

# TEST REPORT

## CERTIFICATE OF CONFORMITY

**Standard:** 47 CFR FCC Part 15, Subpart C (Section 15.247)

**Report No.:** RFBICM-WTW-P22110528-3

**FCC ID:** S9E-125500

**Product:** Rugged Handheld Computer

**Brand:** 

**Model No.:** 125500

**Received Date:** 2022/11/18

**Test Date:** 2022/12/19 ~ 2023/2/3

**Issued Date:** 2023/10/27

**Applicant:** Trimble Inc.

**Address:** 5475 Kellenburger Road, Dayton, Ohio, 45424

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Lin Kou Laboratories

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kewi Shan Dist., Taoyuan City 33383, Taiwan

**FCC Registration /** 788550 / TW0003

**Designation Number:**

**Approved by:** \_\_\_\_\_

*Jeremy Lin*

**Date:** \_\_\_\_\_

**2023/10/27**

Jeremy Lin / Project Engineer

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Prepared by : Gina Liu / Specialist

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## Release Control Record

Issue No.	Description	Date Issued
RFBICM-WTW-P22110528-3	Original release.	2023/10/27

## 1 Certificate

**Product:** Rugged Handheld Computer

**Brand:** 

**Test Model:** 125500

**Sample Status:** Engineering sample

**Applicant:** Trimble Inc.

**Test Date:** 2022/12/19 ~ 2023/2/3

**Standard:** 47 CFR FCC Part 15, Subpart C (Section 15.247)

**Measurement procedure:** ANSI C63.10-2013

KDB 558074 D01 15.247 Meas Guidance v05r02

KDB 662911 D01 Multiple Transmitter Output v02r01

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

## 2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
Standard / Clause	Test Item	Result	Remark
15.247(b)	RF Output Power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.247(a)(2)	6 dB Bandwidth	Pass	Meet the requirement of limit.
15.247(d)	Conducted Out of Band Emissions	Pass	Meet the requirement of limit.
15.207	AC Power Conducted Emissions	Pass	Minimum passing margin is -16.46 dB at 0.65400 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -5.7 dB at 100.81 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.3 dB at 2390.00, 2483.50 MHz
15.203	Antenna Requirement	Pass	Antenna connector is shrapnel not a standard connector.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

### 2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.79 dB
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.99 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	2.29 dB
	18 GHz ~ 40 GHz	2.29 dB


The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

### 2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

### 3 General Information

#### 3.1 General Description

Product	Rugged Handheld Computer
Brand	
Test Model	125500
Status of EUT	Engineering sample
Power Supply Rating	Refer to note
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDMA
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11 Mbps 802.11g: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ax: up to 573.5 Mbps
Operating Frequency	2.412 GHz ~ 2.462 GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20), 802.11ax (HE20): 11 802.11n (HT40), 802.11ax (HE40): 7
Output Power	111.01 mW (20.45 dBm)

Note:

1. The EUT uses following accessories.

<b>Battery</b>		
Brand	Model	Specification
N/A	1400-900069G	Manufacturer : LIFUN TECHNOLOGY CO.,LTD. Power Rating : 3.85 Vdc 4950mAh
<b>USB Cable</b>		
Brand	Model	Specification
Trimble	121920	Signal Line : 2 meters, shielded cable. w/o ferrite core

2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

### 3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna No.	Gain (dBi)	Antenna Type	Connector Type
	2400~2483.5 MHz		
3	0.02	LDS	shrapnel
2	-2.1	LDS	shrapnel

\* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

2. The EUT incorporates a MIMO function:

2.4 GHz Band		
Modulation Mode	TX & RX Configuration	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX

Note:

1. All of modulation mode support beamforming function except 802.11b modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz) and 802.11ax mode for 20 MHz (40 MHz) therefore the manufacturer will control the power for 802.11n mode is same as the 802.11ax mode or more lower than it and investigated worst case to representative mode in test report.
4. Partial RU (resource units) and channel puncturing/bandwidth reduction configurations are not supported.



### 3.3 Channel List

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20), 802.11ax (HE20):

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), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
3	2422 MHz	7	2442 MHz
4	2427 MHz	8	2447 MHz
5	2432 MHz	9	2452 MHz
6	2437 MHz		

### 3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition.
Worst Case:	1. X-axis/ Y-axis/ Z-axis Worst Condition: Y-axis

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

Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g	CDD	1, 6, 11	BPSK	6Mb/s
	802.11n (HT20)	CDD & Beamforming	1, 6, 11	BPSK	MCS0
	802.11n (HT40)	CDD & Beamforming	3, 6, 9	BPSK	MCS0
	802.11ax (HE20)	CDD & Beamforming	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)	CDD & Beamforming	3, 6, 9	BPSK	MCS0
Power Spectral Density	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g	CDD	1, 6, 11	BPSK	6Mb/s
	802.11n (HT20)	CDD	1, 6, 11	BPSK	MCS0
	802.11n (HT40)	CDD	3, 6, 9	BPSK	MCS0
6 dB Bandwidth / Conducted Out of Band Emissions	802.11b	CDD	6	DBPSK	1Mb/s
	802.11g	CDD	6	BPSK	6Mb/s
	802.11n (HT20)	CDD	1, 6, 11	BPSK	MCS0
	802.11n (HT40)	CDD	1, 6, 11	BPSK	MCS0
AC Power Conducted Emissions	802.11b	CDD	6	DBPSK	1Mb/s
Unwanted Emissions below 1 GHz	802.11b	CDD	6	DBPSK	1Mb/s
Unwanted Emissions above 1 GHz	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g	CDD	1, 6, 11	BPSK	6Mb/s
	802.11n (HT20)	CDD	1, 6, 11	BPSK	MCS0
	802.11n (HT40)	CDD	3, 6, 9	BPSK	MCS0

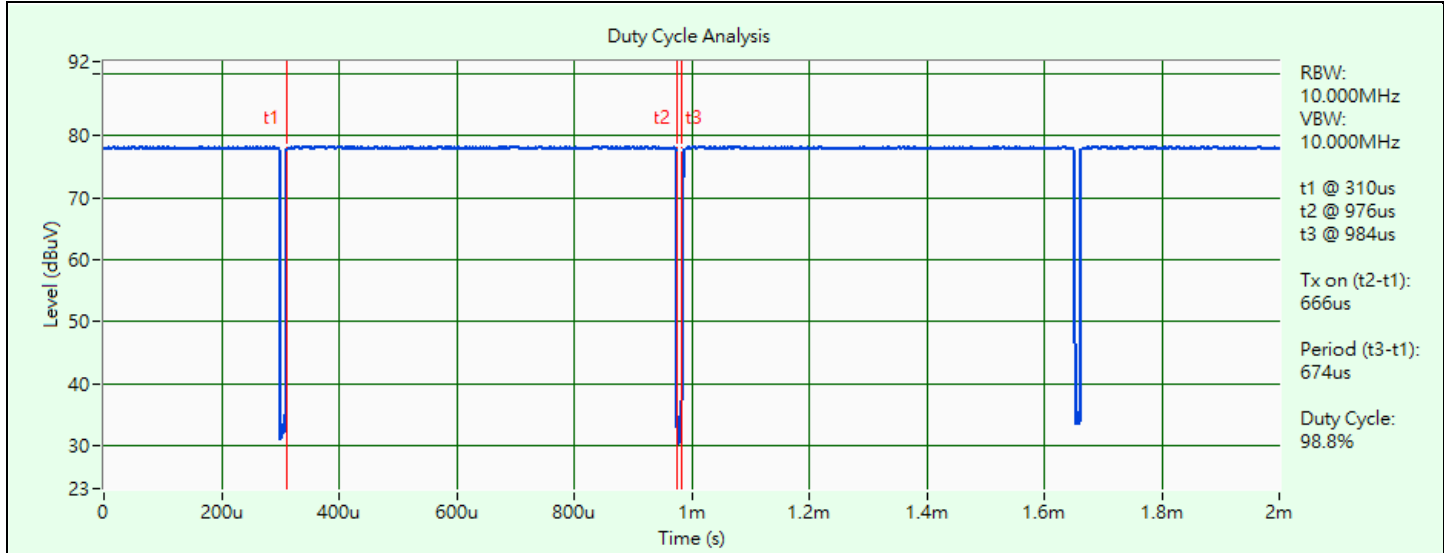
### 3.5 Duty Cycle of Test Signal

**802.11b:** Duty cycle =  $0.666 \text{ ms} / 0.674 \text{ ms} \times 100\% = 98.8\%$

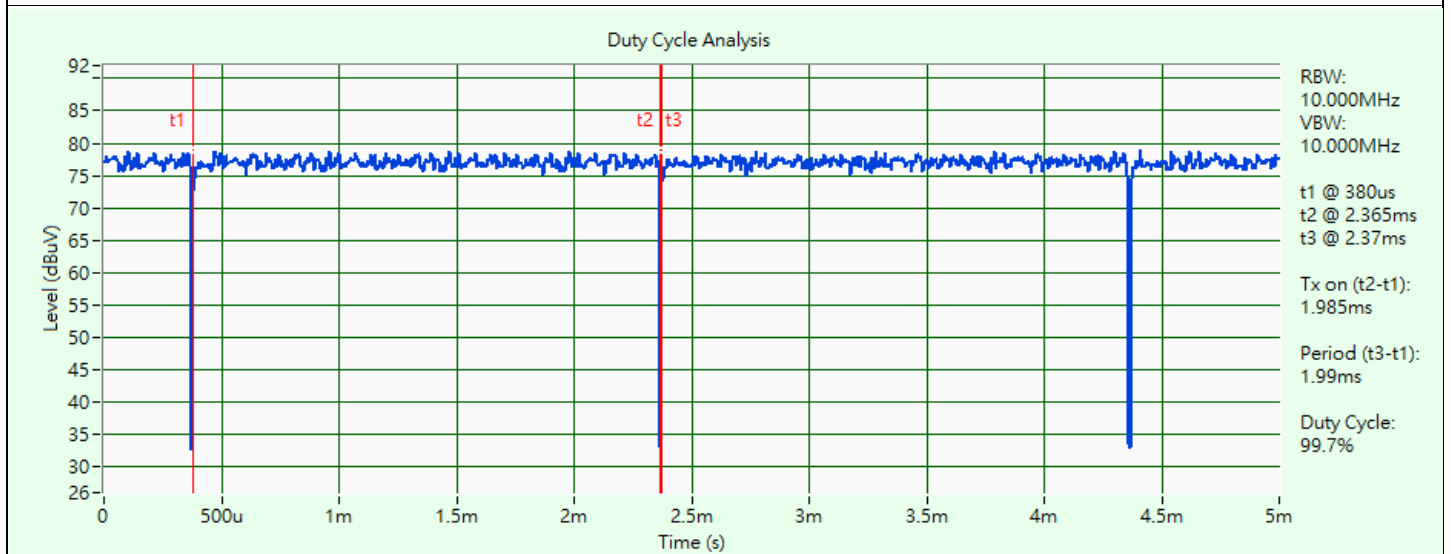
**802.11g:** Duty cycle =  $1.985 \text{ ms} / 1.99 \text{ ms} \times 100\% = 99.7\%$

**802.11n (HT20):** Duty cycle =  $100 \text{ ms} / 100 \text{ ms} \times 100\% = 100.0\%$

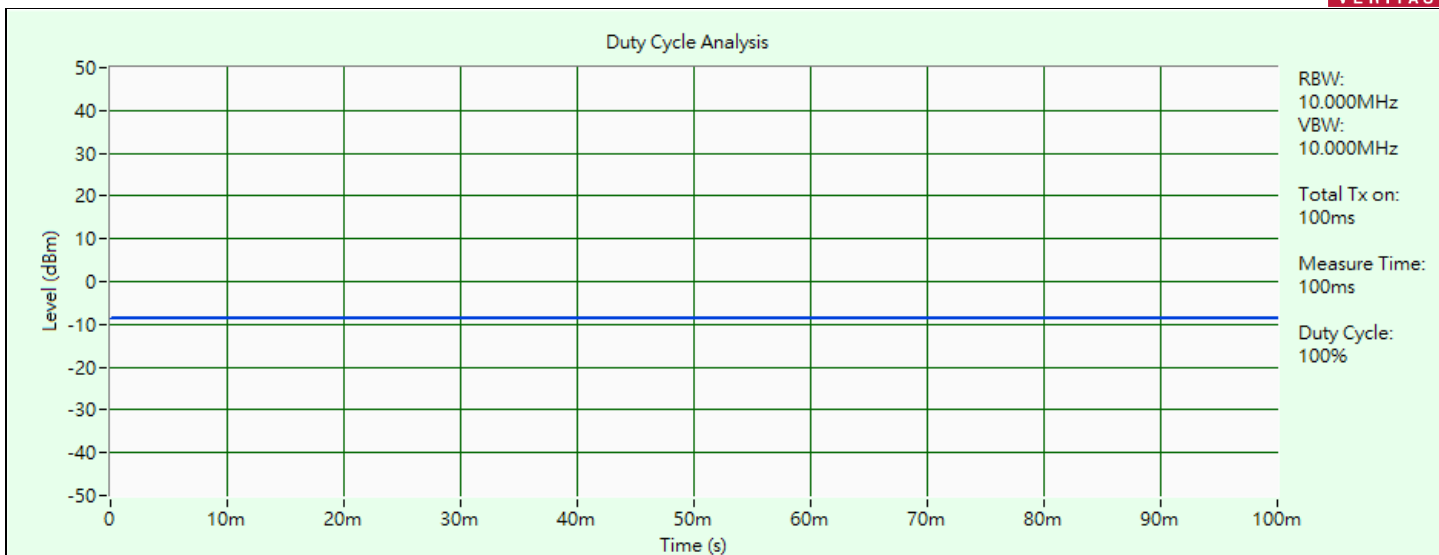
**802.11n (HT40):** Duty cycle =  $100 \text{ ms} / 100 \text{ ms} \times 100\% = 100.0\%$



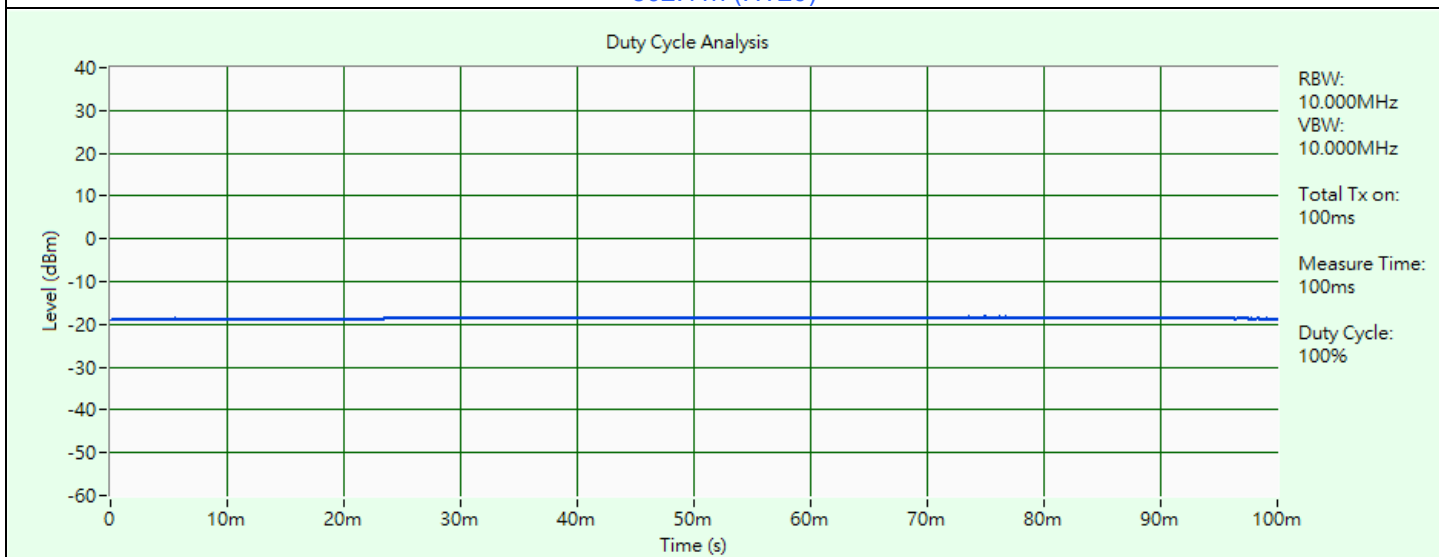
802.11b



802.11g



802.11n (HT20)

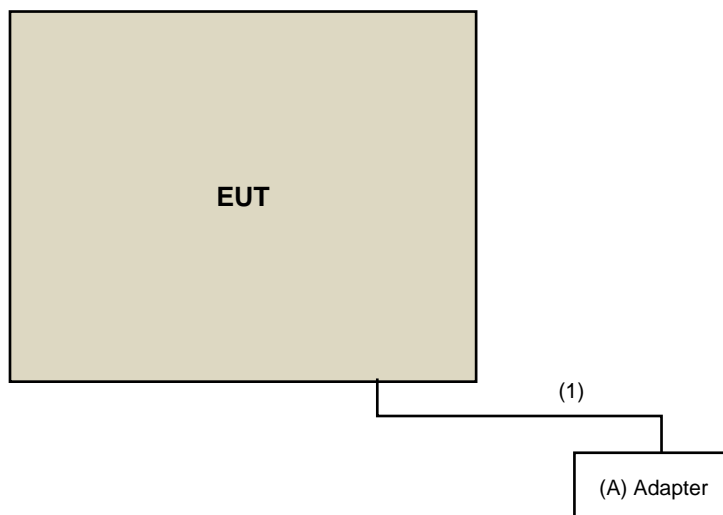


802.11n (HT40)

### 3.6 Test Program Used and Operation Descriptions

Controlling software QRCT 4.0 Version 4.0.00166.0 has been activated to set the EUT under transmission condition continuously at specific channel frequency.

### 3.7 Connection Diagram of EUT and Peripheral Devices



-----  
**Under Table**

-----  
**Remote Site**

### 3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Adapter	FULLPOWER	TYPE-C45IC	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	Type-C Cable	1	2	Yes	0	Supplied by applicant

## 4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

### 4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Peak Power Analyzer Keysight	8990B	MY51000485	2022/1/18	2023/1/17
Wideband Power Sensor Keysight	N1923A	MY58020002	2022/1/17	2023/1/16
		MY58140009	2022/1/17	2023/1/16

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/12/20

### 4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Signal & Spectrum Analyzer R&S	FSV3044	101105	2022/2/16	2023/2/15
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/12/20

### 4.3 6 dB Bandwidth

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	100979	2022/3/25	2023/3/24

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/12/20

### 4.4 Conducted Out of Band Emissions

Refer to section 4.3 to get information of the instruments.

