FCC Test Report

Report No.: RFBCWK-WTW-P21050819

FCC ID: MSQ-RTAX8E00

Test Model: RT-AX1800S

Received Date: May 21, 2021

Test Date: Jul. 17 ~ Aug. 04, 2021

Issued Date: Aug. 30, 2021

Applicant: ASUSTeK COMPUTER INC.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / Designation Number: 788550 / TW0003

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RFBCWK-WTW-P21050819	Original release	Aug. 30, 2021

1 Certificate of Conformity

Product: Wireless-AX1800 Dual Band WiFi 6 Router

Brand: ASUS

Test Model: RT-AX1800S

Sample Status: Engineering sample

Applicant: ASUSTeK COMPUTER INC.

Test Date: Jul. 17 ~ Aug. 04, 2021

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10:2013

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.

Prepared by : Celine Chou , **Date:** Aug. 30, 2021
Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** Aug. 30, 2021
Bruce Chen / Senior Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -8.99dB at 0.43800MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.2dB at 2390.00MHz.
15.247(d)	Antenna Port Emission	Pass	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	Pass	Meet the requirement of limit.
15.247(b)	Conducted power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector are Soldering or IPEX not a standard connector.

Note:

1. For 2.4G band compliance with rule 15.247(d) of the band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.63 dB
	200MHz ~1000MHz	3.64 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless-AX1800 Dual Band WiFi 6 Router
Brand	ASUS
Test Model	RT-AX1800S
Sample Status	Engineering sample
Power Supply Rating	12Vdc from adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDMA
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b:11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 400Mbps 802.11ax: up to 574Mbps
Operating Frequency	2412 ~ 2462MHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20): 11 802.11n (HT40), VHT40, 802.11ax (HE40): 7
Output Power	CDD Mode: 582.157mW Beamforming Mode: 518.454mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	Adapter
Cable Supplied	1m non-shielded LAN cable without core

Note:

1. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Modulation Mode	Beamforming Mode	TX Function
802.11b	Not Support	2TX
802.11g	Not Support	2TX
802.11n (HT20)	Support	2TX
802.11n (HT40)	Support	2TX
VHT20	Support	2TX
VHT40	Support	2TX
802.11ax (HE20)	Support	2TX
802.11ax (HE40)	Support	2TX

* The bandwidth and modulation are similar for HT20/HT40 on 802.11n mode and VHT20/VHT40 on 256QAM and HE20/HE40 on 802.11ax mode. Therefore the investigated worst case is the representative mode in test report. (Final test mode refer section 3.2.1)

* For 802.11n, CDD mode and Beamforming mode are presented in power output test item. For other test items, CDD mode is the worst case for final tests after pretesting.

2. The EUT consumes power from the following Adapter & Battery.

Adapter 1	
Brand	Shenzhen Gongjin Electronics Co.,Ltd.
Model	S18B22-120A150-C4
Input Power	100-240Vac, 50-60Hz, 0.6A
Output Power	12Vdc, 1.5A
Power Line	1.43m cable without core attached on adapter

Adapter 2	
Brand	Shenzhen Gongjin Electronics Co.,Ltd.
Model	S18B22-120A150-CJ
Input Power	100-240Vac, 50-60Hz, 0.6A
Output Power	12Vdc, 1.5A
Power Line	1.47m cable without core attached on adapter

* Adapter 2 was chosen for final test and presented in the test report.

3. The following antennas were provided to the EUT.

No.	Brand	Model	Type	Connector	Gain (dBi)	
					2.4G	5G
1	RF-link	RF21C05435A	Dipole	Soldering	1.81	-
2	RF-link	RF21C05434A	Dipole	Soldering	1.81	-
3	RF-link	U18T01S039N00139	Dipole	I-PEX	-	2.43
4	RF-link	U18T01S039N00140	Dipole	I-PEX	-	2.27

* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

4. 2.4GHz & 5GHz technology can transmit at same time.
5. Spurious emission of the simultaneous operation 2.4GHz & 5GHz has been evaluated and no non-compliance was found.

3.2 Description of Test Modes

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20):

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

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

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where RE≥1G: Radiated Emission above 1GHz & Bandedge Measurement
RE<1G: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission
APCM: Antenna Port Conducted Measurement

Note:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.
2. Radiated emission test (below 1GHz) and power line conducted emission test items chosen the worst maximum power.

Radiated Emission Test (Above 1GHz):

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
-	802.11ax (HE20)	1 to 11	1, 6, 11	OFDMA	BPSK	MCS0
-	802.11ax (HE40)	3 to 9	3, 6, 9	OFDMA	BPSK	MCS0

Radiated Emission Test (Below 1GHz):

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11g	1 to 11	6	OFDM	BPSK	6.0

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11g	1 to 11	6	OFDM	BPSK	6.0

Bandwidth, Power Spectral Density and Conducted Out of Band Emission Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
☒ 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).
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
-	802.11ax (HE20)	1 to 11	1, 6, 11	OFDMA	BPSK	MCS0
-	802.11ax (HE40)	3 to 9	3, 6, 9	OFDMA	BPSK	MCS0

Conducted Output Power Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
☒ 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).
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
-	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
-	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
-	VHT20	1 to 11	1, 6, 11	OFDM	BPSK	MCS0
-	VHT40	3 to 9	3, 6, 9	OFDM	BPSK	MCS0
-	802.11ax (HE20)	1 to 11	1, 6, 11	OFDMA	BPSK	MCS0
-	802.11ax (HE40)	3 to 9	3, 6, 9	OFDMA	BPSK	MCS0

Test Condition:

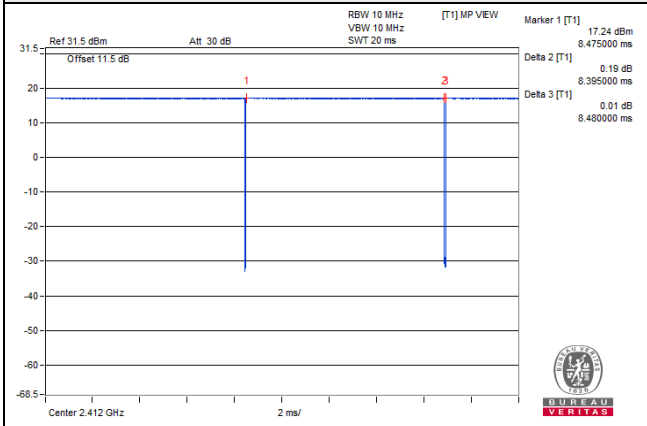
Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 70% RH	120Vac, 60Hz	Han Wu
RE<1G	25 deg. C, 70% RH	120Vac, 60Hz	Han Wu
PLC	25 deg. C, 75% RH	120Vac, 60Hz	Han Wu
APCM	25 deg. C, 76% RH	120Vac, 60Hz	Starltaly Wu, Jisyong Wang

3.3 Duty Cycle of Test Signal

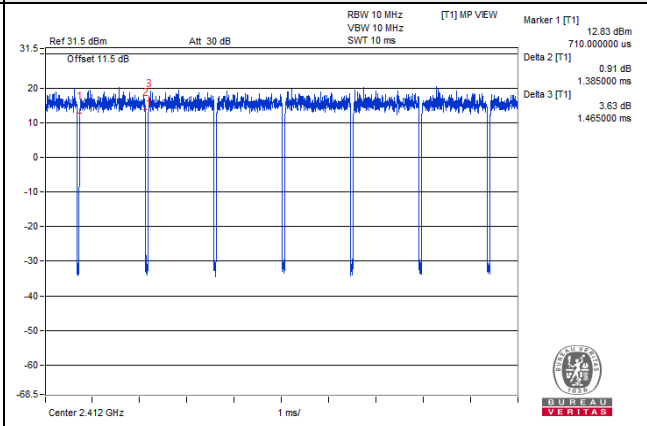
802.11b: Duty cycle of test signal is ≥ 98%, duty factor is not required.
802.11g, 802.11ax (HE20), 802.11ax (HE40): Duty cycle of test signal is < 98%, duty factor is required.

802.11b: Duty cycle = 8.395/8.480 = 0.990
802.11g: Duty cycle = 1.385/1.465 = 0.945, Duty factor = 10 * log (1/0.945) = 0.24
802.11ax (HE20): Duty cycle = 0.532/0.602 = 0.884, Duty factor = 10 * log (1/0.884) = 0.54
802.11ax (HE40): Duty cycle = 0.287/0.355 = 0.808, Duty factor = 10 * log (1/0.808) = 0.92

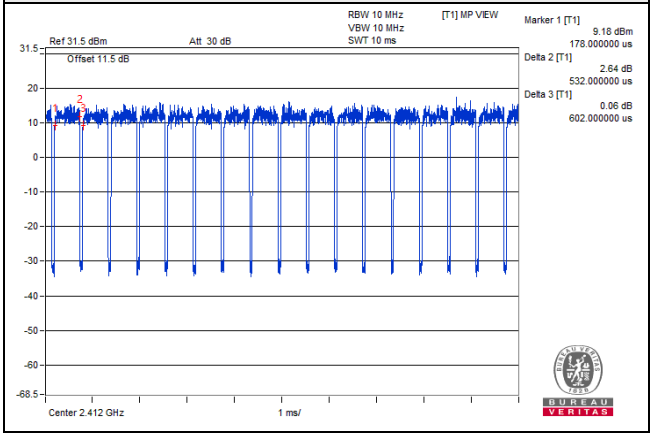
802.11b



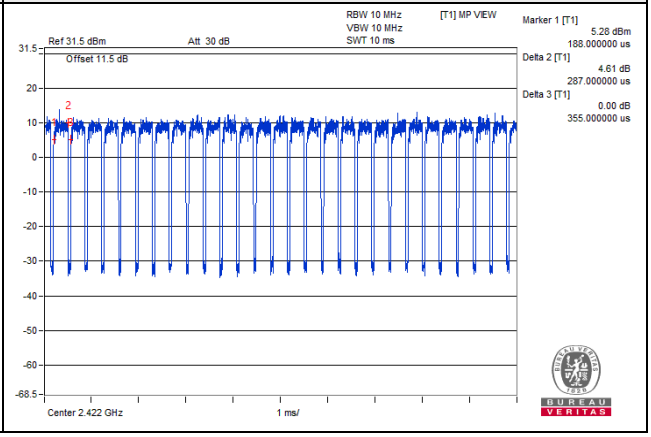
802.11g



802.11ax (HE20)



802.11ax (HE40)



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

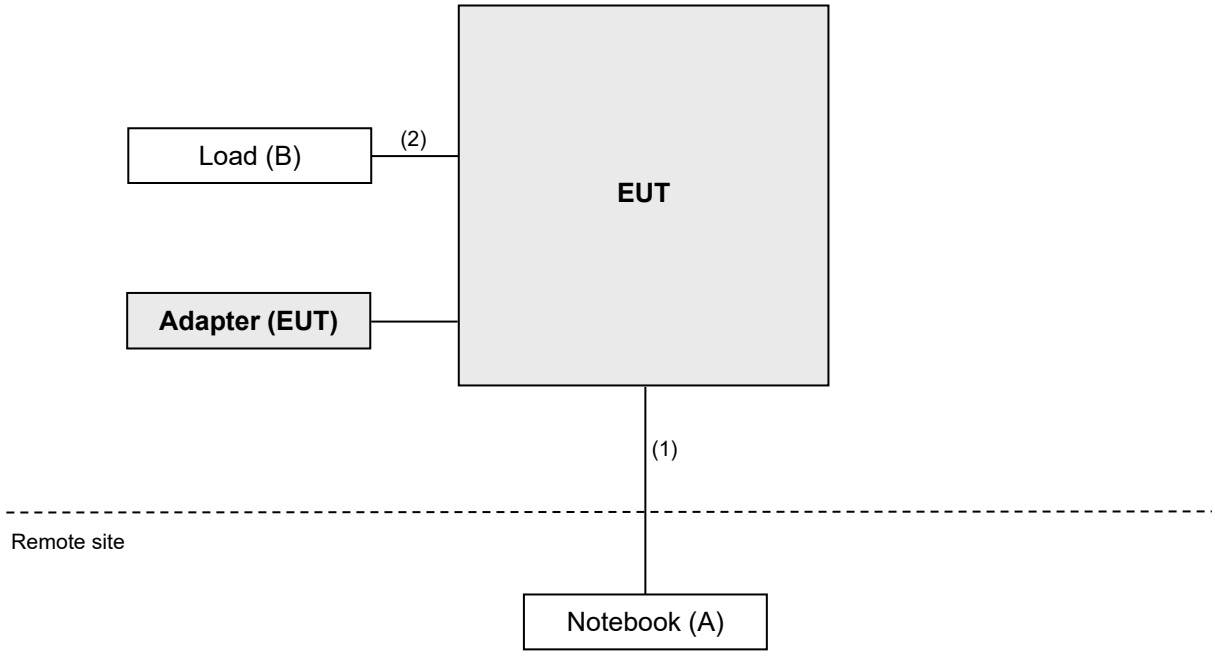
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	1HC2XM1	FCC DoC Approved	-
B.	Load	NA	NA	NA	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items A acted as communication partner to transfer data.

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	LAN	1	7.0	N	0	RJ45, Cat5e
2.	LAN	4	1.5	N	0	RJ45, Cat5e

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

Test standard:
FCC Part 15, Subpart C (15.247)
ANSI C63.10:2013

All test items have been performed and recorded as per the above standards.

References Test Guidance:
KDB 558074 D01 15.247 Meas Guidance v05r02
KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 30dB 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

Note:

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 1000MHz, 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 20dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Dec. 31, 2020	Dec. 30, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 16, 2020	Sep. 15, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Nov. 03, 2020	Nov. 02, 2021
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 22, 2020	Nov. 21, 2021
Loop Antenna EMCI	EM-6879	269	Sep. 17, 2020	Sep. 16, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10631	Jun. 05, 2021	Jun. 04, 2022
Preamplifier KEYSIGHT (Above 1GHz)	83017A	MY53270295	Jun. 05, 2021	Jun. 04, 2022
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH4-01	Aug. 16, 2020	Aug. 15, 2021
RF Coaxial Cable EMCI	EMC102-KM-KM-3000	150929	Aug. 16, 2020	Aug. 15, 2021
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Jun. 05, 2021	Jun. 04, 2022
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Jun. 05, 2021	Jun. 04, 2022
Software BV ADT	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55190004/MY55190007/MY55210005	Jul. 12, 2021	Jul. 11, 2022
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	Jan. 19, 2021	Jan. 18, 2022

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 4.

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) 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.

f. The test-receiver system was set to peak and average detect 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.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.

2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz. (802.11b: RBW = 1MHz, VBW = 10Hz; 802.11g: RBW = 1MHz, VBW = 1kHz; 802.11ax (HE20): RBW = 1MHz, VBW = 3kHz; 802.11ax (HE40): RBW = 1MHz, VBW = 10kHz)

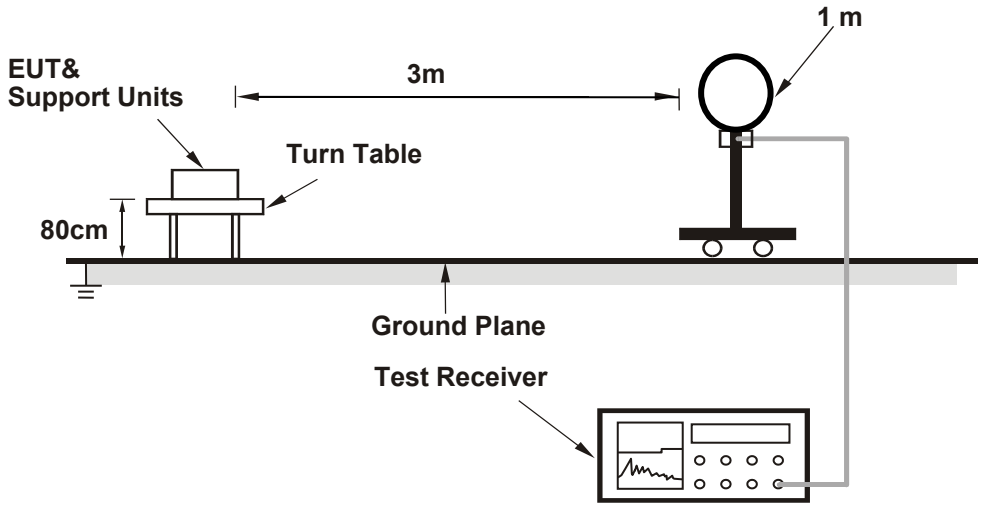
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

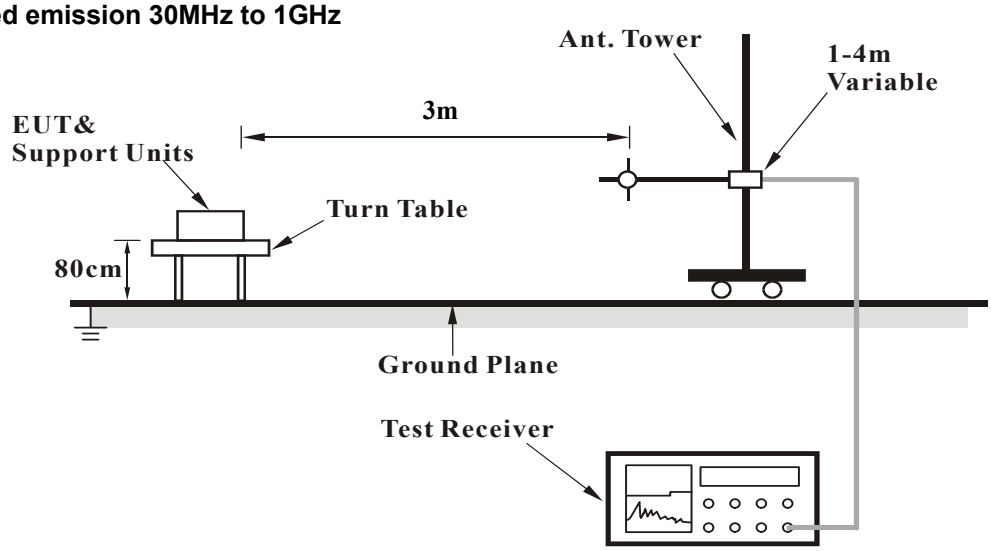
No deviation.

