

Partial FCC Test Report

Report No.: RFBEDW-WTW-P21040354-2

FCC ID: O57AX200NGW

Model: AX200NGW

Received Date: Apr. 21, 2021

Test Date: Apr. 21 ~ Apr. 29, 2021

Issued Date: May 21, 2021

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



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Release Control Record

Issue No.	Description	Date Issued
RFBEDW-WTW-P21040354-2	Original release	May 21, 2021

1 Certificate of Conformity

Product: WLAN and BT , 2x2 Pcle M.2 2230 adapter card

Brand: Intel® Wi-Fi 6 AX200

Model: AX200NGW

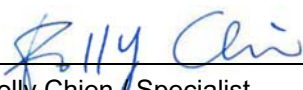
Sample Status: Engineering Sample

Applicant: Lenovo(Shanghai) Electronics Technology Co., Ltd.

Test Date: Apr. 21 ~ Apr. 29, 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 :  , **Date:** May 21, 2021
Polly Chien / Specialist

Approved by :  , **Date:** May 21, 2021
Bruce Chen / Senior 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 -14.96dB at 0.99800MHz
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 2483.50MHz.
15.247(d)	Antenna Port Emission	N/A	Refer to Note
15.247(a)(2)	6dB bandwidth	N/A	Refer to Note
15.247(b)	Conducted power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	N/A	Refer to Note
15.203	Antenna Requirement	Pass	Antenna connector is MHF-B13-N-01 not a standard connector.

Note:

1. This report is a partial report, only test item of AC Power Conducted Emission, Radiated Emissions and Maximum Peak Output Power were performed for this report. Other testing data please refer to Intel report no.: 181210-03.TR04 for module (Brand: Intel® Wi-Fi 6 AX200 , Model: AX200NGW).
2. 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.
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	2.94 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.86 dB
	200MHz ~ 1000MHz	3.87 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	WLAN and BT , 2x2 Pcle M.2 2230 adapter card
Brand	Intel® Wi-Fi 6 AX200
Model	AX200NGW
Sample Status	Engineering Sample
Power Supply Rating	3.3Vdc (from host equipment)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM for OFDMA
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: 11.0 / 5.5 / 2.0 / 1.0 Mbps 802.11g: 54.0 / 48.0 / 36.0 / 24.0 / 18.0 / 12.0 / 9.0 / 6.0 Mbps 802.11n: up to 300.0 Mbps 802.11ax: up to 573.5 Mbps
Operating Frequency	2412 ~ 2462MHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20), 802.11ax (HE20): 13 802.11n (HT40), 802.11ax (HE40): 9
Output Power	262.422mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

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

Modulation Mode	TX Function
2.4GHz Band	
802.11b	1TX
802.11g	1TX
802.11n (HT20)	1TX /2TX
802.11n (HT40)	1TX /2TX
802.11ax (HE20)	1TX /2TX
802.11ax (HE40)	1TX /2TX

* For all test items except conducted output power, the modulation and bandwidth are similar for 802.11n mode for HT20 / HT40 and 802.11ax mode for HE20 / HE40, therefore the investigated were worst case to representative mode in test report. (Final test mode refer section 3.2.1)

2. The EUT is authorized for use in specific End-product. Please refer to below table for more details.

Product	Brand	Model
Notebook Computer	Lenovo	Lenovo 100e Chromebook Gen 3 *****

Note: *=0~9,A-Z,a~z,"-" or blank, for marketing use only, with no impact on RF compliance of the product.

3. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter 1	Lenovo	ADLX45YLC3D	I/P: 100-240Vac, 50-60Hz, 1.3A O/P: 20.0V===2.25A, 45.0W 1.75M / 0core
Adapter 2	Lenovo	ADLX65YLC3D	I/P: 100-240Vac, 50-60Hz, 1.8A O/P: 20.0V===3.25A, 65.0W 1.77M / 0core
Adapter 3	Lenovo	ADLX45YLC3D	I/P: 100-240Vac, 50-60Hz, 1.3A O/P: 20.0V ===2.25A, 45.0W 1.55M / 1core
Battery	Lenovo	L20C3PG0	11.52 Vdc, 3994 mAh, 46Wh

*After pretesting, the adapter 2 was the worst case and chose for final test.

4. The following antennas were provided to the EUT.

Ant. Type	Brand	Ant.	Model	Antenna Peak Gain (dBi)					Connector
				BT	2400-2500MHz	5150-5350MHz	5470-5725MHz	5725-5850MHz	
PIFA	MAGLAYERS	Main	DC33002K420 (PCA-4010-25GC7-A1)	-	-2.77	-3.79	-3.51	-4.58	-
		Aux.	DC33002K420 (PCA-4010-25GC7-A1)	-3.97	-3.97	-4.83	-5.91	-6.62	
	South Star	Main	DC33002IZ20 (N12-7697-R0A)	-	-2.92	-3.92	-3.87	-4.77	MHF-B13-N-01
		Aux.	DC33002IZ20 (N12-7697-R0A)	-4.11	-4.11	-4.99	-6.02	-6.71	

* The Max antenna gain was chosen for final test.

*For Bluetooth was fixed on Aux. antenna.

5. 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.

3.2 Description of Test Modes

13 channels are provided for 802.11b, 802.11g and 802.11n (HT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
1	2412MHz	8	2447MHz
2	2417MHz	9	2452MHz
3	2422MHz	10	2457MHz
4	2427MHz	11	2462MHz
5	2432MHz	12	2467MHz
6	2437MHz	13	2472MHz
7	2442MHz		

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

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	Power	
-	√	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz & Bandedge Measurement
RE<1G: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission
Power: Maximum Output Power Measurement

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

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 13	1, 6, 11, 12, 13	DSSS	DBPSK	1.0
-	802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.0
-	802.11ax (HE20)	1 to 13	1, 6, 11, 12, 13	OFDMA	BPSK	MCS0
-	802.11ax (HE40)	3 to 11	3, 6, 9, 10, 11	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)
-	802.11ax (HE40)	3 to 11	11	OFDMA	BPSK	MCS0

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)
-	802.11ax (HE40)	3 to 11	11	OFDMA	BPSK	MCS0

Maximum 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 13	1, 6, 11, 12, 13	DSSS	DBPSK	1.0
-	802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.0
-	802.11n (HT20)	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.5
-	802.11n (HT40)	3 to 11	3, 6, 9, 10, 11	OFDM	BPSK	13.5
-	802.11ax (HE20)	1 to 13	1, 6, 11, 12, 13	OFDMA	BPSK	MCS0
-	802.11ax (HE40)	3 to 11	3, 6, 9, 10, 11	OFDMA	BPSK	MCS0

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE $\geq$ 1G	23deg. C, 67%RH	120Vac, 60Hz	Adair Peng
RE<1G	23deg. C, 67%RH	120Vac, 60Hz	Adair Peng
PLC	25deg. C, 75%RH	120Vac, 60Hz	Edison Lee
Power	23deg. C, 67%RH	120Vac, 60Hz	Adair Peng

3.3 Duty Cycle of Test Signal

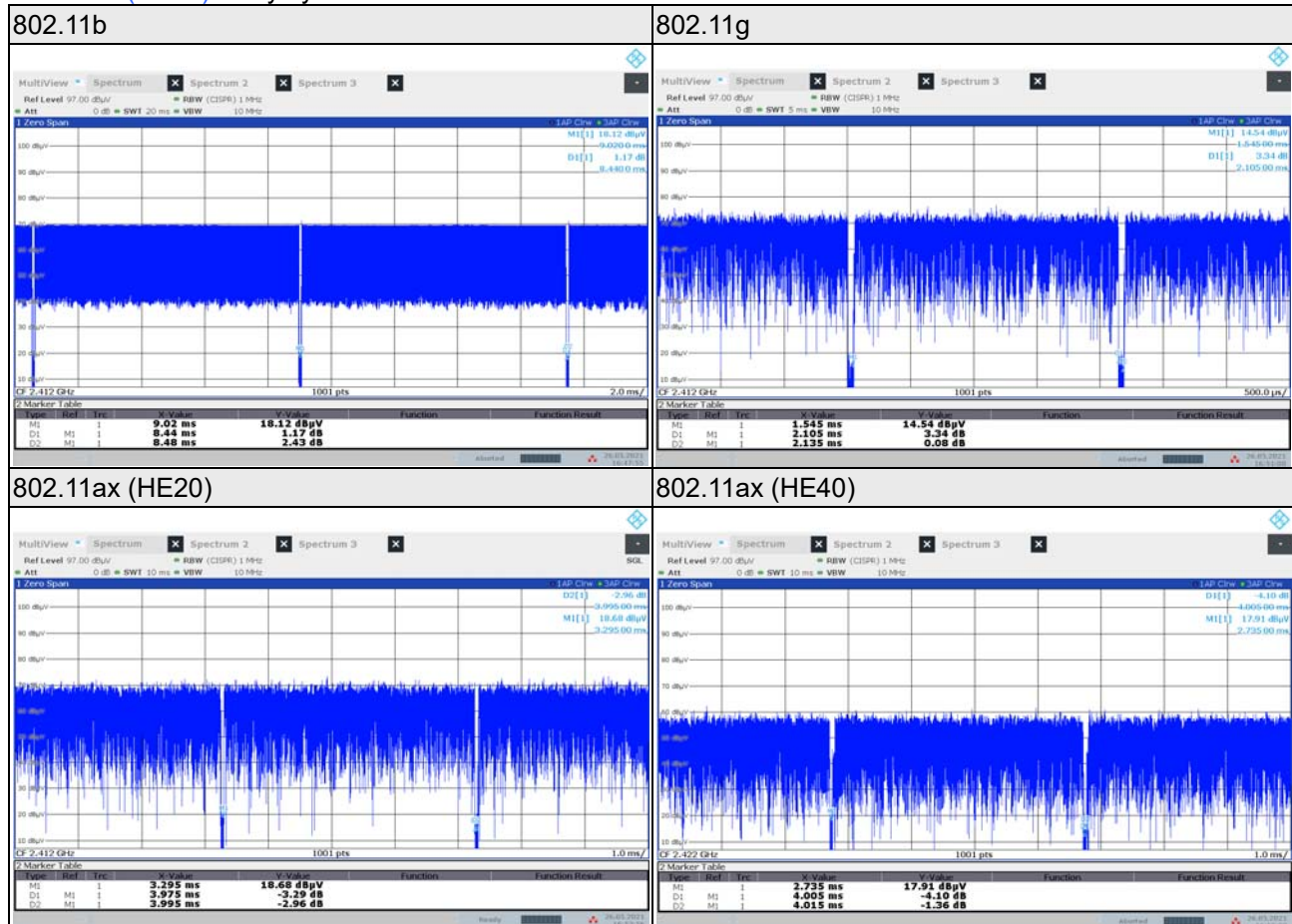
Duty cycle of test signal is > 98 %, duty factor is not required.

