

## FCC Test Report

**Report No.:** RFBBQZ-WTW-P22030481

**FCC ID:** PY322200565

**Test Model:** A8000

**Received Date:** Mar. 14, 2022

**Test Date:** Jul. 08 ~ Jul. 17, 2022

**Issued Date:** Aug. 02, 2022

**Applicant and Manufacturer:** NETGEAR, INC.

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**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Lin Kou Laboratories

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, Taiwan

**FCC Registration /  
Designation Number:** 788550 / TW0003



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### Release Control Record

Issue No.	Description	Date Issued
RFBBQZ-WTW-P22030481	Original release.	Aug. 02, 2022

## 1 Certificate of Conformity

**Product:** AXE3000 USB3.0 Wireless Adapter

**Brand:** Netgear

**Test Model:** A8000

**Sample Status:** Engineering sample

**Applicant and Manufacturer:** NETGEAR, INC..

**Test Date:** Jul. 08 ~ Jul. 17, 2022

**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 :** Polly Chien , **Date:** Aug. 02, 2022  
Polly Chien / Specialist

**Approved by :** Jeremy Lin , **Date:** Aug. 02, 2022  
Jeremy Lin / Project 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 -16.98dB at 0.17400MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -3.4dB at 2483.50MHz.
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 is IPEX not a standard connector.

Note:

- 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.
- 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	AXE3000 USB3.0 Wireless Adapter
Brand	Netgear
Test Model	A8000
Sample Status	Engineering sample
Power Supply Rating	5Vdc from host equipment
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 300Mbps VHT: 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	39.722mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Refer to Note
Cable Supplied	NA

Note:

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

Modulation Mode	TX Function
802.11b	2TX
802.11g	2TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX
VHT20	2TX
VHT40	2TX
802.11ax (HE20)	2TX
802.11ax (HE40)	2TX

\* The bandwidth and modulation are similar for 802.11n mode for 20MHz (40MHz), VHT mode for 20MHz (40MHz) and 802.11ax mode for 20MHz (40MHz). Therefore the investigated worst case is the representative mode in test report. (Final test mode refer section 3.2.1)

2. The EUT uses following accessories.

Dock		
Brand	Model	Specification
Nienyi	107-1059401	Line length : 0.83 m

3. The EUT with follow antennas gain is listed as table below.

ANT. No.	Type	Connector	Frequency Range	Gain (dBi)
2.4G_0	Dipole	IPEX	2400~2483.5MHz	2.20
2.4G_1	Dipole	IPEX	2400~2483.5MHz	1.90
5G_0	Dipole	IPEX	5150~5250MHz	2.30
			5250~5350MHz	2.60
			5470~5725MHz	2.70
			5725~5850MHz	2.60
5G_1	Dipole	IPEX	5150~5250MHz	2.10
			5250~5350MHz	2.80
			5470~5725MHz	1.90
			5725~5850MHz	2.50

\*Detail antenna specification please refer to antenna datasheet.

4. WLAN 2.4GHz, WLAN 5GHz & WLAN 6GHz technology cannot transmit at the same time.



### 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 $\geq$ 1G	RE<1G	PLC	APCM	
A	√	√	√	√	EUT with Dock
B	-	√	√	-	EUT with Notebook

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

Note:

- The EUT had been pre-tested on mode A (EUT with Dock) of 2 antenna angles (0° & 90°). The worst case was found when positioned on mode A(0°). And mode B (EUT with NB) of 2 antenna angles (0° & 90°). The worst case was found when positioned on mode A(90°)
- "-": Means no effect.
- Radiated emission (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)	Remark
A	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)	Remark
A, B	802.11b	1 to 11	6	DSSS	DBPSK	1.0	-

#### 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)	Remark
A, B	802.11b	1 to 11	6	DSSS	DBPSK	1.0	-

**Antenna Port Conducted 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)	Remark
A	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	-

**Test Condition:**

Applicable to	Environmental Conditions	Input Power (System)	Tested by
RE $\geq$ 1G	23 deg. C, 69% RH	120Vac, 60Hz,	Greg Lin
RE<1G	23 deg. C, 69% RH	120Vac, 60Hz,	Greg Lin
PLC	23 deg. C, 69% RH	120Vac, 60Hz,	Greg Lin
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Ivan Tseng

### 3.3 Duty Cycle of Test Signal

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

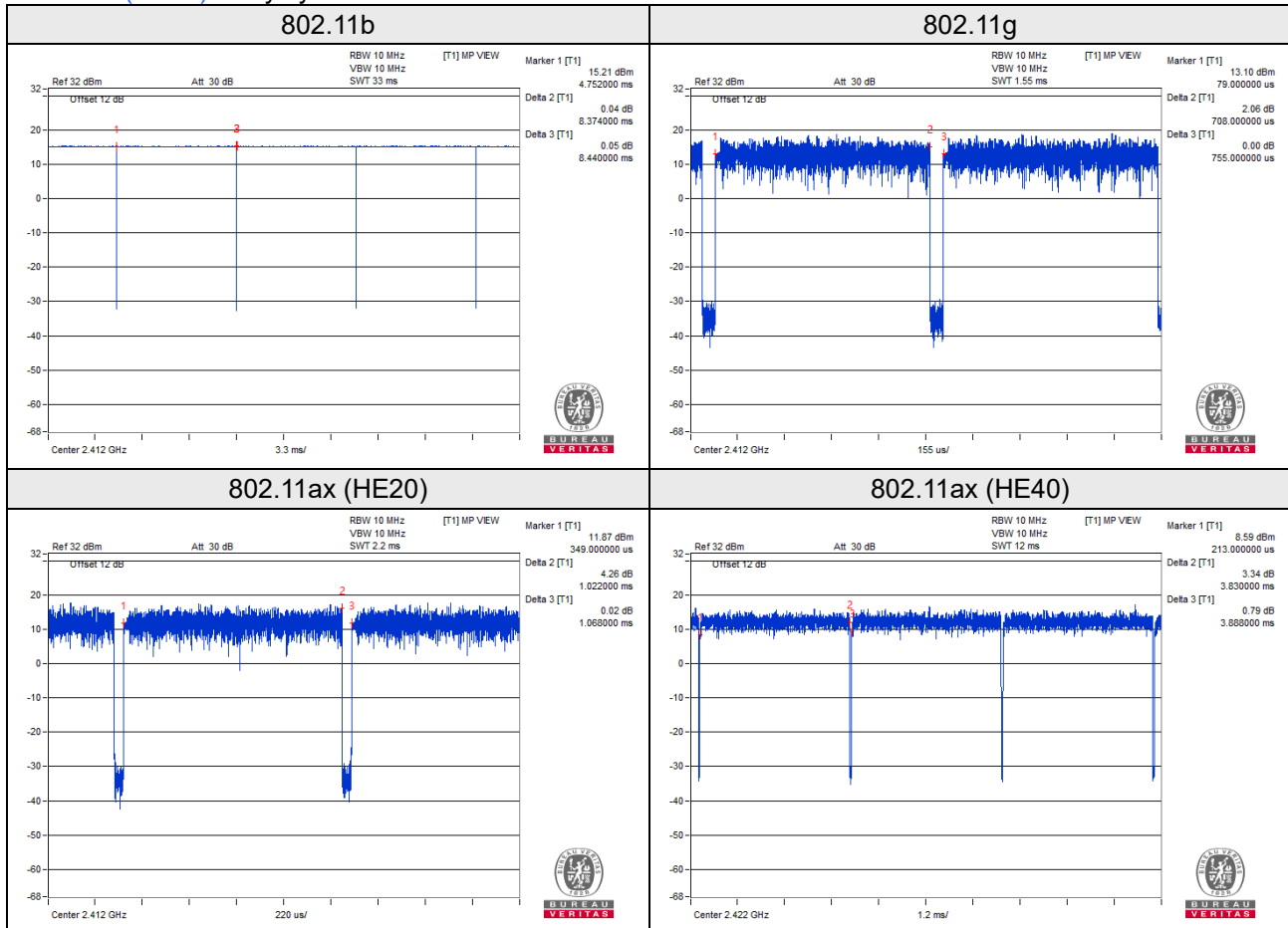
Duty cycle of test signal is < 98%, duty factor is required.

802.11b: Duty cycle = 8.374ms / 8.44ms = 0.992

802.11g: Duty cycle = 0.708ms / 0.755ms = 0.938, Duty factor =  $10 * \log(1/0.938) = 0.28$

802.11ax (HE20): Duty cycle = 1.022ms / 1.068ms = 0.957, Duty factor =  $10 * \log(1/0.957) = 0.19$

802.11ax (HE40): Duty cycle = 3.83ms / 3.888ms = 0.985



### 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.

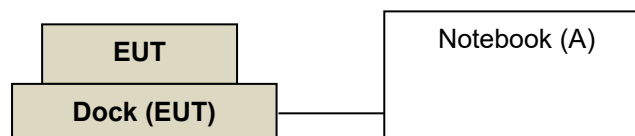
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5420	33MJMQ1	FCC DoC Approved	-
B.	Dock	Nienyi	107-1059401	NA	NA	Accessory of EUT

Note:

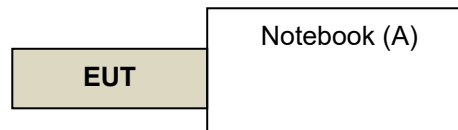
1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

#### 3.4.1 Configuration of System under Test

Mode A



Mode B



### 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. 30, 2021	Dec. 29, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 15, 2021	Sep. 14, 2022
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Nov. 01, 2021	Oct. 30, 2022
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Oct. 26, 2021	Oct. 25, 2022
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier Agilent (Below 1GHz)	8447D	2944A10631	May 14, 2022	May 13, 2023
Preamplifier KEYSIGHT (Above 1GHz)	83017A	MY53270295	May 14, 2022	May 13, 2023
RF Coaxial Cable 57140938WOKEN With 5dB PAD	8D-FB	Cable-CH4-01	Jul. 24, 2021	Jul. 23, 2022
RF Coaxial Cable EMCI	EMC102-KM-KM-3000	150929	Jul. 24, 2021	Jul. 23, 2022
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	Jul. 24, 2021	Jul. 23, 2022
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	May 14, 2022	May 13, 2023
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	May 14, 2022	May 13, 2023
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
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	Jan. 18, 2022	Jan. 17, 2023
Wideband Power Sensor KEYSIGHT	N1923A	MY58190002	May 06, 2022	May 05, 2023

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  $\geq 1/T$  (Duty cycle < 98%) or 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz. (802.11b: RBW = 1MHz, VBW = 10Hz; 802.11g: RBW = 1MHz, VBW = 3kHz, 802.11ax (HE20): RBW = 1MHz, VBW = 1kHz, 802.11ax (HE40): RBW = 1MHz, VBW = 10Hz)
4. All modes of operation were investigated and the worst-case emissions are reported.

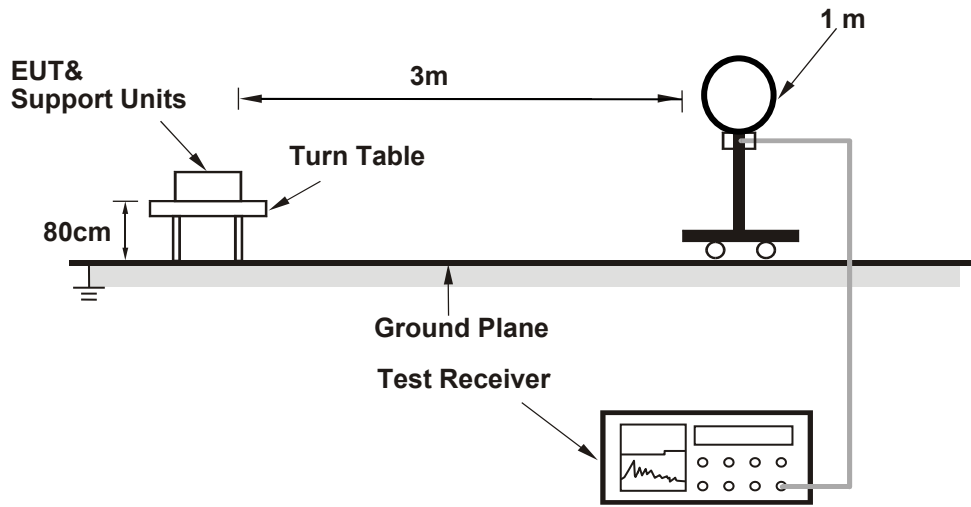
### 4.1.4 Deviation from Test Standard

No deviation.

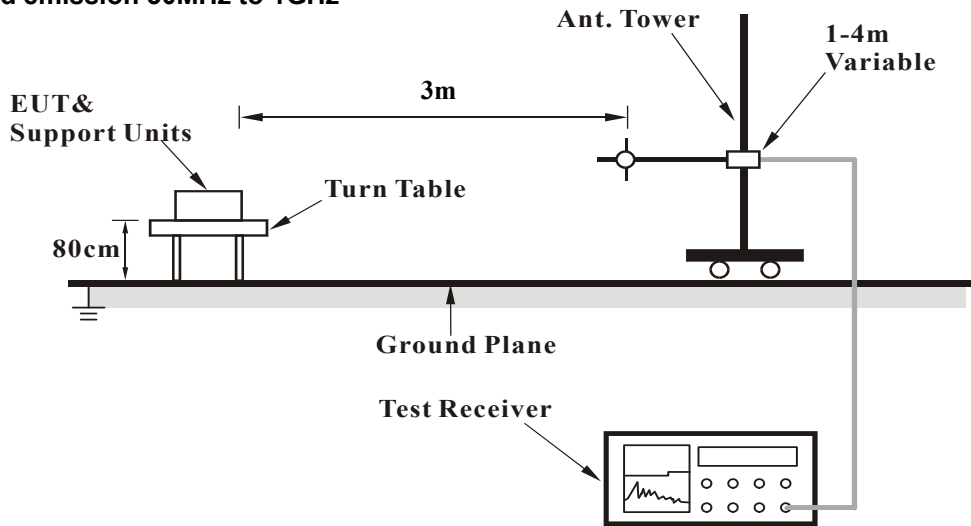


#### 4.1.5 Test Setup

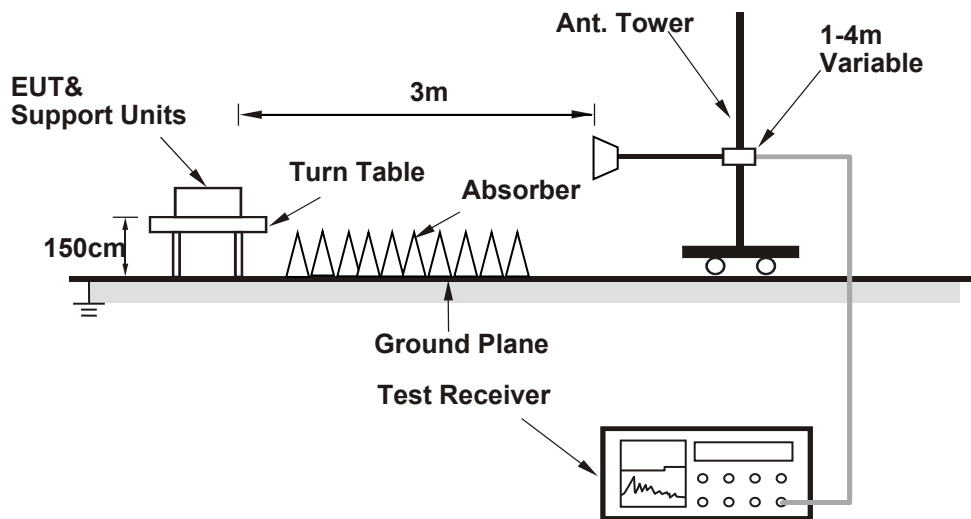
##### For Radiated emission below 30MHz



##### 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

##### Mode A

- EUT connected to the Notebook through dock via USB cable.
- The EUT under transmission condition continuously at specific channel frequency.

##### Mode B

- EUT plugged into the Notebook.
- The EUT under transmission condition continuously at specific channel frequency.

