Partial FCC Test Report

Report No.:	RFBEDW-WTW-P21010555-2
FCC ID:	O57AX200NGW
Test Model:	AX200NGW
Received Date:	Jan. 19, 2021
Test Date:	Feb. 18, 2021 ~ Feb. 26, 2021
Issued Date:	Mar. 08, 2021
Applicant:	Lenovo(Shanghai) Electronics Technology Co., Ltd.
Address:	Section 304-305, Building No.4, #222, Meiyue Road, China(Shanghai) Pilot Free Trade Zone ,Shanghai 200131 , China (Peoples Republic Of)
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
RFBEDW-WTW-P21010555-2	Original Release	Mar. 08, 2021

1 Certificate of Conformity

Product:	WLAN and BT , 2x2 Pcle M.2 2230 adapter card
Brand:	Intel® Wi-Fi 6 AX200
Test Model:	AX200NGW
Sample Status:	Engineering Sample
Applicant:	Lenovo(Shanghai) Electronics Technology Co., Ltd.
Test Date:	Feb. 18, 2021 ~ Feb. 26, 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 : Lena Wang , **Date:** Mar. 08, 2021

Lena Wang / Specialist

Approved by : , **Date:** Mar. 08, 2021

Dylan Chiou / 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 -15.01 dB at 0.57800 MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -4.18 dB at 41.64 MHz.
15.247(d)	Antenna Port Emission	N/A	Refer to Note
15.247(a)(2)	6 dB Bandwidth	N/A	Refer to Note
---	Occupied Bandwidth Measurement	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 i-PEX 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	150 kHz ~ 30 MHz	2.79 dB
Radiated Emissions up to 1 GHz	9 kHz ~ 30 MHz	3.04 dB
	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~ 1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 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**
Test Model	AX200NGW
Status of EUT	Engineering Sample
Nominal Voltage	3.3Vdc form host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM 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 ~ 2472 MHz
Number of Channel	13 for 802.11b, 802.11g, 802.11n (HT20), 802.11ax (HE20) 9 for 802.11n (HT40), 802.11ax (HE40)
Output Power	406.44 mW
Antenna Type	Refer to Note as below
Antenna Connector	Refer to Note as below
Accessory Device	N/A
Data Cable Supplied	N/A

Note:

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

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

* The modulation and bandwidth are similar for 802.11n mode for HT20 / HT40 and 802.11ax mode for HE20 / HE40, therefore investigated 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	Description
Notebook Computer	Lenovo	Lenovo 14e Chromebook Gen 2**********	All models are electrically identical, different models are for marketing purpose.
		IdeaPad 3 Chrome 14APO6 **********	
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	ADLX45YLC2D	I/P: 100-240Vac, 50-60Hz, 1.3A O/P: 20.0V===2.25A, 45.0W 1.77M / 0core
Battery	Lenovo	L20D3PG1	11.52 Vdc, 4950 mAh, 57Wh

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

4. The antenna information is listed as below.

Ant. Type	Brand	Model	Ant.	Antenna Peak Gain (dBi)				
				BT	2400-2500MHz	5150-5350MHz	5470-5725MHz	5725-5850MHz
PIFA	AWAN	DC33002K100 (AYF6Y-100053)	Main	-	0.39	-0.17	-0.21	-0.21
		DC33002K110 (AYF6Y-100054)	Aux.	-0.85	-0.85	-3.94	-3.59	-5.64
	MAGLAYERS	DC33002KD00 (EDA-3212-25GC7-A1)	Main	-	-0.74	-1.23	0.80	0.80
		DC33002KD10 (EDA-3212-25GC7-A2)	Aux.	-0.35	-0.35	-1.36	-1.44	-2.05
* The Max antenna gain was chosen for final test.								

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.
6. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

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

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

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

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

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 1 GHz **RE<1G:** Radiated Emission below 1 GHz
PLC: Power Line Conducted Emission **Power:** Maximum Output Power Measurement

Note: "-"means no effect.
Note: The EUT had been pre-tested on the positioned of NB Mode and each 3 axis of Tablet Mode. The worst case was found when positioned on **NB Mode.**

Radiated Emission Test (Above 1 GHz):

☒ 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 to11	3, 6, 9, 10, 11	OFDMA	BPSK	MCS0

Radiated Emission Test (Below 1 GHz):

☒ 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 to11	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 to11	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	Tested by
RE≥1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Tim Chen
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Tim Chen
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Tim Chen
Power	25 deg. C, 65 % RH	120 Vac, 60 Hz	Tim Chen

3.3 Description of Support Units

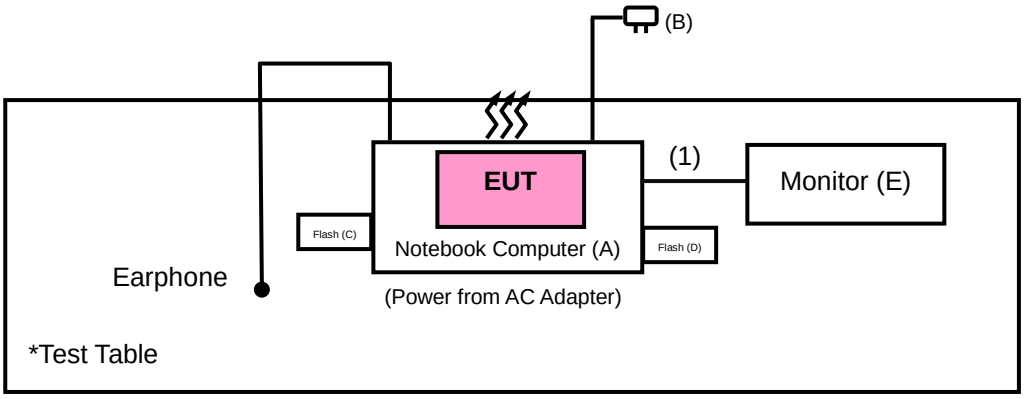
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Notebook Computer	Lenovo	Lenovo 14e Chromebook Gen2**********, IdeaPad 3 Chrome 14APO6 **********	NA	NA	-
B	Adapter	Lenovo	ADLX45YLC2D	NA	NA	-
C	Flash	HP	v250W	05	NA	-
D	Flash	HP	v250W	03	NA	-
E	Monitor	ViewSonic	VX2457-MHD	UG0182942333	NA	-

No.	Signal Cable Description Of The Above Support Units
1.	HDMI Cable: 1m

Note:
1. All power cords of the above support units are non-shielded (1.8m).
2. Items A, C, D acted as communication partners to transfer data.

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards

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 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 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

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 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Mar. 18, 2020	Mar. 17, 2021
Spectrum Analyzer Agilent	N9010A	MY52220314	Dec. 07, 2020	Dec. 06, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 22, 2020	Nov. 21, 2021
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Nov. 06, 2020	Nov. 05, 2021
Fixed Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
Loop Antenna	EM-6879	269	Sep. 17, 2020	Sep. 16, 2021
Preamplifier EMCI	EMC001340	980201	Oct. 21, 2020	Oct. 20, 2021
Preamplifier EMCI	EMC 012645	980115	Oct. 07, 2020	Oct. 06, 2021
Preamplifier EMCI	EMC 330H	980112	Oct. 07, 2020	Oct. 06, 2021
Power Meter Anritsu	ML2495A	1012010	Sep. 01, 2020	Aug. 31, 2021
Power Sensor Anritsu	MA2411B	1315050	Sep. 01, 2020	Aug. 31, 2021
RF Coaxial Cable EMCI	EMC104-SM-SM-8000	171005	Oct. 07, 2020	Oct. 06, 2021
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	Oct. 07, 2020	Oct. 06, 2021
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 07, 2020	Oct. 06, 2021
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	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 Chamber 10.

4.1.3 Test Procedures

For Radiated Emission below 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 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 9 kHz at frequency below 30 MHz.

For Radiated Emission above 30 MHz

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

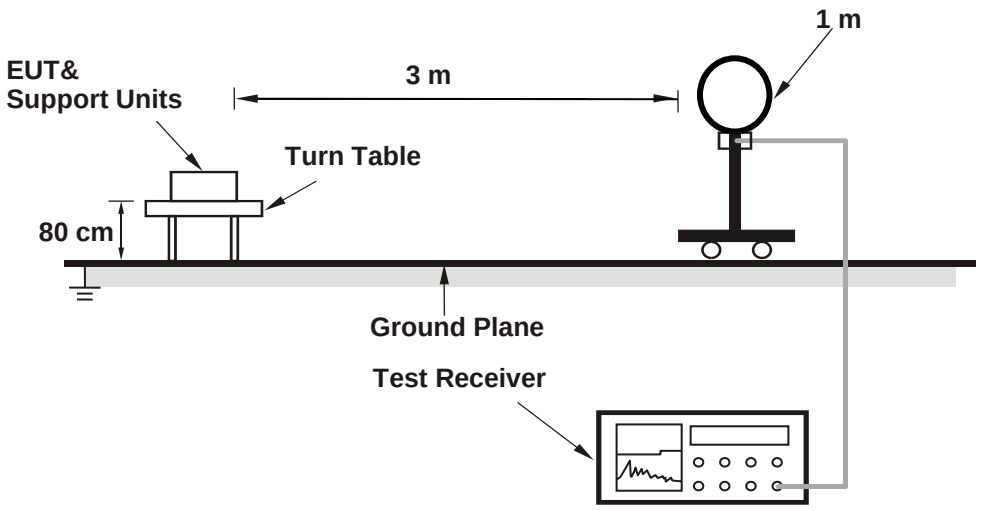
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98 %) or 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz. (11b: RBW = 1 MHz, VBW =10 Hz ; 11g: RBW = 1 MHz, VBW = 10 Hz ;
   11ax (HE20): RBW = 1 MHz, VBW = 10 Hz ; 11ax (HE40): RBW = 1 MHz, VBW = 10 Hz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

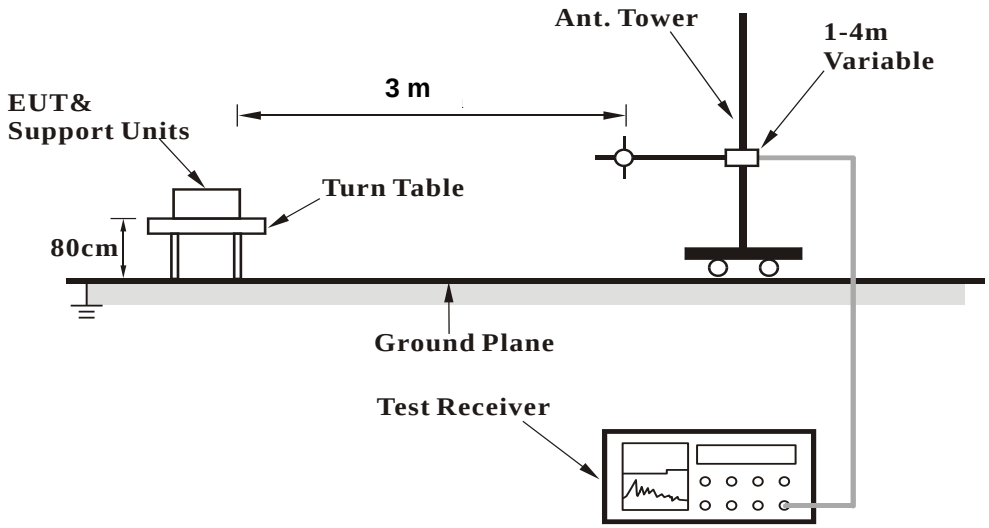
No deviation.