#### 4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
LISN R&S	ESH3-Z5	100311	2022/9/12	2023/9/11
LISN ROHDE & SCHWARZ	ENV216	101826	2022/3/14	2023/3/13
Receiver R&S	ESCI	100412	2022/8/22	2023/8/21
RF Coaxial Cable WOKEN	5D-FB	Cable-cond1-01	2023/1/7	2024/1/6
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2022/8/31	2023/8/30

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2023/2/3

#### 4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn BV ADT	AT100	AT93021705	N/A	N/A
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Spectrum Analyzer R&S	FSW43	101867	2022/12/30	2023/12/29
Test Receiver KEYSIGHT	N9038A	MY55420137	2022/4/27	2023/4/26
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A
Preamplifier Agilent	8447D	2944A10638	2022/05/14	2023/05/13
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-160	2022/10/20	2023/10/19
RF Coaxial Cable Woken	8D-FB	Cable-CH9-01	2022/05/14	2023/05/13

Notes:

1. The test was performed in HY - 966 chamber 4.
2. Tested Date: 2023/2/2

#### 4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn BV ADT	AT100	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	5	N/A	N/A
Horn Antenna Schwarzbeck	9120D	9120D-1169	2022/11/13	2023/11/12
	BBHA 9170	9170-480	2022/11/13	2023/11/12
		BBHA9170243	2022/11/13	2023/11/12
Pre-Amplifier EMCI	EMC 184045	980116	2022/10/1	2023/9/30
Preamplifier Agilent	8449B	3008A02367	2022/2/16	2023/2/15
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2022/7/9	2023/7/8
	EMC102-KM-KM-3000	150929	2022/7/9	2023/7/8
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	2022/1/15	2023/1/14
RF Coaxial Cable HUBER+SUHNER&EMCI	SUCOFLEX 104& EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	2022/1/15	2023/1/14
RF FLITER MICRO-TRONICS	BRM17690	004	2022/1/10	2023/1/9
	BRM50716	060	2022/1/10	2023/1/9
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Spectrum Analyzer R&S	FSW43	101867	2022/1/7	2023/1/6
Test Receiver KEYSIGHT	N9038A	MY55420137	2022/4/27	2023/4/26
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 4.
2. Tested Date: 2022/12/19 ~ 2022/12/23



## 5 Limits of Test Items

### 5.1 RF Output Power

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

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$ ;

Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any  $N_{ANT}$ ;

Array Gain =  $5 \log(N_{ANT}/N_{SS})$  dB or 3 dB, whichever is less, for 20-MHz channel widths with  $N_{ANT} \geq 5$ .

For power measurements on all other devices: Array Gain =  $10 \log(N_{ANT}/N_{SS})$  dB.

### 5.2 Power Spectral Density

The Maximum of Power Spectral Density Measurement is 8 dBm in any 3 kHz.

### 5.3 6 dB Bandwidth

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

### 5.4 Conducted Out of Band Emissions

Below 30 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

### 5.5 AC Power Conducted Emissions

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	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 0.50 MHz.

## 5.6 Unwanted Emissions below 1 GHz

Radiated emissions up to 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 30 dB below the highest level of the desired power:

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).

## 5.7 Unwanted Emissions above 1 GHz

Radiated emissions above 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 30 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

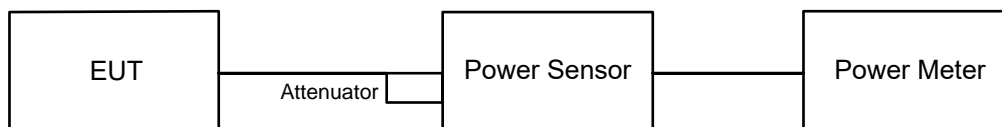
Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, 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 20 dB under any condition of modulation.

## 6 Test Arrangements

### 6.1 RF Output Power

#### 6.1.1 Test Setup



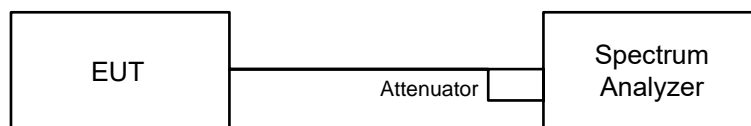
#### 6.1.2 Test Procedure

Average Power:

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

### 6.2 Power Spectral Density

#### 6.2.1 Test Setup

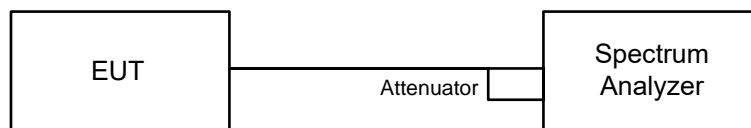


#### 6.2.2 Test Procedure

- a. Measure the duty cycle (x).
- b. Set instrument center frequency to DTS channel center frequency.
- c. Set span to at least 1.5 times the OBW.
- d. Set RBW to: 3 kHz.
- e. Set VBW  $\geq 3 \times$  RBW.
- f. Detector = power averaging (RMS) or sample detector (when RMS not available).
- g. Ensure that the number of measurement points in the sweep  $\geq 2 \times$  span/RBW.
- h. Sweep time = auto couple.
- i. Do not use sweep triggering. Allow sweep to "free run".
- j. Employ trace averaging (RMS) mode over a minimum of 100 traces.
- k. Use the peak marker function to determine the maximum amplitude level.
- l. Note: If Duty cycle < 98%, Add  $10 \log (1/x)$ , where x is the duty cycle measured in step (a), to the measured PSD to compute the average PSD during the actual transmission time.

### 6.3 6 dB Bandwidth

#### 6.3.1 Test Setup

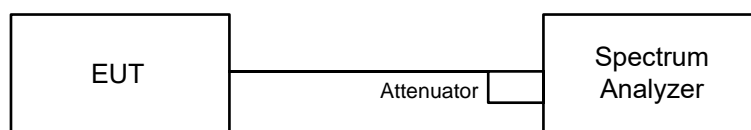


#### 6.3.2 Test Procedure

- Set resolution bandwidth (RBW) = 100 kHz.
- Set the video bandwidth (VBW)  $\geq 3 \times$  RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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.

### 6.4 Conducted Out of Band Emissions

#### 6.4.1 Test Setup



#### 6.4.2 Test Procedure

##### MEASUREMENT PROCEDURE REF

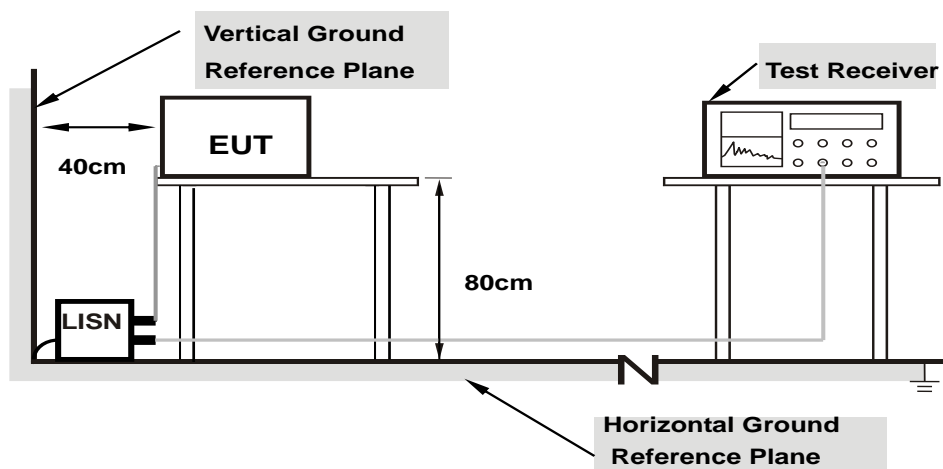
- Set the RBW = 100 kHz.
- Set the VBW  $\geq 300$  kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

##### MEASUREMENT PROCEDURE OOB

- Set RBW = 100 kHz.
- Set VBW  $\geq 300$  kHz.
- Detector = peak.
- Sweep = auto couple.
- Trace Mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level.

## 6.5 AC Power Conducted Emissions

### 6.5.1 Test Setup



**Note: 1.Support units were connected to second LISN.**

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

### 6.5.2 Test Procedure

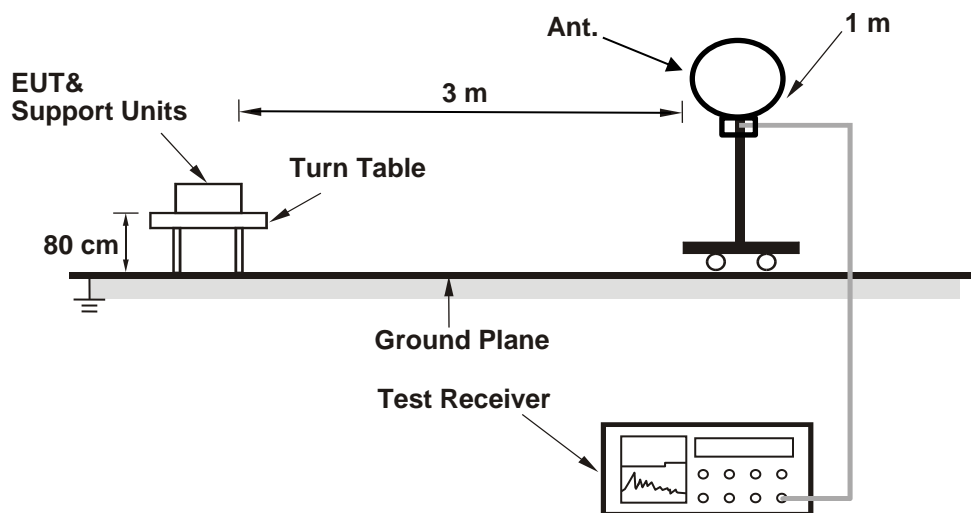
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz-30 MHz.

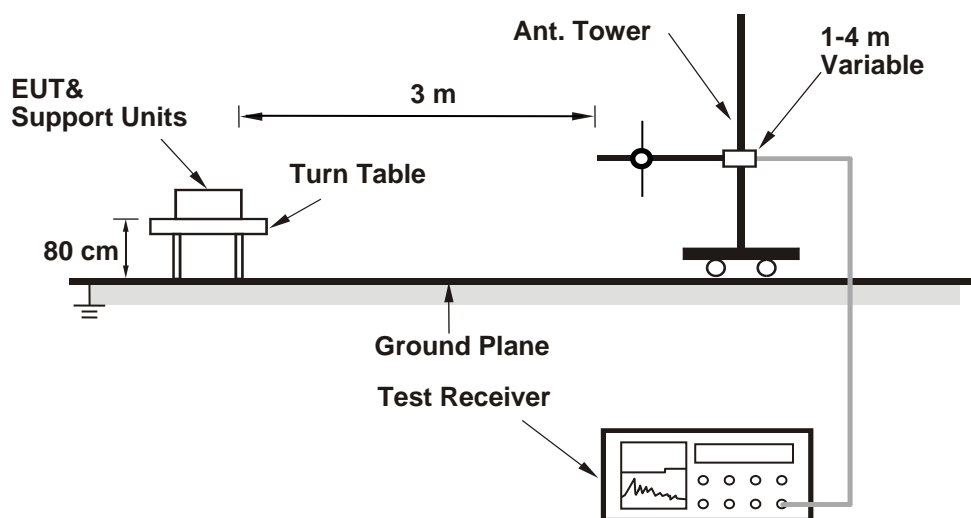
## 6.6 Unwanted Emissions below 1 GHz

### 6.6.1 Test Setup

#### For Radiated emission below 30 MHz



#### For Radiated emission above 30 MHz



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

## 6.6.2 Test Procedure

### For Radiated emission below 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case 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 Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

#### Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

### For Radiated emission above 30 MHz

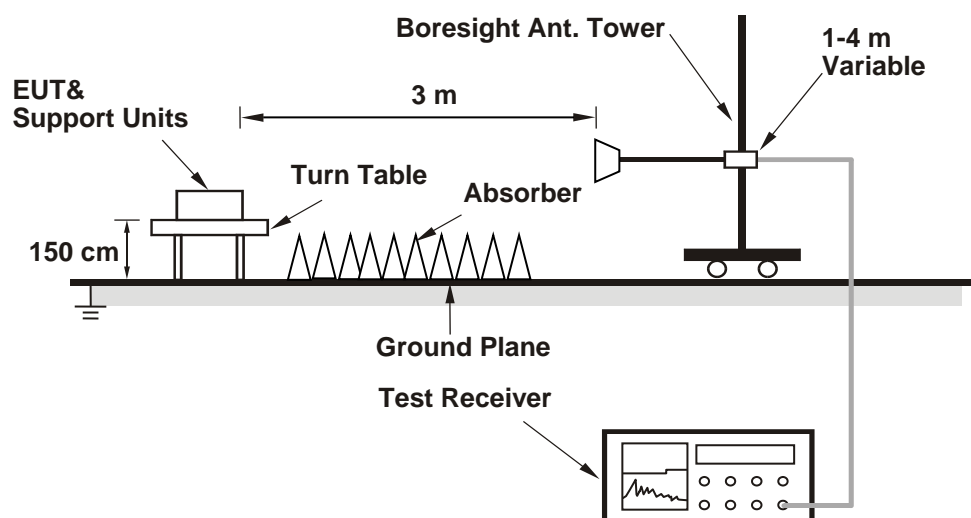
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

#### Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

## 6.7 Unwanted Emissions above 1 GHz

### 6.7.1 Test Setup



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

### 6.7.2 Test Procedure

- The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna 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.
- 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.
- The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

#### Notes:

- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
- For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle  $< 98\%$ ) or 10 Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1 GHz.
- All modes of operation were investigated and the worst-case emissions are reported.



## 7 Test Results of Test Item

### 7.1 RF Output Power

Input Power:	3.85 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Tim Chen/Chris Lin
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#### 802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	17.15	15.78	89.724	19.53	30	Pass
6	2437	17.61	17.27	111.01	20.45	30	Pass
11	2462	16.55	15.43	80.1	19.04	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 0.02 dBi < 6 dBi, so the output power limit shall not be reduced.

#### 802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	15.31	13.80	57.951	17.63	30	Pass
6	2437	15.59	15.48	71.543	18.55	30	Pass
11	2462	14.73	13.79	53.65	17.30	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 0.02 dBi < 6 dBi, so the output power limit shall not be reduced.

#### 802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	14.01	12.50	42.96	16.33	30	Pass
6	2437	14.25	14.16	52.669	17.22	30	Pass
11	2462	13.39	12.48	39.528	15.97	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 0.02 dBi < 6 dBi, so the output power limit shall not be reduced.

### 802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	11.63	10.53	25.853	14.13	30	Pass
6	2437	14.92	14.98	62.523	17.96	30	Pass
9	2452	11.28	11.47	27.456	14.39	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 0.02 dBi < 6 dBi, so the output power limit shall not be reduced.

### 802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	13.20	11.93	36.488	15.62	30	Pass
6	2437	13.46	13.19	43.027	16.34	30	Pass
11	2462	12.69	11.71	33.403	15.24	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 0.02 dBi < 6 dBi, so the output power limit shall not be reduced.

### 802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	11.54	10.48	25.425	14.05	30	Pass
6	2437	12.55	12.62	36.27	15.60	30	Pass
9	2452	11.23	11.41	27.11	14.33	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 0.02 dBi < 6 dBi, so the output power limit shall not be reduced.

### 802.11n (HT20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	14.01	12.50	42.96	16.33	30	Pass
6	2437	14.25	14.16	52.669	17.22	30	Pass
11	2462	13.39	12.48	39.528	15.97	30	Pass

Notes:

1. Directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. The directional gain is 2.03 dBi < 6 dBi, so the output power limit shall not be reduced.

### 802.11n (HT40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	11.63	10.53	25.853	14.13	30	Pass
6	2437	14.92	14.98	62.523	17.96	30	Pass
9	2452	11.28	11.47	27.456	14.39	30	Pass

Notes:

1. Directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. The directional gain is 2.03 dBi < 6 dBi, so the output power limit shall not be reduced.

### 802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	13.20	11.93	36.488	15.62	30	Pass
6	2437	13.46	13.19	43.027	16.34	30	Pass
11	2462	12.69	11.71	33.403	15.24	30	Pass

Notes:

1. Directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. The directional gain is 2.03 dBi < 6 dBi, so the output power limit shall not be reduced.

### 802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	11.54	10.48	25.425	14.05	30	Pass
6	2437	12.55	12.62	36.27	15.60	30	Pass
9	2452	11.23	11.41	27.11	14.33	30	Pass

Notes:

1. Directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. The directional gain is 2.03 dBi < 6 dBi, so the output power limit shall not be reduced.

## 7.2 Power Spectral Density

Input Power:	3.85 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Tim Chen/Chris Lin
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### 802.11b

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-11.71	-12.37	-9.02	8.00	Pass
6	2437	-10.39	-12.07	-8.14	8.00	Pass
11	2462	-11.64	-13.37	-9.41	8.00	Pass

#### Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 2.03 dBi < 6 dBi, so the power density limit shall not be reduced.

### 802.11g

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-16.51	-18.39	-14.34	8.00	Pass
6	2437	-16.18	-16.56	-13.36	8.00	Pass
11	2462	-16.98	-17.96	-14.43	8.00	Pass

#### Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 2.03 dBi < 6 dBi, so the power density limit shall not be reduced.

