TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart C (Section 15.247)**
Report No.:	RFBEIH-WTW-P22110332
FCC ID:	P27-SCSIP0203
Product:	Stream TV
Brand:	Verizon
Model No.:	SC-SIP02
Series Model:	SC-SIP03, SC-SIPXX (the X should be 0 to 9, A to Z, a to z, "blank" or "-", for the marketing purpose)
Received Date:	2022/11/10
Test Date:	2022/12/13 ~ 2023/2/10
Issued Date:	2023/3/7
Applicant:	Sercomm Corp.
Address:	8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
FCC Registration / Designation Number:	198487 / TW2021

Approved by: Jeremy Lin , **Date:** 2023/3/7

Jeremy Lin / Project Engineer

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Prepared by : Annie Chang / Senior Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBEIH-WTW-P22110332	Original release.	2023/3/7

1 Certificate

Product:	Stream TV
Brand:	Verizon
Test Model:	SC-SIP02
Series Model:	SC-SIP03, SC-SIPXX (the X should be 0 to 9, A to Z, a to z, "blank" or "-", for the marketing purpose)
Sample Status:	Engineering sample
Applicant:	Sercomm Corp.
Test Date:	2022/12/13 ~ 2023/2/10
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 -12.06 dB at 0.45859 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -3.6 dB at 44.45 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -1.0 dB at 2483.50 MHz
15.203	Antenna Requirement	Pass	No antenna connector is used.

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	2.63 dB
AC Power Conducted Emissions	150 kHz ~ 30 MHz	3.00 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	2.38 dB
	30 MHz ~ 1 GHz	5.7 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 6 GHz	4.83 dB
	6 GHz ~ 18 GHz	5.37 dB
	18 GHz ~ 40 GHz	5.24 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	Stream TV
Brand	Verizon
Test Model	SC-SIP02
Series Model	SC-SIP03, SC-SIPXX (the X should be 0 to 9, A to Z, a to z, "blank" or "-", for the marketing purpose)
Model Difference	Refer to note as below
Status of EUT	Engineering sample
Power Supply Rating	5Vdc from USB interface
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):7
Output Power	995.569 mW (29.98 dBm)

Note:

1. The EUT has following two samples.

Sample	Test Model	Difference
1	SC-SIP02	OTT (2GB DDR)
2	SC-SIP03	FCL (4GB DDR)

2. The EUT uses following accessories.

Item	Brand	Model	Part Number	Remark
Remote Controller	Omni	RC461	RC4703101	for OTT (2GB DDR)
Remote Controller	Omni	RC562	RC4703102	for FCL (4GB DDR)
HDMI cable	-	-	-	Shielded 1.8m

3. The EUT uses following adapter.

Brand	Model	Rating
LEI	MU10AE050200UA1	Input: 100-240V, 50/60Hz, 0.3A Output: 5.0V, 2.0A

4. WLAN 2.4 GHz & WLAN 5 GHz & Bluetooth technology cannot transmit at same time.
5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna No.	Gain (dBi)			Antenna Type	Connector Type
	2400 MHz	2450 MHz	2500 MHz		
1	3.6	4.0	3.5	Dipole	IPEX
2	2.3	3.1	3.1	PIFA	NA

* 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: The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz) and VHT 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.EUT has Sample1、Sample2. Pre-Scan and find the worst case as a representative test condition.Sample1 =>OTT(2GB DDR size) / Sample2 =>OTT(4GB DDR size). 2.HDMI cable has Grey/Black color. Pre-Scan and find the worst case as a representative test condition. 3. EUT can be used in the following ways: XYZ 3-axis. Pre-scan in these ways and find the worst case as a representative test condition. 4. For Unwanted Emission below/ above 1 GHz has EUT with USB cable(Adapter) / EUT with USB cable(Laptop) mode of power supply. Pre-scan these modes and find the worst case as a representative test condition.
Worst Case:	1. Sample1/ Sample2 Worst Condition: Sample1 =>OTT(2GB DDR size). 2. HDMI cable Grey/ Black Worst Condition: Black 3. XYZ Worst Condition: X-axis 4. For Unwanted Emission below/ above 1 GHz : EUT with USB cable(Adapter)

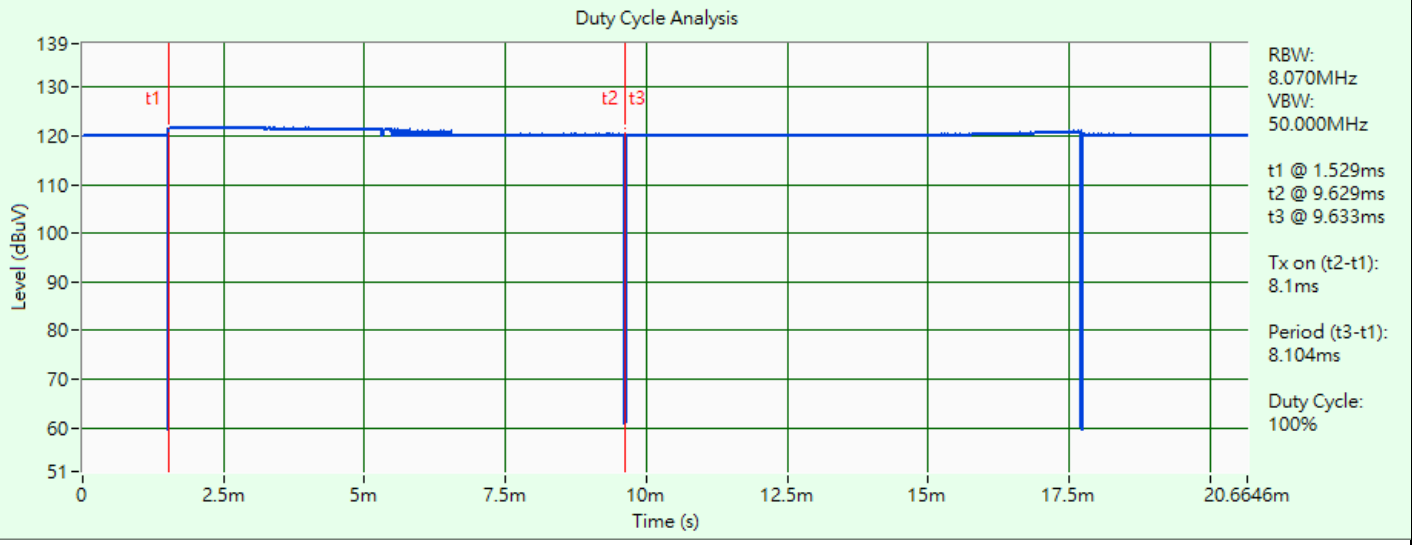
Following channel(s) was (were) selected for the final test as listed below:

Test Item	EUT Configure Mode	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	A	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
Power Spectral Density / 6 dB Bandwidth / Conducted Out of Band Emissions	A	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	A	802.11g	CDD	6	BPSK	6Mb/s
	B	802.11g	CDD	6	BPSK	6Mb/s
Unwanted Emissions below 1 GHz	A	802.11g	CDD	6	BPSK	6Mb/s
Unwanted Emissions above 1 GHz	A	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
EUT Configure Mode:	A	EUT with USB cable(Adapter)				
	B	EUT with USB cable(Laptop)				

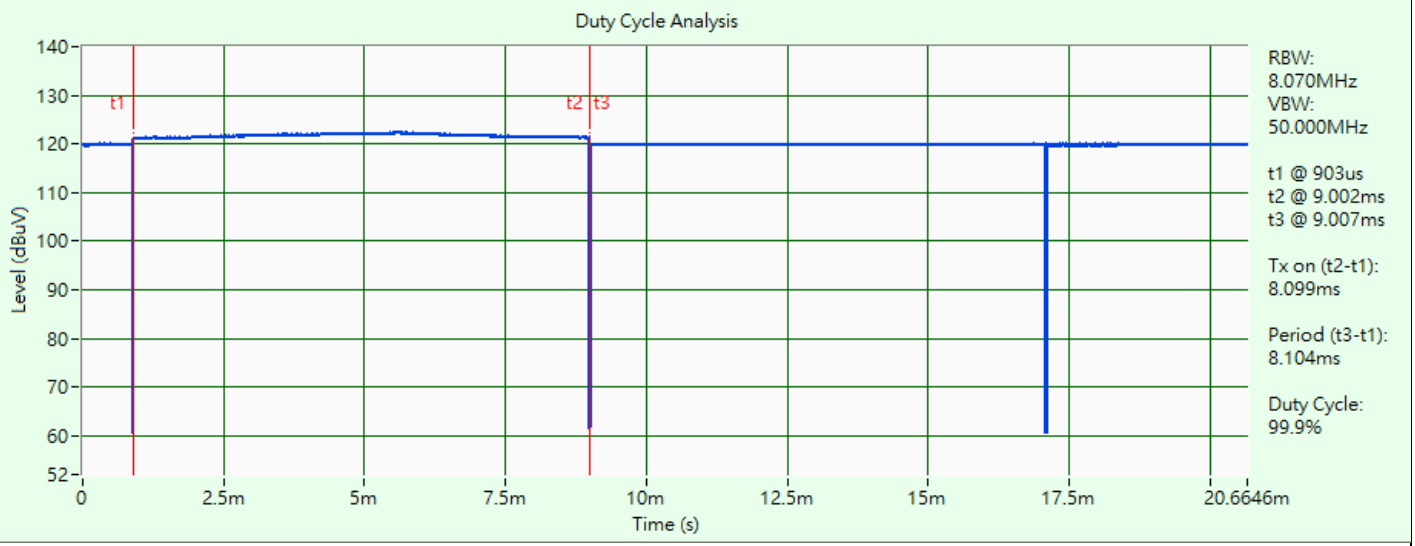
3.5 Duty Cycle of Test Signal

Mode A

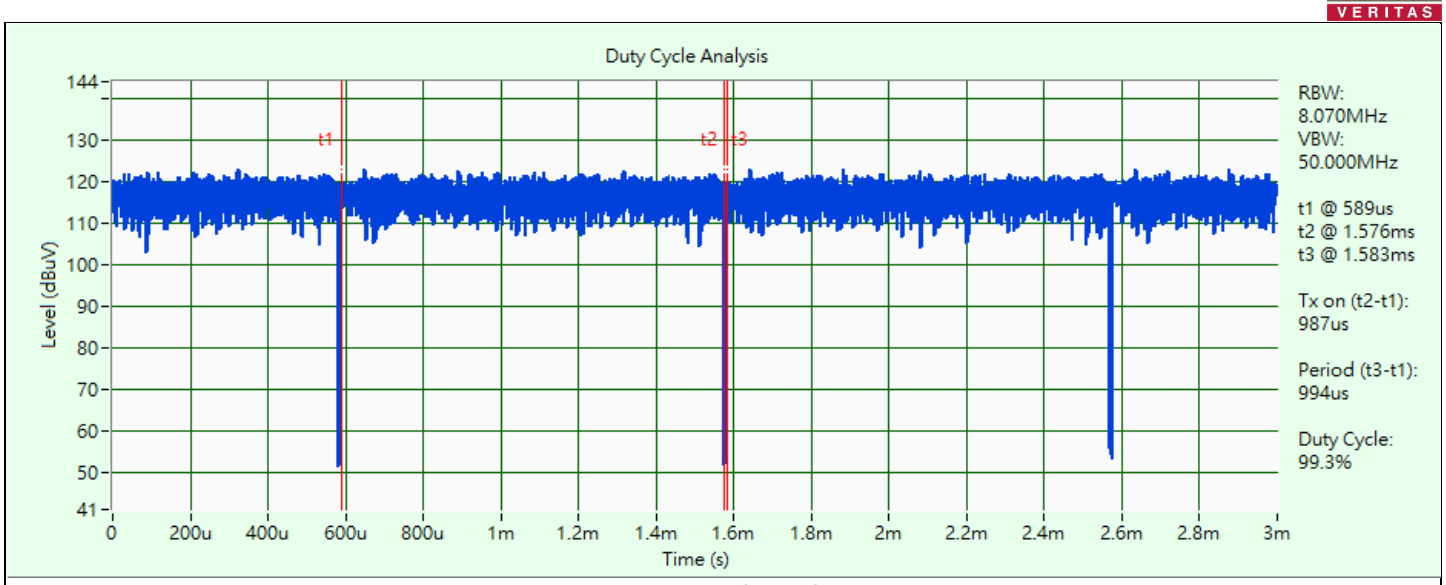
802.11b: Duty cycle = 8.1 ms / 8.104 ms x 100% = 100.0%
802.11g: Duty cycle = 8.099 ms / 8.104 ms x 100% = 99.9%
802.11ax (HE20): Duty cycle = 0.987 ms / 0.994 ms x 100% = 99.3%
802.11ax (HE40): Duty cycle = 0.521 ms / 0.527 ms x 100% = 98.9%



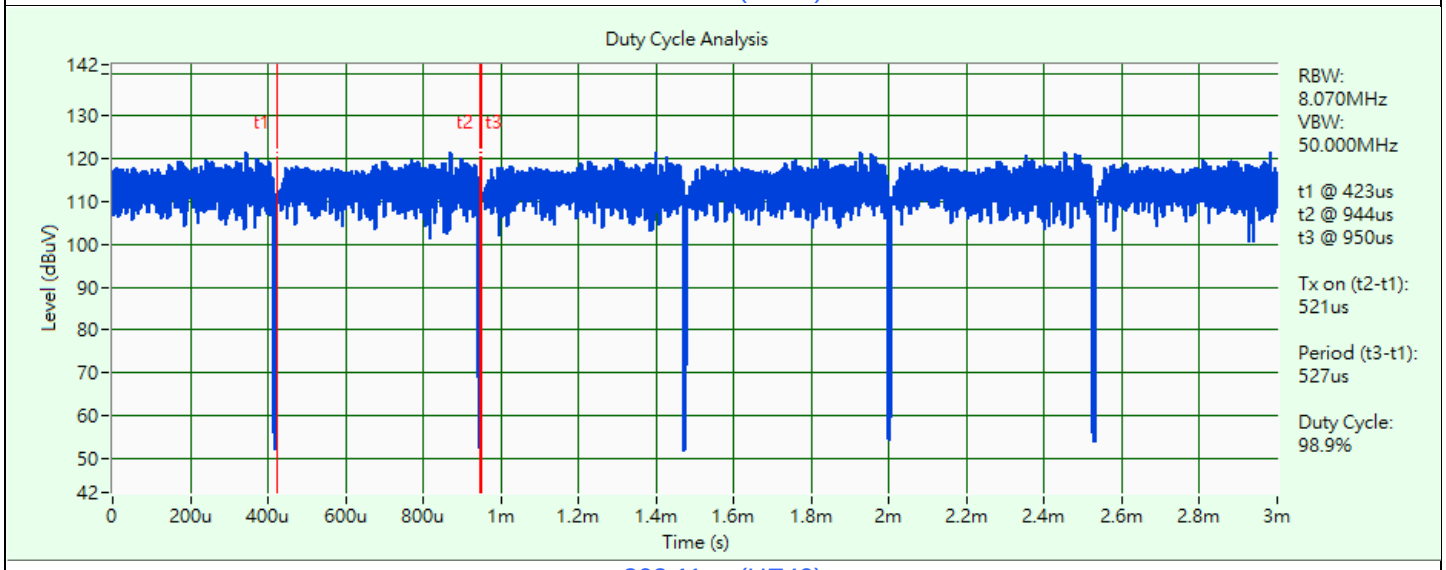
802.11b



802.11g



802.11ax (HE20)



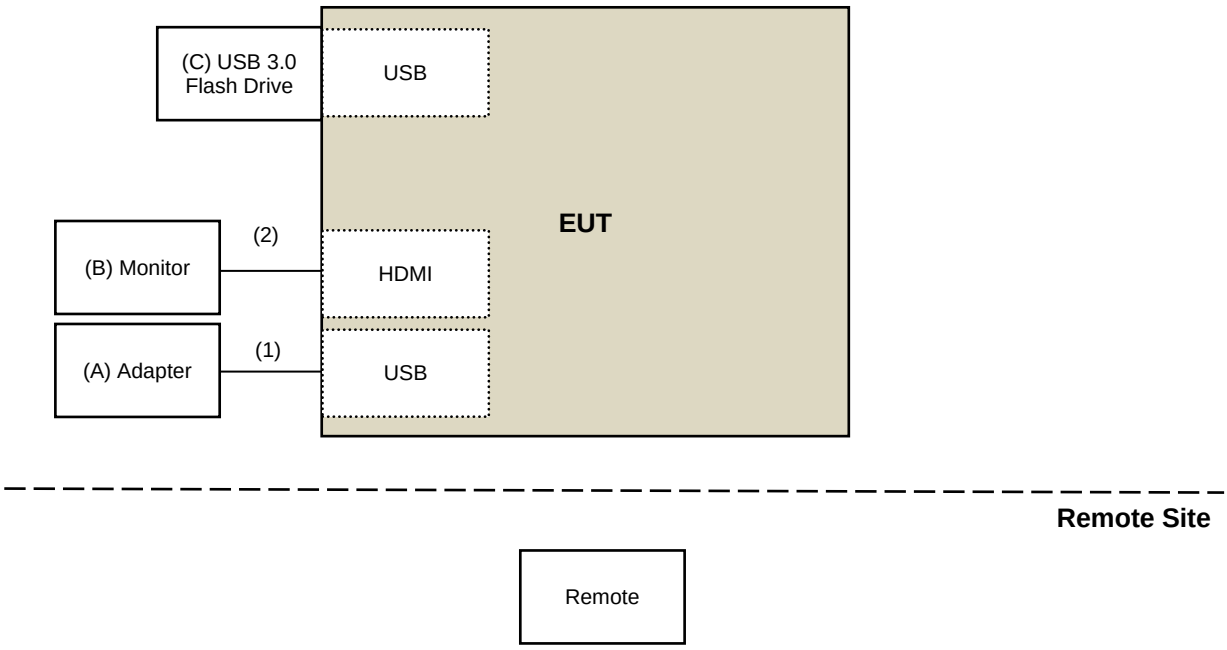
802.11ax (HE40)

3.6 Test Program Used and Operation Descriptions

Controlling software (ADB v1.0.31) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

Mode A



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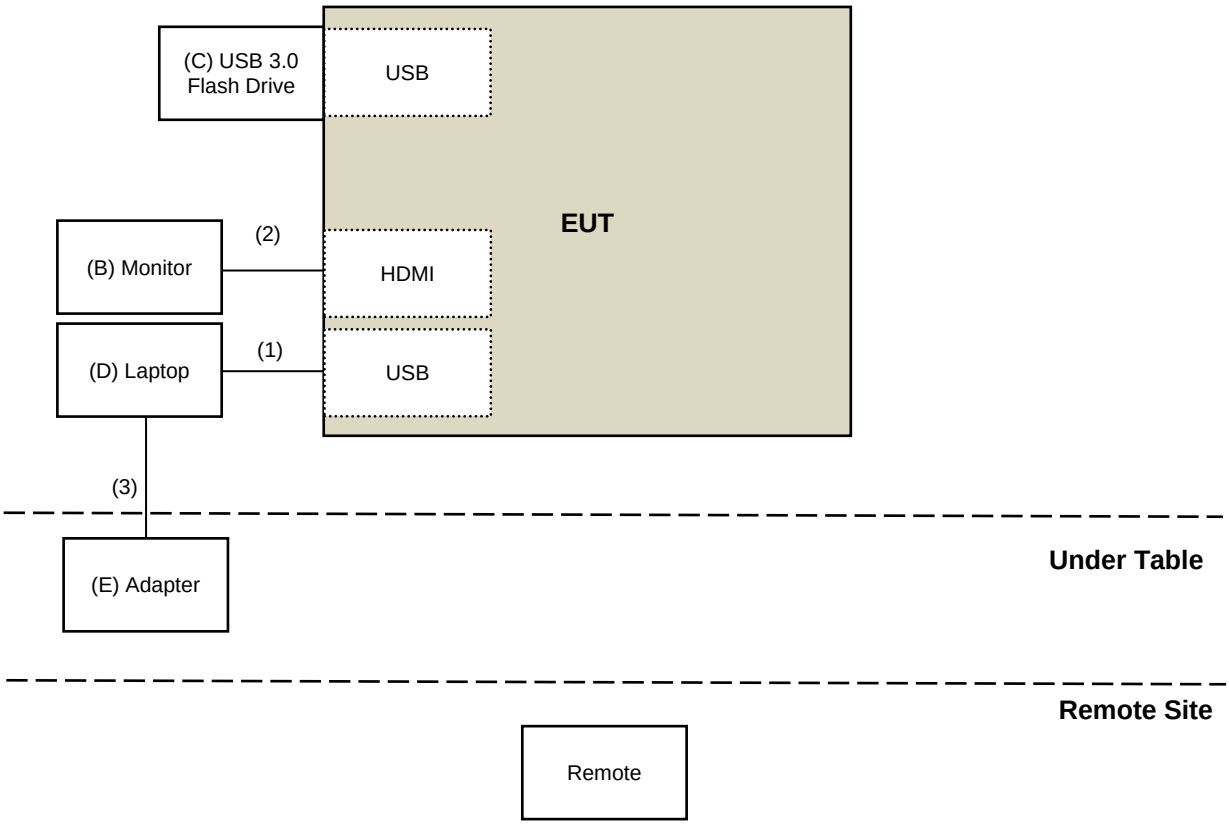


