FCC Test Report

Report No.: RFBEDV-WTW-P20090534 R2

FCC ID: C3K1950

Test Model: 1950, 1951 (Refer to item 3.1 for more details)

Received Date: Sep. 29, 2020

Test Date: Oct. 01, 2020 ~ Feb. 05, 2021

Issued Date: Feb. 22, 2021

Applicant: Microsoft Corporation

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / Designation Number: 427177 / TW0011

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Release Control Record

Issue No.	Description	Date Issued
RFBEDV-WTW-P20090534	Original Release	Feb. 08, 2021
RFBEDV-WTW-P20090534 R1	Revise antenna's information	Feb. 09, 2021
RFBEDV-WTW-P20090534 R2	Revise Band-Edge data	Feb. 22, 2021

1 Certificate of Conformity

Product: Portable Computing Device

Brand: Microsoft

Test Model: 1950, 1951 (Refer to item 3.1 for more details)

Sample Status: Engineering Sample

Applicant: Microsoft Corporation

Test Date: Oct. 01, 2020 ~ Feb. 05, 2021

Standards: 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10:2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Feb. 22, 2021
Gina Liu / Specialist

Approved by : _____ , **Date:** Feb. 22, 2021
Dylan Chiou / Senior Project Engineer

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 -8.58 dB at 0.23993 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 -1.5 dB at 5150 MHz & 5460 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	Pass	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

Note:

1. For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOBE test plots were recorded in section 4.1.7.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.79 dB
Radiated Emissions up to 1 GHz	9 kHz ~ 30 MHz	3.04 dB
	30 MHz ~ 200 MHz	2.0153 dB
	200 MHz ~ 1000 MHz	2.0224 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	1.0121 dB
	18 GHz ~ 40 GHz	1.1508 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Portable Computing Device
Brand	Microsoft
Test Model	1950, 1951
Status of EUT	Engineering Sample
Power Supply Rating	120 Vac
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDMA
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 1733.3 Mbps 802.11ax: up tp 2402 Mbps
Operating Frequency	5180 ~ 5250 MHz, 5250 ~ 5320 MHz, 5500 ~ 5720 MHz, 5745 ~ 5825 MHz
Number of Channel	5180 ~ 5250 MHz 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 4 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1 802.11ac (VHT160), 802.11ax (HE160): 1 5250 ~ 5320 MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 4 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1 5500 ~ 5720 MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 12 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 6 802.11ac (VHT80), 802.11ax (HE80): 3 802.11ac (VHT160), 802.11ax (HE160): 1 5745 ~ 5825 MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 5 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1
Output Power	**Chain A** 99.312 mW for 5180 ~ 5250 MHz 98.855 mW for 5250 ~ 5320 MHz 116.209 mW for 5500 ~ 5720 MHz 99.312 mW for 5745 ~ 5825 MHz **Chain B** 82.224 mW for 5180 ~ 5250 MHz 84.723 mW for 5250 ~ 5320 MHz 104.602 mW for 5500 ~ 5720 MHz 88.716 mW for 5745 ~ 5825 MHz

	MIMO 174.796 mW for 5180 ~ 5250 MHz 154.899 mW for 5250 ~ 5320 MHz 156.112 mW for 5500 ~ 5720 MHz 165.788 mW for 5745 ~ 5825 MHz **Partial RU** **Chain A** 99.541 mW for 5180 ~ 5250 MHz 98.175 mW for 5250 ~ 5320 MHz 97.949 mW for 5500 ~ 5720 MHz 98.855 mW for 5745 ~ 5825 MHz **Chain B** 87.498 mW for 5180 ~ 5250 MHz 87.7 mW for 5250 ~ 5320 MHz 88.716 mW for 5500 ~ 5720 MHz 88.105 mW for 5745 ~ 5825 MHz **MIMO** 146.568 mW for 5180 ~ 5250 MHz 155.26 mW for 5250 ~ 5320 MHz 155.787 mW for 5500 ~ 5720 MHz 176.416 mW for 5745 ~ 5825 MHz
HW Version (Product)	EV2
SW Version (Product)	4.89.137
HW Version (Radio)	N/A
SW Version (Radio)	21.80.2.1
Radio Test Tool & Version	DRTU: 21.80.2.1
Antenna Type	Refer to Note as below
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

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
802.11ac (VHT80)	1TX, 2TX
802.11ac (VHT160)	1TX, 2TX
802.11ax (HE20)	1TX, 2TX
802.11ax (HE40)	1TX, 2TX
802.11ax (HE80)	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 / VHT 160 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. All models are listed as below.

Confing	Brand	Model	Difference
1	Microsoft	1950	The difference between 1950 and 1951 models is the C-Cover. 1950 - Config 1 and 1951 - Config 2
2		1951	

3. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter 1	Microsoft	P/M	--
Adapter 2	Microsoft	P/N	--

* After pretesting, the adapter 1 was the worst case and chose for final test.

4. The antenna used in this EUT is listed as below table:

Item	Type	Brand	Model	Gain(dBi)			
Frequency				5180 ~ 5250 MHz	5250 ~ 5320 MHz	5500 ~ 5720 MHz	5745 ~ 5825 MHz
5 GHz	PIFA	Shenghai Amphenol Airwave	Main (Left Antenna) / CNA987-16-SK2-C	4.5	5.7	5.1	3.3
			AUX (Right Antenna) / CNB674-16-SK2-C	4.7	4.3	5.0	5.1

5. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
6. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

For 5180 ~ 5250 MHz

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

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

Channel	Frequency (MHz)
42	5210

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

Channel	Frequency (MHz)
50	5250

For 5250 ~ 5320 MHz

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
56	5280	64	5320

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270	62	5310

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

Channel	Frequency (MHz)
58	5290

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	APCM	
A	-	-	√	√	Config 1
B	√	√	√	-	Config 2

Where **RE≥1G:** Radiated Emission above 1 GHz **RE<1G:** Radiated Emission below 1 GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement
Note: "-" means no effect.

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)
B	5180-5250	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
		802.11n (HT20)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	13.5
		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
		802.11ac (VHT160)	50	50	OFDM	BPSK	58.5
		802.11ax (HE20)	36 to 48	36, 40, 48	OFDMA	BPSK	MCS0
		802.11ax (HE40)	38 to 46	38, 46	OFDMA	BPSK	MCS0
		802.11ax (HE80)	42	42	OFDMA	BPSK	MCS0
		802.11ax (HE160)	50	50	OFDMA	BPSK	MCS0
	5250-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
		802.11n (HT20)	52 to 64	52, 60, 64	OFDM	BPSK	6.5
		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	13.5
		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
		802.11ax (HE20)	52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
		802.11ax (HE40)	54 to 62	54, 62	OFDMA	BPSK	MCS0
		802.11ax (HE80)	58	58	OFDMA	BPSK	MCS0
	5500-5720	802.11a	100 to 144	100, 116, 140, 144	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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
B	Partial RU	802.11ax (HE20)	36 to 149	36, 64, 100, 140, 149	OFDMA	BPSK	MCS0
		802.11ax (HE40)	38 to 159	38, 62, 102, 134, 142, 151, 159	OFDMA	BPSK	MCS0
		802.11ax (HE80)	42 to 155	42, 58, 106, 122, 138, 155	OFDMA	BPSK	MCS0
		802.11ax (HE160)	50 to 114	50, 114	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)
Chain A							
B	5180-5250	802.11n (HT40)	38 to 46	38	OFDM	BPSK	13.5
Chain B							
B	5180-5250	802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
MIMO							
B	5500-5720	802.11n (HT40)	102 to 134	102	OFDM	BPSK	13.5

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)
A, B	5180-5250	802.11n (HT40)	38 to 46	38	OFDM	BPSK	13.5

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
A	5180-5250	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
		802.11n (HT20)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	13.5
		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
		802.11ac (VHT160)	50	50	OFDM	BPSK	58.5
		802.11ax (HE20)	36 to 48	36, 40, 48	OFDMA	BPSK	MCS0
		802.11ax (HE40)	38 to 46	38, 46	OFDMA	BPSK	MCS0
		802.11ax (HE80)	42	42	OFDMA	BPSK	MCS0
		802.11ax (HE160)	50	50	OFDMA	BPSK	MCS0
	5250-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
		802.11n (HT20)	52 to 64	52, 60, 64	OFDM	BPSK	6.5
		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	13.5
		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
		802.11ax (HE20)	52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
		802.11ax (HE40)	54 to 62	54, 62	OFDMA	BPSK	MCS0
		802.11ax (HE80)	58	58	OFDMA	BPSK	MCS0
	5500-5720	802.11a	100 to 144	100, 116, 140, 144	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
	Partial RU	802.11ax (HE20)	36 to 149	36, 64, 100, 140, 149	OFDMA	BPSK	MCS0
		802.11ax (HE40)	38 to 159	38, 62, 102, 134, 142, 151, 159	OFDMA	BPSK	MCS0
		802.11ax (HE80)	42 to 155	42, 58, 106, 122, 138, 155	OFDMA	BPSK	MCS0
		802.11ax (HE160)	50 to 114	50, 114	OFDMA	BPSK	MCS0

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Harry Hsueh, Charles Hsiao, Karl Lee
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Harry Hsueh
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Jones Chang
APCM	25 deg. C, 65 % RH	120 Vac, 60 Hz	Jisyong Wang

3.3 Duty Cycle of Test Signal

Chain A

802.11a: Duty cycle = 2.072/2.152 = 0.963, Duty factor = 10 * log(1/0.963) = 0.16

802.11n (HT20): Duty cycle = 2.085/2.132 = 0.978, Duty factor = 10 * log(1/0.978) = 0.10

802.11n (HT40): Duty cycle = 3.945/4.04 = 0.976, Duty factor = 10 * log(1/0.976) = 0.10

802.11ac (VHT80): Duty cycle = 3.955/4.025 = 0.983, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11ac (VHT160): Duty cycle = 5.52/5.565 = 0.992, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

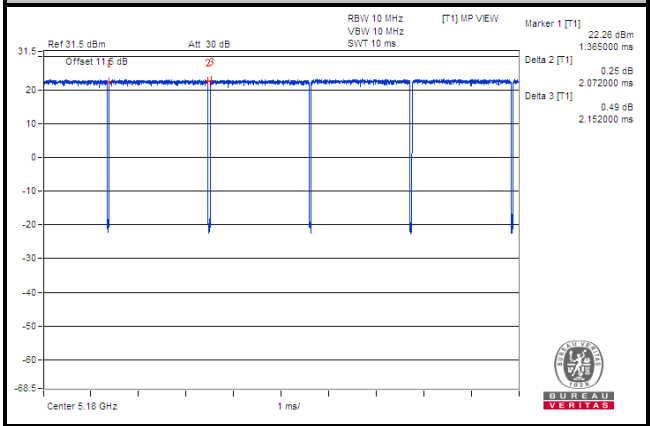
802.11ax (HE20): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE40): Duty cycle = 3.95/4.035 = 0.979, Duty factor = 10 * log(1/0.979) = 0.09

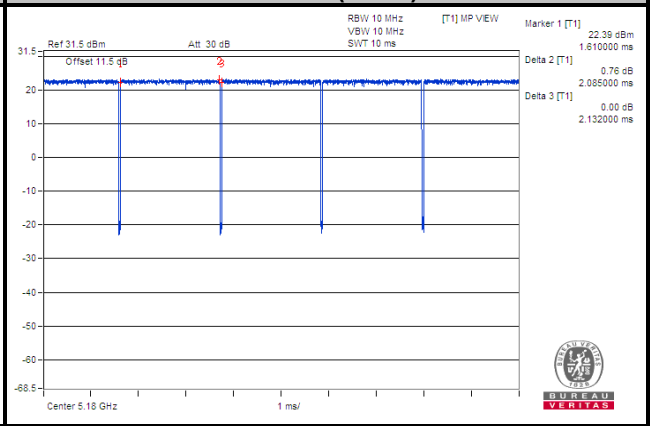
802.11ax (HE80): Duty cycle = 3.93/4.01 = 0.980, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11ax (HE160): Duty cycle = 5.52/5.565 = 0.992, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

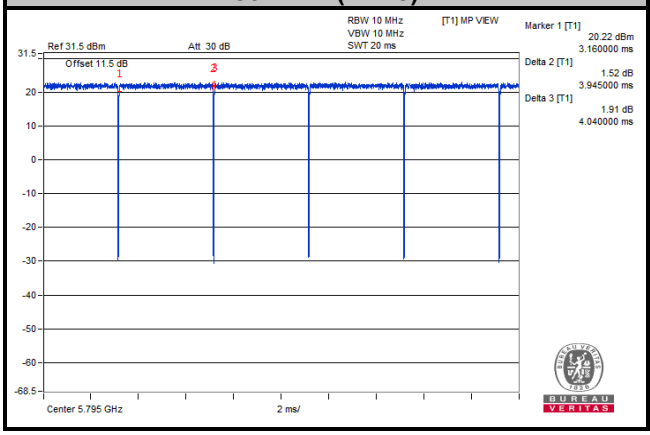
802.11a



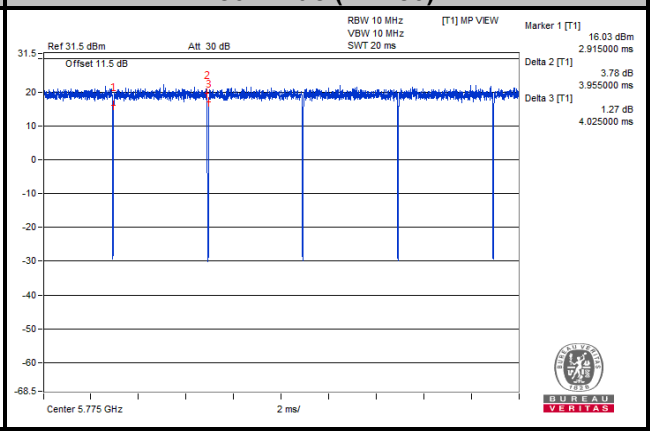
802.11n (HT20)



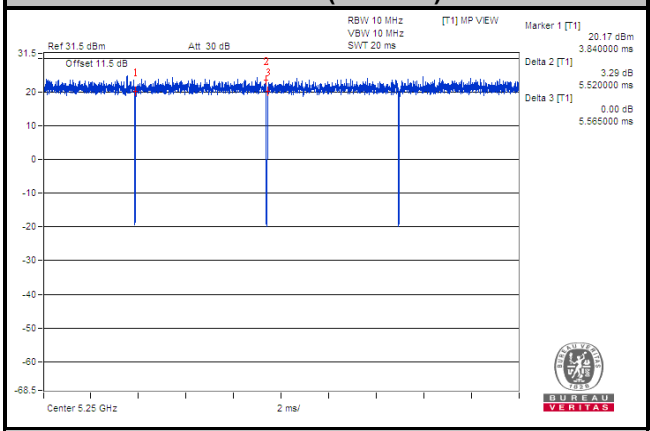
802.11n (HT40)



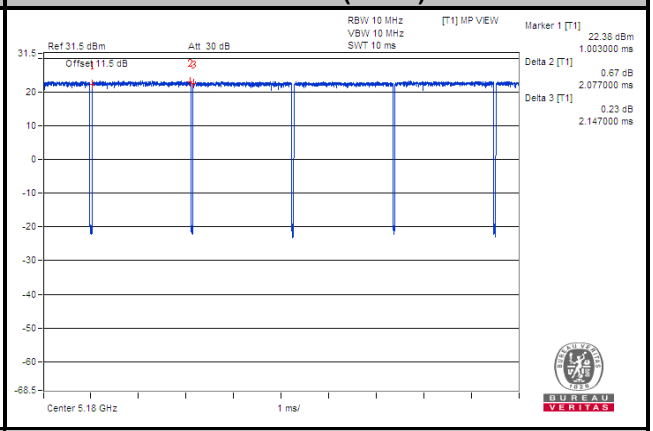
802.11ac (VHT80)



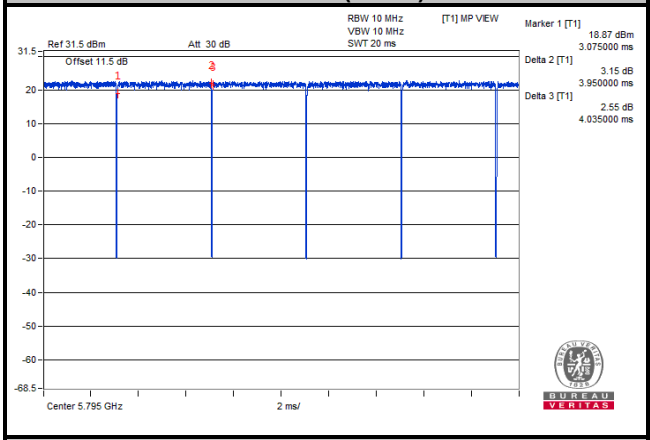
802.11ac (VHT160)



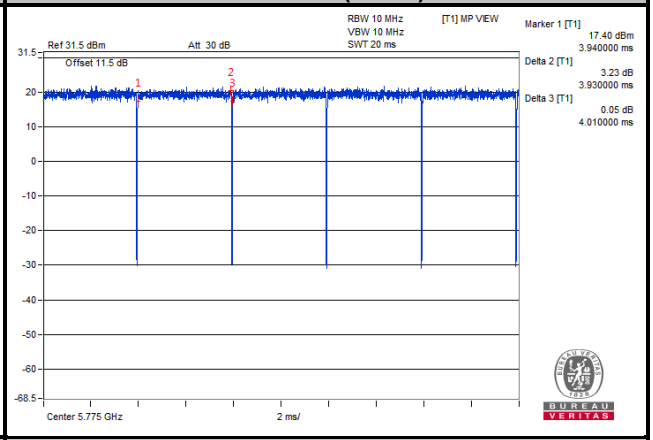
802.11ax (HE20)



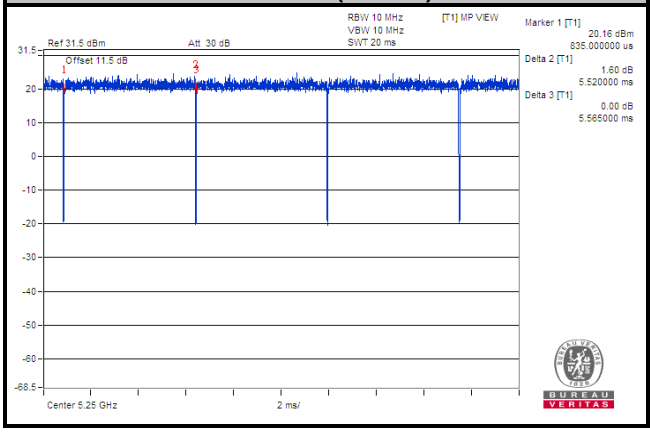
802.11ax (HE40)



802.11ax (HE80)



802.11ax (HE160)



Chain B

802.11a: Duty cycle = 2.072/2.152 = 0.963, Duty factor = 10 * log(1/0.963) = 0.16

802.11n (HT20): Duty cycle = 2.082/2.154 = 0.967, Duty factor = 10 * log(1/0.967) = 0.15

802.11n (HT40): Duty cycle = 3.93/4.025 = 0.976, Duty factor = 10 * log(1/0.976) = 0.10

802.11ac (VHT80): Duty cycle = 3.94/4.04 = 0.975, Duty factor = 10 * log(1/0.975) = 0.11

802.11ac (VHT160): Duty cycle = 5.51/5.565 = 0.990, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

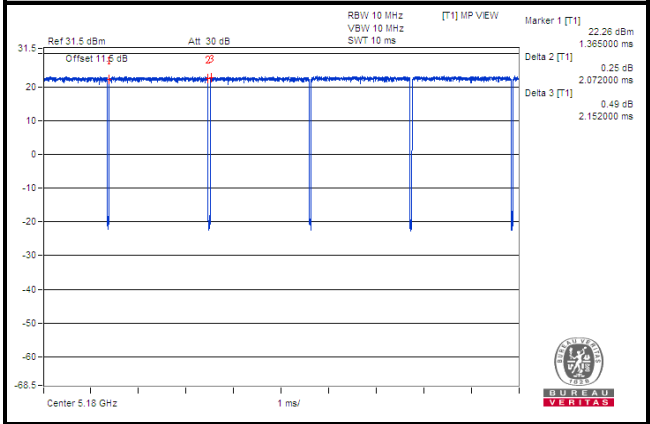
802.11ax (HE20): Duty cycle = 2.079/2.137 = 0.973, Duty factor = 10 * log(1/0.973) = 0.12

802.11ax (HE40): Duty cycle = 3.93/4.025 = 0.976, Duty factor = 10 * log(1/0.976) = 0.10

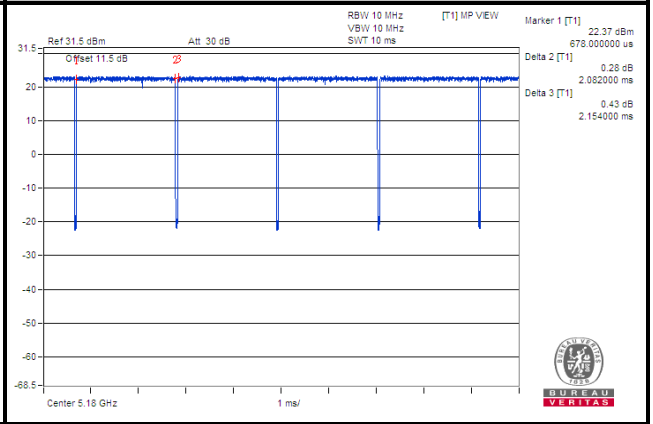
802.11ax (HE80): Duty cycle = 3.96/4.02 = 0.985, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11ax (HE160): Duty cycle = 5.515/5.62 = 0.981, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

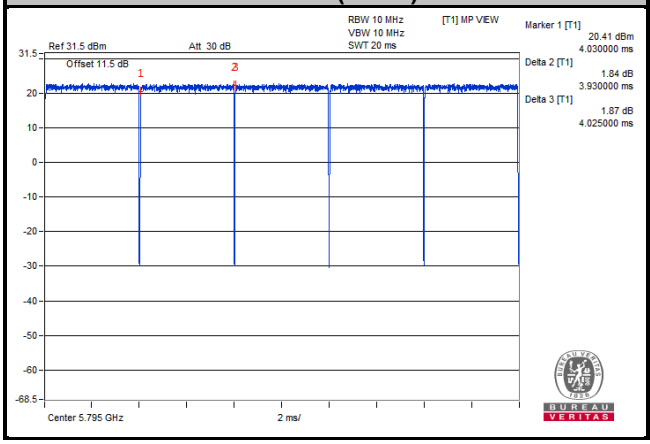
802.11a



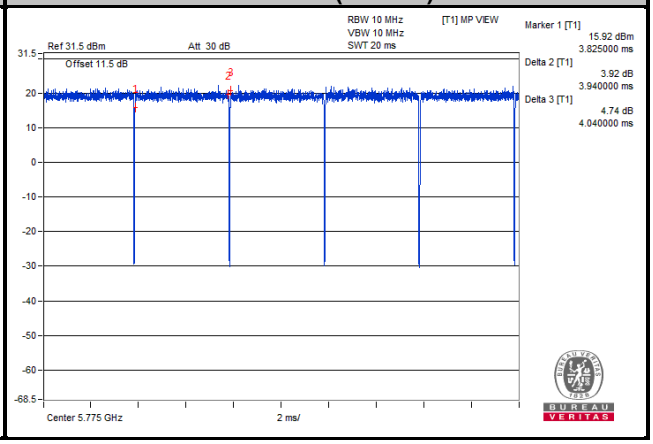
802.11n (HT20)