4.1.5 Test Setup

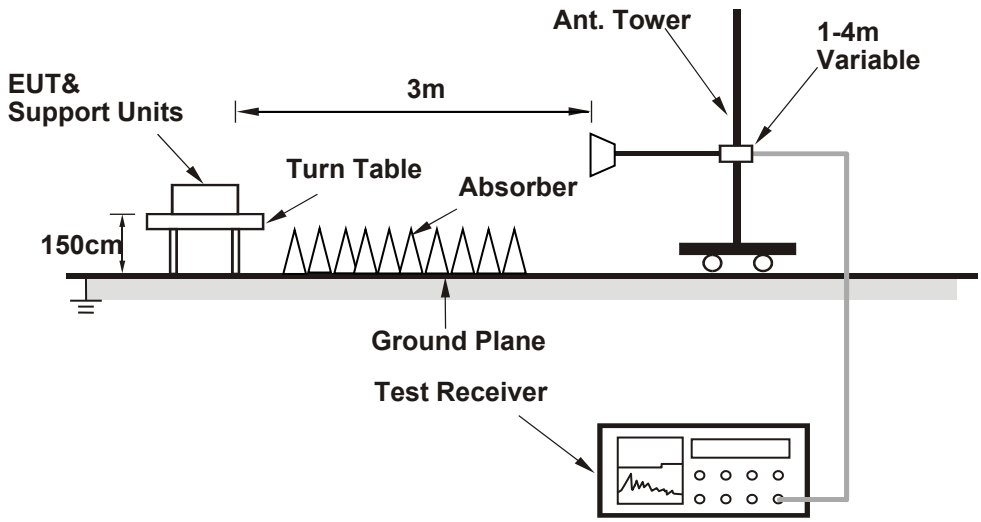
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

a. Placed the EUT on the testing table.
b. Prepared a notebook to act as a communication partner and placed it outside of testing area.
c. The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The communication partner sent data to EUT by command.

4.1.7 Test Results

Above 1GHz Data:

RF Mode	TX 802.11b	Channel	CH 1：2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	60.5 PK	74.0	-13.5	2.01 H	171	26.4	34.1
2	2390.00	48.0 AV	54.0	-6.0	2.01 H	171	13.9	34.1
3	*2412.00	107.4 PK			2.01 H	171	73.3	34.1
4	*2412.00	105.2 AV			2.01 H	171	71.1	34.1
5	4824.00	52.9 PK	74.0	-21.1	2.05 H	210	39.2	13.7
6	4824.00	42.7 AV	54.0	-11.3	2.05 H	210	29.0	13.7
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	62.1 PK	74.0	-11.9	2.01 V	25	28.0	34.1
2	2390.00	52.4 AV	54.0	-1.6	2.01 V	25	18.3	34.1
3	*2412.00	117.1 PK			2.01 V	25	83.0	34.1
4	*2412.00	114.8 AV			2.01 V	25	80.7	34.1
5	4824.00	55.0 PK	74.0	-19.0	2.06 V	251	41.3	13.7
6	4824.00	51.8 AV	54.0	-2.2	2.06 V	251	38.1	13.7

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.

RF Mode	TX 802.11b	Channel	CH 6：2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	106.7 PK			1.96 H	171	72.6	34.1
2	*2437.00	105.1 AV			1.96 H	171	71.0	34.1
3	4824.00	52.7 PK	74.0	-21.3	1.45 H	212	39.0	13.7
4	4824.00	44.8 AV	54.0	-9.2	1.45 H	212	31.1	13.7
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	118.9 PK			1.10 V	182	84.8	34.1
2	*2437.00	116.6 AV			1.10 V	182	82.5	34.1
3	4874.00	56.3 PK	74.0	-17.7	2.17 V	248	42.6	13.7
4	4874.00	51.9 AV	54.0	-2.1	2.17 V	248	38.2	13.7

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.

RF Mode	TX 802.11b	Channel	CH 11：2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	107.3 PK			1.75 H	168	73.2	34.1
2	*2462.00	105.1 AV			1.75 H	168	71.0	34.1
3	2483.50	61.3 PK	74.0	-12.7	1.75 H	168	27.2	34.1
4	2483.50	48.5 AV	54.0	-5.5	1.75 H	168	14.4	34.1
5	4924.00	52.1 PK	74.0	-21.9	1.52 H	208	38.5	13.6
6	4924.00	44.0 AV	54.0	-10.0	1.52 H	208	30.4	13.6
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	118.3 PK			1.55 V	179	84.2	34.1
2	*2462.00	116.0 AV			1.55 V	179	81.9	34.1
3	2483.50	62.9 PK	74.0	-11.1	1.55 V	179	28.8	34.1
4	2483.50	52.6 AV	54.0	-1.4	1.55 V	179	18.5	34.1
5	4924.00	54.2 PK	74.0	-19.8	2.17 V	247	40.6	13.6
6	4924.00	50.8 AV	54.0	-3.2	2.17 V	247	37.2	13.6

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.

RF Mode	TX 802.11g	Channel	CH 1：2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	1.24 H	173	26.5	34.1
2	2390.00	49.5 AV	54.0	-4.5	1.24 H	173	15.4	34.1
3	*2412.00	108.8 PK			1.24 H	173	74.7	34.1
4	*2412.00	98.9 AV			1.24 H	173	64.8	34.1
5	4824.00	50.9 PK	74.0	-23.1	1.64 H	223	37.2	13.7
6	4824.00	39.0 AV	54.0	-15.0	1.64 H	223	25.3	13.7
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	65.9 PK	74.0	-8.1	1.72 V	175	31.8	34.1
2	**2390.00**	**52.8 AV**	**54.0**	**-1.2**	**1.72 V**	**175**	**18.7**	**34.1**
3	*2412.00	117.1 PK			1.72 V	175	83.0	34.1
4	*2412.00	107.9 AV			1.72 V	175	73.8	34.1
5	4824.00	51.6 PK	74.0	-22.4	2.00 V	246	37.9	13.7
6	4824.00	39.3 AV	54.0	-14.7	2.00 V	246	25.6	13.7

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.

RF Mode	TX 802.11g	Channel	CH 6：2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	60.5 PK	74.0	-13.5	1.07 H	177	26.4	34.1
2	2390.00	48.6 AV	54.0	-5.4	1.07 H	177	14.5	34.1
3	*2437.00	114.5 PK			1.07 H	177	80.4	34.1
4	*2437.00	104.2 AV			1.07 H	177	70.1	34.1
5	4874.00	51.9 PK	74.0	-22.1	1.62 H	215	38.2	13.7
6	4874.00	41.3 AV	54.0	-12.7	1.62 H	215	27.6	13.7
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	66.1 PK	74.0	-7.9	1.56 V	171	32.0	34.1
2	2390.00	52.4 AV	54.0	-1.6	1.56 V	171	18.3	34.1
3	*2437.00	124.1 PK			1.56 V	171	90.0	34.1
4	*2437.00	114.3 AV			1.56 V	171	80.2	34.1
5	4824.00	52.6 PK	74.0	-21.4	2.04 V	265	38.9	13.7
6	4824.00	40.9 AV	54.0	-13.1	2.04 V	265	27.2	13.7

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.

RF Mode	TX 802.11g	Channel	CH 11：2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	106.0 PK			1.10 H	181	71.9	34.1
2	*2462.00	96.2 AV			1.10 H	181	62.1	34.1
3	2483.50	61.2 PK	74.0	-12.8	1.10 H	181	27.1	34.1
4	2483.50	49.0 AV	54.0	-5.0	1.10 H	181	14.9	34.1
5	4924.00	50.9 PK	74.0	-23.1	1.72 H	238	37.3	13.6
6	4924.00	39.4 AV	54.0	-14.6	1.72 H	238	25.8	13.6
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	115.1 PK			1.75 V	177	81.0	34.1
2	*2462.00	106.5 AV			1.75 V	177	72.4	34.1
3	2483.50	67.6 PK	74.0	-6.4	1.75 V	177	33.5	34.1
4	2483.50	52.7 AV	54.0	-1.3	1.75 V	177	18.6	34.1
5	4924.00	51.4 PK	74.0	-22.6	1.98 V	232	37.8	13.6
6	4924.00	40.0 AV	54.0	-14.0	1.98 V	232	26.4	13.6

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.

RF Mode	TX 802.11ax (HE20)	Channel	CH 1：2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	60.4 PK	74.0	-13.6	1.11 H	184	26.3	34.1
2	2390.00	48.2 AV	54.0	-5.8	1.11 H	184	14.1	34.1
3	*2412.00	105.8 PK			1.11 H	184	71.7	34.1
4	*2412.00	94.3 AV			1.11 H	184	60.2	34.1
5	4824.00	50.5 PK	74.0	-23.5	1.38 H	215	36.8	13.7
6	4824.00	39.8 AV	54.0	-14.2	1.38 H	215	26.1	13.7
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	64.4 PK	74.0	-9.6	1.79 V	180	30.3	34.1
2	2390.00	52.7 AV	54.0	-1.3	1.79 V	180	18.6	34.1
3	*2412.00	116.5 PK			1.79 V	180	82.4	34.1
4	*2412.00	103.8 AV			1.79 V	180	69.7	34.1
5	4824.00	51.5 PK	74.0	-22.5	2.00 V	267	37.8	13.7
6	4824.00	40.2 AV	54.0	-13.8	2.00 V	267	26.5	13.7

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.

RF Mode	TX 802.11ax (HE20)	Channel	CH 6：2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	60.8 PK	74.0	-13.2	1.06 H	182	26.7	34.1
2	2390.00	48.6 AV	54.0	-5.4	1.06 H	182	14.5	34.1
3	*2437.00	114.4 PK			1.06 H	182	80.3	34.1
4	*2437.00	103.2 AV			1.06 H	182	69.1	34.1
5	4874.00	51.2 PK	74.0	-22.8	1.57 H	202	37.5	13.7
6	4874.00	39.7 AV	54.0	-14.3	1.57 H	202	26.0	13.7
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	67.9 PK	74.0	-6.1	1.93 V	185	33.8	34.1
2	2390.00	52.5 AV	54.0	-1.5	1.93 V	185	18.4	34.1
3	*2437.00	124.4 PK			1.93 V	185	90.3	34.1
4	*2437.00	112.2 AV			1.93 V	185	78.1	34.1
5	4874.00	52.2 PK	74.0	-21.8	2.17 V	244	38.5	13.7
6	4874.00	40.6 AV	54.0	-13.4	2.17 V	244	26.9	13.7

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.

RF Mode	TX 802.11ax (HE20)	Channel	CH 11：2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	106.2 PK			1.11 H	178	72.1	34.1
2	*2462.00	93.9 AV			1.11 H	178	59.8	34.1
3	2483.50	61.6 PK	74.0	-12.4	1.11 H	178	27.5	34.1
4	2483.50	48.8 AV	54.0	-5.2	1.11 H	178	14.7	34.1
5	4924.00	51.9 PK	74.0	-22.1	1.62 H	243	38.3	13.6
6	4924.00	40.1 AV	54.0	-13.9	1.62 H	243	26.5	13.6
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	114.7 PK			1.77 V	178	80.6	34.1
2	*2462.00	103.3 AV			1.77 V	178	69.2	34.1
3	2483.50	66.4 PK	74.0	-7.6	1.77 V	178	32.3	34.1
4	2483.50	52.4 AV	54.0	-1.6	1.77 V	178	18.3	34.1
5	4924.00	52.3 PK	74.0	-21.7	2.43 V	185	38.7	13.6
6	4924.00	39.9 AV	54.0	-14.1	2.43 V	185	26.3	13.6

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.

RF Mode	TX 802.11ax (HE40)	Channel	CH 3：2422 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	1.09 H	180	26.1	34.1
2	2390.00	49.0 AV	54.0	-5.0	1.09 H	180	14.9	34.1
3	*2422.00	101.6 PK			1.09 H	180	67.6	34.0
4	*2422.00	89.5 AV			1.09 H	180	55.5	34.0
5	4844.00	51.2 PK	74.0	-22.8	1.52 H	238	37.5	13.7
6	4844.00	39.9 AV	54.0	-14.1	1.52 H	238	26.2	13.7
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	64.6 PK	74.0	-9.4	1.72 V	176	30.5	34.1
2	**2390.00**	**52.8 AV**	**54.0**	**-1.2**	**1.72 V**	**176**	**18.7**	**34.1**
3	*2422.00	112.5 PK			1.72 V	176	78.5	34.0
4	*2422.00	99.1 AV			1.72 V	176	65.1	34.0
5	4844.00	51.4 PK	74.0	-22.6	2.15 V	224	37.7	13.7
6	4844.00	40.0 AV	54.0	-14.0	2.15 V	224	26.3	13.7

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.

RF Mode	TX 802.11ax (HE40)	Channel	CH 6：2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	1.25 H	178	26.5	34.1
2	2390.00	48.7 AV	54.0	-5.3	1.25 H	178	14.6	34.1
3	*2437.00	106.2 PK			1.25 H	178	72.1	34.1
4	*2437.00	94.5 AV			1.25 H	178	60.4	34.1
5	4874.00	50.9 PK	74.0	-23.1	1.50 H	227	37.2	13.7
6	4874.00	39.6 AV	54.0	-14.4	1.50 H	227	25.9	13.7
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	62.9 PK	74.0	-11.1	1.63 V	177	28.8	34.1
2	2390.00	52.5 AV	54.0	-1.5	1.63 V	177	18.4	34.1
3	*2437.00	115.3 PK			1.63 V	177	81.2	34.1
4	*2437.00	103.2 AV			1.63 V	177	69.1	34.1
5	4874.00	51.3 PK	74.0	-22.7	1.97 V	241	37.6	13.7
6	4874.00	40.5 AV	54.0	-13.5	1.97 V	241	26.8	13.7

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.

RF Mode	TX 802.11ax (HE40)	Channel	CH 9：2452 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	101.5 PK			1.22 H	177	67.4	34.1
2	*2452.00	89.5 AV			1.22 H	177	55.4	34.1
3	2483.50	61.4 PK	74.0	-12.6	1.22 H	177	27.3	34.1
4	2483.50	48.8 AV	54.0	-5.2	1.22 H	177	14.7	34.1
5	4904.00	51.1 PK	74.0	-22.9	1.52 H	213	37.4	13.7
6	4904.00	39.6 AV	54.0	-14.4	1.52 H	213	25.9	13.7
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	*2452.00	110.2 PK			1.76 V	183	76.1	34.1
2	*2452.00	98.7 AV			1.76 V	183	64.6	34.1
3	2483.50	64.3 PK	74.0	-9.7	1.76 V	183	30.2	34.1
4	2483.50	52.5 AV	54.0	-1.5	1.76 V	183	18.4	34.1
5	4904.00	50.5 PK	74.0	-23.5	2.05 V	249	36.8	13.7
6	4904.00	39.6 AV	54.0	-14.4	2.05 V	249	25.9	13.7

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.

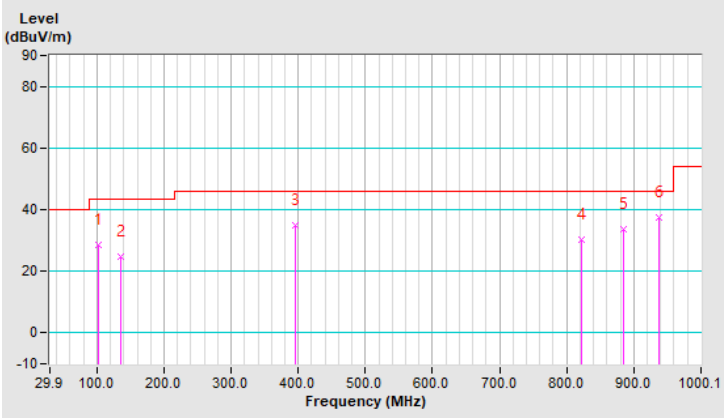
Below 1GHz worst-case data:

RF Mode	TX 802.11g	Channel	CH 6：2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	101.69	28.7 QP	43.5	-14.8	1.50 H	242	41.8	-13.1
2	135.65	24.9 QP	43.5	-18.6	1.50 H	351	34.4	-9.5
3	396.64	34.8 QP	46.0	-11.2	1.00 H	327	40.2	-5.4
4	821.58	30.4 QP	46.0	-15.6	1.00 H	39	26.0	4.4
5	885.62	33.7 QP	46.0	-12.3	2.00 H	252	28.4	5.3
6	938.01	37.3 QP	46.0	-8.7	1.50 H	178	30.6	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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

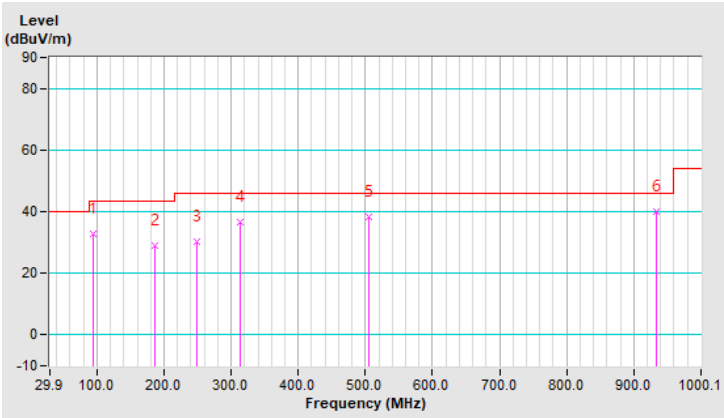


RF Mode	TX 802.11g	Channel	CH 6：2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	93.93	32.8 QP	43.5	-10.7	1.50 V	121	46.9	-14.1
2	187.07	28.8 QP	43.5	-14.7	1.50 V	35	39.8	-11.0
3	249.17	30.1 QP	46.0	-15.9	2.00 V	197	39.4	-9.3
4	313.20	36.4 QP	46.0	-9.6	1.00 V	284	43.4	-7.0
5	504.33	38.5 QP	46.0	-7.5	1.00 V	263	41.8	-3.3
6	934.13	39.9 QP	46.0	-6.1	1.50 V	198	33.2	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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 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 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 04, 2020	Dec. 03, 2021
RF signal cable Woken	5D-FB	Cable-cond1-01	Jan. 16, 2021	Jan. 15, 2022
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 25, 2021	Feb. 24, 2022
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 28, 2020	Aug. 27, 2021
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 1 (Conduction 1).
3. The VCCI Site Registration No. is C-12040.