3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Adapter	LEI	MU10AE050200UA1	N/A	N/A	Supplied by applicant
B	Monitor	ASUS	PA279CV	M7LMTF235926	DoC	Provided by Lab
C	USB 3.0 Flash Drive	HP	v250w	N/A	DoC	Provided by Lab
D	Laptop	Lenovo	IdeaPad 5 15ITL05	N/A	N/A	Provided by Lab
E	Adapter	Lenovo	PA-1450-55LL	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	Type C to USB Cable	1	2	Y	0	Supplied by applicant
2	HDMI Cable	1	1.8	Y	0	Supplied by applicant
3	DC Cable	1	1.8	N	0	Provided by Lab

4 Test Instruments

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

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
MIMO Powermeasurement Test set (4X4) KEYSIGHT	U2021XA	U2021XA_001	2022/6/13	2023/6/12
MXG Vector Signal Generator KEYSIGHT	N5182B	MY53052658	2022/5/9	2023/5/8
Power Meter Anritsu	ML2495A	1232003	2022/1/9	2023/1/8
Power Sensor Anritsu	MA2411B	1207333	2022/1/9	2023/1/8
Spectrum Analyzer KEYSIGHT	N9030A	MY54490260	2022/7/14	2023/7/13
Spectrum Analyzer R&S	FSV40	101042	2022/9/5	2023/9/4
		101544	2022/5/9	2023/5/8
Temperature & Humidity Chamber TERCHY	MHU-225AU	920409	2022/6/27	2023/6/26
Voltage Meter FLUKE	179	89610322	2022/10/3	2023/10/2

Notes:

1. The test was performed in LK - Oven
2. Tested Date: 2022/12/15

4.2 Power Spectral Density

Refer to section 4.1 to get information of the instruments.

4.3 6 dB Bandwidth

Refer to section 4.1 to get information of the instruments.

4.4 Conducted Out of Band Emissions

Refer to section 4.1 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 LYNICS	0900510	E1-011285	2022/9/19	2023/9/18
		E1-011286	2022/9/19	2023/9/18
Attenuator STI	STI02-2200-10	NO.4	2022/9/2	2023/9/1
DC LISN R&S	ESH3-Z6	100219	2022/8/2	2023/8/1
		844950/018	2022/8/2	2023/8/1
DC LISN Schwarzbeck	NNLK 8121	8121-808	2022/4/29	2023/4/28
High Voltage Probe Schwarzbeck	TK9420	00982	2022/12/14	2023/12/13
Isolation Transformer Erika Fiedler	D-65396	017	2022/9/8	2023/9/7
LISN R&S	ENV216	101196	2022/5/24	2023/5/23
LISN Schwarzbeck	NNLK 8121	8121-731	2022/5/26	2023/5/25
		8121-00759	2022/8/18	2023/8/17
	NNLK8129	8129229	2022/6/8	2023/6/7
	NSLK 8128	8128-244	2022/11/8	2023/11/7
RF Coaxial Cable Commate	5D-FB	Cable-CO5-01	2023/1/19	2024/1/18
Software BVADT	Cond_V7.3.7.4	N/A	N/A	N/A
Test Receiver R&S	ESR3	102412	2022/12/21	2023/12/20

Notes:

1. The test was performed in Linkou Conduction 5.
2. Tested Date: 2023/2/9 ~ 2023/2/10

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
* LOOP ANTENNA EMCI	LPA600	270	2021/9/2	2023/9/1
Bi_Log Antenna Schwarzbeck	VULB 9168	137	2022/10/21	2023/10/20
Coupling/Dcoupling Network Schwarzbeck	CDNE-M2	00097	2022/6/1	2023/5/31
	CDNE-M3	00091	2022/6/1	2023/5/31
Pre_Amplifier EMCI	EMC001340	980269	2022/6/28	2023/6/27
Pre_Amplifier HP	8447D	2432A03504	2022/2/17	2023/2/16
RF Coaxial Cable Pacific	8D-FB	Cable-CH6-02	2022/6/30	2023/6/29
Software BVADT	Radiated_V7.7.1.1.1	N/A	N/A	N/A
	Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	101544	2022/5/9	2023/5/8
Test Receiver Agilent	N9038A	MY51210129	2022/4/8	2023/4/7
		MY51210137	2022/6/9	2023/6/8
Tower ADT	AT100	0306	N/A	N/A
Turn Table ADT	TT100	0306	N/A	N/A

Notes:

1. * The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA
2. The test was performed in Linkou 966 Chamber 6 (CH 6).
3. Tested Date: 2023/2/9

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Band Pass Filter MICRO-TRONICS	BRM17690	005	2022/5/26	2023/5/25
Boresight antenna tower fixture BV	BAF-02	6	N/A	N/A
High Pass Filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	2022/5/26	2023/5/25
Horn Antenna EMCO	3115	00027024	2022/11/13	2023/11/12
		00028257	2022/11/13	2023/11/12
Horn Antenna ETS-Lindgren	3117-PA	00215857	2022/11/13	2023/11/12
Horn Antenna Schwarzbeck	BBHA 9170	212	2022/10/20	2023/10/19
Notch Filter MICRO-TRONICS	BRC50703-01	010	2022/5/26	2023/5/25
Pre-amplifier HP	8449B	3008A01201	2022/2/17	2023/2/16
Pre-amplifier (18GHz-40GHz) EMCI	EMC184045B	980175	2022/9/3	2023/9/2
Pre_Amplifier EMCI	EMC0126545	980076	2022/2/17	2023/2/16
	EMC184045B	980235	2022/2/17	2023/2/16
RF Coaxial Cable EM	EM102-KMKM-3.5+1M	EM102-KMKM-3.5+1M-01	2022/7/7	2023/7/6
RF Coaxial Cable EMCI	EMC104	190801	2022/7/7	2023/7/6
		190804	2022/7/7	2023/7/6
RF Coaxial Cable HUBER SUHNER	SF-104	Cable-CH6-01	2022/9/20	2023/9/19
Software BVADT	Radiated_V7.7.1.1.1	N/A	N/A	N/A
	Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Agilent	E4446A	MY51100009	2022/6/27	2023/6/26
Spectrum Analyzer KEYSIGHT	N9030A	MY54490260	2022/7/14	2023/7/13
Spectrum Analyzer R&S	FSV40	101042	2022/9/5	2023/9/4
		101544	2022/5/9	2023/5/8
Test Receiver Agilent	N9038A	MY51210129	2022/4/8	2023/4/7
		MY51210137	2022/6/9	2023/6/8
Tower ADT	AT100	0306	N/A	N/A
Turn Table ADT	TT100	0306	N/A	N/A

Notes:

1. The test was performed in Linkou 966 Chamber 6 (CH 6).
2. Tested Date: 2022/12/13 ~ 2022/12/14

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 20 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 20 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 20 dB below the highest level of the desired power:

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

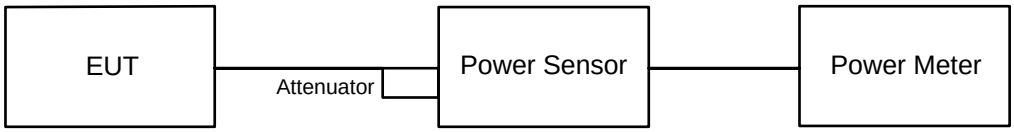
Notes:

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



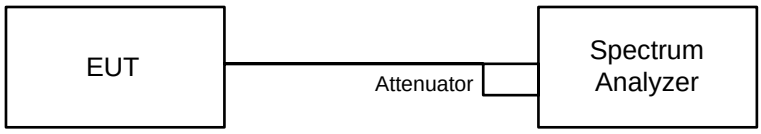
6.1.2 Test Procedure

Peak Power:
A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

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

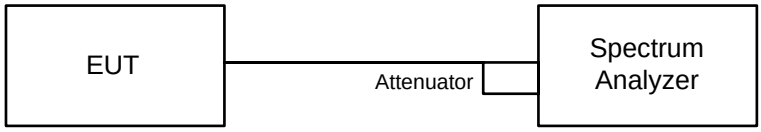


6.2.2 Test Procedure

a. Set analyzer center frequency to DTS channel center frequency.
b. Set the span to 1.5 times the DTS bandwidth.
c. Set the RBW to: 3 kHz.
d. Set the VBW ≥ 3 × RBW.
e. Detector = peak.
f. Sweep time = auto couple.
g. Trace mode = max hold.
h. Allow trace to fully stabilize.
i. Use the peak marker function to determine the maximum amplitude level within the RBW.

6.3 6 dB Bandwidth

6.3.1 Test Setup

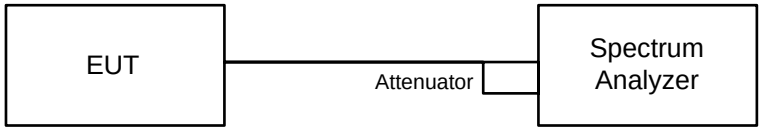


6.3.2 Test Procedure

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

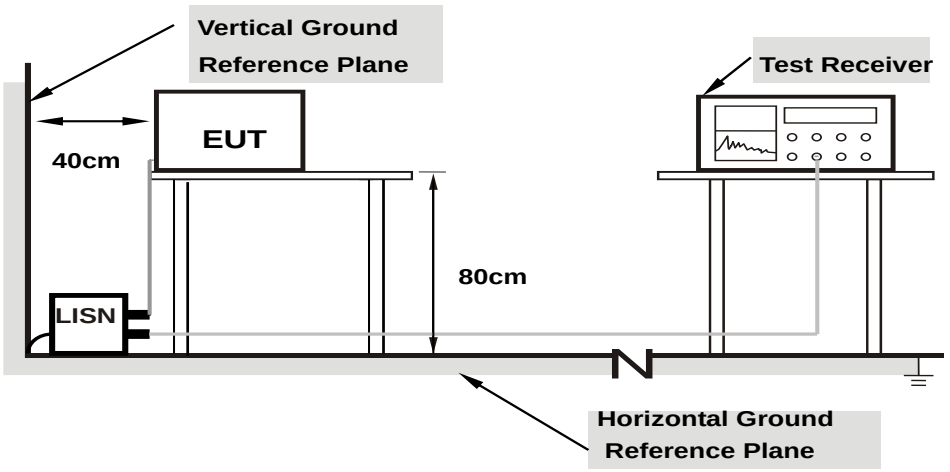
a. Set the RBW = 100 kHz.
b. Set the VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep time = auto couple.
e. Trace mode = max hold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

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.

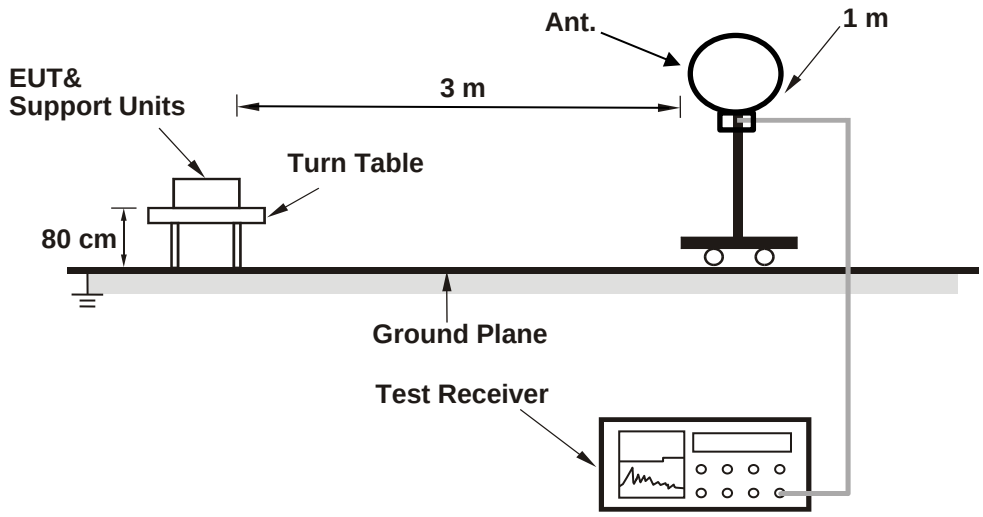
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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.

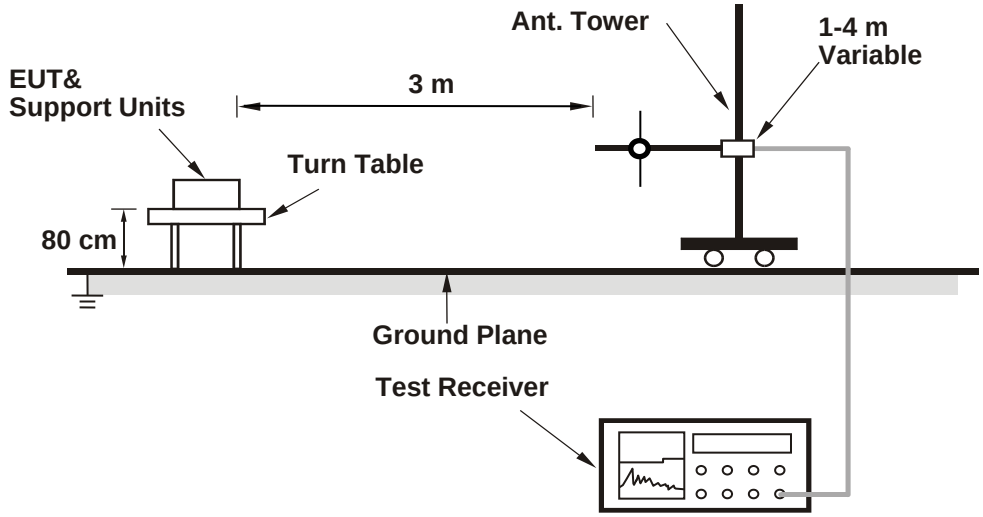
6.6 Unwanted Emissions below 1 GHz

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.

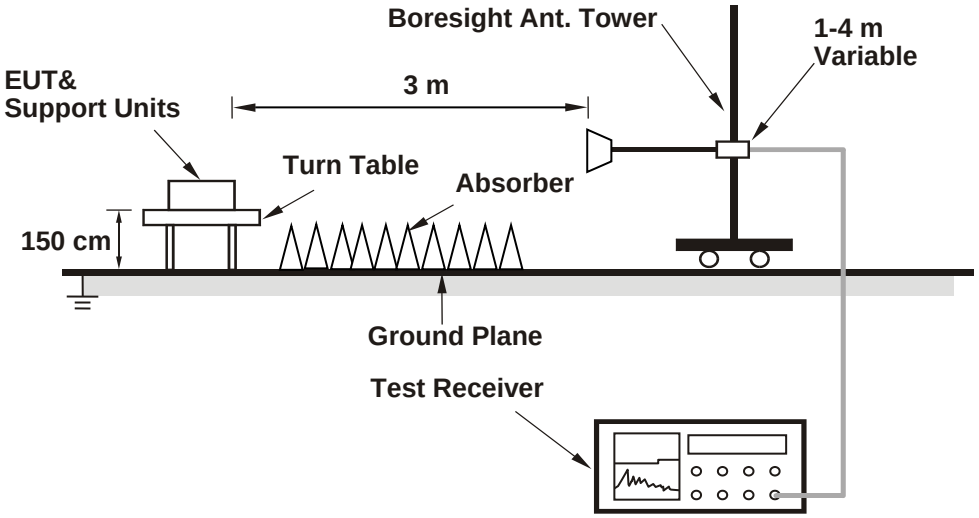
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

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, 76% RH	Tested By:	Waydi Tuan

Mode A

For Peak Power

802.11b

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	19.12	19.26	165.992	22.20	30	Pass
6	2437	21.50	21.64	287.135	24.58	30	Pass
11	2462	18.33	18.47	138.384	21.41	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	24.37	24.51	556.015	27.45	30	Pass
6	2437	26.91	27.03	995.569	29.98	30	Pass
11	2462	24.39	24.53	558.581	27.47	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	23.79	23.95	487.645	26.88	30	Pass
6	2437	26.71	26.80	947.443	29.77	30	Pass
11	2462	22.59	22.68	366.905	25.65	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	22.47	22.92	372.488	25.71	30	Pass
6	2437	23.86	24.01	494.988	26.95	30	Pass
9	2452	22.33	22.43	345.986	25.39	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.

For Average Power

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	17.15	17.20	104.361	20.19
6	2437	19.45	19.51	177.435	22.49
11	2462	16.37	16.43	87.305	19.41

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	15.36	15.44	69.35	18.41
6	2437	18.28	18.35	135.689	21.33
11	2462	15.37	15.44	69.43	18.42

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	15.30	15.37	68.319	18.35
6	2437	18.33	18.36	136.626	21.36
11	2462	13.67	13.71	46.777	16.70

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
3	2422	13.28	13.38	43.058	16.34
6	2437	13.92	14.00	49.779	16.97
9	2452	12.43	12.68	36.034	15.57

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Waydi Tuan

Mode A

802.11b

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-8.2	3.01	-5.19	7.43	Pass
	6	2437	-6.21	3.01	-3.2	7.43	Pass
	11	2462	-8.75	3.01	-5.74	7.43	Pass
Chain 1	1	2412	-8.32	3.01	-5.31	7.43	Pass
	6	2437	-5.96	3.01	-2.95	7.43	Pass
	11	2462	-8.92	3.01	-5.91	7.43	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB 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 6.57 dBi > 6 dBi, so the power density limit shall be reduced to 8-(6.57-6) = 7.43 dBm/3kHz.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-11.94	3.01	-8.93	7.43	Pass
	6	2437	-8.96	3.01	-5.95	7.43	Pass
	11	2462	-12.23	3.01	-9.22	7.43	Pass
Chain 1	1	2412	-12.27	3.01	-9.26	7.43	Pass
	6	2437	-8.89	3.01	-5.88	7.43	Pass
	11	2462	-12.29	3.01	-9.28	7.43	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB 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 6.57 dBi > 6 dBi, so the power density limit shall be reduced to 8-(6.57-6) = 7.43 dBm/3kHz.

