00	-9.75	1.00 V	183	59.19	5.06
2	2390.00	50.16 AV	54.00	-3.84	1.00 V	183	45.10	5.06
3	*2412.00	108.36 PK			1.00 V	183	103.17	5.19
4	*2412.00	93.15 AV			1.00 V	183	87.96	5.19
5	4824.00	56.36 PK	74.00	-17.64	1.00 V	205	45.67	10.69
6	4824.00	42.15 AV	54.00	-11.85	1.00 V	205	31.46	10.69
7	#7236.00	58.15 PK	74.00	-15.85	1.00 V	205	41.20	16.95
8	#7236.00	45.16 AV	54.00	-8.84	1.00 V	205	28.21	16.95

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 greater than 20dB margin.
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	*2437.00	104.26 PK			1.00 H	155	98.94	5.32
2	*2437.00	91.56 AV			1.00 H	155	86.24	5.32
3	4874.00	56.36 PK	74.00	-17.64	1.00 H	200	45.46	10.90
4	4874.00	46.75 AV	54.00	-7.25	1.00 H	220	35.85	10.90
5	7311.00	58.15 PK	74.00	-15.85	1.00 H	220	40.99	17.16
6	7311.00	47.15 AV	54.00	-6.85	1.00 H	188	29.99	17.16
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	105.26 PK			1.00 V	186	99.94	5.32
2	*2437.00	92.63 AV			1.00 V	186	87.31	5.32
3	4874.00	57.64 PK	74.00	-16.36	1.00 V	150	46.74	10.90
4	4874.00	47.69 AV	54.00	-6.31	1.00 V	150	36.79	10.90
5	7311.00	59.48 PK	74.00	-14.52	1.00 V	130	42.32	17.16
6	7311.00	47.86 AV	54.00	-6.14	1.00 V	130	30.70	17.16

**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 greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " \* ": Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
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	104.68 PK			1.00 H	141	99.23	5.45
2	*2462.00	91.58 AV			1.00 H	141	86.13	5.45
3	2483.50	60.12 PK	74.00	-13.88	1.00 H	141	54.55	5.57
4	2483.50	49.85 AV	54.00	-4.15	1.00 H	141	44.28	5.57
5	4924.00	54.36 PK	74.00	-19.64	1.00 H	0	43.27	11.09
6	4924.00	35.16 AV	54.00	-18.84	1.00 H	0	24.07	11.09
7	7386.00	49.58 PK	74.00	-24.42	1.00 H	0	32.22	17.36
8	7386.00	37.19 AV	54.00	-16.81	1.00 H	0	19.83	17.36
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	106.55 PK			1.00 V	187	101.10	5.45
2	*2462.00	94.81 AV			1.00 V	187	89.36	5.45
3	2483.50	65.45 PK	74.00	-8.55	1.00 V	187	59.88	5.57
4	2483.50	50.15 AV	54.00	-3.85	1.00 V	187	44.58	5.57
5	4924.00	57.45 PK	74.00	-16.55	1.00 V	0	46.36	11.09
6	4924.00	40.12 AV	54.00	-13.88	1.00 V	0	29.03	11.09
7	7386.00	51.02 PK	74.00	-22.98	1.00 V	0	33.66	17.36
8	7386.00	35.16 AV	54.00	-18.84	1.00 V	0	17.80	17.36

**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 greater than 20dB margin.
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	61.48 PK	74.00	-12.52	1.00 H	138	56.42	5.06
2	2390.00	48.76 AV	54.00	-5.24	1.00 H	138	43.70	5.06
3	*2422.00	106.48 PK			1.00 H	138	101.24	5.24
4	*2422.00	91.75 AV			1.00 H	138	86.51	5.24
5	4844.00	49.62 PK	74.00	-24.38	1.00 H	113	38.85	10.77
6	4844.00	39.41 AV	54.00	-14.59	1.00 H	113	28.64	10.77
7	7266.00	53.15 PK	74.00	-20.85	1.00 H	113	36.11	17.04
8	7266.00	36.31 AV	54.00	-17.69	1.00 H	113	19.27	17.04
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	59.36 PK	74.00	-14.64	1.00 V	186	54.30	5.06
2	2390.00	47.68 AV	54.00	-6.32	1.00 V	186	42.62	5.06
3	*2422.00	104.16 PK			1.00 V	186	98.92	5.24
4	*2422.00	89.76 AV			1.00 V	186	84.52	5.24
5	4844.00	47.26 PK	74.00	-26.74	1.00 V	75	36.49	10.77
6	4844.00	38.46 AV	54.00	-15.54	1.00 V	75	27.69	10.77
7	7266.00	52.47 PK	74.00	-21.53	1.00 V	75	35.43	17.04
8	7266.00	34.96 AV	54.00	-19.04	1.00 V	75	17.92	17.04

**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 greater than 20dB margin.
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	*2437.00	107.46 PK			1.00 H	242	102.14	5.32
2	*2437.00	92.57 AV			1.00 H	242	87.25	5.32
3	4874.00	49.63 PK	74.00	-24.37	1.00 H	150	38.73	10.90
4	4874.00	34.15 AV	54.00	-19.85	1.00 H	150	23.25	10.90
5	7311.00	53.36 PK	74.00	-20.64	1.00 H	190	36.20	17.16
6	7311.00	41.03 AV	54.00	-12.97	1.00 H	190	23.87	17.16
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	105.36 PK			1.00 V	193	100.04	5.32
2	*2437.00	91.87 AV			1.00 V	193	86.55	5.32
3	4874.00	46.26 PK	74.00	-27.74	1.00 V	200	35.36	10.90
4	4874.00	33.63 AV	54.00	-20.37	1.00 V	200	22.73	10.90
5	7311.00	52.14 PK	74.00	-21.86	1.00 V	188	34.98	17.16
6	7311.00	40.86 AV	54.00	-13.14	1.00 V	188	23.70	17.16

**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 greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " \* ": Fundamental frequency.

<b>CHANNEL</b>	TX Channel 9	<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	*2452.00	102.62 PK			1.00 H	165	97.22	5.40
2	*2452.00	90.15 AV			1.00 H	165	84.75	5.40
3	2483.50	58.26 PK	74.00	-15.74	1.00 H	165	52.69	5.57
4	2483.50	47.16 AV	54.00	-6.84	1.00 H	165	41.59	5.57
5	4904.00	53.16 PK	74.00	-20.84	1.00 H	158	42.15	11.01
6	4904.00	38.46 AV	54.00	-15.54	1.00 H	158	27.45	11.01
7	7356.00	56.12 PK	74.00	-17.88	1.00 H	158	38.83	17.29
8	7356.00	42.15 AV	54.00	-11.85	1.00 H	158	24.86	17.29
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	110.36 PK			1.00 V	163	104.96	5.40
2	*2452.00	94.16 AV			1.00 V	163	88.76	5.40
3	2483.50	62.36 PK	74.00	-11.64	1.00 V	163	56.79	5.57
4	2483.50	49.75 AV	54.00	-4.25	1.00 V	163	44.18	5.57
5	4904.00	48.62 PK	74.00	-25.38	1.00 V	279	37.61	11.01
6	4904.00	35.15 AV	54.00	-18.85	1.00 V	279	24.14	11.01
7	7356.00	52.64 PK	74.00	-21.36	1.00 V	279	35.35	17.29
8	7356.00	44.60 AV	54.00	-9.40	1.00 V	279	27.31	17.29

