

## Partial FCC Test Report

**Report No.:** RFBEDW-WTW-P21010555-3

**FCC ID:** O57AX200NGW

**Test Model:** AX200NGW

**Received Date:** Jan. 19, 2021

**Test Date:** Feb. 18, 2021 ~ Feb. 26, 2021

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



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### Release Control Record

Issue No.	Description	Date Issued
RFBEDW-WTW-P21010555-3	Original Release	Mar. 08, 2021



## 2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -14.51 dB at 0.56294 MHz
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -3.23 dB at 40.67 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only
15.407(a)(1/2/3)	Peak Power Spectral Density	N/A	Refer to Note
15.407(e)	6 dB Bandwidth	N/A	Refer to Note
15.407(g)	Frequency Stability	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.TR01, 181210-03.TR02, and 181210-03.TR03 for module (Brand: Intel® Wi-Fi 6 AX200 , Model: AX200NGW).
2. For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.
3. For U-NII-1, U-NII-2A, U-NII-2C band compliance with rule 15.407(b) of the band-edge items, the test plots were recorded in Annex B. Test Procedures refer to report 4.1.3.
4. 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) ( $\pm$ )
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

<b>Product</b>	WLAN and BT , 2x2 Pcle M.2 2230 adapter card
<b>Brand</b>	Intel® Wi-Fi 6 AX200
<b>Test Model</b>	AX200NGW
<b>Status of EUT</b>	Engineering Sample
<b>Power Supply Rating</b>	3.3Vdc form host equipment
<b>Modulation Type</b>	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM for OFDMA
<b>Modulation Technology</b>	OFDM, OFDMA
<b>Transfer Rate</b>	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to 300.0 Mbps 802.11ac: up to 1733.3 Mbps 802.11ax: up to 2402.0 Mbps
<b>Operating Frequency</b>	5180 ~ 5250 MHz, 5250 ~ 5320 MHz, 5500 ~ 5720 MHz, 5745 ~ 5825 MHz
<b>Number of Channel</b>	5180 ~ 5320 MHz: 8 for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20) 4 for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40) 2 for 802.11ac (VHT80), 802.11ax (HE80) 1 for 802.11ac (VHT160), 802.11ax (HE160) 5500 ~ 5720 MHz: 12 for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20) 6 for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40) 3 for 802.11ac (VHT80), 802.11ax (HE80) 1 for 802.11ac (VHT160), 802.11ax (HE160) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20) 2 for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40) 1 for 802.11ac (VHT80), 802.11ax (HE80)
<b>Output Power</b>	55.46 mW for 5180 ~ 5250 MHz 55.34 mW for 5260 ~ 5320 MHz 55.59 mW for 5500 ~ 5720 MHz 55.21 mW for 5745 ~ 5825 MHz
<b>Antenna Type</b>	Refer to Note as below
<b>Antenna Connector</b>	Refer to Note as below
<b>Accessory Device</b>	N/A
<b>Data Cable Supplied</b>	N/A

**Note:**

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

Modulation Mode	Tx Function
802.11a	1TX
802.11n (HT20)	1TX/2TX
802.11n (HT40)	1TX/2TX
802.11ac (VHT20)	1TX/2TX
802.11ac (VHT40)	1TX/2TX
802.11ax (HE20)	1TX/2TX
802.11ax (HE40)	1TX/2TX
802.11ac (VHT80)	1TX/2TX
802.11ax (HE80)	1TX/2TX
802.11ac (VHT160)	1TX/2TX
802.11ax (HE160)	1TX/2TX

\* The modulation and bandwidth are similar for 802.11n mode for HT20 / HT40 and 802.11ac mode for VHT20 / VHT40 / VHT80 / VHT160 and 802.11ax mode for HE20 / HE40 / HE80 / HE160, 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.

- 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.
- 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

#### For 5180 ~ 5320 MHz

8 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	52	5260
40	5200	56	5280
44	5220	60	5300
48	5240	64	5320

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	54	5270
46	5230	62	5310

2 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	58	5290

1 channel is provided for 802.11ac (VHT160), 802.11ax (HE160):

Channel	Frequency (MHz)
50	5250

### For 5500 ~ 5720 MHz

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
104	5520	128	5640
108	5540	132	5660
112	5560	136	5680
116	5580	140	5700
120	5600	144	5720

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
102	5510	126	5630
110	5550	134	5670
118	5590	142	5710

3 channels are provided for 802.11ac (VHT80) , 802.11ax (HE80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
106	5530	138	5690
122	5610		

1 channel is provided for 802.11ac (VHT160), 802.11ax (HE160):

Channel	Frequency (MHz)
114	5570

### For 5745 ~ 5825 MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785		

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency (MHz)
155	5775

### 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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5320	802.11a	36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.0
-		802.11ax (HE20)	36 to 64	36, 40, 48, 52, 60, 64	OFDMA	BPSK	MCS0
-		802.11ax (HE40)	38 to 62	38, 46, 54, 62	OFDMA	BPSK	MCS0
-		802.11ax (HE80)	42 to 58	42, 58	OFDMA	BPSK	MCS0
-		802.11ax (HE160)	50	50	OFDMA	BPSK	MCS0
-	5500-5720	802.11a	100 to 144	100, 116, 140	OFDM	BPSK	6.0
-		802.11ax (HE20)	100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
-		802.11ax (HE40)	102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
-		802.11ax (HE80)	106 to 138	106, 122, 138	OFDMA	BPSK	MCS0
-		802.11ax (HE160)	114	114	OFDMA	BPSK	MCS0
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		802.11ax (HE20)	149 to 165	149, 157, 165	OFDMA	BPSK	MCS0
-		802.11ax (HE40)	151 to 159	151, 159	OFDMA	BPSK	MCS0
-		802.11ax (HE80)	155	155	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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5500-5720	802.11ax (HE160)	114	114	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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5500-5720	802.11ax (HE160)	114	114	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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5320	802.11a	36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.0
		802.11n (HT20)	36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.5
		802.11n (HT40)	38 to 62	38, 46, 54, 62	OFDM	BPSK	13.5
		802.11ac (VHT80)	42 to 58	42, 58	OFDM	BPSK	29.3
		802.11ac (VHT160)	50	50	OFDM	BPSK	58.5
		802.11ax (HE20)	36 to 64	36, 40, 48, 52, 60, 64	OFDMA	BPSK	MCS0
		802.11ax (HE40)	38 to 62	38, 46, 54, 62	OFDMA	BPSK	MCS0
		802.11ax (HE80)	42 to 58	42, 58	OFDMA	BPSK	MCS0
	802.11ax (HE160)	50	50	OFDMA	BPSK	MCS0	
	5500-5720	802.11a	100 to 144	100, 116, 140	OFDM	BPSK	6.0
		802.11n (HT20)	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
		802.11n (HT40)	102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
		802.11ac (VHT80)	106 to 138	106, 122, 138	OFDM	BPSK	29.3
		802.11ac (VHT160)	114	114	OFDM	BPSK	58.5
		802.11ax (HE20)	100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
		802.11ax (HE40)	102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
		802.11ax (HE80)	106 to 138	106, 122, 138	OFDMA	BPSK	MCS0
	802.11ax (HE160)	114	114	OFDMA	BPSK	MCS0	
	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
		802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
		802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5
		802.11ac (VHT80)	155	155	OFDM	BPSK	29.3
		802.11ax (HE20)	149 to 165	149, 157, 165	OFDMA	BPSK	MCS0
		802.11ax (HE40)	151 to 159	151, 159	OFDMA	BPSK	MCS0
802.11ax (HE80)		155	155	OFDMA	BPSK	MCS0	

**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	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.

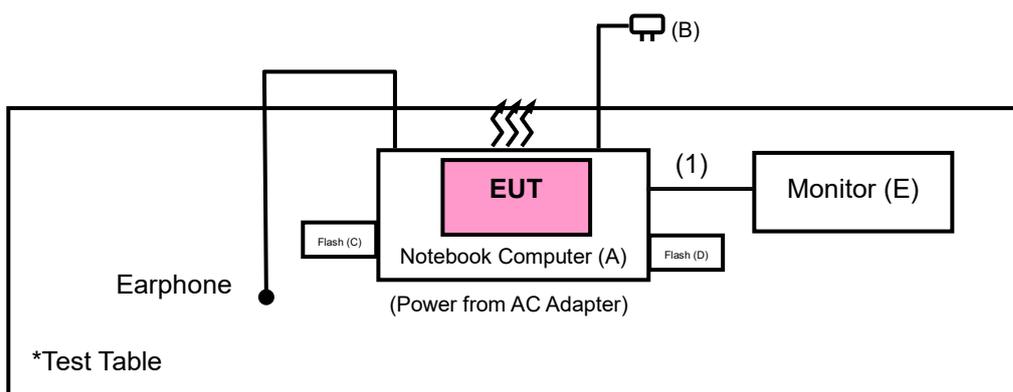
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Notebook Computer	Lenovo	Lenovo 14e Chromebook Gen2*****, IdeaPad 3 Chrome 14APO6 *****	NA	NA	-
B	Adapter	Lenovo	ADLX45YLC2D	NA	NA	-
C	Flash	HP	v250W	05	NA	-
D	Flash	HP	v250W	03	NA	-
E	Monitor	ViewSonic	VX2457-MHD	UG0182942333	NA	-

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 and References

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

#### Test Standard:

#### FCC Part 15, Subpart E (15.407)

ANSI C63.10-2013

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

#### References Test Guidance:

#### KDB 789033 D02 General UNII Test Procedures New Rules v02r01

#### 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.

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 Limits of Unwanted Emission Out of the Restricted Bands

Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v02r01		Field Strength at 3 m	
		PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBµV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	<input checked="" type="checkbox"/> 15.407(b)(4)(i)	PK:-27 (dBm/MHz) <sup>*1</sup> PK:10 (dBm/MHz) <sup>*2</sup> PK:15.6 (dBm/MHz) <sup>*3</sup> PK:27 (dBm/MHz) <sup>*4</sup>	PK: 68.2 (dBµV/m) <sup>*1</sup> PK:105.2 (dBµV/m) <sup>*2</sup> PK: 110.8 (dBµV/m) <sup>*3</sup> PK:122.2 (dBµV/m) <sup>*4</sup>
	<input type="checkbox"/> 15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
<p><sup>*1</sup> beyond 75 MHz or more above of the band edge.</p> <p><sup>*2</sup> below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.</p> <p><sup>*3</sup> below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.</p> <p><sup>*4</sup> from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</p>			

**Note:**

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).$$

#### 4.1.3 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
Broadband Horn Antenna SCHWARZBECK	BBHA 9170	148	Nov. 22, 2020	Nov. 21, 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 184045	980116	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.

#### 4.1.4 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:**

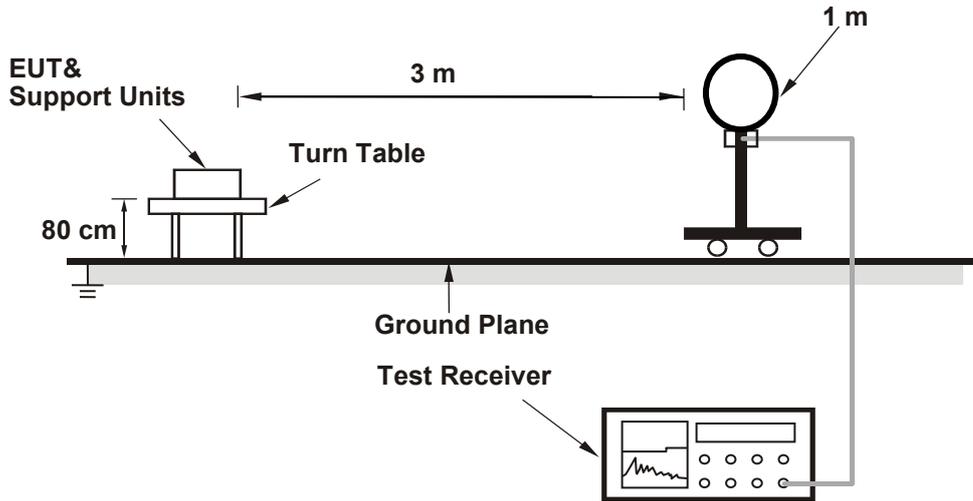
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98 %) or 10 Hz (Duty cycle  $\geq 98$  %) for Average detection (AV) at frequency above 1 GHz.  
(11a: RBW = 1 MHz, VBW = 10 Hz ; 11ax (HE20): RBW = 1 MHz, VBW = 10 Hz ;  
11ax (HE40): RBW = 1 MHz, VBW = 10 Hz ; 11ax (HE80): RBW = 1 MHz, VBW = 10 Hz ; 11ax (HE160): RBW = 1 MHz, VBW = 10 Hz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 Deviation from Test Standard

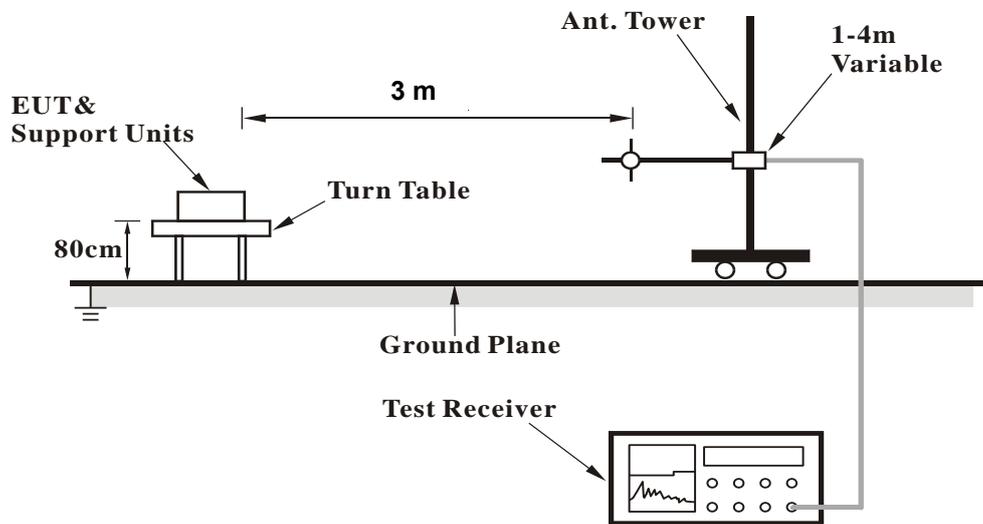
No deviation.

4.1.6 Test Setup

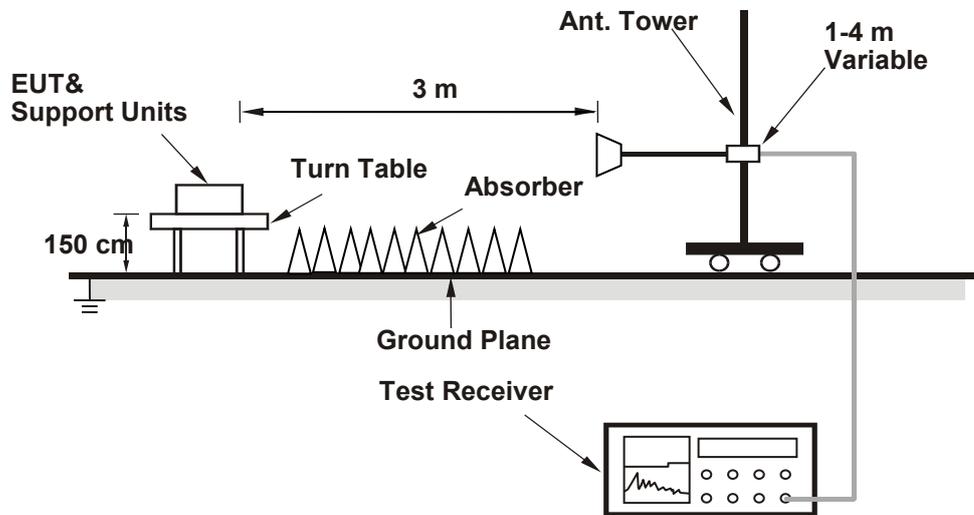
<Radiated Emission below 30 MHz>



<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).

**4.1.7 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.

4.1.8 Test Results  
 Above 1 GHz Data :  
 802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 36	Frequency Range	1 GHz ~ 40 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
5150	40.81	41.68	-0.87	54	-13.19	100	71	Average
5150	50.36	51.23	-0.87	74	-23.64	100	71	Peak
5180	91.89	92.79	-0.9	-----	-----	100	71	Average
5180	98.86	99.76	-0.9	-----	-----	100	71	Peak
10360	51.16	56.1	-4.94	68.2	-17.04	247	76	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
5150	41.41	42.28	-0.87	54	-12.59	341	236	Average
5150	51.57	52.44	-0.87	74	-22.43	341	236	Peak
5180	96.09	96.99	-0.9	-----	-----	341	240	Average
5180	102.93	103.83	-0.9	-----	-----	341	240	Peak
10360	51.47	56.41	-4.94	68.2	-16.73	188	260	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5180 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 40	Frequency Range	1 GHz ~ 40 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
5150	40.42	41.29	-0.87	54	-13.58	100	83	Average
5150	49.69	50.56	-0.87	74	-24.31	100	83	Peak
5200	93.15	94.08	-0.93	-----	-----	100	83	Average
5200	99.62	100.55	-0.93	-----	-----	100	83	Peak
10400	51.63	56.46	-4.83	68.2	-16.57	250	187	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
5150	40.49	41.36	-0.87	54	-13.51	393	197	Average
5150	51.17	52.04	-0.87	74	-22.83	393	197	Peak
5200	93.24	94.17	-0.93	-----	-----	393	197	Average
5200	99.71	100.64	-0.93	-----	-----	393	197	Peak
10400	52.25	57.08	-4.83	68.2	-15.95	183	216	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5200 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 48	Frequency Range	1 GHz ~ 40 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
5150	40.48	41.35	-0.87	54	-13.52	100	83	Average
5150	50.27	51.14	-0.87	74	-23.73	100	83	Peak
5240	92.56	93.7	-1.14	-----	-----	100	83	Average
5240	98.74	99.88	-1.14	-----	-----	100	83	Peak
5350	39.42	40.55	-1.13	54	-14.58	100	83	Average
5350	48.78	49.91	-1.13	74	-25.22	100	83	Peak
10480	51.21	55.58	-4.37	68.2	-16.99	221	105	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
5150	40.34	41.21	-0.87	54	-13.66	400	181	Average
5150	50.22	51.09	-0.87	74	-23.78	400	181	Peak
5240	92.97	94.11	-1.14	-----	-----	400	181	Average
5240	99.61	100.75	-1.14	-----	-----	400	181	Peak
5350	39.41	40.54	-1.13	54	-14.59	400	181	Average
5350	49.04	50.17	-1.13	74	-24.96	400	181	Peak
10480	52.35	56.72	-4.37	68.2	-15.85	265	199	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5240 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 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
5150	40.29	41.16	-0.87	54	-13.71	126	81	Average
5150	50.27	51.14	-0.87	74	-23.73	126	81	Peak
5260	92.41	93.72	-1.31	-----	-----	126	81	Average
5260	98.84	100.15	-1.31	-----	-----	126	81	Peak
5350	39.35	40.48	-1.13	54	-14.65	126	81	Average
5350	49.03	50.16	-1.13	74	-24.97	126	81	Peak
10520	53.19	57.42	-4.23	68.2	-15.01	255	64	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
5150	40.3	41.17	-0.87	54	-13.7	400	180	Average
5150	51.15	52.02	-0.87	74	-22.85	400	180	Peak
5260	92.96	94.27	-1.31	-----	-----	400	180	Average
5260	99.52	100.83	-1.31	-----	-----	400	180	Peak
5350	39.42	40.55	-1.13	54	-14.58	400	180	Average
5350	49.61	50.74	-1.13	74	-24.39	400	180	Peak
10520	52.66	56.89	-4.23	68.2	-15.54	126	231	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5260 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 60	Frequency Range	1 GHz ~ 40 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
5300	91.72	93.11	-1.39	-----	-----	100	88	Average
5300	98.08	99.47	-1.39	-----	-----	100	88	Peak
5350	39.43	40.56	-1.13	54	-14.57	100	88	Average
5350	48.42	49.55	-1.13	74	-25.58	100	88	Peak
10600	45.02	49.34	-4.32	54	-8.98	200	156	Average
10600	52.26	56.58	-4.32	74	-21.74	200	156	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
5300	93.11	94.5	-1.39	-----	-----	396	202	Average
5300	99.41	100.8	-1.39	-----	-----	396	202	Peak
5350	39.53	40.66	-1.13	54	-14.47	396	202	Average
5350	49.34	50.47	-1.13	74	-24.66	396	202	Peak
10600	45.16	49.48	-4.32	54	-8.84	179	233	Average
10600	52.29	56.61	-4.32	74	-21.71	179	233	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5300 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 64	Frequency Range	1 GHz ~ 40 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
5320	92.13	93.44	-1.31	-----	-----	119	89	Average
5320	98.58	99.89	-1.31	-----	-----	119	89	Peak
5350	39.54	40.67	-1.13	54	-14.46	119	89	Average
5350	48.54	49.67	-1.13	74	-25.46	119	89	Peak
10640	44.72	49.02	-4.3	54	-9.28	218	135	Average
10640	51.84	56.14	-4.3	74	-22.16	218	135	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
5320	92.87	94.18	-1.31	-----	-----	395	203	Average
5320	99.19	100.5	-1.31	-----	-----	395	203	Peak
5350	39.69	40.82	-1.13	54	-14.31	395	203	Average
5350	48.86	49.99	-1.13	74	-25.14	395	203	Peak
10640	46.25	50.55	-4.3	54	-7.75	131	273	Average
10640	53.43	57.73	-4.3	74	-20.57	131	273	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5320 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 100	Frequency Range	1 GHz ~ 40 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
5460	39.7	40.58	-0.88	54	-14.3	346	233	Average
5460	50.93	51.81	-0.88	74	-23.07	346	233	Peak
5470	49.61	50.49	-0.88	68.2	-18.59	346	233	Peak
5500	91.53	92.38	-0.85	-----	-----	346	233	Average
5500	97.83	98.68	-0.85	-----	-----	346	233	Peak
5725	50.73	51.67	-0.94	68.2	-17.47	346	233	Peak
11000	45.1	48.64	-3.54	54	-8.9	115	14	Average
11000	52.37	55.91	-3.54	74	-21.63	115	14	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
5460	40.3	41.18	-0.88	54	-13.7	259	233	Average
5460	50.1	50.98	-0.88	74	-23.9	259	233	Peak
5470	50.1	50.98	-0.88	68.2	-18.1	259	233	Peak
5500	94.71	95.56	-0.85	-----	-----	259	233	Average
5500	101.79	102.64	-0.85	-----	-----	259	233	Peak
5725	50.51	51.45	-0.94	68.2	-17.69	259	233	Peak
11000	45.7	49.24	-3.54	54	-8.3	135	241	Average
11000	52.86	56.4	-3.54	74	-21.14	135	241	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5500 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 116	Frequency Range	1 GHz ~ 40 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
5460	39.75	40.63	-0.88	54	-14.25	336	234	Average
5460	49.89	50.77	-0.88	74	-24.11	336	234	Peak
5470	48.65	49.53	-0.88	68.2	-19.55	336	234	Peak
5580	91.28	92.27	-0.99	-----	-----	336	234	Average
5580	98.12	99.11	-0.99	-----	-----	336	234	Peak
5725	50.2	51.14	-0.94	68.2	-18	336	234	Peak
11160	46.34	50.03	-3.69	54	-7.66	126	182	Average
11160	54.95	58.64	-3.69	74	-19.05	126	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
5460	39.99	40.87	-0.88	54	-14.01	276	232	Average
5460	49.58	50.46	-0.88	74	-24.42	276	232	Peak
5470	48.67	49.55	-0.88	68.2	-19.53	276	232	Peak
5580	95.6	96.59	-0.99	-----	-----	276	232	Average
5580	103.54	104.53	-0.99	-----	-----	276	232	Peak
5725	50.41	51.35	-0.94	68.2	-17.79	276	232	Peak
11160	46.3	49.99	-3.69	54	-7.7	178	244	Average
11160	54.74	58.43	-3.69	74	-19.26	178	244	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5580 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 140	Frequency Range	1 GHz ~ 40 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
5460	39.53	40.41	-0.88	54	-14.47	324	236	Average
5460	49.87	50.75	-0.88	74	-24.13	324	236	Peak
5470	48.5	49.38	-0.88	68.2	-19.7	324	236	Peak
5700	89.9	90.94	-1.04	-----	-----	324	236	Average
5700	96.72	97.76	-1.04	-----	-----	324	236	Peak
5725	50.08	51.02	-0.94	68.2	-18.12	324	236	Peak
11400	46.38	50.03	-3.65	54	-7.62	132	116	Average
11400	55.33	58.98	-3.65	74	-18.67	132	116	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
5460	39.66	40.54	-0.88	54	-14.34	265	233	Average
5460	50.03	50.91	-0.88	74	-23.97	265	233	Peak
5470	49.01	49.89	-0.88	68.2	-19.19	265	233	Peak
5700	97.11	98.15	-1.04	-----	-----	265	233	Average
5700	103.62	104.66	-1.04	-----	-----	265	233	Peak
5725	56.16	57.1	-0.94	68.2	-12.04	265	233	Peak
11400	47.07	50.72	-3.65	54	-6.93	146	251	Average
11400	56.89	60.54	-3.65	74	-17.11	146	251	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5700 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