### 802.11n (HT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-20.20	-21.73	-17.89	8.00	Pass
6	2437	-18.79	-19.81	-16.26	8.00	Pass
11	2462	-20.88	-21.39	-18.12	8.00	Pass

#### Notes:

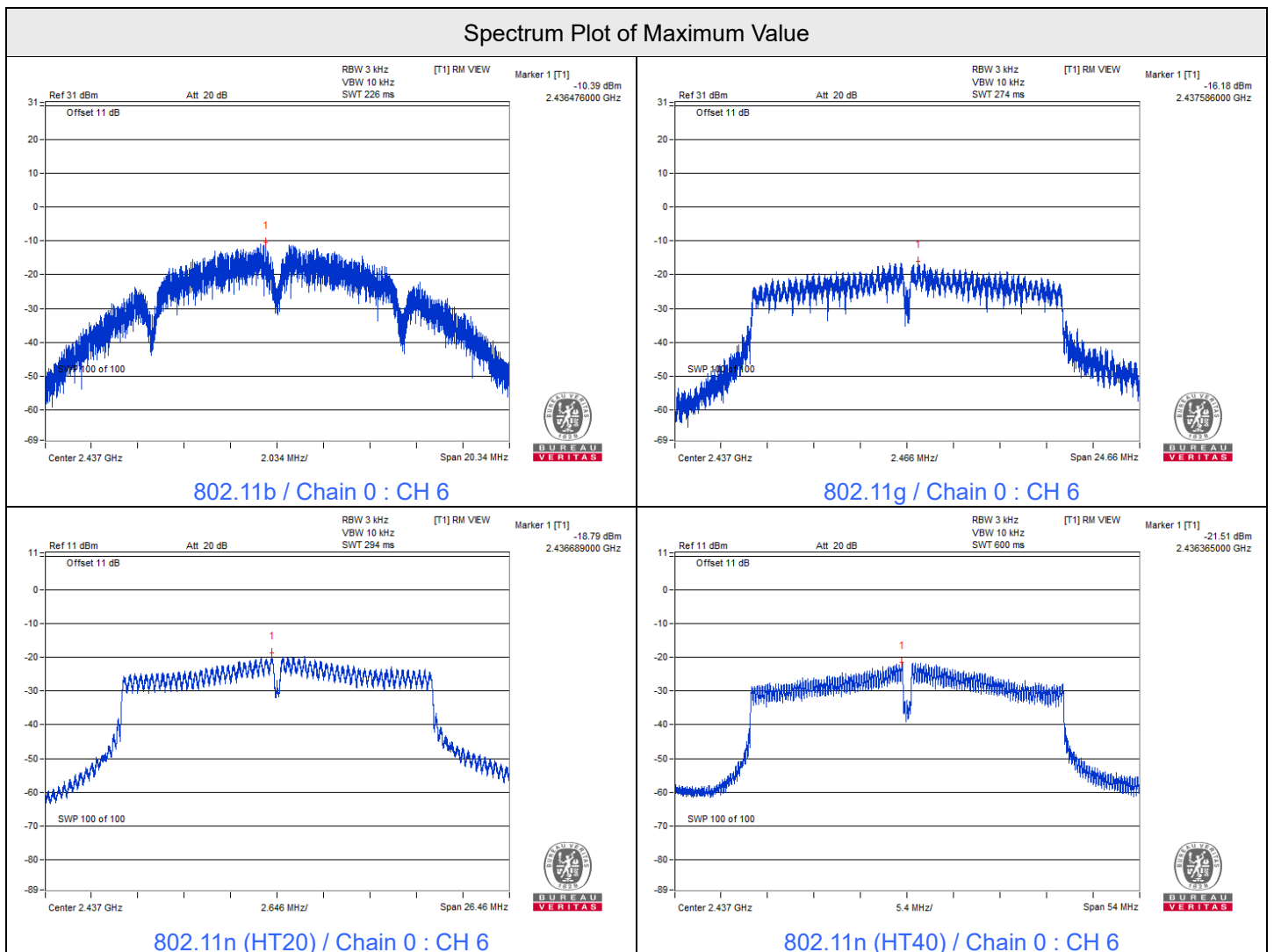
1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 2.03 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
3	2422	-24.99	-26.66	-22.74	8.00	Pass
6	2437	-21.51	-21.51	-18.50	8.00	Pass
9	2452	-25.66	-24.73	-22.16	8.00	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 2.03 dBi < 6 dBi, so the power density limit shall not be reduced.



### 7.3 6 dB Bandwidth

Input Power:	3.85 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Tim Chen/Chris Lin
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#### 802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	8.12	8.14	0.5	Pass
6	2437	8.60	8.61	0.5	Pass
11	2462	8.61	8.62	0.5	Pass

#### 802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	15.21	15.23	0.5	Pass
6	2437	15.18	15.19	0.5	Pass
11	2462	15.22	15.22	0.5	Pass

#### 802.11n (HT20)

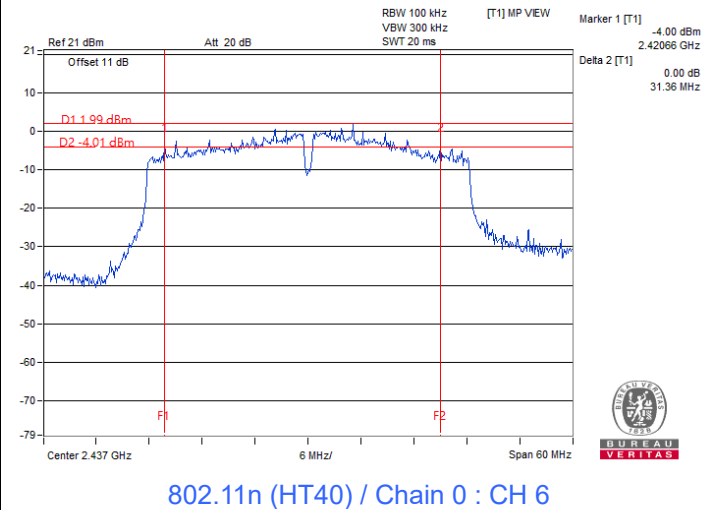
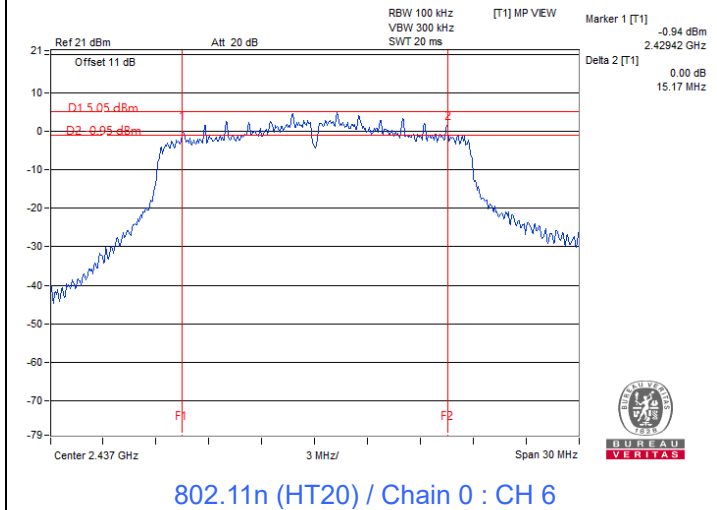
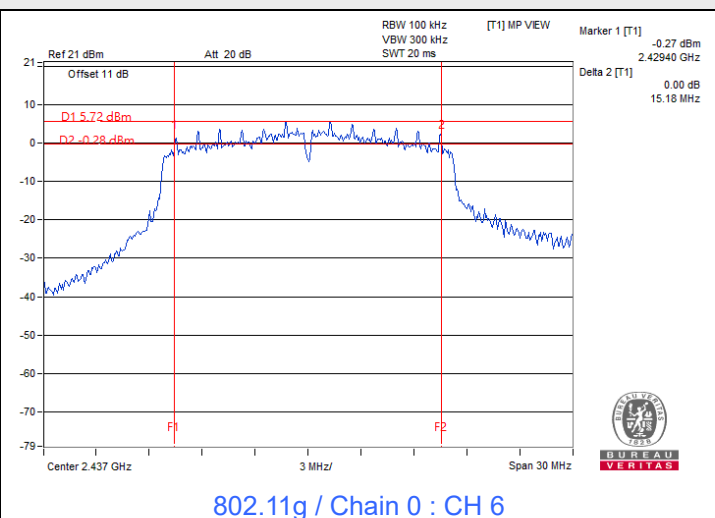
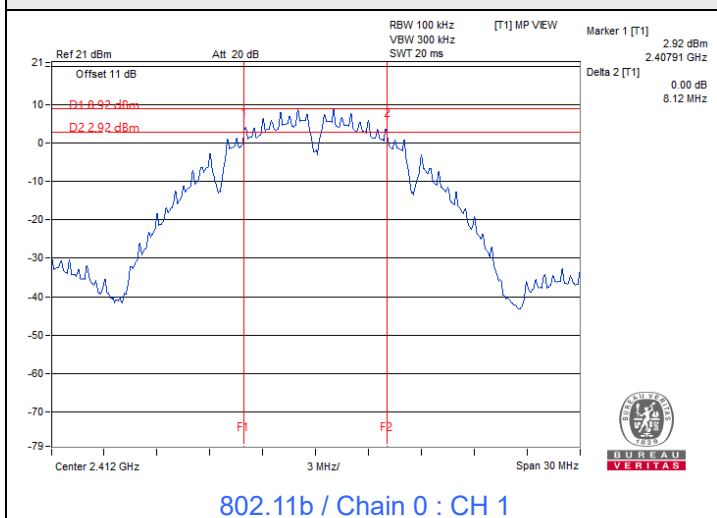
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	15.76	16.40	0.5	Pass
6	2437	15.17	15.19	0.5	Pass
11	2462	15.19	16.41	0.5	Pass

#### 802.11n (HT40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
3	2422	35.74	35.73	0.5	Pass
6	2437	31.36	32.68	0.5	Pass
9	2452	32.66	32.59	0.5	Pass



### Spectrum Plot of Minimum Value

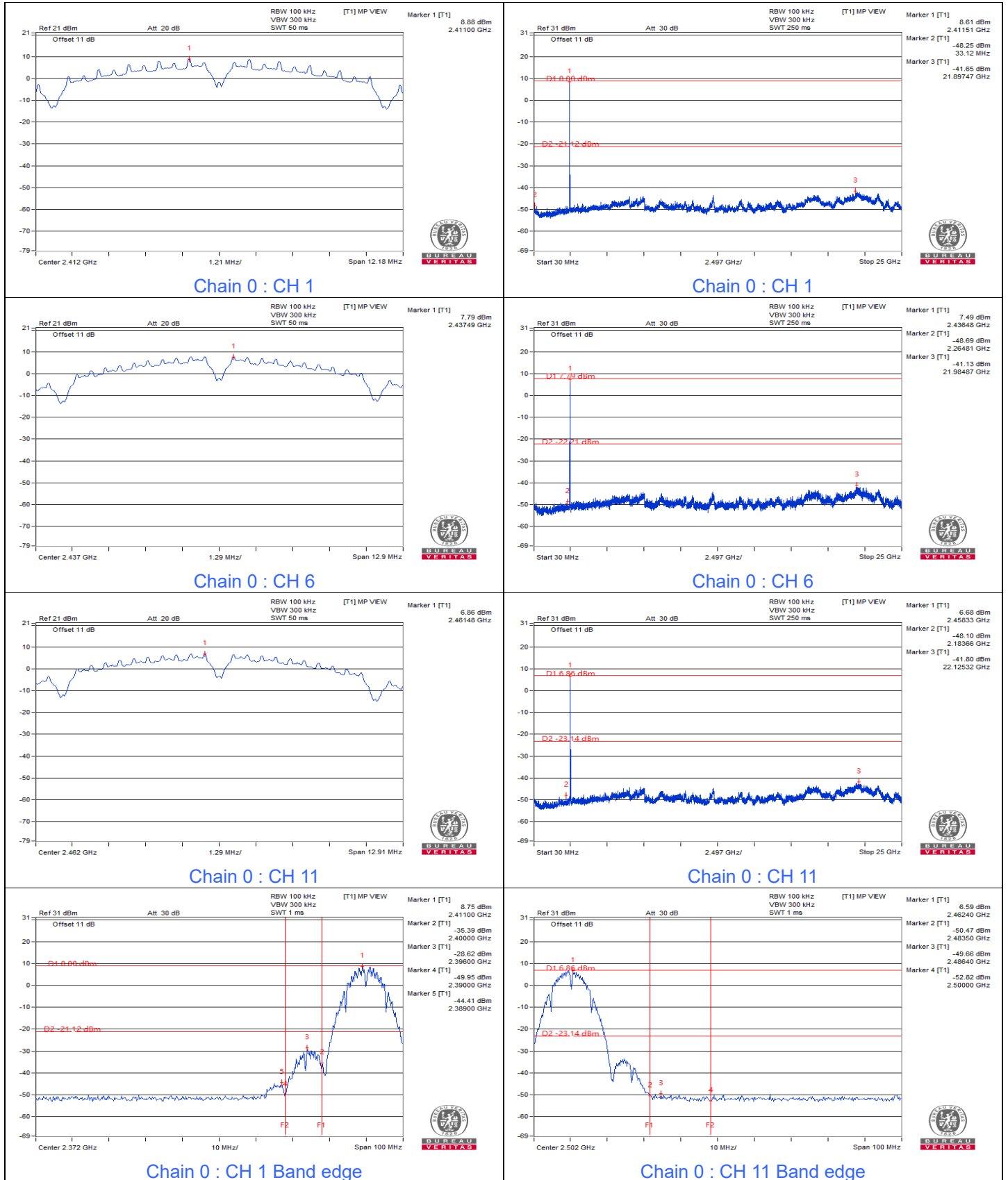




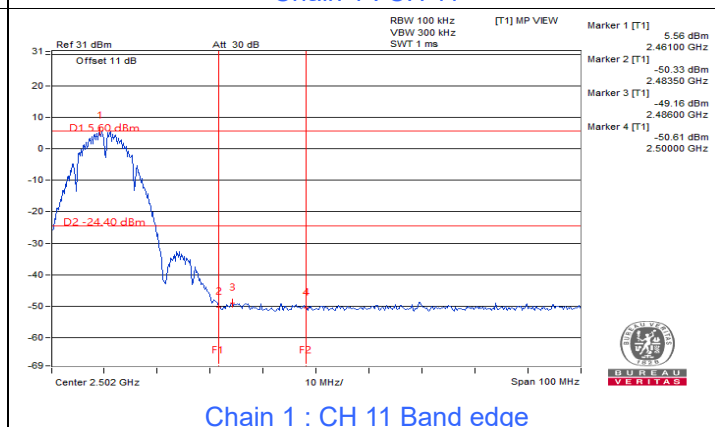
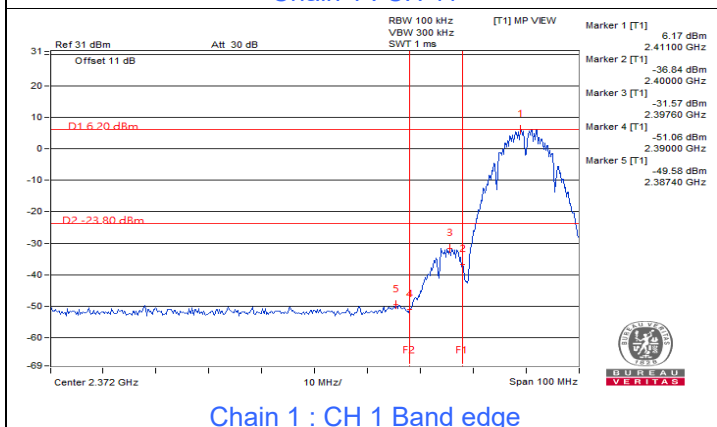
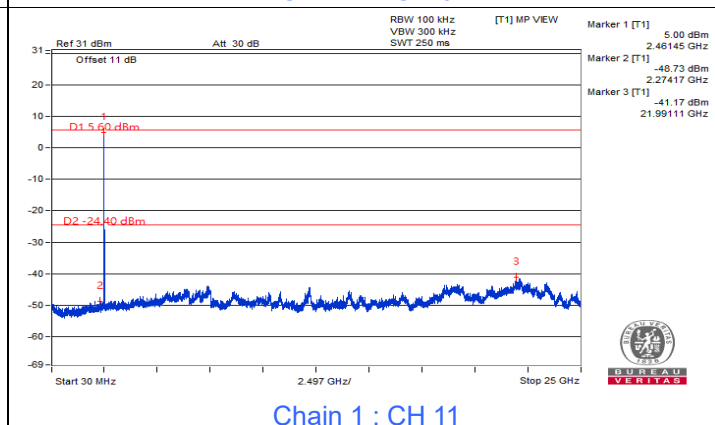
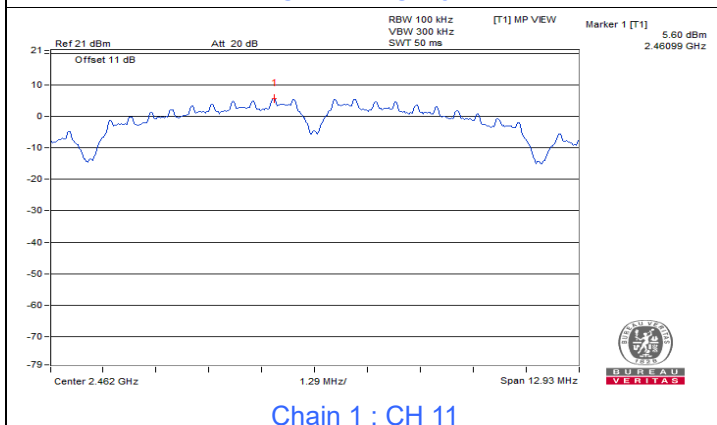
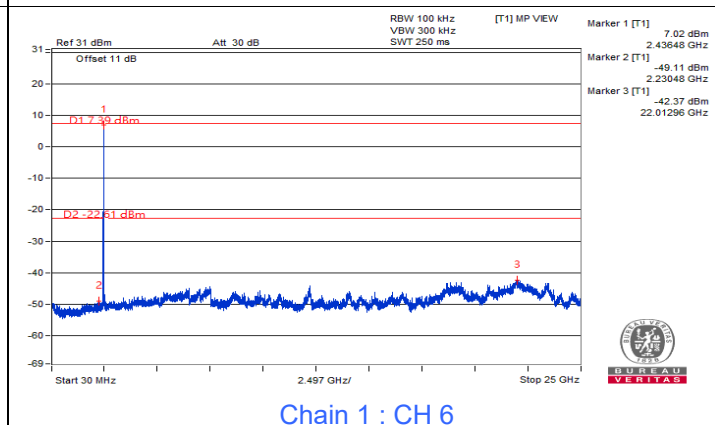
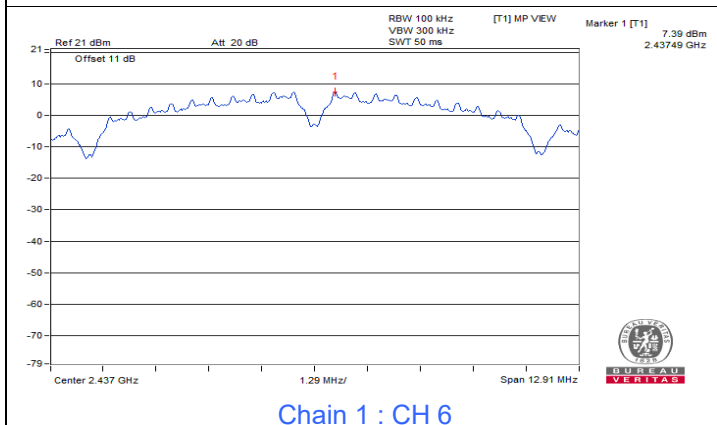
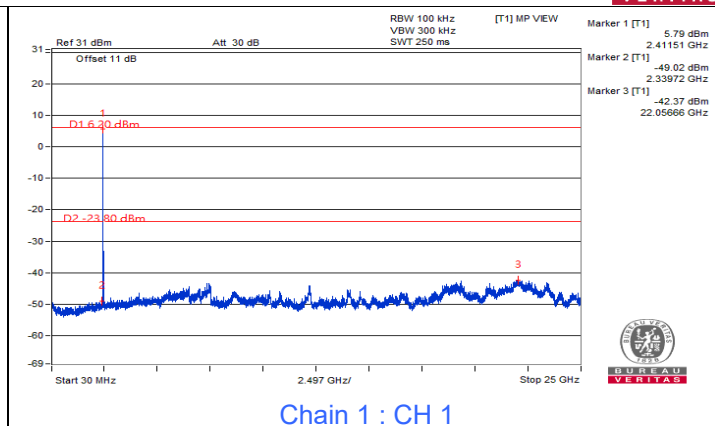
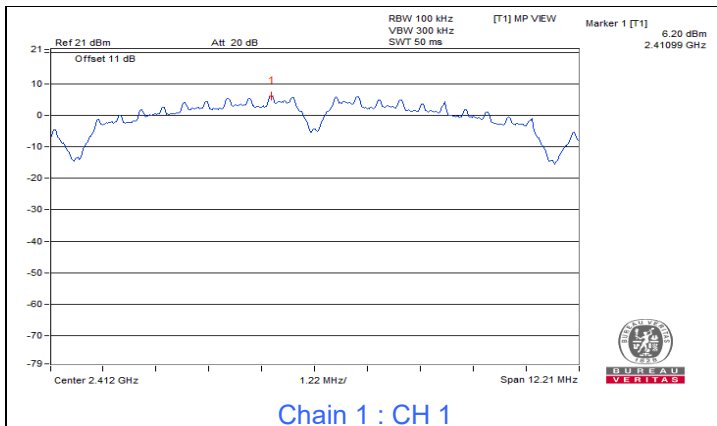
### 7.4 Conducted Out of Band Emissions