4.1.5 Test Set Up

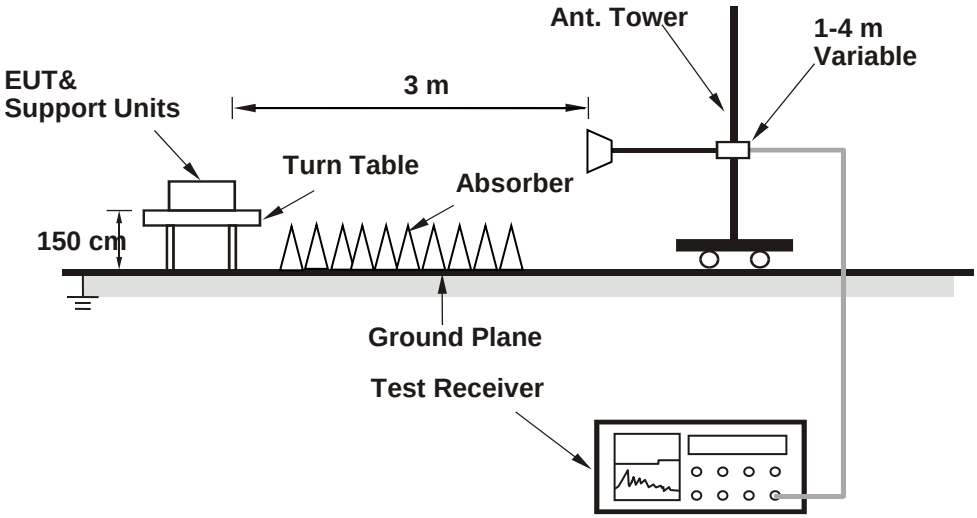
<Radiated Emission below 30 MHz>



<Radiated Emission 30 MHz to 1 GHz>



<Radiated Emission above 1 GHz>



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

4.1.6 EUT Operating Conditions

a. Placed the EUT on a testing table.
b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1 GHz Data：

802.11b

EUT Test Condition		Measurement Detail	
Channel	Channel 1	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2385.378	41.73	48.73	-7	54	-12.27	103	90	Average
2385.378	48.63	55.63	-7	74	-25.37	103	90	Peak
2412	101.91	108.96	-7.05	------	------	103	90	Average
2412	102.66	109.71	-7.05	------	------	103	90	Peak
4824	34.33	50.18	-15.85	54	-19.67	103	168	Average
4824	41.79	57.64	-15.85	74	-32.21	103	168	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2385.48	39.68	46.68	-7	54	-14.32	306	227	Average
2385.48	48.63	55.63	-7	74	-25.37	306	227	Peak
2412	98.42	105.47	-7.05	------	------	306	227	Average
2412	101.4	108.45	-7.05	------	------	306	227	Peak
4824	34.94	50.79	-15.85	54	-19.06	116	209	Average
4824	41.69	57.54	-15.85	74	-32.31	116	209	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2412 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 6	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	34.96	42.01	-7.05	54	-19.04	142	110	Average
2390	45.7	52.75	-7.05	74	-28.3	142	110	Peak
2437	99.94	106.94	-7	------	------	142	110	Average
2437	103.56	110.56	-7	------	------	142	110	Peak
2483.5	35.74	42.6	-6.86	54	-18.26	142	110	Average
2483.5	45.95	52.81	-6.86	74	-28.05	142	110	Peak
4874	35.4	51.34	-15.94	54	-18.6	116	124	Average
4874	42.96	58.9	-15.94	74	-31.04	116	124	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	34.35	41.4	-7.05	54	-19.65	373	227	Average
2390	45.02	52.07	-7.05	74	-28.98	373	227	Peak
2437	96.86	103.86	-7	------	------	373	227	Average
2437	100.48	107.48	-7	------	------	373	227	Peak
2483.5	34.42	41.28	-6.86	54	-19.58	373	227	Average
2483.5	45.36	52.22	-6.86	74	-28.64	373	227	Peak
4874	34.79	50.73	-15.94	54	-19.21	134	167	Average
4874	42.79	58.73	-15.94	74	-31.21	134	167	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2437 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2462	100.65	107.58	-6.93	------	------	126	111	Average
2462	104.03	110.96	-6.93	------	------	126	111	Peak
2490.12	38.79	45.66	-6.87	54	-15.21	126	111	Average
2490.12	48.83	55.7	-6.87	74	-25.17	126	111	Peak
4924	37.01	52.88	-15.87	54	-16.99	163	241	Average
4924	44.49	60.36	-15.87	74	-29.51	163	241	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2462	96.73	103.66	-6.93	------	------	373	226	Average
2462	98.91	105.84	-6.93	------	------	373	226	Peak
2483.5	35.23	42.09	-6.86	54	-18.77	373	226	Average
2483.5	46	52.86	-6.86	74	-28	373	226	Peak
4924	35.57	51.44	-15.87	54	-18.43	111	101	Average
4924	42.67	58.54	-15.87	74	-31.33	111	101	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2462 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 12	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2467	99.11	105.97	-6.86	------	------	100	110	Average
2467	102.53	109.39	-6.86	------	------	100	110	Peak
2484.382	42.37	49.23	-6.86	54	-11.63	100	110	Average
2484.382	49.41	56.27	-6.86	74	-24.59	100	110	Peak
4934	36.05	51.92	-15.87	54	-17.95	102	137	Average
4934	42.71	58.58	-15.87	74	-31.29	102	137	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2467	96.4	103.26	-6.86	------	------	400	221	Average
2467	99.29	106.15	-6.86	------	------	400	221	Peak
2484.268	41.67	48.53	-6.86	54	-12.33	400	221	Average
2484.268	49.06	55.92	-6.86	74	-24.94	400	221	Peak
4934	35.8	51.67	-15.87	54	-18.2	129	62	Average
4934	43.37	59.24	-15.87	74	-30.63	129	62	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2467 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 13	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2472	96.79	103.65	-6.86	------	------	100	111	Average
2472	98.95	105.81	-6.86	------	------	100	111	Peak
2483.5	41.05	47.91	-6.86	54	-12.95	100	111	Average
2483.5	61.77	68.63	-6.86	74	-12.23	100	111	Peak
4944	35.54	51.33	-15.79	54	-18.46	108	274	Average
4944	42.58	58.37	-15.79	74	-31.42	108	274	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2472	94.11	100.97	-6.86	------	------	400	225	Average
2472	97.72	104.58	-6.86	------	------	400	225	Peak
2483.5	39.92	46.78	-6.86	54	-14.08	400	225	Average
2483.5	60.3	67.16	-6.86	74	-13.7	400	225	Peak
4944	34.48	50.27	-15.79	54	-19.52	111	191	Average
4944	42.04	57.83	-15.79	74	-31.96	111	191	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2472 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

802.11g

EUT Test Condition		Measurement Detail	
Channel	Channel 1	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	41.14	48.19	-7.05	54	-12.86	104	111	Average
2390	54.26	61.31	-7.05	74	-19.74	104	111	Peak
2412	96.18	103.23	-7.05	------	------	104	111	Average
2412	103.88	110.93	-7.05	------	------	104	111	Peak
4824	33.53	49.38	-15.85	54	-20.47	101	87	Average
4824	41.3	57.15	-15.85	74	-32.7	101	87	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	38.08	45.13	-7.05	54	-15.92	341	224	Average
2390	50.42	57.47	-7.05	74	-23.58	341	224	Peak
2412	91.47	98.52	-7.05	------	------	341	224	Average
2412	98.88	105.93	-7.05	------	------	341	224	Peak
4824	33.68	49.53	-15.85	54	-20.32	112	306	Average
4824	41.19	57.04	-15.85	74	-32.81	112	306	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2412 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 6	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	35.36	42.41	-7.05	54	-18.64	103	112	Average
2390	46.16	53.21	-7.05	74	-27.84	103	112	Peak
2437	98.8	104.69	-5.89	------	------	103	112	Average
2437	105.84	111.73	-5.89	------	------	103	112	Peak
2483.5	35.44	42.3	-6.86	54	-18.56	103	112	Average
2483.5	46.62	53.48	-6.86	74	-27.38	103	112	Peak
4874	34.3	50.24	-15.94	54	-19.7	103	165	Average
4874	41.07	57.01	-15.94	74	-32.93	103	165	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	34.49	41.54	-7.05	54	-19.51	371	223	Average
2390	45.23	52.28	-7.05	74	-28.77	371	223	Peak
2437	94.63	101.63	-7	------	------	371	223	Average
2437	101.57	108.57	-7	------	------	371	223	Peak
2483.5	34.63	41.49	-6.86	54	-19.37	371	223	Average
2483.5	44.82	51.68	-6.86	74	-29.18	371	223	Peak
4874	33.74	49.68	-15.94	54	-20.26	142	163	Average
4874	40.99	56.93	-15.94	74	-33.01	142	163	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2437 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2462	95.59	102.52	-6.93	------	------	100	112	Average
2462	103.02	109.95	-6.93	------	------	100	112	Peak
2483.5	37.78	44.64	-6.86	54	-16.22	100	112	Average
2483.5	49.34	56.2	-6.86	74	-24.66	100	112	Peak
4924	34.21	50.08	-15.87	54	-19.79	100	157	Average
4924	41.59	57.46	-15.87	74	-32.41	100	157	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2462	92.23	99.16	-6.93	------	------	361	224	Average
2462	100.29	107.22	-6.93	------	------	361	224	Peak
2483.5	36.09	42.95	-6.86	54	-17.91	361	224	Average
2483.5	46.57	53.43	-6.86	74	-27.43	361	224	Peak
4924	33.84	49.71	-15.87	54	-20.16	166	187	Average
4924	41.41	57.28	-15.87	74	-32.59	166	187	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2462 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 12	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2467	94.04	100.9	-6.86	------	------	100	109	Average
2467	101.51	108.37	-6.86	------	------	100	109	Peak
2483.5	42.4	49.26	-6.86	54	-11.6	100	109	Average
2483.5	53.53	60.39	-6.86	74	-20.47	100	109	Peak
4934	34.29	50.16	-15.87	54	-19.71	122	110	Average
4934	41.8	57.67	-15.87	74	-32.2	122	110	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2467	90.79	97.65	-6.86	------	------	400	224	Average
2467	98.36	105.22	-6.86	------	------	400	224	Peak
2483.5	41.12	47.98	-6.86	54	-12.88	400	224	Average
2483.5	52.59	59.45	-6.86	74	-21.41	400	224	Peak
4934	35.02	50.89	-15.87	54	-18.98	142	165	Average
4934	42.25	58.12	-15.87	74	-31.75	142	165	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2467 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 13	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2472	88.59	95.45	-6.86	------	------	338	129	Average
2472	96.31	103.17	-6.86	------	------	338	129	Peak
2483.5	46.83	53.69	-6.86	54	-7.17	338	129	Average
2483.5	65.83	72.69	-6.86	74	-8.17	338	129	Peak
4944	35.15	50.94	-15.79	54	-18.85	236	182	Average
4944	42.36	58.15	-15.79	74	-31.64	236	182	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2472	90.64	97.5	-6.86	------	------	276	184	Average
2472	98.07	104.93	-6.86	------	------	276	184	Peak
2483.5	47.36	54.22	-6.86	54	-6.64	276	184	Average
2483.5	67.03	73.89	-6.86	74	-6.97	276	184	Peak
4944	35.46	51.25	-15.79	54	-18.54	154	89	Average
4944	42.7	58.49	-15.79	74	-31.3	154	89	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2472 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

802.11ax (HE20)

EUT Test Condition		Measurement Detail	
Channel	Channel 1	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	45.92	52.97	-7.05	54	-8.08	105	109	Average
2390	55.7	62.75	-7.05	74	-18.3	105	109	Peak
2412	99.66	106.71	-7.05	------	------	105	109	Average
2412	107.68	114.73	-7.05	------	------	105	109	Peak
4824	34.34	50.19	-15.85	54	-19.66	211	107	Average
4824	41.51	57.36	-15.85	74	-32.49	211	107	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	40.03	47.08	-7.05	54	-13.97	391	131	Average
2390	51.11	58.16	-7.05	74	-22.89	391	131	Peak
2412	96.52	103.57	-7.05	------	------	391	131	Average
2412	104.48	111.53	-7.05	------	------	391	131	Peak
4824	34.47	50.32	-15.85	54	-19.53	155	231	Average
4824	41.6	57.45	-15.85	74	-32.4	155	231	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2412 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 6	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	36.59	43.64	-7.05	54	-17.41	113	104	Average
2390	46.53	53.58	-7.05	74	-27.47	113	104	Peak
2437	100.43	107.43	-7	------	------	113	104	Average
2437	107.46	114.46	-7	------	------	113	104	Peak
2483.5	36.61	43.47	-6.86	54	-17.39	113	104	Average
2483.5	46.55	53.41	-6.86	74	-27.45	113	104	Peak
4874	33.77	49.71	-15.94	54	-20.23	235	89	Average
4874	40.89	56.83	-15.94	74	-33.11	235	89	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	35.18	42.23	-7.05	54	-18.82	389	128	Average
2390	45.83	52.88	-7.05	74	-28.17	389	128	Peak
2437	98.46	105.46	-7	------	------	389	128	Average
2437	106.57	113.57	-7	------	------	389	128	Peak
2483.5	34.82	41.68	-6.86	54	-19.18	389	128	Average
2483.5	45.41	52.27	-6.86	74	-28.59	389	128	Peak
4874	35.11	51.05	-15.94	54	-18.89	126	204	Average
4874	42.28	58.22	-15.94	74	-31.72	126	204	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2437 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2462	99.6	106.53	-6.93	------	------	100	102	Average
2462	106.51	113.44	-6.93	------	------	100	102	Peak
2483.5	41.1	47.96	-6.86	54	-12.9	100	102	Average
2483.5	50.96	57.82	-6.86	74	-23.04	100	102	Peak
4924	33.95	49.82	-15.87	54	-20.05	183	136	Average
4924	41.06	56.93	-15.87	74	-32.94	183	136	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2462	96.49	103.42	-6.93	------	------	384	129	Average
2462	104.53	111.46	-6.93	------	------	384	129	Peak
2483.5	36.58	43.44	-6.86	54	-17.42	384	129	Average
2483.5	47.47	54.33	-6.86	74	-26.53	384	129	Peak
4924	33.81	49.68	-15.87	54	-20.19	117	209	Average
4924	40.95	56.82	-15.87	74	-33.05	117	209	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2462 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 12	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2467	97.7	104.56	-6.86	------	------	103	109	Average
2467	105.52	112.38	-6.86	------	------	103	109	Peak
2483.5	45.73	52.59	-6.86	54	-8.27	103	109	Average
2483.5	57.17	64.03	-6.86	74	-16.83	103	109	Peak
4934	33.15	49.02	-15.87	54	-20.85	216	159	Average
4934	40.31	56.18	-15.87	74	-33.69	216	159	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2467	94.63	101.49	-6.86	------	------	367	128	Average
2467	102.51	109.37	-6.86	------	------	367	128	Peak
2483.5	43.29	50.15	-6.86	54	-10.71	367	128	Average
2483.5	54.81	61.67	-6.86	74	-19.19	367	128	Peak
4934	33.67	49.54	-15.87	54	-20.33	188	284	Average
4934	40.92	56.79	-15.87	74	-33.08	188	284	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2467 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 13	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2472	90.47	97.33	-6.86	------	------	100	116	Average
2472	98.82	105.68	-6.86	------	------	100	116	Peak
2483.5	46.03	52.89	-6.86	54	-7.97	100	116	Average
2483.5	62.65	69.51	-6.86	74	-11.35	100	116	Peak
4944	34.46	50.25	-15.79	54	-19.54	177	258	Average
4944	41.58	57.37	-15.79	74	-32.42	177	258	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2472	93.32	100.18	-6.86	------	------	301	182	Average
2472	102.13	108.99	-6.86	------	------	301	182	Peak
2483.5	48.01	54.87	-6.86	54	-5.99	301	182	Average
2483.5	67.31	74.17	-6.86	74	-6.69	301	182	Peak
4944	34.83	50.62	-15.79	54	-19.17	142	301	Average
4944	42.09	57.88	-15.79	74	-31.91	142	301	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2472 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

