

# TEST REPORT

## CERTIFICATE OF CONFORMITY

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

**Report No.:** RFBFBE-WTW-P22080834

**FCC ID:** YAW529027-BEK-Z

**Model No.:** PVS6

**Received Date:** 2022/8/24

**Test Date:** 2022/9/5 ~ 2022/9/19

**Issued Date:** 2022/10/4

**Applicant:** SunPower Corporation

**Address:** 1414 Harbour Way South Suite 1901, Richmond, CA 94804, USA

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Hsin Chu Laboratory

**Lab Address:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan

**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan

**FCC Registration /** 723255 / TW2022

**Designation Number:**

**Approved by:** \_\_\_\_\_, **Date:** 2022/10/4  
May Chen / Manager

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Prepared by : Vivian Huang / Specialist

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## Release Control Record

Issue No.	Description	Date Issued
RFBFBE-WTW-P22080834	Original release.	2022/10/4

## 1 Certificate

**Product:** SunPower Monitoring System with PVS6

**Brand:** SUNPOWER

**Test Model:** PVS6

**Sample Status:** Engineering sample

**Applicant:** SunPower Corporation

**Test Date:** 2022/9/5 ~ 2022/9/19

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

**Measurement** ANSI C63.10-2013

**procedure:** 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 -6.16 dB at 4.68359 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -0.3 dB at 385.02 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.1 dB at 4824.00 MHz
15.203	Antenna Requirement	Pass	Antenna connector is I-PEX 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	2.5 dB
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.4 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.0 dB
	18 GHz ~ 40 GHz	5.3 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	SunPower Monitoring System with PVS6
Brand	SUNPOWER
Test Model	PVS6
Status of EUT	Engineering sample
Power Supply Rating	AC100-240V, 0.75A , 50/60Hz
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in VHT mode 1024QAM for OFDMA in 11ax mode
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11 Mbps 802.11g: up to 54 Mbps 802.11n: up to 144.4 Mbps 802.11ax: up to 286.8 Mbps
Operating Frequency	2.412 GHz ~ 2.462 GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20) , 802.11ax (HE20): 11
Output Power	298.263 mW (24.75 dBm)
Accessory Device	- Hole Plugs x2 - Bracket x1

Note:

1. The EUT contains certified WWAN module which FCC ID: XMR2020BG95M1 (Brand: Quectel; Model: BG95-M1)
2. There are WLAN, Bluetooth and WWAN technology used for the EUT.
3. The EUT has two radios as following table:

Radio 1	Radio 2
WLAN (2.4GHz+5GHz)+ BT	WWAN (LTE)

4. Simultaneously transmission condition.

Condition	Technology		
1	WLAN(2.4GHz)	BT	WWAN
2	WLAN(5GHz)	BT	WWAN

**Note:** The emission of the simultaneous operation has been evaluated and no non-compliance was found.

5. The EUT needs to be supplied from an Internal power supply, the information is as below table:

Brand	Model No.	Spec.
WLAN WELL	IRM-30-12	AC Input: 100-240V, 0.75A , 50/60Hz DC Output: 12V, 2.5A

6. 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.
7. Customer confirmed that beamforming mode is not supported when operating in AP mode for WLAN.

### 3.2 Antenna Description of EUT

1. The antenna information is listed as below.

WLAN / Bluetooth								
Ant No.	Chain No.	Brand	Part Number	Model	Antenna Net Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type
1	Chain 0 (Including BT)	airgain	N2420DGLCORE3-T-PK1-W90SMA	65-031-212002B	2.2	2.4~2.4835	PCB	I-PEX
					3.8	5.15~5.25		
					4.2	5.725~5.85		
2	Chain 1 (WLAN use only)	airgain	N2420DGST2-T-PK1-A50U	65-031-212003B	4.2	2.4~2.4835	PCB	I-PEX
					4.1	5.15~5.25		
					4.8	5.725~5.85		

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

2. The EUT incorporates a MIMO function:

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
<b>802.11b</b>	2TX	2RX
<b>802.11g</b>	2TX	2RX
<b>802.11n (HT20)</b>	2TX	2RX
<b>802.11ax (HE20)</b>	2TX	2RX

Note: The modulation and bandwidth are similar for 802.11n mode for 20MHz and 802.11ax mode for 20MHz, therefore the manufacturer will control the power for 802.11n mode is the same as the 802.11ax mode or more lower than it and investigated worst case to representative mode in test report.



### 3.3 Channel List

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

### 3.4 Power Setting

802.11b		802.11g		802.11n (HT20)		802.11ax (HE20)	
Fre. (MHz)	Power Setting	Fre. (MHz)	Power Setting	Fre. (MHz)	Power Setting	Fre. (MHz)	Power Setting
2412	68	2412	66	2412	64	2412	64
2437	90	2437	76	2437	77	2437	77
2462	76	2462	67	2462	64	2462	64

### 3.5 Test Mode Applicability and Tested Channel Detail

Worst Case:	1. 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).
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Note: Partial RU(resource unit) configurations not supporte

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

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

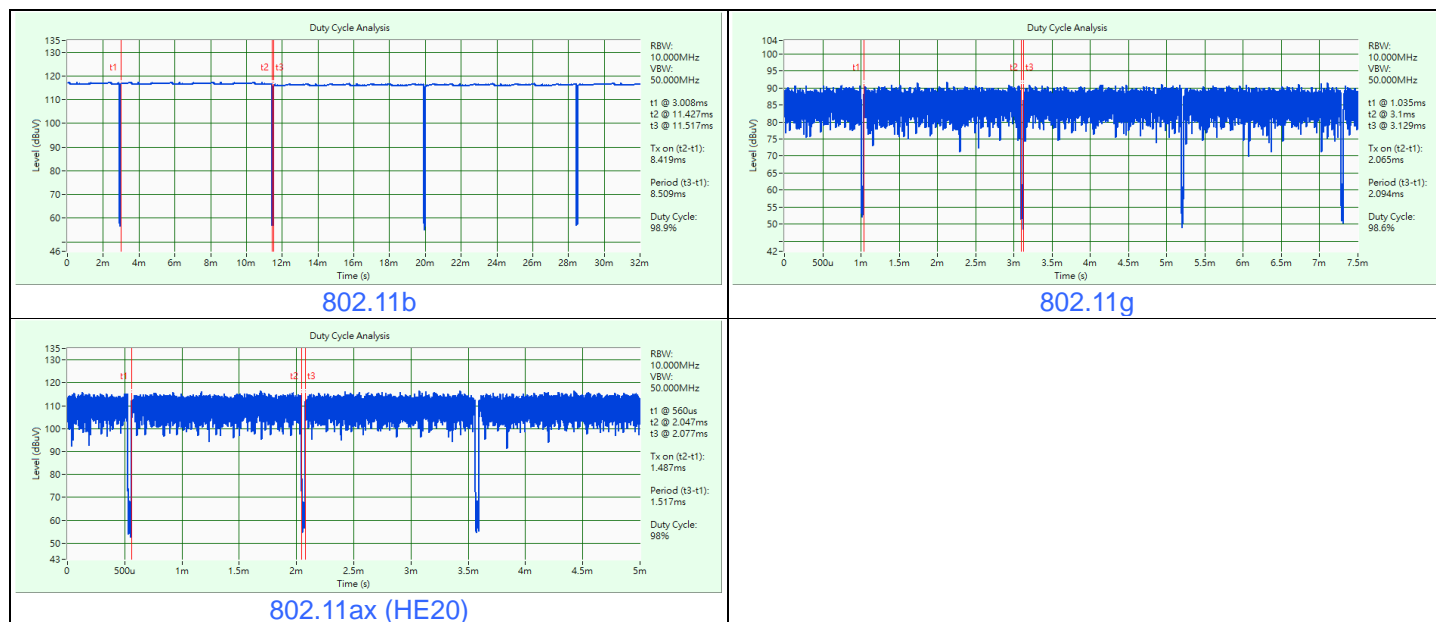
### 3.6 Duty Cycle of Test Signal

Duty cycle of test signal is  $\geq 98\%$ , duty factor is not required.  
 Duty cycle of test signal is  $< 98\%$ , duty factor shall be considered.

**802.11b:** Duty cycle =  $8.419 \text{ ms} / 8.509 \text{ ms} \times 100\% = 98.9\%$

**802.11g:** Duty cycle =  $2.065 \text{ ms} / 2.094 \text{ ms} \times 100\% = 98.6\%$

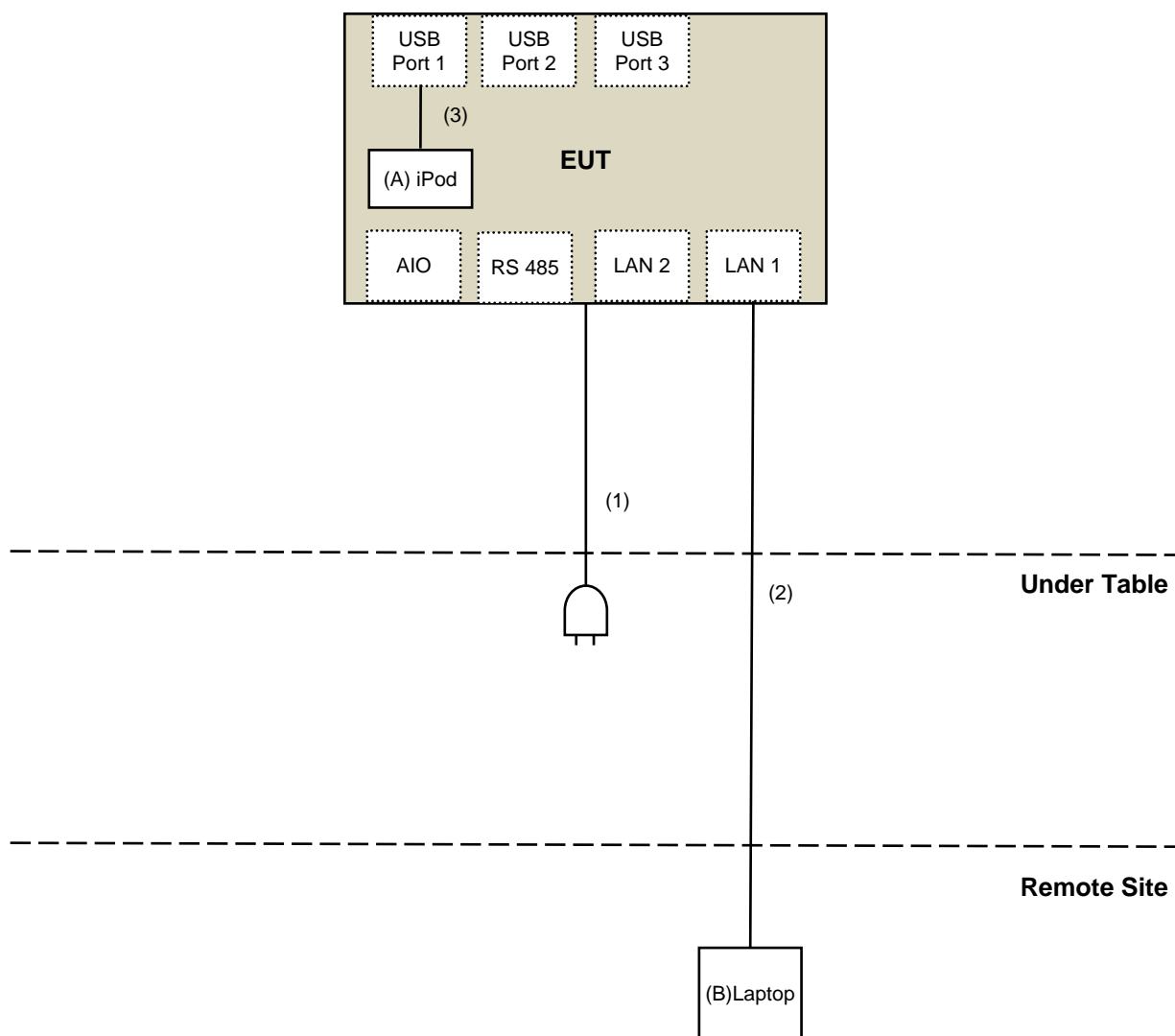
**802.11ax (HE20):** Duty cycle =  $1.487 \text{ ms} / 1.517 \text{ ms} \times 100\% = 98.0\%$



### 3.7 Test Program Used and Operation Descriptions

Controlling software (Run Putty.exe paste PVS6\_WiFi+BT+BLE SOP.docx command) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

### 3.8 Connection Diagram of EUT and Peripheral Devices



NOTE: The test configuration was defined by the applicant requirement.

### 3.9 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	iPod	Apple	MC749TA/A	CC4DMFJUJDFDM	N/A	Provided by Lab
B	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	AC Cable	1	1.8	No	0	Supplied by Applicant
2	RJ-45 Cable	1	10	No	0	Provided by Lab
3	USB Cable	1	0.1	Yes	0	Provided by Lab

## 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
Power Meter Anritsu	ML2495A	1529002	2022/6/22	2023/6/21
Pulse Power Sensor Anritsu	MA2411B	1726434	2022/6/22	2023/6/21
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/9/15

### 4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	101516	2022/3/7	2023/3/6

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/9/15

### 4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

### 4.4 Conducted Out of Band Emissions

Refer to section 4.2 to get information of the instruments.