**<Spurious Emission>**

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
5745	91.55	92.46	-0.91	-----	-----	100	114	Average
5745	98.36	99.27	-0.91	-----	-----	100	114	Peak
11490	44.57	48.23	-3.66	54	-9.43	294	305	Average
11490	51.76	55.42	-3.66	74	-22.24	294	305	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
5745	93	93.91	-0.91	-----	-----	394	210	Average
5745	99.07	99.98	-0.91	-----	-----	394	210	Peak
11490	44.87	48.53	-3.66	54	-9.13	158	261	Average
11490	52	55.66	-3.66	74	-22	158	261	Peak

**<Out of Band Emission (OOBE)>**

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
5646.9	50.2	51.14	-0.94	68.2	-18	100	114	Peak
5654.5	49.66	50.6	-0.94	71.54	-21.88	100	114	Peak
5915.75	49.72	50.07	-0.35	75.02	-25.3	100	114	Peak
6006.475	51.24	51.52	-0.28	68.2	-16.96	100	114	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
5634.55	50.16	51.1	-0.94	68.2	-18.04	394	210	Peak
5655.45	49.69	50.63	-0.94	72.25	-22.56	394	210	Peak
5918.6	49.47	49.82	-0.35	72.92	-23.45	394	210	Peak
6011.225	51.14	51.37	-0.23	68.2	-17.06	394	210	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5745 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 157	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

### <Spurious Emission>

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
5785	92.3	93.13	-0.83	-----	-----	106	115	Average
5785	99.11	99.94	-0.83	-----	-----	106	115	Peak
11570	44.08	47.88	-3.8	54	-9.92	269	148	Average
11570	51.65	55.45	-3.8	74	-22.35	269	148	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
5785	92.63	93.46	-0.83	-----	-----	387	211	Average
5785	99.38	100.21	-0.83	-----	-----	387	211	Peak
11570	43.93	47.73	-3.8	54	-10.07	133	207	Average
11570	52.07	55.87	-3.8	74	-21.93	133	207	Peak

### <Out of Band Emission (OOBE)>

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
5645	50.64	51.58	-0.94	68.2	-17.56	106	115	Peak
5655.45	49.7	50.64	-0.94	72.25	-22.55	106	115	Peak
5916.7	49.25	49.6	-0.35	74.32	-25.07	106	115	Peak
6016.45	51.7	51.93	-0.23	68.2	-16.5	106	115	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
5628.85	49.89	50.9	-1.01	68.2	-18.31	387	211	Peak
5653.075	49.42	50.3	-0.88	70.49	-21.07	387	211	Peak
5917.65	49.47	49.82	-0.35	73.62	-24.15	387	211	Peak
5999.35	51.05	51.33	-0.28	68.2	-17.15	387	211	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5785 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 165	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

### <Spurious Emission>

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
5825	91.46	92.06	-0.6	-----	-----	110	115	Average
5825	98.3	98.9	-0.6	-----	-----	110	115	Peak
11650	43.86	47.97	-4.11	54	-10.14	223	59	Average
11650	51.71	55.82	-4.11	74	-22.29	223	59	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
5825	91.81	92.41	-0.6	-----	-----	400	211	Average
5825	98.94	99.54	-0.6	-----	-----	400	211	Peak
11650	44.66	48.77	-4.11	54	-9.34	305	189	Average
11650	52.19	56.3	-4.11	74	-21.81	305	189	Peak

### <Out of Band Emission (OOBE)>

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
5568.525	49.97	50.92	-0.95	68.2	-18.23	110	115	Peak
5660.2	48.87	49.81	-0.94	75.77	-26.9	110	115	Peak
5916.7	49.24	49.59	-0.35	74.32	-25.08	110	115	Peak
6009.8	50.74	50.98	-0.24	68.2	-17.46	110	115	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
5616.025	51.05	52	-0.95	68.2	-17.15	400	211	Peak
5651.175	48.88	49.76	-0.88	69.07	-20.19	400	211	Peak
5920.5	49.06	49.41	-0.35	71.52	-22.46	400	211	Peak
6018.35	51.2	51.43	-0.23	68.2	-17	400	211	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5825 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

802.11ax (HE20)

EUT Test Condition		Measurement Detail	
Channel	Channel 36	Frequency Range	1 GHz ~ 40 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
5150	40.51	41.38	-0.87	54	-13.49	134	139	Average
5150	51.17	52.04	-0.87	74	-22.83	134	139	Peak
5180	96.37	97.27	-0.9	-----	-----	134	139	Average
5180	103.66	104.56	-0.9	-----	-----	134	139	Peak
10360	53.77	58.71	-4.94	68.2	-14.43	168	301	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
5150	41.11	41.98	-0.87	54	-12.89	329	113	Average
5150	50.14	51.01	-0.87	74	-23.86	329	113	Peak
5180	97.55	98.45	-0.9	-----	-----	329	113	Average
5180	105.63	106.53	-0.9	-----	-----	329	113	Peak
10360	53.66	58.6	-4.94	68.2	-14.54	274	185	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5180 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 40	Frequency Range	1 GHz ~ 40 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
5150	40.53	41.4	-0.87	54	-13.47	142	139	Average
5150	50.43	51.3	-0.87	74	-23.57	142	139	Peak
5200	96.18	97.11	-0.93	-----	-----	142	139	Average
5200	104.62	105.55	-0.93	-----	-----	142	139	Peak
10400	53.47	58.3	-4.83	68.2	-14.73	258	169	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
5150	40.52	41.39	-0.87	54	-13.48	319	126	Average
5150	50.3	51.17	-0.87	74	-23.7	319	126	Peak
5200	98.16	99.09	-0.93	-----	-----	319	126	Average
5200	105.89	106.82	-0.93	-----	-----	319	126	Peak
10400	54.11	58.94	-4.83	68.2	-14.09	159	267	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5200 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 48	Frequency Range	1 GHz ~ 40 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
5150	40.42	41.29	-0.87	54	-13.58	104	139	Average
5150	49.71	50.58	-0.87	74	-24.29	104	139	Peak
5240	96.37	97.51	-1.14	-----	-----	104	139	Average
5240	103.42	104.56	-1.14	-----	-----	104	139	Peak
5350	39.69	40.82	-1.13	54	-14.31	104	139	Average
5350	48.45	49.58	-1.13	74	-25.55	104	139	Peak
10480	55.37	59.74	-4.37	68.2	-12.83	126	311	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
5150	40.48	41.35	-0.87	54	-13.52	334	126	Average
5150	50	50.87	-0.87	74	-24	334	126	Peak
5240	97.6	98.74	-1.14	-----	-----	334	126	Average
5240	105.77	106.91	-1.14	-----	-----	334	126	Peak
5350	39.83	40.96	-1.13	54	-14.17	334	126	Average
5350	49.15	50.28	-1.13	74	-24.85	334	126	Peak
10480	53.9	58.27	-4.37	68.2	-14.3	195	287	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5240 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 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
5150	40.44	41.31	-0.87	54	-13.56	130	138	Average
5150	50.86	51.73	-0.87	74	-23.14	130	138	Peak
5260	96.19	97.5	-1.31	-----	-----	130	138	Average
5260	104.21	105.52	-1.31	-----	-----	130	138	Peak
5350	39.53	40.66	-1.13	54	-14.47	130	138	Average
5350	49.9	51.03	-1.13	74	-24.1	130	138	Peak
10520	53.77	58	-4.23	68.2	-14.43	133	179	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
5150	40.48	41.35	-0.87	54	-13.52	315	126	Average
5150	50.22	51.09	-0.87	74	-23.78	315	126	Peak
5260	97.45	98.76	-1.31	-----	-----	315	126	Average
5260	105.09	106.4	-1.31	-----	-----	315	126	Peak
5350	39.92	41.05	-1.13	54	-14.08	315	126	Average
5350	50	51.13	-1.13	74	-24	315	126	Peak
10520	54.24	58.47	-4.23	68.2	-13.96	288	104	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5260 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 60	Frequency Range	1 GHz ~ 40 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
5300	95.88	97.27	-1.39	-----	-----	100	138	Average
5300	103.66	105.05	-1.39	-----	-----	100	138	Peak
5350	39.51	40.64	-1.13	54	-14.49	100	138	Average
5350	48.36	49.49	-1.13	74	-25.64	100	138	Peak
10600	47.13	51.45	-4.32	54	-6.87	239	72	Average
10600	54.87	59.19	-4.32	74	-19.13	239	72	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
5300	97.46	98.85	-1.39	-----	-----	309	126	Average
5300	104.83	106.22	-1.39	-----	-----	309	126	Peak
5350	40.21	41.34	-1.13	54	-13.79	309	126	Average
5350	49.47	50.6	-1.13	74	-24.53	309	126	Peak
10600	47.62	51.94	-4.32	54	-6.38	191	332	Average
10600	55.7	60.02	-4.32	74	-18.3	191	332	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5300 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 64	Frequency Range	1 GHz ~ 40 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
5320	94.74	96.05	-1.31	-----	-----	100	137	Average
5320	102.67	103.98	-1.31	-----	-----	100	137	Peak
5350	40.11	41.24	-1.13	54	-13.89	100	137	Average
5350	49.04	50.17	-1.13	74	-24.96	100	137	Peak
10640	47.89	52.19	-4.3	54	-6.11	111	249	Average
10640	56.39	60.69	-4.3	74	-17.61	111	249	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
5320	95.99	97.3	-1.31	-----	-----	312	138	Average
5320	103.3	104.61	-1.31	-----	-----	312	138	Peak
5350	40.78	41.91	-1.13	54	-13.22	312	138	Average
5350	50.01	51.14	-1.13	74	-23.99	312	138	Peak
10640	46.88	51.18	-4.3	54	-7.12	229	108	Average
10640	55.03	59.33	-4.3	74	-18.97	229	108	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5320 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 100	Frequency Range	1 GHz ~ 40 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
5460	39.87	40.75	-0.88	54	-14.13	373	219	Average
5460	50.23	51.11	-0.88	74	-23.77	373	219	Peak
5470	50.96	51.84	-0.88	68.2	-17.24	373	219	Peak
5500	96.62	97.47	-0.85	-----	-----	373	219	Average
5500	103.24	104.09	-0.85	-----	-----	373	219	Peak
5725	50.5	51.44	-0.94	68.2	-17.7	373	219	Peak
11000	48.06	51.6	-3.54	54	-5.94	105	164	Average
11000	55.44	58.98	-3.54	74	-18.56	105	164	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
5460	40.36	41.24	-0.88	54	-13.64	274	231	Average
5460	50.43	51.31	-0.88	74	-23.57	274	231	Peak
5470	50.18	51.06	-0.88	68.2	-18.02	274	231	Peak
5500	96.87	97.72	-0.85	-----	-----	274	231	Average
5500	103.57	104.42	-0.85	-----	-----	274	231	Peak
5725	50.4	51.34	-0.94	68.2	-17.8	274	231	Peak
11000	47.63	51.17	-3.54	54	-6.37	134	166	Average
11000	55.53	59.07	-3.54	74	-18.47	134	166	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5500 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 116	Frequency Range	1 GHz ~ 40 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
5460	39.87	40.75	-0.88	54	-14.13	332	234	Average
5460	49.88	50.76	-0.88	74	-24.12	332	234	Peak
5470	49.8	50.68	-0.88	68.2	-18.4	332	234	Peak
5580	97.7	98.69	-0.99	-----	-----	332	234	Average
5580	104.58	105.57	-0.99	-----	-----	332	234	Peak
5725	50.36	51.3	-0.94	68.2	-17.84	332	234	Peak
11160	47.64	51.33	-3.69	54	-6.36	136	224	Average
11160	56.43	60.12	-3.69	74	-17.57	136	224	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
5460	40.09	40.97	-0.88	54	-13.91	273	232	Average
5460	50	50.88	-0.88	74	-24	273	232	Peak
5470	49.29	50.17	-0.88	68.2	-18.91	273	232	Peak
5580	98.91	99.9	-0.99	-----	-----	273	232	Average
5580	106.94	107.93	-0.99	-----	-----	273	232	Peak
5725	50.99	51.93	-0.94	68.2	-17.21	273	232	Peak
11160	47.09	50.78	-3.69	54	-6.91	162	142	Average
11160	56.04	59.73	-3.69	74	-17.96	162	142	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5580 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 140	Frequency Range	1 GHz ~ 40 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
5460	39.73	40.61	-0.88	54	-14.27	317	237	Average
5460	50.25	51.13	-0.88	74	-23.75	317	237	Peak
5470	49.7	50.58	-0.88	68.2	-18.5	317	237	Peak
5700	97.35	98.39	-1.04	-----	-----	317	237	Average
5700	104.24	105.28	-1.04	-----	-----	317	237	Peak
5725	54	54.94	-0.94	68.2	-14.2	317	237	Peak
11400	47.26	50.91	-3.65	54	-6.74	165	187	Average
11400	56.88	60.53	-3.65	74	-17.12	165	187	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
5460	39.82	40.7	-0.88	54	-14.18	313	232	Average
5460	50.23	51.11	-0.88	74	-23.77	313	232	Peak
5470	49.71	50.59	-0.88	68.2	-18.49	313	232	Peak
5700	101.13	100.28	0.85	-----	-----	313	232	Average
5700	108.7	107.85	0.85	-----	-----	313	232	Peak
5725	58.15	59.09	-0.94	68.2	-10.05	313	232	Peak
11400	47.34	50.99	-3.65	54	-6.66	158	224	Average
11400	57.27	60.92	-3.65	74	-16.73	158	224	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5700 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 144	Frequency Range	1 GHz ~ 40 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
5460	39.8	40.68	-0.88	54	-14.2	319	238	Average
5460	49.78	50.66	-0.88	74	-24.22	319	238	Peak
5470	49.62	50.5	-0.88	68.2	-18.58	319	238	Peak
5720	97.94	98.88	-0.94	-----	-----	319	238	Average
5720	105.02	105.96	-0.94	-----	-----	319	238	Peak
5850	51.06	51.57	-0.51	68.2	-17.14	319	238	Peak
11440	48.11	51.74	-3.63	54	-5.89	183	277	Average
11440	56.26	59.89	-3.63	74	-17.74	183	277	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
5460	39.86	40.74	-0.88	54	-14.14	325	230	Average
5460	50.09	50.97	-0.88	74	-23.91	325	230	Peak
5470	49.44	50.32	-0.88	68.2	-18.76	325	230	Peak
5720	98.98	99.92	-0.94	-----	-----	325	230	Average
5720	106.61	107.55	-0.94	-----	-----	325	230	Peak
5850	51.54	52.05	-0.51	68.2	-16.66	325	230	Peak
11440	47.5	51.13	-3.63	54	-6.5	238	146	Average
11440	55.63	59.26	-3.63	74	-18.37	238	146	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5720 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

<Spurious Emission>

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
5745	95.8	96.71	-0.91	-----	-----	120	210	Average
5745	103.54	104.45	-0.91	-----	-----	120	210	Peak
11490	47.68	51.34	-3.66	54	-6.32	138	261	Average
11490	55.99	59.65	-3.66	74	-18.01	138	261	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
5745	98.15	99.06	-0.91	-----	-----	235	73	Average
5745	105.95	106.86	-0.91	-----	-----	235	73	Peak
11490	47.96	51.62	-3.66	54	-6.04	252	108	Average
11490	56.19	59.85	-3.66	74	-17.81	252	108	Peak

<Out of Band Emission (OOBE)>

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
5638.35	50.23	51.17	-0.94	68.2	-17.97	120	210	Peak
5654.5	49.36	50.3	-0.94	71.54	-22.18	120	210	Peak
5916.7	49.02	49.37	-0.35	74.32	-25.3	120	210	Peak
6014.075	51.1	51.33	-0.23	68.2	-17.1	120	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
5589.9	51.7	52.67	-0.97	68.2	-16.5	235	73	Peak
5658.3	49.41	50.35	-0.94	74.36	-24.95	235	73	Peak
5921.45	49.16	49.51	-0.35	70.82	-21.66	235	73	Peak
6012.65	50.19	50.42	-0.23	68.2	-18.01	235	73	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5745 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 157	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

<Spurious Emission>

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
5785	96.5	97.33	-0.83	-----	-----	100	210	Average
5785	104.19	105.02	-0.83	-----	-----	100	210	Peak
11570	46.18	49.98	-3.8	54	-7.82	299	245	Average
11570	54.33	58.13	-3.8	74	-19.67	299	245	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
5785	97.59	98.42	-0.83	-----	-----	221	73	Average
5785	105.14	105.97	-0.83	-----	-----	221	73	Peak
11570	47.03	50.83	-3.8	54	-6.97	204	144	Average
11570	55.31	59.11	-3.8	74	-18.69	204	144	Peak

<Out of Band Emission (OOBE)>

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
5616.025	49.92	50.87	-0.95	68.2	-18.28	100	210	Peak
5653.075	50.19	51.07	-0.88	70.49	-20.3	100	210	Peak
5915.275	49.92	50.27	-0.35	75.37	-25.45	100	210	Peak
6016.45	50.98	51.21	-0.23	68.2	-17.22	100	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
5582.775	51.6	52.57	-0.97	68.2	-16.6	221	73	Peak
5652.125	50.39	51.27	-0.88	69.78	-19.39	221	73	Peak
5916.225	49.2	49.55	-0.35	74.67	-25.47	221	73	Peak
5980.825	50.52	50.83	-0.31	68.2	-17.68	221	73	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5785 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 165	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

### <Spurious Emission>

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
5825	96.15	96.75	-0.6	-----	-----	119	208	Average
5825	103.74	104.34	-0.6	-----	-----	119	208	Peak
11650	46.95	51.06	-4.11	54	-7.05	225	196	Average
11650	54.47	58.58	-4.11	74	-19.53	225	196	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
5825	97.32	97.92	-0.6	-----	-----	218	74	Average
5825	104.73	105.33	-0.6	-----	-----	218	74	Peak
11650	47.01	51.12	-4.11	54	-6.99	183	211	Average
11650	54.58	58.69	-4.11	74	-19.42	183	211	Peak

### <Out of Band Emission (OOBE)>

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
5613.175	49.96	50.97	-1.01	68.2	-18.24	119	208	Peak
5651.65	49.97	50.85	-0.88	69.43	-19.46	119	208	Peak
5916.7	50.19	50.54	-0.35	74.32	-24.13	119	208	Peak
5996.975	50.87	51.15	-0.28	68.2	-17.33	119	208	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
5645.475	50.1	51.04	-0.94	68.2	-18.1	218	74	Peak
5653.075	50.5	51.38	-0.88	70.49	-19.99	218	74	Peak
5920.975	49.65	50	-0.35	71.17	-21.52	218	74	Peak
5958.975	50.75	51.07	-0.32	68.2	-17.45	218	74	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5825 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

### 802.11ax (HE40)

EUT Test Condition		Measurement Detail	
Channel	Channel 38	Frequency Range	1 GHz ~ 40 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
5150	42.51	43.38	-0.87	54	-11.49	100	220	Average
5150	51.28	52.15	-0.87	74	-22.72	100	220	Peak
5190	93.13	94.03	-0.9	-----	-----	100	220	Average
5190	101.17	102.07	-0.9	-----	-----	100	220	Peak
5350	39.7	40.83	-1.13	54	-14.3	100	220	Average
5350	49.32	50.45	-1.13	74	-24.68	100	220	Peak
10380	54.09	58.97	-4.88	68.2	-14.11	128	229	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
5150	43.92	44.79	-0.87	54	-10.08	397	149	Average
5150	52.07	52.94	-0.87	74	-21.93	397	149	Peak
5190	94.67	95.57	-0.9	-----	-----	397	149	Average
5190	102.73	103.63	-0.9	-----	-----	397	149	Peak
5350	39.51	40.64	-1.13	54	-14.49	397	149	Average
5350	48.8	49.93	-1.13	74	-25.2	397	149	Peak
10380	53.45	58.33	-4.88	68.2	-14.75	251	166	Peak

#### Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5190 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 46	Frequency Range	1 GHz ~ 40 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
5150	40.43	41.3	-0.87	54	-13.57	106	219	Average
5150	50.25	51.12	-0.87	74	-23.75	106	219	Peak
5230	92.8	93.94	-1.14	-----	-----	106	219	Average
5230	100.28	101.42	-1.14	-----	-----	106	219	Peak
5350	39.66	40.79	-1.13	54	-14.34	106	219	Average
5350	49.33	50.46	-1.13	74	-24.67	106	219	Peak
10460	54.39	58.93	-4.54	68.2	-13.81	273	48	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
5150	40.43	41.3	-0.87	54	-13.57	400	180	Average
5150	50.86	51.73	-0.87	74	-23.14	400	180	Peak
5230	94.3	95.44	-1.14	-----	-----	400	180	Average
5230	101.64	102.78	-1.14	-----	-----	400	180	Peak
5350	39.65	40.78	-1.13	54	-14.35	400	180	Average
5350	49.32	50.45	-1.13	74	-24.68	400	180	Peak
10460	53.57	58.11	-4.54	68.2	-14.63	231	342	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5230 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 54	Frequency Range	1 GHz ~ 40 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
5150	40.48	41.35	-0.87	54	-13.52	118	138	Average
5150	50.43	51.3	-0.87	74	-23.57	118	138	Peak
5270	92.5	93.81	-1.31	-----	-----	118	138	Average
5270	100.07	101.38	-1.31	-----	-----	118	138	Peak
5350	39.49	40.62	-1.13	54	-14.51	118	138	Average
5350	48.72	49.85	-1.13	74	-25.28	118	138	Peak
10540	54.84	59.12	-4.28	68.2	-13.36	154	23	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
5150	40.33	41.2	-0.87	54	-13.67	400	179	Average
5150	50.03	50.9	-0.87	74	-23.97	400	179	Peak
5270	94.25	95.56	-1.31	-----	-----	400	179	Average
5270	102.03	103.34	-1.31	-----	-----	400	179	Peak
5350	39.48	40.61	-1.13	54	-14.52	400	179	Average
5350	48.27	49.4	-1.13	74	-25.73	400	179	Peak
10540	54.79	59.07	-4.28	68.2	-13.41	263	177	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5270 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 62	Frequency Range	1 GHz ~ 40 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
5150	40.38	41.25	-0.87	54	-13.62	100	138	Average
5150	49.97	50.84	-0.87	74	-24.03	100	138	Peak
5310	92.15	93.46	-1.31	-----	-----	100	138	Average
5310	99.86	101.17	-1.31	-----	-----	100	138	Peak
5350	39.9	41.03	-1.13	54	-14.1	100	138	Average
5350	49.9	51.03	-1.13	74	-24.1	100	138	Peak
10620	47.99	52.3	-4.31	54	-6.01	152	203	Average
10620	56.76	61.07	-4.31	74	-17.24	152	203	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
5150	40.49	41.36	-0.87	54	-13.51	309	126	Average
5150	50.83	51.7	-0.87	74	-23.17	309	126	Peak
5310	94.56	95.87	-1.31	-----	-----	309	126	Average
5310	102.24	103.55	-1.31	-----	-----	309	126	Peak
5350	40.7	41.83	-1.13	54	-13.3	309	126	Average
5350	51.57	52.7	-1.13	74	-22.43	309	126	Peak
10620	47.01	51.32	-4.31	54	-6.99	238	301	Average
10620	55.18	59.49	-4.31	74	-18.82	238	301	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5310 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 102	Frequency Range	1 GHz ~ 40 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
5460	40.48	41.36	-0.88	54	-13.52	316	235	Average
5460	50.4	51.28	-0.88	74	-23.6	316	235	Peak
5470	50.6	51.48	-0.88	68.2	-17.6	316	235	Peak
5510	97.18	96.31	0.87	-----	-----	316	235	Average
5510	102.54	101.67	0.87	-----	-----	316	235	Peak
5725	50.91	51.85	-0.94	68.2	-17.29	316	235	Peak
11020	46.57	50.11	-3.54	54	-7.43	269	137	Average
11020	55.03	58.57	-3.54	74	-18.97	269	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
5460	41.5	42.38	-0.88	54	-12.5	300	230	Average
5460	51.34	52.22	-0.88	74	-22.66	300	230	Peak
5470	52.89	53.77	-0.88	68.2	-15.31	300	230	Peak
5510	96.11	96.99	-0.88	-----	-----	300	230	Average
5510	102.75	103.63	-0.88	-----	-----	300	230	Peak
5725	51.19	52.13	-0.94	68.2	-17.01	300	230	Peak
11020	46.51	50.05	-3.54	54	-7.49	256	104	Average
11020	54.82	58.36	-3.54	74	-19.18	256	104	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5510 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 110	Frequency Range	1 GHz ~ 40 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
5460	40.09	40.97	-0.88	54	-13.91	323	236	Average
5460	50.23	51.11	-0.88	74	-23.77	323	236	Peak
5470	49.4	50.28	-0.88	68.2	-18.8	323	236	Peak
5550	95.1	96.04	-0.94	-----	-----	323	236	Average
5550	102.47	103.41	-0.94	-----	-----	323	236	Peak
5725	51	51.94	-0.94	68.2	-17.2	323	236	Peak
11100	46.32	49.98	-3.66	54	-7.68	218	302	Average
11100	54.35	58.01	-3.66	74	-19.65	218	302	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
5460	40.31	41.19	-0.88	54	-13.69	315	230	Average
5460	51.37	52.25	-0.88	74	-22.63	315	230	Peak
5470	50.57	51.45	-0.88	68.2	-17.63	315	230	Peak
5550	98.11	97.24	0.87	-----	-----	315	230	Average
5550	106.13	105.26	0.87	-----	-----	315	230	Peak
5725	51.11	52.05	-0.94	68.2	-17.09	315	230	Peak
11100	47.77	51.43	-3.66	54	-6.23	183	87	Average
11100	56.04	59.7	-3.66	74	-17.96	183	87	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5550 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 134	Frequency Range	1 GHz ~ 40 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
5460	39.77	40.65	-0.88	54	-14.23	340	224	Average
5460	50.08	50.96	-0.88	74	-23.92	340	224	Peak
5470	49.04	49.92	-0.88	68.2	-19.16	340	224	Peak
5670	96.84	96.11	0.73	-----	-----	340	224	Average
5670	103.89	103.16	0.73	-----	-----	340	224	Peak
5725	51.35	52.29	-0.94	68.2	-16.85	340	224	Peak
11340	47.92	51.77	-3.85	54	-6.08	155	284	Average
11340	57.1	60.95	-3.85	74	-16.9	155	284	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
5460	39.82	40.7	-0.88	54	-14.18	299	232	Average
5460	49.57	50.45	-0.88	74	-24.43	299	232	Peak
5470	48.07	48.95	-0.88	68.2	-20.13	299	232	Peak
5670	96.59	97.55	-0.96	-----	-----	299	232	Average
5670	104.42	105.38	-0.96	-----	-----	299	232	Peak
5725	53.18	54.12	-0.94	68.2	-15.02	299	232	Peak
11340	47.12	50.97	-3.85	54	-6.88	213	117	Average
11340	55.29	59.14	-3.85	74	-18.71	213	117	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5670 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 142	Frequency Range	1 GHz ~ 40 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
5460	39.88	40.76	-0.88	54	-14.12	319	237	Average
5460	50.51	51.39	-0.88	74	-23.49	319	237	Peak
5470	48.83	49.71	-0.88	68.2	-19.37	319	237	Peak
5710	95.26	96.26	-1	-----	-----	319	237	Average
5710	103.78	104.78	-1	-----	-----	319	237	Peak
5850	50.9	51.41	-0.51	68.2	-17.3	319	237	Peak
11420	47.95	51.62	-3.67	54	-6.05	169	234	Average
11420	56.75	60.42	-3.67	74	-17.25	169	234	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
5460	39.96	40.84	-0.88	54	-14.04	261	233	Average
5460	50.2	51.08	-0.88	74	-23.8	261	233	Peak
5470	49.58	50.46	-0.88	68.2	-18.62	261	233	Peak
5710	96.92	97.92	-1	-----	-----	261	233	Average
5710	104.97	105.97	-1	-----	-----	261	233	Peak
5850	51.93	52.44	-0.51	68.2	-16.27	261	233	Peak
11420	47.59	51.26	-3.67	54	-6.41	264	329	Average
11420	56.24	59.91	-3.67	74	-17.76	264	329	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5710 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 151	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

**<Spurious Emission>**

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
5755	94.22	95.06	-0.84	-----	-----	105	210	Average
5755	102.11	102.95	-0.84	-----	-----	105	210	Peak
11510	47.97	51.65	-3.68	54	-6.03	135	267	Average
11510	56.23	59.91	-3.68	74	-17.77	135	267	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
5755	96.29	97.13	-0.84	-----	-----	233	72	Average
5755	103.97	104.81	-0.84	-----	-----	233	72	Peak
11510	47.45	51.13	-3.68	54	-6.55	219	277	Average
11510	55.08	58.76	-3.68	74	-18.92	219	277	Peak

**<Out of Band Emission (OOBE)>**

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
5632.65	50.76	51.7	-0.94	68.2	-17.44	105	210	Peak
5653.55	49.16	50.04	-0.88	70.84	-21.68	105	210	Peak
5922.875	50.04	50.39	-0.35	69.77	-19.73	105	210	Peak
5986.525	51.16	51.47	-0.31	68.2	-17.04	105	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
5644.525	50.73	51.67	-0.94	68.2	-17.47	233	72	Peak
5658.3	50.21	51.15	-0.94	74.36	-24.15	233	72	Peak
5923.825	49.55	49.9	-0.35	69.07	-19.52	233	72	Peak
6019.775	51.2	51.43	-0.23	68.2	-17	233	72	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5755 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 159	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

### <Spurious Emission>

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
5795	94.47	95.23	-0.76	-----	-----	104	209	Average
5795	102.46	103.22	-0.76	-----	-----	104	209	Peak
11590	47.03	50.87	-3.84	54	-6.97	228	163	Average
11590	54.2	58.04	-3.84	74	-19.8	228	163	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
5795	95.74	96.5	-0.76	-----	-----	227	74	Average
5795	103.8	104.56	-0.76	-----	-----	227	74	Peak
11590	46.2	50.04	-3.84	54	-7.8	200	67	Average
11590	53.38	57.22	-3.84	74	-20.62	200	67	Peak

### <Out of Band Emission (OOBE)>

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
5597.975	50.03	51	-0.97	68.2	-18.17	104	209	Peak
5656.875	49.22	50.16	-0.94	73.31	-24.09	104	209	Peak
5917.175	49.23	49.58	-0.35	73.97	-24.74	104	209	Peak
6008.375	50.68	50.92	-0.24	68.2	-17.52	104	209	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
5591.8	50.66	51.63	-0.97	68.2	-17.54	227	74	Peak
5654.5	50.74	51.68	-0.94	71.54	-20.8	227	74	Peak
5918.125	49.83	50.18	-0.35	73.27	-23.44	227	74	Peak
5932.85	50.17	50.52	-0.35	68.2	-18.03	227	74	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5795 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

802.11ax (HE80)

EUT Test Condition		Measurement Detail	
Channel	Channel 42	Frequency Range	1 GHz ~ 40 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
5150	48.07	48.94	-0.87	54	-5.93	129	140	Average
5150	54.8	55.67	-0.87	74	-19.2	129	140	Peak
5210	91.82	92.88	-1.06	-----	-----	129	140	Average
5210	99.62	100.68	-1.06	-----	-----	129	140	Peak
5350	39.86	40.99	-1.13	54	-14.14	129	140	Average
5350	47.87	49	-1.13	74	-26.13	129	140	Peak
10420	55.58	60.35	-4.77	68.2	-12.62	183	255	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
5150	46.88	47.75	-0.87	54	-7.12	300	130	Average
5150	55.09	55.96	-0.87	74	-18.91	300	130	Peak
5210	92.89	93.95	-1.06	-----	-----	300	130	Average
5210	100.96	102.02	-1.06	-----	-----	300	130	Peak
5350	39.93	41.06	-1.13	54	-14.07	300	130	Average
5350	49.5	50.63	-1.13	74	-24.5	300	130	Peak
10420	54.57	59.34	-4.77	68.2	-13.63	219	312	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5210 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 58	Frequency Range	1 GHz ~ 40 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
5150	40.67	41.54	-0.87	54	-13.33	127	140	Average
5150	49.34	50.21	-0.87	74	-24.66	127	140	Peak
5290	90.71	92.05	-1.34	-----	-----	127	140	Average
5290	98.57	99.91	-1.34	-----	-----	127	140	Peak
5350	41.84	42.97	-1.13	54	-12.16	127	140	Average
5350	49.41	50.54	-1.13	74	-24.59	127	140	Peak
10580	55.57	59.91	-4.34	68.2	-12.63	188	251	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
5150	40.61	41.48	-0.87	54	-13.39	294	130	Average
5150	49.6	50.47	-0.87	74	-24.4	294	130	Peak
5290	91.85	93.19	-1.34	-----	-----	294	130	Average
5290	99.71	101.05	-1.34	-----	-----	294	130	Peak
5350	43.09	44.22	-1.13	54	-10.91	294	130	Average
5350	51.01	52.14	-1.13	74	-22.99	294	130	Peak
10580	54.71	59.05	-4.34	68.2	-13.49	233	187	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5290 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 106	Frequency Range	1 GHz ~ 40 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
5460	42.38	43.26	-0.88	54	-11.62	320	234	Average
5460	51.77	52.65	-0.88	74	-22.23	320	234	Peak
5470	52.68	53.56	-0.88	68.2	-15.52	320	234	Peak
5530	91.38	92.3	-0.92	-----	-----	320	234	Average
5530	100.18	101.1	-0.92	-----	-----	320	234	Peak
5725	50.79	51.73	-0.94	68.2	-17.41	320	234	Peak
11060	47.6	51.2	-3.6	54	-6.4	192	74	Average
11060	54.76	58.36	-3.6	74	-19.24	192	74	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
5460	43.5	44.38	-0.88	54	-10.5	317	231	Average
5460	54.42	55.3	-0.88	74	-19.58	317	231	Peak
5470	53.82	54.7	-0.88	68.2	-14.38	317	231	Peak
5530	96.27	95.41	0.86	-----	-----	317	231	Average
5530	105.05	104.19	0.86	-----	-----	317	231	Peak
5725	51.16	52.1	-0.94	68.2	-17.04	317	231	Peak
11060	47.12	50.72	-3.6	54	-6.88	242	113	Average
11060	54.37	57.97	-3.6	74	-19.63	242	113	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5530 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 122	Frequency Range	1 GHz ~ 40 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
5460	39.99	40.87	-0.88	54	-14.01	346	236	Average
5460	50.05	50.93	-0.88	74	-23.95	346	236	Peak
5470	49.38	50.26	-0.88	68.2	-18.82	346	236	Peak
5610	94.14	93.41	0.73	-----	-----	346	236	Average
5610	102.74	102.01	0.73	-----	-----	346	236	Peak
5725	50.75	51.69	-0.94	68.2	-17.45	346	236	Peak
11220	47.55	51.33	-3.78	54	-6.45	299	107	Average
11220	55.62	59.4	-3.78	74	-18.38	299	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
5460	40.18	41.06	-0.88	54	-13.82	273	232	Average
5460	50.38	51.26	-0.88	74	-23.62	273	232	Peak
5470	50.88	51.76	-0.88	68.2	-17.32	273	232	Peak
5610	94.16	95.17	-1.01	-----	-----	273	232	Average
5610	102.83	103.84	-1.01	-----	-----	273	232	Peak
5725	50.9	51.84	-0.94	68.2	-17.3	273	232	Peak
11220	47.89	51.67	-3.78	54	-6.11	237	193	Average
11220	56.43	60.21	-3.78	74	-17.57	237	193	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5610 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 138	Frequency Range	1 GHz ~ 40 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
5460	39.91	40.79	-0.88	54	-14.09	337	223	Average
5460	50.5	51.38	-0.88	74	-23.5	337	223	Peak
5470	49.58	50.46	-0.88	68.2	-18.62	337	223	Peak
5690	92.54	93.58	-1.04	-----	-----	337	223	Average
5690	100.87	101.91	-1.04	-----	-----	337	223	Peak
5850	51.5	52.01	-0.51	68.2	-16.7	337	223	Peak
11380	47.74	51.45	-3.71	54	-6.26	195	301	Average
11380	55.99	59.7	-3.71	74	-18.01	195	301	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
5460	40.08	40.96	-0.88	54	-13.92	294	232	Average
5460	49.73	50.61	-0.88	74	-24.27	294	232	Peak
5470	49.79	50.67	-0.88	68.2	-18.41	294	232	Peak
5690	94.52	95.56	-1.04	-----	-----	294	232	Average
5690	102.88	103.92	-1.04	-----	-----	294	232	Peak
5850	52.01	52.52	-0.51	68.2	-16.19	294	232	Peak
11380	47.47	51.18	-3.71	54	-6.53	261	145	Average
11380	55.61	59.32	-3.71	74	-18.39	261	145	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5690 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 155	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

### <Spurious Emission>

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
5775	93.7	94.49	-0.79	-----	-----	107	211	Average
5775	101.1	101.89	-0.79	-----	-----	107	211	Peak
11550	47.56	51.34	-3.78	54	-6.44	239	76	Average
11550	55.25	59.03	-3.78	74	-18.75	239	76	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
5775	94.06	94.85	-0.79	-----	-----	300	189	Average
5775	101.53	102.32	-0.79	-----	-----	300	189	Peak
11550	47	50.78	-3.78	54	-7	162	110	Average
11550	54.77	58.55	-3.78	74	-19.23	162	110	Peak

### <Out of Band Emission (OOBE)>

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
5586.1	50.4	51.37	-0.97	68.2	-17.8	107	211	Peak
5655.45	50.84	51.78	-0.94	72.25	-21.41	107	211	Peak
5918.125	51.42	51.77	-0.35	73.27	-21.85	107	211	Peak
5929.525	52.49	52.84	-0.35	68.2	-15.71	107	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
5636.925	50.67	51.61	-0.94	68.2	-17.53	300	189	Peak
5654.975	50.47	51.41	-0.94	71.9	-21.43	300	189	Peak
5920.025	50.6	50.95	-0.35	71.87	-21.27	300	189	Peak
5950.9	50.66	51.01	-0.35	68.2	-17.54	300	189	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5775 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

802.11ax (HE160)

EUT Test Condition		Measurement Detail	
Channel	Channel 50	Frequency Range	1 GHz ~ 40 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
5150	41.99	42.86	-0.87	54	-12.01	104	140	Average
5150	49.81	50.68	-0.87	74	-24.19	104	140	Peak
5250	84.07	85.29	-1.22	-----	-----	104	140	Average
5250	91.47	92.69	-1.22	-----	-----	104	140	Peak
5350	40.99	42.12	-1.13	54	-13.01	104	140	Average
5350	49.75	50.88	-1.13	74	-24.25	104	140	Peak
10500	54.9	59.15	-4.25	68.2	-13.3	244	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
5150	41.24	42.11	-0.87	54	-12.76	292	129	Average
5150	49.35	50.22	-0.87	74	-24.65	292	129	Peak
5250	84.94	86.16	-1.22	-----	-----	292	129	Average
5250	92.07	93.29	-1.22	-----	-----	292	129	Peak
5350	42.12	43.25	-1.13	54	-11.88	292	129	Average
5350	50.38	51.51	-1.13	74	-23.62	292	129	Peak
10500	54.27	58.52	-4.25	68.2	-13.93	179	251	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5250 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 114	Frequency Range	1 GHz ~ 40 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
5460	45.2	46.08	-0.88	54	-8.8	344	222	Average
5460	54.87	55.75	-0.88	74	-19.13	344	222	Peak
5470	54.26	55.14	-0.88	68.2	-13.94	344	222	Peak
5570	89.06	90.01	-0.95	-----	-----	344	222	Average
5570	97.74	98.69	-0.95	-----	-----	344	222	Peak
5725	61.12	62.06	-0.94	68.2	-7.08	344	222	Peak
11140	47.36	51.05	-3.69	54	-6.64	173	45	Average
11140	54.91	58.6	-3.69	74	-19.09	173	45	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
5460	47.47	48.35	-0.88	54	-6.53	327	230	Average
5460	57.6	58.48	-0.88	74	-16.4	327	230	Peak
5470	57.51	58.39	-0.88	68.2	-10.69	327	230	Peak
5570	91.48	92.43	-0.95	-----	-----	327	230	Average
5570	99.76	100.71	-0.95	-----	-----	327	230	Peak
5725	64.13	65.07	-0.94	68.2	-4.07	327	230	Peak
11140	46.85	50.54	-3.69	54	-7.15	227	261	Average
11140	54.29	57.98	-3.69	74	-19.71	227	261	Peak

Remarks:

- Emission Level = Read Level + Factor  
Margin value = Emission level – Limit value
- 5570 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

**9 kHz ~ 30 MHz Data:**

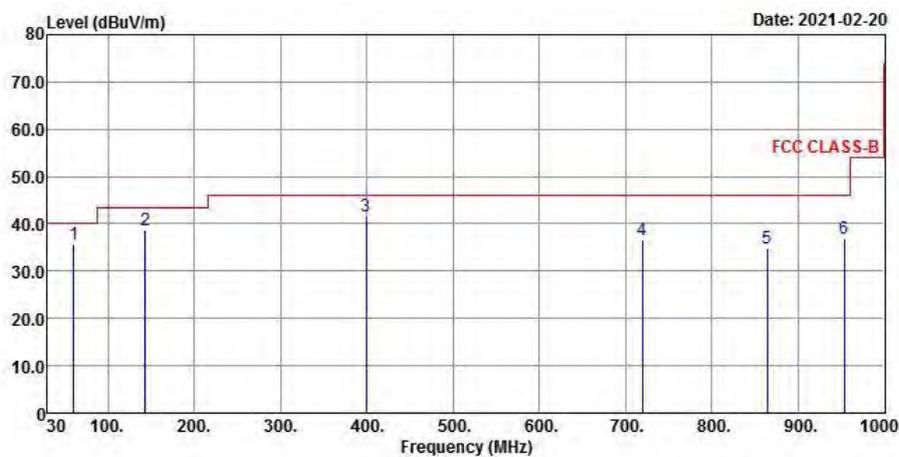
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

**30 MHz ~ 1 GHz Worst-Case Data:**

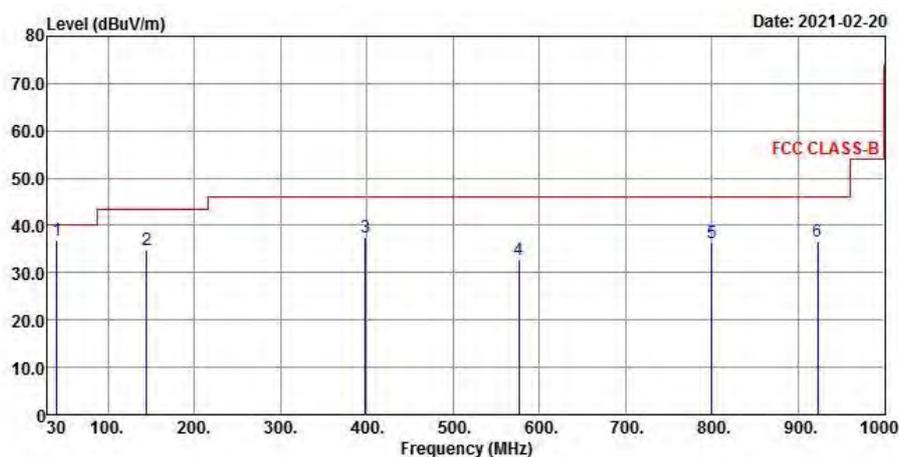
**802.11ax (HE160)**

EUT Test Condition		Measurement Detail	
Channel	Channel 114	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
60.07	35.86	49.02	-13.16	40	-4.14	183	223	QP
143.49	38.72	51.25	-12.53	43.5	-4.78	194	19	QP
399.57	41.58	50.27	-8.69	46	-4.42	171	241	QP
719.67	36.57	37.5	-0.93	46	-9.43	117	293	QP
864.2	34.88	33.27	1.61	46	-11.12	153	233	QP
953.44	37.04	33.71	3.33	46	-8.96	121	261	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	36.77	49.47	-12.7	40	-3.23	182	299	QP
144.46	34.97	47.49	-12.52	43.5	-8.53	108	243	QP
398.6	37.45	46.17	-8.72	46	-8.55	106	37	QP
576.11	32.77	36.29	-3.52	46	-13.23	101	67	QP
800.18	36.3	35.97	0.33	46	-9.7	147	139	QP
922.4	36.68	33.82	2.86	46	-9.32	102	4	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 (Conduction 1).  
 3. The VCCI Site Registration No. is C-12040.

#### 4.2.3 Test Procedures

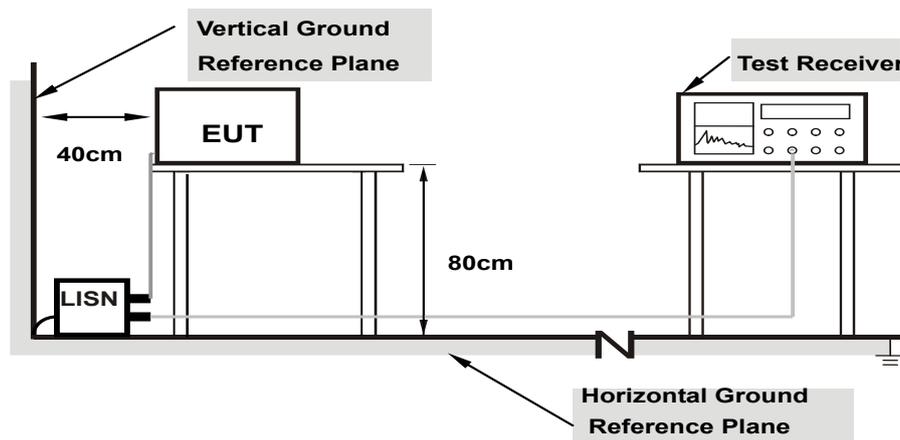
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

**Note:** All modes of operation were investigated and the worst-case emissions are reported.

#### 4.2.4 Deviation from Test Standard

No deviation.

#### 4.2.5 Test Setup



- Note:**
1. Support units were connected to second LISN.
  2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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.