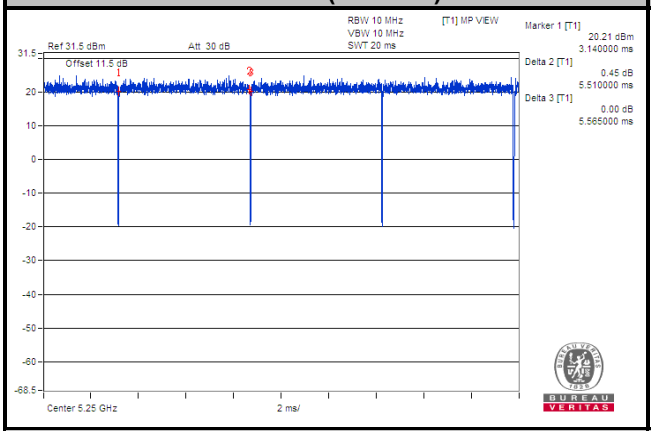
802.11n (HT40)



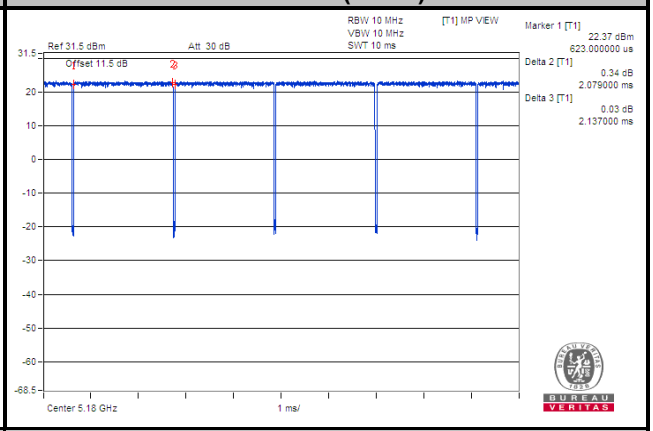
802.11ac (VHT80)



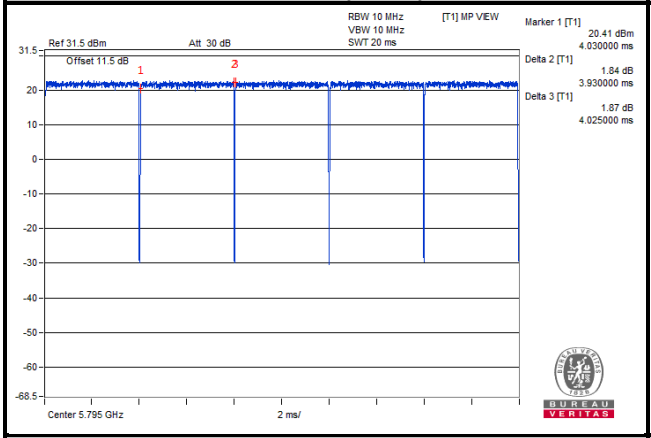
802.11ac (VHT160)



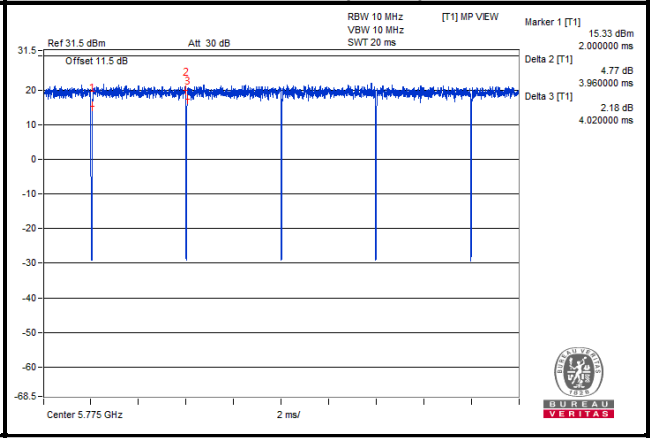
802.11ax (HE20)



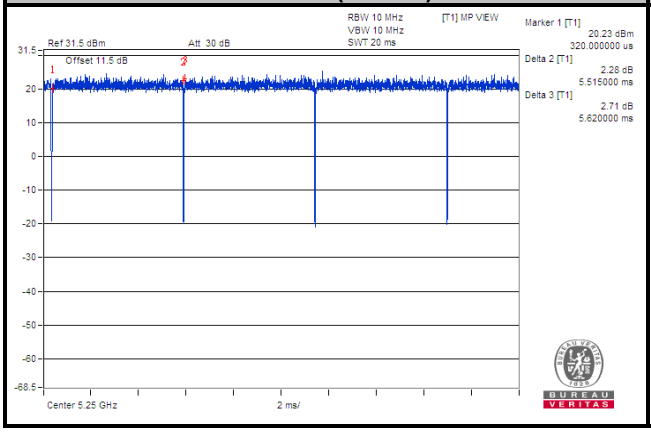
802.11ax (HE40)



802.11ax (HE80)



802.11ax (HE160)



Chain A+B

802.11n (HT20): Duty cycle = 2.085/2.132 = 0.978, Duty factor = 10 * log(1/0.978) = 0.10

802.11n (HT40): Duty cycle = 7.885/7.98 = 0.988, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11ac (VHT80): Duty cycle = 3.945/4.015 = 0.983, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11ac (VHT160): Duty cycle = 5.52/5.565 = 0.992, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

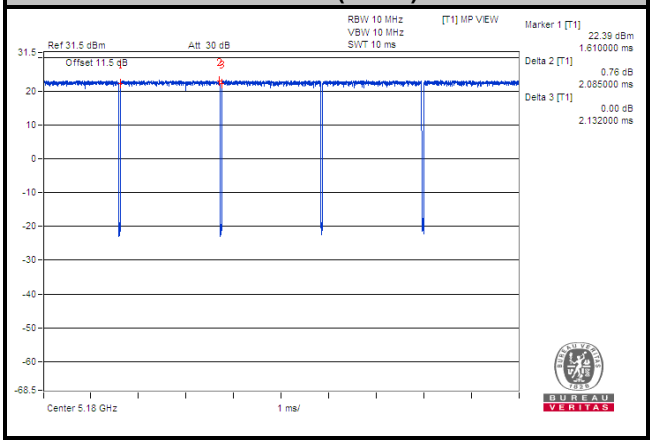
802.11ax (HE20): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE40): Duty cycle = 3.945/4.02 = 0.981, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

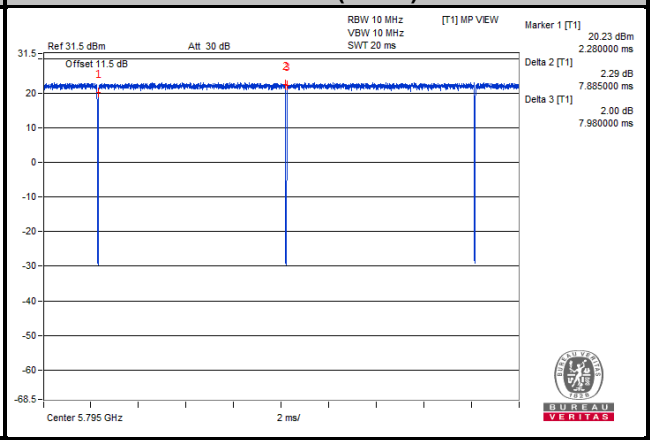
802.11ax (HE80): Duty cycle = 3.92/4.02 = 0.975, Duty factor = 10 * log(1/0.975) = 0.11

802.11ax (HE160): Duty cycle = 5.52/5.565 = 0.992, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

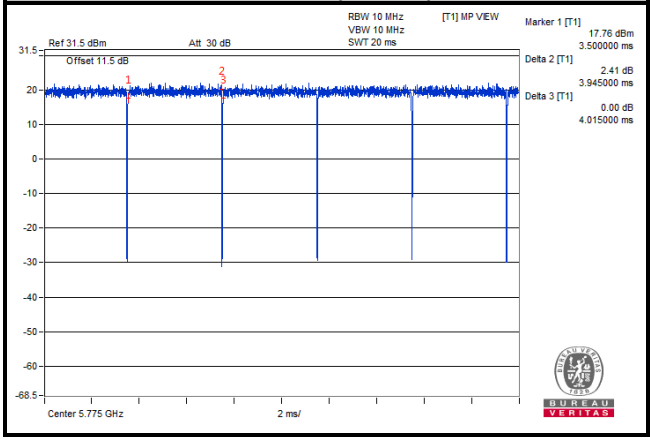
802.11n (HT20)



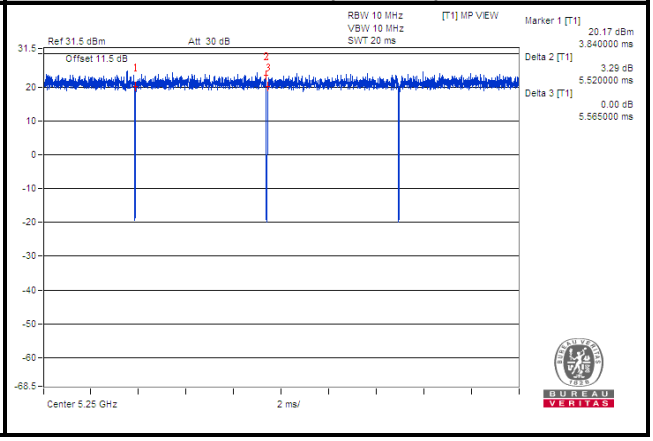
802.11n (HT40)



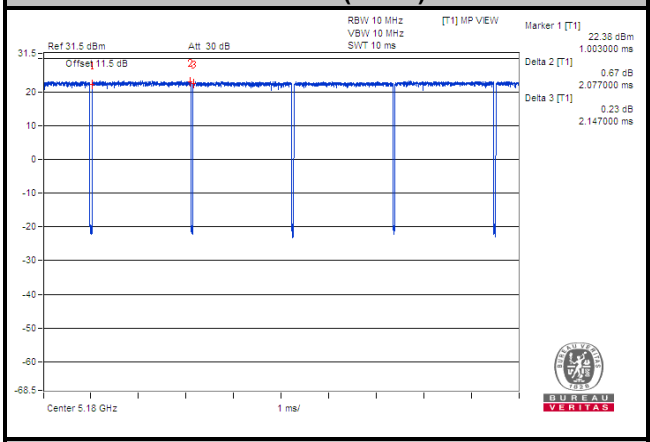
802.11ac (VHT80)



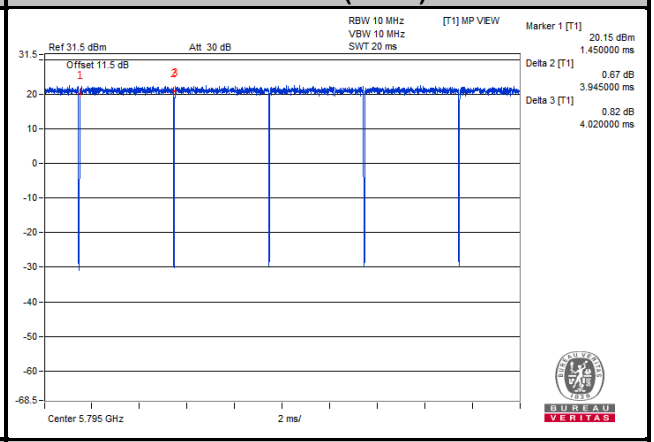
802.11ac (VHT160)



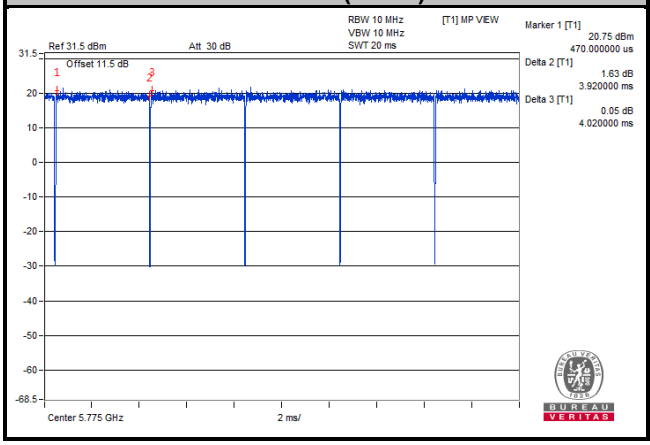
802.11ax (HE20)



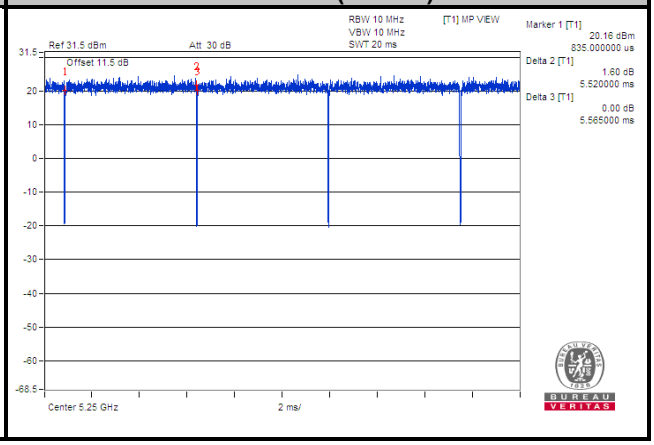
802.11ax (HE40)



802.11ax (HE80)



802.11ax (HE160)



Partial RU

Chain A

802.11ax (HE20) (26, 0): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE20) (26, 8): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE20) (52, 37): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE20) (52, 40): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE20) (106, 53): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE20) (106, 54): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE40) (242, 61): Duty cycle = 3.96/4.04 = 0.98, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

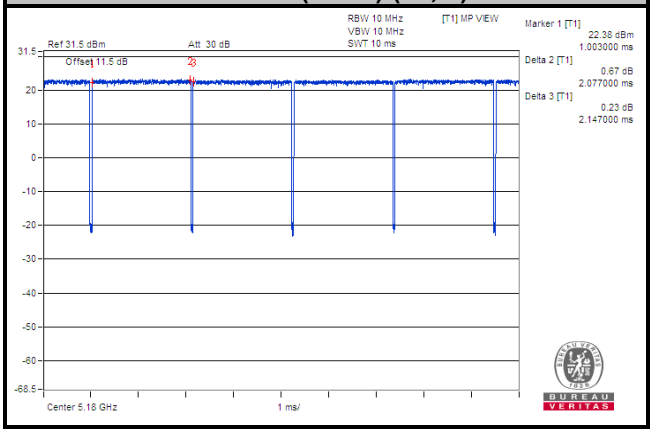
802.11ax (HE40) (242, 62): Duty cycle = 0.285/0.338 = 0.843, Duty factor = 10 * log(1/0.843) = 0.74

802.11ax (HE80) (484, 65): Duty cycle = 3.92/4.02 = 0.975, Duty factor = 10 * log(1/0.975) = 0.11

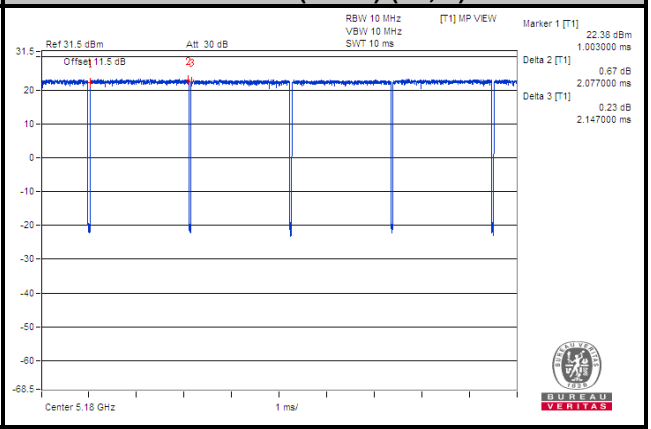
802.11ax (HE160) (996, 67): Duty cycle = 5.52/5.565 = 0.992, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11ax (HE160) (996, S67): Duty cycle = 5.52/5.565 = 0.992, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

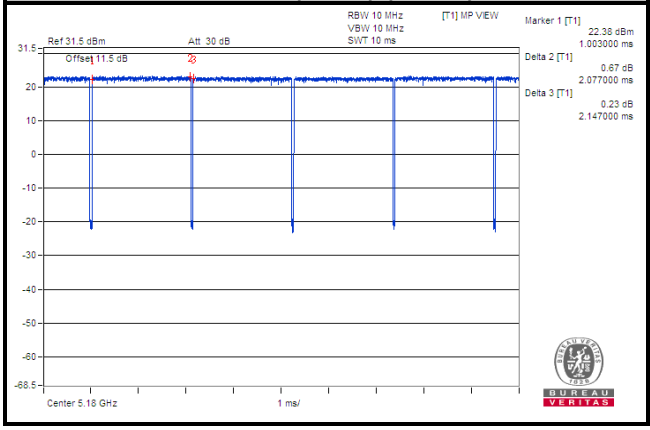
802.11ax (HE20) (26, 0)



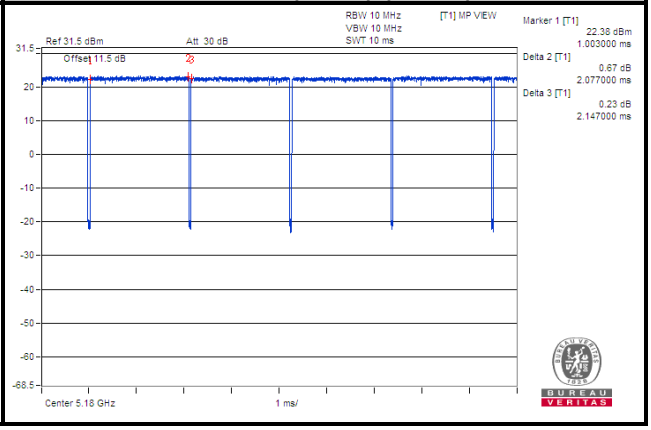
802.11ax (HE20) (26, 8)



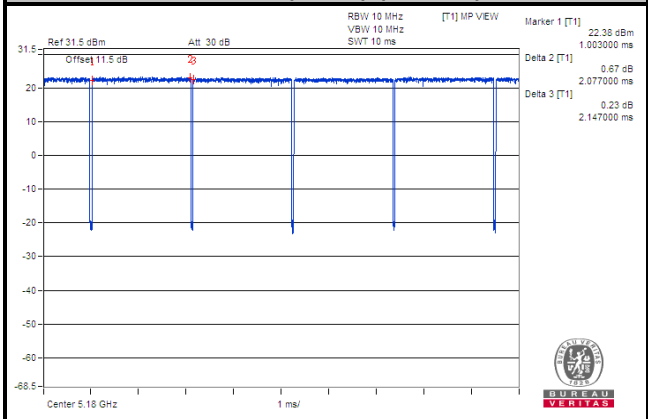
802.11ax (HE20) (52, 37)



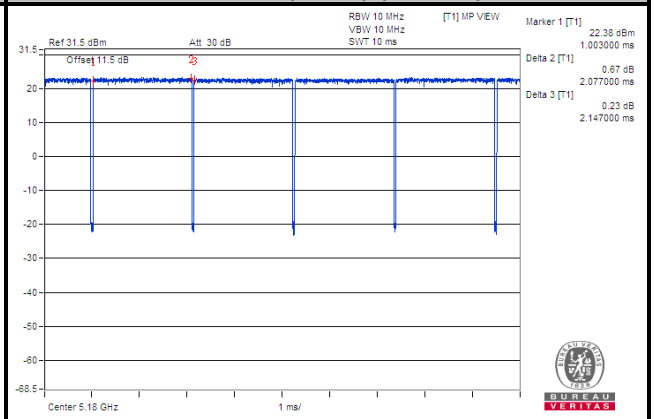
802.11ax (HE20) (52, 40)



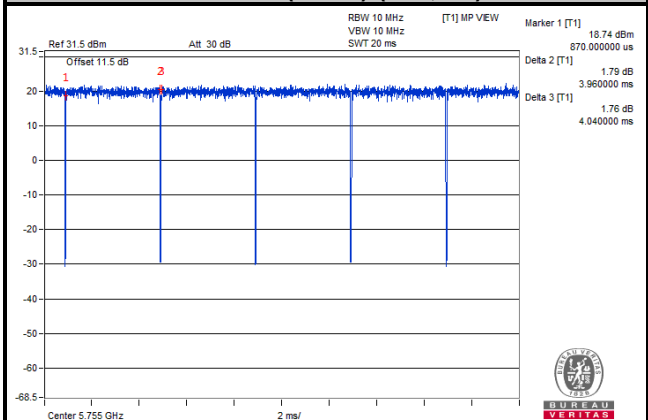
802.11ax (HE20) (106, 53)



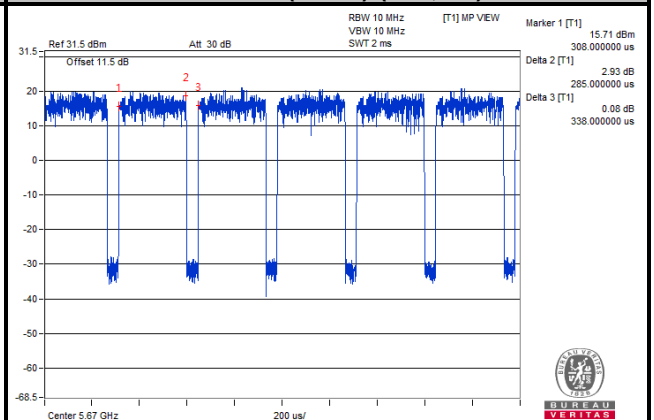
802.11ax (HE20) (106, 54)



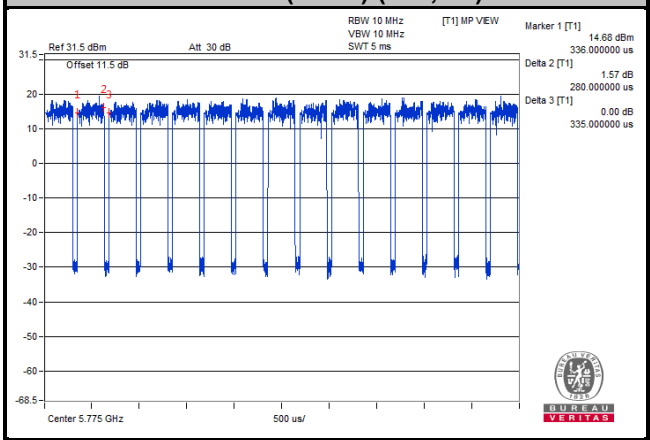
802.11ax (HE40) (242, 61)



