

Partial FCC Test Report

Report No.: RFBASM-WTW-P20110217-2

FCC ID: QYLAX200NG

Test Model: AX200NGW

Received Date: Nov. 06, 2020

Test Date: Dec. 14, 2020 ~ Dec. 22, 2020

Issued Date: Jan. 18, 2021

Applicant: Getac Technology Corporation.

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



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Release Control Record

Issue No.	Description	Date Issued
RFBASM-WTW-P20110217-2	Original Release	Jan. 18, 2021

1 Certificate of Conformity

Product: Wireless module

Brand: Getac

Test Model: AX200NGW

Sample Status: Mass Product

Applicant: Getac Technology Corporation.

Test Date: Dec. 14, 2020 ~ Dec. 22, 2020

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 : Shelly Hsueh, **Date:** Jan. 18, 2021
Shelly Hsueh / Specialist

Approved by : Dylan Chiou, **Date:** Jan. 18, 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 -19.07 dB at 0.43000 MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -7.1 dB at 2483.5 MHz.
15.247(d)	Antenna Port Emission	N/A	Refer to Note 1
15.247(a)(2)	6 dB Bandwidth	N/A	Refer to Note 1
---	Occupied Bandwidth Measurement	N/A	Refer to Note 1
15.247(b)	Conducted power	N/A	Refer to Note 1
15.247(e)	Power Spectral Density	N/A	Refer to Note 1
15.203	Antenna Requirement	N/A	No antenna connector is used.

Note:

1. This report is a partial report, only test item of Conducted Emission, Radiated Emissions 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	Wireless module
Brand	Getac
Test Model	AX200NGW
Status of EUT	Mass Product
Power Supply Rating	7.4Vdc from battery 19 Vdc from Adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK 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 HT8 802.11ax: up to HE0
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	Refer to module report
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)	2TX
802.11n (HT40)	2TX
802.11ax (HE20)	2TX
802.11ax (HE40)	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 for more details.

Product	Brand	Model
Tablet	Getac	T800

3. The following accessories were for the End-product.

Product	Brand	Model	Description
Adapter	FSP	FSP065-RBBN3	I/P: 100-240 Vac, 50-60 Hz, 1.5 A O/P: 19 Vdc, 3.42 A 1.5m cable with 1 core
Battery	Getac	BP2S2P2100S	7.4Vdc, 4200mAh, 32Wh (Min. 4080mAh, 31Wh)
LCD Panel	INNOLUX	HE080IA-06B	8.1"
Photo Camera	FOXLINK	FO20FF-505H	--
Video Camera	FOXLINK	FO80AF-506H	--
SSD	Sandisk	DA4128	128GB
CPU	Intel	Z8750	Speed: 1.6GHz, CPU Pin 1380

4. The antenna information is listed as below.

Ant. Type	Brand	Model	Ant.	Antenna Peak Gain (dBi)			
				2.4GHz/BT	5.2&5.3GHz	5.6GHz	5.8GHz
PIFA	Getac	421122100003	Ant 0	3.16	3.05	3.84	3.84
		421122100001	Ant 1	1.17	3.71	4.27	4.37

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 $\geq$ 1G	RE<1G	PLC	
-	√	√	√	-

Where **RE $\geq$ 1G**: Radiated Emission above 1 GHz **RE<1G**: Radiated Emission below 1 GHz
PLC: Power Line Conducted Emission

Note: “-” means no effect.

Note: For radiated emission (below 1GHz) and power line conducted emission test items chosen the worst maximum power

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	HE0
	802.11ax (HE40)	3 to 11	3, 6, 9, 10, 11	OFDMA	BPSK	HE0

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)
-	802.11g	1 to 13	13	OFDM	BPSK	6.0

Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11g	3 to 11	13	OFDM	BPSK	6.0

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE $\geq$ 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	22 deg. C, 66 % RH	120 Vac, 60 Hz	Tim Chen

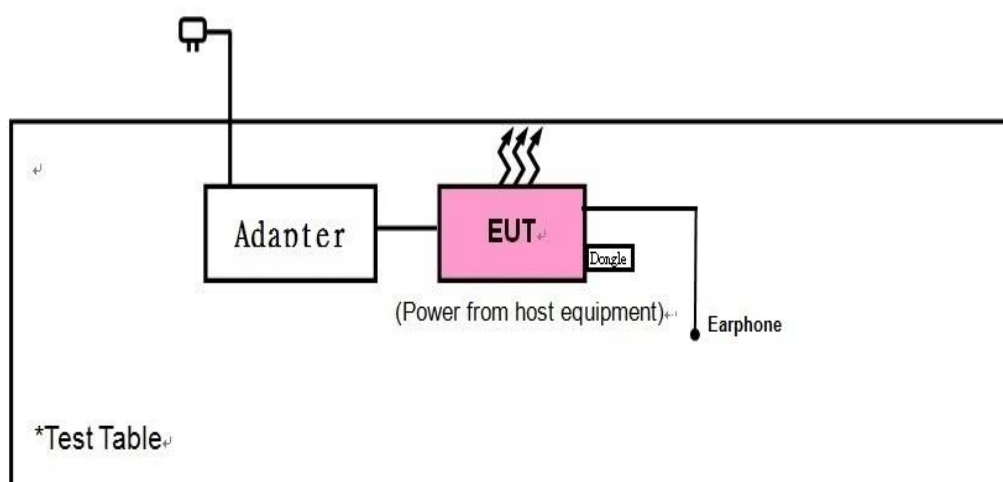
3.3 Description of Support Units

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
1.	Earphone	Apple	NA	NA	NA	-
2.	USB Dongle	HP	v250W	03	NA	-

No.	Signal Cable Description Of The Above Support Units
1.	1.2m

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 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 calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. 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:

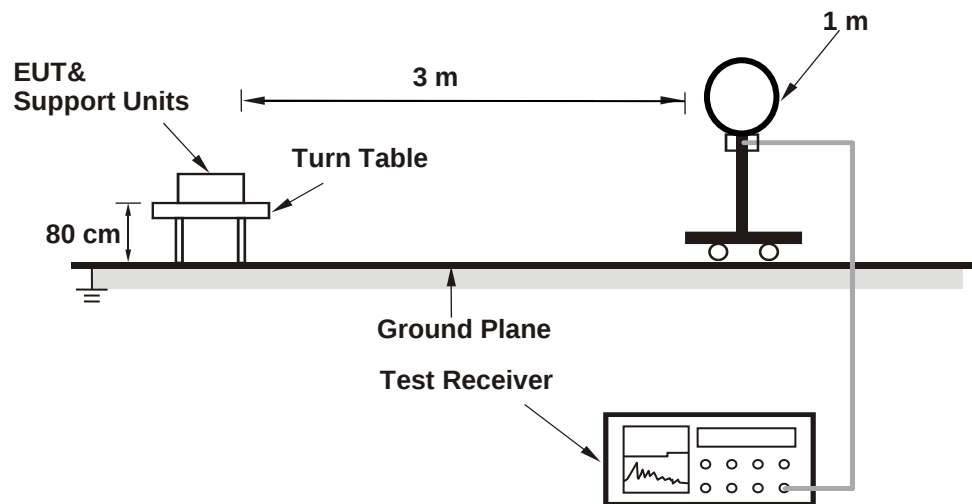
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

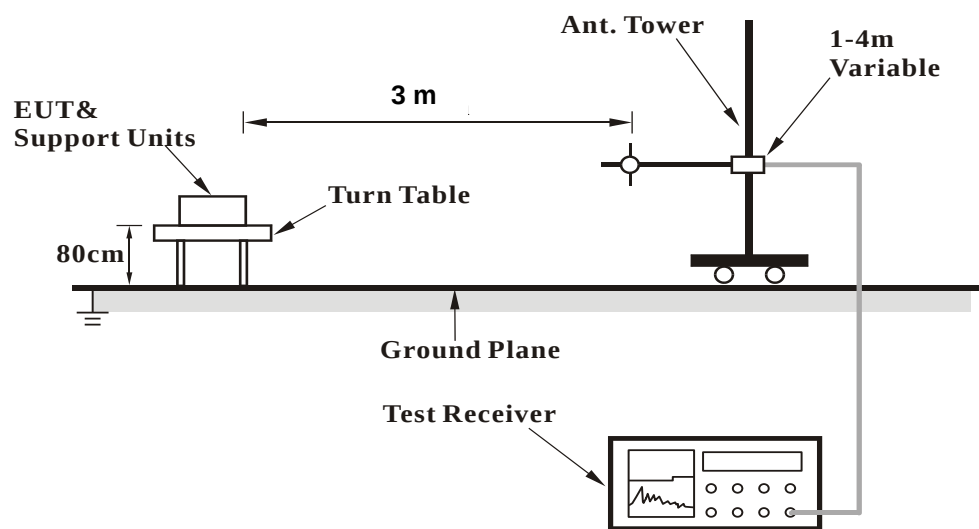
No deviation.