4.2.3 Test Procedures

a. The EUT was 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/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

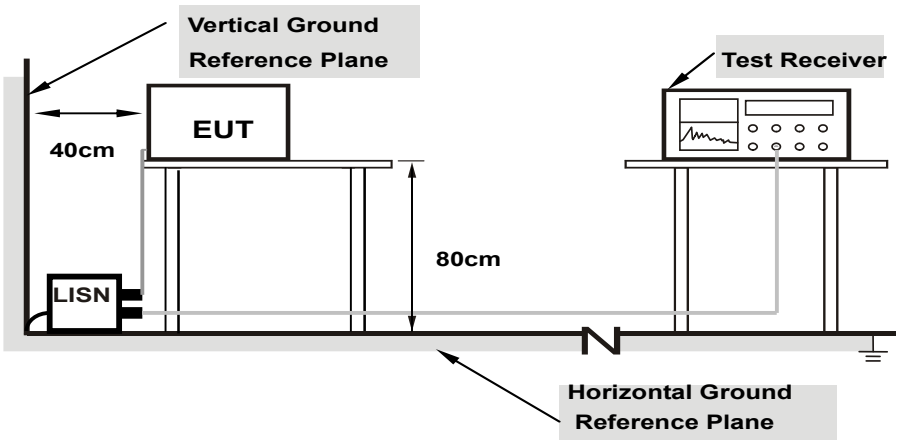
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 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).

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Worst-case data:

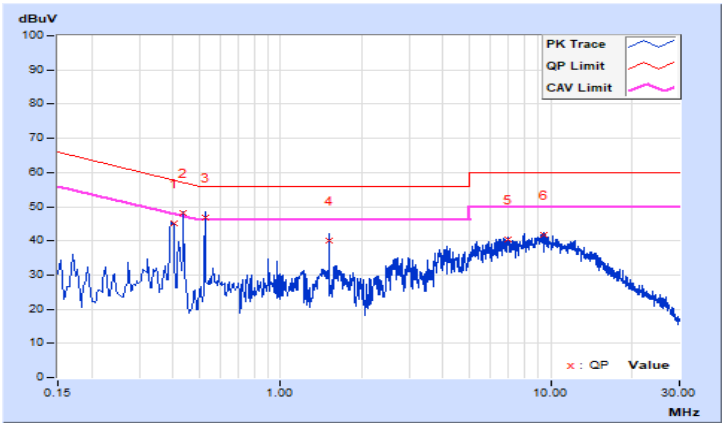
802.11g

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.40179	9.83	35.14	14.63	44.97	24.46	57.82	47.82	-12.85	-23.36
2	**0.43800**	**9.84**	**38.27**	**11.04**	**48.11**	**20.88**	**57.10**	**47.10**	**-8.99**	**-26.22**
3	0.52600	9.85	36.94	15.66	46.79	25.51	56.00	46.00	-9.21	-20.49
4	1.51400	9.93	30.29	13.36	40.22	23.29	56.00	46.00	-15.78	-22.71
5	6.99000	10.02	30.45	20.29	40.47	30.31	60.00	50.00	-19.53	-19.69
6	9.40200	10.05	31.58	21.27	41.63	31.32	60.00	50.00	-18.37	-18.68

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.

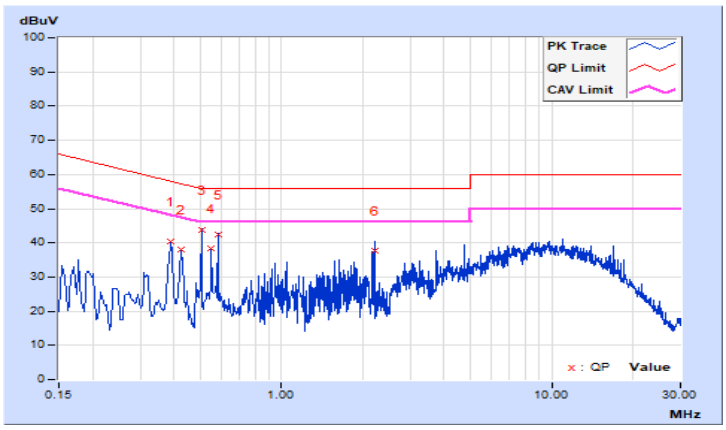


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.39000	9.90	30.45	26.40	40.35	36.30	58.06	48.06	-17.71	-11.76
2	0.42600	9.90	28.07	22.32	37.97	32.22	57.33	47.33	-19.36	-15.11
3	0.50600	9.91	33.79	4.69	43.70	14.60	56.00	46.00	-12.30	-31.40
4	0.55000	9.92	28.54	8.61	38.46	18.53	56.00	46.00	-17.54	-27.47
5	0.58200	9.92	32.51	9.68	42.43	19.60	56.00	46.00	-13.57	-26.40
6	2.21400	10.00	27.59	7.20	37.59	17.20	56.00	46.00	-18.41	-28.80

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.

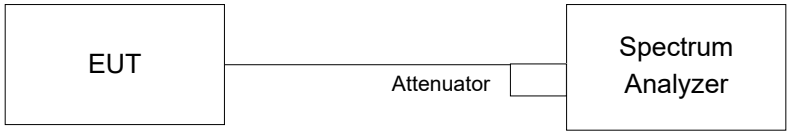


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

a. Set resolution bandwidth (RBW) = 100kHz.

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.

4.3.5 Deviation fromTest Standard

No deviation.

4.3.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	8.08	8.08	0.50	Pass
6	2437	8.07	8.09	0.50	Pass
11	2462	8.08	8.08	0.50	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.31	15.17	0.50	Pass
6	2437	15.18	15.15	0.50	Pass
11	2462	15.32	15.17	0.50	Pass

802.11ax (HE20)

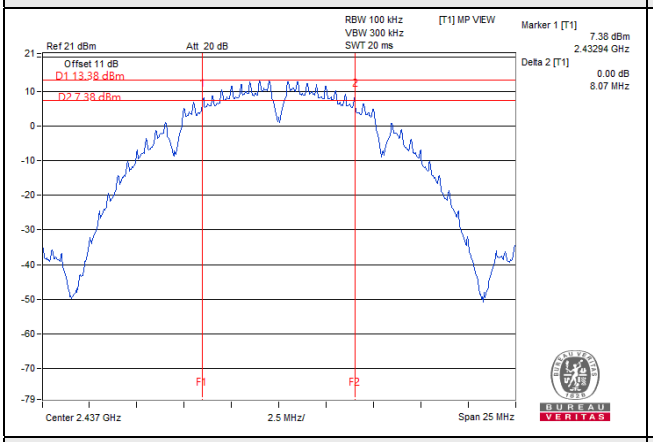
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	18.75	18.69	0.50	Pass
6	2437	18.78	18.54	0.50	Pass
11	2462	18.74	18.87	0.50	Pass

802.11ax (HE40)

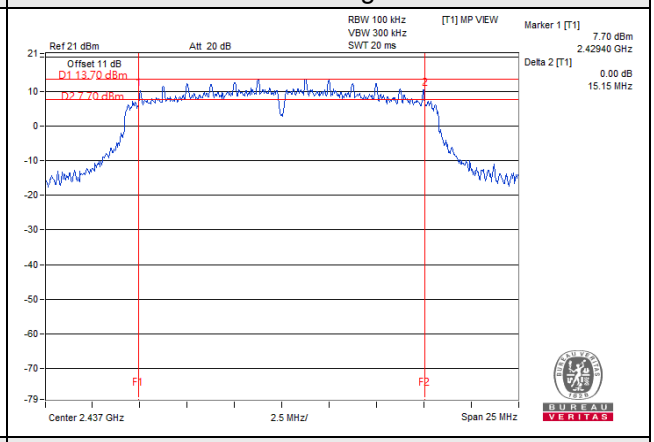
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	36.97	37.70	0.50	Pass
6	2437	37.85	37.30	0.50	Pass
9	2452	37.62	37.39	0.50	Pass

Spectrum Plot of Worst Value

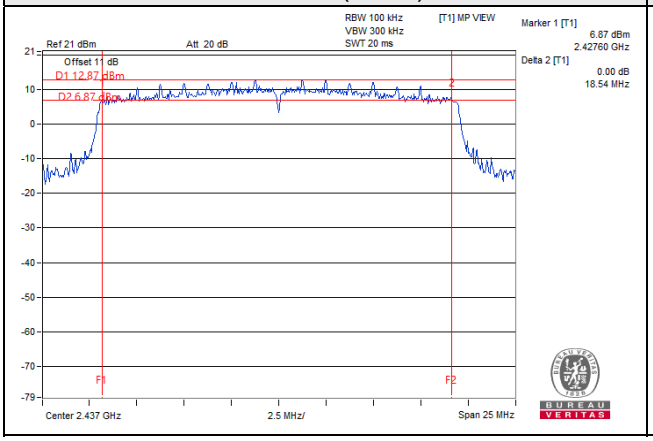
802.11b



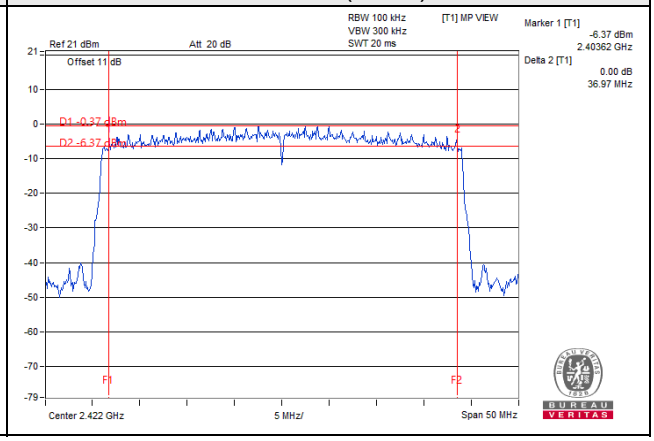
802.11g



802.11ax (HE20)



802.11ax (HE40)



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

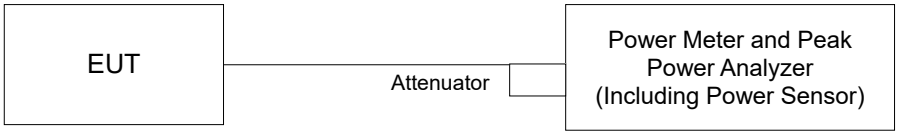
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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.

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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.

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as item 4.3.6.

4.4.7 Test Results

CDD Mode

802.11b

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.68	21.46	287.190	24.58	30.00	Pass
6	2437	22.05	21.74	309.604	24.91	30.00	Pass
11	2462	21.53	21.67	289.126	24.61	30.00	Pass

802.11g

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	18.41	18.37	138.049	21.40	30.00	Pass
6	2437	24.61	24.67	**582.157**	27.65	30.00	Pass
11	2462	14.35	14.53	55.606	17.45	30.00	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	15.49	15.49	70.799	18.50	30.00	Pass
6	2437	23.96	23.72	484.391	26.85	30.00	Pass
11	2462	14.62	14.78	59.034	17.71	30.00	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	13.54	13.39	44.422	16.48	30.00	Pass
6	2437	17.33	17.32	108.026	20.34	30.00	Pass
9	2452	12.48	12.43	35.200	15.47	30.00	Pass

VHT20

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	15.65	15.67	73.626	18.67	30.00	Pass
6	2437	24.14	23.89	504.324	27.03	30.00	Pass
11	2462	14.78	14.94	61.250	17.87	30.00	Pass

VHT40

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	13.71	13.54	46.091	16.64	30.00	Pass
6	2437	17.48	17.49	112.081	20.50	30.00	Pass
9	2452	12.63	12.57	36.395	15.61	30.00	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	15.78	15.78	75.689	18.79	30.00	Pass
6	2437	24.26	24.01	518.454	27.15	30.00	Pass
11	2462	14.91	15.06	63.037	18.00	30.00	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	13.84	13.68	47.545	16.77	30.00	Pass
6	2437	17.62	17.62	115.619	20.63	30.00	Pass
9	2452	12.78	12.72	37.674	15.76	30.00	Pass

Beamforming Mode

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	15.49	15.49	70.799	18.50	30.00	Pass
6	2437	23.96	23.72	484.391	26.85	30.00	Pass
11	2462	14.62	14.78	59.034	17.71	30.00	Pass

Note: Directional gain = 1.81dBi + 10log(2) = 4.82dBi < 6dBi, so the power limit not need to reduce.

802.11n (HT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	13.54	13.39	44.422	16.48	30.00	Pass
6	2437	17.33	17.32	108.026	20.34	30.00	Pass
9	2452	12.48	12.43	35.200	15.47	30.00	Pass

Note: Directional gain = 1.81dBi + 10log(2) = 4.82dBi < 6dBi, so the power limit not need to reduce.

VHT20

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	15.65	15.67	73.626	18.67	30.00	Pass
6	2437	24.14	23.89	504.324	27.03	30.00	Pass
11	2462	14.78	14.94	61.250	17.87	30.00	Pass

Note: Directional gain = 1.81dBi + 10log(2) = 4.82dBi < 6dBi, so the power limit not need to reduce.

VHT40

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	13.71	13.54	46.091	16.64	30.00	Pass
6	2437	17.48	17.49	112.081	20.50	30.00	Pass
9	2452	12.63	12.57	36.395	15.61	30.00	Pass

Note: Directional gain = 1.81dBi + 10log(2) = 4.82dBi < 6dBi, so the power limit not need to reduce.

802.11ax (HE20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	15.78	15.78	75.689	18.79	30.00	Pass
6	2437	24.26	24.01	**518.454**	27.15	30.00	Pass
11	2462	14.91	15.06	63.037	18.00	30.00	Pass

Note: Directional gain = 1.81dBi + 10log(2) = 4.82dBi < 6dBi, so the power limit not need to reduce.

802.11ax (HE40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	13.84	13.68	47.545	16.77	30.00	Pass
6	2437	17.62	17.62	115.619	20.63	30.00	Pass
9	2452	12.78	12.72	37.674	15.76	30.00	Pass

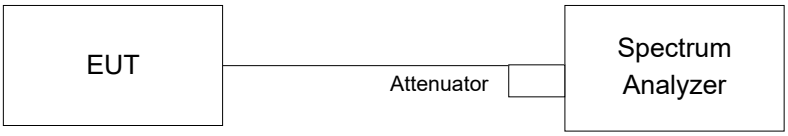
Note: Directional gain = 1.81dBi + 10log(2) = 4.82dBi < 6dBi, so the power limit not need to reduce.

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm in any 3 kHz.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For Average Power (Duty cycle ≥ 98%)

a. Set instrument center frequency to DTS channel center frequency.

b. Set span to at least 1.5 times the OBW.

c. Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.

d. Set VBW ≥3 x RBW.

e. Detector = power averaging (RMS) or sample detector (when RMS not available).

f. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.

g. Sweep time = auto couple.

h. Employ trace averaging (RMS) mode over a minimum of 100 traces.

i. Use the peak marker function to determine the maximum amplitude level.

For Average Power (Duty cycle < 98%)

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 ≤ RBW ≤ 100 kHz.

e. Set VBW ≥3 x RBW.

f. Detector = power averaging (RMS) or sample detector (when RMS not available).

g. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.

h. Sweep time = auto couple.

i. Do not use sweep triggering. Allow sweep to “free run”.

j. Employ trace averaging (RMS) mode over a minimum of 100 traces.

k. Use the peak marker function to determine the maximum amplitude level.

l. 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.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as item 4.3.6

4.5.7 Test Results

802.11b

TX chain	Channel	Frequency (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-12.60	3.01	-9.59	8.00	Pass
	6	2437	-9.92	3.01	-6.91	8.00	Pass
	11	2462	-10.63	3.01	-7.62	8.00	Pass
1	1	2412	-10.34	3.01	-7.33	8.00	Pass
	6	2437	-10.42	3.01	-7.41	8.00	Pass
	11	2462	-10.77	3.01	-7.76	8.00	Pass

Note:
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure value and add 10 log (N_{ANT}) dB.
2. Directional gain = 1.81dBi + 10log(2) = 4.82dBi < 6dBi, so the power density limit not need to reduce.

802.11g

TX chain	Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-18.33	3.01	0.24	-15.08	8.00	Pass
	6	2437	-11.92	3.01	0.24	-8.67	8.00	Pass
	11	2462	-20.15	3.01	0.24	-16.90	8.00	Pass
1	1	2412	-17.94	3.01	0.24	-14.69	8.00	Pass
	6	2437	-11.31	3.01	0.24	-8.06	8.00	Pass
	11	2462	-20.45	3.01	0.24	-17.20	8.00	Pass

Note:
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure value and add 10 log (N_{ANT}) dB.
2. Directional gain = 1.81dBi + 10log(2) = 4.82dBi < 6dBi, so the power density limit not need to reduce.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

TX chain	Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-21.76	3.01	0.54	-18.21	8.00	Pass
	6	2437	-12.99	3.01	0.54	-9.44	8.00	Pass
	11	2462	-22.42	3.01	0.54	-18.87	8.00	Pass
1	1	2412	-21.54	3.01	0.54	-17.99	8.00	Pass
	6	2437	-13.06	3.01	0.54	-9.51	8.00	Pass
	11	2462	-21.14	3.01	0.54	-17.59	8.00	Pass

Note:
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure value and add 10 log (N_{ANT}) dB.
2. Directional gain = 1.81dBi + 10log(2) = 4.82dBi < 6dBi, so the power density limit not need to reduce.
3. Refer to section 3.3 for duty cycle spectrum plot.

