TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart C (Section 15.247)**
Report No.:	RFBGTL-WTW-P20110320A
FCC ID:	RX3-WFU032VZ
Product:	802.11b/g/n 2T2R Wireless Module
Brand:	FOXCONN
Model No.:	WFU032-VZEA
Parent Model:	WFU032-VZ (refer to item 3.1 for more details)
Received Date:	2023/2/21
Test Date:	2023/3/3 ~ 2023/3/10
Issued Date:	2023/3/24
Applicant:	Hon Hai Precision Industry Co., Ltd.
Address:	No.151, Sec. 1, Nankan Rd., Lujhu Dist., Taoyuan City 33859, Taiwan (R.O.C.)
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 / Designation Number:	788550 / TW0003

Approved by: Jeremy Lin , **Date:** 2023/3/24

Jeremy Lin / Project Engineer

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Prepared by : Lena Wang / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBGTL-WTW-P20110320A	Original Release	2023/3/24

1 Certificate

Product:	802.11b/g/n 2T2R Wireless Module
Brand:	FOXCONN
Test Model:	WFU032-VZEA
Parent Model:	WFU032-VZ (refer to item 3.1 for more details)
Sample Status:	Identical Prototype
Applicant:	Hon Hai Precision Industry Co., Ltd.
Test Date:	2023/3/3 ~ 2023/3/10
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	N/A	Refer to note
15.247(a)(2)	6 dB Bandwidth	N/A	Refer to note
15.247(d)	Conducted Out of Band Emissions	N/A	Refer to note
15.207	AC Power Conducted Emissions	Pass	Minimum passing margin is -14.14 dB at 2.46200 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -4.0 dB at 135.73 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -1.0 dB at 4824.00 MHz
15.203	Antenna Requirement	Pass	No antenna connector is used.

Note:

1. Only test items of RF Output Power, AC Power Conducted Emission and Radiated Emissions tests had been performed and recorded in this report. Other testing data please refer to BV CPS report no. RFBGTL-WTW-P20110320.
2. 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) (±)
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.99 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.59 dB
	30 MHz ~ 1 GHz	3.6 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	802.11b/g/n 2T2R Wireless Module
Brand	FOXCONN
Test Model	WFU032-VZEA
Parent Model	WFU032-VZ
Status of EUT	Identical Prototype
Power Supply Rating	4.5 ~ 5.5 Vdc
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: 11.0 / 5.5 / 2.0 / 1.0 Mbps 802.11g: 54.0 / 48.0 / 36.0 / 24.0 / 18.0 / 12.0 / 9.0 / 6.0 Mbps 802.11n: up to 300 Mbps
Operating Frequency	2.412 GHz ~ 2.462 GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20):11 802.11n (HT40):7
Output Power	35.645 mW (15.52 dBm)

Note:

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report to BV CPS report no. RFBGTL-WTW-P20110320. The difference compared with original report are adding test model (WFU032-VZEA) and external antenna, therefore, only test items of RF Output Power, AC Power Conducted Emission and Radiated Emissions tests had been performed and recorded in this report.
2. All models are listed as below.

Brand	Model	Difference
FOXCONN	WFU032-VZEA	External Antenna
	WFU032-VZ	Internal Antenna

3. 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.

Internal Antenna

Antenna No.	Gain (dBi)	Antenna Type	Connector Type
	2400~2483.5 MHz		
1	4.3	PCB	N/A
2	3.5	PCB	N/A

External Antenna

Antenna No.	Brand	Model	Gain (dBi)	Antenna Type	Connector Type
			2400~2483.5 MHz		
1	FOXCONN	6903B00014000	1.98	PIFA	I-PEX
2	FOXCONN	6903B00013000	0.78	PIFA	I-PEX
3	ZTX	6903B00012000	1.46	PIFA	I-PEX
4	ZTX	6903B00011000	1.48	PIFA	I-PEX

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

* Only the antenna which has the maximum gain were chosen as a representative for the final test.

2. The EUT incorporates a MIMO function:

2.4 GHz Band		
Modulation Mode	**TX & RX Configuration**	
802.11b	1TX	1RX
802.11g	1TX	1RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX

3.3 Channel List

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

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

7 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
3	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	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	6.5Mb/s
	802.11n (HT40)	3, 6, 9	BPSK	13.5Mb/s
AC Power Conducted Emissions	802.11b	1	DBPSK	1Mb/s
Unwanted Emissions below 1 GHz	802.11b	1	DBPSK	1Mb/s
Unwanted Emissions above 1 GHz	802.11b	1, 6, 11	DBPSK	1Mb/s
	802.11g	1, 6, 11	BPSK	6Mb/s
	802.11n (HT20)	1, 6, 11	BPSK	6.5Mb/s
	802.11n (HT40)	3, 6, 9	BPSK	13.5Mb/s

3.5 Duty Cycle of Test Signal

Duty cycle of test signal is ≥ 98 %, duty factor is not required.

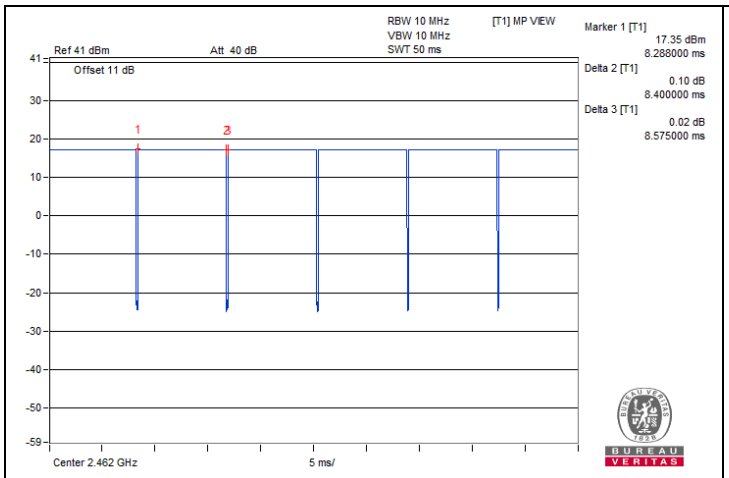
Duty cycle of test signal is < 98 %, duty factor shall be considered.

802.11b: Duty cycle = 8.4 ms / 8.575 ms x 100% = 98.0%

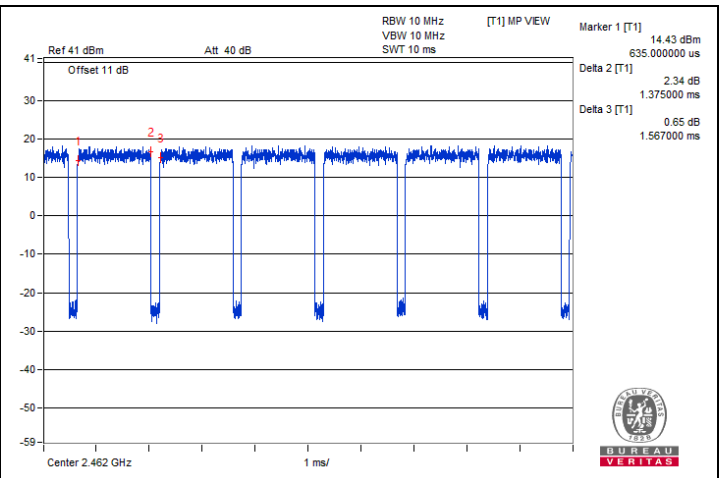
802.11g: Duty cycle = 1.375 ms / 1.567 ms x 100% = 87.7%, duty factor = 10 * log (1/Duty cycle) = 0.57 dB

802.11n (HT20): Duty cycle = 1.302 ms / 1.467 ms x 100% = 88.8%, duty factor = 10 * log (1/Duty cycle) = 0.52 dB

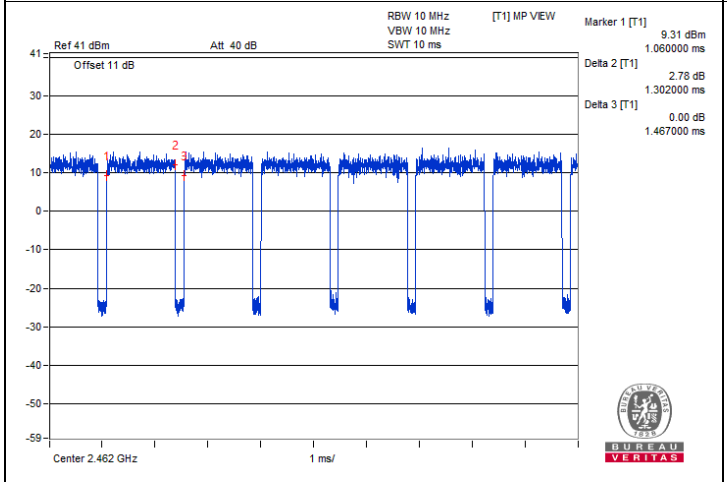
802.11n (HT40): Duty cycle = 0.647 ms / 0.819 ms x 100% = 79.0%, duty factor = 10 * log (1/Duty cycle) = 1.02 dB



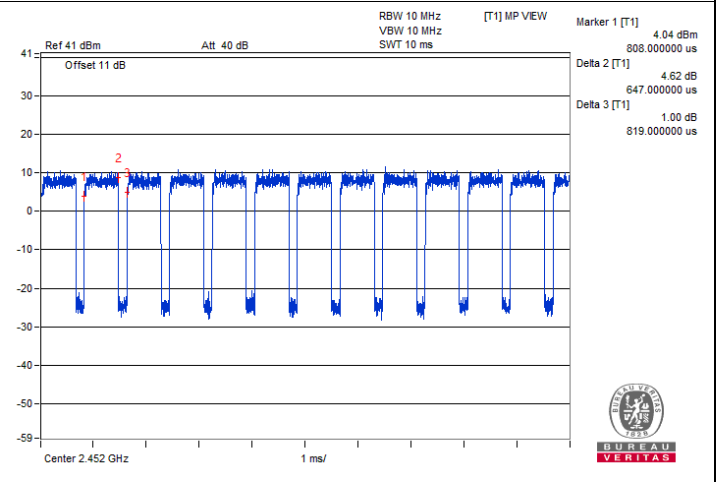
802.11b



802.11g



802.11n (HT20)

