TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart C (Section 15.247)**
Report No.:	RFBCUN-WTW-P21123242C-2
FCC ID:	H8NEAO2522P-2
Product:	Outdoor WiFi6 AP
Brand:	ASKEY
Model No.:	EAO2522P-2
Received Date:	2021/12/27
Test Date:	2021/12/27 ~ 2022/1/10
Issued Date:	2024/6/24
Applicant:	ASKEY COMPUTER CORP.
Address:	10F, NO.119, JIANKANG RD., ZHONGHE DIST., NEW TAIPEI CITY 23585, 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(1):	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kewi Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number(1):	788550 / TW0003
Test Location(2):	No. 70, Wenming Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
FCC Registration / Designation Number(2):	281270 / TW0032

Approved by: Jeremy . Lin , **Date:** **2024/6/24**

Jeremy Lin / Project Engineer

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Prepared by : Gina Liu / Specialist

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RFBCUN-WTW-P21123242C-2	Original release.	2024/6/24

1 Certificate

Product:	Outdoor WiFi6 AP
Brand:	ASKEY
Test Model:	EAO2522P-2
Sample Status:	Engineering sample
Applicant:	ASKEY COMPUTER CORP.
Test Date:	2021/12/27 ~ 2022/1/10
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	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 -7.05 dB at 12.01000 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -4.35 dB at 59.10 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.16 dB at 2483.50 MHz
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.79 dB
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.99 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.00 dB
	30MHz ~ 200MHz	2.91 dB
	200MHz ~1000MHz	2.92 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	1.76 dB
	18GHz ~ 40GHz	1.77 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	Outdoor WiFi6 AP
Brand	ASKEY
Test Model	EAO2522P-2
Status of EUT	Engineering sample
Power Supply Rating	50-57 Vdc (POE)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDMA
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11 Mbps 802.11g: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ax: up to 573.5 Mbps
Operating Frequency	2.412 GHz ~ 2.462 GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20): 11 802.11n (HT40), VHT40, 802.11ax (HE40): 7
Output Power	CDD mode 802.11b: 807.235 mW (29.07 dBm) 802.11g: 890.387 mW (29.50 dBm) VHT20: 746.597 mW (28.73 dBm) VHT40: 191.525 mW (22.82 dBm) 802.11ax (HE20): 753.505 mW (28.77 dBm) 802.11ax (HE40): 192.409 mW (22.84 dBm) Beamforming mode 802.11ac (VHT20): 746.597 mW (28.73 dBm) 802.11ac (VHT40): 191.525 mW (22.82 dBm) 802.11ax (HE20): 753.505 mW (28.77 dBm) 802.11ax (HE40): 192.409 mW (22.84 dBm)

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna No.	Brand	Model	Gain (dBi)	Antenna Type	Connector Type
			2400~2483.5 MHz		
Ant 6	Airgain	N01AKAWB	3.9	Dipole	ipex(MHF)
Ant 7	Airgain	N01AKAWG	4.2	Dipole	ipex(MHF)

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

2. The EUT incorporates a MIMO function:

2.4 GHz Band		
Modulation Mode	TX & RX Configuration	
802.11b	1TX	1RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
VHT20	2TX	2RX
VHT40	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX

Note:
1. All of modulation mode support beamforming function except 802.11b and 802.11g modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz) and 256QAM mode for VHT20 (VHT40) and 802.11ax mode for 20 MHz (40 MHz) therefore the manufacturer will control the power for 802.11n mode and 256QAM mode is 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), VHT20, 802.11ax (HE20):

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

7 channels are provided for 802.11n (HT40), VHT40, 802.11ax (HE40):

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

3.4 Test Mode Applicability and Tested Channel Detail

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

Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g	CDD	1, 6, 11	BPSK	6Mb/s
	802.11n (HT20)	CDD & Beamforming	1, 6, 11	BPSK	MCS0
	802.11n (HT40)	CDD & Beamforming	3, 6, 9	BPSK	MCS0
	VHT20	CDD & Beamforming	1, 6, 11	BPSK	MCS0
	VHT40	CDD & Beamforming	3, 6, 9	BPSK	MCS0
	802.11ax (HE20)	CDD & Beamforming	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)	CDD & Beamforming	3, 6, 9	BPSK	MCS0
Power Spectral Density	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g	CDD	1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0
6 dB Bandwidth / Conducted Out of Band Emissions	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g	CDD	1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0
AC Power Conducted Emissions	802.11ax (HE20)	CDD	6	DBPSK	1Mb/s
Unwanted Emissions below 1 GHz	802.11ax (HE20)	CDD	6	DBPSK	1Mb/s
Unwanted Emissions above 1 GHz	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g	CDD	1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0

Note: The EUT is device Will restriced installation position, the EUT was positioned on the z-axis during testing.

3.5 Duty Cycle of Test Signal

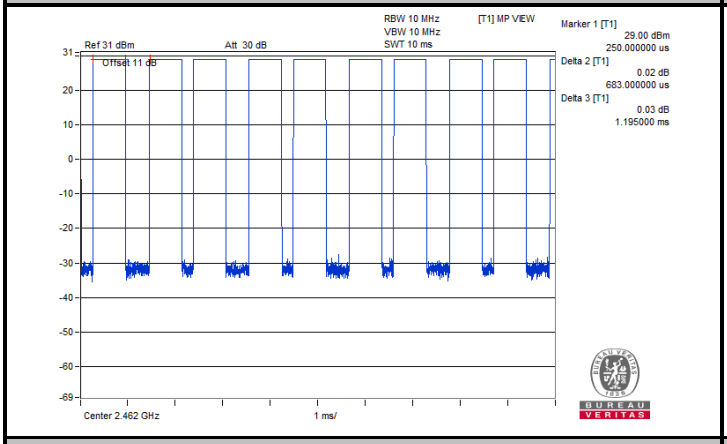
802.11b: Duty cycle = 0.683/1.195 = 0.572, Duty factor = 10 * log(1/0.572) = 2.43

802.11g: Duty cycle = 1.97/2.057 = 0.958, Duty factor = 10 * log(1/0.958) = 0.19

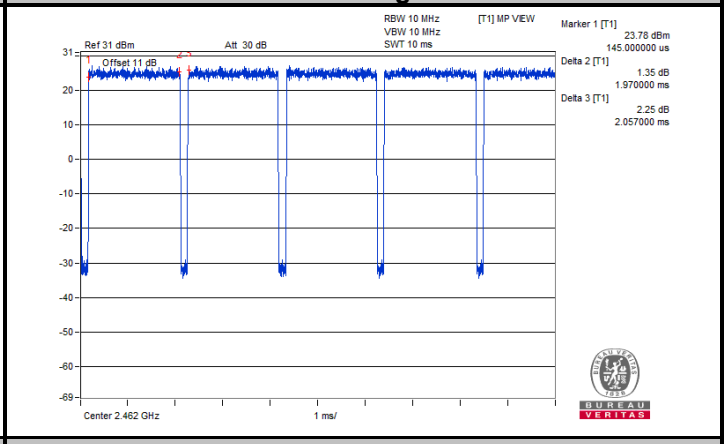
802.11ax (HE20): Duty cycle = 5.441/5.73 = 0.950, Duty factor = 10 * log(1/0.950) = 0.22

802.11ax (HE40): Duty cycle = 5.435/5.747 = 0.946, Duty factor = 10 * log(1/0.946) = 0.24

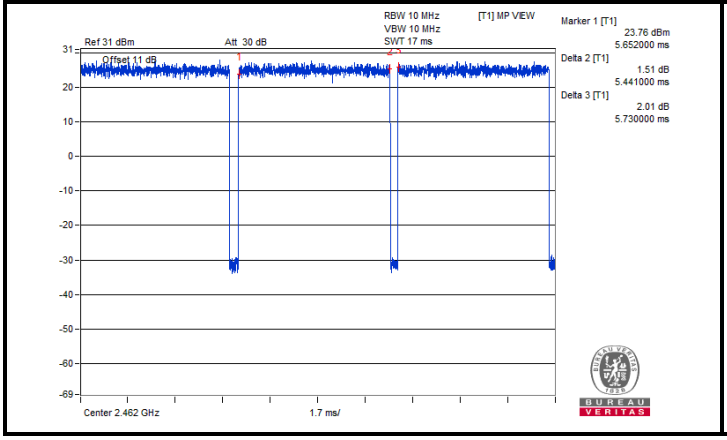
802.11b



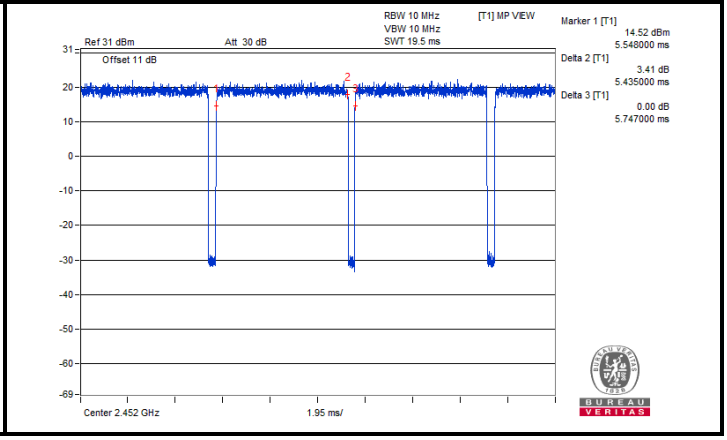
802.11g



802.11ax (HE20)



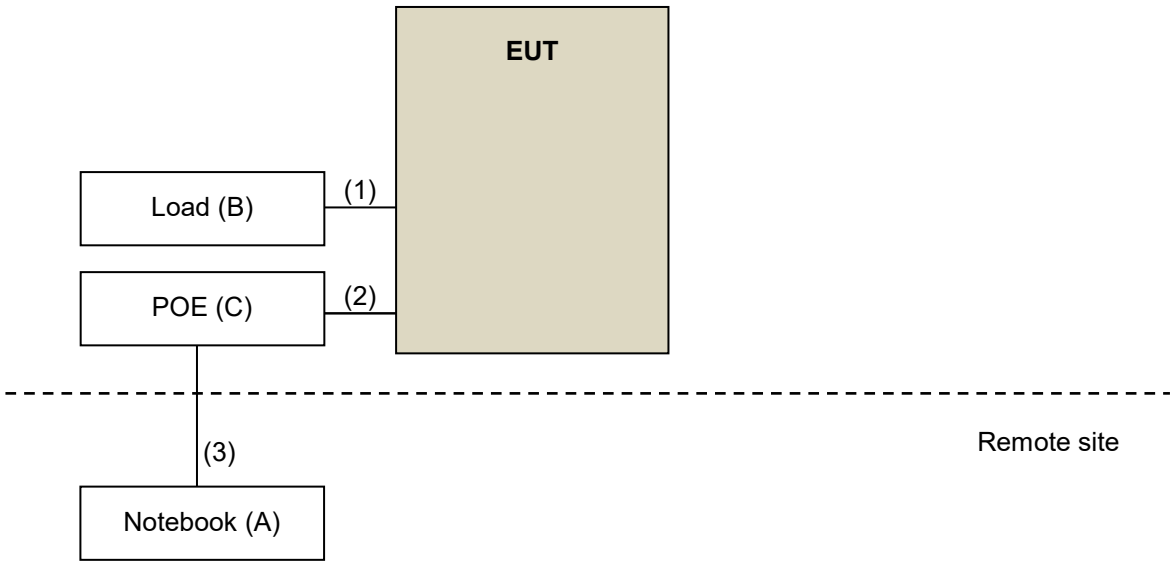
802.11ax (HE40)



3.6 Test Program Used and Operation Descriptions

Controlling software QSPR Version 5.0-00197 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	E5420	76WNBT1	N/A	--
B	Load	N/A	N/A	N/A	N/A	--
C	POE	Delta	ADH-45AR B	N/A	N/A	Provided by client

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	LAN Cable	1	1.5	N	0	RJ45, Cat5e
2	LAN Cable	1	1.5	N	0	RJ45, Cat5e
3	LAN Cable	1	6	N	0	RJ45, Cat5e

4 Test Instruments

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

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	Jan. 19, 2021	Jan. 18, 2022
Wideband Power Sensor KEYSIGHT	N1923A	MY58190002	May 05, 2021	May 04, 2022

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/1/4

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Spectrum Analyzer KEYSIGHT	N9020B	MY60110462	Dec. 21, 2021	Dec. 20, 2022
Software BV CPS	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Spectrum Analyzer R&S	FSU43	101261	Apr. 12, 2021	Apr. 11, 2022

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/1/4

4.3 6 dB Bandwidth

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Software BV CPS	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Spectrum Analyzer R&S	FSU43	101261	Apr. 12, 2021	Apr. 11, 2022

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/1/4

4.4 Conducted Out of Band Emissions

Refer to section 4.3 to get information of the instruments.

4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 03, 2021	Dec. 02, 2022
RF signal cable Woken	5D-FB	Cable-cond1-01	Jan. 16, 2021	Jan. 15, 2022
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 25, 2021	Feb. 24, 2022
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Sep. 07, 2021	Sep. 06, 2022
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2022/1/10

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower KaiTuo	NA	NA	NA	NA
Antenna Tower Controller KaiTuo	KT-2000	NA	NA	NA
Software BV CPS	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Spectrum Analyzer KEYSIGHT	N9020B	MY60110462	Dec. 21, 2021	Dec. 20, 2022
Test Receiver KEYSIGHT	N9038B	MY60180018	Feb. 01, 2021	Jan. 31, 2022
Turn Table Max-Full	MFT-151SS-0.5T	NA	NA	NA
Turn Table Controller Max-Full	MF-7802BS	MF780208675	NA	NA
Preamplifier EMCI	EMC330N	980783	Jan. 19, 2021	Jan. 18, 2022
Preamplifier EMCI	EMC118A45SE	980810	Jan. 06, 2021	Jan. 05, 2022
Preamplifier EMCI	EMC184045SE	980787	Jan. 18, 2021	Jan. 17, 2022
BILOG Antenna SCHWARZBECK	VULB9168	9168-995	Oct. 28, 2021	Otc. 27, 2022
HORN Antenna RF SPIN	DRH18-E	210104A18E	Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9170	9170-995	Nov. 14, 2021	Nov. 13, 2022
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022

Notes:

1. The test was performed in HY - 966 chamber 7.
2. Tested Date: 2021/12/30

4.7 Unwanted Emissions above 1 GHz

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver KEYSIGHT	N9038B	MY60180018	Feb. 01, 2021	Jan. 31, 2022
Spectrum Analyzer KEYSIGHT	N9020B	MY60110462	Dec. 21, 2021	Dec. 20, 2022
BILOG Antenna SCHWARZBECK	VULB9168	9168-995	Oct. 28, 2021	Otc. 27, 2022
HORN Antenna RF SPIN	DRH18-E	210104A18E	Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9170	9170-995	Nov. 14, 2021	Nov. 13, 2022
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier EMCI	EMC330N	980783	Jan. 19, 2021	Jan. 18, 2022
Preamplifier EMCI	EMC118A45SE	980810	Jan. 06, 2021	Jan. 05, 2022
Preamplifier EMCI	EMC184045SE	980787	Jan. 18, 2021	Jan. 17, 2022
RF signal cable EMCI	EMC104-SM-SM-(9000+3000+2000+1000)	201230+ 201242+201238+ 210101	Jan. 18, 2021	Jan. 17, 2022
RF signal cable EMCI	EMCCFD400-NM-NM-(9000+3000+500+500)	201252+ 201250+ 201247+201245	Jan. 18, 2021	Jan. 17, 2022
RF signal cable EMCI	EMC101G-KM-KM-(5000+3000+2000)	201259+201256+201253	Jan. 18, 2021	Jan. 17, 2022
Software BV CPS	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Turn Table Max-Full	MFT-151SS-0.5T	NA	NA	NA
Turn Table Controller Max-Full	MF-7802BS	MF780208675	NA	NA
Antenna Tower KaiTuo	NA	NA	NA	NA
Antenna Tower Controller KaiTuo	KT-2000	NA	NA	NA
Wideband Power Sensor KEYSIGHT	N1923A	MY58190002	May 05, 2021	May 04, 2022
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	Jan. 19, 2021	Jan. 18, 2022

Notes:

1. The test was performed in HY - 966 chamber 7.
2. Tested Date: 2021/12/27

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 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

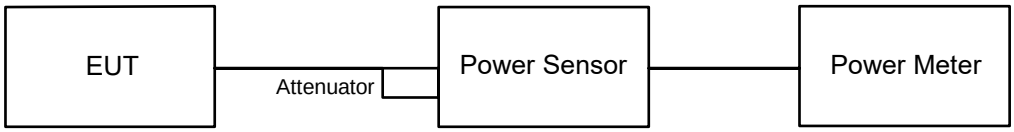
Notes:

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

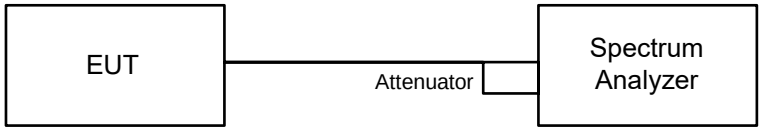


6.1.2 Test Procedure

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

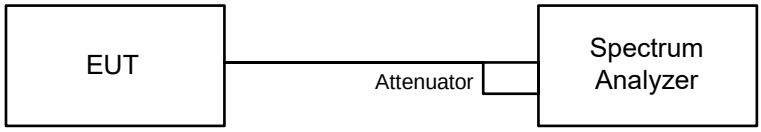


6.2.2 Test Procedure

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 ≥3 x RBW.
f. Detector = power averaging (RMS) or sample detector (when RMS not available).
g. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
h. Sweep time = auto couple.
i. Do not use sweep triggering. Allow sweep to “free run”.
j. Employ trace averaging (RMS) mode over a minimum of 100 traces.
k. Use the peak marker function to determine the maximum amplitude level.
l. Note: If Duty cycle < 98%, Add 10 log (1/x), where x is the duty cycle measured in step (a, to the measured PSD to compute the average PSD during the actual transmission time.