4.1.5 Test Set Up

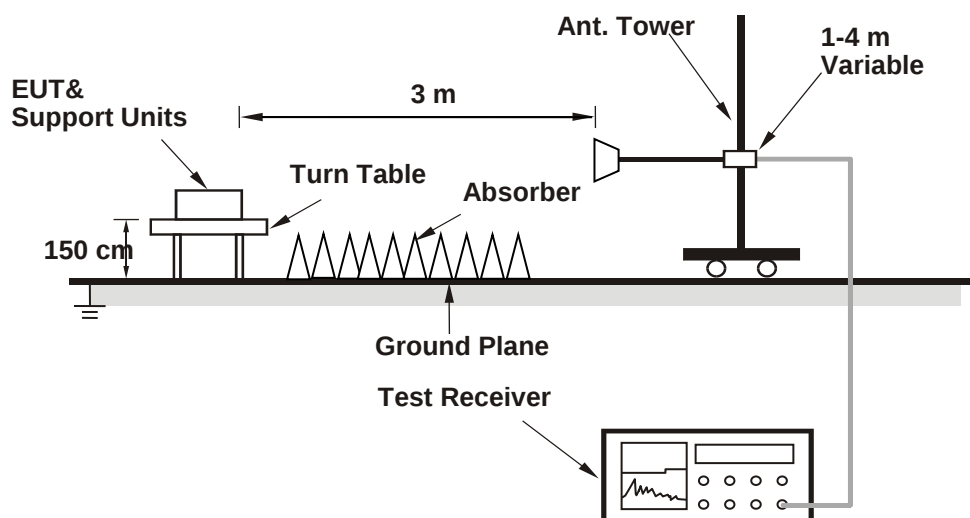
<Radiated Emission below 30 MHz>



<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

- Placed the EUT on a testing table.
- 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	47.13	53.03	-5.9	54	-6.87	174	342	Average
2385.378	52.94	58.84	-5.9	74	-21.06	174	342	Peak
2412	100.67	106.62	-5.95	-----	-----	174	342	Average
2412	103.27	109.22	-5.95	-----	-----	174	342	Peak
4824	32.62	48.24	-15.62	54	-21.38	123	235	Average
4824	40.01	55.63	-15.62	74	-33.99	123	235	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
2385.378	45.11	51.01	-5.9	54	-8.89	100	27	Average
2385.378	51.35	57.25	-5.9	74	-22.65	100	27	Peak
2412	96.28	102.23	-5.95	-----	-----	100	27	Average
2412	98.82	104.77	-5.95	-----	-----	100	27	Peak
4824	31.51	47.13	-15.62	54	-22.49	212	125	Average
4824	41.28	56.9	-15.62	74	-32.72	212	125	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
- 2412 MHz: Fundamental frequency.
- 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
2389.04	41.19	47.09	-5.9	54	-12.81	171	360	Average
2389.04	49.51	55.41	-5.9	74	-24.49	171	360	Peak
2437	102.53	108.42	-5.89	-----	-----	171	360	Average
2437	105.97	111.86	-5.89	-----	-----	171	360	Peak
2484.61	39.46	45.16	-5.7	54	-14.54	171	360	Average
2484.61	48.37	54.07	-5.7	74	-25.63	171	360	Peak
4874	34.56	50.12	-15.56	54	-19.44	252	136	Average
4874	42.18	57.74	-15.56	74	-31.82	252	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
2390	39.66	45.58	-5.92	54	-14.34	100	34	Average
2390	49.02	54.94	-5.92	74	-24.98	100	34	Peak
2437	97.67	103.56	-5.89	-----	-----	100	34	Average
2437	101.29	107.18	-5.89	-----	-----	100	34	Peak
2484.8	38.36	44.06	-5.7	54	-15.64	100	34	Average
2484.8	47.88	53.58	-5.7	74	-26.12	100	34	Peak
4874	36.14	51.7	-15.56	54	-17.86	156	225	Average
4874	42.03	57.59	-15.56	74	-31.97	156	225	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	101.71	107.52	-5.81	-----	-----	170	358	Average
2462	104.26	110.07	-5.81	-----	-----	170	358	Peak
2483.5	41.26	46.96	-5.7	54	-12.74	170	358	Average
2483.5	49.44	55.14	-5.7	74	-24.56	170	358	Peak
4924	37.58	53.09	-15.51	54	-16.42	151	121	Average
4924	44.49	60	-15.51	74	-29.51	151	121	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	96.99	102.8	-5.81	-----	-----	100	51	Average
2462	98.47	104.28	-5.81	-----	-----	100	51	Peak
2483.5	38.88	44.58	-5.7	54	-15.12	100	51	Average
2483.5	48.49	54.19	-5.7	74	-25.51	100	51	Peak
4924	32.03	47.54	-15.51	54	-21.97	121	223	Average
4924	41.44	56.95	-15.51	74	-32.56	121	223	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
- 2462 MHz: Fundamental frequency.
- 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	99.91	105.63	-5.72	-----	-----	189	359	Average
2467	102.41	108.13	-5.72	-----	-----	189	359	Peak
2485.028	41.01	46.71	-5.7	54	-12.99	189	359	Average
2485.028	49.85	55.55	-5.7	74	-24.15	189	359	Peak
4934	37.73	53.24	-15.51	54	-16.27	151	211	Average
4934	42.48	57.99	-15.51	74	-31.52	151	211	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	95.42	101.14	-5.72	-----	-----	100	33	Average
2467	98.06	103.78	-5.72	-----	-----	100	33	Peak
2484.876	38.85	44.55	-5.7	54	-15.15	100	33	Average
2484.876	48.4	54.1	-5.7	74	-25.6	100	33	Peak
4934	35.71	51.22	-15.51	54	-18.29	221	151	Average
4934	42.15	57.66	-15.51	74	-31.85	221	151	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	97.88	103.59	-5.71	-----	-----	190	360	Average
2472	100.42	106.13	-5.71	-----	-----	190	360	Peak
2483.888	39.13	44.83	-5.7	54	-14.87	190	360	Average
2483.888	62.4	68.1	-5.7	74	-11.6	190	360	Peak
4944	36.61	52.1	-15.49	54	-17.39	221	121	Average
4944	41.62	57.11	-15.49	74	-32.38	221	121	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	93.01	98.72	-5.71	-----	-----	100	34	Average
2472	95.67	101.38	-5.71	-----	-----	100	34	Peak
2483.5	37.99	43.69	-5.7	54	-16.01	100	34	Average
2483.5	57.84	63.54	-5.7	74	-16.16	100	34	Peak
4944	32.67	48.16	-15.49	54	-21.33	121	222	Average
4944	41.56	57.05	-15.49	74	-32.44	121	222	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	45.88	51.8	-5.92	54	-8.12	177	360	Average
2390	58.54	64.46	-5.92	74	-15.46	177	360	Peak
2412	95.74	101.69	-5.95	-----	-----	177	360	Average
2412	103.64	109.59	-5.95	-----	-----	177	360	Peak
4824	29.49	45.11	-15.62	54	-24.51	121	221	Average
4824	39	54.62	-15.62	74	-35	121	221	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
2389.968	44.24	50.16	-5.92	54	-9.76	100	26	Average
2389.968	55.25	76.82	-21.57	74	-18.75	100	26	Peak
2412	91.72	97.67	-5.95	-----	-----	100	26	Average
2412	98.76	104.71	-5.95	-----	-----	100	26	Peak
4824	30.6	46.22	-15.62	54	-23.4	212	114	Average
4824	39.88	55.5	-15.62	74	-34.12	212	114	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
- 2412 MHz: Fundamental frequency.
- 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	45.89	51.81	-5.92	54	-8.11	175	360	Average
2390	56.4	62.32	-5.92	74	-17.6	175	360	Peak
2437	99.52	105.41	-5.89	-----	-----	175	360	Average
2437	106.62	112.51	-5.89	-----	-----	175	360	Peak
2483.5	41.52	47.22	-5.7	54	-12.48	175	360	Average
2483.5	51.47	57.17	-5.7	74	-22.53	175	360	Peak
4874	33.54	49.1	-15.56	54	-20.46	221	145	Average
4874	41.07	56.63	-15.56	74	-32.93	221	145	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	44.23	50.15	-5.92	54	-9.77	100	28	Average
2390	54.25	60.17	-5.92	74	-19.75	100	28	Peak
2437	94.43	100.32	-5.89	-----	-----	100	28	Average
2437	101.2	107.09	-5.89	-----	-----	100	28	Peak
2483.5	39.49	45.19	-5.7	54	-14.51	100	28	Average
2483.5	49.58	55.28	-5.7	74	-24.42	100	28	Peak
4874	33.18	48.74	-15.56	54	-20.82	121	154	Average
4874	40.99	56.55	-15.56	74	-33.01	121	154	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
- 2437 MHz: Fundamental frequency.
- 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	96.21	102.02	-5.81	-----	-----	176	15	Average
2462	103.5	109.31	-5.81	-----	-----	176	15	Peak
2483.5	41.04	46.74	-5.7	54	-12.96	176	15	Average
2483.5	51.13	56.83	-5.7	74	-22.87	176	15	Peak
4924	34.34	49.85	-15.51	54	-19.66	145	210	Average
4924	41.41	56.92	-15.51	74	-32.59	145	210	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	91.9	97.71	-5.81	-----	-----	100	49	Average
2462	98.41	104.22	-5.81	-----	-----	100	49	Peak
2483.5	38.97	44.67	-5.7	54	-15.03	100	49	Average
2483.5	48.64	54.34	-5.7	74	-25.36	100	49	Peak
4924	34.32	49.83	-15.51	54	-19.68	164	360	Average
4924	41.41	56.92	-15.51	74	-32.59	164	360	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
- 2462 MHz: Fundamental frequency.
- 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	93.79	99.51	-5.72	-----	-----	171	10	Average
2467	101	106.72	-5.72	-----	-----	171	10	Peak
2483.5	43.45	49.15	-5.7	54	-10.55	171	10	Average
2483.5	53.93	59.63	-5.7	74	-20.07	171	10	Peak
4934	34.22	49.73	-15.51	54	-19.78	100	166	Average
4934	41.35	56.86	-15.51	74	-32.65	100	166	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	88.14	93.86	-5.72	-----	-----	100	44	Average
2467	95.36	101.08	-5.72	-----	-----	100	44	Peak
2483.5	40.27	45.97	-5.7	54	-13.73	100	44	Average
2483.5	49.89	55.59	-5.7	74	-24.11	100	44	Peak
4934	35.13	50.64	-15.51	54	-18.87	100	256	Average
4934	42.25	57.76	-15.51	74	-31.75	100	256	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
- 2467 MHz: Fundamental frequency.
- 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	90.9	96.61	-5.71	-----	-----	173	11	Average
2472	97.37	103.08	-5.71	-----	-----	173	11	Peak
2483.5	47.34	53.04	-5.7	54	-6.66	173	11	Average
2483.5	66.9	72.6	-5.7	74	-7.1	173	11	Peak
4944	34.29	49.78	-15.49	54	-19.71	165	166	Average
4944	41.9	57.39	-15.49	74	-32.1	165	166	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	85.12	90.83	-5.71	-----	-----	100	44	Average
2472	92.04	97.75	-5.71	-----	-----	100	44	Peak
2483.5	43.84	49.54	-5.7	54	-10.16	100	44	Average
2483.5	63.93	69.63	-5.7	74	-10.07	100	44	Peak
4944	33.51	49	-15.49	54	-20.49	239	145	Average
4944	41.5	56.99	-15.49	74	-32.5	239	145	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
- 2472 MHz: Fundamental frequency.
- 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	46.09	52.01	-5.92	54	-7.91	169	360	Average
2390	56.86	62.78	-5.92	74	-17.14	169	360	Peak
2412	98.37	104.32	-5.95	-----	-----	169	360	Average
2412	107.26	113.21	-5.95	-----	-----	169	360	Peak
4824	32.83	48.45	-15.62	54	-21.17	218	297	Average
4824	40.67	56.29	-15.62	74	-33.33	218	297	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	42.75	48.67	-5.92	54	-11.25	394	97	Average
2390	52.21	58.13	-5.92	74	-21.79	394	97	Peak
2412	92.35	98.3	-5.95	-----	-----	394	97	Average
2412	101.17	107.12	-5.95	-----	-----	394	97	Peak
4824	33.56	49.18	-15.62	54	-20.44	256	110	Average
4824	40.66	56.28	-15.62	74	-33.34	256	110	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
- 2412 MHz: Fundamental frequency.
- 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	38.29	44.21	-5.92	54	-15.71	151	360	Average
2390	49.17	55.09	-5.92	74	-24.83	151	360	Peak
2437	97.88	103.77	-5.89	-----	-----	151	360	Average
2437	106.8	112.69	-5.89	-----	-----	151	360	Peak
2483.5	37.79	43.49	-5.7	54	-16.21	151	360	Average
2483.5	48.24	53.94	-5.7	74	-25.76	151	360	Peak
4874	35.15	50.71	-15.56	54	-18.85	155	231	Average
4874	43.07	58.63	-15.56	74	-30.93	155	231	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	37.27	43.19	-5.92	54	-16.73	396	129	Average
2390	48.55	54.47	-5.92	74	-25.45	396	129	Peak
2437	92.38	98.27	-5.89	-----	-----	396	129	Average
2437	101.09	106.98	-5.89	-----	-----	396	129	Peak
2483.5	37.37	43.07	-5.7	54	-16.63	396	129	Average
2483.5	47.45	53.15	-5.7	74	-26.55	396	129	Peak
4874	33.73	49.29	-15.56	54	-20.27	121	253	Average
4874	41.58	57.14	-15.56	74	-32.42	121	253	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	96.92	102.73	-5.81	-----	-----	170	360	Average
2462	104.81	110.62	-5.81	-----	-----	170	360	Peak
2483.5	40.74	46.44	-5.7	54	-13.26	170	360	Average
2483.5	50.93	56.63	-5.7	74	-23.07	170	360	Peak
4924	34.66	50.17	-15.51	54	-19.34	198	83	Average
4924	42.05	57.56	-15.51	74	-31.95	198	83	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	91.4	97.21	-5.81	-----	-----	371	105	Average
2462	99.58	105.39	-5.81	-----	-----	371	105	Peak
2483.5	38.33	44.03	-5.7	54	-15.67	371	105	Average
2483.5	49.44	55.14	-5.7	74	-24.56	371	105	Peak
4924	34.26	49.77	-15.51	54	-19.74	307	45	Average
4924	41.17	56.68	-15.51	74	-32.83	307	45	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
- 2462 MHz: Fundamental frequency.
- 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	94.11	99.83	-5.72	-----	-----	169	360	Average
2467	103.72	109.44	-5.72	-----	-----	169	360	Peak
2483.5	42.46	48.16	-5.7	54	-11.54	169	360	Average
2483.5	53.61	59.31	-5.7	74	-20.39	169	360	Peak
4934	34.28	49.79	-15.51	54	-19.72	271	204	Average
4934	41.24	56.75	-15.51	74	-32.76	271	204	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	87.98	93.7	-5.72	-----	-----	366	107	Average
2467	97.06	102.78	-5.72	-----	-----	366	107	Peak
2483.5	39.35	45.05	-5.7	54	-14.65	366	107	Average
2483.5	48.98	54.68	-5.7	74	-25.02	366	107	Peak
4934	34.21	49.72	-15.51	54	-19.79	159	99	Average
4934	41.16	56.67	-15.51	74	-32.84	159	99	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
- 2467 MHz: Fundamental frequency.
- 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	90.59	96.3	-5.71	-----	-----	165	0	Average
2472	100.3	106.01	-5.71	-----	-----	165	0	Peak
2483.5	42.71	48.41	-5.7	54	-11.29	165	0	Average
2483.5	58.11	63.81	-5.7	74	-15.89	165	0	Peak
4944	34.64	50.13	-15.49	54	-19.36	183	122	Average
4944	41.78	57.27	-15.49	74	-32.22	183	122	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	84.16	89.87	-5.71	-----	-----	365	106	Average
2472	94.16	99.87	-5.71	-----	-----	365	106	Peak
2483.5	39.41	45.11	-5.7	54	-14.59	365	106	Average
2483.5	57.09	62.79	-5.7	74	-16.91	365	106	Peak
4944	34.82	50.31	-15.49	54	-19.18	240	80	Average
4944	41.78	57.27	-15.49	74	-32.22	240	80	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 (HE40)