Input Power:	3.85 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Tim Chen/Chris Lin
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#### 802.11b

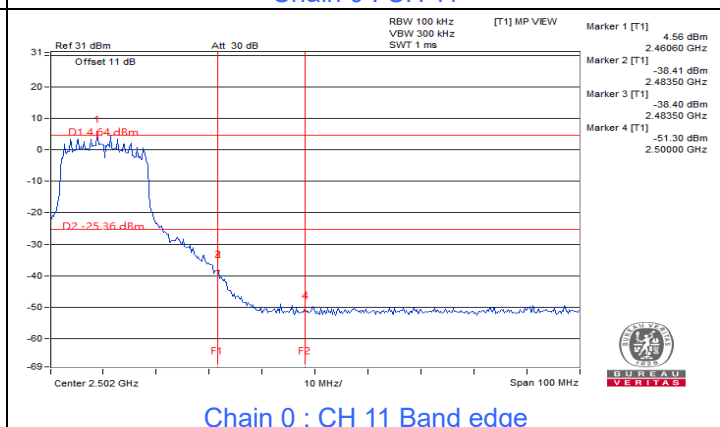
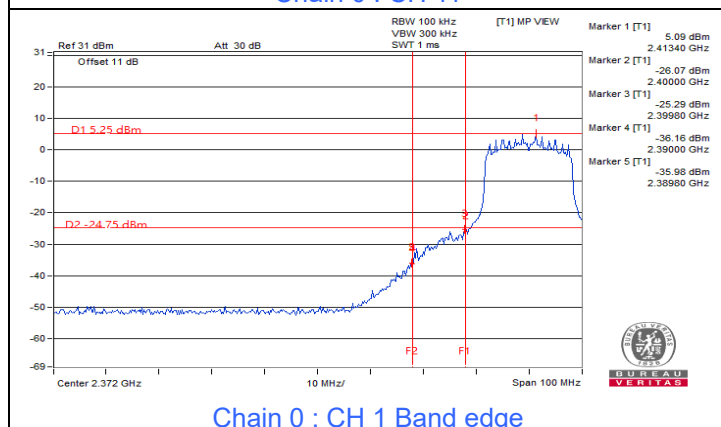
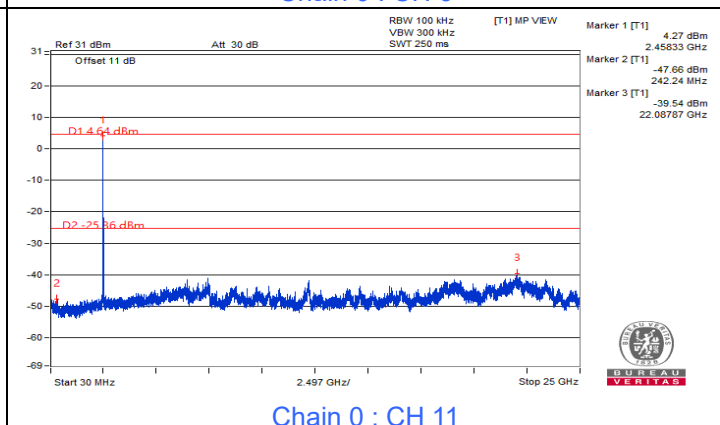
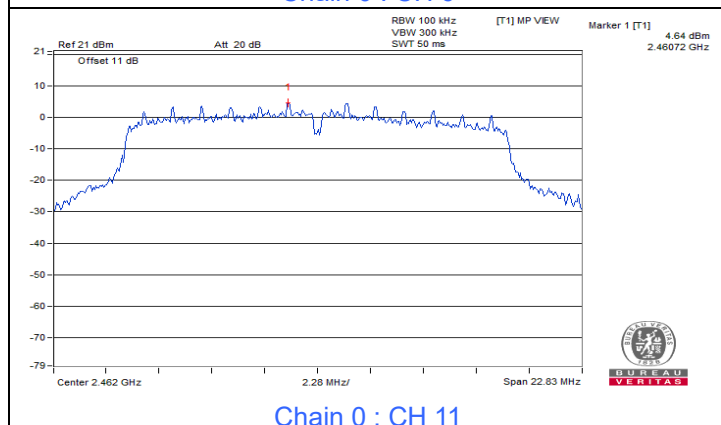
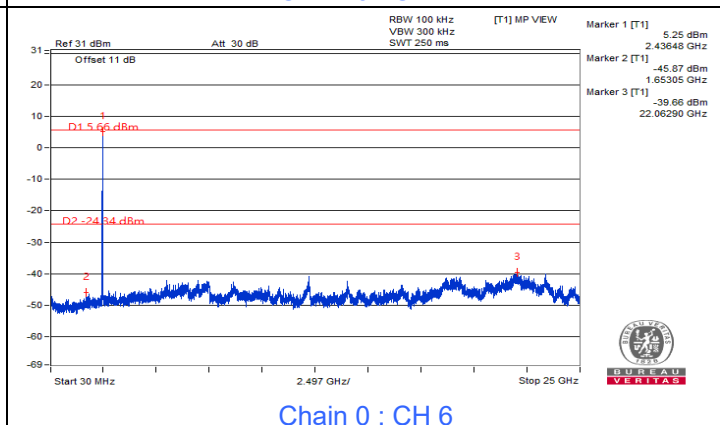
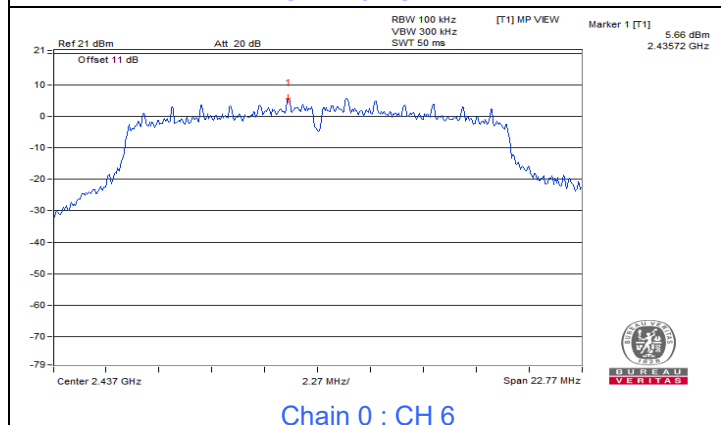
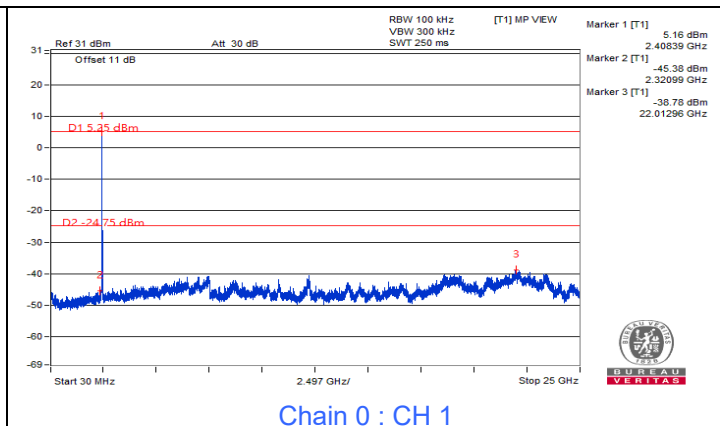
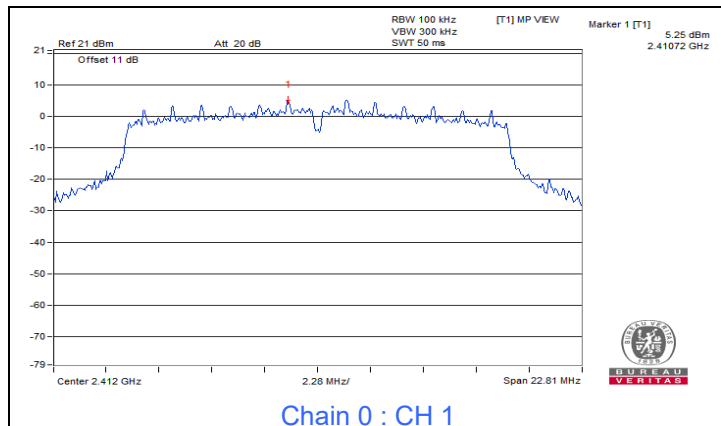