**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 greater than 20dB margin.
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.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	May 21,21
Power Sensor	Keysight	U2021XA	MY55060018	May 21,21
Power Meter	Anritsu	ML2495A	1139001	Mar. 11,21
Power Sensor	Anritsu	MA2411B	1531155	Mar. 11,21
Digital Multimeter	FLUKE	15B	A1220010DG	Oct.16, 21
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Nov. 14,21
Oscilloscope	Agilent	DSO9254A	MY51260160	Sep. 17,21
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Mar. 12,21
Signal Generator	Agilent	N5183A	MY50140980	Sep. 18,21
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Sep. 11,21
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	May 19,21
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A
DC Source	Keysight	E3642A	MY56146098	N/A

**NOTES:** 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.

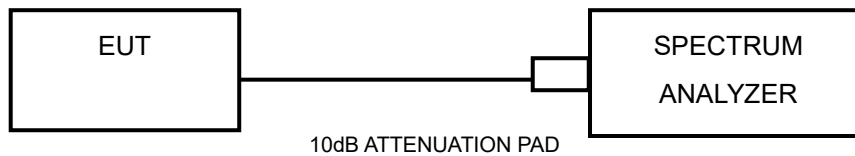
#### 4.3.3 TEST PROCEDURE

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	8.10	0.5	PASS
6	2437	9.11	0.5	PASS
11	2462	9.08	0.5	PASS

##### 802.11g

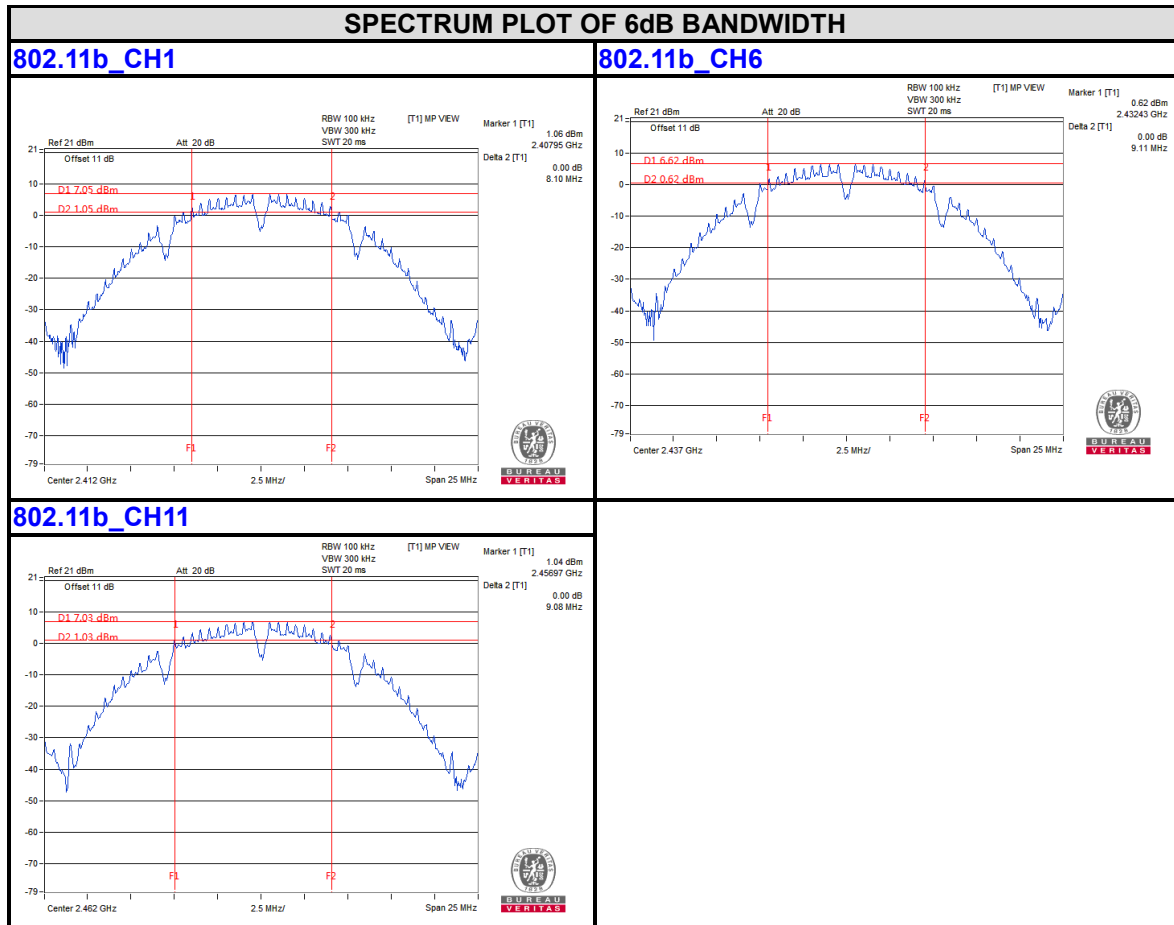
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.43	0.5	PASS
6	2437	16.37	0.5	PASS
11	2462	16.40	0.5	PASS

