TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart C (Section 15.247)**
Report No.:	RFBFLF-WTW-P23030358
FCC ID:	MSQ-APAX6R00
Product:	AX3000 Dual Band PoE Access Point
Brand:	ASUS
Model No.:	EBA63
Received Date:	2023/9/26
Test Date:	2023/10/24 ~ 2023/12/16
Issued Date:	2024/1/17
Applicant:	ASUSTeK COMPUTER INC.
Address:	1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan
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
Test Location (2):	B2F., No.215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan
FCC Registration / Designation Number:	788550 / TW0003 427177 / TW0011

Approved by: Jeremy Lin , **Date:** 2024/1/17

Jeremy Lin / Project Engineer

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Prepared by : Polly Chien / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBFLF-WTW-P23030358	Original release.	2024/1/17

1 Certificate

Product:	AX3000 Dual Band PoE Access Point
Brand:	ASUS
Test Model:	EBA63
Sample Status:	Engineering sample
Applicant:	ASUSTeK COMPUTER INC.
Test Date:	2023/10/24 ~ 2023/12/16
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 -15.39 dB at 0.35313 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -8.8 dB at 61.44 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.5 dB at 2390.00 and 2483.50 MHz
15.203	Antenna Requirement	Pass	Antenna connector is IPEX 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) (±)
RF Output Power	-	1.371 dB
Power Spectral Density	-	1.017 dB
6 dB Bandwidth	-	206.5 Hz
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.79 dB
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.88 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	2.44 dB
	30 MHz ~ 1 GHz	2.02 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	1.01 dB
	18 GHz ~ 40 GHz	1.15 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	AX3000 Dual Band PoE Access Point
Brand	ASUS
Test Model	EBA63
Status of EUT	Engineering sample
Power Supply Rating	12Vdc from adapter 54Vdc from POE
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in VHT mode 1024QAM for OFDMA in 11ax mode only
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	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): 9
Output Power	CDD Mode: 959.329 mW (29.82 dBm) Beamforming Mode: 502.910 mW (27.01 dBm)

Note:

1. The EUT uses following accessories.

AC Adapter 1		
Brand	Model	Specification
DING FU TECHNOLOGY CO., LTD.	KA1801A-1201500US	AC Input : 100-240 Vac, 50/60Hz, 0.55A DC Output : 12Vdc, 1.5A DC Output Cable : 1.47M non-shielding cable with 0 core
AC Adapter 2		
Brand	Model	Specification
DING FU TECHNOLOGY CO., LTD.	F18L10-120150SPAU	AC Input : 100-240 Vac, 50/60Hz, 0.6A DC Output : 12Vdc, 1.5A, 18W DC Output Cable : 1.48M non-shielding cable with 0 core
RJ-45 Cable		
Brand	Model	Specification
AOC Electronics Co., Ltd.	CON-C-460	Signal Line : 1.5M non-shielding cable with 0 core

2. The following POE is for support unit only.

POE (Provided by Lab)		
Brand	Model	Specification
EnGenius	EPA5006GAT	AC Input: 100-240 Vac, 0.8A, 50-60Hz DC Output: 54Vdc, 0.6A

*After the pretesting adapters and POE, the adapter 2 is found to be the worst case test mode and therefore had been chosen for final test.

3. There are WLAN (2.4 GHz & 5 GHz) technology used for the EUT.

4. 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.

ANT. No.	Antenna Type	Connector	Frequency Range	Gain (dBi)
1	Monopole	ipex(MHF)	2.4~2.4835GHz	3.6
3	Monopole	ipex(MHF)	2.4~2.4835GHz	3.3
2	Monopole	ipex(MHF)	5.15~5.25GHz	3.8
	Monopole	ipex(MHF)	5.25~5.35GHz	3.6
	Monopole	ipex(MHF)	5.47~5.725GHz	4.0
	Monopole	ipex(MHF)	5.725~5.85GHz	4.2
4	Monopole	ipex(MHF)	5.15~5.25GHz	4.5
	Monopole	ipex(MHF)	5.25~5.35GHz	4.5
	Monopole	ipex(MHF)	5.47~5.725GHz	4.7
	Monopole	ipex(MHF)	5.725~5.85GHz	4.8

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

2. The EUT incorporates a MIMO function:

2.4 GHz Band		
Modulation Mode	TX & RX Configuration	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
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/g 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), VHT mode for 20 MHz (40 MHz) and 802.11ax mode for 20 MHz (40 MHz) therefore the manufacturer will control the power for 802.11n/VHT mode is the same as the 802.11ax 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

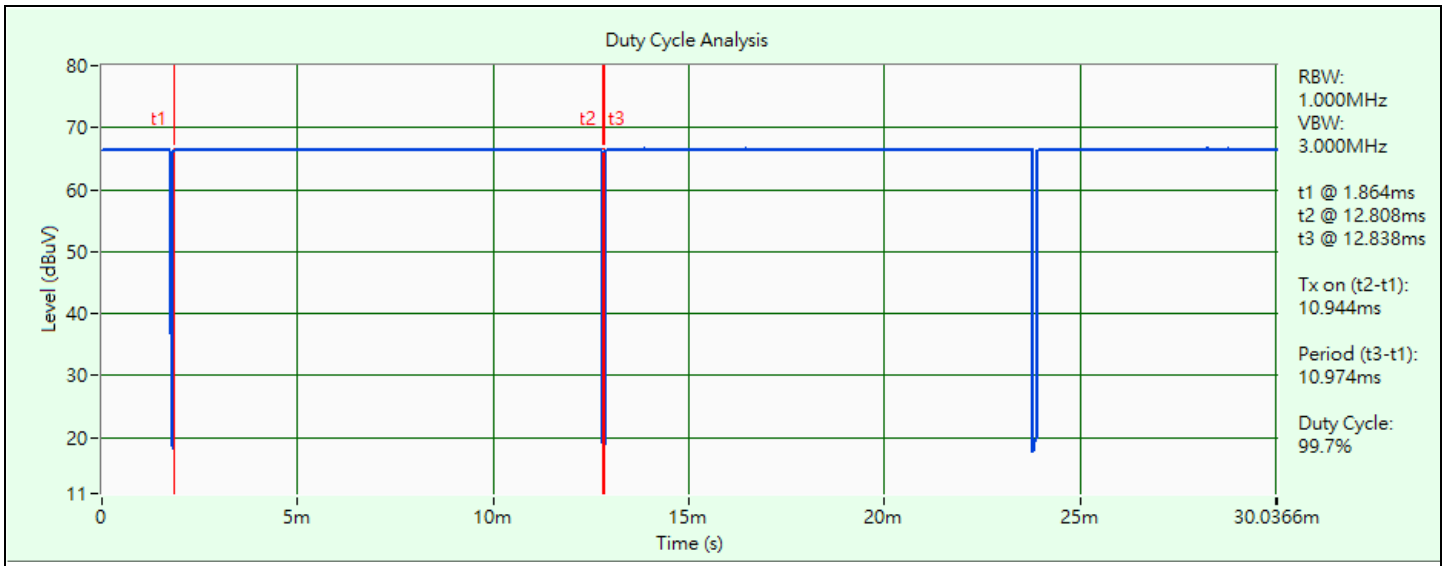
Pre-Scan:	1. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). 2. Pre-scan ac adapter and POE
Worst Case:	1. X-axis/ Z-axis Worst Condition: X-axis 2. Worst Condition: adapter mode

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

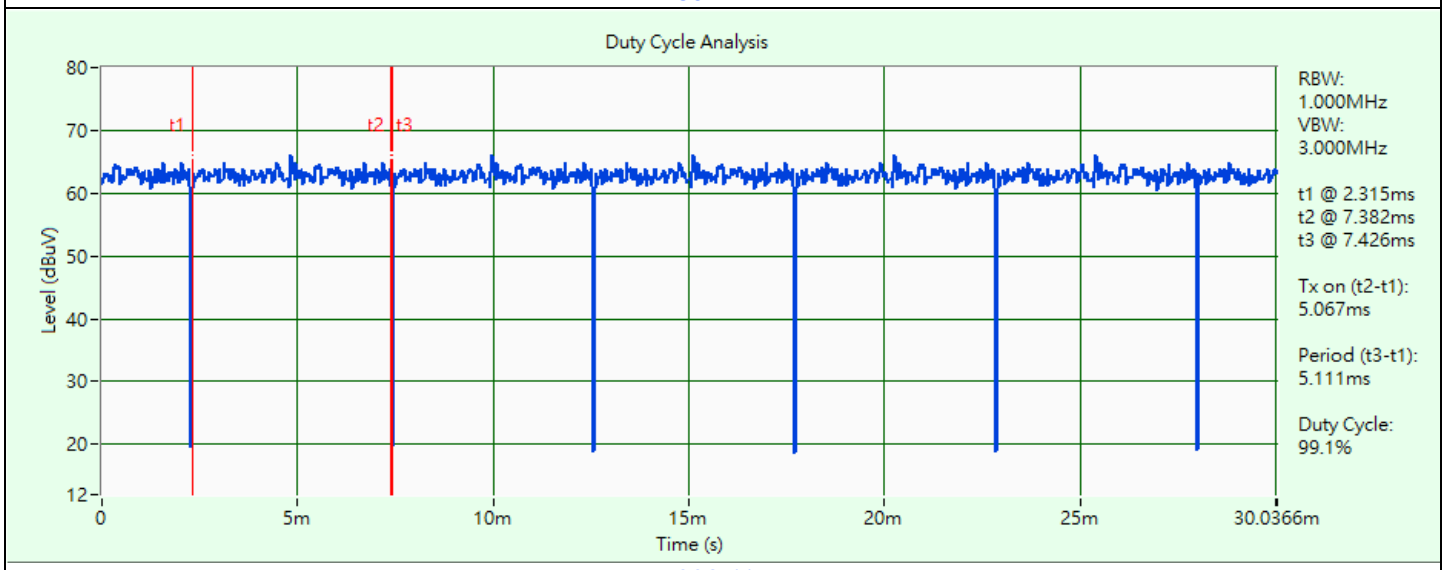
Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g	CDD	1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)	CDD & Beamforming	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)	CDD & Beamforming	3, 6, 9	BPSK	MCS0
Power Spectral Density / 6 dB Bandwidth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

3.5 Duty Cycle of Test Signal

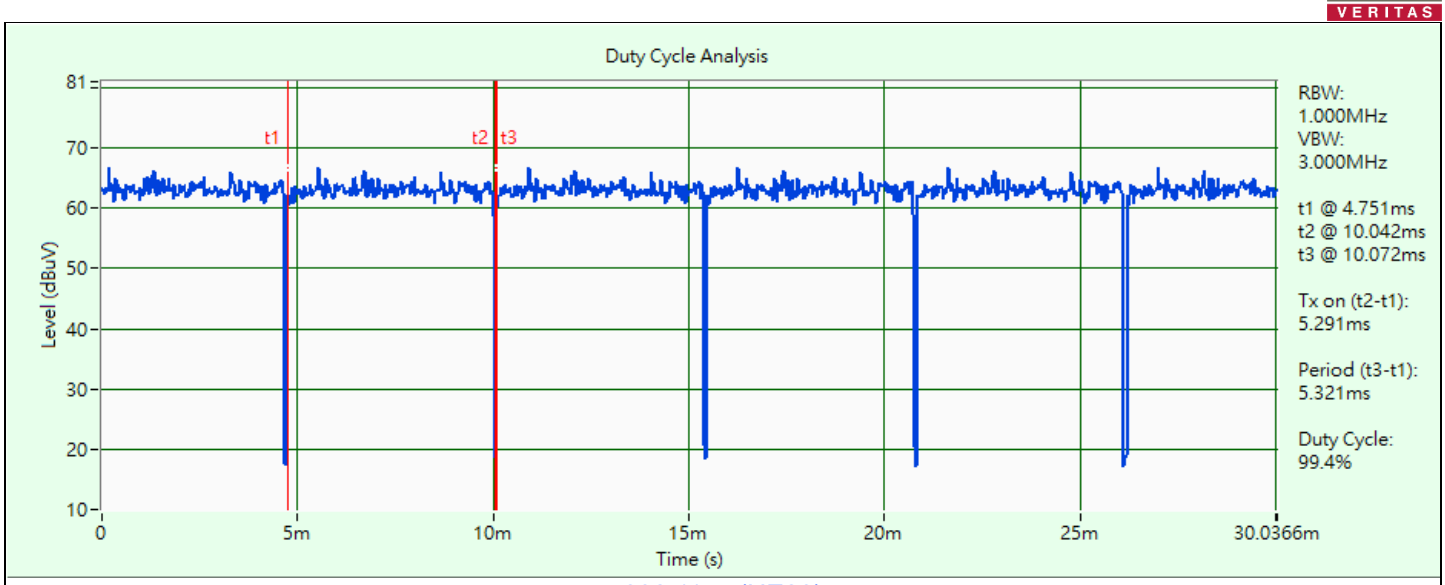
802.11b: Duty cycle = 10.944 ms / 10.974 ms x 100% = 99.7%
802.11g: Duty cycle = 5.067 ms / 5.111 ms x 100% = 99.1%
802.11ax (HE20): Duty cycle = 5.291 ms / 5.321 ms x 100% = 99.4%
802.11ax (HE40): Duty cycle = 3.997 ms / 4.027 ms x 100% = 99.3%



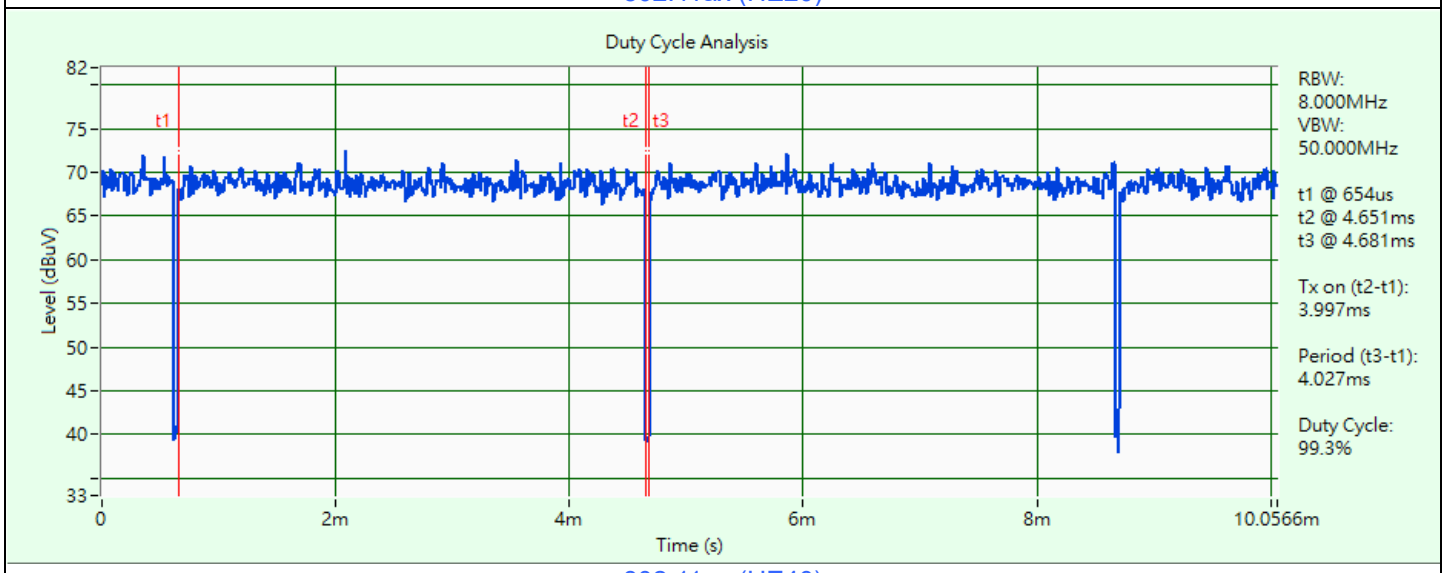
802.11b



802.11g



802.11ax (HE20)

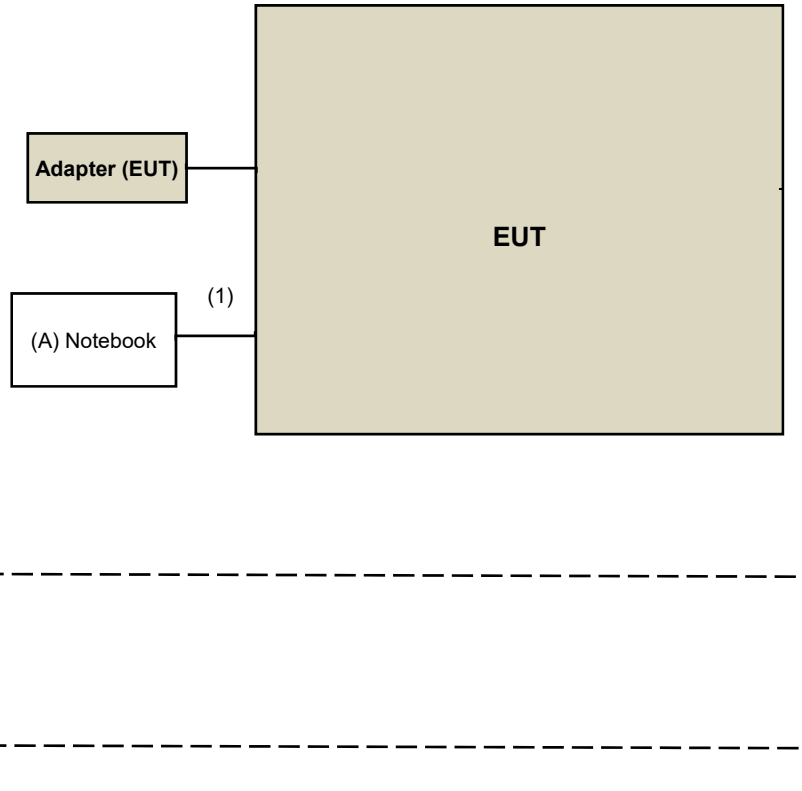


802.11ax (HE40)

3.6 Test Program Used and Operation Descriptions

Controlling software accessMtool_3.2.1.5 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	Lenovo	P00048A	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	1.5	No	0	Supplied by applicant

4 Test Instruments

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

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Peak Power Analyzer Keysight	8990B	MY51000485	2023/1/19	2024/1/18
Wideband Power Sensor Keysight	N1923A	MY58020002	2023/1/18	2024/1/17
		MY58140009	2023/1/18	2024/1/17

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/12/16

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSU43	100115	2023/1/17	2024/1/16

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/12/16

4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.4 Conducted Out of Band Emissions

Refer to section 4.2 to get information of the instruments.