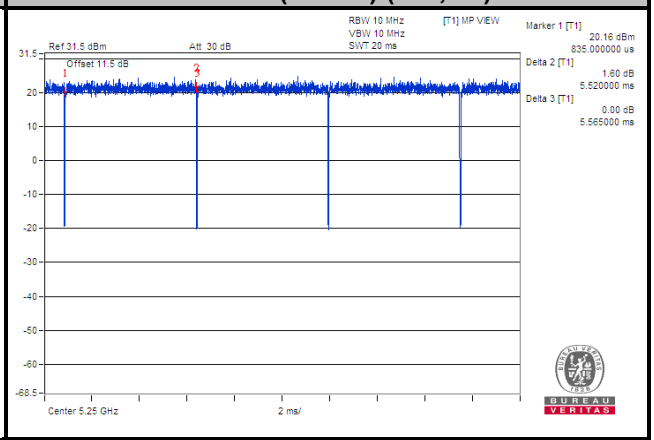
802.11ax (HE40) (242, 62)



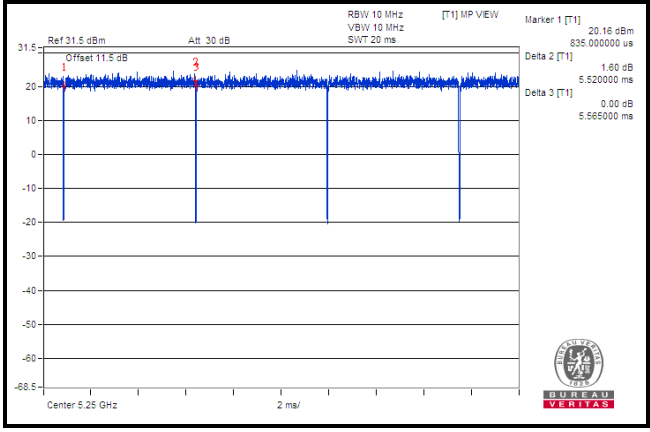
802.11ax (HE80) (484, 65)



802.11ax (HE160) (996, 67)



802.11ax (HE160) (996, S67)



Chain B

802.11ax (HE20) (26, 0): Duty cycle = 2.079/2.137 = 0.973, Duty factor = 10 * log(1/0.973) = 0.12

802.11ax (HE20) (26, 8): Duty cycle = 2.079/2.137 = 0.973, Duty factor = 10 * log(1/0.973) = 0.12

802.11ax (HE20) (52, 37): Duty cycle = 2.079/2.137 = 0.973, Duty factor = 10 * log(1/0.973) = 0.12

802.11ax (HE20) (52, 40): Duty cycle = 2.079/2.137 = 0.973, Duty factor = 10 * log(1/0.973) = 0.12

802.11ax (HE20) (106, 53): Duty cycle = 2.079/2.137 = 0.973, Duty factor = 10 * log(1/0.973) = 0.12

802.11ax (HE20) (106, 54): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE40) (242, 61): Duty cycle = 3.96/4.04 = 0.980, Duty cycle of test signal is ≥ 98 %, duty factor is not required

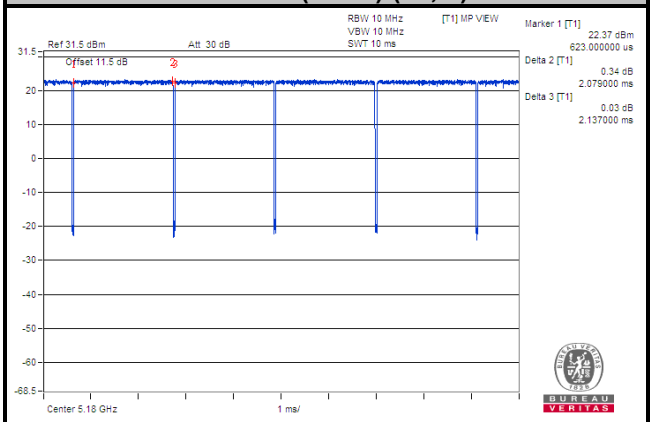
802.11ax (HE40) (242, 62): Duty cycle = 0.285/0.335 = 0.851, Duty factor = 10 * log(1/0.851) = 0.70

802.11ax (HE80) (484, 65): Duty cycle = 3.955/4.045 = 0.978, Duty factor = 10 * log(1/0.978) = 0.10

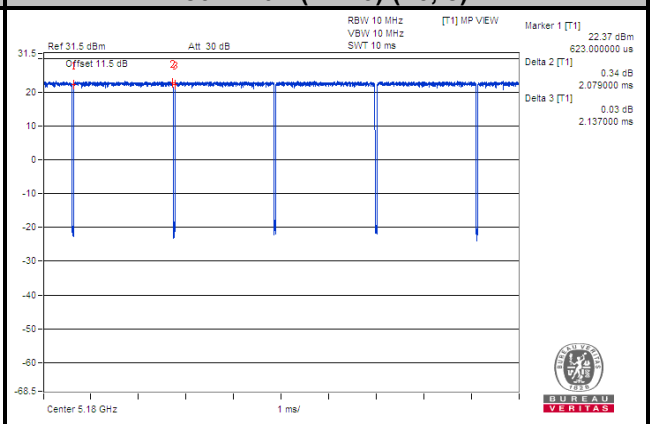
802.11ax (HE160) (996, 67): Duty cycle = 5.515/5.62 = 0.981, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11ax (HE160) (996, S67): Duty cycle = 5.515/5.62 = 0.981, Duty cycle of test signal is ≥ 98 %, duty factor is not required.

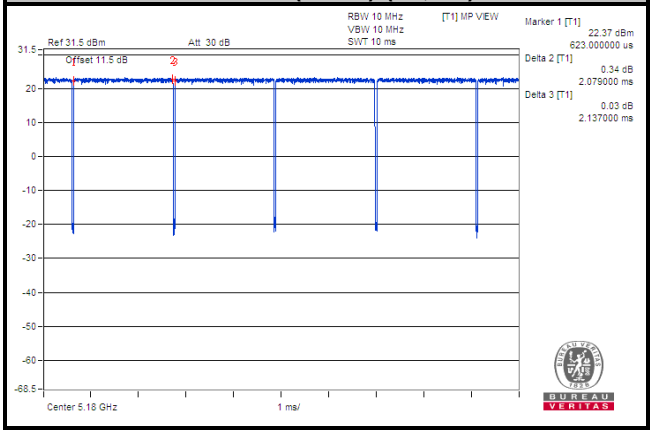
802.11ax (HE20) (26, 0)



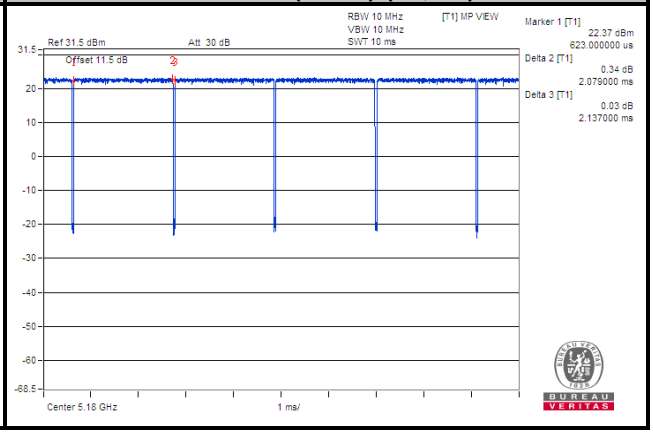
802.11ax (HE20) (26, 8)



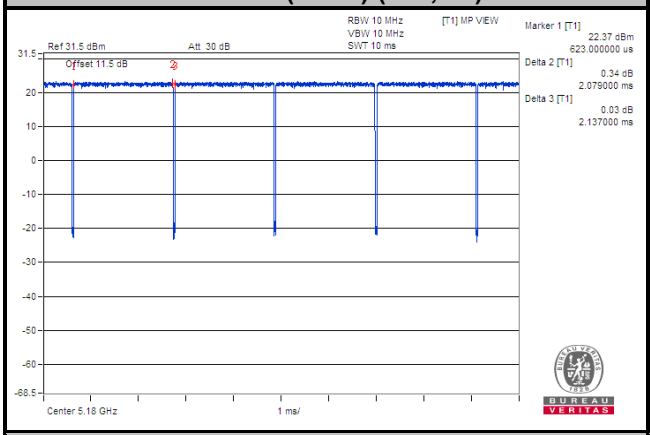
802.11ax (HE20) (52, 37)



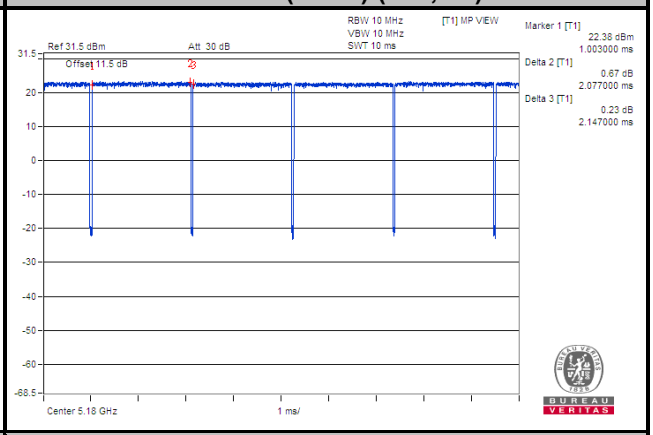
802.11ax (HE20) (52, 40)



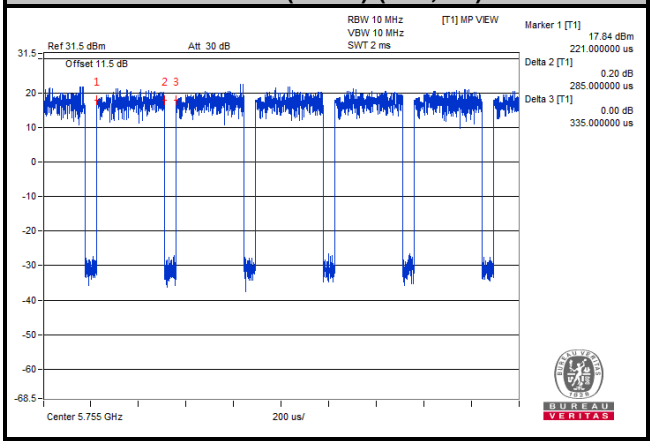
802.11ax (HE20) (106, 53)



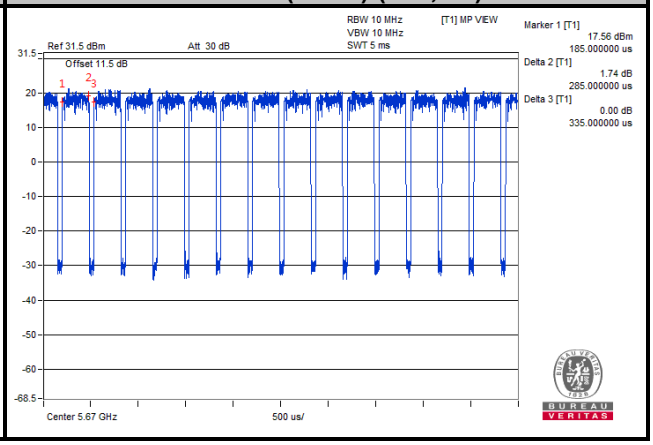
802.11ax (HE20) (106, 54)



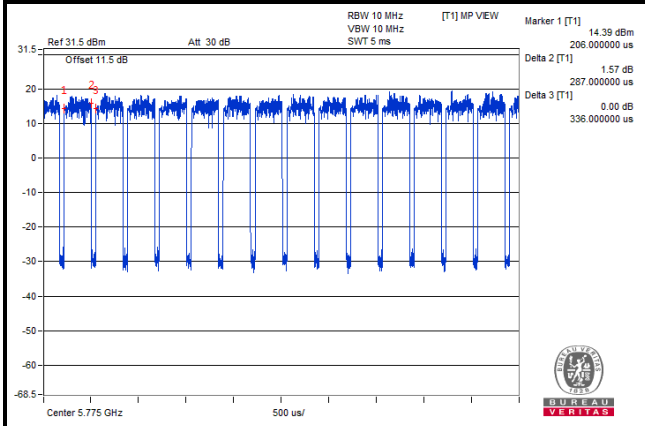
802.11ax (HE40) (242, 61)



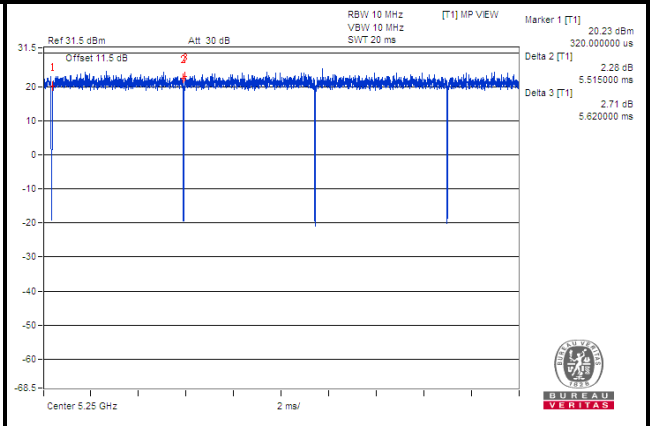
802.11ax (HE40) (242, 62)



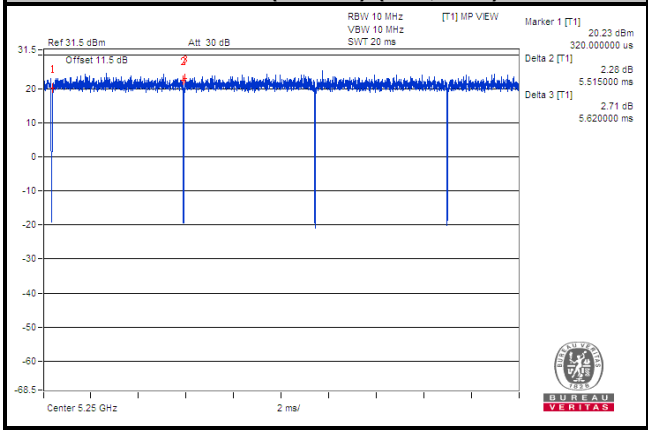
802.11ax (HE80) (484, 65)



802.11ax (HE160) (996, 67)



802.11ax (HE160) (996, S67)



Chain A+B

802.11ax (HE20) (26, 0): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE20) (26, 8): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE20) (52, 37): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE20) (52, 40): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE20) (106, 53): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE20) (106, 54): Duty cycle = 2.077/2.147 = 0.967, Duty factor = 10 * log(1/0.967) = 0.14

802.11ax (HE40) (242, 61): Duty cycle = 3.96/4.04 = 0.980, Duty cycle of test signal is ≥ 98 %, duty factor is not required

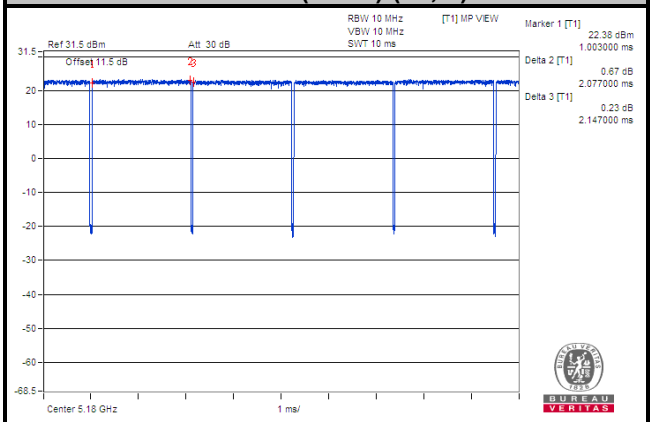
802.11ax (HE40) (242, 62): Duty cycle = 3.96/4.045 = 0.979, Duty factor = 10 * log(1/0.979) = 0.09

802.11ax (HE80) (484, 65): Duty cycle = 3.92/4.02 = 0.975, Duty factor = 10 * log(1/0.975) = 0.11

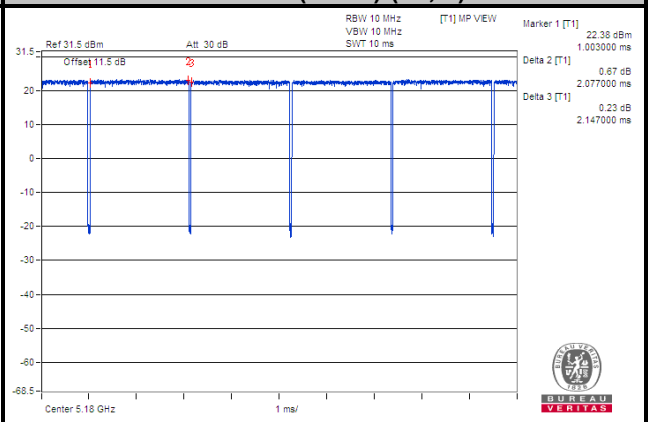
802.11ax (HE160) (996, 67): Duty cycle = 5.52/5.565 = 0.992, Duty cycle of test signal is ≥ 98 %, duty factor is not required

802.11ax (HE160) (996, S67): Duty cycle = 5.52/5.565 = 0.992, Duty cycle of test signal is ≥ 98 %, duty factor is not required

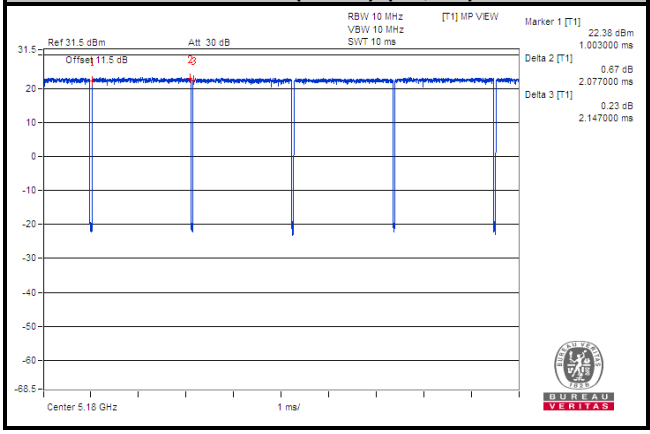
802.11ax (HE20) (26, 0)



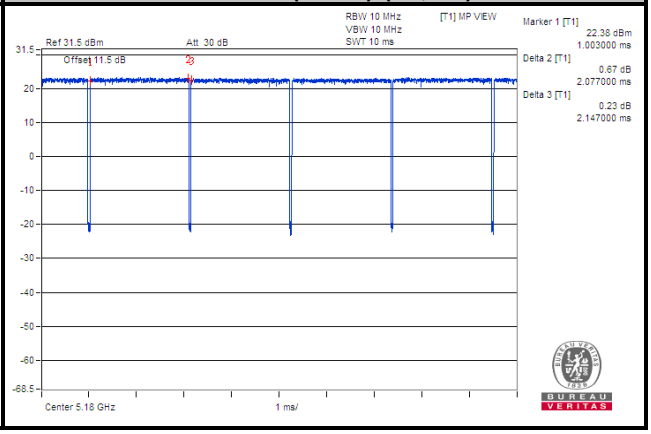
802.11ax (HE20) (26, 8)



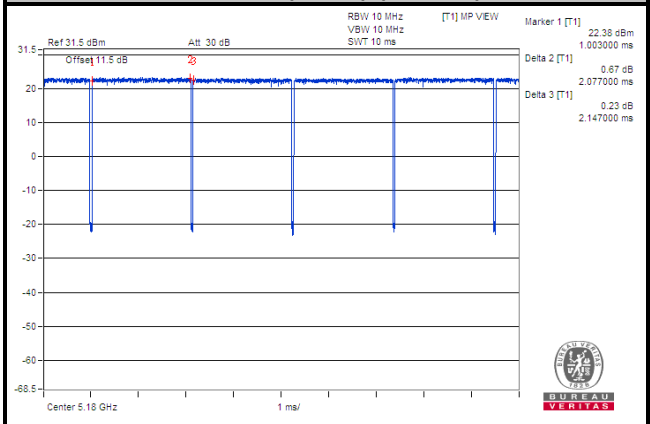
802.11ax (HE20) (52, 37)



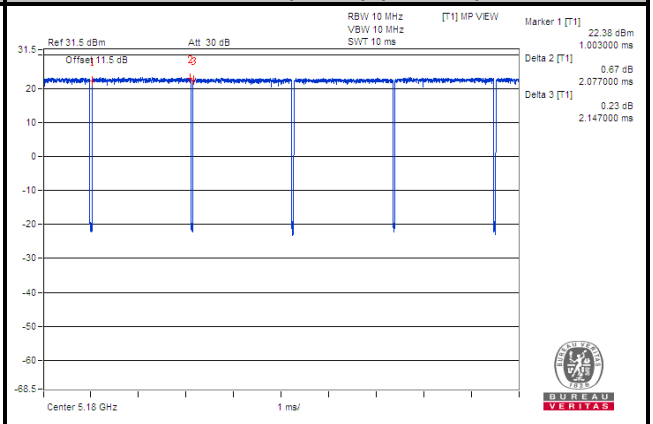
802.11ax (HE20) (52, 40)



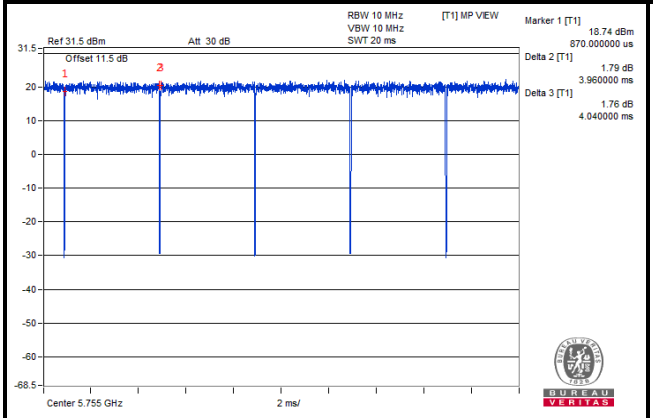
802.11ax (HE20) (106, 53)



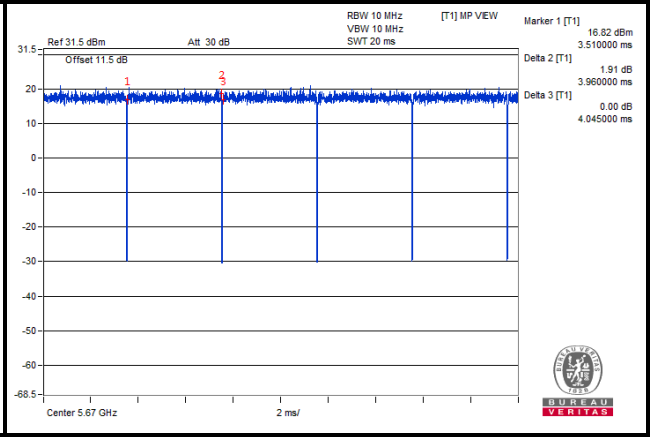
802.11ax (HE20) (106, 54)



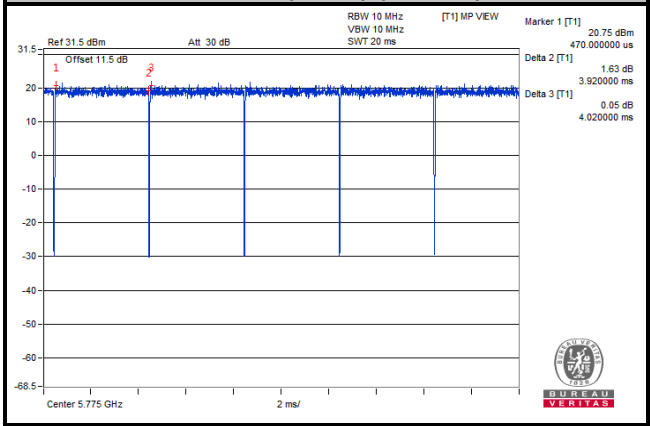
802.11ax (HE40) (242, 61)



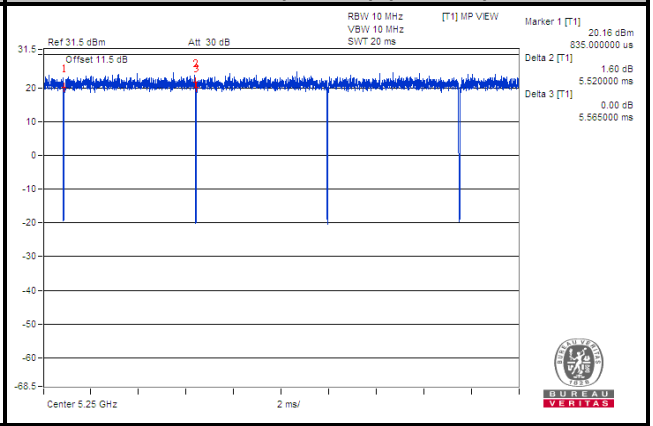
802.11ax (HE40) (242, 62)



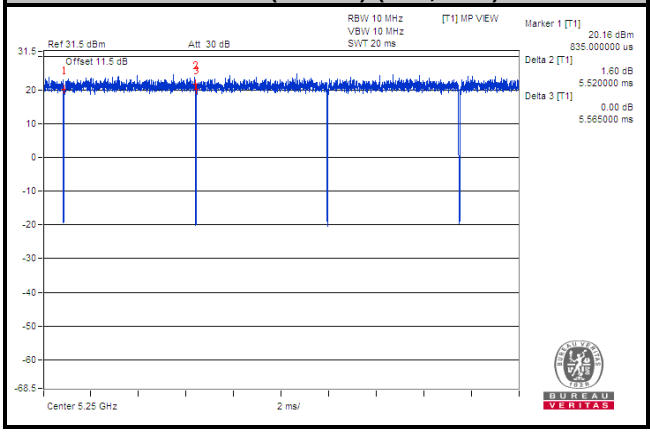
802.11ax (HE80) (484, 65)



802.11ax (HE160) (996, 67)



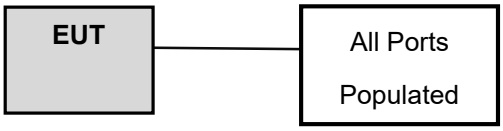
802.11ax (HE160) (996, S67)



3.4 Description of Support Units

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

3.4.1 Configuration of System under Test



Note: The EUT is tested with all external accessory ports populated.