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	48.28	54.2	-5.92	54	-5.72	154	0	Average
2390	58.03	63.95	-5.92	74	-15.97	154	0	Peak
2422	95.09	100.97	-5.88	-----	-----	154	0	Average
2422	105.41	111.29	-5.88	-----	-----	154	0	Peak
2483.5	37.89	43.59	-5.7	54	-16.11	154	0	Average
2483.5	48.48	54.18	-5.7	74	-25.52	154	0	Peak
4844	33.96	49.55	-15.59	54	-20.04	261	73	Average
4844	41.69	57.28	-15.59	74	-32.31	261	73	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	43.92	49.84	-5.92	54	-10.08	390	96	Average
2390	51.7	57.62	-5.92	74	-22.3	390	96	Peak
2422	89.89	95.77	-5.88	-----	-----	390	96	Average
2422	98.93	104.81	-5.88	-----	-----	390	96	Peak
2483.5	37.4	43.1	-5.7	54	-16.6	390	96	Average
2483.5	48.28	53.98	-5.7	74	-25.72	390	96	Peak
4844	33.15	48.74	-15.59	54	-20.85	178	256	Average
4844	40.41	56	-15.59	74	-33.59	178	256	Peak

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
- 2422 MHz: Fundamental frequency.
- 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	39.09	45.01	-5.92	54	-14.91	149	0	Average
2390	50.04	55.96	-5.92	74	-23.96	149	0	Peak
2437	92.65	98.54	-5.89	-----	-----	149	0	Average
2437	103.53	109.42	-5.89	-----	-----	149	0	Peak
2483.5	38.88	44.58	-5.7	54	-15.12	149	0	Average
2483.5	49.03	54.73	-5.7	74	-24.97	149	0	Peak
4874	35	50.56	-15.56	54	-19	100	271	Average
4874	43.06	58.62	-15.56	74	-30.94	100	271	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	37.46	43.38	-5.92	54	-16.54	395	127	Average
2390	48.36	54.28	-5.92	74	-25.64	395	127	Peak
2437	87.55	93.44	-5.89	-----	-----	395	127	Average
2437	97.68	103.57	-5.89	-----	-----	395	127	Peak
2483.5	37.42	43.12	-5.7	54	-16.58	395	127	Average
2483.5	47.75	53.45	-5.7	74	-26.25	395	127	Peak
4874	33.77	49.33	-15.56	54	-20.23	199	283	Average
4874	40.98	56.54	-15.56	74	-33.02	199	283	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	37.82	43.74	-5.92	54	-16.18	173	0	Average
2390	48.89	54.81	-5.92	74	-25.11	173	0	Peak
2452	92.76	98.58	-5.82	-----	-----	173	0	Average
2452	102.53	108.35	-5.82	-----	-----	173	0	Peak
2483.5	40.71	46.41	-5.7	54	-13.29	173	0	Average
2483.5	52.26	57.96	-5.7	74	-21.74	173	0	Peak
4904	34.57	50.12	-15.55	54	-19.43	167	54	Average
4904	42.48	58.03	-15.55	74	-31.52	167	54	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	37.23	43.15	-5.92	54	-16.77	395	127	Average
2390	48.14	54.06	-5.92	74	-25.86	395	127	Peak
2452	87.19	93.01	-5.82	-----	-----	395	127	Average
2452	96.47	102.29	-5.82	-----	-----	395	127	Peak
2483.5	38.14	43.84	-5.7	54	-15.86	395	127	Average
2483.5	48.43	54.13	-5.7	74	-25.57	395	127	Peak
4904	33.97	49.52	-15.55	54	-20.03	245	47	Average
4904	41.11	56.66	-15.55	74	-32.89	245	47	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	37.36	43.28	-5.92	54	-16.64	170	0	Average
2390	48.01	53.93	-5.92	74	-25.99	170	0	Peak
2457	88.93	94.74	-5.81	-----	-----	170	0	Average
2457	98.54	104.35	-5.81	-----	-----	170	0	Peak
2483.5	47.72	53.42	-5.7	54	-6.28	170	0	Average
2483.5	57.91	63.61	-5.7	74	-16.09	170	0	Peak
4914	34.73	50.26	-15.53	54	-19.27	235	102	Average
4914	42.1	57.63	-15.53	74	-31.9	235	102	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	37.21	43.13	-5.92	54	-16.79	371	108	Average
2390	47.85	53.77	-5.92	74	-26.15	371	108	Peak
2457	83.19	89.01	-5.82	-----	-----	371	108	Average
2457	93.64	99.46	-5.82	-----	-----	371	108	Peak
2483.5	42.3	48	-5.7	54	-11.7	371	108	Average
2483.5	52.05	57.75	-5.7	74	-21.95	371	108	Peak
4914	35.01	50.54	-15.53	54	-18.99	301	262	Average
4914	42.51	58.04	-15.53	74	-31.49	301	262	Peak

Remarks:

1. Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
2. 2457 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
2390	38.36	44.28	-5.92	54	-15.64	166	200	Average
2390	48.89	54.81	-5.92	74	-25.11	166	200	Peak
2462	86.73	92.54	-5.81	-----	-----	166	200	Average
2462	95.79	101.6	-5.81	-----	-----	166	200	Peak
2483.5	49.14	54.84	-5.7	54	-4.86	166	200	Average
2483.5	63.24	68.94	-5.7	74	-10.76	166	200	Peak
4924	34.31	49.82	-15.51	54	-19.69	105	344	Average
4924	41.6	57.11	-15.51	74	-32.4	105	344	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	38.15	44.07	-5.92	54	-15.85	100	32	Average
2390	49.43	55.35	-5.92	74	-24.57	100	32	Peak
2462	81.83	87.64	-5.81	-----	-----	100	32	Average
2462	90.57	96.38	-5.81	-----	-----	100	32	Peak
2483.5	42.94	48.64	-5.7	54	-11.06	100	32	Average
2483.5	57.02	62.72	-5.7	74	-16.98	100	32	Peak
4924	34.55	50.06	-15.51	54	-19.45	123	166	Average
4924	42.54	58.05	-15.51	74	-31.46	123	166	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.