##### 802.11n HT20

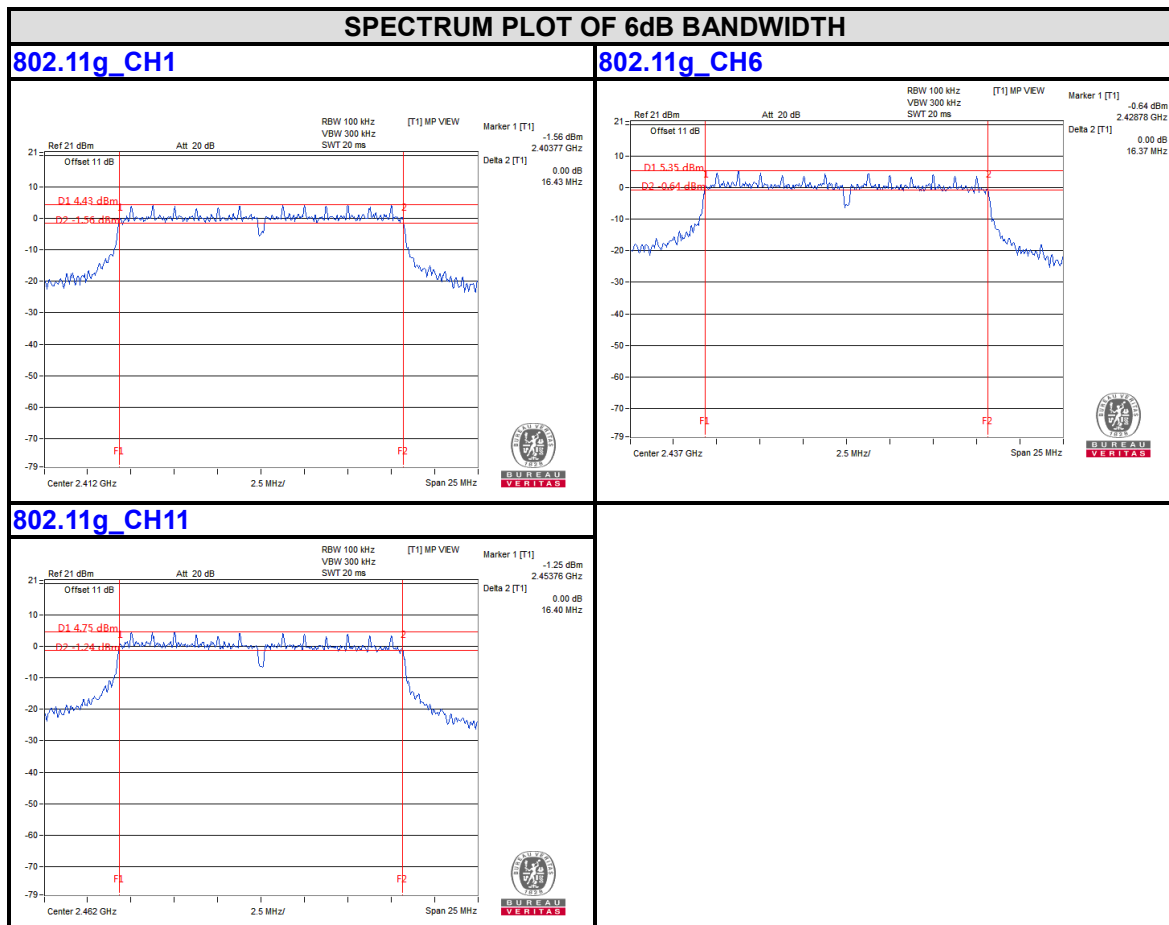
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.62	0.5	PASS
6	2437	17.21	0.5	PASS
11	2462	17.32	0.5	PASS