3.5 General Description of Applied Standards and References

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

Test Standard:

FCC Part 15, Subpart 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.

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	☒	15.407(b)(4)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2 (dBμV/m) *1 PK:105.2 (dBμV/m) *2 PK: 110.8 (dBμV/m) *3 PK:122.2 (dBμV/m) *4
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	

*1 beyond 75 MHz or more above of the band edge.

*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note:

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver Agilent Technologies	N9038A	MY52260177	Aug. 24, 2020	Aug. 23, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021
HORN Antenna ETS-Lindgren	3117	00143293	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
BILOG Antenna SCHWARZBECK	VULB 9168	9168-616	Nov. 12, 2019	Nov. 11, 2020
			Nov. 09, 2020	Nov. 08, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
Loop Antenna	EM-6879	269	Sep. 17, 2020	Sep. 16, 2021
Preamplifier Agilent	310N	187226	Jun. 17, 2020	Jun. 16, 2021
Preamplifier Agilent	83017A	MY39501357	Jun. 17, 2020	Jun. 16, 2021
Preamplifier EMCI	EMC 184045	980116	Oct. 08, 2019	Oct. 07, 2020
			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 signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-400)	Jun. 17, 2020	Jun. 16, 2021
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(RFC-SMS-100-SMS-24)	Jun. 17, 2020	Jun. 17, 2021
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 8.130425b	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	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 HsinTien Chamber 1.

4.1.3 Test Procedures

For Radiated Emission below 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz at frequency below 30 MHz.

For Radiated Emission above 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30 MHz ~ 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98 %) or 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz.

Chain A
802.11a: RBW = 1 MHz, VBW = 10 kHz
802.11n (HT20): RBW = 1 MHz, VBW = 10 kHz
802.11n (HT40): RBW = 1 MHz, VBW = 1 kHz
802.11ac (VHT80): RBW = 1 MHz, VBW = 10 Hz
802.11ac (VHT160): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE20): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE40): RBW = 1 MHz, VBW = 1 kHz
802.11ax (HE80): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE160): RBW = 1 MHz, VBW = 10 kHz

Chain B
802.11a: RBW = 1 MHz, VBW = 10 kHz
802.11n (HT20): RBW = 1 MHz, VBW = 10 kHz
802.11n (HT40): RBW = 1 MHz, VBW = 1 kHz
802.11ac (VHT80): RBW = 1 MHz, VBW = 1 kHz
802.11ac (VHT160): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE20): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE40): RBW = 1 MHz, VBW = 1 kHz
802.11ax (HE80): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE160): RBW = 1 MHz, VBW = 10 kHz

Chain A+B
802.11n (HT20): RBW = 1 MHz, VBW = 10 kHz
802.11n (HT40): RBW = 1 MHz, VBW = 10 Hz
802.11ac (VHT80): RBW = 1 MHz, VBW = 10 Hz
802.11ac (VHT160): RBW = 1 MHz, VBW = 1 kHz
802.11ax (HE20): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE40): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE80): RBW = 1 MHz, VBW = 1 kHz
802.11ax (HE160): RBW = 1 MHz, VBW = 10 kHz

Partial RU

Chain A

802.11ax (HE20) (26, 0): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE20) (26, 8): RBW = 1 MHz, VBW = 3 kHz
802.11ax (HE20) (52, 37): RBW = 1 MHz, VBW = 3 kHz
802.11ax (HE20) (52, 40): RBW = 1 MHz, VBW = 1 kHz
802.11ax (HE20) (106, 53): RBW = 1 MHz, VBW = 3 kHz
802.11ax (HE20) (106, 54): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE40) (242, 61): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE40) (242, 62): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE80) (484, 65): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE160) (996，67): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE160) (996，S67): RBW = 1 MHz, VBW = 10 kHz

Chain B

802.11ax (HE20) (26, 0): RBW = 1 MHz, VBW = 3 kHz
802.11ax (HE20) (26, 8): RBW = 1 MHz, VBW = 3 kHz
802.11ax (HE20) (52, 37): RBW = 1 MHz, VBW = 3 kHz
802.11ax (HE20) (52, 40): RBW = 1 MHz, VBW = 3 kHz
802.11ax (HE20) (106, 53): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE20) (106, 54): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE40) (242, 61): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE40) (242, 62): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE80) (484, 65): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE160) (996，67): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE160) (996，S67): RBW = 1 MHz, VBW = 10 Hz

Chain A+B

802.11ax (HE20) (26, 0): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE20) (26, 8): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE20) (52, 37): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE20) (52, 40): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE20) (106, 53): RBW = 1 MHz, VBW = 10 Hz
802.11ax (HE20) (106, 54): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE40) (242, 61): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE40) (242, 62): RBW = 1 MHz, VBW = 1 kHz
802.11ax (HE80) (484, 65): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE160) (996，67): RBW = 1 MHz, VBW = 10 kHz
802.11ax (HE160) (996，S67): RBW = 1 MHz, VBW = 10 kHz

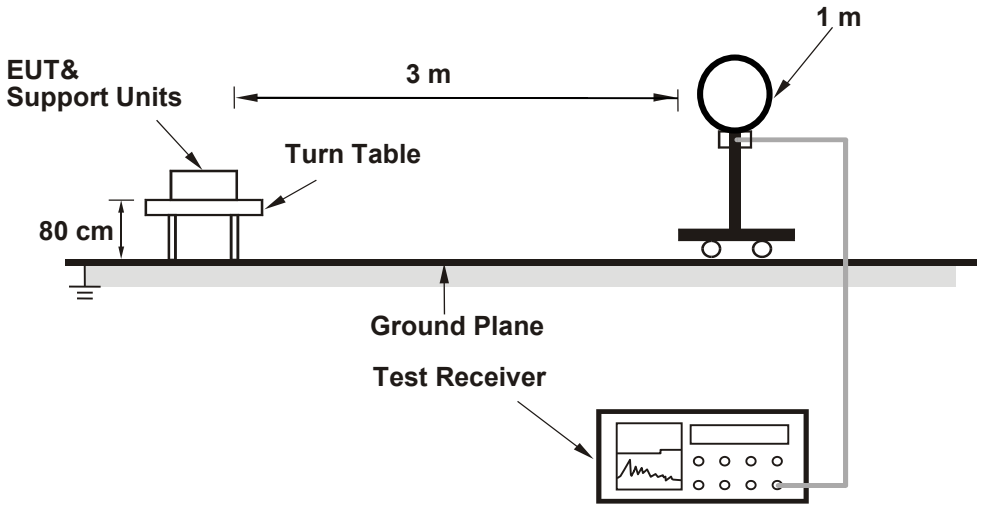
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

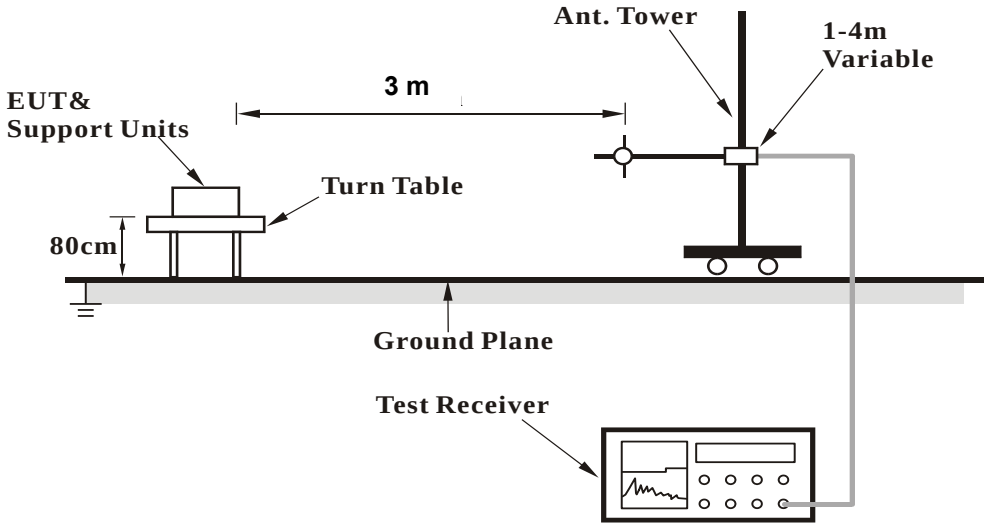
No deviation.

4.1.5 Test Setup

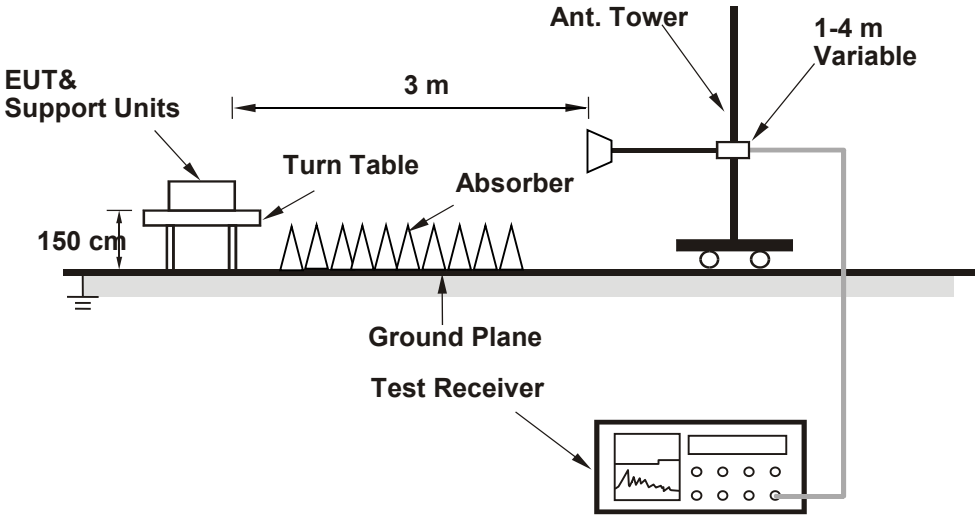
<Radiated Emission below 30 MHz>



<Radiated Emission 30 MHz to 1 GHz>



<Radiated Emission above 1 GHz>



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

4.1.6 EUT Operating Conditions

a. Placed the EUT on a testing table.

b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

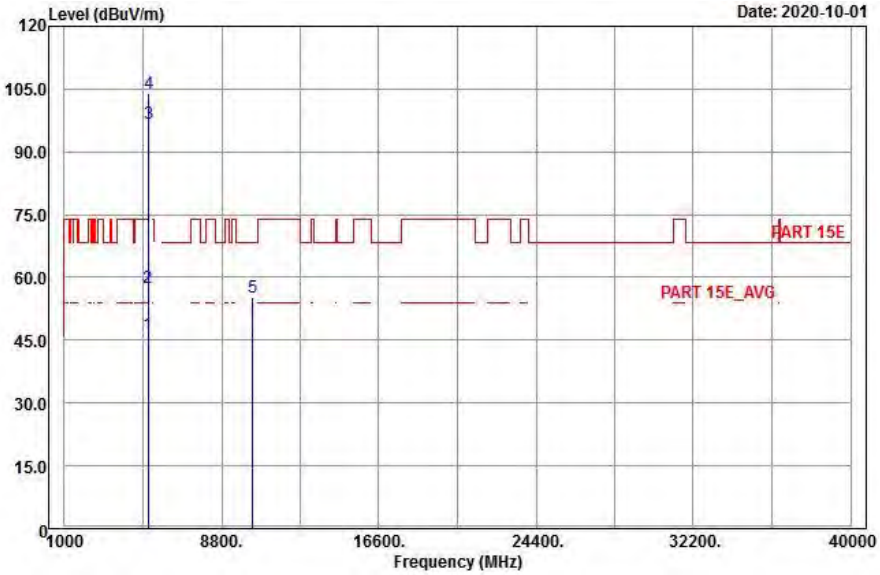
Above 1 GHz Data：

Chain A

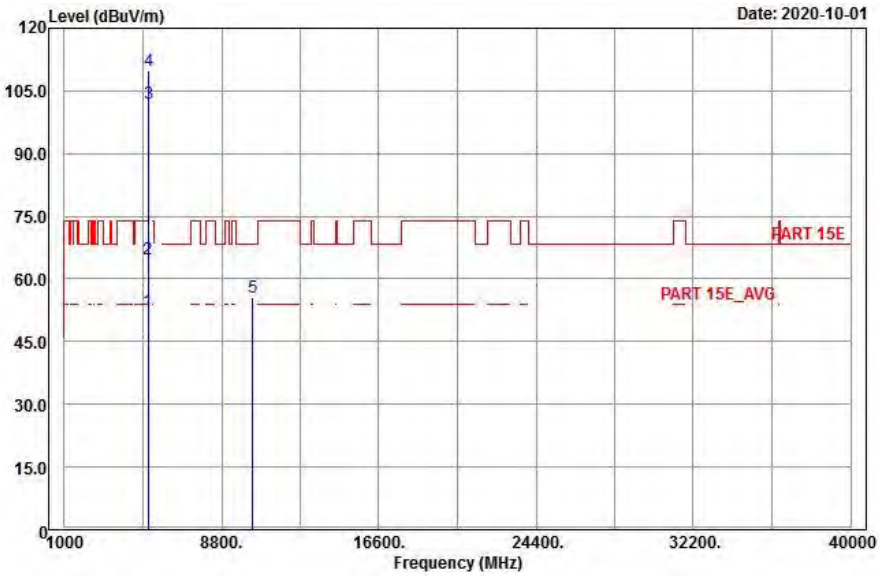
802.11a

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**	Charles Hsiao

Horizontal



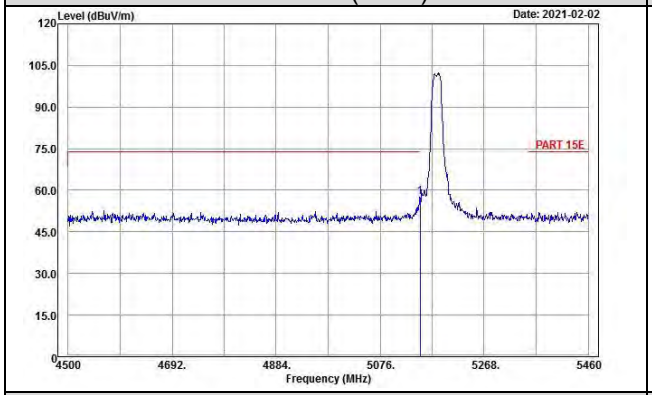
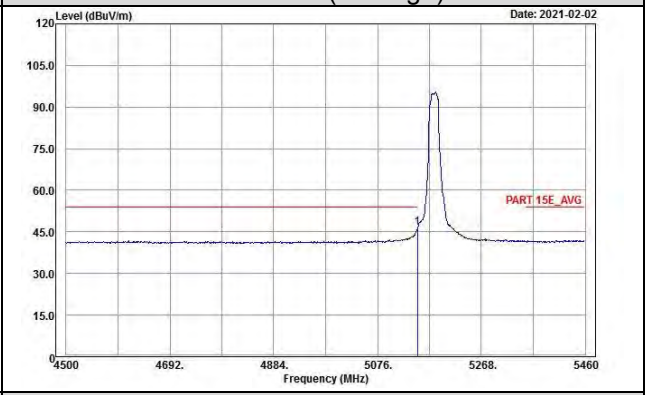
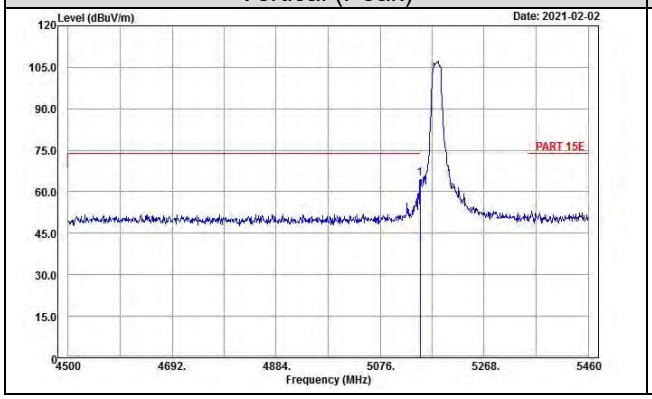
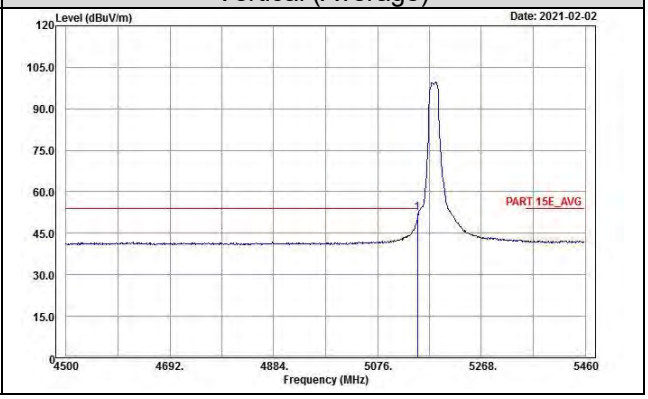
Vertical



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
5150	46.49	36.44	10.05	54	-7.51	211	19	Average
5150	57.54	47.49	10.05	74	-16.46	211	19	Peak
5180	96.69	86.57	10.12			211	19	Average
5180	103.97	93.85	10.12			211	19	Peak
*10360	55.15	39.13	16.02	68.2	-13.05	185	5	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	52.23	42.18	10.05	54	-1.77	188	344	Average
5150	64.84	54.79	10.05	74	-9.16	188	344	Peak
5180	102.14	92.02	10.12			188	344	Average
5180	109.86	99.74	10.12			188	344	Peak
*10360	55.5	39.48	16.02	68.2	-12.7	119	314	Peak

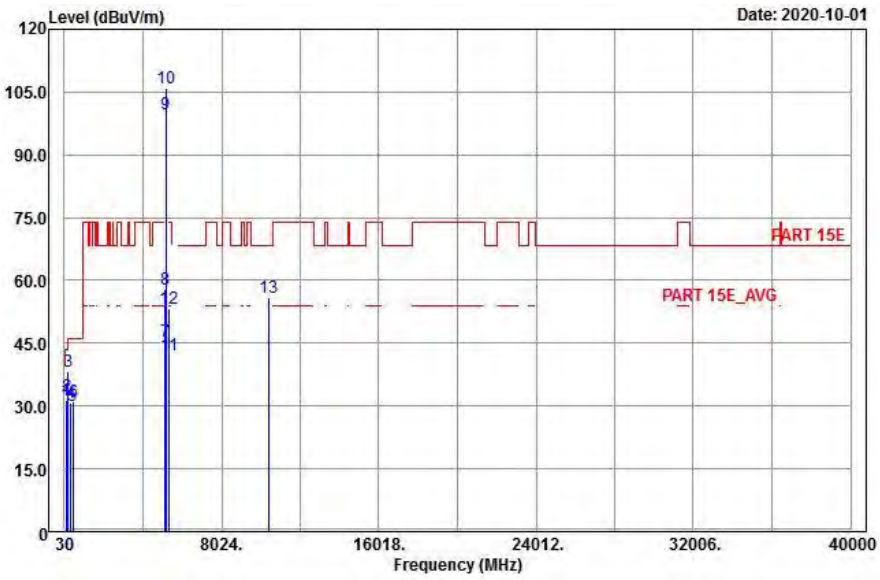
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5180 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