9 kHz ~ 30 MHz Data:

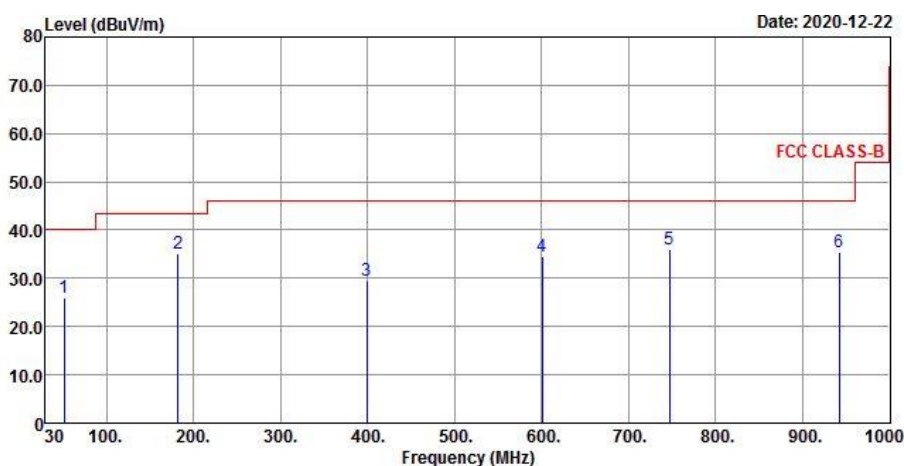
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1 GHz Worst-Case Data:

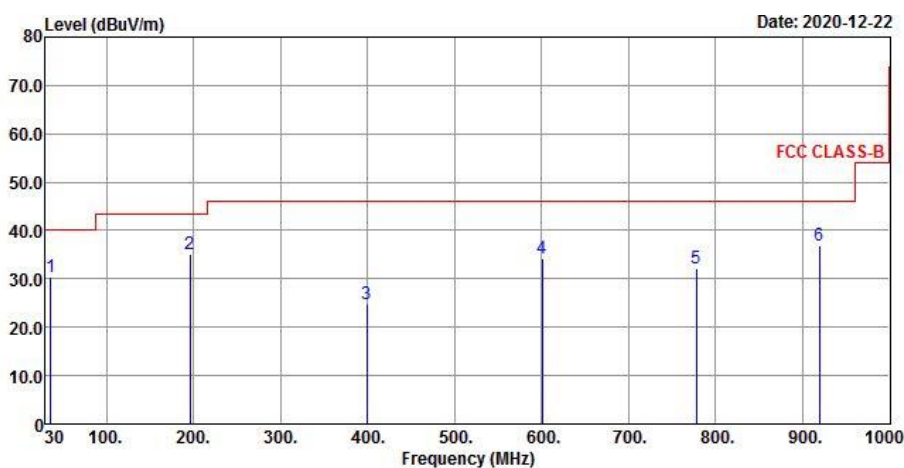
802.11g

EUT Test Condition		Measurement Detail	
Channel	Channel 13	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) 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
51.34	25.84	37.63	-11.79	40	-14.16	159	246	QP
182.29	35.23	48.94	-13.71	43.5	-8.27	128	234	QP
399.57	29.54	37.9	-8.36	46	-16.46	347	294	QP
600.36	34.68	37.39	-2.71	46	-11.32	100	278	QP
746.83	35.98	35.03	0.95	46	-10.02	259	33	QP
941.8	35.29	31.75	3.54	46	-10.71	194	45	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
35.82	30.41	43.16	-12.75	40	-9.59	265	173	QP
195.87	35.18	50.17	-14.99	43.5	-8.32	157	67	QP
399.57	24.75	33.11	-8.36	46	-21.25	137	35	QP
600.36	34.22	36.93	-2.71	46	-11.78	169	11	QP
777.87	32.18	30.7	1.48	46	-13.82	167	199	QP
919.49	36.75	33.47	3.28	46	-9.25	166	154	QP

Remarks:

- Emission Level = Read Level + Factor
Margin value = Emission level – Limit value.
- 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.
 3. The VCCI Site Registration No. is C-12040.

4.2.3 Test Procedures

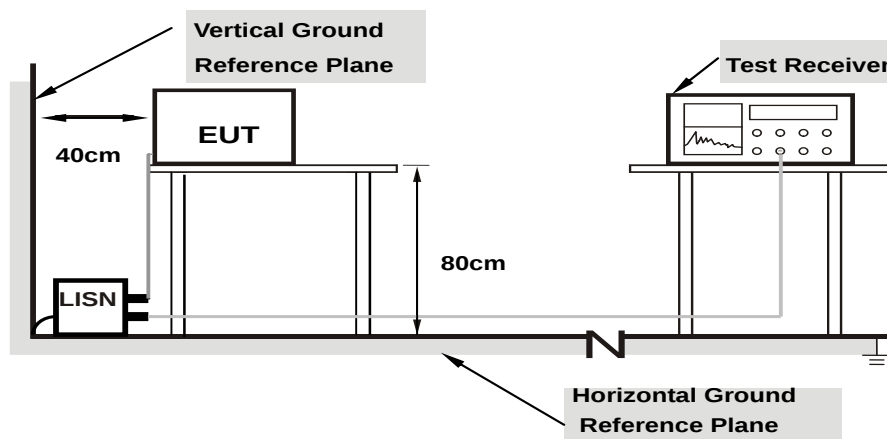
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50 uH of coupling impedance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

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

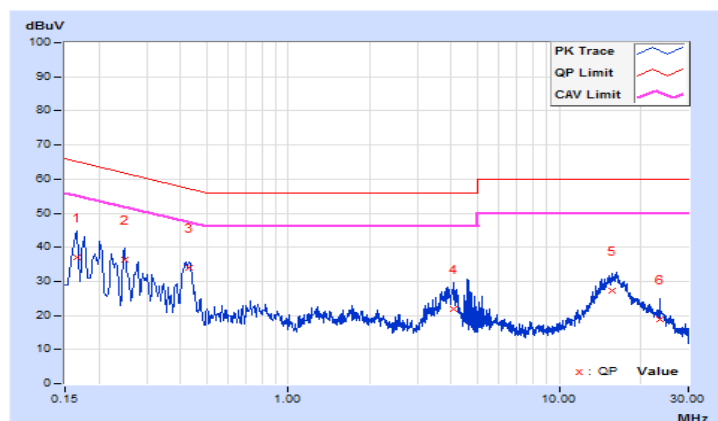
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	22°C, 66%RH
Tested by	Tim Chen	Test Date	2020/12/22

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	0.16579	9.65	27.33	13.42	36.98	23.07	65.17	55.17	-28.19	-32.10
2	0.25000	9.66	26.71	17.73	36.37	27.39	61.76	51.76	-25.39	-24.37
3	0.42915	9.66	24.49	18.40	34.15	28.06	57.27	47.27	-23.12	-19.21
4	4.10200	9.74	12.25	1.31	21.99	11.05	56.00	46.00	-34.01	-34.95
5	15.65800	9.85	17.33	10.42	27.18	20.27	60.00	50.00	-32.82	-29.73
6	23.61000	9.84	9.08	0.46	18.92	10.30	60.00	50.00	-41.08	-39.70

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

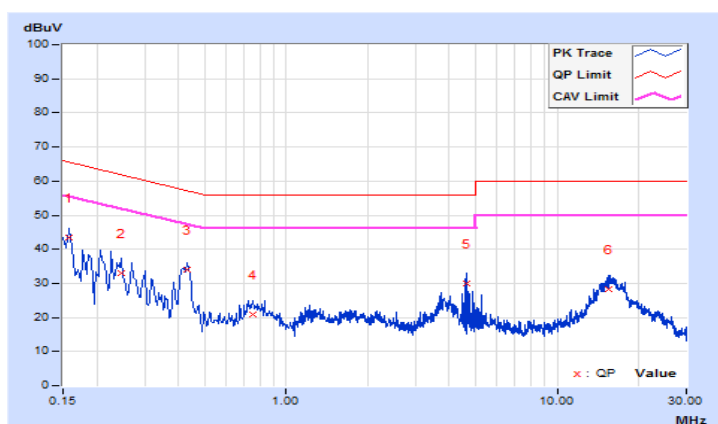


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	22°C, 66%RH
Tested by	Tim Chen	Test Date	2020/12/22

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	0.15800	9.68	33.83	20.67	43.51	30.35	65.57	55.57	-22.06	-25.22
2	0.24600	9.68	23.23	15.15	32.91	24.83	61.89	51.89	-28.98	-27.06
3	0.43000	9.68	24.46	18.50	34.14	28.18	57.25	47.25	-23.11	-19.07
4	0.75400	9.69	11.34	3.63	21.03	13.32	56.00	46.00	-34.97	-32.68
5	4.65800	9.78	20.17	5.80	29.95	15.58	56.00	46.00	-26.05	-30.42
6	15.55800	9.94	18.42	9.13	28.36	19.07	60.00	50.00	-31.64	-30.93