#### 4.1.7 Test Results

Above 1GHz worst-Case 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	59.0 PK	74.0	-15.0	2.61 H	358	24.9	34.1
2	2390.00	46.7 AV	54.0	-7.3	2.61 H	358	12.6	34.1
3	*2412.00	96.2 PK			2.61 H	358	62.1	34.1
4	*2412.00	93.7 AV			2.61 H	358	59.6	34.1
5	4824.00	52.5 PK	74.0	-21.5	1.82 H	314	38.9	13.6
6	4824.00	39.8 AV	54.0	-14.2	1.82 H	314	26.2	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	2390.00	59.9 PK	74.0	-14.1	1.25 V	160	25.8	34.1
2	2390.00	47.2 AV	54.0	-6.8	1.25 V	160	13.1	34.1
3	*2412.00	102.4 PK			1.25 V	160	68.3	34.1
4	*2412.00	99.9 AV			1.25 V	160	65.8	34.1
5	4824.00	53.5 PK	74.0	-20.5	1.45 V	155	39.9	13.6
6	4824.00	40.4 AV	54.0	-13.6	1.45 V	155	26.8	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 802.11b	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	97.1 PK			2.58 H	354	62.8	34.3
2	*2437.00	94.6 AV			2.58 H	354	60.3	34.3
3	4874.00	52.8 PK	74.0	-21.2	1.84 H	306	39.2	13.6
4	4874.00	40.0 AV	54.0	-14.0	1.84 H	306	26.4	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	*2437.00	103.2 PK			1.18 V	186	68.9	34.3
2	*2437.00	100.7 AV			1.18 V	186	66.4	34.3
3	4874.00	53.9 PK	74.0	-20.1	1.52 V	164	40.3	13.6
4	4874.00	40.8 AV	54.0	-13.2	1.52 V	164	27.2	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 802.11b	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	96.7 PK			2.57 H	351	62.4	34.3
2	*2462.00	94.2 AV			2.57 H	351	59.9	34.3
3	2483.50	59.6 PK	74.0	-14.4	2.57 H	351	25.3	34.3
4	2483.50	47.2 AV	54.0	-6.8	2.57 H	351	12.9	34.3
5	4924.00	52.5 PK	74.0	-21.5	1.76 H	312	39.1	13.4
6	4924.00	39.7 AV	54.0	-14.3	1.76 H	312	26.3	13.4

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	102.7 PK			1.04 V	195	68.4	34.3
2	*2462.00	100.2 AV			1.04 V	195	65.9	34.3
3	2483.52	59.9 PK	74.0	-14.1	1.04 V	195	25.6	34.3
4	2483.52	47.6 AV	54.0	-6.4	1.04 V	195	13.3	34.3
5	4924.00	53.6 PK	74.0	-20.4	1.43 V	158	40.2	13.4
6	4924.00	40.3 AV	54.0	-13.7	1.43 V	158	26.9	13.4

**Remarks:**

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

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	59.5 PK	74.0	-14.5	2.54 H	353	25.4	34.1
2	2390.00	46.7 AV	54.0	-7.3	2.54 H	353	12.6	34.1
3	*2412.00	99.2 PK			2.54 H	353	65.1	34.1
4	*2412.00	89.3 AV			2.54 H	353	55.2	34.1
5	4824.00	52.9 PK	74.0	-21.1	1.92 H	314	39.3	13.6
6	4824.00	40.0 AV	54.0	-14.0	1.92 H	314	26.4	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	2390.00	60.9 PK	74.0	-13.1	1.27 V	205	26.8	34.1
2	2390.00	47.6 AV	54.0	-6.4	1.27 V	205	13.5	34.1
3	*2412.00	105.0 PK			1.27 V	205	70.9	34.1
4	*2412.00	95.1 AV			1.27 V	205	61.0	34.1
5	4824.00	53.9 PK	74.0	-20.1	1.49 V	161	40.3	13.6
6	4824.00	40.3 AV	54.0	-13.7	1.49 V	161	26.7	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 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	99.7 PK			2.57 H	349	65.4	34.3
2	*2437.00	89.7 AV			2.57 H	349	55.4	34.3
3	4874.00	52.9 PK	74.0	-21.1	1.92 H	324	39.3	13.6
4	4874.00	40.0 AV	54.0	-14.0	1.92 H	324	26.4	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	*2437.00	105.6 PK			1.21 V	202	71.3	34.3
2	*2437.00	95.7 AV			1.21 V	202	61.4	34.3
3	4874.00	54.2 PK	74.0	-19.8	1.51 V	162	40.6	13.6
4	4874.00	40.4 AV	54.0	-13.6	1.51 V	162	26.8	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 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	99.2 PK			2.58 H	355	64.9	34.3
2	*2462.00	89.3 AV			2.58 H	355	55.0	34.3
3	2483.50	59.9 PK	74.0	-14.1	2.58 H	355	25.6	34.3
4	2483.50	47.5 AV	54.0	-6.5	2.58 H	355	13.2	34.3
5	4924.00	52.6 PK	74.0	-21.4	1.76 H	312	39.2	13.4
6	4924.00	39.8 AV	54.0	-14.2	1.76 H	312	26.4	13.4

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	105.4 PK			1.07 V	208	71.1	34.3
2	*2462.00	95.4 AV			1.07 V	208	61.1	34.3
3	2483.50	60.5 PK	74.0	-13.5	1.07 V	208	26.2	34.3
4	2483.50	48.2 AV	54.0	-5.8	1.07 V	208	13.9	34.3
5	4924.00	53.7 PK	74.0	-20.3	1.38 V	157	40.3	13.4
6	4924.00	40.4 AV	54.0	-13.6	1.38 V	157	27.0	13.4

**Remarks:**

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



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	59.8 PK	74.0	-14.2	2.63 H	353	25.7	34.1
2	2390.00	47.6 AV	54.0	-6.4	2.63 H	353	13.5	34.1
3	*2412.00	100.8 PK			2.63 H	353	66.7	34.1
4	*2412.00	87.9 AV			2.63 H	353	53.8	34.1
5	4824.00	52.9 PK	74.0	-21.1	1.71 H	309	39.3	13.6
6	4824.00	40.1 AV	54.0	-13.9	1.71 H	309	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	2390.00	60.5 PK	74.0	-13.5	1.14 V	205	26.4	34.1
2	2390.00	48.3 AV	54.0	-5.7	1.14 V	205	14.2	34.1
3	*2412.00	106.9 PK			1.14 V	205	72.8	34.1
4	*2412.00	94.1 AV			1.14 V	205	60.0	34.1
5	4824.00	53.8 PK	74.0	-20.2	1.51 V	168	40.2	13.6
6	4824.00	40.5 AV	54.0	-13.5	1.51 V	168	26.9	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 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	101.6 PK			2.57 H	348	67.3	34.3
2	*2437.00	88.8 AV			2.57 H	348	54.5	34.3
3	4874.00	52.9 PK	74.0	-21.1	1.79 H	311	39.3	13.6
4	4874.00	40.0 AV	54.0	-14.0	1.79 H	311	26.4	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	*2437.00	107.6 PK			1.21 V	184	73.3	34.3
2	*2437.00	94.9 AV			1.21 V	184	60.6	34.3
3	4874.00	54.1 PK	74.0	-19.9	1.53 V	157	40.5	13.6
4	4874.00	40.7 AV	54.0	-13.3	1.53 V	157	27.1	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 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	101.5 PK			2.53 H	352	67.2	34.3
2	*2462.00	88.4 AV			2.53 H	352	54.1	34.3
3	2483.50	60.5 PK	74.0	-13.5	2.53 H	352	26.2	34.3
4	2483.50	47.4 AV	54.0	-6.6	2.53 H	352	13.1	34.3
5	4924.00	52.5 PK	74.0	-21.5	1.81 H	315	39.1	13.4
6	4924.00	39.7 AV	54.0	-14.3	1.81 H	315	26.3	13.4

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	107.4 PK			1.14 V	190	73.1	34.3
2	*2462.00	94.5 AV			1.14 V	190	60.2	34.3
3	2483.50	61.4 PK	74.0	-12.6	1.14 V	190	27.1	34.3
4	2483.50	48.5 AV	54.0	-5.5	1.14 V	190	14.2	34.3
5	4924.00	53.7 PK	74.0	-20.3	1.39 V	156	40.3	13.4
6	4924.00	40.3 AV	54.0	-13.7	1.39 V	156	26.9	13.4

**Remarks:**

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

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	60.4 PK	74.0	-13.6	2.59 H	356	26.3	34.1
2	2390.00	47.3 AV	54.0	-6.7	2.59 H	356	13.2	34.1
3	*2422.00	99.0 PK			2.59 H	356	64.9	34.1
4	*2422.00	86.1 AV			2.59 H	356	52.0	34.1
5	4844.00	52.7 PK	74.0	-21.3	1.88 H	316	39.1	13.6
6	4844.00	39.8 AV	54.0	-14.2	1.88 H	316	26.2	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	2390.00	61.5 PK	74.0	-12.5	1.19 V	185	27.4	34.1
2	2390.00	48.2 AV	54.0	-5.8	1.19 V	185	14.1	34.1
3	*2422.00	105.3 PK			1.19 V	185	71.2	34.1
4	*2422.00	92.2 AV			1.19 V	185	58.1	34.1
5	4844.00	53.7 PK	74.0	-20.3	1.43 V	158	40.1	13.6
6	4844.00	40.4 AV	54.0	-13.6	1.43 V	158	26.8	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 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	99.5 PK			2.68 H	350	65.2	34.3
2	*2437.00	86.5 AV			2.68 H	350	52.2	34.3
3	4874.00	52.8 PK	74.0	-21.2	1.84 H	310	39.2	13.6
4	4874.00	39.9 AV	54.0	-14.1	1.84 H	310	26.3	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	*2437.00	105.7 PK			1.21 V	189	71.4	34.3
2	*2437.00	92.5 AV			1.21 V	189	58.2	34.3
3	4874.00	53.9 PK	74.0	-20.1	1.54 V	159	40.3	13.6
4	4874.00	40.5 AV	54.0	-13.5	1.54 V	159	26.9	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 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	98.8 PK			2.62 H	354	64.5	34.3
2	*2452.00	85.9 AV			2.62 H	354	51.6	34.3
3	2483.50	59.7 PK	74.0	-14.3	2.62 H	354	25.4	34.3
4	2483.50	48.6 AV	54.0	-5.4	2.62 H	354	14.3	34.3
5	4904.00	52.5 PK	74.0	-21.5	1.87 H	316	39.0	13.5
6	4904.00	39.6 AV	54.0	-14.4	1.87 H	316	26.1	13.5

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2452.00	105.0 PK			1.12 V	192	70.7	34.3
2	*2452.00	92.1 AV			1.12 V	192	57.8	34.3
3	2483.50	63.2 PK	74.0	-10.8	1.12 V	192	28.9	34.3
<b>4</b>	<b>2483.50</b>	<b>50.6 AV</b>	<b>54.0</b>	<b>-3.4</b>	<b>1.12 V</b>	<b>192</b>	<b>16.3</b>	<b>34.3</b>
5	4904.00	53.7 PK	74.0	-20.3	1.51 V	158	40.2	13.5
6	4904.00	40.3 AV	54.0	-13.7	1.51 V	158	26.8	13.5

**Remarks:**

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

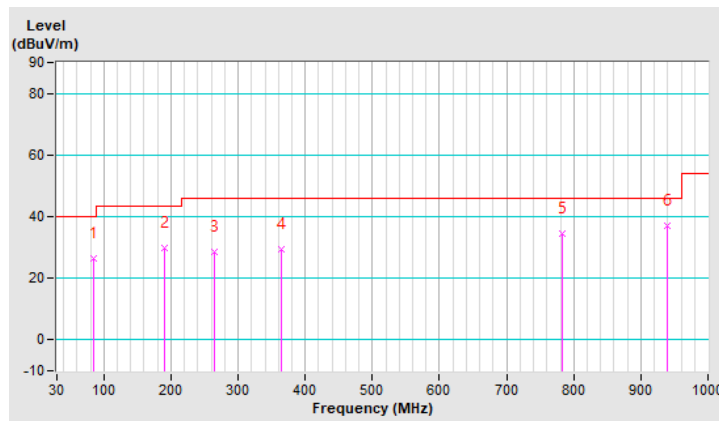
Below 1GHz worst-case data: 802.11b

RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
Test Mode	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	84.32	26.4 QP	40.0	-13.6	1.00 H	157	40.4	-14.0
2	191.02	29.7 QP	43.5	-13.8	1.50 H	228	41.0	-11.3
3	264.74	28.6 QP	46.0	-17.4	1.50 H	117	37.3	-8.7
4	363.68	29.6 QP	46.0	-16.4	1.00 H	40	36.1	-6.5
5	782.72	34.7 QP	46.0	-11.3	1.00 H	164	32.2	2.5
6	939.86	37.2 QP	46.0	-8.8	1.25 H	242	31.5	5.7

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.



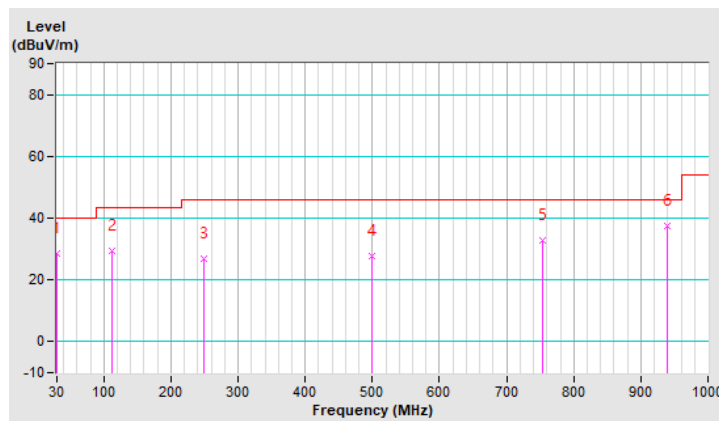
RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
Test Mode	A		

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	28.7 QP	40.0	-11.3	1.00 V	225	38.9	-10.2
2	111.48	29.5 QP	43.5	-14.0	1.25 V	227	41.4	-11.9
3	249.22	26.8 QP	46.0	-19.2	1.50 V	155	36.2	-9.4
4	499.48	27.7 QP	46.0	-18.3	1.25 V	309	31.6	-3.9
5	753.62	33.0 QP	46.0	-13.0	1.00 V	30	31.5	1.5
6	939.86	37.6 QP	46.0	-8.4	1.50 V	171	31.9	5.7

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.



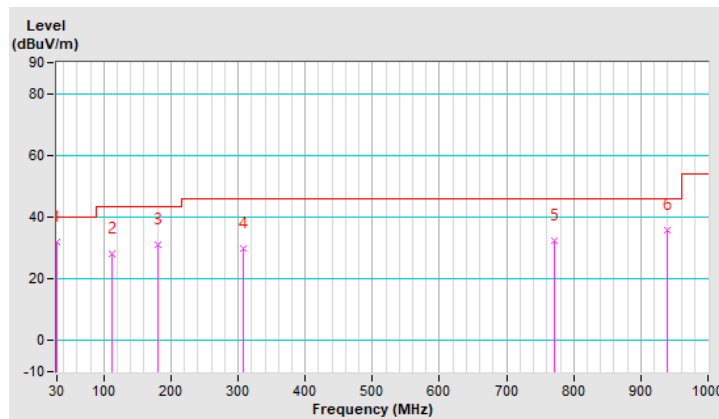


RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
Test Mode	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	32.1 QP	40.0	-7.9	1.25 H	97	42.3	-10.2
2	111.48	28.3 QP	43.5	-15.2	1.00 H	99	40.2	-11.9
3	181.32	31.0 QP	43.5	-12.5	1.50 H	106	41.4	-10.4
4	307.42	29.8 QP	46.0	-16.2	1.25 H	1	37.2	-7.4
5	771.08	32.4 QP	46.0	-13.6	1.00 H	132	30.3	2.1
6	939.86	35.9 QP	46.0	-10.1	1.50 H	9	30.2	5.7

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.