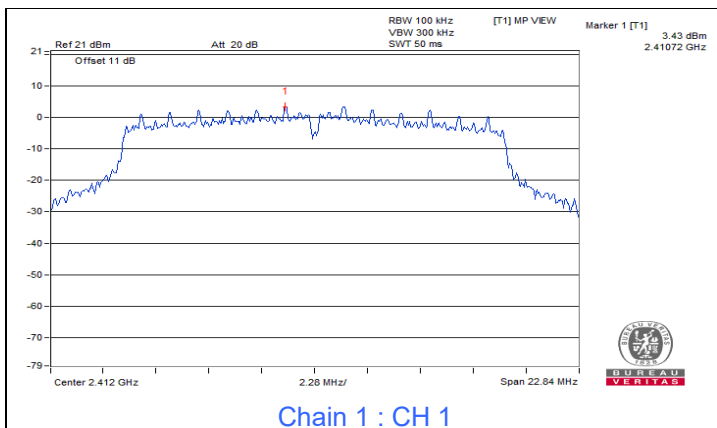




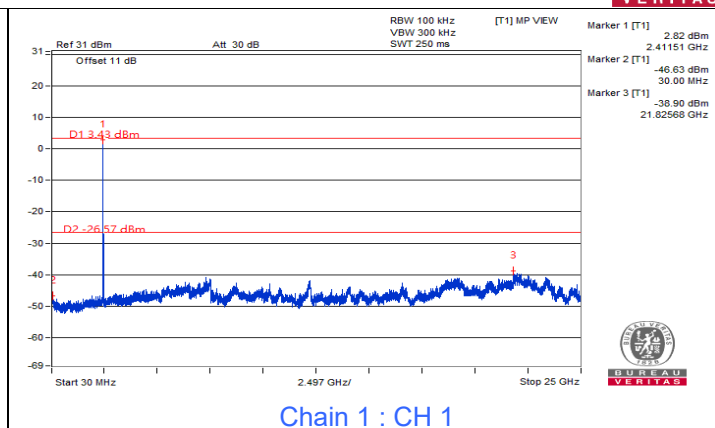


# 802.11g

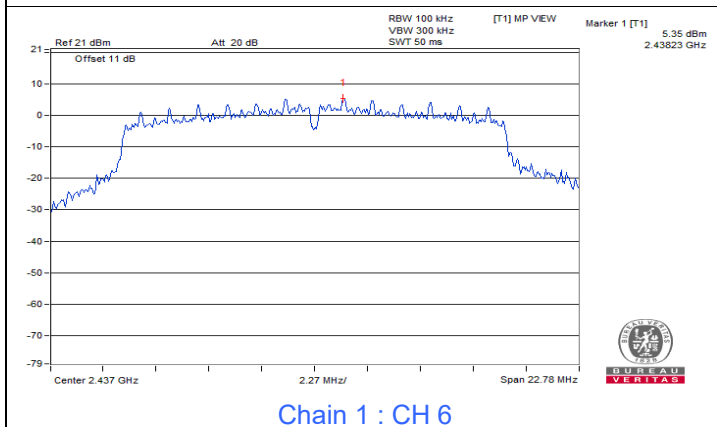




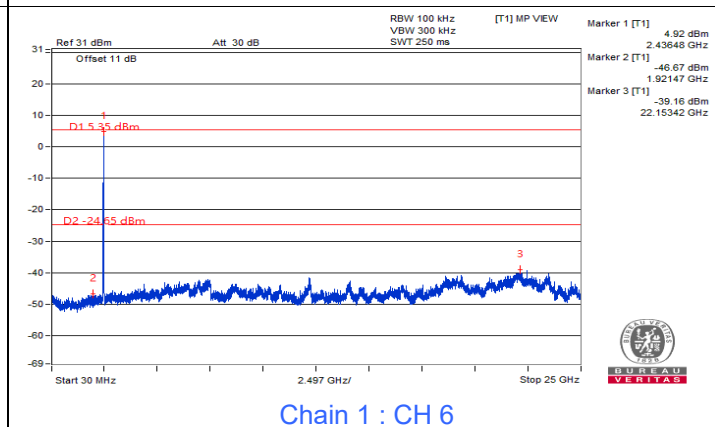
Chain 1 : CH 1



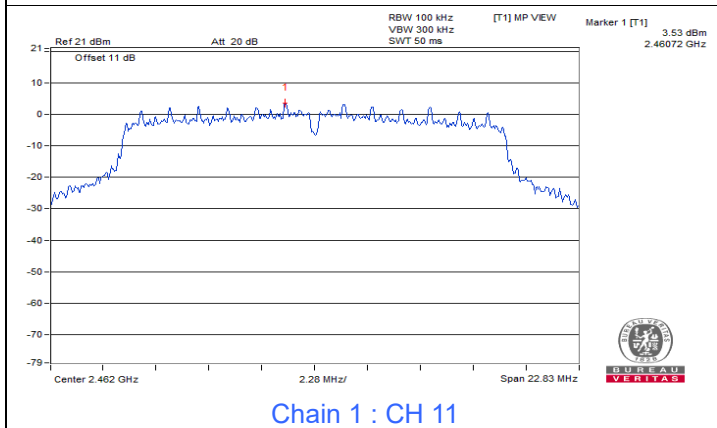
Chain 1 : CH 1



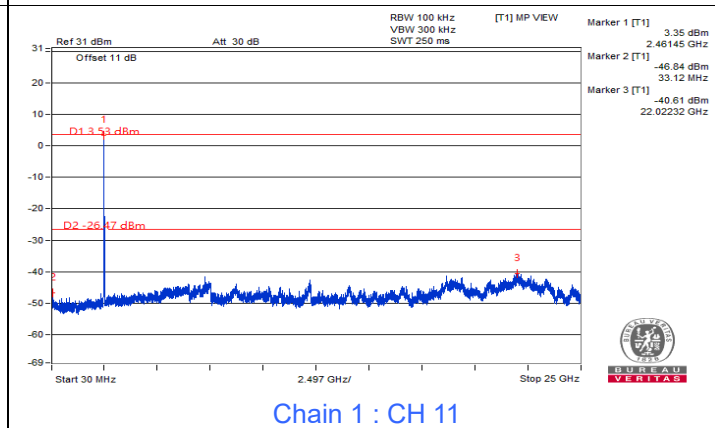
Chain 1 : CH 6



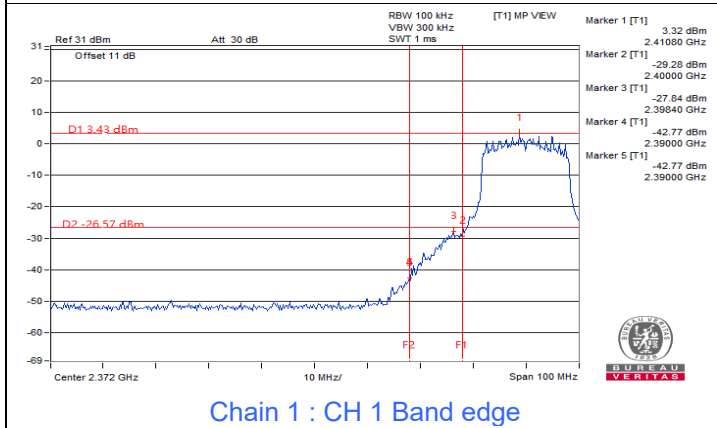
Chain 1 : CH 6



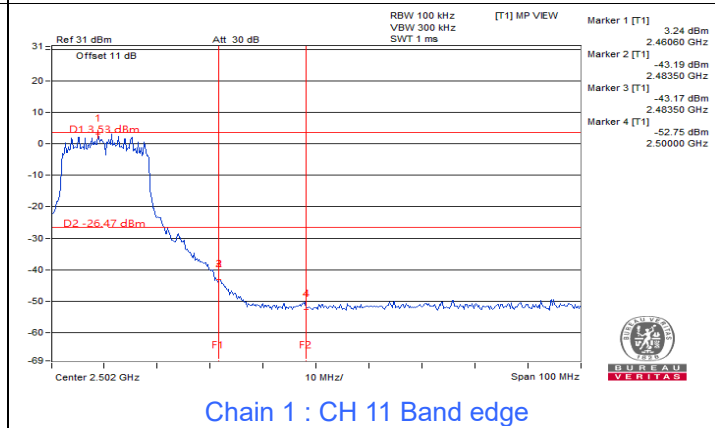
Chain 1 : CH 11



Chain 1 : CH 11



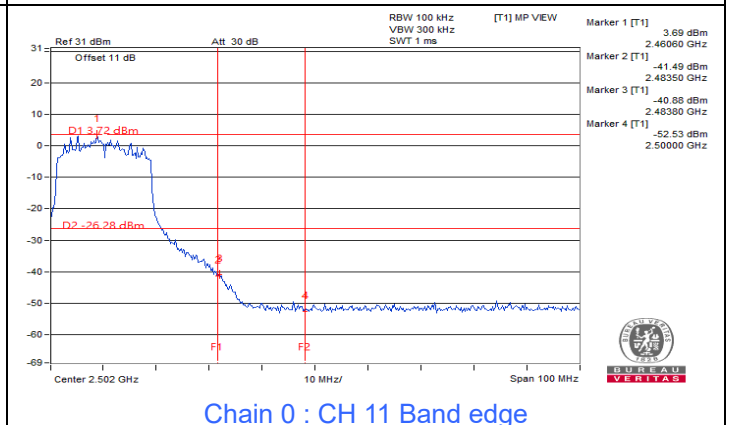
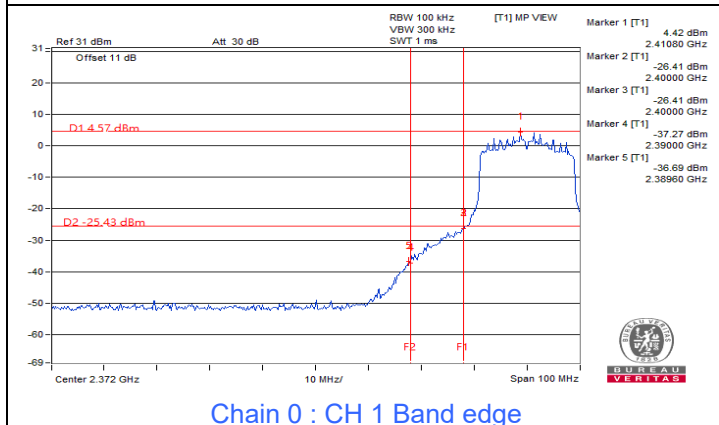
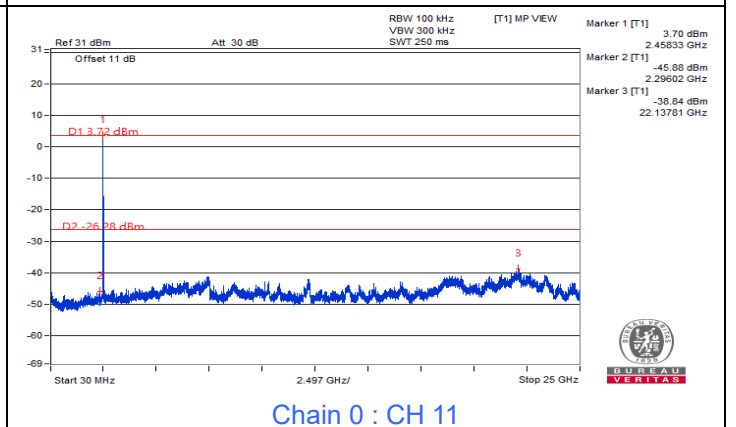
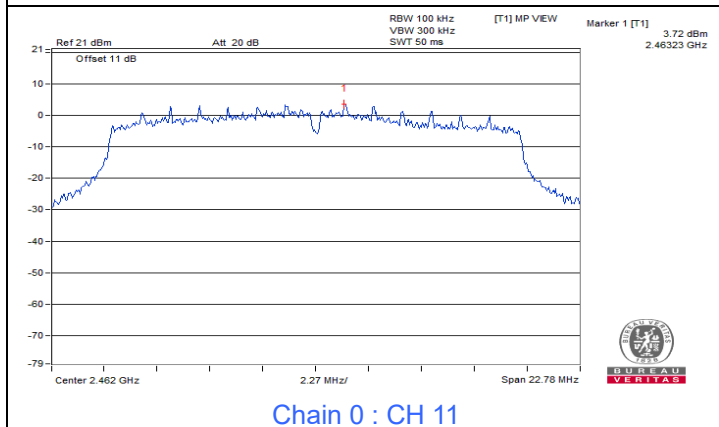
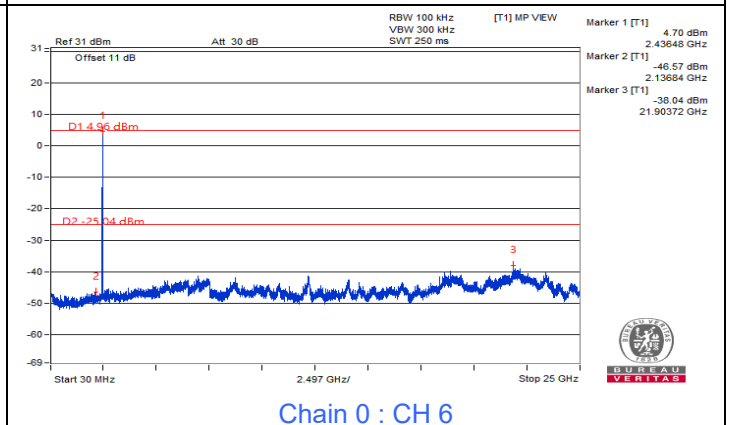
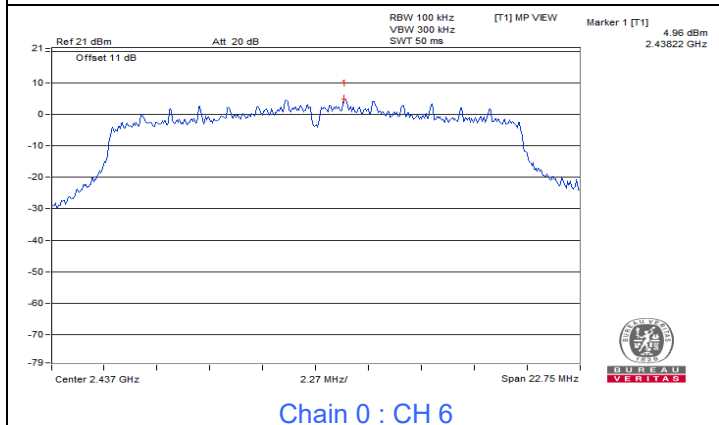
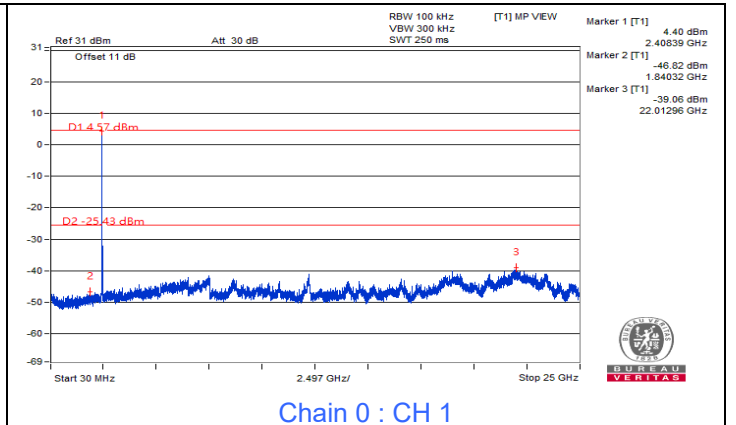
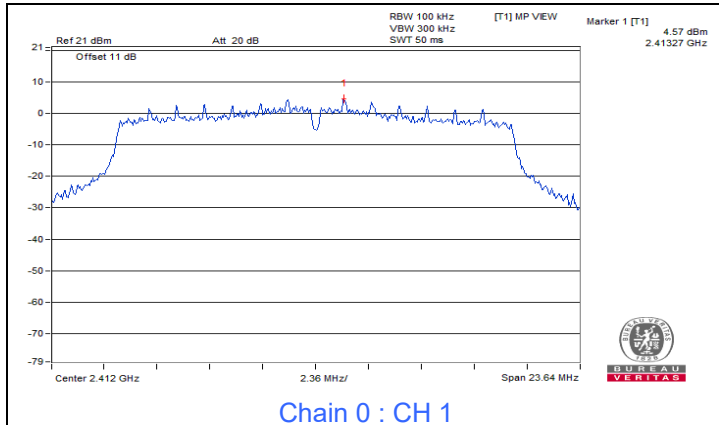
Chain 1 : CH 1 Band edge

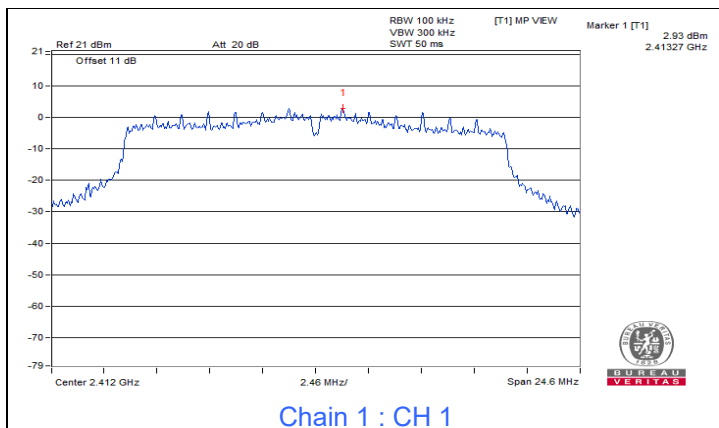


Chain 1 : CH 11 Band edge

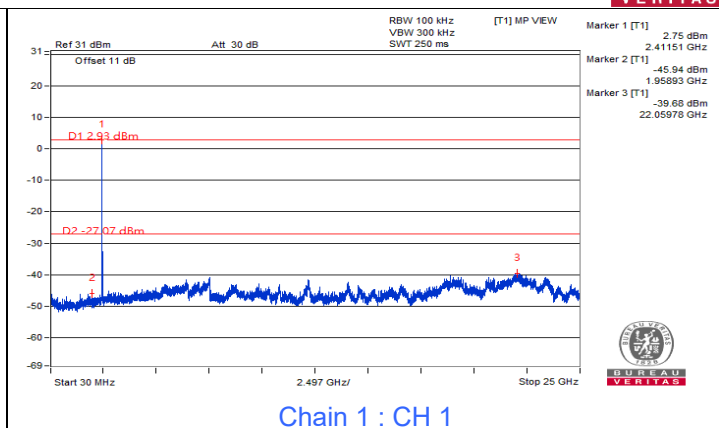


# 802.11n (HT20)

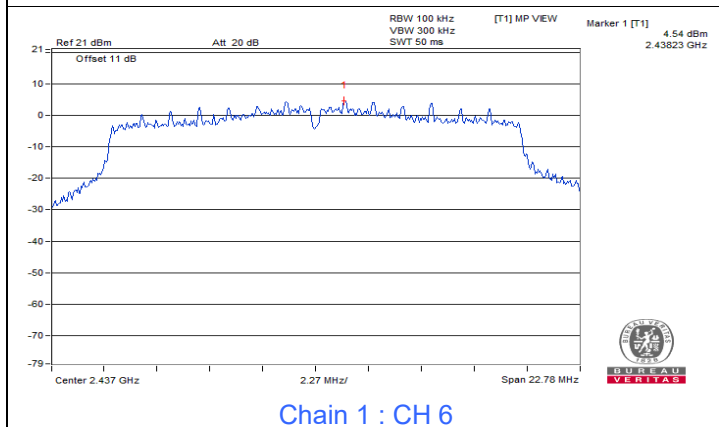




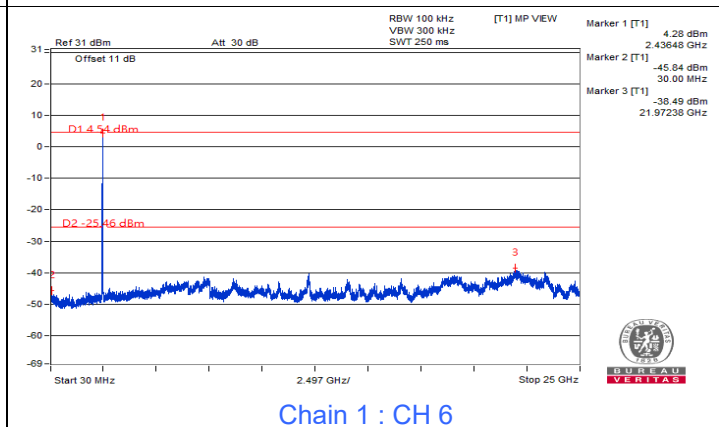
Chain 1 : CH 1



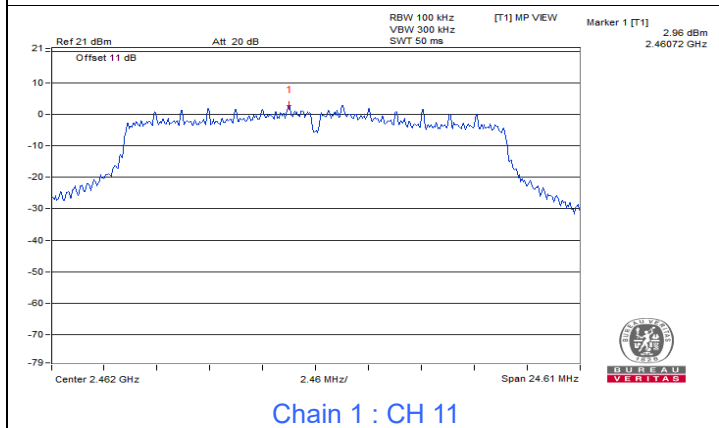
Chain 1 : CH 1



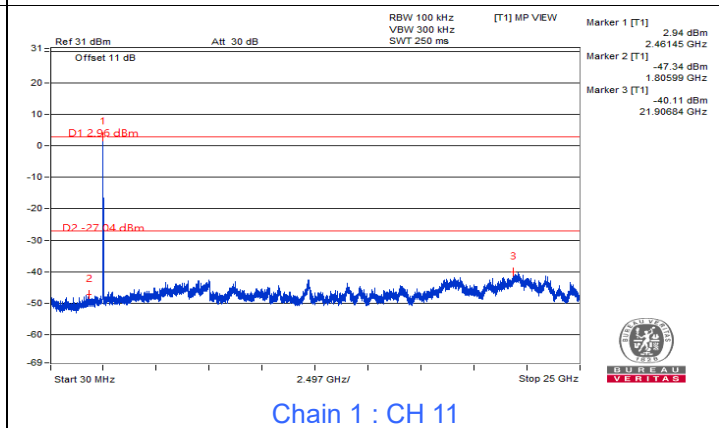
Chain 1 : CH 6



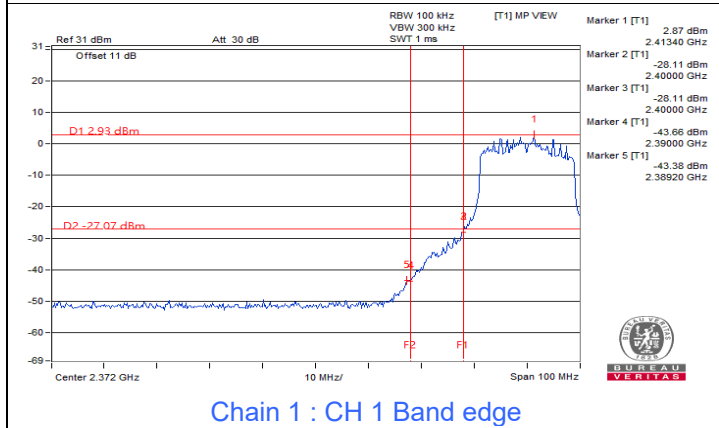
Chain 1 : CH 6



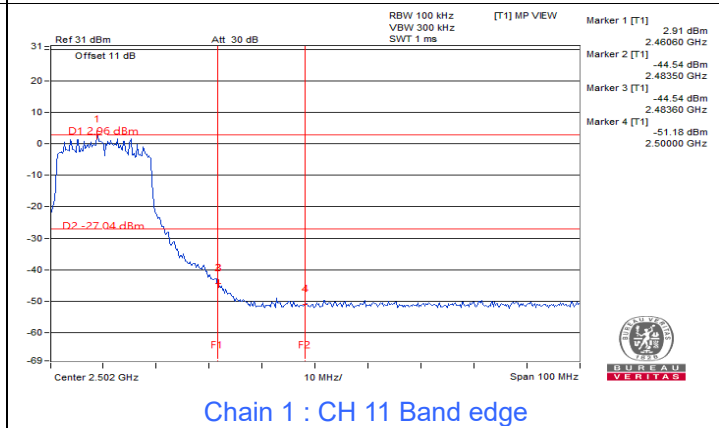
Chain 1 : CH 11



Chain 1 : CH 11



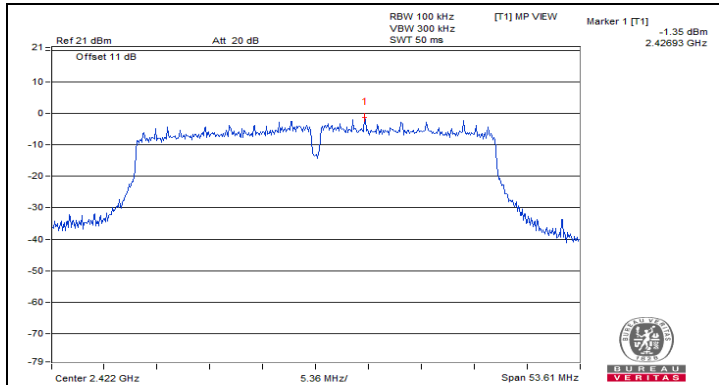
Chain 1 : CH 1 Band edge



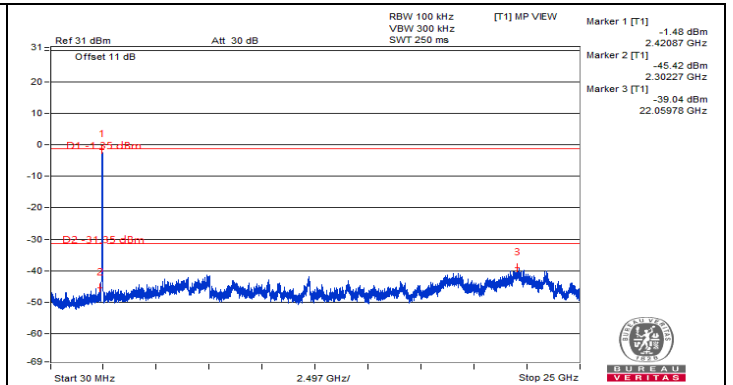
Chain 1 : CH 11 Band edge



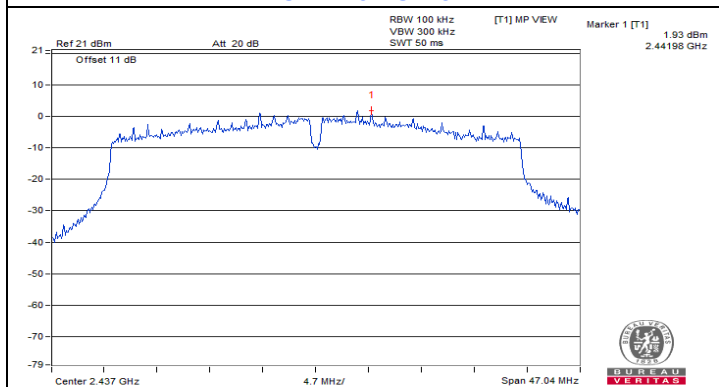
### 802.11n (HT40)