4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance HUBER+SUHNER	E1-011276	01	2023/2/1	2024/1/31
	E1-011312	10	2023/1/30	2024/1/29
	E1-011591	17	2023/2/1	2024/1/31
DC-LISN Schwarzbeck	NNBM 8126G	8126G-069	2023/11/7	2024/11/6
EMI Test Receiver R&S	ESCS 30	100288	2023/1/3	2024/1/2
Fixed Attenuator SGH	BNC10W10dB	PAD-COND2-01	2023/9/2	2024/9/1
LISN R&S	ESH2-Z5	100100	2023/3/7	2024/3/6
	ESH3-Z5	100312	2023/9/12	2024/9/11
RF Coaxial Cable Woken	5D-FB	Cable-cond2-01	2023/9/2	2024/9/1
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2023/8/31	2024/8/30

Notes:

1. The test was performed in HY - Conduction 2.
2. Tested Date: 2023/12/14

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	UNAT_5+	PAD-CH6-01	N/A	N/A
Antenna Tower Controller Max-Full	MF-7802	N/A	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-616	2023/10/18	2024/10/17
Loop Antenna Electro-Metrics	EM-6879	269	2023/9/23	2024/9/22
Loop Antenna TESEQ	HLA 6121	45745	2023/8/8	2024/8/7
MXE EMI Receiver Agilent	N9038A	MY52260177	2023/9/15	2024/9/14
Preamplifier Agilent	310N	187226	2023/6/13	2024/6/12
Preamplifier EMCI	EMC001340	980201	2023/9/27	2024/9/26
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	2023/1/7	2024/1/6
RF Coaxial Cable ETS-Lindgren	EMC104-SM-SM-10000	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-4)	2023/6/13	2024/6/12
	RFC-SMS-100-SMS-24-IN	Cable-CH1-02(RFC-SMS-100-SMS-24)	2023/6/13	2024/6/12
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	TT-1510	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802	N/A	N/A	N/A

Notes:

1. The test was performed in XD - 966 chamber 6.
2. Tested Date: 2023/10/24

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	UNAT_5+	PAD-CH6-01	N/A	N/A
Antenna Tower Controller Max-Full	MF-7802	N/A	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	8	N/A	N/A
Horn Antenna ETS-Lindgren	3117	00143293	2023/11/12	2024/11/11
Horn Antenna Schwarzbeck	BBHA 9170	BBHA9170241	2023/10/16	2024/10/15
MXE EMI Receiver Agilent	N9038A	MY52260177	2023/9/15	2024/9/14
Preamplifier Agilent	83017A	MY39501373	2023/6/13	2024/6/12
Preamplifier EMCI	EMC 184045	980116	2023/9/27	2024/9/26
RF Coaxial Cable ETS-Lindgren	EMC104-SM-SM-10000	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-4)	2023/6/13	2024/6/12
	RFC-SMS-100-SMS-24-IN	Cable-CH1-02(RFC-SMS-100-SMS-24)	2023/6/13	2024/6/12
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	2023/1/7	2024/1/6
RF Coaxial Cable HUBER+SUHNER&EMCI	SUCOFLEX 104& EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	2023/1/7	2024/1/6
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	TT-1510	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802	N/A	N/A	N/A

Notes:

1. The test was performed in XD - 966 chamber 6.
2. Tested Date: 2023/12/5

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

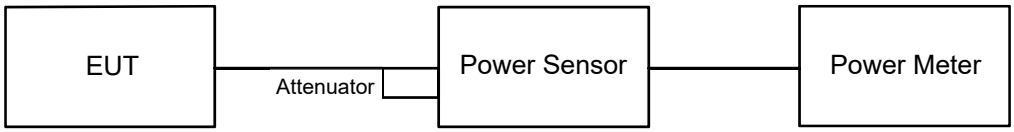
Notes:

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

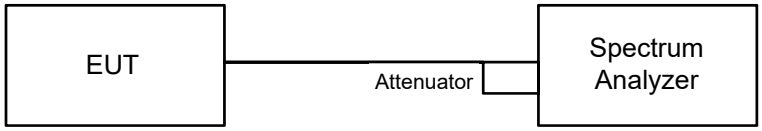


6.1.2 Test Procedure

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



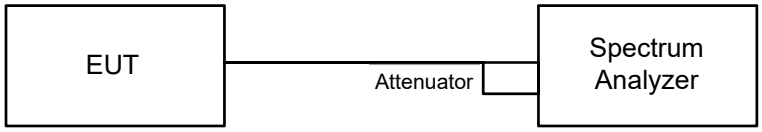
6.2.2 Test Procedure

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.

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

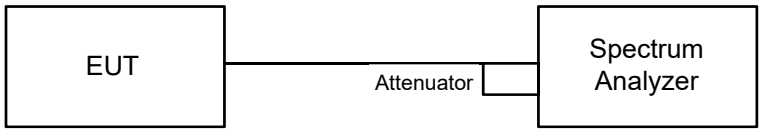


6.3.2 Test Procedure

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

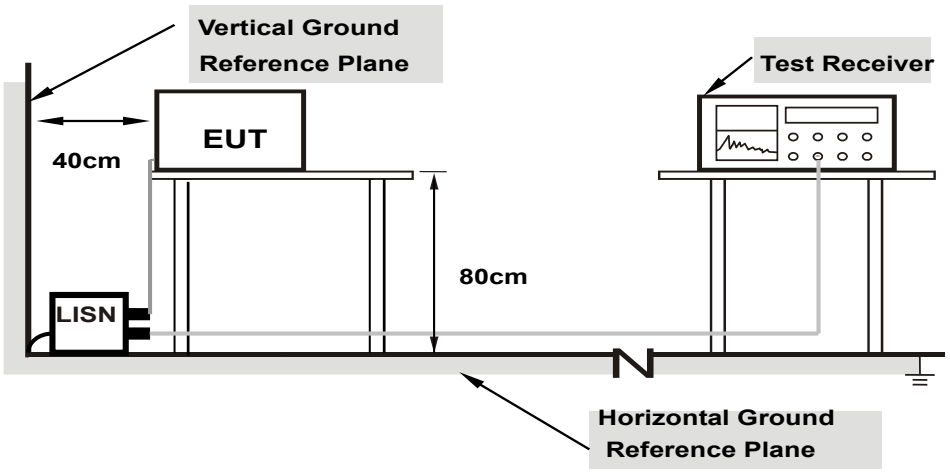
a. Set the RBW = 100 kHz.
b. Set the VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep time = auto couple.
e. Trace mode = max hold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

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.

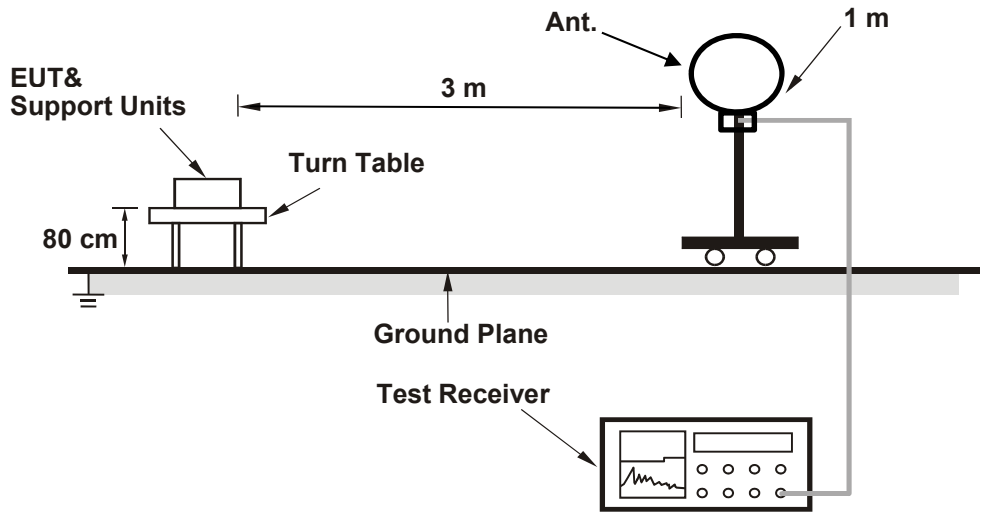
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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.

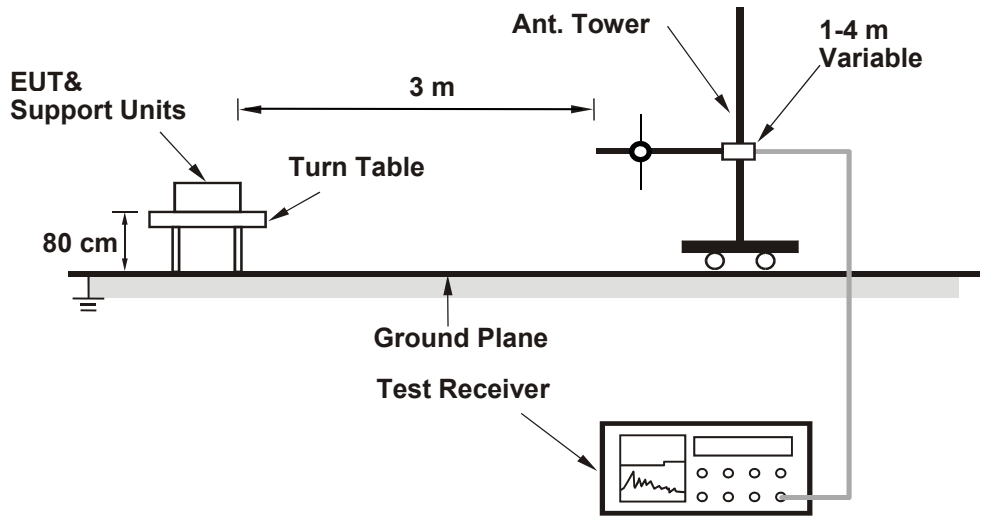
6.6 Unwanted Emissions below 1 GHz

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.

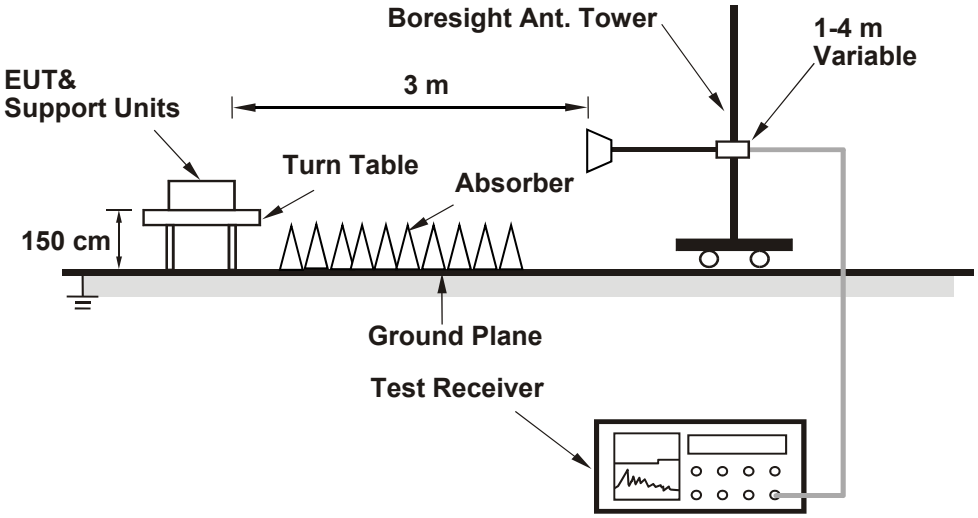
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

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:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Henry Hsu

802.11b CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	21.97	21.70	305.309	24.85	30	Pass
6	2437	27.00	26.61	959.329	29.82	30	Pass
11	2462	22.18	21.96	322.232	25.08	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.6 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11g CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	18.84	18.31	144.324	21.59	30	Pass
6	2437	24.27	23.81	507.737	27.06	30	Pass
11	2462	17.88	17.87	122.611	20.89	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.6 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	17.59	17.40	112.366	20.51	30	Pass
6	2437	24.20	23.80	502.91	27.01	30	Pass
11	2462	17.55	17.51	113.249	20.54	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.6 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	16.93	16.57	94.712	19.76	30	Pass
6	2437	16.80	16.41	91.615	19.62	30	Pass
9	2452	16.04	15.92	79.263	18.99	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.6 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	17.59	17.40	112.366	20.51	29.54	Pass
6	2437	24.20	23.80	502.910	27.01	29.54	Pass
11	2462	17.55	17.51	113.249	20.54	29.54	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. The directional gain is 6.46 dBi > 6 dBi, so the output power limit shall be reduced to 30-(6.46-6) = 29.54 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	16.93	16.57	94.712	19.76	29.54	Pass
6	2437	16.80	16.41	91.615	19.62	29.54	Pass
9	2452	16.04	15.92	79.263	18.99	29.54	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. The directional gain is 6.46 dBi > 6 dBi, so the output power limit shall be reduced to 30-(6.46-6) = 29.54 dBm.

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Henry Hsu

802.11b

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-9.37	-9.68	-6.51	7.54	Pass
6	2437	-4.38	-4.79	-1.57	7.54	Pass
11	2462	-9.35	-9.37	-6.35	7.54	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 6.46 dBi > 6 dBi, so the power density limit shall be reduced to 8-(6.46-6) = 7.54 dBm/3kHz.

802.11g

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-14.98	-15.18	-12.07	7.54	Pass
6	2437	-8.40	-8.74	-5.56	7.54	Pass
11	2462	-14.99	-15.10	-12.03	7.54	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 6.46 dBi > 6 dBi, so the power density limit shall be reduced to 8-(6.46-6) = 7.54 dBm/3kHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-15.62	-15.82	-12.71	7.54	Pass
6	2437	-9.02	-9.41	-6.20	7.54	Pass
11	2462	-15.66	-15.70	-12.67	7.54	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 6.46 dBi > 6 dBi, so the power density limit shall be reduced to 8-(6.46-6) = 7.54 dBm/3kHz.

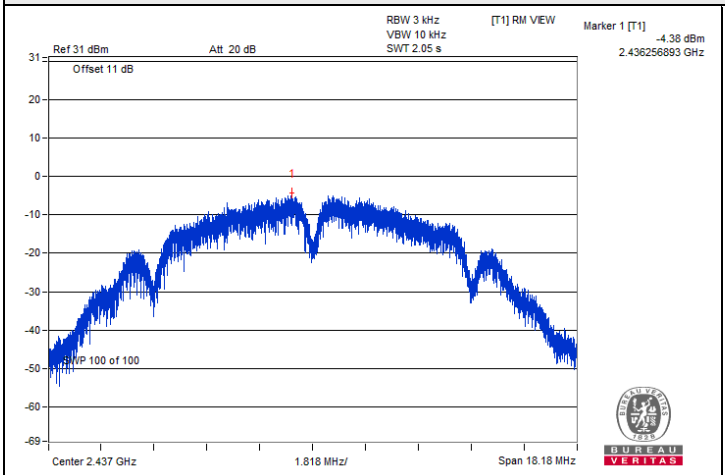
802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
3	2422	-19.61	-19.98	-16.78	7.54	Pass
6	2437	-19.76	-20.14	-16.94	7.54	Pass
9	2452	-20.52	-20.67	-17.58	7.54	Pass

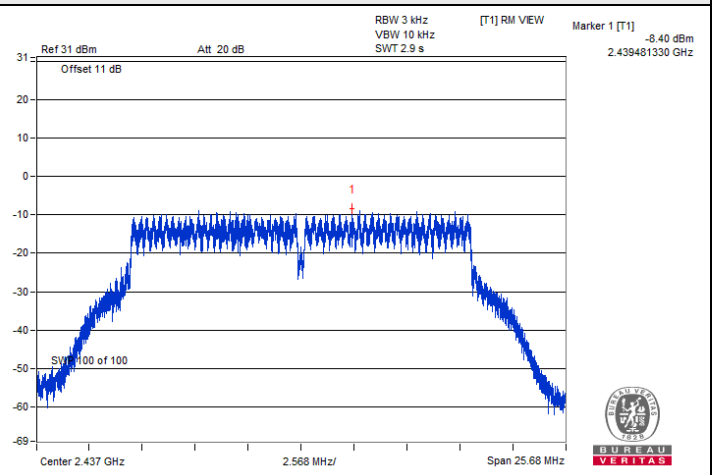
Notes:

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 6.46 dBi > 6 dBi, so the power density limit shall be reduced to 8-(6.46-6) = 7.54 dBm/3kHz.

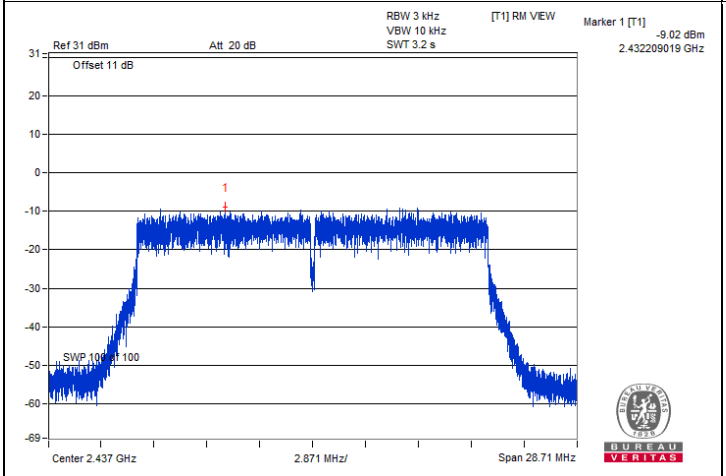
Spectrum Plot of Maximum Value



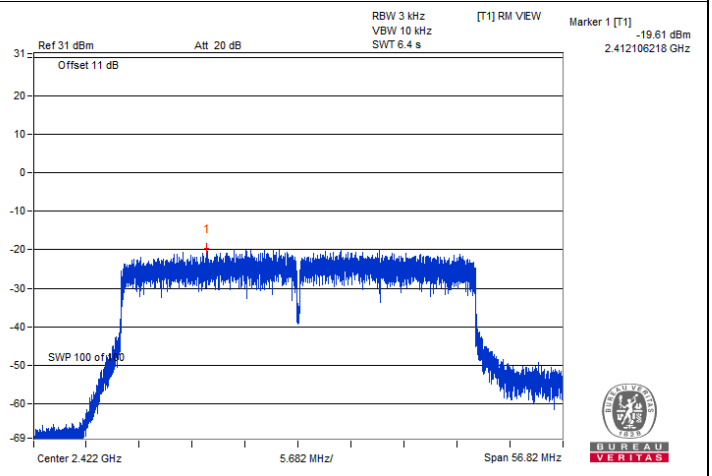
802.11b / Chain 0 : CH 6



802.11g / Chain 0 : CH 6



802.11ax (HE20) / Chain 0 : CH 6



802.11ax (HE40) / Chain 0 : CH 3

7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Henry Hsu

802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	7.05	7.08	0.5	Pass
6	2437	7.56	7.10	0.5	Pass
11	2462	7.10	7.02	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	16.38	16.40	0.5	Pass
6	2437	16.40	16.40	0.5	Pass
11	2462	16.39	16.39	0.5	Pass

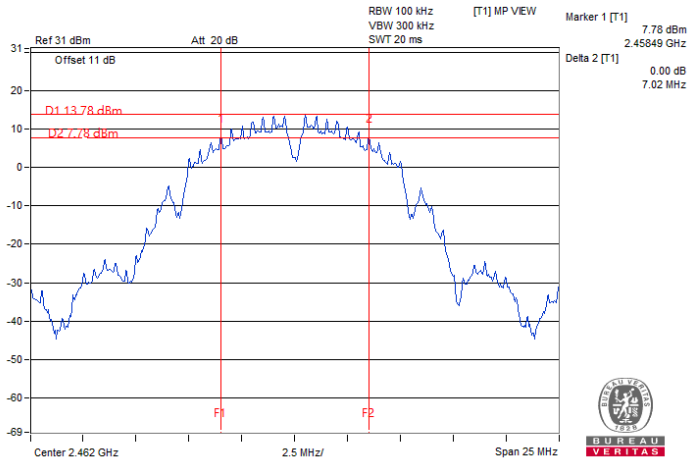
802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	18.78	18.77	0.5	Pass
6	2437	19.06	19.00	0.5	Pass
11	2462	19.01	18.99	0.5	Pass

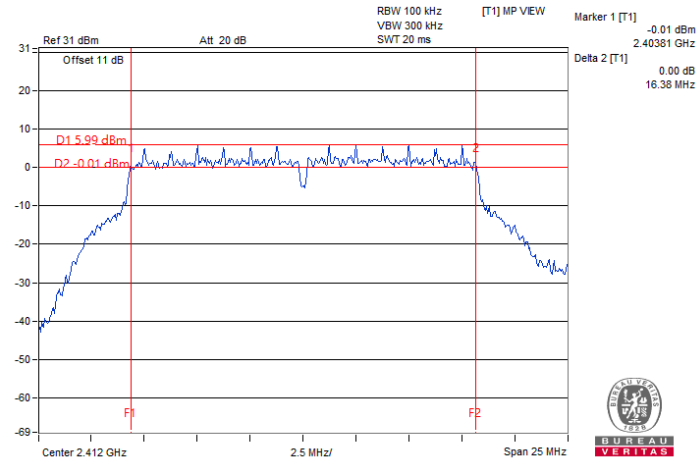
802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
3	2422	37.63	37.63	0.5	Pass
6	2437	37.72	37.74	0.5	Pass
9	2452	37.10	37.14	0.5	Pass