802.11b: Duty cycle = $8.44/8.48 = 0.995$

802.11g: Duty cycle = $2.105/2.135 = 0.986$

802.11ax (HE20): Duty cycle = $3.975/3.995 = 0.995$

802.11ax (HE40): Duty cycle = $4.005/4.015 = 0.998$



3.4 Description of Support Units

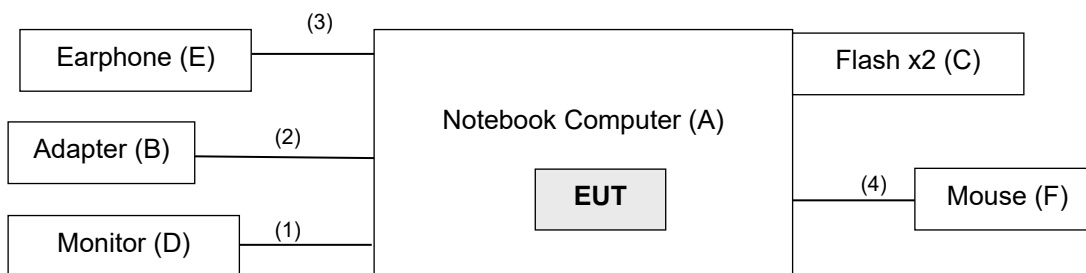
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook Computer	Lenovo	Lenovo 100e Chromebook Gen3 *****	NA	NA	Provided by Client
B.	Adapter	Lenovo	ADLX65YLC3D	NA	NA	-
C.	Flash	HP	v250W	05	NA	-
	Flash	HP	v250W	09	NA	-
D.	Monitor	DELL	SE2416Hc	CN-OWJKMC-641 80-66D-013B-A00	FCC DoC Approved	-
E.	Earphone	NA	NA	NA	NA	-
F.	Mouse	Microsoft	ITE78CJ	NA	FCC DoC Approved	-

Note: All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	HDMI cable	1	1.0	N	0	Provided by Lab (Brand: Amber, Model: HDMI-AA120)
2.	Power cable	1	1.75	N	0	Provided by Client
3.	Audio cable	1	1.2	N	0	-
4.	USB cable	1	1.8	N	0	-

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 DTS 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 30dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102579	Jul. 07, 2020	Jul. 06, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jun. 09, 2020	Jun. 08, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Nov. 04, 2020	Nov. 03, 2021
HORN Antenna SCHWARZBECK	9120D	209	Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 22, 2020	Nov. 21, 2021
Loop Antenna TESEQ	HLA 6121	45745	Jul. 06, 2020	Jul. 05, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Aug. 16, 2020	Aug. 15, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Mar. 22, 2021	Mar. 21, 2022
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH3-01	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 104&EMC104-SM- SM-8000	Cable-CH3-03 (309224+170907)	Aug. 16, 2020	Aug. 15, 2021
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55 190004/MY5519000 7/MY55210005	Jul. 13, 2020	Jul. 12, 2021

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 3.

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 detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

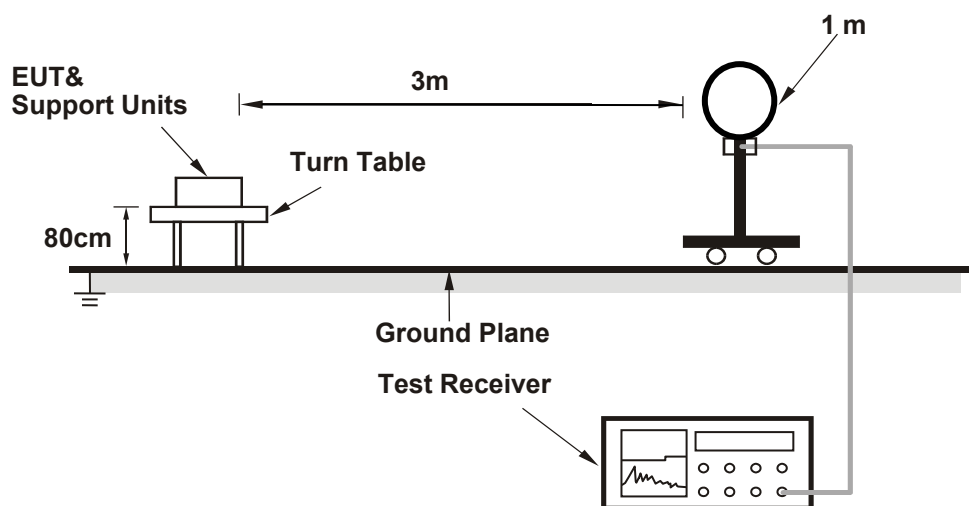
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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 = 1 MHz, VBW = 10Hz; 802.11g: RBW = 1 MHz, VBW = 10Hz; 802.11ax (HE20): RBW = 1 MHz, VBW = 10Hz; 802.11ax (HE40): RBW = 1 MHz, VBW = 10Hz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

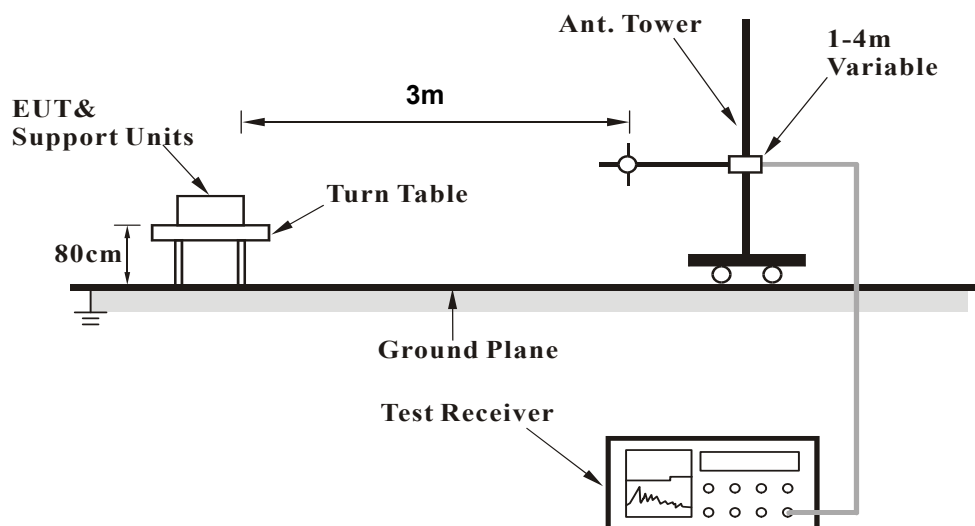
No deviation.

4.1.5 Test Set Up

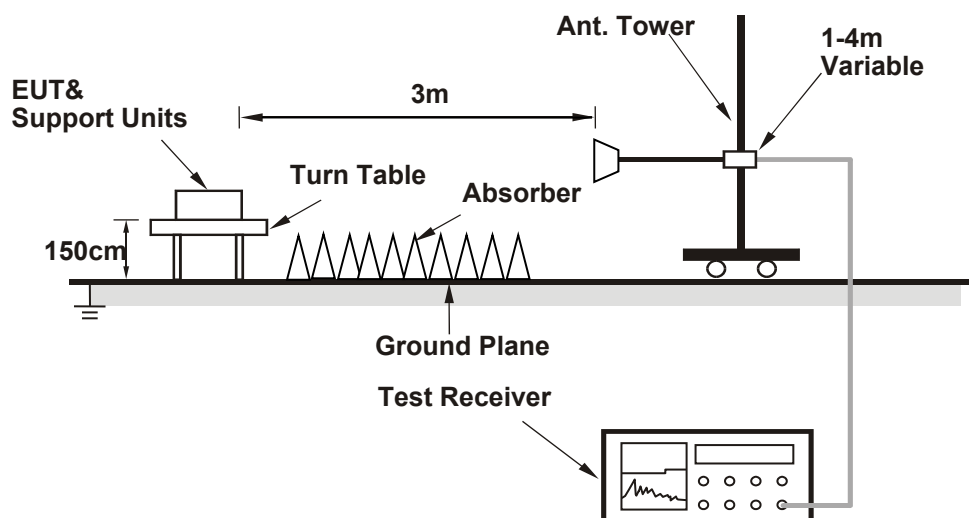
For Radiated emission below 30MHz



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

- Installed the EUT into the Portable Computer which is placed on the testing table.
- Controlling software (provided by manufacturer) has been activated to set 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	60.1 PK	74.0	-13.9	1.71 H	102	25.6	34.5
2	2390.00	49.7 AV	54.0	-4.3	1.71 H	102	15.2	34.5
3	*2412.00	109.5 PK			1.71 H	102	75.1	34.4
4	*2412.00	107.1 AV			1.71 H	102	72.7	34.4
5	4824.00	48.5 PK	74.0	-25.5	2.12 H	157	46.1	2.4
6	4824.00	42.6 AV	54.0	-11.4	2.12 H	157	40.2	2.4
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	2390.00	60.2 PK	74.0	-13.8	2.11 V	118	25.7	34.5
2	2390.00	47.5 AV	54.0	-6.5	2.11 V	118	13.0	34.5
3	*2412.00	105.6 PK			2.11 V	118	71.2	34.4
4	*2412.00	103.2 AV			2.11 V	118	68.8	34.4
5	4824.00	48.7 PK	74.0	-25.3	2.58 V	160	46.3	2.4
6	4824.00	44.6 AV	54.0	-9.4	2.58 V	160	42.2	2.4

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 802.11b	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	109.7 PK			1.73 H	105	75.3	34.4
2	*2437.00	107.2 AV			1.73 H	105	72.8	34.4
3	4874.00	48.7 PK	74.0	-25.3	2.15 H	160	46.2	2.5
4	4874.00	42.9 AV	54.0	-11.1	2.15 H	160	40.4	2.5
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	*2437.00	105.7 PK			2.13 V	120	71.3	34.4
2	*2437.00	103.1 AV			2.13 V	120	68.7	34.4
3	4874.00	48.7 PK	74.0	-25.3	2.55 V	159	46.2	2.5
4	4874.00	44.6 AV	54.0	-9.4	2.55 V	159	42.1	2.5

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.

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	109.5 PK			1.40 H	118	75.2	34.3
2	*2462.00	107.1 AV			1.40 H	118	72.8	34.3
3	2487.80	60.8 PK	74.0	-13.2	1.40 H	118	26.5	34.3
4	2487.80	50.2 AV	54.0	-3.8	1.40 H	118	15.9	34.3
5	4924.00	48.9 PK	74.0	-25.1	2.25 H	163	46.3	2.6
6	4924.00	42.7 AV	54.0	-11.3	2.25 H	163	40.1	2.6
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	104.9 PK			2.15 V	114	70.6	34.3
2	*2462.00	102.4 AV			2.15 V	114	68.1	34.3
3	2487.80	60.6 PK	74.0	-13.4	2.15 V	114	26.3	34.3
4	2487.80	48.1 AV	54.0	-5.9	2.15 V	114	13.8	34.3
5	4924.00	49.1 PK	74.0	-24.9	2.51 V	152	46.5	2.6
6	4924.00	45.0 AV	54.0	-9.0	2.51 V	152	42.4	2.6

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 12 : 2467 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	*2467.00	109.9 PK			1.37 H	118	75.6	34.3
2	*2467.00	107.3 AV			1.37 H	118	73.0	34.3
3	2485.60	61.8 PK	74.0	-12.2	1.37 H	118	27.5	34.3
4	2485.60	51.0 AV	54.0	-3.0	1.37 H	118	16.7	34.3
5	4934.00	48.9 PK	74.0	-25.1	2.21 H	165	46.2	2.7
6	4934.00	42.8 AV	54.0	-11.2	2.21 H	165	40.1	2.7
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	*2467.00	109.8 PK			3.22 V	85	75.5	34.3
2	*2467.00	107.3 AV			3.22 V	85	73.0	34.3
3	2485.60	61.4 PK	74.0	-12.6	3.22 V	85	27.1	34.3
4	2485.60	50.9 AV	54.0	-3.1	3.22 V	85	16.6	34.3
5	4934.00	49.1 PK	74.0	-24.9	2.54 V	162	46.4	2.7
6	4934.00	45.2 AV	54.0	-8.8	2.54 V	162	42.5	2.7

Remarks:

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

RF Mode	TX 802.11b	Channel	CH 13 : 2472 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	*2472.00	108.0 PK			1.36 H	118	73.6	34.4
2	*2472.00	105.4 AV			1.36 H	118	71.0	34.4
3	2487.00	62.9 PK	74.0	-11.1	1.36 H	118	28.6	34.3
4	2487.00	52.9 AV	54.0	-1.1	1.36 H	118	18.6	34.3
5	4944.00	47.9 PK	74.0	-26.1	2.19 H	163	45.2	2.7
6	4944.00	42.4 AV	54.0	-11.6	2.19 H	163	39.7	2.7
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	*2472.00	107.5 PK			3.22 V	86	73.1	34.4
2	*2472.00	105.1 AV			3.22 V	86	70.7	34.4
3	2487.00	62.1 PK	74.0	-11.9	3.22 V	86	27.8	34.3
4	2487.00	52.8 AV	54.0	-1.2	3.22 V	86	18.5	34.3
5	4944.00	48.0 PK	74.0	-26.0	2.24 V	157	45.3	2.7
6	4944.00	44.8 AV	54.0	-9.2	2.24 V	157	42.1	2.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	59.8 PK	74.0	-14.2	1.54 H	102	25.3	34.5
2	2390.00	47.7 AV	54.0	-6.3	1.54 H	102	13.2	34.5
3	*2412.00	113.4 PK			1.54 H	102	79.0	34.4
4	*2412.00	103.6 AV			1.54 H	102	69.2	34.4
5	4824.00	45.4 PK	74.0	-28.6	2.15 H	169	43.0	2.4
6	4824.00	35.0 AV	54.0	-19.0	2.15 H	169	32.6	2.4
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	2390.00	60.0 PK	74.0	-14.0	3.19 V	82	25.5	34.5
2	2390.00	47.7 AV	54.0	-6.3	3.19 V	82	13.2	34.5
3	*2412.00	114.0 PK			3.19 V	82	79.6	34.4
4	*2412.00	104.4 AV			3.19 V	82	70.0	34.4
5	4824.00	45.6 PK	74.0	-28.4	2.56 V	168	43.2	2.4
6	4824.00	35.2 AV	54.0	-18.8	2.56 V	168	32.8	2.4

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 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	113.6 PK			1.55 H	114	79.2	34.4
2	*2437.00	104.0 AV			1.55 H	114	69.6	34.4
3	4874.00	45.6 PK	74.0	-28.4	2.06 H	172	43.1	2.5
4	4874.00	35.0 AV	54.0	-19.0	2.06 H	172	32.5	2.5
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	*2437.00	114.2 PK			3.15 V	86	79.8	34.4
2	*2437.00	104.6 AV			3.15 V	86	70.2	34.4
3	4874.00	45.9 PK	74.0	-28.1	2.53 V	169	43.4	2.5
4	4874.00	35.3 AV	54.0	-18.7	2.53 V	169	32.8	2.5

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.