802.11ax (HE20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-12.2	3.01	-9.19	7.43	Pass
	6	2437	-9.03	3.01	-6.02	7.43	Pass
	11	2462	-13.63	3.01	-10.62	7.43	Pass
Chain 1	1	2412	-12.09	3.01	-9.08	7.43	Pass
	6	2437	-9.39	3.01	-6.38	7.43	Pass
	11	2462	-13.67	3.01	-10.66	7.43	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB 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 6.57 dBi > 6 dBi, so the power density limit shall be reduced to 8-(6.57-6) = 7.43 dBm/3kHz.

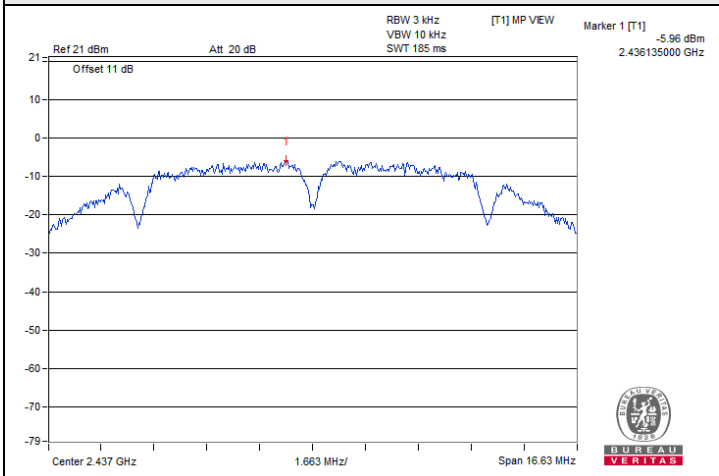
802.11ax (HE40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	3	2422	-16.31	3.01	-13.3	7.43	Pass
	6	2437	-15.92	3.01	-12.91	7.43	Pass
	9	2452	-17.27	3.01	-14.26	7.43	Pass
Chain 1	3	2422	-16.4	3.01	-13.39	7.43	Pass
	6	2437	-15.95	3.01	-12.94	7.43	Pass
	9	2452	-17.75	3.01	-14.74	7.43	Pass

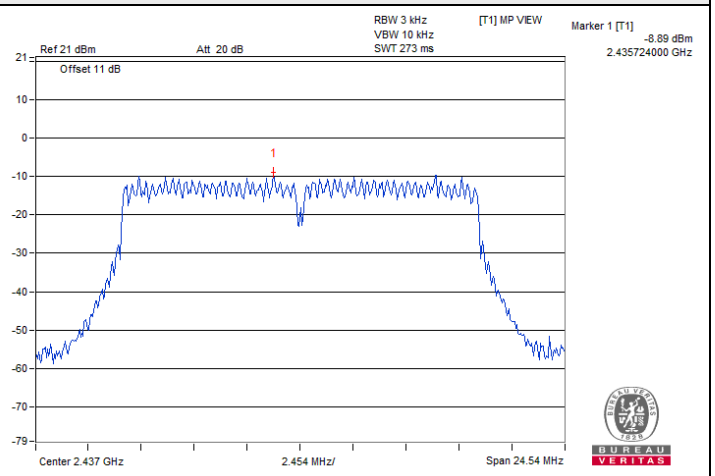
Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB 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 6.57 dBi > 6 dBi, so the power density limit shall be reduced to 8-(6.57-6) = 7.43 dBm/3kHz.

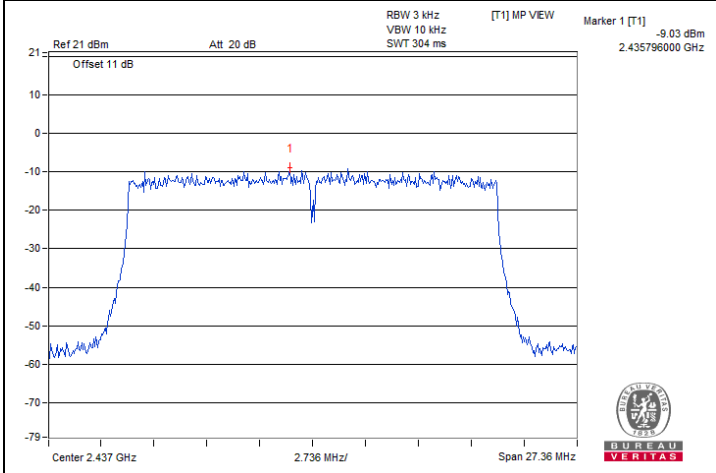
Spectrum Plot of Maximum Value



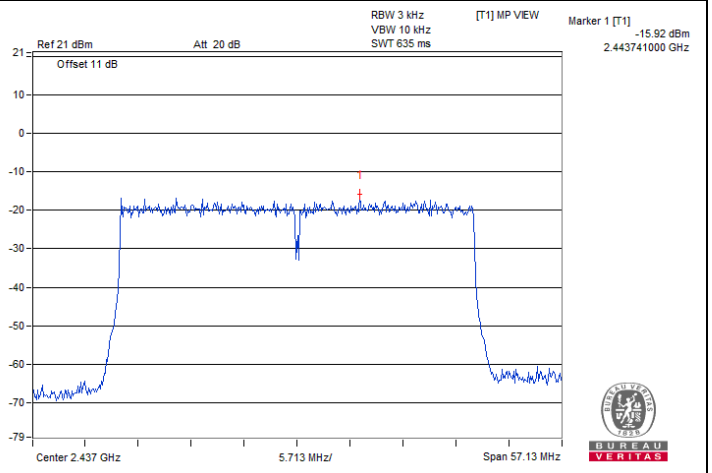
802.11b / Chain 1 : CH 6



802.11g / Chain 1 : CH 6



802.11ax (HE20) / Chain 0 : CH 6



802.11ax (HE40) / Chain 0 : CH 6

7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Waydi Tuan

Mode A

802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	11.08	11.10	0.5	Pass
6	2437	12.02	11.09	0.5	Pass
11	2462	10.17	10.16	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	16.36	16.36	0.5	Pass
6	2437	16.37	16.36	0.5	Pass
11	2462	16.36	16.36	0.5	Pass

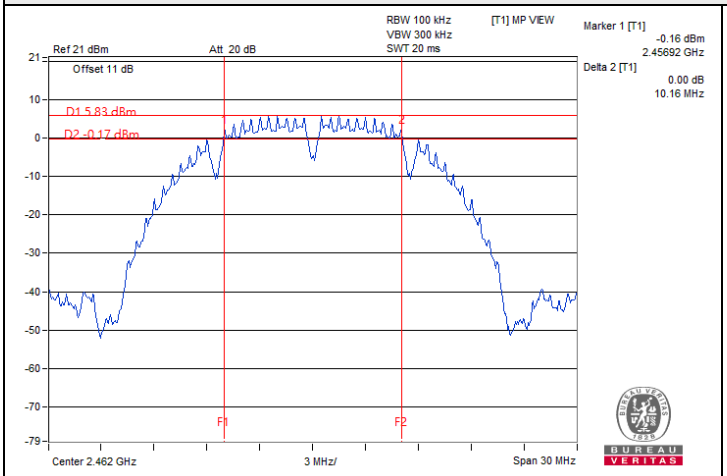
802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	18.16	18.15	0.5	Pass
6	2437	18.24	18.41	0.5	Pass
11	2462	18.24	18.67	0.5	Pass

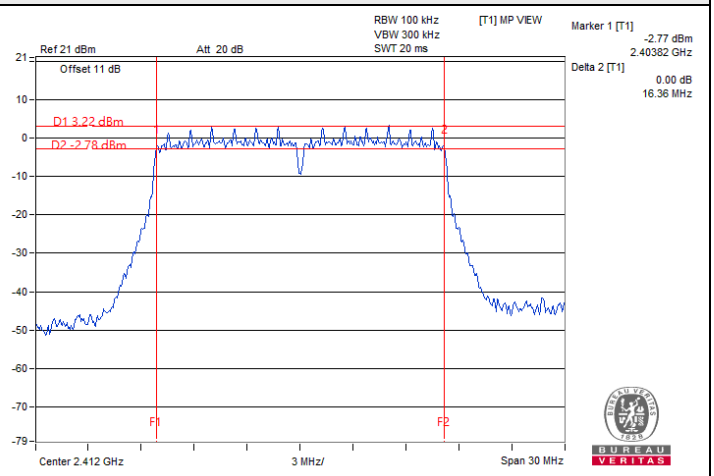
802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
3	2422	38.09	38.09	0.5	Pass
6	2437	38.09	38.10	0.5	Pass
9	2452	38.10	38.09	0.5	Pass

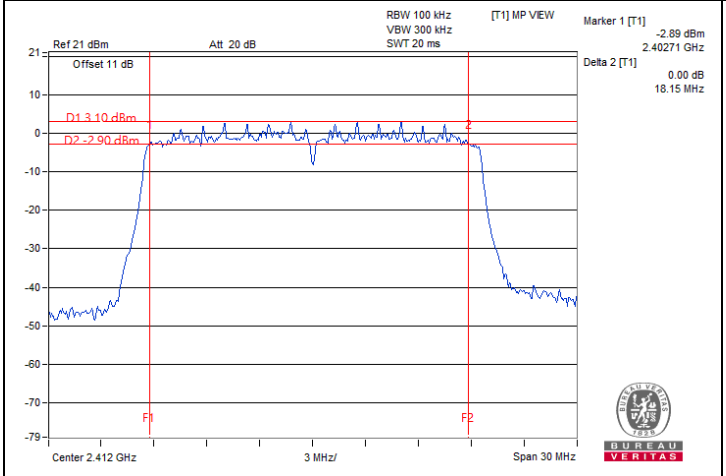
Spectrum Plot of Minimum Value



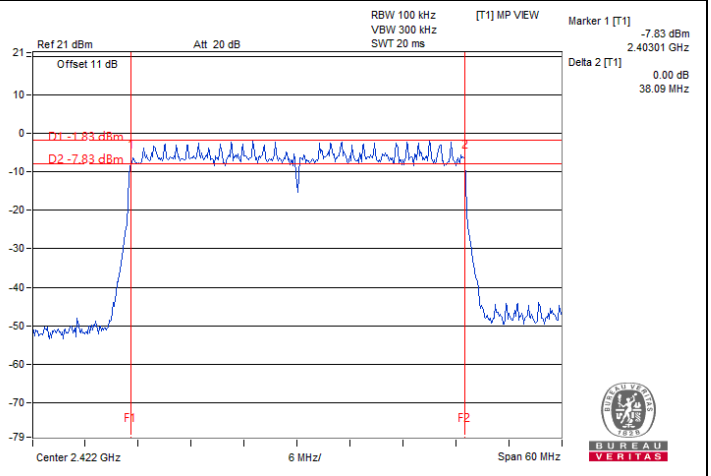
802.11b / Chain 1 : CH 11



802.11g / Chain 0 : CH 1



802.11ax (HE20) / Chain 1 : CH 1



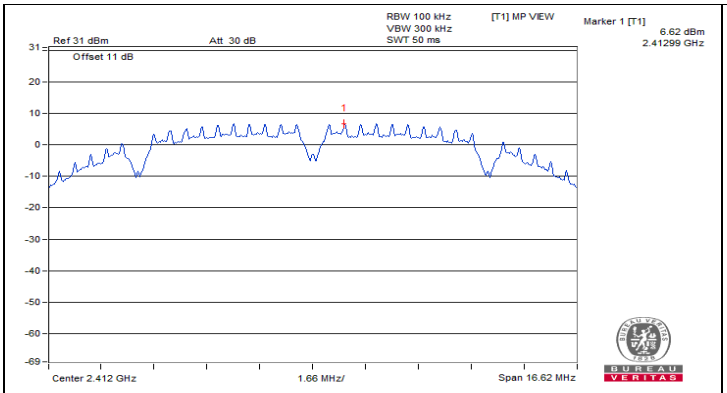
802.11ax (HE40) / Chain 0 : CH 3

7.4 Conducted Out of Band Emissions

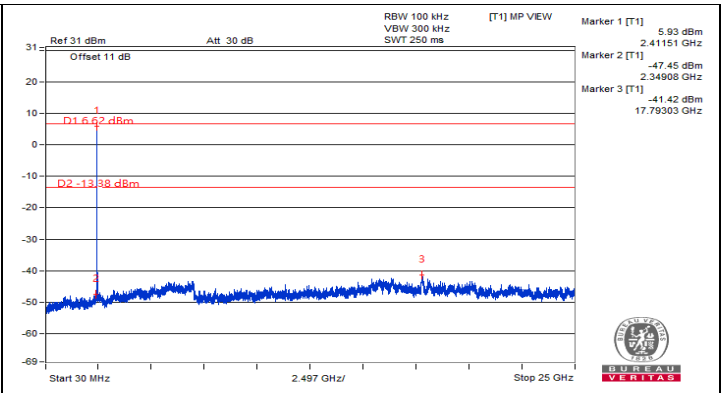
Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Waydi Tuan