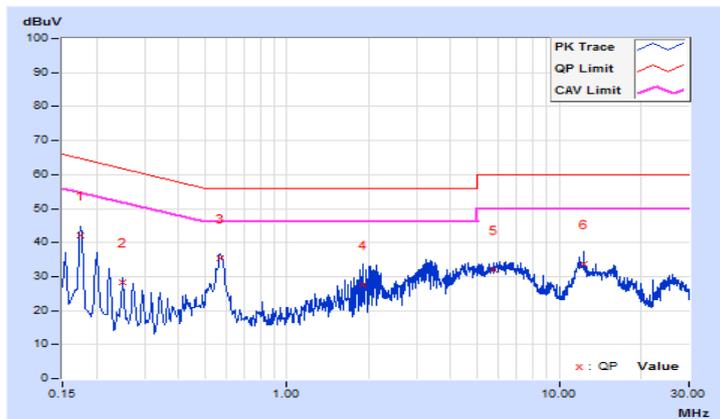
4.2.7 Test Results

<b>Frequency Range</b>	150kHz ~ 30MHz	<b>Detector Function &amp; Resolution Bandwidth</b>	Quasi-Peak (QP) / Average (AV), 9kHz
<b>Input Power</b>	120Vac, 60Hz	<b>Environmental Conditions</b>	23°C, 67%RH
<b>Tested by</b>	Tim Chen	<b>Test Date</b>	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	0.17400	10.05	31.99	12.75	42.04	22.80	64.77	54.77	-22.73	-31.97
2	0.25000	10.06	18.36	3.31	28.42	13.37	61.76	51.76	-33.34	-38.39
3	0.56591	10.11	25.39	17.14	35.50	27.25	56.00	46.00	-20.50	-18.75
4	1.90600	10.20	17.56	6.80	27.76	17.00	56.00	46.00	-28.24	-29.00
5	5.73400	10.39	21.69	13.14	32.08	23.53	60.00	50.00	-27.92	-26.47
6	12.34600	10.73	22.99	13.34	33.72	24.07	60.00	50.00	-26.28	-25.93

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

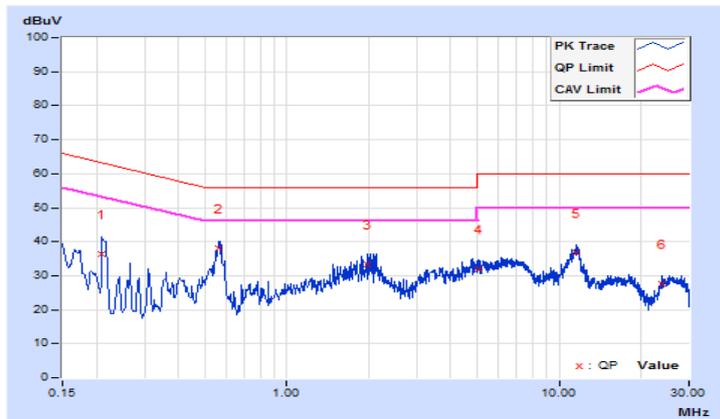


<b>Frequency Range</b>	150kHz ~ 30MHz	<b>Detector Function &amp; Resolution Bandwidth</b>	Quasi-Peak (QP) / Average (AV), 9kHz
<b>Input Power</b>	120Vac, 60Hz	<b>Environmental Conditions</b>	23°C, 67%RH
<b>Tested by</b>	Tim Chen	<b>Test Date</b>	2021/2/20

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	0.21000	10.04	26.44	11.76	36.48	21.80	63.21	53.21	-26.73	-31.41
<b>2</b>	<b>0.56294</b>	<b>10.10</b>	<b>27.95</b>	<b>21.39</b>	<b>38.05</b>	<b>31.49</b>	<b>56.00</b>	<b>46.00</b>	<b>-17.95</b>	<b>-14.51</b>
3	1.99000	10.19	23.10	14.62	33.29	24.81	56.00	46.00	-22.71	-21.19
4	5.05000	10.30	21.62	13.79	31.92	24.09	60.00	50.00	-28.08	-25.91
5	11.63400	10.54	26.15	16.06	36.69	26.60	60.00	50.00	-23.31	-23.40
6	23.96200	10.84	16.62	6.49	27.46	17.33	60.00	50.00	-32.54	-32.67

**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 Transmit Power Measurement

#### 4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125 mW (21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Mobile and Portable client device	250 mW (24 dBm)
U-NII-2A		√	250 mW (24 dBm) or 11 dBm + 10 log B*
U-NII-2C		√	250 mW (24 dBm) or 11 dBm + 10 log B*
U-NII-3		√	1 Watt (30 dBm)

\*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$ ;

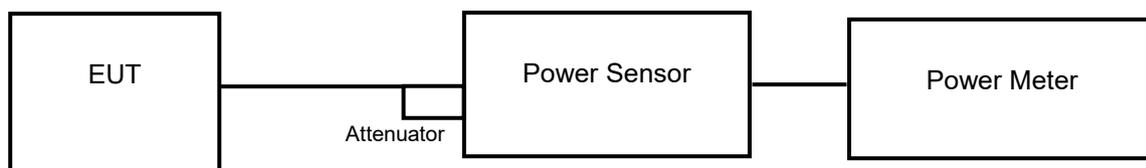
Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any  $N_{ANT}$ ;

Array Gain =  $5 \log(N_{ANT}/N_{SS})$  dB or 3 dB, whichever is less for 20 MHz channel widths with  $N_{ANT} \geq 5$ .

For power measurements on all other devices: Array Gain =  $10 \log(N_{ANT}/N_{SS})$  dB.

#### 4.3.2 Test Setup

##### <Power Output Measurement>



#### 4.3.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

#### 4.3.4 Test Procedure

##### **Average Power Measurement**

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

#### 4.3.5 Deviation from Test Standard

No deviation.

#### 4.3.6 EUT Operating Conditions

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

#### 4.3.7 Test Results

(SISO)

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)		Maximum Conducted Power (dBm)		Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
36	5180	27.42	27.23	14.38	14.35	24	Pass
40	5200	27.04	14.31	14.32	14.31	24	Pass
48	5240	27.93	14.27	14.46	14.27	24	Pass
52	5260	27.73	14.39	14.43	14.39	24	Pass
60	5300	27.10	14.31	14.33	14.31	24	Pass
64	5320	27.23	14.34	14.35	14.34	24	Pass
100	5500	27.67	14.32	14.42	14.32	24	Pass
116	5580	26.98	14.00	14.31	14.00	24	Pass
140	5700	27.67	14.31	14.42	14.31	24	Pass
149	5745	27.35	14.38	14.37	14.38	30	Pass
157	5785	27.67	14.32	14.42	14.32	30	Pass
165	5825	27.61	14.36	14.41	14.36	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)		Maximum Conducted Power (dBm)		Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
36	5180	17.42	17.42	12.41	12.41	24	Pass
40	5200	17.50	17.22	12.43	12.36	24	Pass
48	5240	17.18	17.02	12.35	12.31	24	Pass
52	5260	17.34	17.50	12.39	12.43	24	Pass
60	5300	17.14	17.46	12.34	12.42	24	Pass
64	5320	17.58	17.06	12.45	12.32	24	Pass
100	5500	17.70	16.94	12.48	12.29	24	Pass
116	5580	17.46	17.10	12.42	12.33	24	Pass
140	5700	17.54	17.30	12.44	12.38	24	Pass
144	5720	17.18	17.06	12.35	12.32	24	Pass
149	5745	16.94	17.46	12.29	12.42	30	Pass
157	5785	17.02	17.22	12.31	12.36	30	Pass
165	5825	17.22	16.90	12.36	12.28	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)		Maximum Conducted Power (dBm)		Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
38	5190	27.42	27.353	14.38	14.37	24	Pass
46	5230	27.16	27.227	14.34	14.35	24	Pass
54	5270	27.04	27.290	14.32	14.36	24	Pass
62	5310	27.80	26.977	14.44	14.31	24	Pass
102	5510	27.42	27.542	14.38	14.40	24	Pass
110	5550	27.23	27.416	14.35	14.38	24	Pass
134	5670	27.23	27.164	14.35	14.34	24	Pass
142	5710	27.10	27.102	14.33	14.33	24	Pass
151	5755	27.29	27.102	14.36	14.33	30	Pass
159	5795	26.98	27.353	14.31	14.37	30	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)		Maximum Conducted Power (dBm)		Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
42	5210	27.48	26.792	14.39	14.28	24	Pass
58	5290	26.73	26.977	14.27	14.31	24	Pass
106	5530	27.73	27.290	14.43	14.36	24	Pass
122	5610	27.61	27.164	14.41	14.34	24	Pass
138	5690	27.29	26.853	14.36	14.29	24	Pass
155	5775	27.48	26.977	14.39	14.31	30	Pass

802.11ac (VHT160)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)		Maximum Conducted Power (dBm)		Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
50	5250	23.55	23.768	13.72	13.76	24	Pass
114	5570	26.98	27.733	14.31	14.43	24	Pass

**802.11ax (HE20)**

Channel	Frequency (MHz)	Maximum Conducted Power (mW)		Maximum Conducted Power (dBm)		Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
36	5180	26.98	27.925	14.31	14.46	24	Pass
40	5200	27.29	27.733	14.36	14.43	24	Pass
48	5240	27.61	27.227	14.41	14.35	24	Pass
52	5260	27.23	26.977	14.35	14.31	24	Pass
60	5300	27.10	27.669	14.33	14.42	24	Pass
64	5320	28.05	27.102	14.48	14.33	24	Pass
100	5500	27.35	27.040	14.37	14.32	24	Pass
116	5580	27.04	26.792	14.32	14.28	24	Pass
140	5700	27.29	27.040	14.36	14.32	24	Pass
144	5720	27.04	27.164	14.32	14.34	24	Pass
149	5745	27.23	26.792	14.35	14.28	30	Pass
157	5785	27.67	27.797	14.42	14.44	30	Pass
165	5825	27.42	27.164	14.38	14.34	30	Pass

**802.11ax (HE40)**

Channel	Frequency (MHz)	Maximum Conducted Power (mW)		Maximum Conducted Power (dBm)		Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
38	5190	27.67	27.990	14.42	14.47	24	Pass
46	5230	28.05	26.853	14.48	14.29	24	Pass
54	5270	27.29	27.102	14.36	14.33	24	Pass
62	5310	27.10	27.164	14.33	14.34	24	Pass
102	5510	26.98	27.925	14.31	14.46	24	Pass
110	5550	27.23	27.606	14.35	14.41	24	Pass
134	5670	27.48	26.977	14.39	14.31	24	Pass
142	5710	26.98	27.227	14.31	14.35	24	Pass
151	5755	27.29	27.606	14.36	14.41	30	Pass
159	5795	27.04	27.479	14.32	14.39	30	Pass

**802.11ax (HE80)**

Channel	Frequency (MHz)	Maximum Conducted Power (mW)		Maximum Conducted Power (dBm)		Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
42	5210	27.99	27.925	14.47	14.46	24	Pass
58	5290	27.67	27.797	14.42	14.44	24	Pass
106	5530	27.61	27.669	14.41	14.42	24	Pass
138	5690	27.35	26.977	14.37	14.31	24	Pass
138	5690	27.23	26.853	14.35	14.29	24	Pass
155	5775	27.35	27.040	14.37	14.32	30	Pass

**802.11ax (HE160)**

Channel	Frequency (MHz)	Maximum Conducted Power (mW)		Maximum Conducted Power (dBm)		Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1		
50	5250	27.86	28.054	14.45	14.48	24	Pass
114	5570	27.42	27.479	14.38	14.39	24	Pass

(MIMO)  
802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	14.39	14.35	54.70	17.38	24	Pass
40	5200	14.34	14.31	54.20	17.34	24	Pass
48	5240	14.41	14.38	55.08	17.41	24	Pass
52	5260	14.32	14.30	53.95	17.32	24	Pass
60	5300	14.31	14.27	53.70	17.30	24	Pass
64	5320	14.29	14.25	53.46	17.28	24	Pass
100	5500	14.33	14.29	53.95	17.32	24	Pass
116	5580	14.36	14.33	54.45	17.36	24	Pass
140	5700	14.31	14.27	53.70	17.30	24	Pass
144	5720	14.27	14.26	53.46	17.28	24	Pass
149	5745	14.39	14.34	54.70	17.38	30	Pass
157	5785	14.35	14.31	54.20	17.34	30	Pass
165	5825	14.33	14.29	53.95	17.32	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	14.42	14.40	55.21	17.42	24	Pass
46	5230	14.39	14.35	54.70	17.38	24	Pass
54	5270	14.34	14.31	54.20	17.34	24	Pass
62	5310	14.36	14.32	54.33	17.35	24	Pass
102	5510	14.35	14.32	54.33	17.35	24	Pass
110	5550	14.43	14.40	55.34	17.43	24	Pass
134	5670	14.29	14.27	53.58	17.29	24	Pass
142	5710	14.33	14.30	54.08	17.33	24	Pass
151	5755	14.36	14.32	54.33	17.35	30	Pass
159	5795	14.38	14.35	54.70	17.38	30	Pass

**802.11ac (VHT80)**

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	14.36	14.32	54.33	17.35	24	Pass
58	5290	14.41	14.38	55.08	17.41	24	Pass
106	5530	14.35	14.31	54.20	17.34	24	Pass
122	5610	14.32	14.29	53.95	17.32	24	Pass
138	5690	14.34	14.30	54.08	17.33	24	Pass
155	5775	14.40	14.39	55.08	17.41	30	Pass

**802.11ac (VHT160)**

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
50	5250	12.44	12.41	34.99	15.44	24	Pass
114	5570	12.93	12.89	39.08	15.92	24	Pass

**802.11ax (HE20)**

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	14.41	14.37	54.95	17.40	24	Pass
40	5200	14.37	14.33	54.45	17.36	24	Pass
48	5240	14.44	14.42	55.46	17.44	24	Pass
52	5260	14.35	14.33	54.33	17.35	24	Pass
60	5300	14.34	14.31	54.20	17.34	24	Pass
64	5320	14.32	14.28	53.83	17.31	24	Pass
100	5500	14.36	14.31	54.33	17.35	24	Pass
116	5580	14.39	14.35	54.70	17.38	24	Pass
140	5700	14.33	14.31	54.08	17.33	24	Pass
144	5720	14.32	14.30	53.95	17.32	24	Pass
149	5745	14.42	14.36	54.95	17.40	30	Pass
157	5785	14.38	14.34	54.58	17.37	30	Pass
165	5825	14.38	14.32	54.45	17.36	30	Pass

**802.11ax (HE40)**

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	14.45	14.41	55.46	17.44	24	Pass
46	5230	14.42	14.38	55.08	17.41	24	Pass
54	5270	14.37	14.34	54.58	17.37	24	Pass
62	5310	14.39	14.34	54.70	17.38	24	Pass
102	5510	14.38	14.36	54.70	17.38	24	Pass
110	5550	14.46	14.42	55.59	17.45	24	Pass
134	5670	14.32	14.29	53.95	17.32	24	Pass
142	5710	14.36	14.33	54.45	17.36	24	Pass
151	5755	14.41	14.35	54.83	17.39	30	Pass
159	5795	14.39	14.36	54.83	17.39	30	Pass

**802.11ax (HE80)**

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	14.39	14.34	54.70	17.38	24	Pass
58	5290	14.44	14.39	55.34	17.43	24	Pass
106	5530	14.38	14.34	54.58	17.37	24	Pass
122	5610	14.35	14.31	54.20	17.34	24	Pass
138	5690	14.35	14.32	54.33	17.35	24	Pass
155	5775	14.43	14.39	55.21	17.42	30	Pass

**802.11ax (HE160)**

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
50	5250	12.47	12.42	35.16	15.46	24	Pass
114	5570	12.95	12.91	39.26	15.94	24	Pass

## 5 Pictures of Test Arrangements

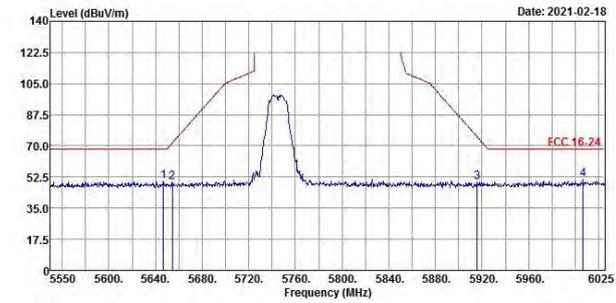
Please refer to the attached file (Test Setup Photo).

# Annex A- Radiated Out of Band Emission (OOBE) Measurement

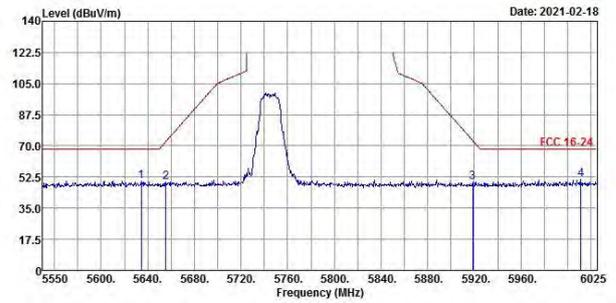
802.11a

**CH 149 5745 MHz**

**Horizontal**

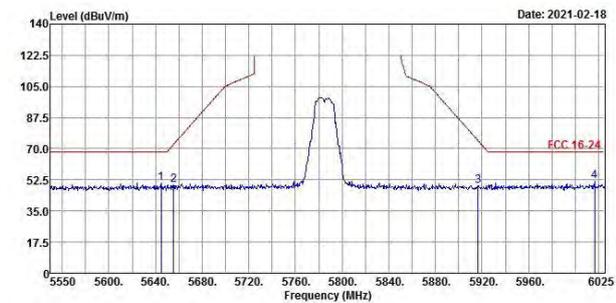


**Vertical**

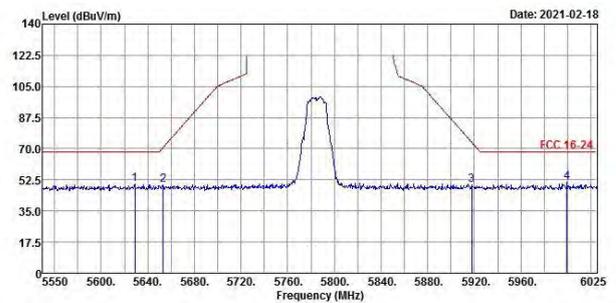


**CH 157 5785 MHz**

**Horizontal**

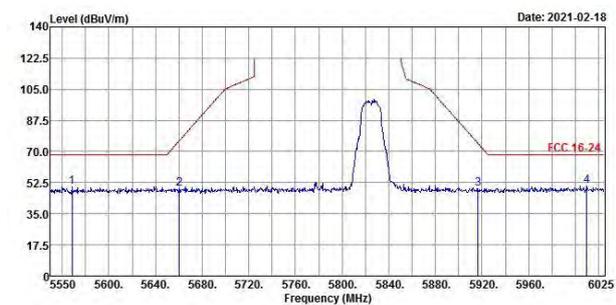


**Vertical**

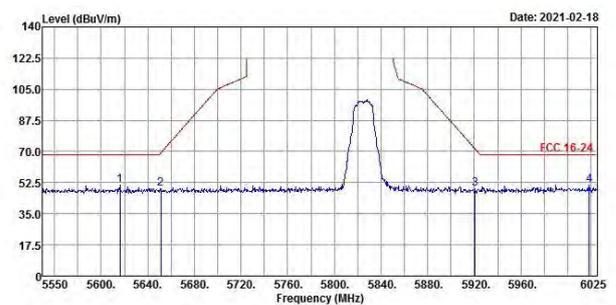


**CH 165 5825 MHz**

**Horizontal**



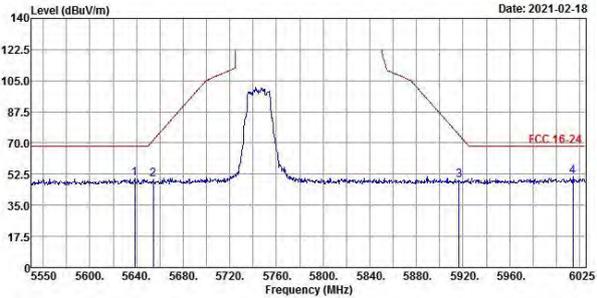
**Vertical**



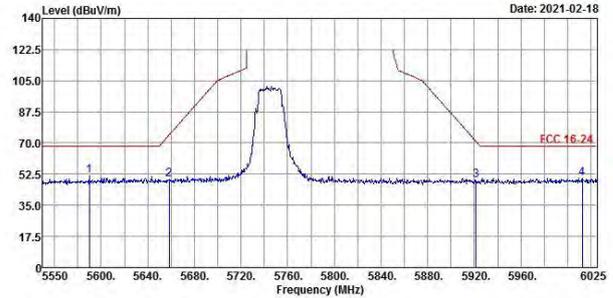
802.11ax (HE20)

CH 149 5745 MHz

Horizontal

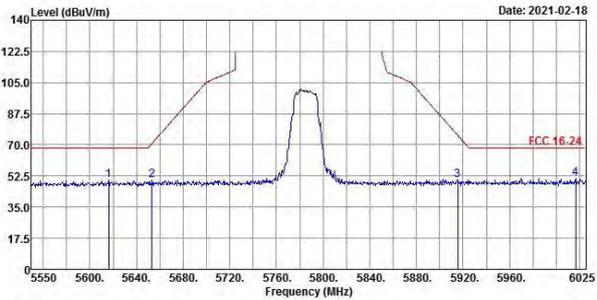


Vertical

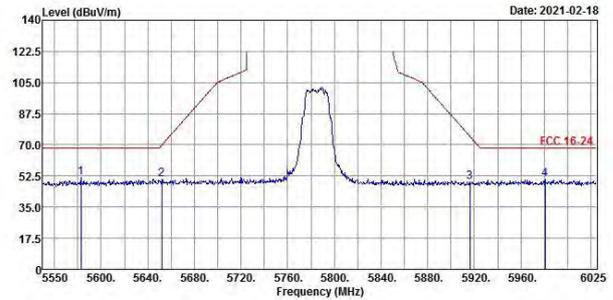


CH 157 5785 MHz

Horizontal

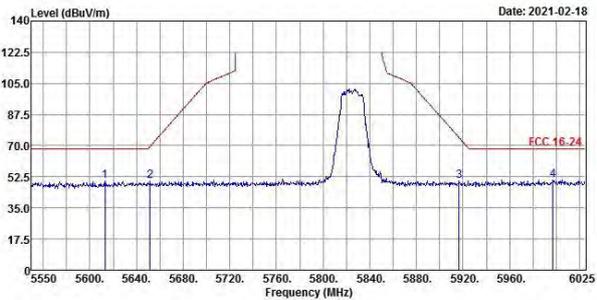


Vertical

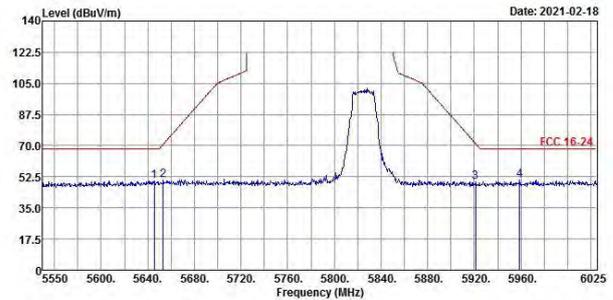


CH 165 5825 MHz

Horizontal



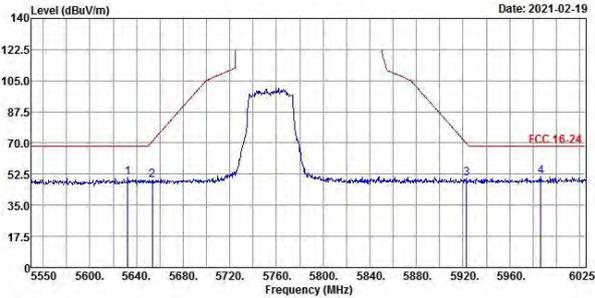
Vertical



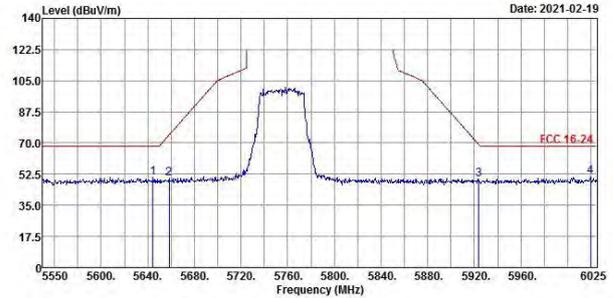
### 802.11ax (HE40)