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	111.6 PK			1.40 H	119	77.3	34.3
2	*2462.00	101.7 AV			1.40 H	119	67.4	34.3
3	2483.50	61.0 PK	74.0	-13.0	1.40 H	119	26.7	34.3
4	2483.50	48.2 AV	54.0	-5.8	1.40 H	119	13.9	34.3
5	4924.00	45.8 PK	74.0	-28.2	2.11 H	158	43.2	2.6
6	4924.00	35.3 AV	54.0	-18.7	2.11 H	158	32.7	2.6
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	111.9 PK			3.24 V	81	77.6	34.3
2	*2462.00	102.0 AV			3.24 V	81	67.7	34.3
3	2483.50	60.7 PK	74.0	-13.3	3.24 V	81	26.4	34.3
4	2483.50	48.1 AV	54.0	-5.9	3.24 V	81	13.8	34.3
5	4924.00	46.0 PK	74.0	-28.0	2.49 V	169	43.4	2.6
6	4924.00	35.3 AV	54.0	-18.7	2.49 V	169	32.7	2.6

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 12 : 2467 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	*2467.00	110.5 PK			1.38 H	122	76.2	34.3
2	*2467.00	100.6 AV			1.38 H	122	66.3	34.3
3	2483.50	62.9 PK	74.0	-11.1	1.38 H	122	28.6	34.3
4	2483.50	50.0 AV	54.0	-4.0	1.38 H	122	15.7	34.3
5	4934.00	45.2 PK	74.0	-28.8	2.21 H	174	42.5	2.7
6	4934.00	35.1 AV	54.0	-18.9	2.21 H	174	32.4	2.7
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	*2467.00	110.6 PK			3.23 V	82	76.3	34.3
2	*2467.00	100.8 AV			3.23 V	82	66.5	34.3
3	2483.50	64.2 PK	74.0	-9.8	3.23 V	82	29.9	34.3
4	2483.50	50.4 AV	54.0	-3.6	3.23 V	82	16.1	34.3
5	4934.00	45.7 PK	74.0	-28.3	2.48 V	171	43.0	2.7
6	4934.00	35.2 AV	54.0	-18.8	2.48 V	171	32.5	2.7

Remarks:

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

RF Mode	TX 802.11g	Channel	CH 13 : 2472 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	*2472.00	108.1 PK			1.36 H	116	73.7	34.4
2	*2472.00	97.4 AV			1.36 H	116	63.0	34.4
3	2483.50	73.8 PK	74.0	-0.2	1.36 H	116	39.5	34.3
4	2483.50	49.5 AV	54.0	-4.5	1.36 H	116	15.2	34.3
5	4944.00	45.0 PK	74.0	-29.0	2.13 H	162	42.3	2.7
6	4944.00	35.1 AV	54.0	-18.9	2.13 H	162	32.4	2.7
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	*2472.00	107.7 PK			3.23 V	86	73.3	34.4
2	*2472.00	97.5 AV			3.23 V	86	63.1	34.4
3	2483.50	73.9 PK	74.0	-0.1	3.23 V	86	39.6	34.3
4	2483.50	49.3 AV	54.0	-4.7	3.23 V	86	15.0	34.3
5	4944.00	45.0 PK	74.0	-29.0	2.51 V	170	42.3	2.7
6	4944.00	35.2 AV	54.0	-18.8	2.51 V	170	32.5	2.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	61.1 PK	74.0	-12.9	1.60 H	120	26.6	34.5
2	2390.00	47.4 AV	54.0	-6.6	1.60 H	120	12.9	34.5
3	*2412.00	109.9 PK			1.60 H	120	75.5	34.4
4	*2412.00	97.8 AV			1.60 H	120	63.4	34.4
5	4824.00	46.9 PK	74.0	-27.1	1.38 H	210	44.5	2.4
6	4824.00	35.1 AV	54.0	-18.9	1.38 H	210	32.7	2.4

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	2390.00	59.7 PK	74.0	-14.3	1.73 V	146	25.2	34.5
2	2390.00	46.8 AV	54.0	-7.2	1.73 V	146	12.3	34.5
3	*2412.00	103.2 PK			1.73 V	146	68.8	34.4
4	*2412.00	91.0 AV			1.73 V	146	56.6	34.4
5	4824.00	46.6 PK	74.0	-27.4	2.41 V	163	44.2	2.4
6	4824.00	34.5 AV	54.0	-19.5	2.41 V	163	32.1	2.4

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 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	114.4 PK			1.54 H	123	80.0	34.4
2	*2437.00	101.2 AV			1.54 H	123	66.8	34.4
3	4874.00	47.1 PK	74.0	-26.9	1.35 H	221	44.6	2.5
4	4874.00	35.3 AV	54.0	-18.7	1.35 H	221	32.8	2.5
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	*2437.00	108.2 PK			1.71 V	149	73.8	34.4
2	*2437.00	96.5 AV			1.71 V	149	62.1	34.4
3	4874.00	46.6 PK	74.0	-27.4	2.39 V	168	44.1	2.5
4	4874.00	34.8 AV	54.0	-19.2	2.39 V	168	32.3	2.5

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.

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	112.0 PK			1.54 H	120	77.7	34.3
2	*2462.00	99.7 AV			1.54 H	120	65.4	34.3
3	2483.50	61.3 PK	74.0	-12.7	1.54 H	120	27.0	34.3
4	2483.50	47.9 AV	54.0	-6.1	1.54 H	120	13.6	34.3
5	4924.00	47.3 PK	74.0	-26.7	1.41 H	219	44.7	2.6
6	4924.00	35.4 AV	54.0	-18.6	1.41 H	219	32.8	2.6
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	105.9 PK			1.64 V	149	71.6	34.3
2	*2462.00	93.3 AV			1.64 V	149	59.0	34.3
3	2483.50	59.9 PK	74.0	-14.1	1.64 V	149	25.6	34.3
4	2483.50	47.1 AV	54.0	-6.9	1.64 V	149	12.8	34.3
5	4924.00	46.8 PK	74.0	-27.2	2.39 V	158	44.2	2.6
6	4924.00	34.9 AV	54.0	-19.1	2.39 V	158	32.3	2.6

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 12 : 2467 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	*2467.00	110.1 PK			1.63 H	125	75.8	34.3
2	*2467.00	97.5 AV			1.63 H	125	63.2	34.3
3	2483.50	61.5 PK	74.0	-12.5	1.63 H	125	27.2	34.3
4	2483.50	49.0 AV	54.0	-5.0	1.63 H	125	14.7	34.3
5	4934.00	47.0 PK	74.0	-27.0	1.27 H	204	44.3	2.7
6	4934.00	35.3 AV	54.0	-18.7	1.27 H	204	32.6	2.7
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	*2467.00	104.1 PK			1.83 V	153	69.8	34.3
2	*2467.00	91.2 AV			1.83 V	153	56.9	34.3
3	2483.50	60.5 PK	74.0	-13.5	1.83 V	153	26.2	34.3
4	2483.50	47.5 AV	54.0	-6.5	1.83 V	153	13.2	34.3
5	4934.00	46.8 PK	74.0	-27.2	2.33 V	164	44.1	2.7
6	4934.00	34.7 AV	54.0	-19.3	2.33 V	164	32.0	2.7

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 13 : 2472 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	*2472.00	107.3 PK			1.38 H	121	72.9	34.4
2	*2472.00	94.4 AV			1.38 H	121	60.0	34.4
3	2483.50	63.5 PK	74.0	-10.5	1.38 H	121	29.2	34.3
4	2483.50	48.6 AV	54.0	-5.4	1.38 H	121	14.3	34.3
5	4944.00	47.5 PK	74.0	-26.5	1.43 H	205	44.8	2.7
6	4944.00	35.6 AV	54.0	-18.4	1.43 H	205	32.9	2.7
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	*2472.00	100.9 PK			1.67 V	151	66.5	34.4
2	*2472.00	87.6 AV			1.67 V	151	53.2	34.4
3	2483.50	60.4 PK	74.0	-13.6	1.67 V	151	26.1	34.3
4	2483.50	47.4 AV	54.0	-6.6	1.67 V	151	13.1	34.3
5	4944.00	47.0 PK	74.0	-27.0	2.34 V	159	44.3	2.7
6	4944.00	34.7 AV	54.0	-19.3	2.34 V	159	32.0	2.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	64.3 PK	74.0	-9.7	1.44 H	98	29.8	34.5
2	2390.00	51.3 AV	54.0	-2.7	1.44 H	98	16.8	34.5
3	*2422.00	111.1 PK			1.44 H	98	76.7	34.4
4	*2422.00	98.0 AV			1.44 H	98	63.6	34.4
5	4844.00	46.1 PK	74.0	-27.9	1.51 H	205	43.6	2.5
6	4844.00	34.9 AV	54.0	-19.1	1.51 H	205	32.4	2.5
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	2390.00	61.7 PK	74.0	-12.3	2.45 V	220	27.2	34.5
2	2390.00	48.4 AV	54.0	-5.6	2.45 V	220	13.9	34.5
3	*2422.00	107.4 PK			2.45 V	220	73.0	34.4
4	*2422.00	94.5 AV			2.45 V	220	60.1	34.4
5	4844.00	46.0 PK	74.0	-28.0	2.25 V	179	43.5	2.5
6	4844.00	34.5 AV	54.0	-19.5	2.25 V	179	32.0	2.5

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.

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	110.7 PK			1.68 H	96	76.3	34.4
2	*2437.00	97.6 AV			1.68 H	96	63.2	34.4
3	4874.00	46.2 PK	74.0	-27.8	1.58 H	215	43.7	2.5
4	4874.00	35.0 AV	54.0	-19.0	1.58 H	215	32.5	2.5
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	*2437.00	107.1 PK			2.49 V	214	72.7	34.4
2	*2437.00	94.2 AV			2.49 V	214	59.8	34.4
3	4874.00	46.0 PK	74.0	-28.0	2.13 V	185	43.5	2.5
4	4874.00	34.6 AV	54.0	-19.4	2.13 V	185	32.1	2.5

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.