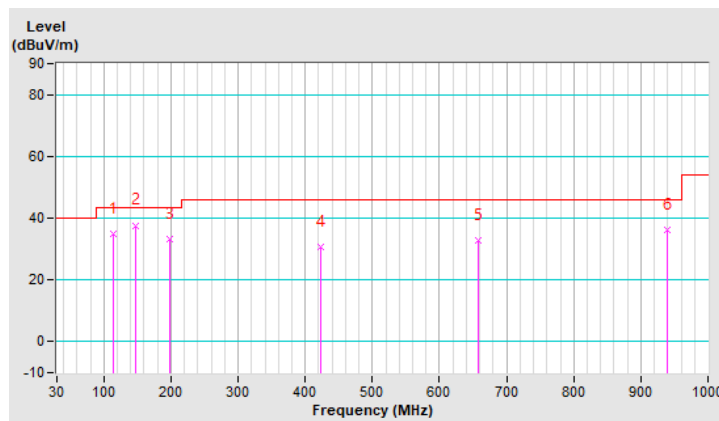


RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
Test Mode	B		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	113.42	34.9 QP	43.5	-8.6	1.25 V	120	46.6	-11.7
2	146.40	37.7 QP	43.5	-5.8	1.00 V	327	46.5	-8.8
3	198.78	33.4 QP	43.5	-10.1	1.50 V	320	45.1	-11.7
4	423.82	30.8 QP	46.0	-15.2	1.25 V	318	36.1	-5.3
5	658.56	32.8 QP	46.0	-13.2	1.00 V	318	33.6	-0.8
6	939.86	36.2 QP	46.0	-9.8	1.25 V	182	30.5	5.7

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. 03, 2021	Dec. 02, 2022
RF signal cable Woken	5D-FB	Cable-cond1-01	Jan. 15, 2022	Jan. 14, 2023
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Mar. 14, 2022	Mar. 13, 2023
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Sep. 07, 2021	Sep. 06, 2022
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

- 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. Tested date: Jul. 17, 2022

#### 4.2.3 Test Procedures

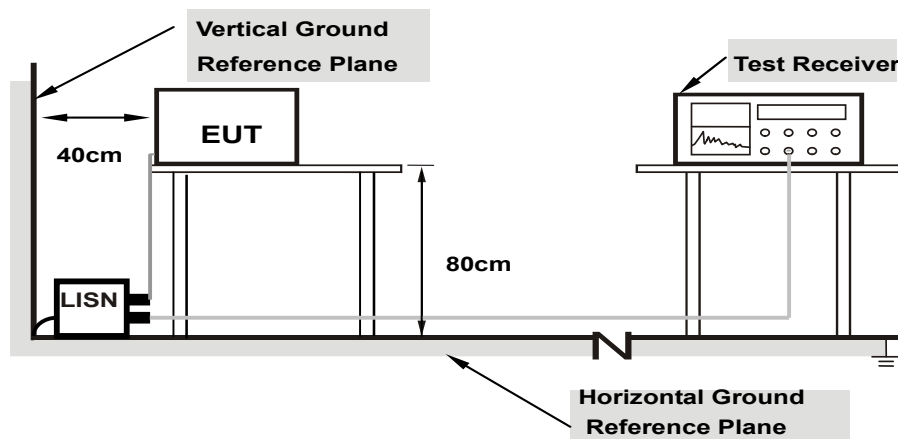
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

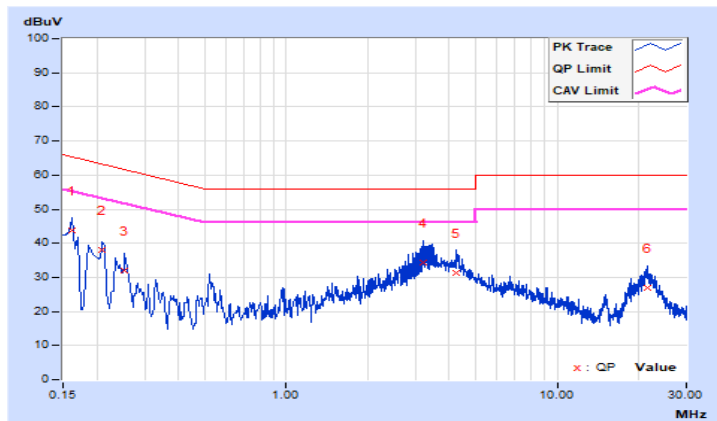
Worst-case data: 802.11b

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

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16200	9.62	34.07	19.08	43.69	28.70	65.36
2	0.21000	9.64	28.53	15.02	38.17	24.66	63.21	53.21	-25.04	-28.55
3	0.25400	9.65	22.37	11.23	32.02	20.88	61.63	51.63	-29.61	-30.75
4	3.19800	9.74	24.60	16.13	34.34	25.87	56.00	46.00	-21.66	-20.13
5	4.24600	9.75	21.42	15.72	31.17	25.47	56.00	46.00	-24.83	-20.53
6	21.59000	9.87	16.95	7.37	26.82	17.24	60.00	50.00	-33.18	-32.76

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.

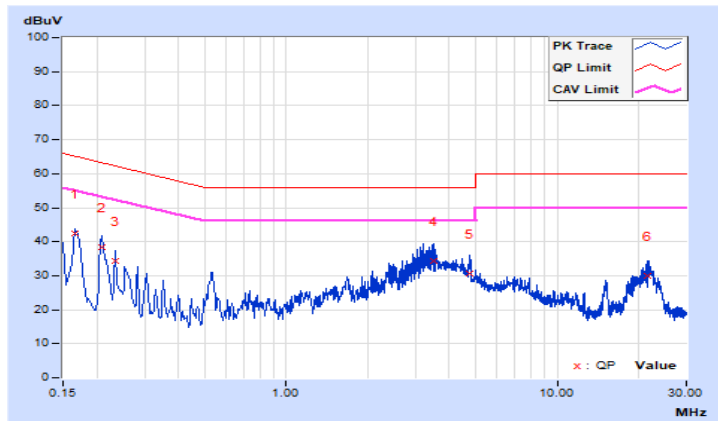


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16600	9.63	32.64	18.64	42.27	28.27	65.16
2	0.21000	9.64	28.67	15.53	38.31	25.17	63.21	53.21	-24.90	-28.04
3	0.23400	9.65	24.66	12.02	34.31	21.67	62.31	52.31	-28.00	-30.64
4	3.51800	9.75	24.65	16.75	34.40	26.50	56.00	46.00	-21.60	-19.50
5	4.77800	9.76	20.99	13.74	30.75	23.50	56.00	46.00	-25.25	-22.50
6	21.53800	9.89	20.04	5.16	29.93	15.05	60.00	50.00	-30.07	-34.95

Remarks:

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

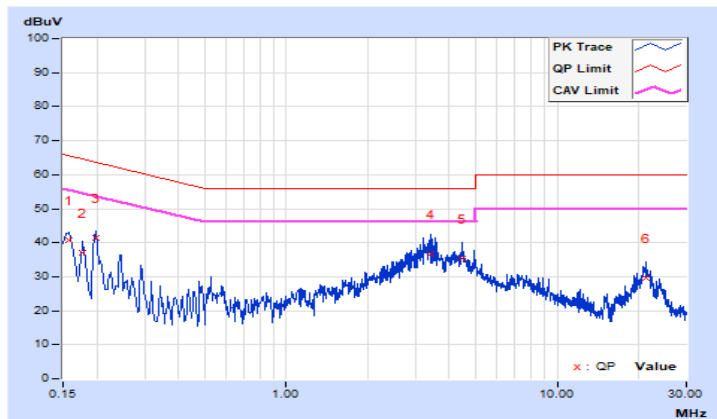


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15687	9.62	31.28	19.40	40.90	29.02	65.63
2	0.17800	9.63	27.54	10.86	37.17	20.49	64.58	54.58	-27.41	-34.09
3	0.19780	9.64	31.67	16.65	41.31	26.29	63.70	53.70	-22.39	-27.41
4	3.43400	9.74	26.92	17.19	36.66	26.93	56.00	46.00	-19.34	-19.07
5	4.47800	9.75	25.51	17.08	35.26	26.83	56.00	46.00	-20.74	-19.17
6	21.28200	9.87	19.69	7.97	29.56	17.84	60.00	50.00	-30.44	-32.16

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.

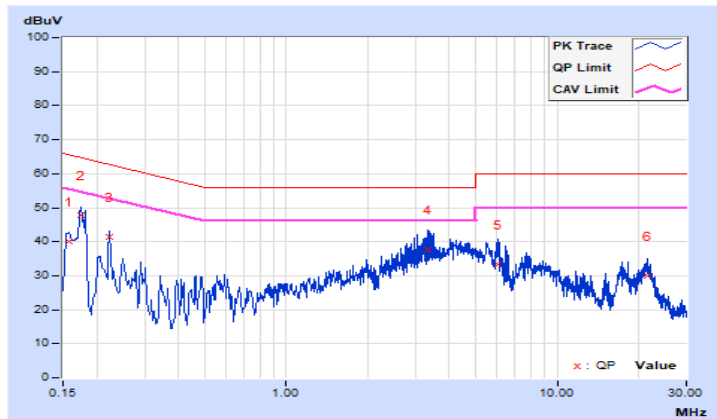


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15687	9.62	30.37	16.77	39.99	26.39	65.63
<b>2</b>	<b>0.17400</b>	<b>9.63</b>	<b>38.16</b>	<b>22.50</b>	<b>47.79</b>	<b>32.13</b>	<b>64.77</b>	<b>54.77</b>	<b>-16.98</b>	<b>-22.64</b>
3	0.22200	9.65	31.61	17.03	41.26	26.68	62.74	52.74	-21.48	-26.06
4	3.32200	9.74	27.82	18.24	37.56	27.98	56.00	46.00	-18.44	-18.02
5	6.06600	9.77	23.67	11.92	33.44	21.69	60.00	50.00	-26.56	-28.31
6	21.48600	9.89	20.06	8.52	29.95	18.41	60.00	50.00	-30.05	-31.59

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.



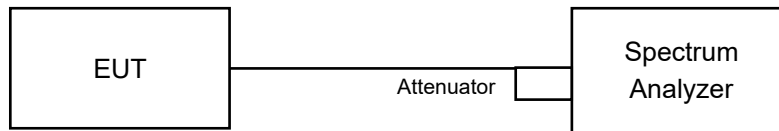


### 4.3 6dB Bandwidth Measurement

#### 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

- Set resolution bandwidth (RBW) = 100kHz.
- Set the video bandwidth (VBW)  $\geq 3 \times$  RBW, Detector = peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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 from Test 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	8.06	8.07	0.5	Pass
6	2437	8.09	8.07	0.5	Pass
11	2462	8.06	8.06	0.5	Pass

##### 802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.20	15.17	0.5	Pass
6	2437	15.83	15.83	0.5	Pass
11	2462	15.84	15.87	0.5	Pass

##### 802.11ax (HE20)

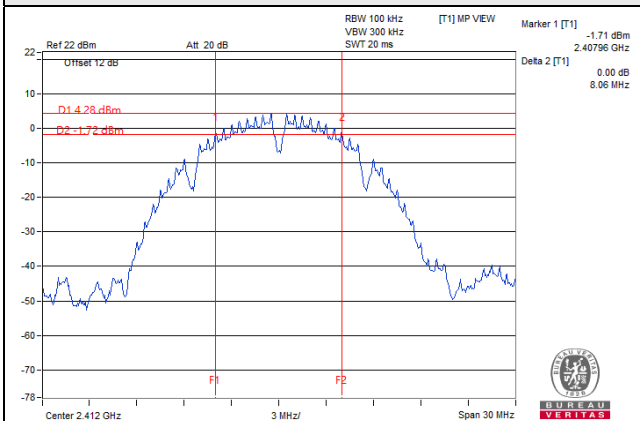
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	18.38	18.04	0.5	Pass
6	2437	18.70	18.41	0.5	Pass
11	2462	18.67	18.63	0.5	Pass

##### 802.11ax (HE40)

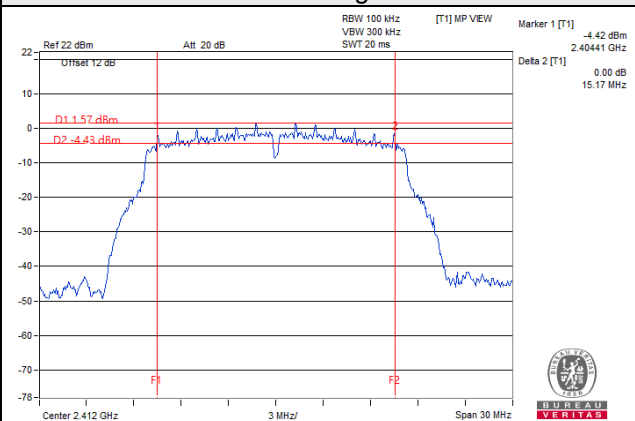
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	37.36	37.23	0.5	Pass
6	2437	37.53	37.17	0.5	Pass
9	2452	37.50	37.07	0.5	Pass

### Spectrum Plot of Worst Value

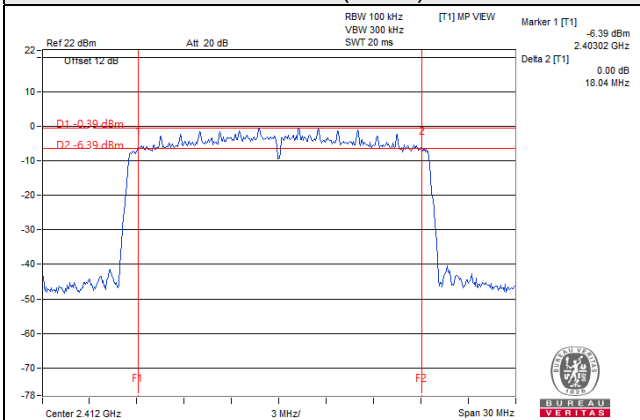
#### 802.11b



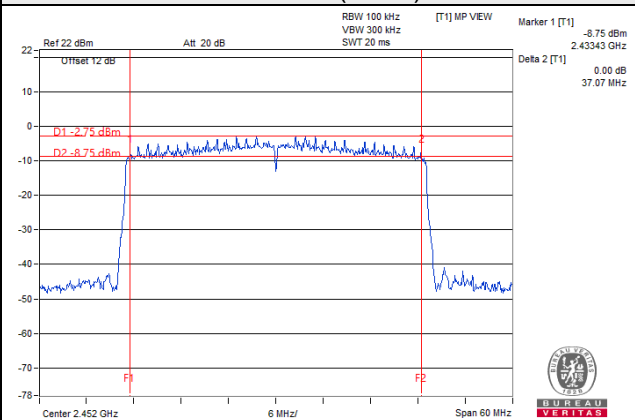
#### 802.11g



#### 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,

If antenna gains are not equal, the user may use either of the following methods to calculate directional gain, provided that each transmit antenna is driven by only one spatial stream:

- Directional gain may be calculated by using the formulas applicable to equal gain antennas with GANT set equal to the gain of the antenna having the highest gain; or,

$$\bullet \text{ DirectionalGain} = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

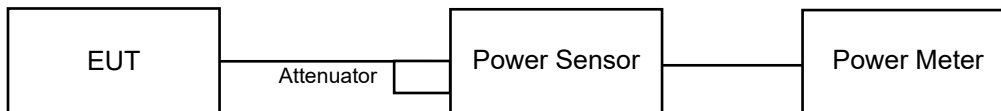
Each antenna is driven by no more than one spatial stream;

$N_{SS}$  = the number of independent spatial streams of data;

$N_{ANT}$  = the total number of antennas

$g_{j,k} = 10^{G_k/20}$  if the  $k$ th antenna is being fed by spatial stream  $j$ , or zero if it is not;  
 $G_k$  is the gain in dBi of the  $k$ th antenna.

### 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

##### 802.11b

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	12.93	12.98	39.495	15.97	30	Pass
6	2437	12.97	12.99	<b>39.722</b>	15.99	30	Pass
11	2462	12.57	12.64	36.437	15.62	30	Pass

Note: Directional Gain = 5.06dBi < 6dBi, so the power limit is not reduced.

##### 802.11g

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	12.22	12.37	33.931	15.31	30	Pass
6	2437	12.80	12.99	38.961	15.91	30	Pass
11	2462	12.18	12.11	32.775	15.16	30	Pass

Note: Directional Gain = 5.06dBi < 6dBi, so the power limit is not reduced.

##### 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	11.42	11.59	28.289	14.52	30	Pass
6	2437	11.75	12.49	32.704	15.15	30	Pass
11	2462	11.22	11.26	26.609	14.25	30	Pass

Note: Directional Gain = 5.06dBi < 6dBi, so the power limit is not reduced.