**CH 151 5755 MHz**

**Horizontal**

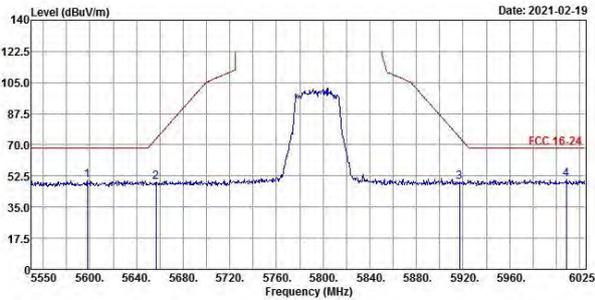


**Vertical**

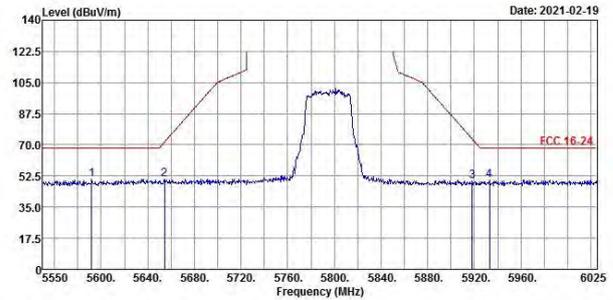


**CH 159 5795 MHz**

**Horizontal**



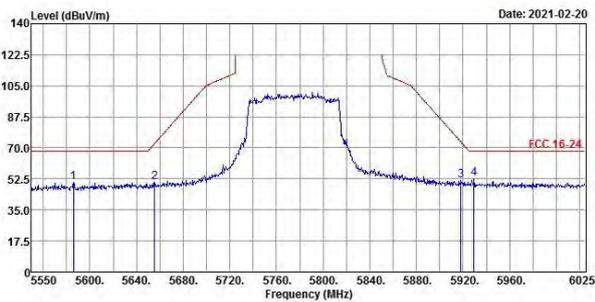
**Vertical**



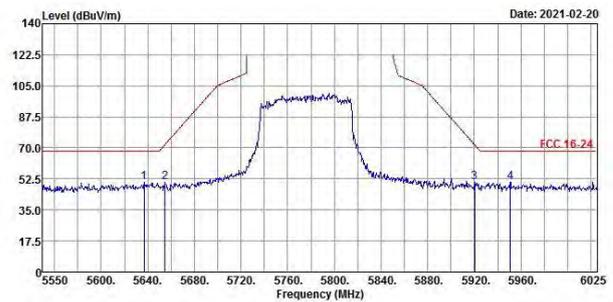
### 802.11ax (HE80)

**CH 155 5775 MHz**

**Horizontal**



**Vertical**

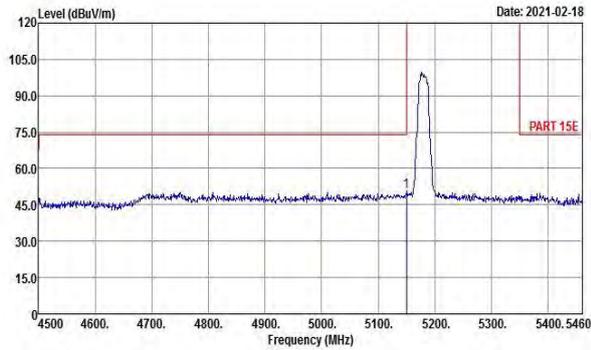


## Annex B- Band-edge measurement

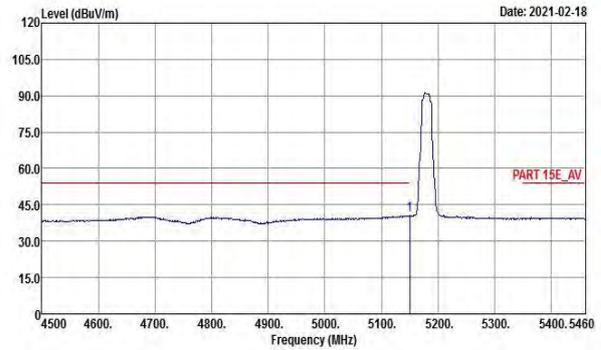
### 802.11a

#### 802.11a Channel 36

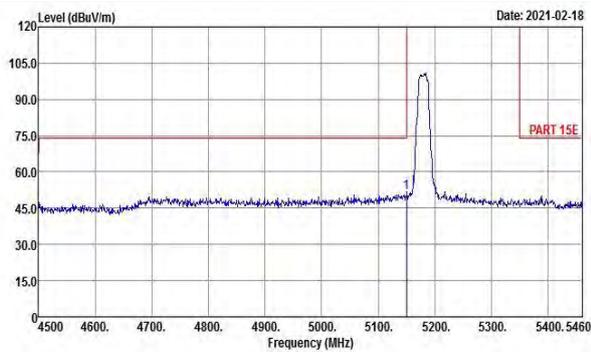
##### Horizontal (Peak)



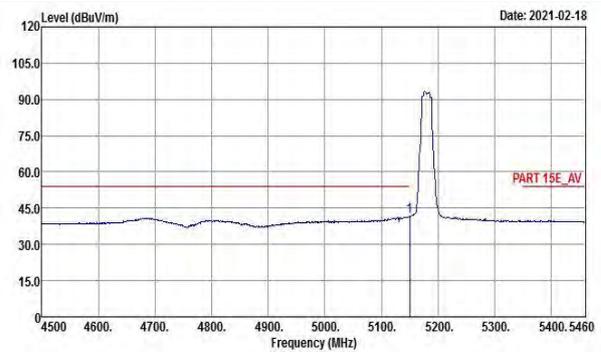
##### Horizontal (Average)



##### Vertical (Peak)

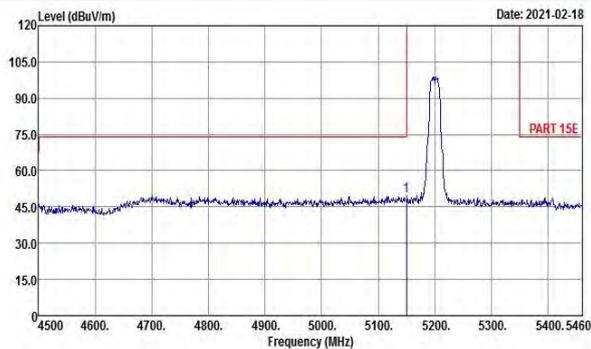


##### Vertical (Average)

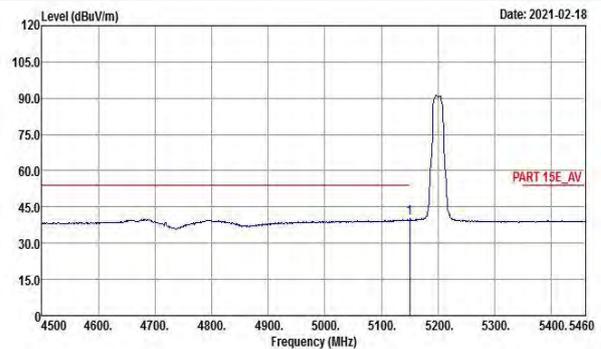


#### 802.11a Channel 40

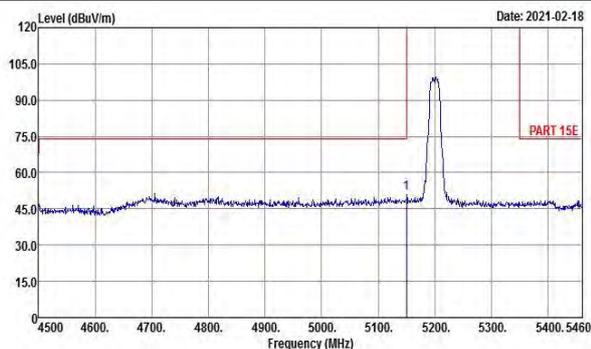
##### Horizontal (Peak)



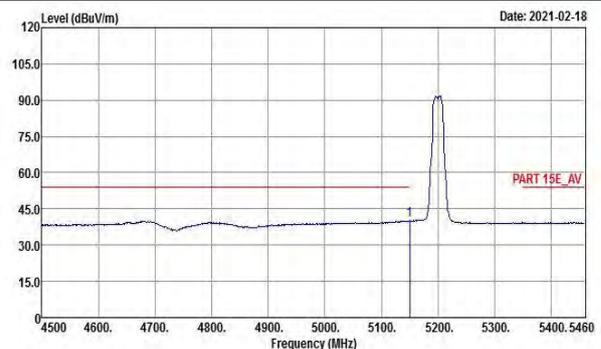
##### Horizontal (Average)



##### Vertical (Peak)

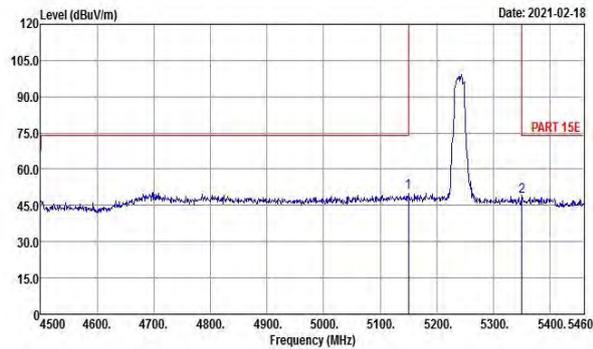


##### Vertical (Average)

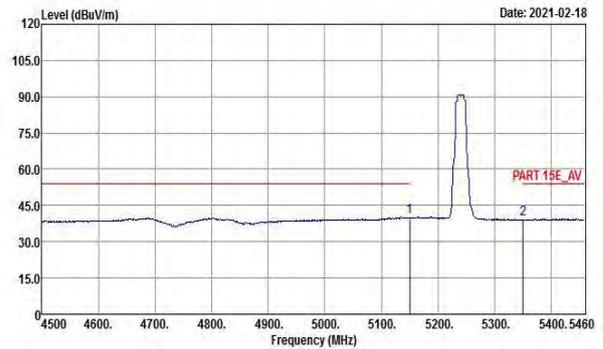


### 802.11a Channel 48

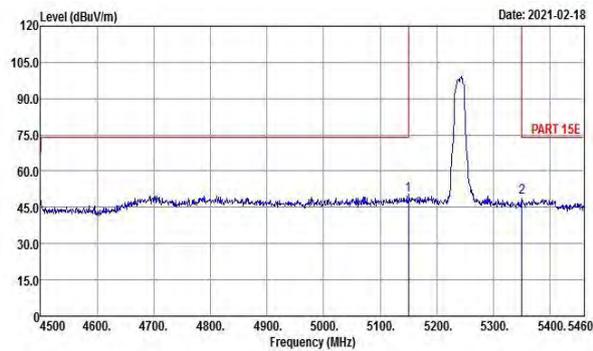
**Horizontal (Peak)**



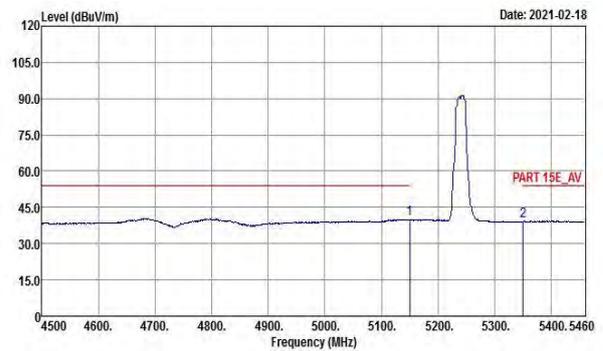
**Horizontal (Average)**



**Vertical (Peak)**

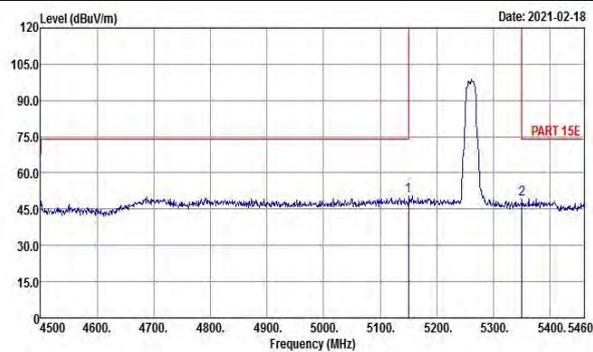


**Vertical (Average)**

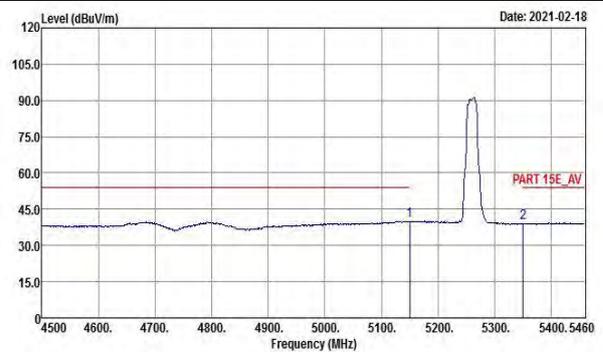


### 802.11a Channel 52

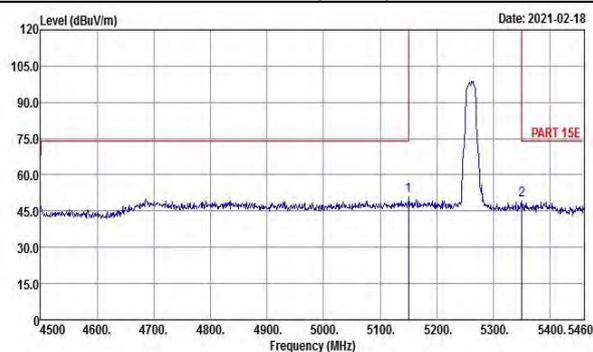
**Horizontal (Peak)**



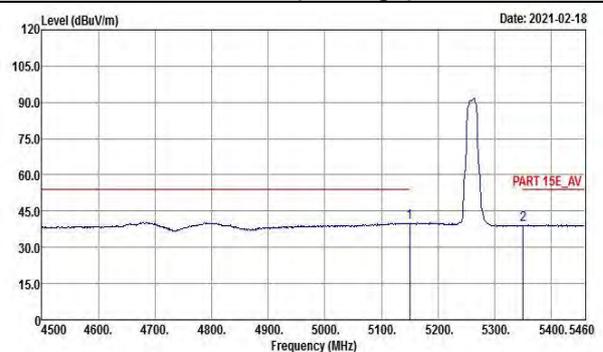
**Horizontal (Average)**



**Vertical (Peak)**

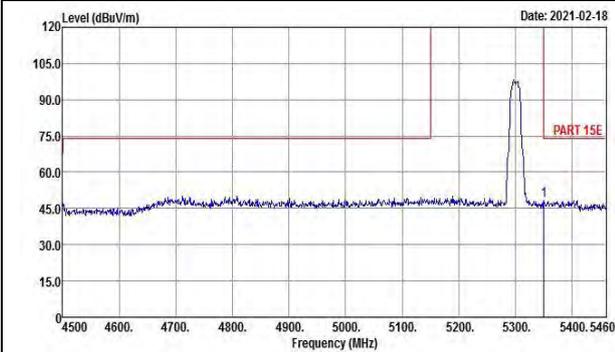


**Vertical (Average)**

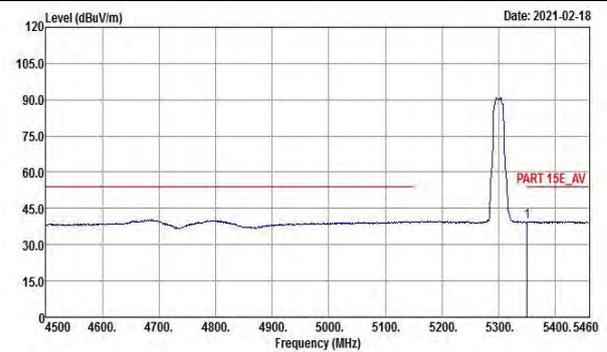


### 802.11a Channel 60

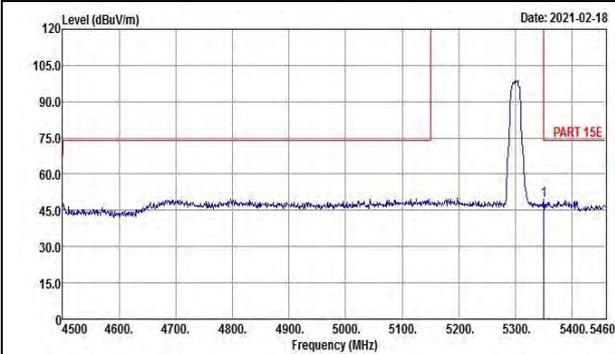
**Horizontal (Peak)**



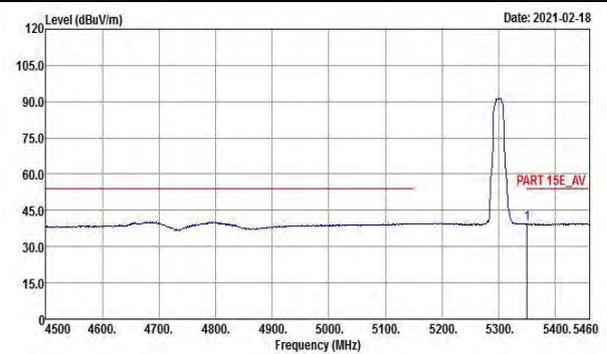
**Horizontal (Average)**



**Vertical (Peak)**

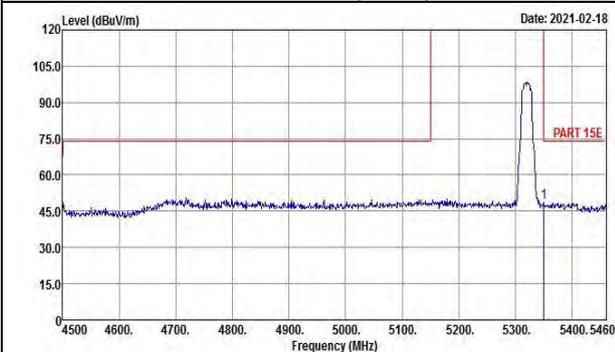


**Vertical (Average)**

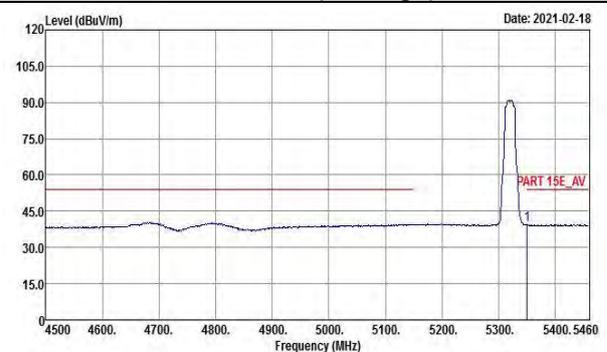


### 802.11a Channel 64

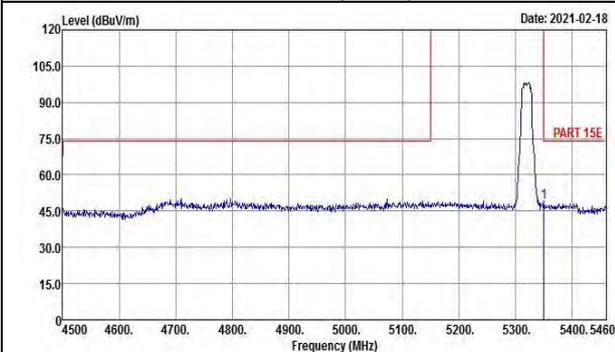
**Horizontal (Peak)**



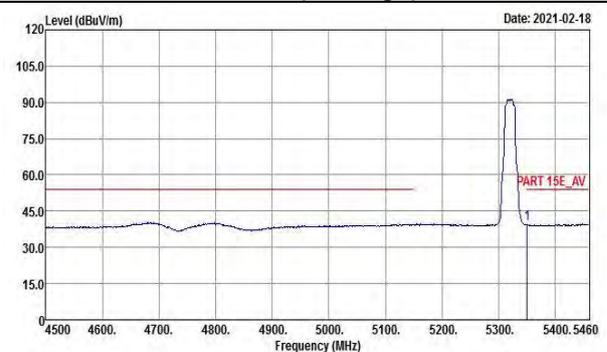
**Horizontal (Average)**



**Vertical (Peak)**

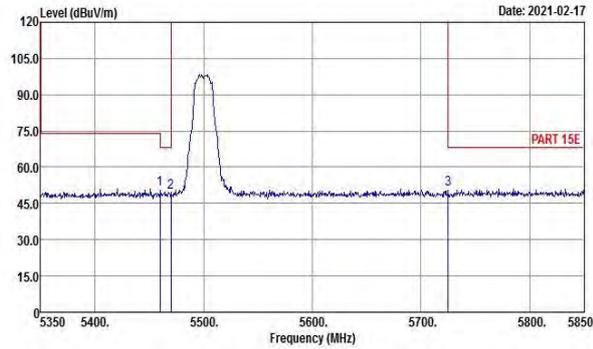


**Vertical (Average)**

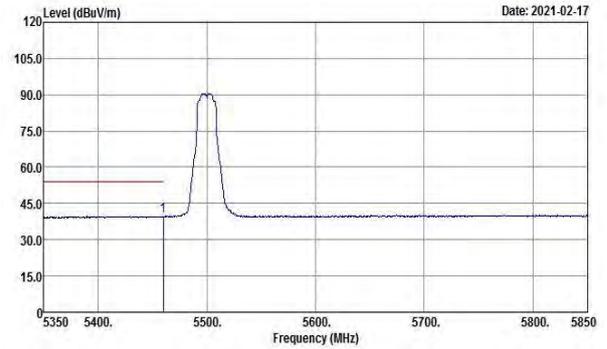


### 802.11a Channel 100

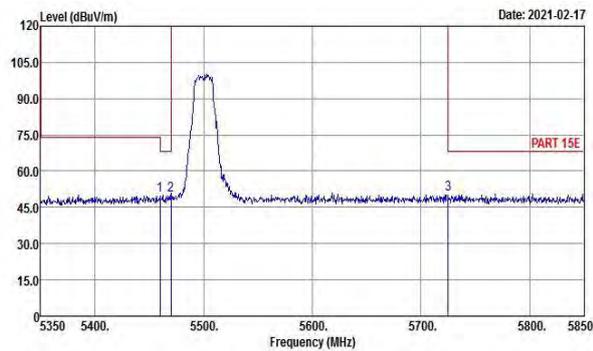
#### Horizontal (Peak)



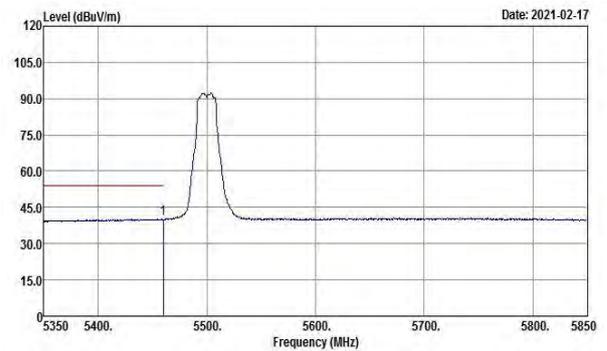
#### Horizontal (Average)



#### Vertical (Peak)

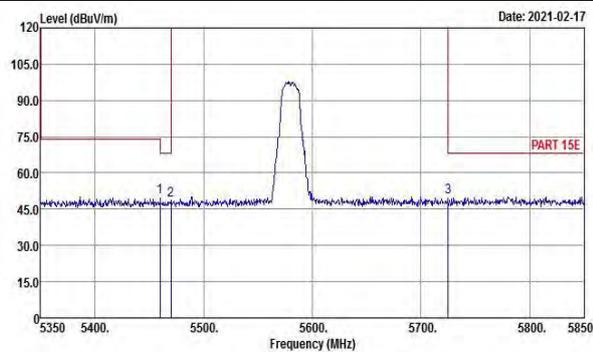


#### Vertical (Average)

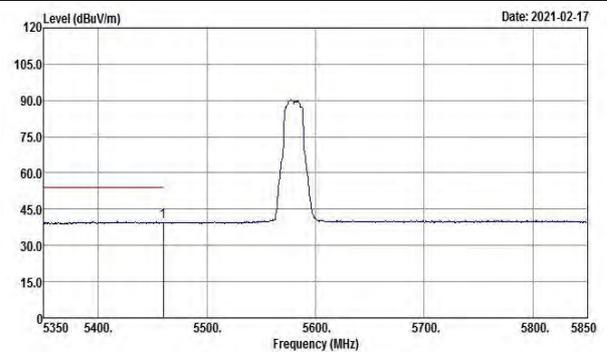


### 802.11a Channel 106

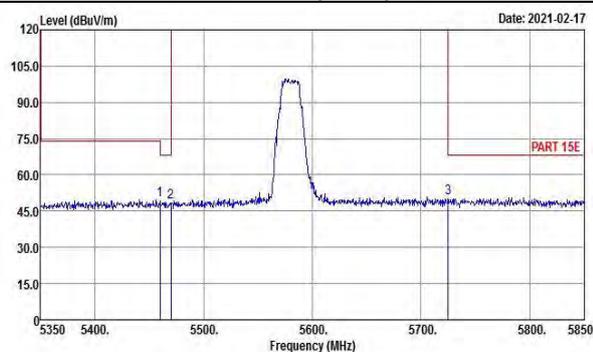
#### Horizontal (Peak)