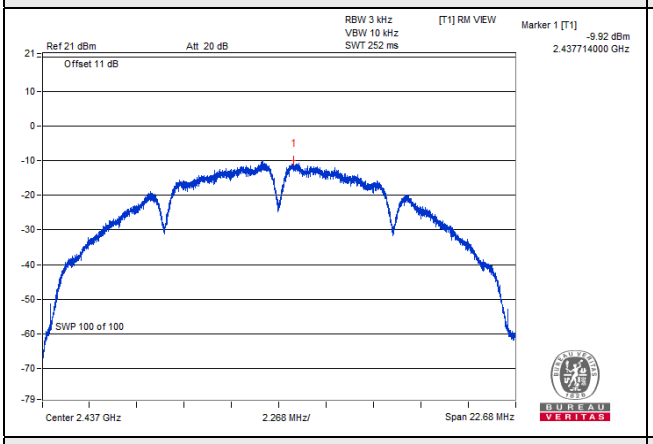
802.11ax (HE40)

TX chain	Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	3	2422	-24.29	3.01	0.92	-20.36	8.00	Pass
	6	2437	-21.32	3.01	0.92	-17.39	8.00	Pass
	9	2452	-26.29	3.01	0.92	-22.36	8.00	Pass
1	3	2422	-24.56	3.01	0.92	-20.63	8.00	Pass
	6	2437	-21.32	3.01	0.92	-17.39	8.00	Pass
	9	2452	-26.61	3.01	0.92	-22.68	8.00	Pass

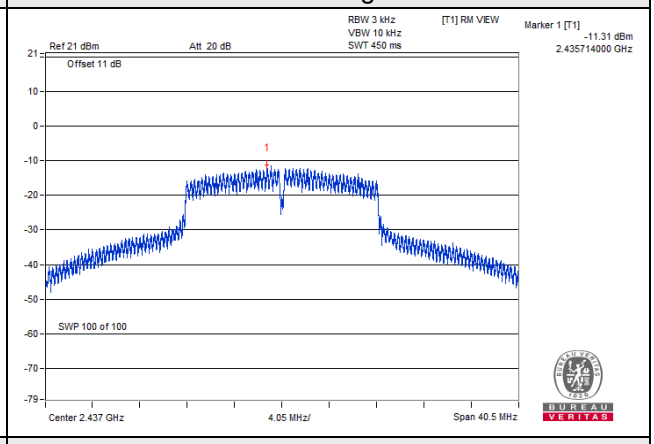
Note:
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure value and add 10 log (N_{ANT}) dB.
2. Directional gain = 1.81dBi + 10log(2) = 4.82dBi < 6dBi, so the power density limit not need to reduce.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

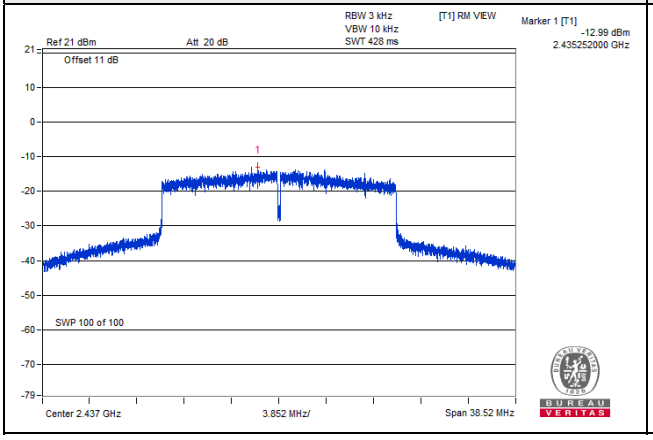
802.11b



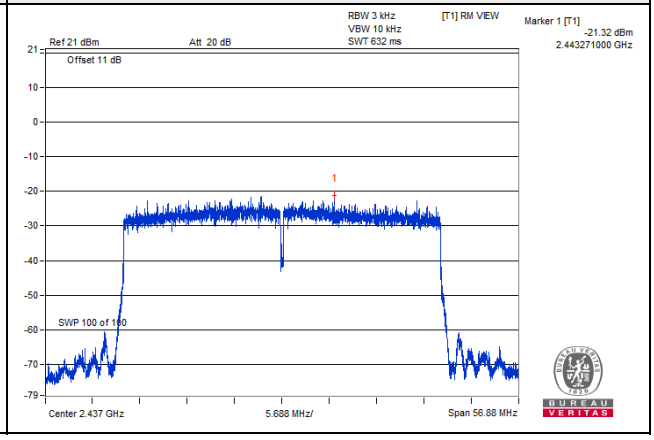
802.11g



802.11ax (HE20)



802.11ax (HE40)

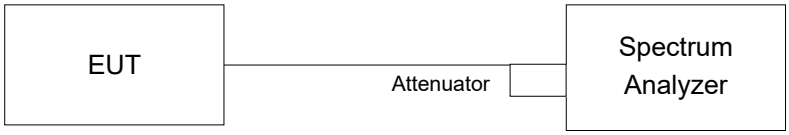


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below -30dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 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.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