#### 4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohms Terminator	50	3	2021/10/27	2022/10/26
Fixed attenuator STI	STI02-2200-10	005	2022/8/24	2023/8/23
LISN R&S	ESH3-Z5	848773/004	2021/10/29	2022/10/28
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2022/8/24	2023/8/23
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A
TEST RECEIVER R&S	ESCS 30	847124/029	2021/10/13	2022/10/12

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2022/9/19

#### 4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	2022/9/14	2023/9/13
LOOP ANTENNA Electro-Metrics	EM-6879	264	2022/3/18	2023/3/17
Pre_Amplifier Agilent	8447D	2944A10636	2022/3/19	2023/3/18
Pre_Amplifier Mini-Circuits	ZFL-1000VH2	QA0838008	2021/10/19	2022/10/18
RF Coaxial Cable COMMATE/PEWC	8D	966-3-2	2022/2/26	2023/2/25
		966-3-3	2022/2/26	2023/2/25
		966-4-1	2022/3/8	2023/3/7
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/1/6	2023/1/5
		LOOPCAB-002	2022/1/6	2023/1/5
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2022/4/26	2023/4/25
Test Receiver KEYSIGHT	N9038A	MY59050100	2022/6/20	2023/6/19
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-361	2021/10/26	2022/10/25

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/9/16



#### 4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9170	9170-739	2021/11/14	2022/11/13
	BBHA9120-D	9120D-406	2021/11/14	2022/11/13
Pre_Amplifier EMCI	EMC12630SE	980384	2022/1/10	2023/1/9
	EMC184045SE	980387	2022/1/10	2023/1/9
RF Cable EMCI	EMC104-SM-SM-6000	210201	2022/5/10	2023/5/9
RF Cable-Frequency range: 1- 40GHz EMCI	EMC102-KM-KM-1200	160924	2022/1/10	2023/1/9
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2022/3/8	2023/3/7
	EMC104-SM-SM-1500	180504	2022/4/25	2023/4/24
	EMC104-SM-SM-2000	180601	2022/6/6	2023/6/5
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2022/4/26	2023/4/25
Test Receiver KEYSIGHT	N9038A	MY59050100	2022/6/20	2023/6/19

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/9/5 ~ 2022/9/16

## 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

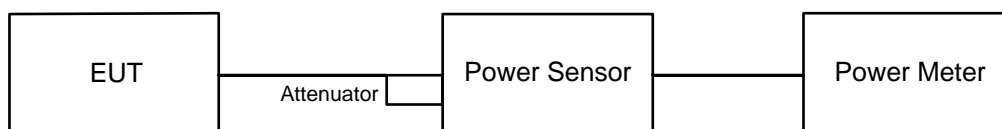
Notes:

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



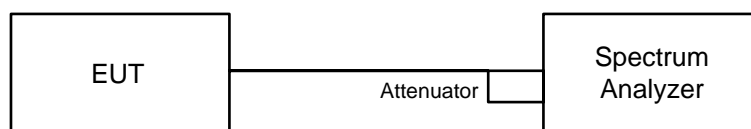
#### 6.1.2 Test Procedure

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



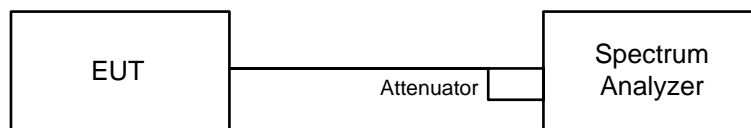
#### 6.2.2 Test Procedure

- 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.

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

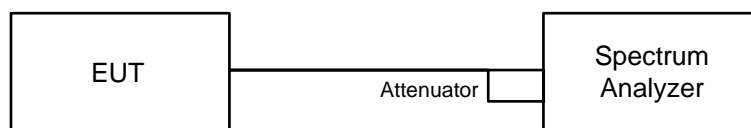


#### 6.3.2 Test Procedure

- 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

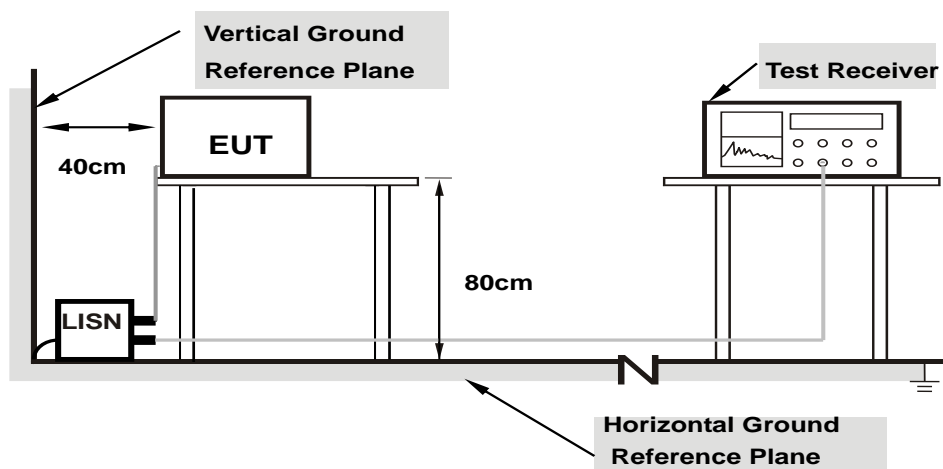
- Set the RBW = 100 kHz.
- Set the VBW  $\geq 300$  kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

##### MEASUREMENT PROCEDURE OOBE

- 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

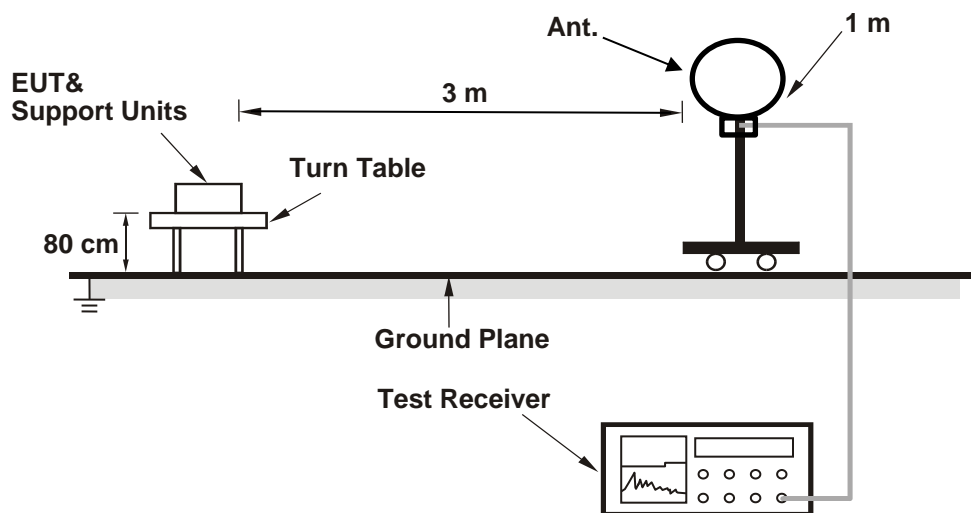
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The 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.

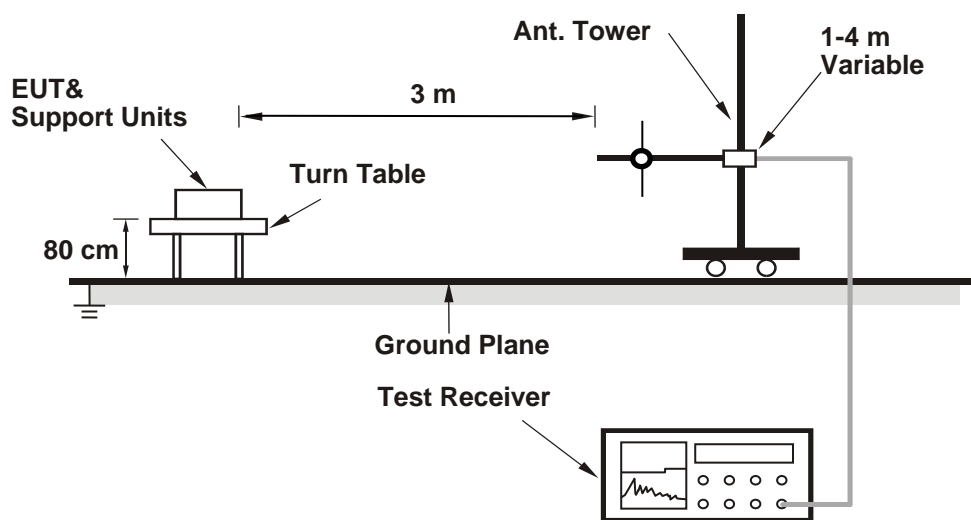
## 6.6 Unwanted Emissions below 1 GHz

### 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:

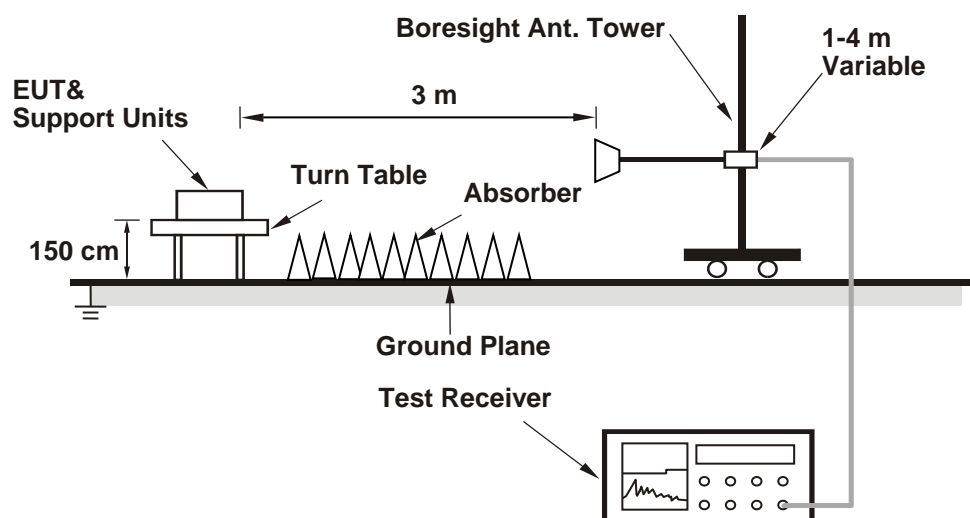
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.



## 6.7 Unwanted Emissions above 1 GHz

### 6.7.1 Test Setup

#### For Radiated emission above 1 GHz



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:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Eric Peng
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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	16.41	16.89	92.617	19.67	30	Pass
6	2437	22.03	21.42	298.263	24.75	30	Pass
11	2462	18.94	19.78	173.403	22.39	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4.2 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	16.32	16.37	86.206	19.36	30	Pass
6	2437	19.26	19.83	180.495	22.56	30	Pass
11	2462	16.22	16.81	89.853	19.54	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4.2 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	15.69	16.35	80.22	19.04	30	Pass
6	2437	19.05	20.18	184.584	22.66	30	Pass
11	2462	15.50	16.27	77.846	18.91	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4.2 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	15.79	16.51	82.703	19.18	30	Pass
6	2437	19.21	20.37	192.261	22.84	30	Pass
11	2462	15.55	16.42	79.745	19.02	30	Pass

**Notes:**

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4.2 dBi < 6 dBi, so the output power limit shall not be reduced.

## 7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Eric Peng
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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	-12.16	-12.68	-9.40	7.73	Pass
6	2437	-7.50	-6.61	-4.02	7.73	Pass
11	2462	-10.10	-9.61	-6.84	7.73	Pass

#### Notes:

- Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
- Directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- The directional gain is 6.27 dBi > 6 dBi, so the power density limit shall be reduced to  $8 - (6.27 - 6) = 7.73$  dBm/3kHz.

### 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	-13.31	-13.53	-10.41	7.73	Pass
6	2437	-10.57	-10.24	-7.39	7.73	Pass
11	2462	-14.17	-13.17	-10.63	7.73	Pass

#### Notes:

- Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
- Directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- The directional gain is 6.27 dBi > 6 dBi, so the power density limit shall be reduced to  $8 - (6.27 - 6) = 7.73$  dBm/3kHz.

### 802.11ax (HE20)

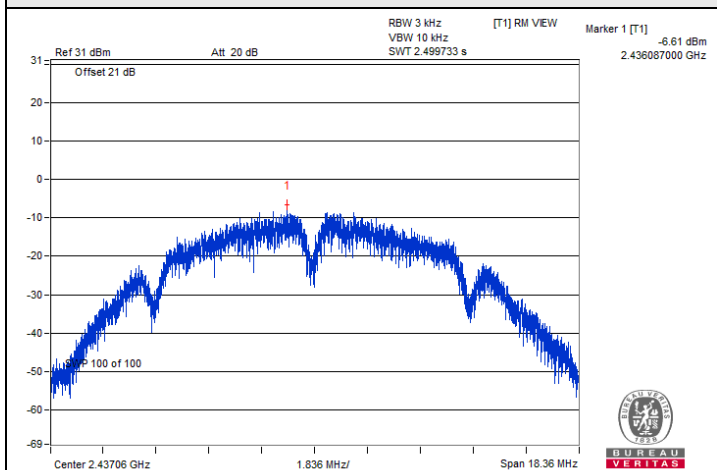
Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-16.03	-15.71	-12.86	7.73	Pass
6	2437	-10.79	-12.77	-8.66	7.73	Pass
11	2462	-16.62	-15.52	-13.03	7.73	Pass

#### Notes:

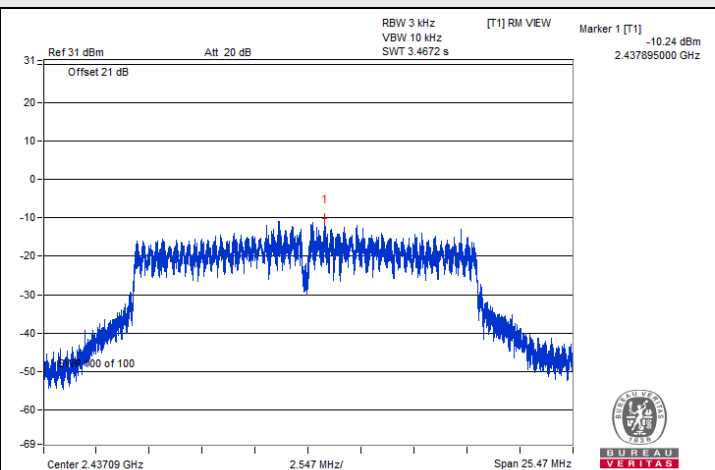
- Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
- Directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- The directional gain is 6.27 dBi > 6 dBi, so the power density limit shall be reduced to  $8 - (6.27 - 6) = 7.73$  dBm/3kHz.