6.3 6 dB Bandwidth

6.3.1 Test Setup

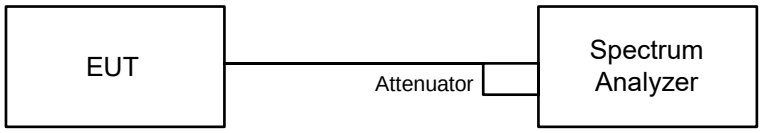


6.3.2 Test Procedure

a. Set resolution bandwidth (RBW) = 100 kHz.
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. 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

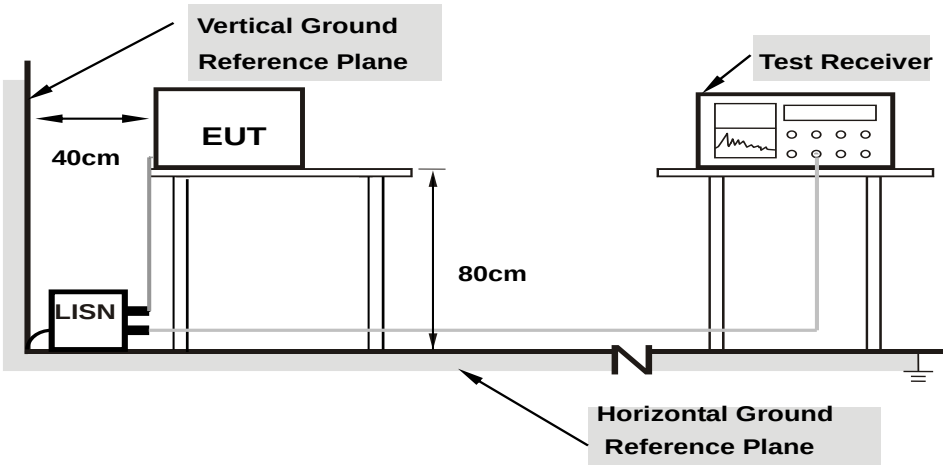
a. Set the RBW = 100 kHz.
b. Set the VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep time = auto couple.
e. Trace mode = max hold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

a. Set RBW = 100 kHz.
b. Set VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep = auto couple.
e. Trace Mode = max hold.
f. Allow trace to fully stabilize.
g. 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

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.

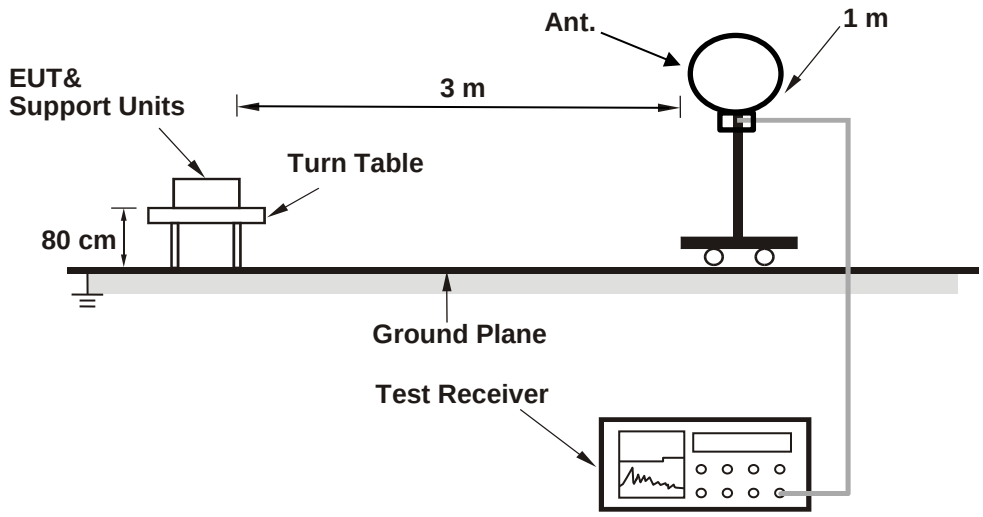
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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.

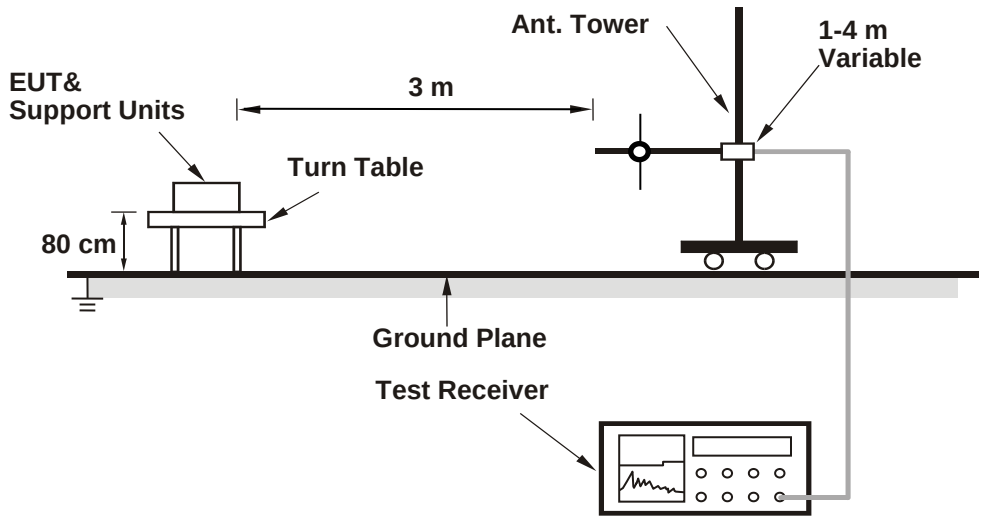
6.6 Unwanted Emissions below 1 GHz

6.6.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.6.2 Test Procedure

For Radiated emission below 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

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

For Radiated emission above 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

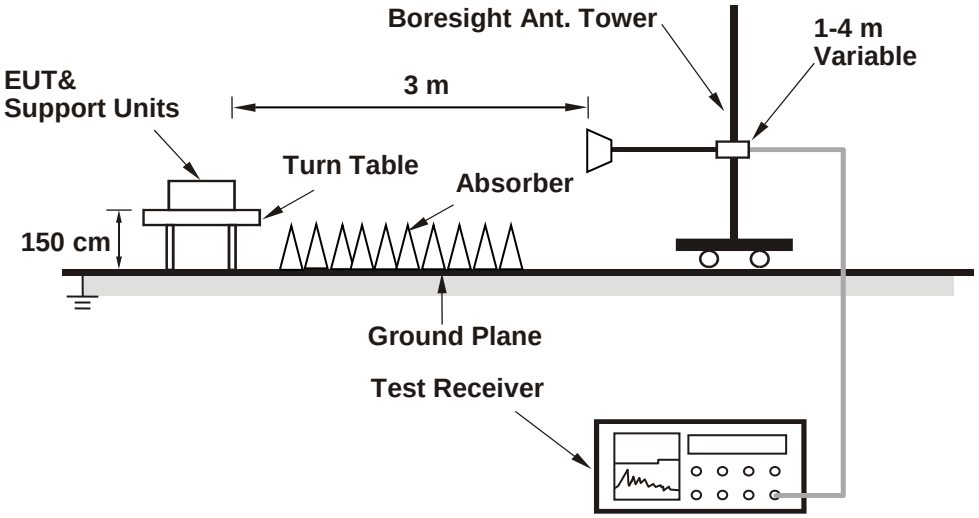
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

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

6.7 Unwanted Emissions above 1 GHz

6.7.1 Test Setup



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

6.7.2 Test Procedure

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:	54 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin

CDD Mode

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
1	2412	301.301	24.79	30	Pass
6	2437	807.235	29.07	30	Pass
11	2462	474.242	26.76	30	Pass

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	19.55	19.34	176.058	22.46	30	Pass
6	2437	26.55	26.42	890.387	29.50	30	Pass
11	2462	21.82	21.77	302.369	24.81	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.

VHT20

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	17.24	16.83	101.161	20.05	30	Pass
6	2437	25.79	25.65	746.597	28.73	30	Pass
11	2462	21.48	21.34	276.749	24.42	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.

VHT40

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	15.08	14.55	60.721	17.83	30	Pass
6	2437	19.94	19.68	191.525	22.82	30	Pass
9	2452	17.98	17.62	120.615	20.81	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	17.28	16.85	101.874	20.08	30	Pass
6	2437	25.83	25.69	753.505	28.77	30	Pass
11	2462	21.50	21.39	278.975	24.46	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 (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	15.11	14.57	61.076	17.86	30	Pass
6	2437	19.96	19.70	192.409	22.84	30	Pass
9	2452	18.01	17.66	121.586	20.85	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.

VHT20 Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	17.24	16.83	101.161	20.05	28.94	Pass
6	2437	25.79	25.65	746.597	28.73	28.94	Pass
11	2462	21.48	21.34	276.749	24.42	28.94	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. The directional gain is 7.06 dBi > 6 dBi, so the power density limit shall be reduced to 30-(7.06-6) = 28.94 dBm.

VHT40 Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	15.08	14.55	60.721	17.83	28.94	Pass
6	2437	19.94	19.68	191.525	22.82	28.94	Pass
9	2452	17.98	17.62	120.615	20.81	28.94	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. The directional gain is 7.06 dBi > 6 dBi, so the power density limit shall be reduced to 30-(7.06-6) = 28.94 dBm.

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	17.28	16.85	101.874	20.08	28.94	Pass
6	2437	25.83	25.69	753.505	28.77	28.94	Pass
11	2462	21.50	21.39	278.975	24.46	28.94	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. The directional gain is 7.06 dBi > 6 dBi, so the power density limit shall be reduced to 30-(7.06-6) = 28.94 dBm.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	15.11	14.57	61.076	17.86	28.94	Pass
6	2437	19.96	19.70	192.409	22.84	28.94	Pass
9	2452	18.01	17.66	121.586	20.85	28.94	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. The directional gain is 7.06 dBi > 6 dBi, so the power density limit shall be reduced to 30-(7.06-6) = 28.94 dBm.

7.2 Power Spectral Density

Input Power:	54 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin

802.11b

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
1	2412	-12.65	8.00	Pass
6	2437	-8.52	8.00	Pass
11	2462	-11	8.00	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The antenna gain is 4.2 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-16.53	-16.41	-13.27	6.94	Pass
6	2437	-9.73	-9.80	-6.57	6.94	Pass
11	2462	-14.30	-14.66	-11.28	6.94	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
3. The directional gain is 7.06 dBi > 6 dBi, so the power density limit shall be reduced to 8-(7.06-6) = 6.94 dBm.

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	-20.87	-20.93	-17.66	6.94	Pass
6	2437	-12.62	-12.54	-9.34	6.94	Pass
11	2462	-16.48	-16.72	-13.36	6.94	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
3. The directional gain is 7.06 dBi > 6 dBi, so the power density limit shall be reduced to 8-(7.06-6) = 6.94 dBm.

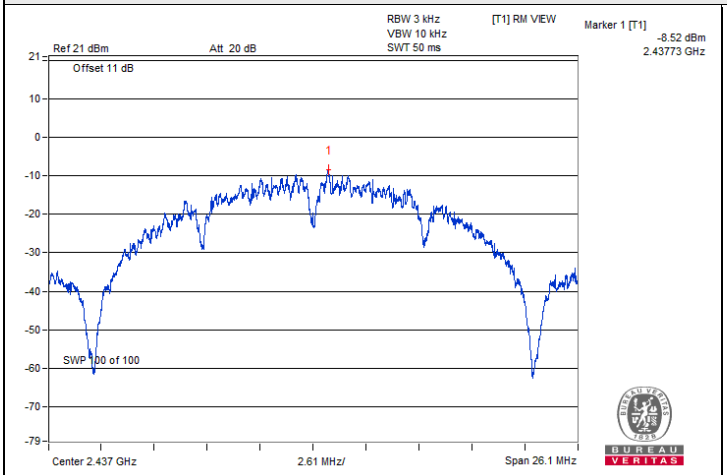
802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
3	2422	-25.73	-25.90	-22.56	6.94	Pass
6	2437	-21.07	-21.00	-17.78	6.94	Pass
9	2452	-22.66	-22.97	-19.56	6.94	Pass

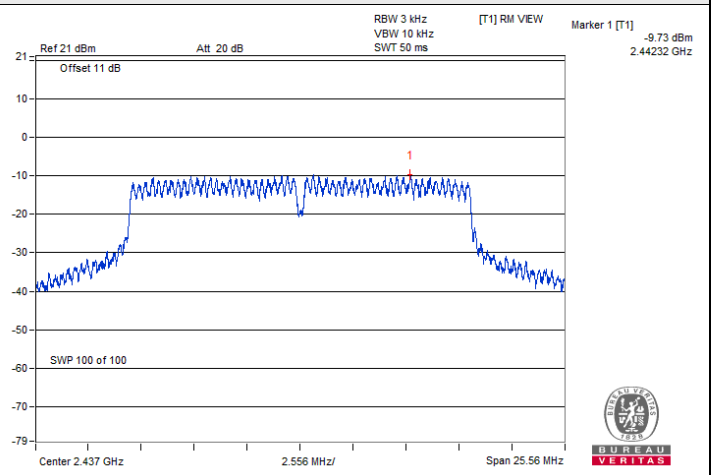
Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[(10$^{Chain0/20}$ + 10$^{Chain1/20}$)^2 / 2]
3. The directional gain is 7.06 dBi > 6 dBi, so the power density limit shall be reduced to 8-(7.06-6) = 6.94 dBm.

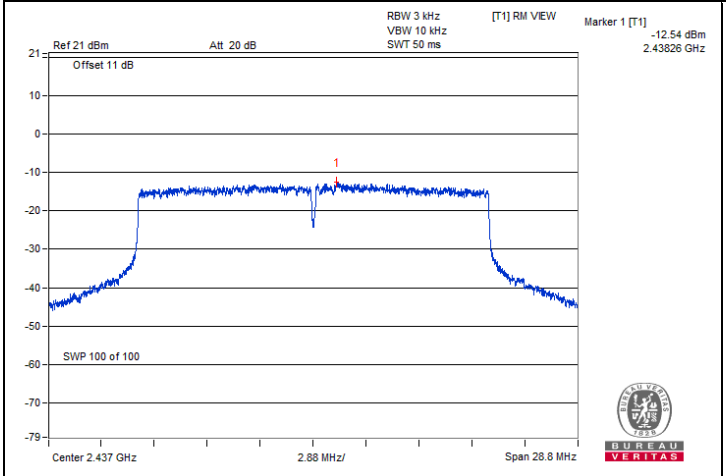
Spectrum Plot of Maximum Value



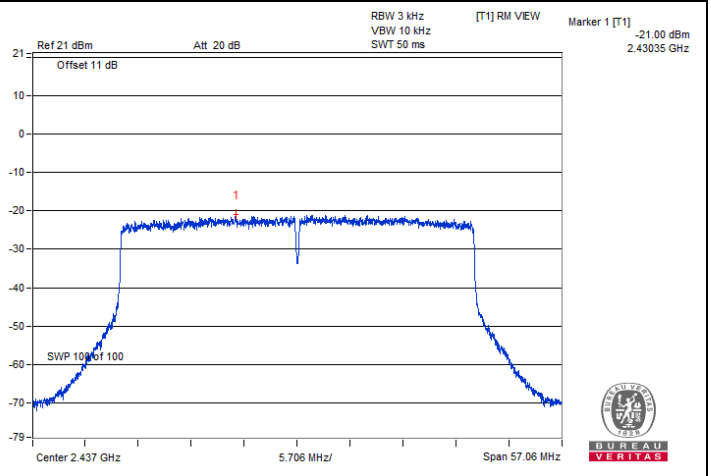
802.11b / Chain 0 : CH 6



802.11g / Chain 0 : CH 6



802.11ax (HE20) / Chain 1 : CH 6



802.11ax (HE40) / Chain 1 : CH 6

7.3 6 dB Bandwidth

Input Power:	54 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin

802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
1	2412	7.62	0.5	Pass
6	2437	10.07	0.5	Pass
11	2462	7.59	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	15.76	15.93	0.5	Pass
6	2437	15.67	15.60	0.5	Pass
11	2462	15.64	15.65	0.5	Pass