##### 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	11.40	11.99	29.616	14.72	30	Pass
6	2437	11.64	11.99	30.401	14.83	30	Pass
9	2452	11.49	11.47	28.121	14.49	30	Pass

Note: Directional Gain = 5.06dBi < 6dBi, so the power limit is not reduced.

## 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 band during any time interval of continuous transmission.

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

If antenna gains are not equal, the user may use either of the following methods to calculate directional gain, provided that each transmit antenna is driven by only one spatial stream:

- Directional gain may be calculated by using the formulas applicable to equal gain antennas with GANT set equal to the gain of the antenna having the highest gain; or,

$$\bullet \text{ DirectionalGain} = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

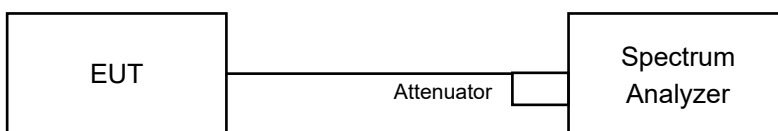
Each antenna is driven by no more than one spatial stream;

$N_{SS}$  = the number of independent spatial streams of data;

$N_{ANT}$  = the total number of antennas

$g_{j,k} = 10^{G_k/20}$  if the  $k$ th antenna is being fed by spatial stream  $j$ , or zero if it is not;  
 $G_k$  is the gain in dBi of the  $k$ th antenna.

### 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  $\geq 98\%$ )

- Set instrument center frequency to DTS channel center frequency.
- Set span to at least 1.5 times the OBW.
- Set RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- Set VBW  $\geq 3 \times \text{RBW}$ .
- Detector = power averaging (RMS) or sample detector (when RMS not available).
- Ensure that the number of measurement points in the sweep  $\geq 2 \times \text{span/RBW}$ .
- Sweep time = auto couple.
- Employ trace averaging (RMS) mode over a minimum of 100 traces.
- 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:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- e) Set VBW  $\geq 3 \times \text{RBW}$ .
- f) Detector = power averaging (RMS) or sample detector (when RMS not available).
- g) Ensure that the number of measurement points in the sweep  $\geq 2 \times \text{span}/\text{RBW}$ .
- 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	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-19.15	3.01	-16.14	8.00	Pass
	6	2437	-19.16	3.01	-16.15	8.00	Pass
	11	2462	-19.32	3.01	-16.31	8.00	Pass
1	1	2412	-18.98	3.01	-15.97	8.00	Pass
	6	2437	-18.90	3.01	-15.89	8.00	Pass
	11	2462	-19.18	3.01	-16.17	8.00	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.
2. Directional Gain = 5.06dBi < 6dBi, so the power spectral density limit is not reduced.

##### 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	-21.50	3.01	0.28	-18.21	8.00	Pass
	6	2437	-21.00	3.01	0.28	-17.71	8.00	Pass
	11	2462	-21.56	3.01	0.28	-18.27	8.00	Pass
1	1	2412	-21.41	3.01	0.28	-18.12	8.00	Pass
	6	2437	-20.85	3.01	0.28	-17.56	8.00	Pass
	11	2462	-21.64	3.01	0.28	-18.35	8.00	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.
2. Directional Gain = 5.06dBi < 6dBi, so the power spectral density limit is not reduced.
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	-22.54	3.01	0.19	-19.34	8.00	Pass
	6	2437	-22.11	3.01	0.19	-18.91	8.00	Pass
	11	2462	-22.63	3.01	0.19	-19.43	8.00	Pass
1	1	2412	-22.27	3.01	0.19	-19.07	8.00	Pass
	6	2437	-21.25	3.01	0.19	-18.05	8.00	Pass
	11	2462	-22.58	3.01	0.19	-19.38	8.00	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.
2. Directional Gain = 5.06dBi < 6dBi, so the power spectral density limit is not reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

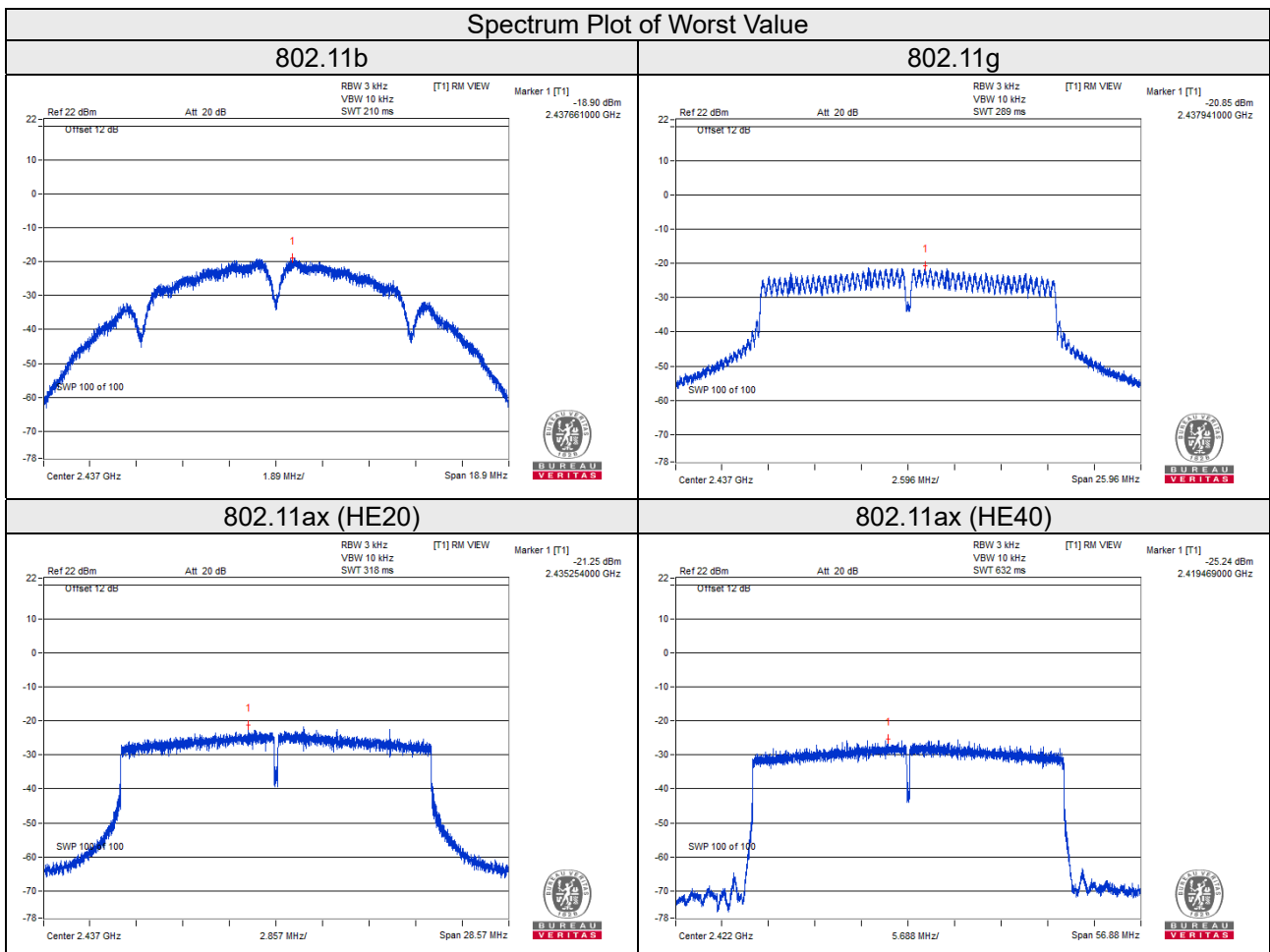


802.11ax (HE40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-25.68	3.01	-22.67	8.00	Pass
	6	2437	-25.60	3.01	-22.59	8.00	Pass
	9	2452	-25.45	3.01	-22.44	8.00	Pass
1	3	2422	-25.24	3.01	-22.23	8.00	Pass
	6	2437	-25.27	3.01	-22.26	8.00	Pass
	9	2452	-25.50	3.01	-22.49	8.00	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.
2. Directional Gain = 5.06dBi < 6dBi, so the power spectral density limit is not reduced.

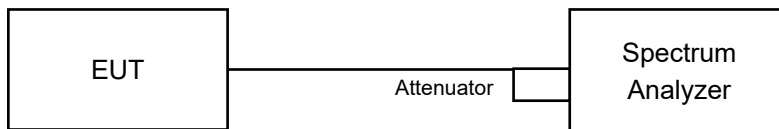


## 4.6 Conducted Out of Band Emission Measurement

### 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

1. Set the RBW = 100 kHz.
2. Set the VBW  $\geq$  300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

#### MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW  $\geq$  300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. 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.

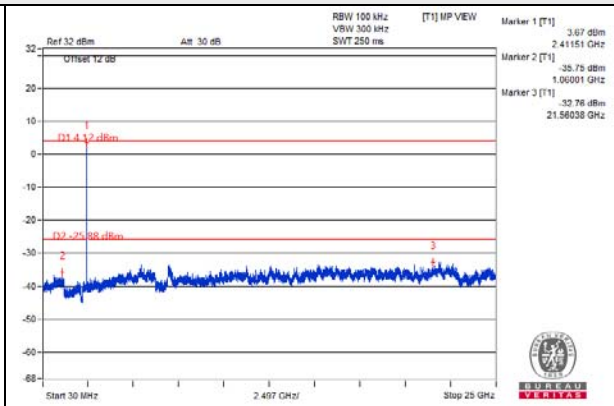
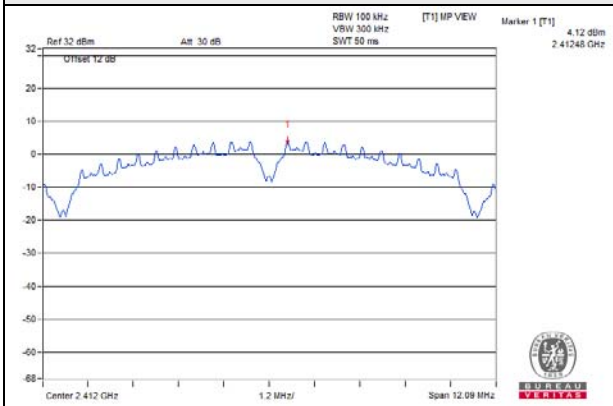
### 4.6.7 Test Results

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.

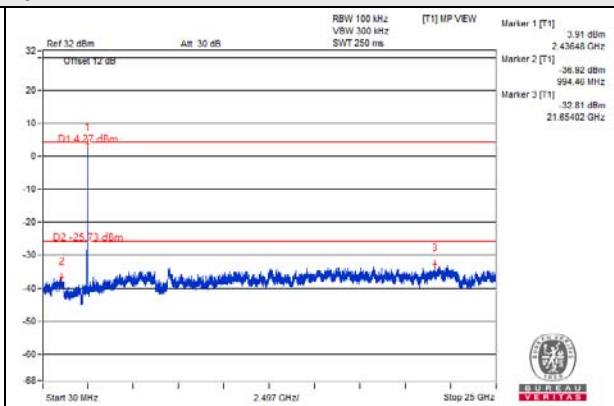
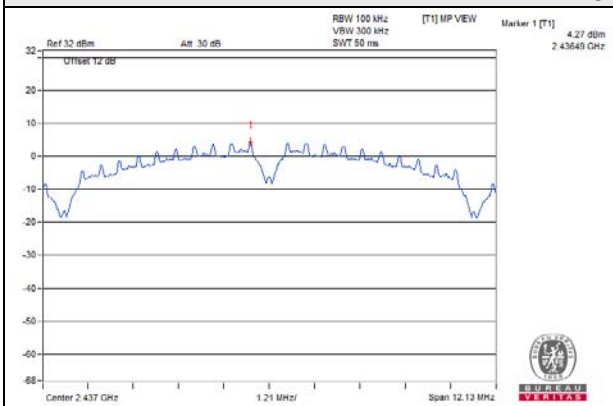
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

802.11b\_Chain 0

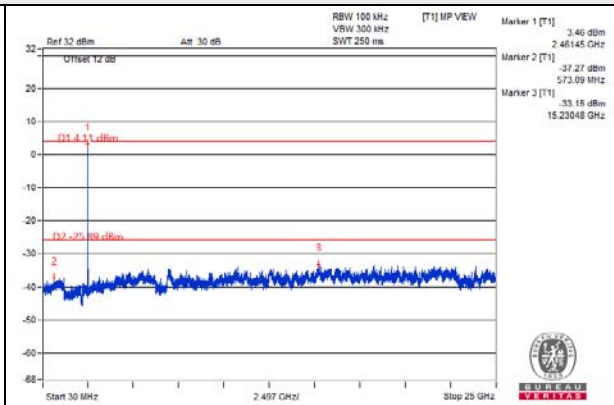
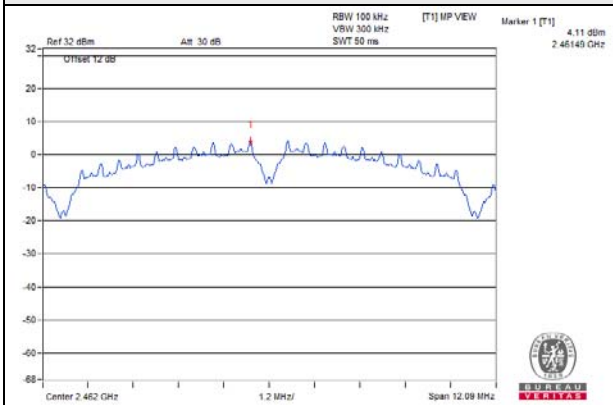
CH 1



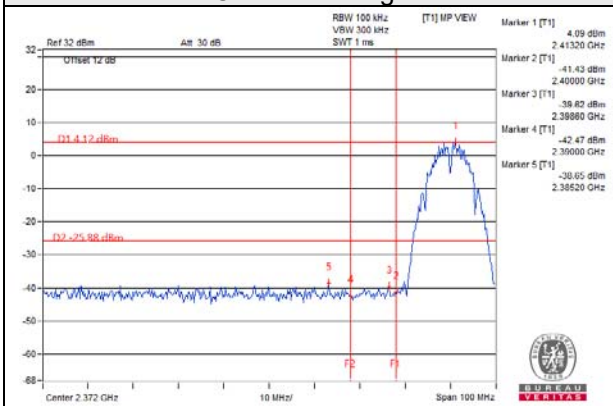
CH 6



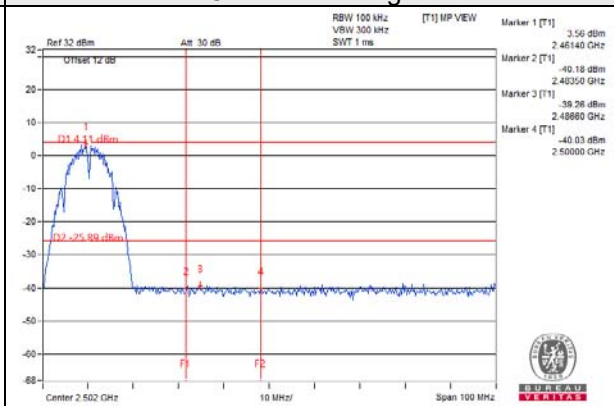
CH 11



CH 1 Band edge

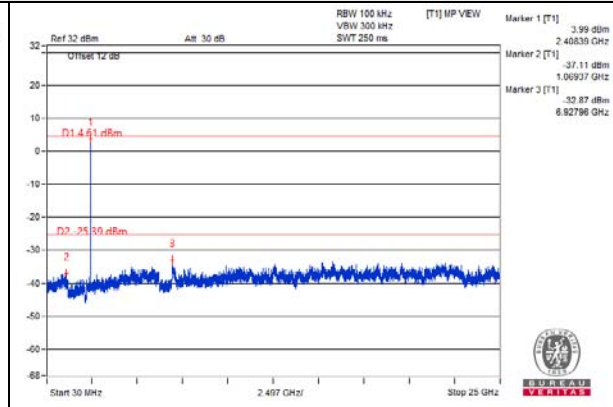
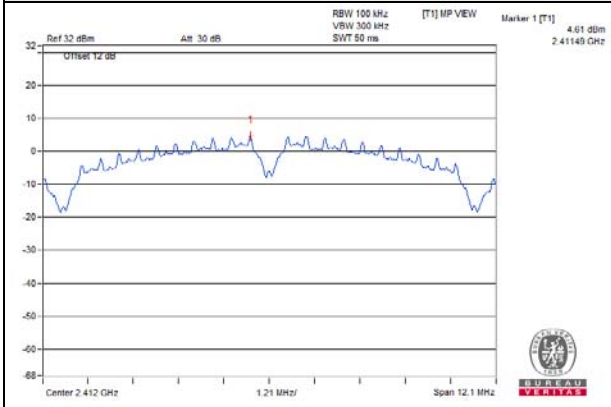