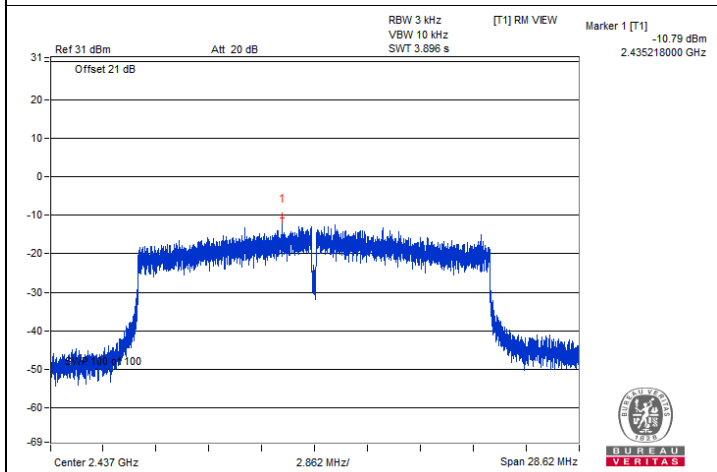
### Spectrum Plot of Maximum Value



802.11b / Chain1 : CH 6



802.11g / Chain1 : CH 6



802.11ax (HE20) / Chain0 : CH 6

### 7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Eric Peng
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#### 802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	7.58	7.57	0.5	Pass
6	2437	8.05	7.11	0.5	Pass
11	2462	7.58	8.07	0.5	Pass

#### 802.11g

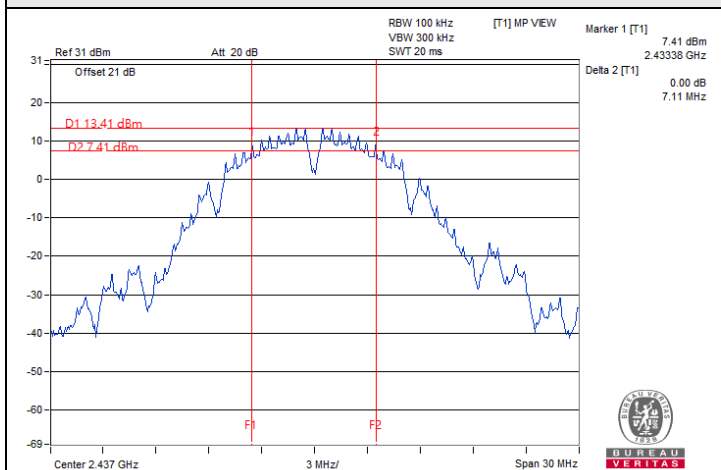
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	16.38	16.37	0.5	Pass
6	2437	16.38	16.37	0.5	Pass
11	2462	16.37	16.38	0.5	Pass

#### 802.11ax (HE20)

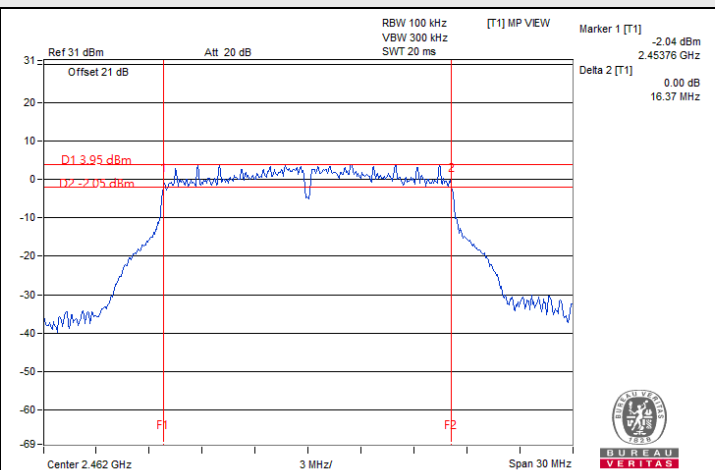
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	18.71	18.87	0.5	Pass
6	2437	18.52	17.87	0.5	Pass
11	2462	18.59	18.67	0.5	Pass



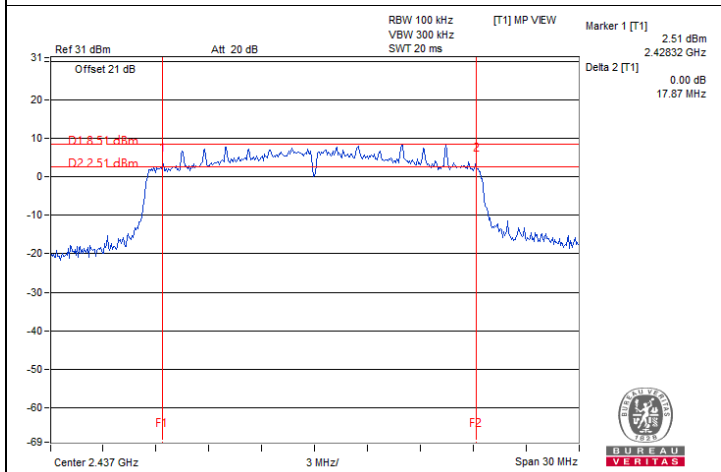
### Spectrum Plot of Minimum Value



802.11b / Chain1 : CH 6



802.11g / Chain0 : CH 11

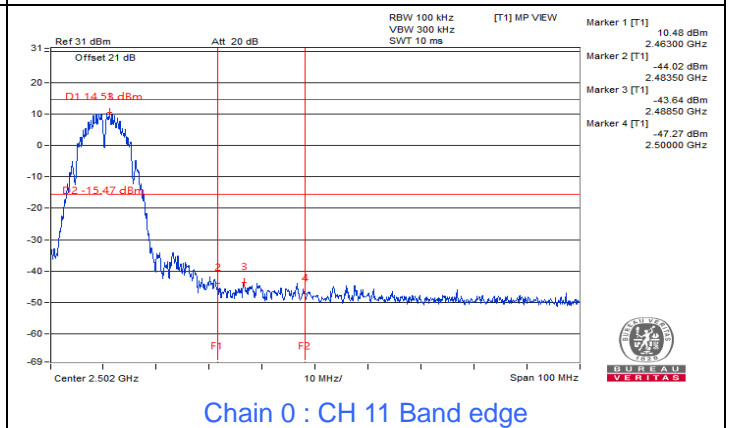
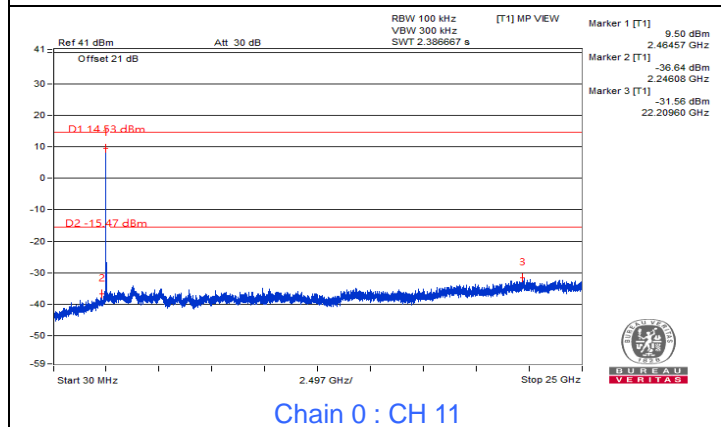
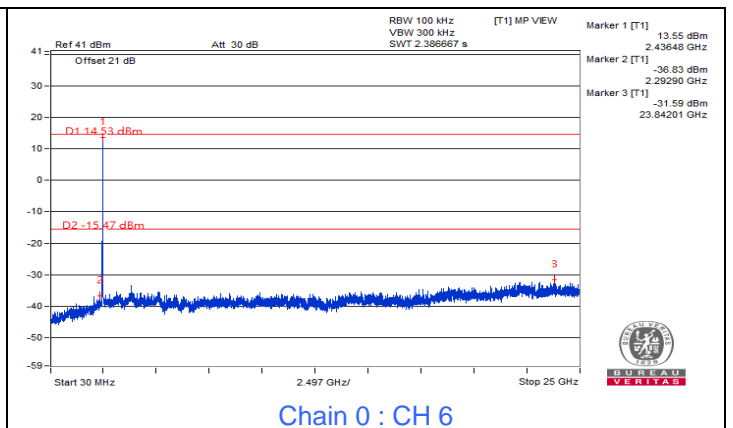
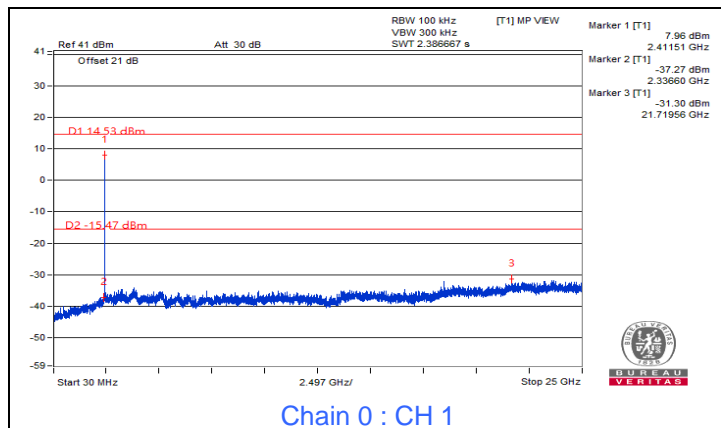
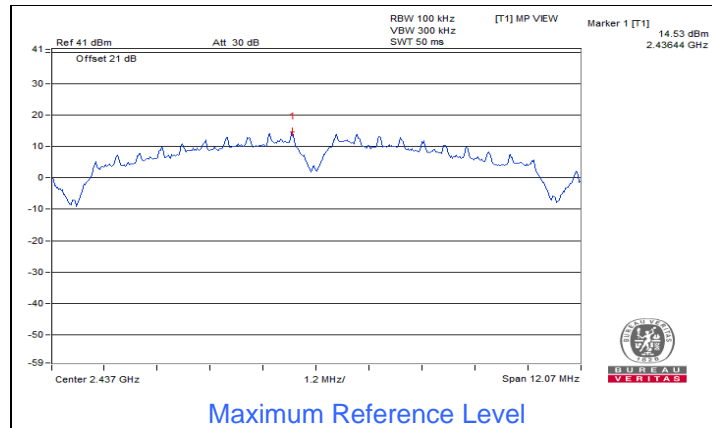


802.11ax (HE20) / Chain1 : CH 6

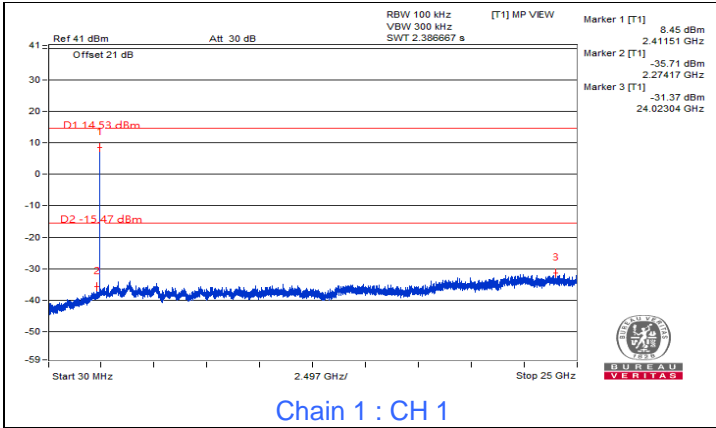
### 7.4 Conducted Out of Band Emissions

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Eric Peng
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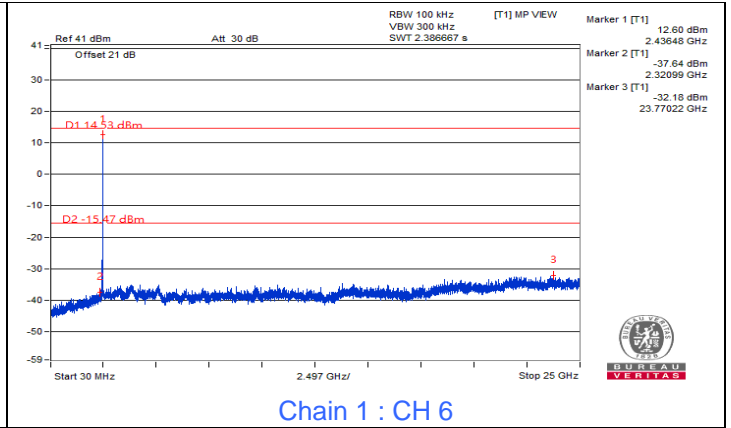
#### 802.11b