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EUT Test Condition		Measurement Detail	
Channel	Channel 3	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	44.32	51.37	-7.05	54	-9.68	100	110	Average
2390	55.77	62.82	-7.05	74	-18.23	100	110	Peak
2422	97.53	104.52	-6.99	------	------	100	110	Average
2422	105.26	112.25	-6.99	------	------	100	110	Peak
2483.5	36.51	43.37	-6.86	54	-17.49	100	110	Average
2483.5	45.7	52.56	-6.86	74	-28.3	100	110	Peak
4844	33.45	49.33	-15.88	54	-20.55	172	268	Average
4844	40.61	56.49	-15.88	74	-33.39	172	268	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	39.73	46.78	-7.05	54	-14.27	328	164	Average
2390	49.84	56.89	-7.05	74	-24.16	328	164	Peak
2422	93.72	100.71	-6.99	------	------	328	164	Average
2422	101.66	108.65	-6.99	------	------	328	164	Peak
2483.5	35.48	42.34	-6.86	54	-18.52	328	164	Average
2483.5	46.07	52.93	-6.86	74	-27.93	328	164	Peak
4844	33.34	49.22	-15.88	54	-20.66	133	342	Average
4844	40.58	56.46	-15.88	74	-33.42	133	342	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2422 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 6	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	40.01	47.06	-7.05	54	-13.99	105	108	Average
2390	49.98	57.03	-7.05	74	-24.02	105	108	Peak
2437	98.64	105.64	-7	------	------	105	108	Average
2437	106.68	113.68	-7	------	------	105	108	Peak
2483.5	39.15	46.01	-6.86	54	-14.85	105	108	Average
2483.5	49.92	56.78	-6.86	74	-24.08	105	108	Peak
4874	34.08	50.02	-15.94	54	-19.92	164	202	Average
4874	41.17	57.11	-15.94	74	-32.83	164	202	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	37.25	44.3	-7.05	54	-16.75	326	161	Average
2390	46.68	53.73	-7.05	74	-27.32	326	161	Peak
2437	94.47	101.47	-7	------	------	326	161	Average
2437	102.46	109.46	-7	------	------	326	161	Peak
2483.5	37.35	44.21	-6.86	54	-16.65	326	161	Average
2483.5	46.93	53.79	-6.86	74	-27.07	326	161	Peak
4874	35.6	51.54	-15.94	54	-18.4	251	117	Average
4874	42.76	58.7	-15.94	74	-31.24	251	117	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2437 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 9	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	37.47	44.52	-7.05	54	-16.53	100	108	Average
2390	47.46	54.51	-7.05	74	-26.54	100	108	Peak
2452	98.61	105.54	-6.93	------	------	100	108	Average
2452	106.24	113.17	-6.93	------	------	100	108	Peak
2483.5	48.02	54.88	-6.86	54	-5.98	100	108	Average
2483.5	57.05	63.91	-6.86	74	-16.95	100	108	Peak
4904	33.63	49.58	-15.95	54	-20.37	200	237	Average
4904	40.79	56.74	-15.95	74	-33.21	200	237	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	36	43.05	-7.05	54	-18	326	161	Average
2390	45.81	52.86	-7.05	74	-28.19	326	161	Peak
2452	95.83	102.76	-6.93	------	------	326	161	Average
2452	103.96	110.89	-6.93	------	------	326	161	Peak
2483.5	45.8	52.66	-6.86	54	-8.2	326	161	Average
2483.5	56.11	62.97	-6.86	74	-17.89	326	161	Peak
4904	34.11	50.06	-15.95	54	-19.89	122	179	Average
4904	41.27	57.22	-15.95	74	-32.73	122	179	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2452 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 10	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	35.16	42.21	-7.05	54	-18.84	100	110	Average
2390	45.36	52.41	-7.05	74	-28.64	100	110	Peak
2457	94.01	100.94	-6.93	------	------	100	110	Average
2457	101.64	108.57	-6.93	------	------	100	110	Peak
2483.5	43.99	50.85	-6.86	54	-10.01	100	110	Average
2483.5	57.86	64.72	-6.86	74	-16.14	100	110	Peak
4914	34.08	50.03	-15.95	54	-19.92	230	92	Average
4914	41.24	57.19	-15.95	74	-32.76	230	92	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	34.84	41.89	-7.05	54	-19.16	374	126	Average
2390	45.19	52.24	-7.05	74	-28.81	374	126	Peak
2457	90.99	97.92	-6.93	------	------	374	126	Average
2457	99.02	105.95	-6.93	------	------	374	126	Peak
2483.5	41.19	48.05	-6.86	54	-12.81	374	126	Average
2483.5	53.93	60.79	-6.86	74	-20.07	374	126	Peak
4914	33.89	49.84	-15.95	54	-20.11	125	303	Average
4914	41.04	56.99	-15.95	74	-32.96	125	303	Peak

Remarks:

4. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
5. 2457 MHz: Fundamental frequency.
6. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	44.14	51.19	-7.05	54	-9.86	121	114	Average
2390	55.34	62.39	-7.05	74	-18.66	121	114	Peak
2462	88.87	95.8	-6.93	------	------	121	114	Average
2462	97.21	104.14	-6.93	------	------	121	114	Peak
2483.5	46.8	53.66	-6.86	54	-7.2	121	114	Average
2483.5	62.02	68.88	-6.86	74	-11.98	121	114	Peak
4924	35.03	50.9	-15.87	54	-18.97	216	173	Average
4924	42.17	58.04	-15.87	74	-31.83	216	173	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	44.24	51.29	-7.05	54	-9.76	297	183	Average
2390	55.19	62.24	-7.05	74	-18.81	297	183	Peak
2462	91.23	98.16	-6.93	------	------	297	183	Average
2462	99.68	106.61	-6.93	------	------	297	183	Peak
2483.5	49.05	55.91	-6.86	54	-4.95	297	183	Average
2483.5	64.26	71.12	-6.86	74	-9.74	297	183	Peak
4924	34.77	50.64	-15.87	54	-19.23	189	204	Average
4924	42.02	57.89	-15.87	74	-31.98	189	204	Peak

Remarks:

7. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
8. 2462 MHz: Fundamental frequency.
9. The emission levels of other frequencies were very low against the limit.

9 kHz ~ 30 MHz Data:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1 GHz Worst-Case Data:

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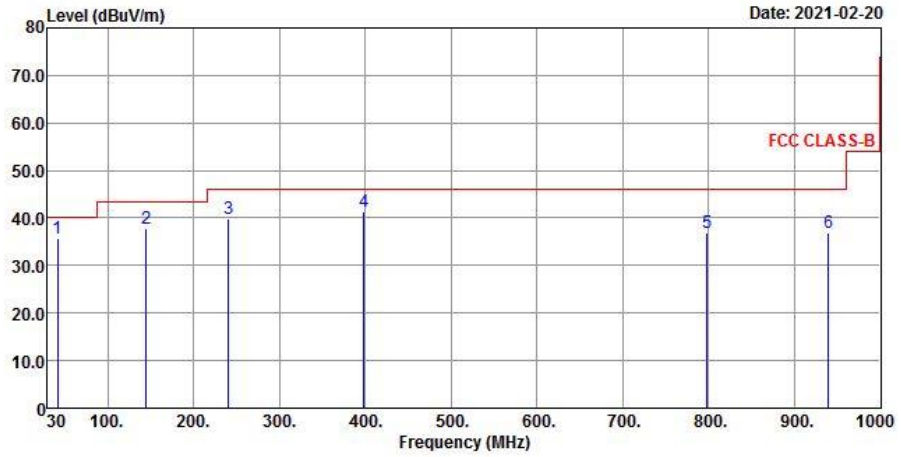
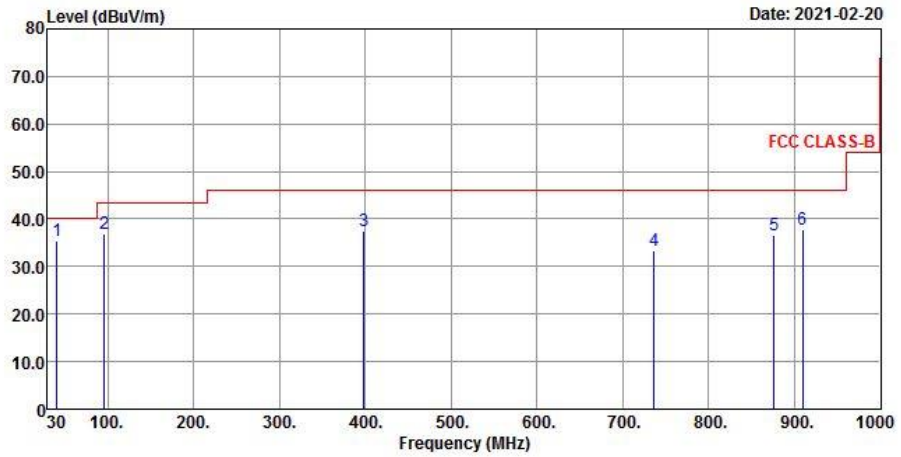
EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
41.64	35.82	48.44	-12.62	40	-4.18	191	184	QP
144.46	37.85	50.37	-12.52	43.5	-5.65	117	293	QP
240.49	39.86	53.93	-14.07	46	-6.14	137	35	QP
398.6	41.24	49.96	-8.72	46	-4.76	194	297	QP
798.24	36.93	36.56	0.37	46	-9.07	173	110	QP
939.86	36.79	33.7	3.09	46	-9.21	169	341	QP
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
40.67	35.51	48.21	-12.7	40	-4.49	132	211	QP
95.96	36.82	54.01	-17.19	43.5	-6.68	127	308	QP
398.6	37.37	46.09	-8.72	46	-8.63	297	80	QP
736.16	33.28	33.42	-0.14	46	-12.72	126	55	QP
875.84	36.54	34.69	1.85	46	-9.46	154	95	QP
909.79	37.92	35.43	2.49	46	-8.08	157	173	QP

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value.
2. The emission levels of other frequencies were very low against the limit.

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 0.50 MHz.

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 (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Sep. 04, 2020	Sep. 03, 2021
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 19, 2020	Mar. 18, 2021
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 28, 2020	Aug. 27, 2021
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

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

4.2.3 Test Procedures

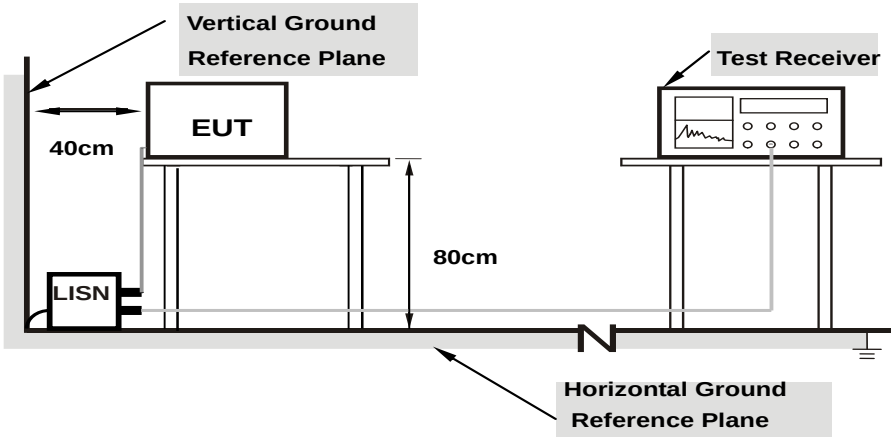
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50 uH of coupling impedance for the measuring instrument.
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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

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

a. Placed the EUT on a testing table.
b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

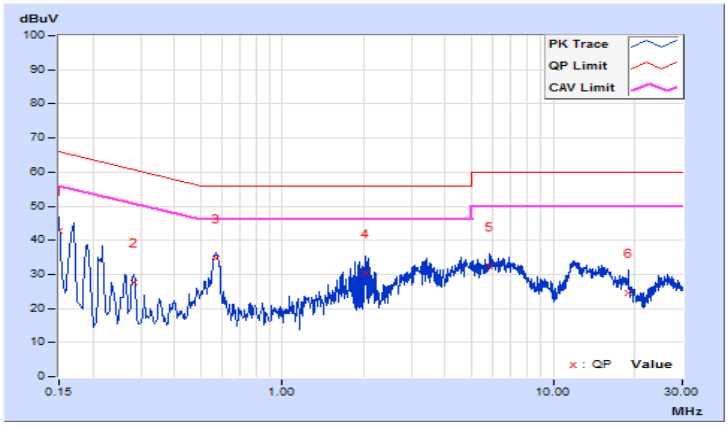
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	**Environmental Conditions**	23℃, 67%RH
Tested by	Tim Chen	**Test Date**	2021/2/20