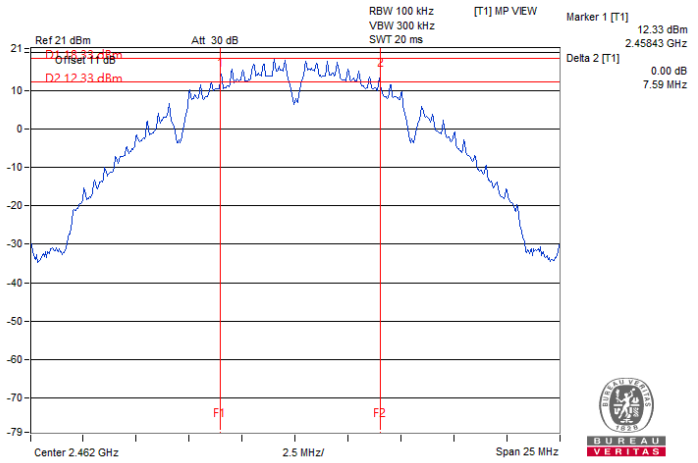
802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	18.51	18.39	0.5	Pass
6	2437	18.57	18.52	0.5	Pass
11	2462	18.61	18.47	0.5	Pass

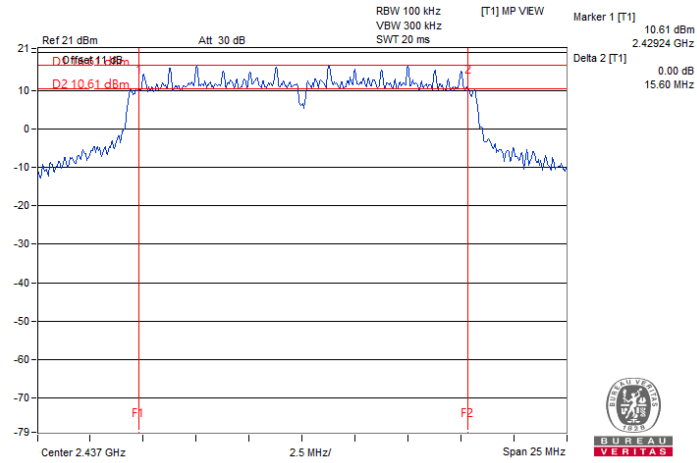
802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
3	2422	37.79	37.98	0.5	Pass
6	2437	37.90	37.65	0.5	Pass
9	2452	37.91	37.91	0.5	Pass