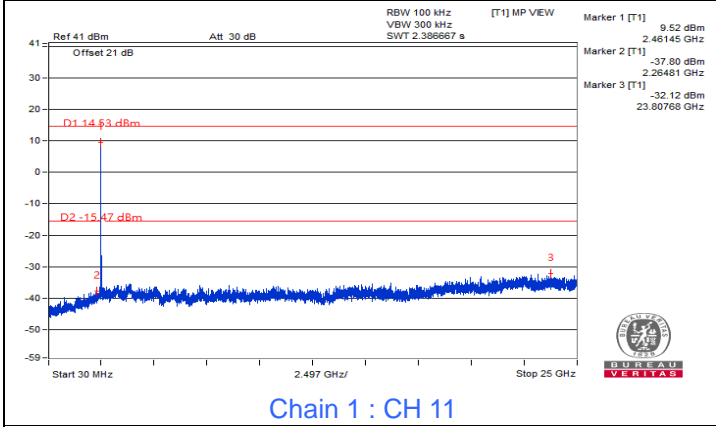




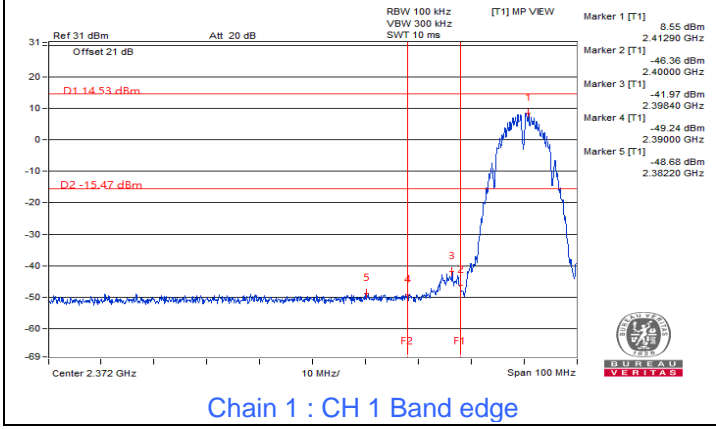
Chain 1 : CH 1



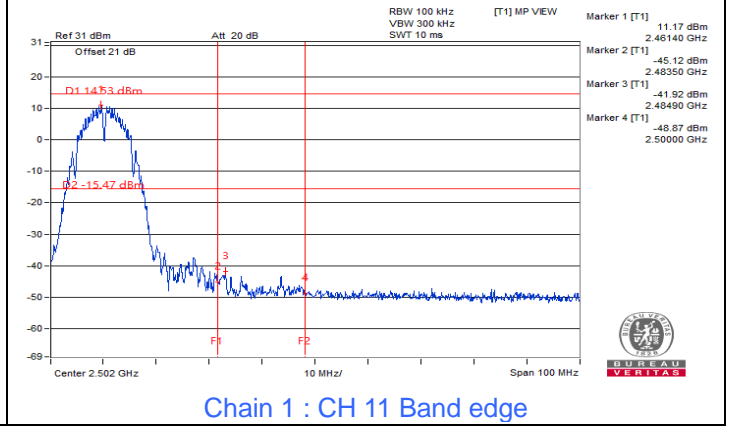
Chain 1 : CH 6



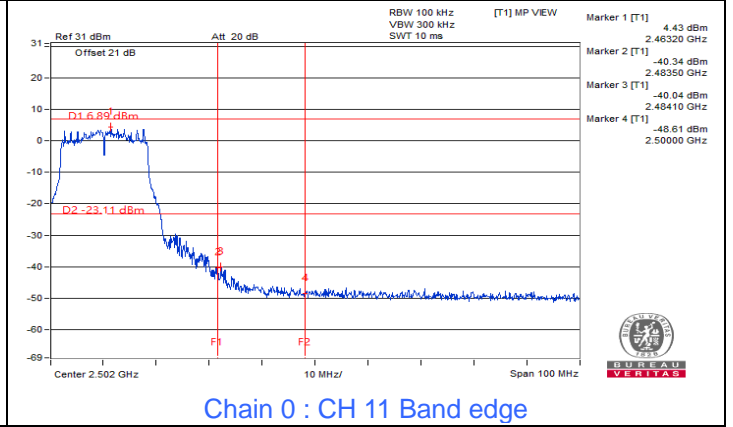
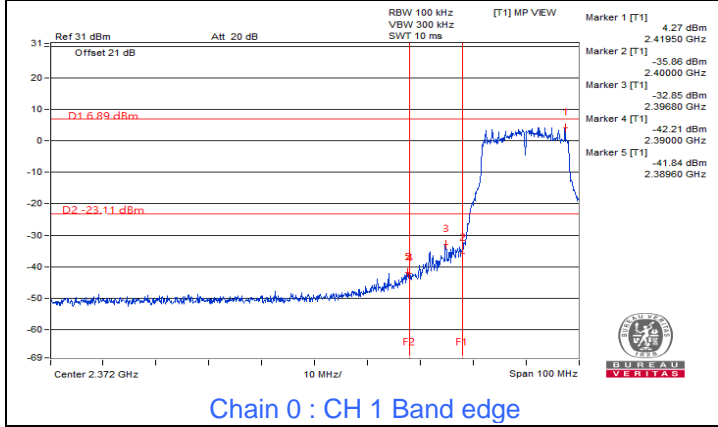
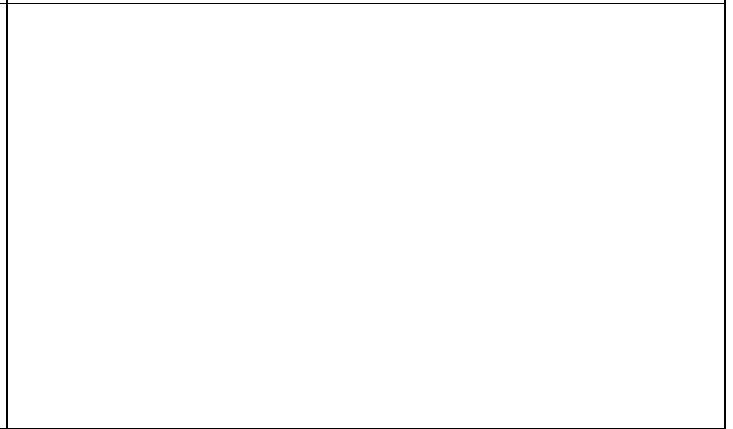
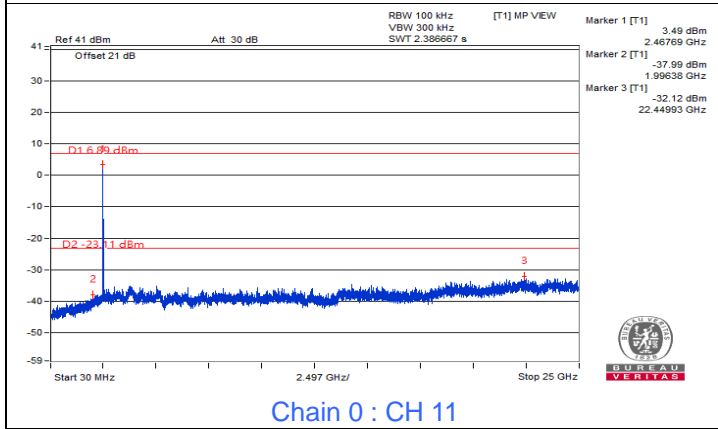
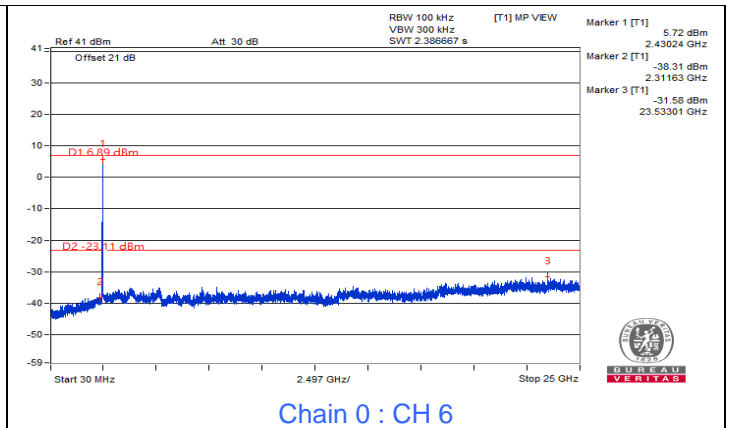
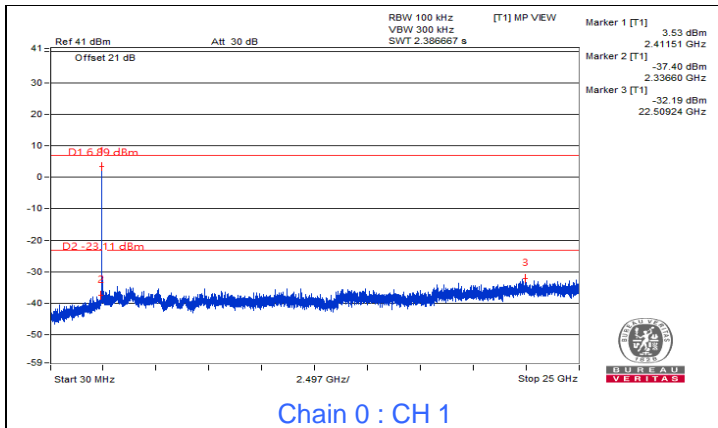
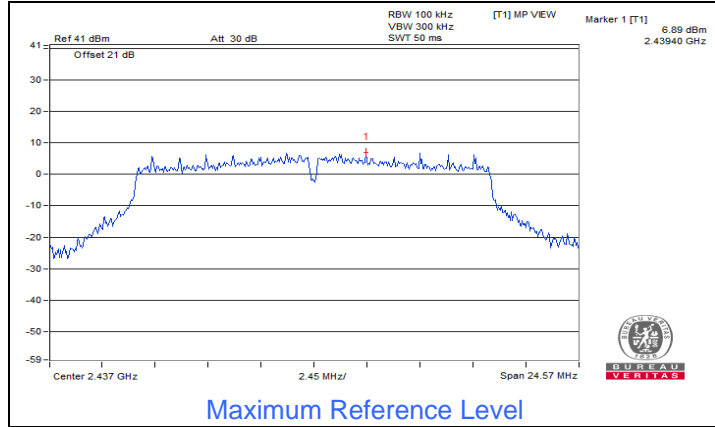
Chain 1 : CH 11