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15000	10.05	32.85	17.09	42.90	27.14	66.00	56.00	-23.10	-28.86
2	0.28200	10.07	17.47	2.58	27.54	12.65	60.76	50.76	-33.22	-38.11
3	0.56890	10.11	24.57	17.37	34.68	27.48	56.00	46.00	-21.32	-18.52
4	2.03800	10.20	20.18	8.84	30.38	19.04	56.00	46.00	-25.62	-26.96
5	5.83000	10.39	21.99	13.43	32.38	23.82	60.00	50.00	-27.62	-26.18
6	18.98600	11.02	13.46	5.07	24.48	16.09	60.00	50.00	-35.52	-33.91

Remarks:

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

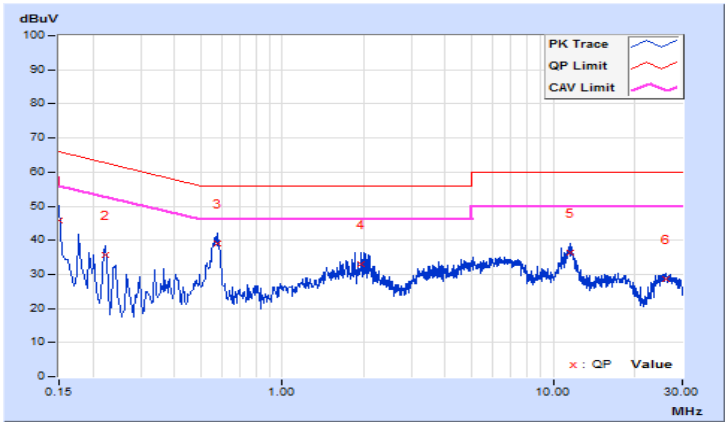


Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	**Environmental Conditions**	23℃, 67%RH
Tested by	Tim Chen	**Test Date**	2021/2/20

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15000	10.04	35.72	20.92	45.76	30.96	66.00	56.00	-20.24	-25.04
2	0.22200	10.04	25.56	8.71	35.60	18.75	62.74	52.74	-27.14	-33.99
3	**0.57800**	**10.10**	**28.80**	**20.89**	**38.90**	**30.99**	**56.00**	**46.00**	**-17.10**	**-15.01**
4	1.94600	10.19	22.86	14.34	33.05	24.53	56.00	46.00	-22.95	-21.47
5	11.56200	10.54	25.78	16.11	36.32	26.65	60.00	50.00	-23.68	-23.35
6	26.01400	10.85	17.89	7.89	28.74	18.74	60.00	50.00	-31.26	-31.26

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

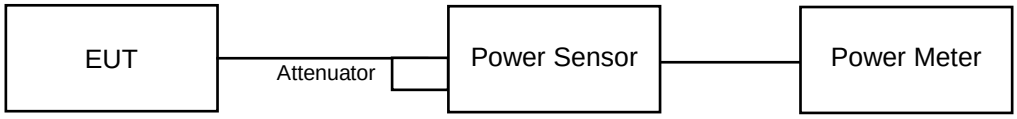
4.3.1 Limits of Conducted Output Power Measurement

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30 dBm)
Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20 MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) 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

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.

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 1	Chain 0	Chain 1	Chain 0		
1	2412	118.30	115.88	20.73	20.64	30	Pass
6	2437	119.95	116.41	20.79	20.66	30	Pass
11	2462	119.67	114.02	20.78	20.57	30	Pass
12	2467	119.40	97.95	20.77	19.91	30	Pass
13	2472	64.57	54.95	18.10	17.40	30	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (mW)		Peak Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 1	Chain 0	Chain 1	Chain 0		
1	2412	200.45	199.53	23.02	23.00	30	Pass
6	2437	233.35	234.96	23.68	23.71	30	Pass
11	2462	131.52	119.12	21.19	20.76	30	Pass
12	2467	92.47	89.95	19.66	19.54	30	Pass
13	2472	58.61	58.75	17.68	17.69	30	Pass

Channel	Frequency (MHz)	Average Power (mW)		Average Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 1	Chain 0	Chain 1	Chain 0		
1	2412	51.52	51.40	17.12	17.11	30	Pass
6	2437	61.24	60.81	17.87	17.84	30	Pass
11	2462	33.81	31.33	15.29	14.96	30	Pass
12	2467	23.99	23.55	13.80	13.72	30	Pass
13	2472	15.21	15.17	11.82	11.81	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (mW)		Peak Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 1	Chain 0	Chain 1	Chain 0		
1	2412	184.08	213.30	22.65	23.29	30	Pass
6	2437	226.46	242.66	23.55	23.85	30	Pass
11	2462	163.31	170.61	22.13	22.32	30	Pass
12	2467	91.62	89.74	19.62	19.53	30	Pass
13	2472	57.28	58.88	17.58	17.70	30	Pass

Channel	Frequency (MHz)	Average Power (mW)		Average Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 1	Chain 0	Chain 1	Chain 0		
1	2412	47.75	54.83	16.79	17.39	30	Pass
6	2437	59.29	62.52	17.73	17.96	30	Pass
11	2462	42.95	43.85	16.33	16.42	30	Pass
12	2467	24.04	23.28	13.81	13.67	30	Pass
13	2472	15.00	15.35	11.76	11.86	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Peak Power (mW)		Peak Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 1	Chain 0	Chain 1	Chain 0		
3	2422	166.72	190.11	22.22	22.79	30	Pass
6	2437	242.66	176.60	23.85	22.47	30	Pass
9	2452	148.25	134.90	21.71	21.30	30	Pass
10	2457	74.47	69.02	18.72	18.39	30	Pass
11	2462	62.09	59.43	17.93	17.74	30	Pass

Channel	Frequency (MHz)	Average Power (mW)		Average Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 1	Chain 0	Chain 1	Chain 0		
3	2422	43.75	49.43	16.41	16.94	30	Pass
6	2437	62.52	45.81	17.96	16.61	30	Pass
9	2452	38.28	34.99	15.83	15.44	30	Pass
10	2457	19.19	17.91	12.83	12.53	30	Pass
11	2462	16.26	15.28	12.11	11.84	30	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	Peak Power (mW)		Peak Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 1	Chain 0	Chain 1	Chain 0		
1	2412	146.22	141.91	21.65	21.52	30	Pass
6	2437	147.23	142.56	21.68	21.54	30	Pass
11	2462	149.28	139.96	21.74	21.46	30	Pass
12	2467	94.19	57.68	19.74	17.61	30	Pass
13	2472	58.61	54.20	17.68	17.34	30	Pass

Channel	Frequency (MHz)	Average Power (mW)		Average Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 1	Chain 0	Chain 1	Chain 0		
1	2412	37.93	37.33	15.79	15.72	30	Pass
6	2437	38.11	36.90	15.81	15.67	30	Pass
11	2462	38.37	36.64	15.84	15.64	30	Pass
12	2467	24.72	14.83	13.93	11.71	30	Pass
13	2472	15.17	14.06	11.81	11.48	30	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	Peak Power (mW)		Peak Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 1	Chain 0	Chain 1	Chain 0		
3	2422	182.81	192.31	22.62	22.84	30	Pass
6	2437	172.58	233.35	22.37	23.68	30	Pass
9	2452	130.62	123.31	21.16	20.91	30	Pass
10	2457	67.14	66.68	18.27	18.24	30	Pass
11	2462	58.08	58.21	17.64	17.65	30	Pass

Channel	Frequency (MHz)	Average Power (mW)		Average Power (dBm)		Limit (dBm)	Pass / Fail
		Chain 1	Chain 0	Chain 1	Chain 0		
3	2422	46.99	49.66	16.72	16.96	30	Pass
6	2437	44.98	61.24	16.53	17.87	30	Pass
9	2452	34.12	31.77	15.33	15.02	30	Pass
10	2457	17.26	17.30	12.37	12.38	30	Pass
11	2462	15.21	14.96	11.82	11.75	30	Pass

(MIMO)

802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 1	Chain 0				
1	2412	18.49	18.44	140.60	21.48	30	Pass
6	2437	20.11	20.03	203.24	23.08	30	Pass
11	2462	17.14	17.07	102.80	20.12	30	Pass
12	2467	14.83	14.78	60.53	17.82	30	Pass
13	2472	11.37	10.32	24.49	13.89	30	Pass

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 1	Chain 0				
1	2412	15.68	15.64	73.62	18.67	30	Pass
6	2437	17.22	17.18	104.95	20.21	30	Pass
11	2462	14.28	14.25	53.46	17.28	30	Pass
12	2467	11.93	11.88	31.05	14.92	30	Pass
13	2472	8.52	7.51	12.74	11.05	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 1	Chain 0				
3	2422	20.29	20.19	211.35	23.25	30	Pass
6	2437	20.72	20.65	234.42	23.70	30	Pass
9	2452	20.47	20.82	232.27	23.66	30	Pass
10	2457	13.65	13.66	46.45	16.67	30	Pass
11	2462	16.26	16.15	83.56	19.22	30	Pass

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 1	Chain 0				
3	2422	14.44	14.39	55.34	17.43	30	Pass
6	2437	14.83	14.80	60.67	17.83	30	Pass
9	2452	14.62	14.97	60.39	17.81	30	Pass
10	2457	7.83	7.81	12.11	10.83	30	Pass
11	2462	10.42	10.31	21.78	13.38	30	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 1	Chain 0				
1	2412	21.66	21.64	292.42	24.66	30	Pass
6	2437	23.14	23.02	406.44	26.09	30	Pass
11	2462	19.98	19.92	197.70	22.96	30	Pass
12	2467	17.58	16.33	100.23	20.01	30	Pass
13	2472	13.79	14.18	50.12	17.00	30	Pass

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 1	Chain 0				
1	2412	15.81	15.78	76.03	18.81	30	Pass
6	2437	17.26	17.21	105.93	20.25	30	Pass
11	2462	14.08	14.02	50.82	17.06	30	Pass
12	2467	11.77	10.48	26.18	14.18	30	Pass
13	2472	7.91	8.37	13.06	11.16	30	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 1	Chain 0				
3	2422	20.32	20.24	213.30	23.29	30	Pass
6	2437	20.75	20.68	236.05	23.73	30	Pass
9	2452	20.42	20.53	223.36	23.49	30	Pass
10	2457	13.14	13.35	42.27	16.26	30	Pass
11	2462	15.83	16.27	80.72	19.07	30	Pass

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 1	Chain 0				
3	2422	14.47	14.41	55.59	17.45	30	Pass
6	2437	14.86	14.84	61.09	17.86	30	Pass
9	2452	14.52	14.68	57.68	17.61	30	Pass
10	2457	7.33	7.45	10.96	10.40	30	Pass
11	2462	10.02	10.39	20.99	13.22	30	Pass

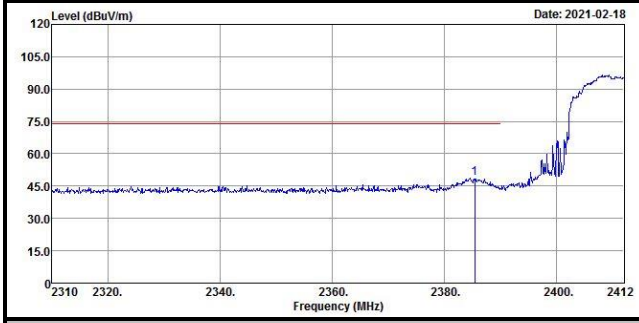
Annex A- Band Edge Measurement

802.11b

Ch 1

Peak

Horizontal



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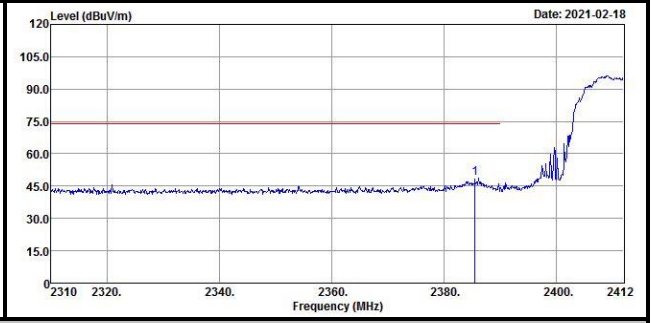
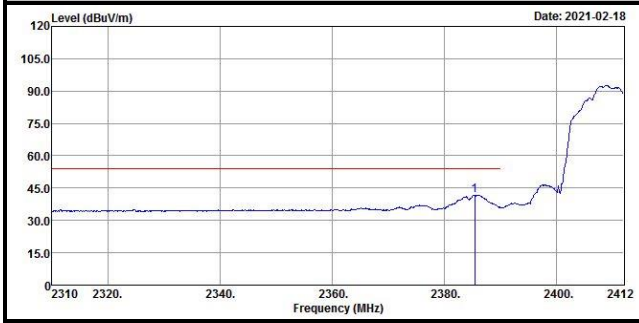
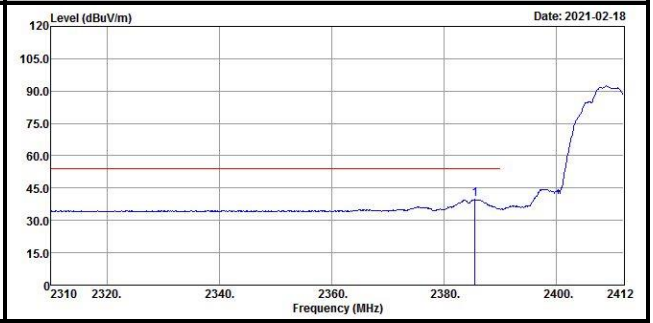