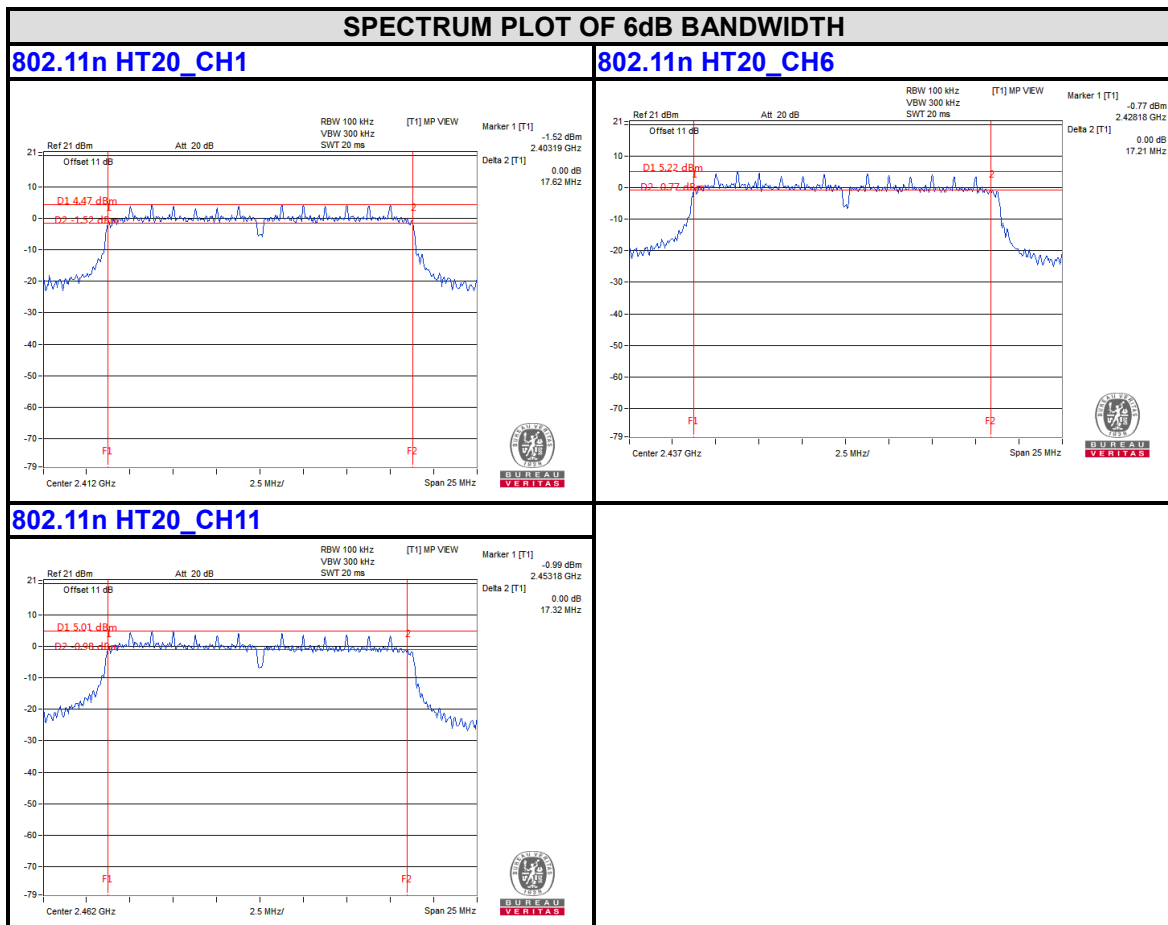
##### 802.11n HT40

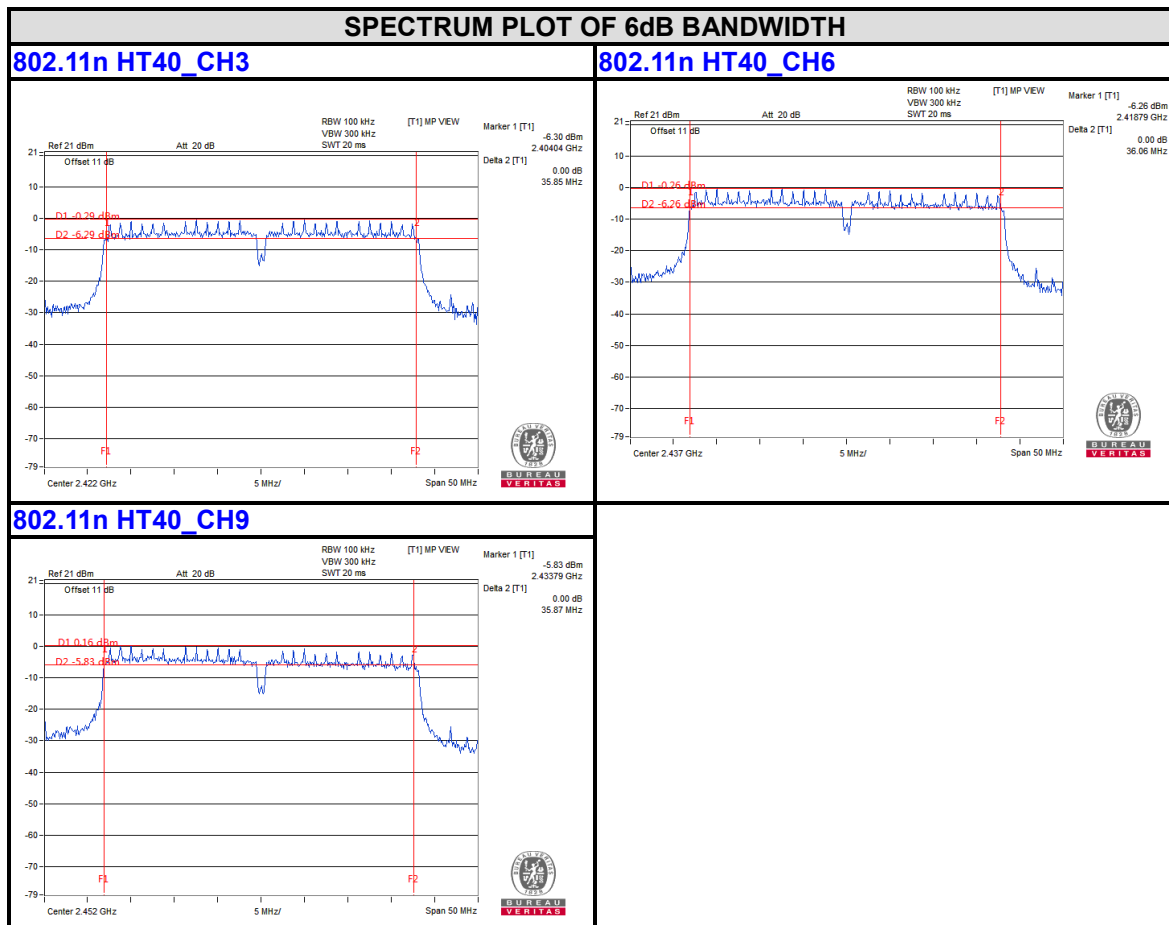
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	35.85	0.5	PASS
6	2437	36.06	0.5	PASS
9	2452	35.87	0.5	PASS









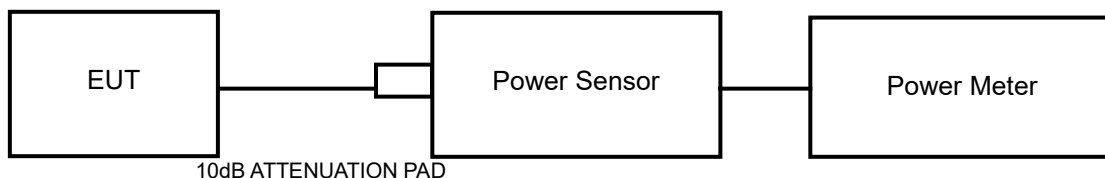


## 4.4 CONDUCTED OUTPUT POWER

### 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.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	May 21,21
Power Sensor	Keysight	U2021XA	MY55060018	May 21,21
Power Meter	Anritsu	ML2495A	1139001	Mar. 11,21
Power Sensor	Anritsu	MA2411B	1531155	Mar. 11,21
Digital Multimeter	FLUKE	15B	A1220010DG	Oct.16, 21
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Nov. 14,21
Oscilloscope	Agilent	DSO9254A	MY51260160	Sep. 17,21
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Mar. 12,21
Signal Generator	Agilent	N5183A	MY50140980	Sep. 18,21
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Sep. 11,21
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	May 19,21
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A
DC Source	Keysight	E3642A	MY56146098	N/A

#### NOTES:

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.



Test Report No.: RF2101WDG0363

#### 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	18.92	77.983	1	PASS
6	2437	19.23	83.753	1	PASS
11	2462	19.31	85.31	1	PASS

##### 802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
1	2412	24.03	252.93	1	PASS
<b>6</b>	<b>2437</b>	<b>24.22</b>	<b>264.241</b>	<b>1</b>	<b>PASS</b>
11	2462	23.82	240.991	1	PASS

##### 802.11n HT20

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
1	2412	23.91	246.037	1	PASS
6	2437	24.02	252.348	1	PASS
11	2462	23.82	240.991	1	PASS

##### 02.11n HT40

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
3	2422	22.09	161.808	1	PASS
6	2437	21.89	154.525	1	PASS
9	2452	21.96	157.036	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	15.96	39.446
6	2437	16.01	39.902
11	2462	16.05	40.272

**802.11g**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVG. POWER (mW)
1	2412	16.23	41.976
6	2437	16.21	41.783
11	2462	15.97	39.537

**802.11n HT20**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVG. POWER (mW)
1	2412	16.03	40.087
6	2437	16.18	41.495
11	2462	16.01	39.902

**802.11n HT40**

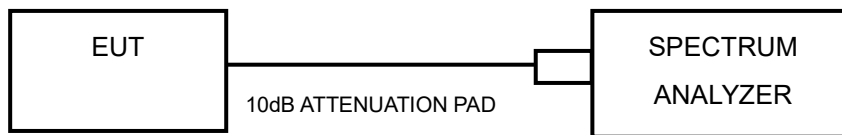
CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVG. POWER (mW)
3	2422	14.18	26.182
6	2437	13.94	24.774
9	2452	14.08	25.586

## 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 1.5 times the DTS bandwidth.
- c) Set RBW to: 3KHz
- 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

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-6.87	8.00	PASS
6	2437	-6.99	8.00	PASS
11	2462	-6.02	8.00	PASS