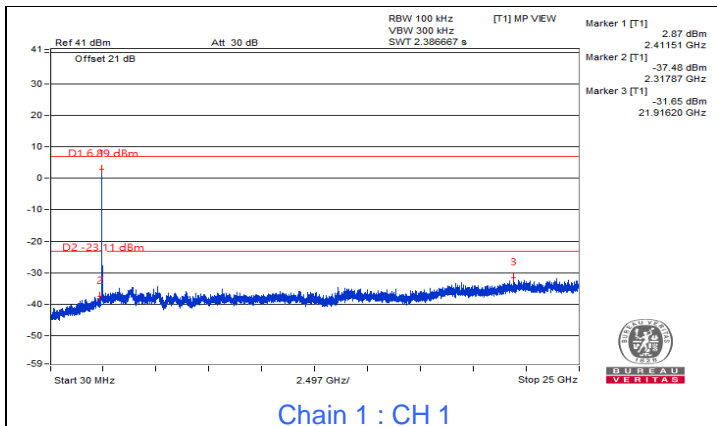


Chain 1 : CH 1 Band edge

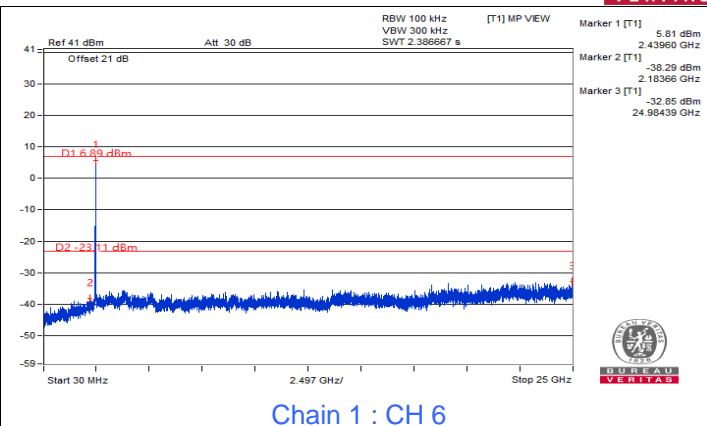


Chain 1 : CH 11 Band edge

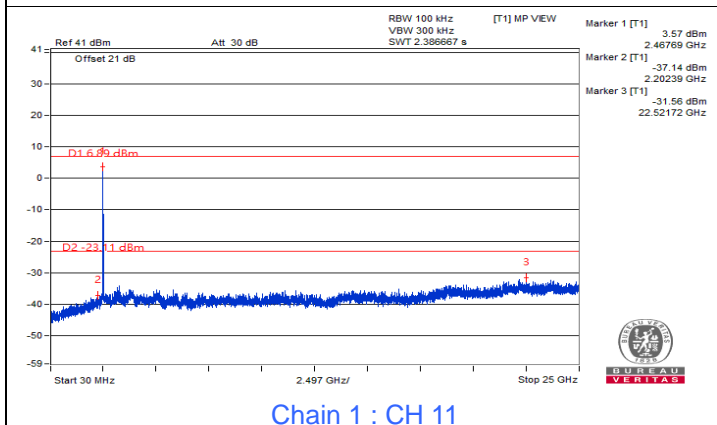




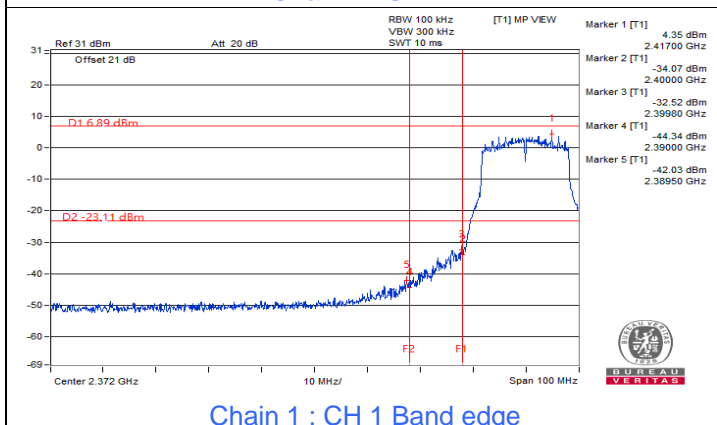
Chain 1 : CH 1



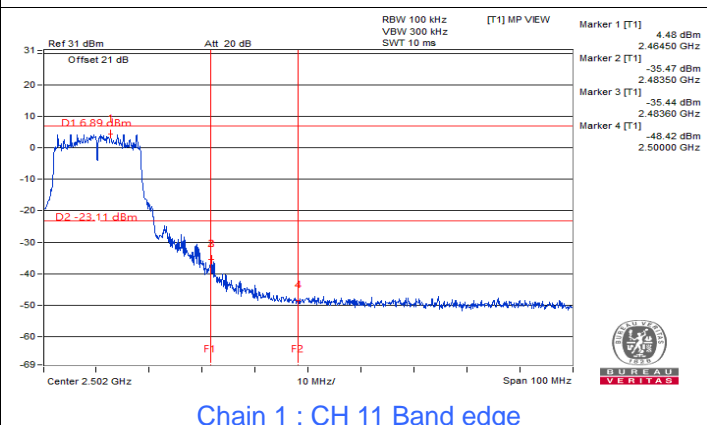
Chain 1 : CH 6



Chain 1 : CH 11

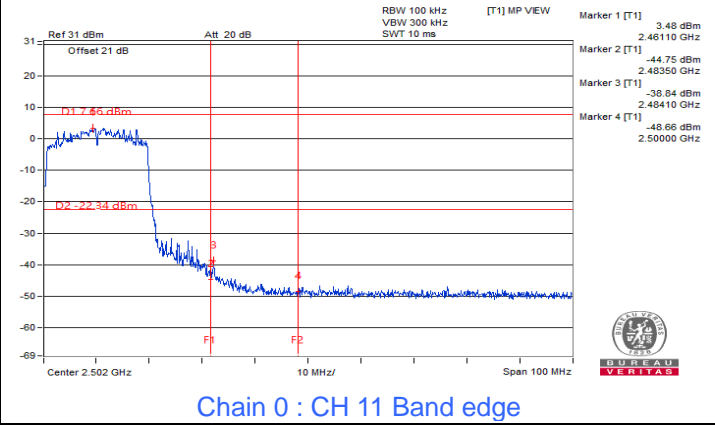
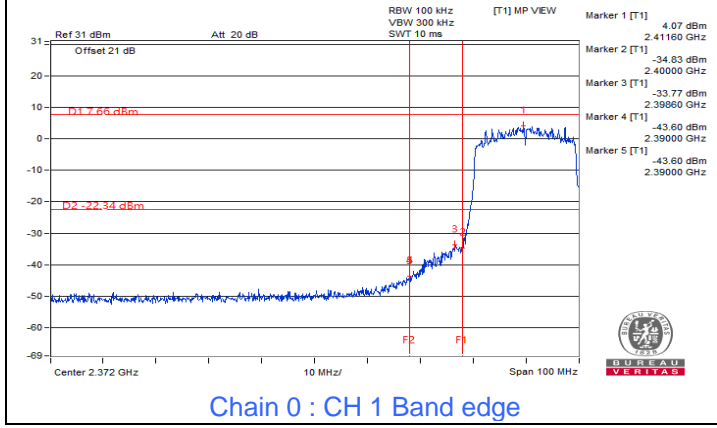
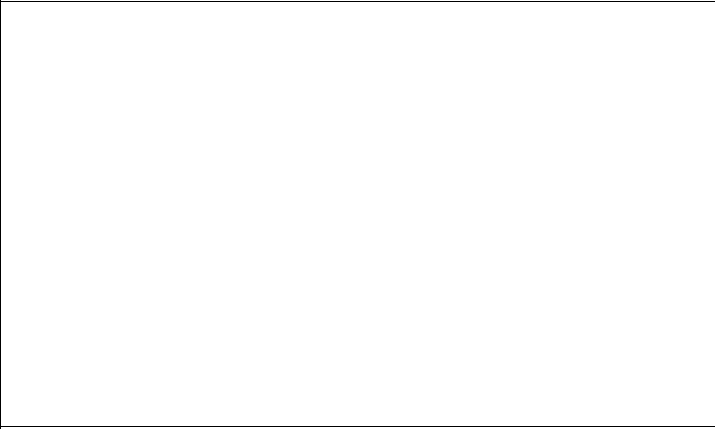
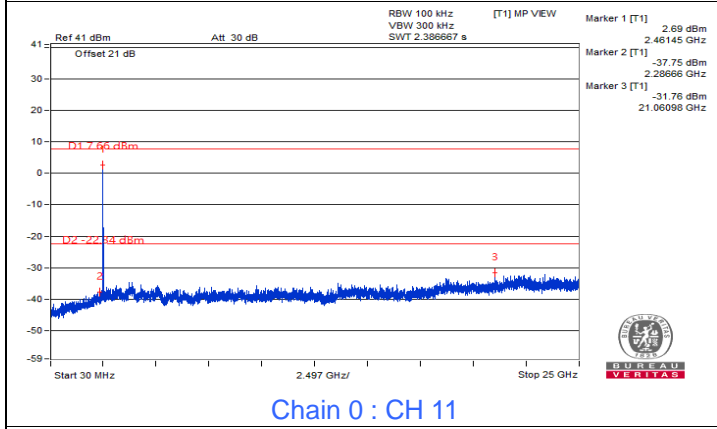
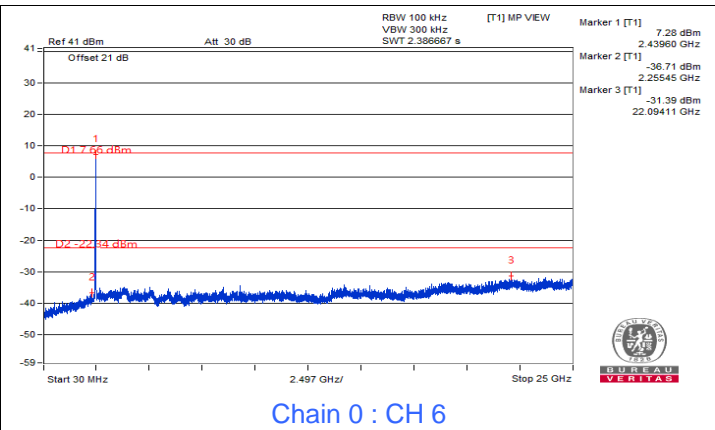
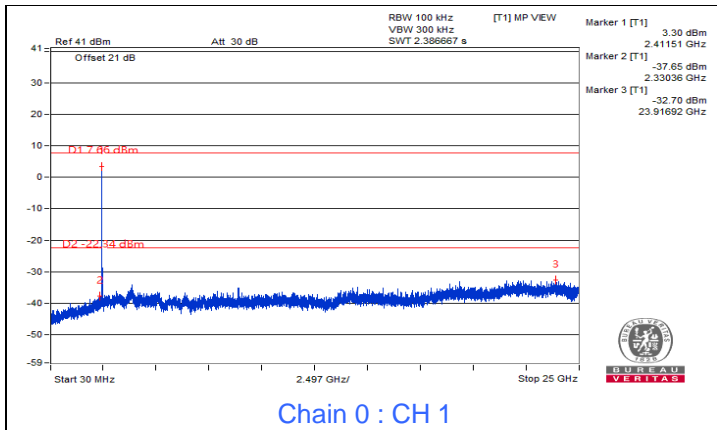
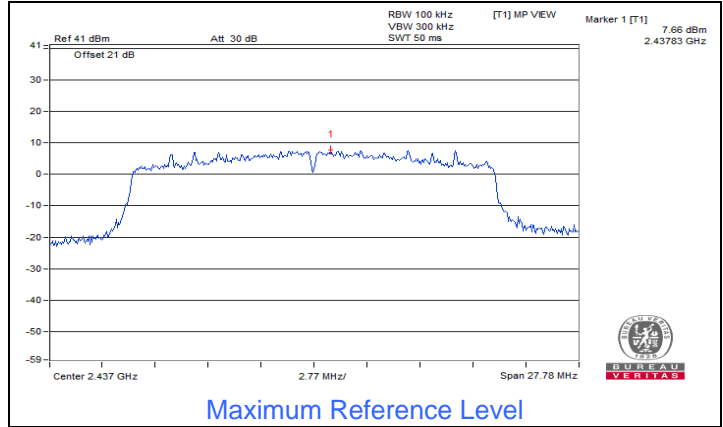


Chain 1 : CH 1 Band edge



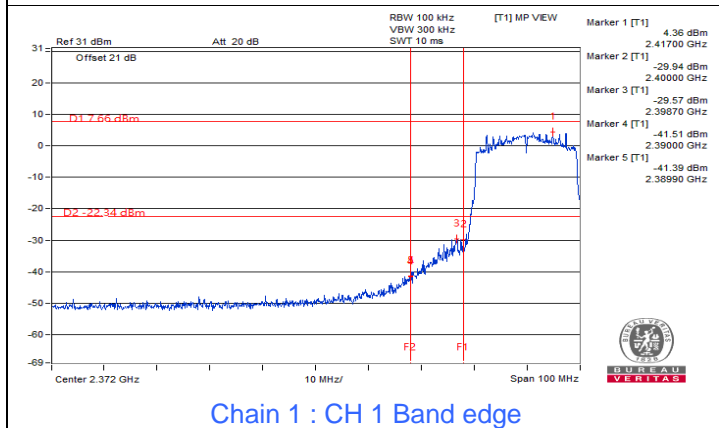
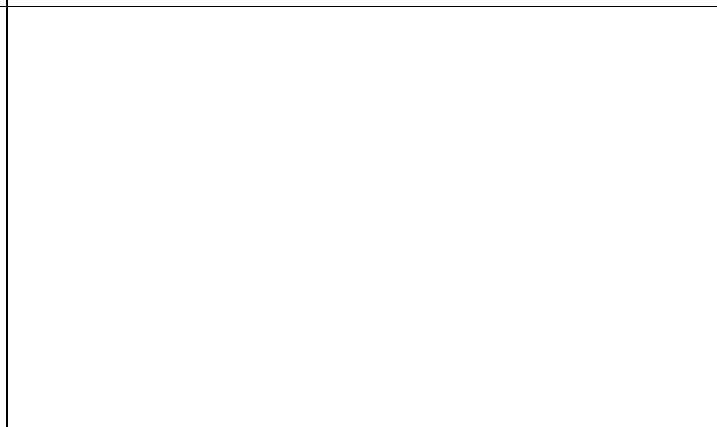
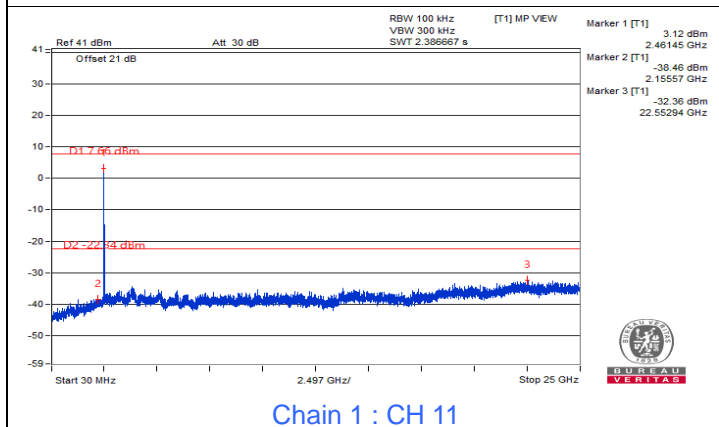
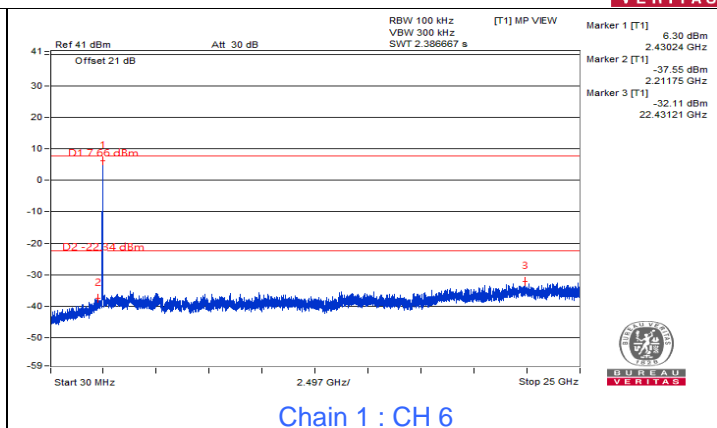
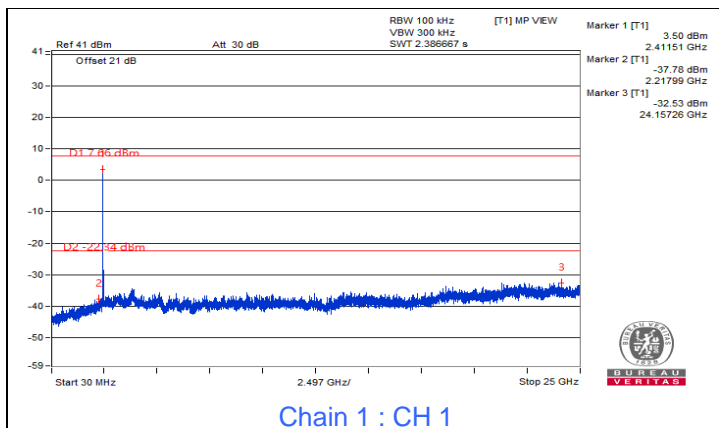
Chain 1 : CH 11 Band edge

802.11ax (HE20)





BUREAU  
VERITAS



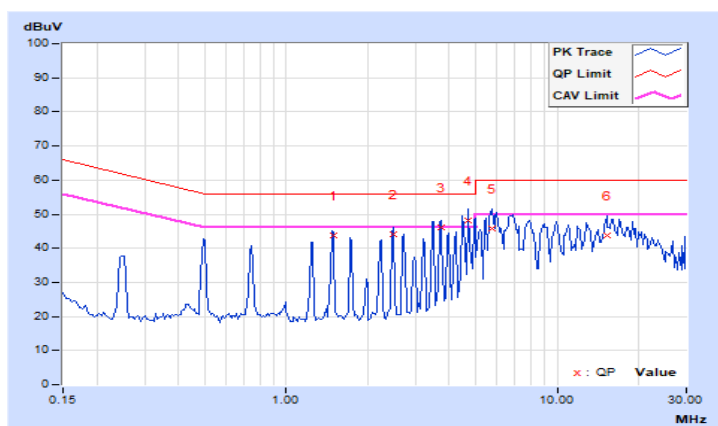
## 7.5 AC Power Conducted Emissions

RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Carter Lin		

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	1.49609	10.02	33.76	26.25	43.78	36.27	56.00	46.00	-12.22	-9.73
2	2.48047	10.07	33.94	26.06	44.01	36.13	56.00	46.00	-11.99	-9.87
3	3.74609	10.14	36.03	25.10	46.17	35.24	56.00	46.00	-9.83	-10.76
4	4.68750	10.19	37.87	28.50	48.06	38.69	56.00	46.00	-7.94	-7.31
5	5.72266	10.25	35.40	24.57	45.65	34.82	60.00	50.00	-14.35	-15.18
6	15.22266	10.81	32.96	22.73	43.77	33.54	60.00	50.00	-16.23	-16.46

### 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

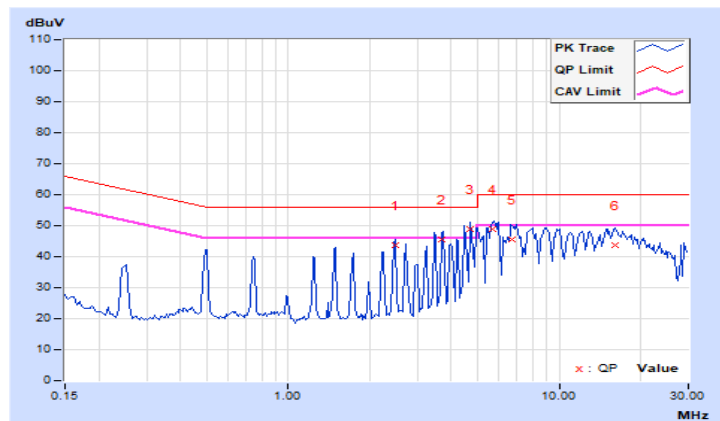


RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Carter Lin		

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	2.48047	10.04	33.56	25.79	43.60	35.83	56.00	46.00	-12.40	-10.17
2	3.69922	10.09	35.31	26.46	45.40	36.55	56.00	46.00	-10.60	-9.45
<b>3</b>	<b>4.68359</b>	<b>10.13</b>	<b>38.58</b>	<b>29.71</b>	<b>48.71</b>	<b>39.84</b>	<b>56.00</b>	<b>46.00</b>	<b>-7.29</b>	<b>-6.16</b>
4	5.66797	10.18	38.62	29.33	48.80	39.51	60.00	50.00	-11.20	-10.49
5	6.73828	10.22	35.49	25.67	45.71	35.89	60.00	50.00	-14.29	-14.11
6	16.02344	10.65	33.08	24.91	43.73	35.56	60.00	50.00	-16.27	-14.44