Mode A

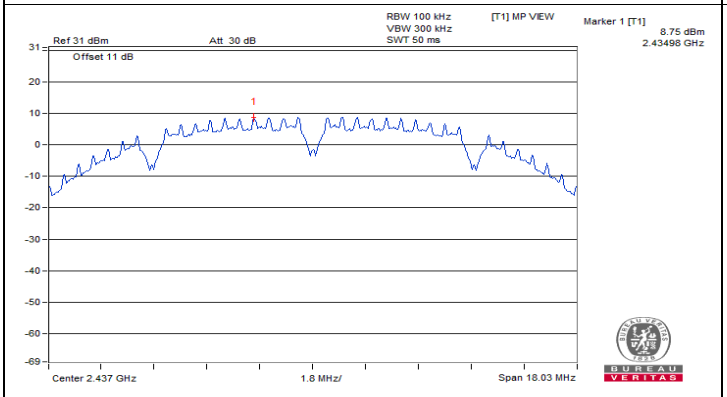
802.11b



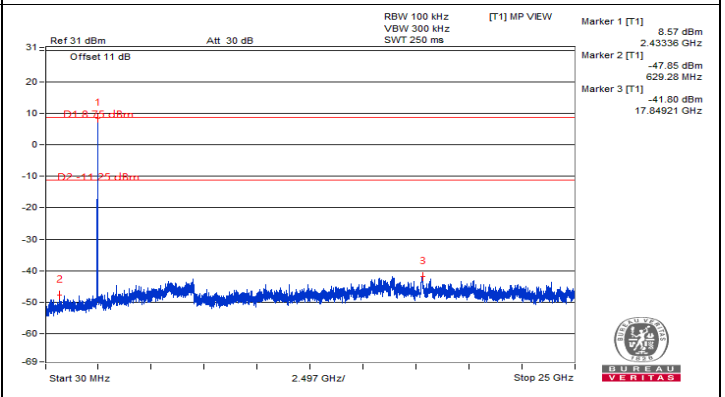
Chain 0 : CH 1



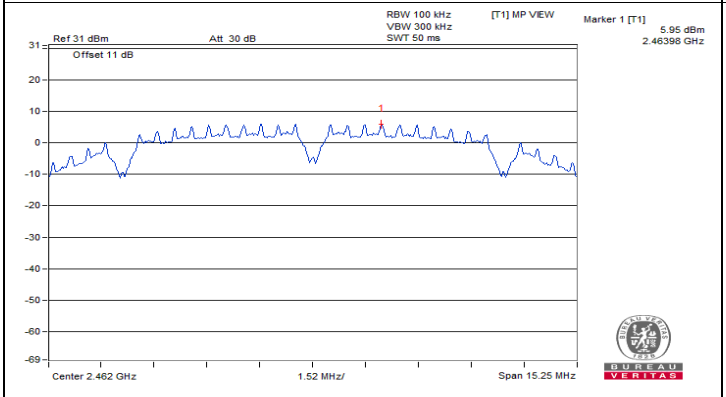
Chain 0 : CH 1



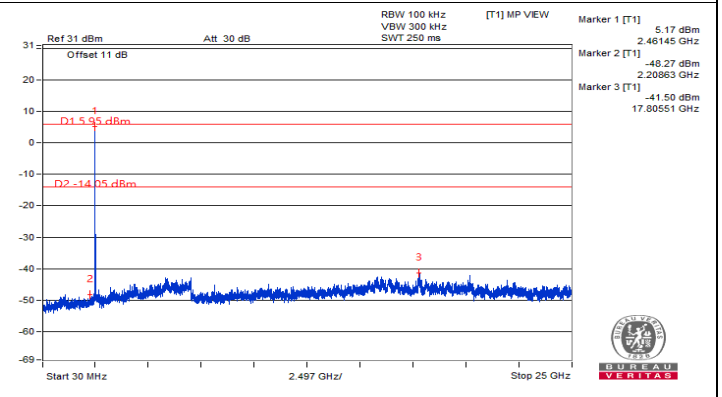
Chain 0 : CH 6



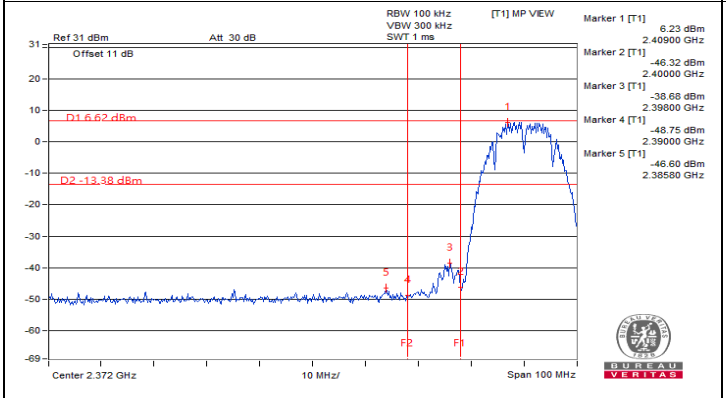
Chain 0 : CH 6



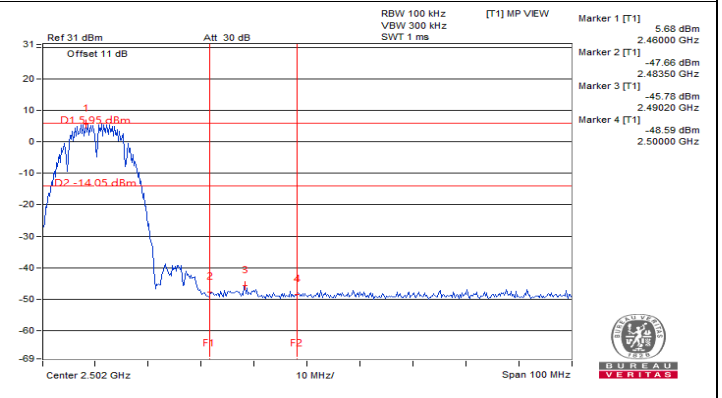
Chain 0 : CH 11



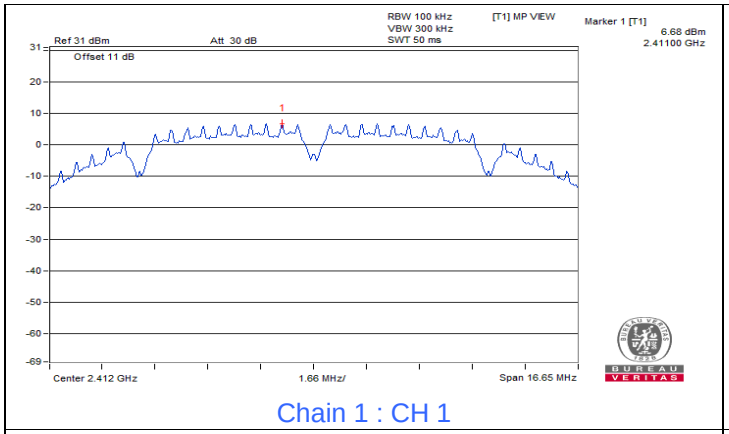
Chain 0 : CH 11



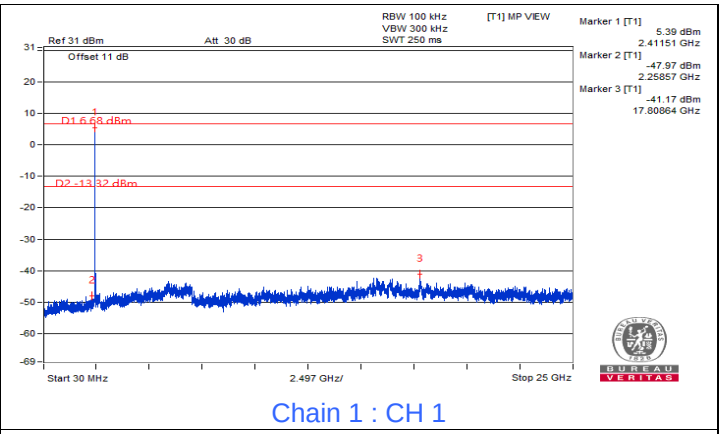
Chain 0 : CH 1 Band edge



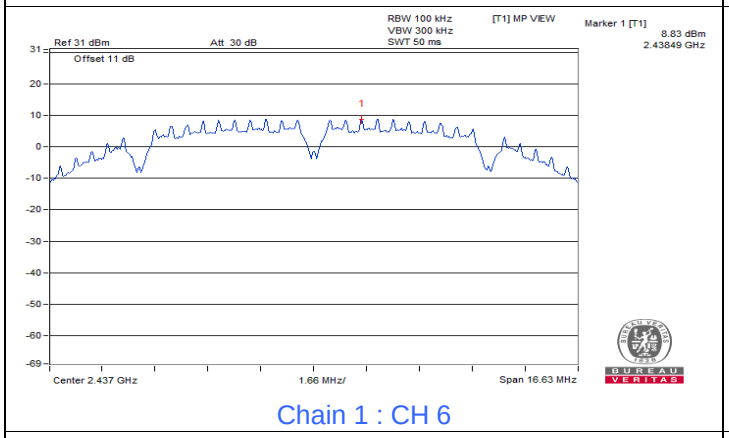
Chain 0 : CH 11 Band edge



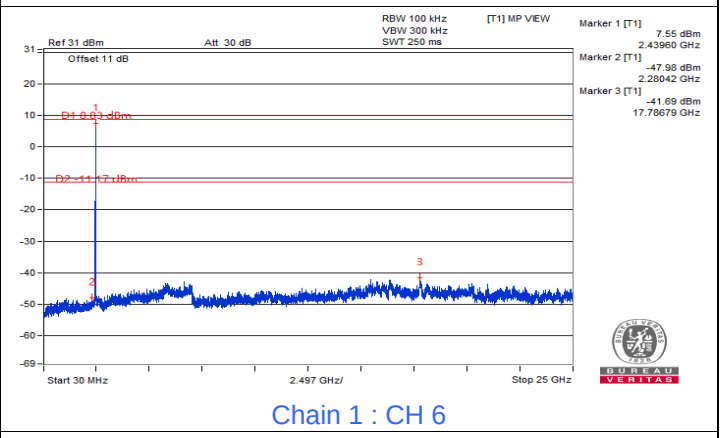
Chain 1 : CH 1



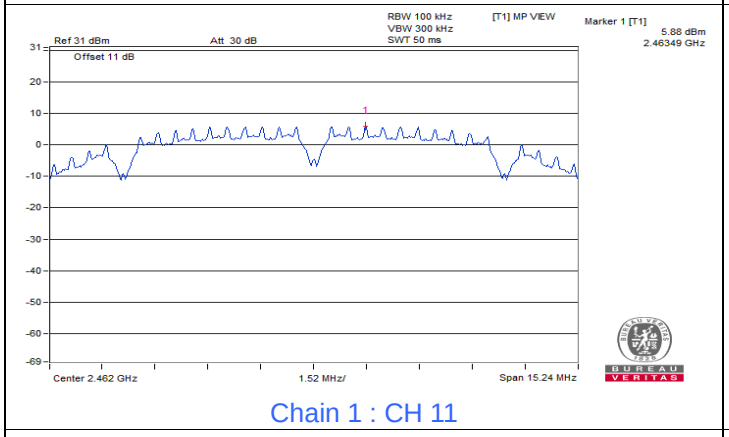
Chain 1 : CH 1



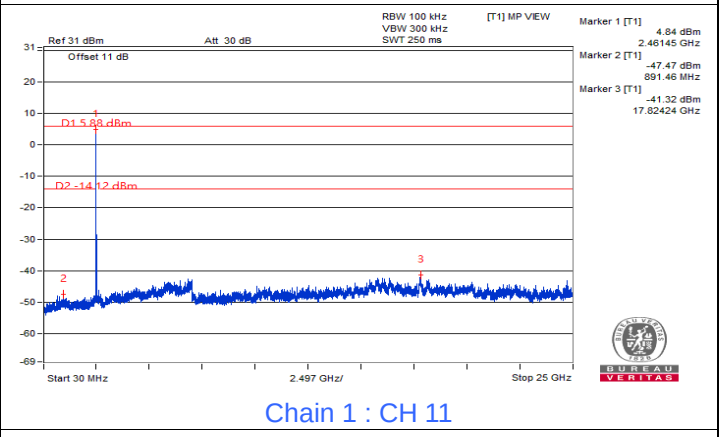
Chain 1 : CH 6



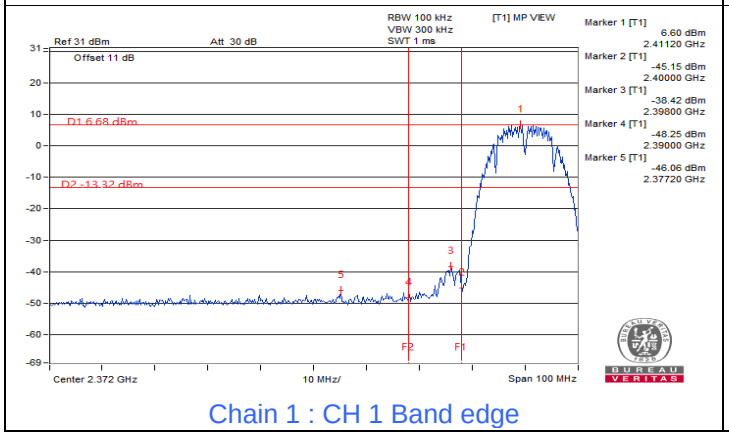
Chain 1 : CH 6



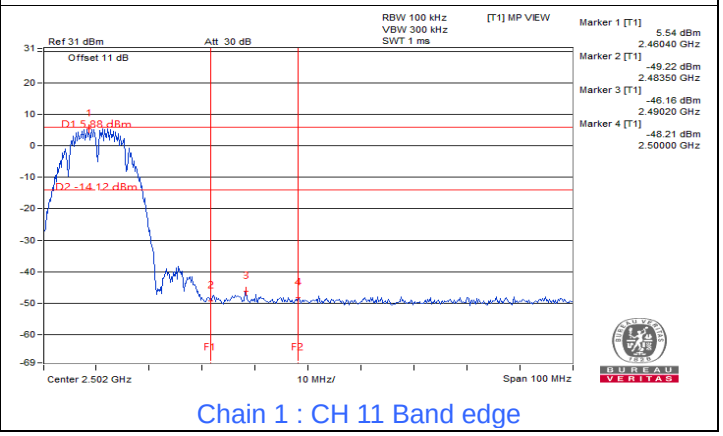
Chain 1 : CH 11



Chain 1 : CH 11

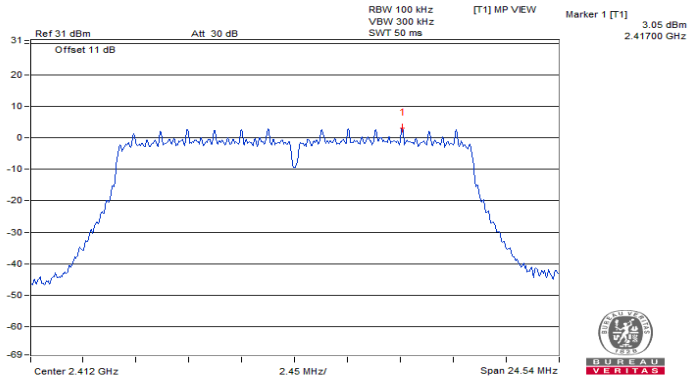


Chain 1 : CH 1 Band edge

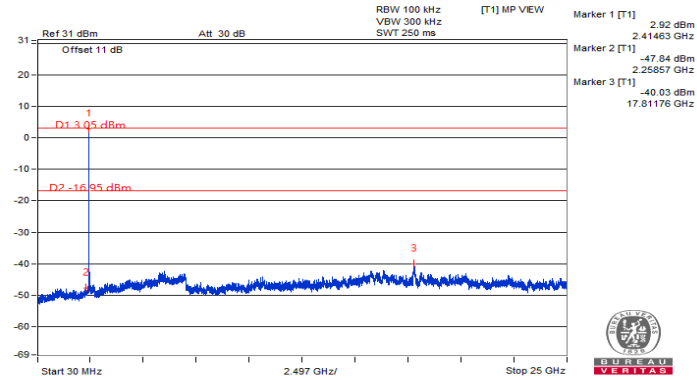


Chain 1 : CH 11 Band edge

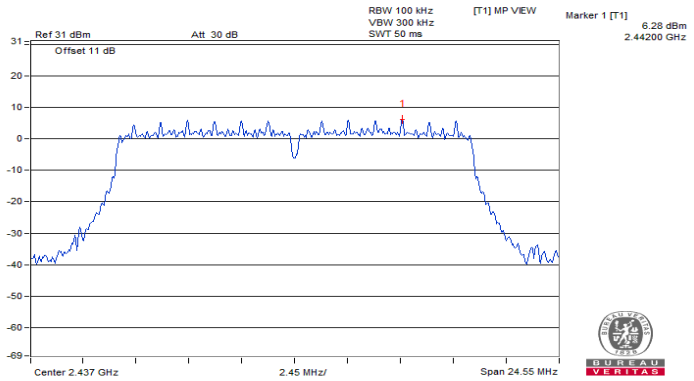
802.11g



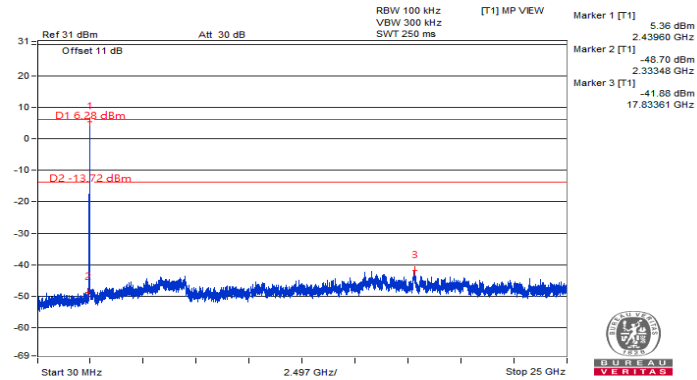
Chain 0 : CH 1



Chain 0 : CH 1



Chain 0 : CH 6



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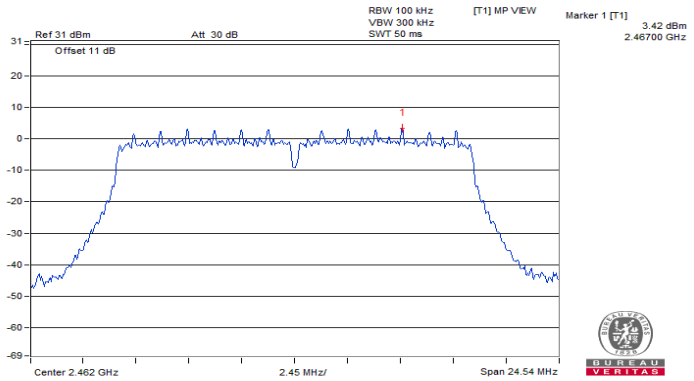
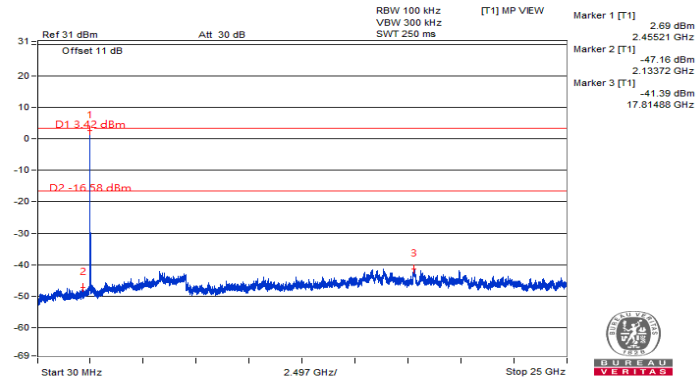
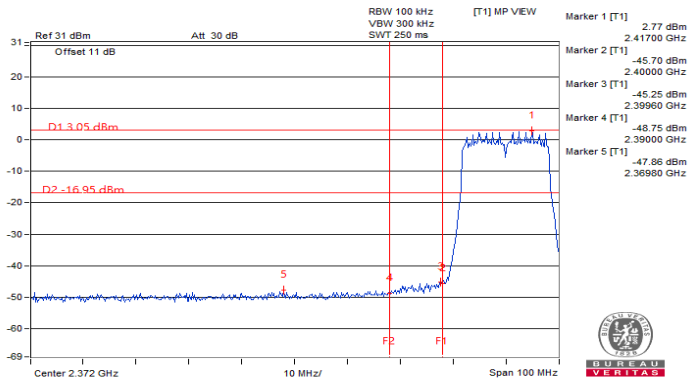