##### 802.11g

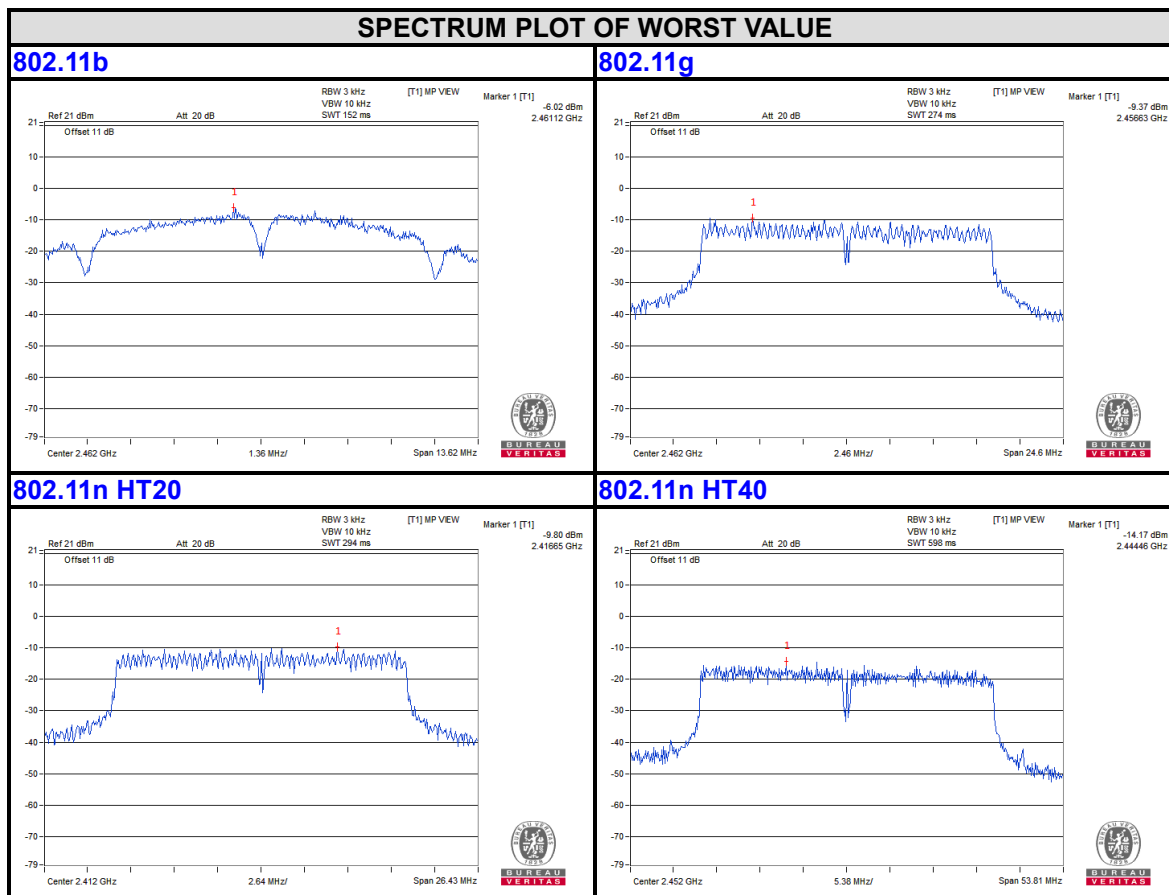
Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-10.14	8.00	PASS
6	2437	-9.40	8.00	PASS
11	2462	-9.37	8.00	PASS

##### 802.11n HT20

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-9.80	8.00	PASS
6	2437	-9.85	8.00	PASS
11	2462	-10.35	8.00	PASS

##### 802.11n HT40

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-14.92	8.00	PASS
6	2437	-14.54	8.00	PASS
9	2452	-14.17	8.00	PASS