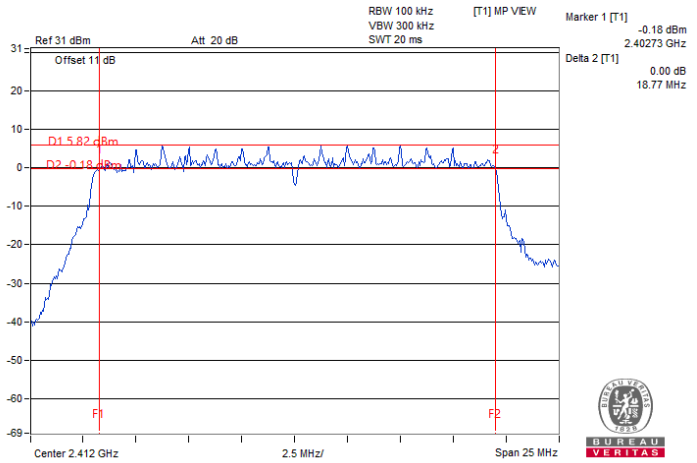
Spectrum Plot of Minimum Value



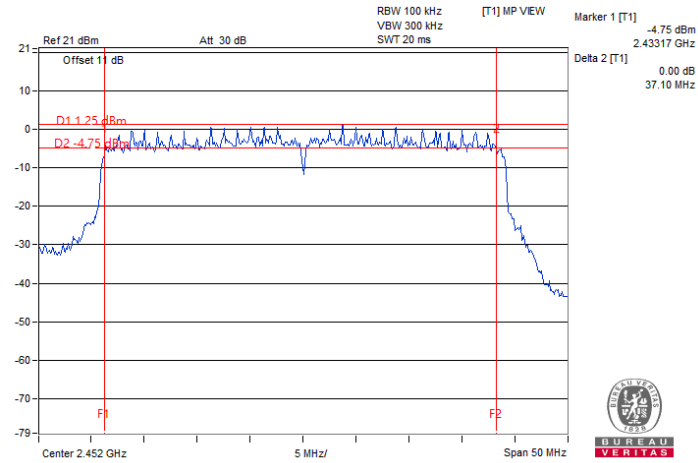
802.11b / Chain 1 : CH 11



802.11g / Chain 0 : CH 1



802.11ax (HE20) / Chain 1 : CH 1

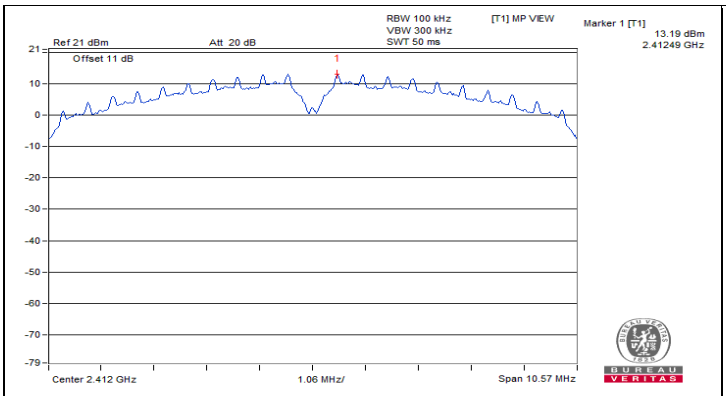


802.11ax (HE40) / Chain 0 : CH 9

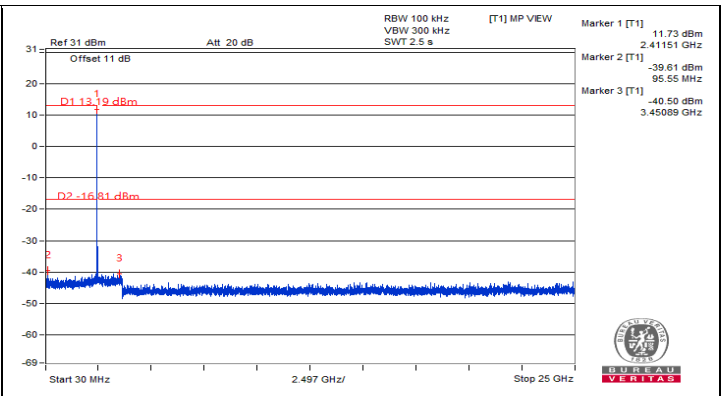
7.4 Conducted Out of Band Emissions

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Henry Hsu

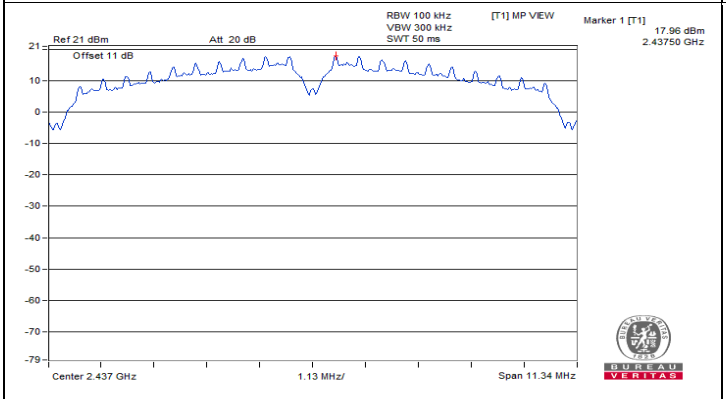
802.11b



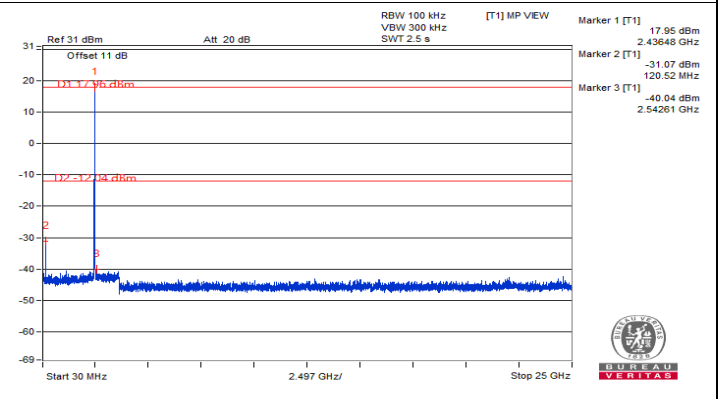
Chain 0 : CH 1



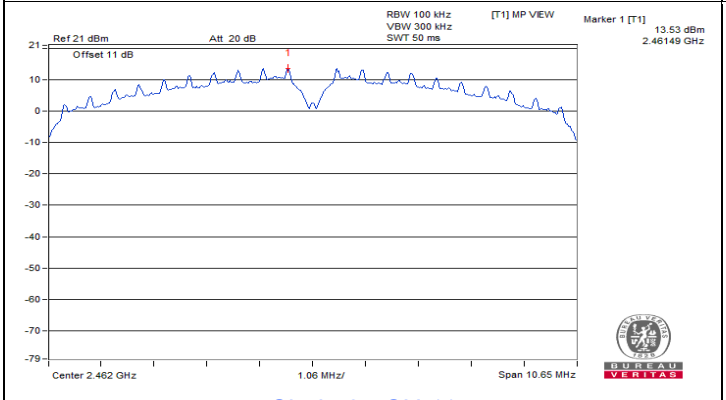
Chain 0 : CH 1



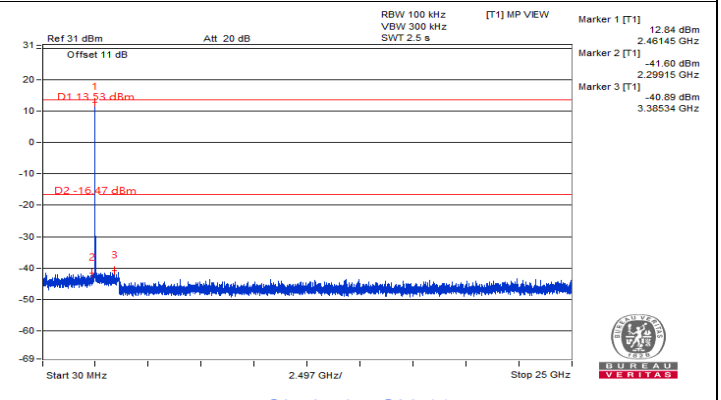
Chain 0 : CH 6



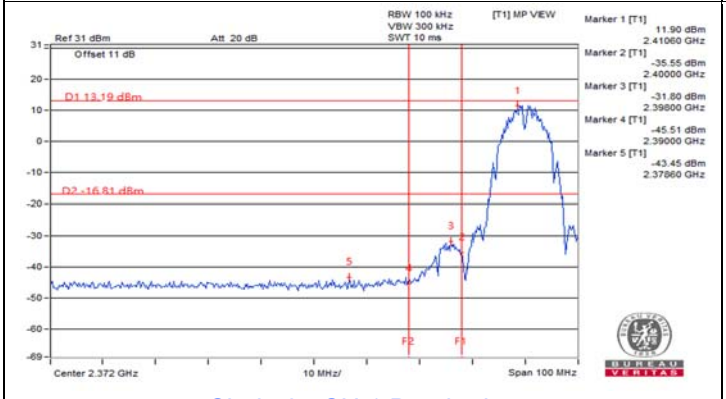
Chain 0 : CH 6



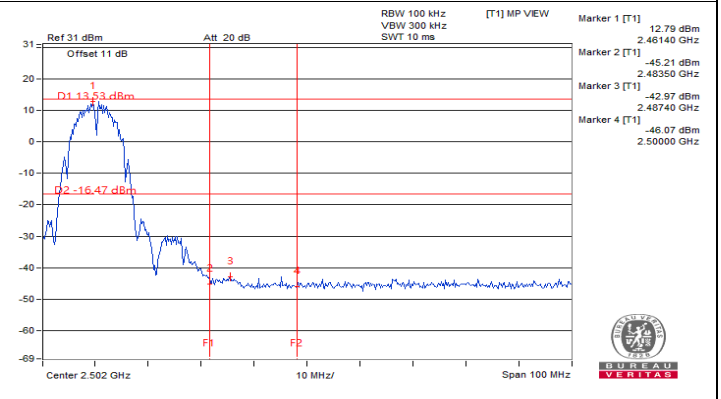
Chain 0 : CH 11



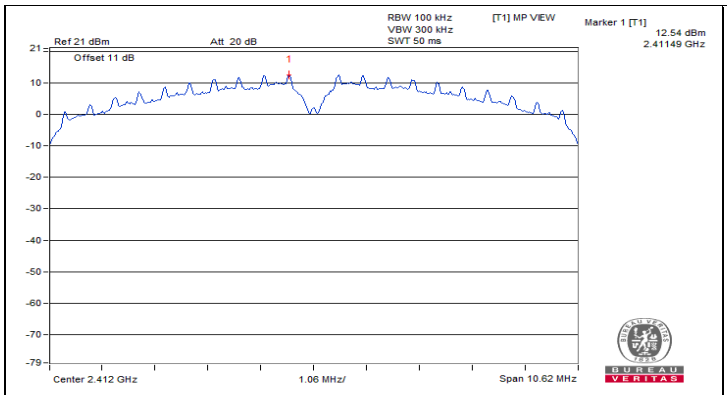
Chain 0 : CH 11



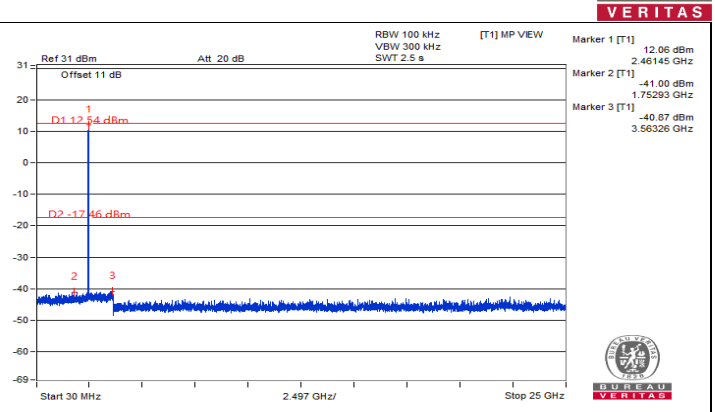
Chain 0 : CH 1 Band edge



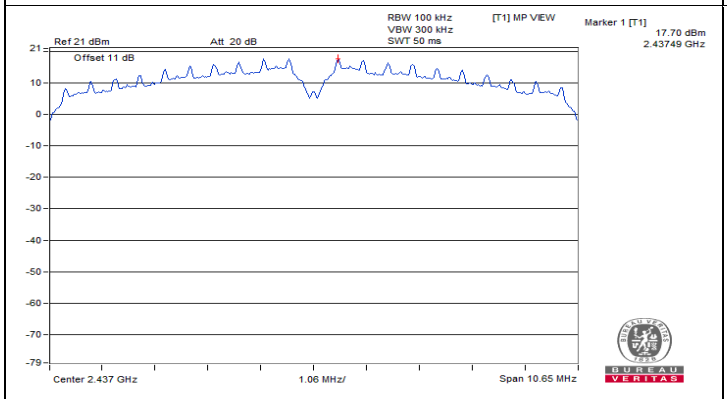
Chain 0 : CH 11 Band edge



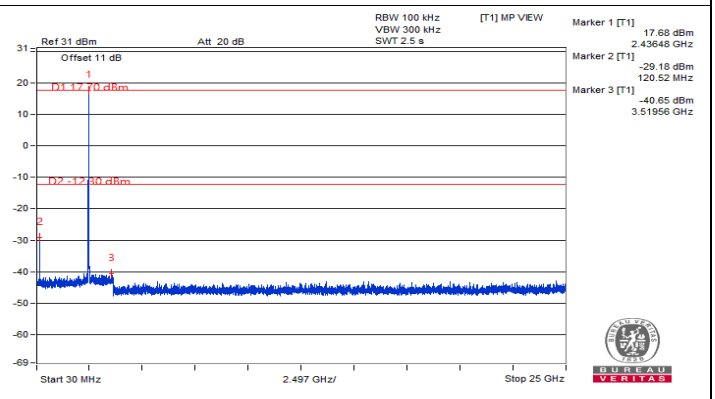
Chain 1 : CH 1



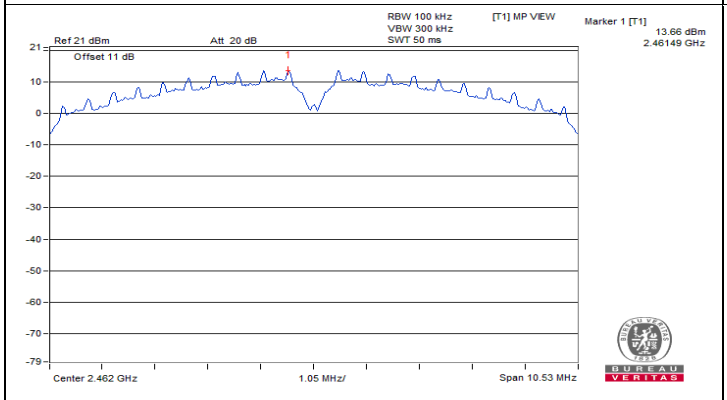
Chain 1 : CH 1



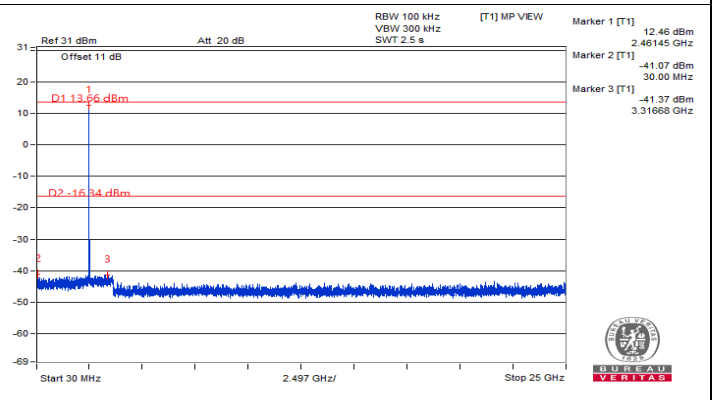
Chain 1 : CH 6



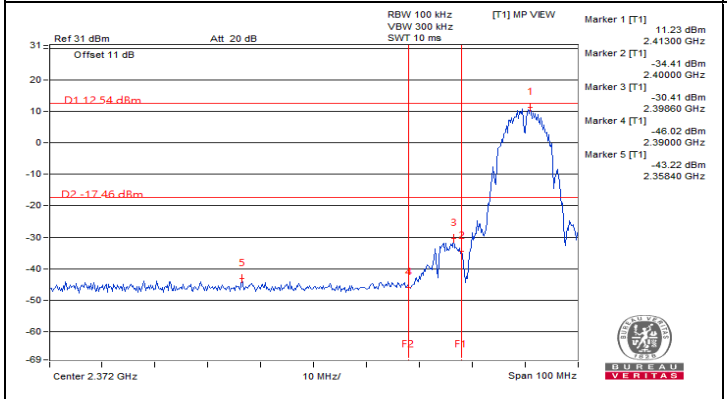
Chain 1 : CH 6



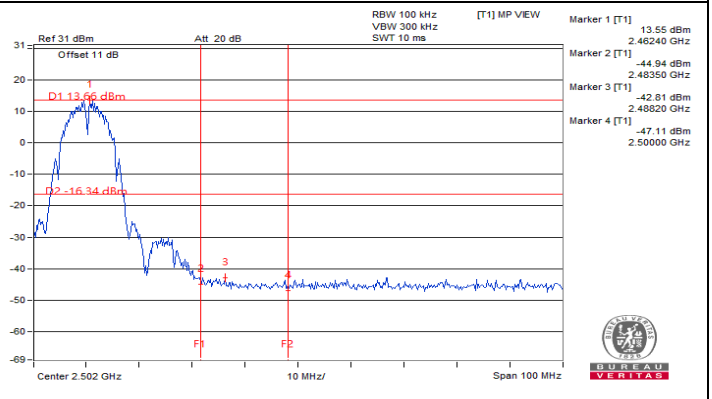