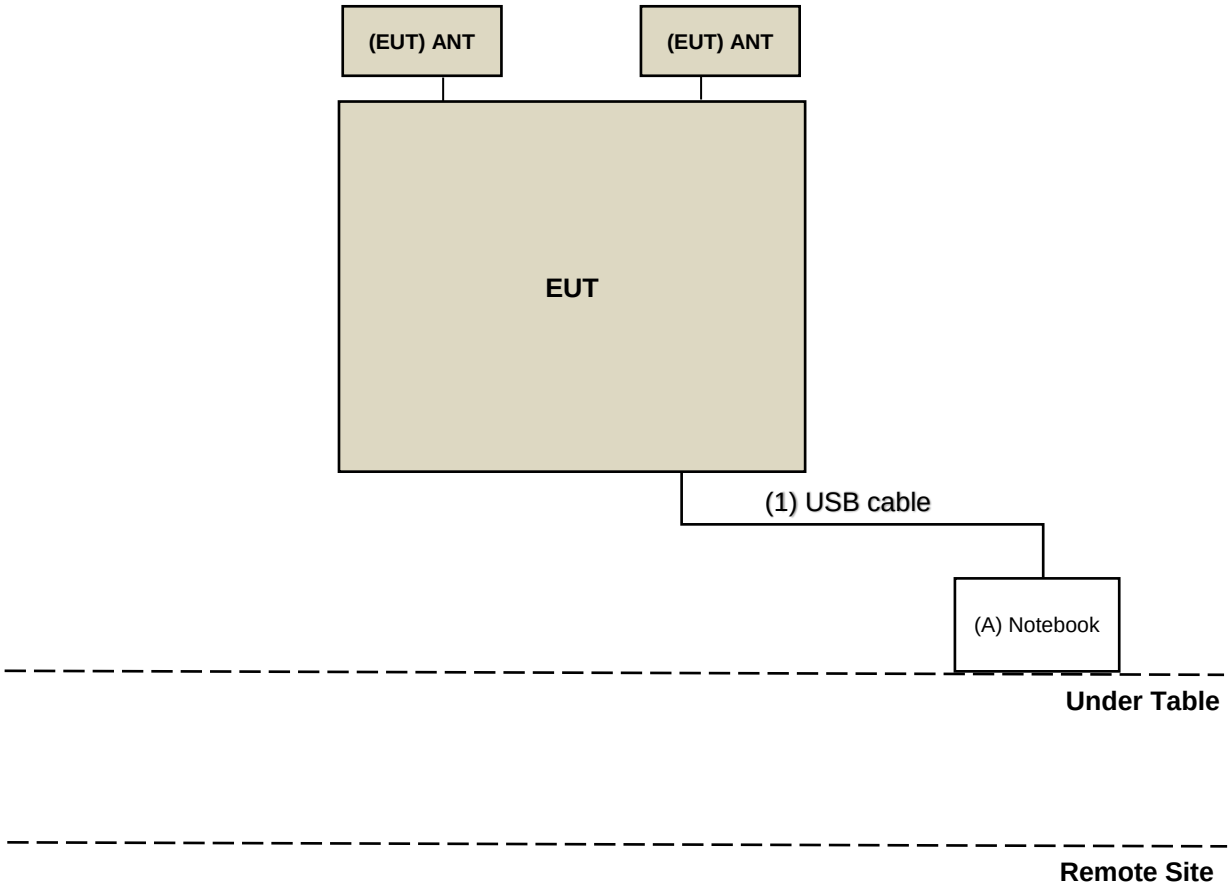


802.11n (HT40)

3.6 Test Program Used and Operation Descriptions

Controlling software QA Tool_MT7603 QA 0.0.0.99 has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Notebook	Dell	E5430	BPJVKV1	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	USB cable	1	0.2	No	0	Provided by client

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
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55190004/MY55190007/MY55210005	2022/7/13	2023/7/12

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/3/10

4.2 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
LISN R&S	ESH3-Z5	100311	2022/09/12	2023/09/11
LISN ROHDE & SCHWARZ	ENV216	101826	2022/03/14	2023/03/13
RF Coaxial Cable WOKEN	5D-FB	Cable-cond1-01	2023/01/07	2024/01/06
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
Test Receiver Rohde&Schwarz	ESCI	100613	2022/12/05	2023/12/04
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2022/08/31	2023/08/30

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2023/3/7

4.3 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
Bi_Log Antenna Schwarbeck	VULB9168	9168-160	2022/10/20	2023/10/19
Loop Antenna EMCI	EM-6879	269	2022/09/19	2023/09/18
Loop Antenna TESEQ	HLA 6121	45745	2022/07/27	2023/07/26
Pre-amplifier EMCI	EMC001340	980201	2022/09/23	2023/09/22
Preamplifier Agilent	8447D	2944A10638	2022/05/14	2023/05/13
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	2023/01/07	2024/01/06
RF Coaxial Cable WOKEN	8D-FB	Cable-CH9-01	2022/05/14	2023/05/13
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	2022/04/27	2023/04/26
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: 2023/3/6

4.4 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-Ammlifier EMCI	EMC 184045	980116	2022/10/01	2023/09/30
Preamplifier Agilent	8449B	3008A02367	2023/02/15	2024/02/14
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2022/07/09	2023/07/08
	EMC102-KM-KM-3000	150929	2022/07/09	2023/07/08
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	2023/01/07	2024/01/06
RF Coaxial Cable HUBER+SUHNER&EMCI	SUCOFLEX 104& EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	2023/01/07	2024/01/06
RF FLITER MICRO-TRONICS	BRM17690	004	2023/01/11	2024/01/10
	BRM50716	060	2023/01/11	2024/01/10
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	2022/04/27	2023/04/26
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: 2023/3/3

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 ≥ 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 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.

5.3 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).

5.4 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

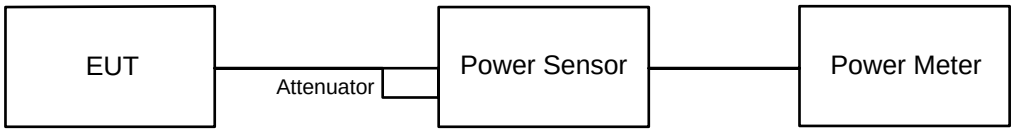
Notes:

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

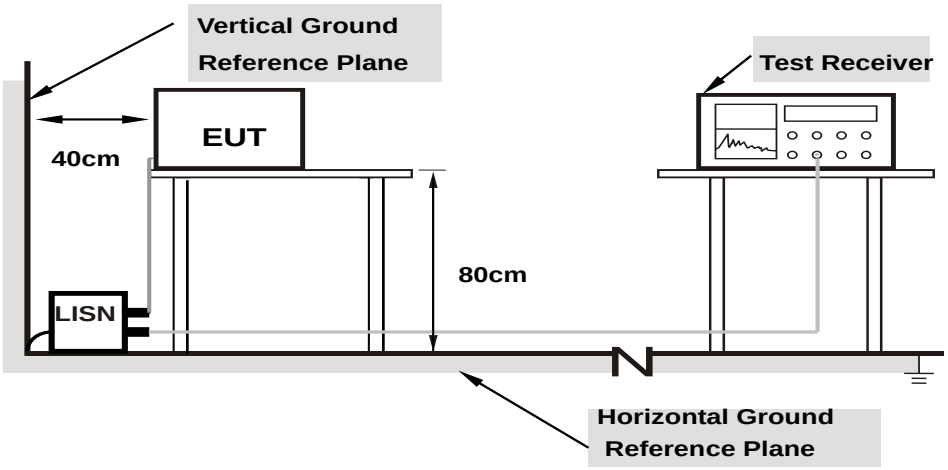


6.1.2 Test Procedure

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 AC Power Conducted Emissions

6.2.1 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).

6.2.2 Test Procedure

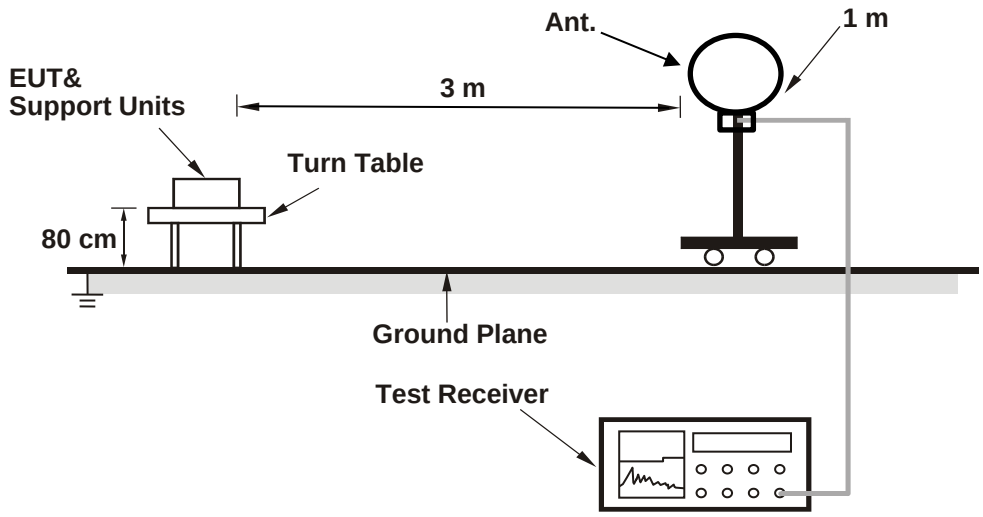
a. The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
c. 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.