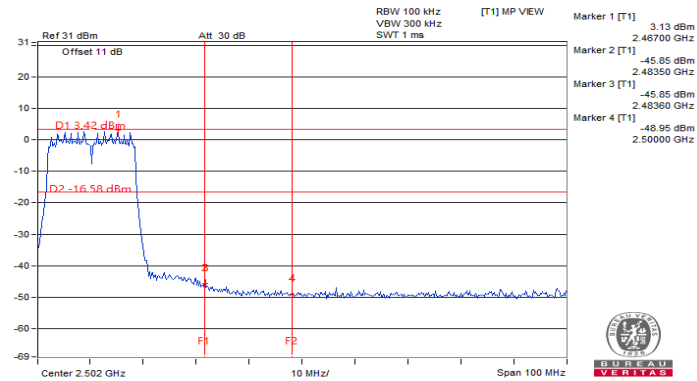
Chain 0 : CH 11



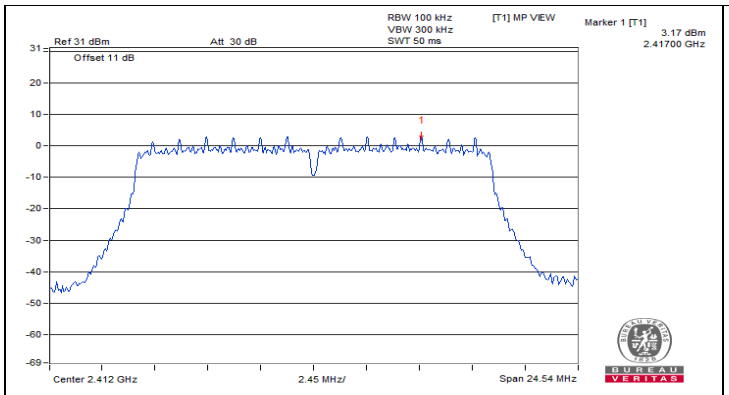
Chain 0 : CH 11



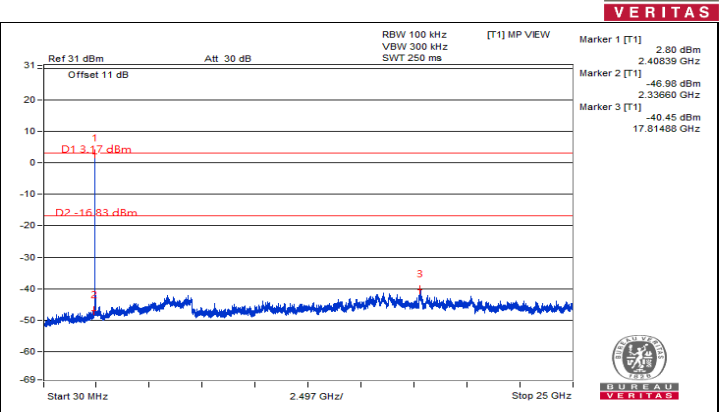
Chain 0 : CH 1 Band edge



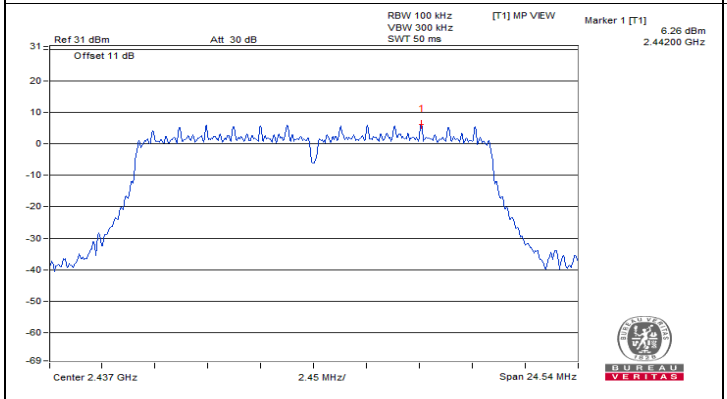
Chain 0 : CH 11 Band edge



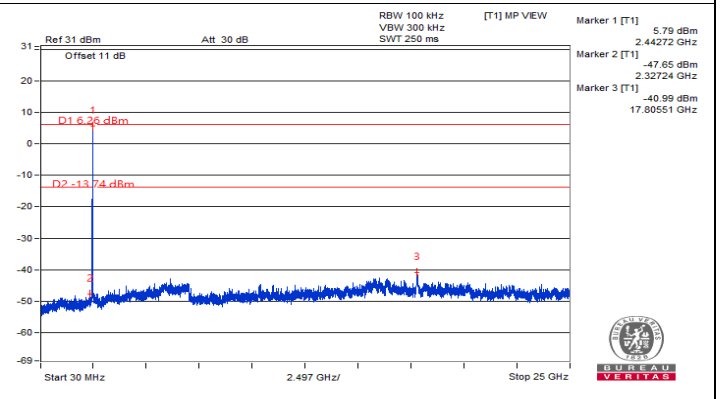
Chain 1 : CH 1



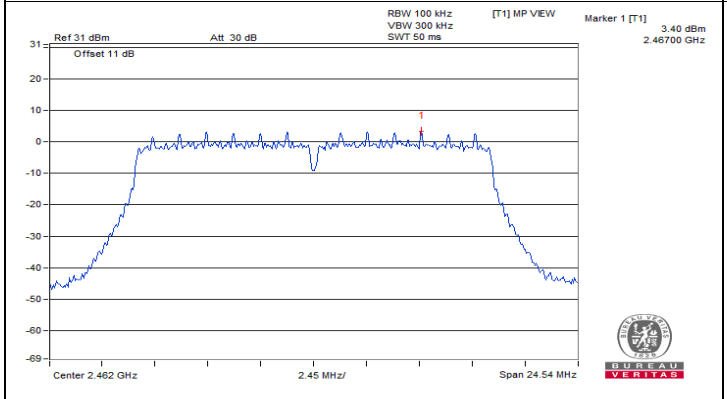
Chain 1 : CH 1



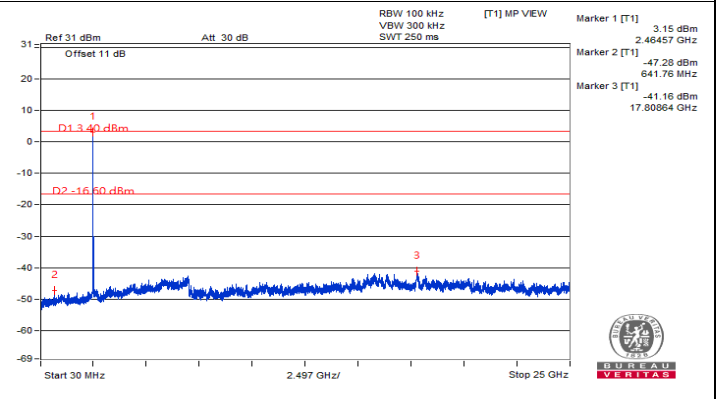
Chain 1 : CH 6



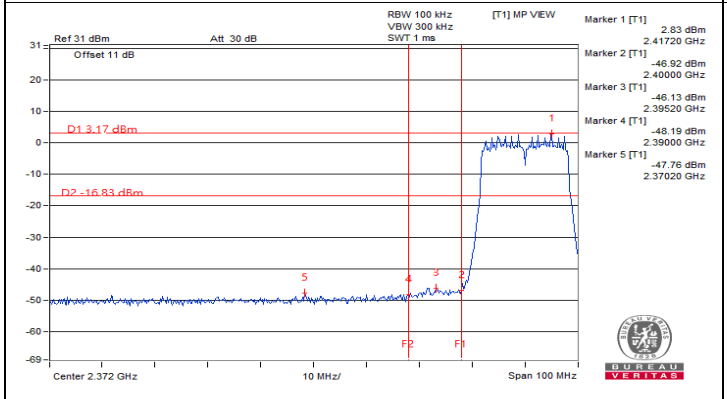
Chain 1 : CH 6



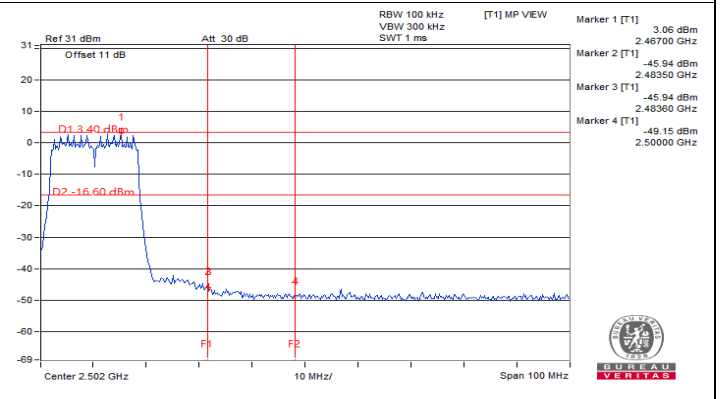
Chain 1 : CH 11



Chain 1 : CH 11

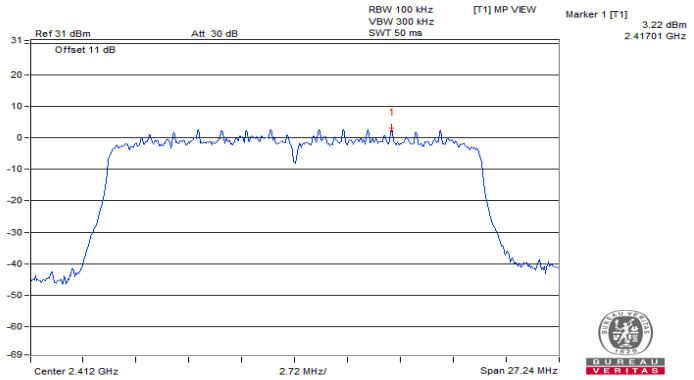


Chain 1 : CH 1 Band edge

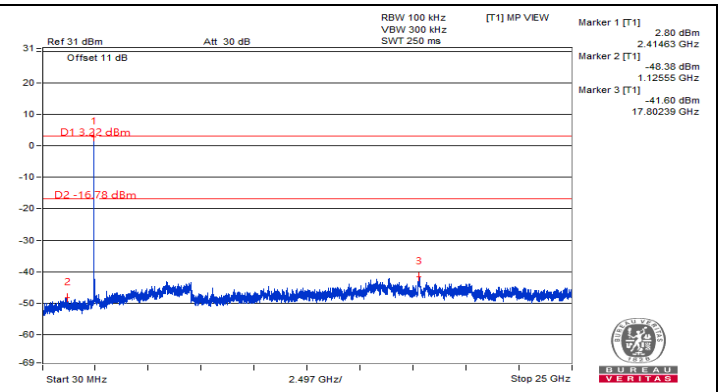


Chain 1 : CH 11 Band edge

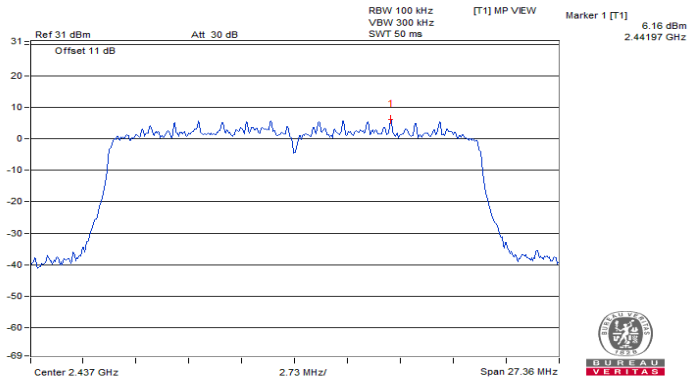
802.11ax (HE20)



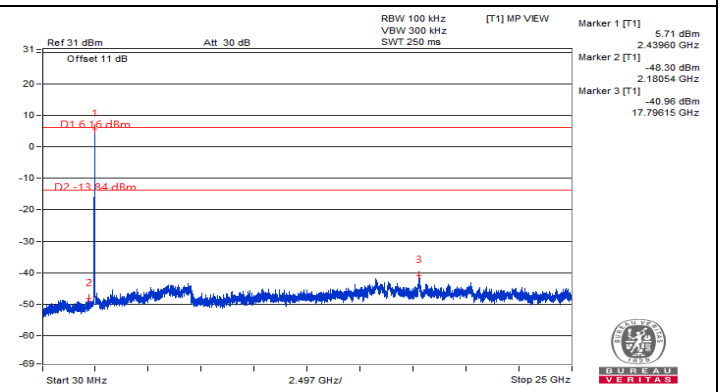
Chain 0 : CH 1



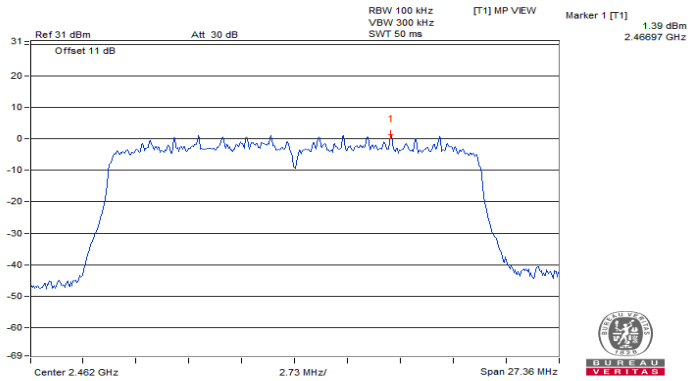
Chain 0 : CH 1



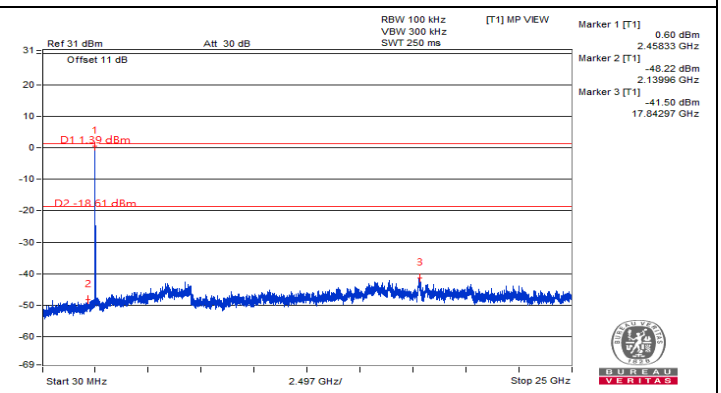
Chain 0 : CH 6



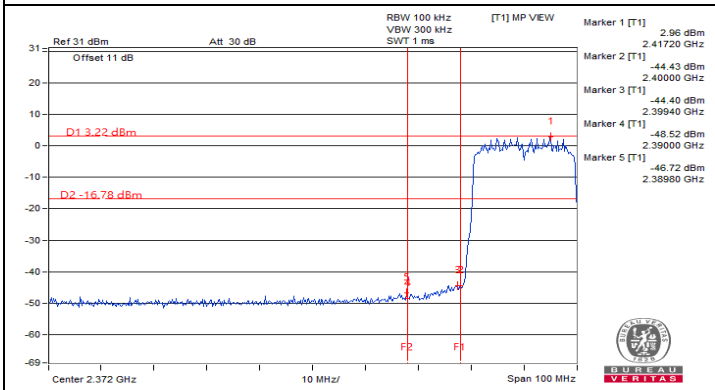
Chain 0 : CH 6



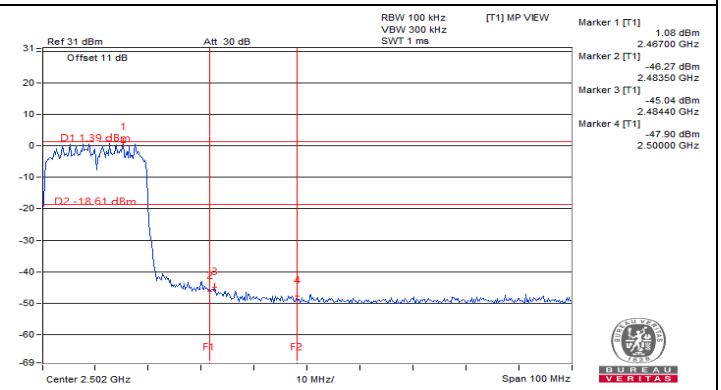
Chain 0 : CH 11



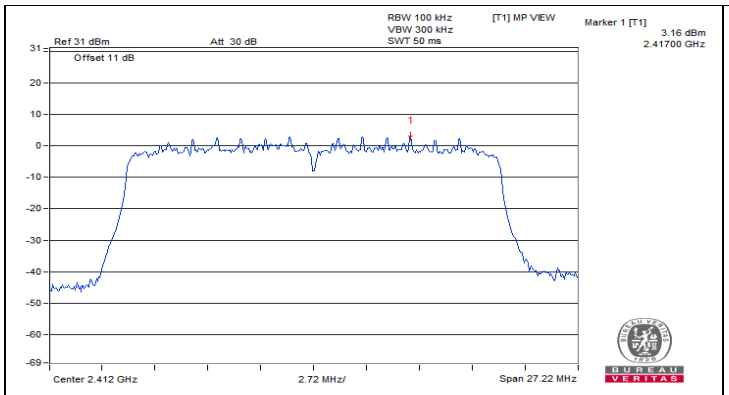
Chain 0 : CH 11



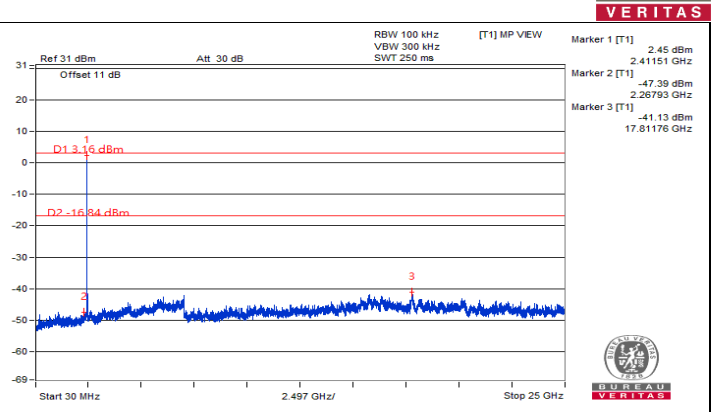
Chain 0 : CH 1 Band edge



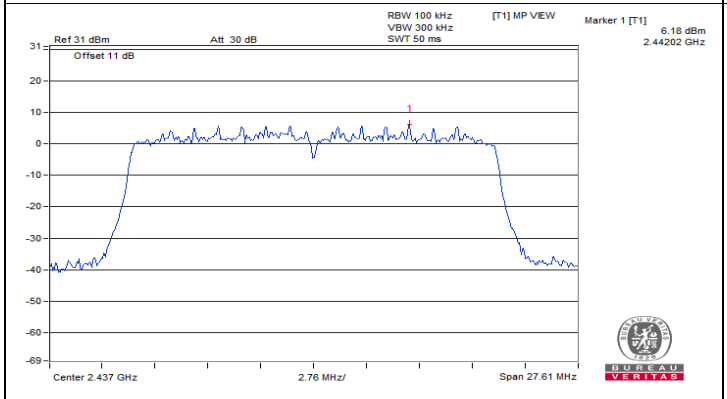
Chain 0 : CH 11 Band edge



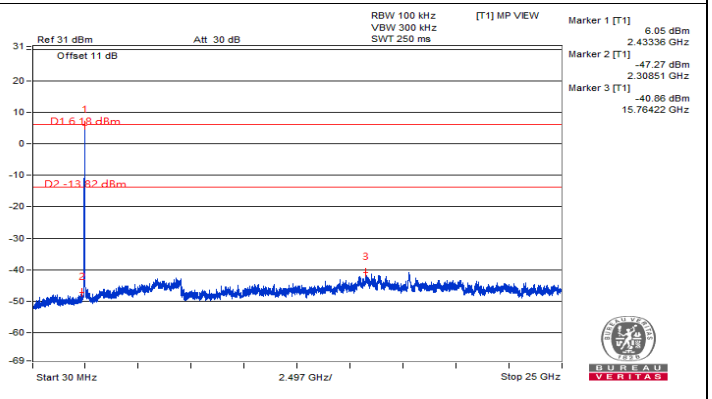
Chain 1 : CH 1



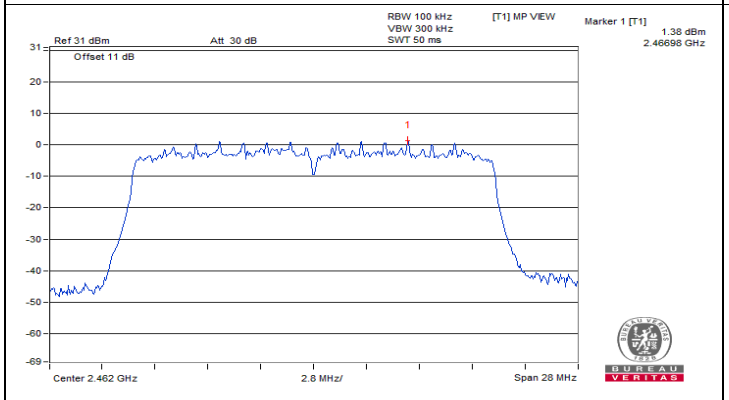
Chain 1 : CH 1



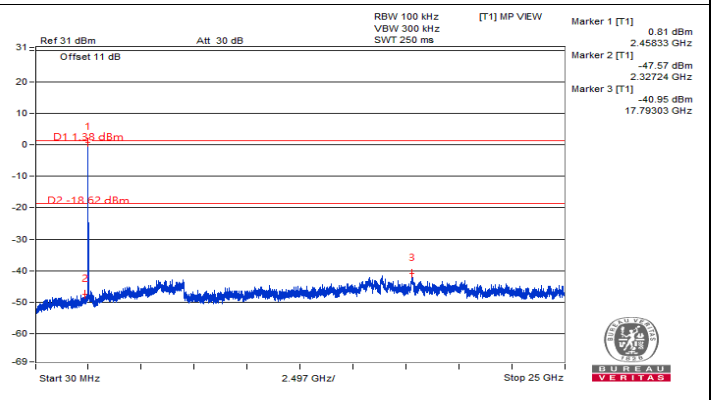
Chain 1 : CH 6



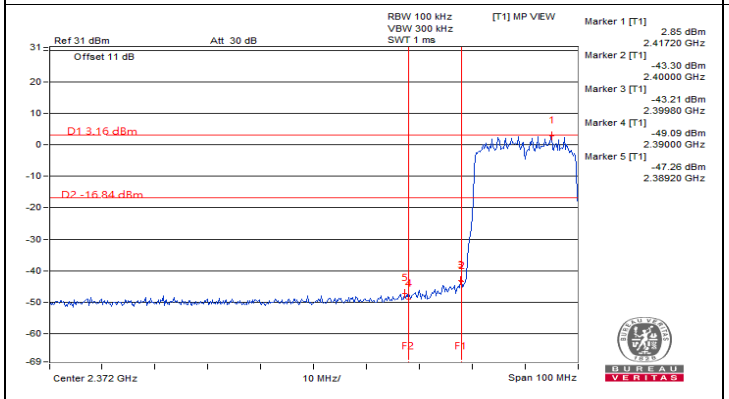
Chain 1 : CH 6



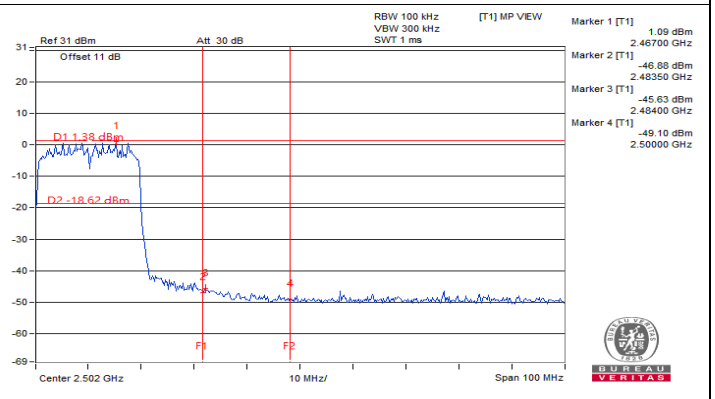
Chain 1 : CH 11



Chain 1 : CH 11

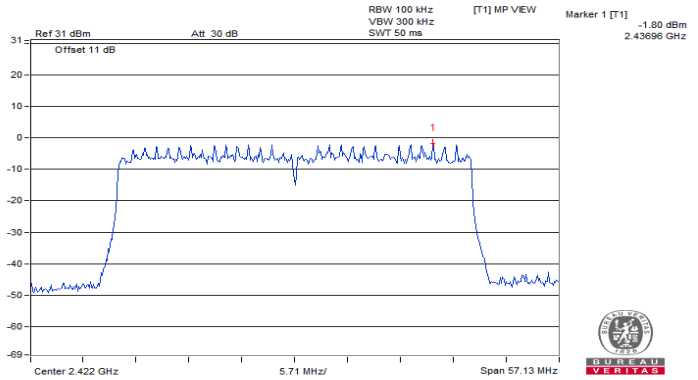


Chain 1 : CH 1 Band edge

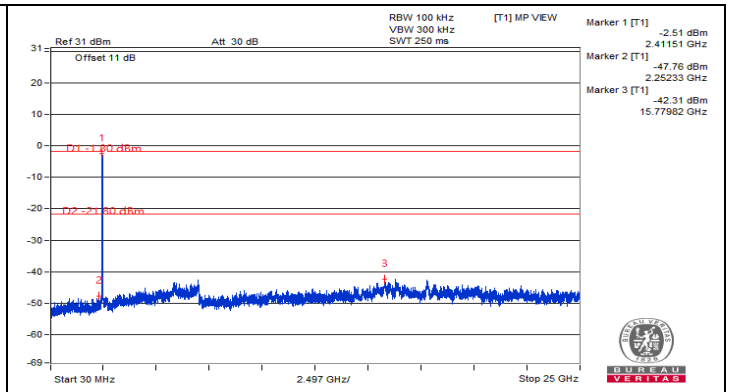


Chain 1 : CH 11 Band edge

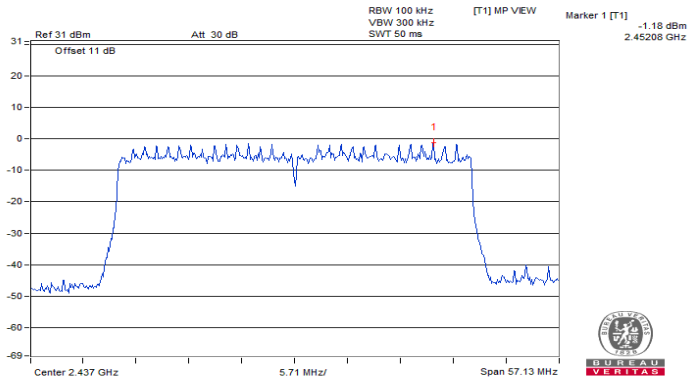
802.11ax (HE40)