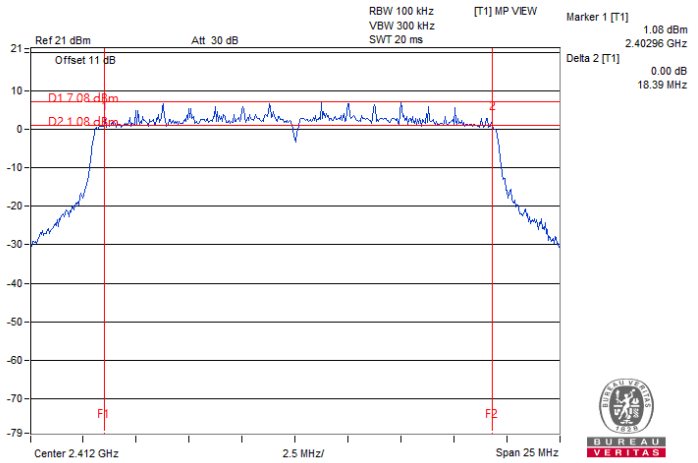
Spectrum Plot of Minimum Value



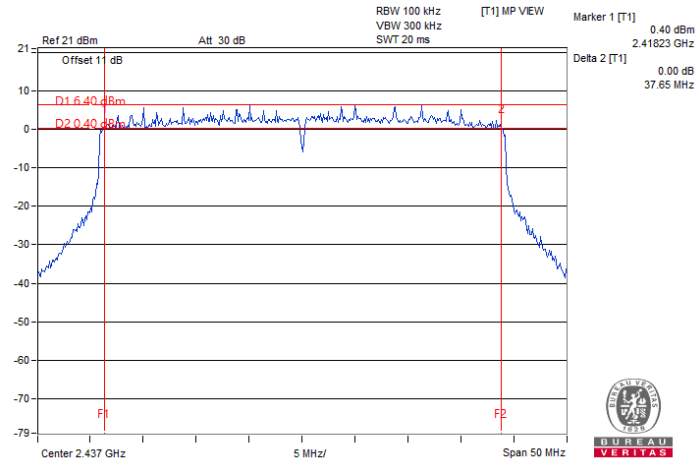
802.11b / Chain 0 : CH 11



802.11g / Chain 1 : CH 6



802.11ax (HE20) / Chain 1 : CH 1

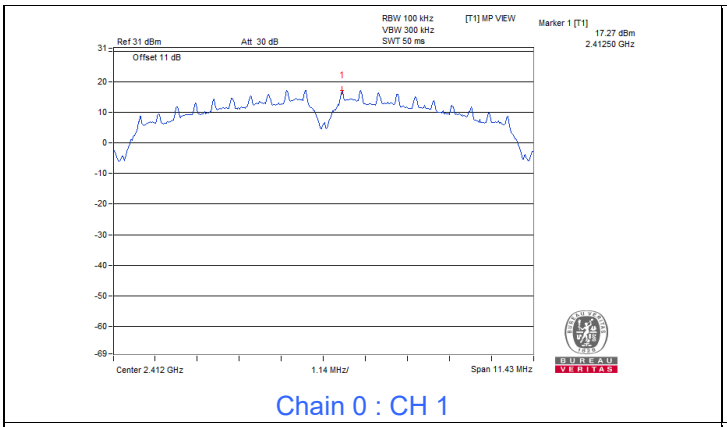


802.11ax (HE40) / Chain 1 : CH 6

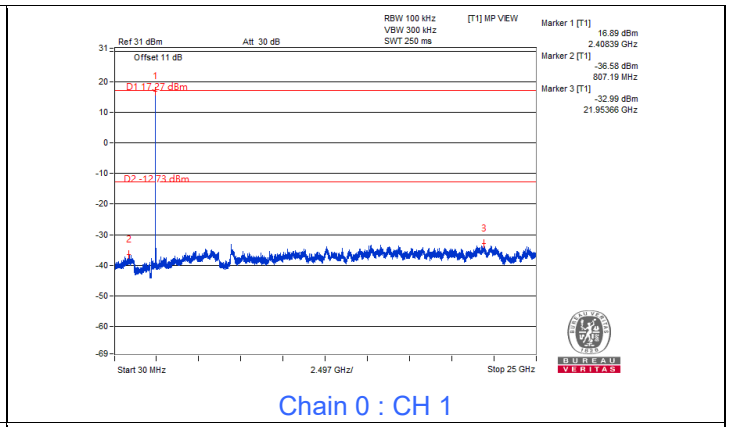
7.4 Conducted Out of Band Emissions

Input Power:	54 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin

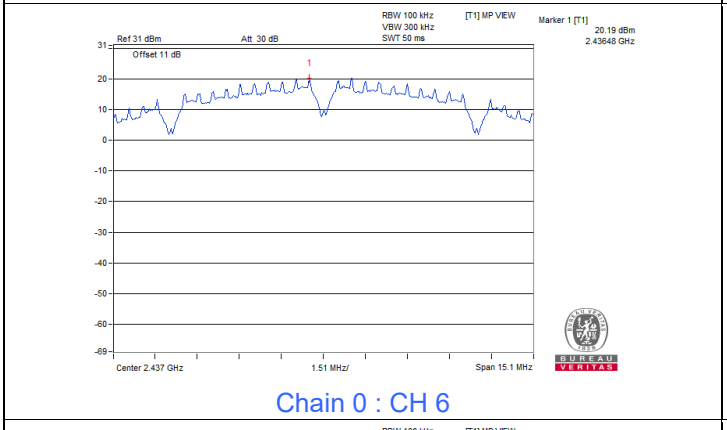
802.11b



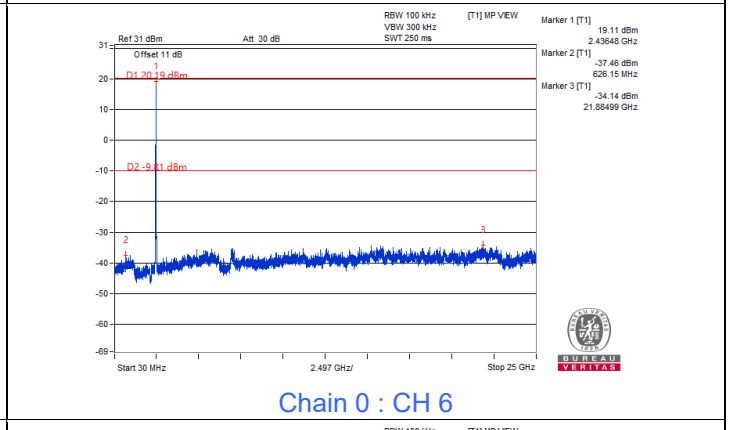
Chain 0 : CH 1



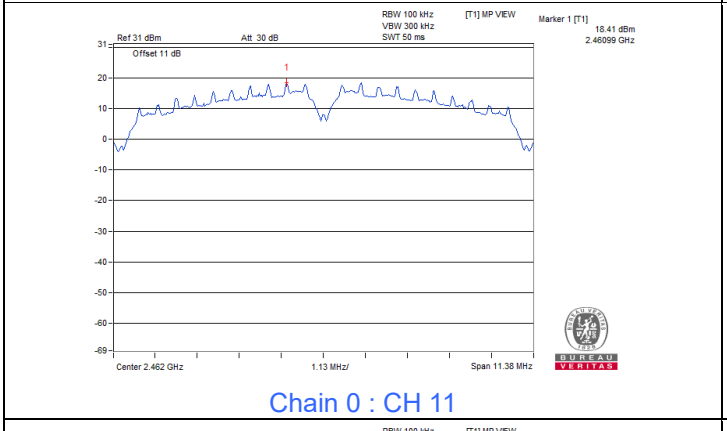
Chain 0 : CH 1



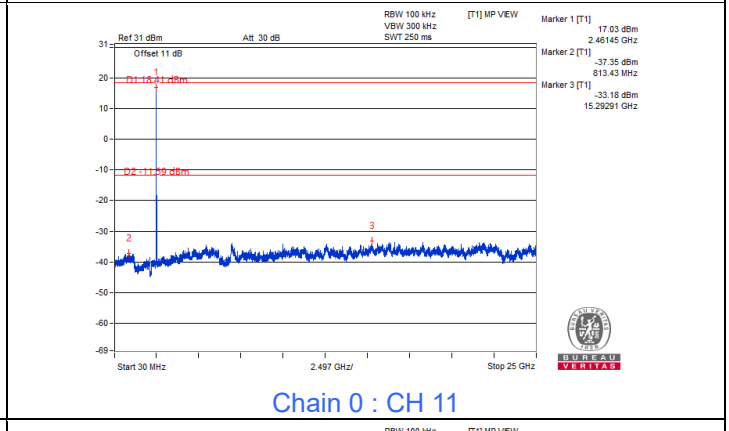
Chain 0 : CH 6



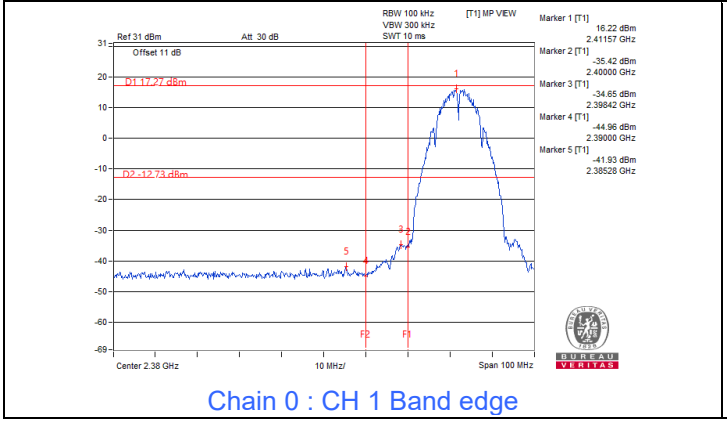
Chain 0 : CH 6



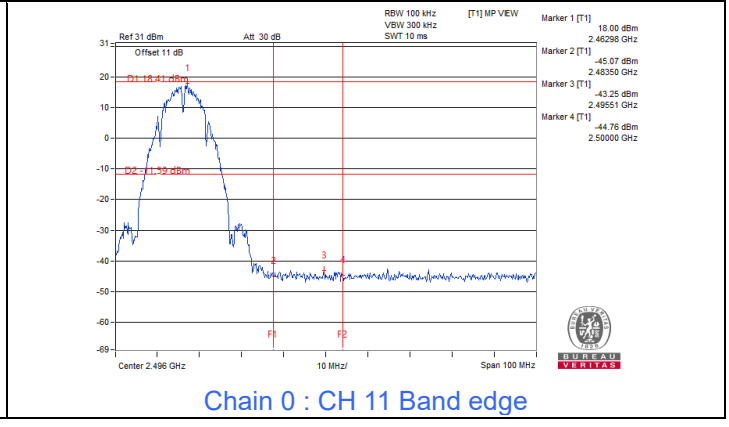
Chain 0 : CH 11



Chain 0 : CH 11

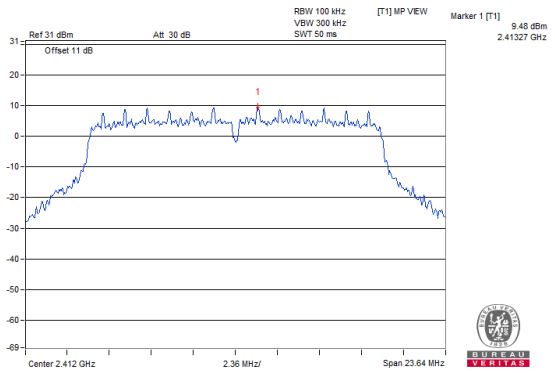


Chain 0 : CH 1 Band edge

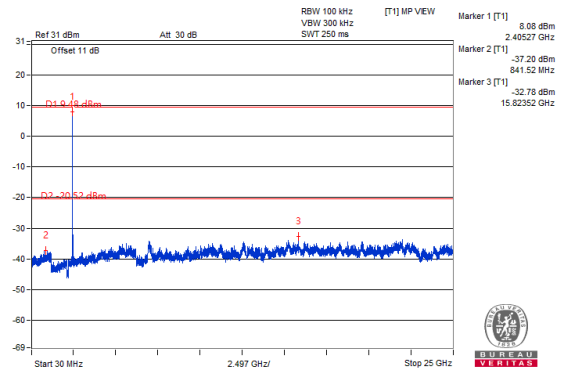


Chain 0 : CH 11 Band edge

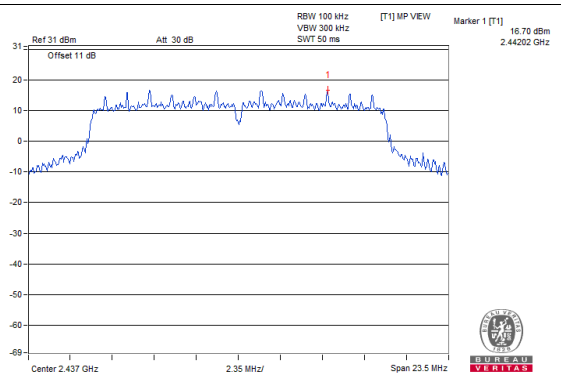
802.11g



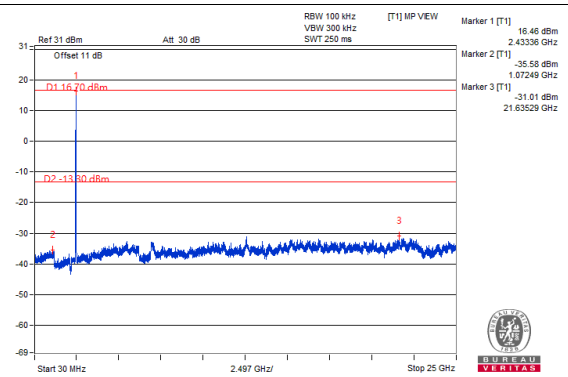
Chain 0 : CH 1



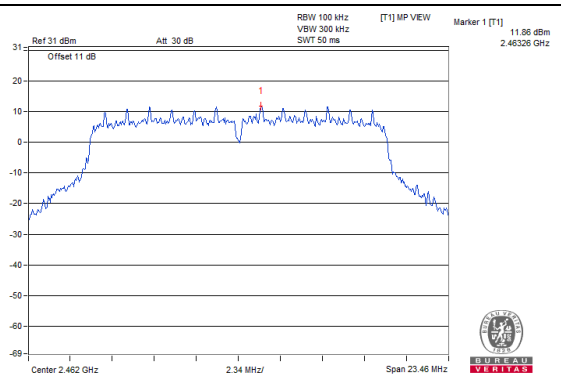
Chain 0 : CH 1



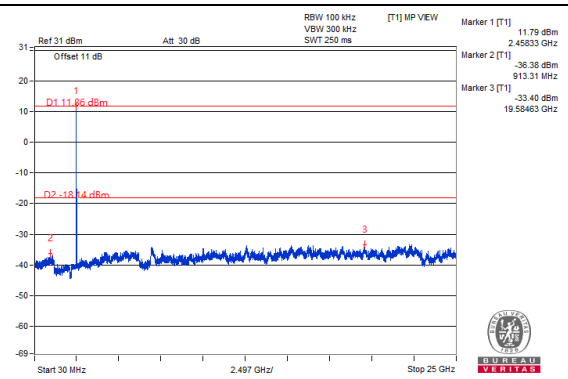
Chain 0 : CH 6



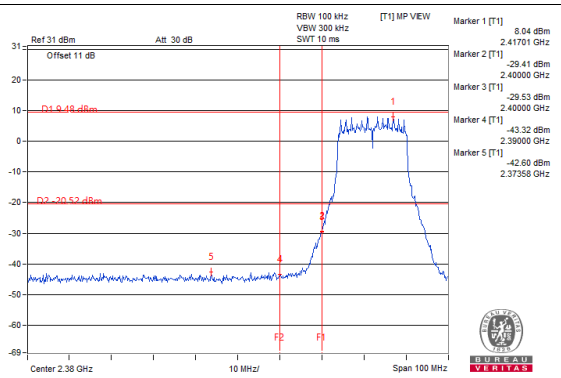
Chain 0 : CH 6



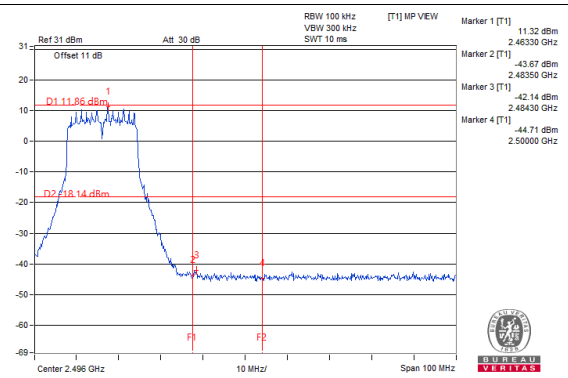
Chain 0 : CH 11



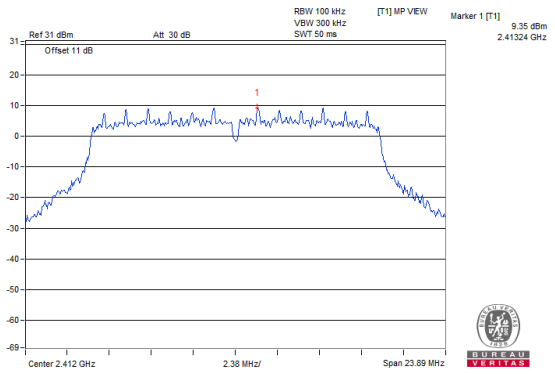
Chain 0 : CH 11



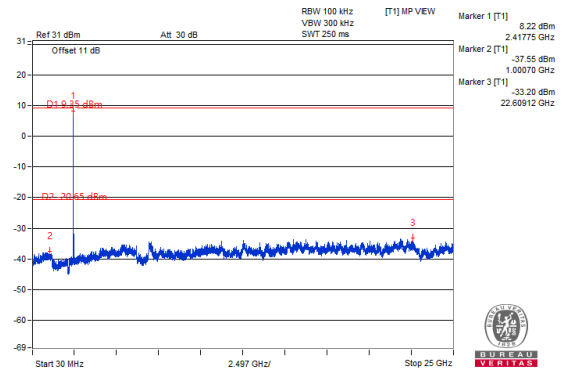
Chain 0 : CH 1 Band edge



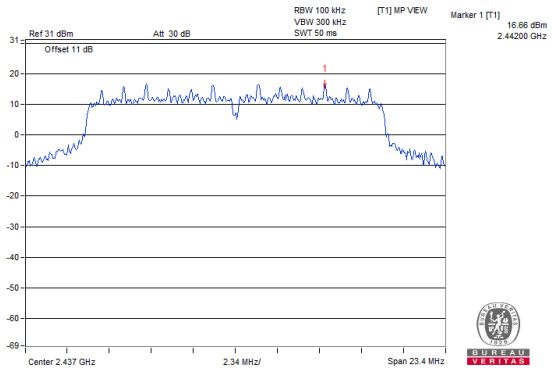
Chain 0 : CH 11 Band edge



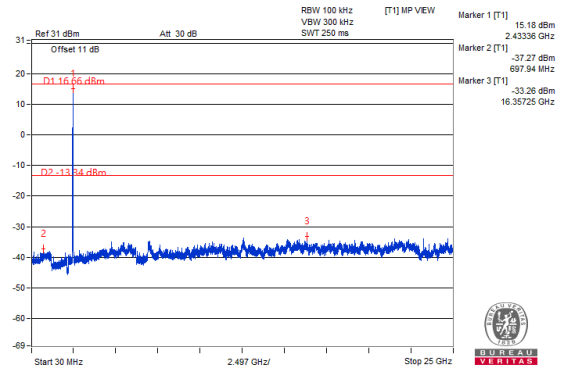
Chain 1 : CH 1



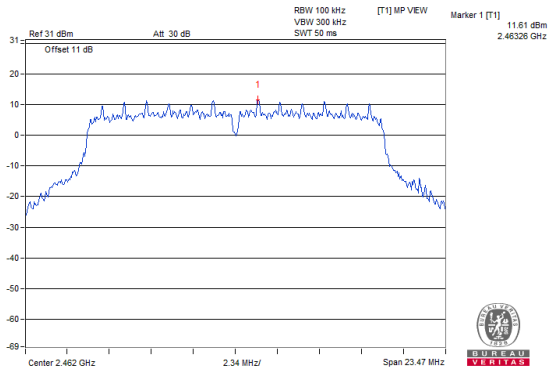
Chain 1 : CH 1



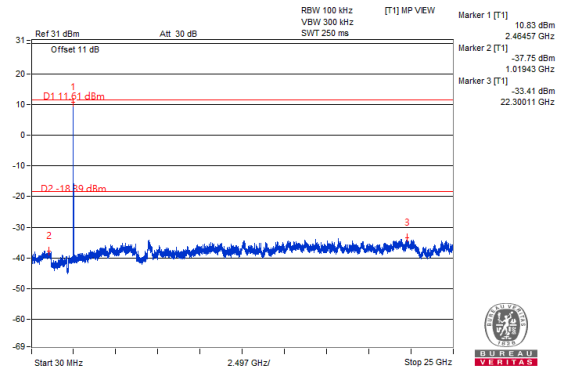
Chain 1 : CH 6



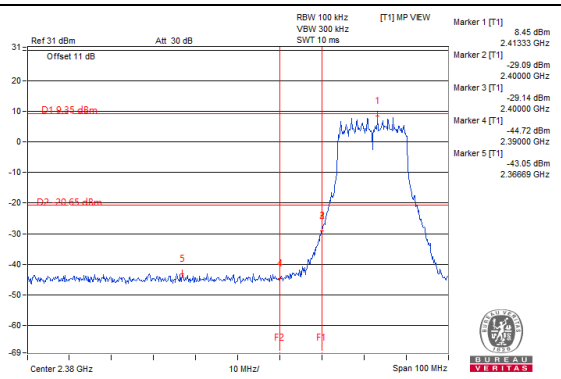
Chain 1 : CH 6



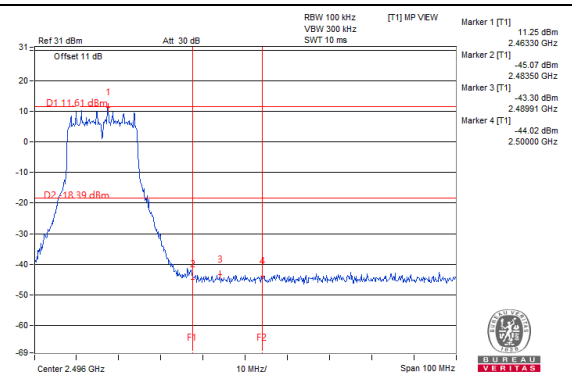
Chain 1 : CH 11



Chain 1 : CH 11



Chain 1 : CH 1 Band edge



Chain 1 : CH 11 Band edge

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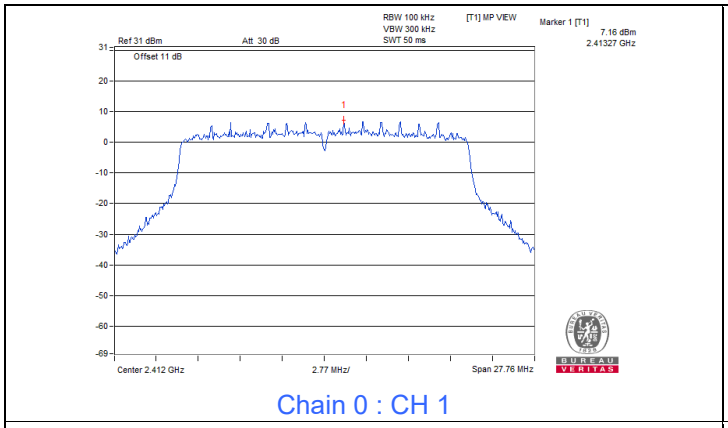

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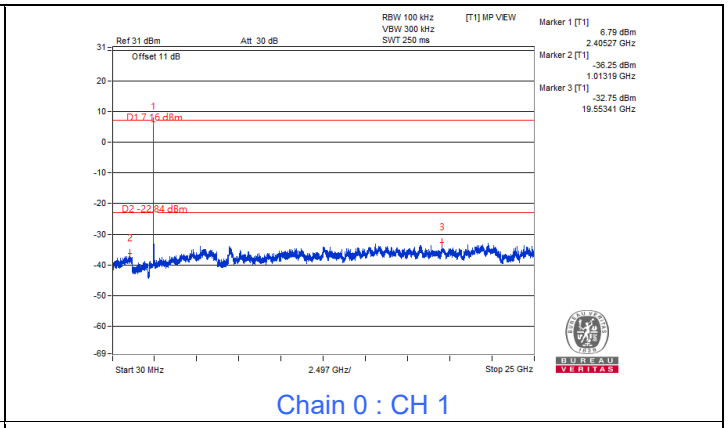
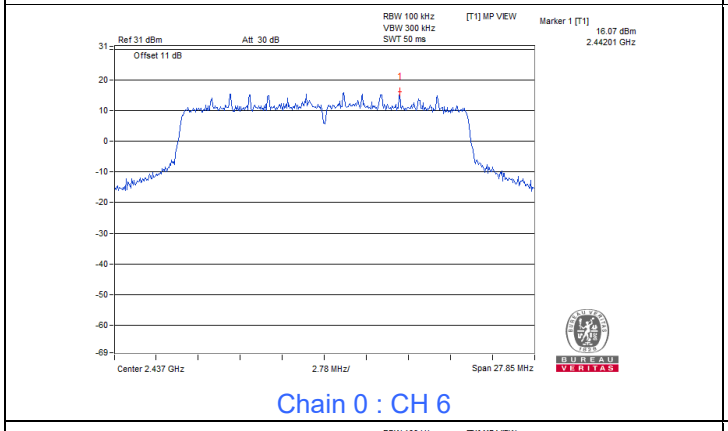
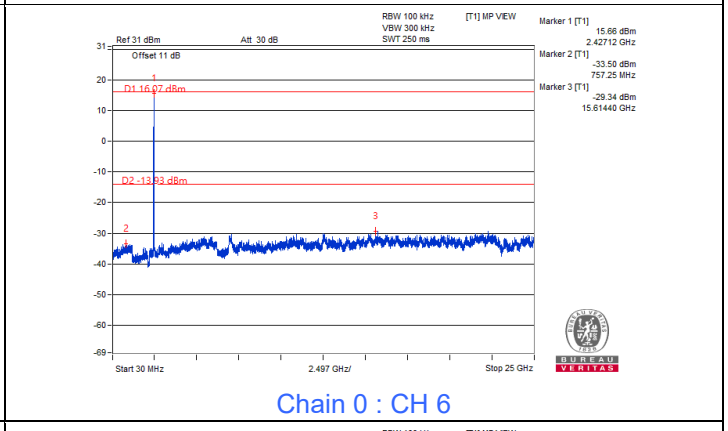


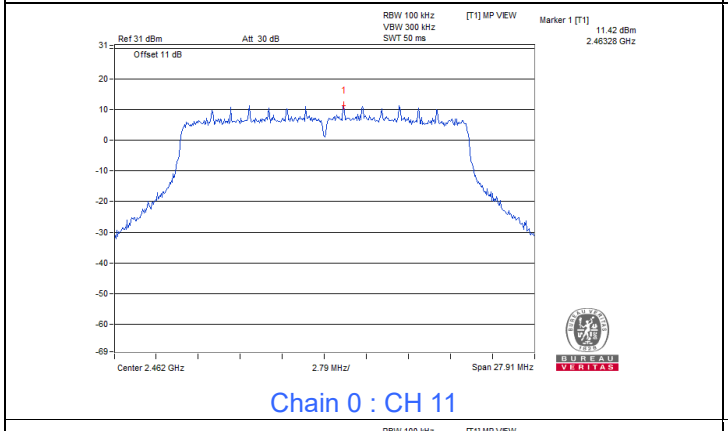
Chain 0 : CH 1



Chain 0 : CH 6



Chain 0 : CH 6



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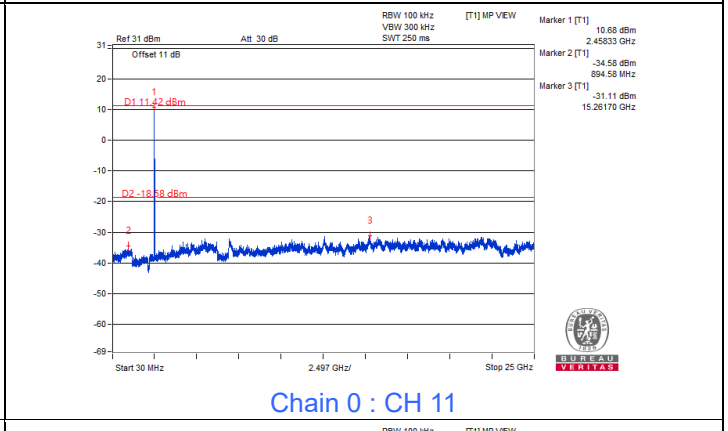
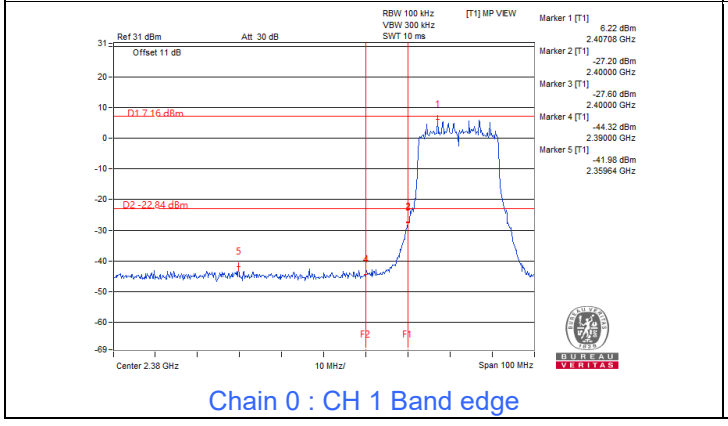
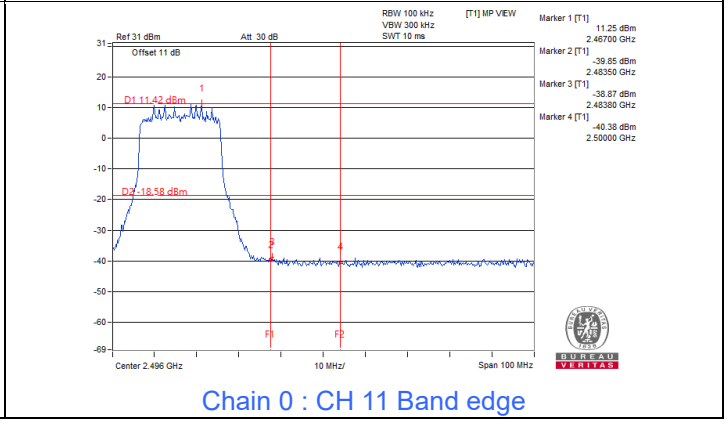