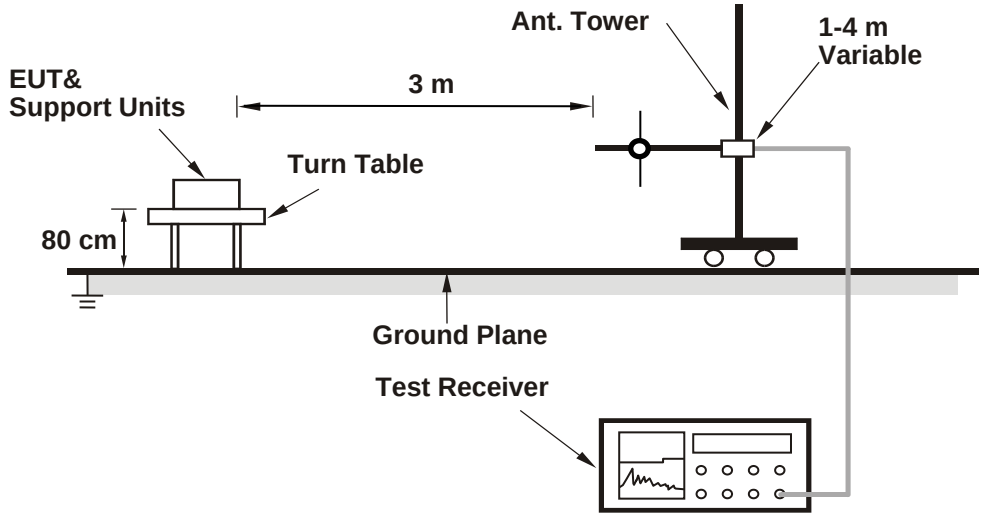
6.3 Unwanted Emissions below 1 GHz

6.3.1 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).

6.3.2 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.

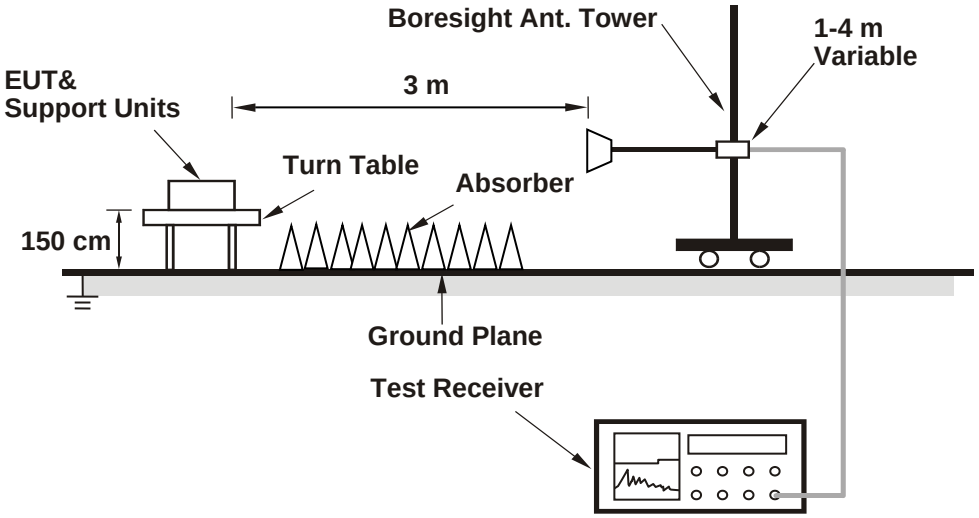
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

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.

6.4 Unwanted Emissions above 1 GHz

6.4.1 Test Setup



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

6.4.2 Test Procedure

a. 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.

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 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:

1. 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.
2. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10 Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1 GHz.
3. 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:	Jisyong Wang

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
1	2412	**35.645**	**15.52**	30	Pass
6	2437	35.237	15.47	30	Pass
11	2462	35.481	15.50	30	Pass

Note: The antenna gain is 1.98 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
1	2412	15.311	11.85	30	Pass
6	2437	14.028	11.47	30	Pass
11	2462	15.205	11.82	30	Pass

Note: The antenna gain is 1.98 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	8.52	9.08	15.203	11.82	30	Pass
6	2437	8.61	9.15	15.483	11.90	30	Pass
11	2462	8.55	8.67	14.524	11.62	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 1.98 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	5.96	7.21	9.205	9.64	30	Pass
6	2437	5.95	7.05	9.005	9.54	30	Pass
9	2452	6.04	6.89	8.904	9.50	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 1.98 dBi < 6 dBi, so the output power limit shall not be reduced.

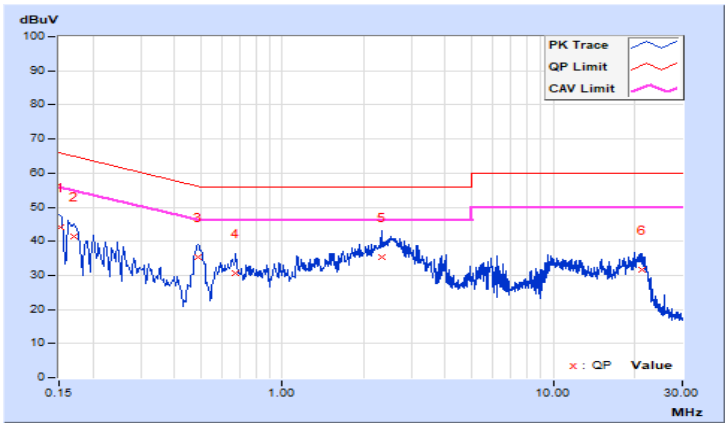
7.2 AC Power Conducted Emissions

RF Mode	802.11b	**Channel**	CH 1：2412 MHz
Frequency Range	150kHz ~ 30MHz	**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	Tank Wu		

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	0.15200	9.64	34.61	19.72	44.25	29.36	65.89	55.89	-21.64	-26.53
2	0.16932	9.65	31.84	18.66	41.49	28.31	64.99	54.99	-23.50	-26.68
3	0.48600	9.69	25.62	20.29	35.31	29.98	56.24	46.24	-20.93	-16.26
4	0.67000	9.70	20.88	15.40	30.58	25.10	56.00	46.00	-25.42	-20.90
5	2.32200	9.74	25.47	20.54	35.21	30.28	56.00	46.00	-20.79	-15.72
6	21.19400	9.89	21.70	16.16	31.59	26.05	60.00	50.00	-28.41	-23.95

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

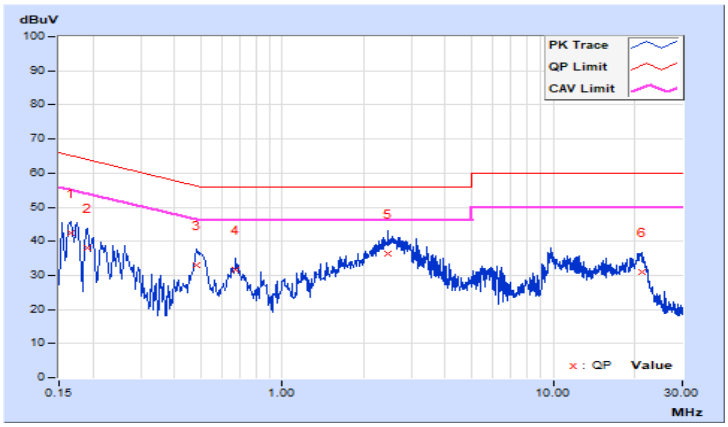


RF Mode	802.11b	**Channel**	CH 1：2412 MHz
Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Tank Wu		

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	0.16535	9.65	32.90	19.19	42.55	28.84	65.19	55.19	-22.64	-26.35
2	0.19000	9.66	28.44	13.67	38.10	23.33	64.04	54.04	-25.94	-30.71
3	0.48200	9.69	23.25	17.94	32.94	27.63	56.30	46.30	-23.36	-18.67
4	0.67000	9.70	22.09	15.03	31.79	24.73	56.00	46.00	-24.21	-21.27
5	**2.46200**	**9.75**	**26.71**	**22.11**	**36.46**	**31.86**	**56.00**	**46.00**	**-19.54**	**-14.14**
6	21.38200	9.91	20.96	15.20	30.87	25.11	60.00	50.00	-29.13	-24.89

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



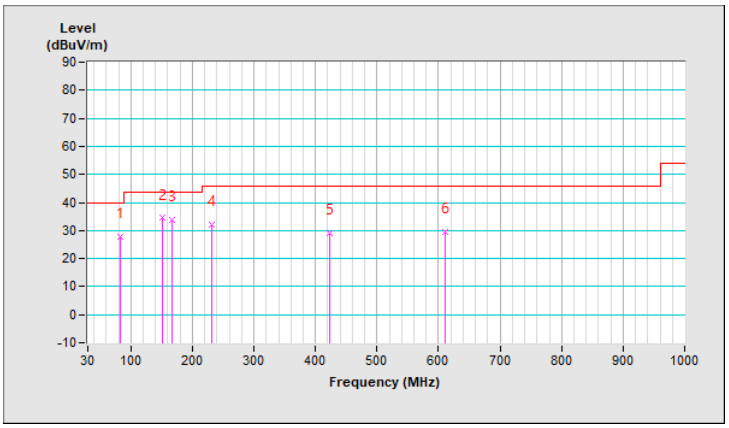
7.3 Unwanted Emissions below 1 GHz

RF Mode	802.11b	Channel	CH 1：2412 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	19.8°C, 77.3% RH
Tested By	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	83.35	27.6 QP	40.0	-12.4	1.50 H	18	41.7	-14.1
2	151.25	34.4 QP	43.5	-9.1	1.00 H	56	43.1	-8.7
3	167.74	33.7 QP	43.5	-9.8	1.00 H	175	42.6	-8.9
4	231.76	31.9 QP	46.0	-14.1	1.50 H	295	42.4	-10.5
5	423.82	29.1 QP	46.0	-16.9	1.00 H	17	33.0	-3.9
6	611.03	29.5 QP	46.0	-16.5	1.25 H	111	29.6	-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.