Chain 1 : CH 11



Chain 1 : CH 11

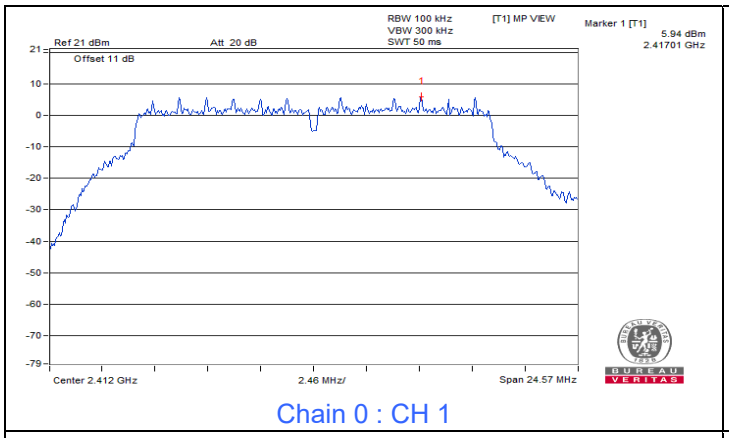


Chain 1 : CH 1 Band edge

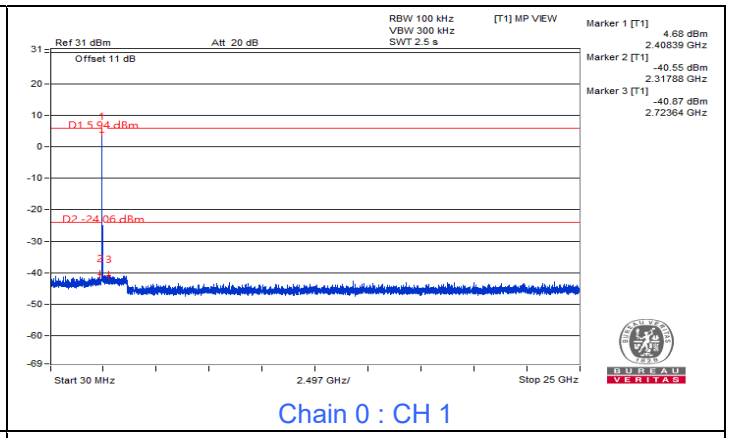


Chain 1 : CH 11 Band edge

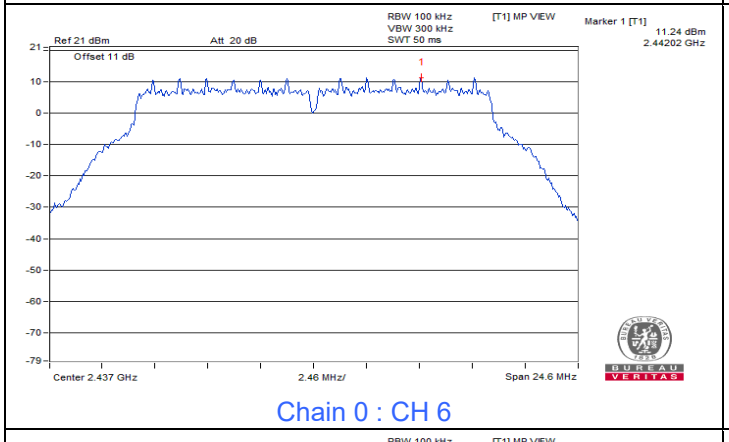
802.11g



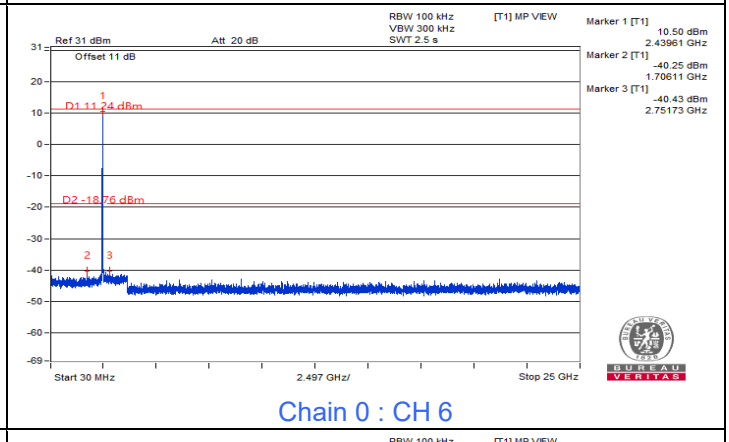
Chain 0 : CH 1



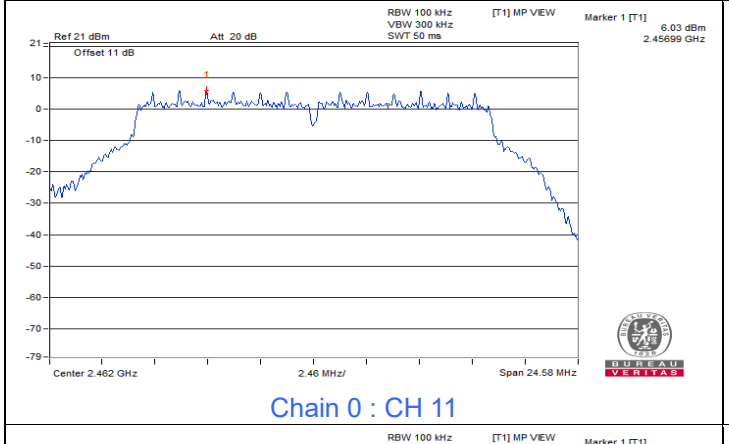
Chain 0 : CH 1



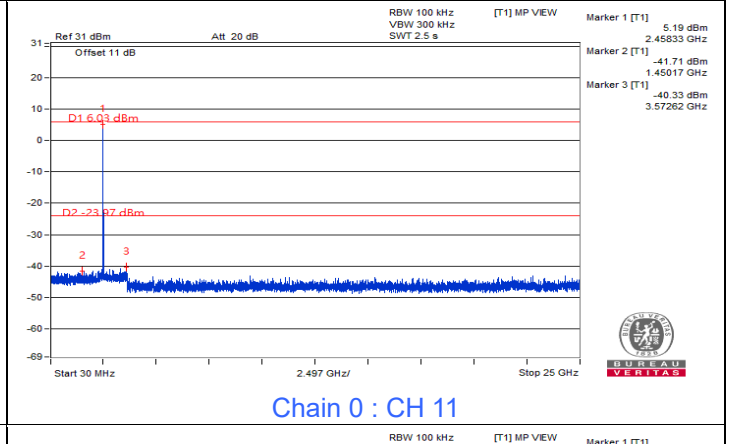
Chain 0 : CH 6



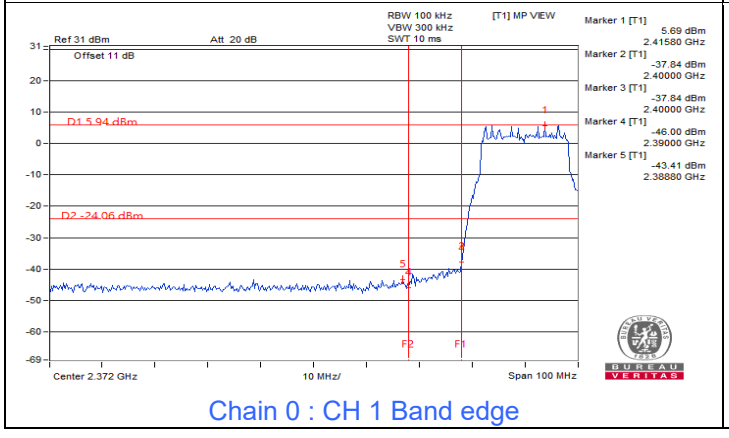
Chain 0 : CH 6



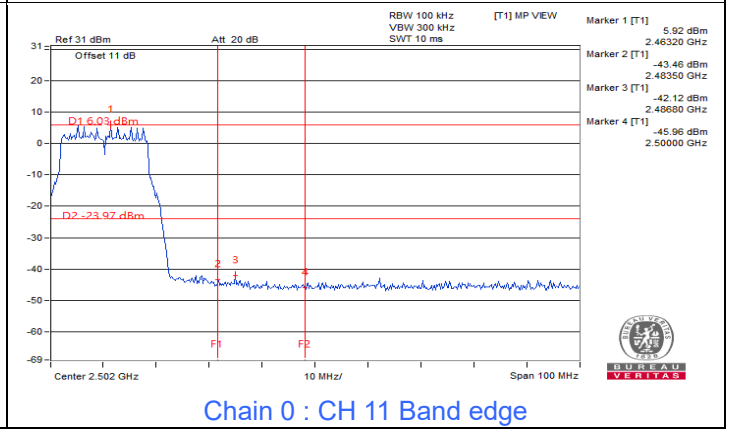
Chain 0 : CH 11



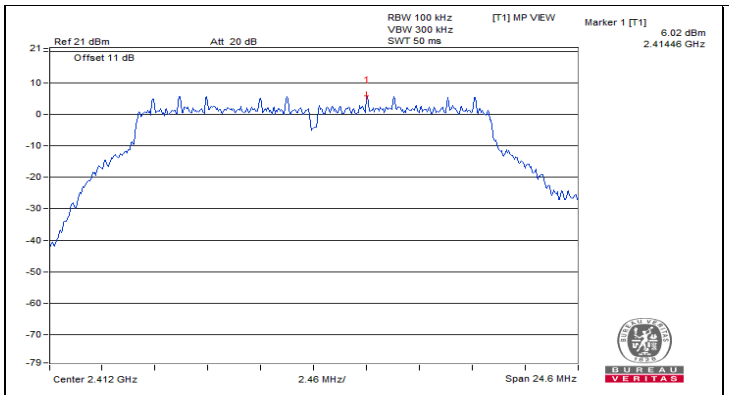
Chain 0 : CH 11



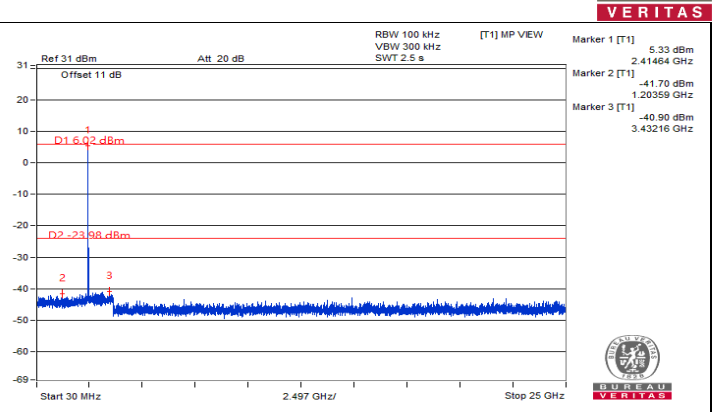
Chain 0 : CH 1 Band edge



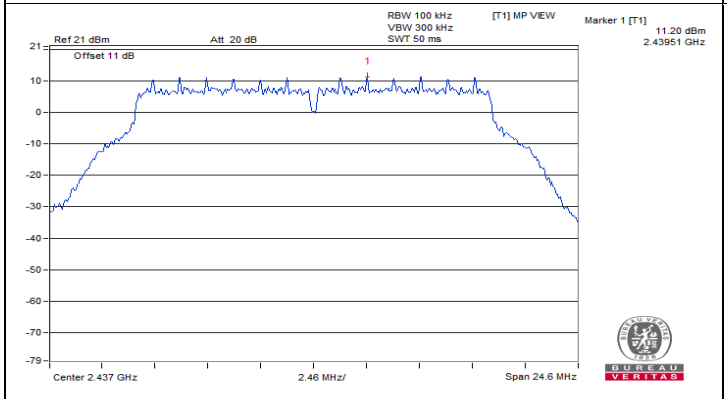
Chain 0 : CH 11 Band edge



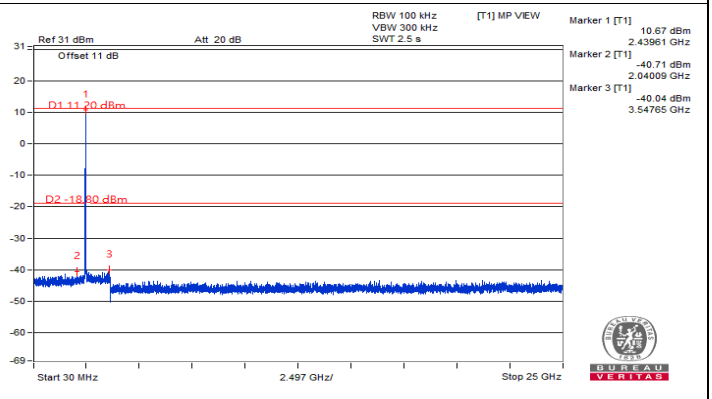
Chain 1 : CH 1



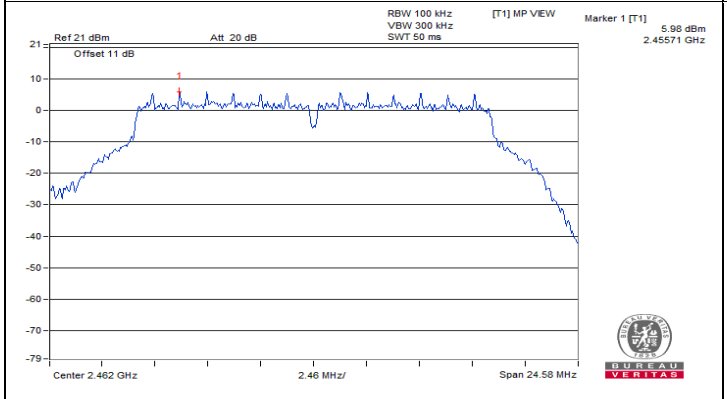
Chain 1 : CH 1



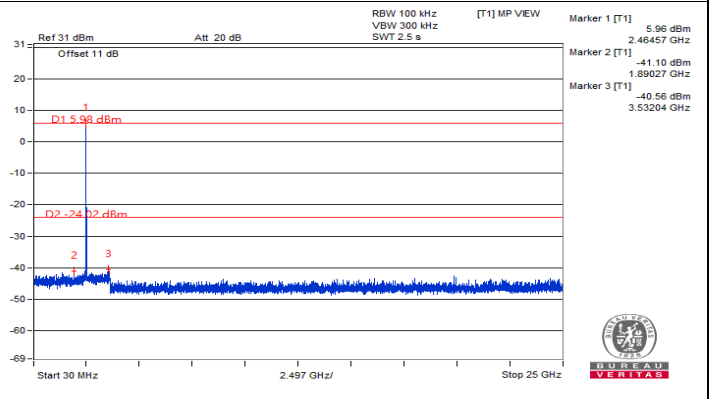
Chain 1 : CH 6



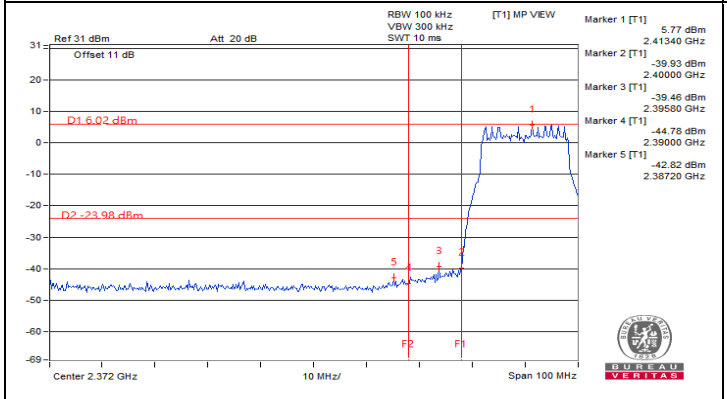
Chain 1 : CH 6



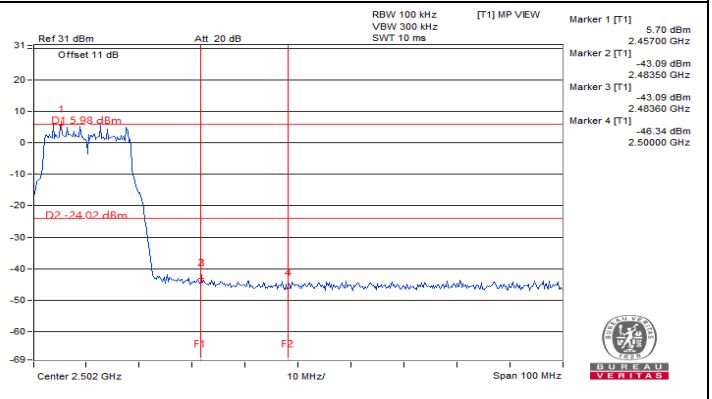
Chain 1 : CH 11



Chain 1 : CH 11

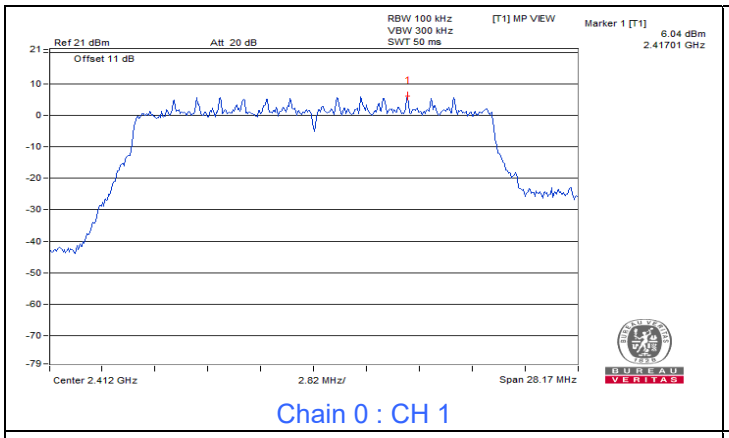


Chain 1 : CH 1 Band edge

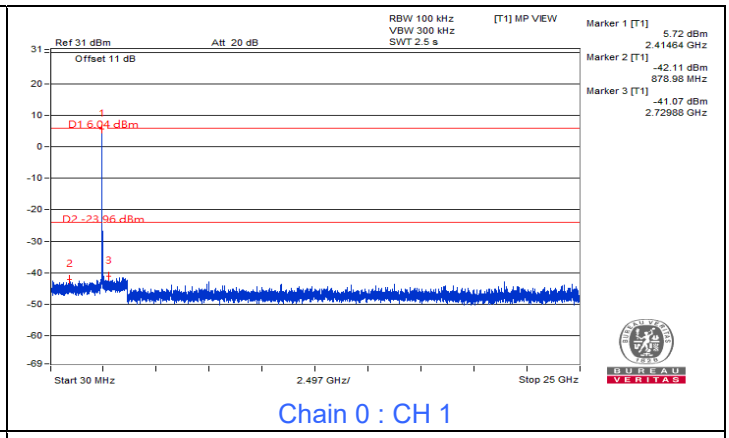


Chain 1 : CH 11 Band edge

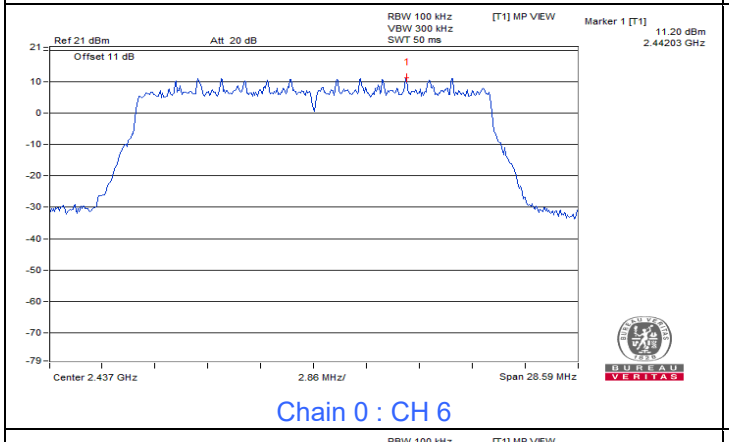
802.11ax (HE20)