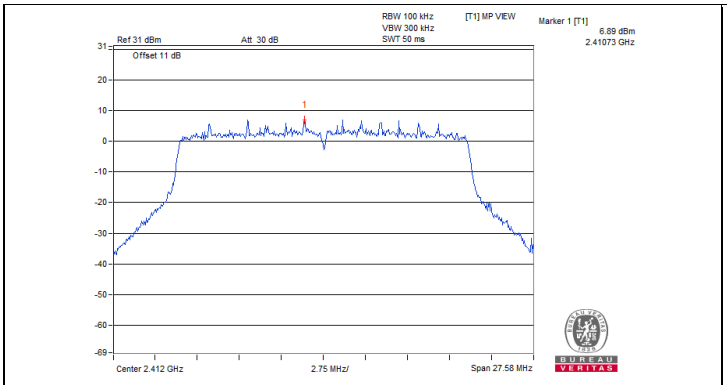
Chain 0 : CH 11



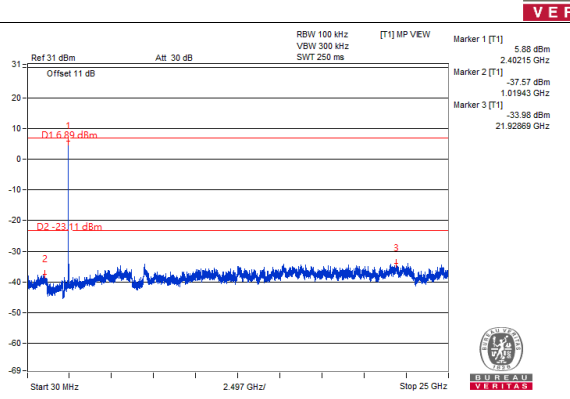
Chain 0 : CH 1 Band edge



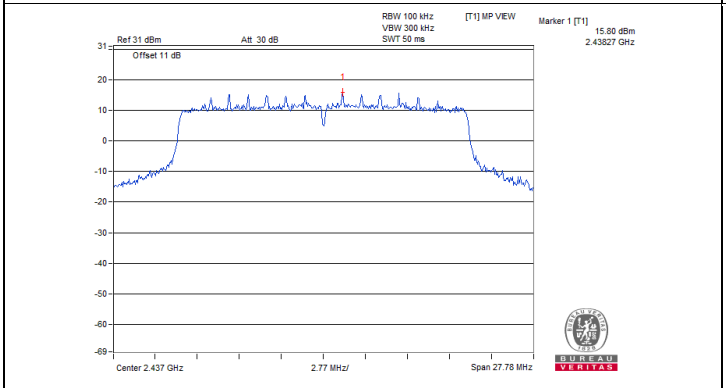
Chain 0 : CH 11 Band edge



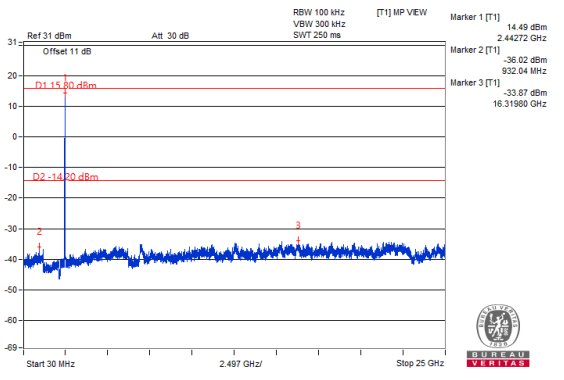
Chain 1 : CH 1



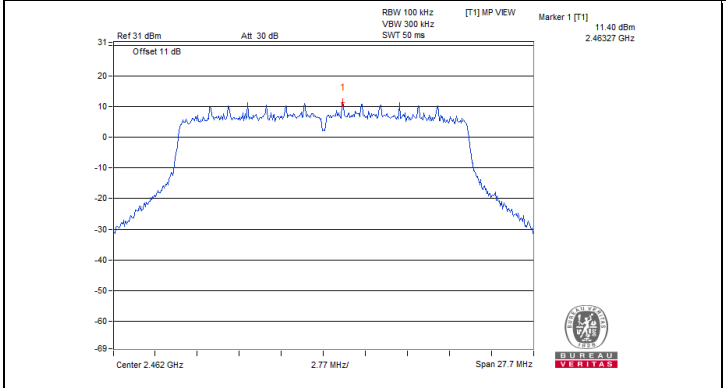
Chain 1 : CH 1



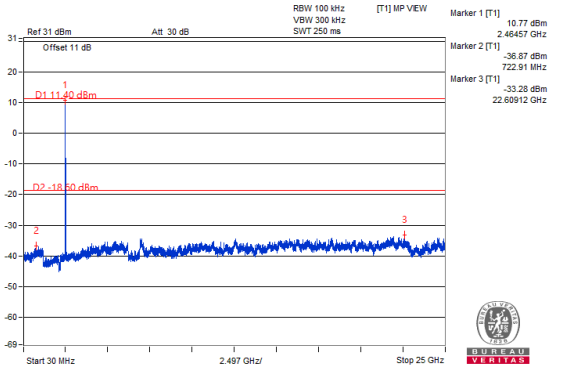
Chain 1 : CH 6



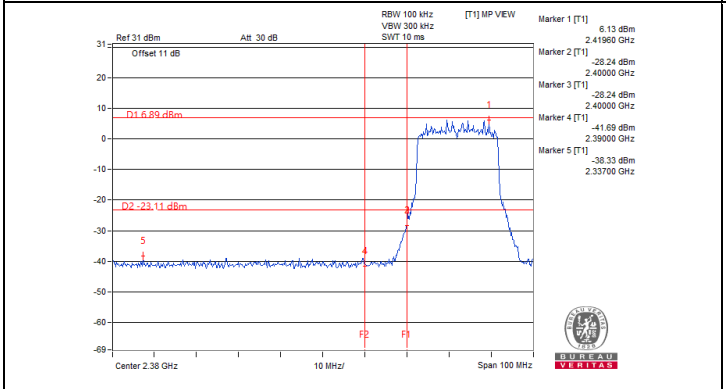
Chain 1 : CH 6



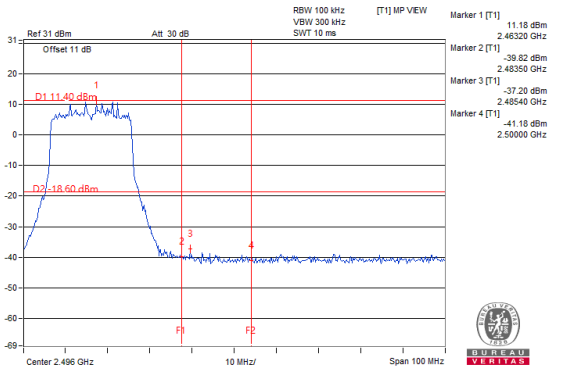
Chain 1 : CH 11



Chain 1 : CH 11



Chain 1 : CH 1 Band edge



Chain 1 : CH 11 Band edge

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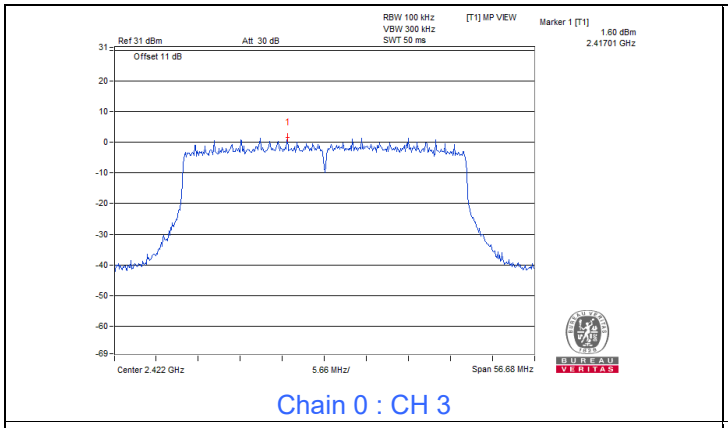
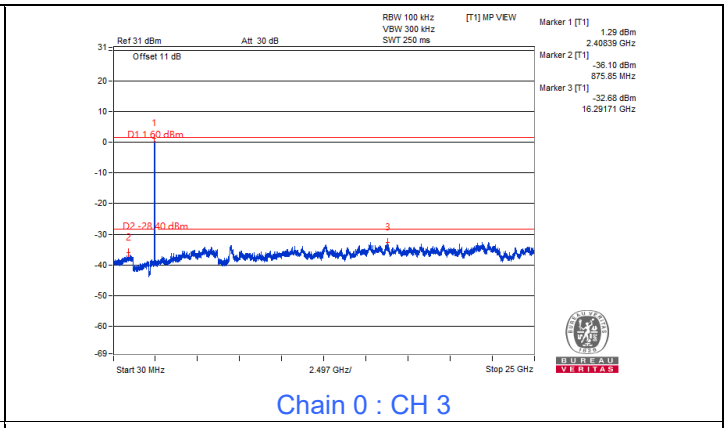
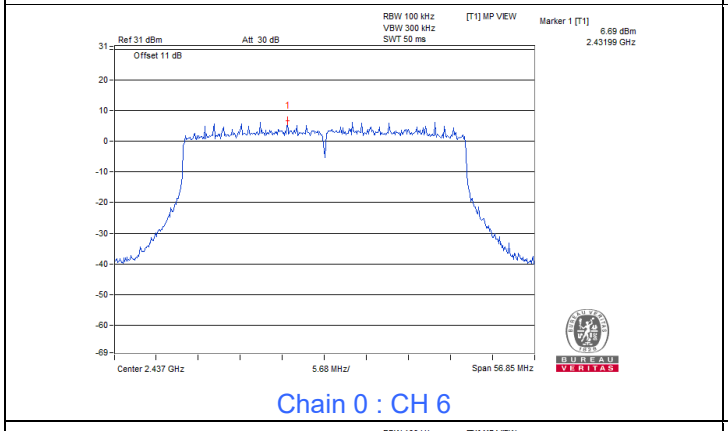