**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



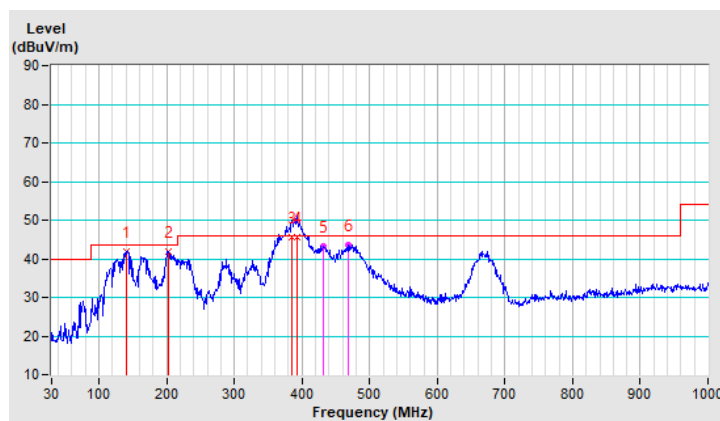
## 7.6 Unwanted Emissions below 1 GHz

RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 65% RH
Tested By	Nelson Teng		

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	141.50	41.8 QP	43.5	-1.7	2.00 H	274	50.2	-8.4
2	203.02	41.9 QP	43.5	-1.6	1.50 H	274	53.2	-11.3
<b>3</b>	<b>385.02</b>	<b>45.7 QP</b>	<b>46.0</b>	<b>-0.3</b>	<b>1.00 H</b>	<b>233</b>	<b>51.4</b>	<b>-5.7</b>
4	392.08	45.6 QP	46.0	-0.4	1.00 H	230	51.2	-5.6
5	431.12	43.4 QP	46.0	-2.6	1.50 H	193	47.6	-4.2
6	468.51	43.7 QP	46.0	-2.3	1.50 H	207	47.2	-3.5

### 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.



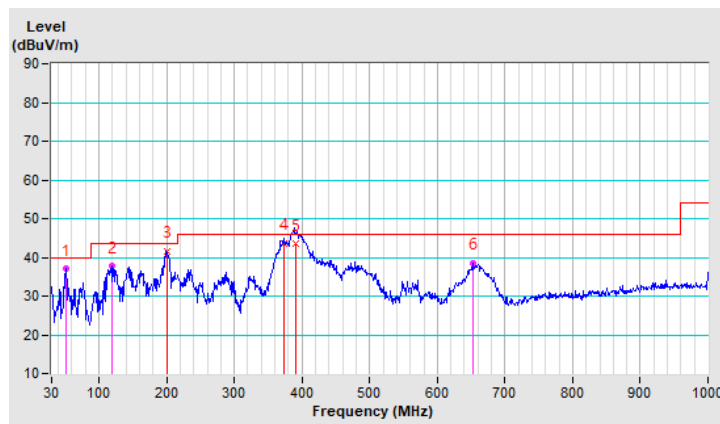


<b>RF Mode</b>	TX 802.11b	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	9 kHz ~ 1 GHz	<b>Detector Function &amp; Bandwidth</b>	(QP) RB = 120kHz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 65% RH
<b>Tested By</b>	Nelson Teng		

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	50.90	37.0 QP	40.0	-3.0	1.00 V	190	45.3	-8.3
2	119.05	37.7 QP	43.5	-5.8	1.00 V	57	47.9	-10.2
3	200.30	41.5 QP	43.5	-2.0	1.00 V	360	52.7	-11.2
4	374.33	43.6 QP	46.0	-2.4	1.50 V	99	49.5	-5.9
5	391.03	43.4 QP	46.0	-2.6	2.00 V	343	49.0	-5.6
6	653.37	38.4 QP	46.0	-7.6	1.00 V	69	38.3	0.1

**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.



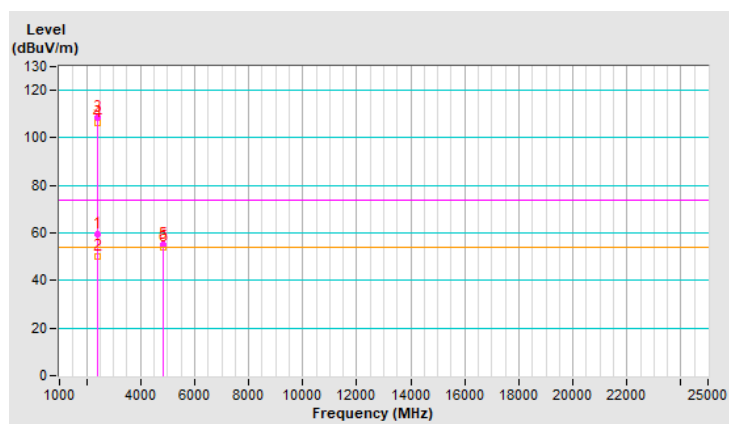
## 7.7 Unwanted Emissions above 1 GHz

<b>RF Mode</b>	TX 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>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

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	2389.75	59.3 PK	74.0	-14.7	1.55 H	103	60.1	-0.8
2	2389.75	49.9 AV	54.0	-4.1	1.55 H	103	50.7	-0.8
3	*2412.00	108.5 PK			1.55 H	103	109.3	-0.8
4	*2412.00	106.1 AV			1.55 H	103	106.9	-0.8
5	4824.00	55.2 PK	74.0	-18.8	1.45 H	287	51.2	4.0
6	<b>4824.00</b>	<b>53.9 AV</b>	<b>54.0</b>	<b>-0.1</b>	<b>1.45 H</b>	<b>287</b>	<b>49.9</b>	<b>4.0</b>

### 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.

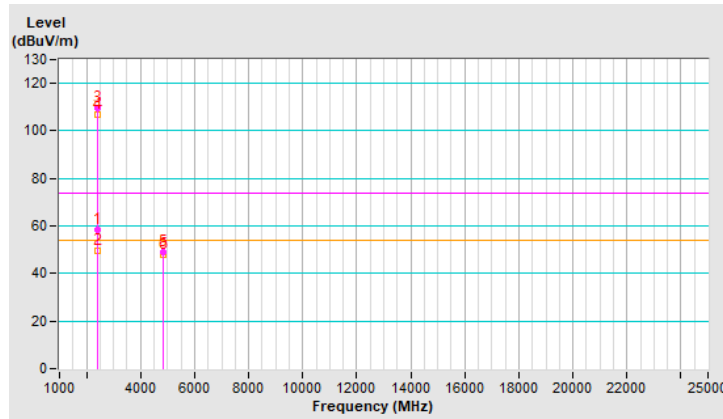


<b>RF Mode</b>	TX 802.11b	<b>Channel</b>	CH 1 : 2412 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

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	2385.70	58.3 PK	74.0	-15.7	1.37 V	26	59.1	-0.8
2	2385.70	49.6 AV	54.0	-4.4	1.37 V	26	50.4	-0.8
3	*2412.00	109.4 PK			1.37 V	26	110.2	-0.8
4	*2412.00	106.8 AV			1.37 V	26	107.6	-0.8
5	4824.00	49.0 PK	74.0	-25.0	2.42 V	47	45.0	4.0
6	4824.00	47.7 AV	54.0	-6.3	2.42 V	47	43.7	4.0

**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.



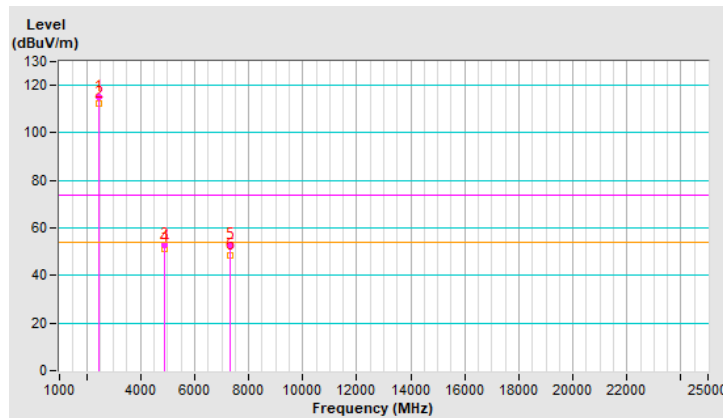
<b>RF Mode</b>	TX 802.11b	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

**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	115.0 PK			1.53 H	90	115.8	-0.8
2	*2437.00	112.2 AV			1.53 H	90	113.0	-0.8
3	4874.00	53.1 PK	74.0	-20.9	1.44 H	283	49.1	4.0
4	4874.00	51.5 AV	54.0	-2.5	1.44 H	283	47.5	4.0
5	7311.00	52.8 PK	74.0	-21.2	2.10 H	263	42.6	10.2
6	7311.00	48.7 AV	54.0	-5.3	2.10 H	263	38.5	10.2

**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.

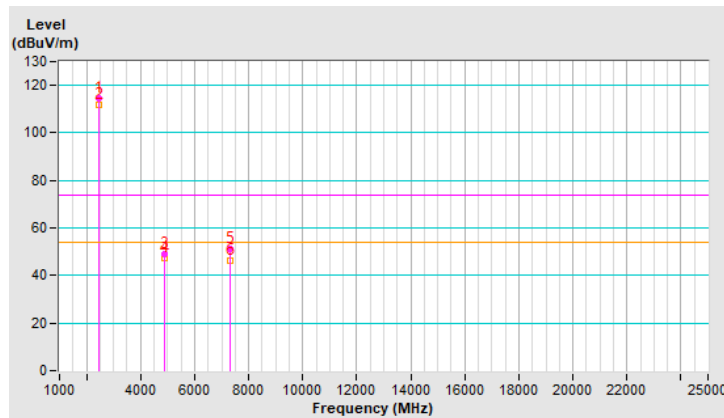


<b>RF Mode</b>	TX 802.11b	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

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	114.7 PK			1.32 V	23	115.5	-0.8
2	*2437.00	112.0 AV			1.32 V	23	112.8	-0.8
3	4874.00	49.2 PK	74.0	-24.8	2.40 V	26	45.2	4.0
4	4874.00	47.3 AV	54.0	-6.7	2.40 V	26	43.3	4.0
5	7311.00	51.1 PK	74.0	-22.9	1.00 V	329	40.9	10.2
6	7311.00	46.3 AV	54.0	-7.7	1.00 V	329	36.1	10.2

**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.



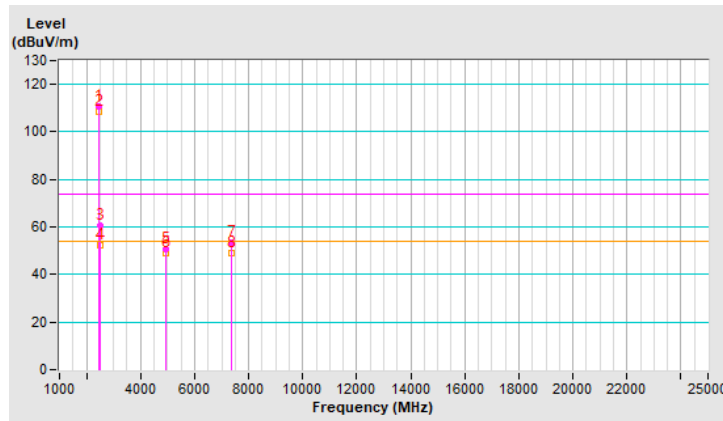
<b>RF Mode</b>	TX 802.11b	<b>Channel</b>	CH 11 : 2462 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

**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	110.8 PK			1.76 H	257	111.7	-0.9
2	*2462.00	108.3 AV			1.76 H	257	109.2	-0.9
3	2484.67	60.8 PK	74.0	-13.2	1.76 H	257	61.8	-1.0
4	2484.67	52.1 AV	54.0	-1.9	1.76 H	257	53.1	-1.0
5	4924.00	50.9 PK	74.0	-23.1	1.42 H	282	46.9	4.0
6	4924.00	49.2 AV	54.0	-4.8	1.42 H	282	45.2	4.0
7	7386.00	53.5 PK	74.0	-20.5	2.13 H	250	43.2	10.3
8	7386.00	49.2 AV	54.0	-4.8	2.13 H	250	38.9	10.3

**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.

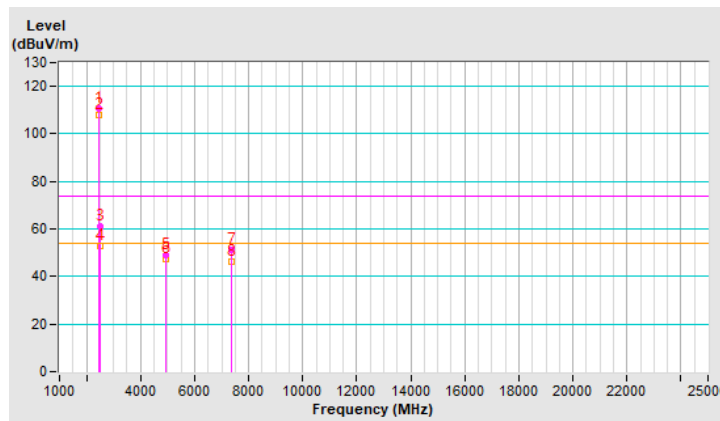


<b>RF Mode</b>	TX 802.11b	<b>Channel</b>	CH 11 : 2462 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

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	110.6 PK			1.60 V	35	111.5	-0.9
2	*2462.00	108.1 AV			1.60 V	35	109.0	-0.9
3	2498.66	61.3 PK	74.0	-12.7	1.60 V	35	62.3	-1.0
4	2498.66	53.1 AV	54.0	-0.9	1.60 V	35	54.1	-1.0
5	4924.00	49.2 PK	74.0	-24.8	2.42 V	35	45.2	4.0
6	4924.00	47.6 AV	54.0	-6.4	2.42 V	35	43.6	4.0
7	7386.00	51.3 PK	74.0	-22.7	1.05 V	323	41.0	10.3
8	7386.00	46.4 AV	54.0	-7.6	1.05 V	323	36.1	10.3