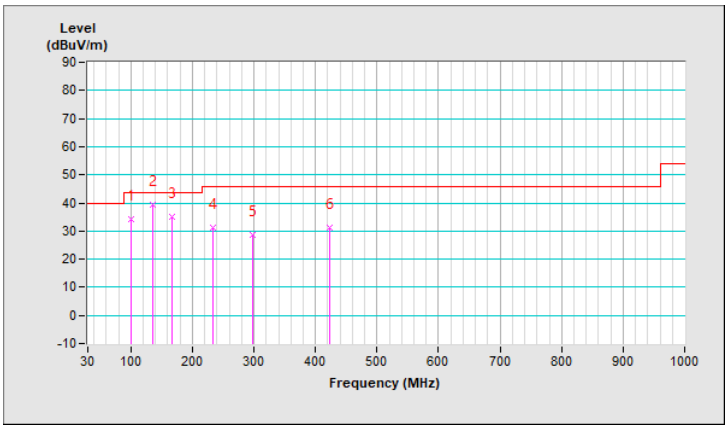


RF Mode	802.11b	**Channel**	CH 1：2412 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	19.8°C, 77.3% RH
Tested By	Rex Wang		

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	99.84	34.0 QP	43.5	-9.5	2.00 V	245	47.4	-13.4
2	**135.73**	**39.5 QP**	**43.5**	**-4.0**	**1.00 V**	**255**	**49.0**	**-9.5**
3	167.74	35.2 QP	43.5	-8.3	1.00 V	171	44.1	-8.9
4	232.73	31.1 QP	46.0	-14.9	1.25 V	153	41.4	-10.3
5	298.69	28.5 QP	46.0	-17.5	1.49 V	80	35.3	-6.8
6	423.82	31.3 QP	46.0	-14.7	1.49 V	5	35.2	-3.9

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.



7.4 Unwanted Emissions above 1 GHz

RF Mode	802.11b	**Channel**	CH 1：2412 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	19.8°C, 77.3% RH
Tested By	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	2390.00	59.5 PK	74.0	-14.5	3.15 H	195	25.8	33.7
2	2390.00	46.5 AV	54.0	-7.5	3.15 H	195	12.8	33.7
3	*2412.00	103.8 PK			3.15 H	195	70.1	33.7
4	*2412.00	101.2 AV			3.15 H	195	67.5	33.7
5	4824.00	56.5 PK	74.0	-17.5	2.26 H	163	46.2	10.3
6	**4824.00**	**53.0 AV**	**54.0**	**-1.0**	**2.26 H**	**163**	**42.7**	**10.3**
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	59.2 PK	74.0	-14.8	2.63 V	182	25.5	33.7
2	2390.00	46.4 AV	54.0	-7.6	2.63 V	182	12.7	33.7
3	*2412.00	100.6 PK			2.63 V	182	66.9	33.7
4	*2412.00	98.2 AV			2.63 V	182	64.5	33.7
5	4824.00	56.3 PK	74.0	-17.7	2.71 V	184	46.0	10.3
6	4824.00	52.7 AV	54.0	-1.3	2.71 V	184	42.4	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.

RF Mode	802.11b	Channel	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	19.8°C, 77.3% RH
Tested By	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	*2437.00	103.8 PK			3.12 H	182	70.0	33.8
2	*2437.00	101.2 AV			3.12 H	182	67.4	33.8
3	4874.00	56.3 PK	74.0	-17.7	2.86 H	170	45.8	10.5
4	4874.00	52.2 AV	54.0	-1.8	2.86 H	170	41.7	10.5
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	100.4 PK			2.26 V	189	66.6	33.8
2	*2437.00	98.1 AV			2.26 V	189	64.3	33.8
3	4874.00	56.0 PK	74.0	-18.0	2.74 V	183	45.5	10.5
4	4874.00	51.8 AV	54.0	-2.2	2.74 V	183	41.3	10.5

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

RF Mode	802.11b	Channel	CH 11：2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	19.8°C, 77.3% RH
Tested By	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	*2462.00	104.7 PK			3.07 H	191	70.8	33.9
2	*2462.00	102.0 AV			3.07 H	191	68.1	33.9
3	2498.60	59.8 PK	74.0	-14.2	3.07 H	191	26.0	33.8
4	2498.60	49.3 AV	54.0	-4.7	3.07 H	191	15.5	33.8
5	4924.00	53.9 PK	74.0	-20.1	3.48 H	188	43.5	10.4
6	4924.00	48.4 AV	54.0	-5.6	3.48 H	188	38.0	10.4
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	101.4 PK			2.51 V	186	67.5	33.9
2	*2462.00	98.9 AV			2.51 V	186	65.0	33.9
3	2483.50	59.2 PK	74.0	-14.8	2.51 V	186	25.4	33.8
4	2483.50	48.7 AV	54.0	-5.3	2.51 V	186	14.9	33.8
5	4924.00	53.7 PK	74.0	-20.3	2.78 V	184	43.3	10.4
6	4924.00	48.3 AV	54.0	-5.7	2.78 V	184	37.9	10.4

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

RF Mode	802.11g	Channel	CH 1：2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	19.8°C, 77.3% RH
Tested By	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	2390.00	59.5 PK	74.0	-14.5	3.23 H	194	25.8	33.7
2	2390.00	46.2 AV	54.0	-7.8	3.23 H	194	12.5	33.7
3	*2412.00	103.3 PK			3.23 H	194	69.6	33.7
4	*2412.00	93.4 AV			3.23 H	194	59.7	33.7
5	4824.00	51.1 PK	74.0	-22.9	2.98 H	174	40.8	10.3
6	4824.00	39.0 AV	54.0	-15.0	2.98 H	174	28.7	10.3
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	59.1 PK	74.0	-14.9	2.29 V	191	25.4	33.7
2	2390.00	46.0 AV	54.0	-8.0	2.29 V	191	12.3	33.7
3	*2412.00	99.3 PK			2.29 V	191	65.6	33.7
4	*2412.00	89.9 AV			2.29 V	191	56.2	33.7
5	4824.00	50.8 PK	74.0	-23.2	2.68 V	185	40.5	10.3
6	4824.00	38.5 AV	54.0	-15.5	2.68 V	185	28.2	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.

RF Mode	802.11g	Channel	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	19.8°C, 77.3% RH
Tested By	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	*2437.00	103.3 PK			3.11 H	181	69.5	33.8
2	*2437.00	93.3 AV			3.11 H	181	59.5	33.8
3	4874.00	51.2 PK	74.0	-22.8	3.24 H	166	40.7	10.5
4	4874.00	39.1 AV	54.0	-14.9	3.24 H	166	28.6	10.5
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	99.9 PK			2.55 V	188	66.1	33.8
2	*2437.00	90.0 AV			2.55 V	188	56.2	33.8
3	4874.00	51.0 PK	74.0	-23.0	2.75 V	189	40.5	10.5
4	4874.00	38.8 AV	54.0	-15.2	2.75 V	189	28.3	10.5

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

RF Mode	802.11g	Channel	CH 11：2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	19.8°C, 77.3% RH
Tested By	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	*2462.00	105.3 PK			3.08 H	185	71.4	33.9
2	*2462.00	94.5 AV			3.08 H	185	60.6	33.9
3	2483.50	59.4 PK	74.0	-14.6	3.08 H	185	25.6	33.8
4	2483.50	48.8 AV	54.0	-5.2	3.08 H	185	15.0	33.8
5	4924.00	51.1 PK	74.0	-22.9	2.89 H	164	40.7	10.4
6	4924.00	38.9 AV	54.0	-15.1	2.89 H	164	28.5	10.4
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	101.1 PK			2.47 V	184	67.2	33.9
2	*2462.00	91.1 AV			2.47 V	184	57.2	33.9
3	2483.50	59.3 PK	74.0	-14.7	2.47 V	184	25.5	33.8
4	2483.50	48.5 AV	54.0	-5.5	2.47 V	184	14.7	33.8
5	4924.00	50.7 PK	74.0	-23.3	2.74 V	183	40.3	10.4
6	4924.00	38.6 AV	54.0	-15.4	2.74 V	183	28.2	10.4

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

RF Mode	802.11n (HT20)	Channel	CH 1：2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	19.8°C, 77.3% RH
Tested By	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	2390.00	59.5 PK	74.0	-14.5	3.13 H	174	25.8	33.7
2	2390.00	46.4 AV	54.0	-7.6	3.13 H	174	12.7	33.7
3	*2412.00	104.2 PK			3.13 H	174	70.5	33.7
4	*2412.00	94.2 AV			3.13 H	174	60.5	33.7
5	4824.00	51.2 PK	74.0	-22.8	2.93 H	168	40.9	10.3
6	4824.00	38.3 AV	54.0	-15.7	2.93 H	168	28.0	10.3
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	59.3 PK	74.0	-14.7	2.55 V	186	25.6	33.7
2	2390.00	46.2 AV	54.0	-7.8	2.55 V	186	12.5	33.7
3	*2412.00	101.9 PK			2.55 V	186	68.2	33.7
4	*2412.00	92.2 AV			2.55 V	186	58.5	33.7
5	4824.00	50.9 PK	74.0	-23.1	2.76 V	166	40.6	10.3
6	4824.00	38.1 AV	54.0	-15.9	2.76 V	166	27.8	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.