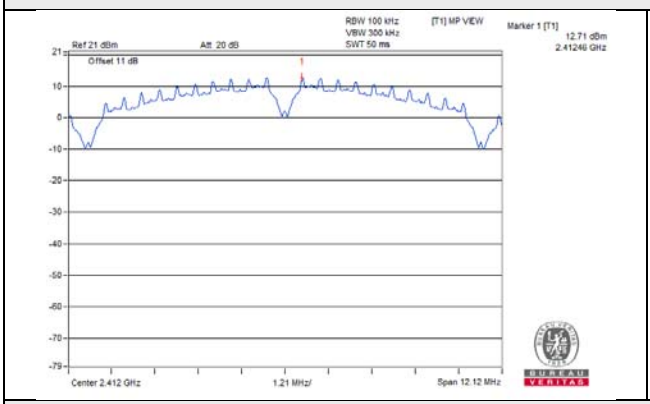
Same as item 4.3.6

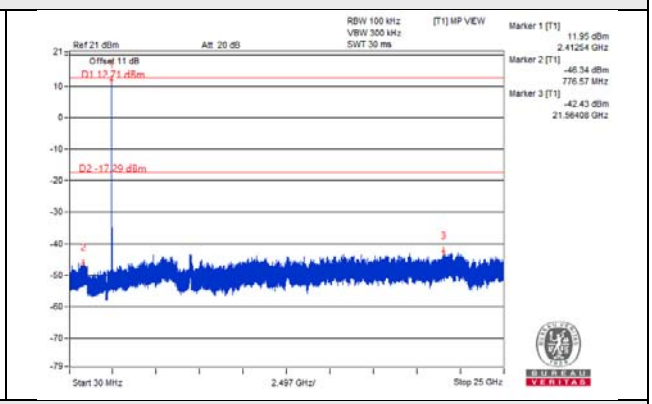
4.6.7 Test Results

The conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

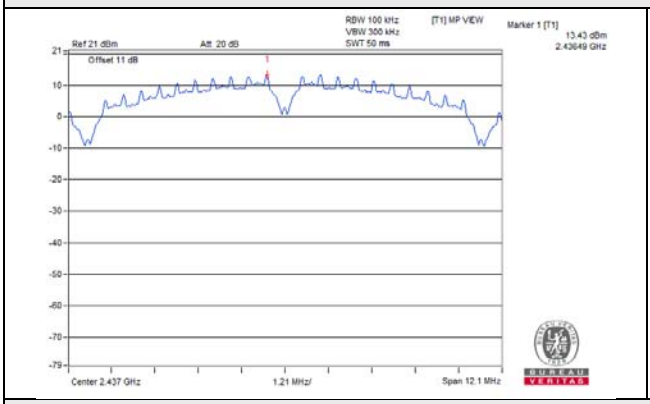
802.11b_Chain 0

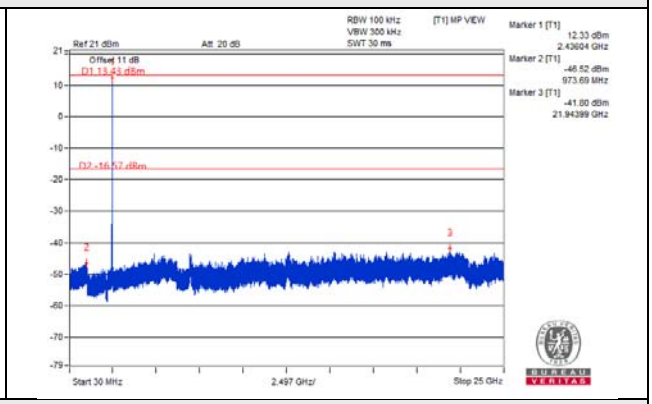
CH 1



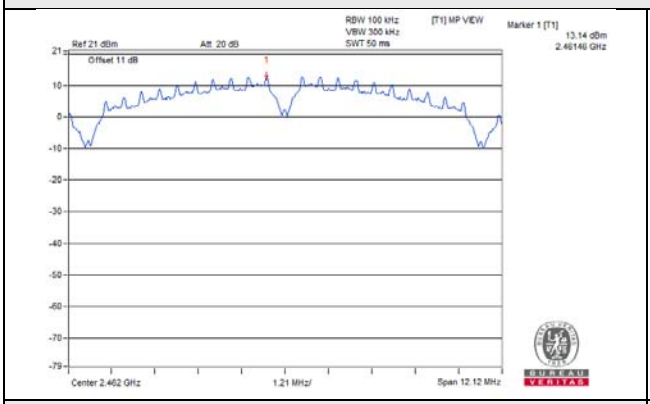


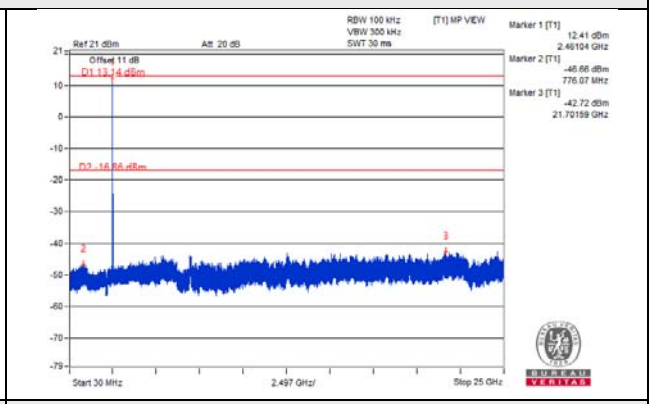
CH 6



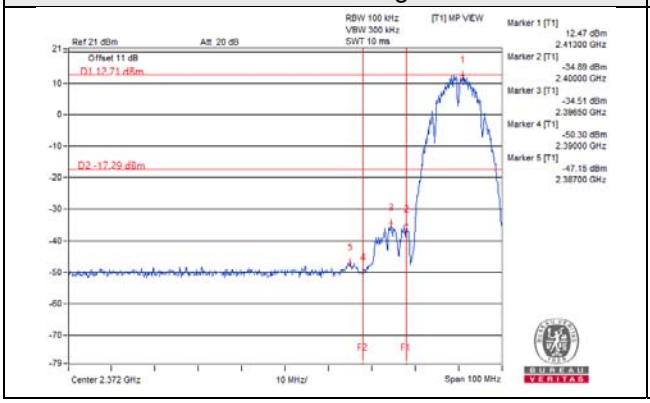


CH 11

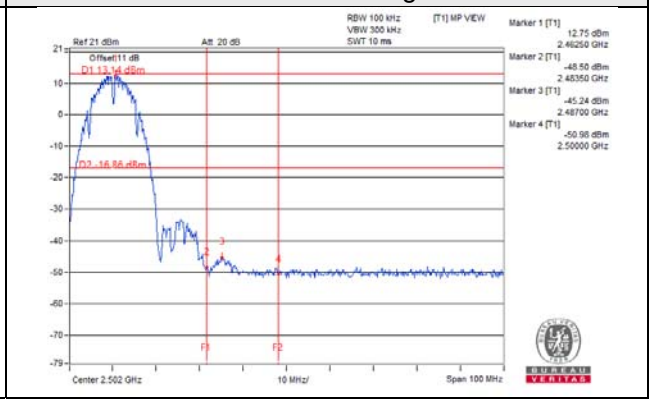




CH 1 Band edge

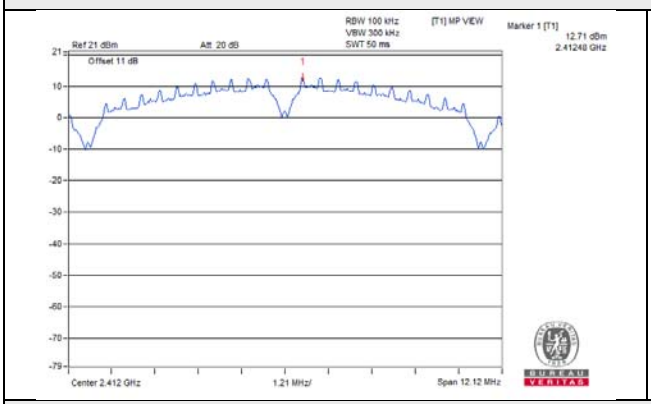


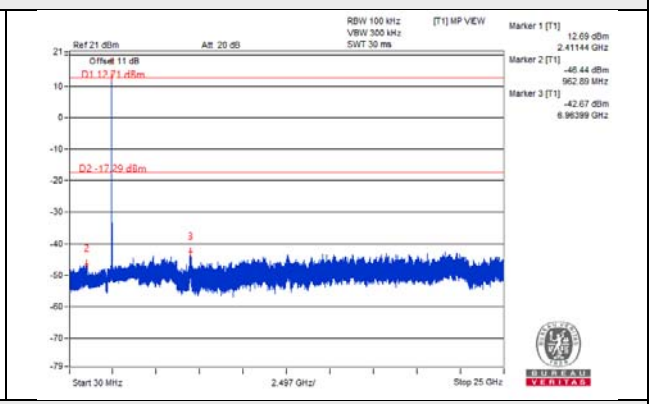
CH 11 Band edge



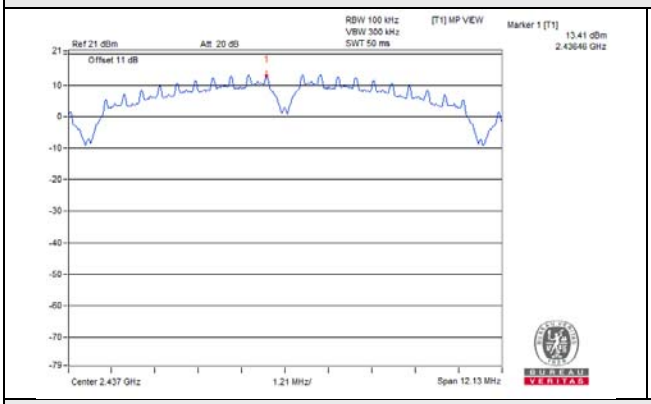
802.11b_Chain 1

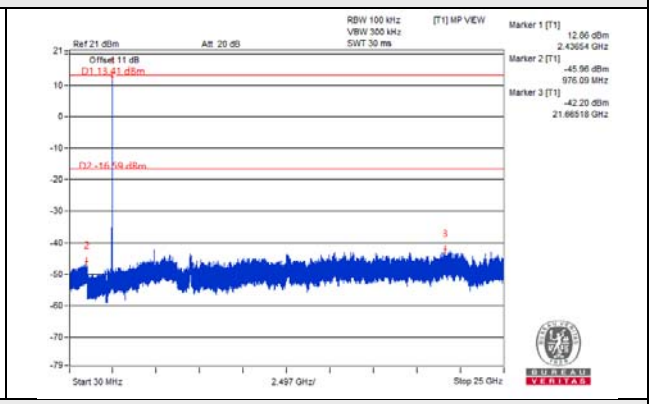
CH 1



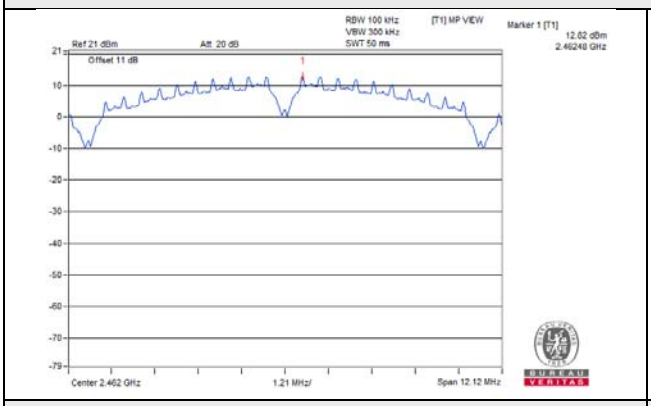


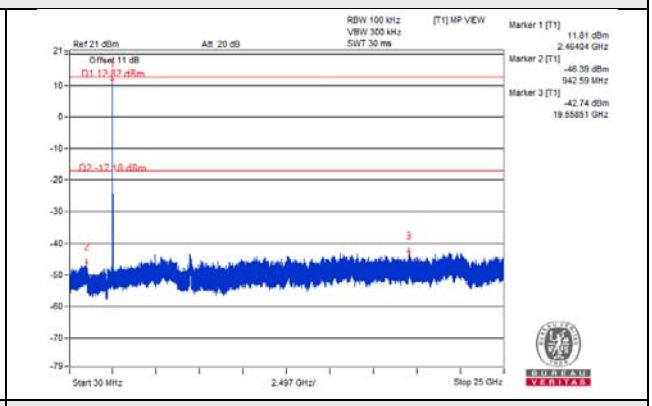
CH 6



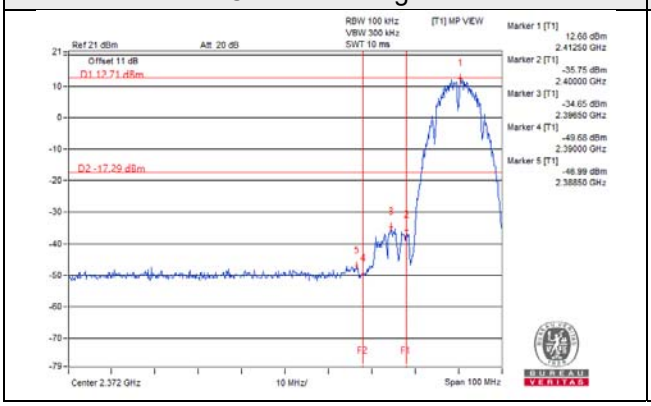


CH 11

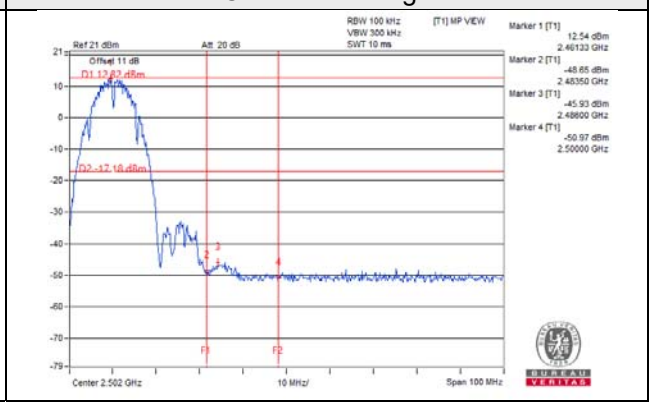




CH 1 Band edge

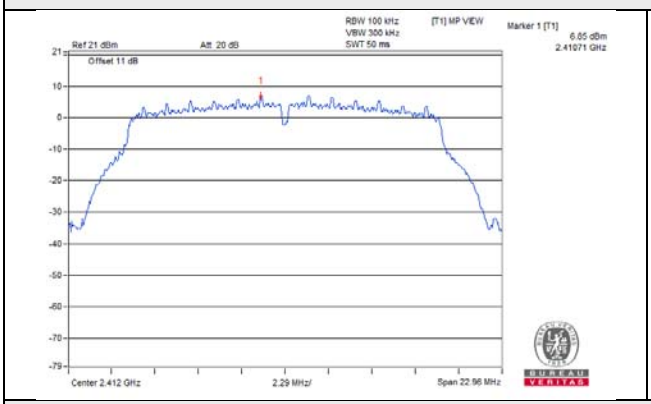


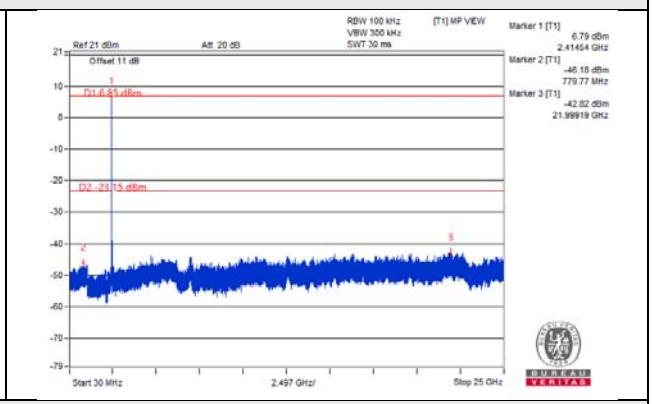
CH 11 Band edge



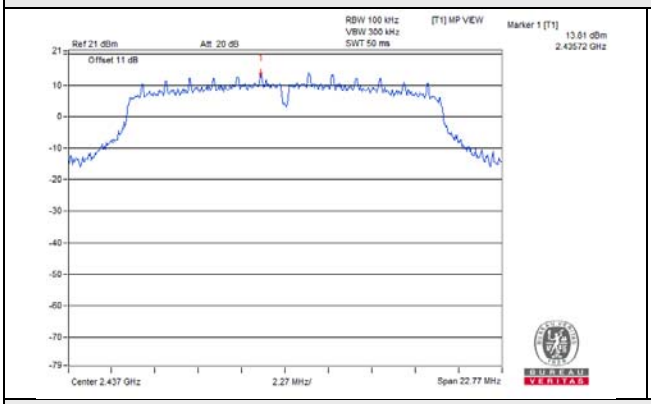
802.11g_Chain 0

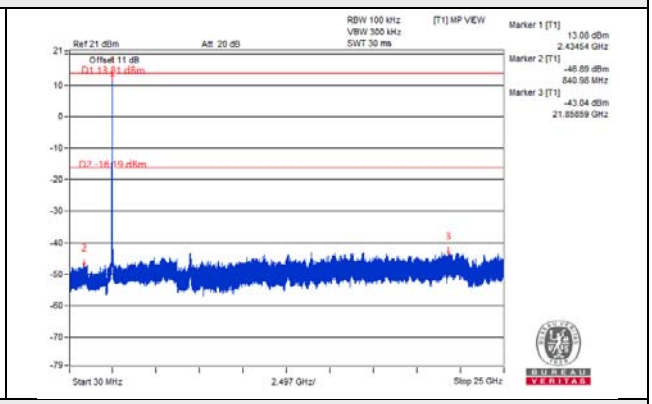
CH 1



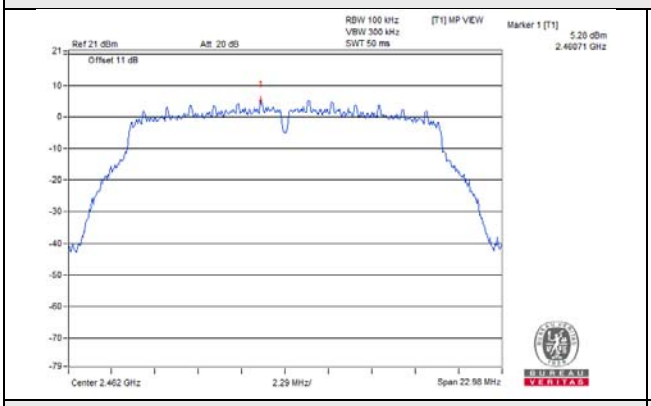


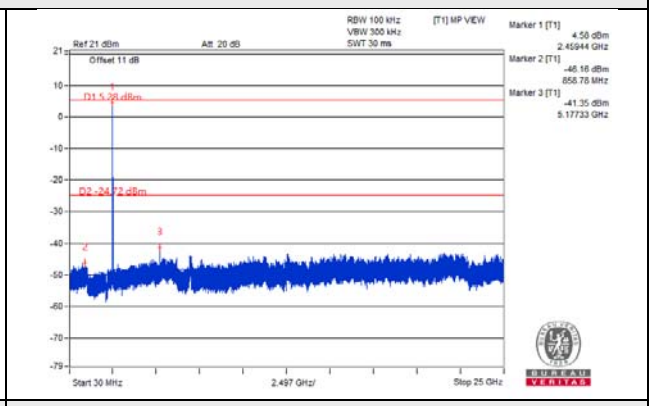
CH 6



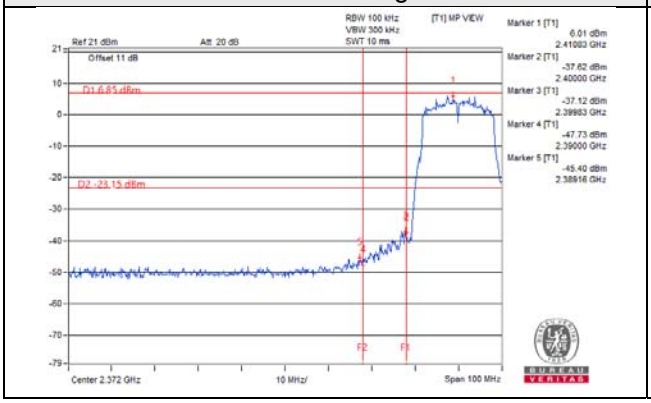


CH 11

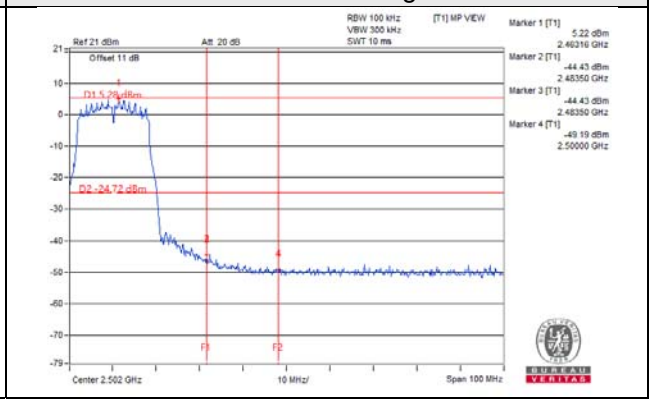




CH 1 Band edge

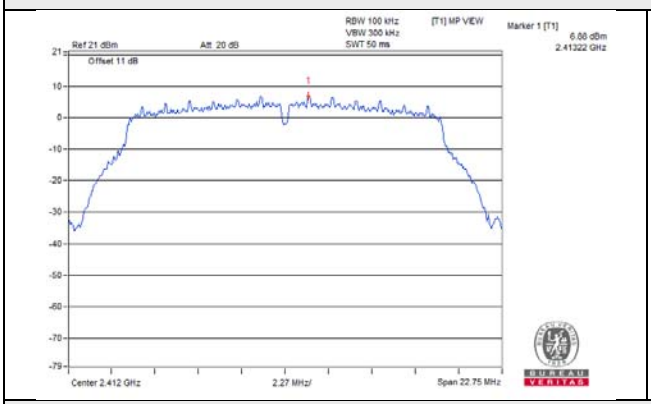


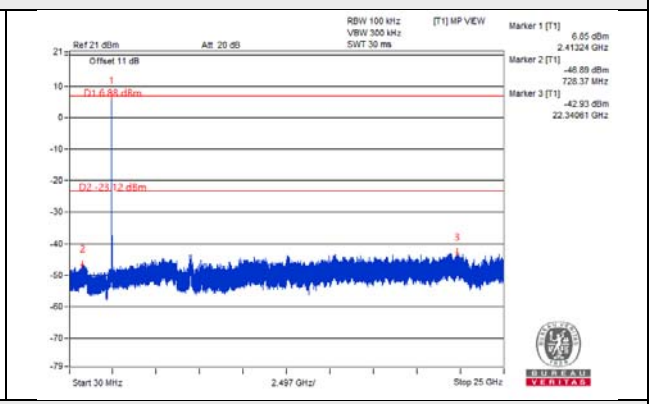
CH 11 Band edge



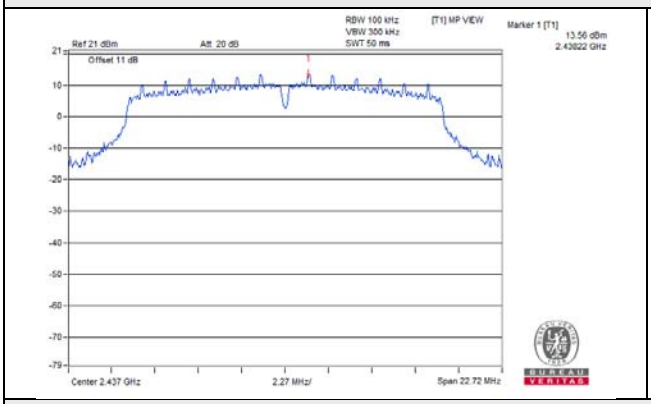
802.11g_Chain 1

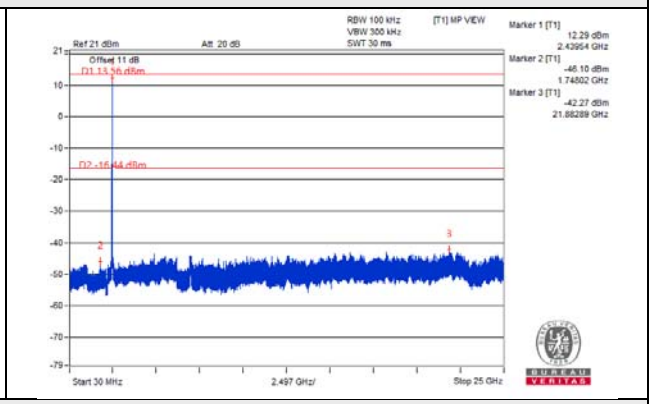
CH 1



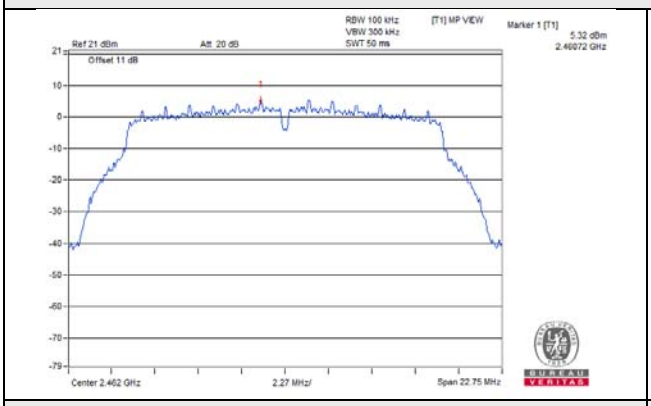