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	111.0 PK			1.66 H	98	76.6	34.4
2	*2452.00	97.6 AV			1.66 H	98	63.2	34.4
3	2483.50	61.9 PK	74.0	-12.1	1.66 H	98	27.6	34.3
4	2483.50	49.0 AV	54.0	-5.0	1.66 H	98	14.7	34.3
5	4904.00	46.6 PK	74.0	-27.4	1.65 H	215	44.0	2.6
6	4904.00	35.4 AV	54.0	-18.6	1.65 H	215	32.8	2.6
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	*2452.00	107.4 PK			2.41 V	220	73.0	34.4
2	*2452.00	94.5 AV			2.41 V	220	60.1	34.4
3	2483.50	60.6 PK	74.0	-13.4	2.41 V	220	26.3	34.3
4	2483.50	47.8 AV	54.0	-6.2	2.41 V	220	13.5	34.3
5	4904.00	46.1 PK	74.0	-27.9	2.12 V	175	43.5	2.6
6	4904.00	34.8 AV	54.0	-19.2	2.12 V	175	32.2	2.6

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 10 : 2457 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	*2457.00	109.9 PK			1.65 H	93	75.6	34.3
2	*2457.00	97.0 AV			1.65 H	93	62.7	34.3
3	2483.50	68.4 PK	74.0	-5.6	1.65 H	93	34.1	34.3
4	2483.50	51.3 AV	54.0	-2.7	1.65 H	93	17.0	34.3
5	4914.00	46.4 PK	74.0	-27.6	1.71 H	225	43.8	2.6
6	4914.00	35.2 AV	54.0	-18.8	1.71 H	225	32.6	2.6
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	*2457.00	106.5 PK			2.42 V	219	72.2	34.3
2	*2457.00	93.2 AV			2.42 V	219	58.9	34.3
3	2483.50	64.9 PK	74.0	-9.1	2.42 V	219	30.6	34.3
4	2483.50	49.2 AV	54.0	-4.8	2.42 V	219	14.9	34.3
5	4914.00	46.1 PK	74.0	-27.9	2.19 V	178	43.5	2.6
6	4914.00	34.8 AV	54.0	-19.2	2.19 V	178	32.2	2.6

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 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	104.3 PK			1.66 H	99	70.0	34.3
2	*2462.00	91.2 AV			1.66 H	99	56.9	34.3
3	2483.50	64.9 PK	74.0	-9.1	1.66 H	99	30.6	34.3
4	2483.50	47.9 AV	54.0	-6.1	1.66 H	99	13.6	34.3
5	4924.00	46.5 PK	74.0	-27.5	1.80 H	205	43.9	2.6
6	4924.00	35.3 AV	54.0	-18.7	1.80 H	205	32.7	2.6
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	100.9 PK			2.43 V	215	66.6	34.3
2	*2462.00	87.9 AV			2.43 V	215	53.6	34.3
3	2483.50	64.5 PK	74.0	-9.5	2.43 V	215	30.2	34.3
4	2483.50	47.5 AV	54.0	-6.5	2.43 V	215	13.2	34.3
5	4924.00	45.9 PK	74.0	-28.1	2.28 V	185	43.3	2.6
6	4924.00	34.9 AV	54.0	-19.1	2.28 V	185	32.3	2.6

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.

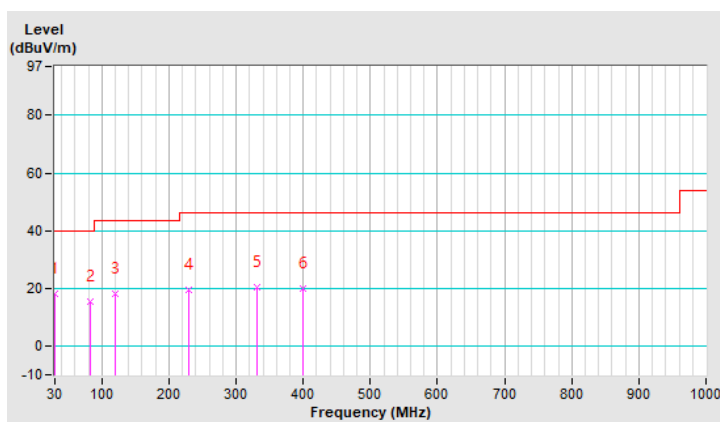
Below 1GHz worst-case data:

RF Mode	TX 802.11ax (HE40)	Channel	CH 11 : 2462 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	30.97	18.2 QP	40.0	-21.8	1.01 H	18	37.9	-19.7
2	82.38	15.4 QP	40.0	-24.6	1.51 H	214	39.0	-23.6
3	119.24	17.9 QP	43.5	-25.6	1.51 H	59	38.4	-20.5
4	228.85	19.6 QP	46.0	-26.4	1.51 H	120	40.6	-21.0
5	330.70	20.3 QP	46.0	-25.7	1.01 H	94	37.1	-16.8
6	399.57	20.1 QP	46.0	-25.9	2.00 H	126	35.4	-15.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
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 20dB below the permissible value to be report.

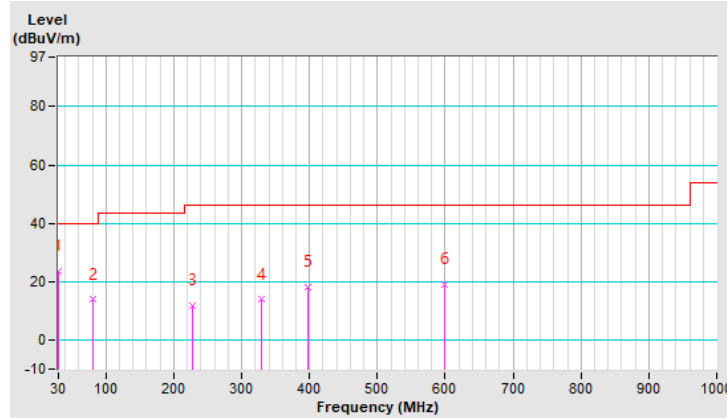


RF Mode	TX 802.11ax (HE40)	Channel	CH 11 : 2462 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	30.97	23.6 QP	40.0	-16.4	1.00 V	31	43.3	-19.7
2	81.41	13.8 QP	40.0	-26.2	1.00 V	2	37.3	-23.5
3	227.88	11.8 QP	46.0	-34.2	1.49 V	18	32.9	-21.1
4	328.76	13.8 QP	46.0	-32.2	1.49 V	101	30.6	-16.8
5	397.63	18.3 QP	46.0	-27.7	1.49 V	152	33.6	-15.3
6	598.42	19.0 QP	46.0	-27.0	1.00 V	202	29.3	-10.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
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 20dB 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.	Date Of Calibration	Due Date Of Calibration
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/AMN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 25, 2021	Feb. 24, 2022
LISN/AMN 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

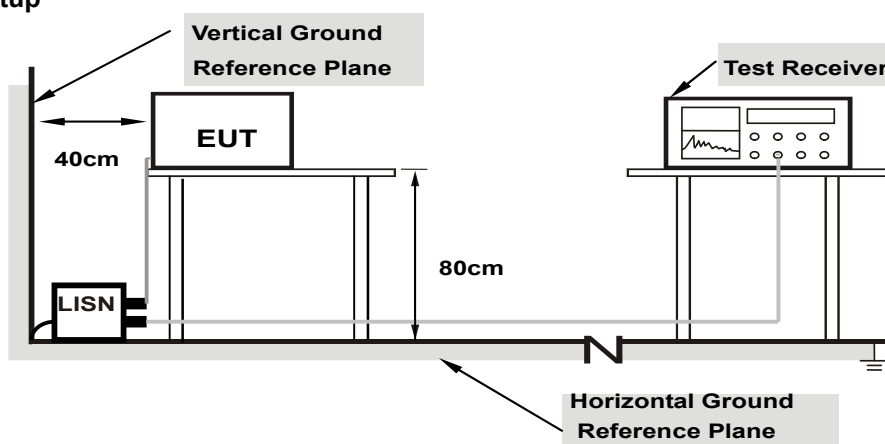
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

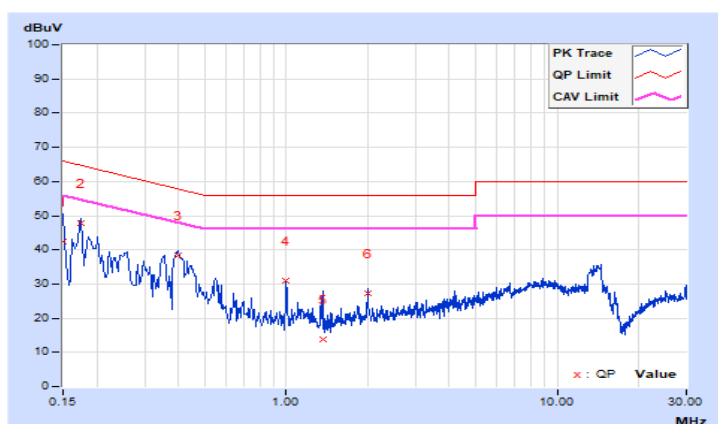
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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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	0.15000	9.71	32.60	24.91	42.31	34.62	66.00	56.00	-23.69	-21.38
2	0.17384	9.71	38.08	20.94	47.79	30.65	64.77	54.77	-16.98	-24.12
3	0.39758	9.73	28.52	20.54	38.25	30.27	57.90	47.90	-19.65	-17.63
4	0.99800	9.76	21.34	21.28	31.10	31.04	56.00	46.00	-24.90	-14.96
5	1.36070	9.76	4.19	1.34	13.95	11.10	56.00	46.00	-42.05	-34.90
6	1.99800	9.77	17.54	16.54	27.31	26.31	56.00	46.00	-28.69	-19.69

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.

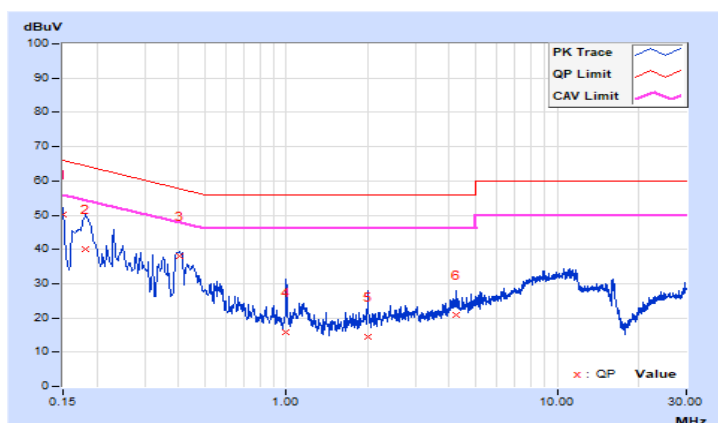


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	-----------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.76	40.55	24.77	50.31	34.53	66.00	56.00	-15.69	-21.47
2	0.18133	9.77	30.40	17.25	40.17	27.02	64.42	54.42	-24.25	-27.40
3	0.40498	9.79	28.33	20.36	38.12	30.15	57.75	47.75	-19.63	-17.60
4	0.99800	9.82	5.87	4.82	15.69	14.64	56.00	46.00	-40.31	-31.36
5	1.99800	9.83	4.59	0.75	14.42	10.58	56.00	46.00	-41.58	-35.42
6	4.25000	9.85	11.12	4.59	20.97	14.44	56.00	46.00	-35.03	-31.56

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 Conducted Output Power Measurement

4.3.1 Limits of Conducted Output Power Measurement

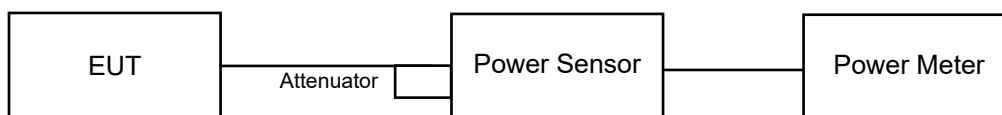
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedures

For Peak Power

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

For Average Power

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

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 Results

(SISO)
802.11b

Channel	Frequency (MHz)	Peak Power (mW)		Peak Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
1	2412	81.470	80.353	19.11	19.05	30	Pass
6	2437	80.724	80.724	19.07	19.07	30	Pass
11	2462	82.224	81.096	19.15	19.09	30	Pass
12	2467	81.658	80.168	19.12	19.04	30	Pass
13	2472	54.325	47.534	17.35	16.77	30	Pass

Channel	Frequency (MHz)	Average Power (mW)		Average Power (dBm)	
		Chain 0	Chain 1	Chain 0	Chain 1
1	2412	48.753	49.659	16.88	16.96
6	2437	49.204	49.774	16.92	16.97
11	2462	50.003	49.431	16.99	16.94
12	2467	99.312	49.091	19.97	16.91
13	2472	33.574	29.242	15.26	14.66