Average

Horizontal



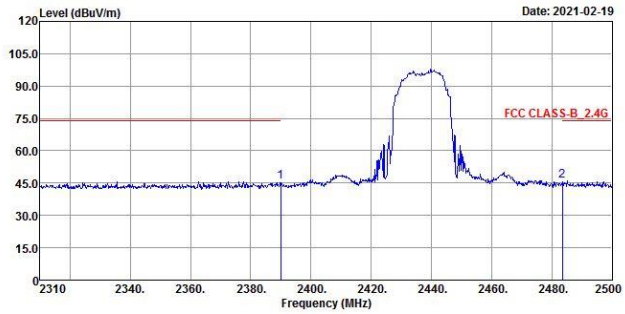
Vertical



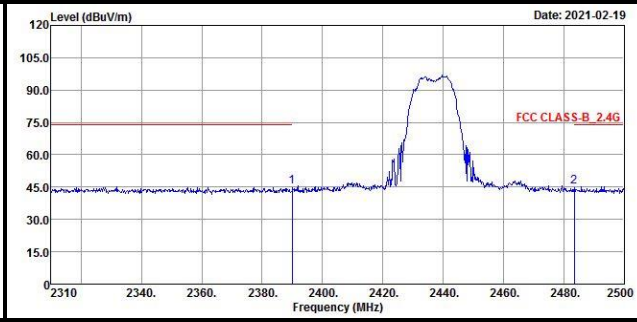
Ch 6

Peak

Horizontal

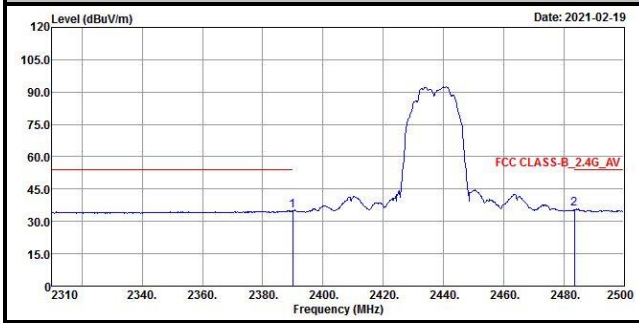


Vertical

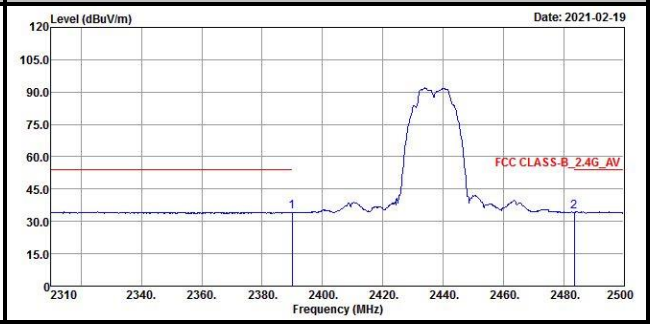


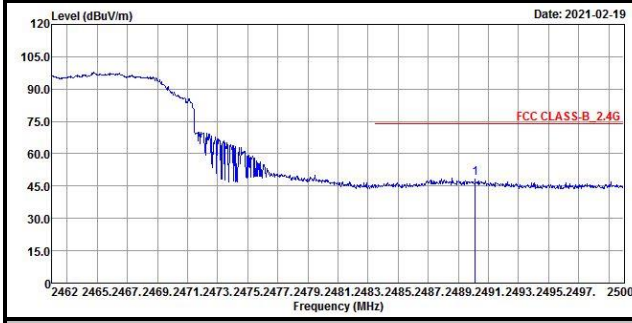
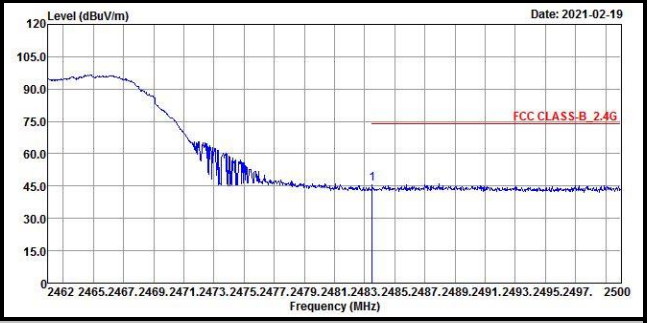
Average

Horizontal



Vertical



Ch 11	
Peak	
Horizontal	Vertical
	
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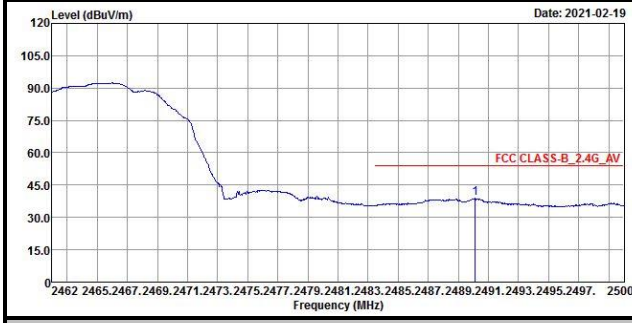
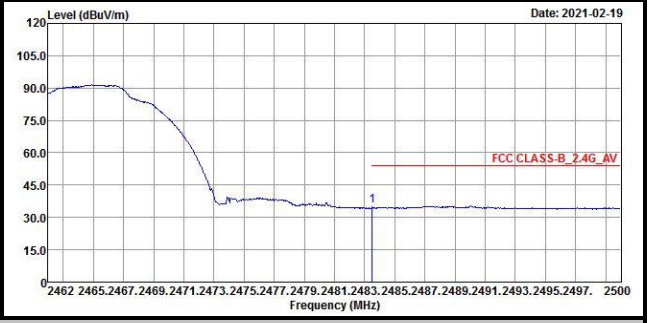
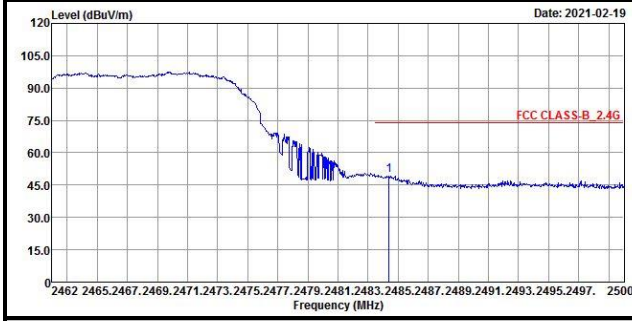
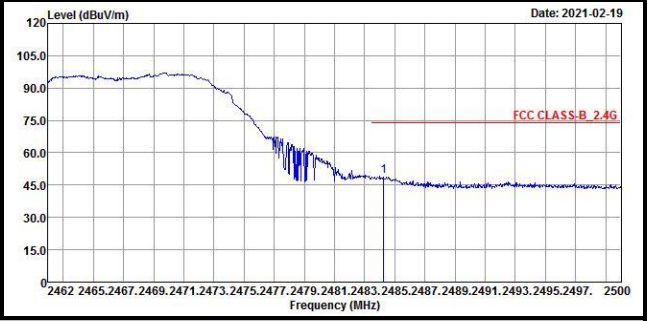
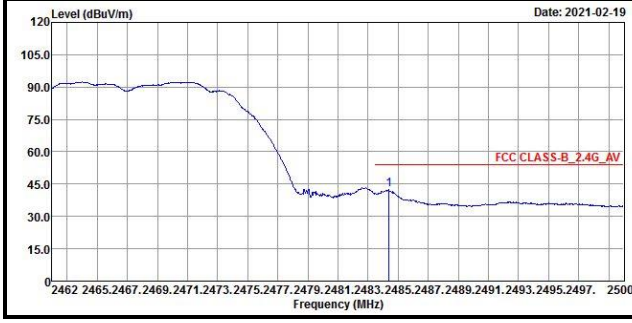
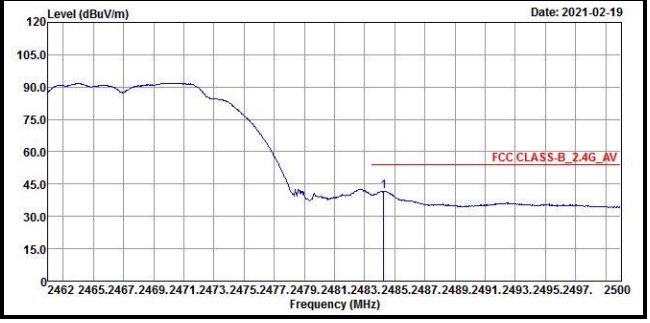
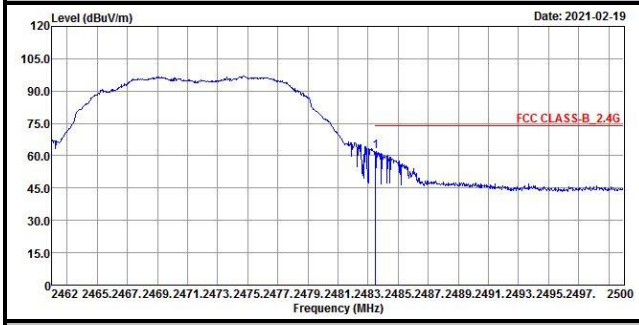
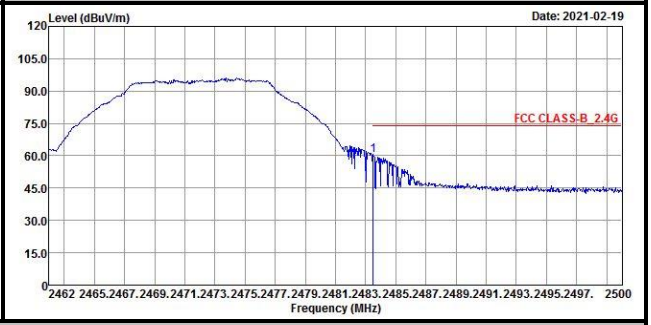
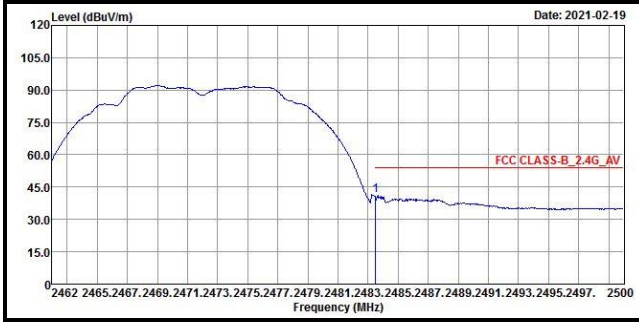
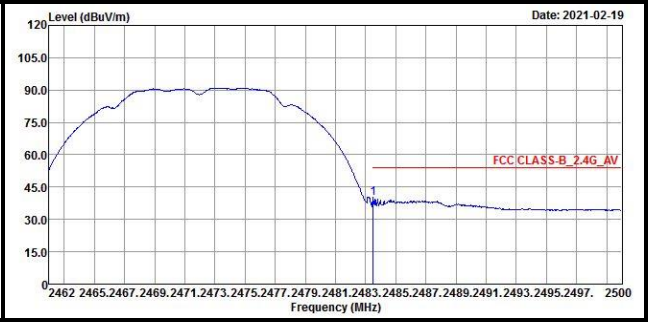
Horizontal	Vertical
	