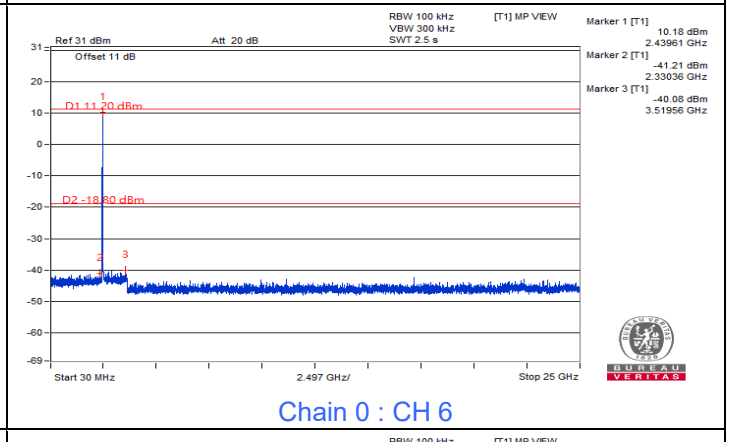
Chain 0 : CH 1



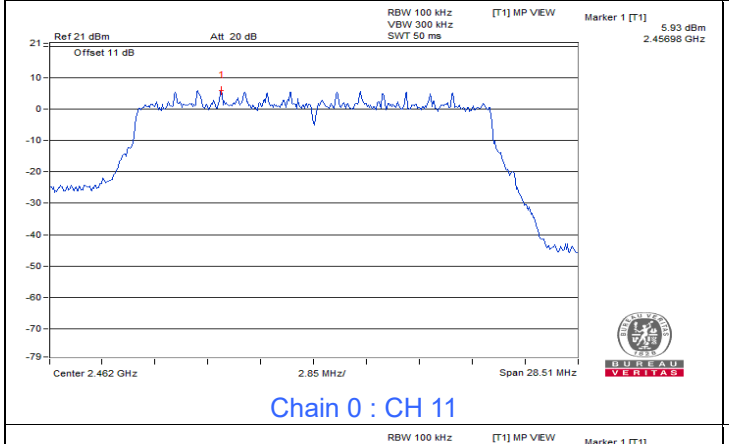
Chain 0 : CH 1



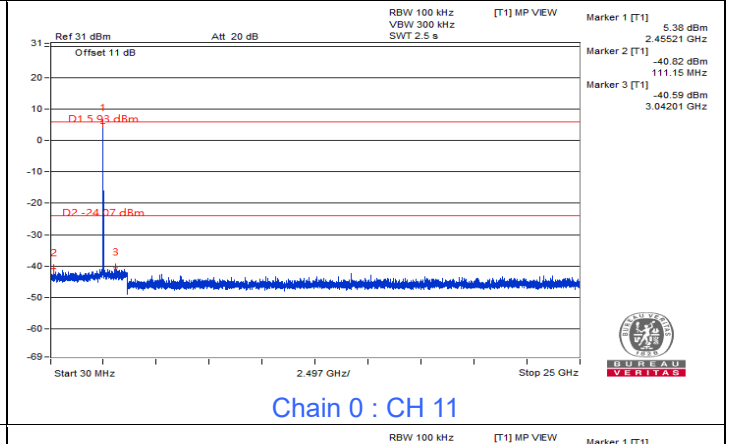
Chain 0 : CH 6



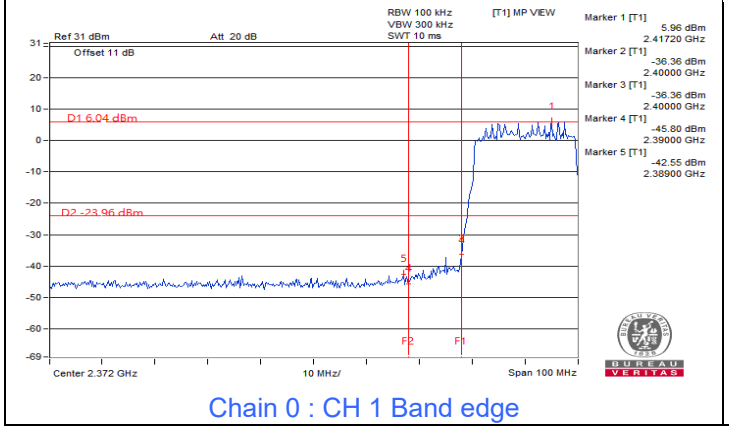
Chain 0 : CH 6



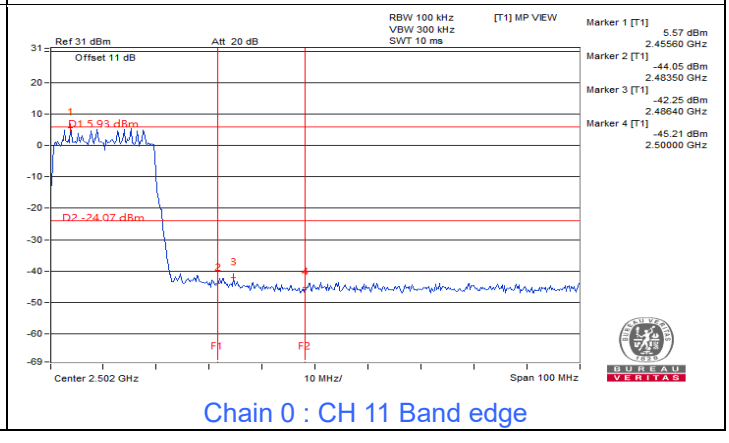
Chain 0 : CH 11



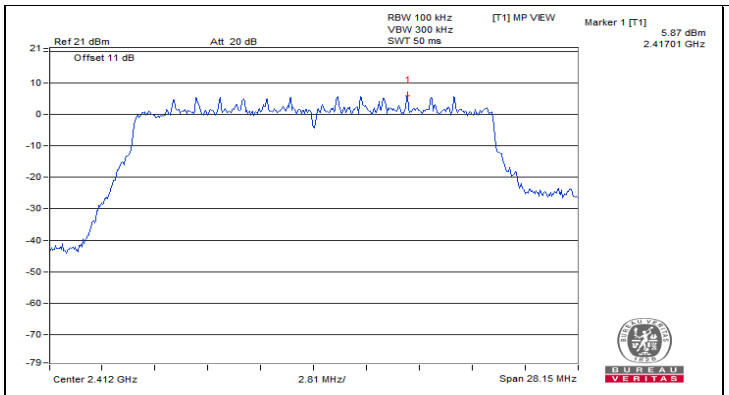
Chain 0 : CH 11



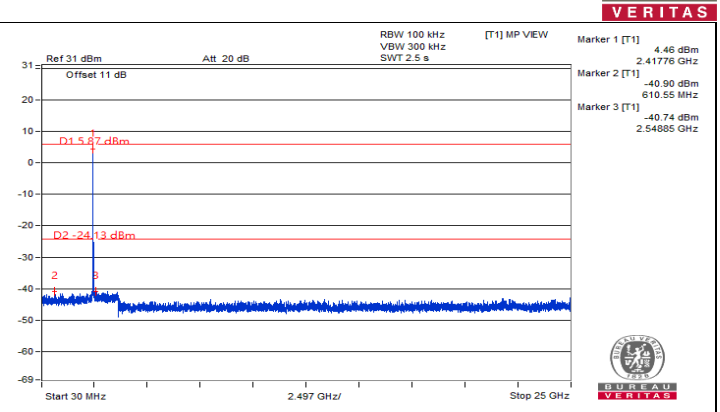
Chain 0 : CH 1 Band edge



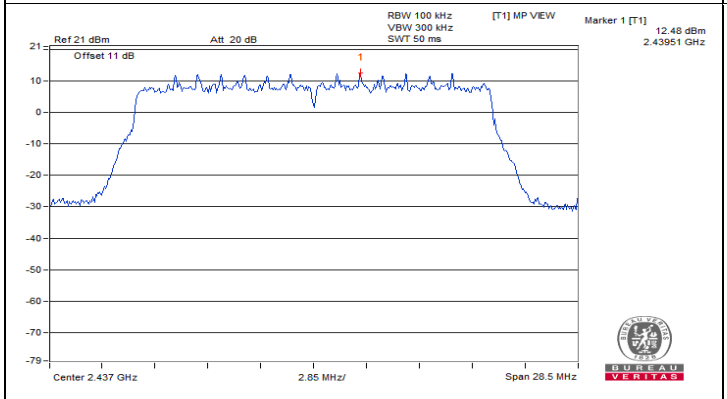
Chain 0 : CH 11 Band edge



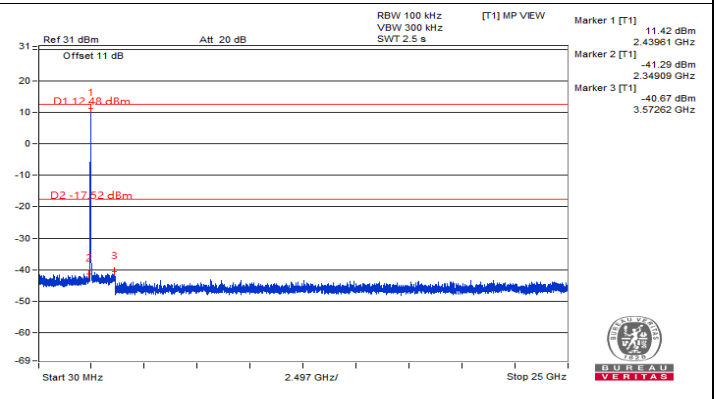
Chain 1 : CH 1



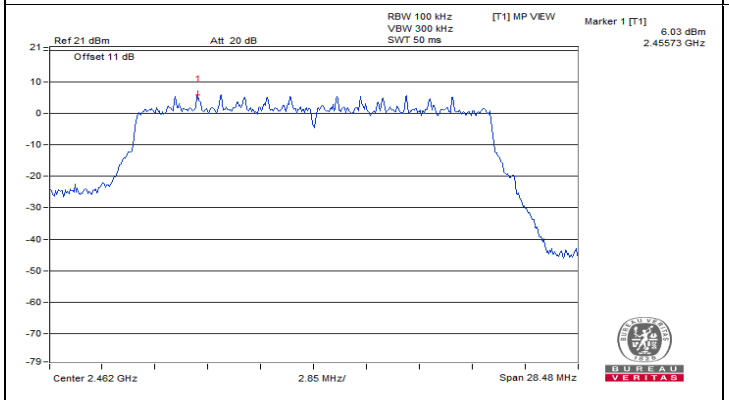
Chain 1 : CH 1



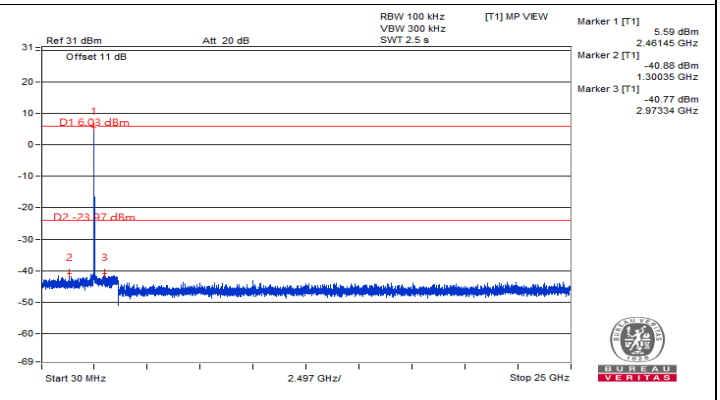
Chain 1 : CH 6



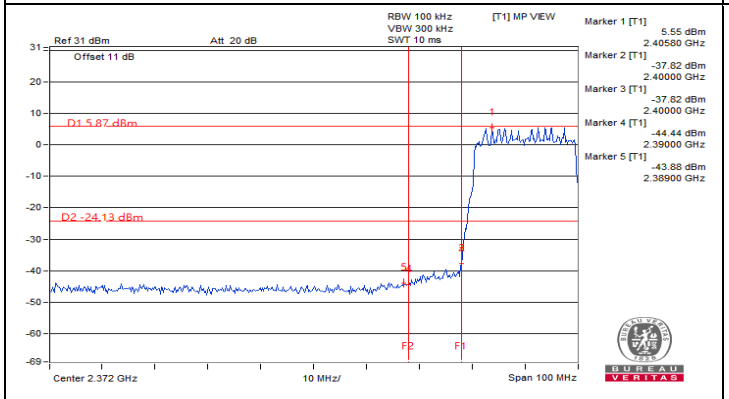
Chain 1 : CH 6



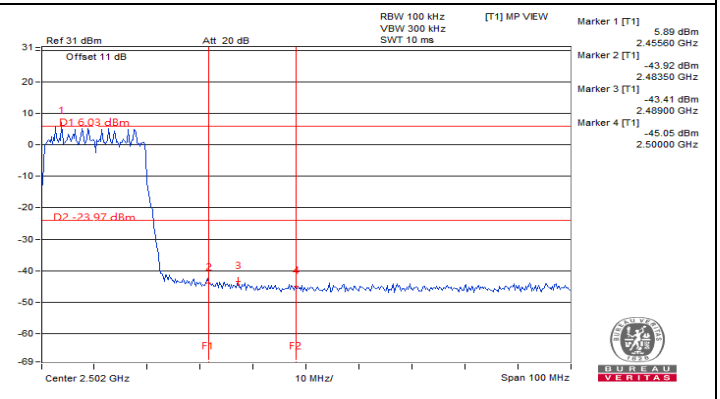
Chain 1 : CH 11



Chain 1 : CH 11

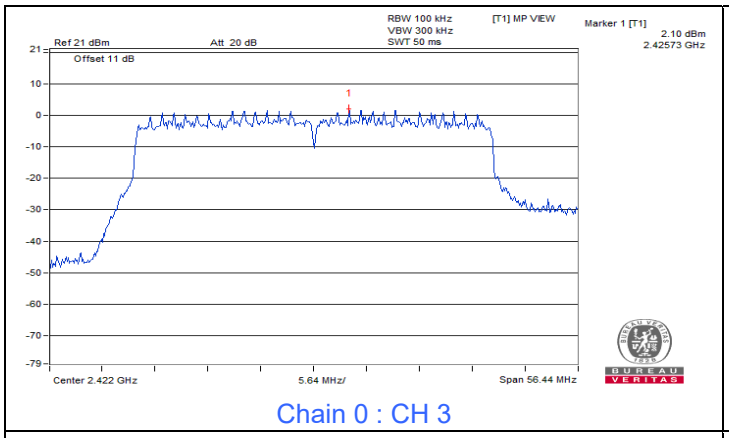


Chain 1 : CH 1 Band edge

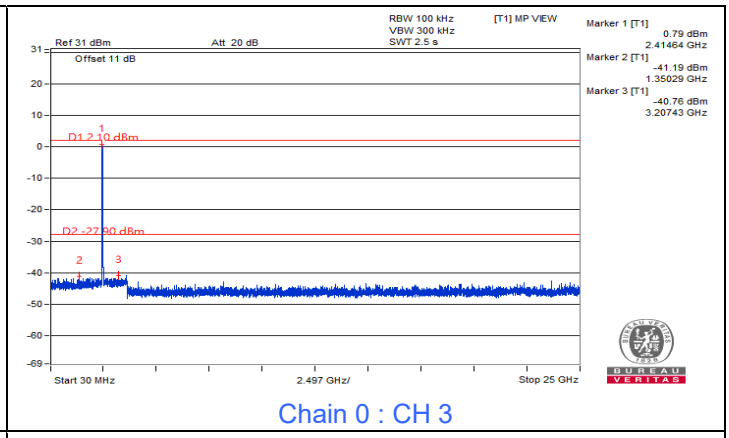


Chain 1 : CH 11 Band edge

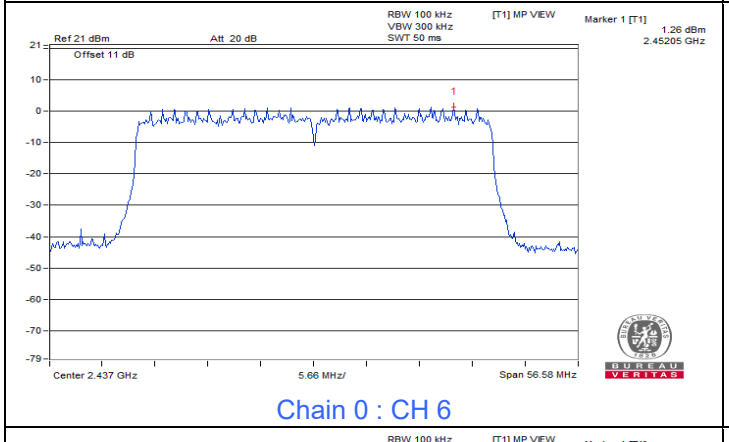
802.11ax (HE40)