## 4.6 OUT OF BAND EMISSION MEASUREMENT

### 4.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

Below  $-20\text{dB}$  of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

### 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.

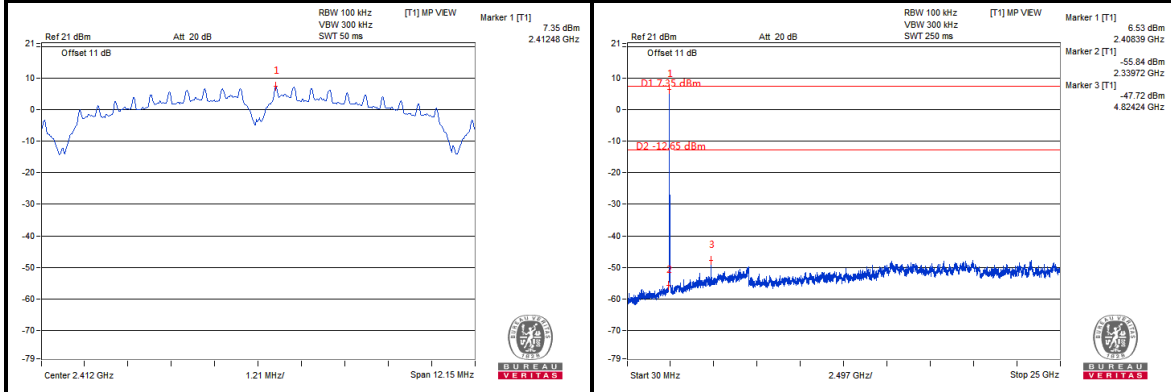
#### **4.6.6 EUT OPERATING CONDITION**

Same as item 4.3.6

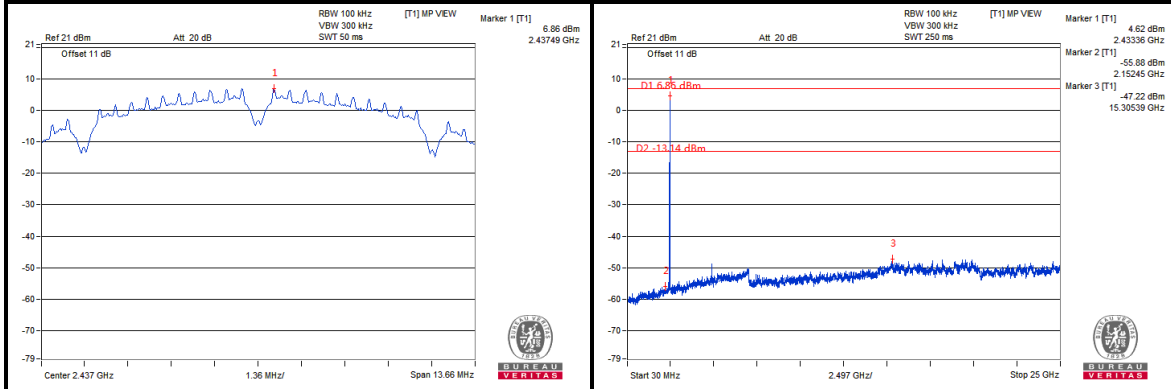
## 4.6.7 TEST RESULTS

### 802.11b

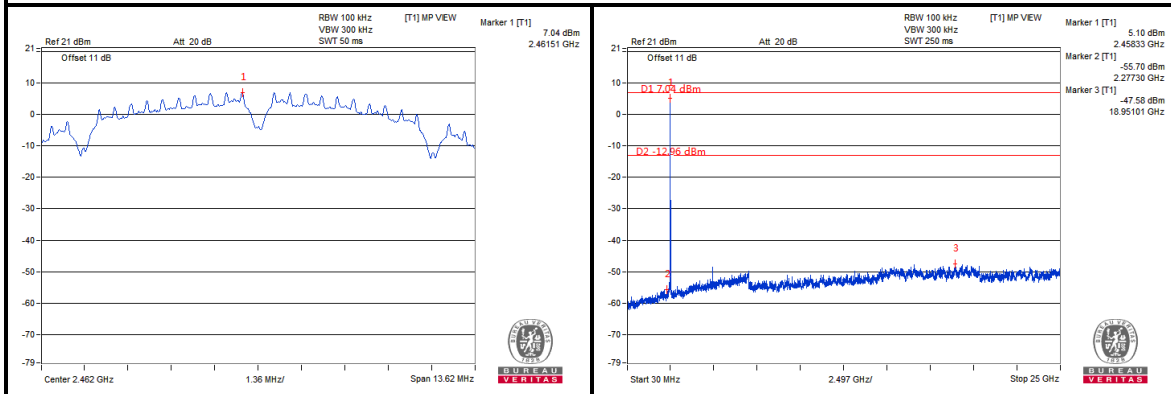
#### CH 1



#### CH 6

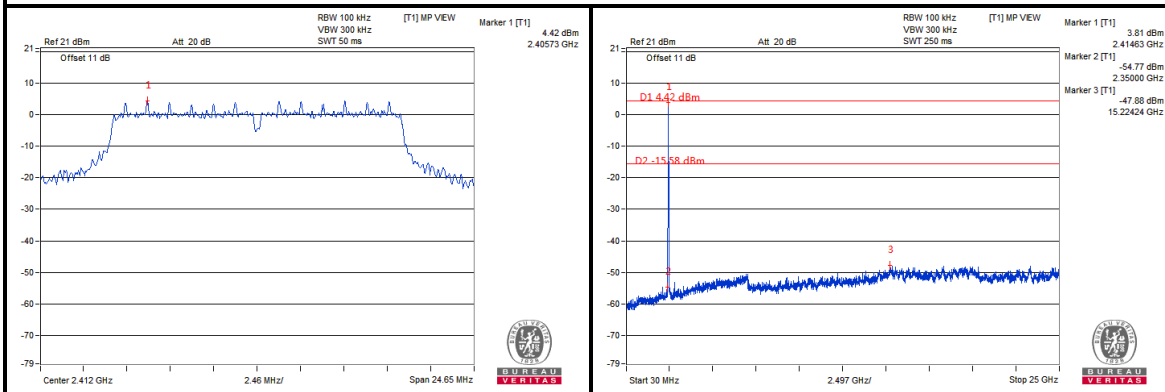


#### CH 11

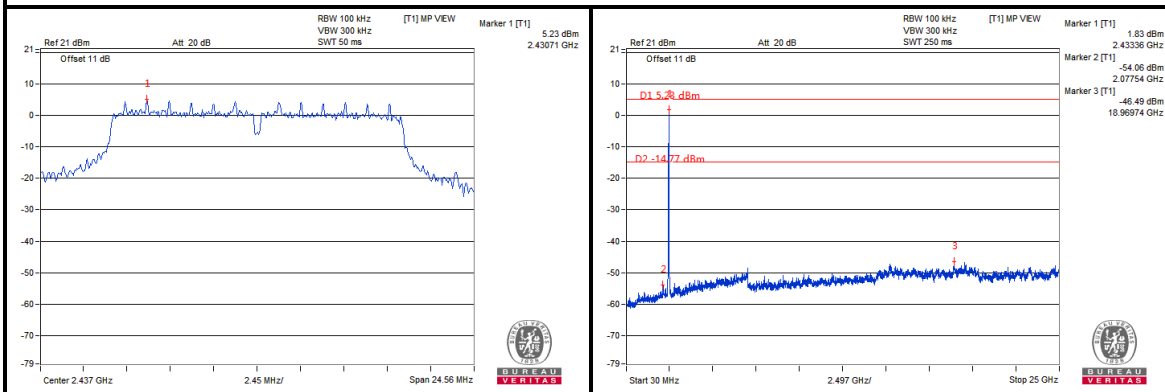


802.11g

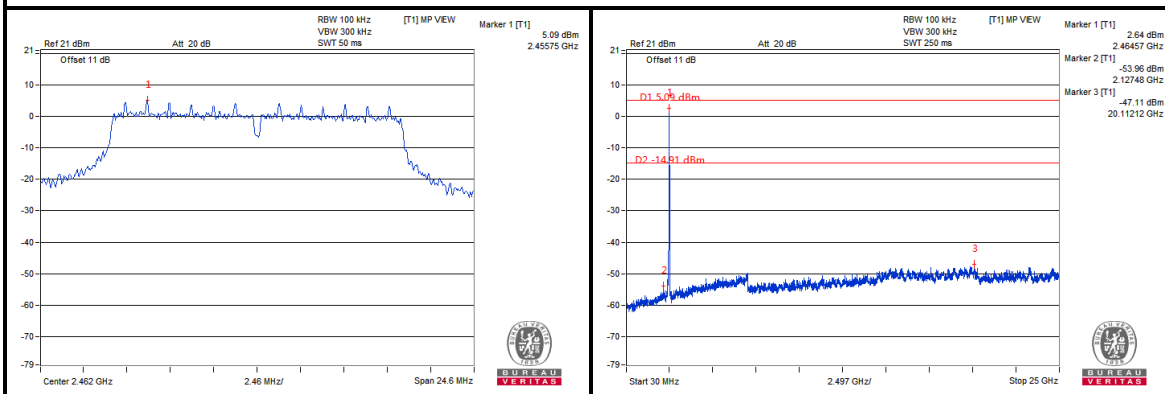
CH 1



CH 6

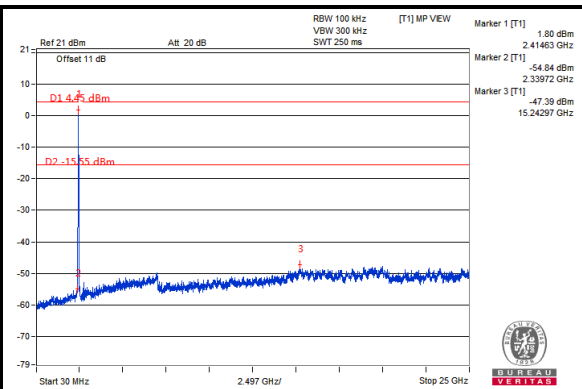
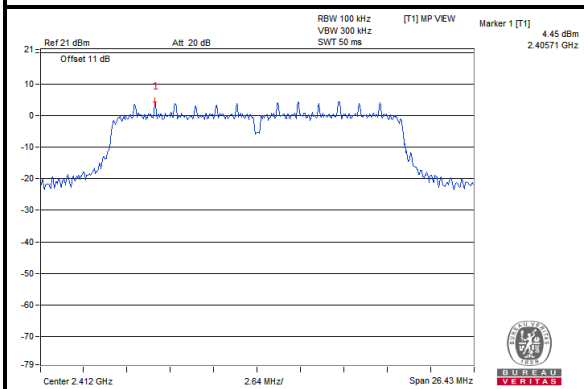