RF Mode	802.11n (HT20)	**Channel**	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	19.8°C, 77.3% RH
Tested By	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	*2437.00	104.3 PK			3.09 H	169	70.5	33.8
2	*2437.00	94.8 AV			3.09 H	169	61.0	33.8
3	4874.00	51.3 PK	74.0	-22.7	2.22 H	166	40.8	10.5
4	4874.00	38.6 AV	54.0	-15.4	2.22 H	166	28.1	10.5
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	102.1 PK			2.52 V	183	68.3	33.8
2	*2437.00	92.4 AV			2.52 V	183	58.6	33.8
3	4874.00	51.0 PK	74.0	-23.0	2.68 V	184	40.5	10.5
4	4874.00	38.4 AV	54.0	-15.6	2.68 V	184	27.9	10.5

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

RF Mode	802.11n (HT20)	**Channel**	CH 11：2462 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	19.8°C, 77.3% RH
Tested By	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	*2462.00	104.5 PK			3.06 H	186	70.6	33.9
2	*2462.00	94.4 AV			3.06 H	186	60.5	33.9
3	2483.50	59.3 PK	74.0	-14.7	3.06 H	186	25.5	33.8
4	2483.50	48.5 AV	54.0	-5.5	3.06 H	186	14.7	33.8
5	4924.00	51.2 PK	74.0	-22.8	2.96 H	183	40.8	10.4
6	4924.00	38.2 AV	54.0	-15.8	2.96 H	183	27.8	10.4
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	102.4 PK			2.47 V	184	68.5	33.9
2	*2462.00	92.6 AV			2.47 V	184	58.7	33.9
3	2483.50	58.8 PK	74.0	-15.2	2.47 V	184	25.0	33.8
4	2483.50	48.4 AV	54.0	-5.6	2.47 V	184	14.6	33.8
5	4924.00	51.1 PK	74.0	-22.9	2.33 V	167	40.7	10.4
6	4924.00	38.1 AV	54.0	-15.9	2.33 V	167	27.7	10.4

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

RF Mode	802.11n (HT40)	Channel	CH 3：2422 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	19.8°C, 77.3% RH
Tested By	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	2390.00	59.0 PK	74.0	-15.0	2.55 H	175	25.3	33.7
2	2390.00	46.3 AV	54.0	-7.7	2.55 H	175	12.6	33.7
3	*2422.00	98.8 PK			2.55 H	175	65.1	33.7
4	*2422.00	89.7 AV			2.55 H	175	56.0	33.7
5	4844.00	51.1 PK	74.0	-22.9	2.23 H	173	40.7	10.4
6	4844.00	38.2 AV	54.0	-15.8	2.23 H	173	27.8	10.4
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	58.8 PK	74.0	-15.2	2.79 V	185	25.1	33.7
2	2390.00	46.2 AV	54.0	-7.8	2.79 V	185	12.5	33.7
3	*2422.00	96.4 PK			2.79 V	185	62.7	33.7
4	*2422.00	87.7 AV			2.79 V	185	54.0	33.7
5	4844.00	50.9 PK	74.0	-23.1	2.28 V	163	40.5	10.4
6	4844.00	38.0 AV	54.0	-16.0	2.28 V	163	27.6	10.4

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

RF Mode	802.11n (HT40)	**Channel**	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	19.8°C, 77.3% RH
Tested By	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	*2437.00	98.9 PK			3.09 H	172	65.1	33.8
2	*2437.00	90.2 AV			3.09 H	172	56.4	33.8
3	4874.00	51.4 PK	74.0	-22.6	2.28 H	166	40.9	10.5
4	4874.00	38.4 AV	54.0	-15.6	2.28 H	166	27.9	10.5
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	96.6 PK			2.73 V	195	62.8	33.8
2	*2437.00	88.3 AV			2.73 V	195	54.5	33.8
3	4874.00	51.3 PK	74.0	-22.7	2.75 V	182	40.8	10.5
4	4874.00	38.1 AV	54.0	-15.9	2.75 V	182	27.6	10.5

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

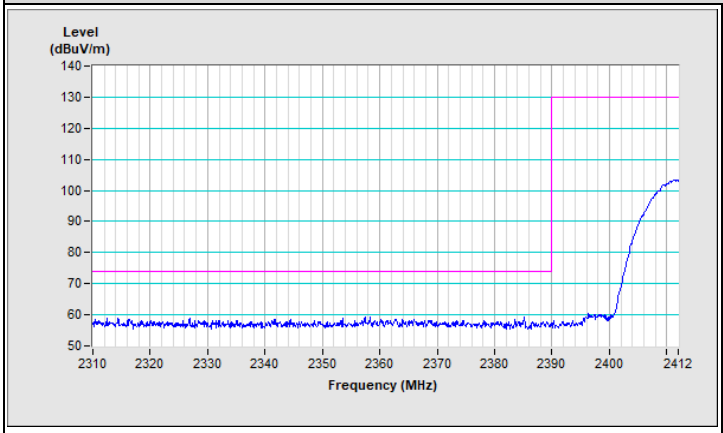
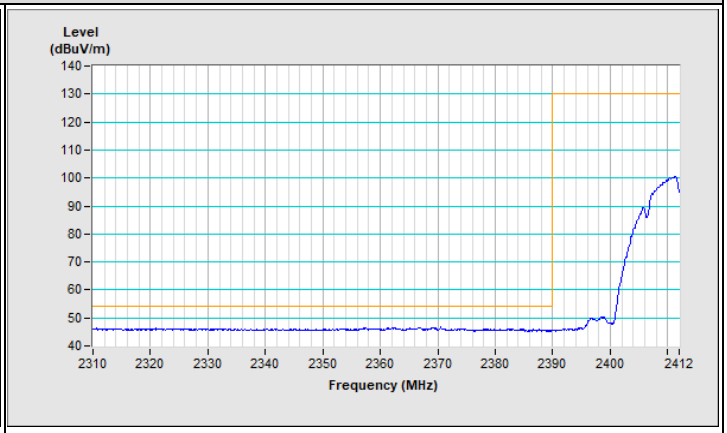
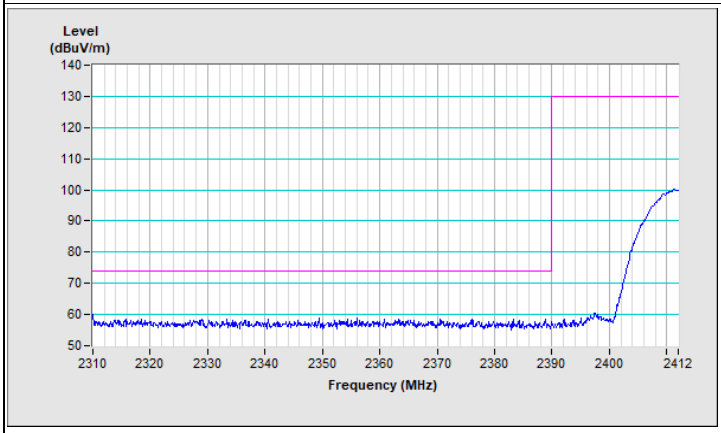
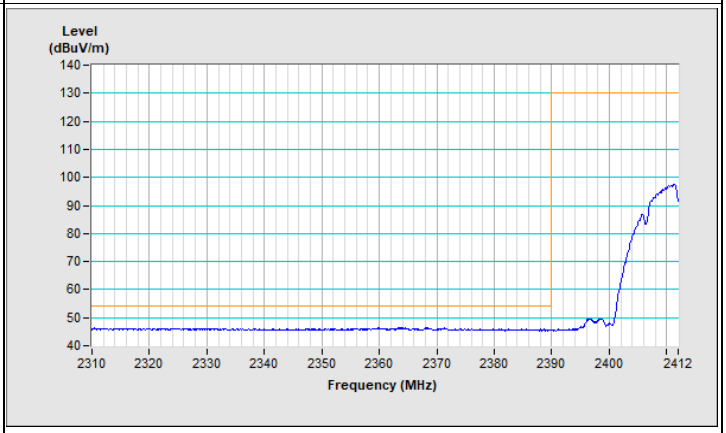
RF Mode	802.11n (HT40)	Channel	CH 9：2452 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	19.8°C, 77.3% RH
Tested By	Rex Wang		

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	*2452.00	98.9 PK			3.05 H	175	65.1	33.8
2	*2452.00	89.8 AV			3.05 H	175	56.0	33.8
3	2483.50	59.8 PK	74.0	-14.2	3.05 H	175	26.0	33.8
4	2483.50	48.6 AV	54.0	-5.4	3.05 H	175	14.8	33.8
5	4904.00	51.0 PK	74.0	-23.0	2.25 H	174	40.6	10.4
6	4904.00	38.2 AV	54.0	-15.8	2.25 H	174	27.8	10.4
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	96.0 PK			2.72 V	196	62.2	33.8
2	*2452.00	86.7 AV			2.72 V	196	52.9	33.8
3	2483.50	59.6 PK	74.0	-14.4	2.72 V	196	25.8	33.8
4	2483.50	48.3 AV	54.0	-5.7	2.72 V	196	14.5	33.8
5	4904.00	50.8 PK	74.0	-23.2	2.78 V	184	40.4	10.4
6	4904.00	37.9 AV	54.0	-16.1	2.78 V	184	27.5	10.4

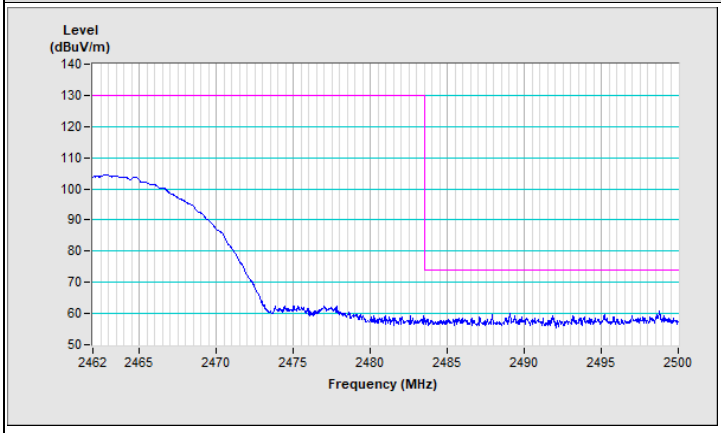
Remarks:

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

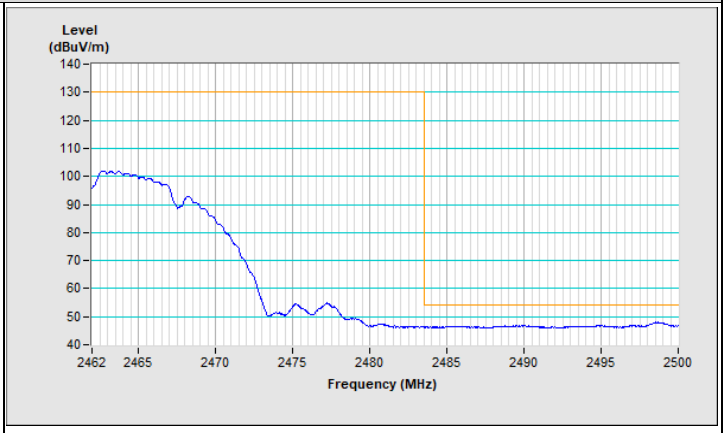
Plot of Band Edge

802.11b Channel 1	
	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)

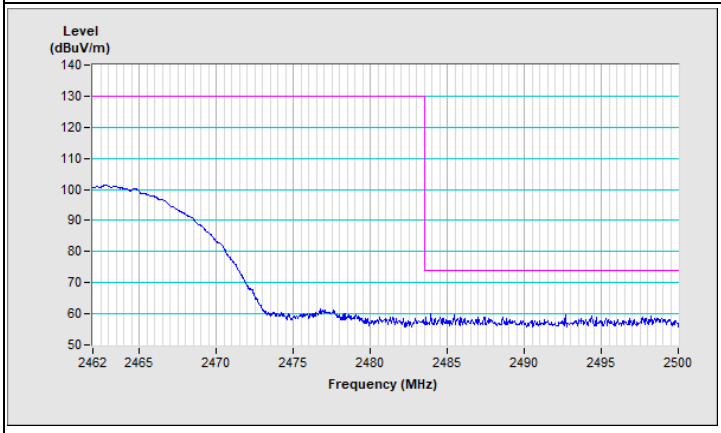
802.11b Channel 11



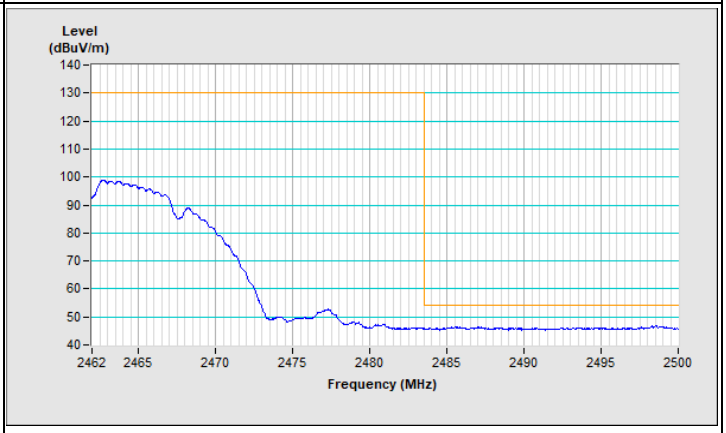
Horizontal (Peak)



Horizontal (Average)

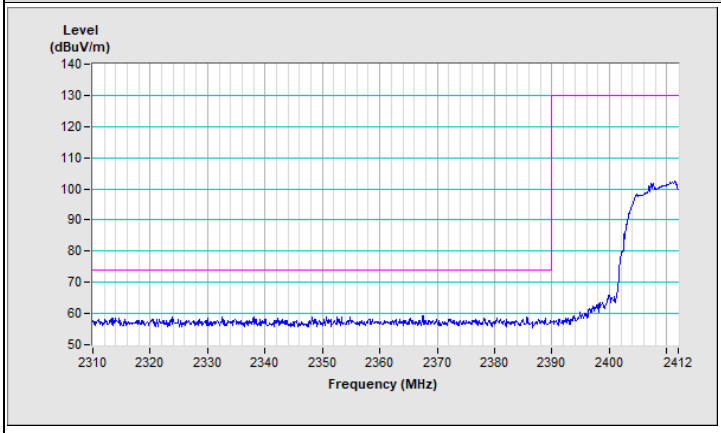


Vertical (Peak)

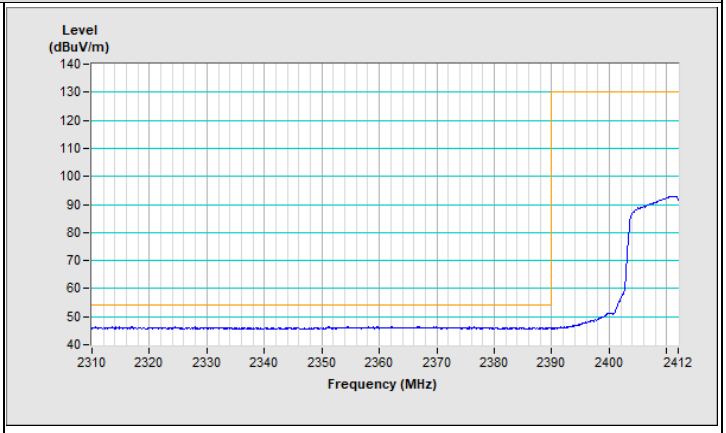


Vertical (Average)

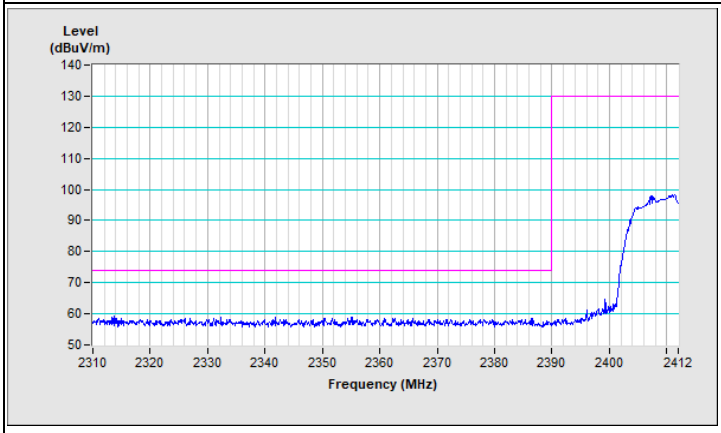
802.11g Channel 1



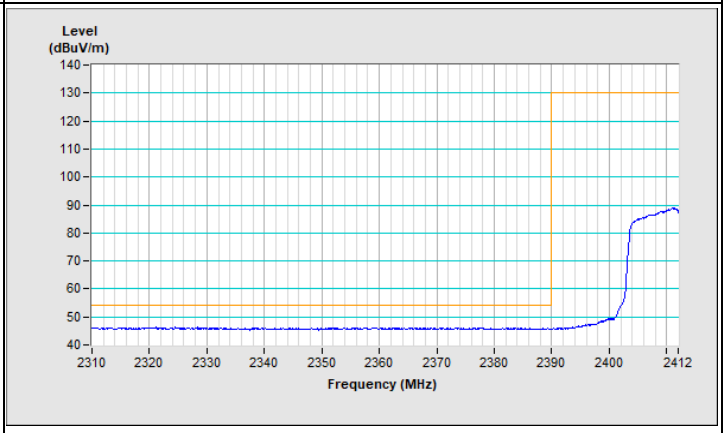
Horizontal (Peak)



Horizontal (Average)

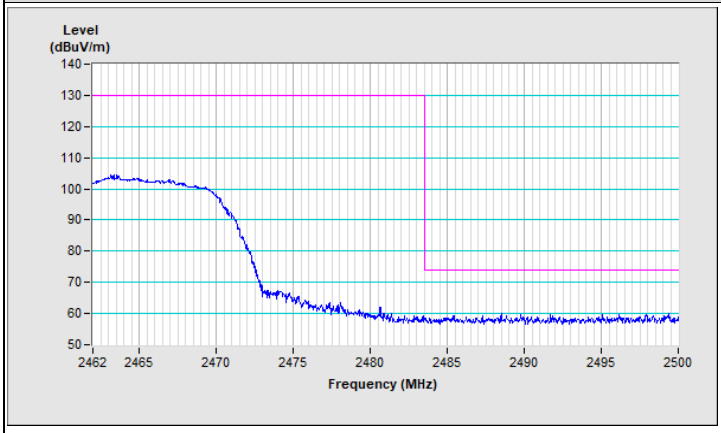


Vertical (Peak)

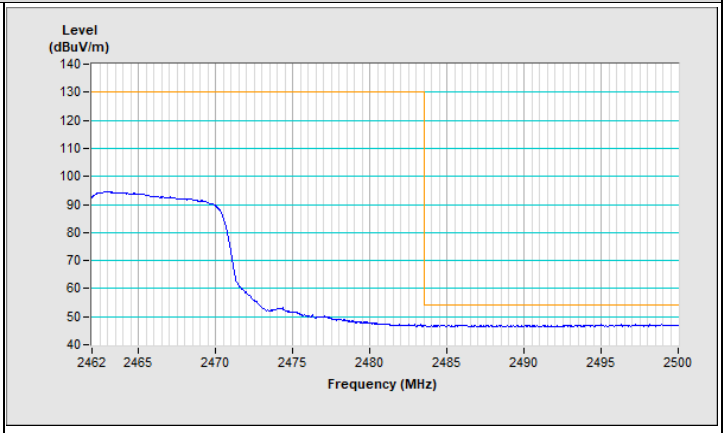


Vertical (Average)