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

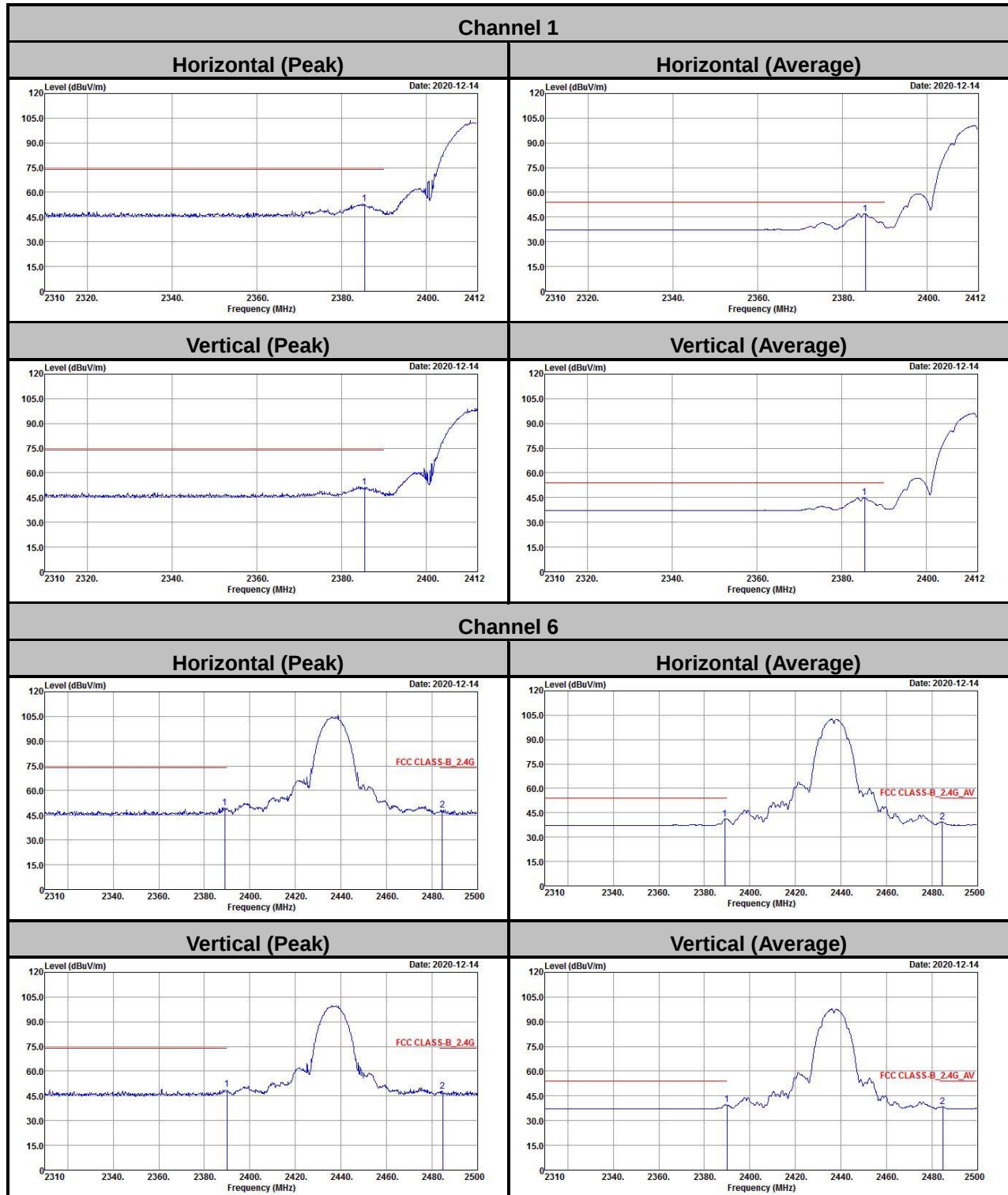


5 Pictures of Test Arrangements

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

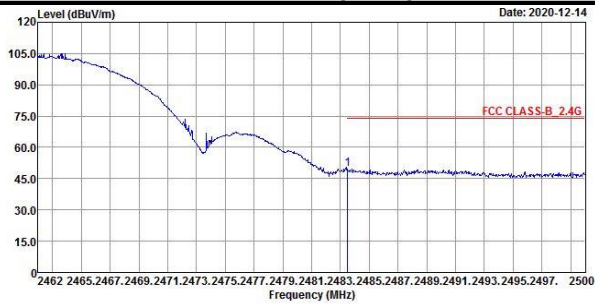
Annex A- Band Edge Measurement

802.11b

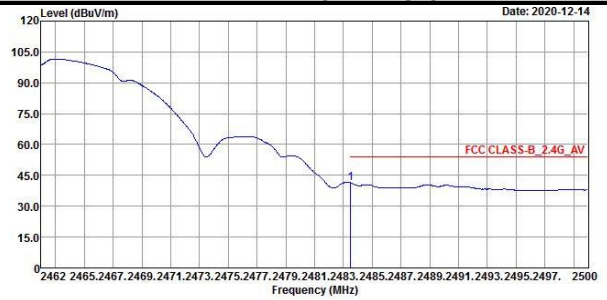


Channel 11

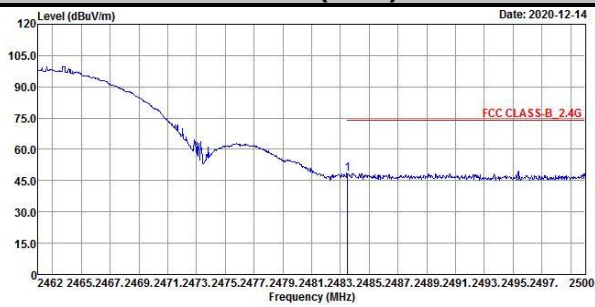
Horizontal (Peak)



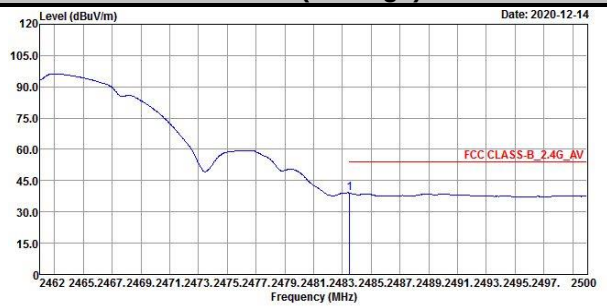
Horizontal (Average)



Vertical (Peak)

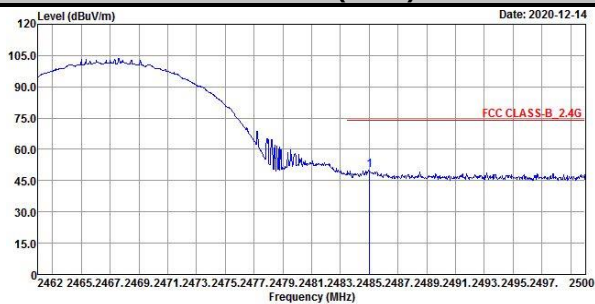


Vertical (Average)

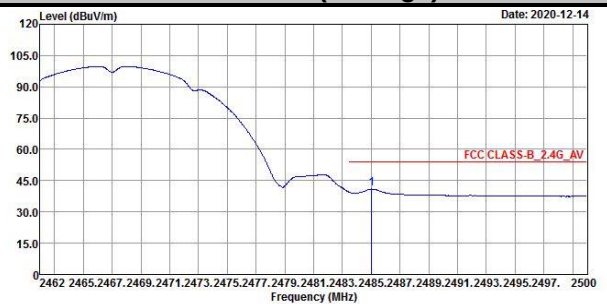


Channel 12

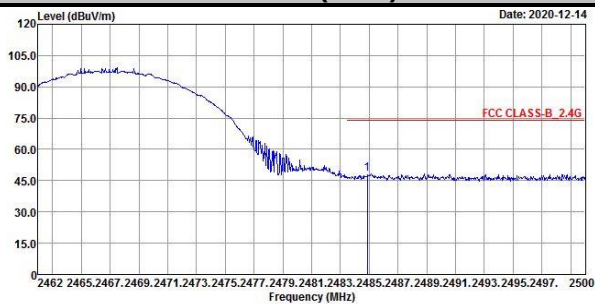
Horizontal (Peak)



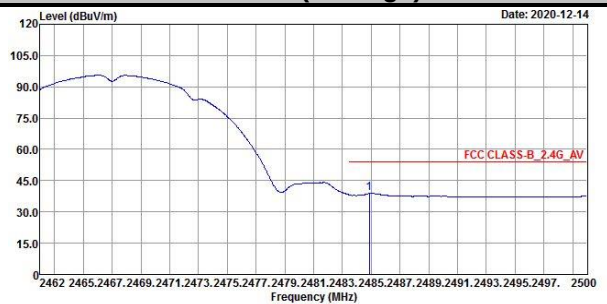
Horizontal (Average)



Vertical (Peak)

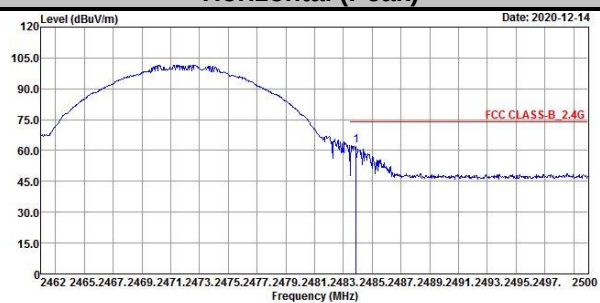


Vertical (Average)



Channel 13

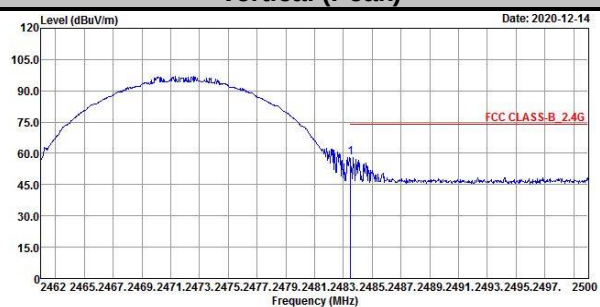
Horizontal (Peak)



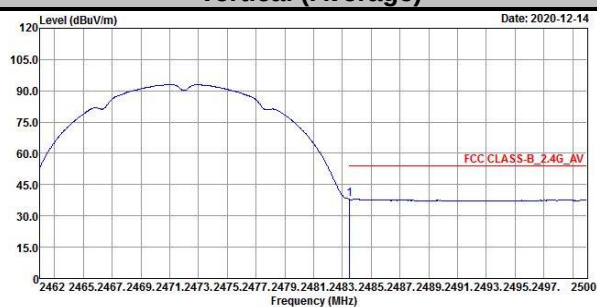
Horizontal (Average)