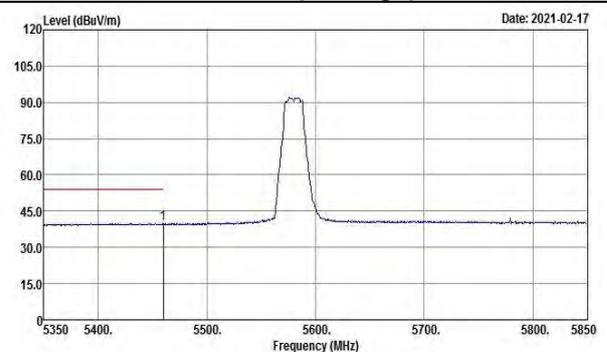
#### Horizontal (Average)



#### Vertical (Peak)

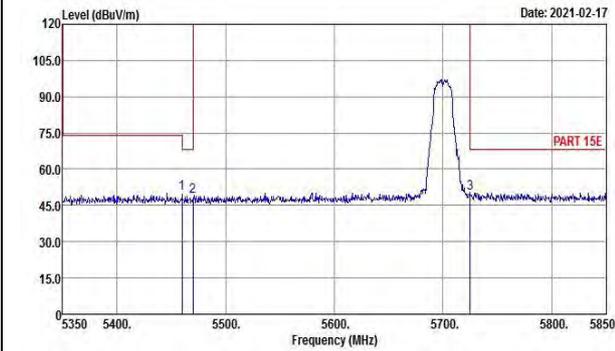


#### Vertical (Average)

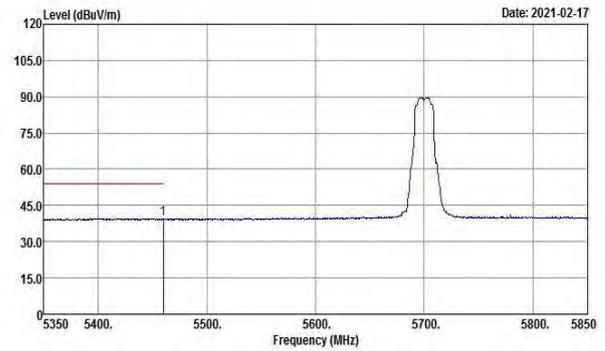


### 802.11a Channel 140

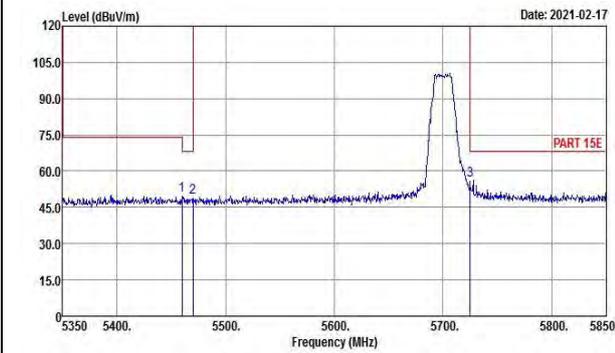
#### Horizontal (Peak)



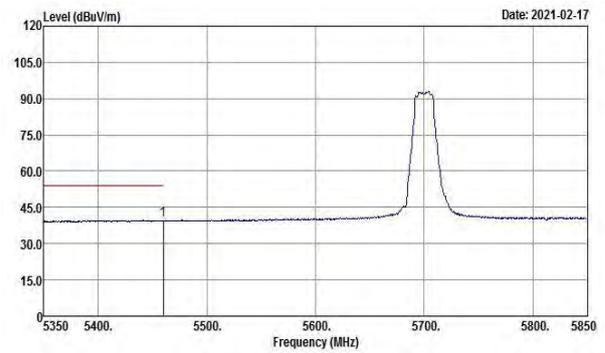
#### Horizontal (Average)



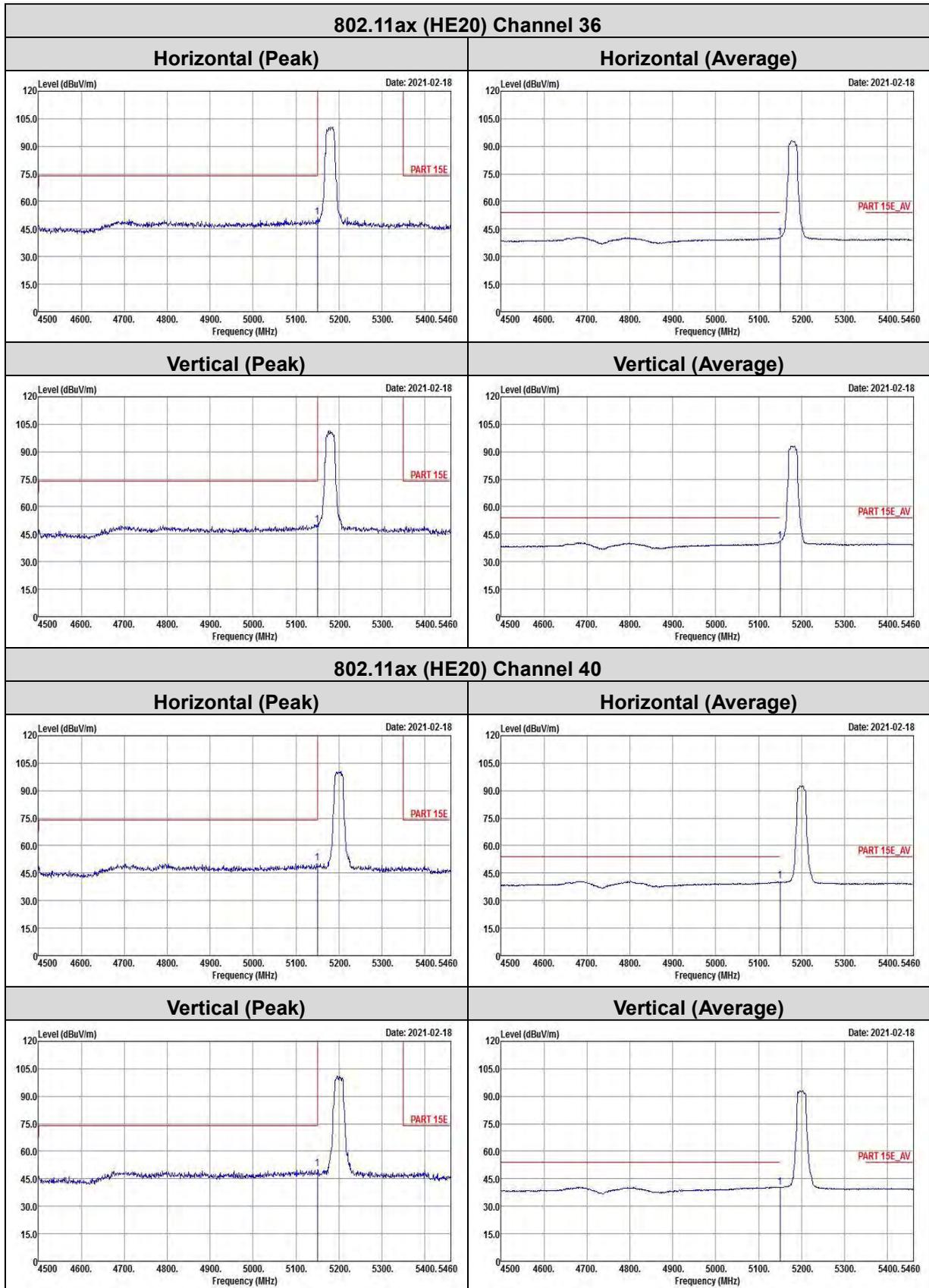
#### Vertical (Peak)



#### Vertical (Average)

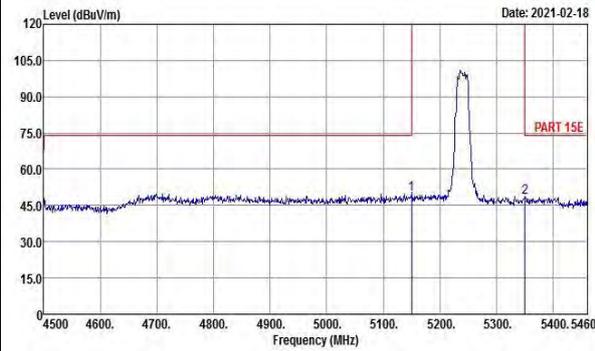


802.11ax (HE20)