CH 11 Band edge

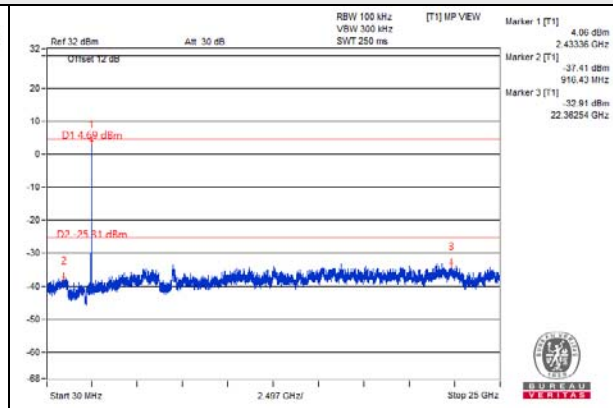
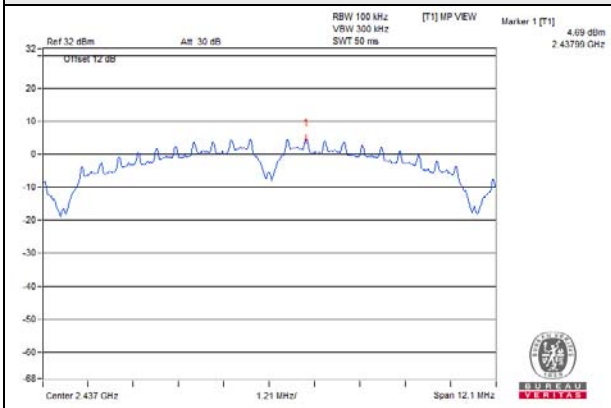


802.11b\_Chain 1

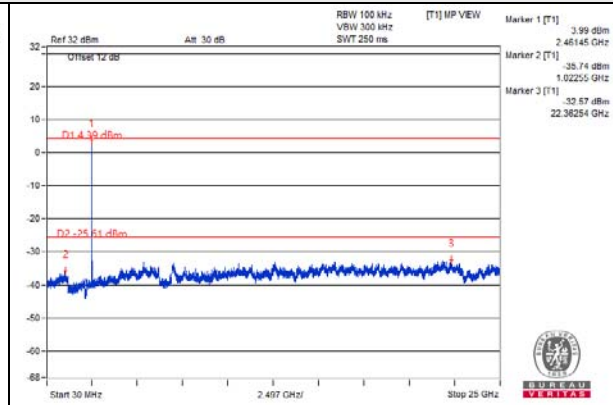
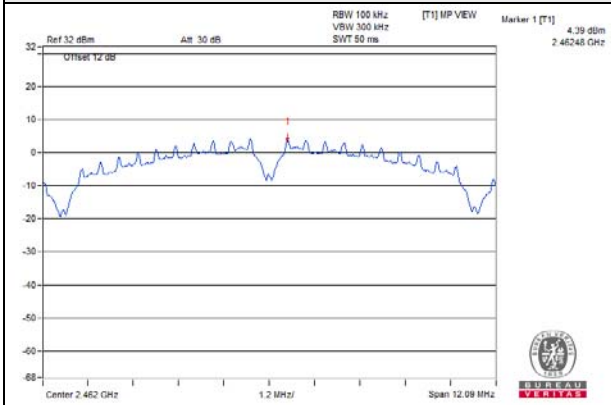
CH 1



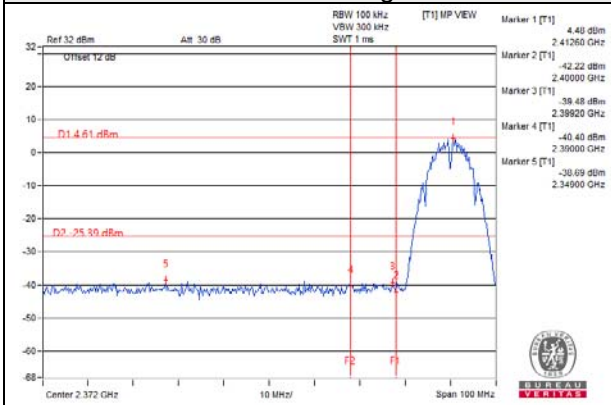
CH 6



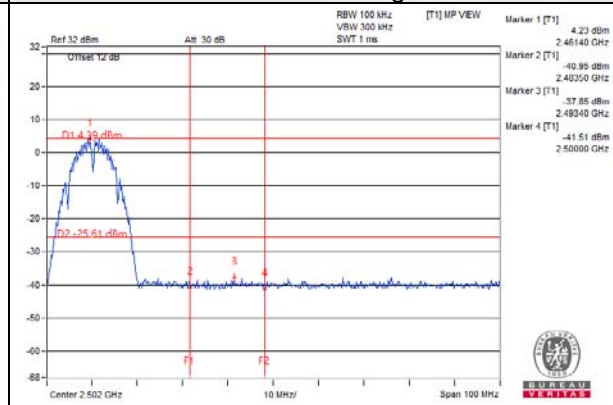
CH 11



CH 1 Band edge

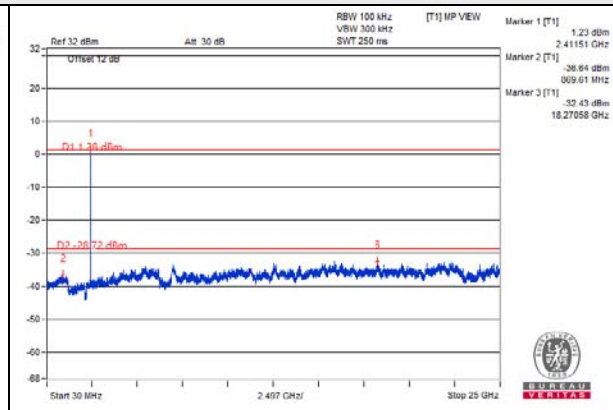
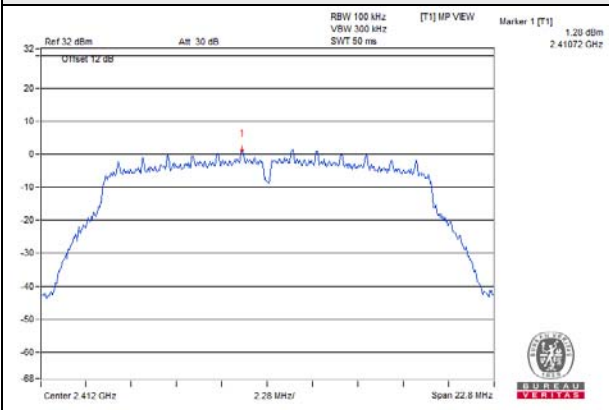


CH 11 Band edge

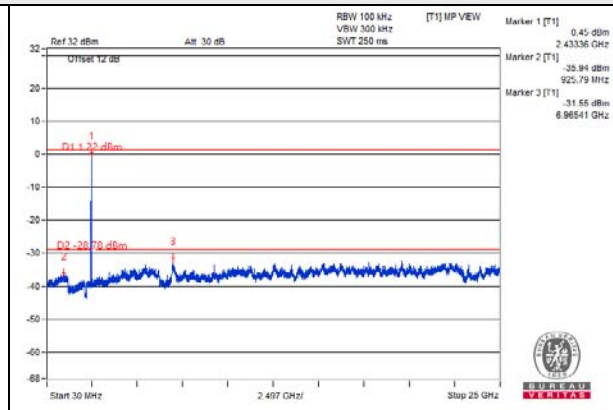
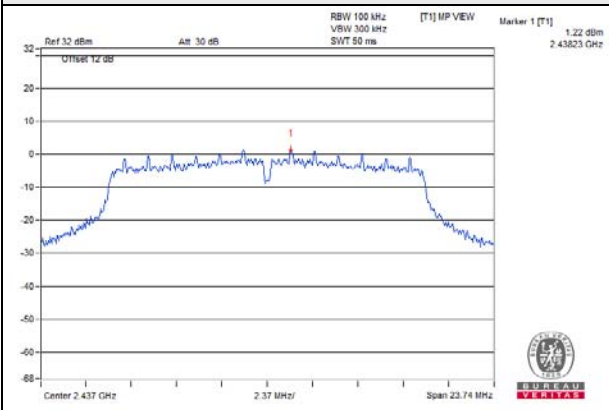


802.11g\_Chain 0

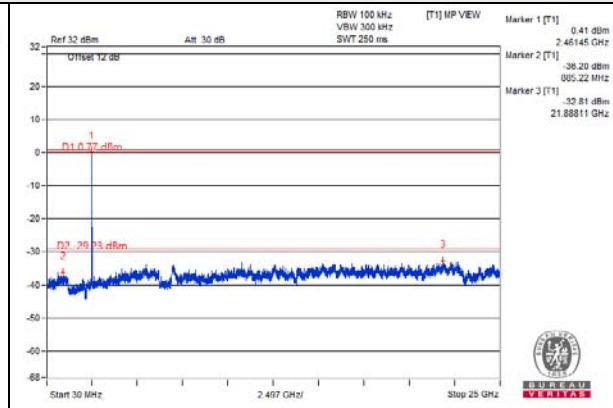
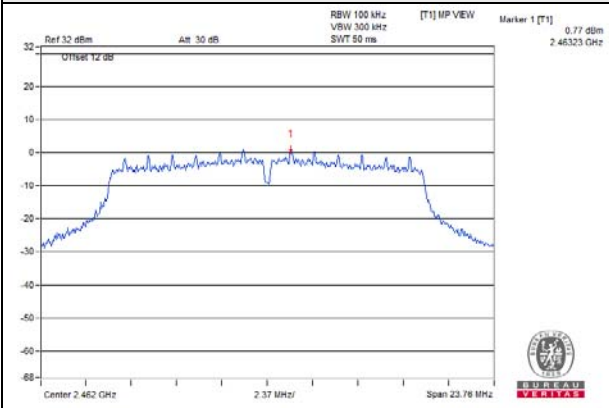
CH 1



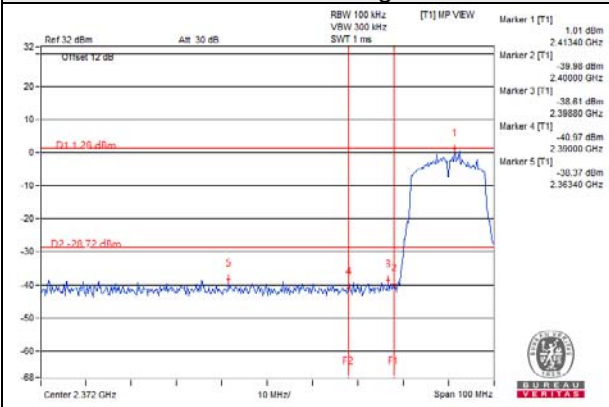
CH 6



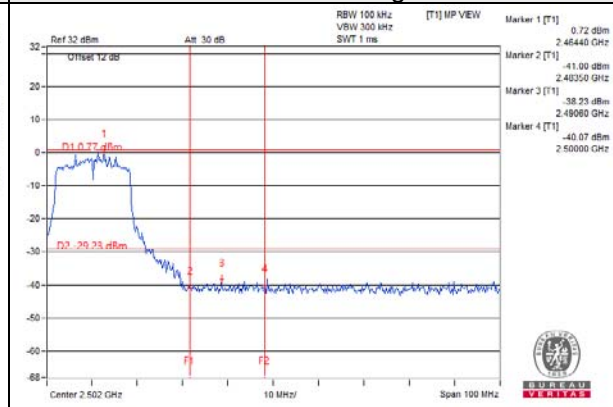
CH 11



CH 1 Band edge

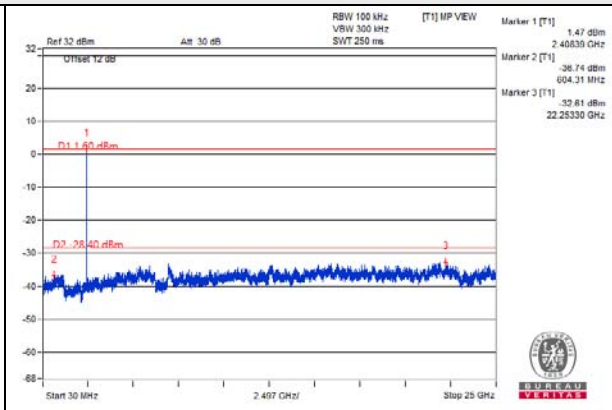
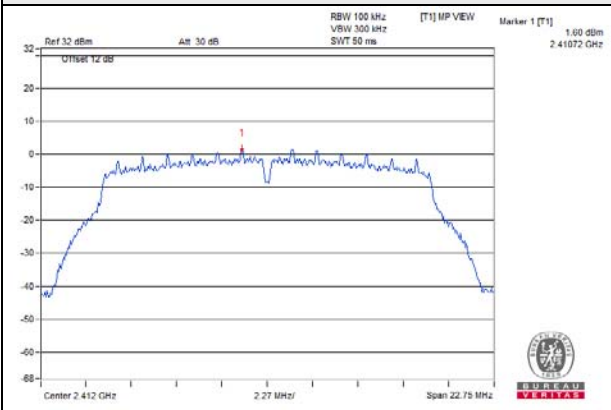


CH 11 Band edge

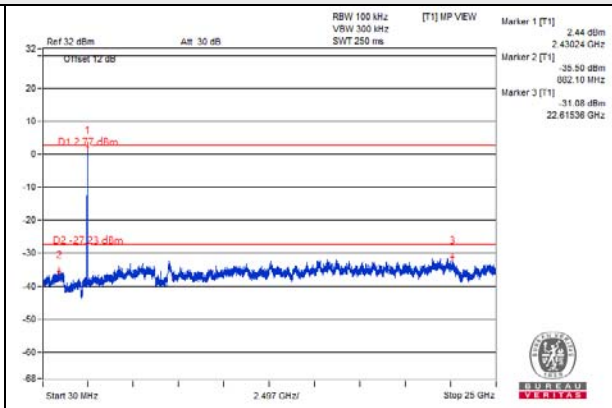
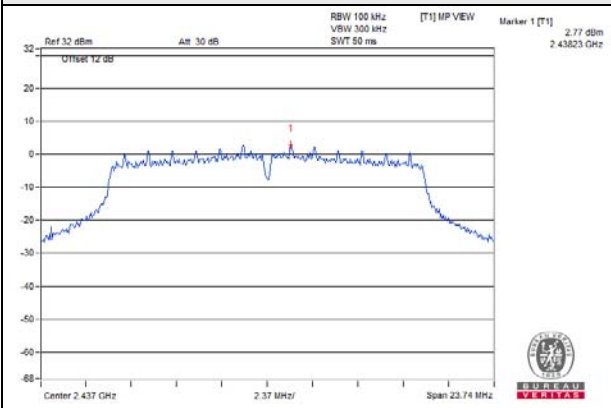


802.11g\_Chain 1

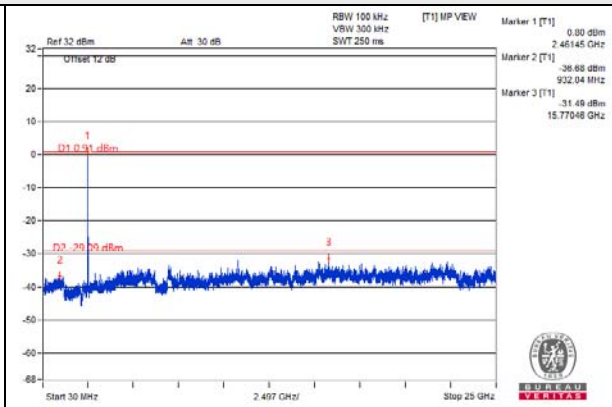
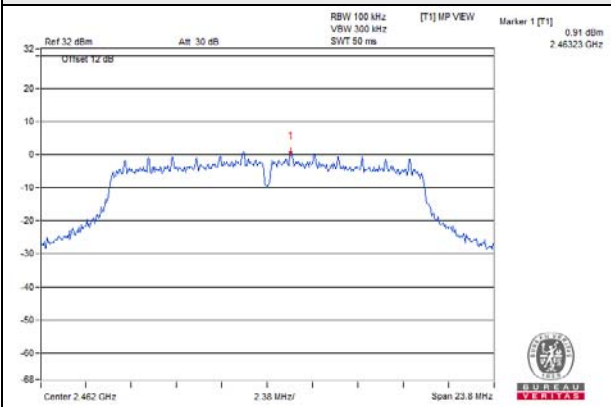
CH 1