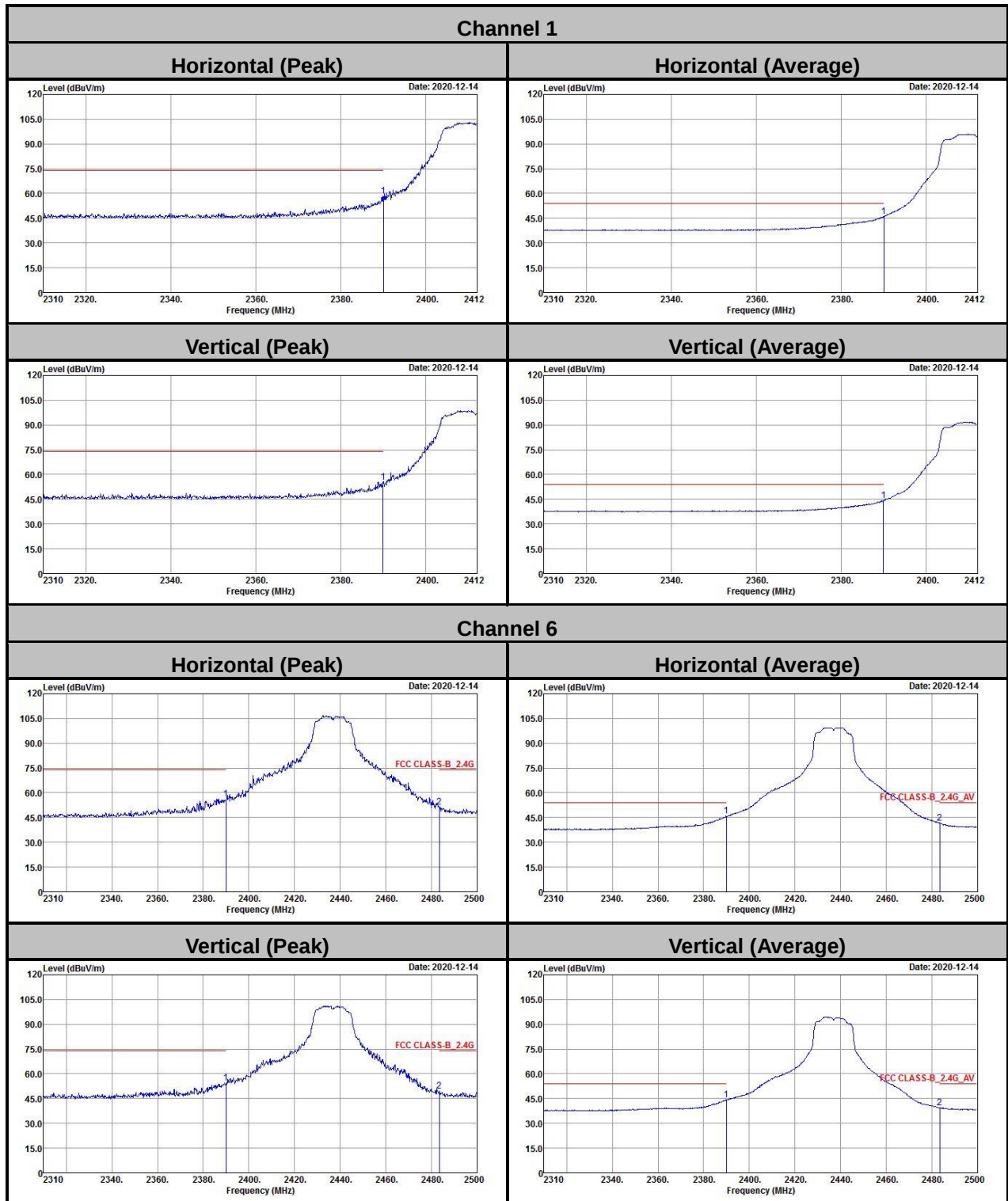
Vertical (Peak)



Vertical (Average)

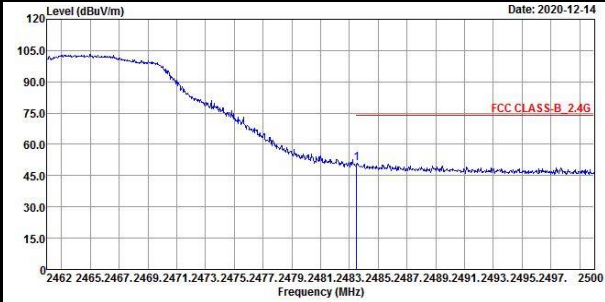


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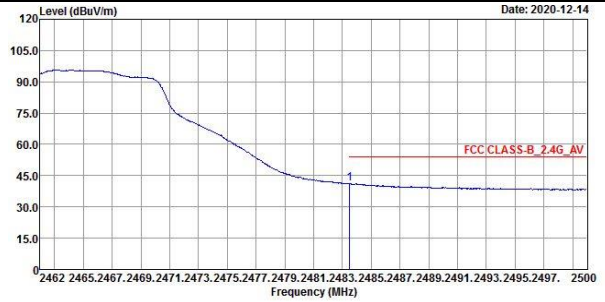


Channel 11

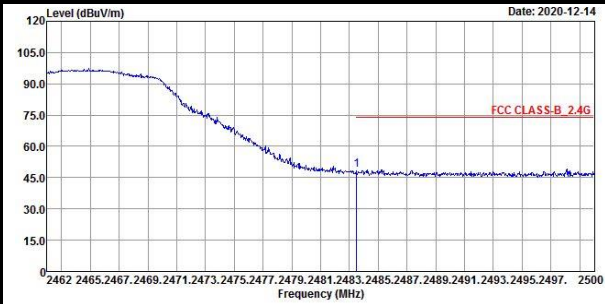
Horizontal (Peak)



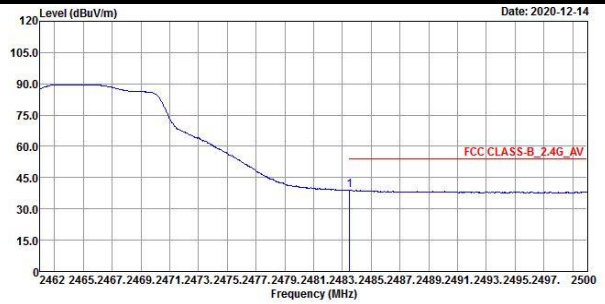
Horizontal (Average)



Vertical (Peak)

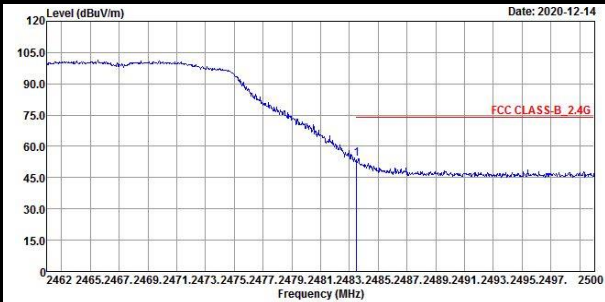


Vertical (Average)

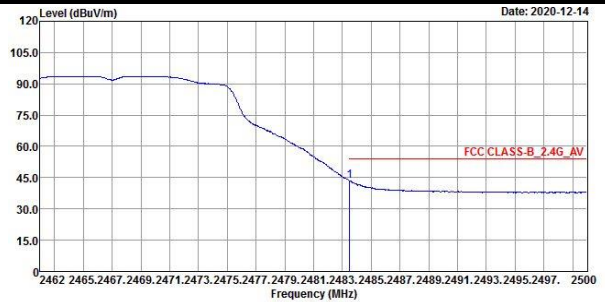


Channel 12

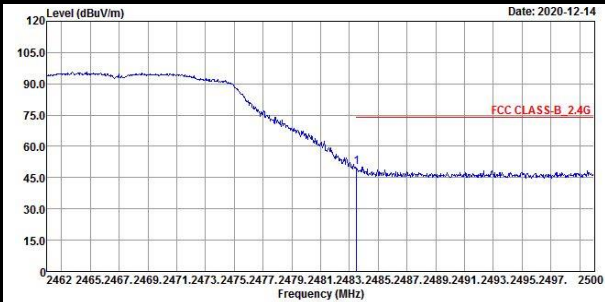
Horizontal (Peak)



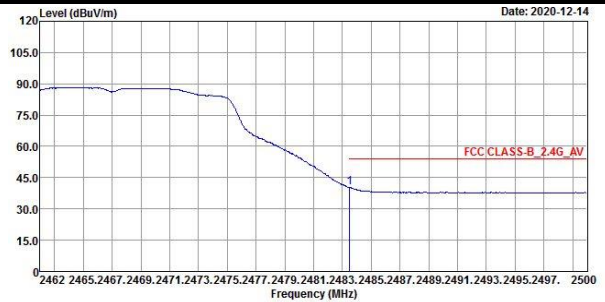
Horizontal (Average)



Vertical (Peak)

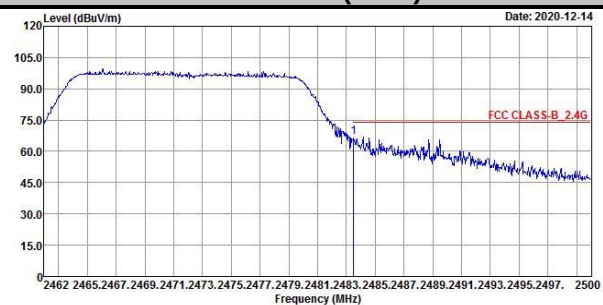


Vertical (Average)

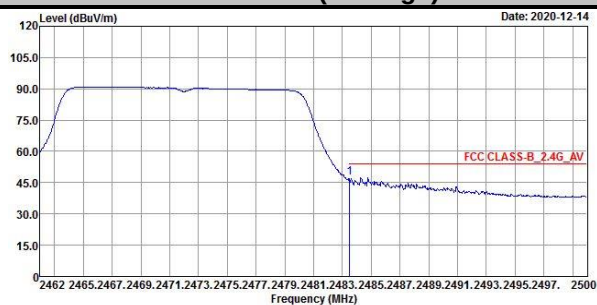


Channel 13

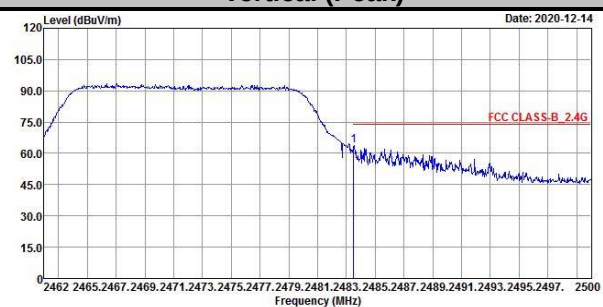
Horizontal (Peak)