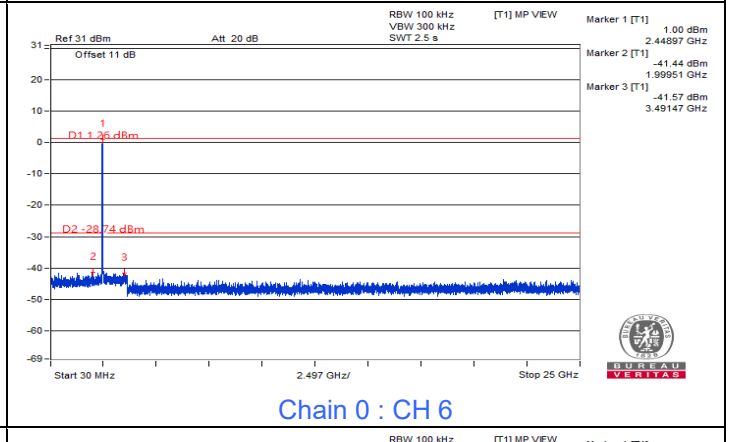
Chain 0 : CH 3



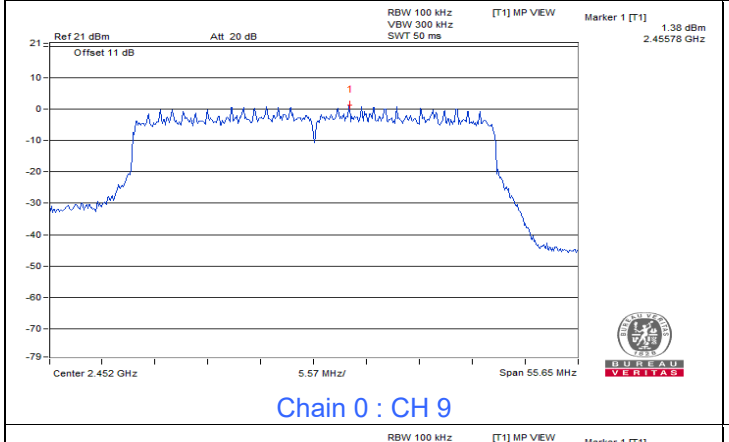
Chain 0 : CH 3



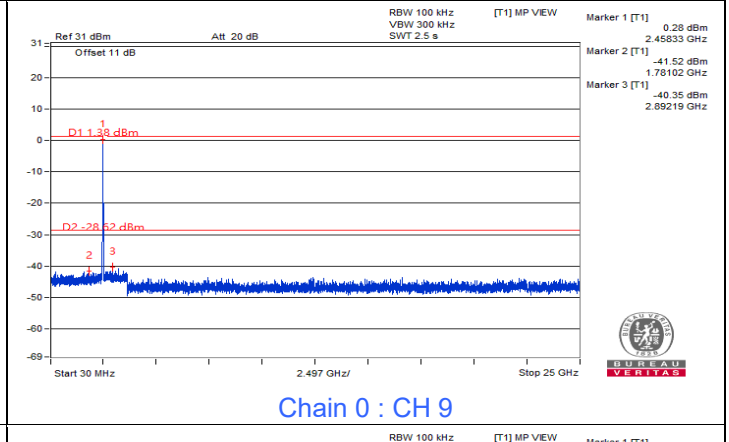
Chain 0 : CH 6



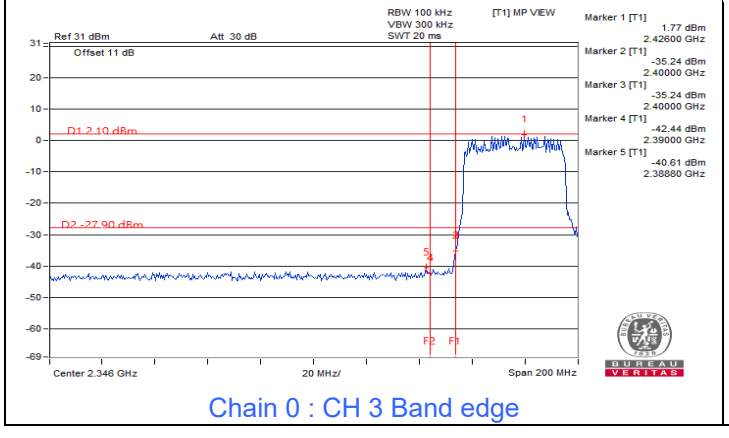
Chain 0 : CH 6



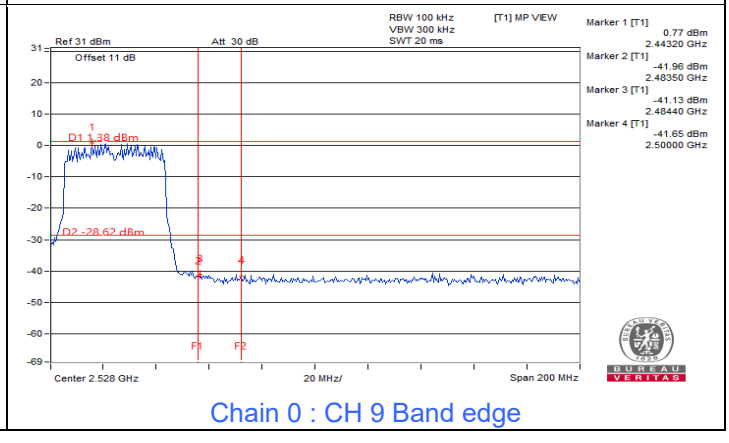
Chain 0 : CH 9



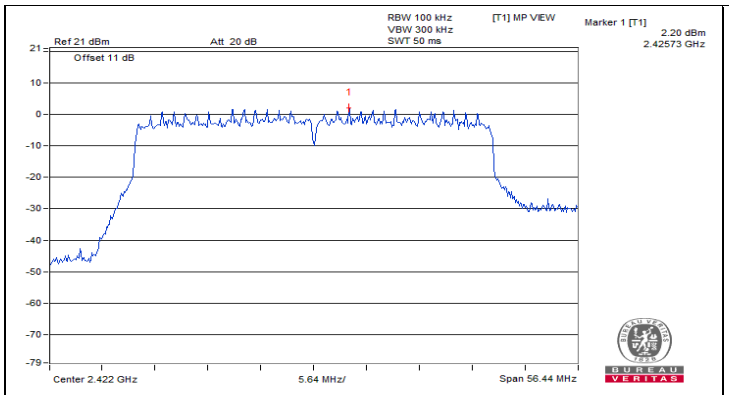
Chain 0 : CH 9



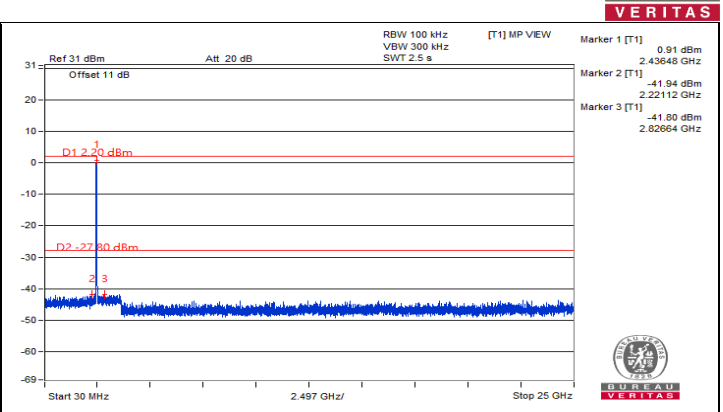
Chain 0 : CH 3 Band edge



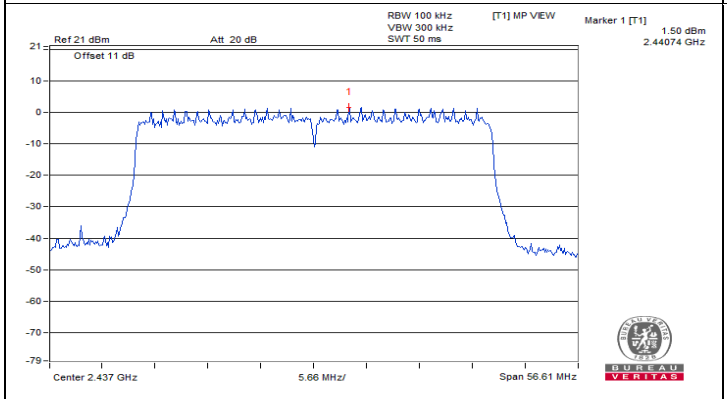
Chain 0 : CH 9 Band edge



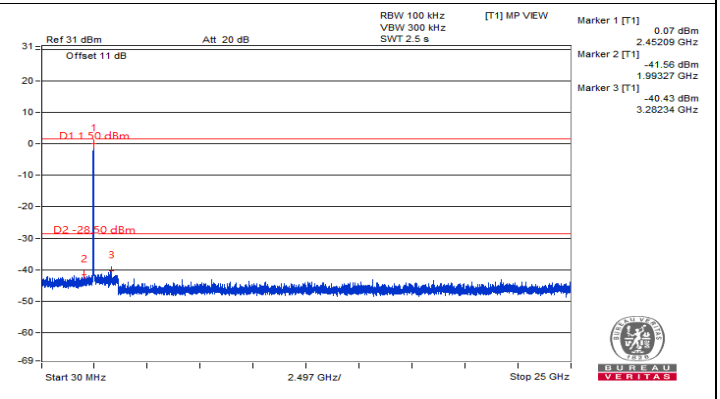
Chain 1 : CH 3



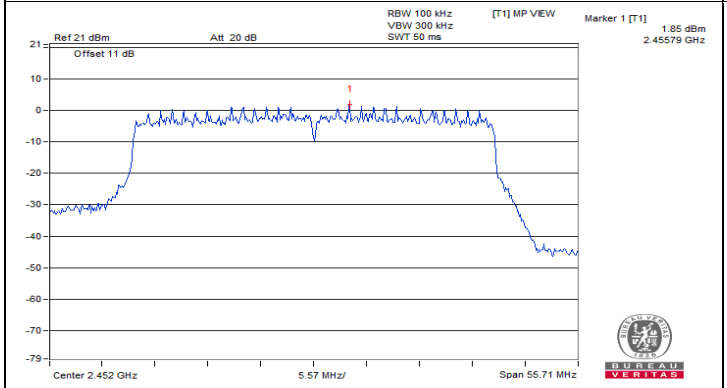
Chain 1 : CH 3



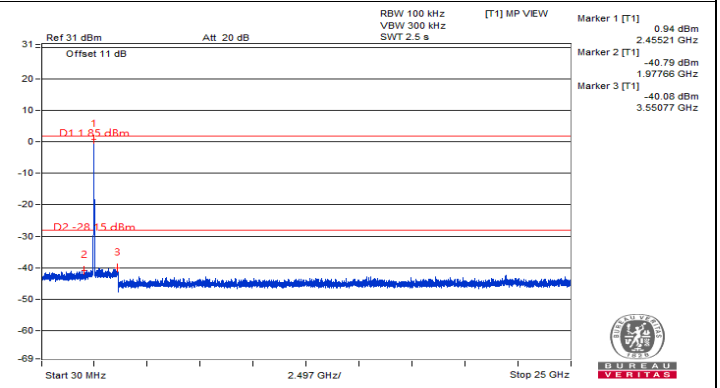
Chain 1 : CH 6



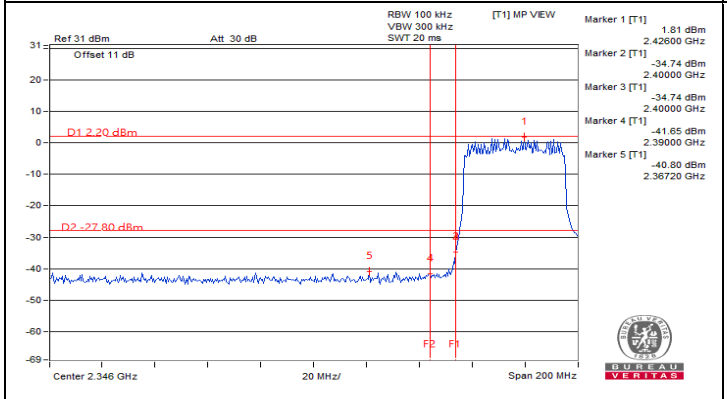
Chain 1 : CH 6



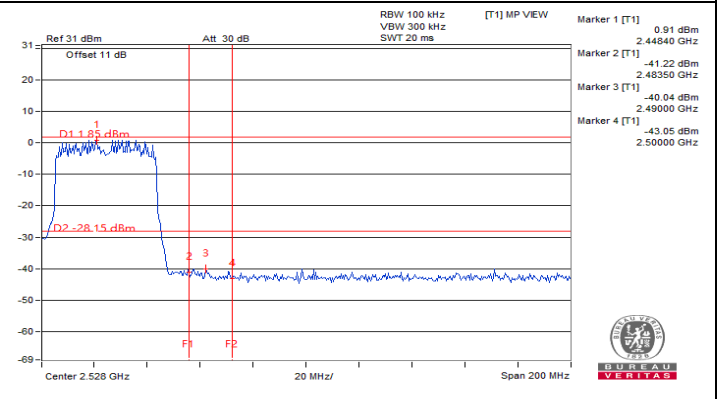
Chain 1 : CH 9



Chain 1 : CH 9



Chain 1 : CH 3 Band edge



Chain 1 : CH 9 Band edge

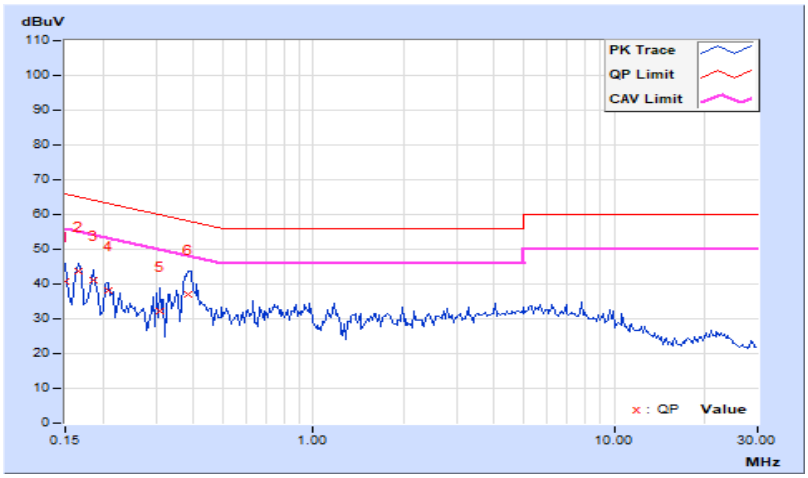
7.5 AC Power Conducted Emissions

RF Mode	802.11b	**Channel**	CH 6：2437 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 66% RH
Tested By	Titan HSU		

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	0.15000	10.37	30.19	15.71	40.56	26.08	66.00	56.00	-25.44	-29.92
2	0.16562	10.38	33.19	18.27	43.57	28.65	65.18	55.18	-21.61	-26.53
3	0.18516	10.39	30.72	17.14	41.11	27.53	64.25	54.25	-23.14	-26.72
4	0.20859	10.40	27.58	14.87	37.98	25.27	63.26	53.26	-25.28	-27.99
5	0.31016	10.45	21.70	12.85	32.15	23.30	59.97	49.97	-27.82	-26.67
6	0.38438	10.48	26.69	13.62	37.17	24.10	58.18	48.18	-21.01	-24.08

Remarks:

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

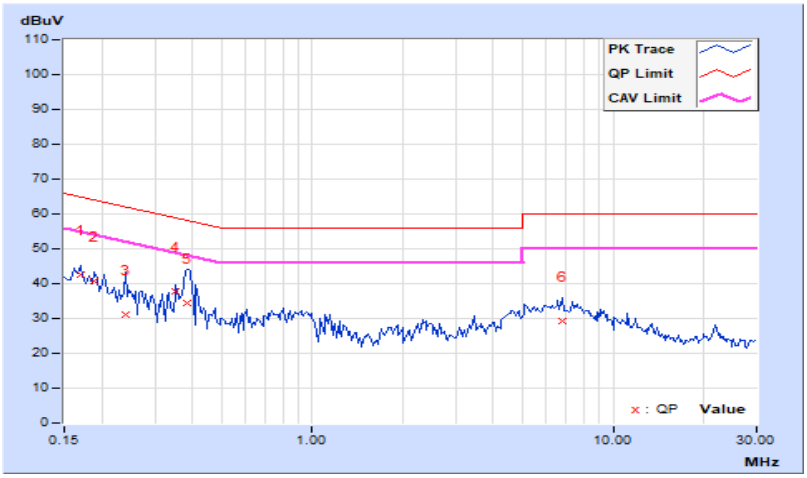


RF Mode	802.11b	**Channel**	CH 6：2437 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 66% RH
Tested By	Titan HSU		

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	0.16953	10.42	32.32	22.94	42.74	33.36	64.98	54.98	-22.24	-21.62
2	0.18906	10.43	30.30	21.87	40.73	32.30	64.08	54.08	-23.35	-21.78
3	0.23984	10.46	20.73	3.41	31.19	13.87	62.10	52.10	-30.91	-38.23
4	**0.35313**	**10.51**	**27.37**	**22.99**	**37.88**	**33.50**	**58.89**	**48.89**	**-21.01**	**-15.39**
5	0.38438	10.52	23.83	6.73	34.35	17.25	58.18	48.18	-23.83	-30.93
6	6.75391	10.79	18.43	11.81	29.22	22.60	60.00	50.00	-30.78	-27.40

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



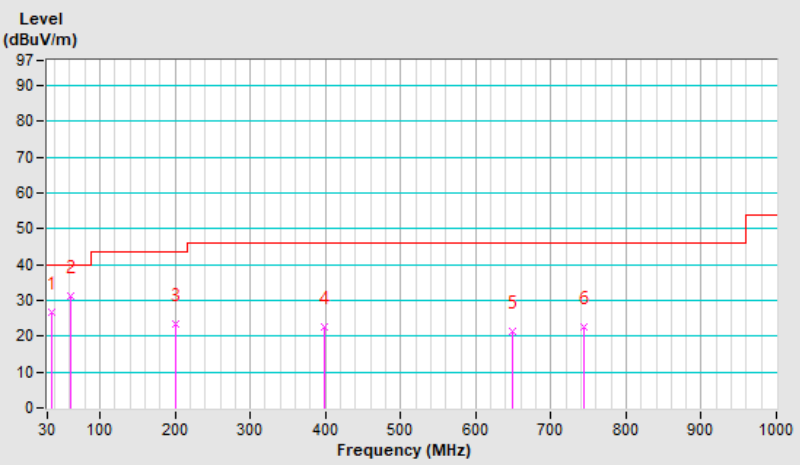
7.6 Unwanted Emissions below 1 GHz

RF Mode	802.11b	**Channel**	CH 6：2437 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 61% RH
Tested By	Charles Hsiao		

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	36.00	26.9 QP	40.0	-13.1	1.84 H	227	45.8	-18.9
2	**61.44**	**31.2 QP**	**40.0**	**-8.8**	**1.42 H**	**18**	**49.8**	**-18.6**
3	200.20	23.3 QP	43.5	-20.2	1.59 H	314	44.3	-21.0
4	399.00	22.5 QP	46.0	-23.5	1.05 H	247	37.2	-14.7
5	648.87	21.4 QP	46.0	-24.6	1.01 H	14	31.1	-9.7
6	744.84	22.8 QP	46.0	-23.2	1.05 H	206	30.8	-8.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

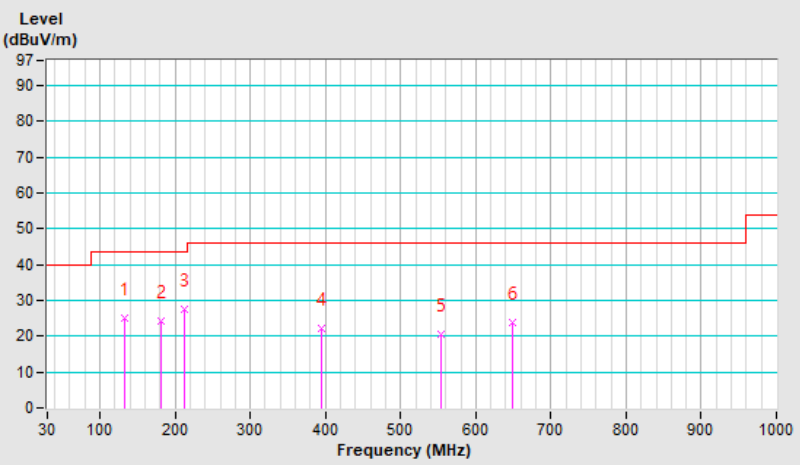


RF Mode	802.11b	Channel	CH 6：2437 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

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	132.14	24.9 QP	43.5	-18.6	1.45 V	188	43.7	-18.8
2	181.00	24.1 QP	43.5	-19.4	1.02 V	315	43.6	-19.5
3	212.20	27.5 QP	43.5	-16.0	1.05 V	288	48.4	-20.9
4	395.60	22.0 QP	46.0	-24.0	1.02 V	220	36.8	-14.8
5	554.45	20.4 QP	46.0	-25.6	1.47 V	8	32.0	-11.6
6	648.89	24.0 QP	46.0	-22.0	1.55 V	174	33.7	-9.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this 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, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

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	59.6 PK	74.0	-14.4	1.19 H	360	21.8	37.8
2	2390.00	49.7 AV	54.0	-4.3	1.19 H	360	11.9	37.8
3	*2412.00	109.1 PK			1.19 H	360	71.2	37.9
4	*2412.00	107.2 AV			1.19 H	360	69.3	37.9
5	4824.00	47.9 PK	74.0	-26.1	1.05 H	200	36.0	11.9
6	4824.00	40.5 AV	54.0	-13.5	1.05 H	200	28.6	11.9
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	62.0 PK	74.0	-12.0	1.74 V	24	24.2	37.8
2	2390.00	53.4 AV	54.0	-0.6	1.74 V	24	15.6	37.8
3	*2412.00	115.3 PK			2.00 V	355	77.4	37.9
4	*2412.00	113.1 AV			2.00 V	355	75.2	37.9
5	4824.00	48.3 PK	74.0	-25.7	1.59 V	306	36.4	11.9
6	4824.00	40.6 AV	54.0	-13.4	1.59 V	306	28.7	11.9

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.
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, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

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	60.2 PK	74.0	-13.8	1.19 H	360	22.4	37.8
2	2390.00	50.0 AV	54.0	-4.0	1.19 H	360	12.2	37.8
3	*2437.00	113.3 PK			1.19 H	360	75.5	37.8
4	*2437.00	111.5 AV			1.19 H	360	73.7	37.8
5	2483.50	59.6 PK	74.0	-14.4	1.19 H	360	21.7	37.9
6	2483.50	49.5 AV	54.0	-4.5	1.19 H	360	11.6	37.9
7	4874.00	48.2 PK	74.0	-25.8	1.04 H	111	36.1	12.1
8	4874.00	41.1 AV	54.0	-12.9	1.04 H	111	29.0	12.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	63.7 PK	74.0	-10.3	1.74 V	24	25.9	37.8
2	2390.00	53.1 AV	54.0	-0.9	1.74 V	24	15.3	37.8
3	*2437.00	119.2 PK			1.75 V	355	81.4	37.8
4	*2437.00	117.2 AV			1.75 V	355	79.4	37.8
5	2483.50	59.3 PK	74.0	-14.7	1.75 V	355	21.4	37.9
6	2483.50	50.2 AV	54.0	-3.8	1.75 V	355	12.3	37.9
7	4874.00	48.5 PK	74.0	-25.5	1.75 V	205	36.4	12.1
8	4874.00	41.4 AV	54.0	-12.6	1.75 V	205	29.3	12.1

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.
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, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

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	111.2 PK			1.19 H	194	73.4	37.8
2	*2462.00	109.0 AV			1.19 H	194	71.2	37.8
3	2483.50	60.0 PK	74.0	-14.0	1.19 H	194	22.1	37.9
4	2483.50	50.2 AV	54.0	-3.8	1.19 H	194	12.3	37.9
5	4924.00	48.2 PK	74.0	-25.8	1.57 H	335	35.9	12.3
6	4924.00	40.9 AV	54.0	-13.1	1.57 H	335	28.6	12.3
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	*2462.00	118.8 PK			2.26 V	230	81.0	37.8
2	*2462.00	116.3 AV			2.26 V	230	78.5	37.8
3	2483.50	62.3 PK	74.0	-11.7	2.26 V	233	24.4	37.9
4	2483.50	53.4 AV	54.0	-0.6	2.26 V	233	15.5	37.9
5	4924.00	48.3 PK	74.0	-25.7	1.17 V	45	36.0	12.3
6	4924.00	41.2 AV	54.0	-12.8	1.17 V	45	28.9	12.3

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 1：2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

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	59.2 PK	74.0	-14.8	1.19 H	360	21.4	37.8
2	2390.00	49.0 AV	54.0	-5.0	1.19 H	360	11.2	37.8
3	*2412.00	107.8 PK			1.19 H	360	69.9	37.9
4	*2412.00	99.6 AV			1.19 H	360	61.7	37.9
5	4824.00	48.1 PK	74.0	-25.9	1.44 H	157	36.2	11.9
6	4824.00	40.9 AV	54.0	-13.1	1.44 H	157	29.0	11.9
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	62.2 PK	74.0	-11.8	2.00 V	232	24.4	37.8
2	2390.00	52.5 AV	54.0	-1.5	2.00 V	232	14.7	37.8
3	*2412.00	113.4 PK			2.00 V	233	75.5	37.9
4	*2412.00	105.8 AV			2.00 V	233	67.9	37.9
5	4824.00	48.3 PK	74.0	-25.7	1.44 V	174	36.4	11.9
6	4824.00	41.4 AV	54.0	-12.6	1.44 V	174	29.5	11.9

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.
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, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

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	59.1 PK	74.0	-14.9	1.19 H	360	21.3	37.8
2	2390.00	49.2 AV	54.0	-4.8	1.19 H	360	11.4	37.8
3	*2437.00	113.0 PK			1.19 H	360	75.2	37.8
4	*2437.00	105.4 AV			1.19 H	360	67.6	37.8
5	2483.50	59.0 PK	74.0	-15.0	1.19 H	360	21.1	37.9
6	2483.50	49.0 AV	54.0	-5.0	1.19 H	360	11.1	37.9
7	4874.00	48.2 PK	74.0	-25.8	1.19 H	348	36.1	12.1
8	4874.00	41.1 AV	54.0	-12.9	1.19 H	348	29.0	12.1
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	64.6 PK	74.0	-9.4	1.74 V	42	26.8	37.8
2	2390.00	53.3 AV	54.0	-0.7	1.74 V	42	15.5	37.8
3	*2437.00	118.2 PK			1.75 V	46	80.4	37.8
4	*2437.00	110.2 AV			1.75 V	46	72.4	37.8
5	2483.50	64.3 PK	74.0	-9.7	1.75 V	46	26.4	37.9
6	2483.50	52.7 AV	54.0	-1.3	1.75 V	46	14.8	37.9
7	4874.00	48.6 PK	74.0	-25.4	1.15 V	247	36.5	12.1
8	4874.00	41.7 AV	54.0	-12.3	1.15 V	247	29.6	12.1