CH 11

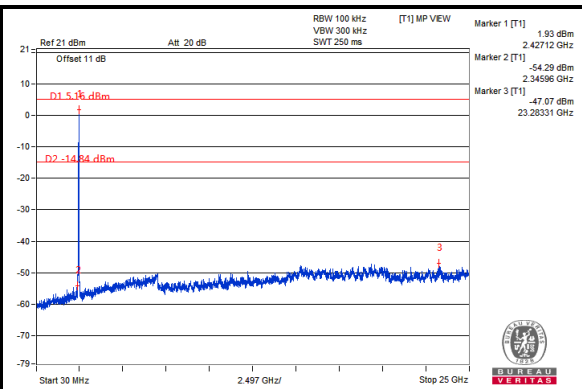
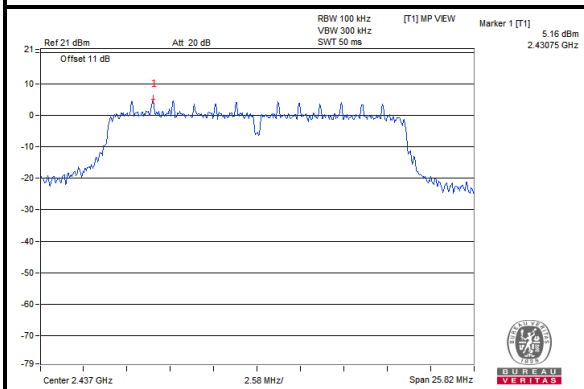


802.11n HT20

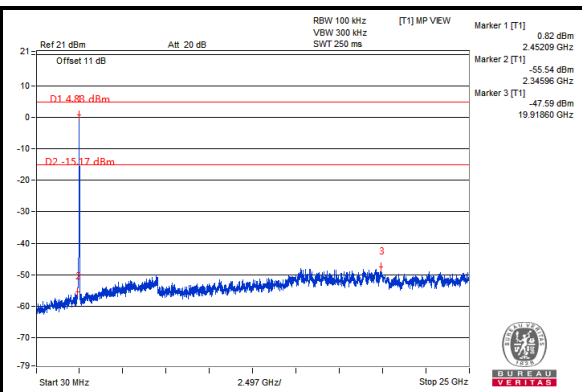
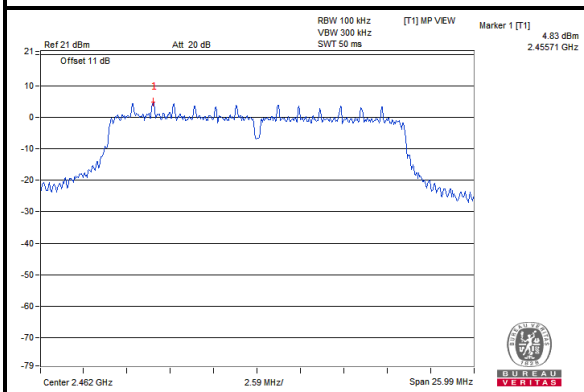
CH 1



CH 6

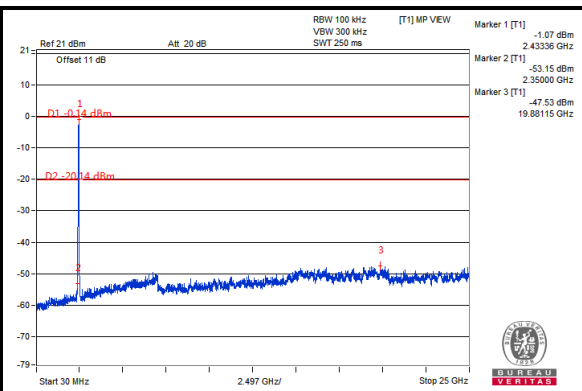
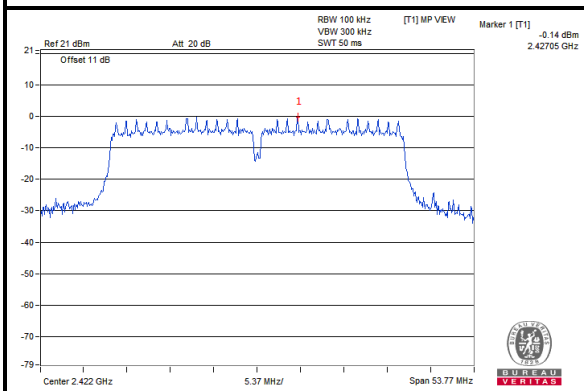


CH 11

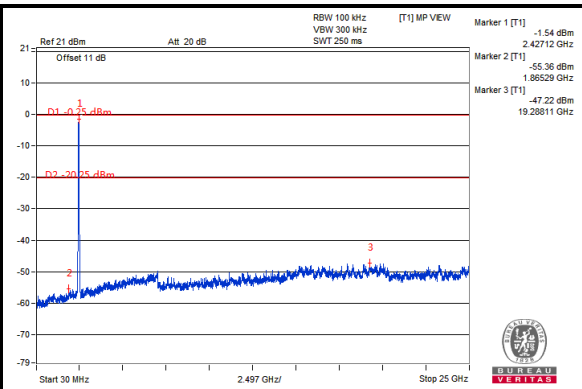
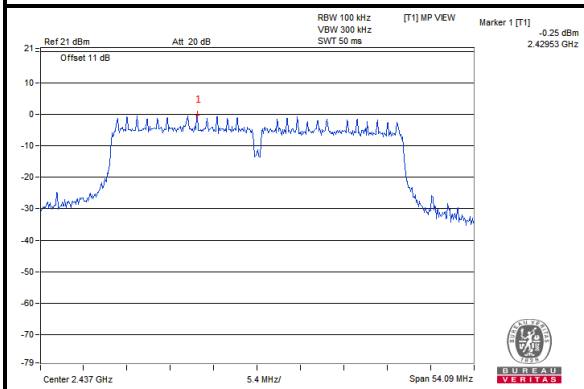


802.11n HT40

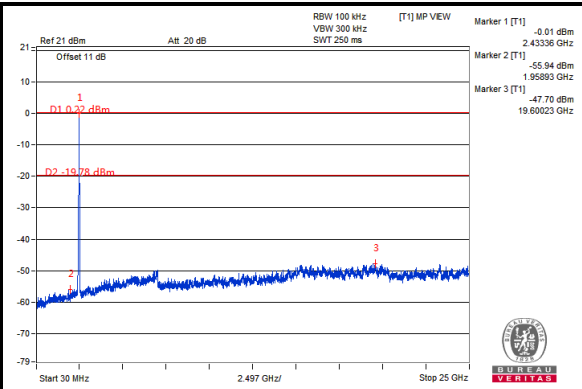
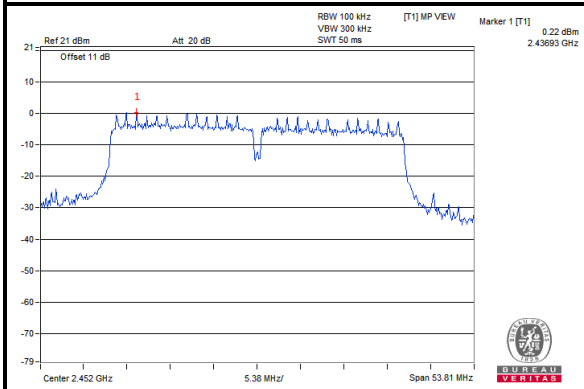
**CH 3**