802.11g

Channel	Frequency (MHz)	Peak Power (mW)		Peak Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
1	2412	150.314	146.218	21.77	21.65	30	Pass
6	2437	143.219	143.219	21.56	21.56	30	Pass
11	2462	94.842	90.157	19.77	19.55	30	Pass
12	2467	63.387	65.313	18.02	18.15	30	Pass
13	2472	97.051	88.105	19.87	19.45	30	Pass

Channel	Frequency (MHz)	Average Power (mW)		Average Power (dBm)	
		Chain 0	Chain 1	Chain 0	Chain 1
1	2412	49.888	49.431	16.98	16.94
6	2437	49.545	49.317	16.95	16.93
11	2462	32.961	30.974	15.18	14.91
12	2467	22.751	22.961	13.57	13.61
13	2472	13.459	13.243	11.29	11.22

802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (mW)		Peak Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
1	2412	146.218	139.637	21.65	21.45	30	Pass
6	2437	147.571	146.218	21.69	21.65	30	Pass
11	2462	143.219	137.721	21.56	21.39	30	Pass
12	2467	87.700	87.700	19.43	19.43	30	Pass
13	2472	126.474	113.763	21.02	20.56	30	Pass

Channel	Frequency (MHz)	Average Power (mW)		Average Power (dBm)	
		Chain 0	Chain 1	Chain 0	Chain 1
1	2412	48.195	48.865	16.83	16.89
6	2437	60.395	49.204	17.81	16.92
11	2462	48.865	48.417	16.89	16.85
12	2467	29.107	29.648	14.64	14.72
13	2472	17.022	15.453	12.31	11.89

802.11n (HT40)

Channel	Frequency (MHz)	Peak Power (mW)		Peak Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
3	2422	161.065	163.305	22.07	22.13	30	Pass
6	2437	164.816	166.725	22.17	22.22	30	Pass
9	2452	151.008	117.761	21.79	20.71	30	Pass
10	2457	91.411	97.275	19.61	19.88	30	Pass
11	2462	83.753	127.644	19.23	21.06	30	Pass

Channel	Frequency (MHz)	Average Power (mW)		Average Power (dBm)	
		Chain 0	Chain 1	Chain 0	Chain 1
3	2422	46.238	49.317	16.65	16.93
6	2437	46.345	48.417	16.66	16.85
9	2452	38.548	34.834	15.86	15.42
10	2457	19.275	18.450	12.85	12.66
11	2462	16.672	16.331	12.22	12.13

802.11ax (HE20)

Channel	Frequency (MHz)	Peak Power (mW)		Peak Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
1	2412	146.893	145.546	21.67	21.63	30	Pass
6	2437	139.959	143.219	21.46	21.56	30	Pass
11	2462	132.739	129.718	21.23	21.13	30	Pass
12	2467	92.683	43.853	19.67	16.42	30	Pass
13	2472	115.080	106.660	20.61	20.28	30	Pass

Channel	Frequency (MHz)	Average Power (mW)		Average Power (dBm)	
		Chain 0	Chain 1	Chain 0	Chain 1
1	2412	48.529	49.204	16.86	16.92
6	2437	48.306	49.091	16.84	16.91
11	2462	44.361	46.345	16.47	16.66
12	2467	30.269	14.655	14.81	11.66
13	2472	15.205	14.256	11.82	11.54

802.11ax (HE40)

Channel	Frequency (MHz)	Peak Power (mW)		Peak Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
3	2422	174.181	167.880	22.41	22.25	30	Pass
6	2437	170.216	168.267	22.31	22.26	30	Pass
9	2452	125.603	110.408	20.99	20.43	30	Pass
10	2457	91.411	97.499	19.61	19.89	30	Pass
11	2462	138.357	106.905	21.41	20.29	30	Pass

Channel	Frequency (MHz)	Average Power (mW)		Average Power (dBm)	
		Chain 0	Chain 1	Chain 0	Chain 1
3	2422	46.989	48.865	16.72	16.89
6	2437	46.666	46.238	16.69	16.65
9	2452	34.914	31.842	15.43	15.03
10	2457	17.742	17.258	12.49	12.37
11	2462	15.922	14.928	12.02	11.74

(MIMO)
802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	18.41	18.70	143.549	21.57	30	Pass
6	2437	18.43	18.95	148.252	21.71	30	Pass
11	2462	18.86	18.59	149.279	21.74	30	Pass
12	2467	17.09	16.91	100.231	20.01	30	Pass
13	2472	17.11	17.27	104.713	20.20	30	Pass

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	13.78	13.75	47.643	16.78
6	2437	13.63	13.83	47.206	16.74
11	2462	13.76	13.86	48.084	16.82
12	2467	12.08	12.10	32.359	15.10
13	2472	7.94	8.02	12.560	10.99

802.11n (HT40)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	19.45	19.56	178.649	22.52	30	Pass
6	2437	19.58	19.55	181.134	22.58	30	Pass
9	2452	19.22	19.59	174.582	22.42	30	Pass
10	2457	14.86	14.92	61.660	17.90	30	Pass
11	2462	19.58	19.77	185.780	22.69	30	Pass

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	13.89	13.96	49.431	16.94
6	2437	13.75	13.99	48.753	16.88
9	2452	13.72	13.98	48.529	16.86
10	2457	10.01	10.43	21.086	13.24
11	2462	7.77	7.96	12.246	10.88

802.11ax (HE20)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	18.73	18.95	153.109	21.85	30	Pass
6	2437	18.87	18.91	154.882	21.90	30	Pass
11	2462	18.91	19.19	160.694	22.06	30	Pass
12	2467	15.89	16.18	80.353	19.05	30	Pass
13	2472	18.05	18.22	130.317	21.15	30	Pass

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	13.79	13.99	48.978	16.90
6	2437	13.74	13.98	48.641	16.87
11	2462	13.72	13.82	47.643	16.78
12	2467	10.85	11.06	24.946	13.97
13	2472	8.12	8.18	13.062	11.16

802.11ax (HE40)

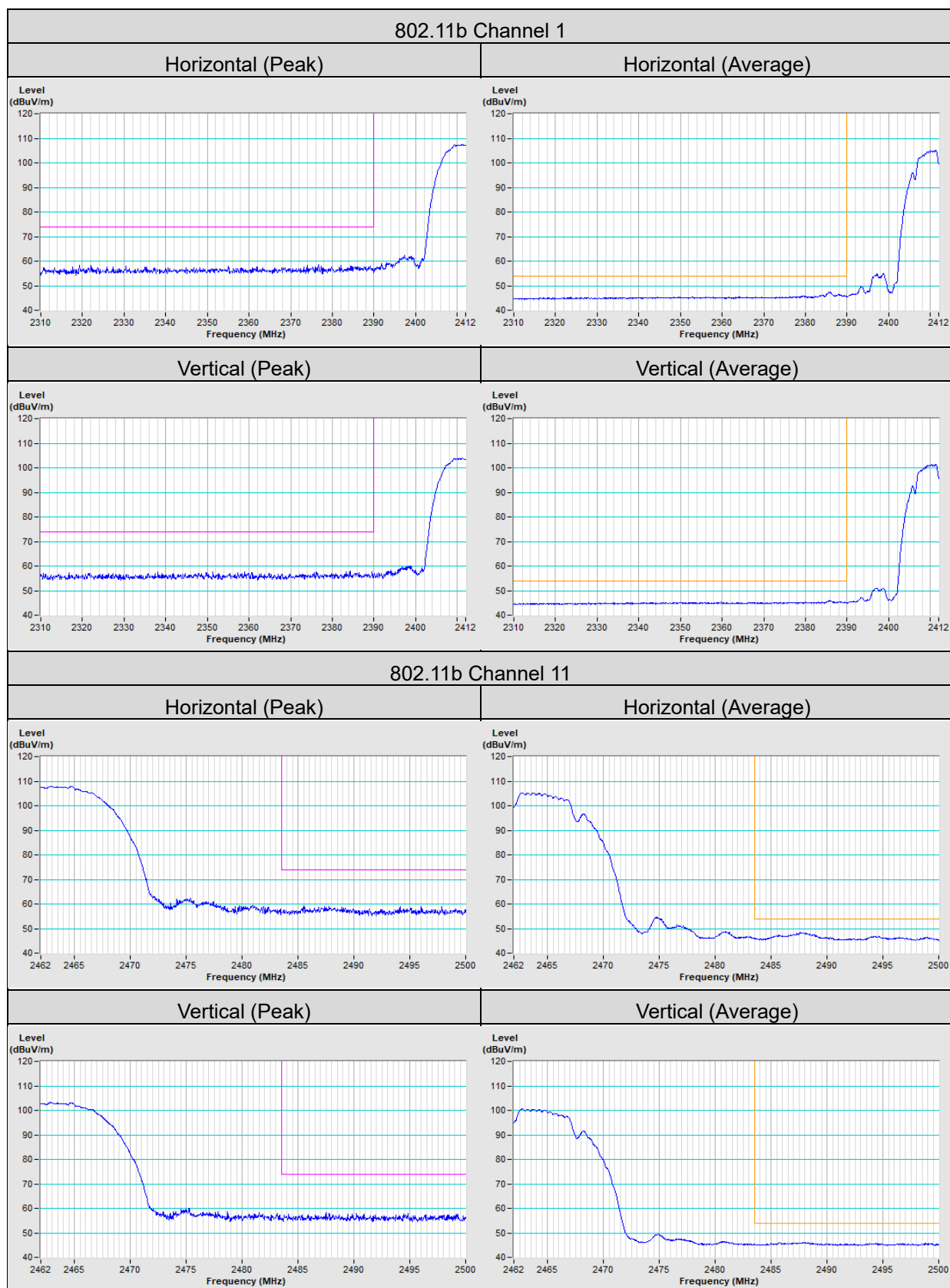
Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	19.21	19.55	173.380	22.39	30	Pass
6	2437	19.03	19.42	167.494	22.24	30	Pass
9	2452	19.11	19.42	169.044	22.28	30	Pass
10	2457	14.43	14.23	54.200	17.34	30	Pass
11	2462	21.11	21.25	262.422	24.19	30	Pass

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	13.53	13.81	46.559	16.68
6	2437	13.56	13.83	46.881	16.71
9	2452	13.51	13.82	46.559	16.68
10	2457	11.73	11.80	30.061	14.78
11	2462	7.12	7.33	10.568	10.24

5 Pictures of Test Arrangements

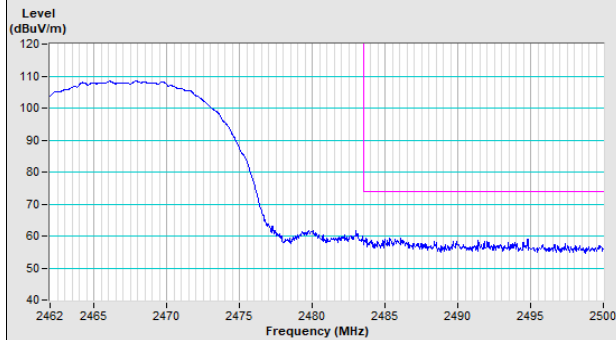
Please refer to the attached file (Test Setup Photo).