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.
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, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	108.0 PK			1.19 H	360	70.2	37.8
2	*2462.00	100.1 AV			1.19 H	360	62.3	37.8
3	2483.50	60.1 PK	74.0	-13.9	1.19 H	360	22.2	37.9
4	2483.50	49.8 AV	54.0	-4.2	1.19 H	360	11.9	37.9
5	4924.00	48.1 PK	74.0	-25.9	1.04 H	220	35.8	12.3
6	4924.00	41.1 AV	54.0	-12.9	1.04 H	220	28.8	12.3
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	*2462.00	114.6 PK			2.26 V	42	76.8	37.8
2	*2462.00	106.6 AV			2.26 V	42	68.8	37.8
3	2483.50	64.4 PK	74.0	-9.6	2.26 V	20	26.5	37.9
4	**2483.50**	**53.5 AV**	**54.0**	**-0.5**	**2.26 V**	**20**	**15.6**	**37.9**
5	4924.00	48.3 PK	74.0	-25.7	1.65 V	3	36.0	12.3
6	4924.00	41.4 AV	54.0	-12.6	1.65 V	3	29.1	12.3

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	802.11ax (HE20)	Channel	CH 1：2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

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	60.2 PK	74.0	-13.8	1.19 H	360	22.4	37.8
2	2390.00	50.3 AV	54.0	-3.7	1.19 H	360	12.5	37.8
3	*2412.00	107.1 PK			1.19 H	360	69.2	37.9
4	*2412.00	99.2 AV			1.19 H	360	61.3	37.9
5	4824.00	48.0 PK	74.0	-26.0	1.95 H	337	36.1	11.9
6	4824.00	40.9 AV	54.0	-13.1	1.95 H	337	29.0	11.9
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	62.8 PK	74.0	-11.2	2.00 V	48	25.0	37.8
2	2390.00	53.0 AV	54.0	-1.0	2.00 V	48	15.2	37.8
3	*2412.00	113.5 PK			2.00 V	22	75.6	37.9
4	*2412.00	105.7 AV			2.00 V	22	67.8	37.9
5	4824.00	48.3 PK	74.0	-25.7	1.57 V	7	36.4	11.9
6	4824.00	41.2 AV	54.0	-12.8	1.57 V	7	29.3	11.9

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.
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, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

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	60.2 PK	74.0	-13.8	1.19 H	360	22.4	37.8
2	2390.00	50.0 AV	54.0	-4.0	1.19 H	360	12.2	37.8
3	*2437.00	115.2 PK			1.19 H	360	77.4	37.8
4	*2437.00	107.7 AV			1.19 H	360	69.9	37.8
5	2483.50	60.5 PK	74.0	-13.5	1.19 H	360	22.6	37.9
6	2483.50	50.4 AV	54.0	-3.6	1.19 H	360	12.5	37.9
7	4874.00	48.1 PK	74.0	-25.9	1.85 H	227	36.0	12.1
8	4874.00	41.2 AV	54.0	-12.8	1.85 H	227	29.1	12.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	63.2 PK	74.0	-10.8	2.00 V	21	25.4	37.8
2	2390.00	53.2 AV	54.0	-0.8	2.00 V	21	15.4	37.8
3	*2437.00	120.8 PK			2.00 V	22	83.0	37.8
4	*2437.00	112.4 AV			2.00 V	22	74.6	37.8
5	2483.50	63.5 PK	74.0	-10.5	2.01 V	21	25.6	37.9
6	2483.50	53.4 AV	54.0	-0.6	2.01 V	21	15.5	37.9
7	4874.00	48.4 PK	74.0	-25.6	1.85 V	337	36.3	12.1
8	4874.00	41.2 AV	54.0	-12.8	1.85 V	337	29.1	12.1

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.
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, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	110.3 PK			1.19 H	360	72.5	37.8
2	*2462.00	102.5 AV			1.19 H	360	64.7	37.8
3	2483.50	61.9 PK	74.0	-12.1	1.19 H	360	24.0	37.9
4	2483.50	51.1 AV	54.0	-2.9	1.19 H	360	13.2	37.9
5	4924.00	48.0 PK	74.0	-26.0	1.74 H	66	35.7	12.3
6	4924.00	41.0 AV	54.0	-13.0	1.74 H	66	28.7	12.3
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	*2462.00	115.2 PK			2.26 V	21	77.4	37.8
2	*2462.00	107.6 AV			2.26 V	21	69.8	37.8
3	2483.50	65.3 PK	74.0	-8.7	2.25 V	20	27.4	37.9
4	**2483.50**	**53.5 AV**	**54.0**	**-0.5**	**2.25 V**	**20**	**15.6**	**37.9**
5	4924.00	48.3 PK	74.0	-25.7	1.58 V	229	36.0	12.3
6	4924.00	41.5 AV	54.0	-12.5	1.58 V	229	29.2	12.3

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	802.11ax (HE40)	Channel	CH 3：2422 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

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	60.2 PK	74.0	-13.8	1.19 H	360	22.4	37.8
2	2390.00	50.1 AV	54.0	-3.9	1.19 H	360	12.3	37.8
3	*2422.00	103.3 PK			1.19 H	360	65.5	37.8
4	*2422.00	95.4 AV			1.19 H	360	57.6	37.8
5	2483.50	57.5 PK	74.0	-16.5	1.19 H	360	19.6	37.9
6	2483.50	47.0 AV	54.0	-7.0	1.19 H	360	9.1	37.9
7	4844.00	48.2 PK	74.0	-25.8	1.74 H	77	36.2	12.0
8	4844.00	41.1 AV	54.0	-12.9	1.74 H	77	29.1	12.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	63.6 PK	74.0	-10.4	2.00 V	22	25.8	37.8
2	2390.00	53.3 AV	54.0	-0.7	2.00 V	22	15.5	37.8
3	*2422.00	110.0 PK			2.00 V	20	72.2	37.8
4	*2422.00	102.3 AV			2.00 V	20	64.5	37.8
5	2483.50	57.7 PK	74.0	-16.3	2.00 V	20	19.8	37.9
6	2483.50	47.6 AV	54.0	-6.4	2.00 V	20	9.7	37.9
7	4844.00	48.6 PK	74.0	-25.4	1.59 V	6	36.6	12.0
8	4844.00	41.5 AV	54.0	-12.5	1.59 V	6	29.5	12.0

Remarks:

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

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, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

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	59.9 PK	74.0	-14.1	1.19 H	360	22.1	37.8
2	2390.00	50.0 AV	54.0	-4.0	1.19 H	360	12.2	37.8
3	*2437.00	105.5 PK			1.19 H	360	67.7	37.8
4	*2437.00	97.7 AV			1.19 H	360	59.9	37.8
5	2483.50	59.6 PK	74.0	-14.4	1.19 H	360	21.7	37.9
6	2483.50	49.8 AV	54.0	-4.2	1.19 H	360	11.9	37.9
7	4874.00	47.9 PK	74.0	-26.1	1.14 H	154	35.8	12.1
8	4874.00	40.8 AV	54.0	-13.2	1.14 H	154	28.7	12.1
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	64.9 PK	74.0	-9.1	2.00 V	22	27.1	37.8
2	**2390.00**	**53.5 AV**	**54.0**	**-0.5**	**2.00 V**	**22**	**15.7**	**37.8**
3	*2437.00	111.2 PK			2.00 V	21	73.4	37.8
4	*2437.00	103.6 AV			2.00 V	21	65.8	37.8
5	2483.50	64.8 PK	74.0	-9.2	2.01 V	21	26.9	37.9
6	2483.50	52.3 AV	54.0	-1.7	2.01 V	21	14.4	37.9
7	4874.00	48.6 PK	74.0	-25.4	1.15 V	212	36.5	12.1
8	4874.00	41.5 AV	54.0	-12.5	1.15 V	212	29.4	12.1

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.
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, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 61% RH
Tested By	Charles Hsiao		

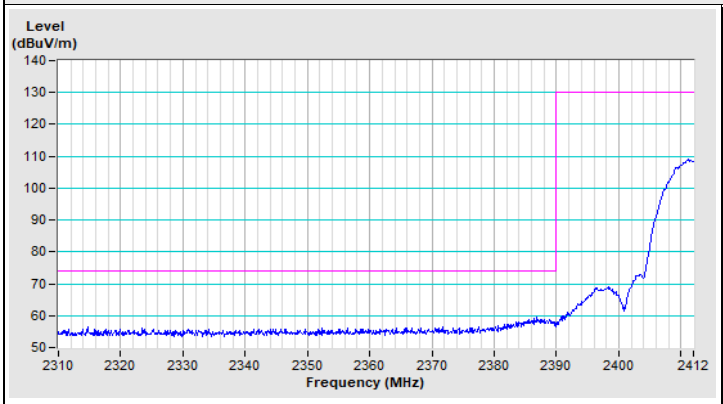
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.4 PK	74.0	-16.6	1.19 H	360	19.6	37.8
2	2390.00	47.5 AV	54.0	-6.5	1.19 H	360	9.7	37.8
3	*2452.00	104.0 PK			1.19 H	360	66.2	37.8
4	*2452.00	96.4 AV			1.19 H	360	58.6	37.8
5	2483.50	58.2 PK	74.0	-15.8	1.19 H	360	20.3	37.9
6	2483.50	49.0 AV	54.0	-5.0	1.19 H	360	11.1	37.9
7	4904.00	48.0 PK	74.0	-26.0	1.95 H	333	35.8	12.2
8	4904.00	40.9 AV	54.0	-13.1	1.95 H	333	28.7	12.2
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	57.4 PK	74.0	-16.6	2.26 V	232	19.6	37.8
2	2390.00	47.8 AV	54.0	-6.2	2.26 V	232	10.0	37.8
3	*2452.00	111.0 PK			2.26 V	232	73.2	37.8
4	*2452.00	103.6 AV			2.26 V	232	65.8	37.8
5	2483.50	63.9 PK	74.0	-10.1	2.56 V	233	26.0	37.9
6	2483.50	53.4 AV	54.0	-0.6	2.56 V	233	15.5	37.9
7	4904.00	48.3 PK	74.0	-25.7	1.45 V	355	36.1	12.2
8	4904.00	41.3 AV	54.0	-12.7	1.45 V	355	29.1	12.2

Remarks:

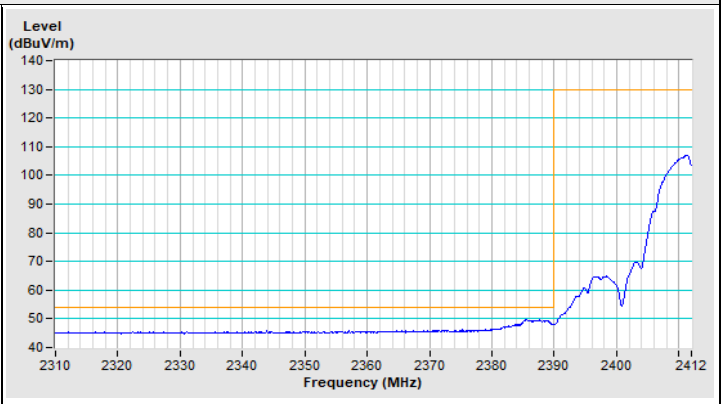
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency,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

Frequency Range	2.31 GHz ~ 2.412 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak

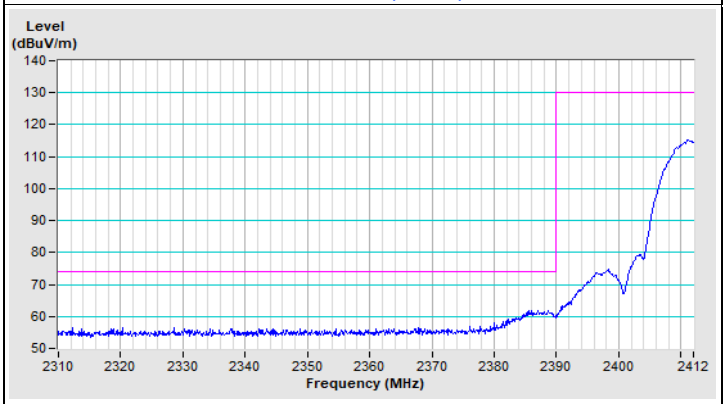
802.11b Channel 1



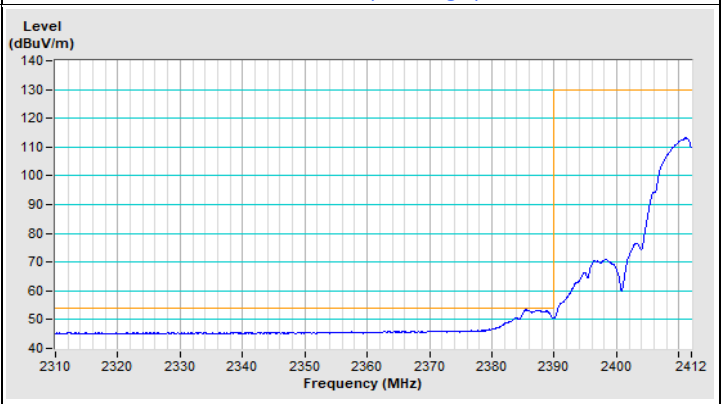
Horizontal (Peak)



Horizontal (Average)



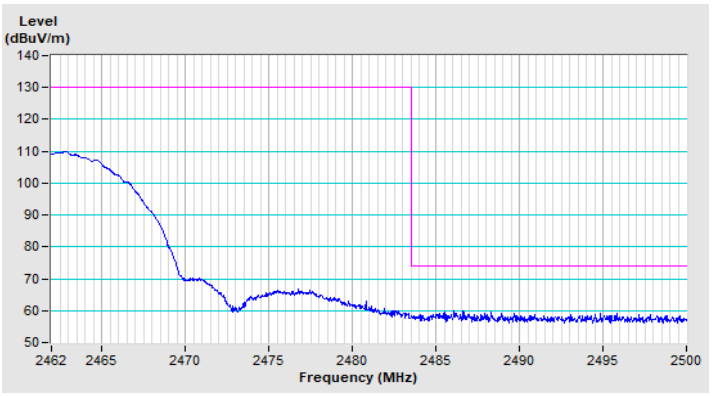
Vertical (Peak)



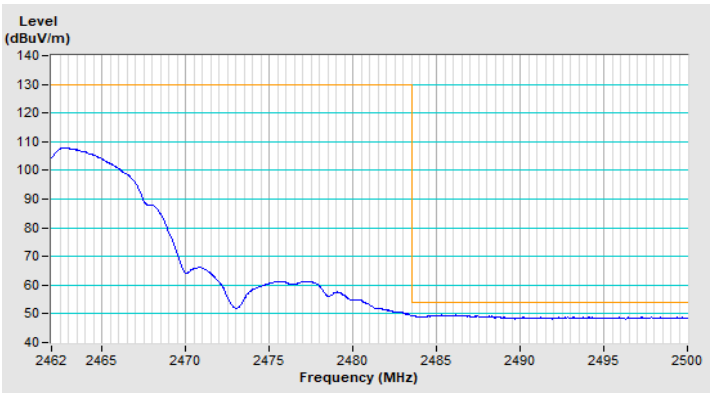
Vertical (Average)

Frequency Range	2.462 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak

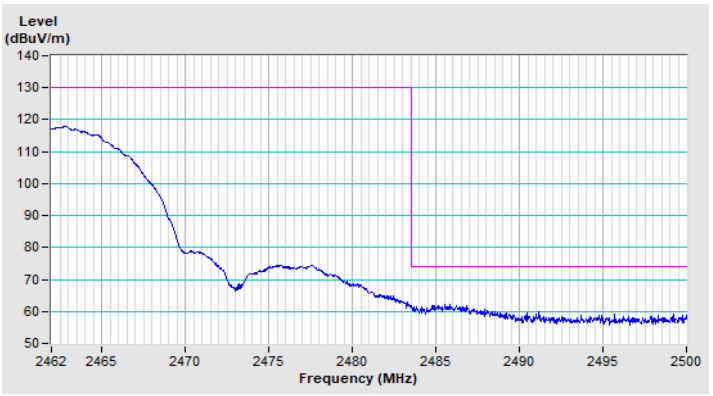
802.11b Channel 11



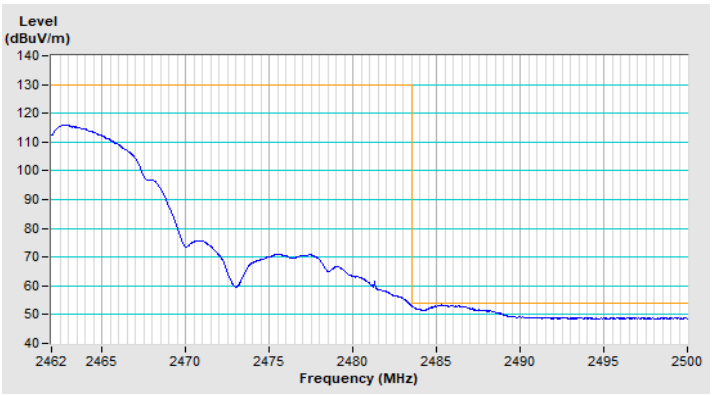
Horizontal (Peak)



Horizontal (Average)



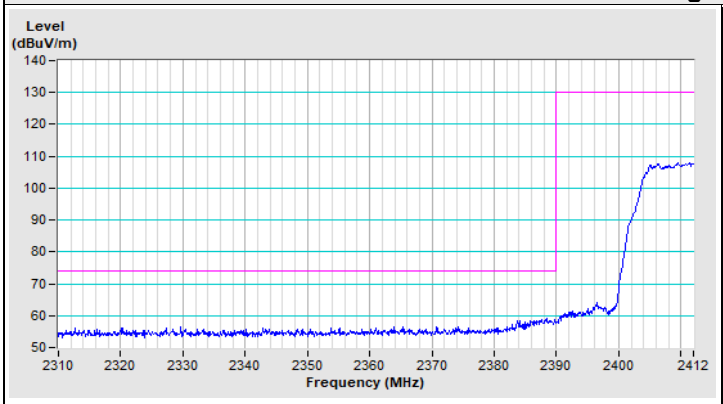
Vertical (Peak)



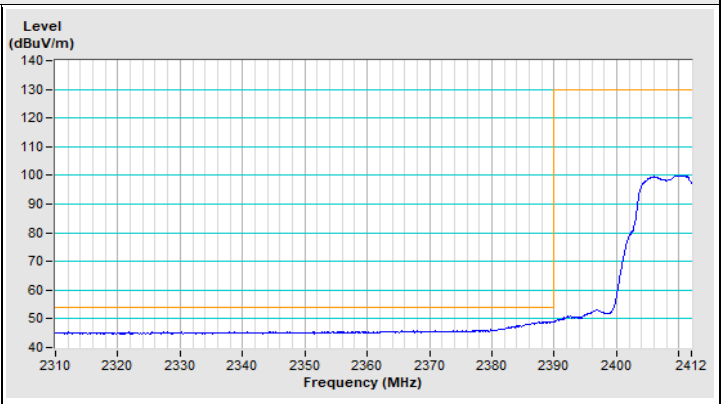
Vertical (Average)

Frequency Range	2.31 GHz ~ 2.412 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak

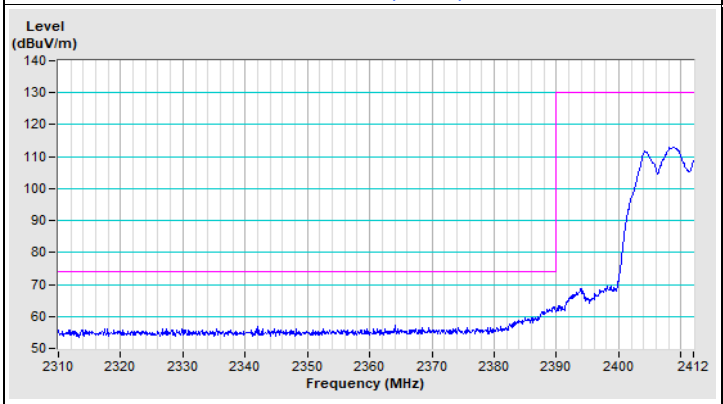
802.11g Channel 1



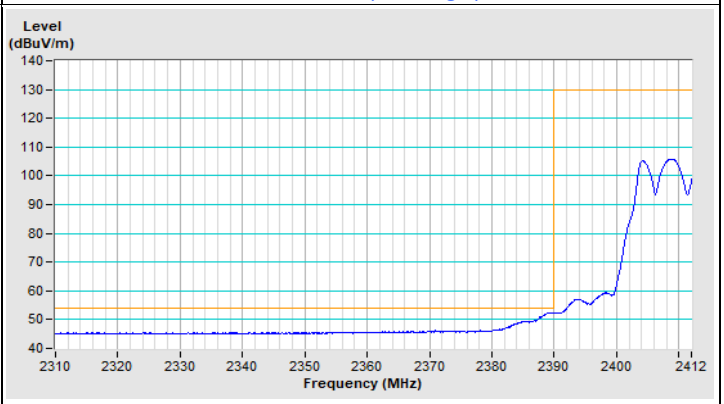
Horizontal (Peak)