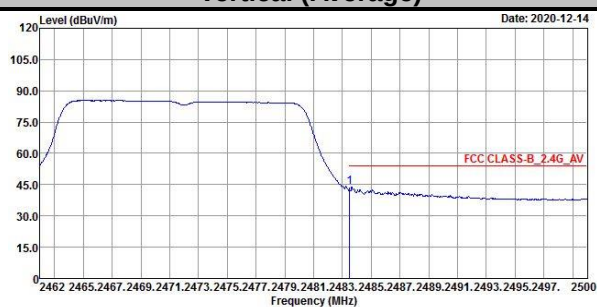
Horizontal (Average)



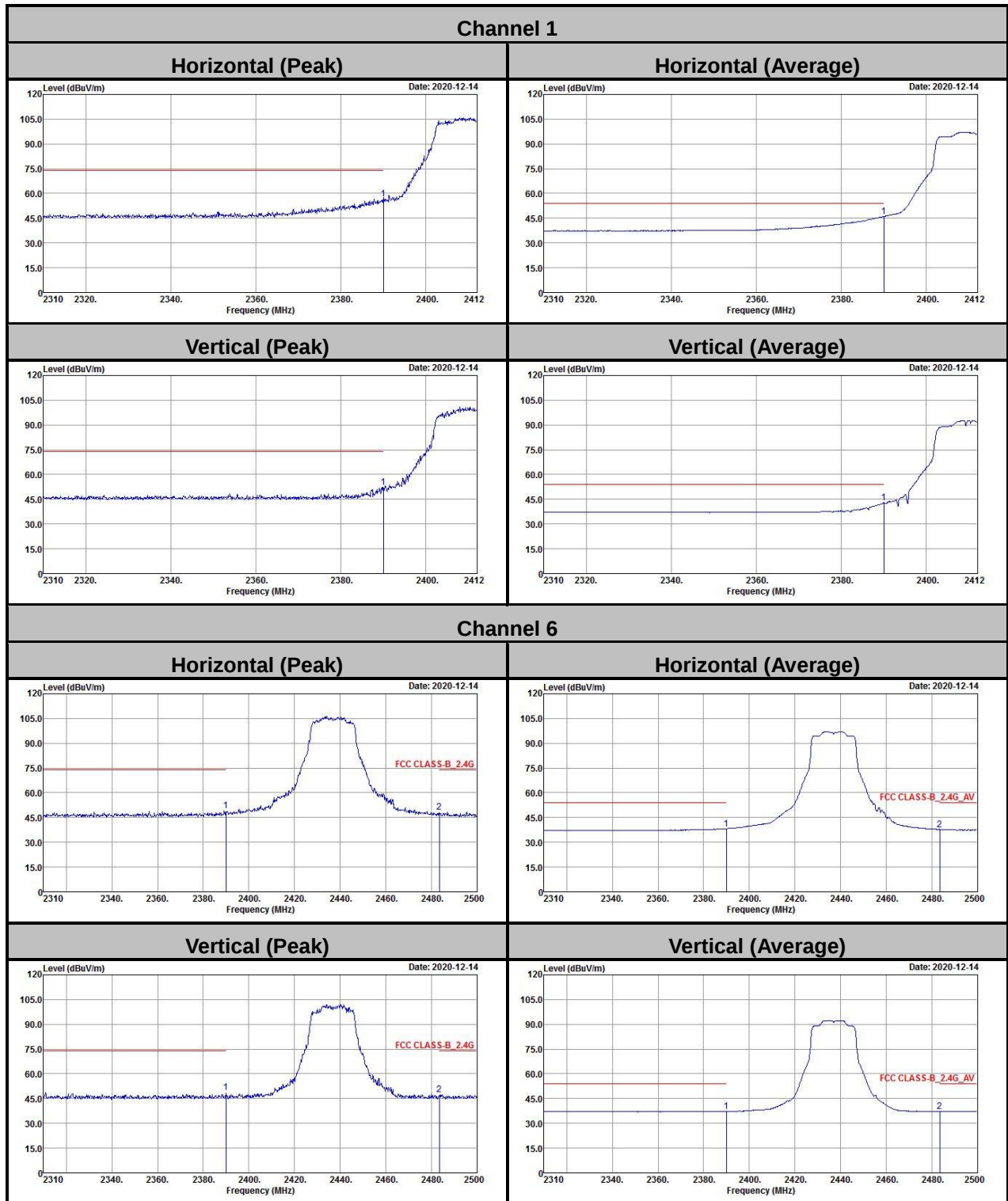
Vertical (Peak)



Vertical (Average)

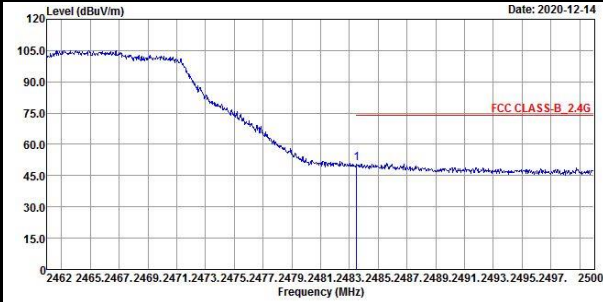


802.11ax (HE20)



Channel 11

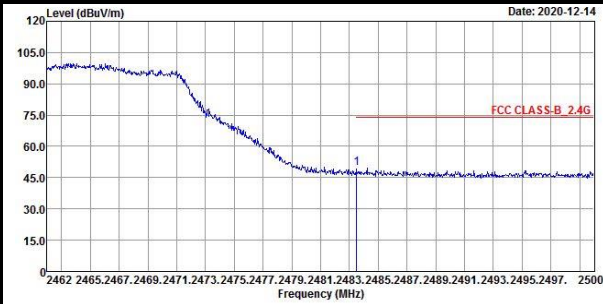
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)

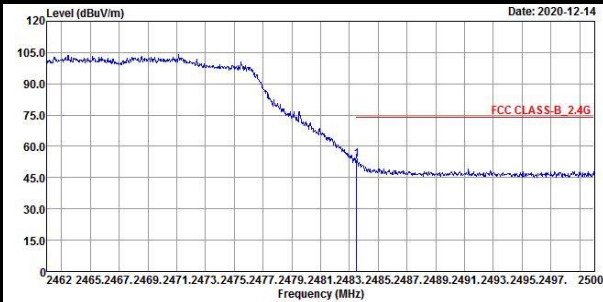


Vertical (Average)



Channel 12

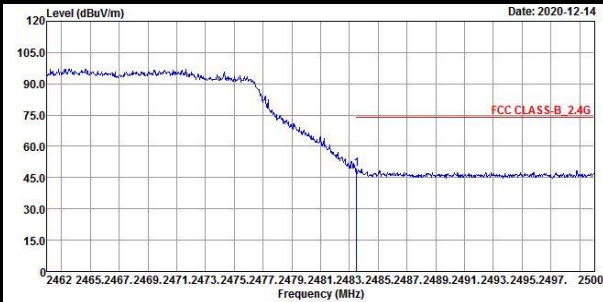
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)

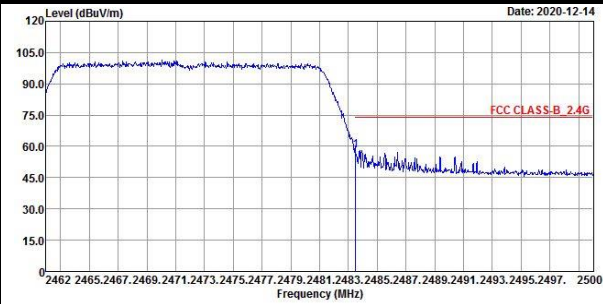


Vertical (Average)

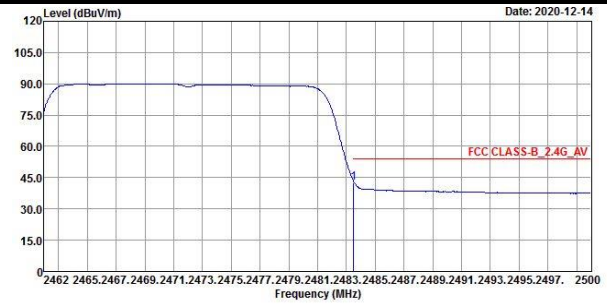


Channel 13

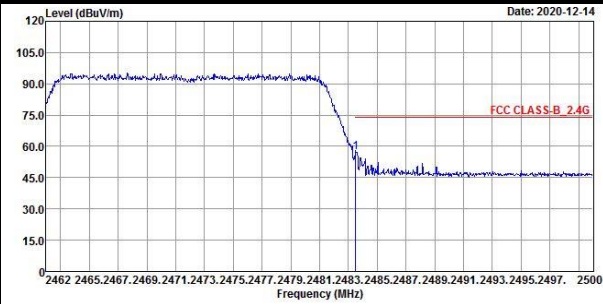
Horizontal (Peak)



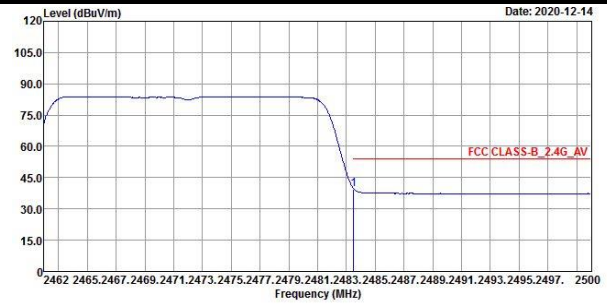
Horizontal (Average)