**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.



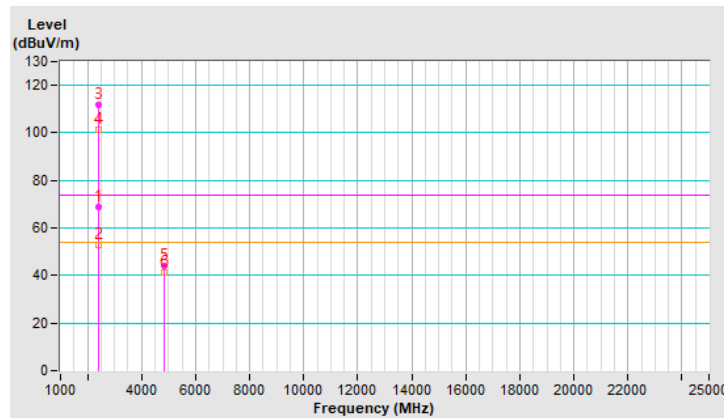
<b>RF Mode</b>	TX 802.11g	<b>Channel</b>	CH 1 : 2412 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

**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	68.6 PK	74.0	-5.4	1.81 H	263	69.4	-0.8
2	2390.00	52.8 AV	54.0	-1.2	1.81 H	263	53.6	-0.8
3	*2412.00	112.0 PK			1.81 H	263	112.8	-0.8
4	*2412.00	101.4 AV			1.81 H	263	102.2	-0.8
5	4824.00	44.2 PK	74.0	-29.8	1.40 H	276	40.2	4.0
6	4824.00	41.5 AV	54.0	-12.5	1.40 H	276	37.5	4.0

**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.



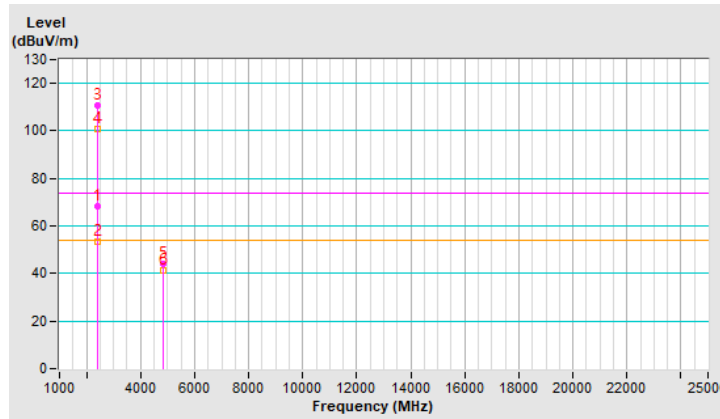


<b>RF Mode</b>	TX 802.11g	<b>Channel</b>	CH 1 : 2412 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

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	68.2 PK	74.0	-5.8	1.97 V	46	69.0	-0.8
2	2390.00	53.2 AV	54.0	-0.8	1.97 V	46	54.0	-0.8
3	*2412.00	110.9 PK			1.97 V	46	111.7	-0.8
4	*2412.00	100.8 AV			1.97 V	46	101.6	-0.8
5	4824.00	44.1 PK	74.0	-29.9	2.46 V	43	40.1	4.0
6	4824.00	41.4 AV	54.0	-12.6	2.46 V	43	37.4	4.0

**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.



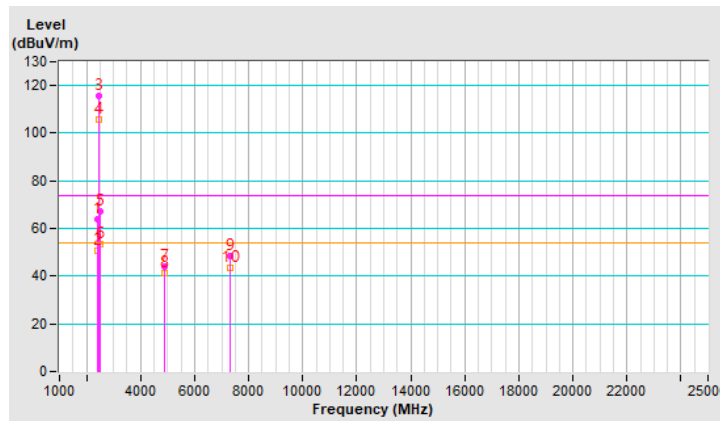
<b>RF Mode</b>	TX 802.11g	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

**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	63.9 PK	74.0	-10.1	1.75 H	285	64.7	-0.8
2	2390.00	50.9 AV	54.0	-3.1	1.75 H	285	51.7	-0.8
3	*2437.00	115.7 PK			1.75 H	285	116.5	-0.8
4	*2437.00	105.8 AV			1.75 H	285	106.6	-0.8
5	2483.50	67.3 PK	74.0	-6.7	1.75 H	285	68.3	-1.0
6	2483.50	53.2 AV	54.0	-0.8	1.75 H	285	54.2	-1.0
7	4874.00	43.8 PK	74.0	-30.2	1.43 H	268	39.8	4.0
8	4874.00	41.3 AV	54.0	-12.7	1.43 H	268	37.3	4.0
9	7311.00	48.3 PK	74.0	-25.7	2.06 H	254	38.1	10.2
10	7311.00	43.6 AV	54.0	-10.4	2.06 H	254	33.4	10.2

**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.

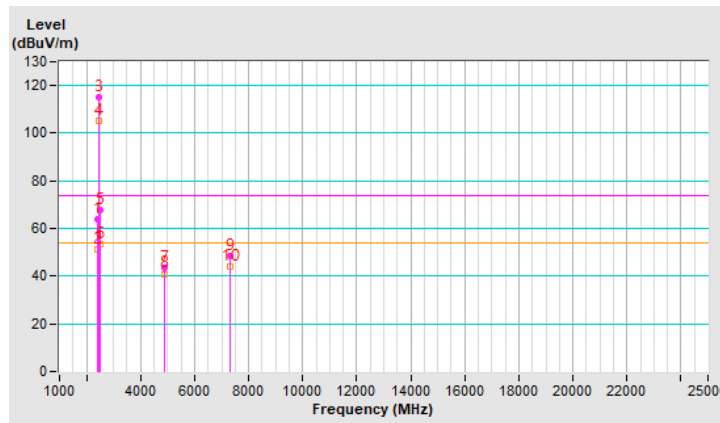


<b>RF Mode</b>	TX 802.11g	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

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	2.91 V	160	64.9	-0.8
2	2390.00	51.0 AV	54.0	-3.0	2.91 V	160	51.8	-0.8
3	*2437.00	115.1 PK			2.91 V	160	115.9	-0.8
4	*2437.00	105.4 AV			2.91 V	160	106.2	-0.8
5	2483.50	67.5 PK	74.0	-6.5	2.91 V	160	68.5	-1.0
6	2483.50	53.4 AV	54.0	-0.6	2.91 V	160	54.4	-1.0
7	4874.00	43.5 PK	74.0	-30.5	2.43 V	33	39.5	4.0
8	4874.00	41.0 AV	54.0	-13.0	2.43 V	33	37.0	4.0
9	7311.00	48.7 PK	74.0	-25.3	1.02 V	326	38.5	10.2
10	7311.00	44.1 AV	54.0	-9.9	1.02 V	326	33.9	10.2

**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.

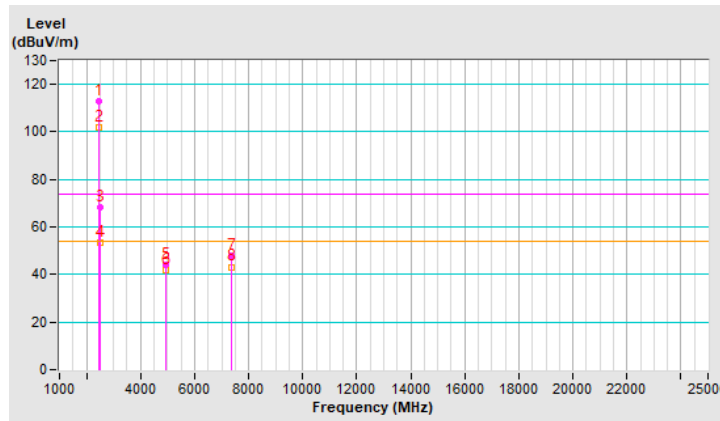


<b>RF Mode</b>	TX 802.11g	<b>Channel</b>	CH 11 : 2462 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

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	112.9 PK			1.79 H	269	113.8	-0.9
2	*2462.00	101.7 AV			1.79 H	269	102.6	-0.9
3	2483.50	68.3 PK	74.0	-5.7	1.79 H	269	69.3	-1.0
4	2483.50	53.2 AV	54.0	-0.8	1.79 H	269	54.2	-1.0
5	4924.00	44.3 PK	74.0	-29.7	1.38 H	278	40.3	4.0
6	4924.00	41.6 AV	54.0	-12.4	1.38 H	278	37.6	4.0
7	7386.00	47.8 PK	74.0	-26.2	2.06 H	239	37.5	10.3
8	7386.00	43.2 AV	54.0	-10.8	2.06 H	239	32.9	10.3

**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.



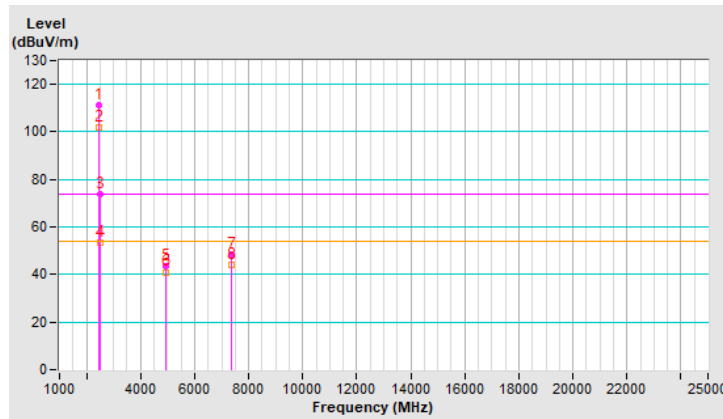
<b>RF Mode</b>	TX 802.11g	<b>Channel</b>	CH 11 : 2462 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

**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	111.3 PK			2.42 V	38	112.2	-0.9
2	*2462.00	101.7 AV			2.42 V	38	102.6	-0.9
3	2483.50	73.6 PK	74.0	-0.4	2.42 V	38	74.6	-1.0
4	2483.50	53.6 AV	54.0	-0.4	2.42 V	38	54.6	-1.0
5	4924.00	43.4 PK	74.0	-30.6	2.45 V	40	39.4	4.0
6	4924.00	41.0 AV	54.0	-13.0	2.45 V	40	37.0	4.0
7	7386.00	48.6 PK	74.0	-25.4	1.08 V	340	38.3	10.3
8	7386.00	44.0 AV	54.0	-10.0	1.08 V	340	33.7	10.3

**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.



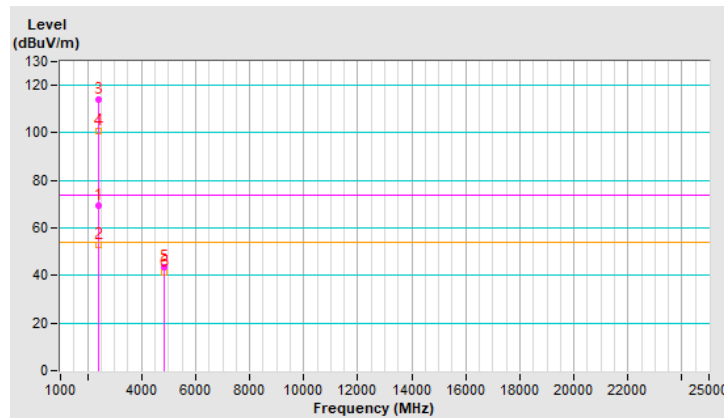
<b>RF Mode</b>	TX 802.11ax (HE20)	<b>Channel</b>	CH 1 : 2412 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

**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	69.5 PK	74.0	-4.5	1.84 H	267	70.3	-0.8
2	2390.00	53.0 AV	54.0	-1.0	1.84 H	267	53.8	-0.8
3	*2412.00	113.9 PK			1.84 H	267	114.7	-0.8
4	*2412.00	100.8 AV			1.84 H	267	101.6	-0.8
5	4824.00	43.7 PK	74.0	-30.3	1.38 H	252	39.7	4.0
6	4824.00	41.3 AV	54.0	-12.7	1.38 H	252	37.3	4.0

**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.

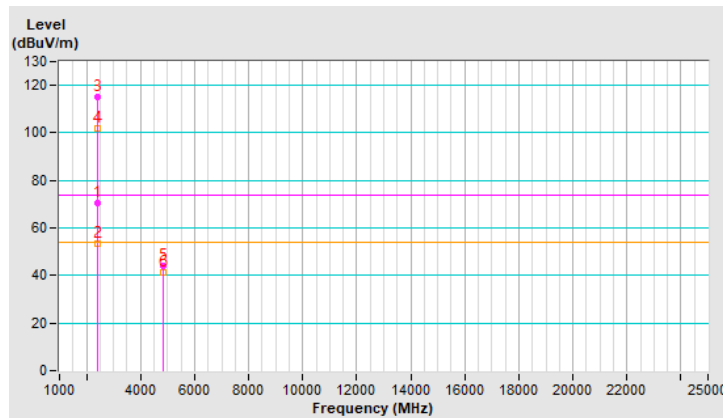


<b>RF Mode</b>	TX 802.11ax (HE20)	<b>Channel</b>	CH 1 : 2412 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

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	70.4 PK	74.0	-3.6	2.03 V	43	71.2	-0.8
2	2390.00	53.2 AV	54.0	-0.8	2.03 V	43	54.0	-0.8
3	*2412.00	115.3 PK			2.03 V	43	116.1	-0.8
4	*2412.00	102.0 AV			2.03 V	43	102.8	-0.8
5	4824.00	43.9 PK	74.0	-30.1	2.37 V	49	39.9	4.0
6	4824.00	41.3 AV	54.0	-12.7	2.37 V	49	37.3	4.0