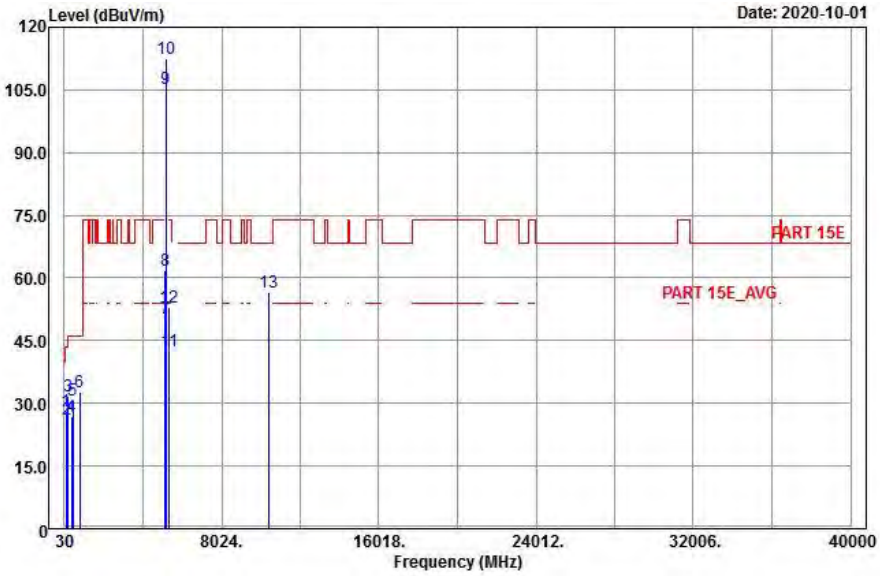
Channel 36	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

EUT Test Condition		Measurement Detail	
Channel	Channel 40	**Frequency Range**	30 MHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



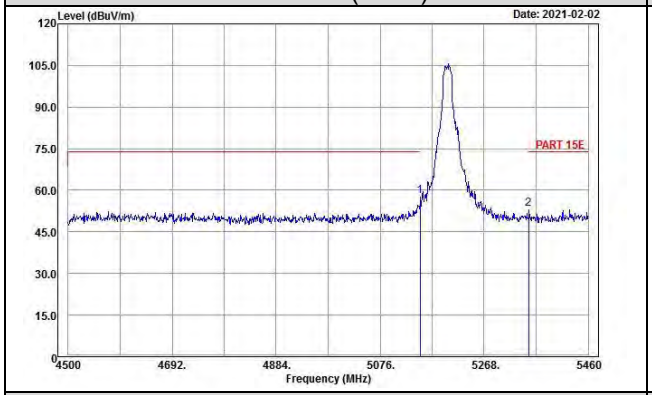
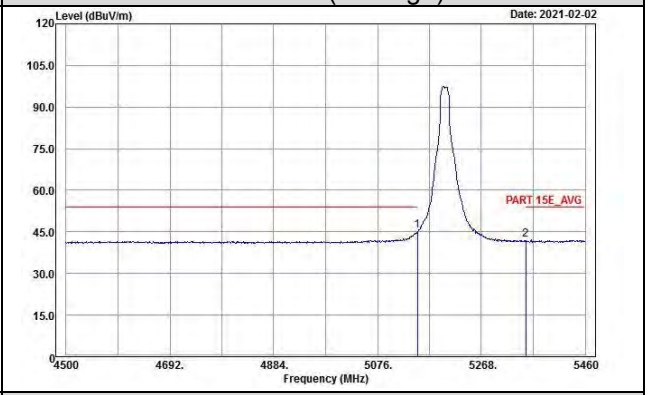
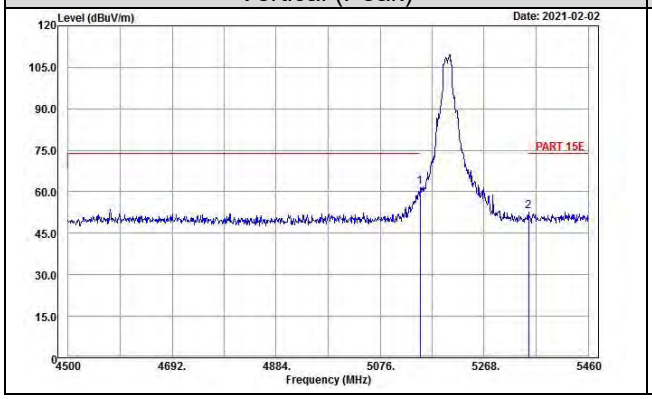
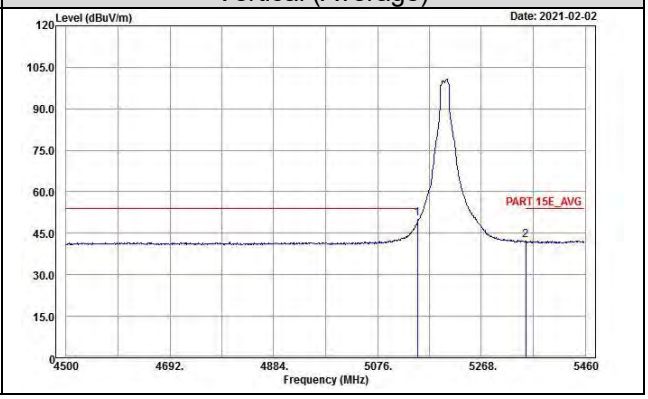
Vertical



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
126.12	31.54	51.62	-20.08	43.5	-11.96	132	225	Peak
201.72	32.47	50.68	-18.21	43.5	-11.03	106	119	Peak
220.89	38.36	56.17	-17.81	46	-7.64	154	255	Peak
367.2	30.77	45.21	-14.44	46	-15.23	105	141	Peak
447.7	30.05	43.35	-13.3	46	-15.95	133	300	Peak
498.1	31.18	43.51	-12.33	46	-14.82	188	7	Peak
5150	45.32	35.27	10.05	54	-8.68	211	19	Average
5150	57.79	47.74	10.05	74	-16.21	211	19	Peak
5200	99.67	89.51	10.16			211	19	Average
5200	106.05	95.89	10.16			211	19	Peak
5350	42.2	31.97	10.23	54	-11.8	211	19	Average
5350	53.19	42.96	10.23	74	-20.81	211	19	Peak
*10400	55.81	39.63	16.18	68.2	-12.39	132	166	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
127.2	28.1	48.29	-20.19	43.5	-15.4	101	14	Peak
183.9	26.09	45.33	-19.24	43.5	-17.41	131	105	Peak
223.32	31.79	49.5	-17.71	46	-14.21	105	241	Peak
401.5	26.77	40.68	-13.91	46	-19.23	164	55	Peak
475	30.87	43.69	-12.82	46	-15.13	188	85	Peak
818	32.58	39.99	-7.41	46	-13.42	105	25	Peak
5150	50.35	40.3	10.05	54	-3.65	188	344	Average
5150	61.76	51.71	10.05	74	-12.24	188	344	Peak
5200	105.16	95	10.16			188	344	Average
5200	112.34	102.18	10.16			188	344	Peak
5350	42.45	32.22	10.23	54	-11.55	188	344	Average
5350	52.82	42.59	10.23	74	-21.18	188	344	Peak
*10400	56.72	40.54	16.18	68.2	-11.48	124	44	Peak

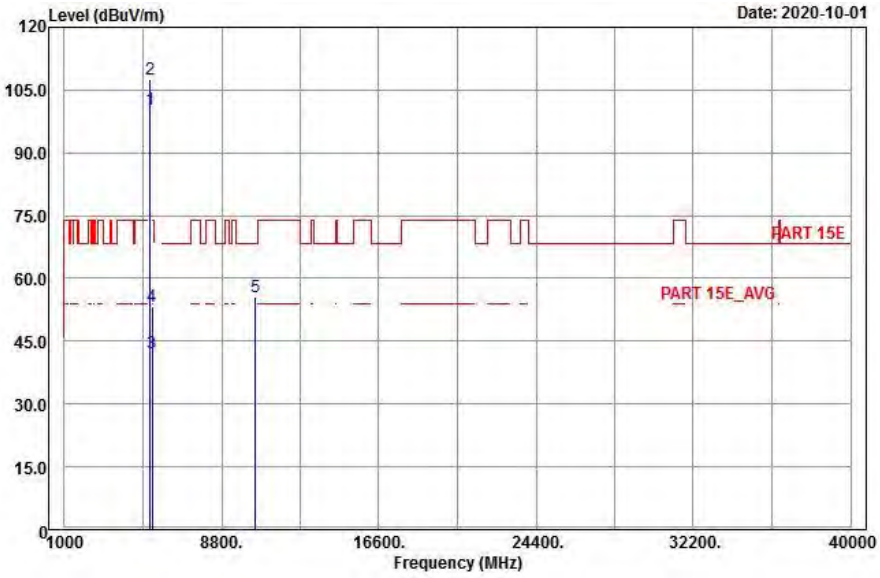
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5200 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

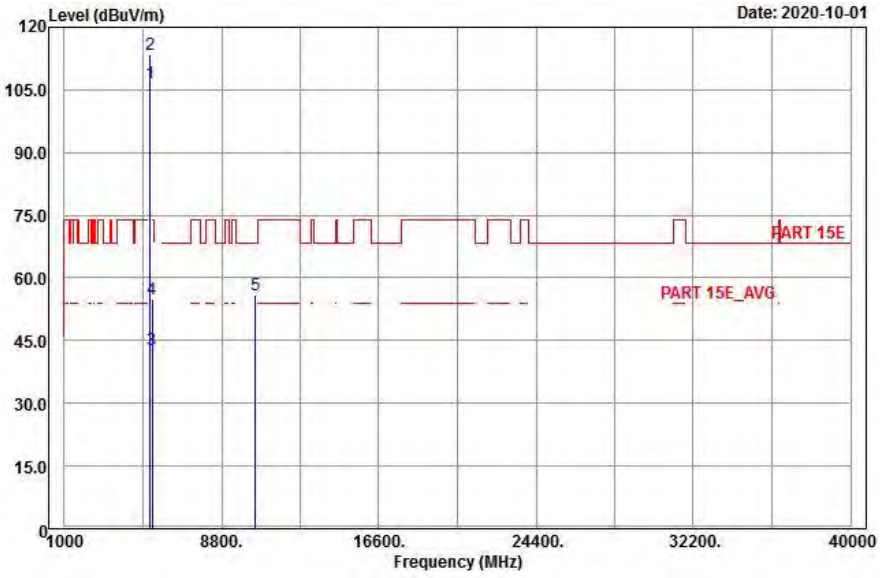
Channel 40	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



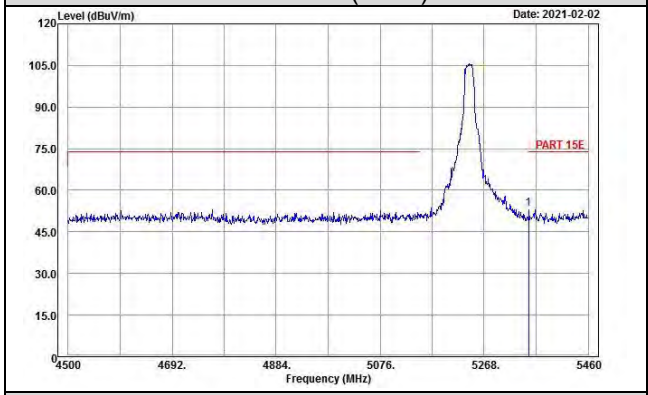
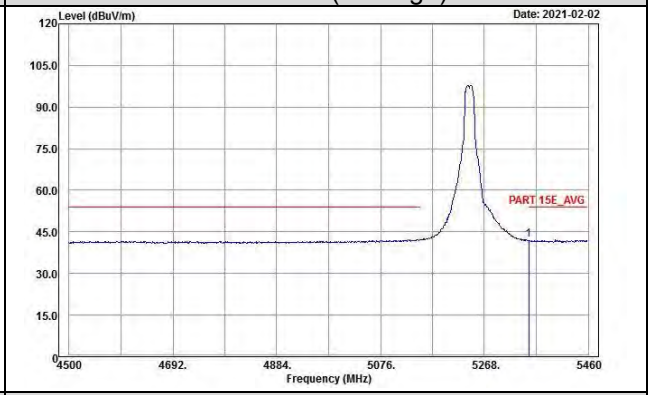
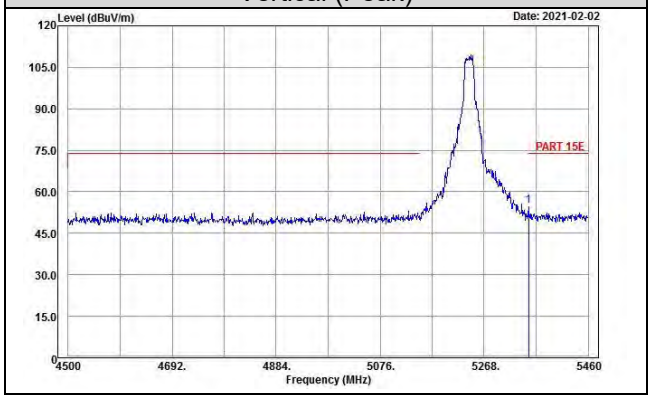
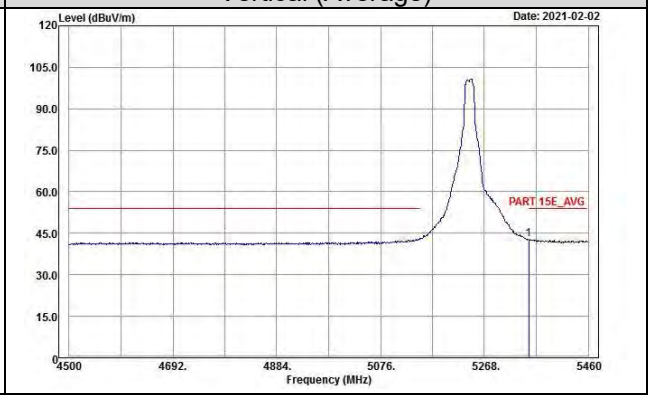
Vertical



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
5240	100.27	90.13	10.14			211	19	Average
5240	107.57	97.43	10.14			211	19	Peak
5350	42.2	31.97	10.23	54	-11.8	211	19	Average
5350	53.36	43.13	10.23	74	-20.64	211	19	Peak
*10480	55.43	39.53	15.9	68.2	-12.77	116	347	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
5240	106.54	96.4	10.14			188	344	Average
5240	113.34	103.2	10.14			188	344	Peak
5350	42.84	32.61	10.23	54	-11.16	188	344	Average
5350	54.91	44.68	10.23	74	-19.09	188	344	Peak
*10480	56.07	40.17	15.9	68.2	-12.13	118	174	Peak

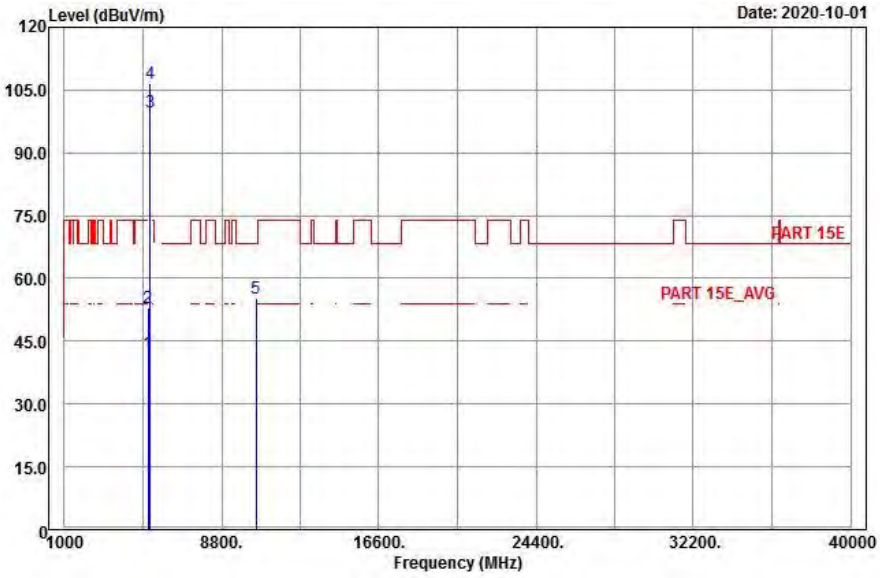
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5240 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

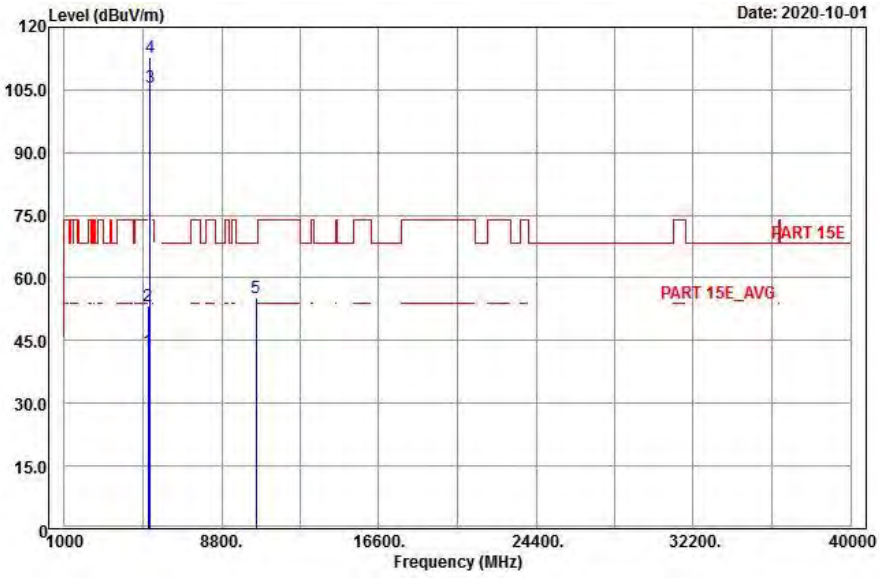
Channel 48	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



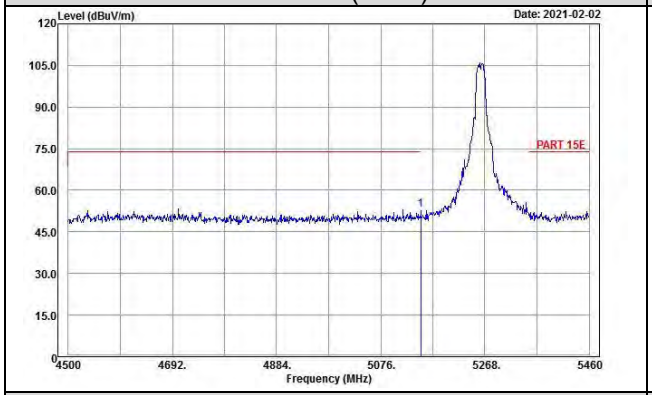
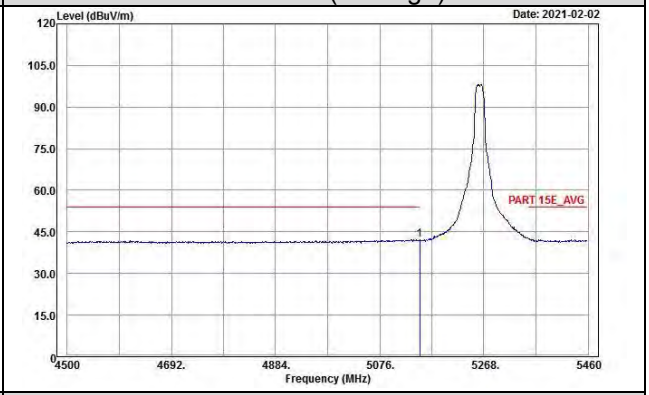
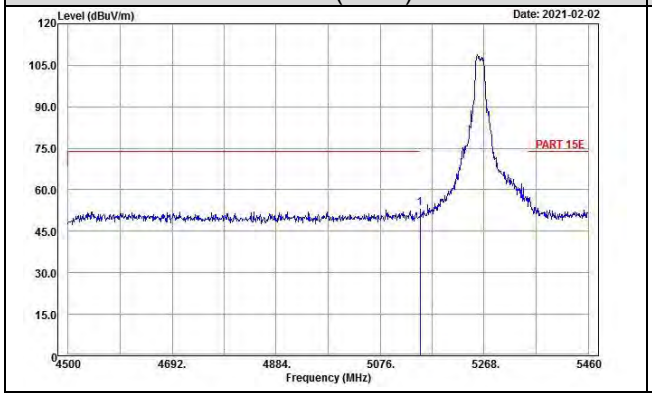
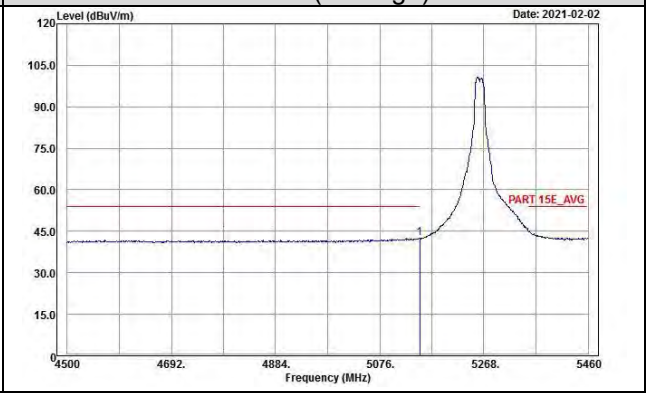
Vertical



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
5150	42.25	32.2	10.05	54	-11.75	252	19	Average
5150	52.85	42.8	10.05	74	-21.15	252	19	Peak
5260	99.68	89.56	10.12			252	19	Average
5260	106.45	96.33	10.12			252	19	Peak
*10520	55.35	39.47	15.88	68.2	-12.85	185	111	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	42.64	32.59	10.05	54	-11.36	218	341	Average
5150	53.34	43.29	10.05	74	-20.66	218	341	Peak
5260	105.58	95.46	10.12			218	341	Average
5260	112.66	102.54	10.12			218	341	Peak
*10520	55.12	39.24	15.88	68.2	-13.08	154	118	Peak

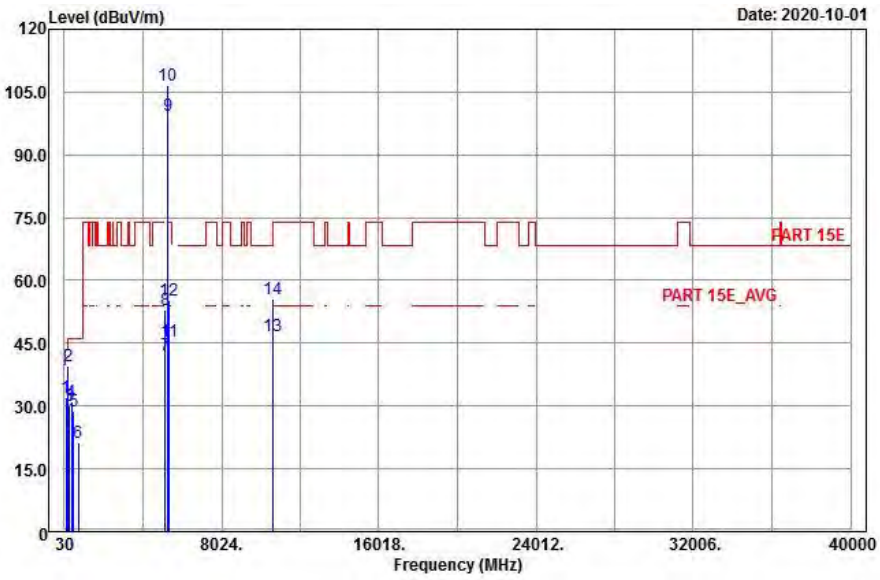
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5260 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