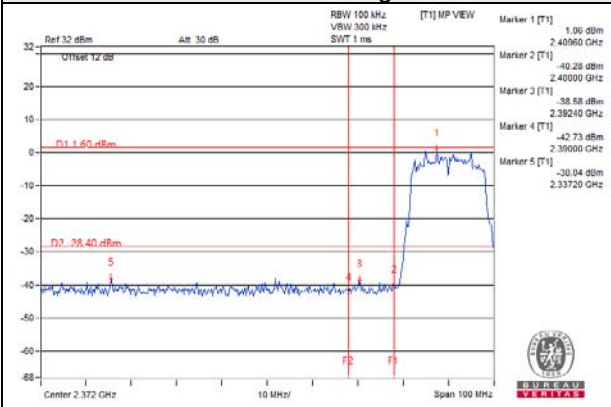
CH 6



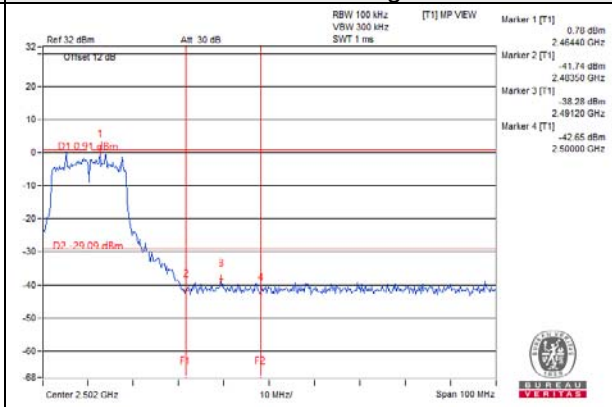
CH 11



CH 1 Band edge

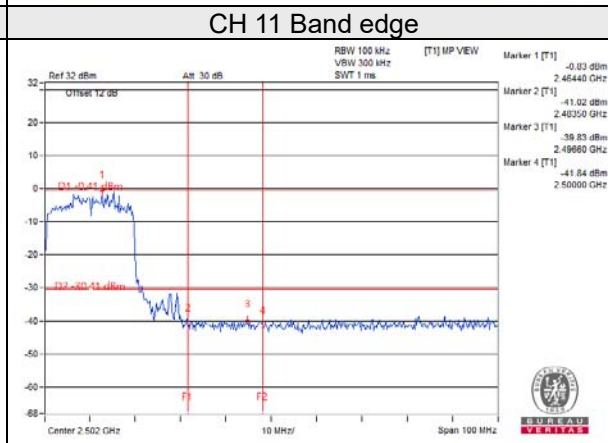
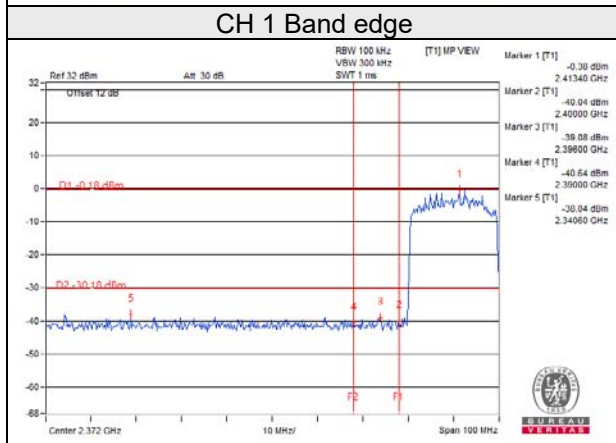
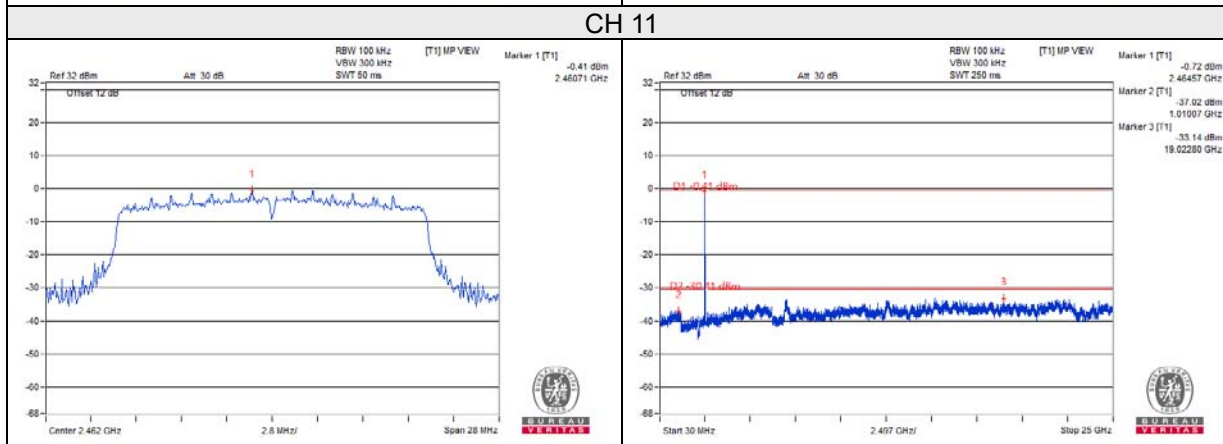
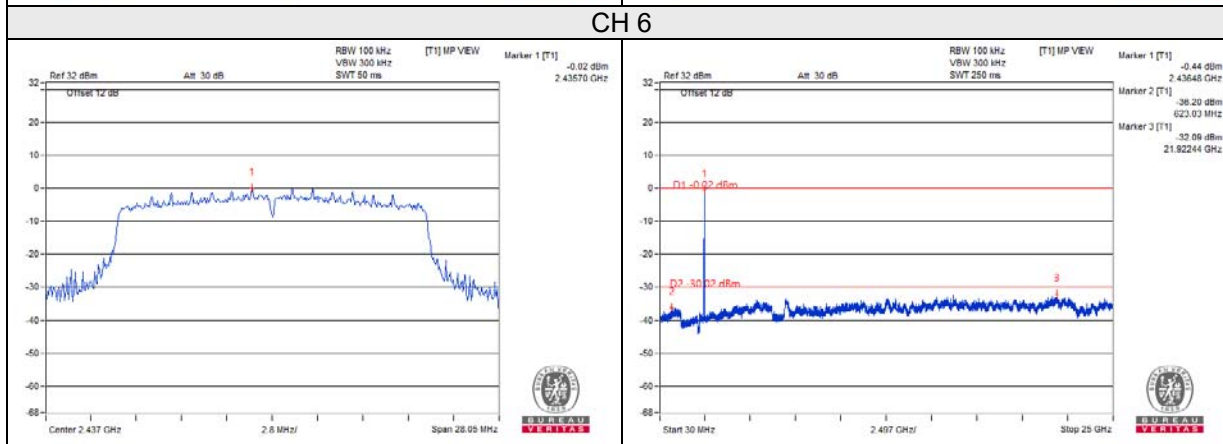
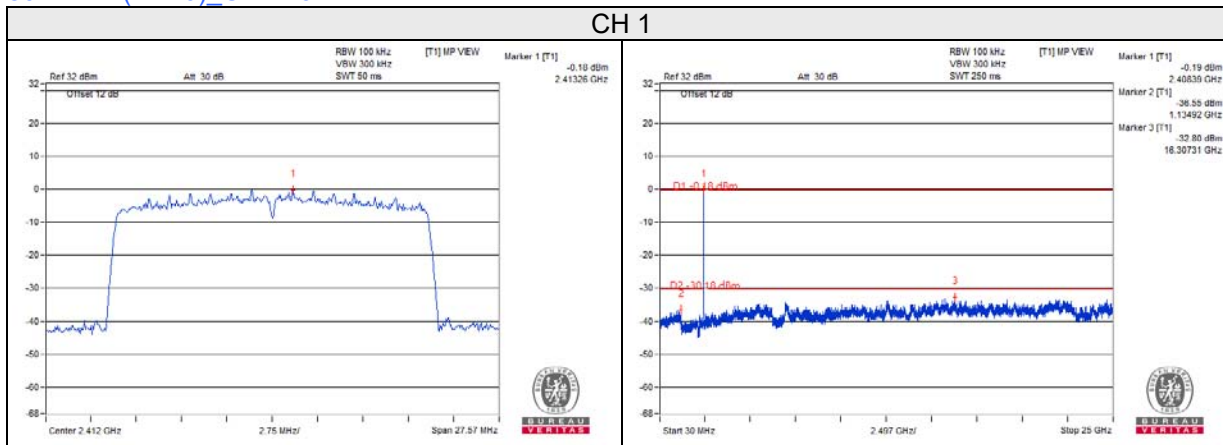


CH 11 Band edge



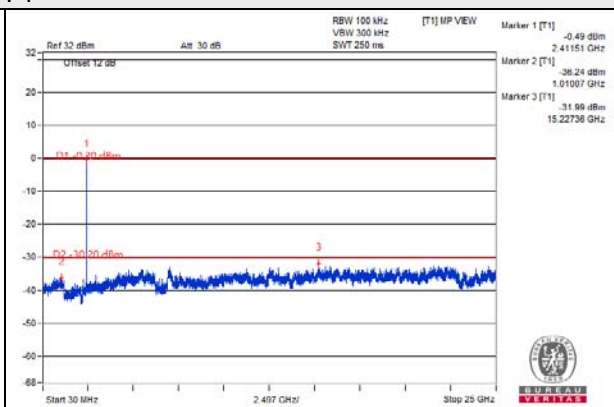
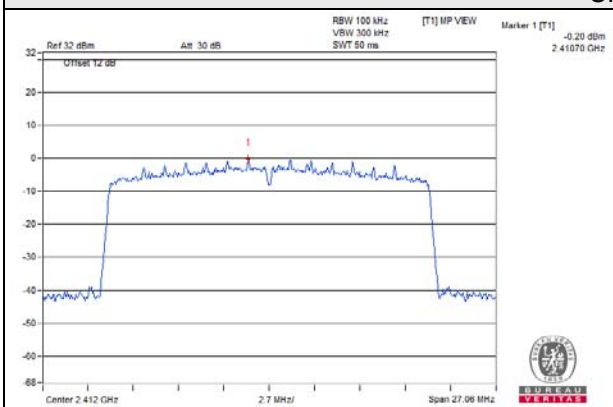


802.11ax (HE20)\_Chain 0

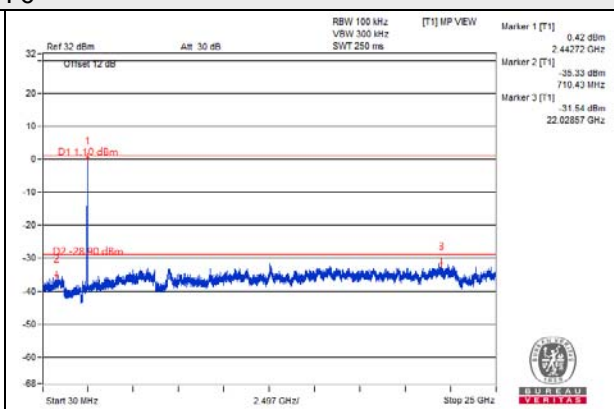
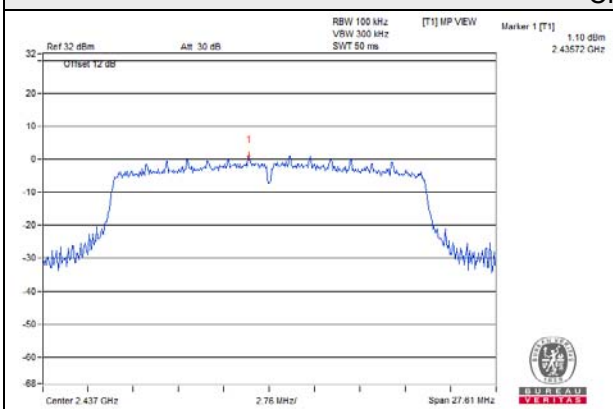


802.11ax (HE20)\_Chain 1

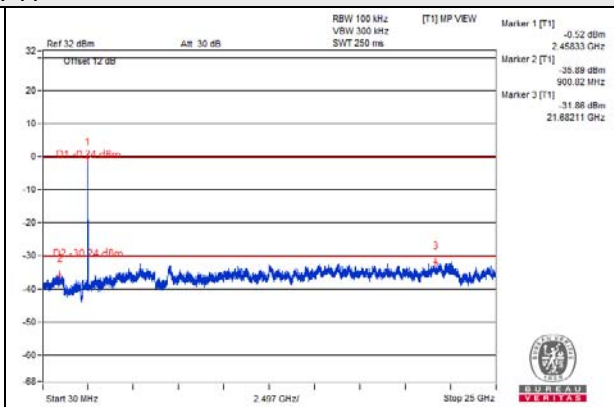
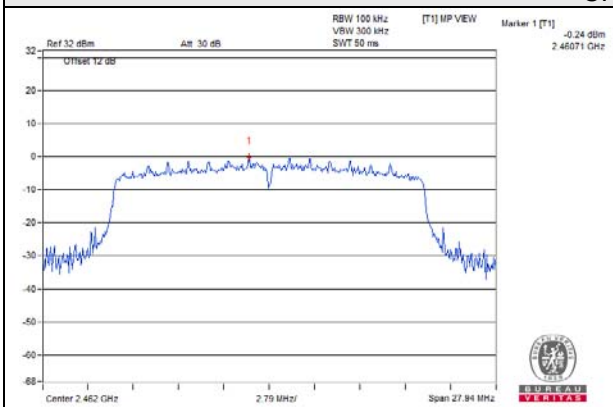
CH 1



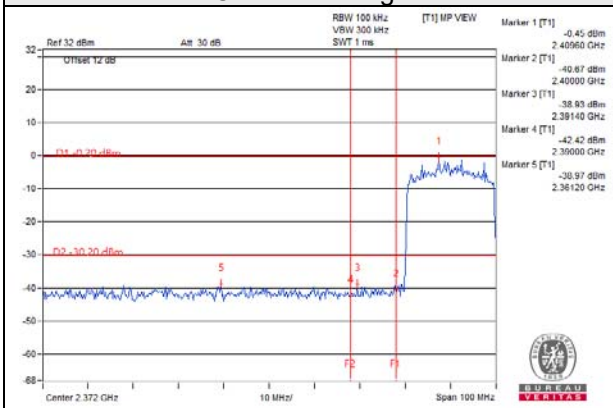
CH 6



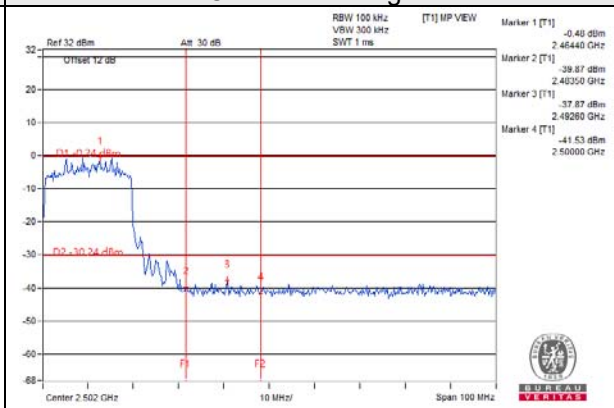
CH 11



CH 1 Band edge



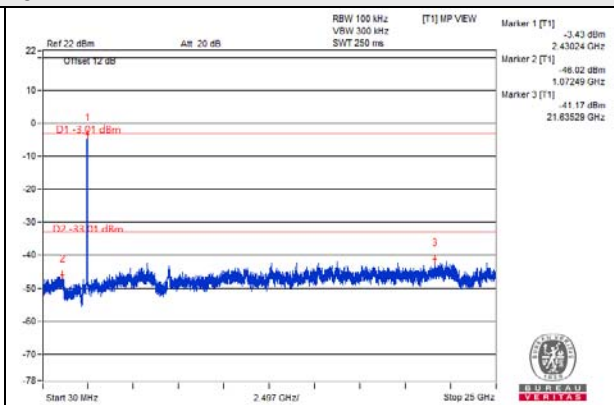
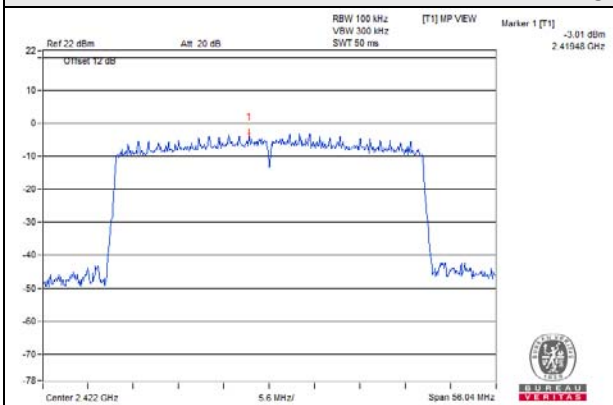
CH 11 Band edge