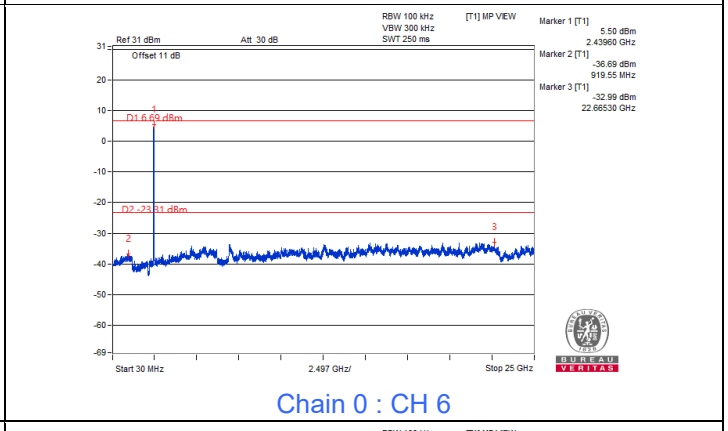
Chain 0 : CH 3



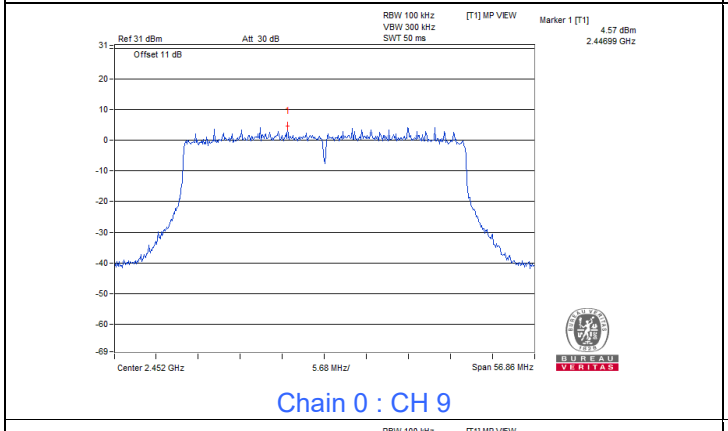
Chain 0 : CH 3



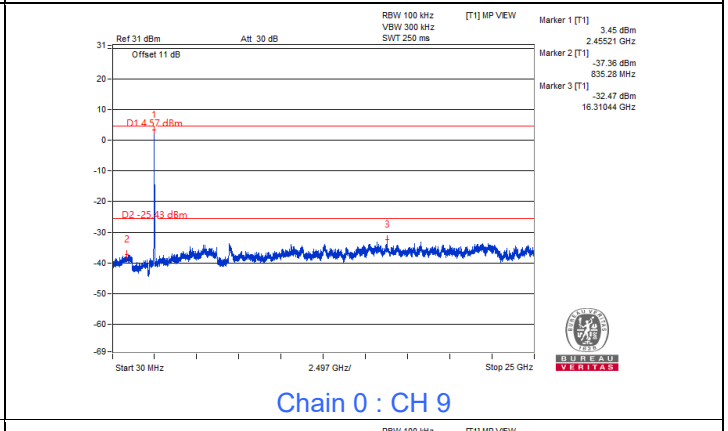
Chain 0 : CH 6



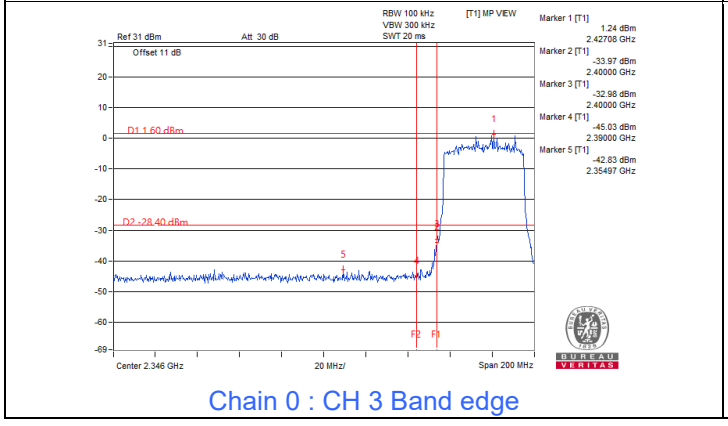
Chain 0 : CH 6



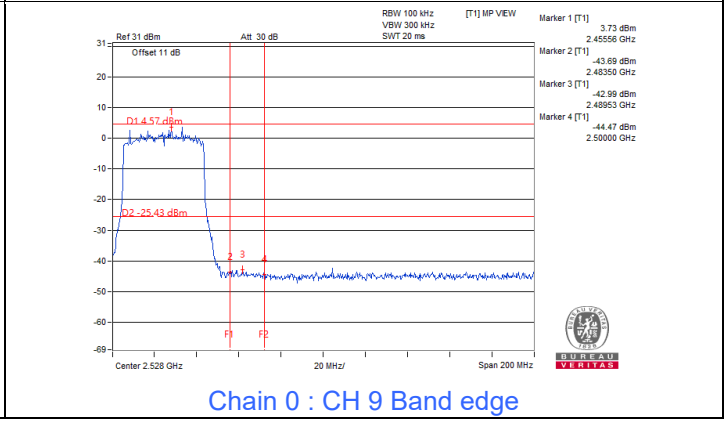
Chain 0 : CH 9



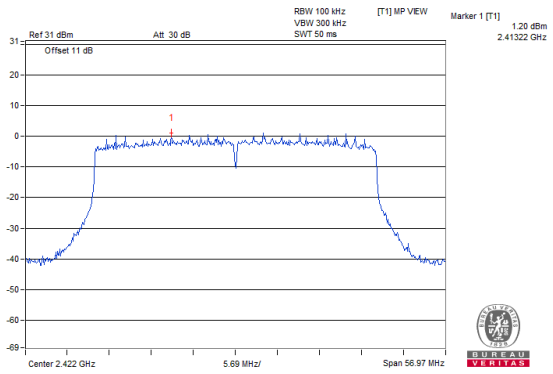
Chain 0 : CH 9



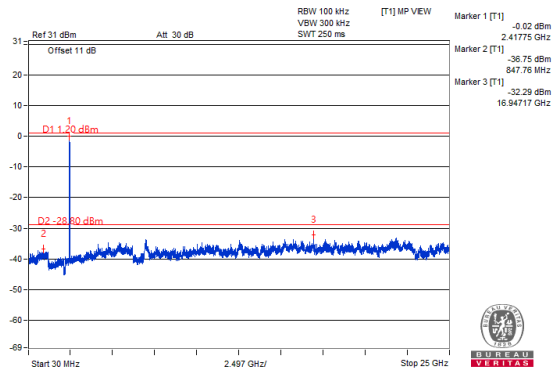
Chain 0 : CH 3 Band edge



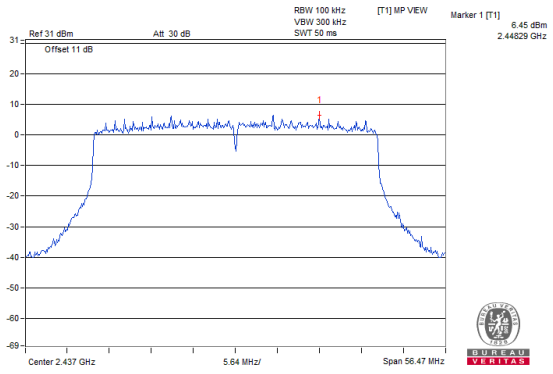
Chain 0 : CH 9 Band edge



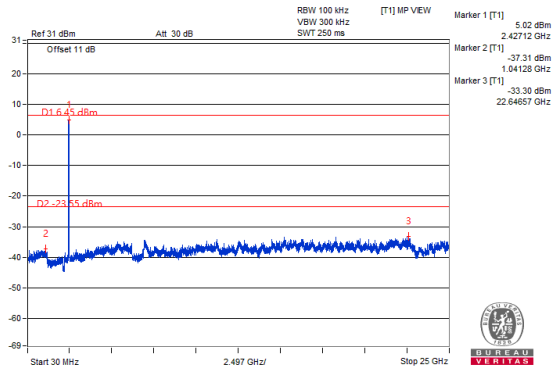
Chain 1 : CH 3



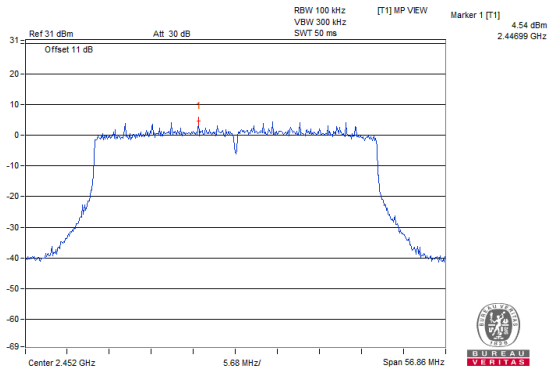
Chain 1 : CH 3



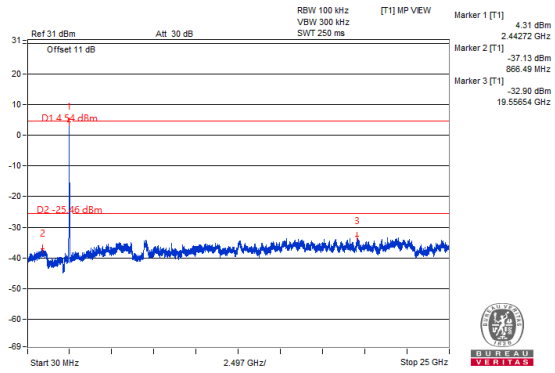
Chain 1 : CH 6



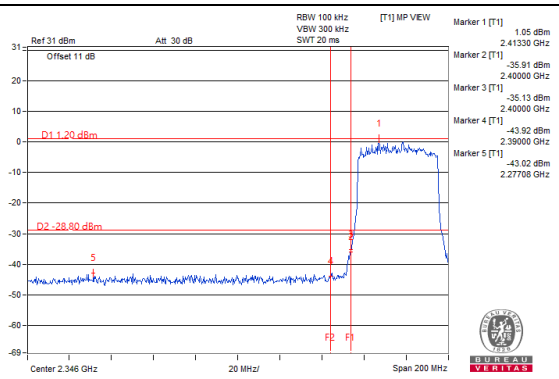
Chain 1 : CH 6



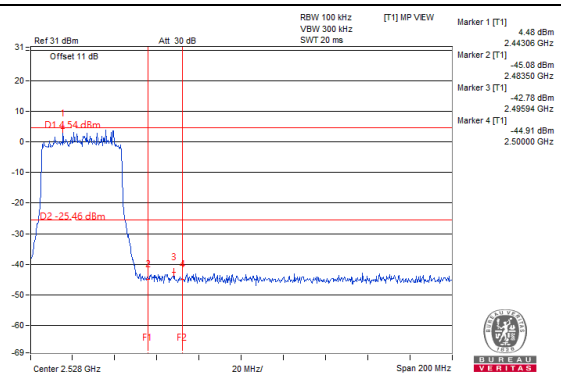
Chain 1 : CH 9



Chain 1 : CH 9



Chain 1 : CH 3 Band edge



Chain 1 : CH 9 Band edge

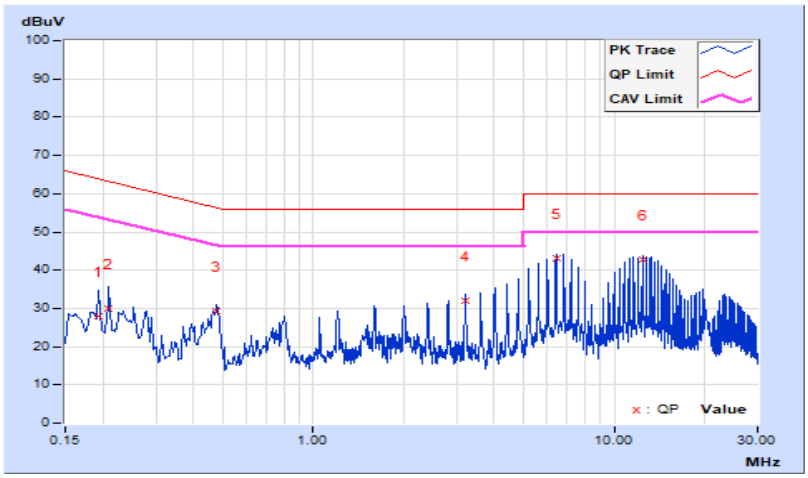
7.5 AC Power Conducted Emissions

RF Mode	802.11ax (HE20)	**Channel**	CH 6：2437 MHz
Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 67% RH
Tested By	Adair Peng		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.19400	9.71	18.14	7.86	27.85	17.57	63.86	53.86	-36.01	-36.29
2	0.21000	9.71	20.36	6.76	30.07	16.47	63.21	53.21	-33.14	-36.74
3	0.47800	9.73	19.59	6.79	29.32	16.52	56.37	46.37	-27.05	-29.85
4	3.20600	9.78	22.37	21.15	32.15	30.93	56.00	46.00	-23.85	-15.07
5	6.41000	9.82	33.20	33.11	43.02	42.93	60.00	50.00	-16.98	-7.07
6	12.42200	9.85	32.80	31.64	42.65	41.49	60.00	50.00	-17.35	-8.51

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

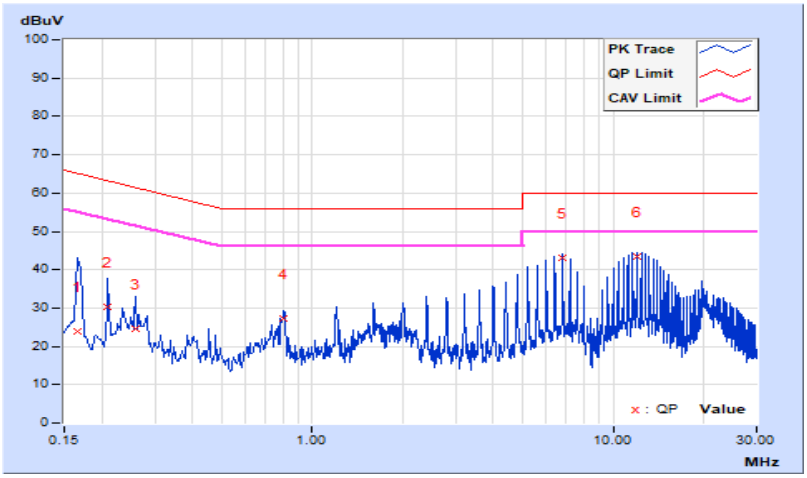


RF Mode	802.11ax (HE20)	**Channel**	CH 6：2437 MHz
Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 67% RH
Tested By	Adair Peng		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.16600	9.77	14.23	4.78	24.00	14.55	65.16	55.16	-41.16	-40.61
2	0.21000	9.77	20.50	5.13	30.27	14.90	63.21	53.21	-32.94	-38.31
3	0.25800	9.78	14.84	7.35	24.62	17.13	61.50	51.50	-36.88	-34.37
4	0.80200	9.81	17.33	16.04	27.14	25.85	56.00	46.00	-28.86	-20.15
5	6.80600	9.89	33.16	33.02	43.05	42.91	60.00	50.00	-16.95	-7.09
6	**12.01000**	**9.94**	**33.46**	**33.01**	**43.40**	**42.95**	**60.00**	**50.00**	**-16.60**	**-7.05**

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



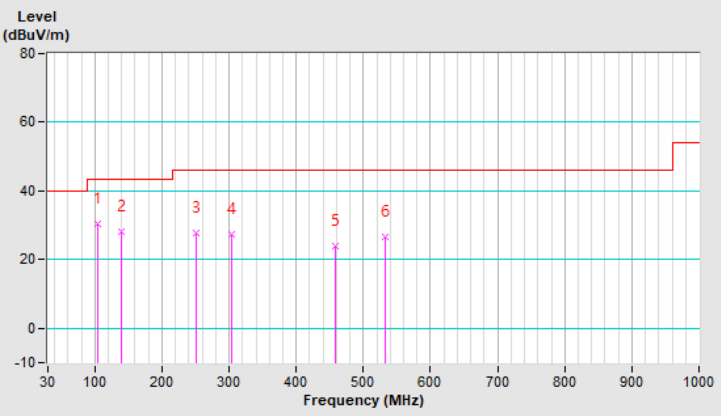
7.6 Unwanted Emissions below 1 GHz

RF Mode	802.11ax (HE20)	**Channel**	CH 6：2437 MHz
Frequency Range	30 MHz ~1000 MHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 65% RH
Tested By	Wade Huang		

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	104.69	30.48 QP	43.50	-13.02	1.99 H	229	52.48	-22.00
2	139.61	28.26 QP	43.50	-15.24	1.99 H	92	46.93	-18.67
3	250.19	27.66 QP	46.00	-18.34	1.01 H	96	47.35	-19.69
4	304.51	27.36 QP	46.00	-18.64	1.01 H	18	45.28	-17.92
5	458.74	23.78 QP	46.00	-22.22	1.99 H	124	37.70	-13.92
6	533.43	26.44 QP	46.00	-19.56	1.01 H	18	39.21	-12.77

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.

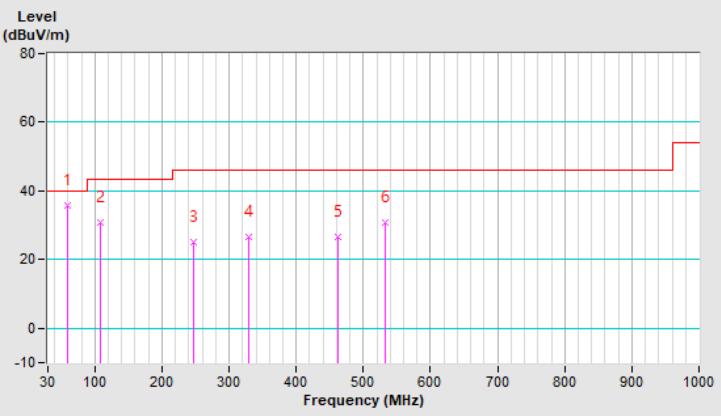


RF Mode	802.11ax (HE20)	**Channel**	CH 6：2437 MHz
Frequency Range	30 MHz ~1000 MHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 65% RH
Tested By	Wade Huang		

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	**59.10**	**35.65 QP**	**40.00**	**-4.35**	**1.49 V**	**144**	**54.31**	**-18.66**
2	107.60	30.71 QP	43.50	-12.79	1.49 V	254	52.29	-21.58
3	247.28	24.92 QP	46.00	-21.08	1.99 V	200	44.70	-19.78
4	329.73	26.63 QP	46.00	-19.37	1.49 V	101	43.73	-17.10
5	461.65	26.74 QP	46.00	-19.26	1.00 V	181	40.65	-13.91
6	533.43	30.71 QP	46.00	-15.29	1.49 V	87	43.48	-12.77

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

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 = 3 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 68% RH
Tested By	Wade Huang		

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	2385.00	57.13 PK	74.00	-16.87	1.77 H	328	25.17	31.96
2	2385.00	45.79 AV	54.00	-8.21	1.77 H	328	13.83	31.96
3	*2412.00	108.35 PK			1.77 H	328	76.43	31.92
4	*2412.00	106.21 AV			1.77 H	328	74.29	31.92
5	4824.00	47.52 PK	74.00	-26.48	2.51 H	241	44.82	2.70
6	4824.00	37.66 AV	54.00	-16.34	2.51 H	241	34.96	2.70
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	2385.00	61.20 PK	74.00	-12.80	1.73 V	359	29.24	31.96
2	2385.00	53.55 AV	54.00	-0.45	1.73 V	359	21.59	31.96
3	*2412.00	120.29 PK			1.73 V	359	88.37	31.92
4	*2412.00	117.69 AV			1.73 V	359	85.77	31.92
5	4824.00	46.11 PK	74.00	-27.89	1.51 V	241	43.41	2.70
6	4824.00	36.12 AV	54.00	-17.88	1.51 V	241	33.42	2.70

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 = 3 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 68% RH
Tested By	Wade Huang		

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	112.83 PK			1.81 H	326	80.97	31.86
2	*2437.00	110.31 AV			1.81 H	326	78.45	31.86
3	4874.00	46.20 PK	74.00	-27.80	1.36 H	284	43.53	2.67
4	4874.00	37.97 AV	54.00	-16.03	1.36 H	284	35.30	2.67
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	2386.00	61.03 PK	74.00	-12.97	1.81 V	357	29.07	31.96
2	2386.00	52.83 AV	54.00	-1.17	1.81 V	357	20.87	31.96
3	*2437.00	124.61 PK			1.81 V	357	92.75	31.86
4	*2437.00	122.22 AV			1.81 V	357	90.36	31.86
5	4874.00	46.09 PK	74.00	-27.91	1.10 V	92	43.42	2.67
6	4874.00	36.06 AV	54.00	-17.94	1.10 V	92	33.39	2.67

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 = 3 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 68% RH
Tested By	Wade Huang		

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	112.58 PK			1.91 H	323	80.72	31.86
2	*2462.00	110.00 AV			1.91 H	323	78.14	31.86
3	2483.50	58.33 PK	74.00	-15.67	1.91 H	323	26.44	31.89
4	2483.50	47.14 AV	54.00	-6.86	1.91 H	323	15.25	31.89
5	4924.00	47.54 PK	74.00	-26.46	1.72 H	79	44.85	2.69
6	4924.00	37.41 AV	54.00	-16.59	1.72 H	79	34.72	2.69
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	119.76 PK			1.70 V	351	87.90	31.86
2	*2462.00	117.29 AV			1.70 V	351	85.43	31.86
3	2488.00	63.41 PK	74.00	-10.59	1.70 V	351	31.51	31.90
4	2488.00	51.52 AV	54.00	-2.48	1.70 V	351	19.62	31.90
5	4924.00	46.56 PK	74.00	-27.44	2.10 V	79	43.87	2.69
6	4924.00	35.28 AV	54.00	-18.72	2.10 V	79	32.59	2.69

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	21°C, 68% RH
Tested By	Wade Huang		

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	63.03 PK	74.00	-10.97	1.18 H	184	31.07	31.96
2	2390.00	45.49 AV	54.00	-8.51	1.18 H	184	13.53	31.96
3	*2412.00	111.94 PK			1.18 H	184	80.02	31.92
4	*2412.00	101.79 AV			1.18 H	184	69.87	31.92
5	4824.00	46.07 PK	74.00	-27.93	1.20 H	185	43.37	2.70
6	4824.00	36.04 AV	54.00	-17.96	1.20 H	185	33.34	2.70
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	67.73 PK	74.00	-6.27	1.66 V	1	35.77	31.96
2	2390.00	53.57 AV	54.00	-0.43	1.66 V	1	21.61	31.96
3	*2412.00	121.80 PK			1.66 V	1	89.88	31.92
4	*2412.00	112.13 AV			1.66 V	1	80.21	31.92
5	4824.00	48.78 PK	74.00	-25.22	1.00 V	96	46.08	2.70
6	4824.00	36.95 AV	54.00	-17.05	1.00 V	96	34.25	2.70

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	21°C, 68% RH
Tested By	Wade Huang		

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	117.23 PK			1.53 H	314	85.37	31.86
2	*2437.00	107.95 AV			1.53 H	314	76.09	31.86
3	4874.00	50.87 PK	74.00	-23.13	3.15 H	134	48.20	2.67
4	4874.00	42.68 AV	54.00	-11.32	3.15 H	134	40.01	2.67
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	64.90 PK	74.00	-9.10	1.72 V	2	32.94	31.96
2	2390.00	53.77 AV	54.00	-0.23	1.72 V	2	21.81	31.96
3	*2437.00	129.39 PK			1.72 V	2	97.53	31.86
4	*2437.00	119.39 AV			1.72 V	2	87.53	31.86
5	4874.00	54.45 PK	74.00	-19.55	1.51 V	173	51.78	2.67
6	4874.00	44.36 AV	54.00	-9.64	1.51 V	173	41.69	2.67

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	21°C, 68% RH
Tested By	Wade Huang		

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	111.76 PK			1.45 H	353	79.90	31.86
2	*2462.00	101.98 AV			1.45 H	353	70.12	31.86
3	2483.50	58.82 PK	74.00	-15.18	1.45 H	353	26.93	31.89
4	2483.50	47.43 AV	54.00	-6.57	1.45 H	353	15.54	31.89
5	4924.00	46.70 PK	74.00	-27.30	2.13 H	278	44.01	2.69
6	4924.00	36.03 AV	54.00	-17.97	2.13 H	278	33.34	2.69
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	123.56 PK			1.74 V	13	91.70	31.86
2	*2462.00	113.57 AV			1.74 V	13	81.71	31.86
3	2483.50	67.25 PK	74.00	-6.75	1.74 V	13	35.36	31.89
4	2483.50	53.82 AV	54.00	-0.18	1.74 V	13	21.93	31.89
5	4924.00	47.38 PK	74.00	-26.62	1.49 V	63	44.69	2.69
6	4924.00	35.77 AV	54.00	-18.23	1.49 V	63	33.08	2.69