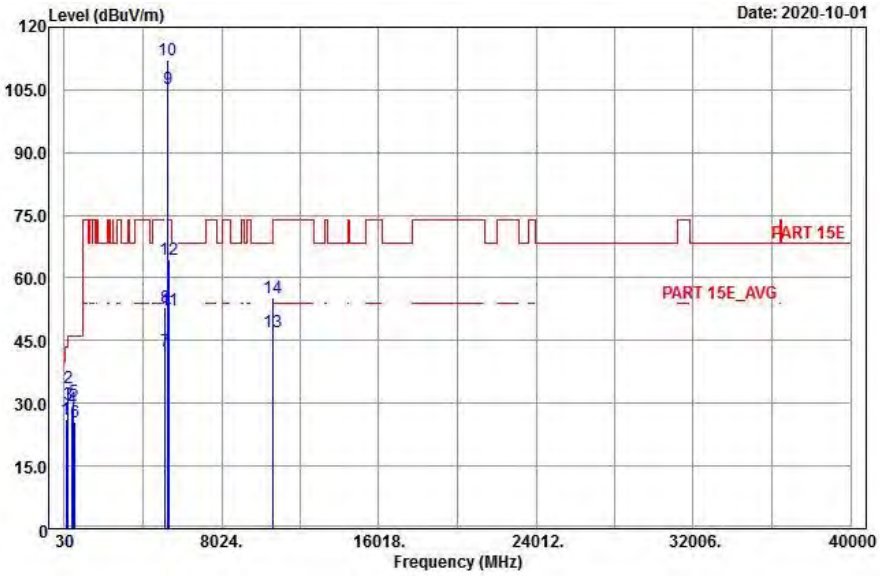
Channel 52	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

EUT Test Condition		Measurement Detail	
Channel	Channel 60	**Frequency Range**	30 MHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



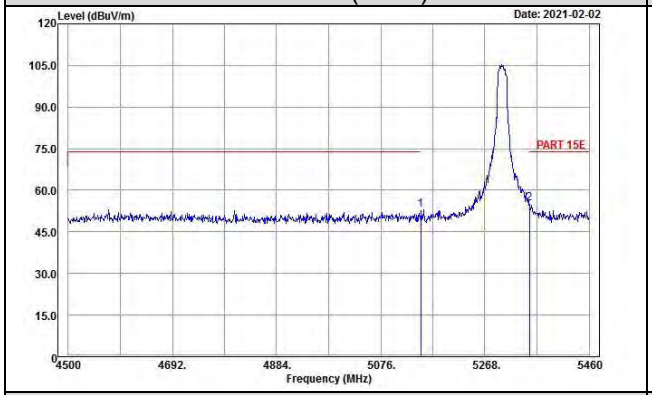
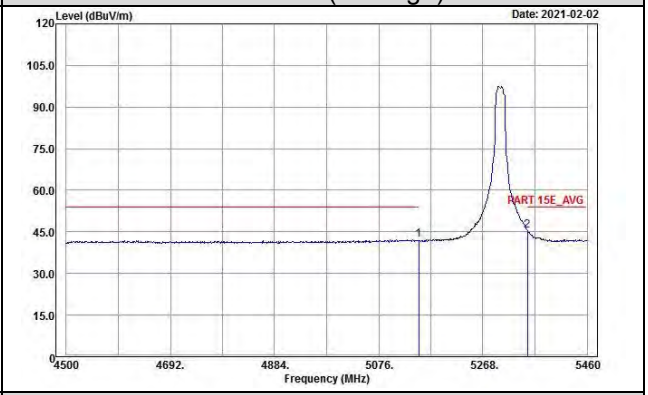
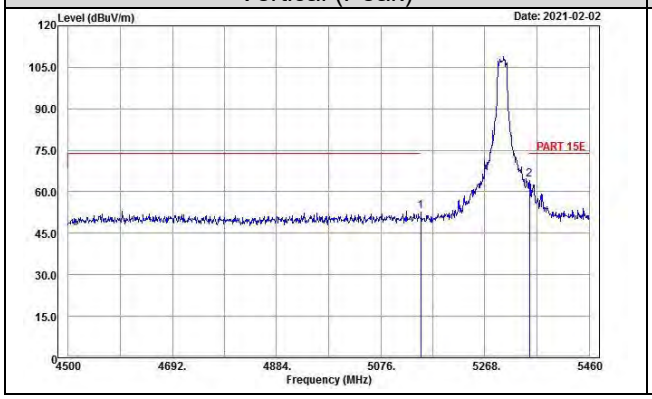
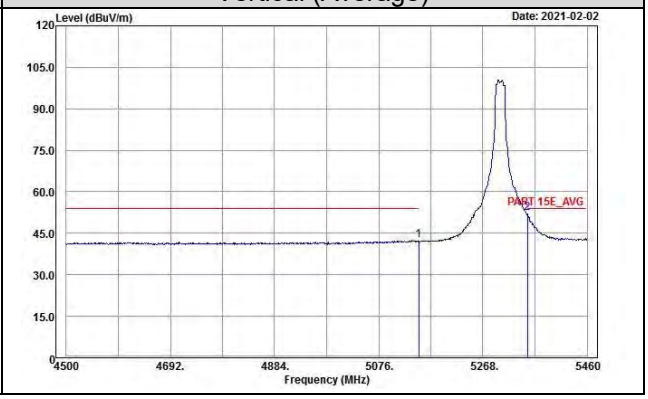
Vertical



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
126.93	32.14	52.33	-20.19	43.5	-11.36	126	359	Peak
223.05	39.45	57.16	-17.71	46	-6.55	105	2	Peak
298.92	30	45.93	-15.93	46	-16	130	35	Peak
389.6	31	45.1	-14.1	46	-15	154	177	Peak
484.1	28.81	41.44	-12.63	46	-17.19	105	161	Peak
731.9	21.1	29.75	-8.65	46	-24.9	163	3	Peak
5150	42.31	32.26	10.05	54	-11.69	252	19	Average
5150	52.91	42.86	10.05	74	-21.09	252	19	Peak
5300	99.5	89.44	10.06			252	19	Average
5300	106.58	96.52	10.06			252	19	Peak
5350	45.51	35.28	10.23	54	-8.49	252	19	Average
5350	55.38	45.15	10.23	74	-18.62	252	19	Peak
10600	46.81	31.05	15.76	54	-7.19	134	4	Average
10600	55.61	39.85	15.76	74	-18.39	134	4	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
128.01	26.26	46.54	-20.28	43.5	-17.24	126	33	Peak
223.32	33.57	51.28	-17.71	46	-12.43	180	165	Peak
228.99	29.86	47.29	-17.43	46	-16.14	174	144	Peak
420.4	28.75	42.29	-13.54	46	-17.25	124	222	Peak
494.6	30.38	42.79	-12.41	46	-15.62	105	2	Peak
577.2	25.38	36.38	-11	46	-20.62	187	195	Peak
5150	42.46	32.41	10.05	54	-11.54	218	341	Average
5150	53.03	42.98	10.05	74	-20.97	218	341	Peak
5300	105.25	95.19	10.06			218	341	Average
5300	112	101.94	10.06			218	341	Peak
5350	52.4	42.17	10.23	54	-1.6	218	341	Average
5350	64.49	54.26	10.23	74	-9.51	218	341	Peak
10600	47.1	31.34	15.76	54	-6.9	119	285	Average
10600	55.42	39.66	15.76	74	-18.58	119	285	Peak

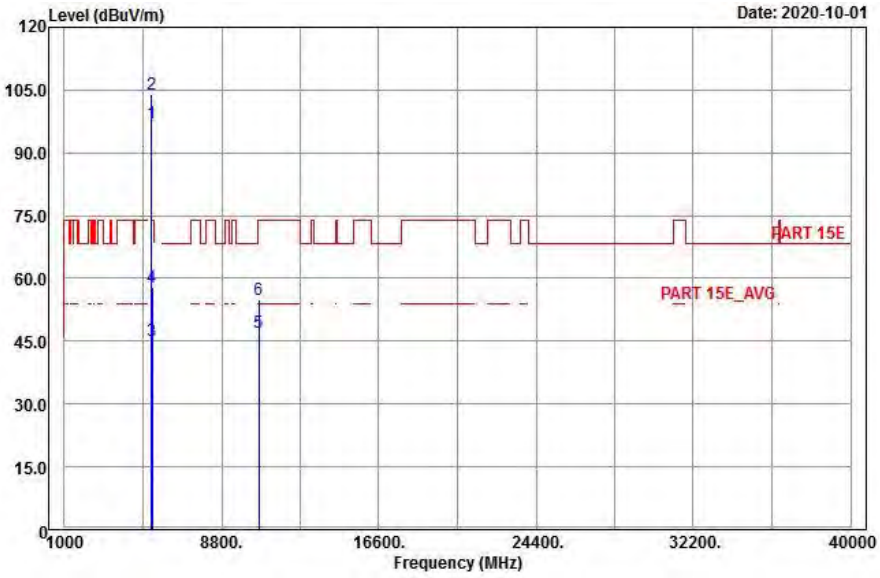
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5300 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

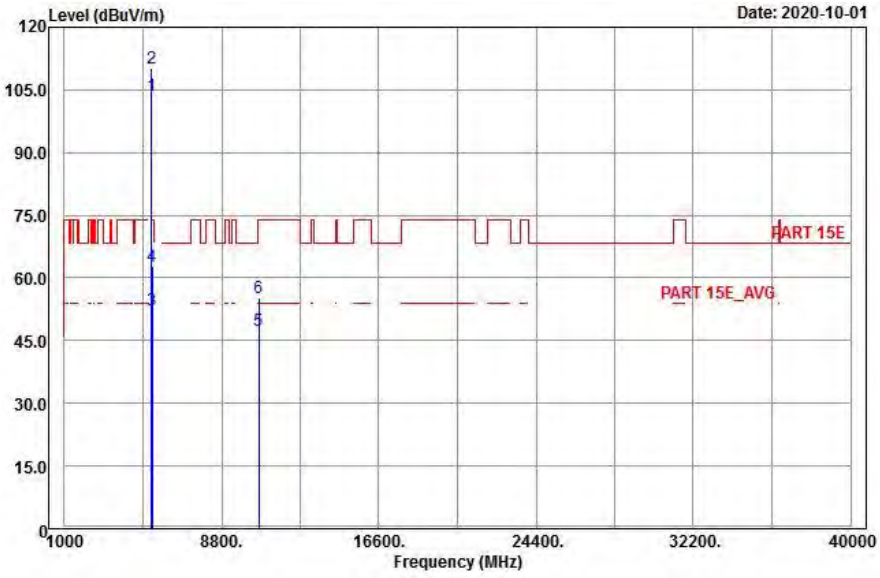
Channel 60	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Karl Lee

Horizontal



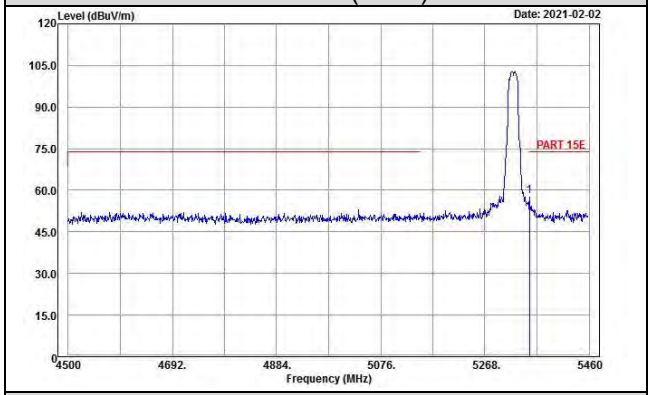
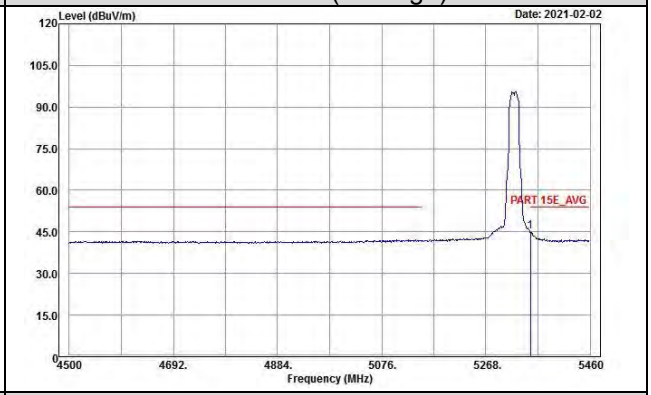
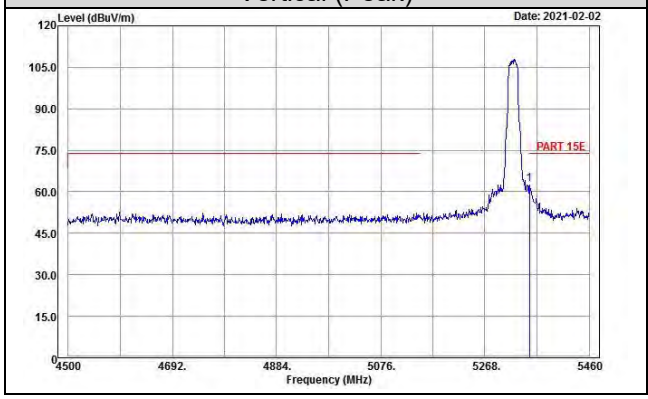
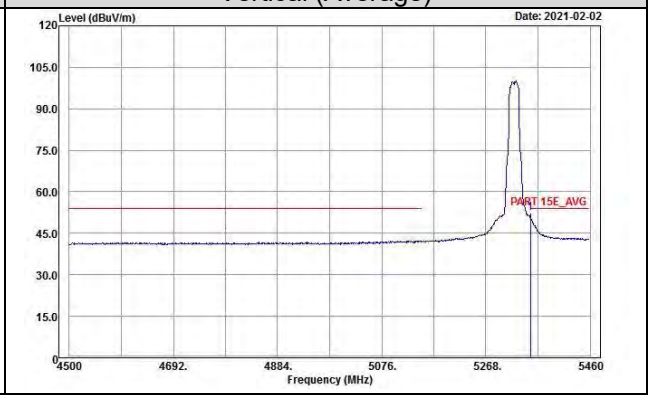
Vertical



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
5320	97.16	87.07	10.09			252	19	Average
5320	104	93.91	10.09			252	19	Peak
5350	45.27	35.04	10.23	54	-8.73	252	19	Average
5350	57.84	47.61	10.23	74	-16.16	252	19	Peak
10640	47.18	31.19	15.99	54	-6.82	158	8	Average
10640	55.02	39.03	15.99	74	-18.98	158	8	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	103.66	93.57	10.09			218	341	Average
5320	110.19	100.1	10.09			218	341	Peak
5350	52.21	41.98	10.23	54	-1.79	218	341	Average
5350	62.73	52.5	10.23	74	-11.27	218	341	Peak
10640	47.31	31.32	15.99	54	-6.69	117	45	Average
10640	55.28	39.29	15.99	74	-18.72	117	45	Peak

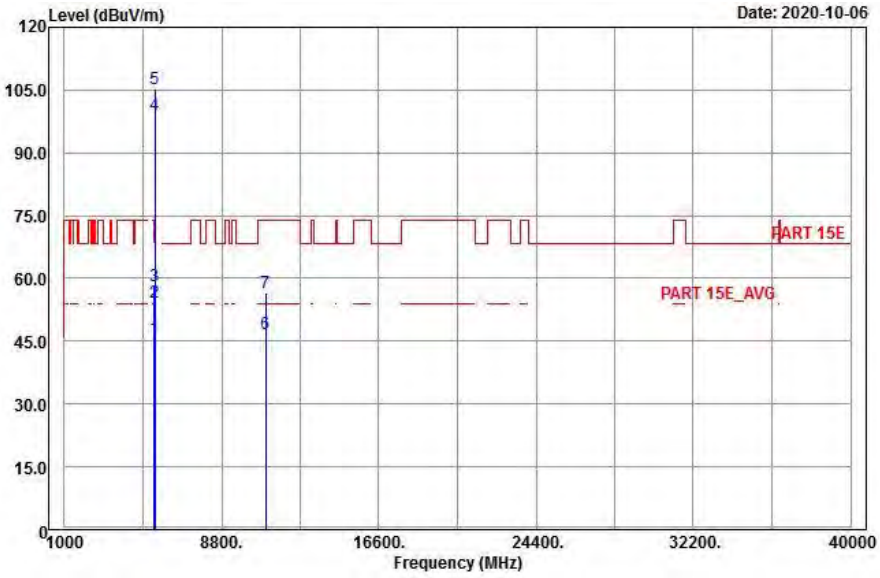
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5320 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

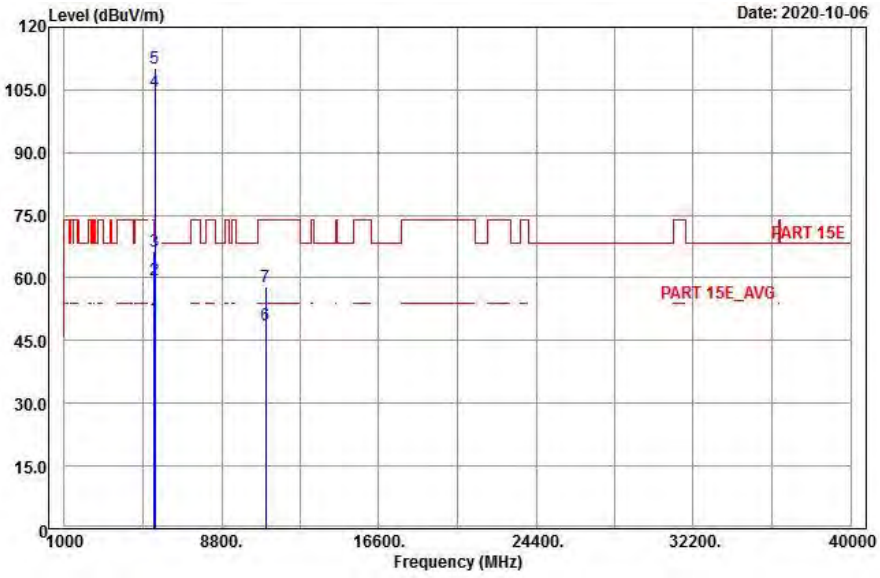
Channel 64	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



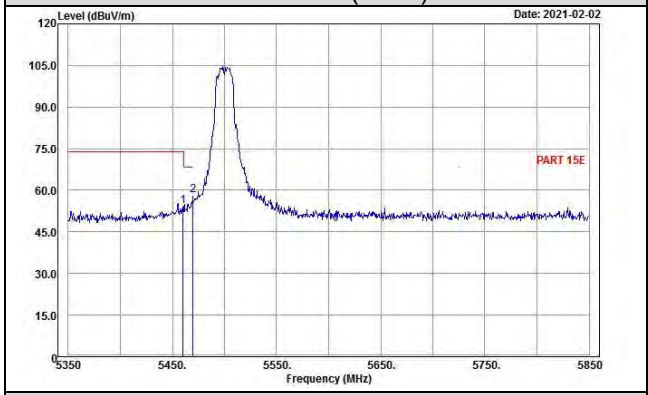
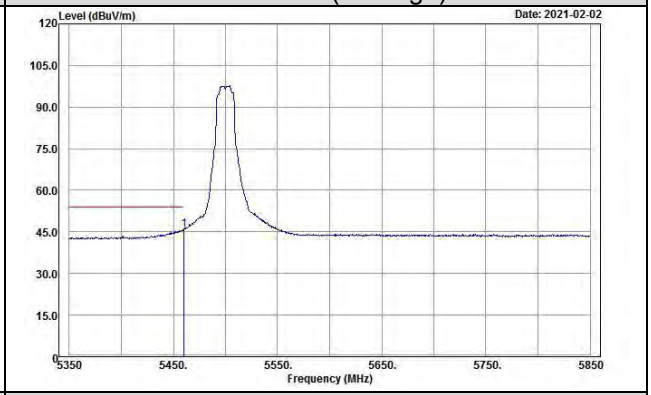
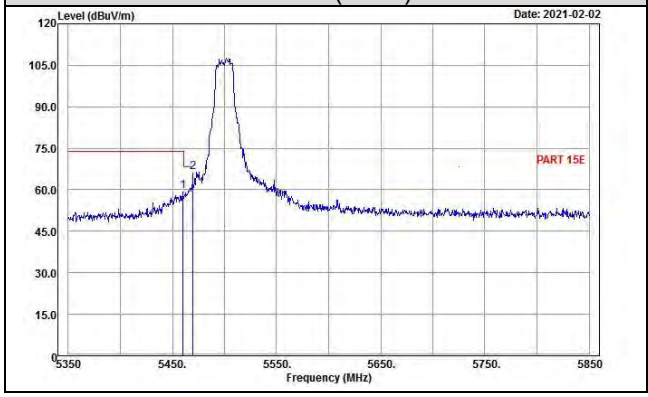
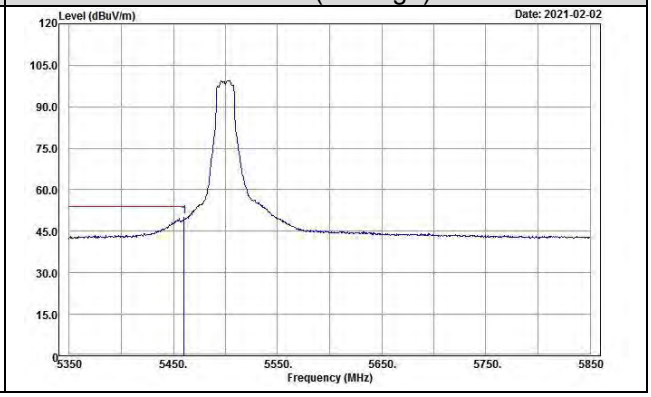
Vertical



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
5460	45.94	35.43	10.51	54	-8.06	127	23	Average
5460	54.2	43.69	10.51	74	-19.8	127	23	Peak
*5470	58.05	47.52	10.53	68.2	-10.15	127	23	Peak
5500	99.12	88.52	10.6			127	23	Average
5500	105.33	94.73	10.6			127	23	Peak
11000	46.89	30.76	16.13	54	-7.11	105	256	Average
11000	56.41	40.28	16.13	74	-17.59	105	256	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	50.34	39.83	10.51	54	-3.66	216	318	Average
5460	59.62	49.11	10.51	74	-14.38	216	318	Peak
*5470	66.35	55.82	10.53	68.2	-1.85	216	318	Peak
5500	104.77	94.17	10.6			216	318	Average
5500	110.32	99.72	10.6			216	318	Peak
11000	48.74	32.61	16.13	54	-5.26	222	60	Average
11000	58.01	41.88	16.13	74	-15.99	222	60	Peak