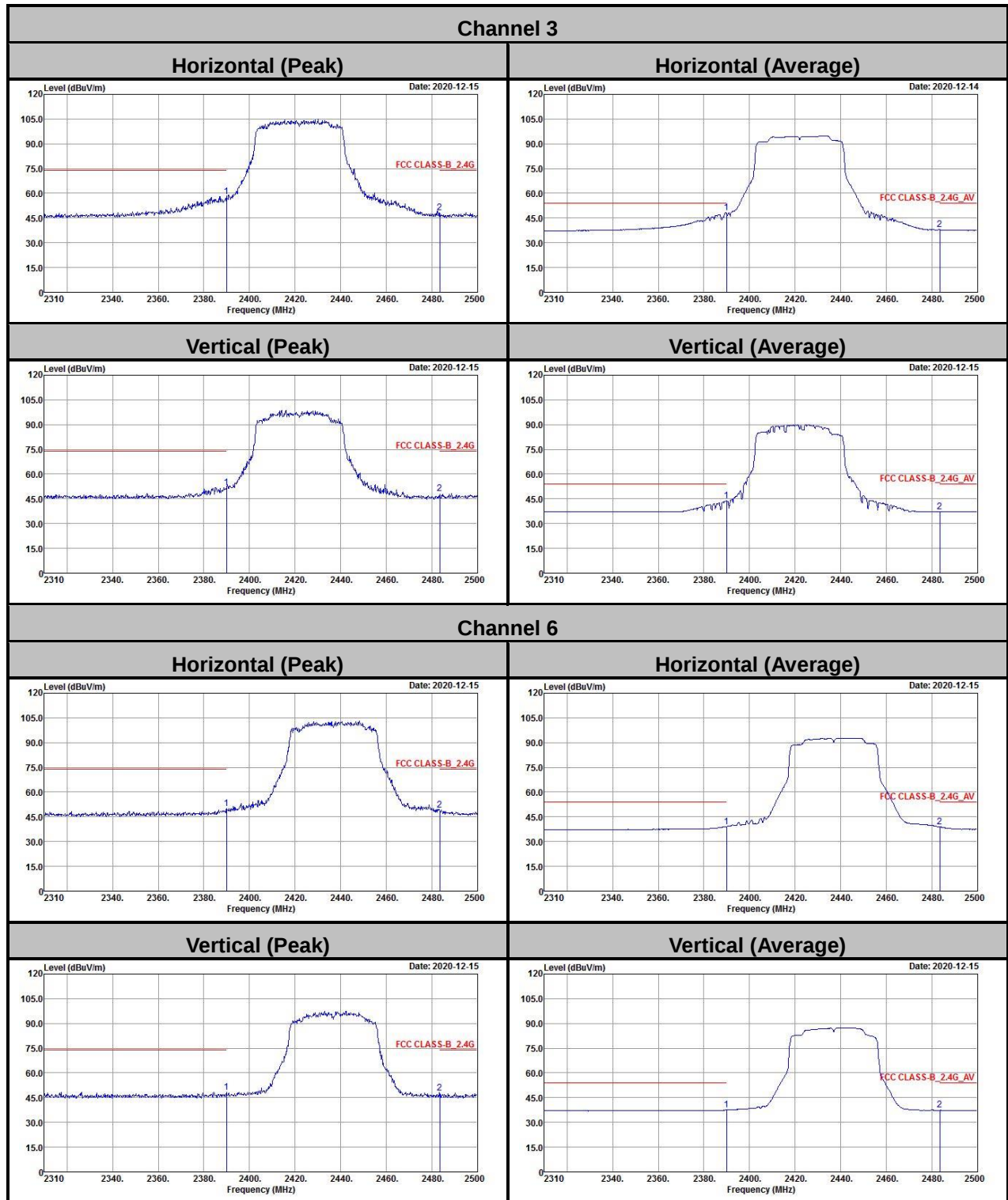
Vertical (Peak)



Vertical (Average)

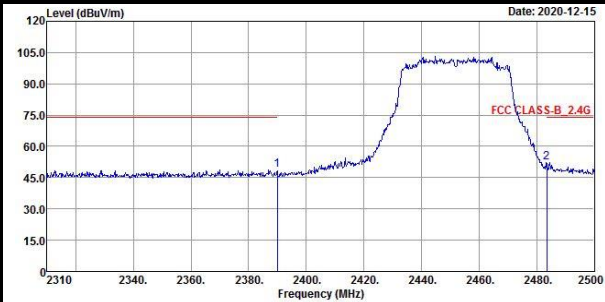


802.11ax (HE40)

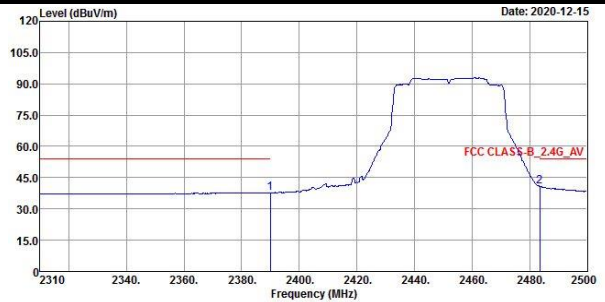


Channel 9

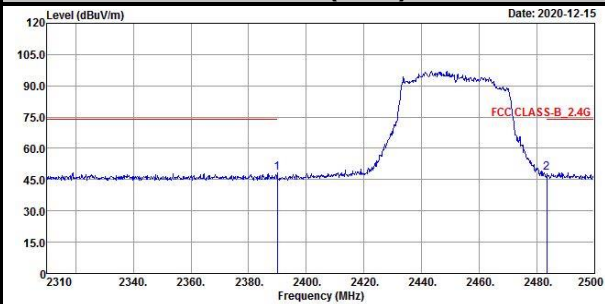
Horizontal (Peak)



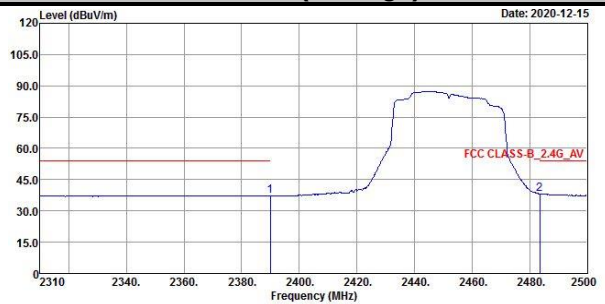
Horizontal (Average)



Vertical (Peak)

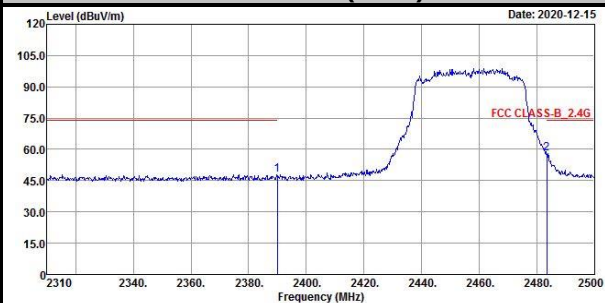


Vertical (Average)

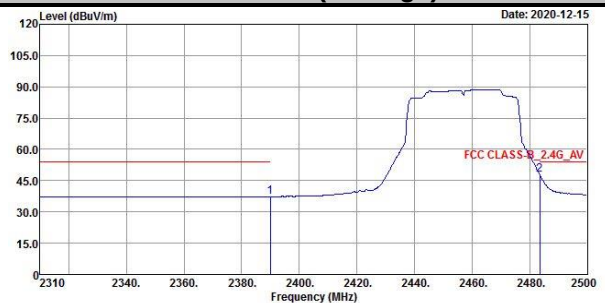


Channel 10

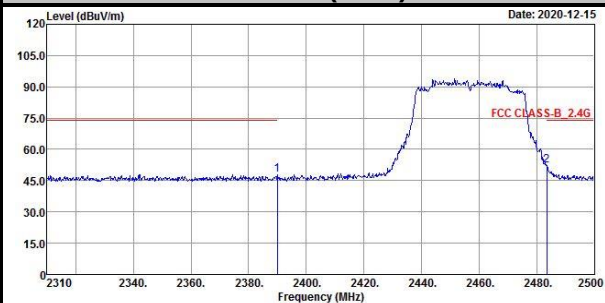
Horizontal (Peak)



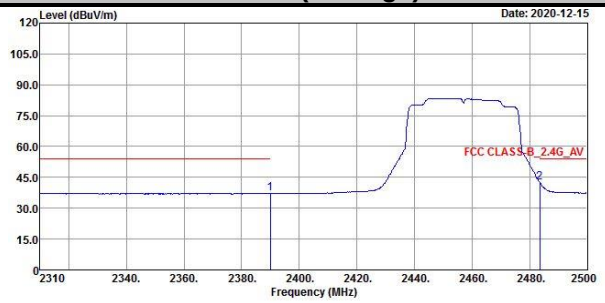
Horizontal (Average)



Vertical (Peak)

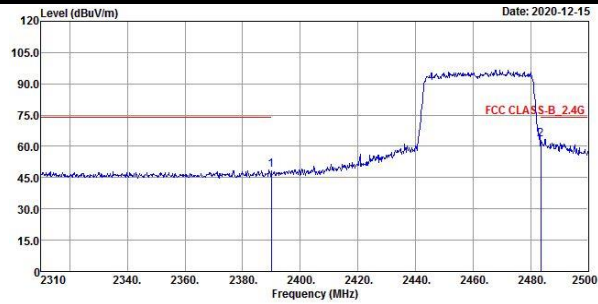


Vertical (Average)

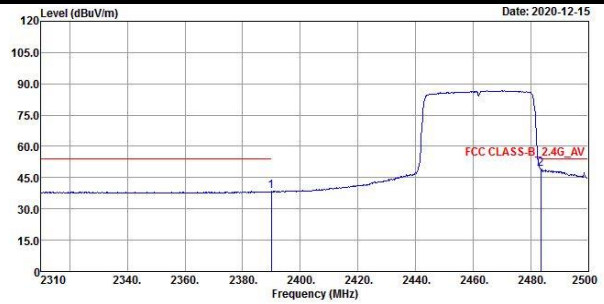


Channel 11

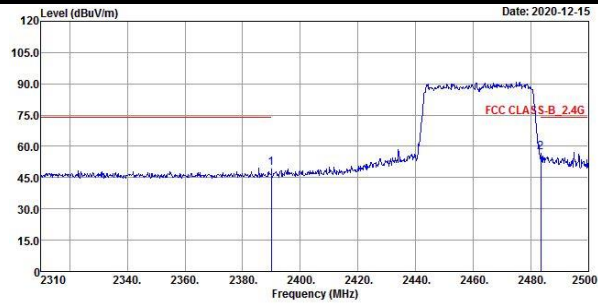
Horizontal (Peak)



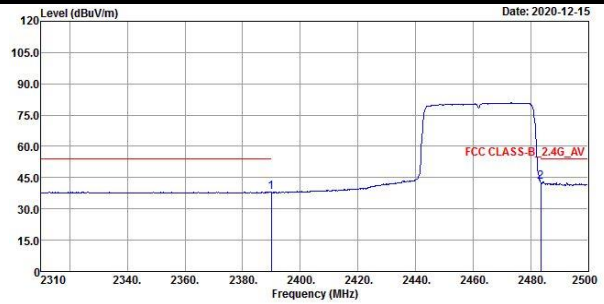
Horizontal (Average)



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 according to ISO/IEC 17025.

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Web Site: www.bureauveritas-adt.com

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

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