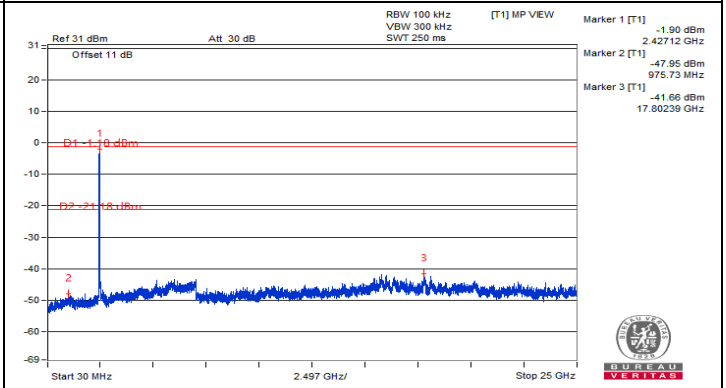
Chain 0 : CH 3



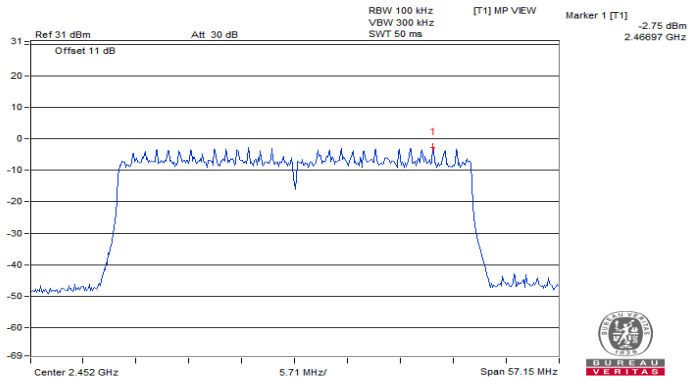
Chain 0 : CH 3



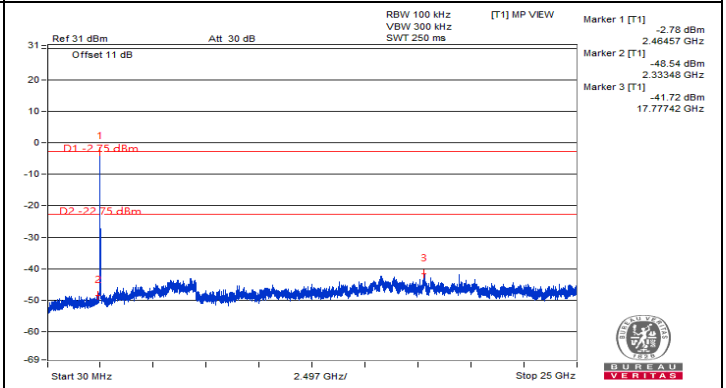
Chain 0 : CH 6



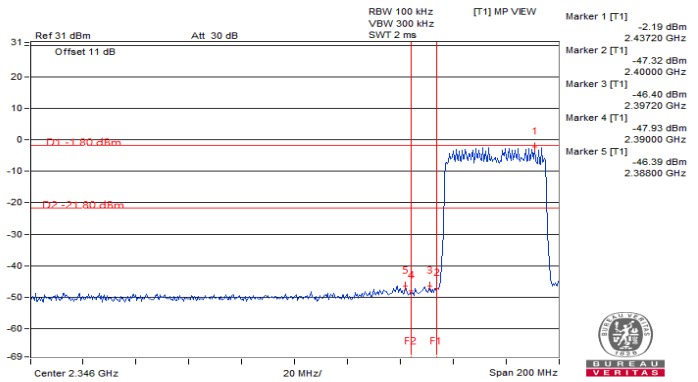
Chain 0 : CH 6



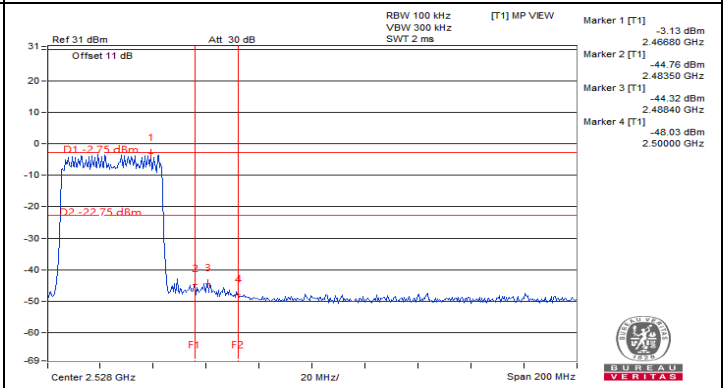
Chain 0 : CH 9



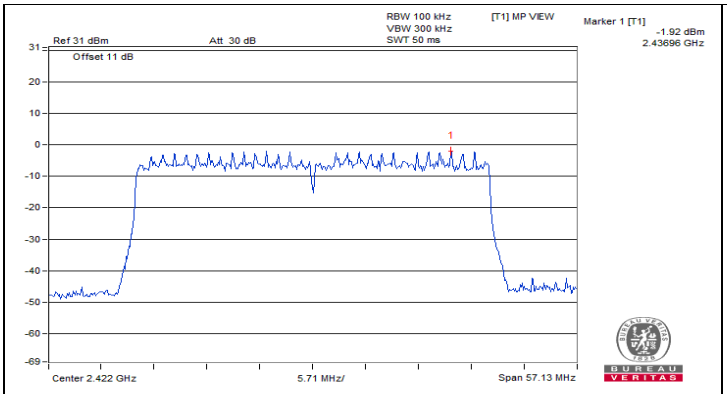
Chain 0 : CH 9



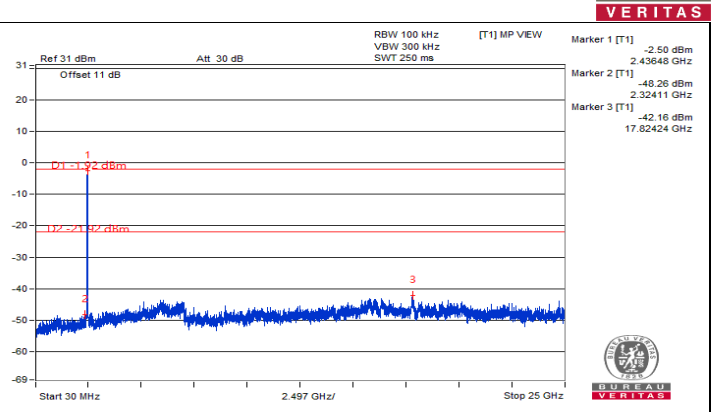
Chain 0 : CH 3 Band edge



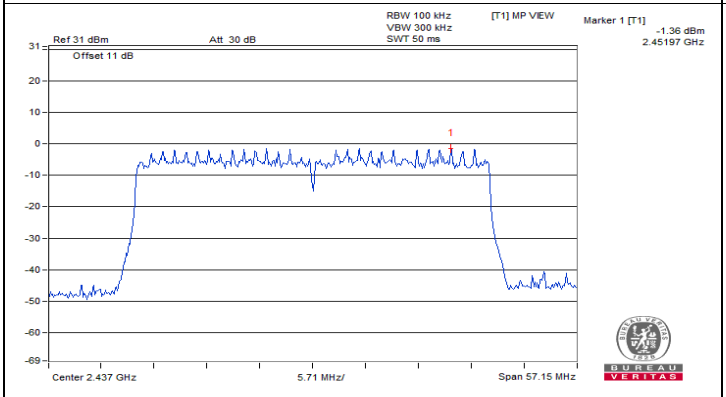
Chain 0 : CH 9 Band edge



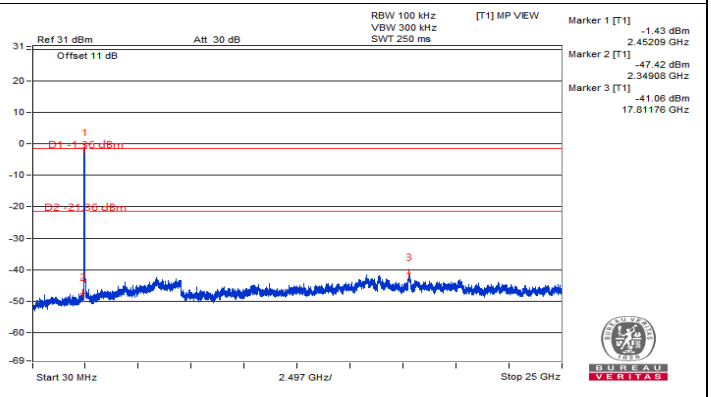
Chain 1 : CH 3



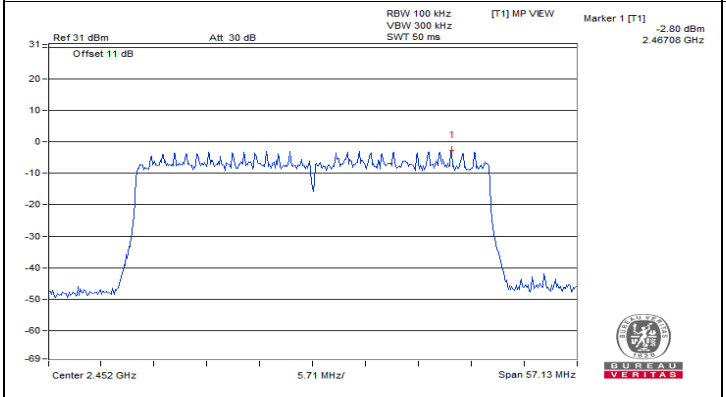
Chain 1 : CH 3



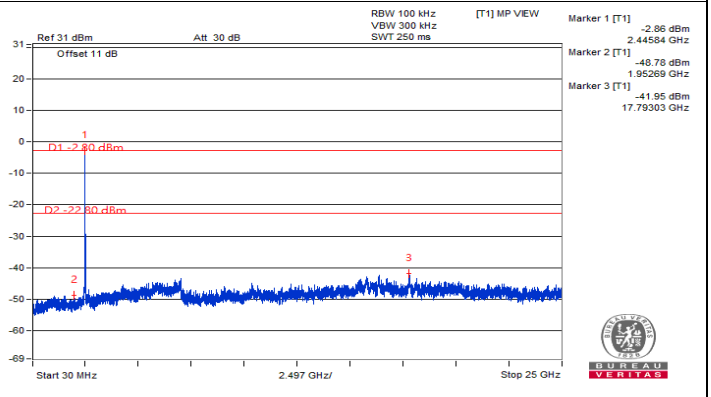
Chain 1 : CH 6



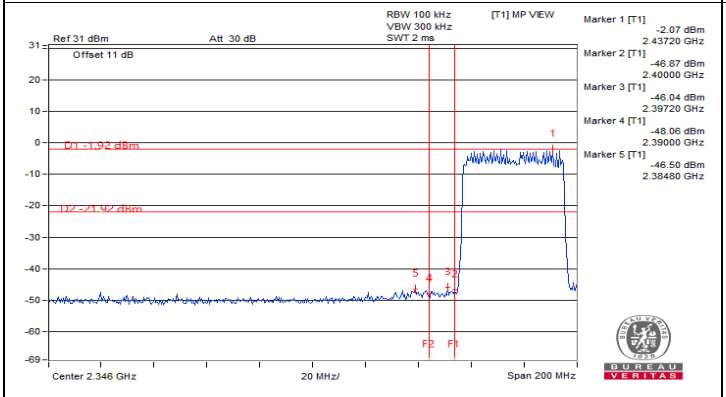
Chain 1 : CH 6



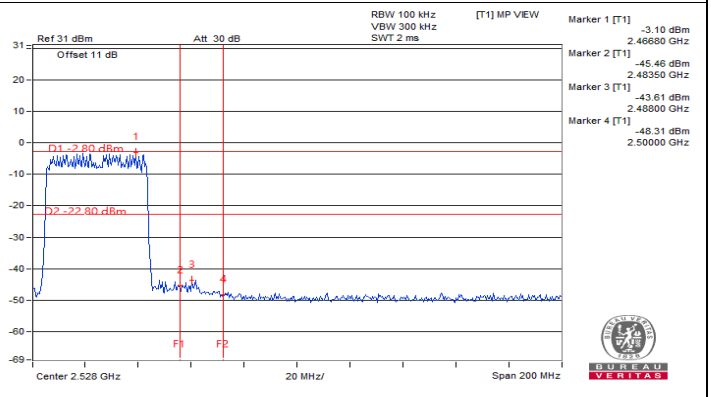
Chain 1 : CH 9



Chain 1 : CH 9



Chain 1 : CH 3 Band edge



Chain 1 : CH 9 Band edge

7.5 AC Power Conducted Emissions

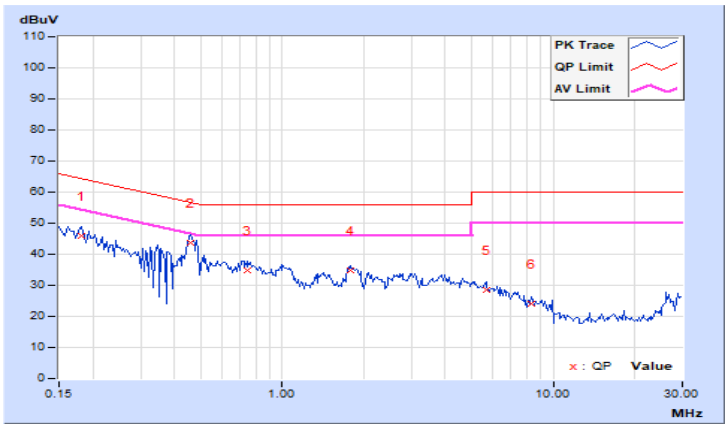
Mode A

RF Mode	802.11g	**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**	25°C, 75% RH
Tested By	Jed Wu		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18125	10.09	35.86	20.11	45.95	30.20	64.43	54.43	-18.48	-24.23
2	**0.45859**	**10.22**	**33.43**	**24.44**	**43.65**	**34.66**	**56.72**	**46.72**	**-13.07**	**-12.06**
3	0.74375	10.30	24.38	17.91	34.68	28.21	56.00	46.00	-21.32	-17.79
4	1.78516	10.38	24.52	13.36	34.90	23.74	56.00	46.00	-21.10	-22.26
5	5.64844	10.54	18.10	7.64	28.64	18.18	60.00	50.00	-31.36	-31.82
6	8.33594	10.62	13.45	3.76	24.07	14.38	60.00	50.00	-35.93	-35.62

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	802.11g	**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**	25°C, 75% RH
Tested By	Jed Wu		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.16562	10.10	41.13	22.38	51.23	32.48	65.18	55.18	-13.95	-22.70
2	0.45859	10.20	29.28	23.14	39.48	33.34	56.72	46.72	-17.24	-13.38
3	0.80234	10.24	25.50	17.30	35.74	27.54	56.00	46.00	-20.26	-18.46
4	1.97656	10.28	20.04	13.59	30.32	23.87	56.00	46.00	-25.68	-22.13
5	5.66016	10.49	14.37	7.19	24.86	17.68	60.00	50.00	-35.14	-32.32
6	9.51172	10.64	9.36	2.56	20.00	13.20	60.00	50.00	-40.00	-36.80

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

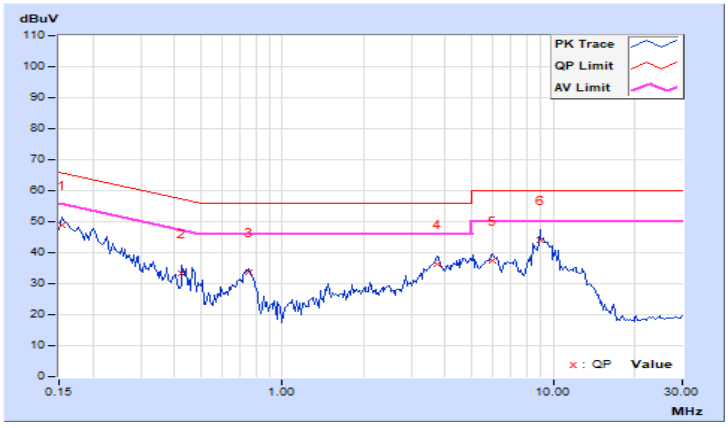
Mode B

RF Mode	802.11g	**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**	25°C, 75% RH
Tested By	Jed Wu		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15391	10.04	38.76	20.85	48.80	30.89	65.79	55.79	-16.99	-24.90
2	0.42734	10.22	22.98	10.77	33.20	20.99	57.30	47.30	-24.10	-26.31
3	0.75156	10.30	23.36	17.18	33.66	27.48	56.00	46.00	-22.34	-18.52
4	3.73438	10.49	25.82	16.35	36.31	26.84	56.00	46.00	-19.69	-19.16
5	5.98828	10.55	26.74	19.37	37.29	29.92	60.00	50.00	-22.71	-20.08
6	**8.95313**	**10.63**	**33.43**	**26.46**	**44.06**	**37.09**	**60.00**	**50.00**	**-15.94**	**-12.91**

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

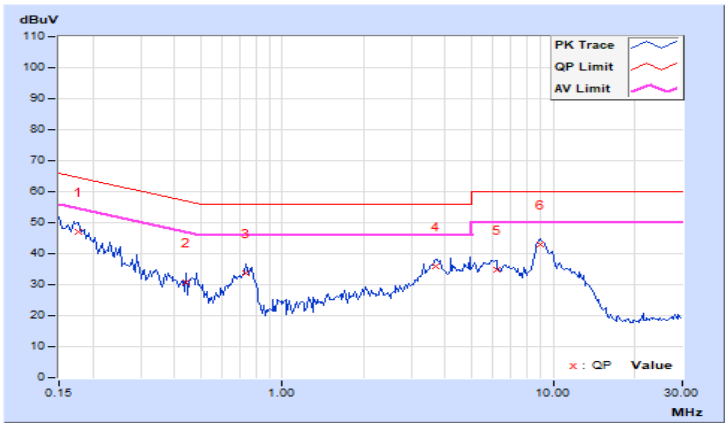


RF Mode	802.11g	**Channel**	CH 6：2437 MHz
Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Jed Wu		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.17734	10.13	36.73	20.93	46.86	31.06	64.61	54.61	-17.75	-23.55
2	0.44297	10.20	20.61	15.90	30.81	26.10	57.01	47.01	-26.20	-20.91
3	0.73203	10.23	23.47	16.76	33.70	26.99	56.00	46.00	-22.30	-19.01
4	3.69531	10.41	25.59	16.79	36.00	27.20	56.00	46.00	-20.00	-18.80
5	6.16797	10.51	24.23	13.82	34.74	24.33	60.00	50.00	-25.26	-25.67
6	8.96094	10.62	32.31	25.46	42.93	36.08	60.00	50.00	-17.07	-13.92

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

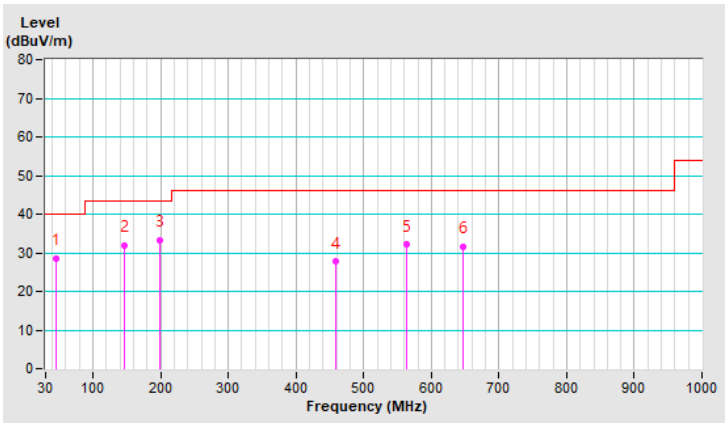
Mode A

RF Mode	802.11g	Channel	CH 6：2437 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 63% RH
Tested By	William Su		

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	44.74	28.4 QP	40.0	-11.6	1.55 H	0	37.1	-8.7
2	146.93	31.9 QP	43.5	-11.6	1.87 H	279	39.9	-8.0
3	199.56	33.2 QP	43.5	-10.3	2.10 H	258	43.8	-10.6
4	457.92	27.7 QP	46.0	-18.3	1.36 H	324	29.7	-2.0
5	563.60	32.0 QP	46.0	-14.0	2.26 H	351	32.2	-0.2
6	646.39	31.7 QP	46.0	-14.3	1.43 H	341	29.5	2.2

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 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.