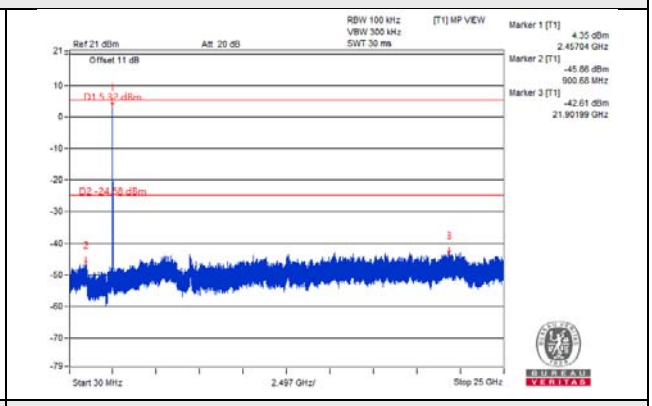
CH 6



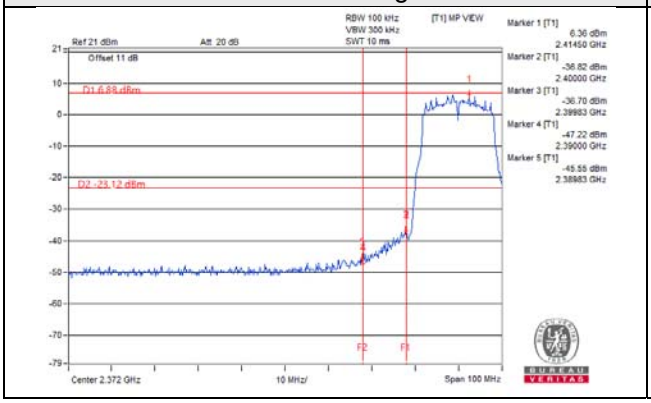


CH 11

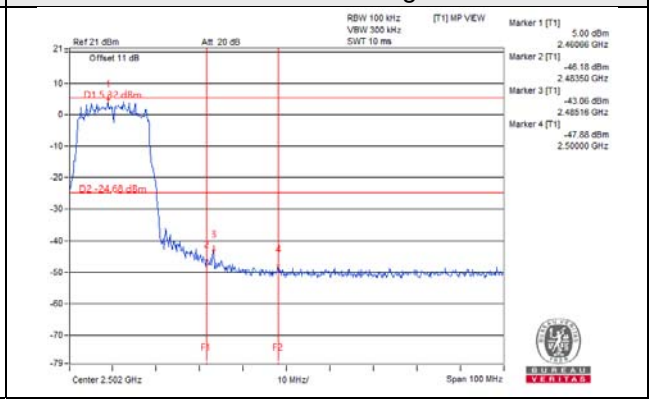




CH 1 Band edge

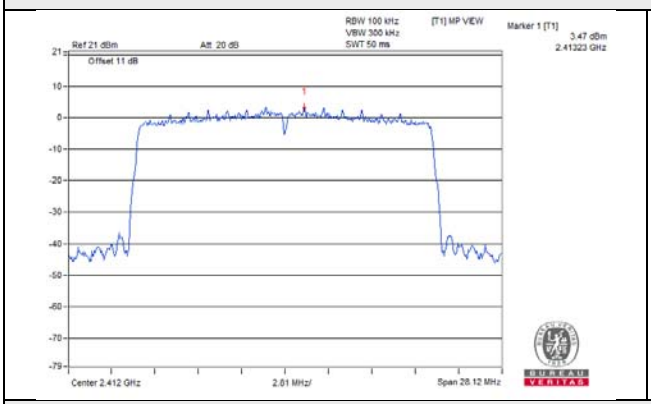


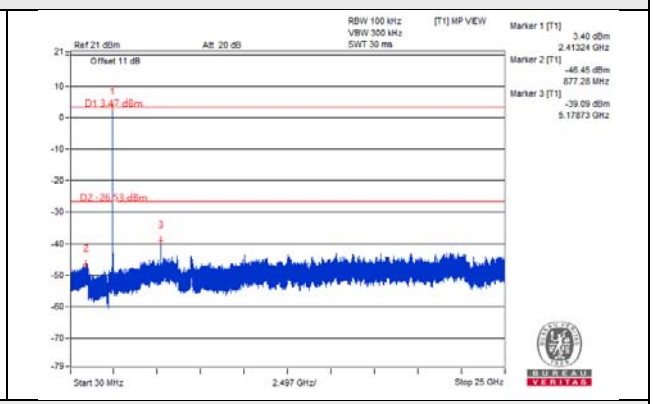
CH 11 Band edge



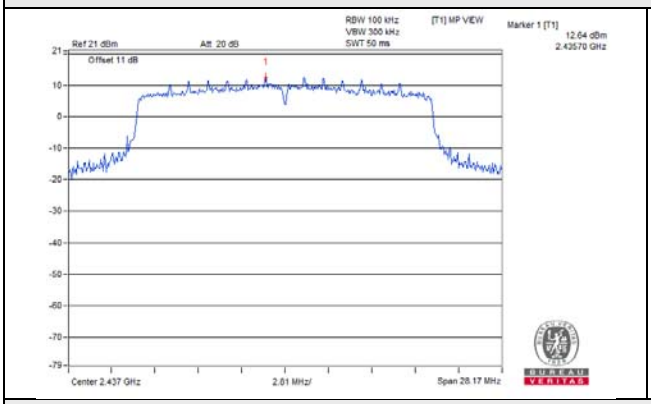
802.11ax (HE20)_Chain 0

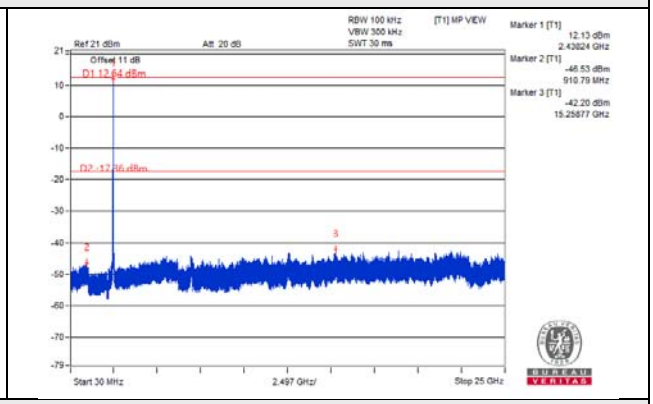
CH 1



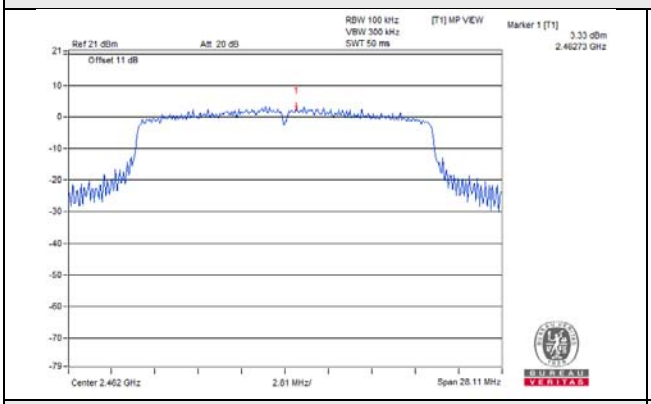


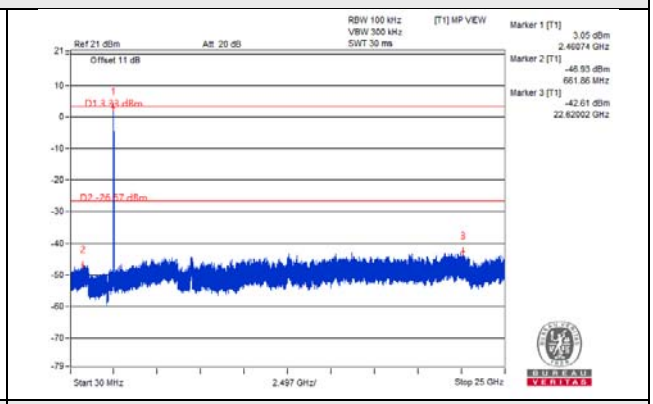
CH 6



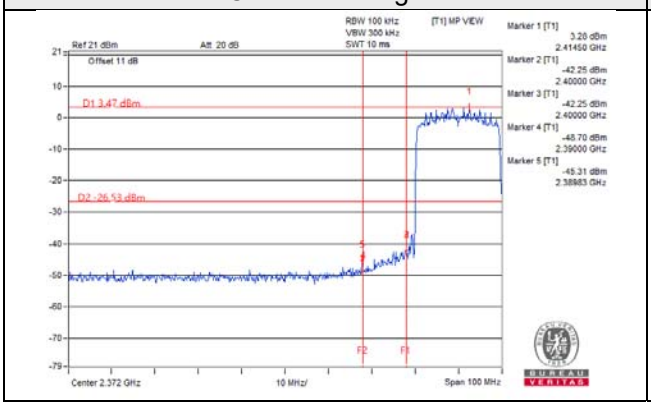


CH 11

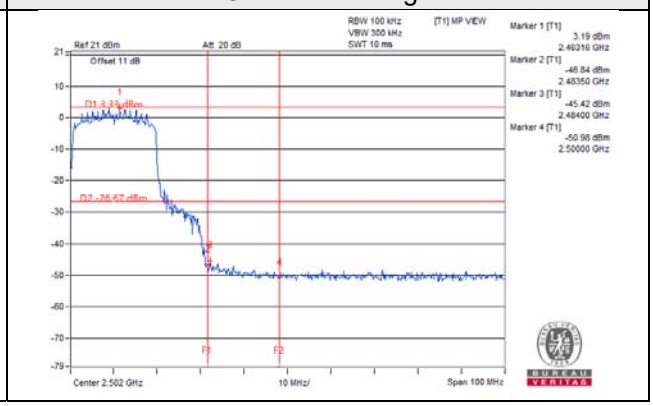




CH 1 Band edge

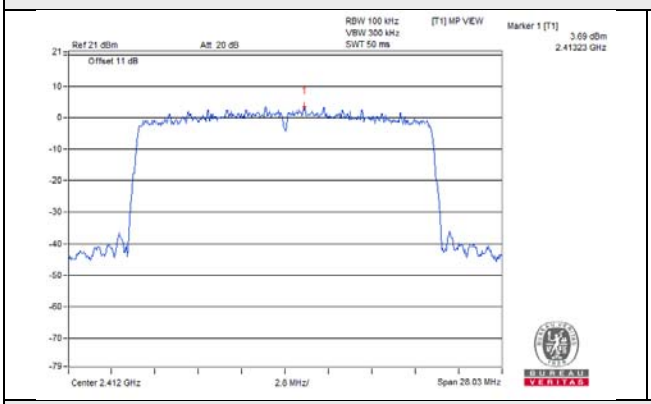


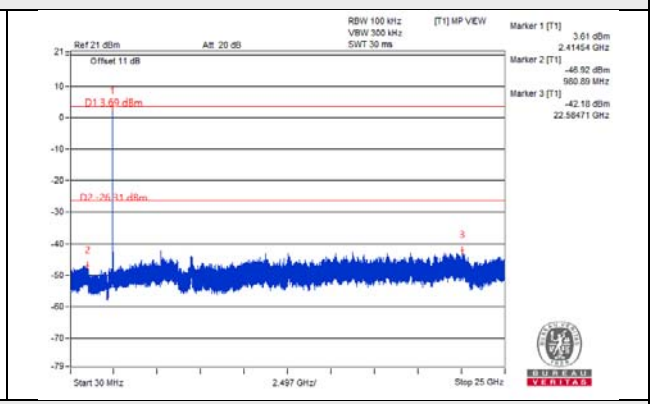
CH 11 Band edge



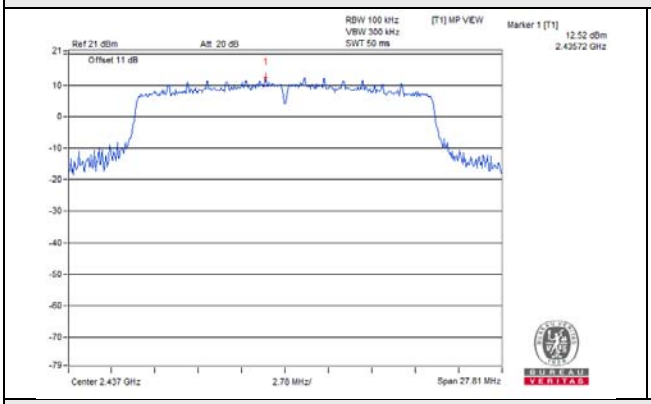
802.11ax (HE20)_Chain 1

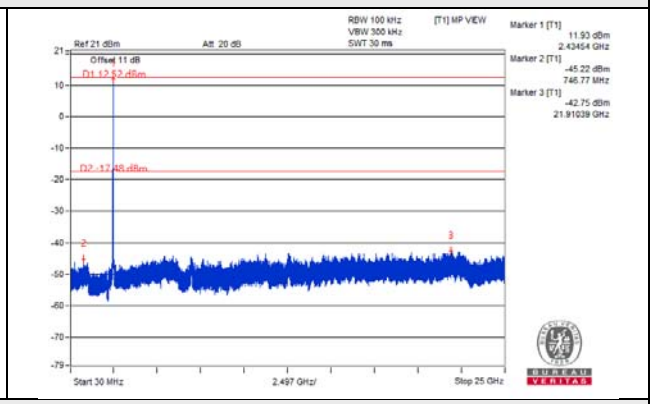
CH 1



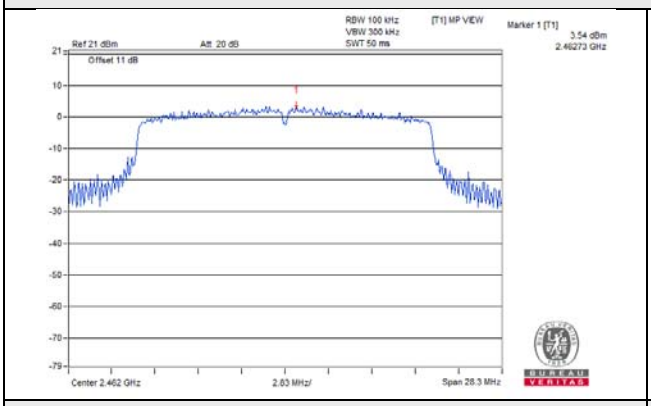


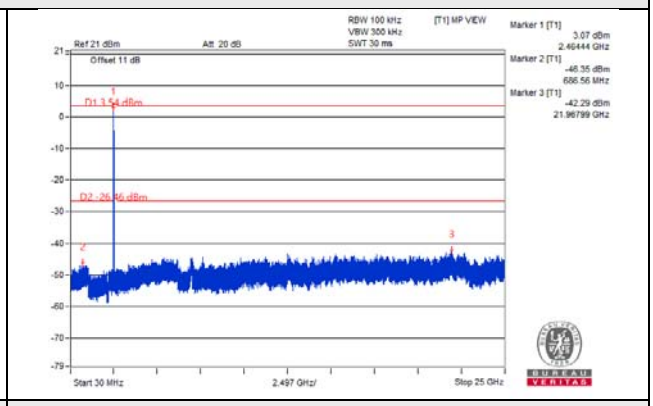
CH 6



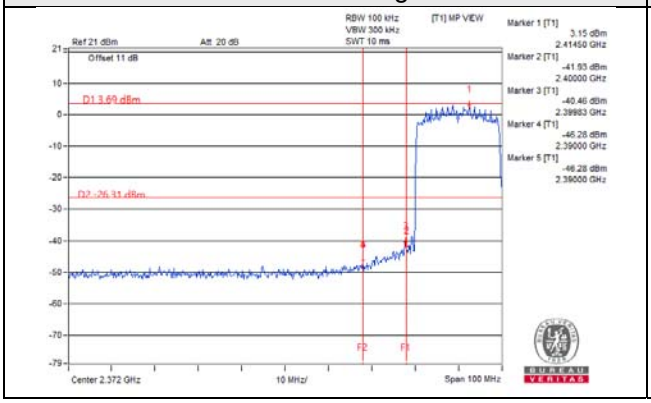


CH 11

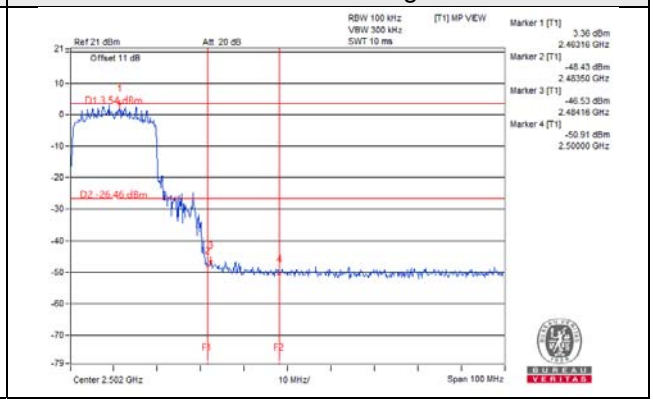




CH 1 Band edge

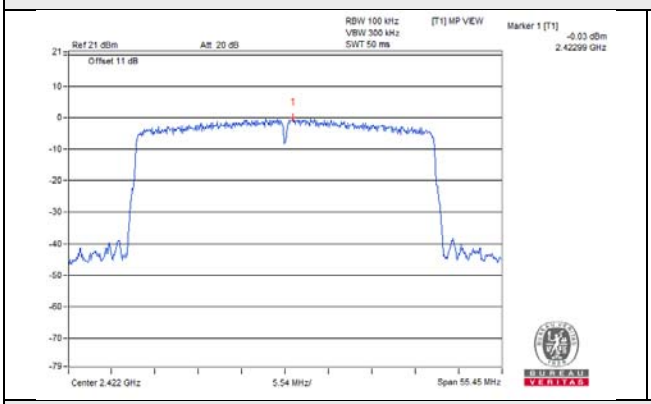


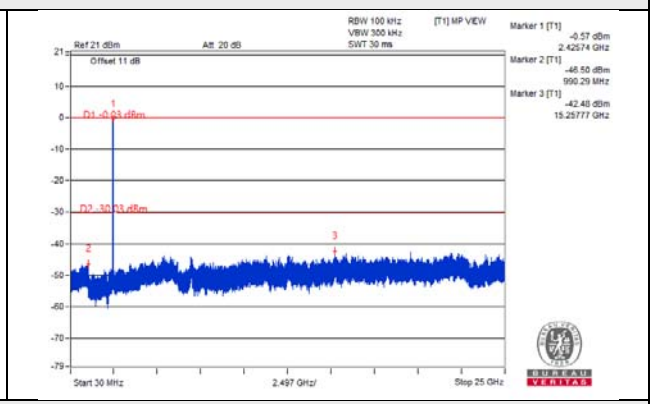
CH 11 Band edge



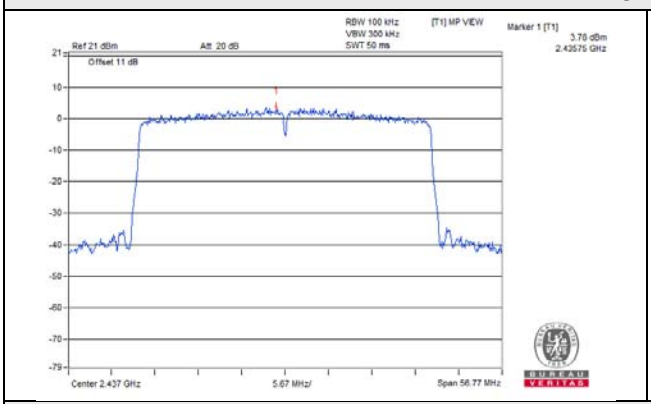
802.11ax (HE40)_Chain 0

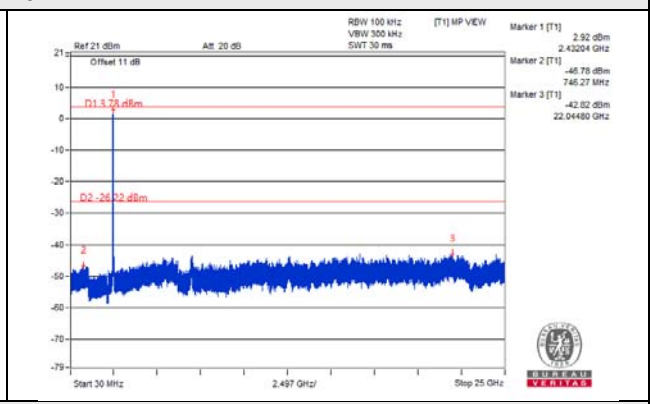
CH 3



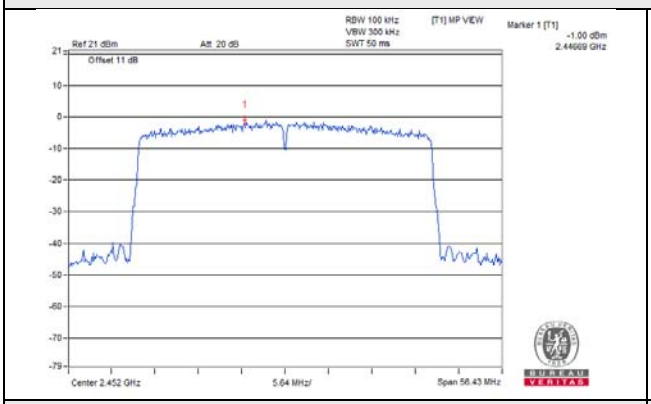


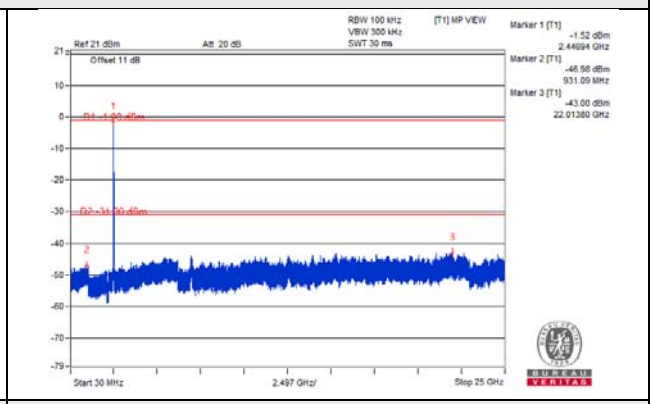
CH 6



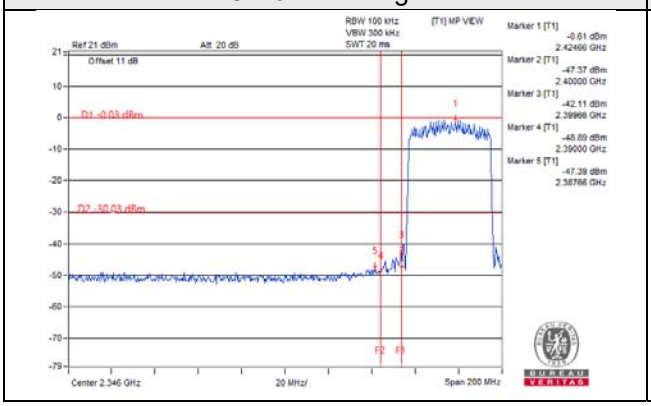


CH 9

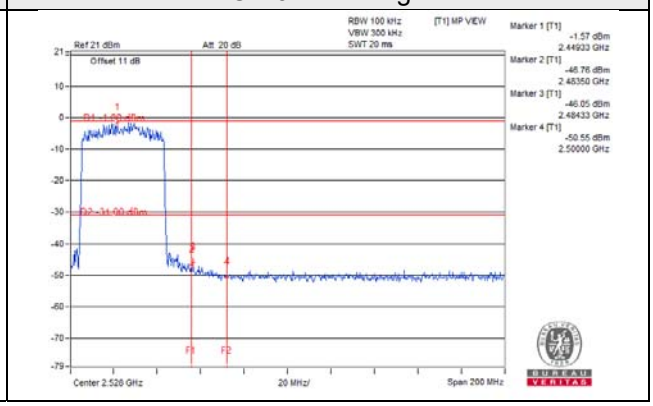




CH 3 Band edge

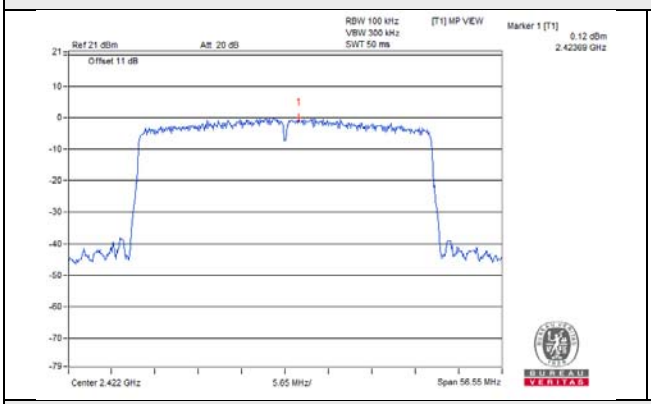


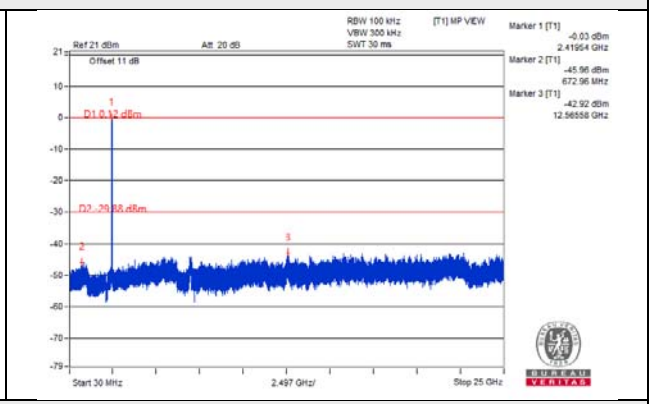
CH 9 Band edge