Ch 12	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	

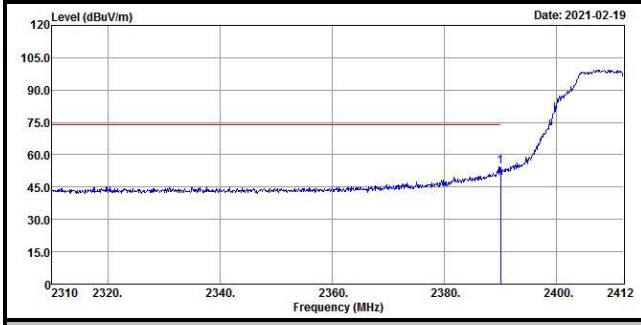
Ch 13	
Peak	
Horizontal	**Vertical**
	
Average	
Horizontal	**Vertical**
	

802.11g

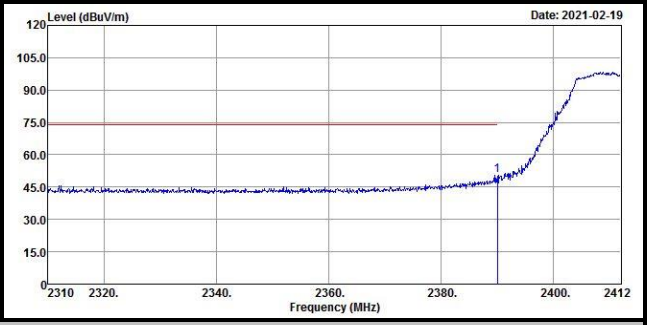
Ch 1

Peak

Horizontal

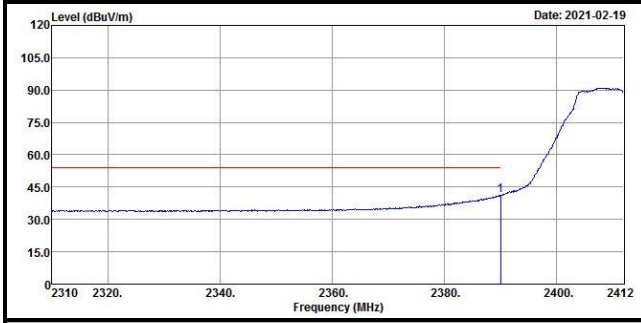


Vertical

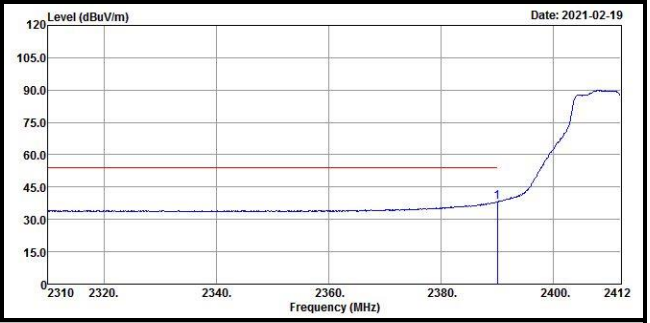


Average

Horizontal



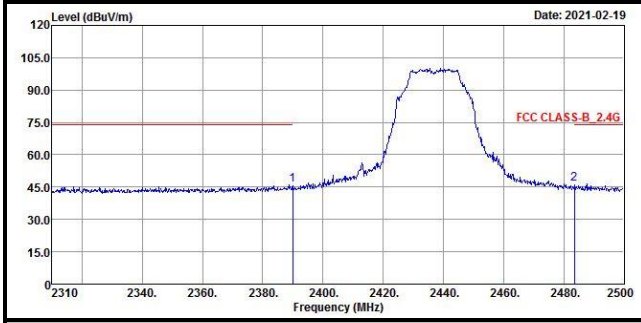
Vertical



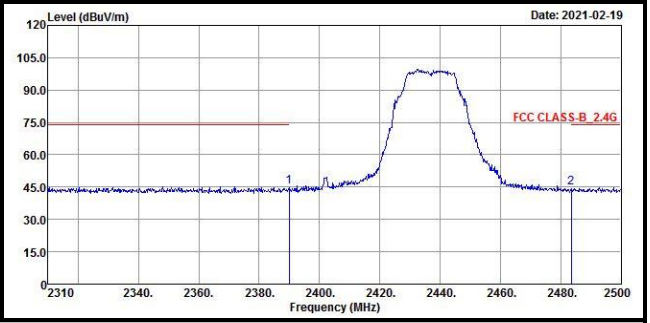
Ch 6

Peak

Horizontal

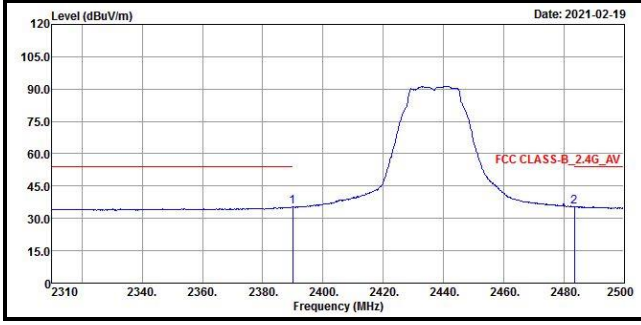


Vertical

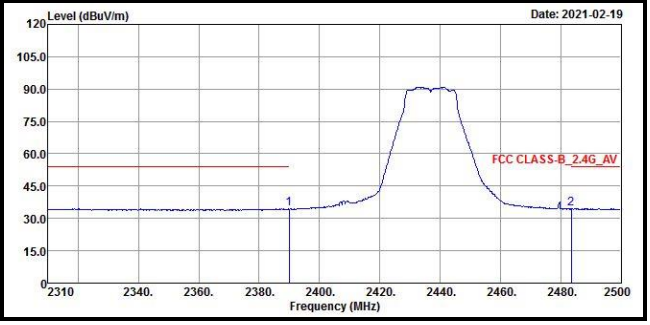


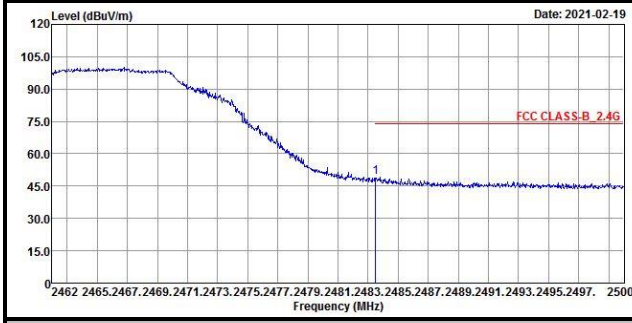
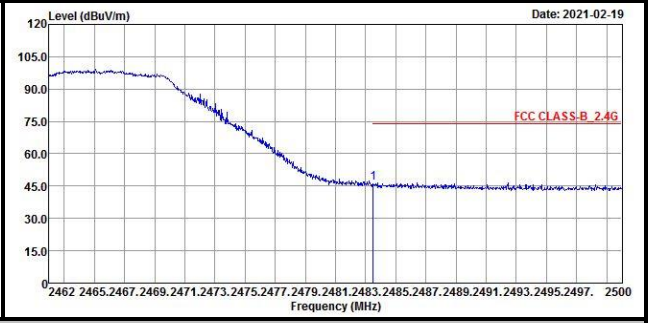
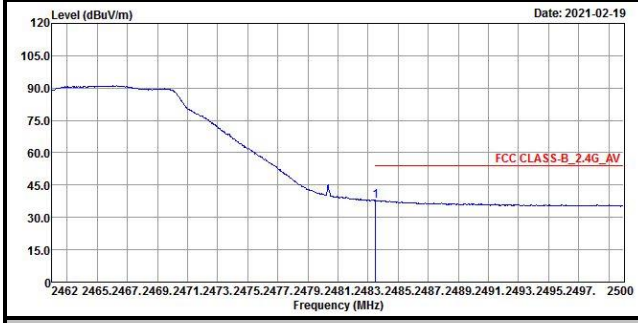
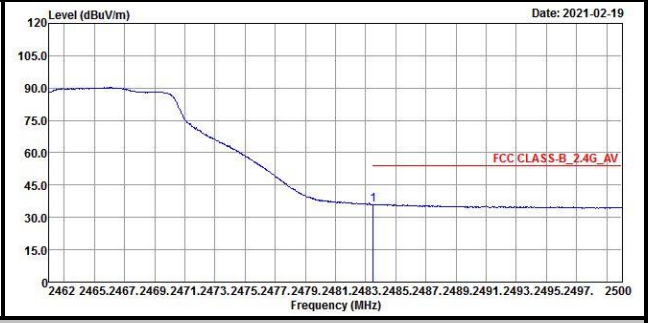
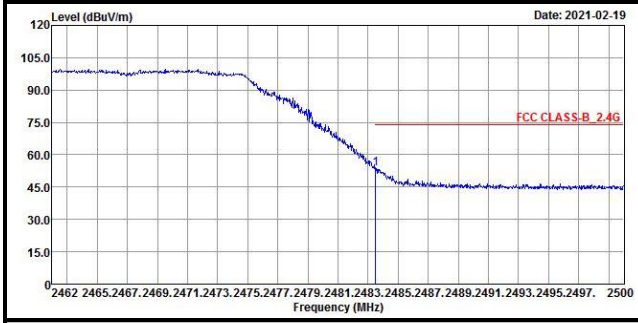
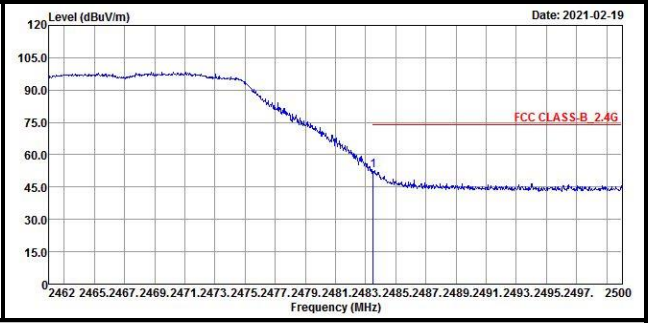
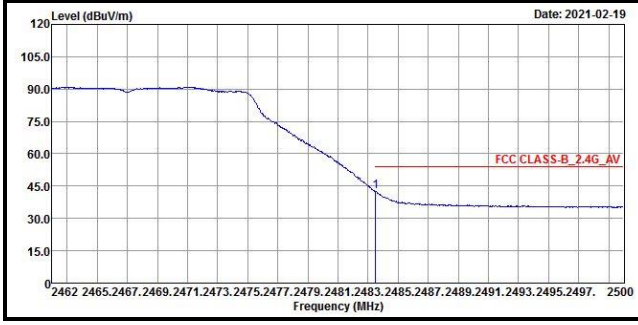
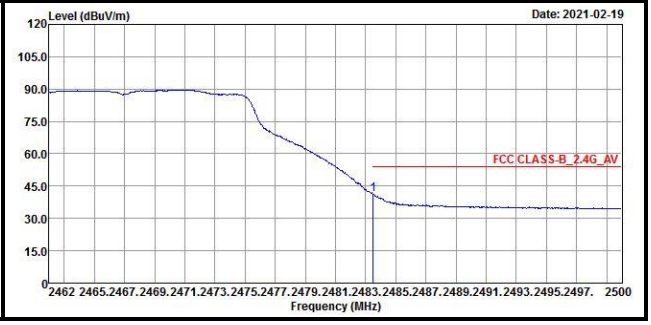
Average

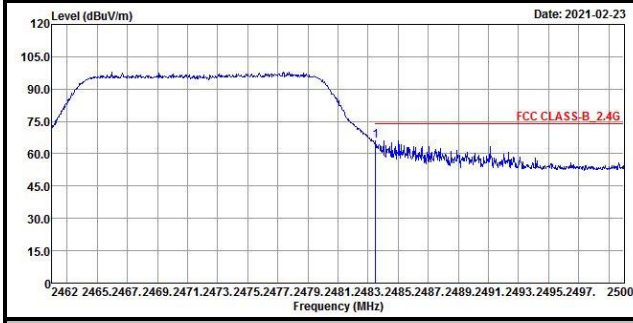
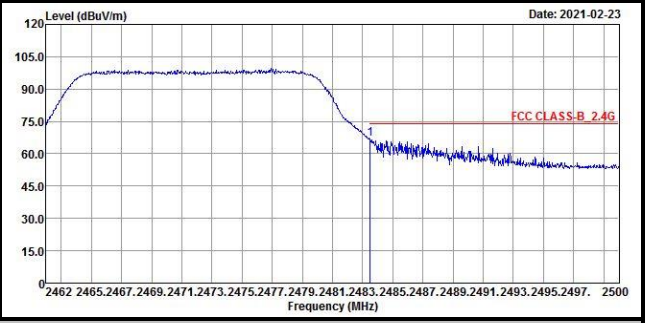
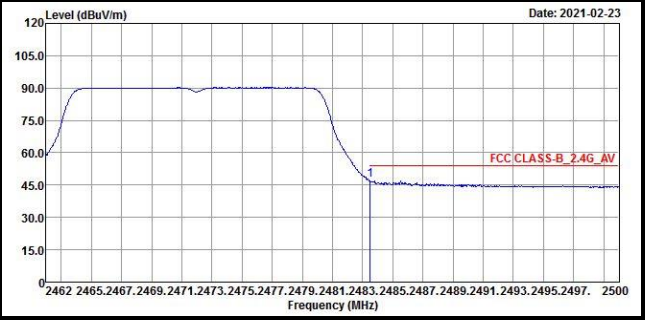
Horizontal



Vertical



Ch 11	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	
Ch 12	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	

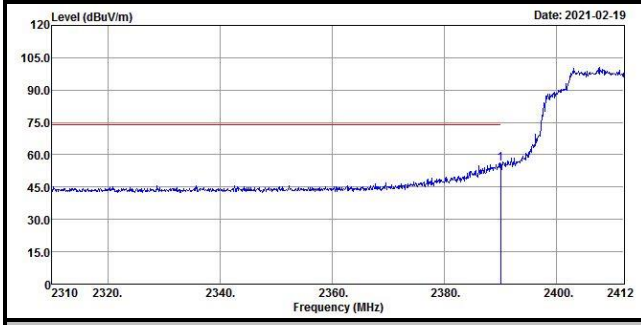
Ch 13	
Peak	
Horizontal	**Vertical**
	
Average	
Horizontal	**Vertical**
	

802.11ax (HE20)