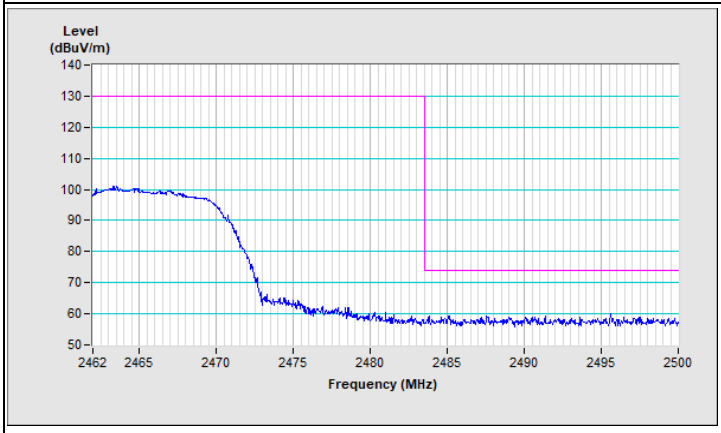
802.11g Channel 11



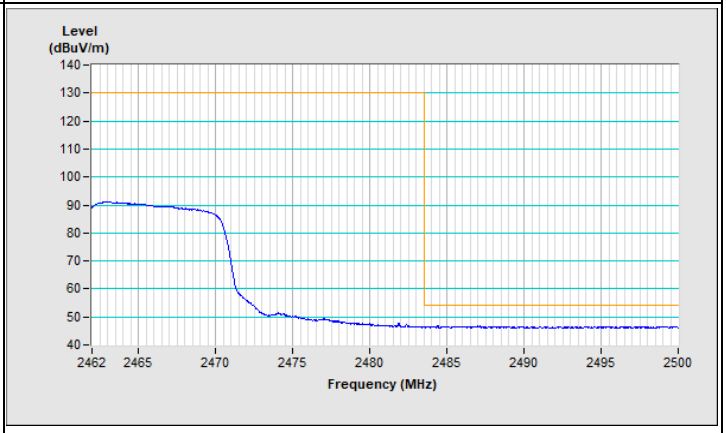
Horizontal (Peak)



Horizontal (Average)

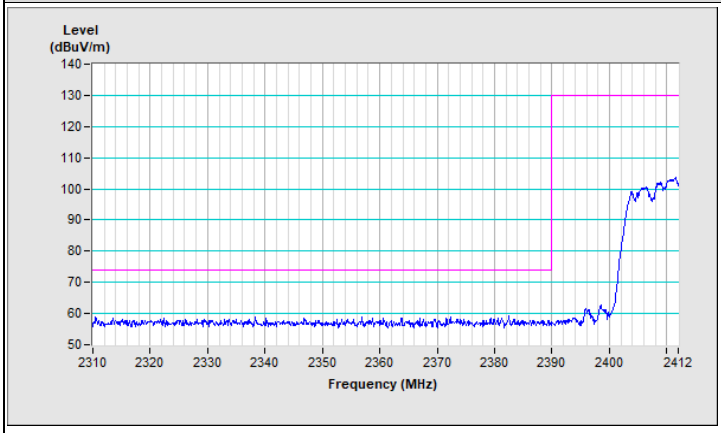


Vertical (Peak)

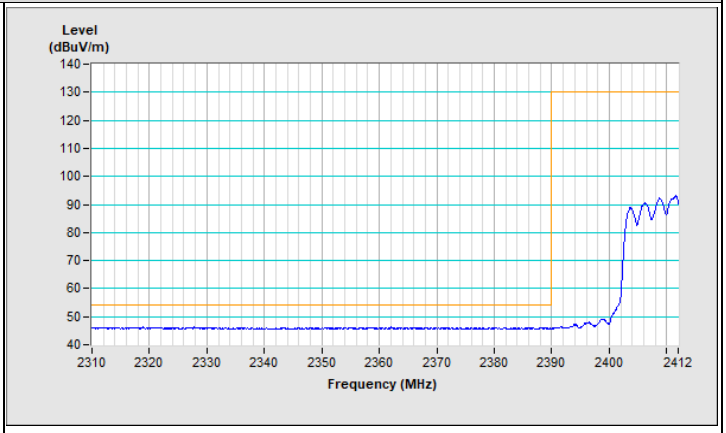


Vertical (Average)

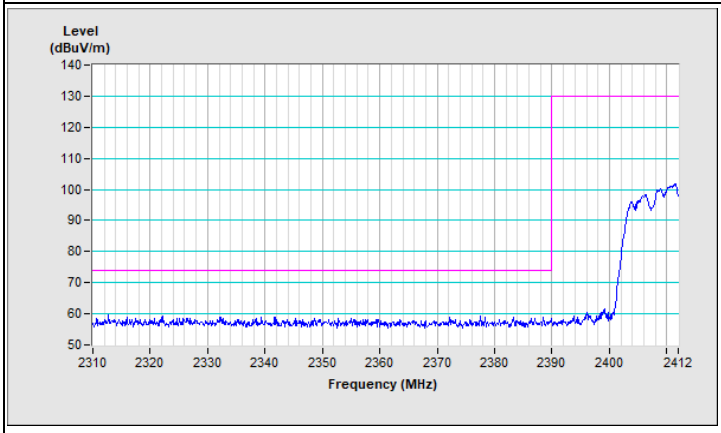
802.11n (HT20) Channel 1



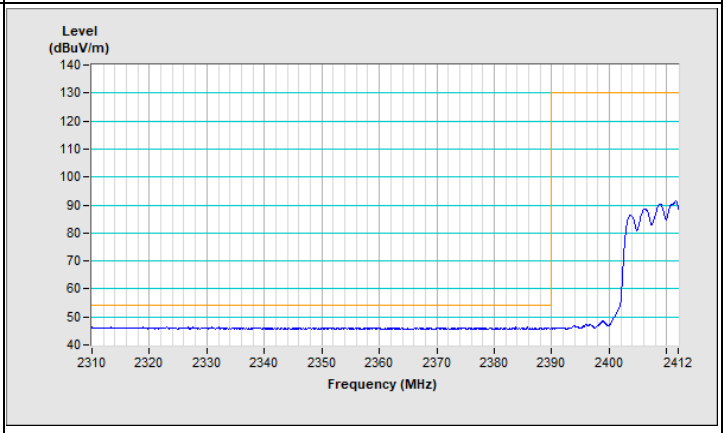
Horizontal (Peak)



Horizontal (Average)

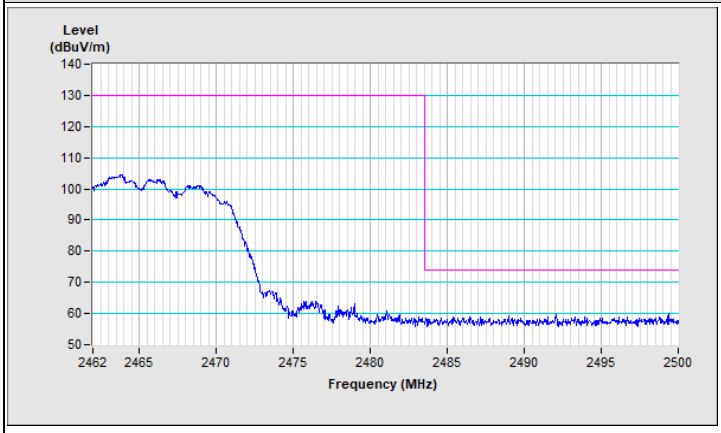


Vertical (Peak)

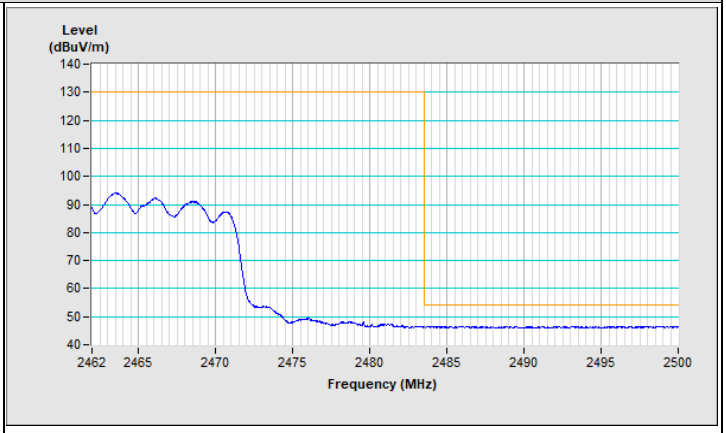


Vertical (Average)