Annex A- Band Edge Measurement

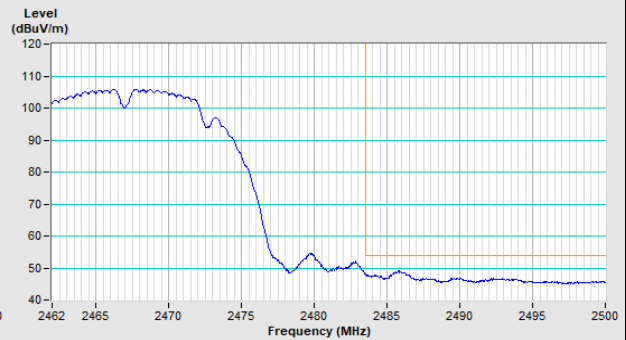


802.11b Channel 12

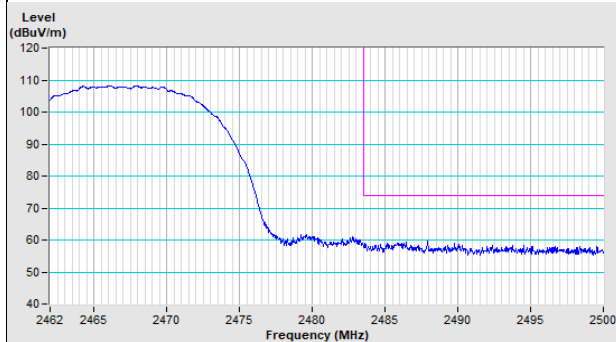
Horizontal (Peak)



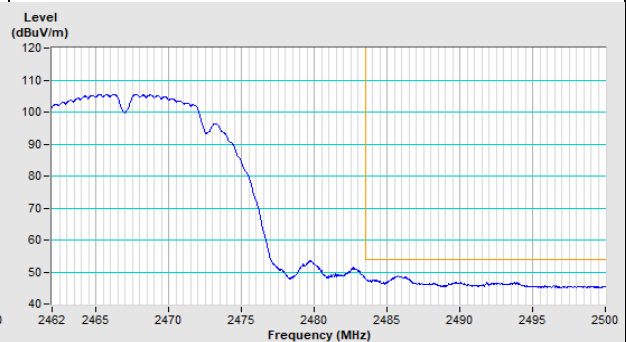
Horizontal (Average)



Vertical (Peak)

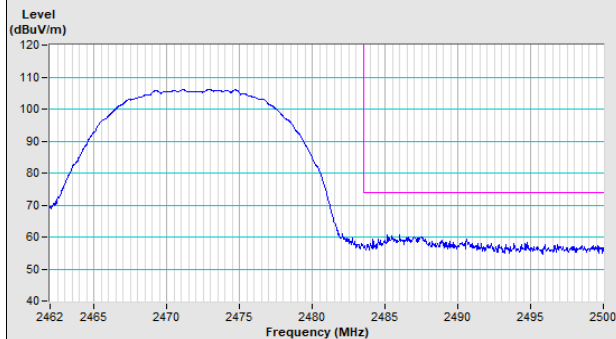


Vertical (Average)

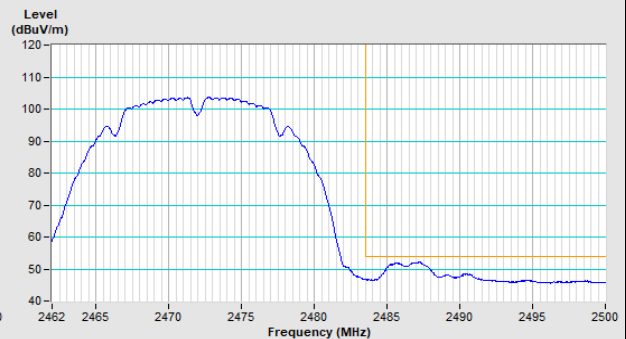


802.11b Channel 13

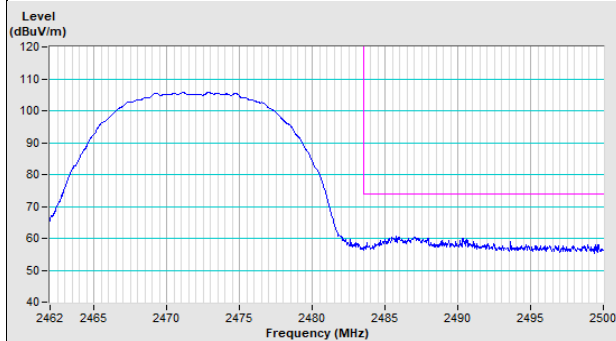
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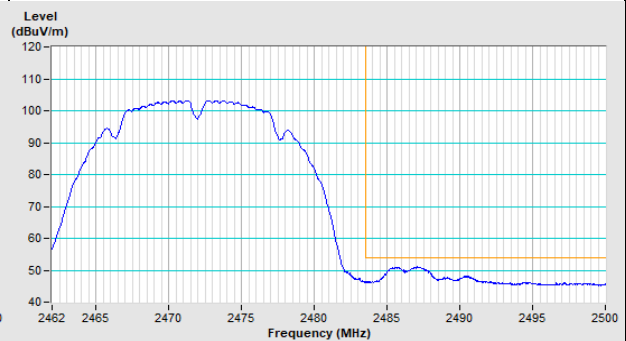
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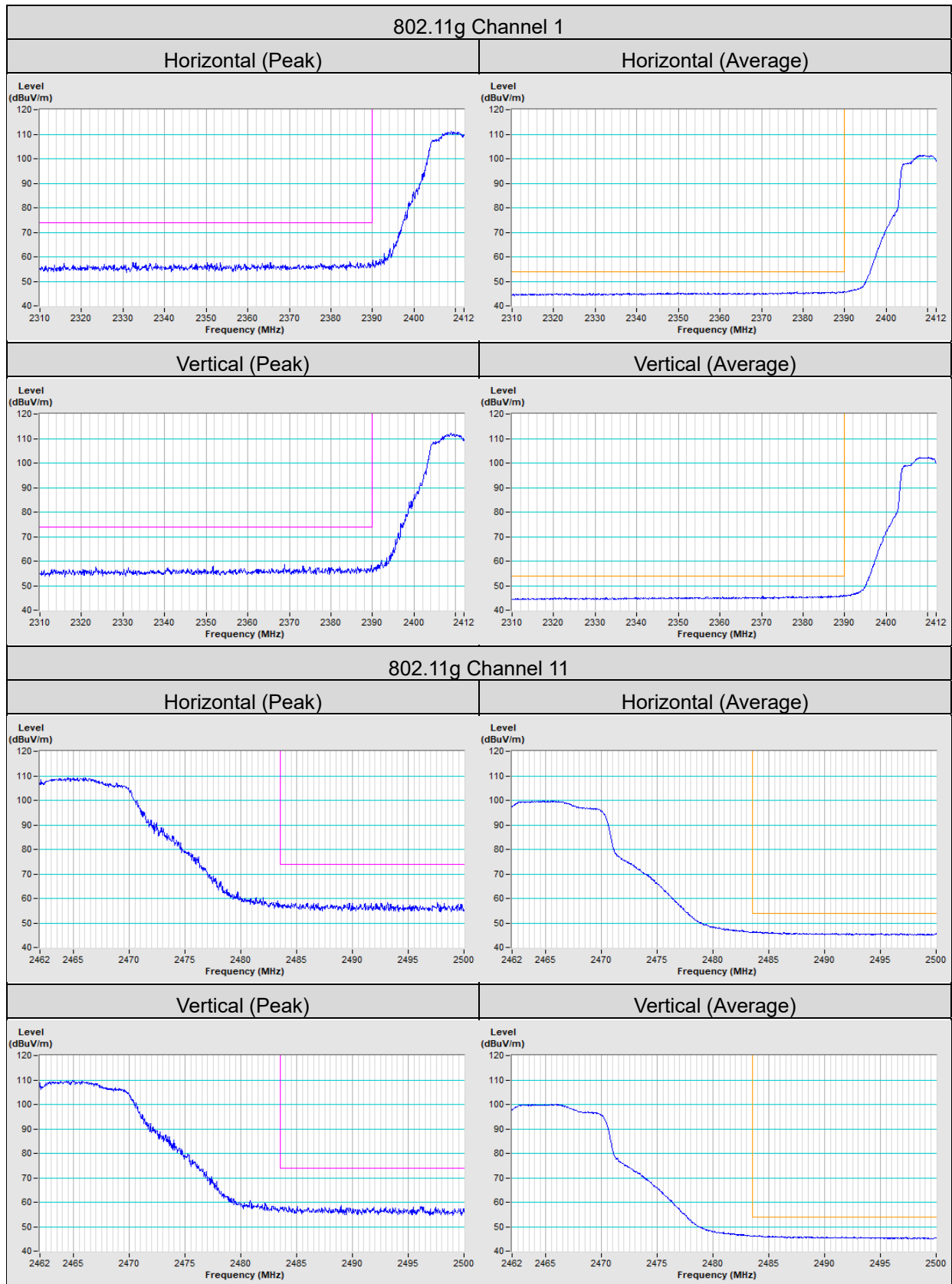


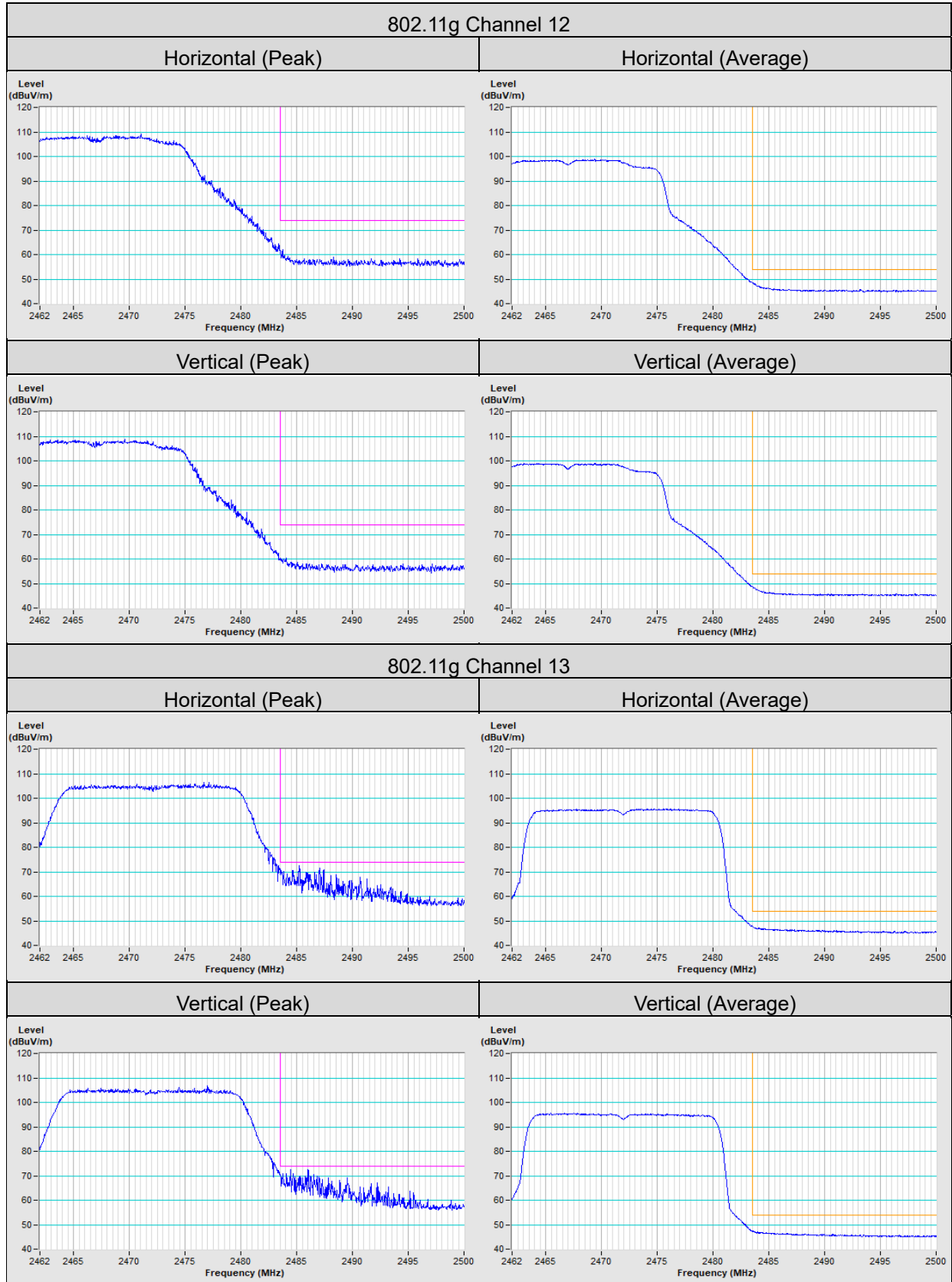
Vertical (Peak)



Vertical (Average)