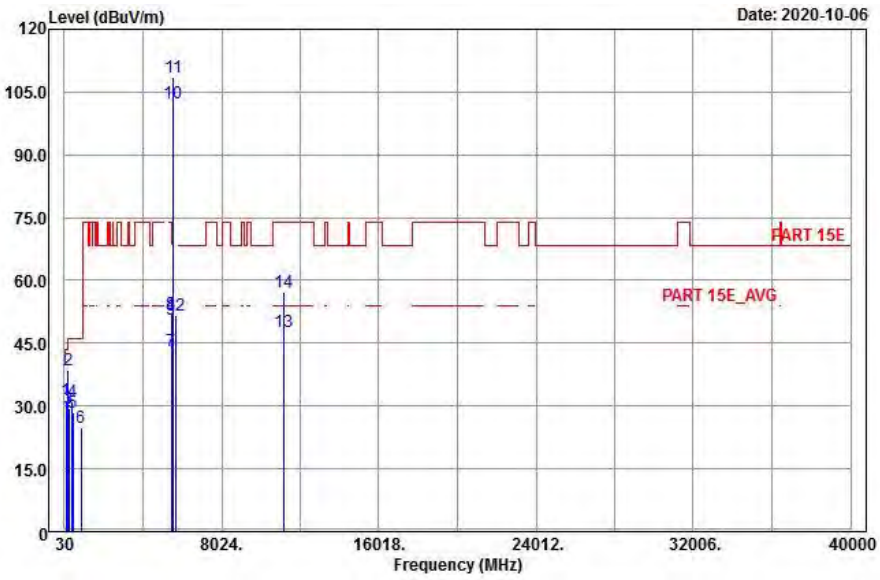
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5500 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

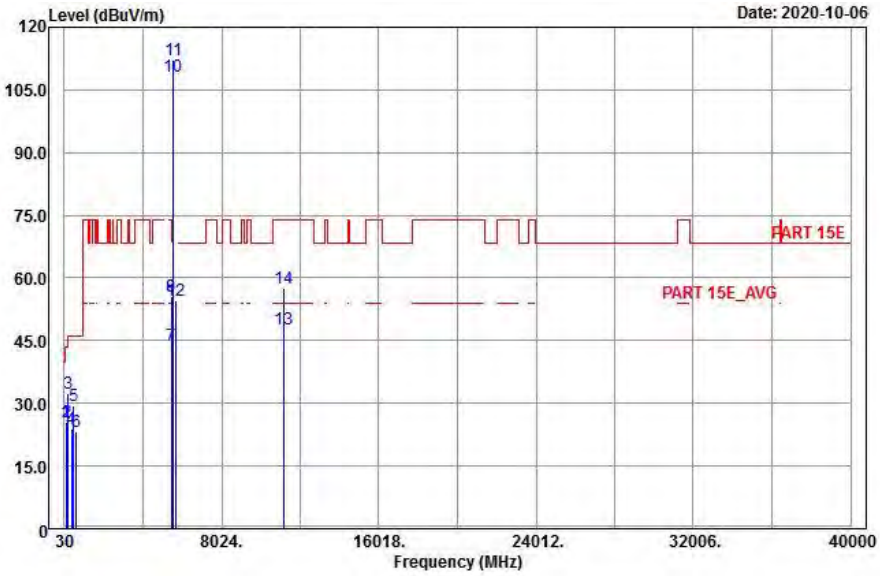
Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

EUT Test Condition		Measurement Detail	
Channel	Channel 116	**Frequency Range**	30 MHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



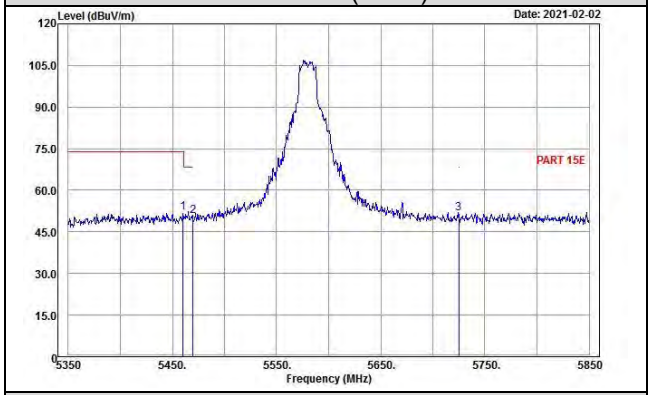
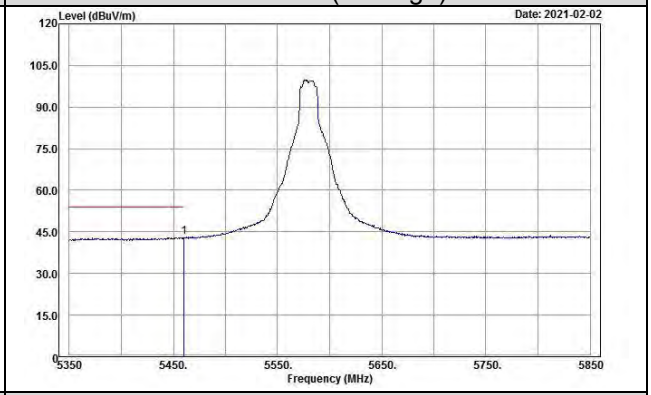
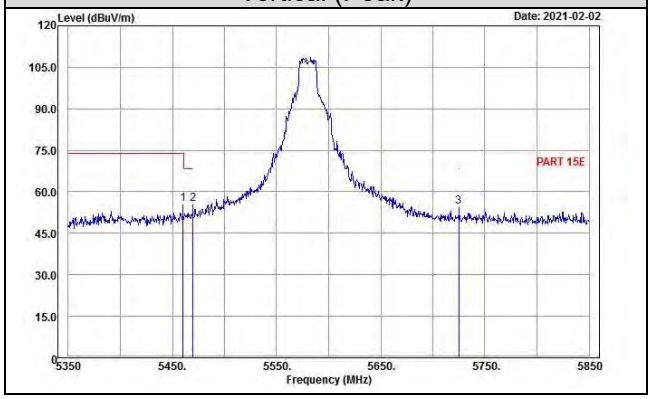
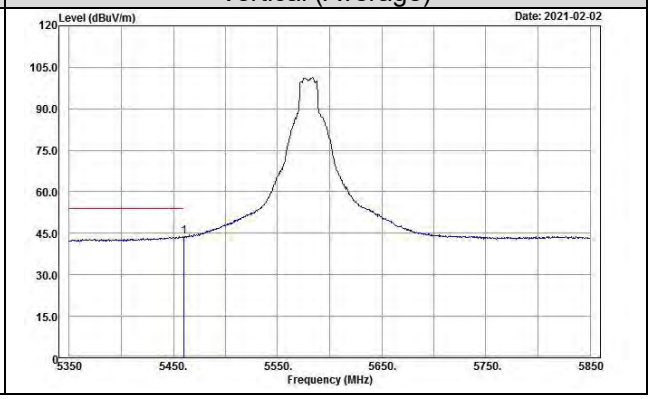
Vertical



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
126.66	31.38	51.57	-20.19	43.5	-12.12	116	352	Peak
222.78	38.67	56.38	-17.71	46	-7.33	114	147	Peak
250.05	29.56	46.39	-16.83	46	-16.44	150	250	Peak
419.7	31.17	44.71	-13.54	46	-14.83	125	55	Peak
480.6	28.52	41.2	-12.68	46	-17.48	141	177	Peak
896.4	24.9	30.88	-5.98	46	-21.1	105	195	Peak
5460	43.1	32.59	10.51	54	-10.9	126	22	Average
5460	52.05	41.54	10.51	74	-21.95	126	22	Peak
*5470	50.71	40.18	10.53	68.2	-17.49	126	22	Peak
5580	102.27	91.56	10.71			126	22	Average
5580	108.49	97.78	10.71			126	22	Peak
*5725	51.7	40.78	10.92	68.2	-16.5	126	22	Peak
11160	47.68	31.32	16.36	54	-6.32	124	236	Average
11160	57.36	41	16.36	74	-16.64	124	236	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
126.93	25.62	45.81	-20.19	43.5	-17.88	154	256	Peak
184.98	25.58	44.73	-19.15	43.5	-17.92	184	199	Peak
224.4	32.22	49.88	-17.66	46	-13.78	122	325	Peak
399.4	23.95	37.89	-13.94	46	-22.05	123	332	Peak
482.7	29.5	42.15	-12.65	46	-16.5	105	1	Peak
639.5	23.11	33.41	-10.3	46	-22.89	105	185	Peak
5460	43.97	33.46	10.51	54	-10.03	252	308	Average
5460	55.45	44.94	10.51	74	-18.55	252	308	Peak
*5470	55.47	44.94	10.53	68.2	-12.73	252	308	Peak
5580	108.18	97.47	10.71			252	308	Average
5580	112.21	101.5	10.71			252	308	Peak
*5725	54.61	43.69	10.92	68.2	-13.59	252	308	Peak
11160	47.76	31.4	16.36	54	-6.24	211	62	Average
11160	57.58	41.22	16.36	74	-16.42	211	62	Peak

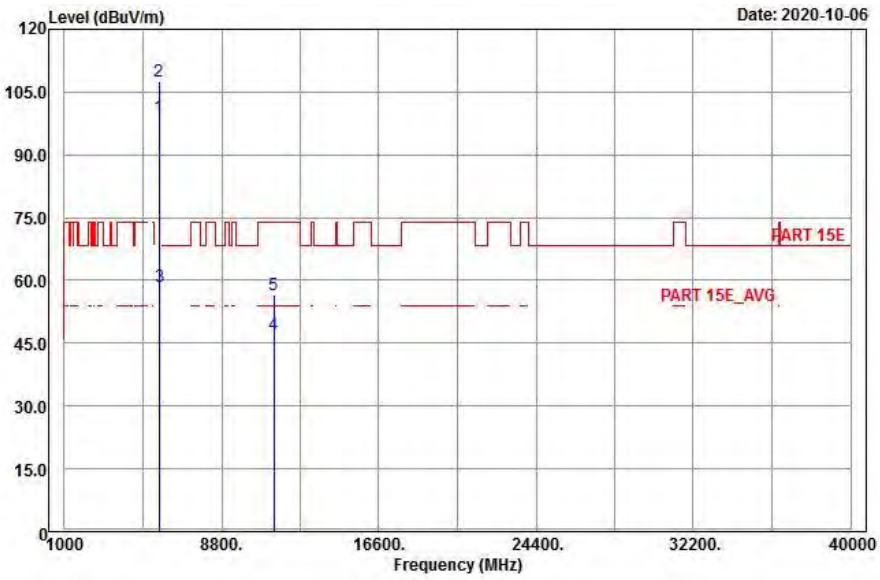
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

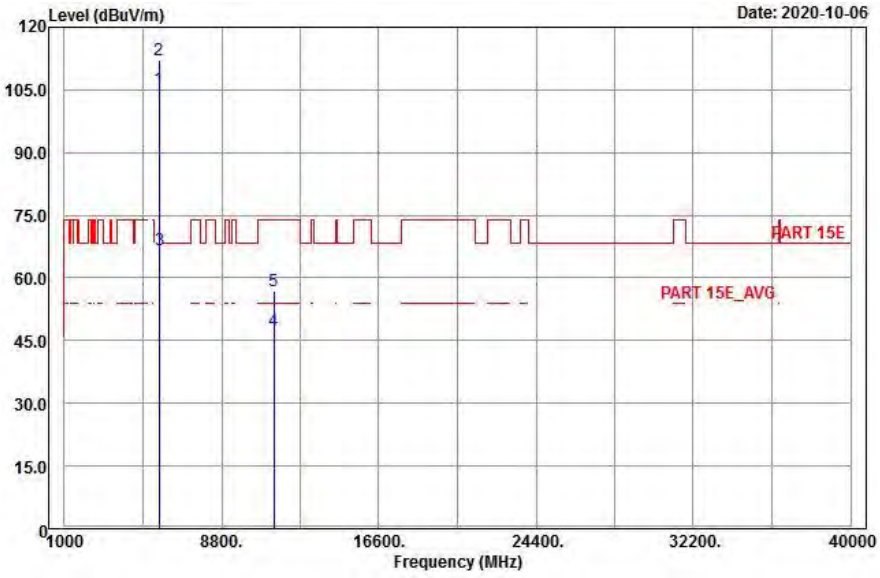
Channel 116	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



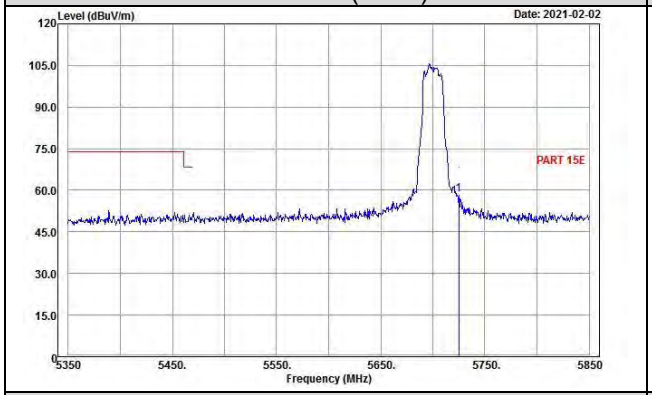
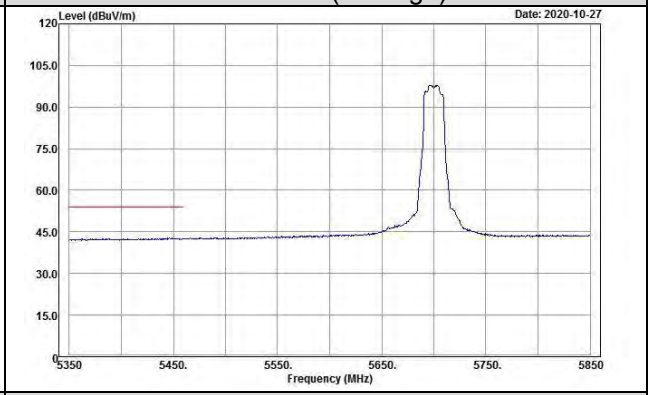
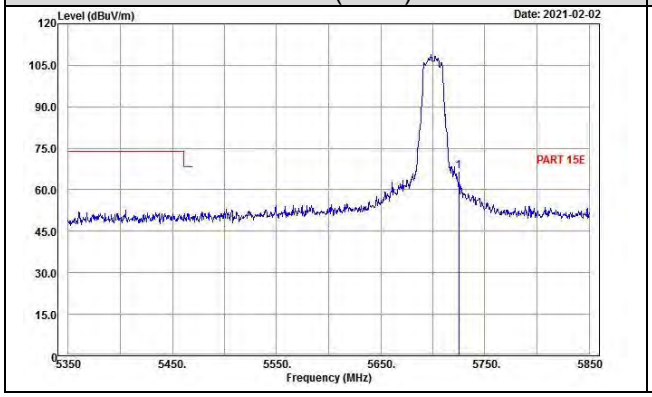
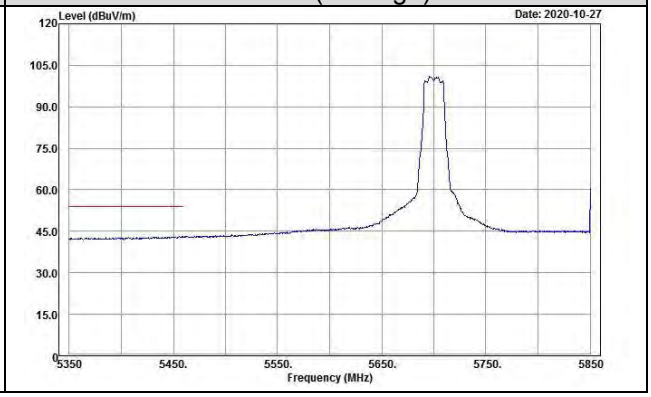
Vertical



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
5700	98.92	87.97	10.95			126	26	Average
5700	107.5	96.55	10.95			126	26	Peak
*5725	58.55	47.63	10.92	68.2	-9.65	126	26	Peak
11400	46.98	30.79	16.19	54	-7.02	135	171	Average
11400	56.51	40.32	16.19	74	-17.49	135	171	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
5700	105.13	94.18	10.95			228	315	Average
5700	112.08	101.13	10.95			228	315	Peak
*5725	66.68	55.76	10.92	68.2	-1.52	228	315	Peak
11400	47.35	31.16	16.19	54	-6.65	225	64	Average
11400	56.8	40.61	16.19	74	-17.2	225	64	Peak

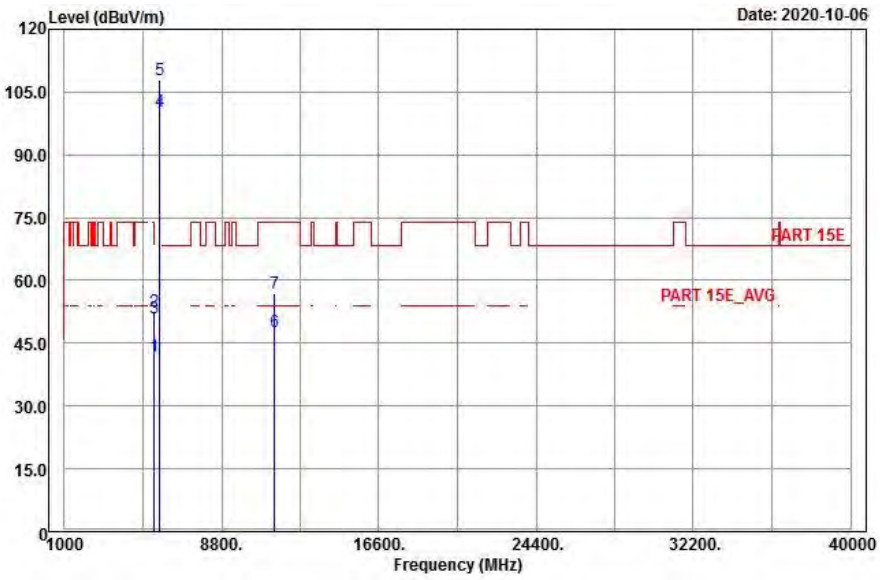
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5700 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

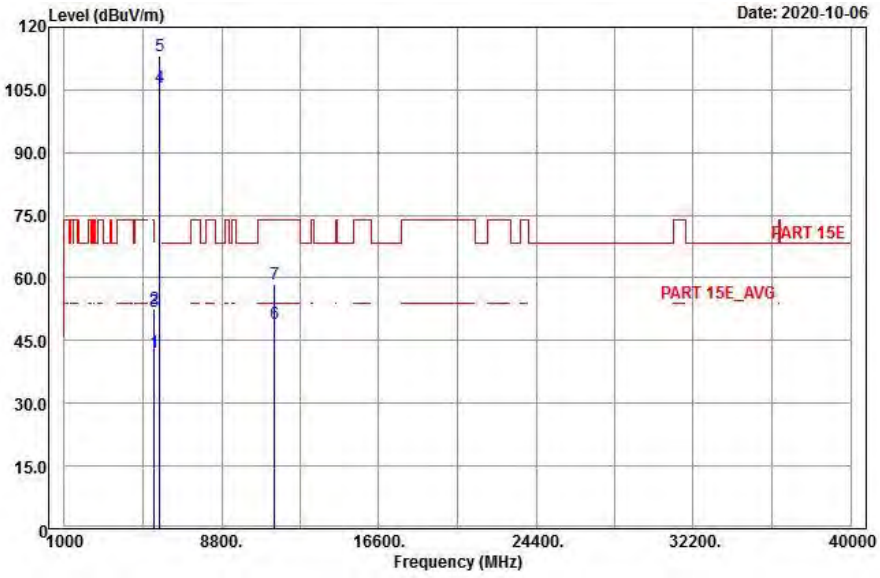
Channel 140	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



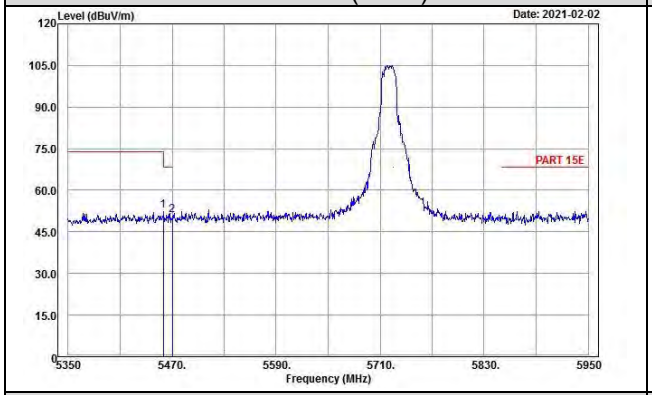
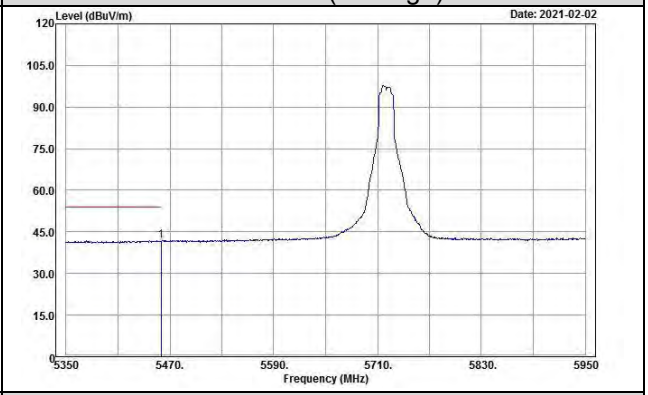
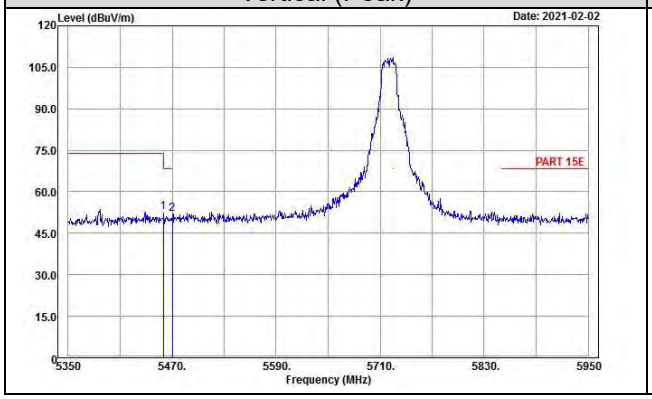
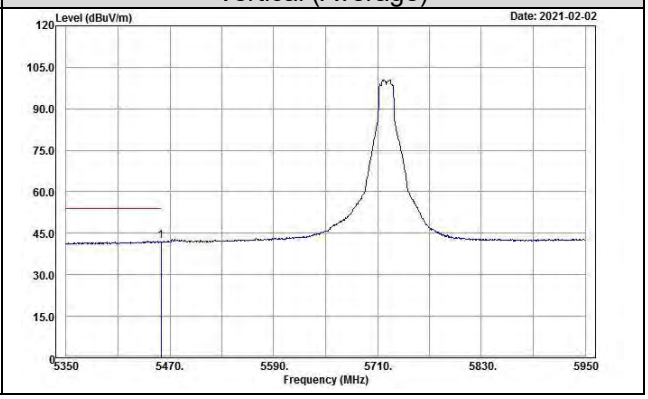
Vertical