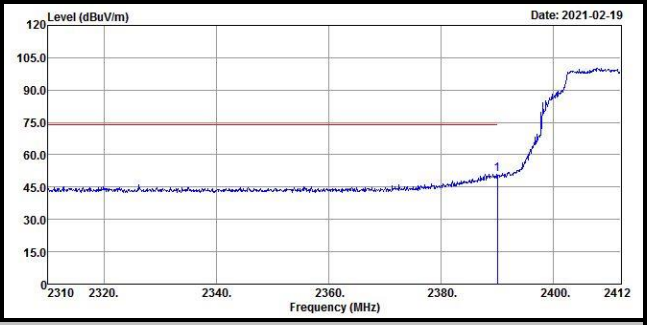
Ch 1

Peak

Horizontal

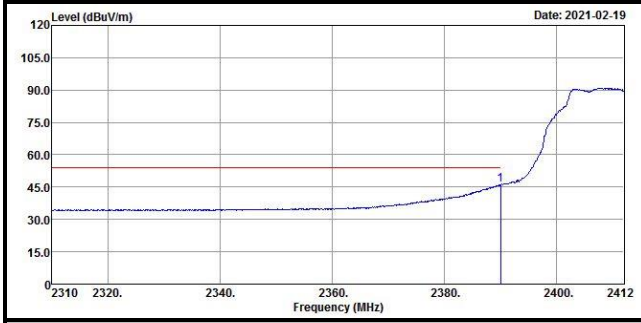


Vertical

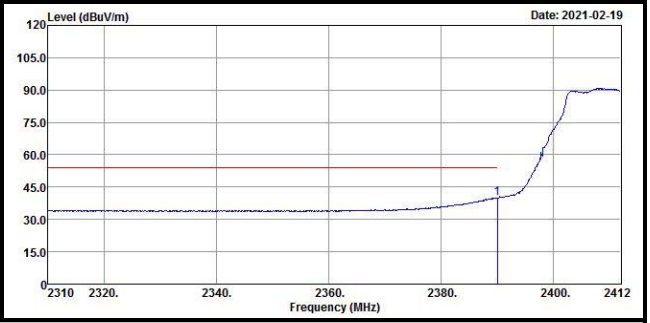


Average

Horizontal



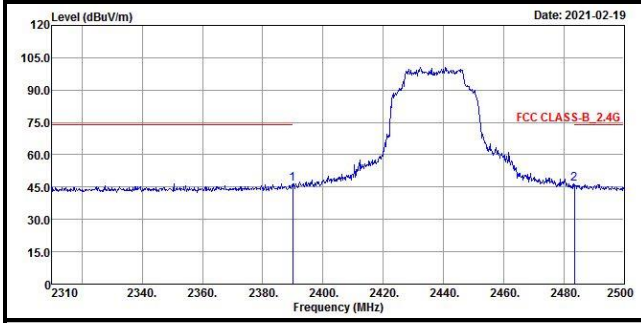
Vertical



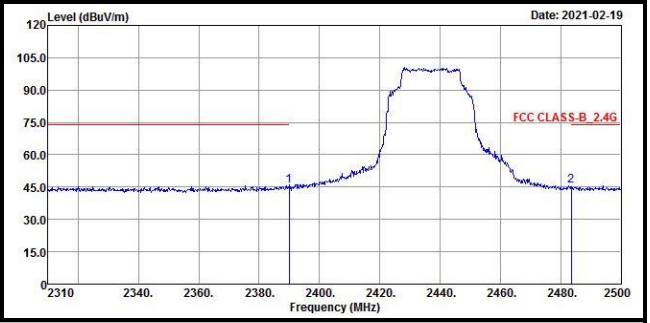
Ch 6

Peak

Horizontal

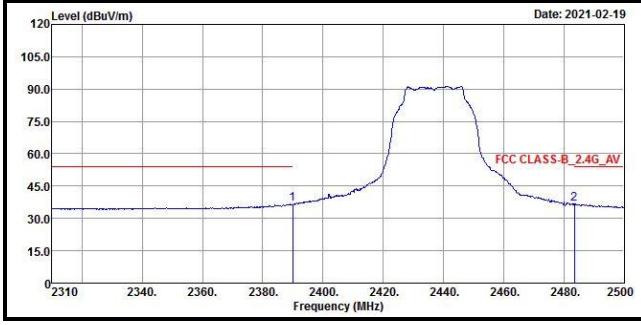


Vertical

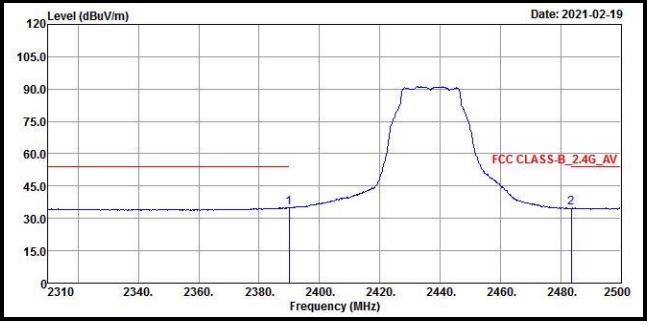


Average

Horizontal



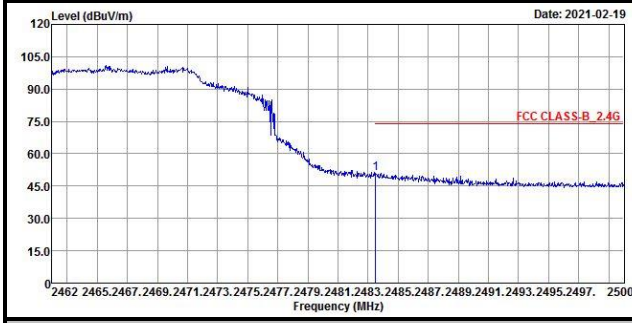
Vertical



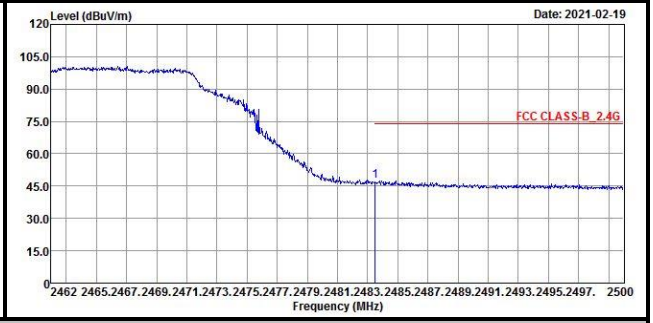
Ch 11

Peak

Horizontal

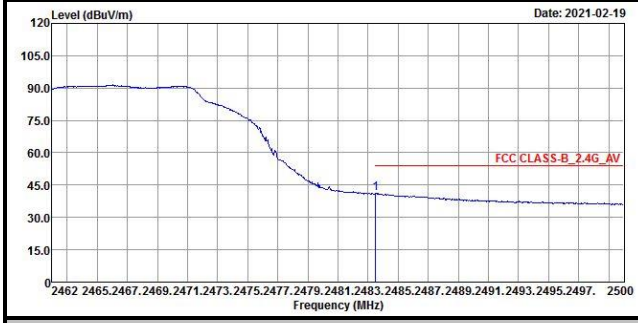


Vertical

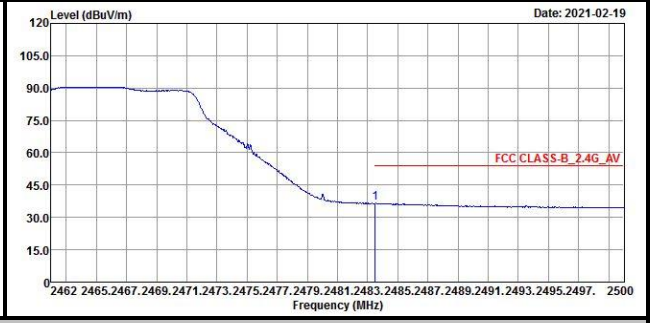


Average

Horizontal



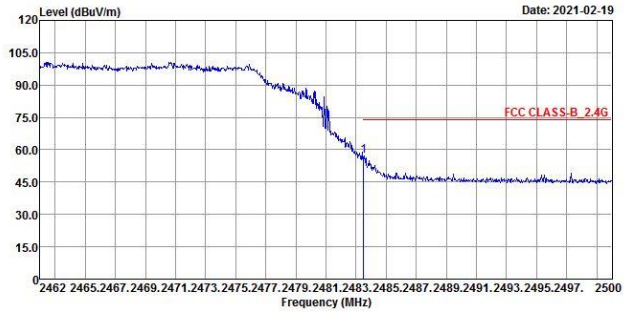
Vertical



Ch 12

Peak

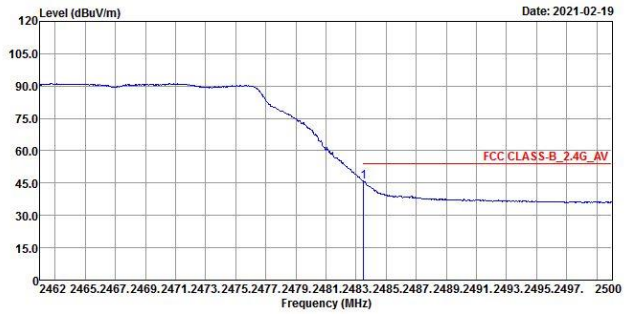
Horizontal



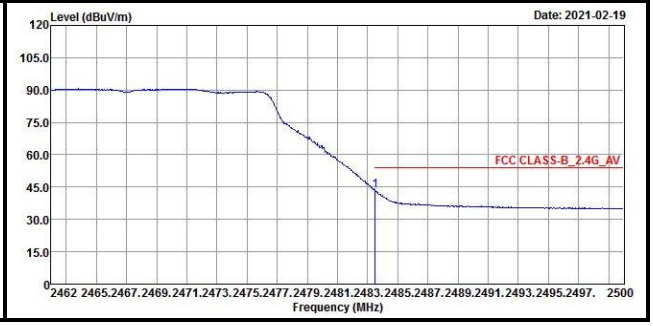
Vertical

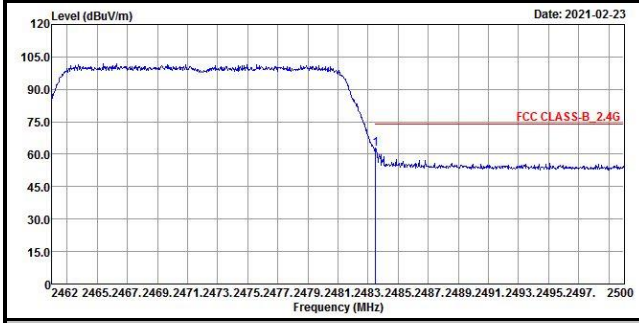
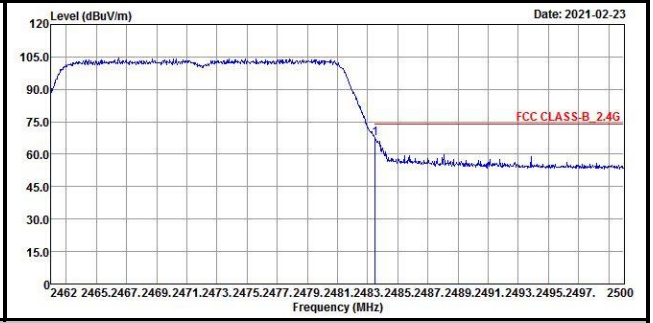
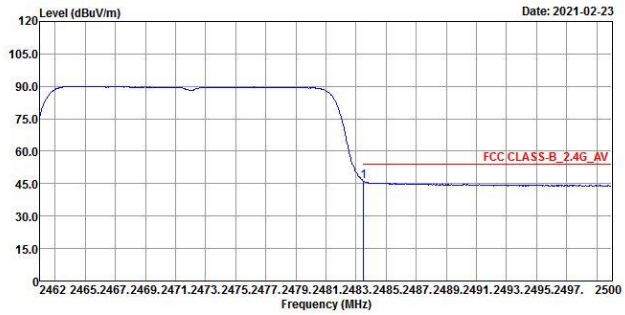
Average

Horizontal



Vertical



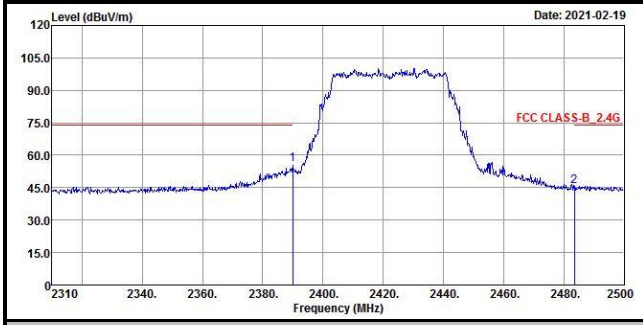
Ch 13	
Peak	
Horizontal	**Vertical**
	
Average	
Horizontal	**Vertical**
	

802.11ax (HE40)