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	802.11ax (HE20)	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	21°C, 68% RH
Tested By	Wade Huang		

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	59.18 PK	74.00	-14.82	1.19 H	18	27.22	31.96
2	2390.00	45.99 AV	54.00	-8.01	1.19 H	18	14.03	31.96
3	*2412.00	110.67 PK			1.19 H	18	78.75	31.92
4	*2412.00	97.49 AV			1.19 H	18	65.57	31.92
5	4824.00	46.25 PK	74.00	-27.75	1.60 H	95	43.55	2.70
6	4824.00	36.71 AV	54.00	-17.29	1.60 H	95	34.01	2.70
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	66.12 PK	74.00	-7.88	1.76 V	0	34.16	31.96
2	2390.00	53.61 AV	54.00	-0.39	1.76 V	0	21.65	31.96
3	*2412.00	122.24 PK			1.76 V	0	90.32	31.92
4	*2412.00	108.80 AV			1.76 V	0	76.88	31.92
5	4824.00	47.69 PK	74.00	-26.31	1.56 V	86	44.99	2.70
6	4824.00	37.44 AV	54.00	-16.56	1.56 V	86	34.74	2.70

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	802.11ax (HE20)	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	21°C, 68% RH
Tested By	Wade Huang		

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	118.09 PK			1.49 H	315	86.23	31.86
2	*2437.00	105.86 AV			1.49 H	315	74.00	31.86
3	4874.00	55.88 PK	74.00	-18.12	1.69 H	255	53.21	2.67
4	4874.00	43.74 AV	54.00	-10.26	1.69 H	255	41.07	2.67
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	130.95 PK			1.86 V	2	99.09	31.86
2	*2437.00	117.93 AV			1.86 V	2	86.07	31.86
3	2483.50	65.32 PK	74.00	-8.68	1.86 V	2	33.43	31.89
4	**2483.50**	**53.84 AV**	**54.00**	**-0.16**	**1.86 V**	**2**	**21.95**	**31.89**
5	4874.00	54.64 PK	74.00	-19.36	1.74 V	56	51.97	2.67
6	4874.00	42.79 AV	54.00	-11.21	1.74 V	56	40.12	2.67

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	802.11ax (HE20)	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	21°C, 68% RH
Tested By	Wade Huang		

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	114.80 PK			1.55 H	352	82.94	31.86
2	*2462.00	102.22 AV			1.55 H	352	70.36	31.86
3	2486.00	61.26 PK	74.00	-12.74	1.55 H	352	29.37	31.89
4	2486.00	48.66 AV	54.00	-5.34	1.55 H	352	16.77	31.89
5	4924.00	47.30 PK	74.00	-26.70	1.77 H	131	44.61	2.69
6	4924.00	36.19 AV	54.00	-17.81	1.77 H	131	33.50	2.69
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	125.95 PK			1.70 V	0	94.09	31.86
2	*2462.00	112.90 AV			1.70 V	0	81.04	31.86
3	2486.00	67.12 PK	74.00	-6.88	1.70 V	0	35.23	31.89
4	2486.00	53.55 AV	54.00	-0.45	1.70 V	0	21.66	31.89
5	4924.00	46.61 PK	74.00	-27.39	1.55 V	63	43.92	2.69
6	4924.00	35.96 AV	54.00	-18.04	1.55 V	63	33.27	2.69

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	802.11ax (HE40)	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 = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 68% RH
Tested By	Wade Huang		

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	57.63 PK	74.00	-16.37	1.13 H	355	25.67	31.96
2	2390.00	45.62 AV	54.00	-8.38	1.13 H	355	13.66	31.96
3	*2422.00	106.01 PK			1.13 H	355	74.11	31.90
4	*2422.00	92.52 AV			1.13 H	355	60.62	31.90
5	4844.00	47.49 PK	74.00	-26.51	1.88 H	191	44.81	2.68
6	4844.00	35.53 AV	54.00	-18.47	1.88 H	191	32.85	2.68
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	66.05 PK	74.00	-7.95	1.85 V	4	34.09	31.96
2	2390.00	53.83 AV	54.00	-0.17	1.85 V	4	21.87	31.96
3	*2422.00	117.02 PK			1.85 V	4	85.12	31.90
4	*2422.00	104.19 AV			1.85 V	4	72.29	31.90
5	4844.00	48.48 PK	74.00	-25.52	1.44 V	81	45.80	2.68
6	4844.00	36.24 AV	54.00	-17.76	1.44 V	81	33.56	2.68

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	802.11ax (HE40)	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	21°C, 68% RH
Tested By	Wade Huang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	109.61 PK			1.95 H	358	77.75	31.86
2	*2437.00	96.88 AV			1.95 H	358	65.02	31.86
3	4874.00	45.63 PK	74.00	-28.37	1.52 H	301	42.96	2.67
4	4874.00	35.58 AV	54.00	-18.42	1.52 H	301	32.91	2.67
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	121.27 PK			1.66 V	0	89.41	31.86
2	*2437.00	109.12 AV			1.66 V	0	77.26	31.86
3	2483.50	66.62 PK	74.00	-7.38	1.66 V	0	34.73	31.89
4	2483.50	53.70 AV	54.00	-0.30	1.66 V	0	21.81	31.89
5	4874.00	45.86 PK	74.00	-28.14	1.29 V	96	43.19	2.67
6	4874.00	35.90 AV	54.00	-18.10	1.29 V	96	33.23	2.67

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	802.11ax (HE40)	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 = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 68% RH
Tested By	Wade Huang		

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	107.59 PK			1.59 H	1	75.75	31.84
2	*2452.00	94.99 AV			1.59 H	1	63.15	31.84
3	2483.50	58.36 PK	74.00	-15.64	1.59 H	1	26.47	31.89
4	2483.50	45.49 AV	54.00	-8.51	1.59 H	1	13.60	31.89
5	4904.00	46.67 PK	74.00	-27.33	1.36 H	199	44.02	2.65
6	4904.00	35.21 AV	54.00	-18.79	1.36 H	199	32.56	2.65
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	119.40 PK			1.64 V	3	87.56	31.84
2	*2452.00	106.75 AV			1.64 V	3	74.91	31.84
3	2487.00	66.22 PK	74.00	-7.78	1.64 V	3	34.32	31.90
4	2487.00	53.59 AV	54.00	-0.41	1.64 V	3	21.69	31.90
5	4904.00	47.20 PK	74.00	-26.80	1.74 V	61	44.55	2.65
6	4904.00	35.47 AV	54.00	-18.53	1.74 V	61	32.82	2.65

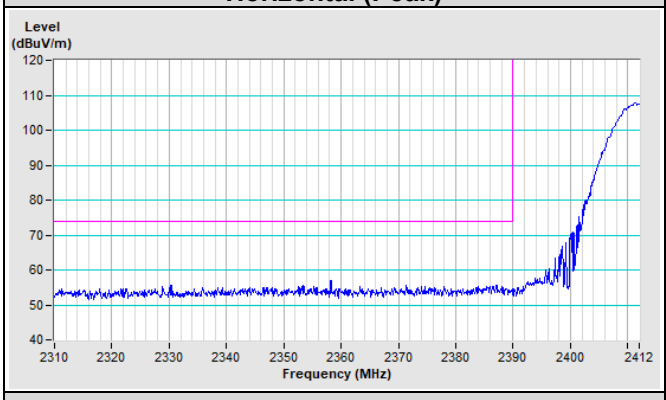
Remarks:

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.

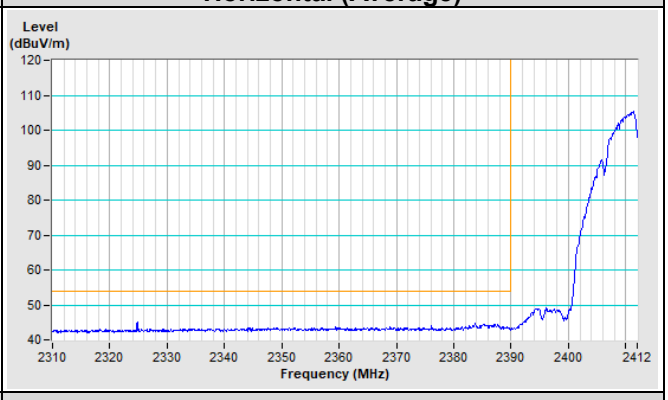
Plot of Band Edge

802.11b Channel 1

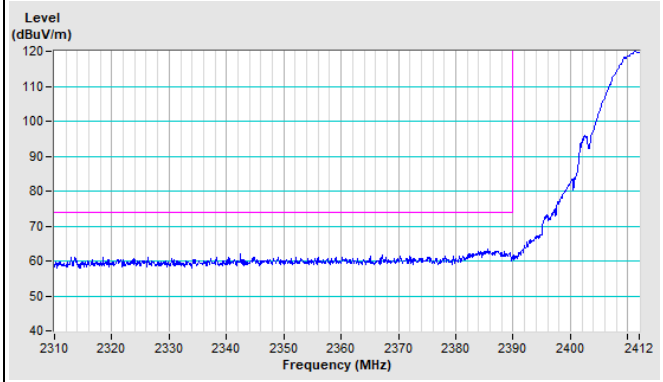
Horizontal (Peak)



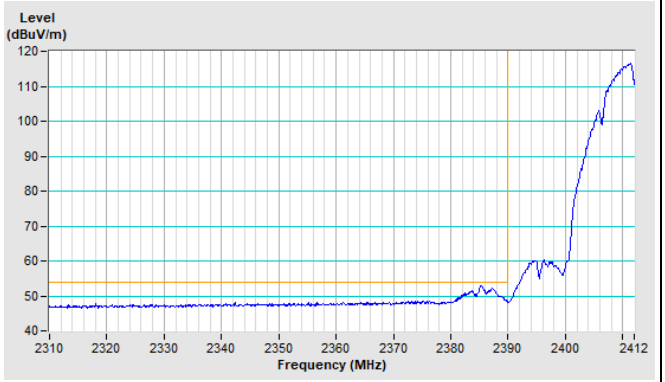
Horizontal (Average)



Vertical (Peak)

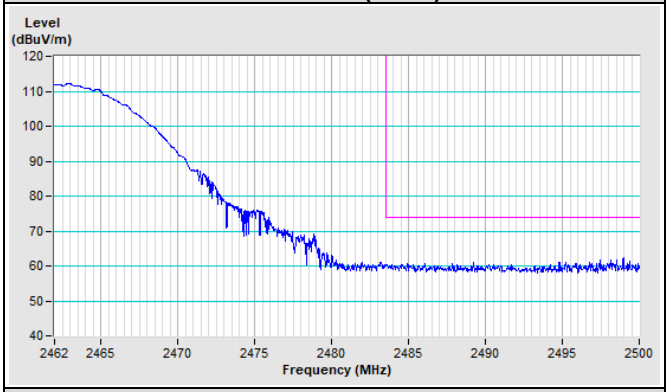


Vertical (Average)

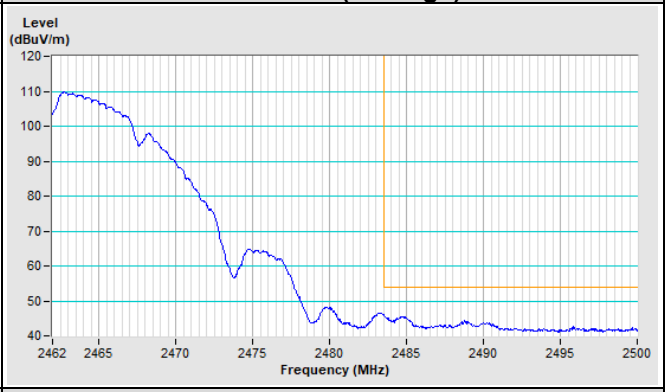


802.11b Channel 11

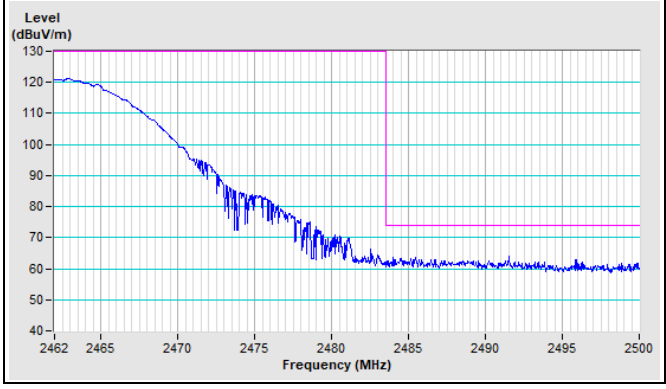
Horizontal (Peak)



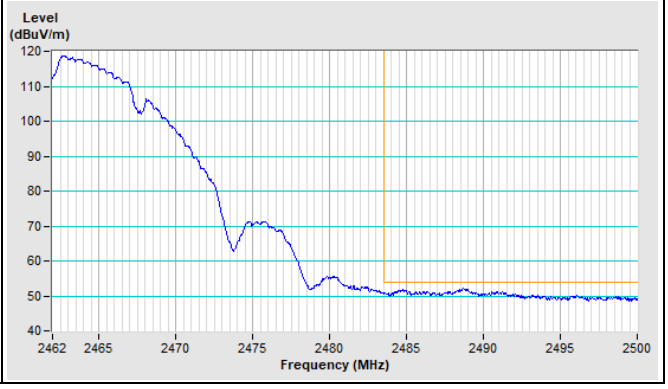
Horizontal (Average)



Vertical (Peak)

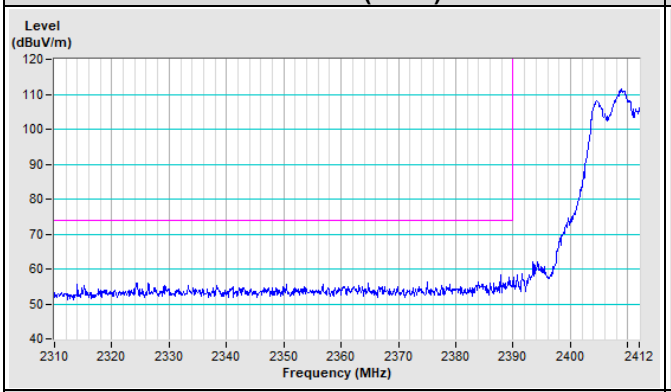


Vertical (Average)

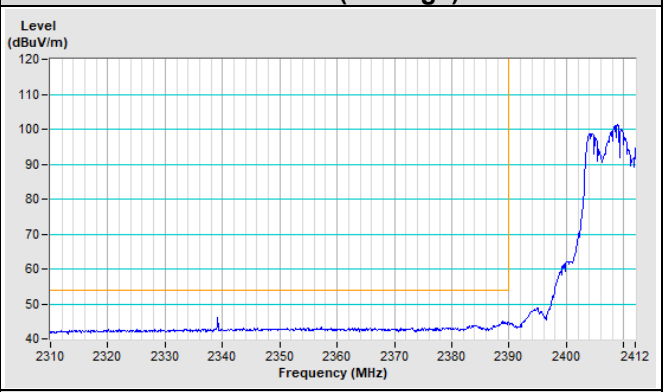


802.11g Channel 1

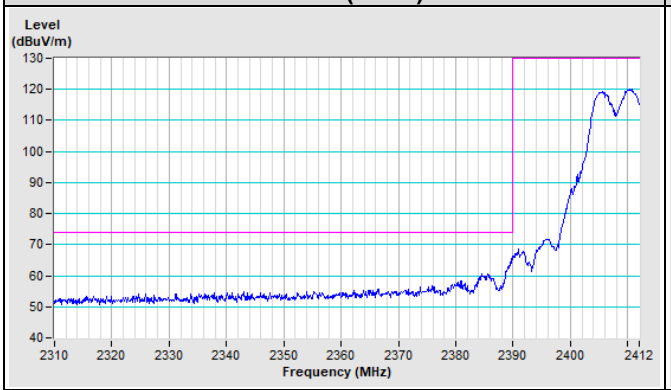
Horizontal (Peak)



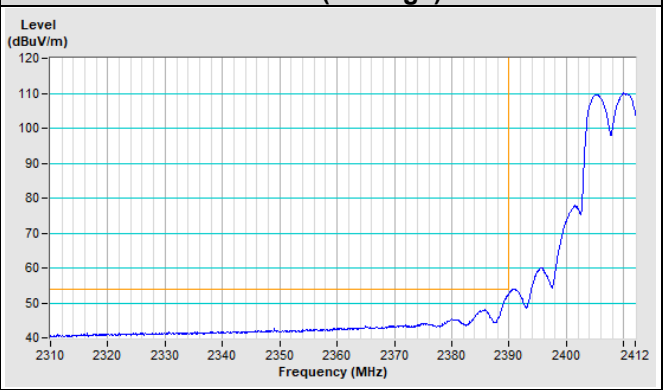
Horizontal (Average)



Vertical (Peak)