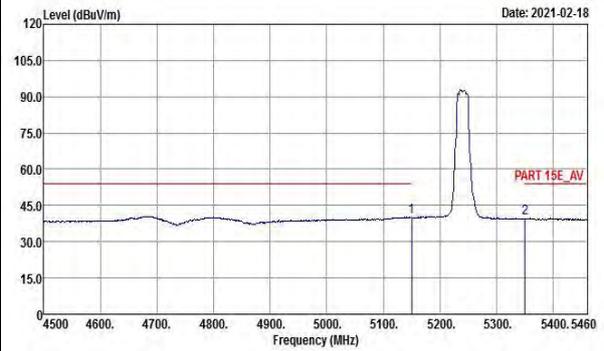


### 802.11ax (HE20) Channel 48

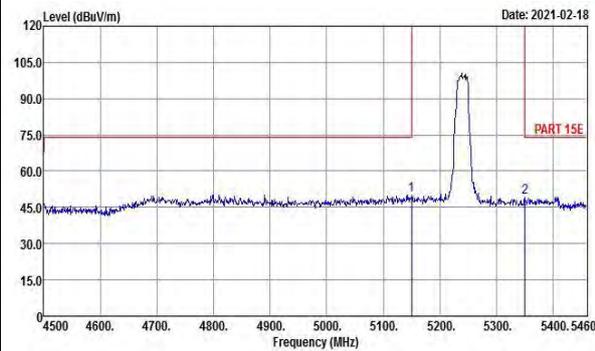
**Horizontal (Peak)**



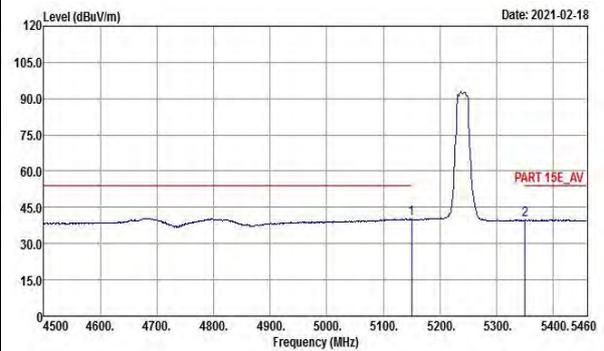
**Horizontal (Average)**



**Vertical (Peak)**

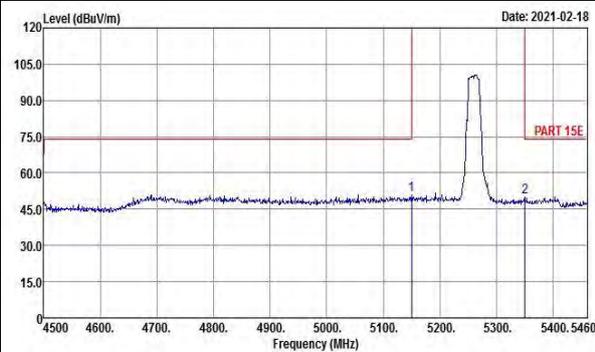


**Vertical (Average)**

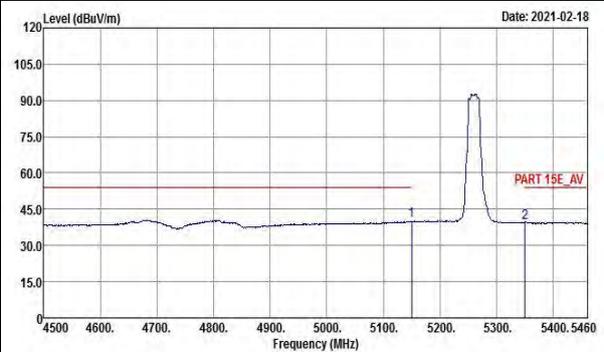


### 802.11ax (HE20) Channel 52

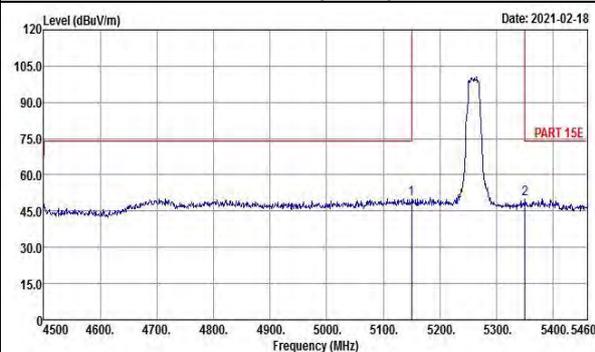
**Horizontal (Peak)**



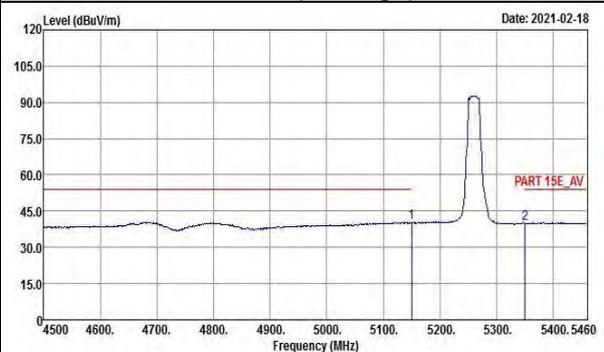
**Horizontal (Average)**



**Vertical (Peak)**

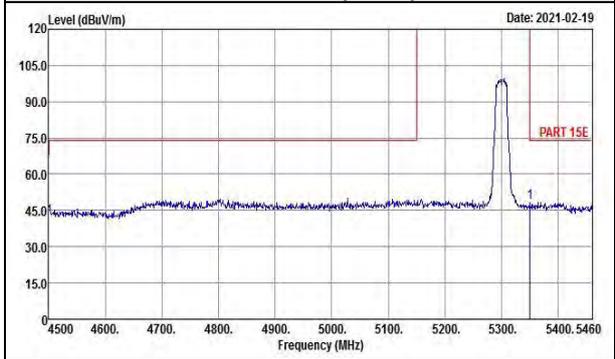


**Vertical (Average)**

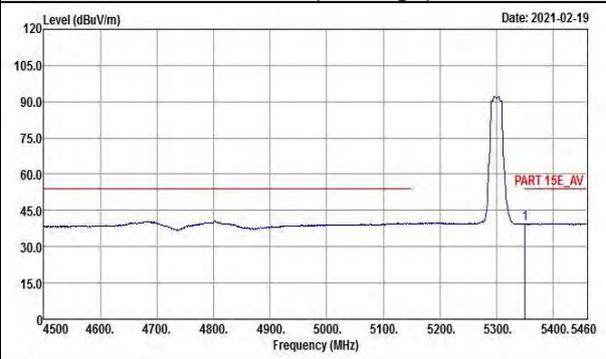


**802.11ax (HE20) Channel 60**

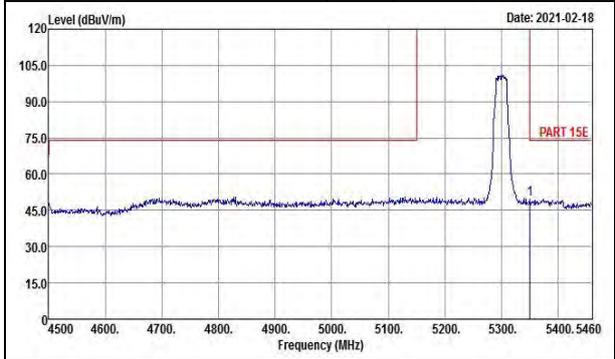
**Horizontal (Peak)**



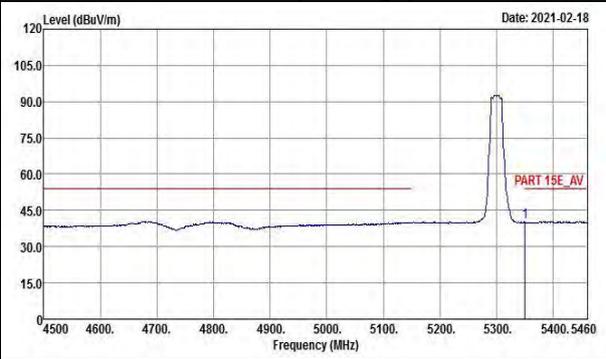
**Horizontal (Average)**



**Vertical (Peak)**

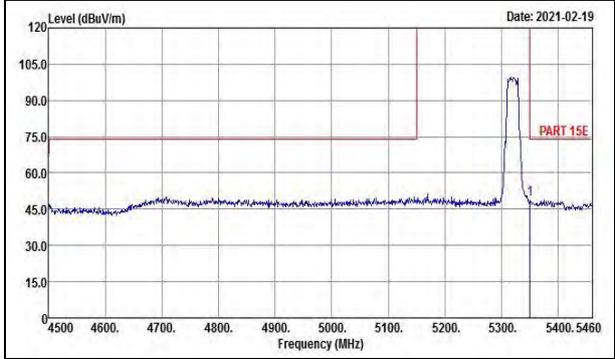


**Vertical (Average)**

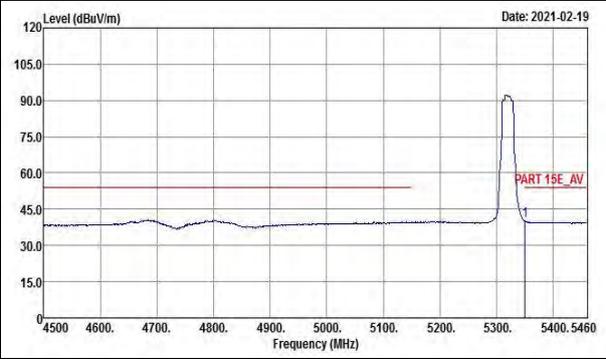


**802.11ax (HE20) Channel 64**

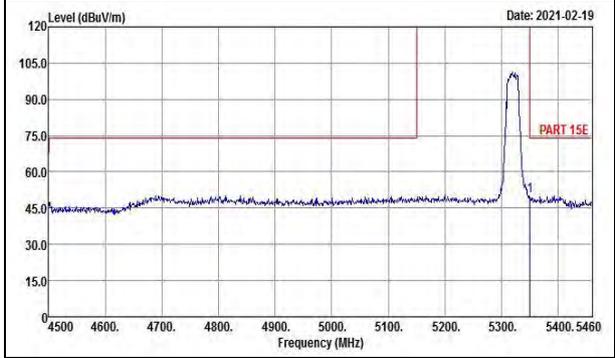
**Horizontal (Peak)**



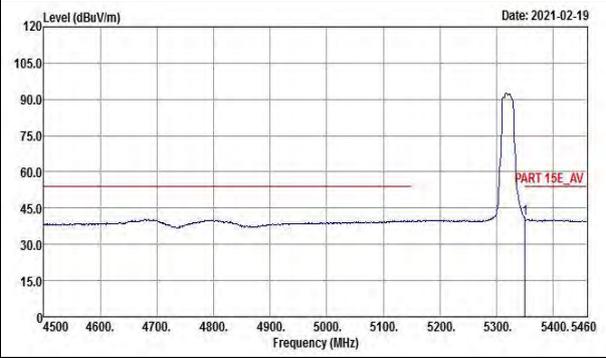
**Horizontal (Average)**



**Vertical (Peak)**

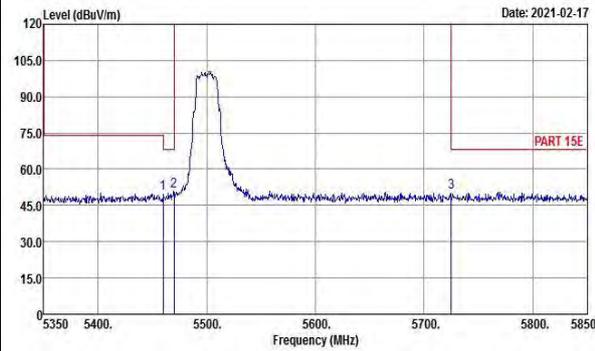


**Vertical (Average)**

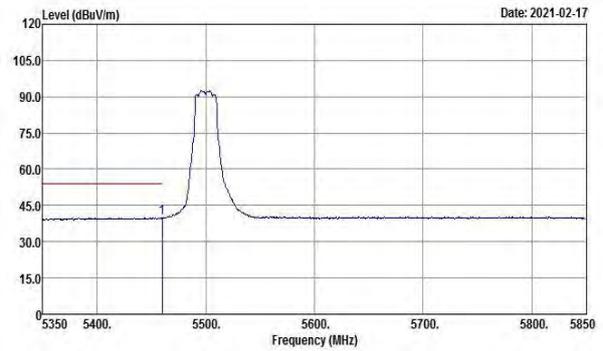


### 802.11ax (HE20) Channel 100

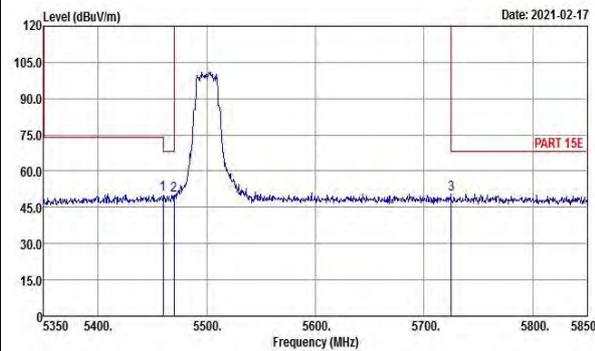
**Horizontal (Peak)**



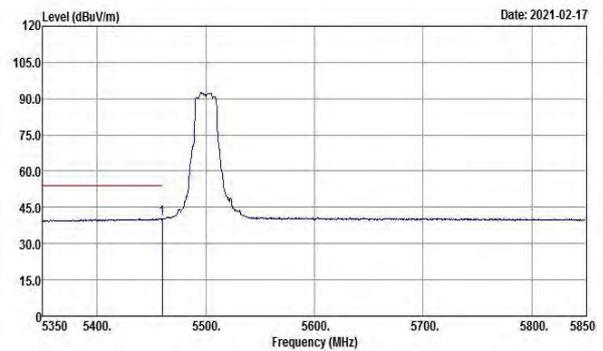
**Horizontal (Average)**



**Vertical (Peak)**

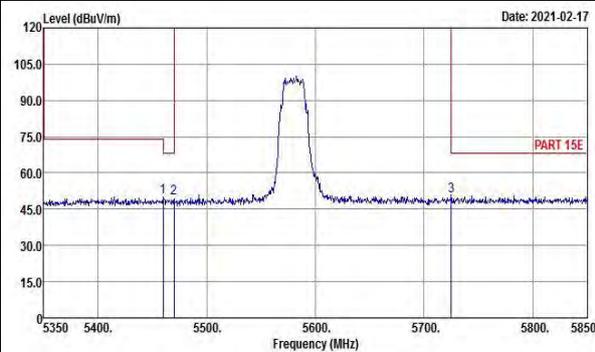


**Vertical (Average)**

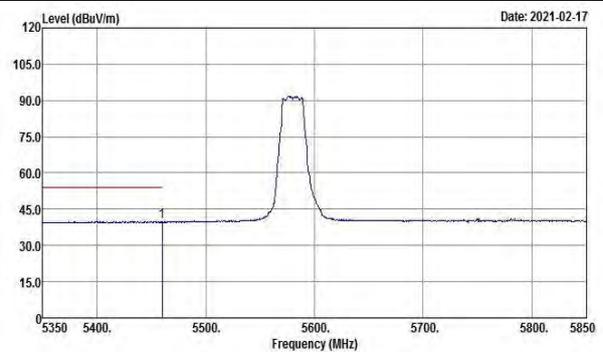


### 802.11ax (HE20) Channel 116

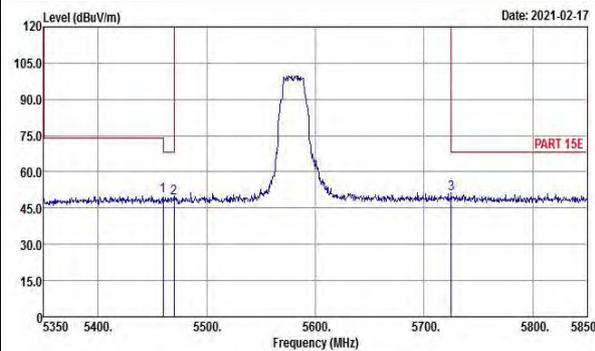
**Horizontal (Peak)**



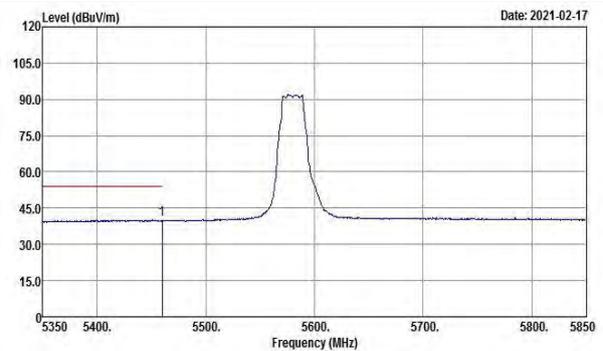
**Horizontal (Average)**



**Vertical (Peak)**

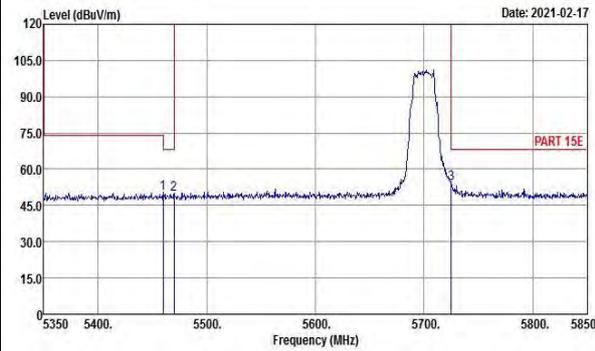


**Vertical (Average)**

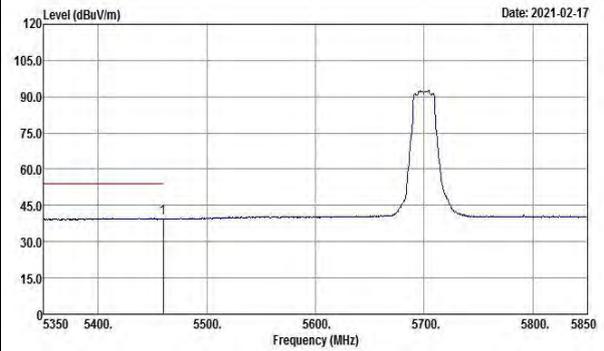


### 802.11ax (HE20) Channel 140

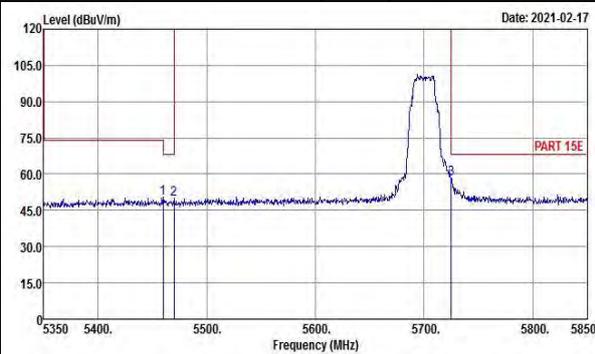
**Horizontal (Peak)**



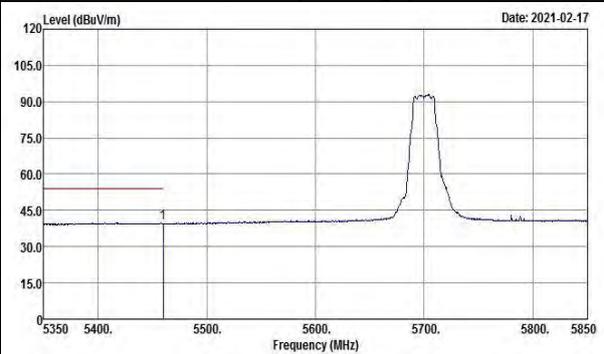
**Horizontal (Average)**



**Vertical (Peak)**

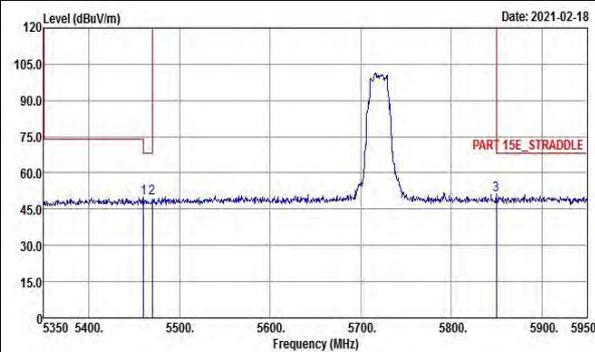


**Vertical (Average)**

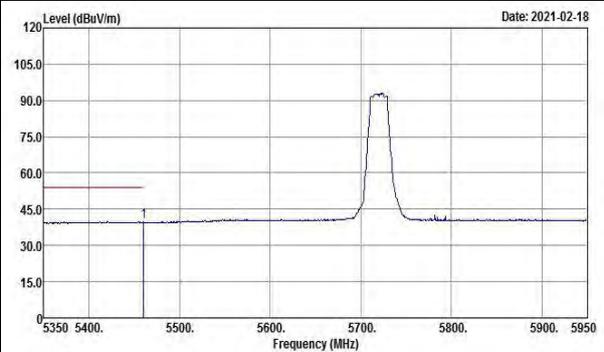


### 802.11ax (HE20) Channel 144

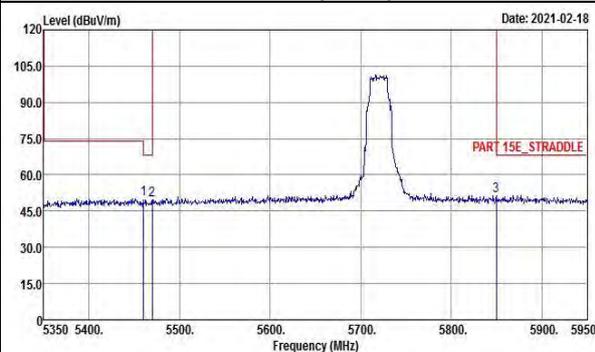
**Horizontal (Peak)**



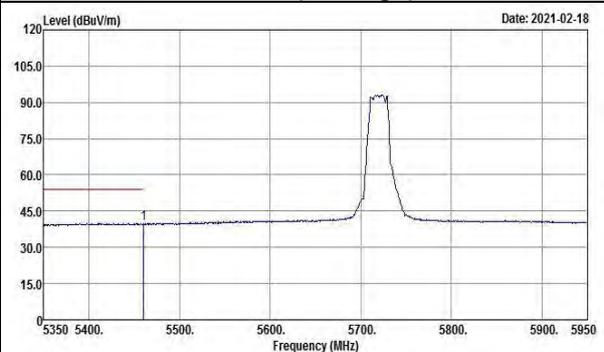
**Horizontal (Average)**



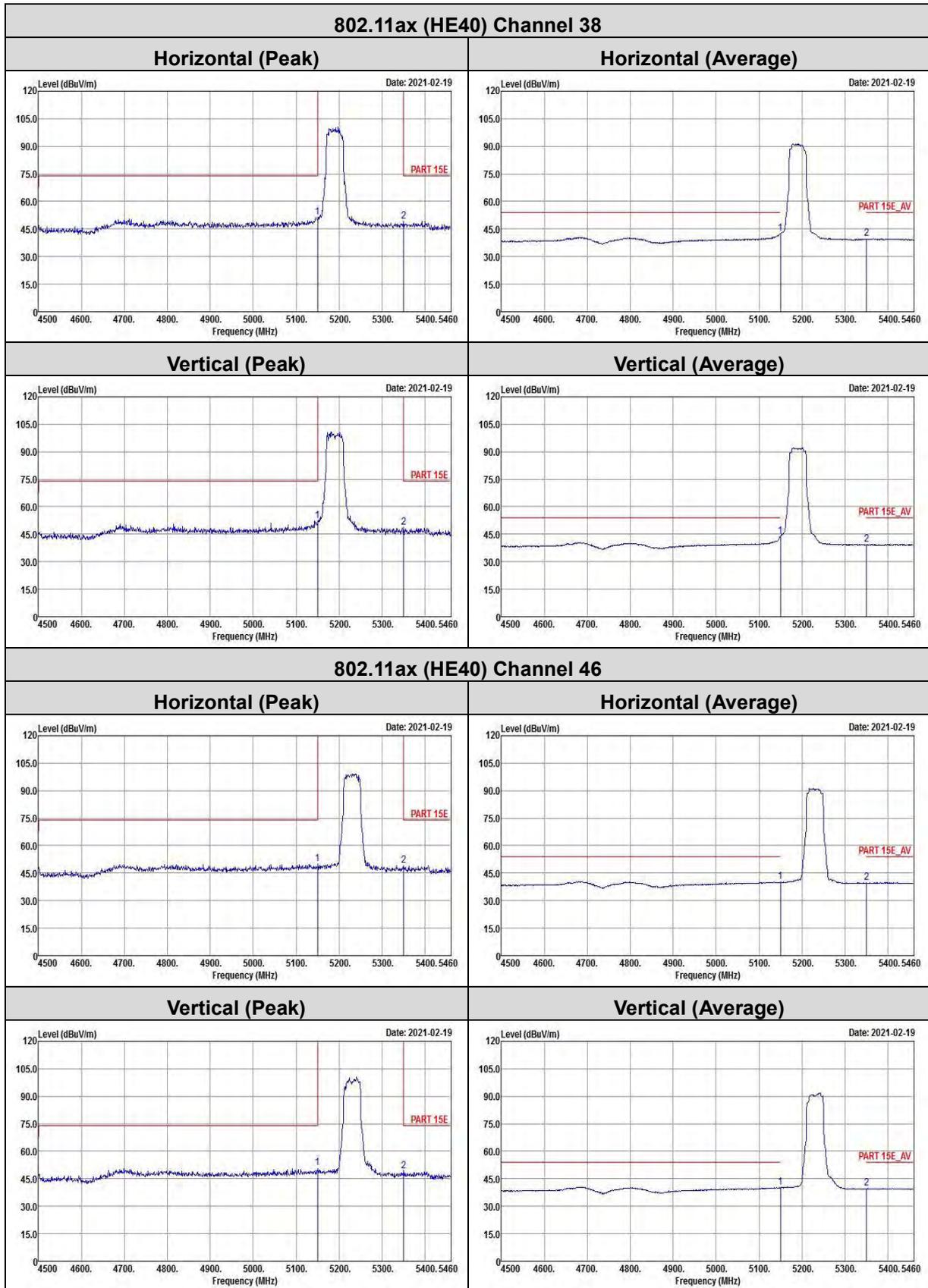
**Vertical (Peak)**



**Vertical (Average)**

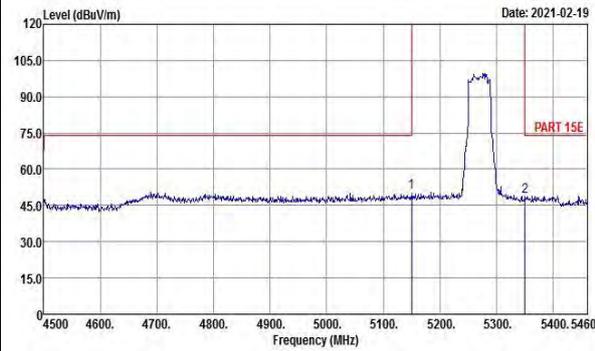


802.11ax (HE40)