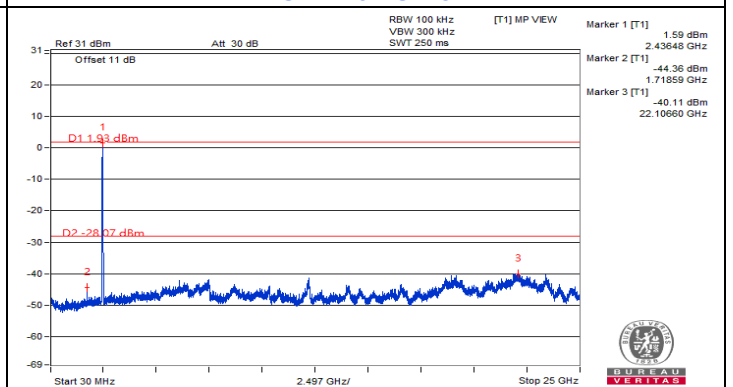
Chain 0 : CH 3



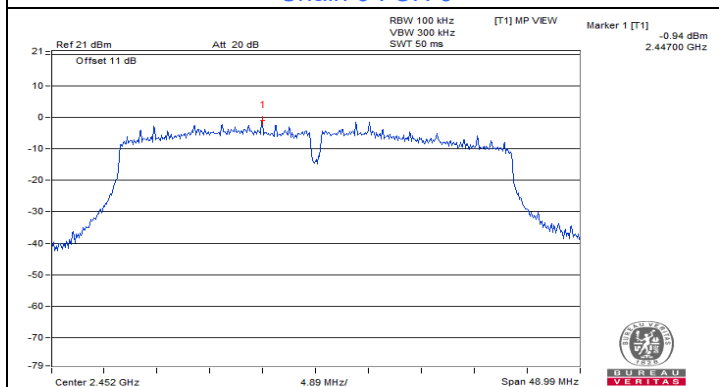
Chain 0 : CH 3



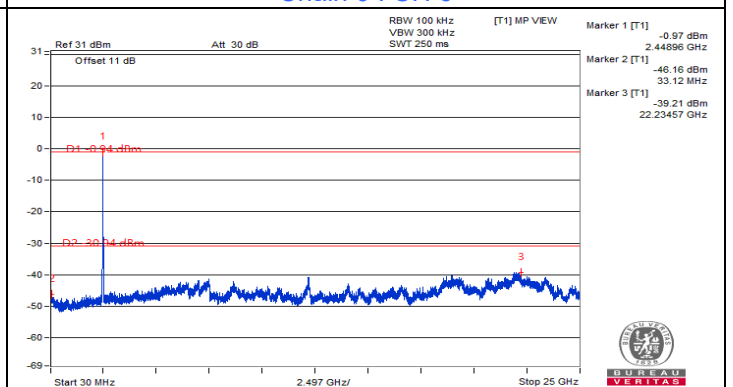
Chain 0 : CH 6



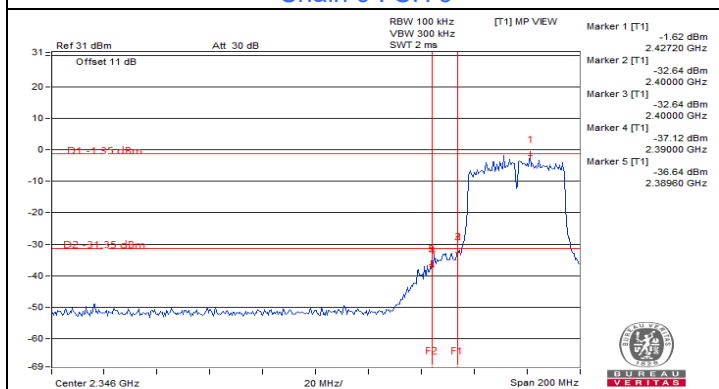
Chain 0 : CH 6



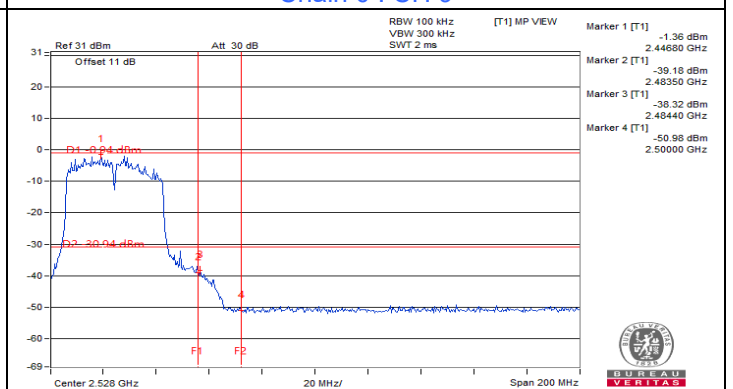
Chain 0 : CH 9



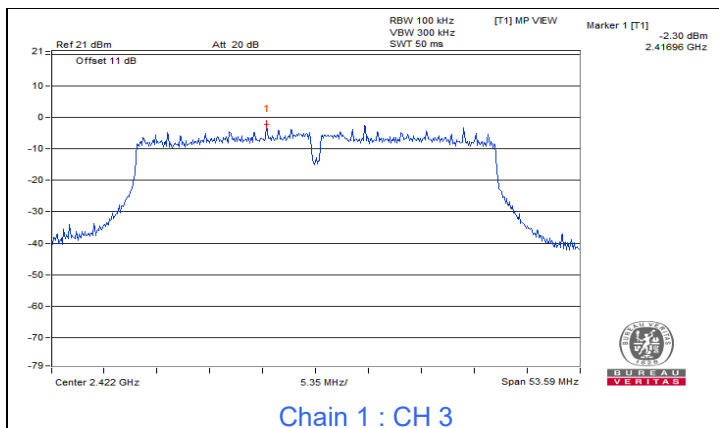
Chain 0 : CH 9



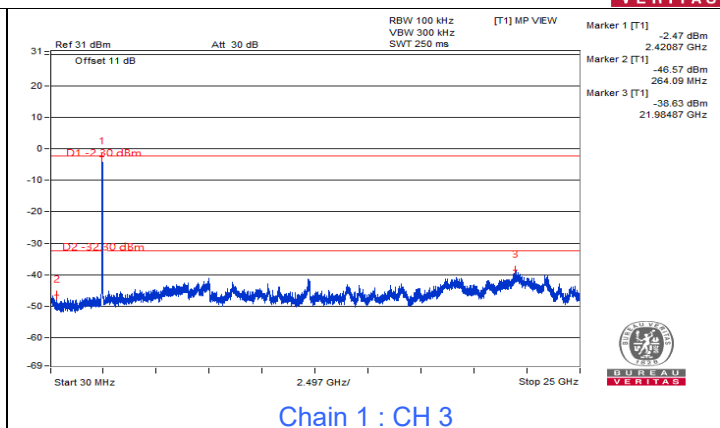
Chain 0 : CH 3 Band edge



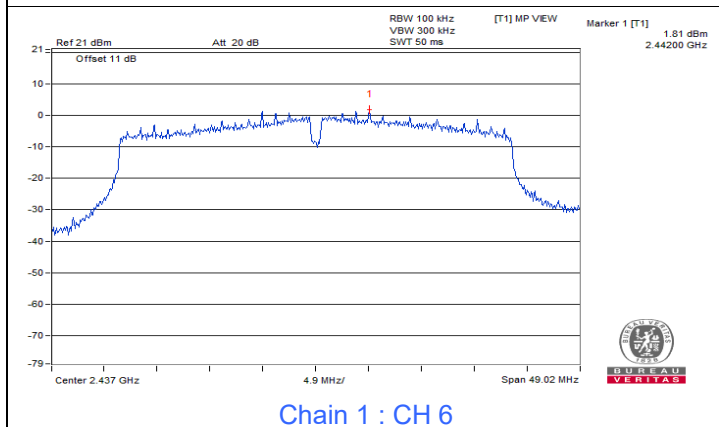
Chain 0 : CH 9 Band edge



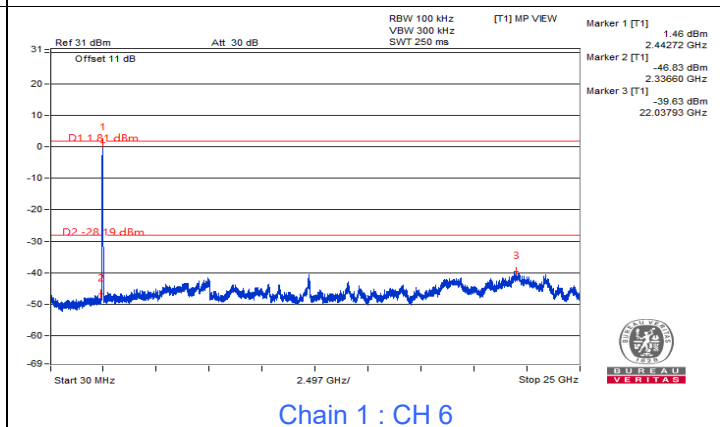
Chain 1 : CH 3



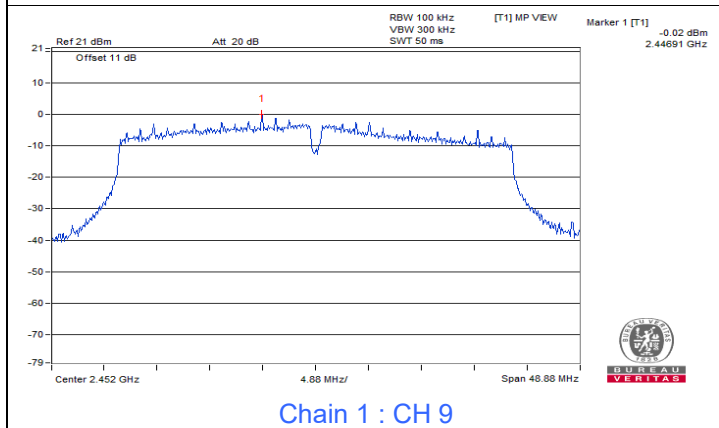
Chain 1 : CH 3



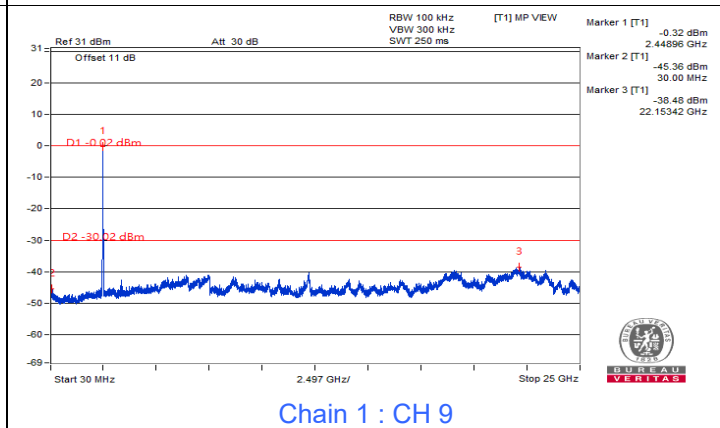
Chain 1 : CH 6



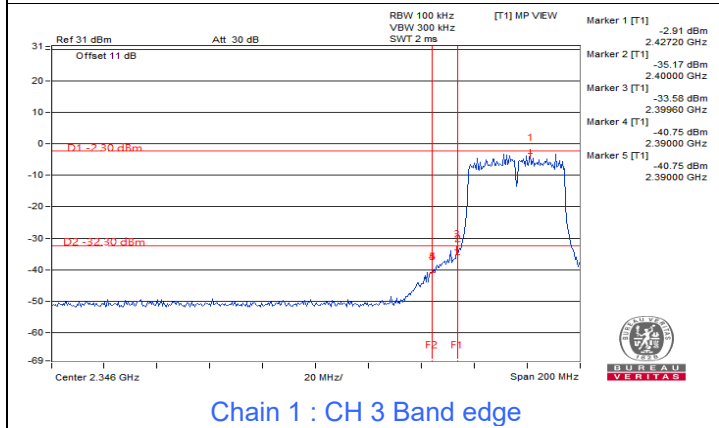
Chain 1 : CH 6



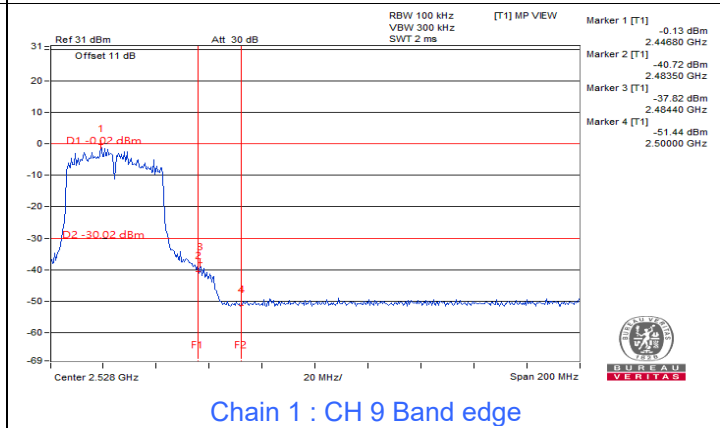
Chain 1 : CH 9



Chain 1 : CH 9



Chain 1 : CH 3 Band edge



Chain 1 : CH 9 Band edge

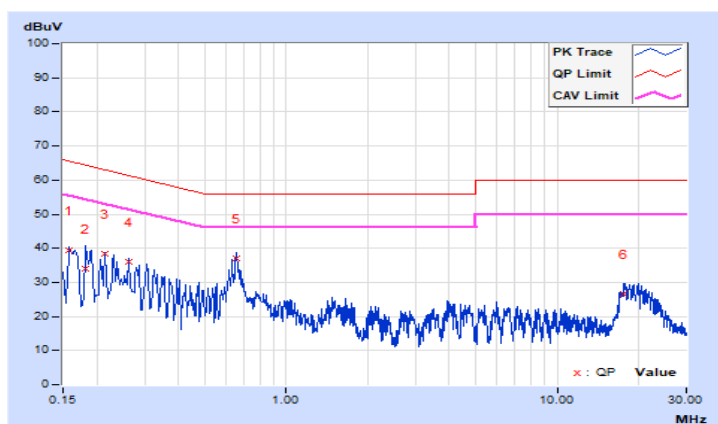
## 7.5 AC Power Conducted Emissions

RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 67% RH
Tested By	Adair Peng		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	9.69	29.68	14.19	39.37	23.88	65.57	55.57	-26.20	-31.69
2	0.18200	9.71	24.31	11.64	34.02	21.35	64.39	54.39	-30.37	-33.04
3	0.21400	9.73	28.69	15.64	38.42	25.37	63.05	53.05	-24.63	-27.68
4	0.26200	9.75	26.24	14.44	35.99	24.19	61.37	51.37	-25.38	-27.18
<b>5</b>	<b>0.65400</b>	<b>9.84</b>	<b>27.09</b>	<b>19.70</b>	<b>36.93</b>	<b>29.54</b>	<b>56.00</b>	<b>46.00</b>	<b>-19.07</b>	<b>-16.46</b>
6	17.66600	10.15	16.48	10.70	26.63	20.85	60.00	50.00	-33.37	-29.15

### Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



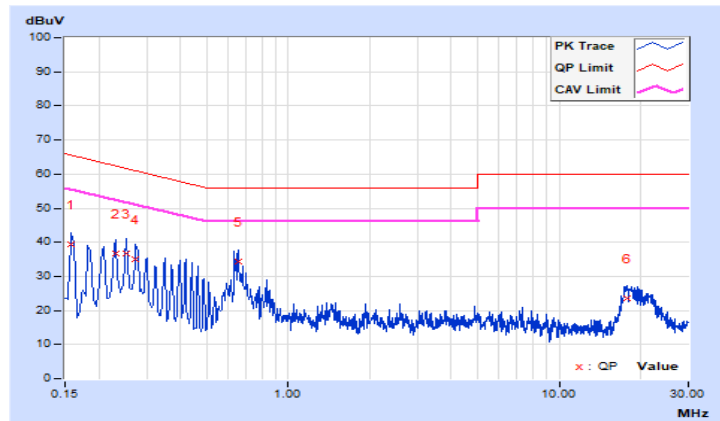


RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 67% RH
Tested By	Adair Peng		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	9.69	29.61	13.49	39.30	23.18	65.57	55.57	-26.27	-32.39
2	0.23000	9.73	26.86	14.56	36.59	24.29	62.45	52.45	-25.86	-28.16
3	0.25400	9.74	26.95	14.29	36.69	24.03	61.63	51.63	-24.94	-27.60
4	0.27400	9.75	25.43	13.08	35.18	22.83	61.00	51.00	-25.82	-28.17
5	0.65400	9.82	24.66	16.13	34.48	25.95	56.00	46.00	-21.52	-20.05
6	17.87400	10.16	13.51	6.76	23.67	16.92	60.00	50.00	-36.33	-33.08

**Remarks:**

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



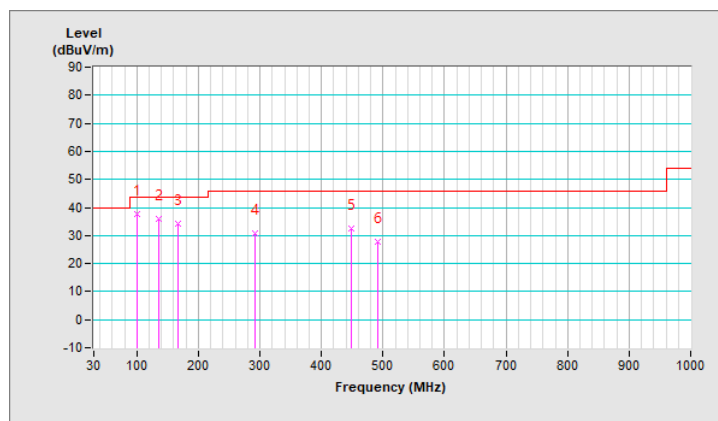
## 7.6 Unwanted Emissions below 1 GHz

<b>RF Mode</b>	802.11b	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	30 MHz ~1000 MHz	<b>Detector Function &amp; Bandwidth</b>	(QP) RB = 120kHz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	20.6°C, 78.3% RH
<b>Tested By</b>	Rex Wang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	100.81	37.8 QP	43.5	-5.7	1.00 H	63	51.1	-13.3
2	135.73	35.9 QP	43.5	-7.6	1.99 H	259	45.4	-9.5
3	167.74	34.3 QP	43.5	-9.2	1.00 H	266	43.2	-8.9
4	292.87	30.8 QP	46.0	-15.2	1.00 H	183	37.8	-7.0
5	448.07	32.4 QP	46.0	-13.6	1.00 H	231	35.8	-3.4
6	490.75	27.6 QP	46.0	-18.4	1.00 H	206	30.3	-2.7

### Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

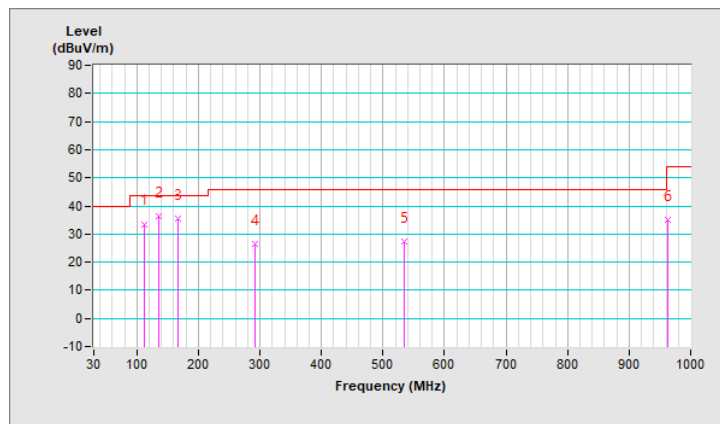


<b>RF Mode</b>	802.11b	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	30 MHz ~1000 MHz	<b>Detector Function &amp; Bandwidth</b>	(QP) RB = 120kHz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	20.6°C, 78.3% RH
<b>Tested By</b>	Rex Wang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	112.45	33.6 QP	43.5	-9.9	1.99 V	178	45.4	-11.8
2	135.73	36.4 QP	43.5	-7.1	1.99 V	330	45.9	-9.5
3	167.74	35.4 QP	43.5	-8.1	1.00 V	357	44.3	-8.9
4	291.90	26.4 QP	46.0	-19.6	1.49 V	82	33.4	-7.0
5	534.40	27.5 QP	46.0	-18.5	1.99 V	321	29.3	-1.8
6	963.14	35.0 QP	54.0	-19.0	1.00 V	309	28.6	6.4

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



## 7.7 Unwanted Emissions above 1 GHz

<b>RF Mode</b>	802.11b	<b>Channel</b>	CH 1 : 2412 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2388.00	60.1 PK	74.0	-13.9	1.63 H	226	26.3	33.8
2	2388.00	49.4 AV	54.0	-4.6	1.63 H	226	15.6	33.8
3	*2412.00	108.6 PK			1.63 H	226	74.8	33.8
4	*2412.00	106.1 AV			1.63 H	226	72.3	33.8
5	4824.00	55.8 PK	74.0	-18.2	1.49 H	215	45.1	10.7
6	4824.00	51.0 AV	54.0	-3.0	1.49 H	215	40.3	10.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2388.00	59.6 PK	74.0	-14.4	2.59 V	95	25.8	33.8
2	2388.00	48.1 AV	54.0	-5.9	2.59 V	95	14.3	33.8
3	*2412.00	104.8 PK			2.59 V	95	71.0	33.8
4	*2412.00	102.5 AV			2.59 V	95	68.7	33.8
5	4824.00	54.8 PK	74.0	-19.2	2.54 V	105	44.1	10.7
6	4824.00	48.7 AV	54.0	-5.3	2.54 V	105	38.0	10.7

### Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* " : Fundamental frequency, the limit was restricted at the RF Output Power.



<b>RF Mode</b>	802.11b	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	109.0 PK			1.79 H	213	75.1	33.9
2	*2437.00	106.5 AV			1.79 H	213	72.6	33.9
3	4874.00	56.3 PK	74.0	-17.7	1.38 H	217	45.3	11.0
4	4874.00	51.5 AV	54.0	-2.5	1.38 H	217	40.5	11.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	105.3 PK			2.62 V	97	71.4	33.9
2	*2437.00	102.8 AV			2.62 V	97	68.9	33.9
3	4874.00	55.4 PK	74.0	-18.6	2.46 V	107	44.4	11.0
4	4874.00	49.3 AV	54.0	-4.7	2.46 V	107	38.3	11.0

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* " : Fundamental frequency, the limit was restricted at the RF Output Power.



<b>RF Mode</b>	802.11b	<b>Channel</b>	CH 11 : 2462 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (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	107.5 PK			1.78 H	229	73.5	34.0
2	*2462.00	105.0 AV			1.78 H	229	71.0	34.0
3	2485.00	59.7 PK	74.0	-14.3	1.78 H	229	25.8	33.9
4	2485.00	48.9 AV	54.0	-5.1	1.78 H	229	15.0	33.9
5	4924.00	55.4 PK	74.0	-18.6	1.28 H	212	44.4	11.0
6	4924.00	50.4 AV	54.0	-3.6	1.28 H	212	39.4	11.0

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (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	103.9 PK			2.55 V	93	69.9	34.0
2	*2462.00	101.5 AV			2.55 V	93	67.5	34.0
3	2485.00	59.4 PK	74.0	-14.6	2.55 V	93	25.5	33.9
4	2485.00	48.2 AV	54.0	-5.8	2.55 V	93	14.3	33.9
5	4924.00	54.5 PK	74.0	-19.5	2.50 V	108	43.5	11.0
6	4924.00	48.6 AV	54.0	-5.4	2.50 V	108	37.6	11.0

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency, the limit was restricted at the RF Output Power.

<b>RF Mode</b>	802.11g	<b>Channel</b>	CH 1 : 2412 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (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	65.9 PK	74.0	-8.1	1.81 H	208	32.1	33.8
2	2390.00	52.5 AV	54.0	-1.5	1.81 H	208	18.7	33.8
3	*2412.00	109.4 PK			1.81 H	208	75.6	33.8
4	*2412.00	100.1 AV			1.81 H	208	66.3	33.8
5	4824.00	51.8 PK	74.0	-22.2	1.34 H	219	41.1	10.7
6	4824.00	39.3 AV	54.0	-14.7	1.34 H	219	28.6	10.7

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	68.9 PK	74.0	-5.1	2.57 V	95	35.1	33.8
2	<b>2390.00</b>	<b>53.7 AV</b>	<b>54.0</b>	<b>-0.3</b>	<b>2.57 V</b>	<b>95</b>	<b>19.9</b>	<b>33.8</b>
3	*2412.00	108.5 PK			2.57 V	95	74.7	33.8
4	*2412.00	99.0 AV			2.57 V	95	65.2	33.8
5	4824.00	50.4 PK	74.0	-23.6	2.42 V	111	39.7	10.7
6	4824.00	38.0 AV	54.0	-16.0	2.42 V	111	27.3	10.7

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency, the limit was restricted at the RF Output Power.



<b>RF Mode</b>	802.11g	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	109.9 PK			2.00 H	202	76.0	33.9
2	*2437.00	100.5 AV			2.00 H	202	66.6	33.9
3	4874.00	52.6 PK	74.0	-21.4	1.41 H	220	41.6	11.0
4	4874.00	39.9 AV	54.0	-14.1	1.41 H	220	28.9	11.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	108.8 PK			2.55 V	97	74.9	33.9
2	*2437.00	99.4 AV			2.55 V	97	65.5	33.9
3	4874.00	51.3 PK	74.0	-22.7	2.43 V	108	40.3	11.0
4	4874.00	38.7 AV	54.0	-15.3	2.43 V	108	27.7	11.0

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* " : Fundamental frequency, the limit was restricted at the RF Output Power.





<b>RF Mode</b>	802.11g	<b>Channel</b>	CH 11 : 2462 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (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	107.9 PK			2.23 H	207	73.9	34.0
2	*2462.00	98.4 AV			2.23 H	207	64.4	34.0
3	2483.50	64.2 PK	74.0	-9.8	2.23 H	207	30.3	33.9
4	2483.50	50.1 AV	54.0	-3.9	2.23 H	207	16.2	33.9
5	4924.00	52.1 PK	74.0	-21.9	1.37 H	218	41.1	11.0
6	4924.00	39.3 AV	54.0	-14.7	1.37 H	218	28.3	11.0

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (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	105.7 PK			2.23 V	95	71.7	34.0
2	*2462.00	96.3 AV			2.23 V	95	62.3	34.0
3	2483.50	64.3 PK	74.0	-9.7	2.23 V	95	30.4	33.9
4	2483.50	50.3 AV	54.0	-3.7	2.23 V	95	16.4	33.9
5	4924.00	51.3 PK	74.0	-22.7	2.47 V	116	40.3	11.0
6	4924.00	38.3 AV	54.0	-15.7	2.47 V	116	27.3	11.0

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency, the limit was restricted at the RF Output Power.

<b>RF Mode</b>	802.11n (HT20)	<b>Channel</b>	CH 1 : 2412 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (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	66.3 PK	74.0	-7.7	2.23 H	227	32.5	33.8
2	2390.00	53.1 AV	54.0	-0.9	2.23 H	227	19.3	33.8
3	*2412.00	108.9 PK			2.23 H	227	75.1	33.8
4	*2412.00	99.2 AV			2.23 H	227	65.4	33.8
5	4824.00	50.8 PK	74.0	-23.2	1.60 H	216	40.1	10.7
6	4824.00	38.1 AV	54.0	-15.9	1.60 H	216	27.4	10.7

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (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	64.1 PK	74.0	-9.9	2.26 V	91	30.3	33.8
2	2390.00	49.7 AV	54.0	-4.3	2.26 V	91	15.9	33.8
3	*2412.00	107.0 PK			2.26 V	91	73.2	33.8
4	*2412.00	97.3 AV			2.26 V	91	63.5	33.8
5	4824.00	50.3 PK	74.0	-23.7	2.41 V	115	39.6	10.7
6	4824.00	37.6 AV	54.0	-16.4	2.41 V	115	26.9	10.7

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency, the limit was restricted at the RF Output Power.



<b>RF Mode</b>	802.11n (HT20)	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (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	108.9 PK			2.29 H	223	75.0	33.9
2	*2437.00	100.2 AV			2.29 H	223	66.3	33.9
3	4874.00	51.6 PK	74.0	-22.4	1.57 H	212	40.6	11.0
4	4874.00	38.7 AV	54.0	-15.3	1.57 H	212	27.7	11.0

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (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	107.0 PK			2.28 V	93	73.1	33.9
2	*2437.00	98.3 AV			2.28 V	93	64.4	33.9
3	4874.00	51.4 PK	74.0	-22.6	2.37 V	111	40.4	11.0
4	4874.00	38.5 AV	54.0	-15.5	2.37 V	111	27.5	11.0

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* " : Fundamental frequency, the limit was restricted at the RF Output Power.

<b>RF Mode</b>	802.11n (HT20)	<b>Channel</b>	CH 11 : 2462 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (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	108.0 PK			2.17 H	226	74.0	34.0
2	*2462.00	98.1 AV			2.17 H	226	64.1	34.0
3	2483.50	63.4 PK	74.0	-10.6	2.17 H	226	29.5	33.9
4	2483.50	51.6 AV	54.0	-2.4	2.17 H	226	17.7	33.9
5	4924.00	51.4 PK	74.0	-22.6	1.49 H	207	40.4	11.0
6	4924.00	38.5 AV	54.0	-15.5	1.49 H	207	27.5	11.0

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (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	105.3 PK			2.38 V	95	71.3	34.0
2	*2462.00	96.1 AV			2.38 V	95	62.1	34.0
3	2483.50	62.2 PK	74.0	-11.8	2.38 V	95	28.3	33.9
4	2483.50	49.7 AV	54.0	-4.3	2.38 V	95	15.8	33.9
5	4924.00	51.2 PK	74.0	-22.8	2.37 V	119	40.2	11.0
6	4924.00	38.2 AV	54.0	-15.8	2.37 V	119	27.2	11.0

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency, the limit was restricted at the RF Output Power.



<b>RF Mode</b>	802.11n (HT40)	<b>Channel</b>	CH 3 : 2422 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (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	67.6 PK	74.0	-6.4	2.05 H	218	33.8	33.8
2	2390.00	53.4 AV	54.0	-0.6	2.05 H	218	19.6	33.8
3	*2422.00	103.3 PK			2.05 H	218	69.5	33.8
4	*2422.00	93.5 AV			2.05 H	218	59.7	33.8
5	4844.00	50.3 PK	74.0	-23.7	1.42 H	208	39.5	10.8
6	4844.00	38.0 AV	54.0	-16.0	1.42 H	208	27.2	10.8

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (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	67.0 PK	74.0	-7.0	2.51 V	91	33.2	33.8
2	2390.00	51.2 AV	54.0	-2.8	2.51 V	91	17.4	33.8
3	*2422.00	103.2 PK			2.51 V	91	69.4	33.8
4	*2422.00	93.4 AV			2.51 V	91	59.6	33.8
5	4844.00	50.0 PK	74.0	-24.0	2.31 V	112	39.2	10.8
6	4844.00	37.7 AV	54.0	-16.3	2.31 V	112	26.9	10.8

**Remarks:**

1. Emission Level(dBUV/m) = Raw Value(dBUV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency, the limit was restricted at the RF Output Power.



<b>RF Mode</b>	802.11n (HT40)	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (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	106.1 PK			2.11 H	217	72.2	33.9
2	*2437.00	96.4 AV			2.11 H	217	62.5	33.9
3	4874.00	50.9 PK	74.0	-23.1	1.40 H	198	39.9	11.0
4	4874.00	38.4 AV	54.0	-15.6	1.40 H	198	27.4	11.0

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (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	105.7 PK			2.55 V	93	71.8	33.9
2	*2437.00	96.0 AV			2.55 V	93	62.1	33.9
3	4874.00	50.6 PK	74.0	-23.4	2.22 V	103	39.6	11.0
4	4874.00	38.1 AV	54.0	-15.9	2.22 V	103	27.1	11.0

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* " : Fundamental frequency, the limit was restricted at the RF Output Power.

<b>RF Mode</b>	802.11n (HT40)	<b>Channel</b>	CH 9 : 2452 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	23°C, 67% RH
<b>Tested By</b>	Adair Peng		

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (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	104.5 PK			2.42 H	222	70.5	34.0
2	*2452.00	94.8 AV			2.42 H	222	60.8	34.0
3	2483.50	65.0 PK	74.0	-9.0	2.42 H	222	31.1	33.9
4	2483.50	52.9 AV	54.0	-1.1	2.42 H	222	19.0	33.9
5	4904.00	50.6 PK	74.0	-23.4	1.38 H	191	39.6	11.0
6	4904.00	38.3 AV	54.0	-15.7	1.38 H	191	27.3	11.0

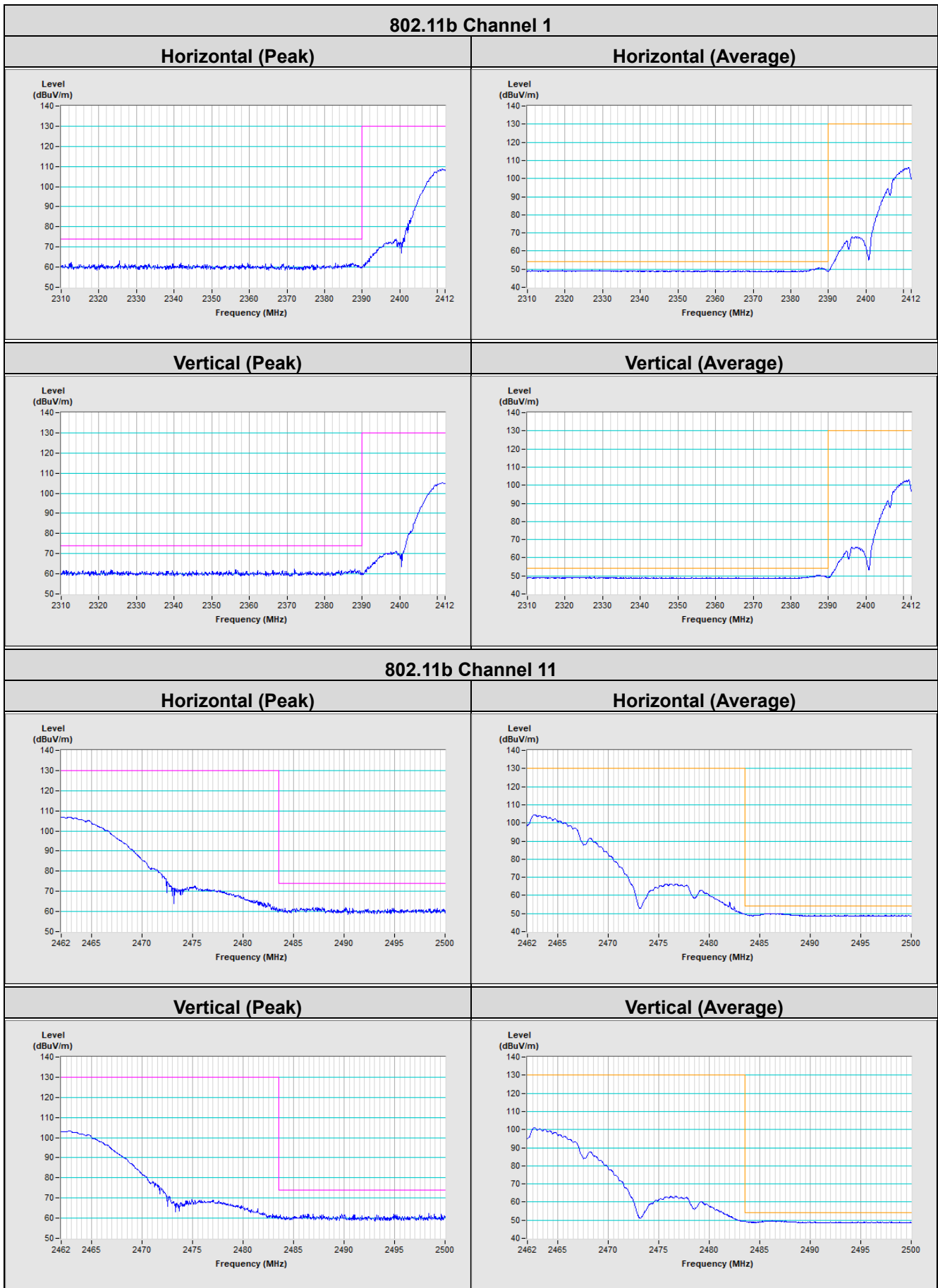
**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (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	104.1 PK			2.53 V	95	70.1	34.0
2	*2452.00	94.2 AV			2.53 V	95	60.2	34.0
3	2483.50	63.7 PK	74.0	-10.3	2.53 V	95	29.8	33.9
4	2483.50	50.9 AV	54.0	-3.1	2.53 V	95	17.0	33.9
5	4904.00	50.3 PK	74.0	-23.7	2.26 V	108	39.3	11.0
6	4904.00	38.0 AV	54.0	-16.0	2.26 V	108	27.0	11.0

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency, the limit was restricted at the RF Output Power.