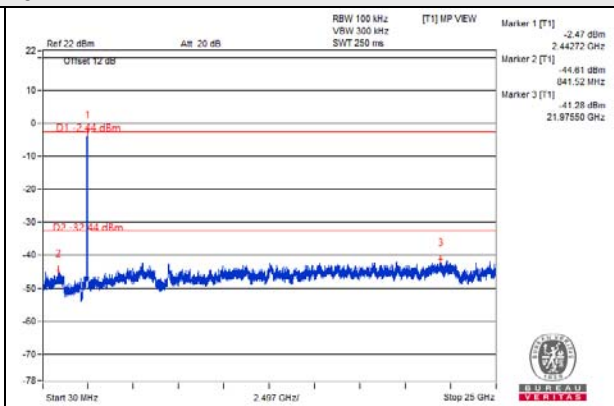
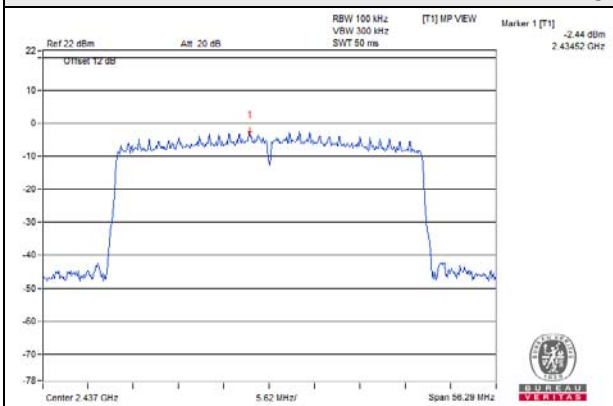


802.11ax (HE40)\_Chain 0

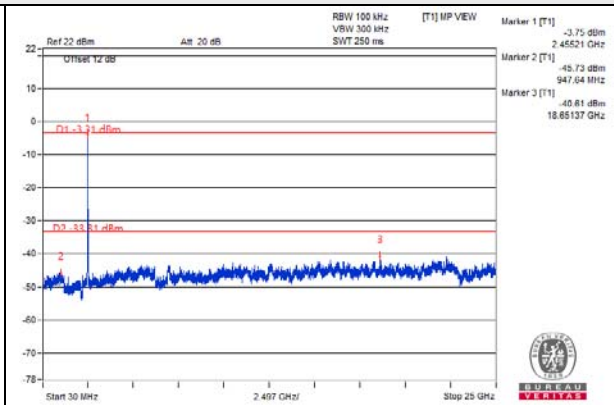
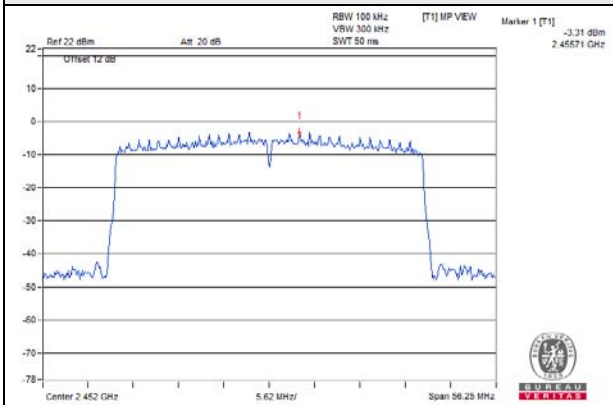
CH 3



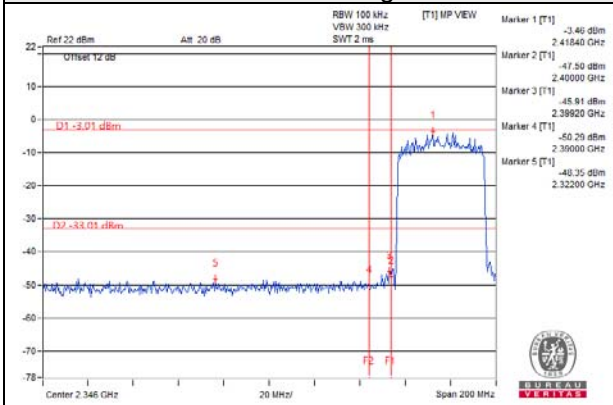
CH 6



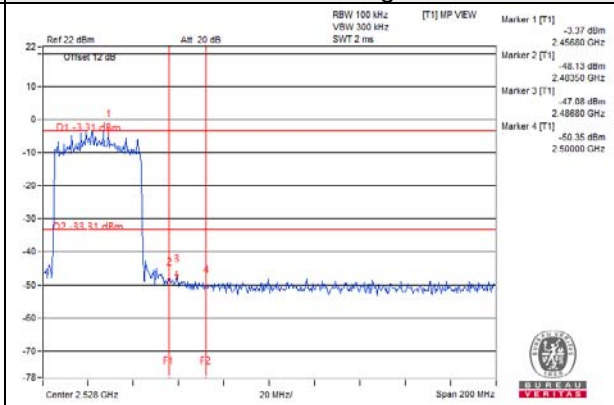
CH 9



CH 3 Band edge

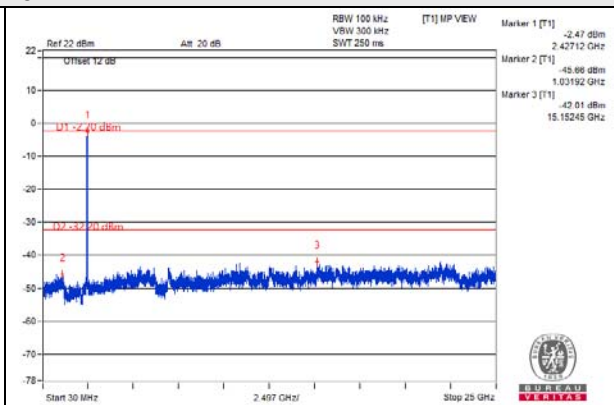
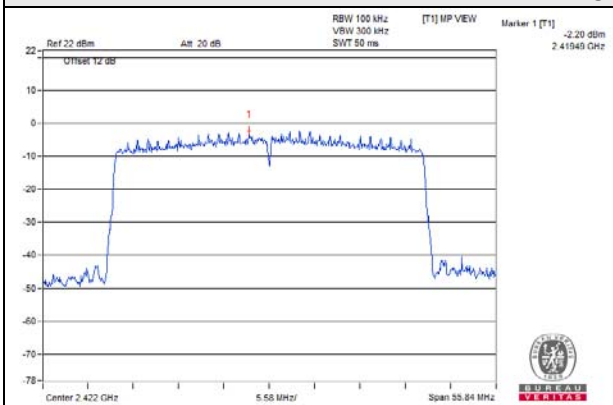


CH 9 Band edge

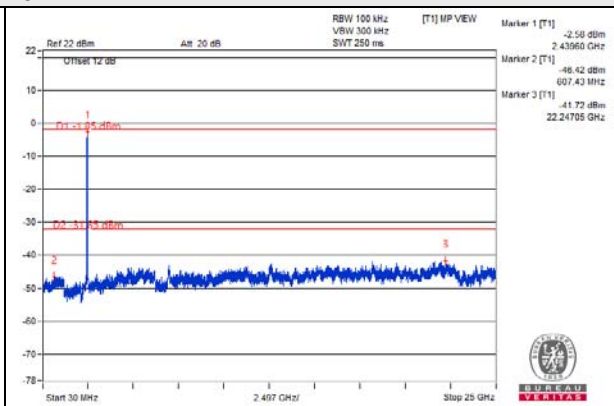
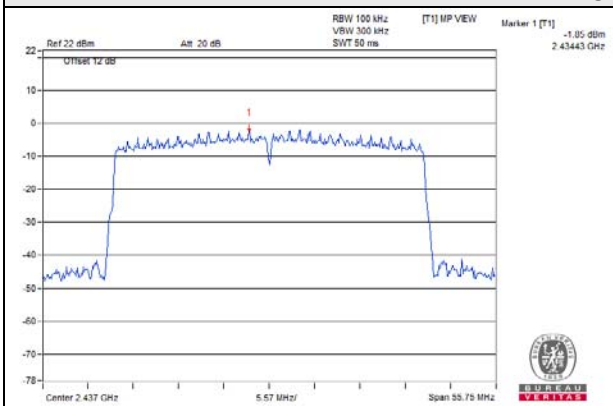


802.11ax (HE40)\_Chain 1

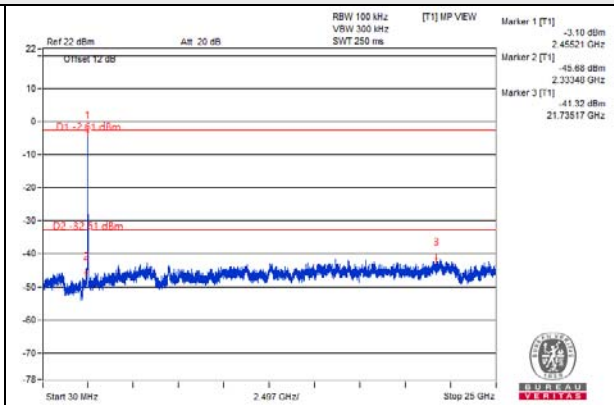
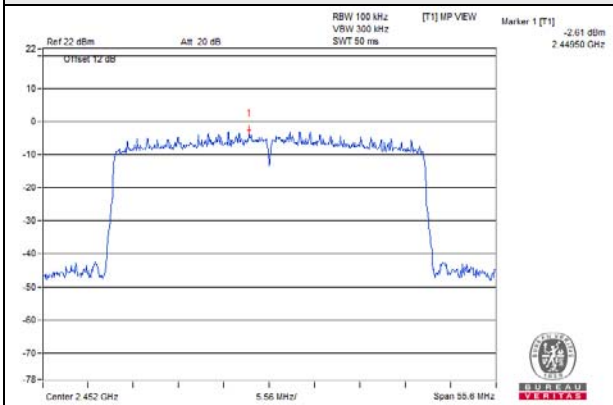
CH 3



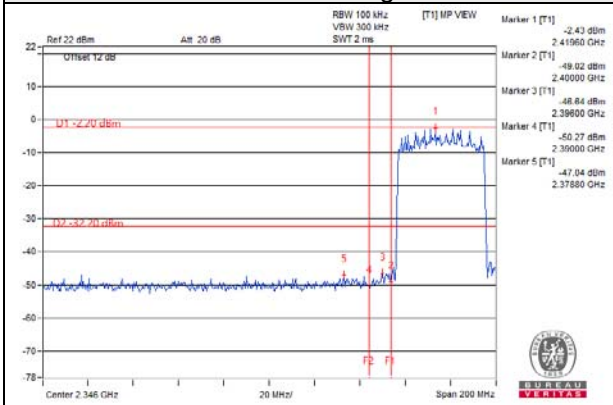
CH 6



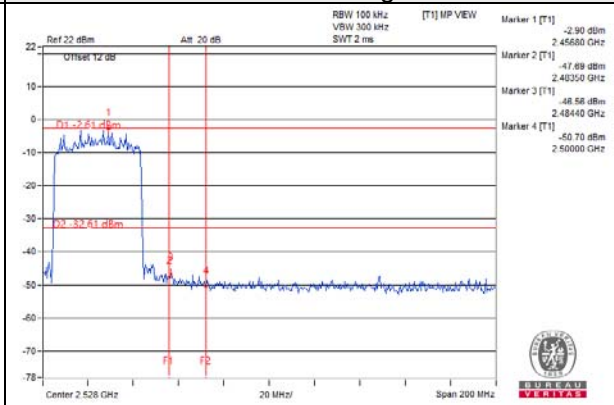
CH 9



CH 3 Band edge



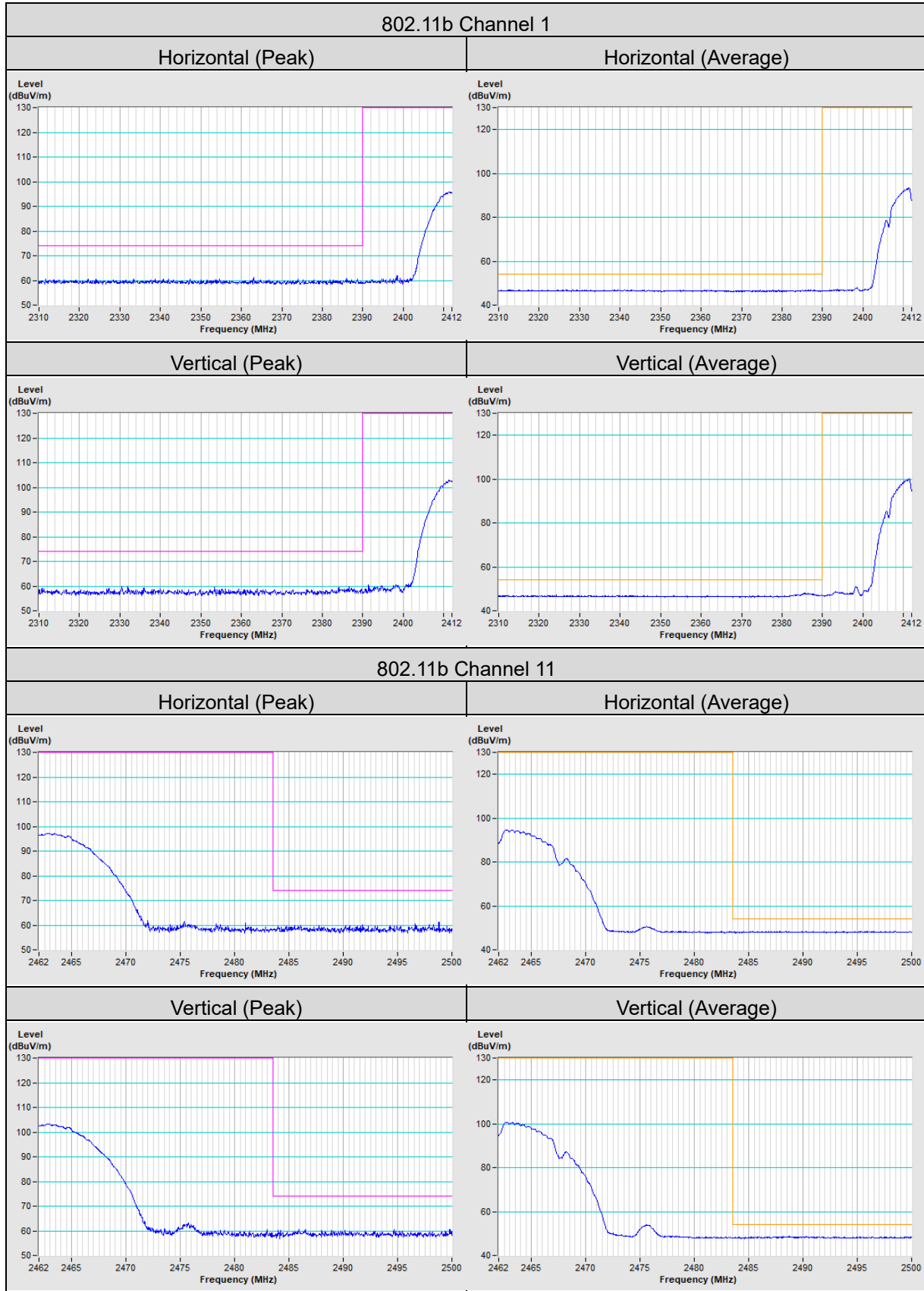
CH 9 Band edge



## 5 Pictures of Test Arrangements

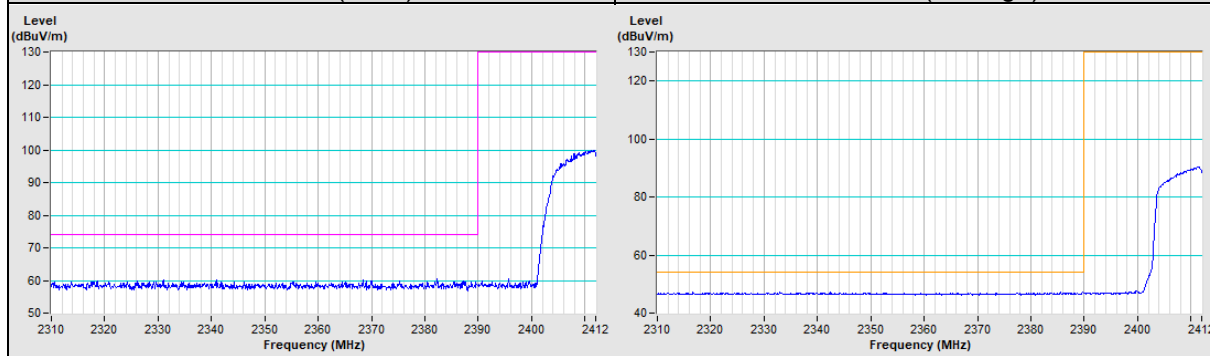
Please refer to the attached file (Test Setup Photo).