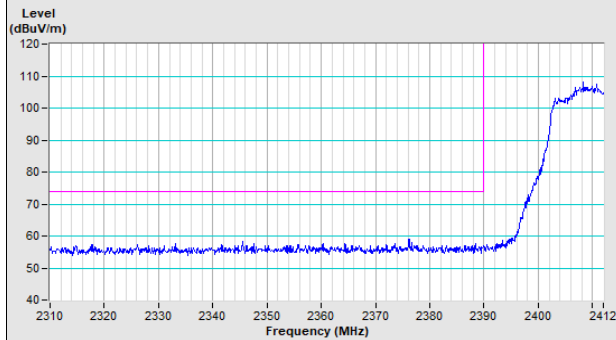




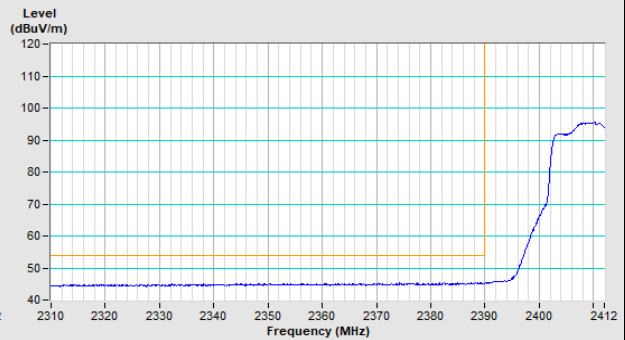


802.11ax (HE20) Channel 1

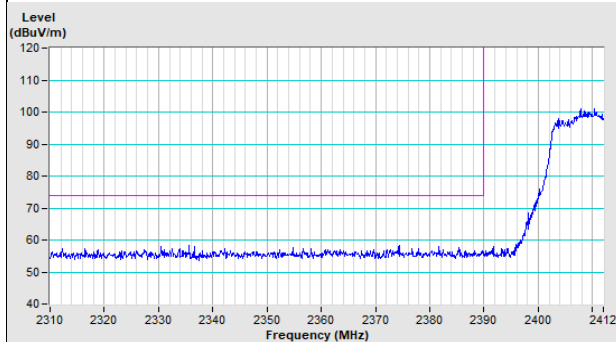
Horizontal (Peak)



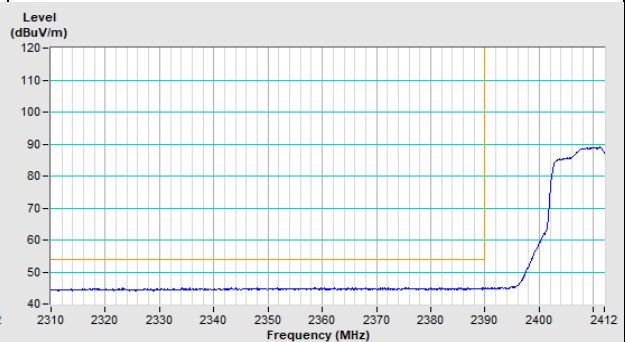
Horizontal (Average)



Vertical (Peak)

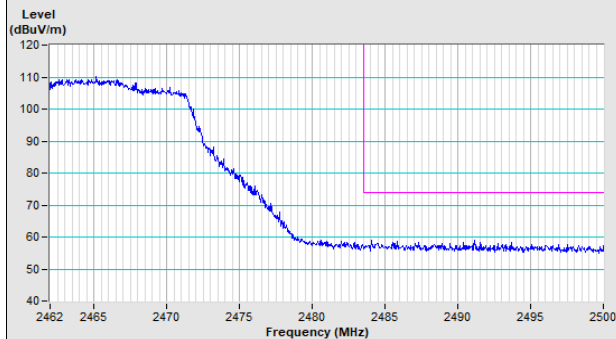


Vertical (Average)

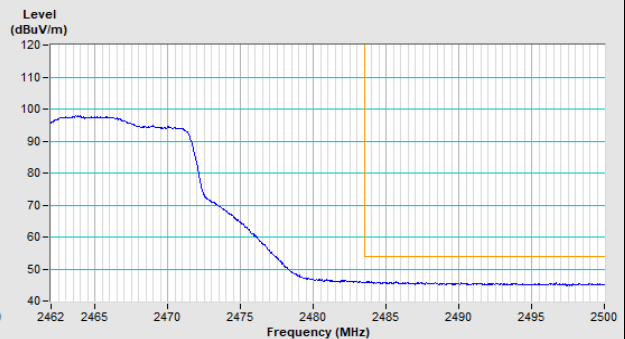


802.11ax (HE20) Channel 11

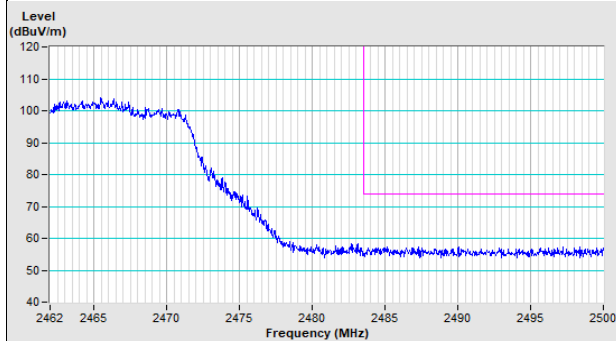
Horizontal (Peak)



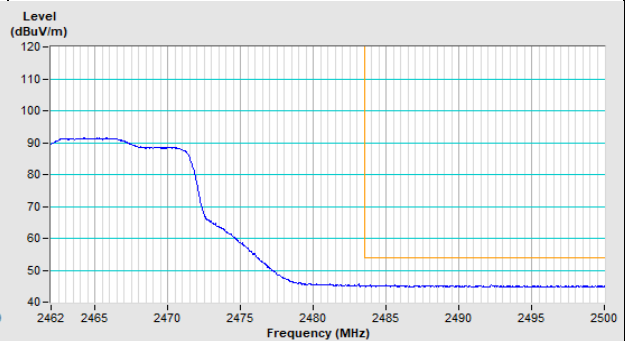
Horizontal (Average)



Vertical (Peak)

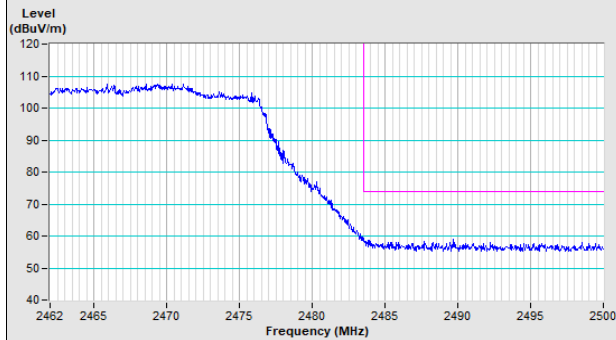


Vertical (Average)

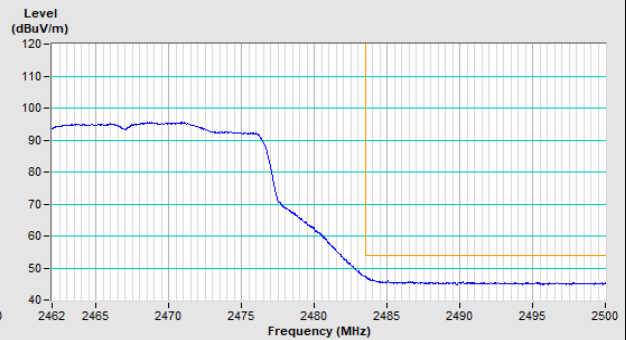


802.11ax (HE20) Channel 12

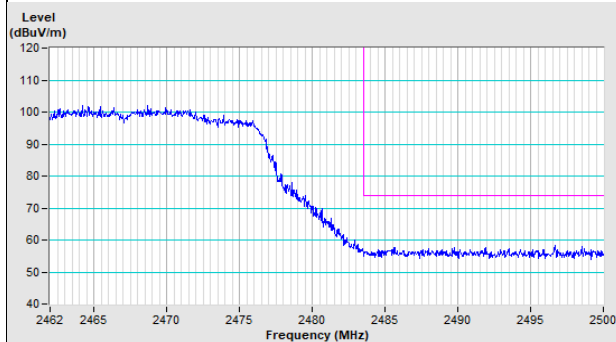
Horizontal (Peak)



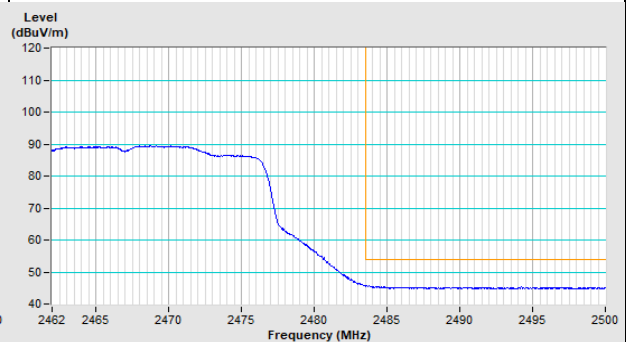
Horizontal (Average)



Vertical (Peak)

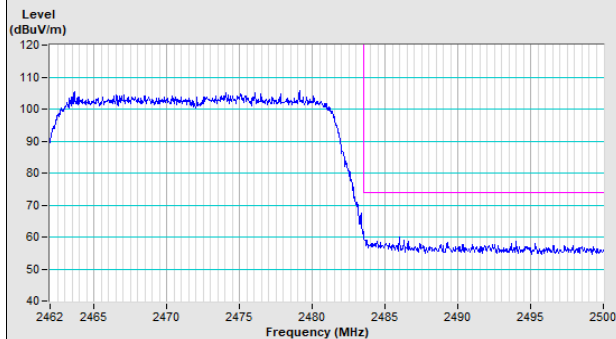


Vertical (Average)

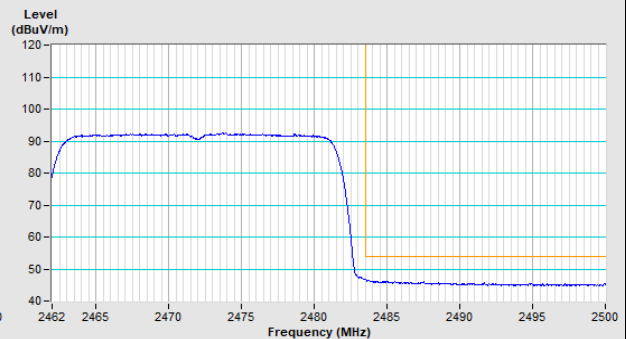


802.11ax (HE20) Channel 13

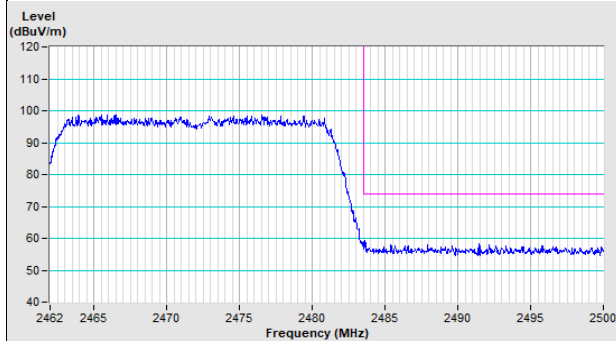
Horizontal (Peak)



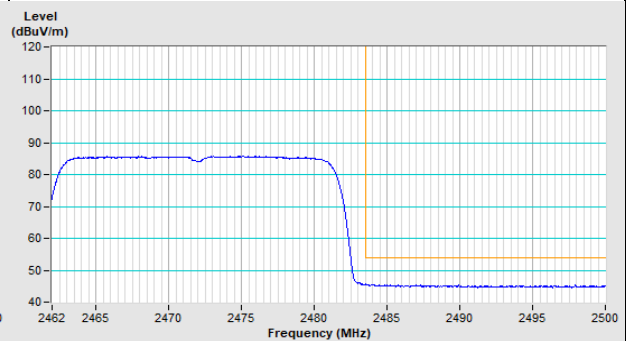
Horizontal (Average)



Vertical (Peak)