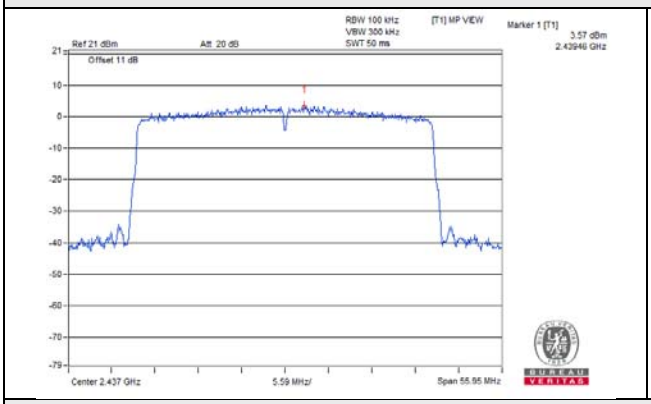
802.11ax (HE40)_Chain 1

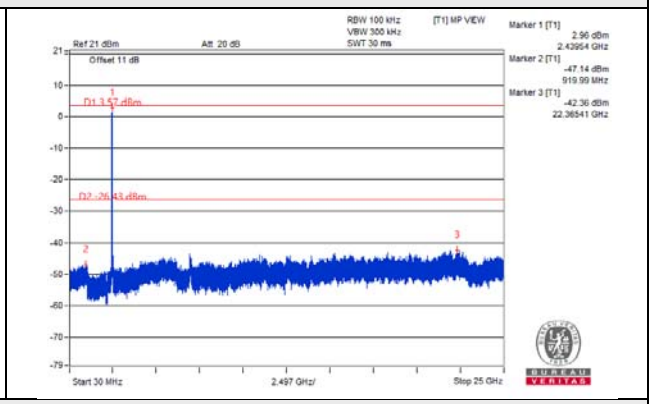
CH 3



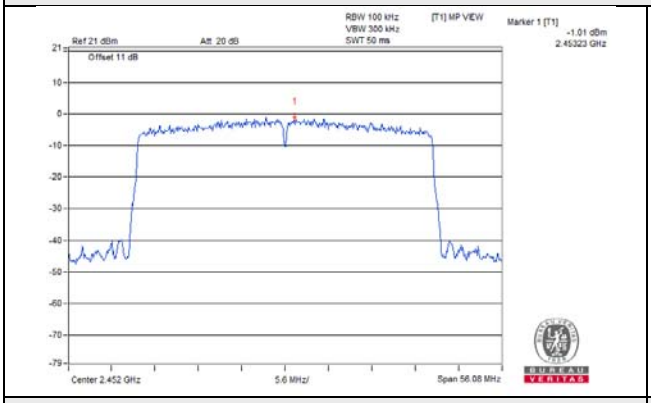


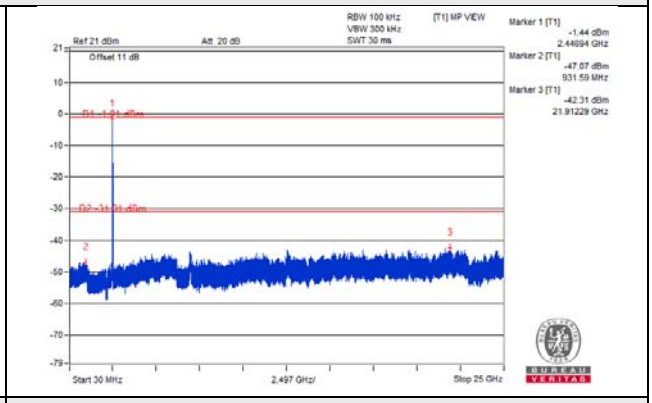
CH 6



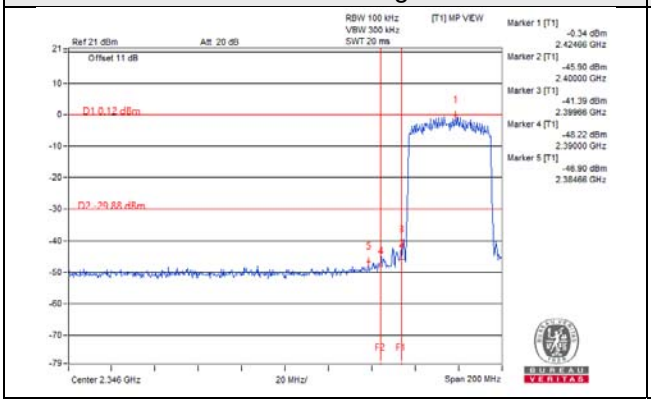


CH 9

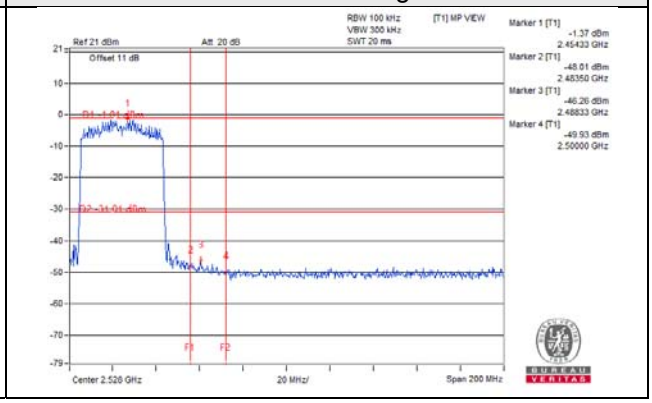




CH 3 Band edge



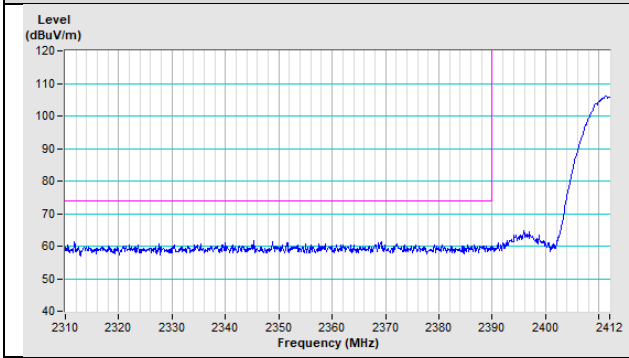
CH 9 Band edge



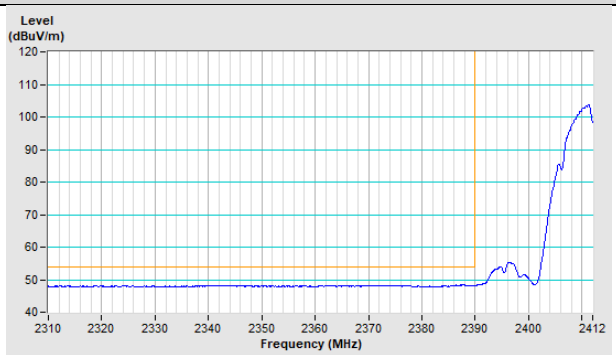
Annex A - Band Edge Measurement

802.11b Channel 1

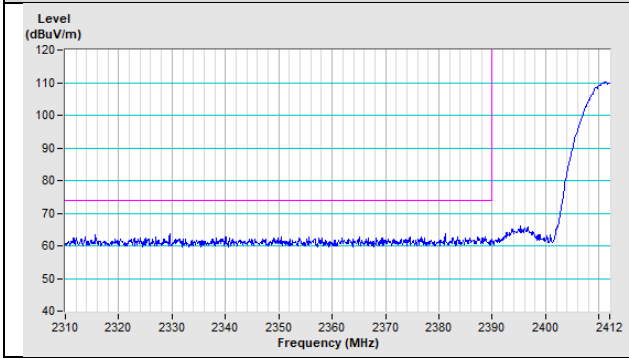
Horizontal (Peak)



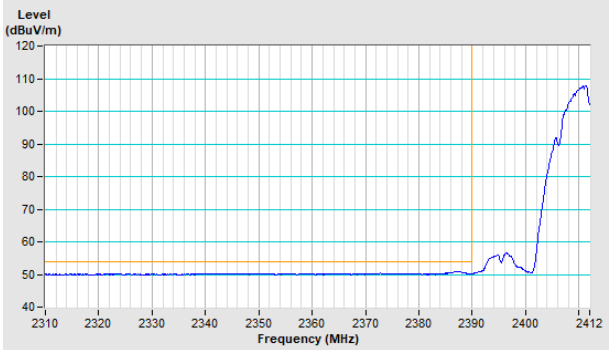
Horizontal (Average)



Vertical (Peak)

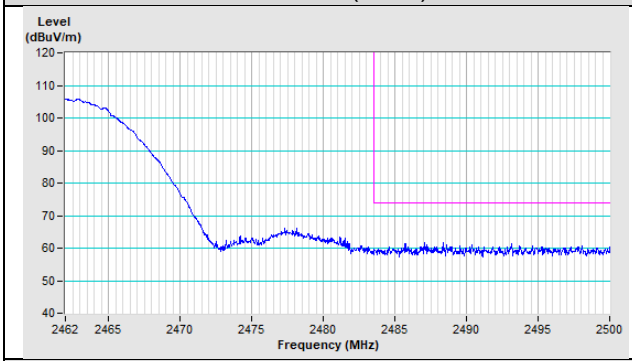


Vertical (Average)

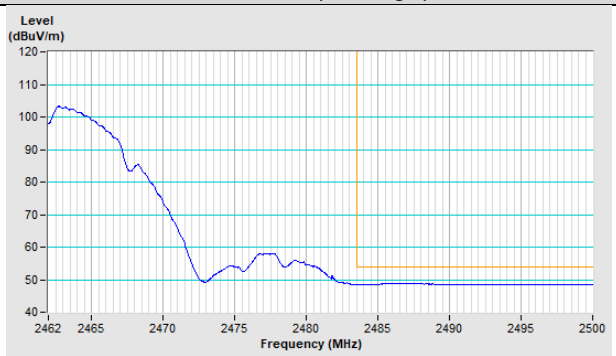


802.11b Channel 11

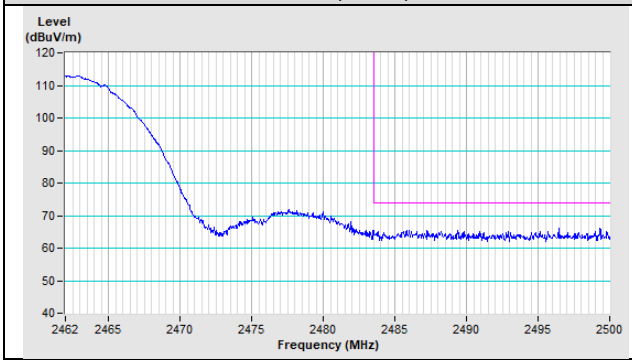
Horizontal (Peak)



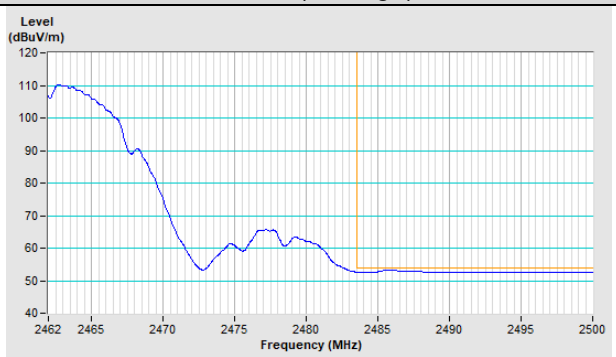
Horizontal (Average)



Vertical (Peak)

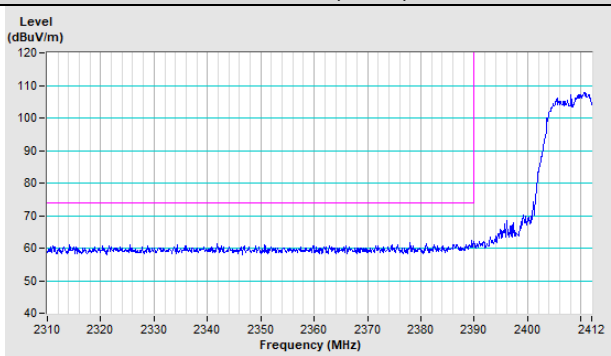


Vertical (Average)

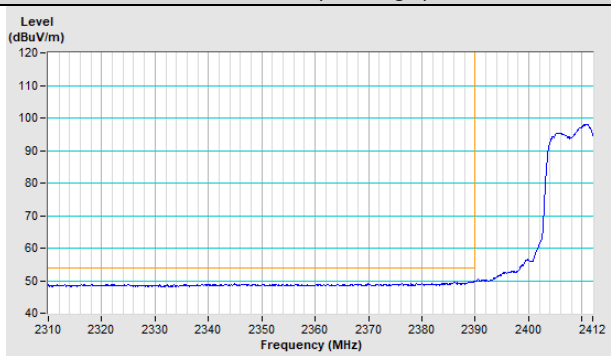


802.11g Channel 1

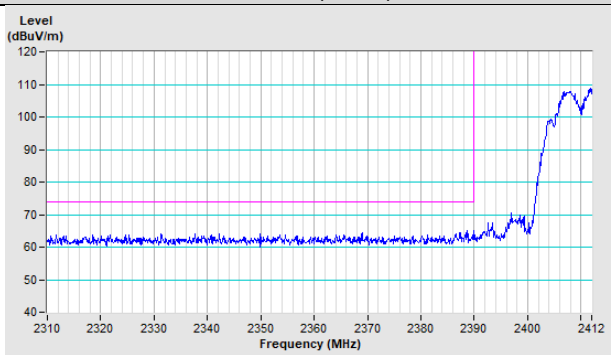
Horizontal (Peak)



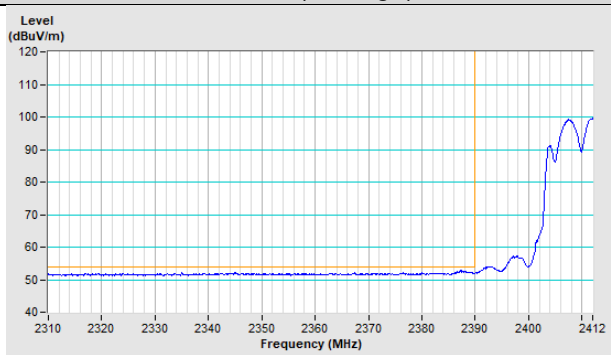
Horizontal (Average)



Vertical (Peak)

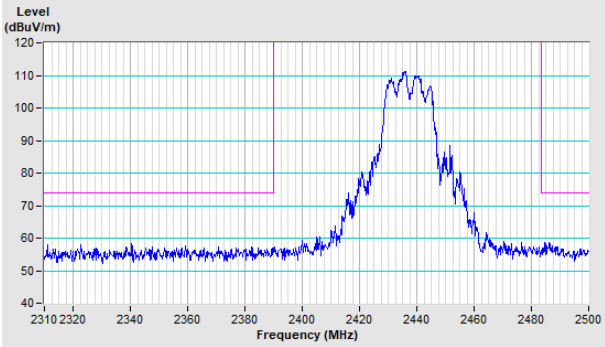


Vertical (Average)

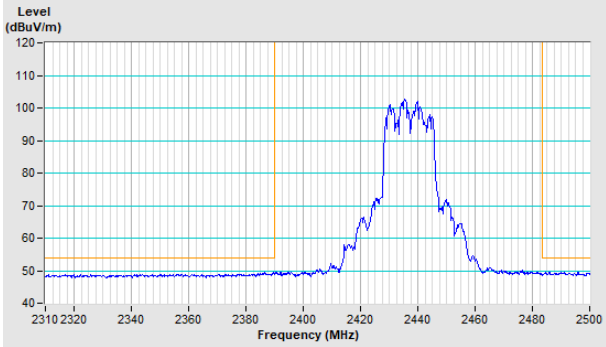


802.11g Channel 6

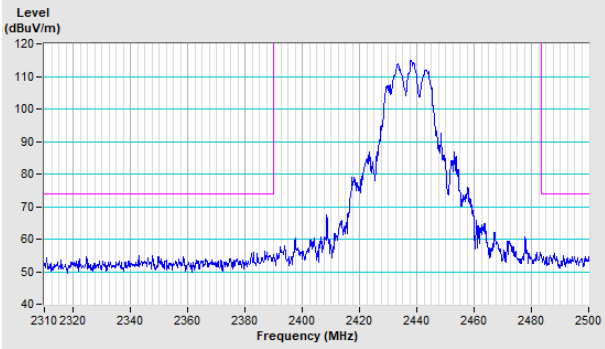
Horizontal (Peak)



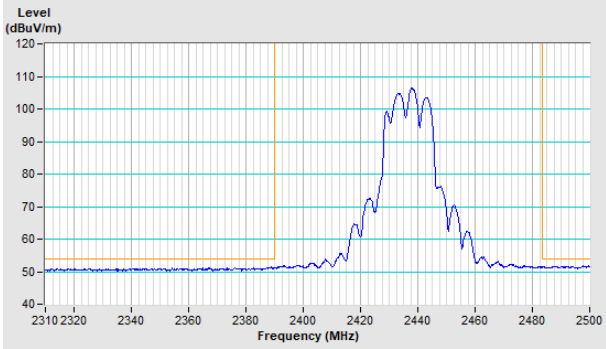
Horizontal (Average)

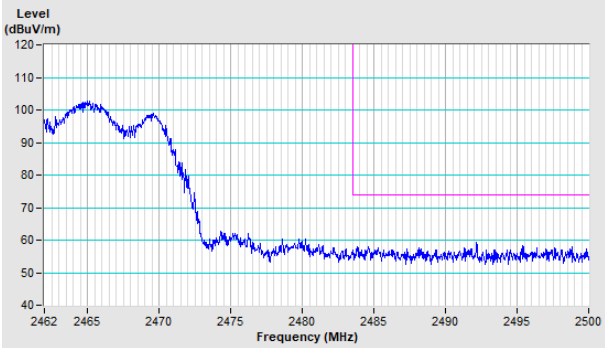
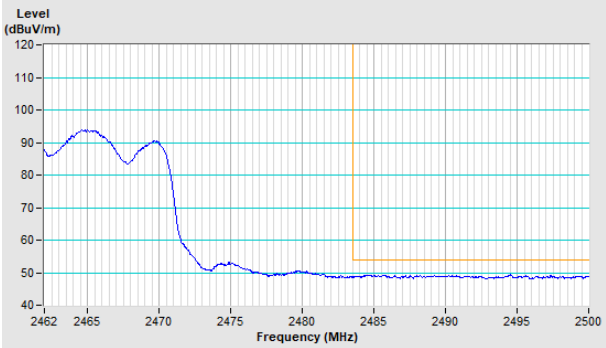
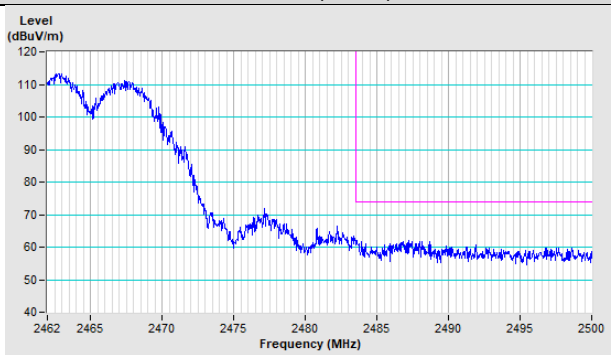
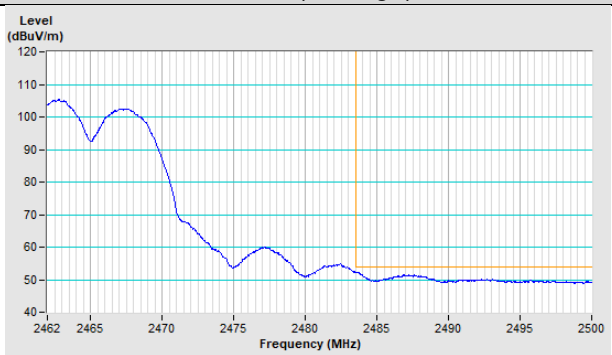