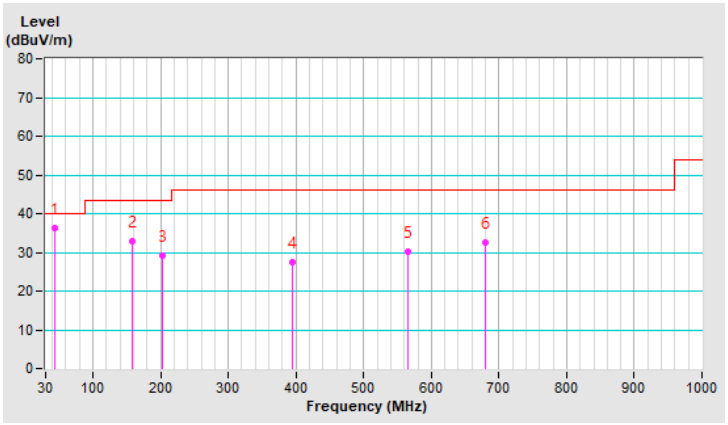


RF Mode	802.11g	**Channel**	CH 6：2437 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 63% RH
Tested By	William Su		

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	**44.45**	**36.4 QP**	**40.0**	**-3.6**	**1.15 V**	**117**	**45.1**	**-8.7**
2	158.04	32.9 QP	43.5	-10.6	1.42 V	360	40.8	-7.9
3	202.71	29.3 QP	43.5	-14.2	1.64 V	308	39.8	-10.5
4	395.45	27.6 QP	46.0	-18.4	1.21 V	229	31.2	-3.6
5	566.36	30.1 QP	46.0	-15.9	1.19 V	162	30.1	0.0
6	680.58	32.6 QP	46.0	-13.4	1.49 V	186	29.9	2.7

Remarks:

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



7.7 Unwanted Emissions above 1 GHz

Mode A

RF Mode	802.11b	**Channel**	CH 1：2412 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	18°C, 64% RH
Tested By	Jed Wu		

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	60.6 PK	74.0	-13.4	1.18 H	249	61.9	-1.3
2	2390.00	52.7 AV	54.0	-1.3	1.18 H	249	54.0	-1.3
3	*2412.00	113.2 PK			1.18 H	249	114.5	-1.3
4	*2412.00	111.5 AV			1.18 H	249	112.8	-1.3
5	4824.00	47.2 PK	74.0	-26.8	1.02 H	300	40.5	6.7
6	4824.00	36.8 AV	54.0	-17.2	1.02 H	300	30.1	6.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	2390.00	58.4 PK	74.0	-15.6	1.39 V	2	59.7	-1.3
2	2390.00	49.8 AV	54.0	-4.2	1.39 V	2	51.1	-1.3
3	*2412.00	108.2 PK			1.39 V	2	109.5	-1.3
4	*2412.00	106.3 AV			1.39 V	2	107.6	-1.3
5	4824.00	46.7 PK	74.0	-27.3	2.94 V	293	40.0	6.7
6	4824.00	36.4 AV	54.0	-17.6	2.94 V	293	29.7	6.7

Remarks:

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

RF Mode	802.11b	Channel	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	18°C, 64% RH
Tested By	Jed Wu		

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	114.7 PK			1.17 H	250	115.9	-1.2
2	*2437.00	112.7 AV			1.17 H	250	113.9	-1.2
3	4874.00	48.6 PK	74.0	-25.4	1.03 H	299	41.9	6.7
4	4874.00	38.2 AV	54.0	-15.8	1.03 H	299	31.5	6.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	109.7 PK			1.40 V	3	110.9	-1.2
2	*2437.00	107.5 AV			1.40 V	3	108.7	-1.2
3	4874.00	48.1 PK	74.0	-25.9	2.93 V	294	41.4	6.7
4	4874.00	37.8 AV	54.0	-16.2	2.93 V	294	31.1	6.7

Remarks:

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

RF Mode	802.11b	Channel	CH 11：2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	18°C, 64% RH
Tested By	Jed Wu		

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	112.1 PK			1.01 H	245	113.2	-1.1
2	*2462.00	110.1 AV			1.01 H	245	111.2	-1.1
3	2483.50	61.1 PK	74.0	-12.9	1.01 H	245	62.1	-1.0
4	2483.50	52.8 AV	54.0	-1.2	1.01 H	245	53.8	-1.0
5	4924.00	46.0 PK	74.0	-28.0	1.19 H	296	39.2	6.8
6	4924.00	35.8 AV	54.0	-18.2	1.19 H	296	29.0	6.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	107.1 PK			1.22 V	6	108.2	-1.1
2	*2462.00	104.6 AV			1.22 V	6	105.7	-1.1
3	2483.50	59.0 PK	74.0	-15.0	1.22 V	6	60.0	-1.0
4	2483.50	50.9 AV	54.0	-3.1	1.22 V	6	51.9	-1.0
5	4924.00	45.5 PK	74.0	-28.5	2.77 V	297	38.7	6.8
6	4924.00	35.4 AV	54.0	-18.6	2.77 V	297	28.6	6.8

Remarks:

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

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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	18°C, 64% RH
Tested By	Jed Wu		

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	63.4 PK	74.0	-10.6	1.18 H	253	64.7	-1.3
2	2390.00	52.6 AV	54.0	-1.4	1.18 H	253	53.9	-1.3
3	*2412.00	113.1 PK			1.18 H	253	114.4	-1.3
4	*2412.00	106.5 AV			1.18 H	253	107.8	-1.3
5	4824.00	47.0 PK	74.0	-27.0	1.01 H	304	40.3	6.7
6	4824.00	36.6 AV	54.0	-17.4	1.01 H	304	29.9	6.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.9 PK	74.0	-16.1	1.40 V	6	59.2	-1.3
2	2390.00	48.0 AV	54.0	-6.0	1.40 V	6	49.3	-1.3
3	*2412.00	108.2 PK			1.40 V	6	109.5	-1.3
4	*2412.00	100.9 AV			1.40 V	6	102.2	-1.3
5	4824.00	46.5 PK	74.0	-27.5	2.95 V	289	39.8	6.7
6	4824.00	36.1 AV	54.0	-17.9	2.95 V	289	29.4	6.7

Remarks:

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

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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	18°C, 64% RH
Tested By	Jed Wu		

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	118.0 PK			1.02 H	228	119.2	-1.2
2	*2437.00	111.1 AV			1.02 H	228	112.3	-1.2
3	4874.00	49.9 PK	74.0	-24.1	1.18 H	279	43.2	6.7
4	4874.00	39.5 AV	54.0	-14.5	1.18 H	279	32.8	6.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	113.2 PK			1.23 V	23	114.4	-1.2
2	*2437.00	106.2 AV			1.23 V	23	107.4	-1.2
3	4874.00	49.4 PK	74.0	-24.6	2.78 V	272	42.7	6.7
4	4874.00	39.0 AV	54.0	-15.0	2.78 V	272	32.3	6.7

Remarks:

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

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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	18°C, 64% RH
Tested By	Jed Wu		

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	112.1 PK			1.00 H	243	113.2	-1.1
2	*2462.00	105.3 AV			1.00 H	243	106.4	-1.1
3	2483.50	64.5 PK	74.0	-9.5	1.00 H	243	65.5	-1.0
4	**2483.50**	**53.0 AV**	**54.0**	**-1.0**	**1.00 H**	**243**	**54.0**	**-1.0**
5	4924.00	46.0 PK	74.0	-28.0	1.20 H	306	39.2	6.8
6	4924.00	35.6 AV	54.0	-18.4	1.20 H	306	28.8	6.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	107.3 PK			1.21 V	8	108.4	-1.1
2	*2462.00	100.4 AV			1.21 V	8	101.5	-1.1
3	2483.50	58.8 PK	74.0	-15.2	1.21 V	8	59.8	-1.0
4	2483.50	47.8 AV	54.0	-6.2	1.21 V	8	48.8	-1.0
5	4924.00	45.5 PK	74.0	-28.5	2.76 V	287	38.7	6.8
6	4924.00	35.1 AV	54.0	-18.9	2.76 V	287	28.3	6.8

Remarks:

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

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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	18°C, 64% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	65.8 PK	74.0	-8.2	1.19 H	228	67.1	-1.3
2	2390.00	52.9 AV	54.0	-1.1	1.19 H	228	54.2	-1.3
3	*2412.00	116.0 PK			1.19 H	228	117.3	-1.3
4	*2412.00	106.6 AV			1.19 H	228	107.9	-1.3
5	4824.00	50.0 PK	74.0	-24.0	1.03 H	279	43.3	6.7
6	4824.00	39.6 AV	54.0	-14.4	1.03 H	279	32.9	6.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	61.6 PK	74.0	-12.4	1.38 V	23	62.9	-1.3
2	2390.00	48.9 AV	54.0	-5.1	1.38 V	23	50.2	-1.3
3	*2412.00	111.3 PK			1.38 V	23	112.6	-1.3
4	*2412.00	101.9 AV			1.38 V	23	103.2	-1.3
5	4824.00	49.5 PK	74.0	-24.5	2.93 V	314	42.8	6.7
6	4824.00	39.1 AV	54.0	-14.9	2.93 V	314	32.4	6.7

Remarks:

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

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 = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	18°C, 64% RH
Tested By	Jed Wu		

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	118.2 PK			1.34 H	228	119.4	-1.2
2	*2437.00	108.7 AV			1.34 H	228	109.9	-1.2
3	4874.00	52.1 PK	74.0	-21.9	1.18 H	279	45.4	6.7
4	4874.00	41.7 AV	54.0	-12.3	1.18 H	279	35.0	6.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*2437.00	113.3 PK			1.55 V	24	114.5	-1.2
2	*2437.00	104.0 AV			1.55 V	24	105.2	-1.2
3	4874.00	51.6 PK	74.0	-22.4	3.10 V	272	44.9	6.7
4	4874.00	41.3 AV	54.0	-12.7	3.10 V	272	34.6	6.7

Remarks:

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

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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	18°C, 64% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	113.1 PK			3.65 H	232	114.2	-1.1
2	*2462.00	103.6 AV			3.65 H	232	104.7	-1.1
3	2483.50	65.9 PK	74.0	-8.1	3.65 H	232	66.9	-1.0
4	2483.50	52.9 AV	54.0	-1.1	3.65 H	232	53.9	-1.0
5	4924.00	47.0 PK	74.0	-27.0	3.49 H	317	40.2	6.8
6	4924.00	36.6 AV	54.0	-17.4	3.49 H	317	29.8	6.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	108.2 PK			3.86 V	19	109.3	-1.1
2	*2462.00	98.9 AV			3.86 V	19	100.0	-1.1
3	2483.50	63.7 PK	74.0	-10.3	3.86 V	19	64.7	-1.0
4	2483.50	50.2 AV	54.0	-3.8	3.86 V	19	51.2	-1.0
5	4924.00	46.5 PK	74.0	-27.5	3.03 V	310	39.7	6.8
6	4924.00	36.1 AV	54.0	-17.9	3.03 V	310	29.3	6.8

Remarks:

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

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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	18°C, 64% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	65.2 PK	74.0	-8.8	1.19 H	227	66.5	-1.3
2	2390.00	52.6 AV	54.0	-1.4	1.19 H	227	53.9	-1.3
3	*2422.00	111.6 PK			1.19 H	227	112.8	-1.2
4	*2422.00	100.7 AV			1.19 H	227	101.9	-1.2
5	4844.00	45.5 PK	74.0	-28.5	1.03 H	278	38.8	6.7
6	4844.00	35.1 AV	54.0	-18.9	1.03 H	278	28.4	6.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	61.3 PK	74.0	-12.7	1.40 V	24	62.6	-1.3
2	2390.00	48.4 AV	54.0	-5.6	1.40 V	24	49.7	-1.3
3	*2422.00	106.8 PK			1.40 V	24	108.0	-1.2
4	*2422.00	97.0 AV			1.40 V	24	98.2	-1.2
5	4844.00	45.0 PK	74.0	-29.0	2.93 V	271	38.3	6.7
6	4844.00	34.7 AV	54.0	-19.3	2.93 V	271	28.0	6.7

Remarks:

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

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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	18°C, 64% RH
Tested By	Jed Wu		

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	112.3 PK			1.18 H	227	113.5	-1.2
2	*2437.00	101.3 AV			1.18 H	227	102.5	-1.2
3	2483.50	65.7 PK	74.0	-8.3	1.18 H	227	66.7	-1.0
4	**2483.50**	**53.0 AV**	**54.0**	**-1.0**	**1.18 H**	**227**	**54.0**	**-1.0**
5	4874.00	46.2 PK	74.0	-27.8	1.01 H	278	39.5	6.7
6	4874.00	35.8 AV	54.0	-18.2	1.01 H	278	29.1	6.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	107.4 PK			1.38 V	25	108.6	-1.2
2	*2437.00	96.8 AV			1.38 V	25	98.0	-1.2
3	2483.50	63.4 PK	74.0	-10.6	1.38 V	25	64.4	-1.0
4	2483.50	51.2 AV	54.0	-2.8	1.38 V	25	52.2	-1.0
5	4874.00	45.7 PK	74.0	-28.3	2.96 V	270	39.0	6.7
6	4874.00	35.3 AV	54.0	-18.7	2.96 V	270	28.6	6.7

Remarks:

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

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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	18°C, 64% RH
Tested By	Jed Wu		

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	111.1 PK			1.02 H	227	112.2	-1.1
2	*2452.00	99.9 AV			1.02 H	227	101.0	-1.1
3	2483.50	65.2 PK	74.0	-8.8	1.02 H	227	66.2	-1.0
4	2483.50	52.7 AV	54.0	-1.3	1.02 H	227	53.7	-1.0
5	4904.00	45.0 PK	74.0	-29.0	1.18 H	279	38.2	6.8
6	4904.00	34.8 AV	54.0	-19.2	1.18 H	279	28.0	6.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2452.00	106.3 PK			1.22 V	25	107.4	-1.1
2	*2452.00	95.7 AV			1.22 V	25	96.8	-1.1
3	2483.50	62.3 PK	74.0	-11.7	1.22 V	25	63.3	-1.0
4	2483.50	50.7 AV	54.0	-3.3	1.22 V	25	51.7	-1.0
5	4904.00	44.5 PK	74.0	-29.5	2.77 V	270	37.7	6.8
6	4904.00	34.4 AV	54.0	-19.6	2.77 V	270	27.6	6.8

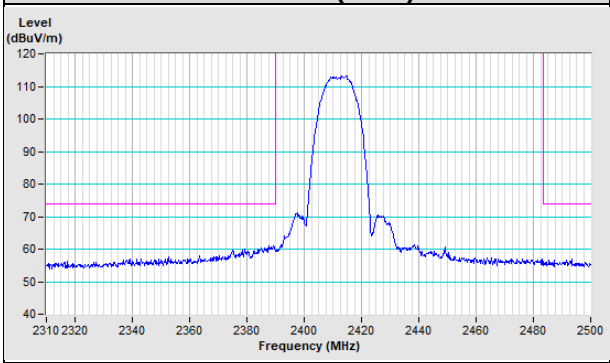
Remarks:

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

Mode A_Plot of Band Edge

802.11b Channel 1

Horizontal (Peak)



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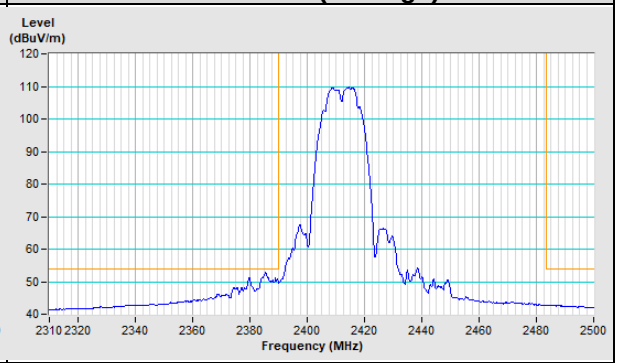
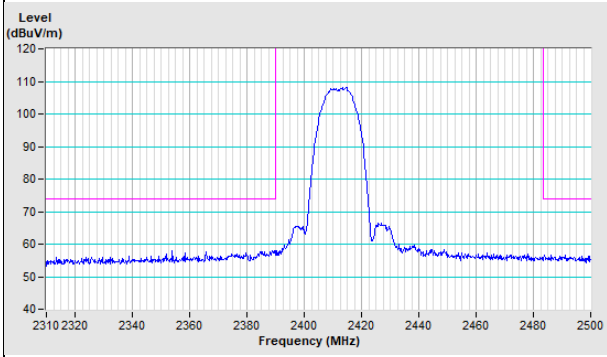
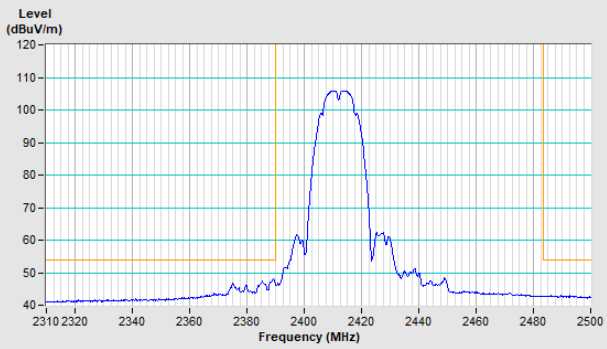


Vertical (Peak)

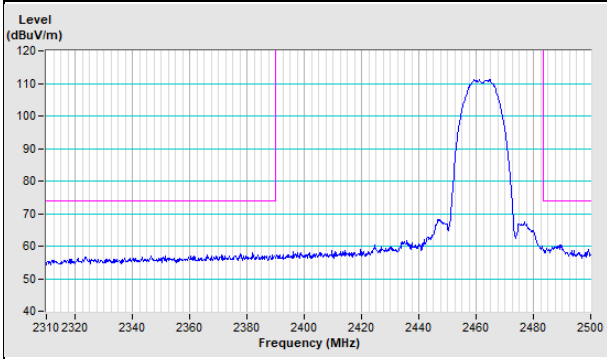


Vertical (Average)