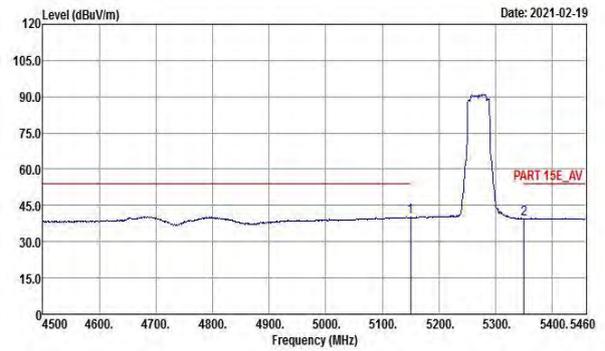


### 802.11ax (HE40) Channel 54

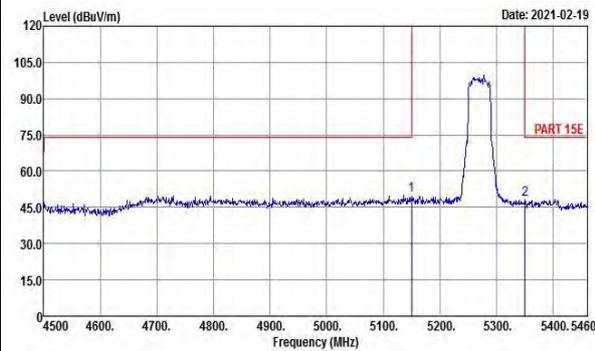
**Horizontal (Peak)**



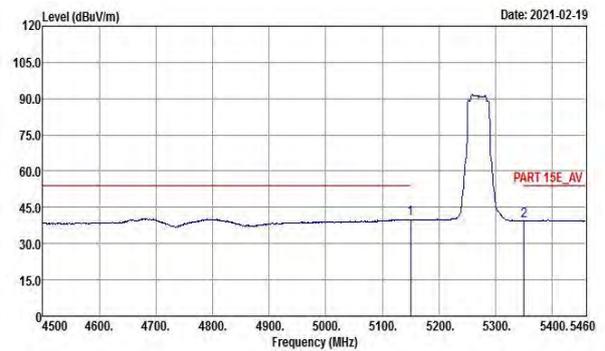
**Horizontal (Average)**



**Vertical (Peak)**

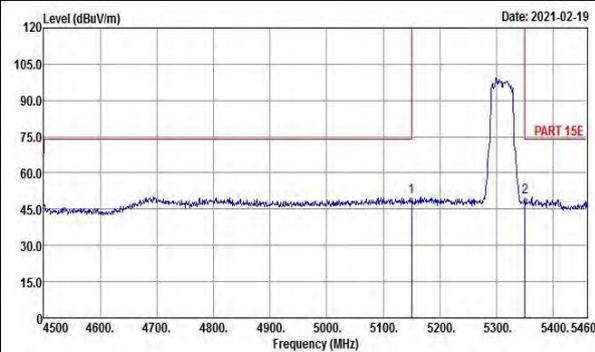


**Vertical (Average)**

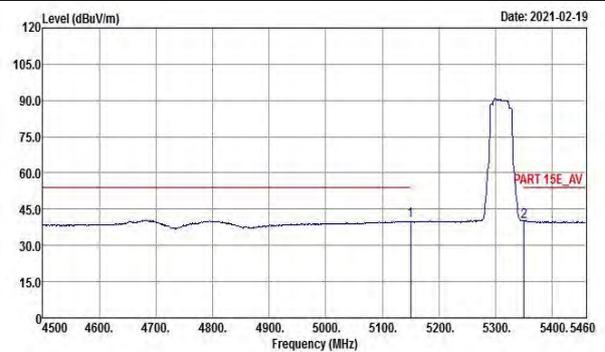


### 802.11ax (HE40) Channel 62

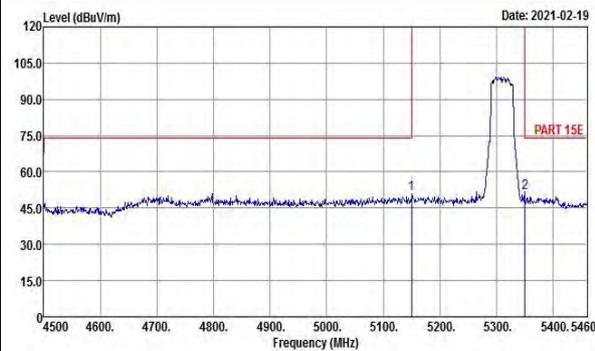
**Horizontal (Peak)**



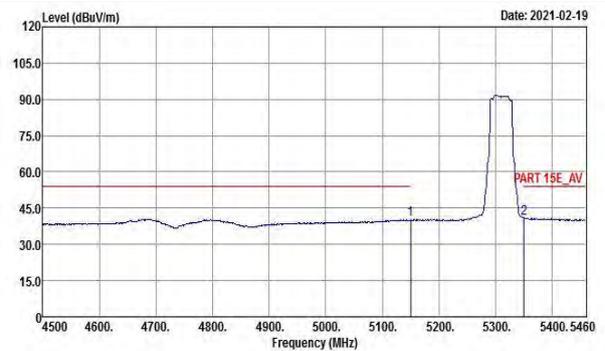
**Horizontal (Average)**



**Vertical (Peak)**

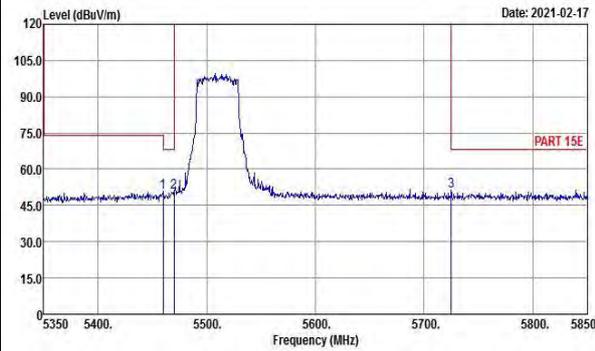


**Vertical (Average)**

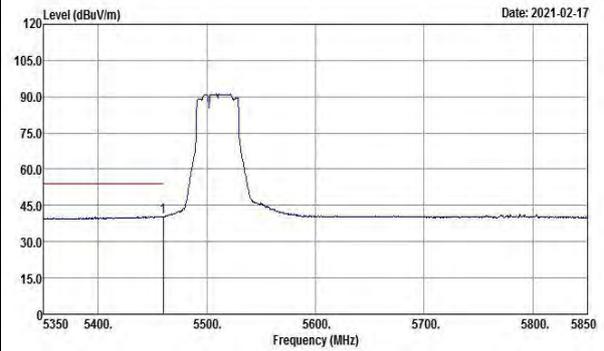


### 802.11ax (HE40) Channel 102

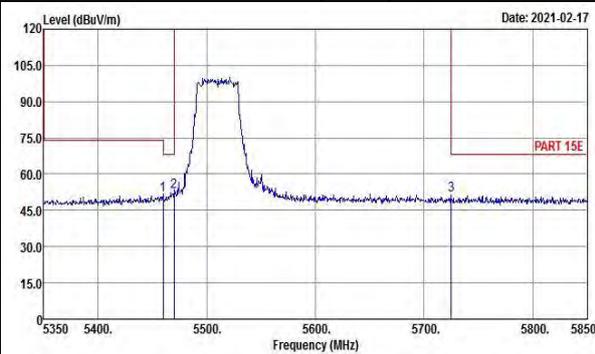
**Horizontal (Peak)**



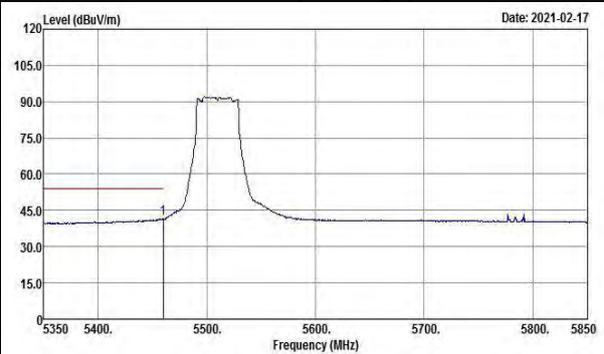
**Horizontal (Average)**



**Vertical (Peak)**

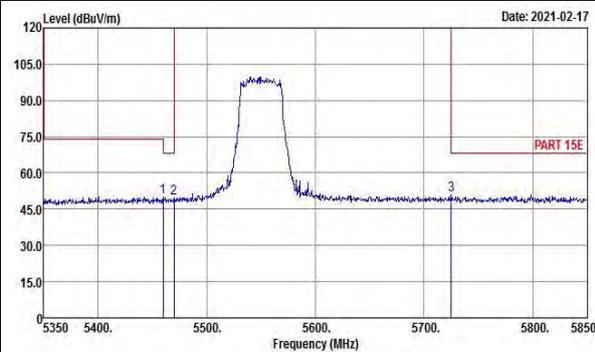


**Vertical (Average)**

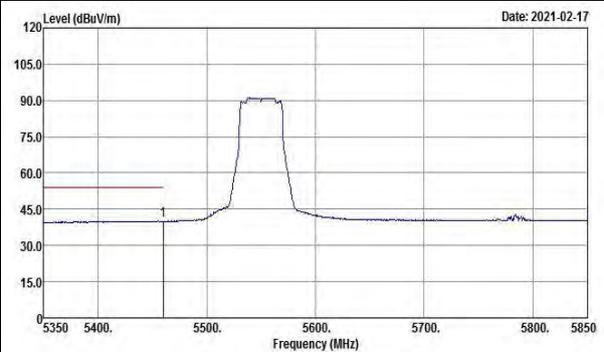


### 802.11ax (HE40) Channel 110

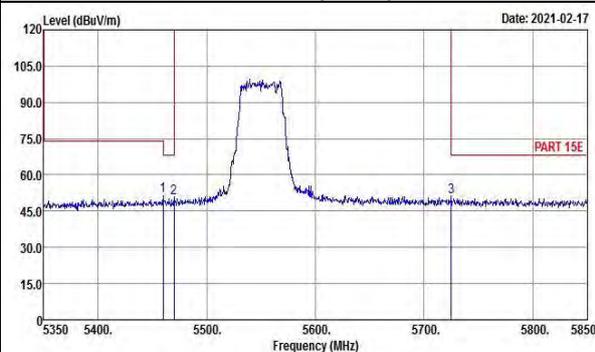
**Horizontal (Peak)**



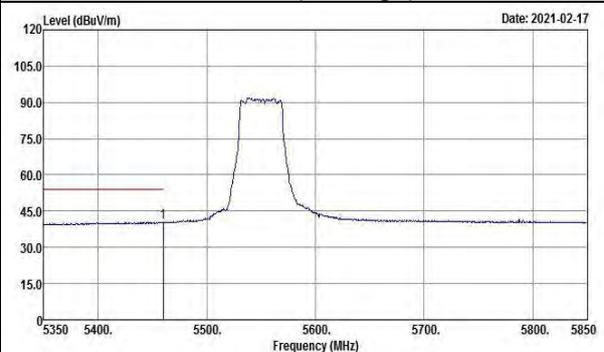
**Horizontal (Average)**



**Vertical (Peak)**

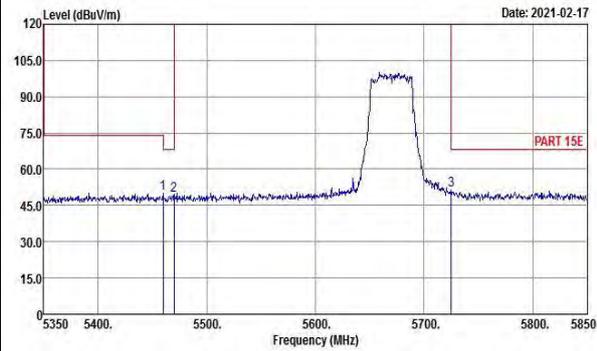


**Vertical (Average)**

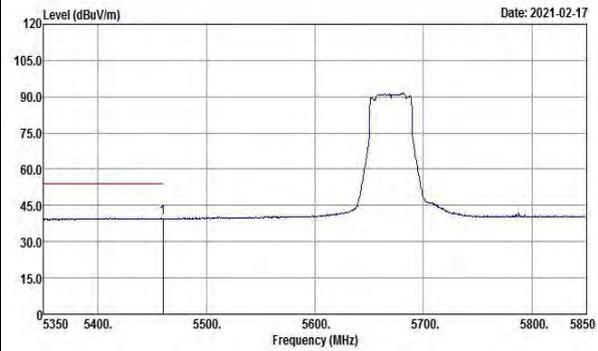


### 802.11ax (HE40) Channel 134

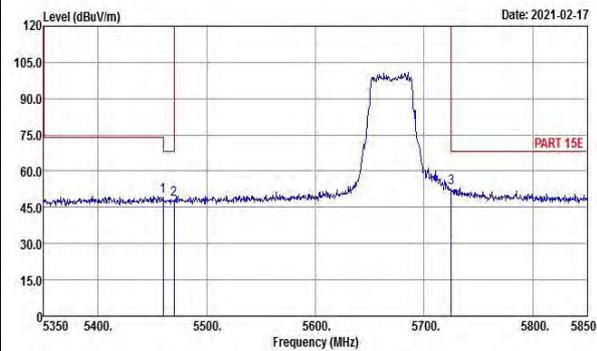
**Horizontal (Peak)**



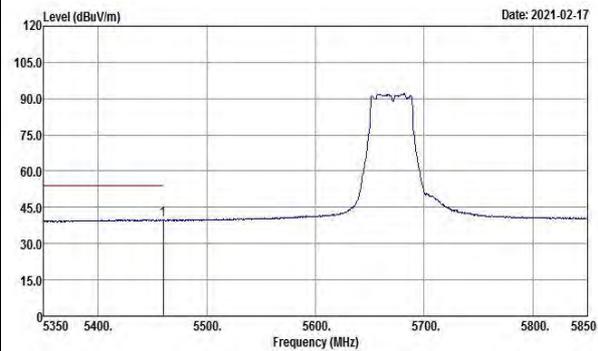
**Horizontal (Average)**



**Vertical (Peak)**

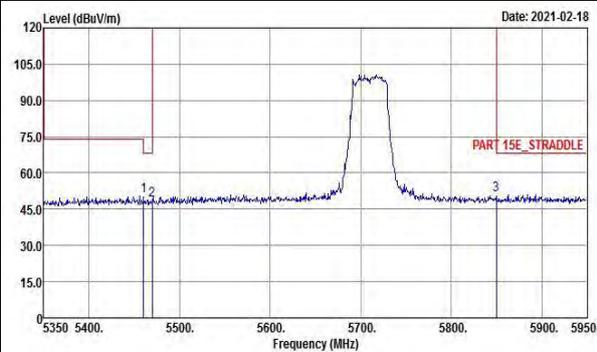


**Vertical (Average)**

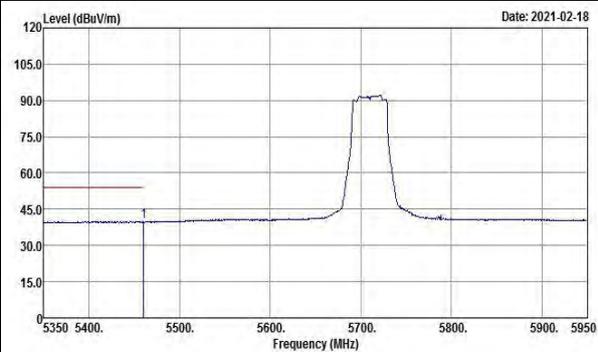


### 802.11ax (HE40) Channel 142

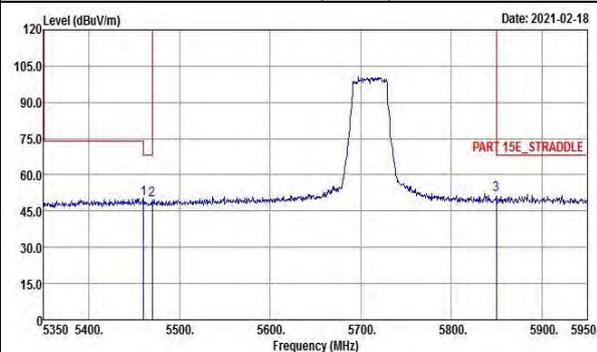
**Horizontal (Peak)**



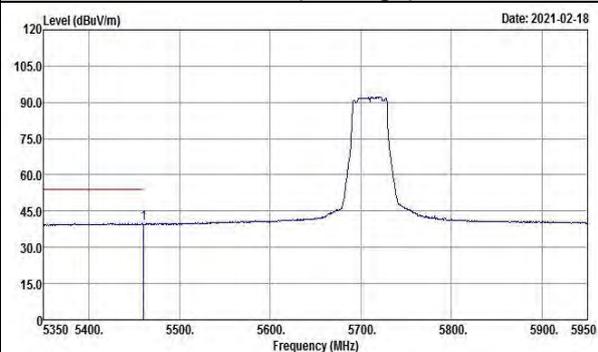
**Horizontal (Average)**



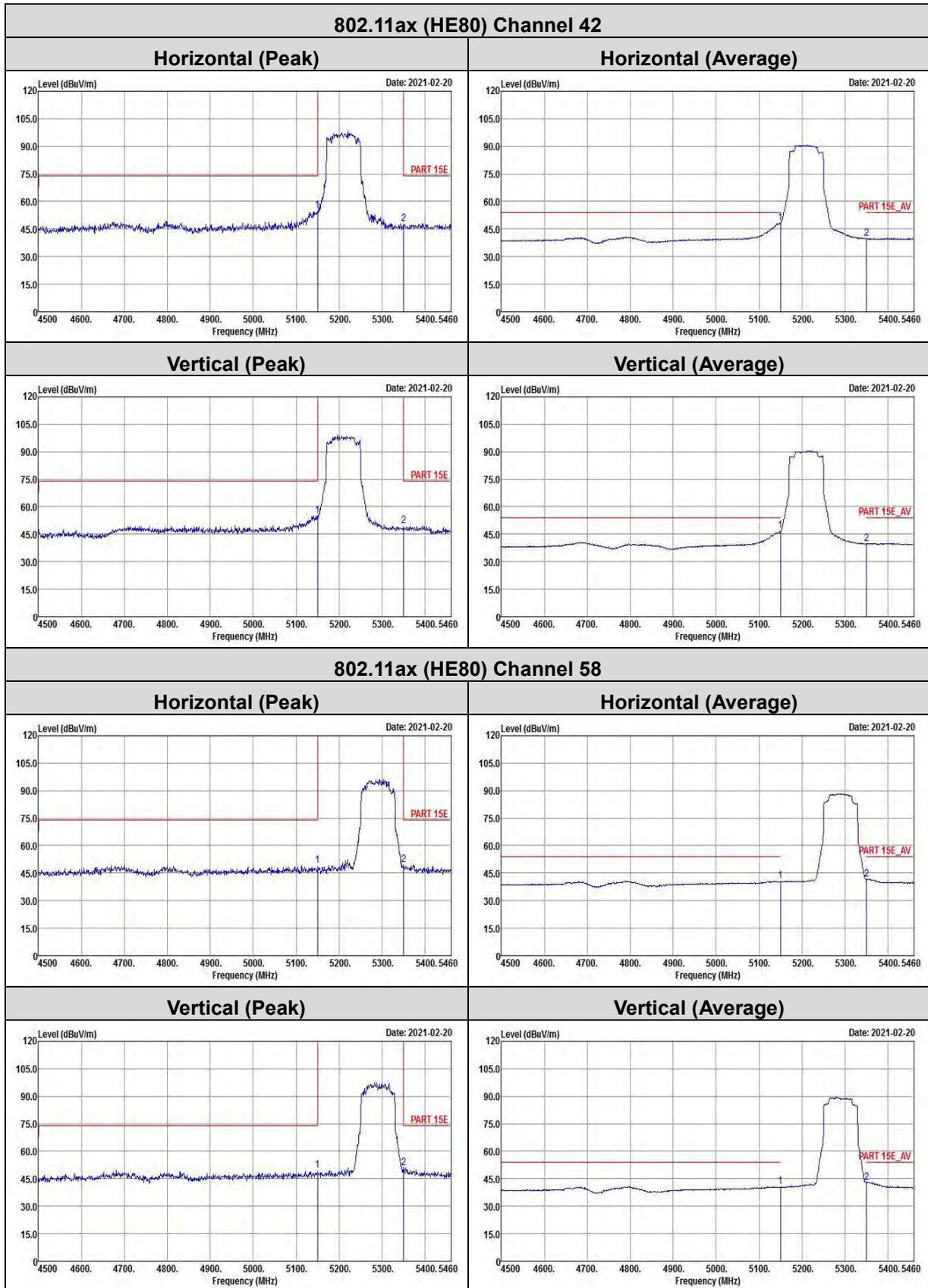
**Vertical (Peak)**



**Vertical (Average)**

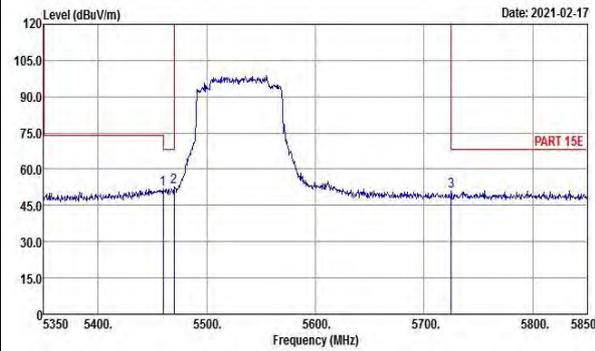


802.11ax (HE80)

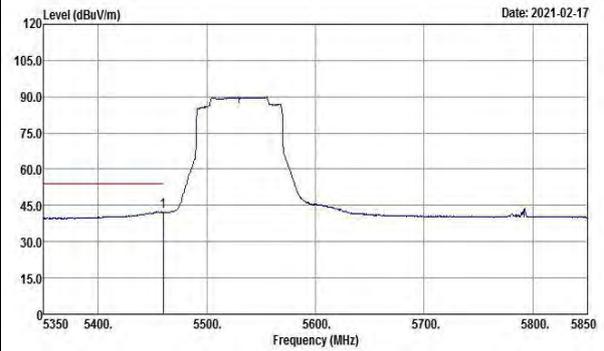


### 802.11ax (HE80) Channel 106

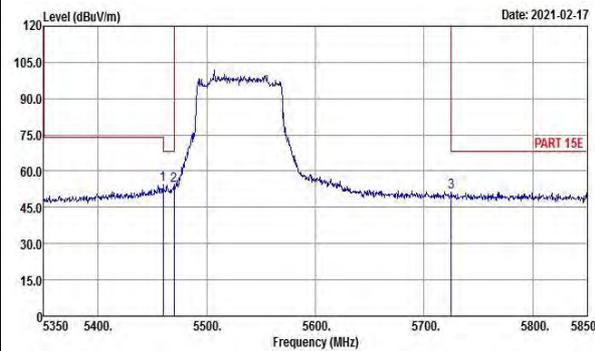
**Horizontal (Peak)**



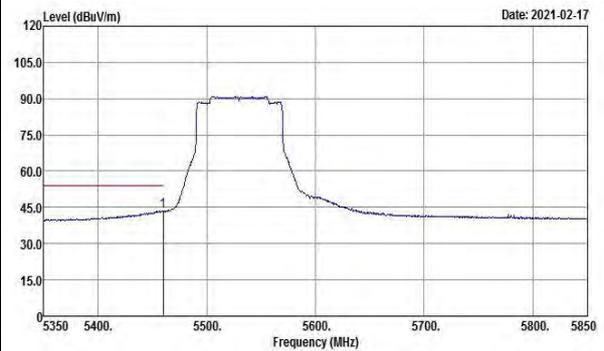
**Horizontal (Average)**



**Vertical (Peak)**

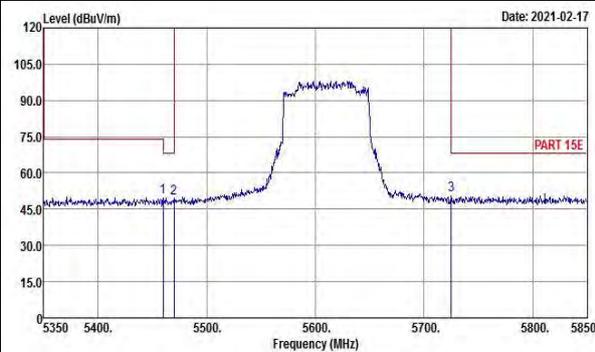


**Vertical (Average)**

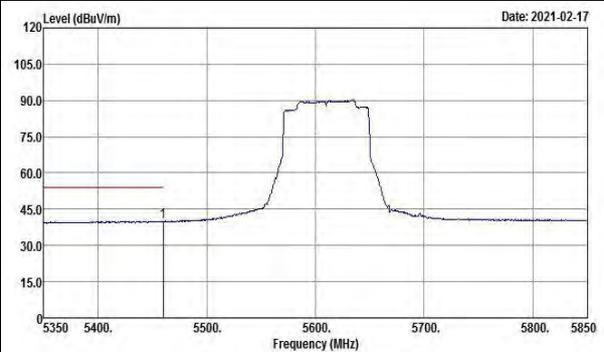


### 802.11ax (HE80) Channel 122

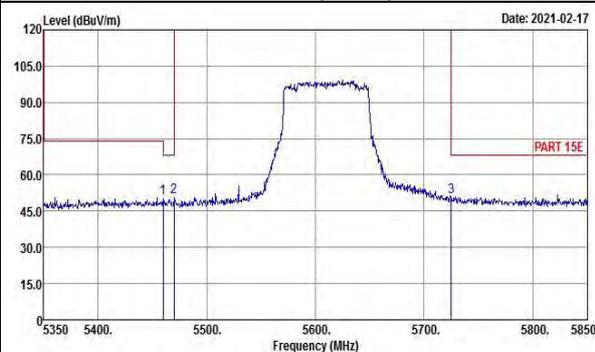
**Horizontal (Peak)**



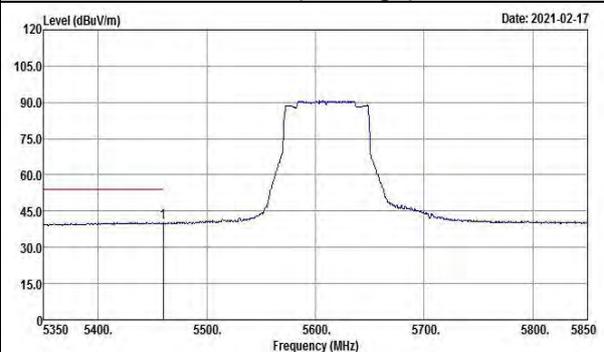
**Horizontal (Average)**



**Vertical (Peak)**

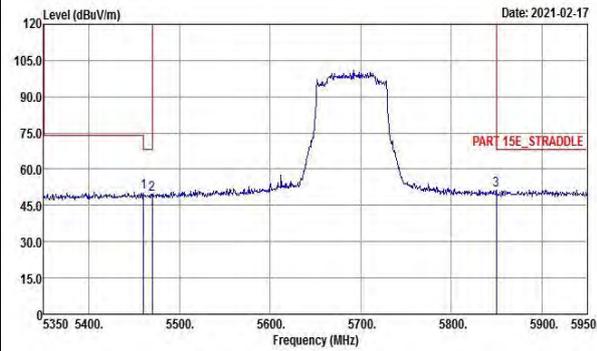


**Vertical (Average)**

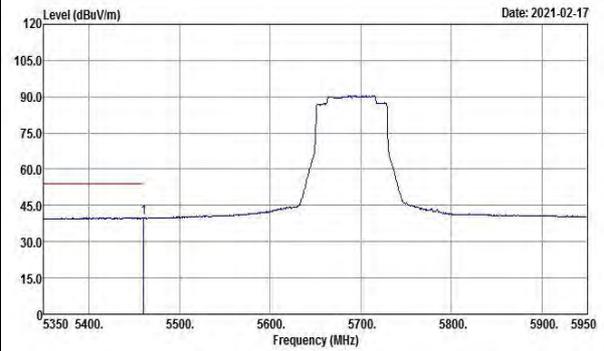


### 802.11ax (HE80) Channel 138

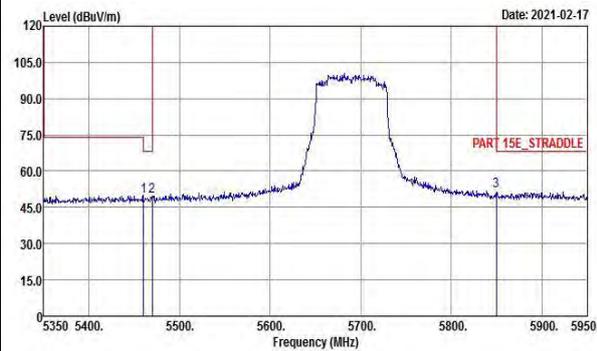
**Horizontal (Peak)**



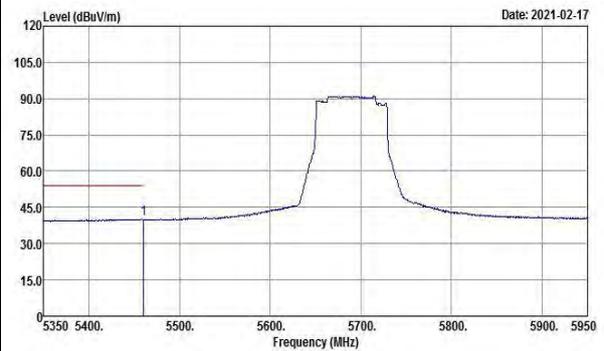
**Horizontal (Average)**



**Vertical (Peak)**

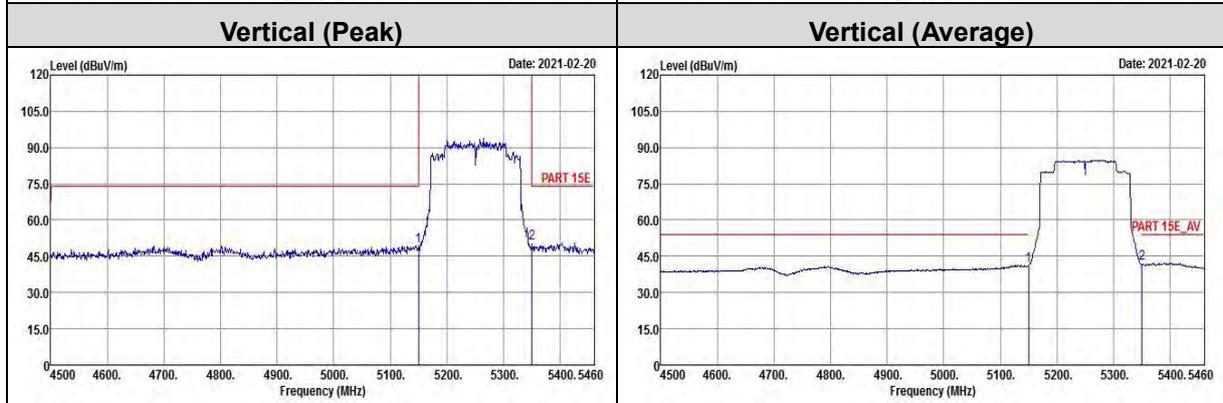
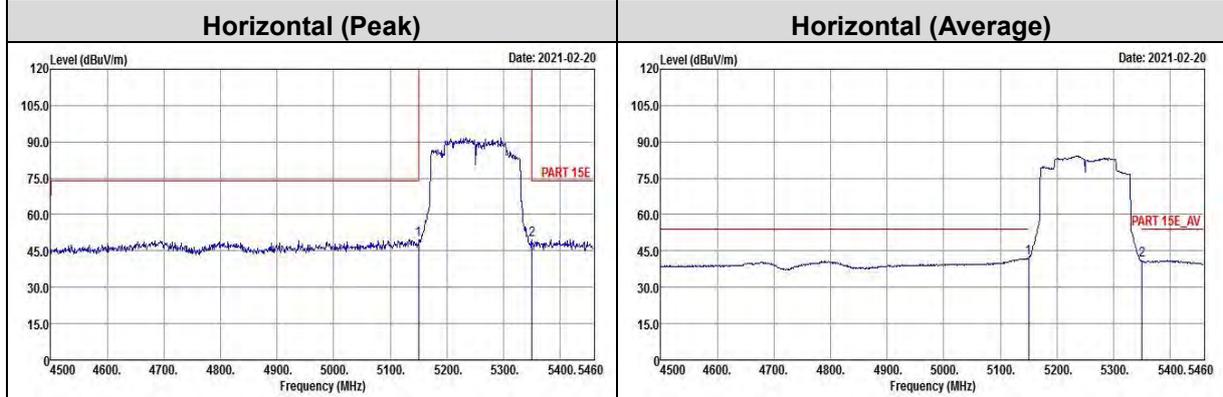


**Vertical (Average)**

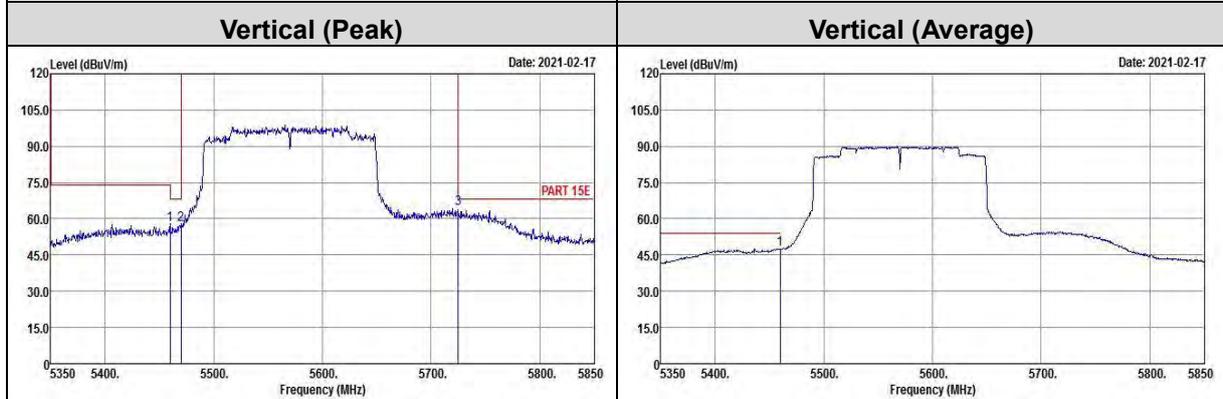
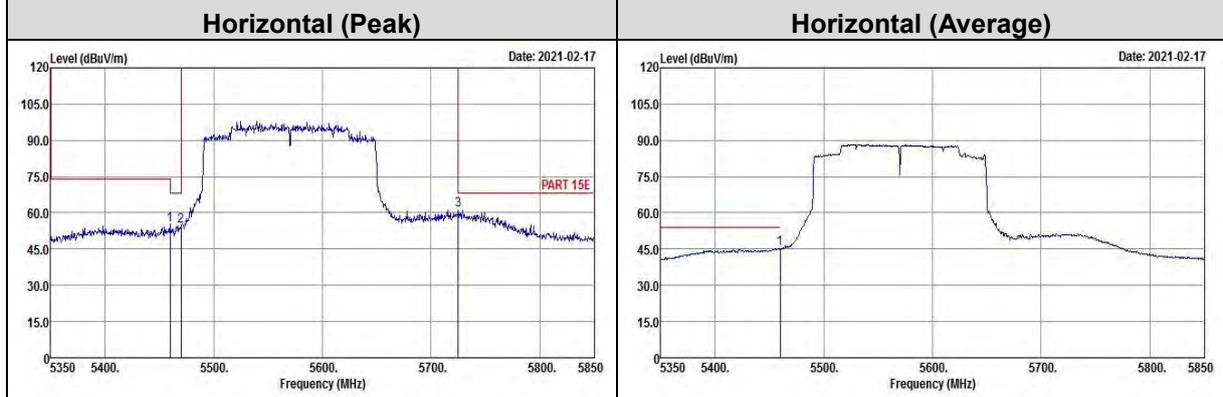


802.11ax (HE160)

**802.11ax (HE160) Channel 50**



**802.11ax (HE160) Channel 114**



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

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