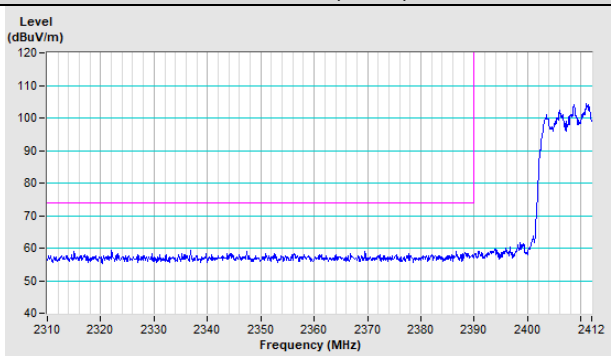
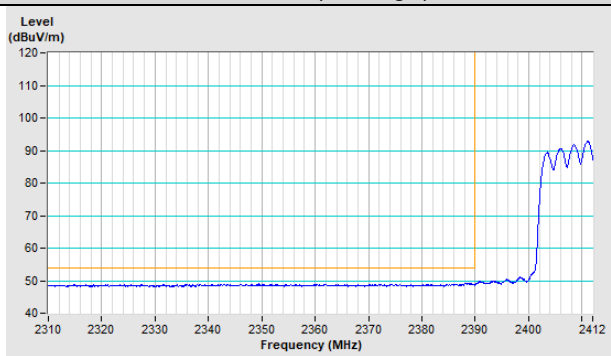
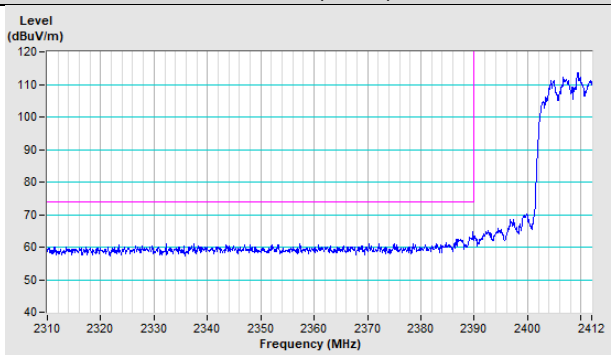
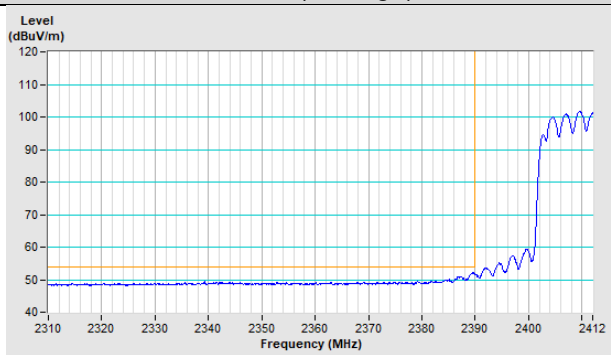
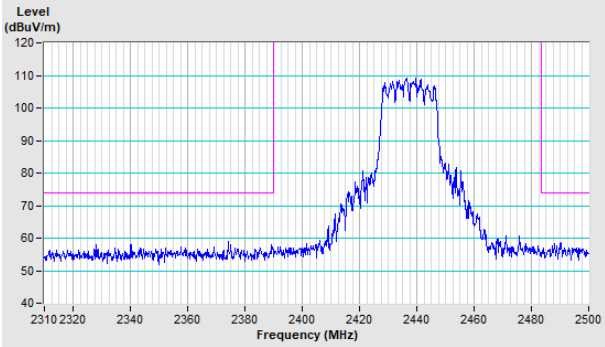
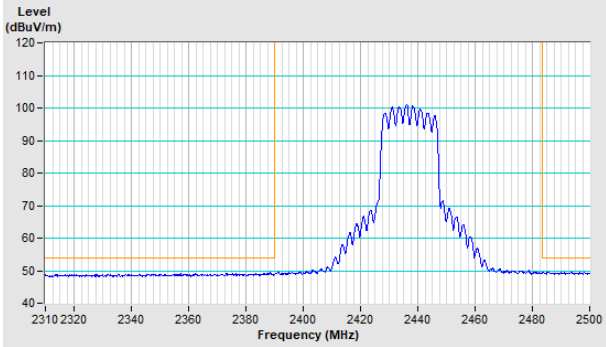
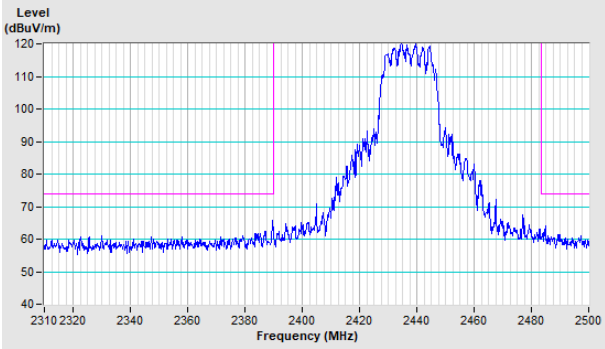
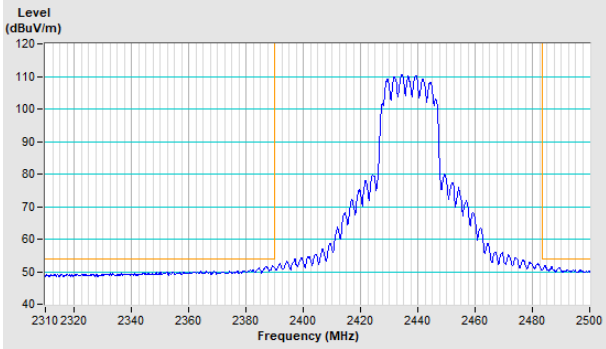
Vertical (Peak)

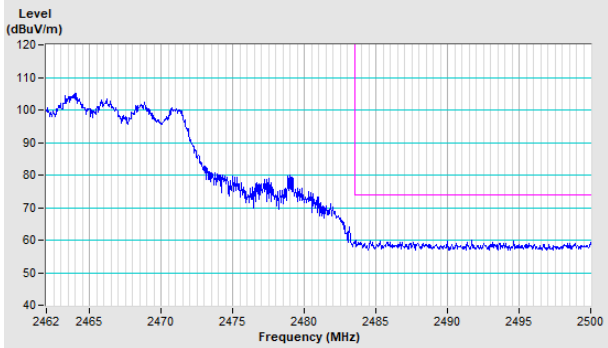
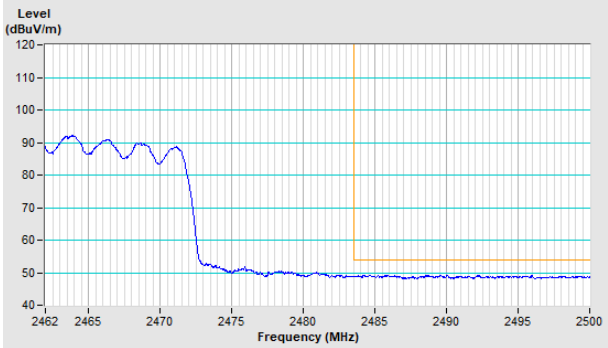
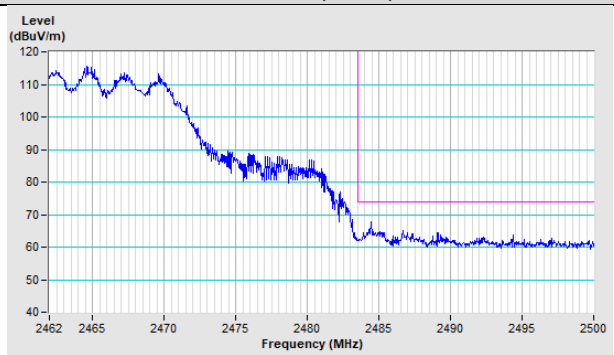
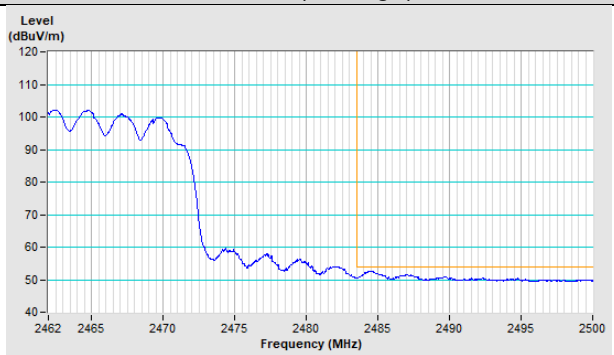


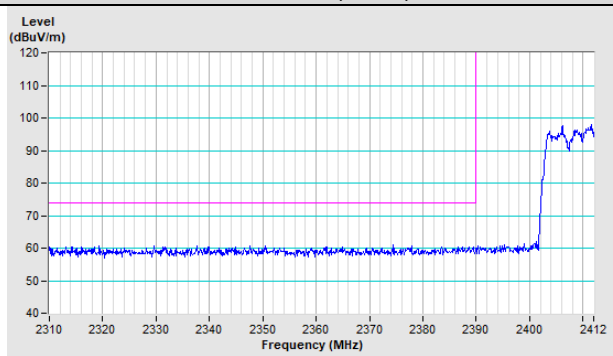
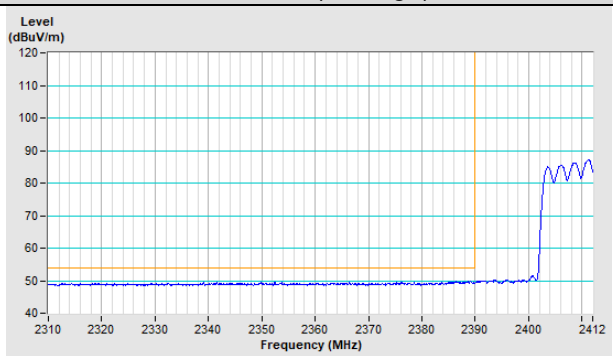
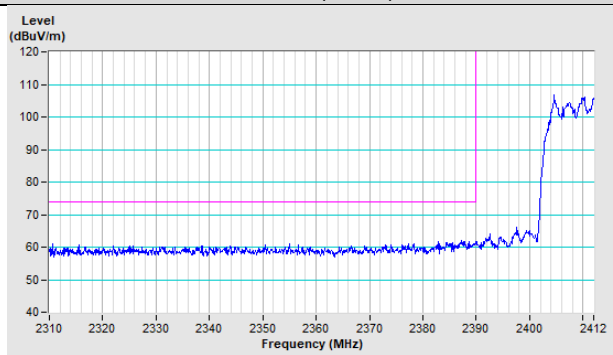
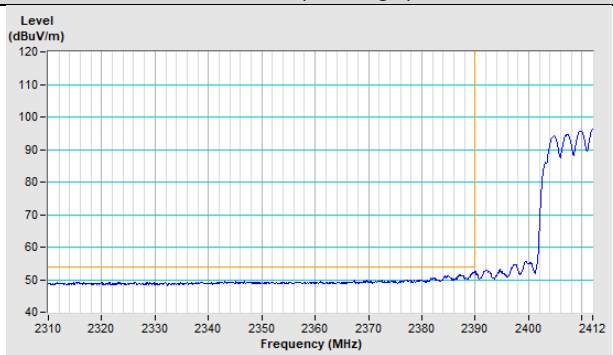
Vertical (Average)

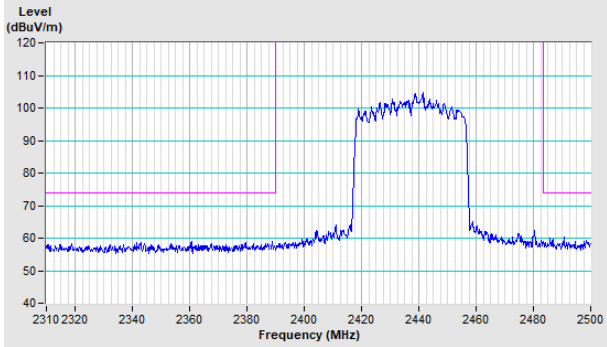
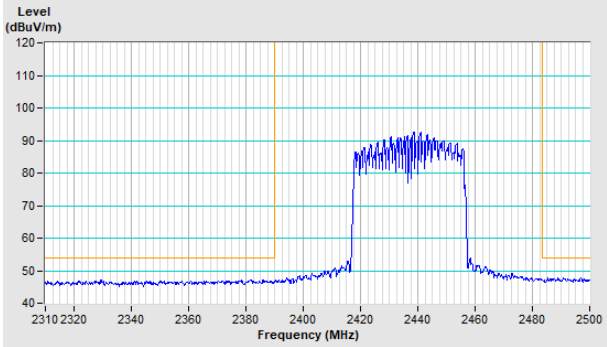
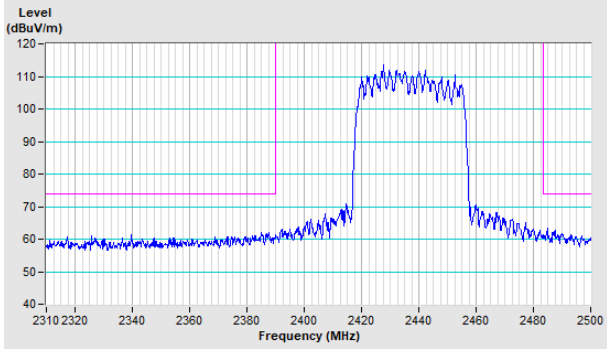
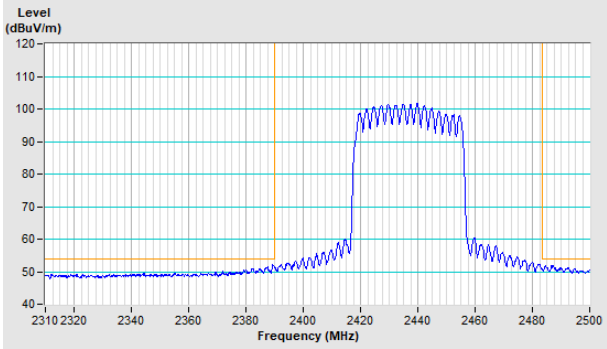


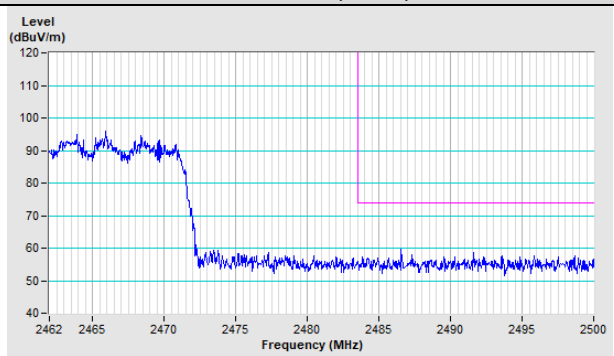
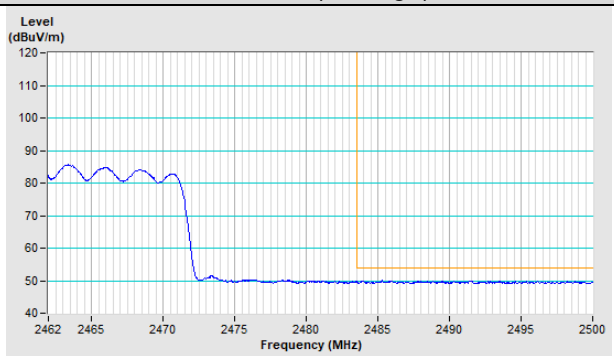
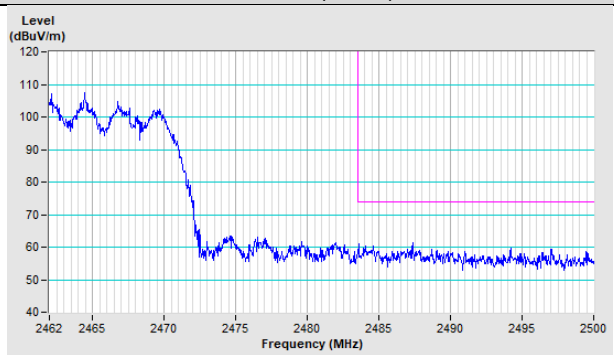
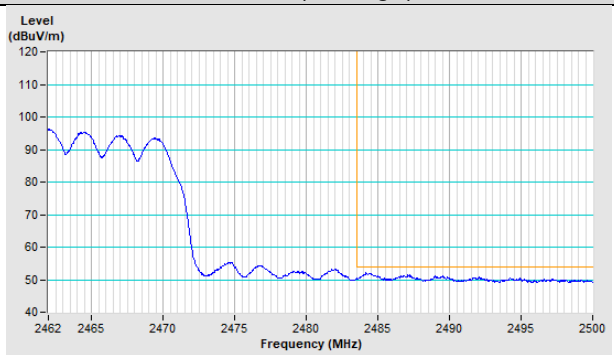
802.11g Channel 11	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11ax (HE20) Channel 1	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11ax (HE20) Channel 6	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11ax (HE20) Channel 11	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11ax (HE40) Channel 3	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11ax (HE40) Channel 6	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11ax (HE40) Channel 9	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – 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 and approved according to ISO/IEC 17025.

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Web Site: www.bureauveritas-adt.com

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

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