802.11b Channel 11

Horizontal (Peak)



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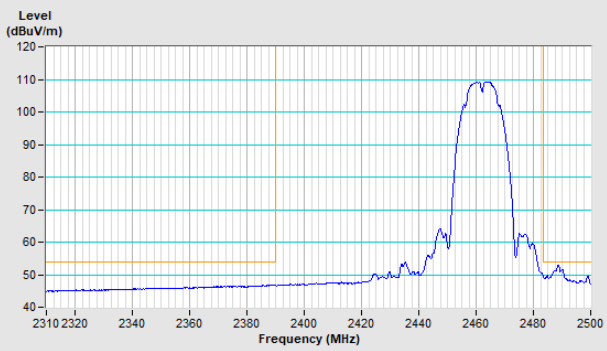

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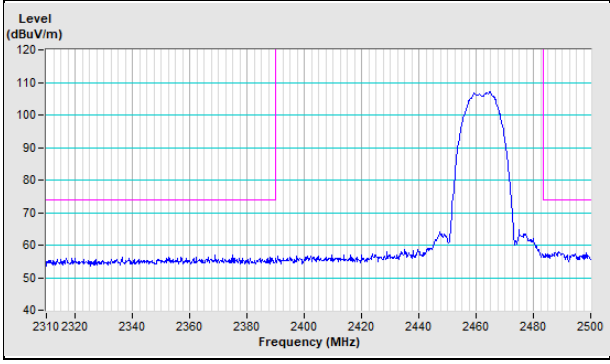
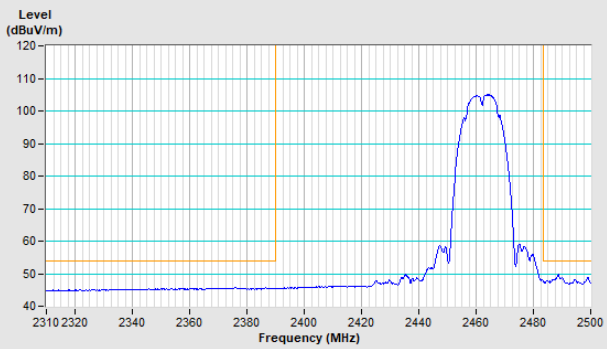
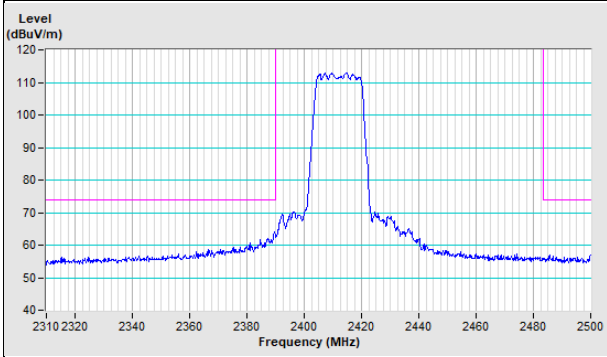


Vertical (Average)



802.11g Channel 1

Horizontal (Peak)



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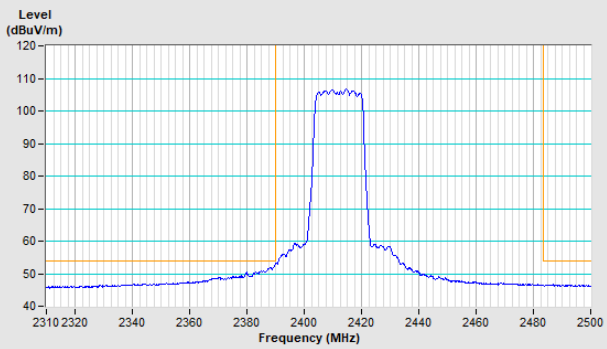
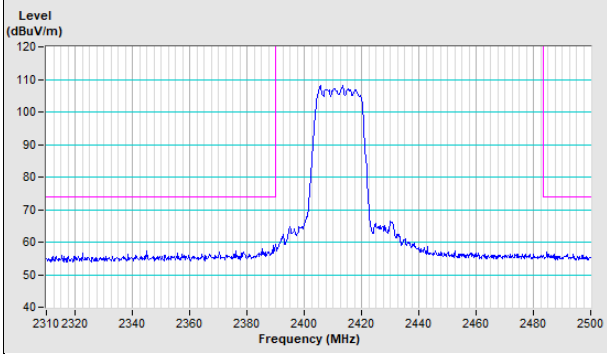
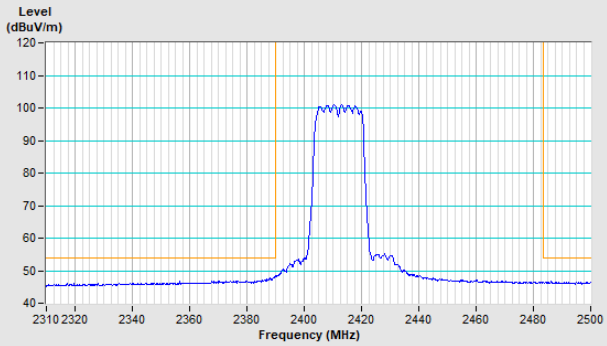


Vertical (Peak)

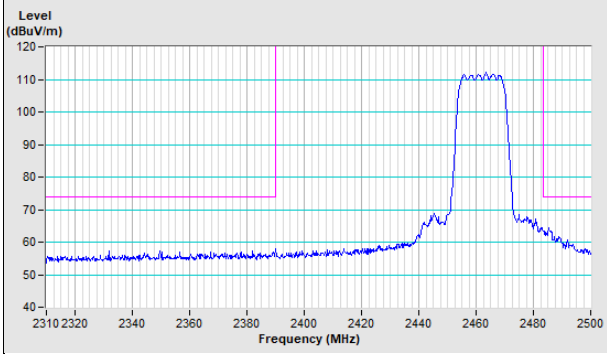


Vertical (Average)

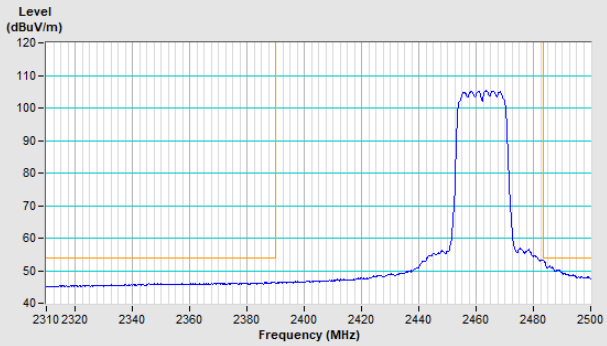


802.11g Channel 11

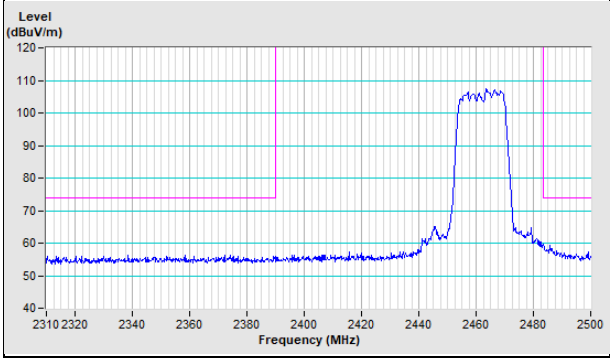
Horizontal (Peak)



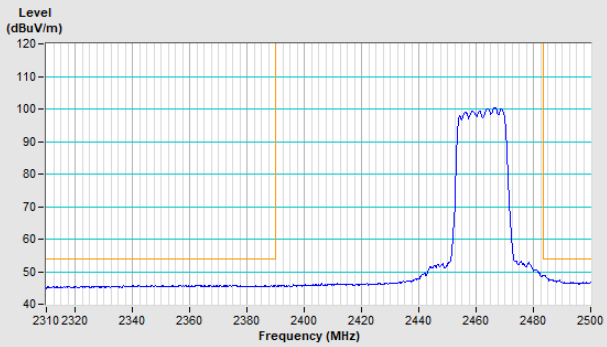
Horizontal (Average)



Vertical (Peak)

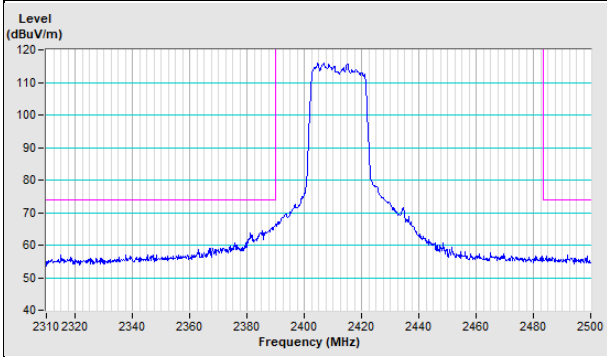


Vertical (Average)



802.11ax (HE20) Channel 1

Horizontal (Peak)



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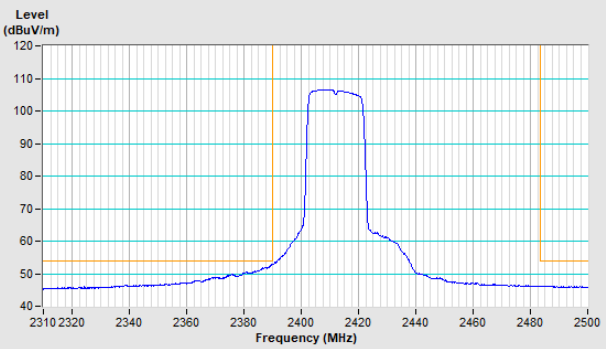
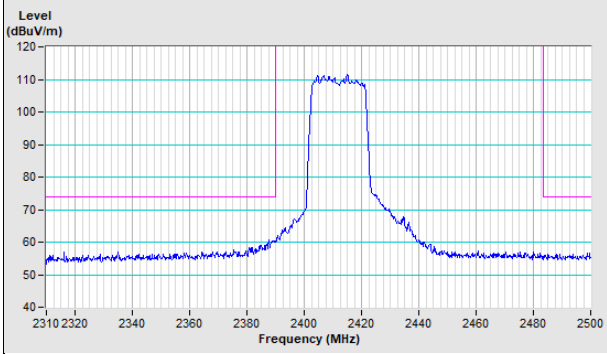
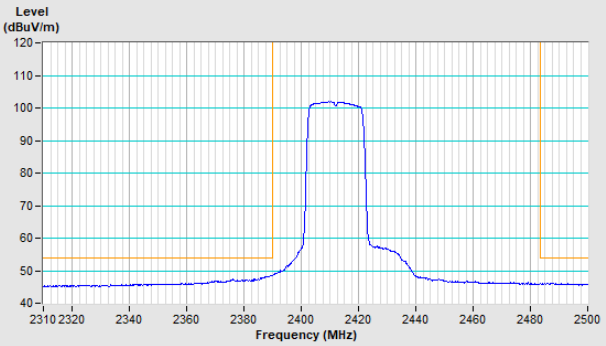


Vertical (Peak)

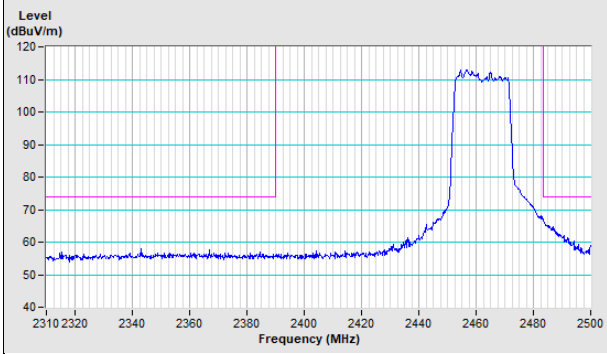


Vertical (Average)



802.11ax (HE20) Channel 11

Horizontal (Peak)



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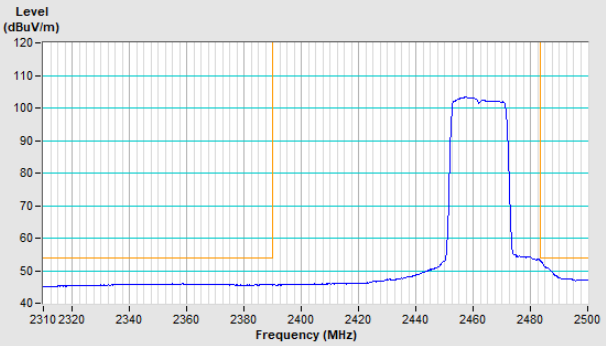
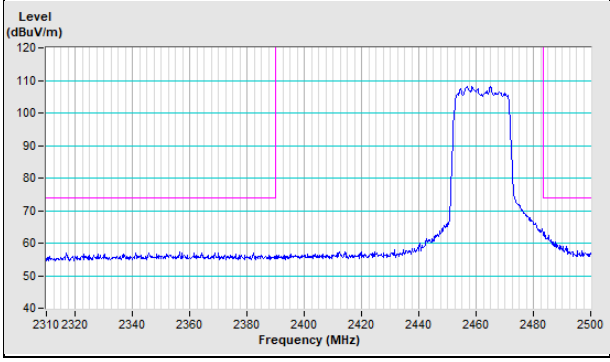
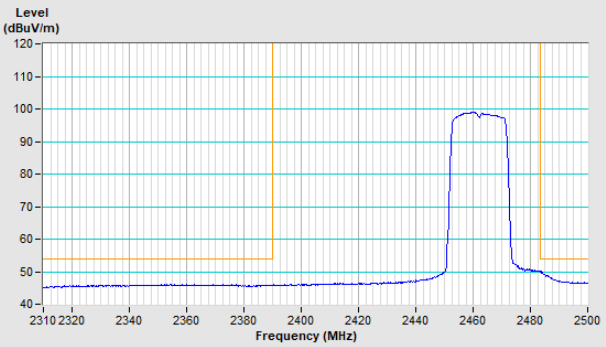


Vertical (Peak)

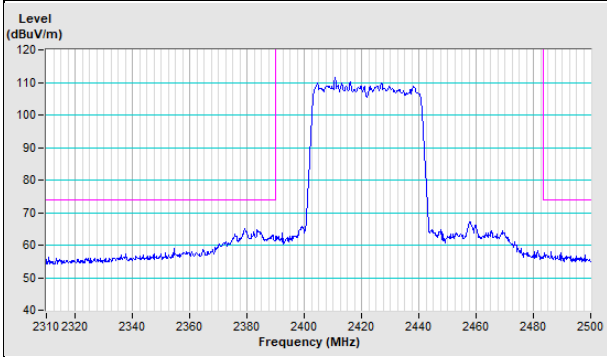


Vertical (Average)

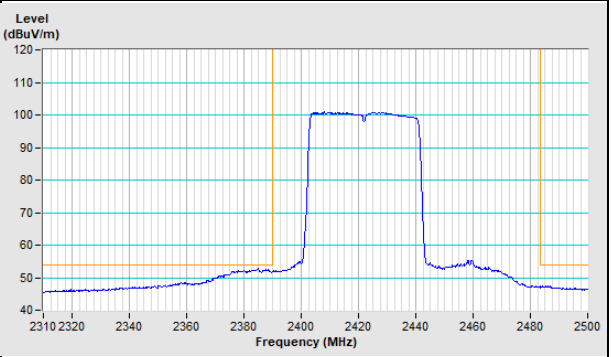


802.11ax (HE40) Channel 3

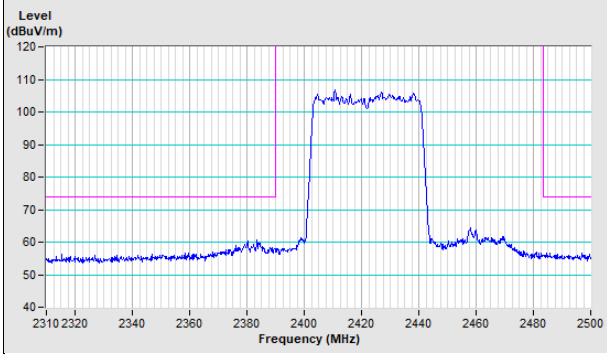
Horizontal (Peak)



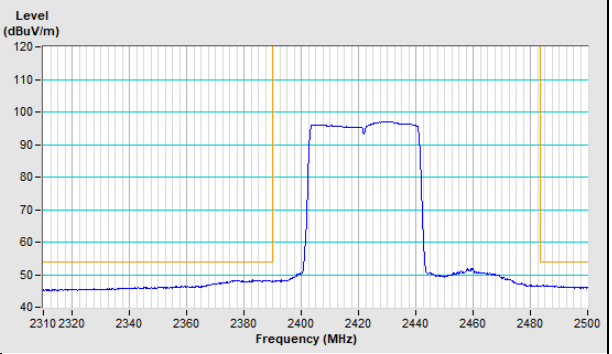
Horizontal (Average)



Vertical (Peak)

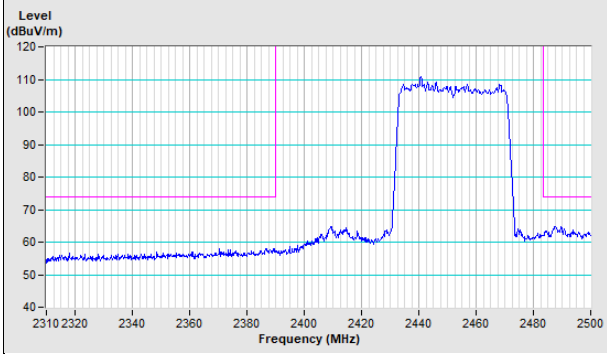


Vertical (Average)

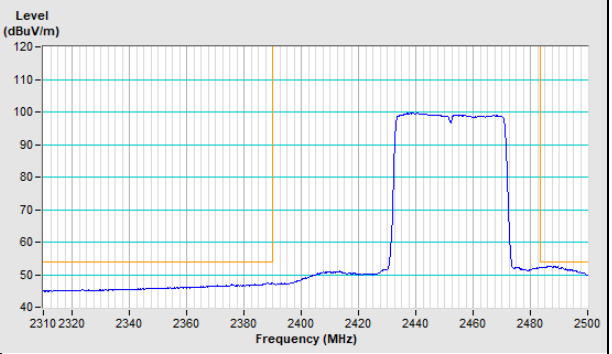


802.11ax (HE40) Channel 9

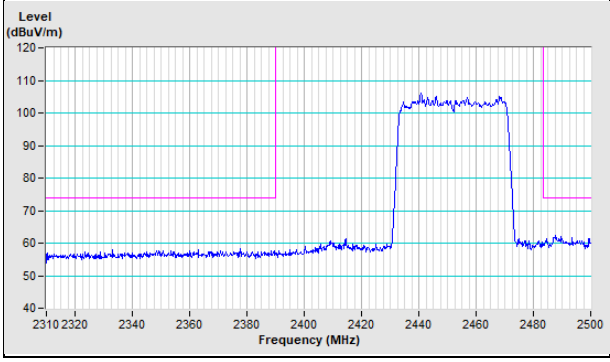
Horizontal (Peak)



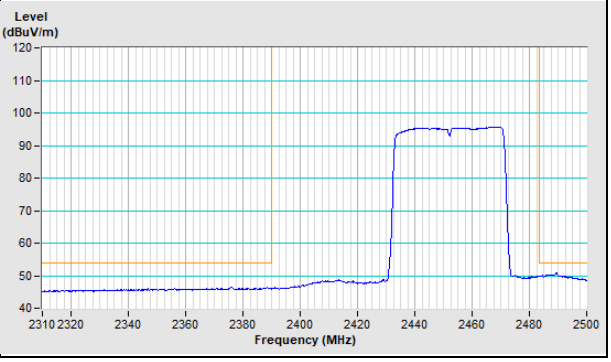
Horizontal (Average)



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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