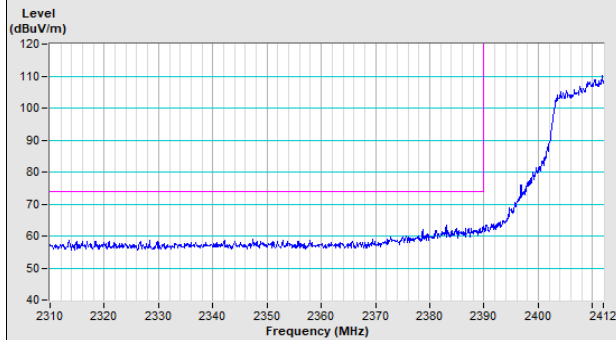


Vertical (Average)

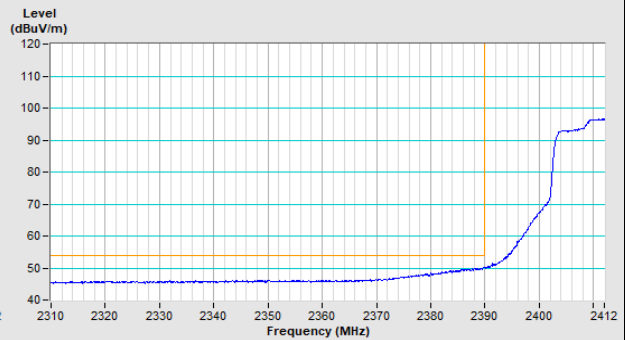


802.11ax (HE40) Channel 3

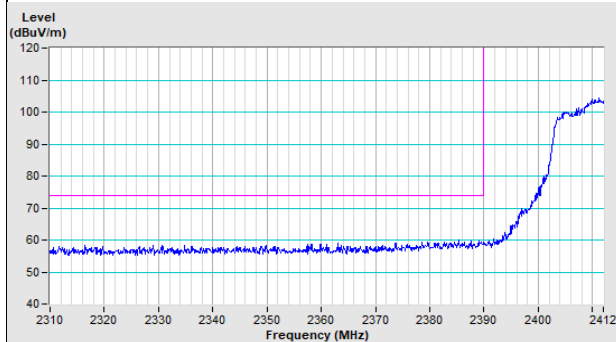
Horizontal (Peak)



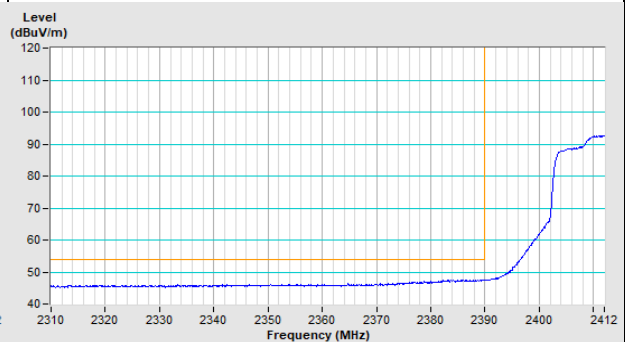
Horizontal (Average)



Vertical (Peak)

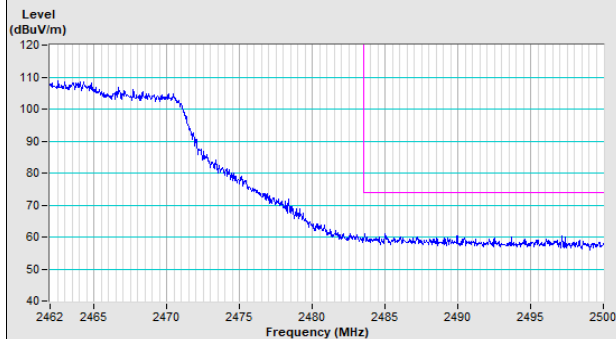


Vertical (Average)

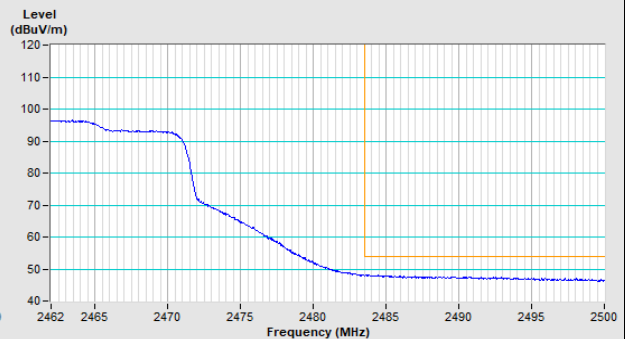


802.11ax (HE40) Channel 9

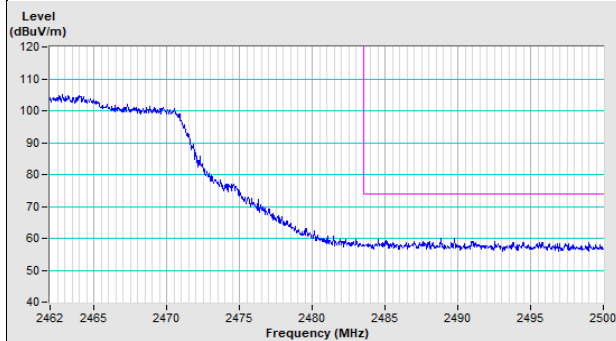
Horizontal (Peak)



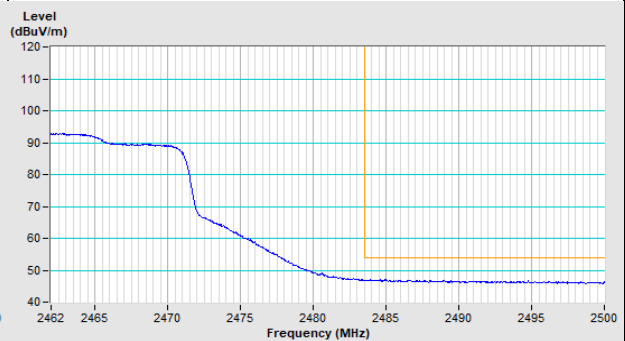
Horizontal (Average)



Vertical (Peak)

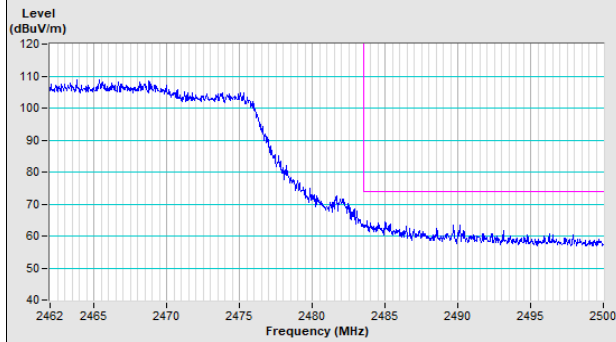


Vertical (Average)

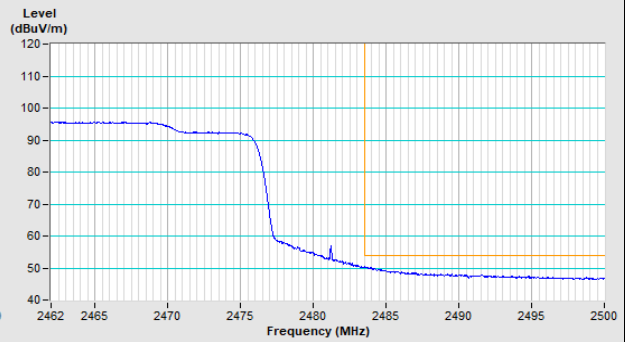


802.11ax (HE40) Channel 10

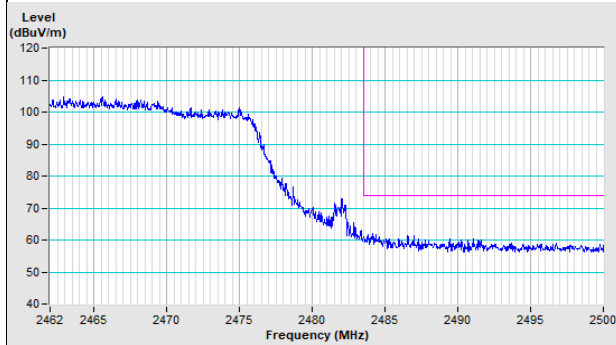
Horizontal (Peak)



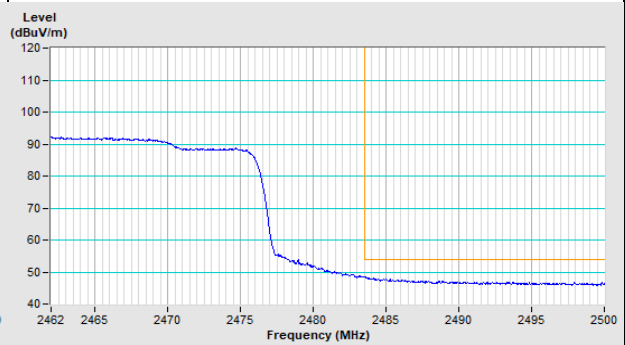
Horizontal (Average)



Vertical (Peak)

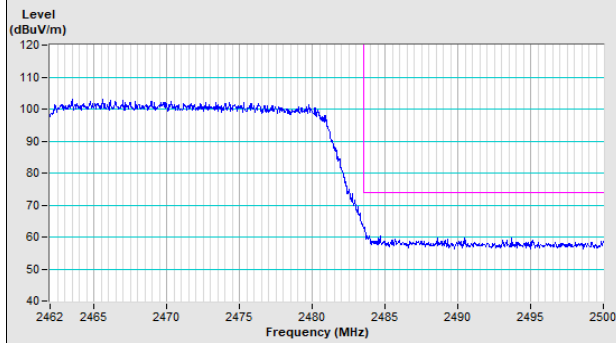


Vertical (Average)

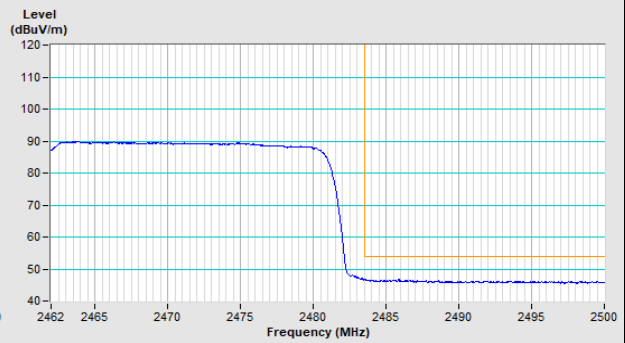


802.11ax (HE40) Channel 11

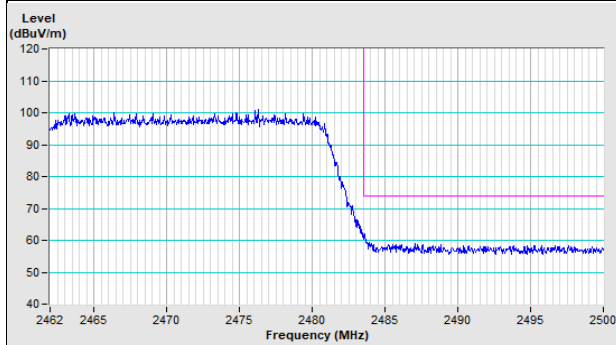
Horizontal (Peak)



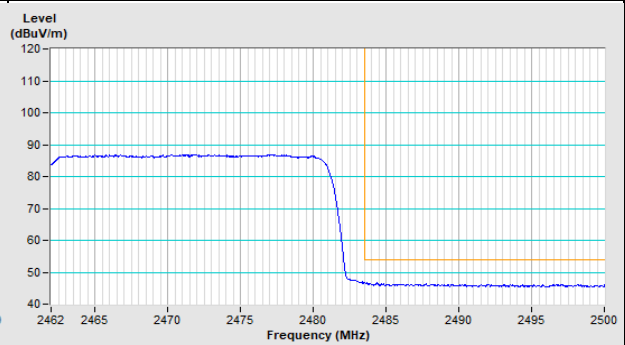
Horizontal (Average)



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.

If you have any comments, please feel free to contact us at the following:

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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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