**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.



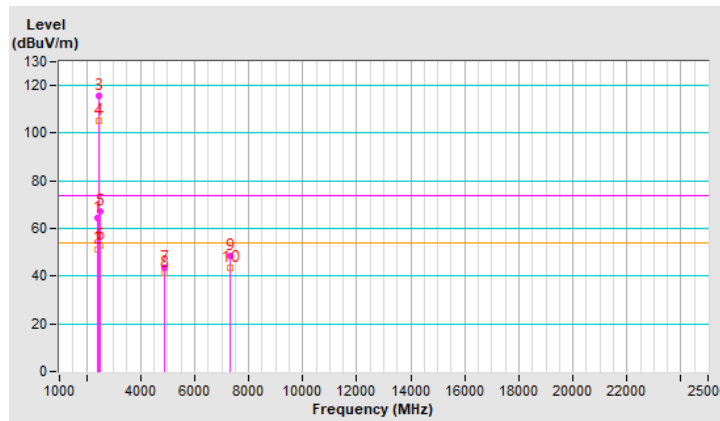
<b>RF Mode</b>	TX 802.11ax (HE20)	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

**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	64.4 PK	74.0	-9.6	1.82 H	266	65.2	-0.8
2	2390.00	51.2 AV	54.0	-2.8	1.82 H	266	52.0	-0.8
3	*2437.00	115.9 PK			1.82 H	266	116.7	-0.8
4	*2437.00	105.0 AV			1.82 H	266	105.8	-0.8
5	2483.50	67.3 PK	74.0	-6.7	1.82 H	266	68.3	-1.0
6	2483.50	53.0 AV	54.0	-1.0	1.82 H	266	54.0	-1.0
7	4874.00	43.5 PK	74.0	-30.5	1.47 H	256	39.5	4.0
8	4874.00	41.1 AV	54.0	-12.9	1.47 H	256	37.1	4.0
9	7311.00	48.2 PK	74.0	-25.8	2.03 H	248	38.0	10.2
10	7311.00	43.5 AV	54.0	-10.5	2.03 H	248	33.3	10.2

**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.



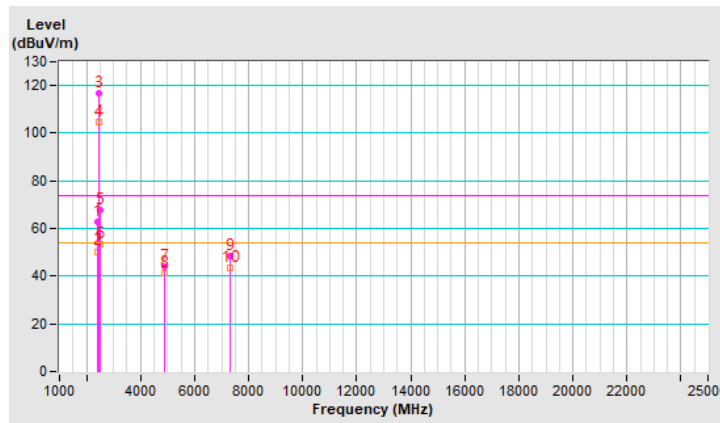


<b>RF Mode</b>	TX 802.11ax (HE20)	<b>Channel</b>	CH 6 : 2437 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

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	63.0 PK	74.0	-11.0	2.91 V	52	63.8	-0.8
2	2390.00	50.4 AV	54.0	-3.6	2.91 V	52	51.2	-0.8
3	*2437.00	116.9 PK			2.91 V	52	117.7	-0.8
4	*2437.00	104.8 AV			2.91 V	52	105.6	-0.8
5	2483.50	67.5 PK	74.0	-6.5	2.91 V	52	68.5	-1.0
6	2483.50	53.3 AV	54.0	-0.7	2.91 V	52	54.3	-1.0
7	4874.00	43.9 PK	74.0	-30.1	2.42 V	43	39.9	4.0
8	4874.00	41.1 AV	54.0	-12.9	2.42 V	43	37.1	4.0
9	7311.00	48.6 PK	74.0	-25.4	1.05 V	338	38.4	10.2
10	7311.00	43.7 AV	54.0	-10.3	1.05 V	338	33.5	10.2

**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.



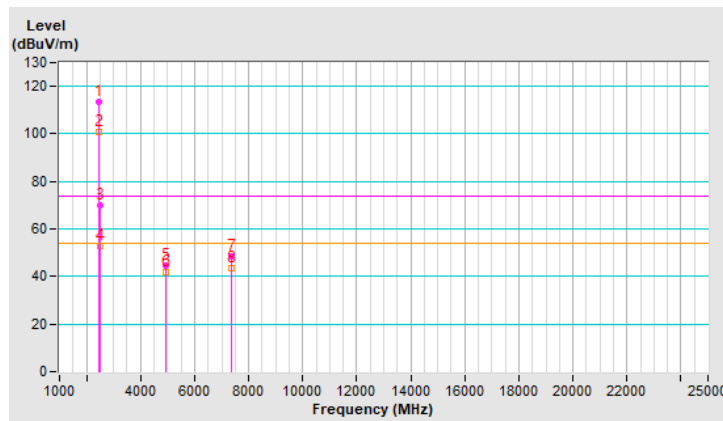
<b>RF Mode</b>	TX 802.11ax (HE20)	<b>Channel</b>	CH 11 : 2462 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

**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	113.7 PK			1.83 H	272	114.6	-0.9
2	*2462.00	100.6 AV			1.83 H	272	101.5	-0.9
3	2483.50	69.8 PK	74.0	-4.2	1.83 H	272	70.8	-1.0
4	2483.50	52.7 AV	54.0	-1.3	1.83 H	272	53.7	-1.0
5	4924.00	44.4 PK	74.0	-29.6	1.40 H	279	40.4	4.0
6	4924.00	41.8 AV	54.0	-12.2	1.40 H	279	37.8	4.0
7	7386.00	48.4 PK	74.0	-25.6	2.10 H	248	38.1	10.3
8	7386.00	43.7 AV	54.0	-10.3	2.10 H	248	33.4	10.3

**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.



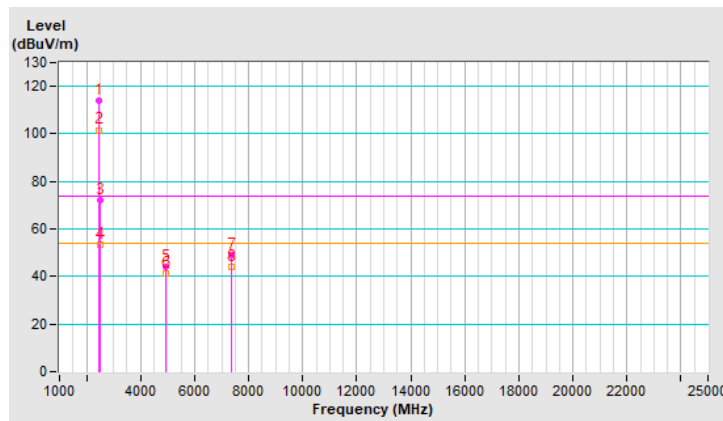
<b>RF Mode</b>	TX 802.11ax (HE20)	<b>Channel</b>	CH 11 : 2462 MHz
<b>Frequency Range</b>	1 GHz ~ 25 GHz	<b>Detector Function &amp; Bandwidth</b>	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
<b>Input Power</b>	120 Vac, 60 Hz	<b>Environmental Conditions</b>	25°C, 75% RH
<b>Tested By</b>	Carter Lin		

**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	113.9 PK			2.22 V	44	114.8	-0.9
2	*2462.00	101.6 AV			2.22 V	44	102.5	-0.9
3	2483.50	72.0 PK	74.0	-2.0	2.22 V	44	73.0	-1.0
4	2483.50	53.5 AV	54.0	-0.5	2.22 V	44	54.5	-1.0
5	4924.00	43.8 PK	74.0	-30.2	2.45 V	35	39.8	4.0
6	4924.00	41.1 AV	54.0	-12.9	2.45 V	35	37.1	4.0
7	7386.00	49.0 PK	74.0	-25.0	1.05 V	318	38.7	10.3
8	7386.00	44.2 AV	54.0	-9.8	1.05 V	318	33.9	10.3

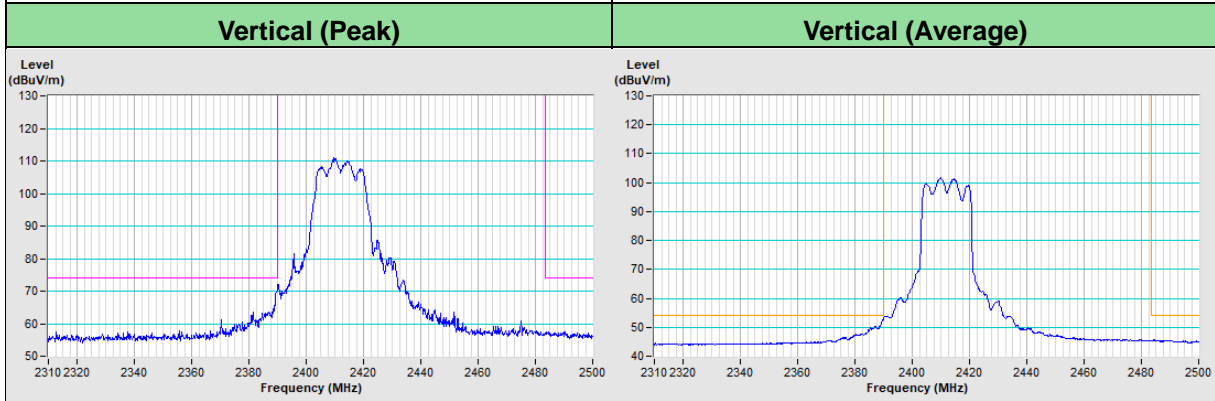
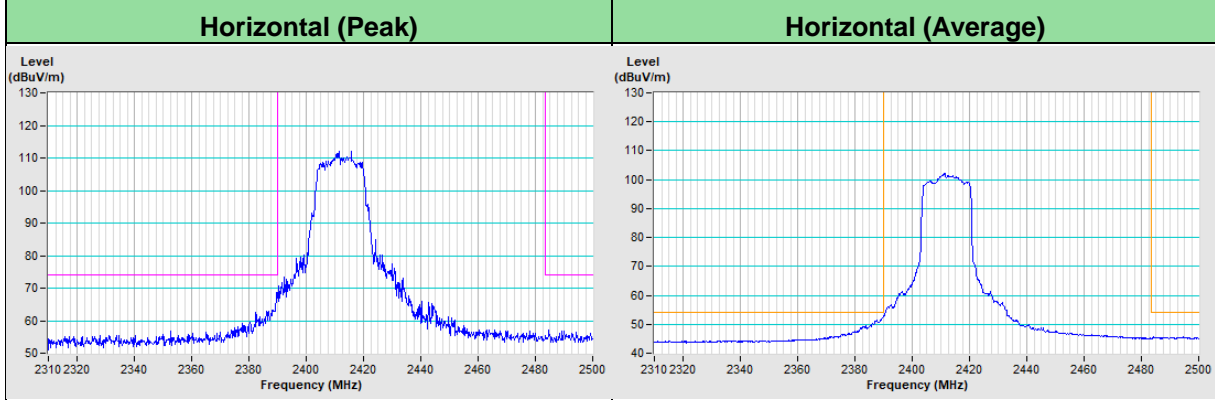
**Remarks:**

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.

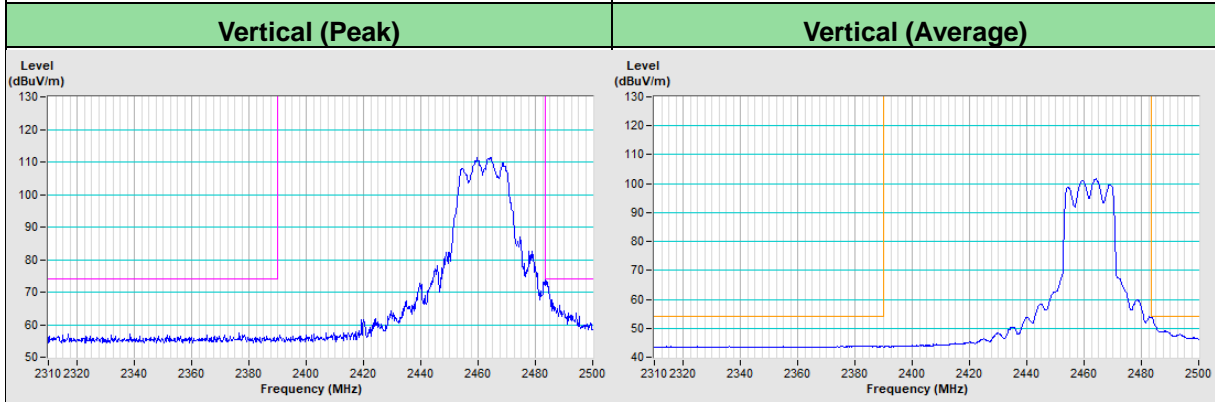
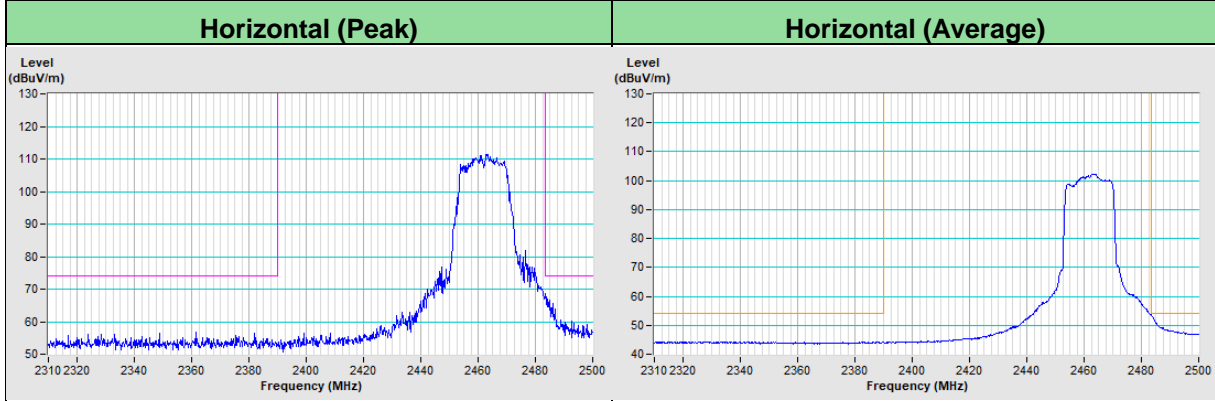




### 802.11g Channel 1



### 802.11g Channel 11





## 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.

If you have any comments, please feel free to contact us at the following:

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**Email:** [service.adt@bureauveritas.com](mailto:service.adt@bureauveritas.com)

**Web Site:** <http://ee.bureauveritas.com.tw>

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

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