### Annex A- Band Edge Measurement

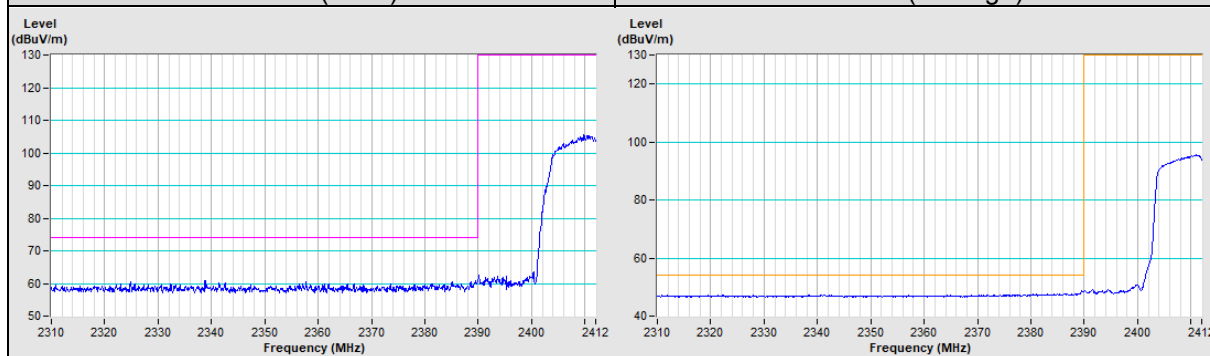


### 802.11g Channel 1

Horizontal (Peak) Horizontal (Average)

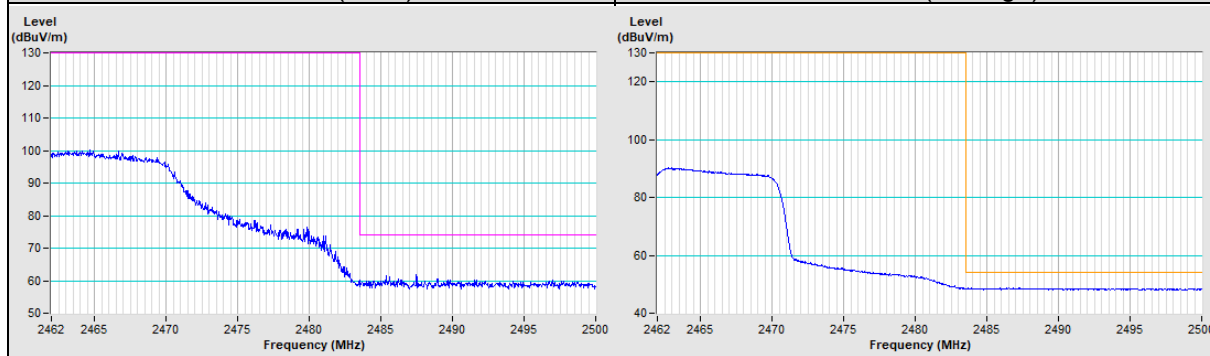


Vertical (Peak) Vertical (Average)

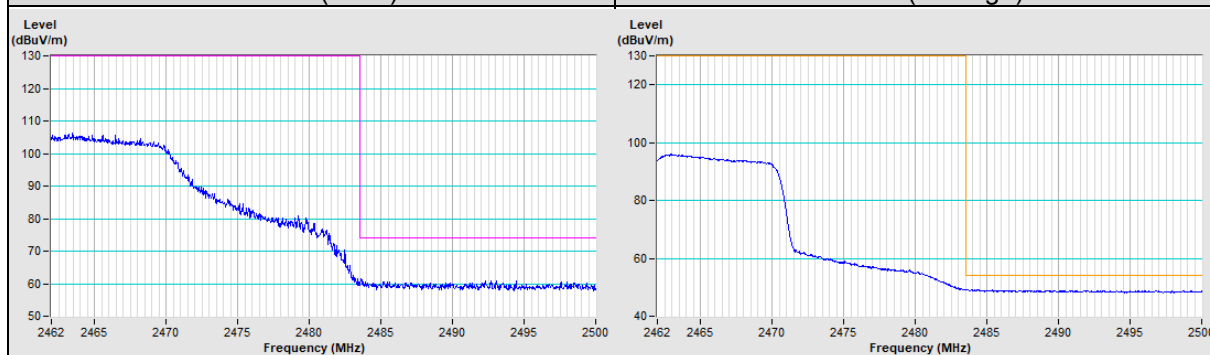


### 802.11g Channel 11

Horizontal (Peak) Horizontal (Average)

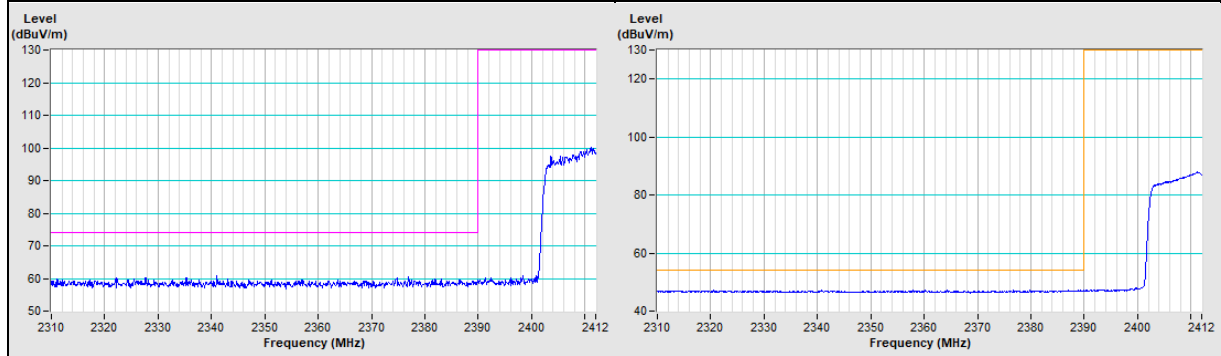


Vertical (Peak) Vertical (Average)

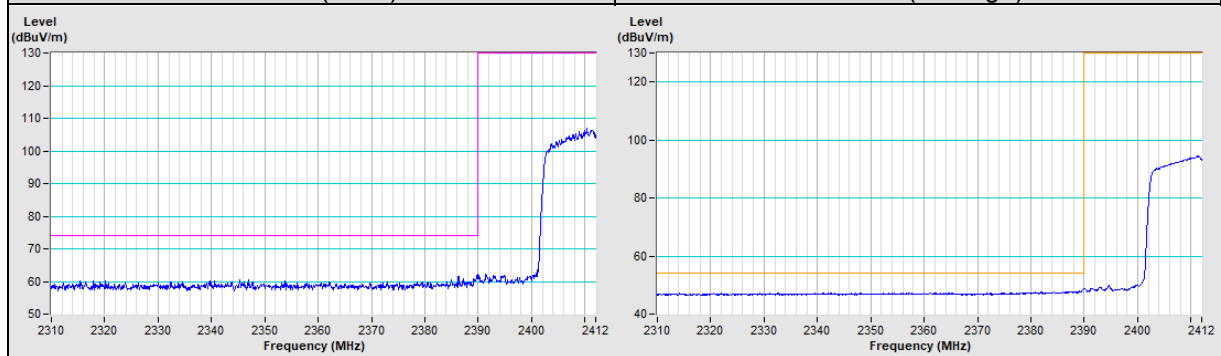


### 802.11ax (HE20) Channel 1

Horizontal (Peak) Horizontal (Average)

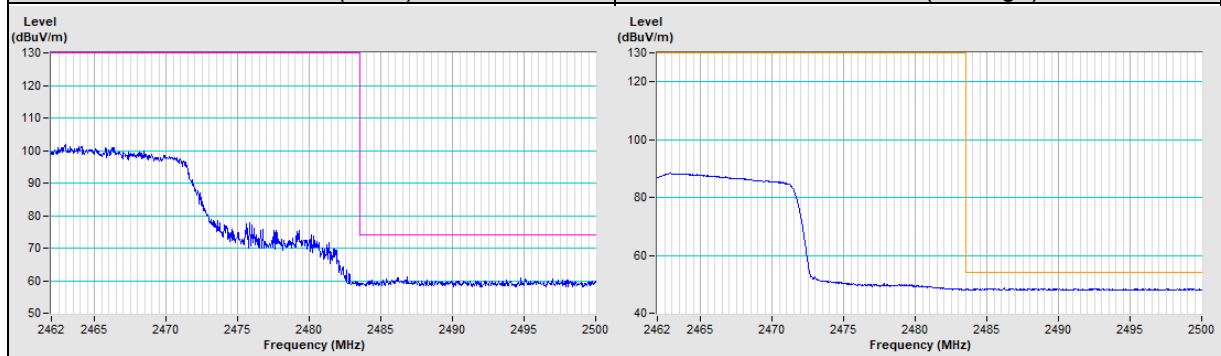


Vertical (Peak) Vertical (Average)

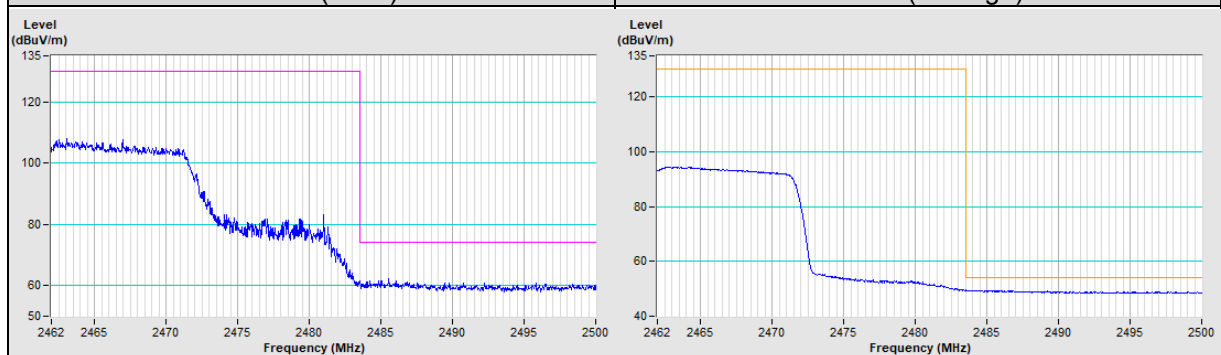


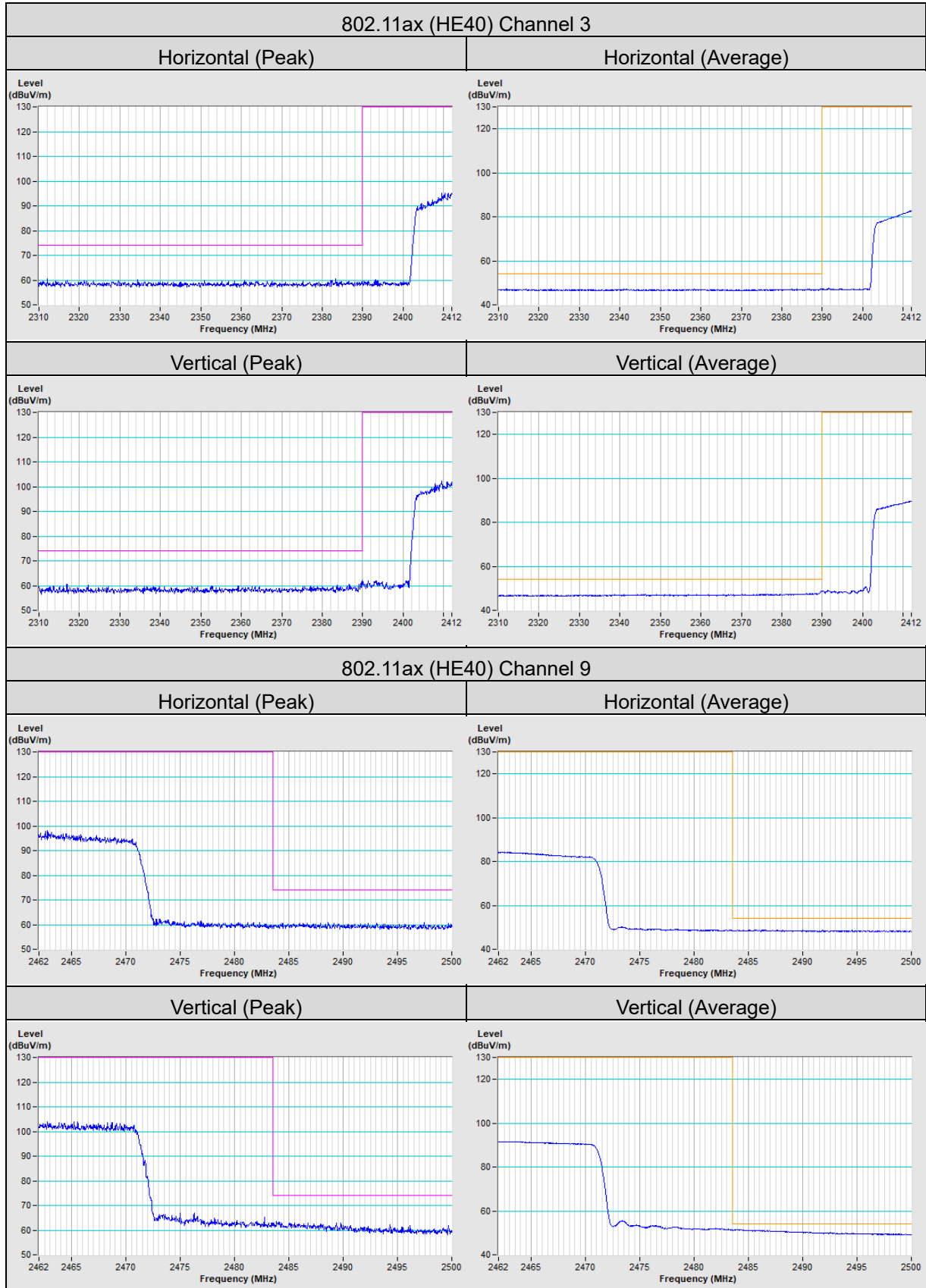
### 802.11ax (HE20) Channel 11

Horizontal (Peak) Horizontal (Average)



Vertical (Peak) Vertical (Average)





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

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