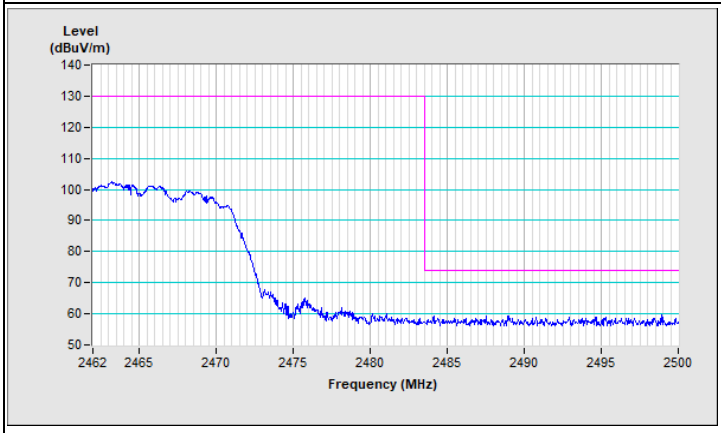
802.11n (HT20) Channel 11



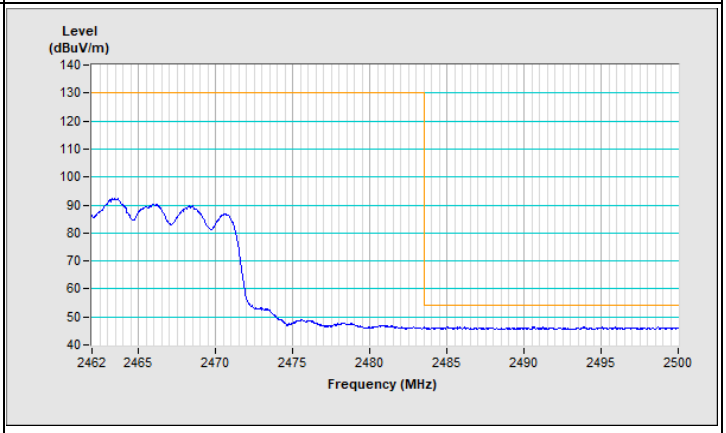
Horizontal (Peak)



Horizontal (Average)

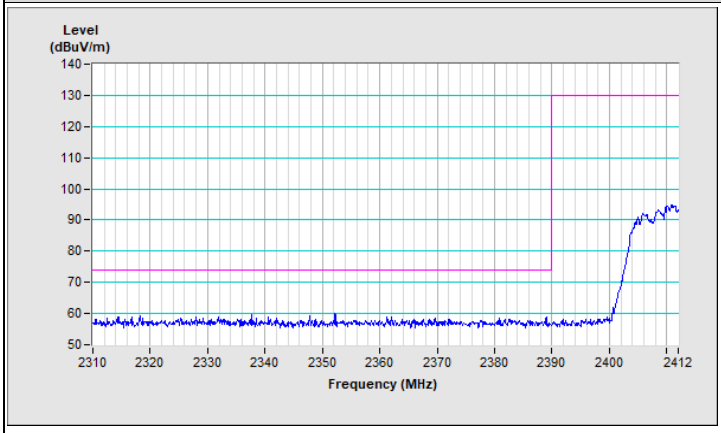


Vertical (Peak)

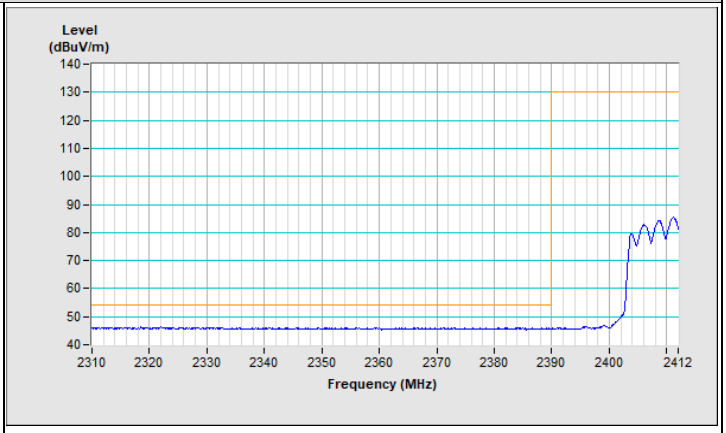


Vertical (Average)

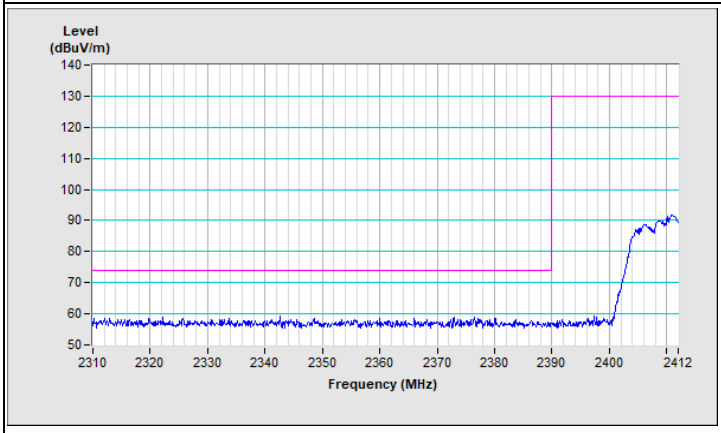
802.11n (HT40) Channel 3



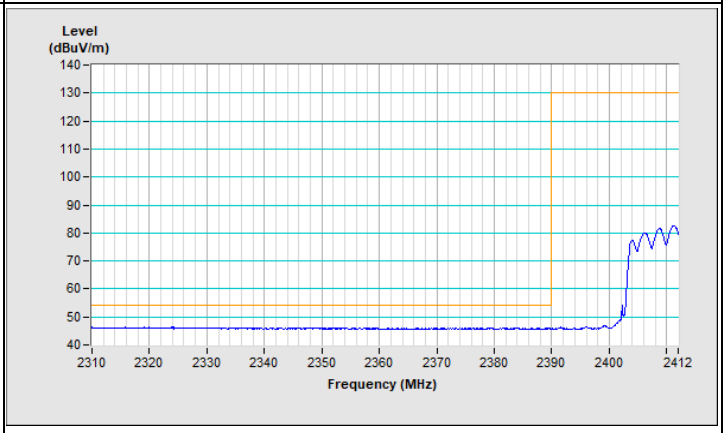
Horizontal (Peak)



Horizontal (Average)

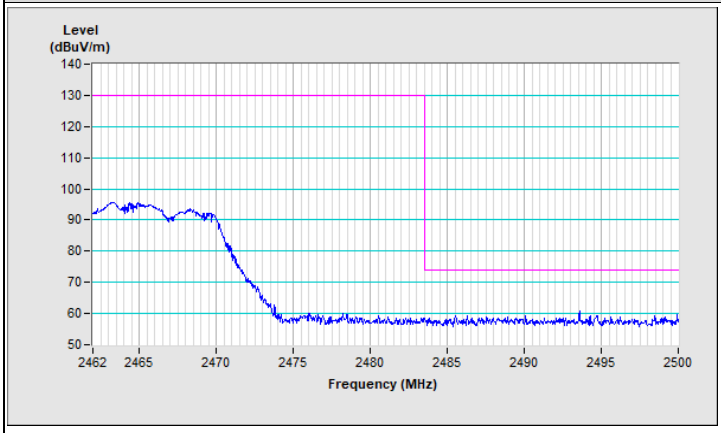


Vertical (Peak)

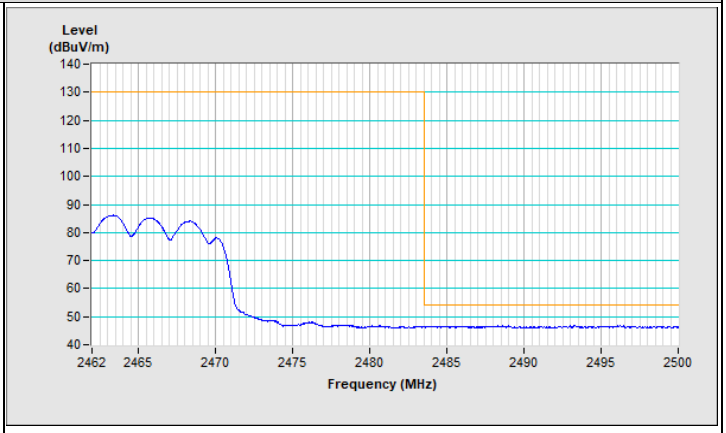


Vertical (Average)

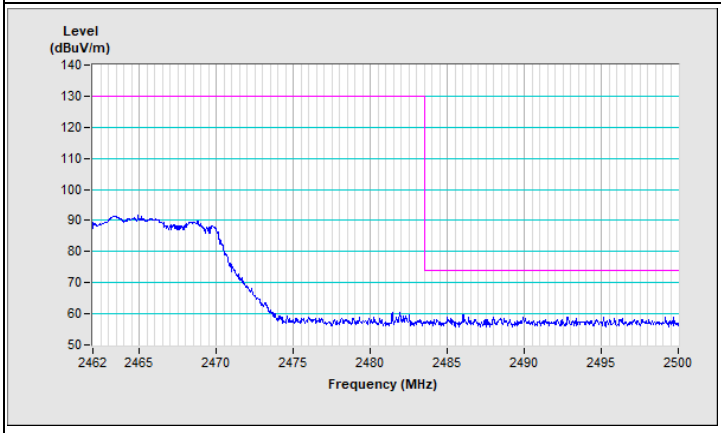
802.11n (HT40) Channel 9



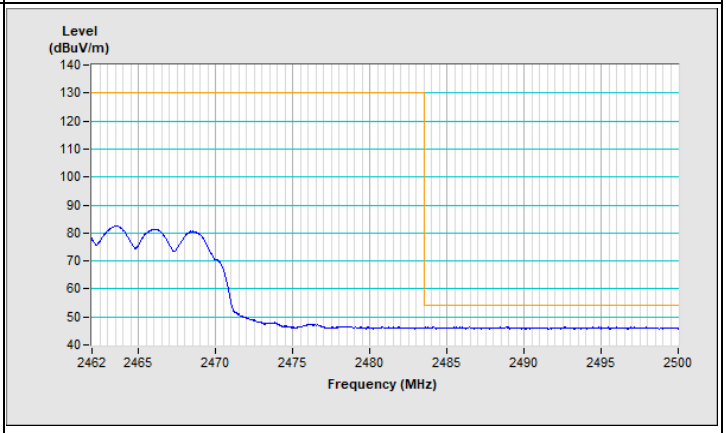
Horizontal (Peak)



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.

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

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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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