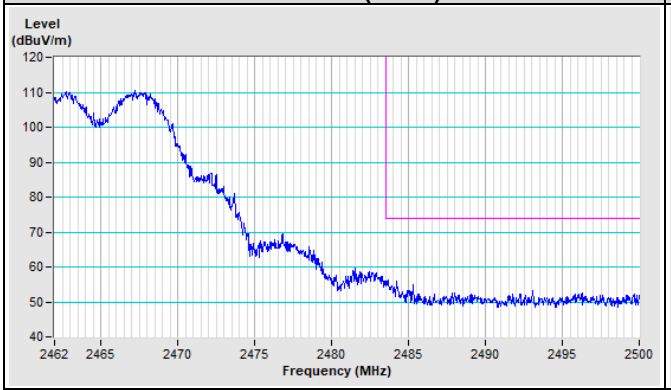


Vertical (Average)

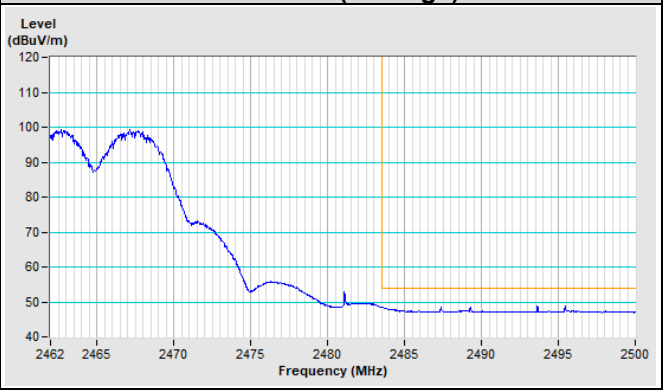


802.11g Channel 11

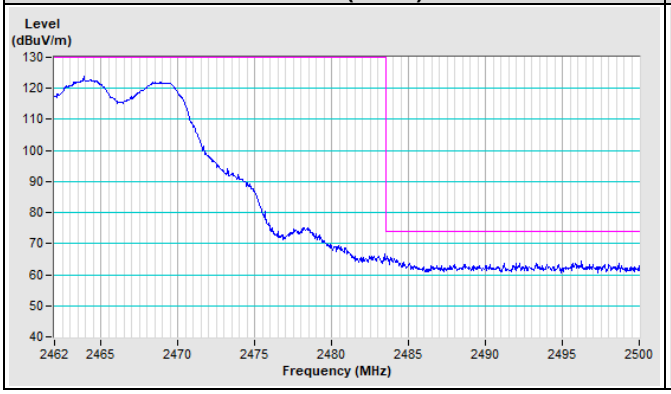
Horizontal (Peak)



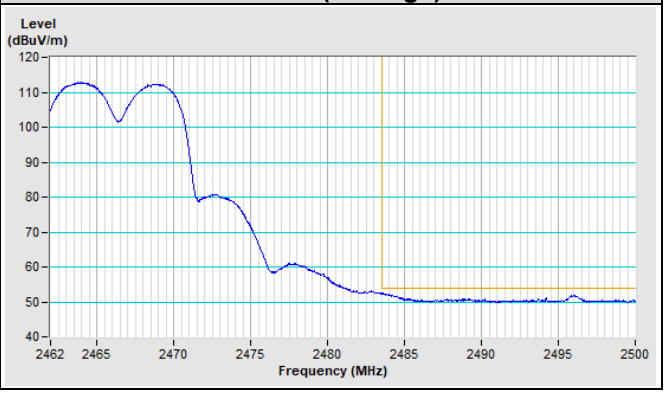
Horizontal (Average)



Vertical (Peak)

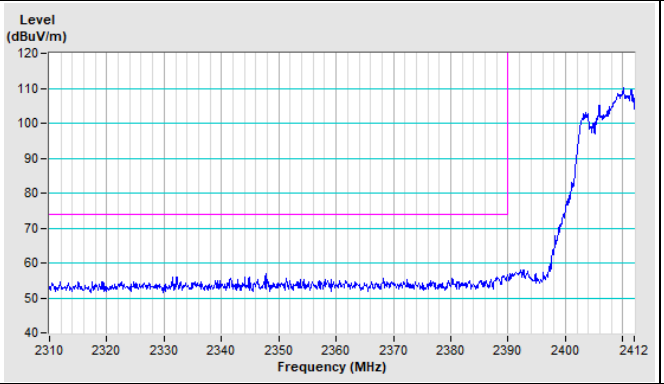


Vertical (Average)

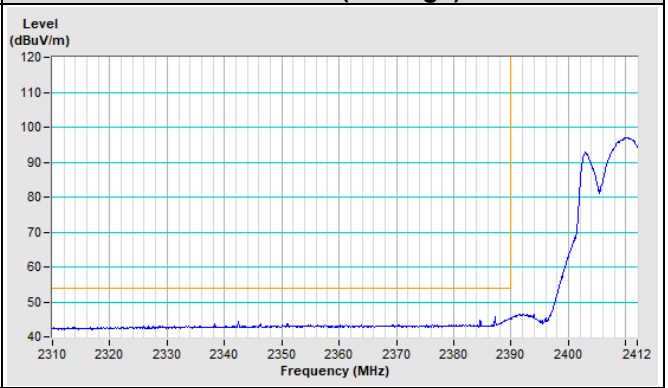


802.11ax (HE20) Channel 1

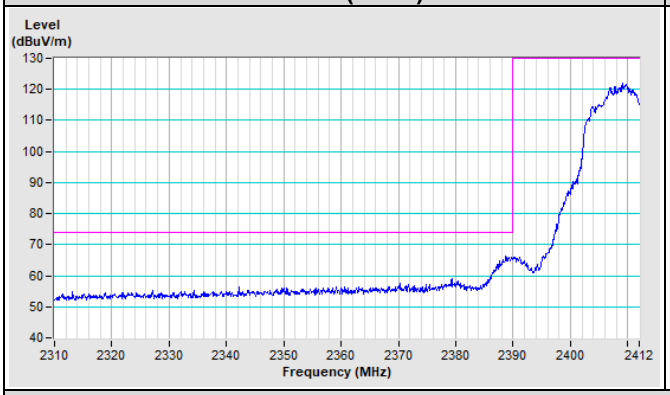
Horizontal (Peak)



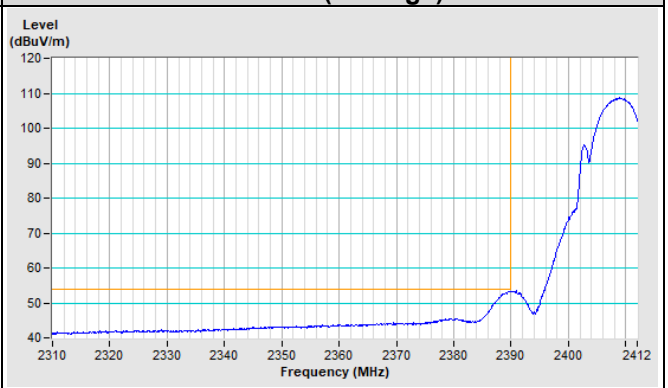
Horizontal (Average)



Vertical (Peak)

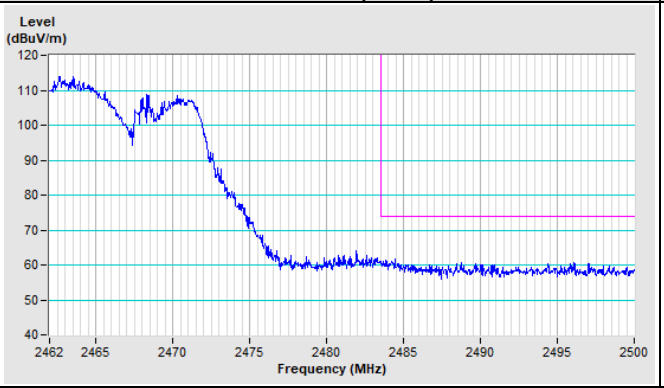


Vertical (Average)

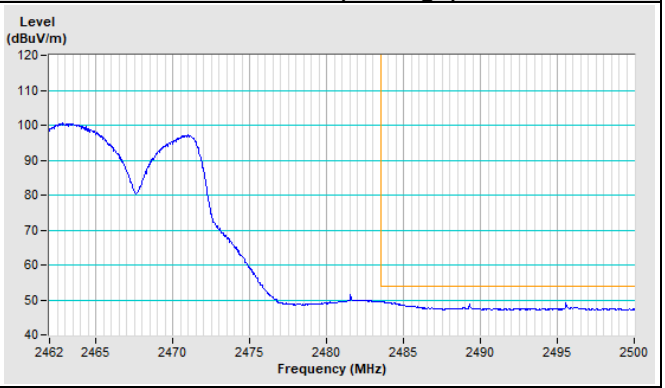


802.11ax (HE20) Channel 11

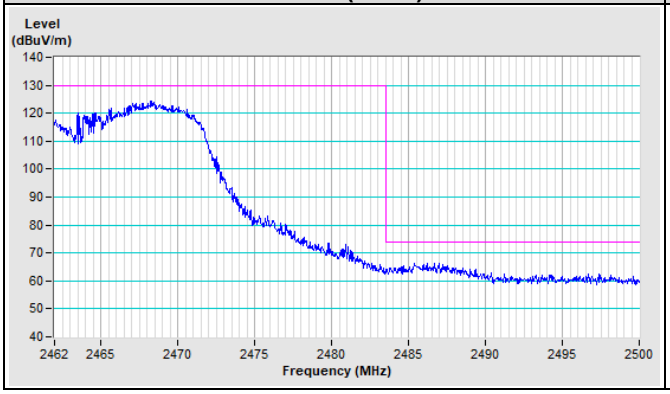
Horizontal (Peak)



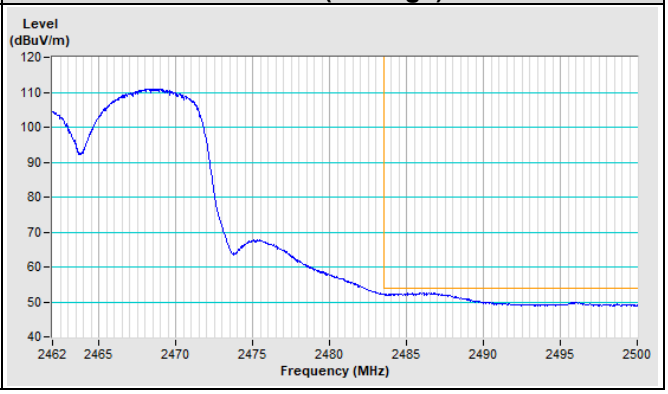
Horizontal (Average)



Vertical (Peak)

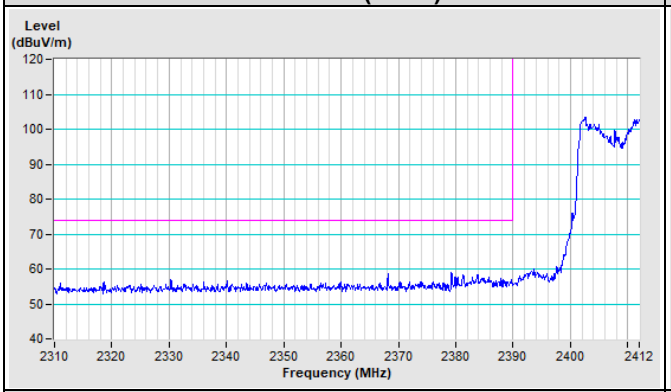


Vertical (Average)

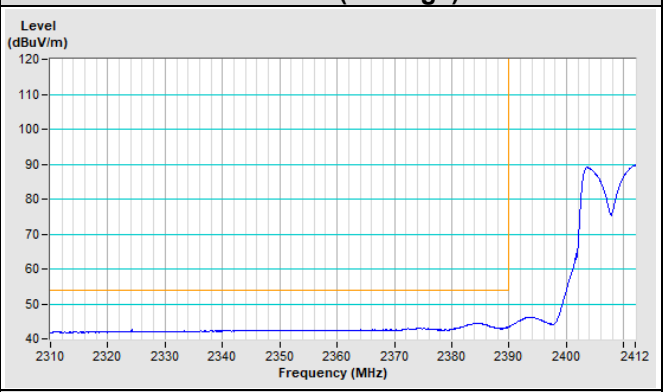


802.11ax (HE40) Channel 3

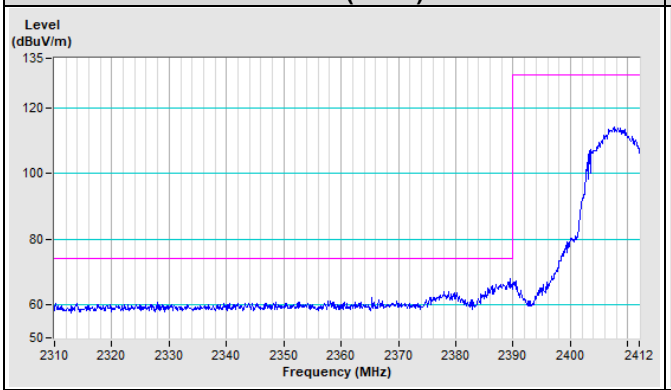
Horizontal (Peak)



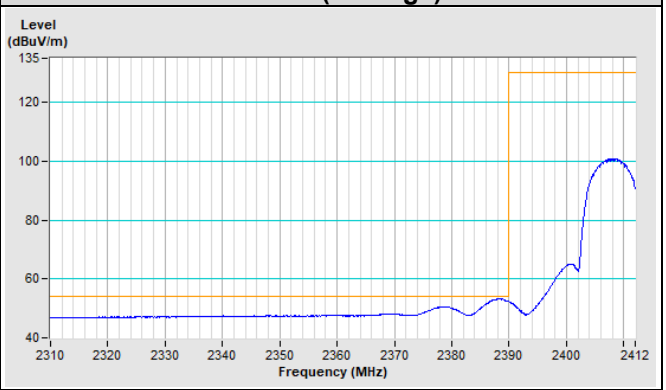
Horizontal (Average)



Vertical (Peak)

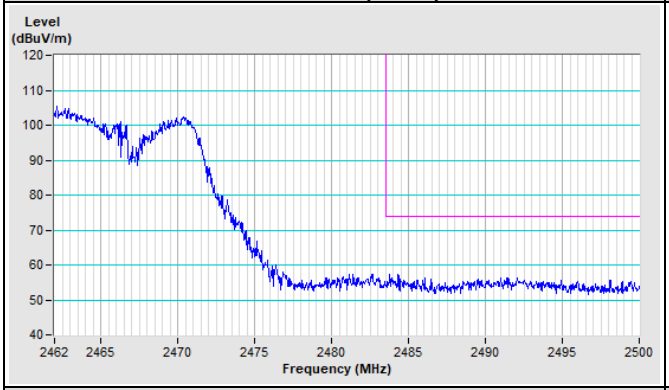


Vertical (Average)

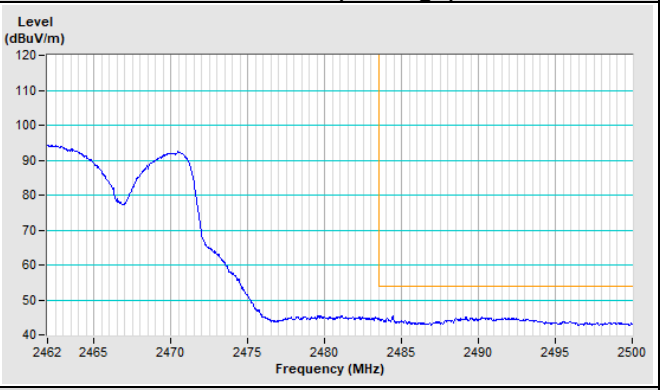


802.11n (HT40) Channel 9

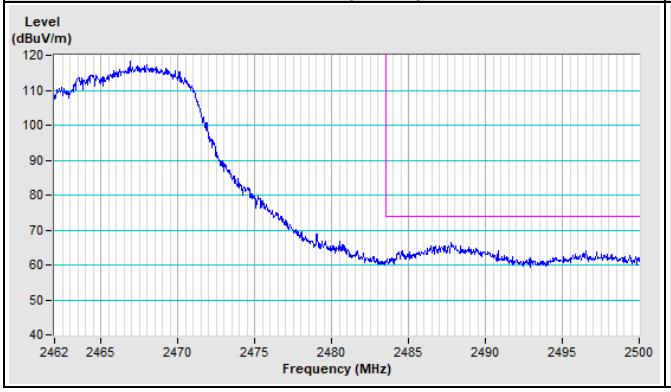
Horizontal (Peak)



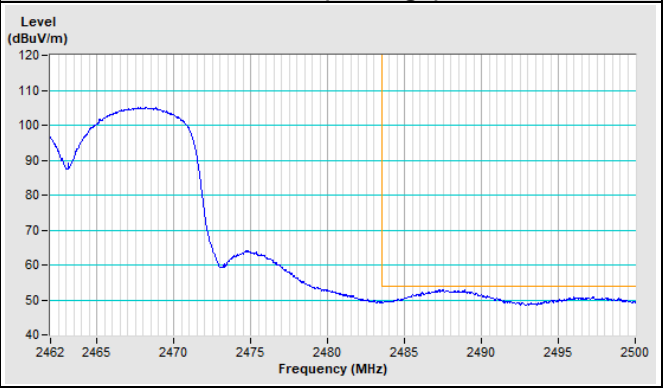
Horizontal (Average)



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:

Lin Kou EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: 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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