Horizontal (Average)



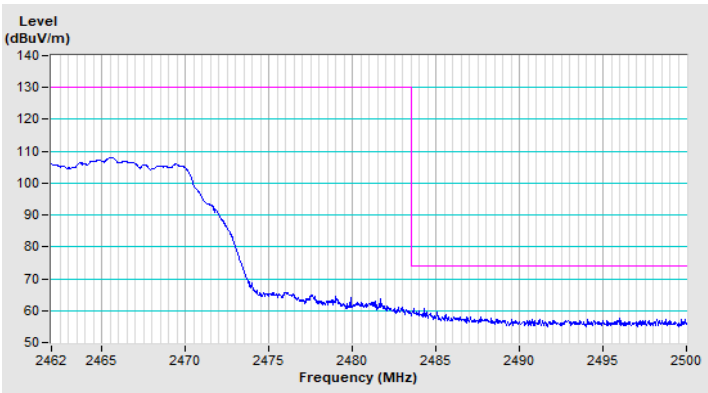
Vertical (Peak)



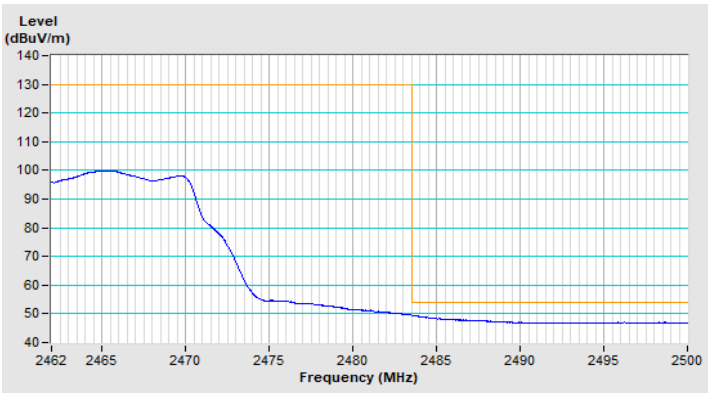
Vertical (Average)

Frequency Range	2.462 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak

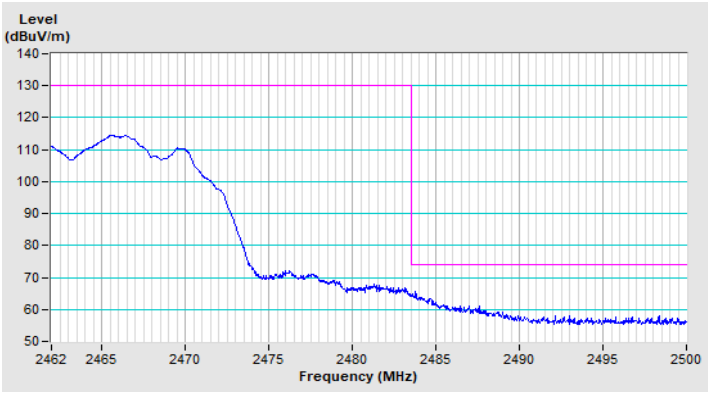
802.11g Channel 11



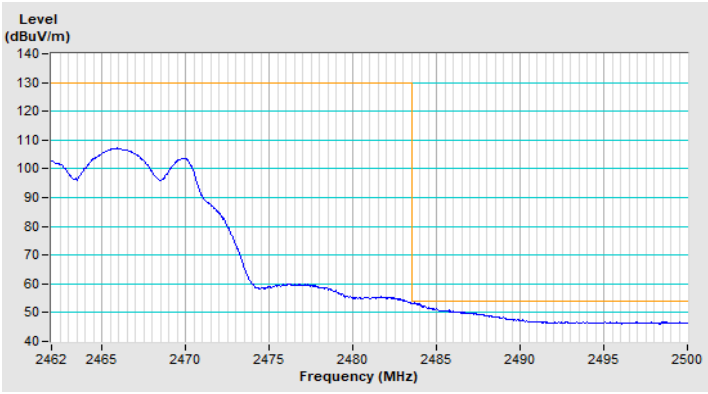
Horizontal (Peak)



Horizontal (Average)



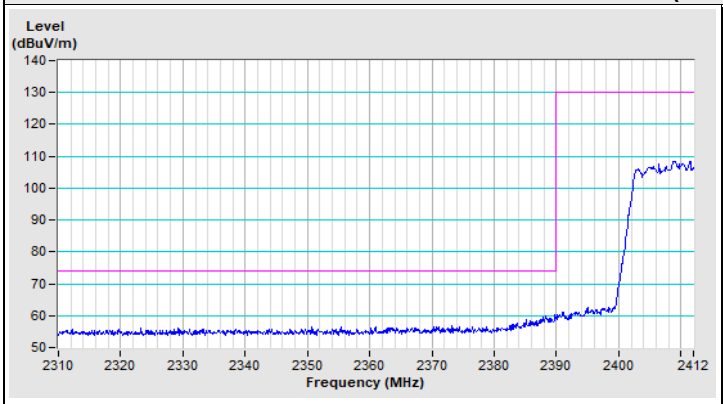
Vertical (Peak)



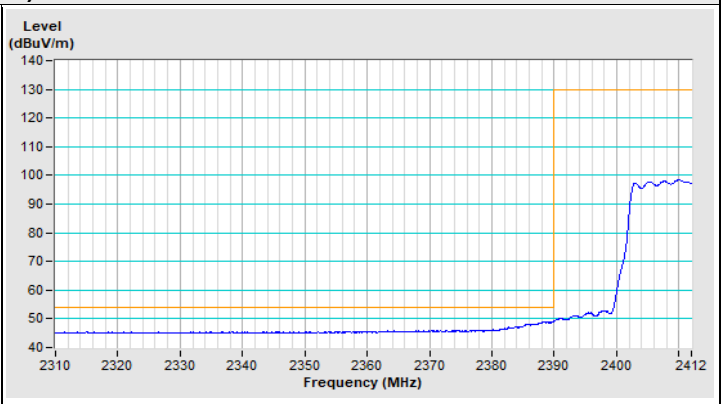
Vertical (Average)

Frequency Range	2.31 GHz ~ 2.412 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak

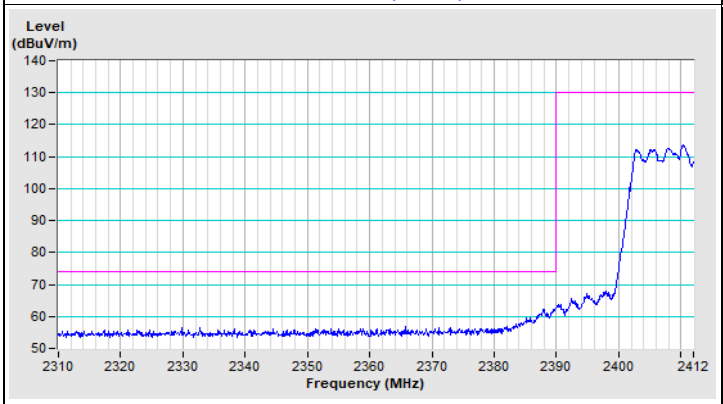
802.11ax (HE20) Channel 1



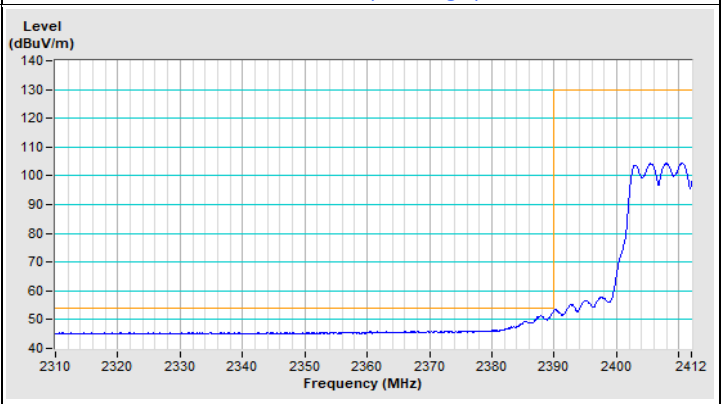
Horizontal (Peak)



Horizontal (Average)



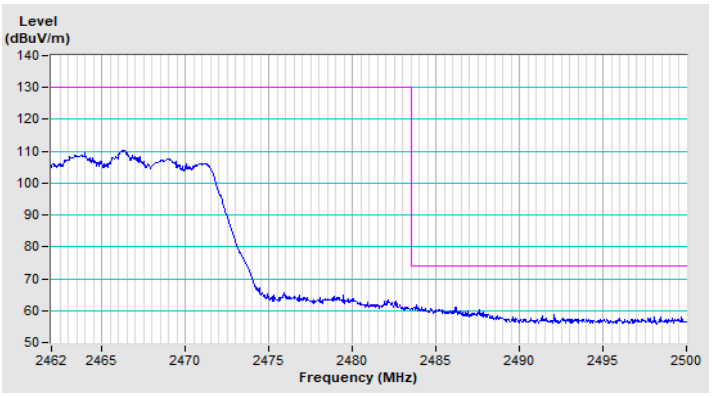
Vertical (Peak)



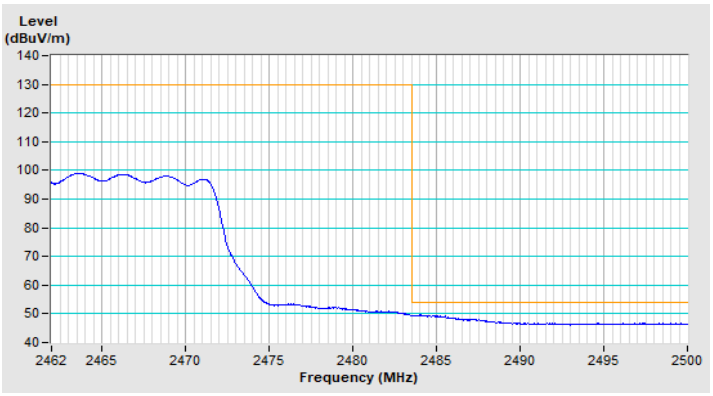
Vertical (Average)

Frequency Range	2.462 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak

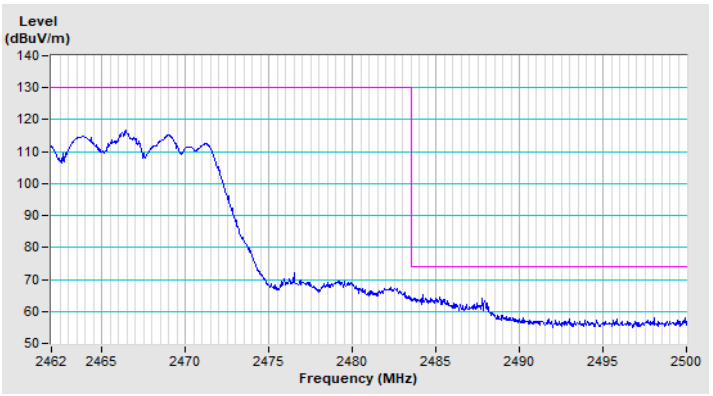
802.11ax (HE20) Channel 11



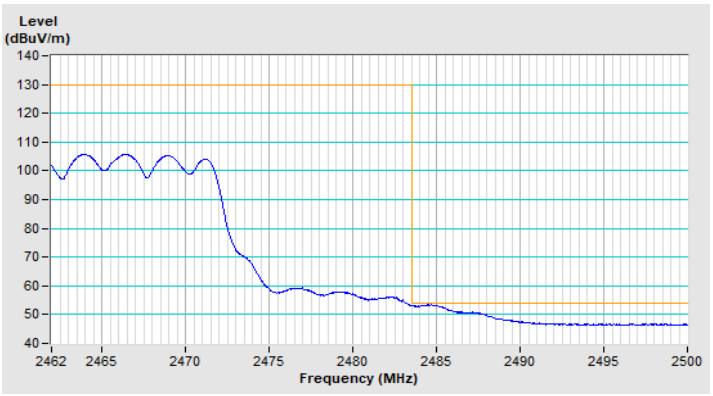
Horizontal (Peak)



Horizontal (Average)



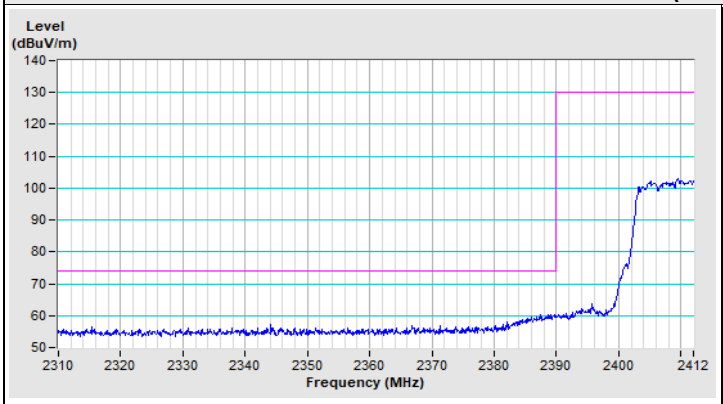
Vertical (Peak)



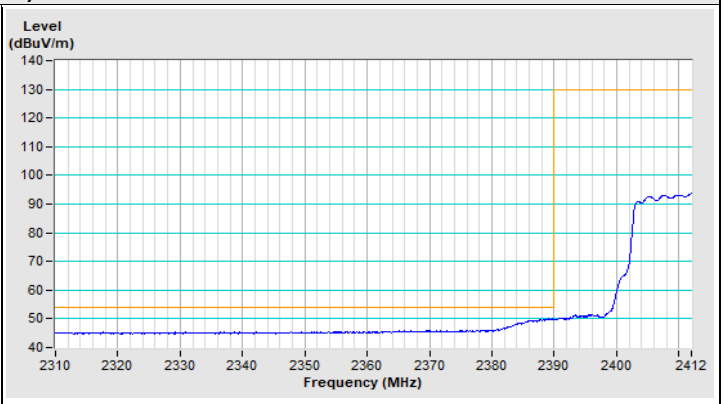
Vertical (Average)

Frequency Range	2.31 GHz ~ 2.412 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak

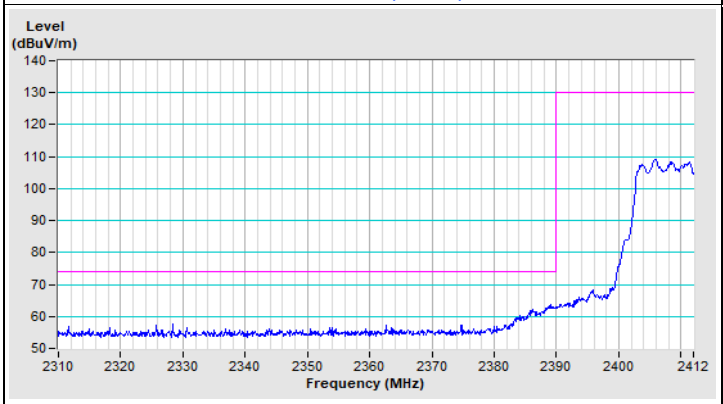
802.11ax (HE40) Channel 3



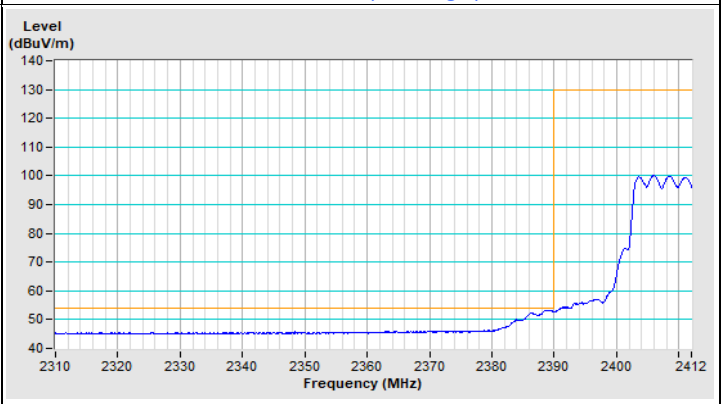
Horizontal (Peak)



Horizontal (Average)



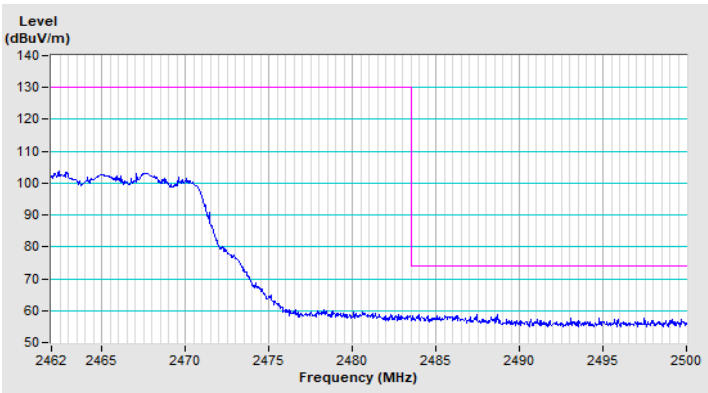
Vertical (Peak)



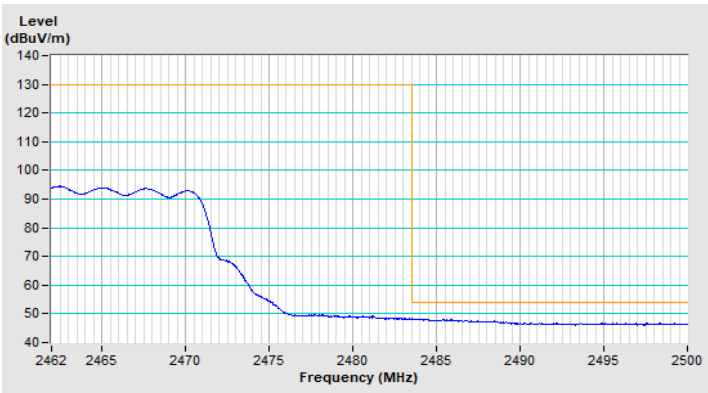
Vertical (Average)

Frequency Range	2.462 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak

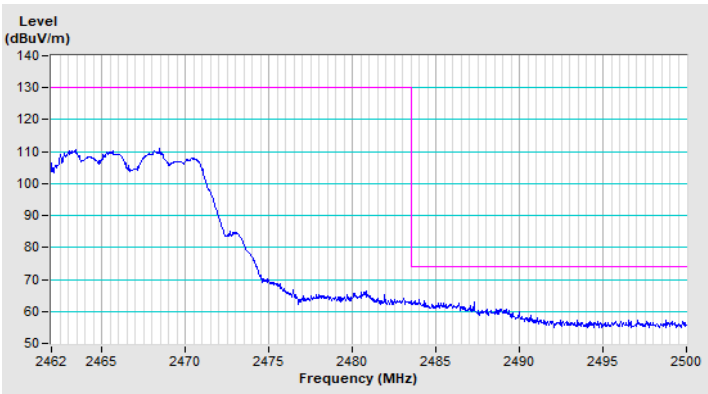
802.11ax (HE40) Channel 9



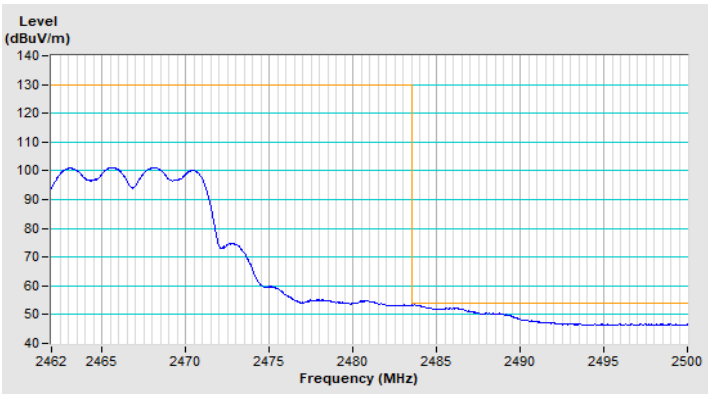
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)



Vertical (Average)

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

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

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

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