**CH 6**

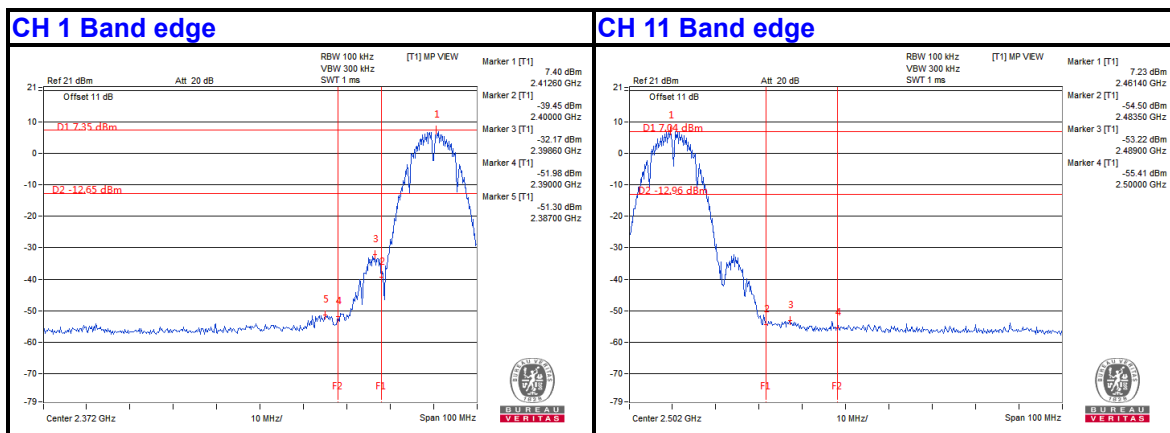


**CH 9**

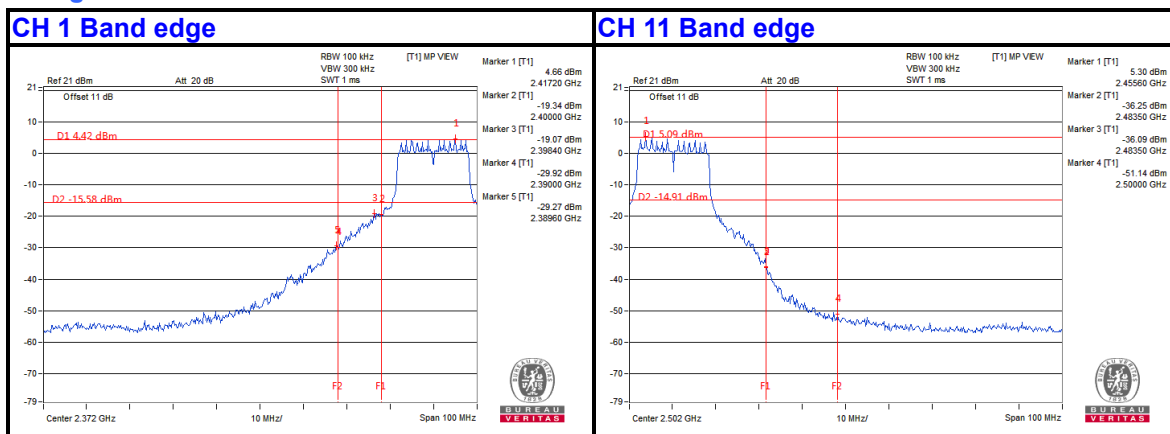




802.11b

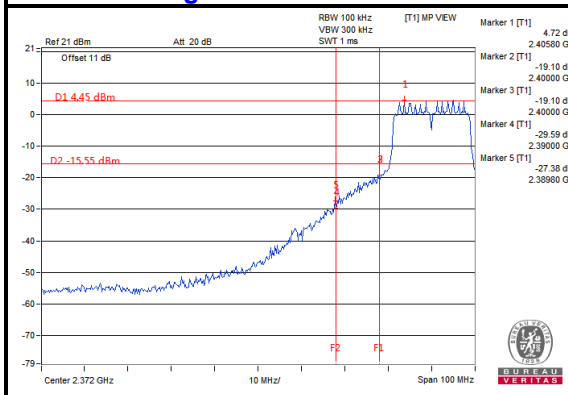


802.11g

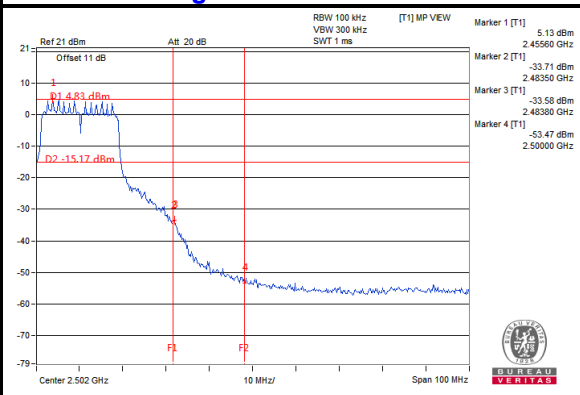


802.11n HT20

CH 1 Band edge

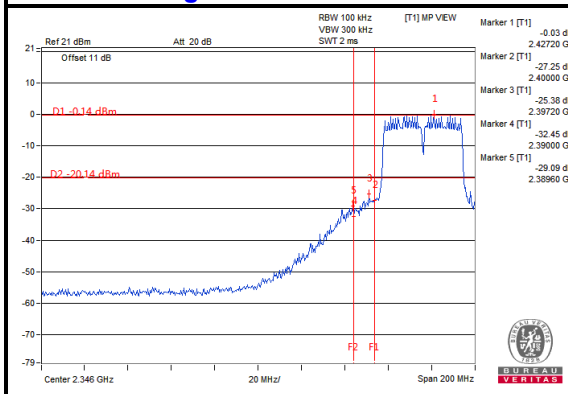


CH 11 Band edge

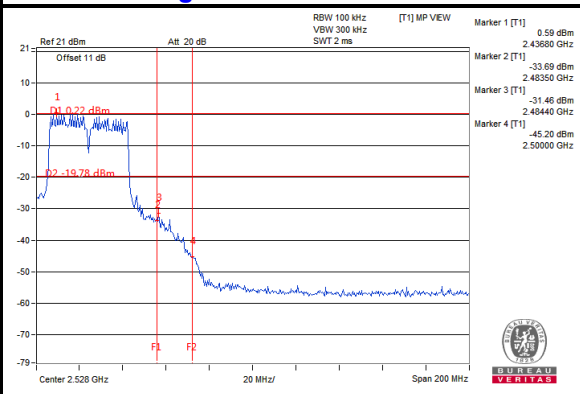


802.11n HT40

CH 3 Band edge



CH 9 Band edge





Test Report No.: RF2101WDG0363

## 5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



Test Report No.: RF2101WDG0363

## 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---