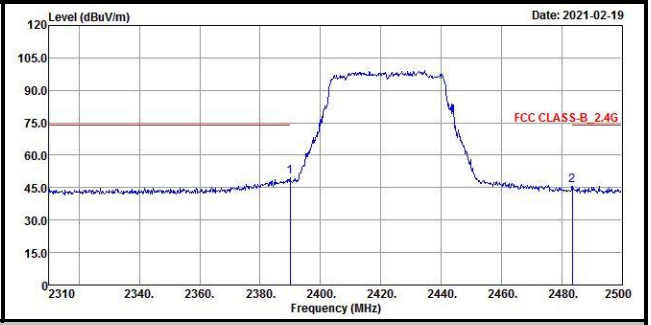
Ch 3

Peak

Horizontal

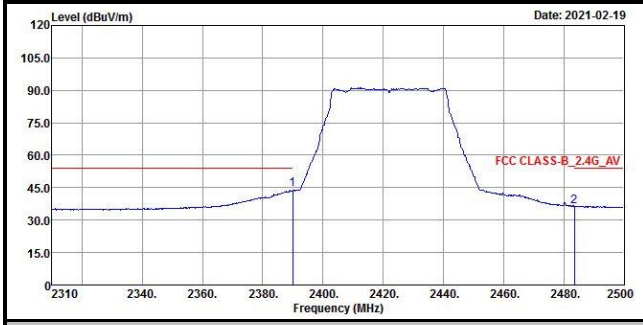


Vertical

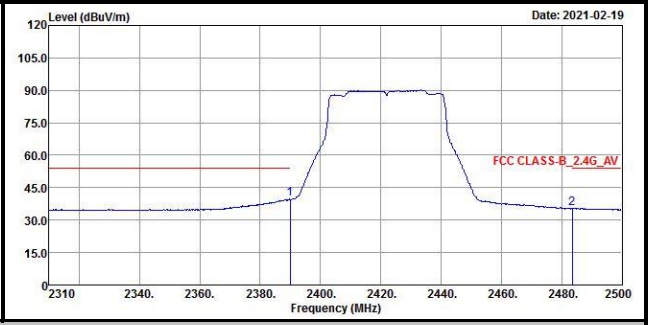


Average

Horizontal



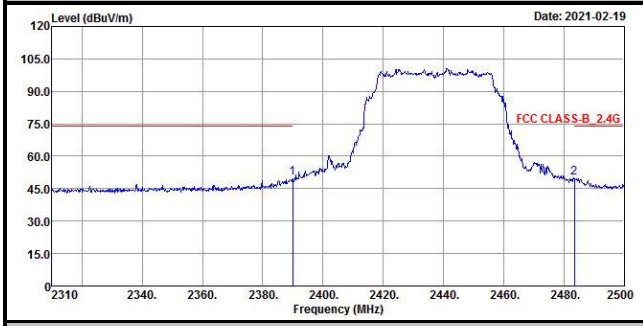
Vertical



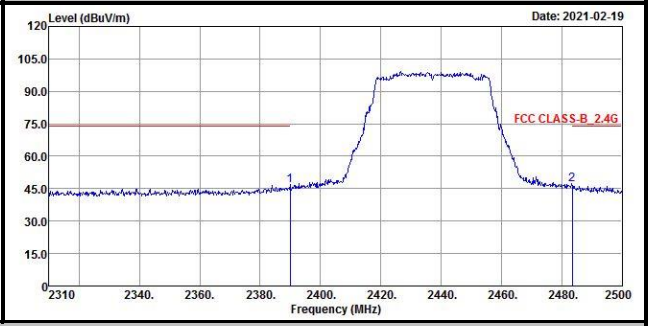
Ch 6

Peak

Horizontal

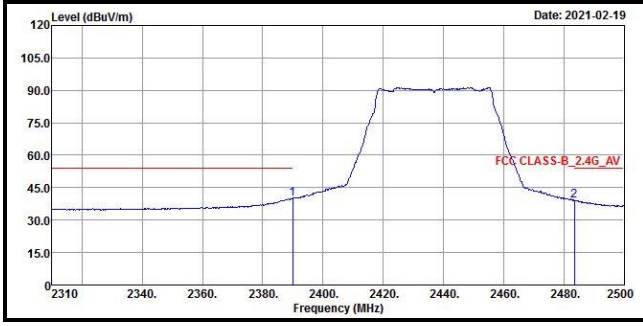


Vertical

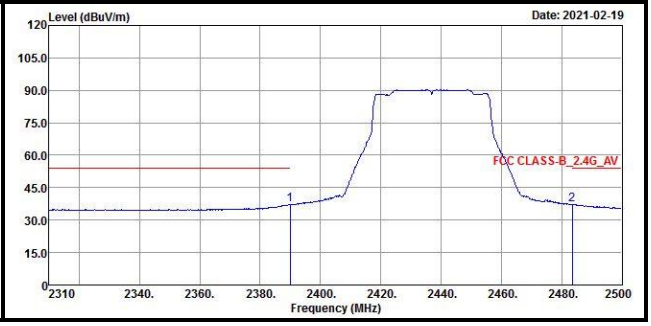


Average

Horizontal



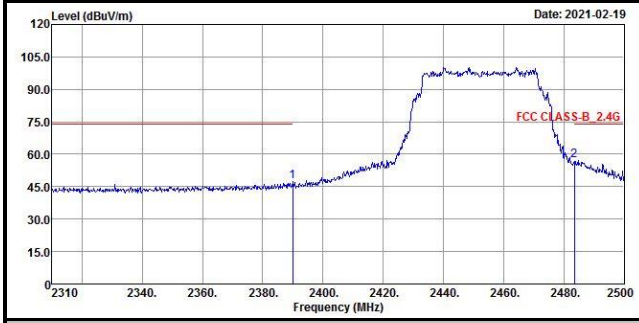
Vertical



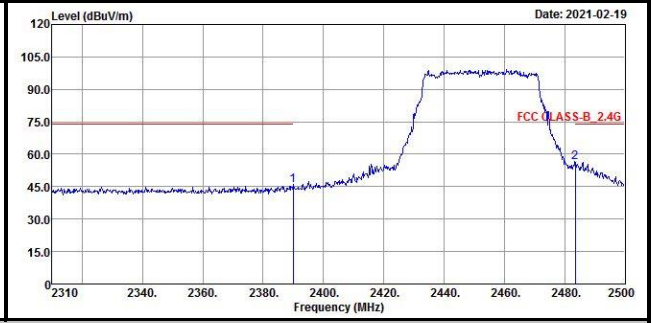
Ch 9

Peak

Horizontal

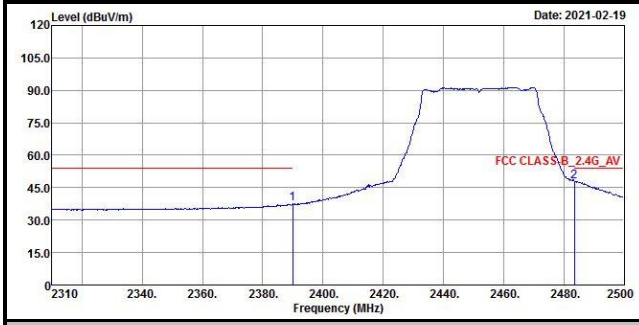


Vertical

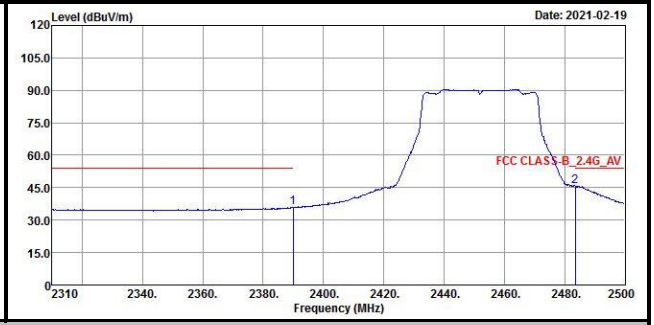


Average

Horizontal



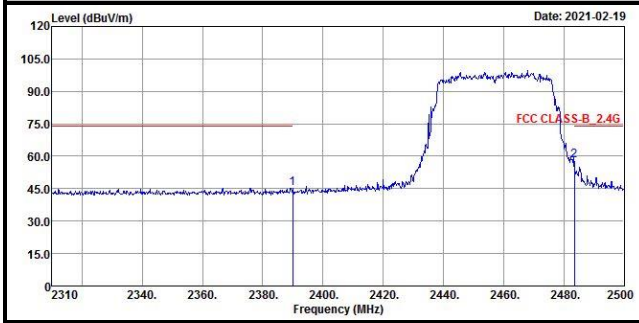
Vertical



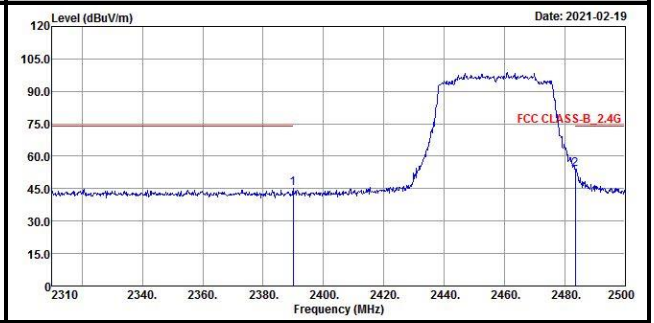
Ch 10

Peak

Horizontal

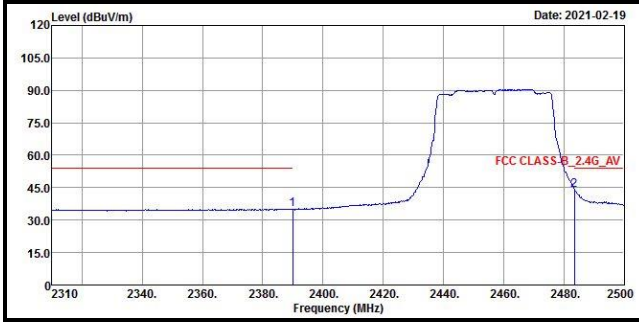


Vertical

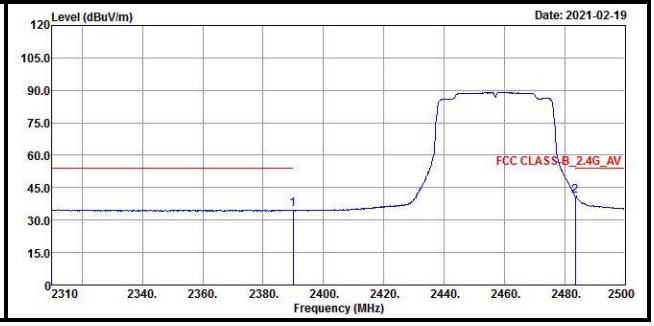


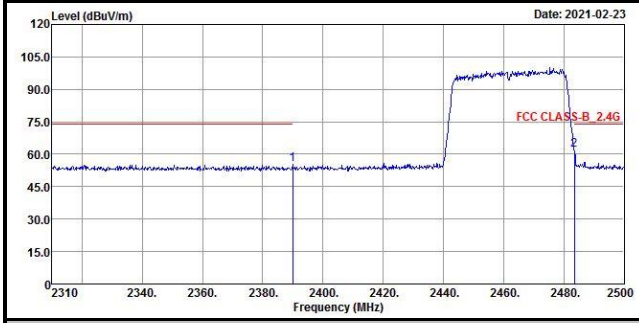
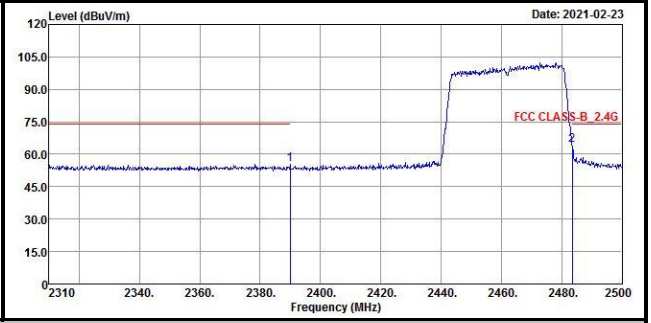
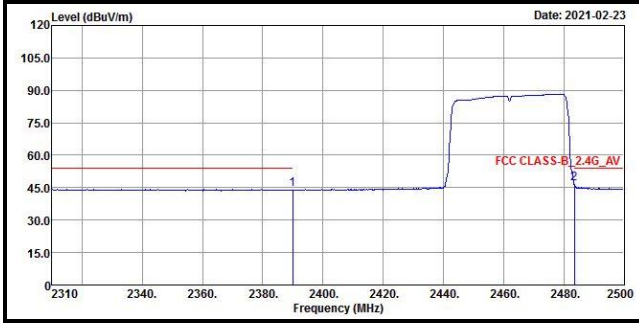
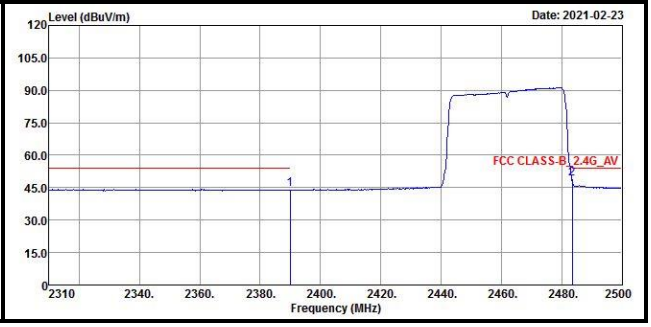
Average

Horizontal



Vertical



Ch 11	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	

5 Pictures of Test Arrangements

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

Appendix – Information of the Testing Laboratories

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