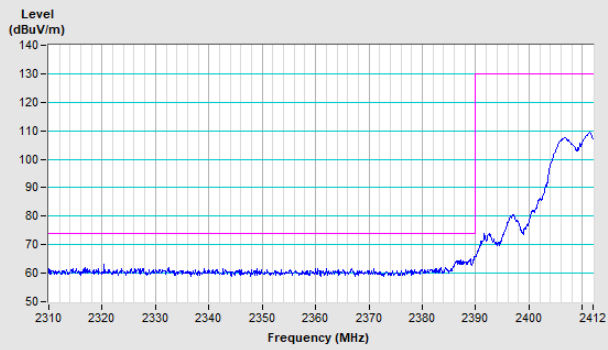
Plot of Band Edge



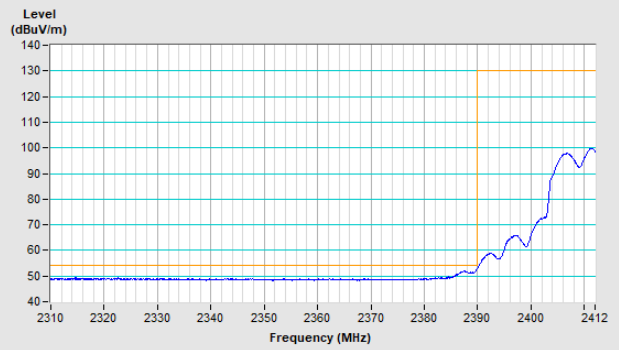


### 802.11g Channel 1

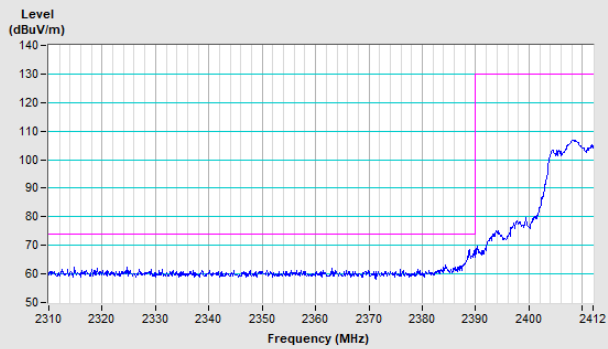
**Horizontal (Peak)**



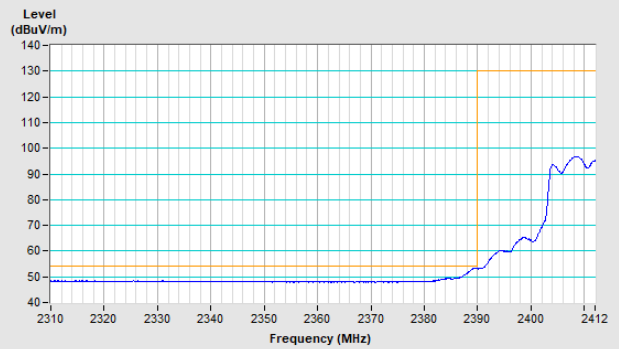
**Horizontal (Average)**



**Vertical (Peak)**

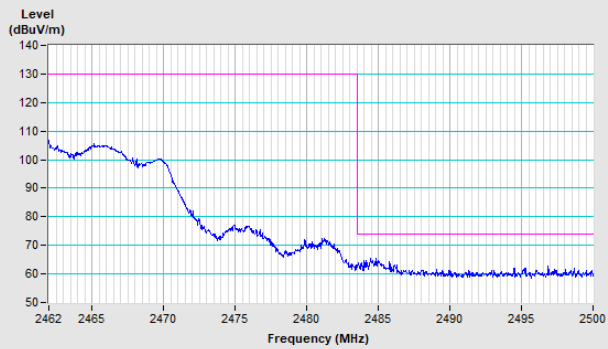


**Vertical (Average)**

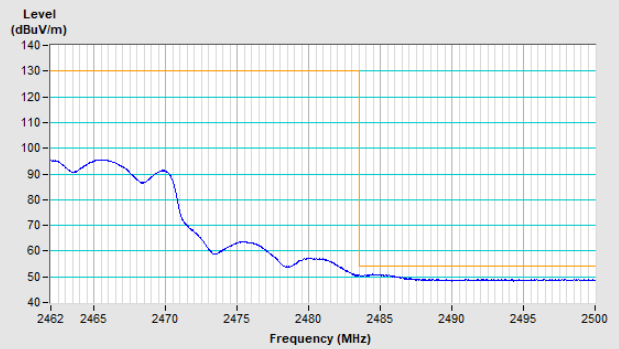


### 802.11g Channel 11

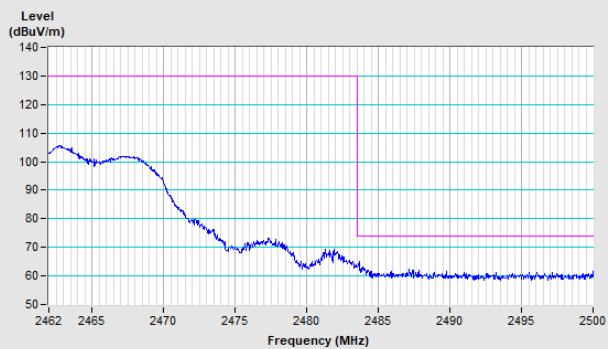
**Horizontal (Peak)**



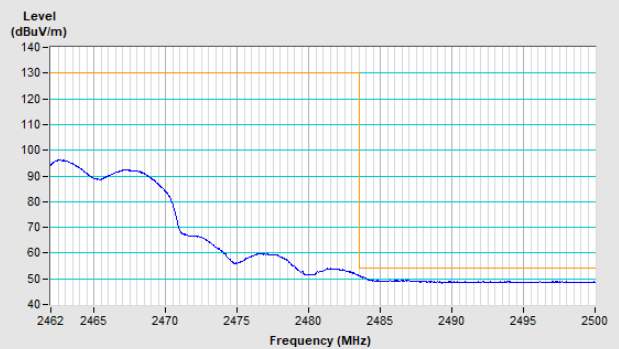
**Horizontal (Average)**



**Vertical (Peak)**

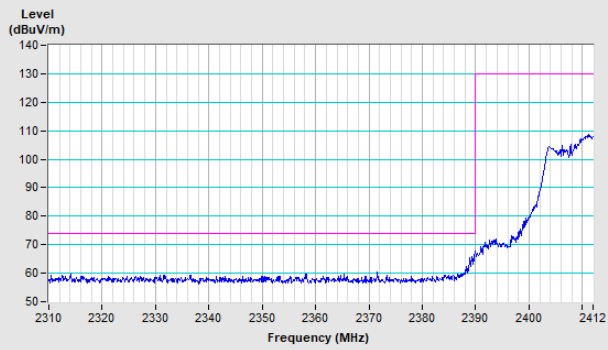


**Vertical (Average)**

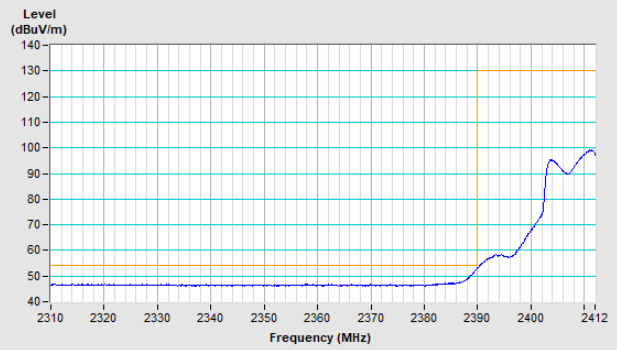


### 802.11n (HT20) Channel 1

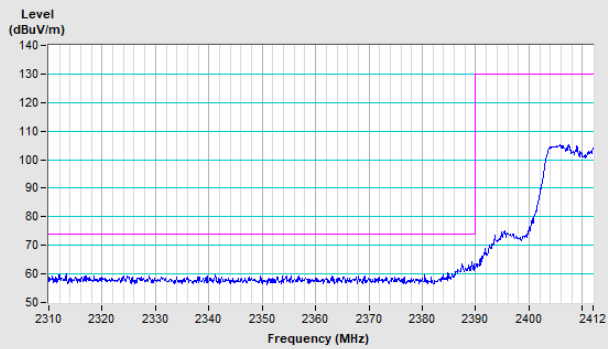
#### Horizontal (Peak)



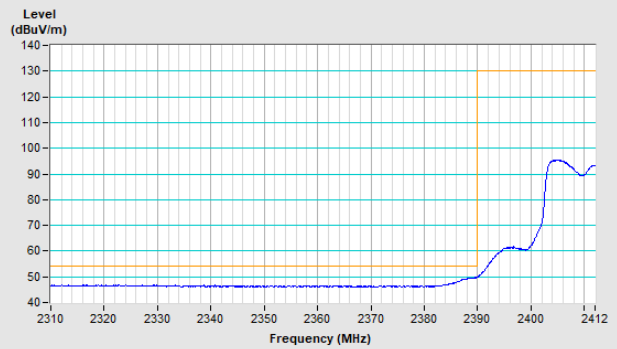
#### Horizontal (Average)



#### Vertical (Peak)

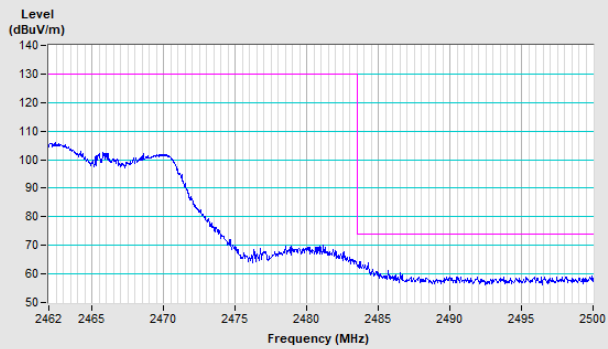


#### Vertical (Average)

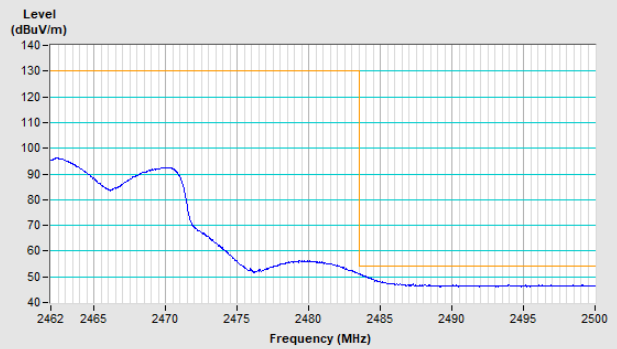


### 802.11n (HT20) Channel 11

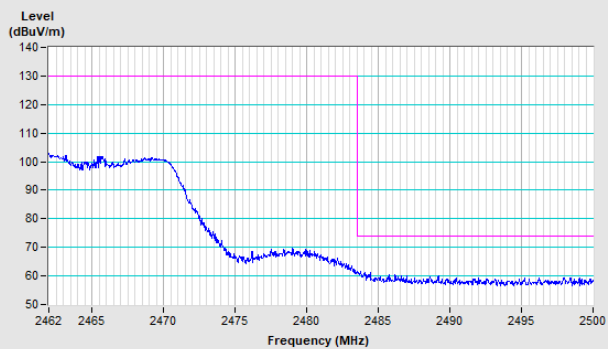
#### Horizontal (Peak)



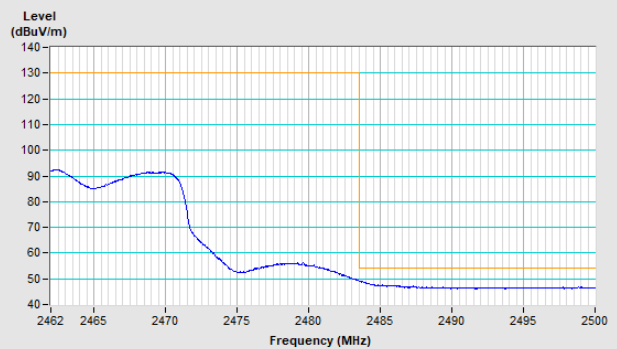
#### Horizontal (Average)



#### Vertical (Peak)

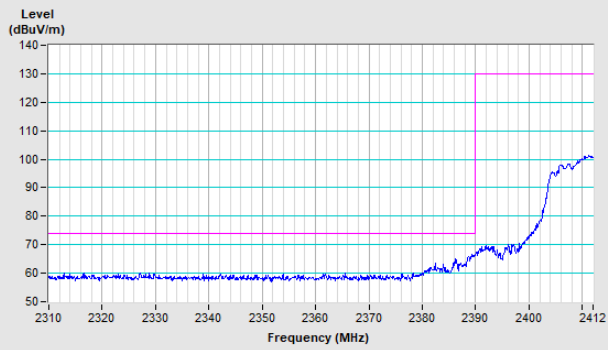


#### Vertical (Average)

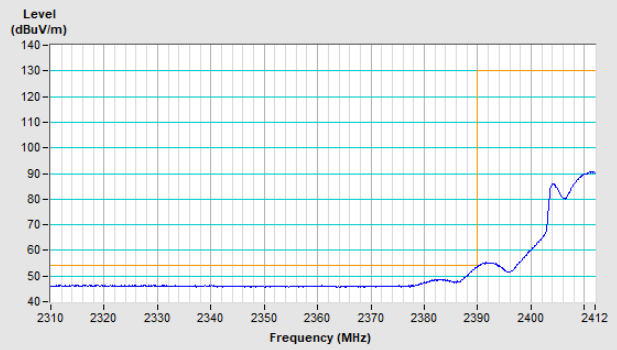


### 802.11n (HT40) Channel 3

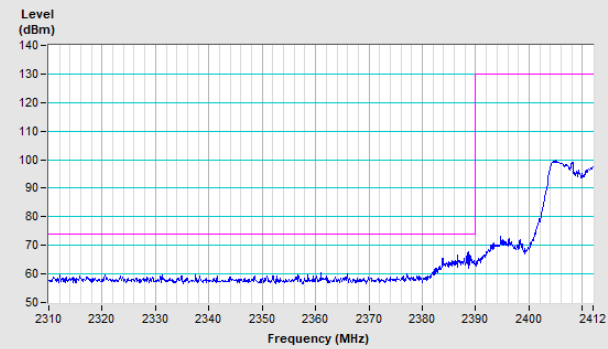
#### Horizontal (Peak)



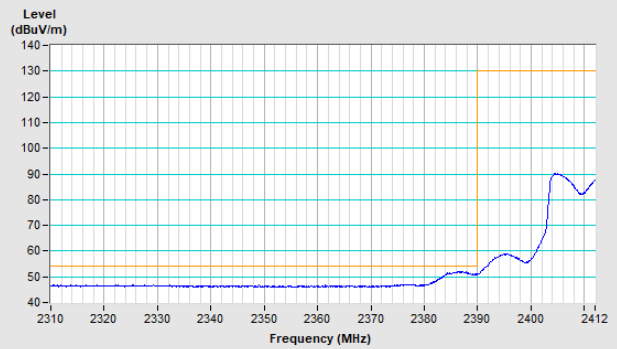
#### Horizontal (Average)



#### Vertical (Peak)

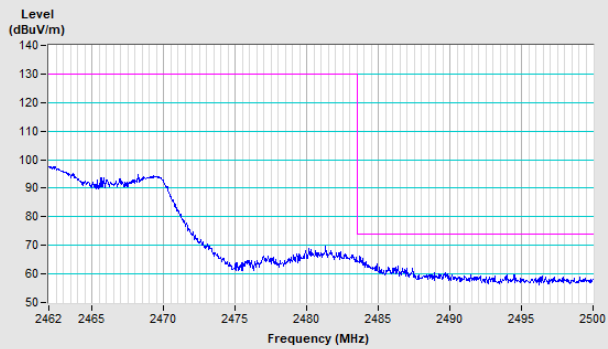


#### Vertical (Average)

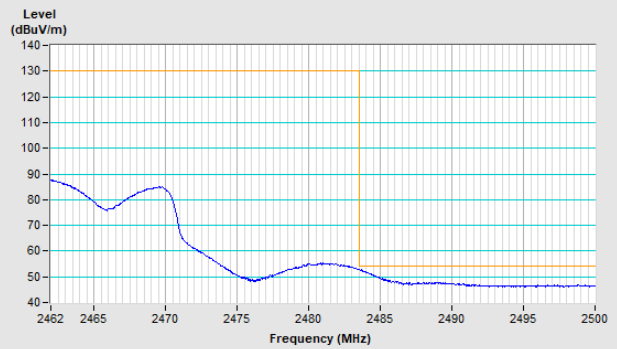


### 802.11n (HT40) Channel 9

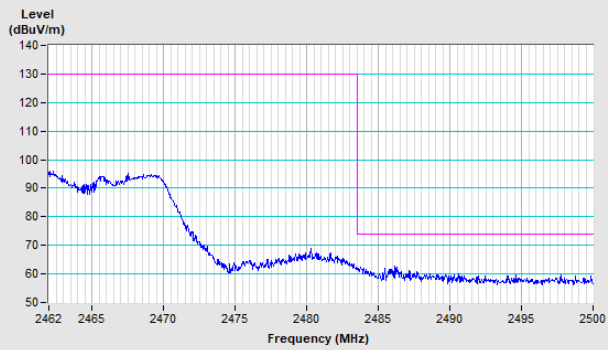
#### Horizontal (Peak)



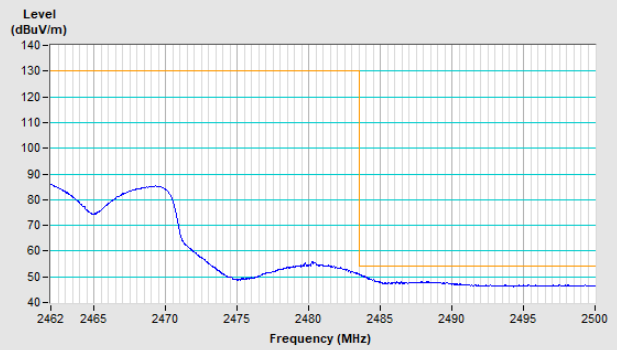
#### Horizontal (Average)



#### Vertical (Peak)



#### Vertical (Average)



## 8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

## 9 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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