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
5460	41.92	31.41	10.51	54	-12.08	119	28	Average
5460	52.57	42.06	10.51	74	-21.43	119	28	Peak
*5470	51.11	40.58	10.53	68.2	-17.09	119	28	Peak
5720	100.4	89.48	10.92			119	28	Average
5720	107.79	96.87	10.92			119	28	Peak
11440	47.58	31.29	16.29	54	-6.42	119	241	Average
11440	56.77	40.48	16.29	74	-17.23	119	241	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	42.18	31.67	10.51	54	-11.82	252	308	Average
5460	52.71	42.2	10.51	74	-21.29	252	308	Peak
*5470	51.88	41.35	10.53	68.2	-16.32	252	308	Peak
5720	105.58	94.66	10.92			252	308	Average
5720	112.99	102.07	10.92			252	308	Peak
11440	49.14	32.85	16.29	54	-4.86	252	48	Average
11440	58.59	42.3	16.29	74	-15.41	252	48	Peak

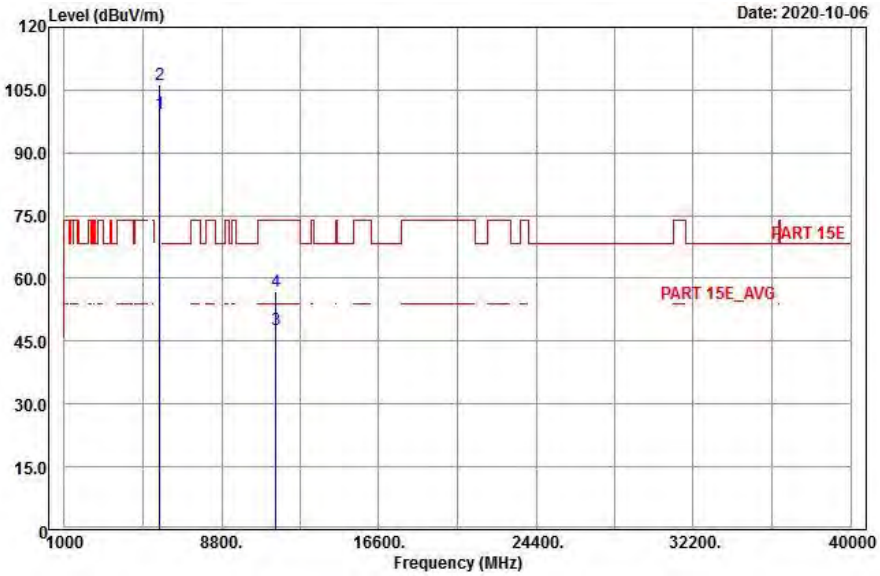
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5720 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

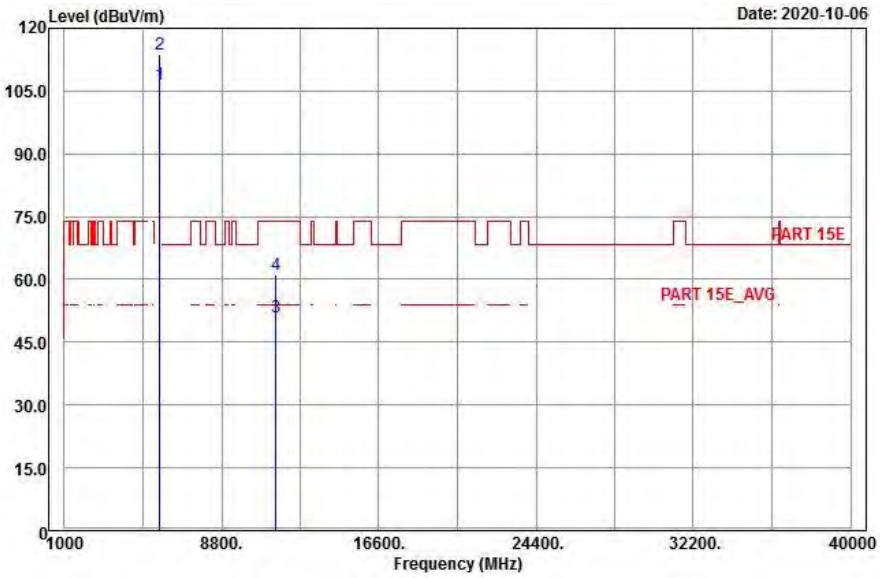
Channel 144	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Harry Hsueh

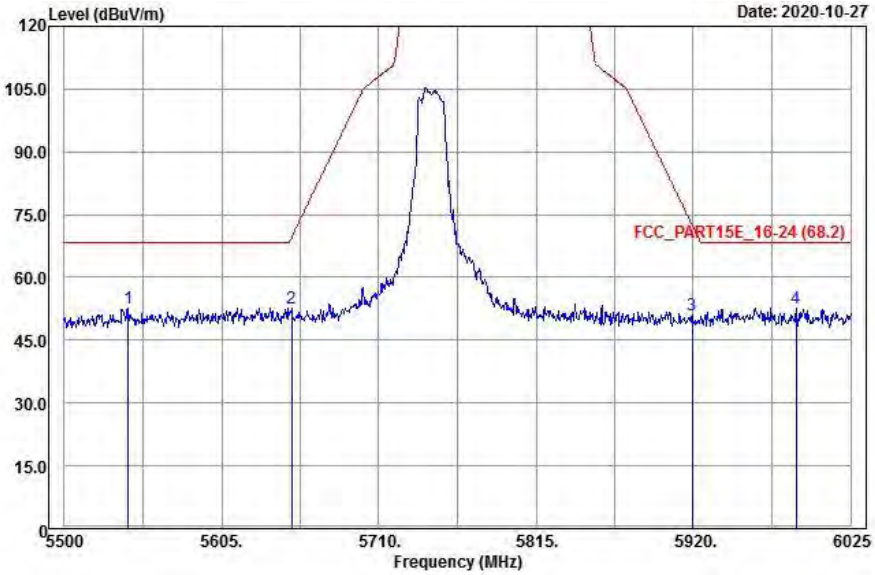
<Spurious Emission>
Horizontal



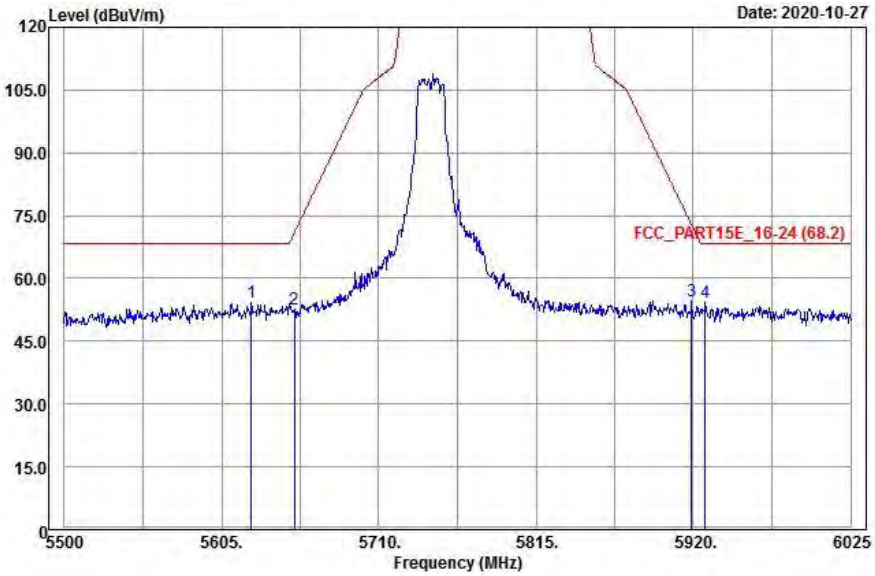
Vertical



<Out of Band Emission (OOBE)>
Horizontal



Vertical



<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	99.49	88.61	10.88			119	28	Average
5745	106.26	95.38	10.88			119	28	Peak
11490	47.58	31.11	16.47	54	-6.42	105	254	Average
11490	56.84	40.37	16.47	74	-17.16	105	254	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	106.57	95.69	10.88			244	324	Average
5745	113.89	103.01	10.88			244	324	Peak
11490	50.97	34.5	16.47	54	-3.03	222	59	Average
11490	61.3	44.83	16.47	74	-12.7	222	59	Peak

<Out of Band Emission (OOBE)>

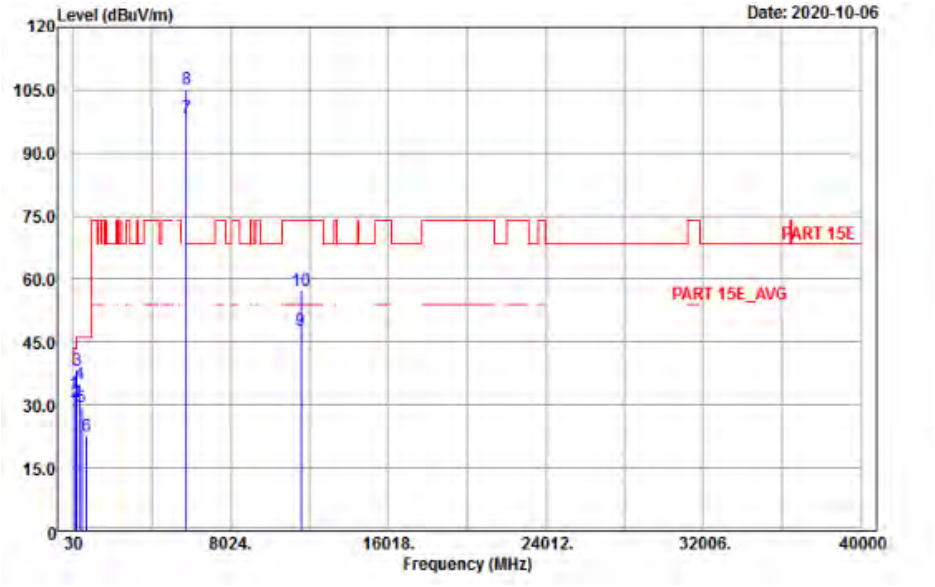
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5542.525	52.78	42.12	10.66	68.2	-15.42	119	28	Peak
5651.725	52.74	41.87	10.87	69.48	-16.74	119	28	Peak
5919.475	51.16	40.07	11.09	72.29	-21.13	119	28	Peak
*5988.775	52.58	41.27	11.31	68.2	-15.62	119	28	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
*5624.95	54.26	43.47	10.79	68.2	-13.94	244	324	Peak
5653.825	52.59	41.72	10.87	71.03	-18.44	244	324	Peak
5918.95	54.51	43.42	11.09	72.68	-18.17	244	324	Peak
*5927.875	54.34	43.23	11.11	68.2	-13.86	244	324	Peak

Remarks:

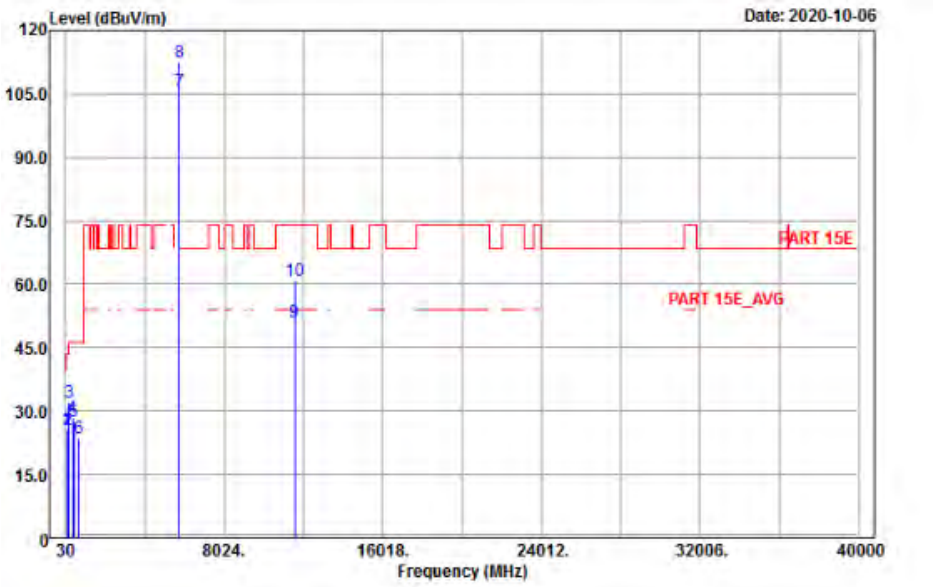
1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5745 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 157	**Frequency Range**	30 MHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Harry Hsueh

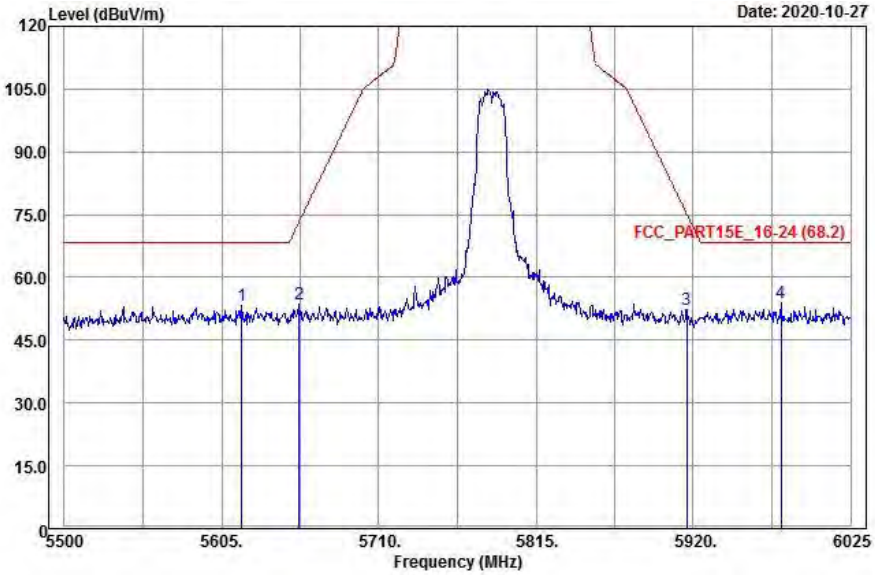
<Spurious Emission>
Horizontal



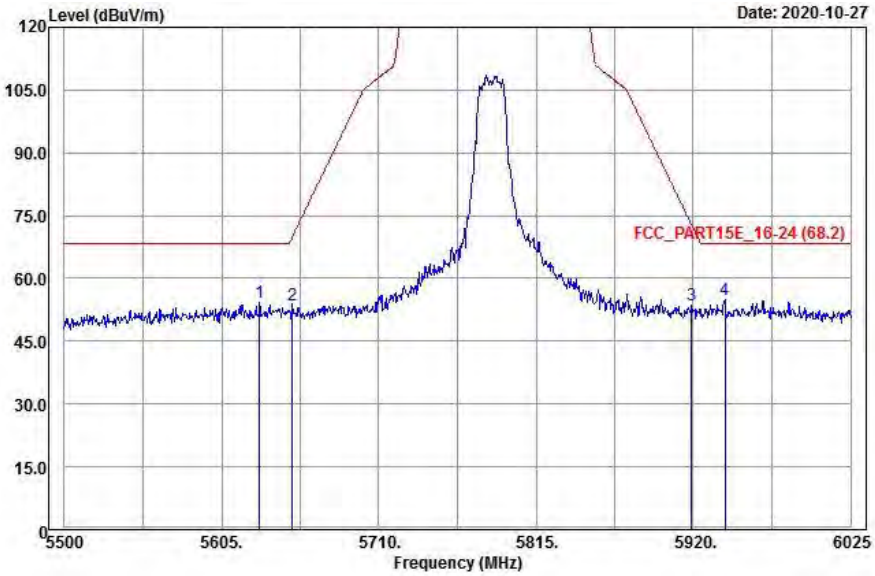
Vertical



<Out of Band Emission (OOBE)>
Horizontal



Vertical



<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
127.47	32.83	53.02	-20.19	43.5	-10.67	185	55	Peak
200.37	30.78	49.02	-18.24	43.5	-12.72	163	33	Peak
223.59	38.37	56.03	-17.66	46	-7.63	105	254	Peak
362.3	35	49.54	-14.54	46	-11	124	111	Peak
475	29.4	42.22	-12.82	46	-16.6	105	5	Peak
704.6	22.71	31.86	-9.15	46	-23.29	170	346	Peak
5785	98.48	87.67	10.81			119	28	Average
5785	105.3	94.49	10.81			119	28	Peak
11570	47.73	31.24	16.49	54	-6.27	154	145	Average
11570	57.17	40.68	16.49	74	-16.83	154	145	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
126.66	25.37	45.56	-20.19	43.5	-18.13	153	336	Peak
182.82	25.4	44.74	-19.34	43.5	-18.1	100	14	Peak
223.05	32.16	49.87	-17.71	46	-13.84	162	256	Peak
402.9	28.56	42.45	-13.89	46	-17.44	140	229	Peak
473.6	27.5	40.37	-12.87	46	-18.5	187	211	Peak
720	23.54	32.35	-8.81	46	-22.46	150	253	Peak
5785	105.54	94.73	10.81			244	324	Average
5785	112.44	101.63	10.81			244	324	Peak
11570	50.99	34.5	16.49	54	-3.01	222	59	Average
11570	60.96	44.47	16.49	74	-13.04	222	59	Peak

<Out of Band Emission (OOBE)>

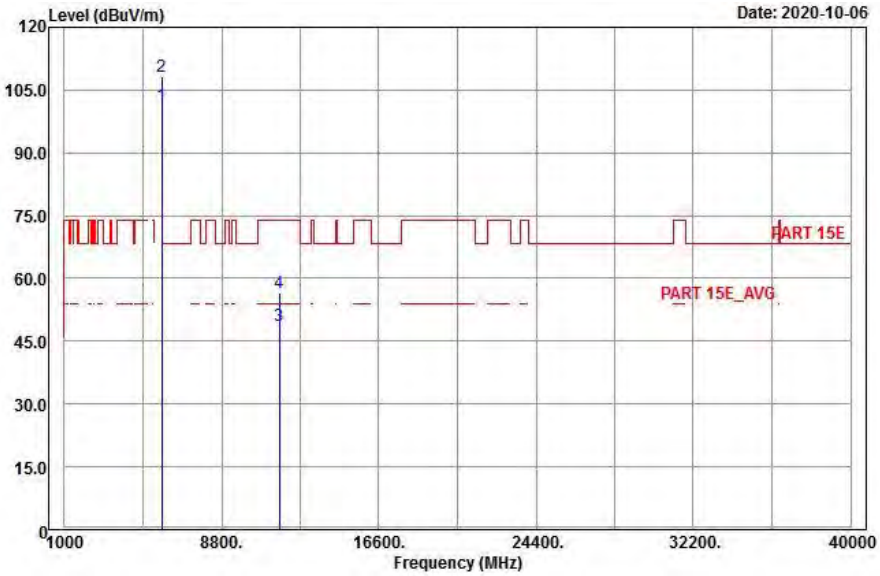
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5618.65	53.2	42.41	10.79	68.2	-15	119	28	Peak
5656.975	53.63	42.76	10.87	73.36	-19.73	119	28	Peak
5915.8	52.31	41.22	11.09	75.01	-22.7	119	28	Peak
*5978.8	53.85	42.59	11.26	68.2	-14.35	119	28	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
*5630.2	54.29	43.48	10.81	68.2	-13.91	244	324	Peak
5652.25	53.57	42.7	10.87	69.86	-16.29	244	324	Peak
5918.95	53.51	42.42	11.09	72.68	-19.17	244	324	Peak
*5941	55.03	43.85	11.18	68.2	-13.17	244	324	Peak

Remarks:

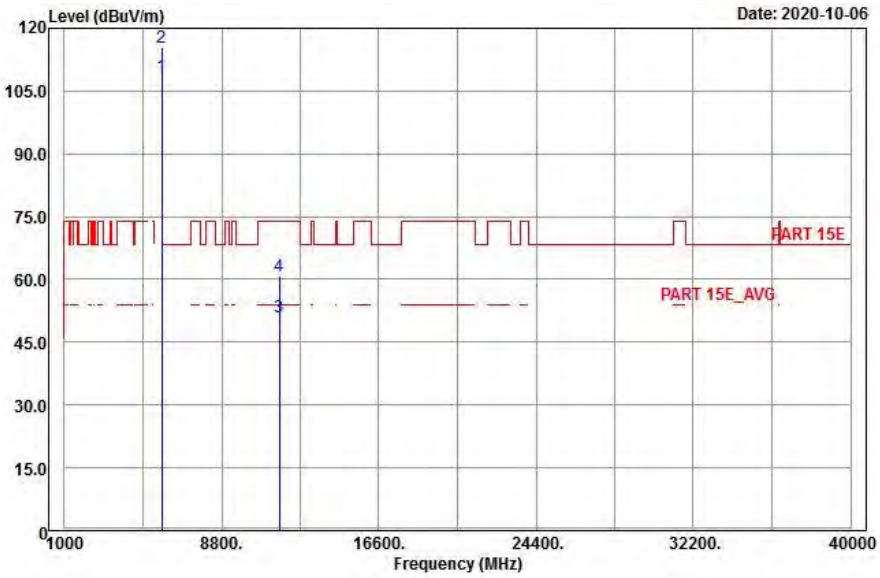
1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5785 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

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**	Charles Hsiao

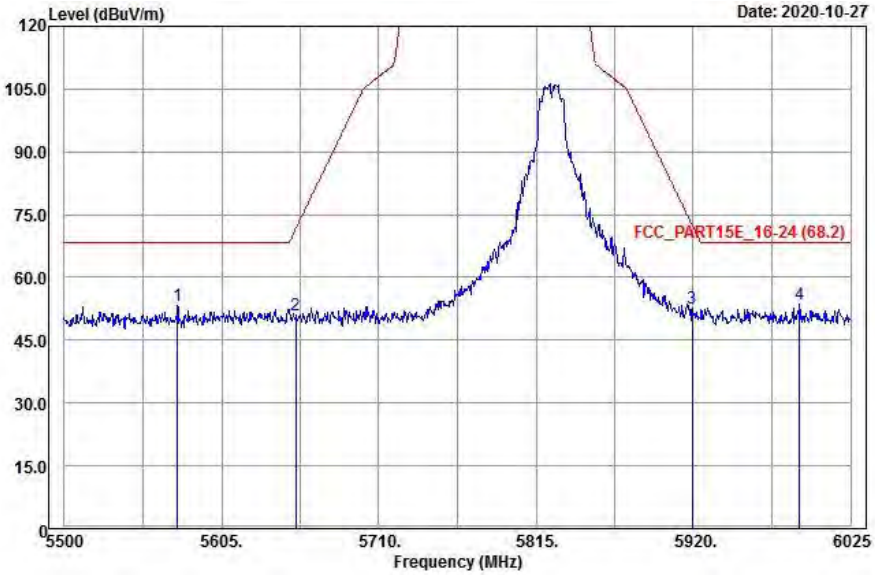
<Spurious Emission>
Horizontal



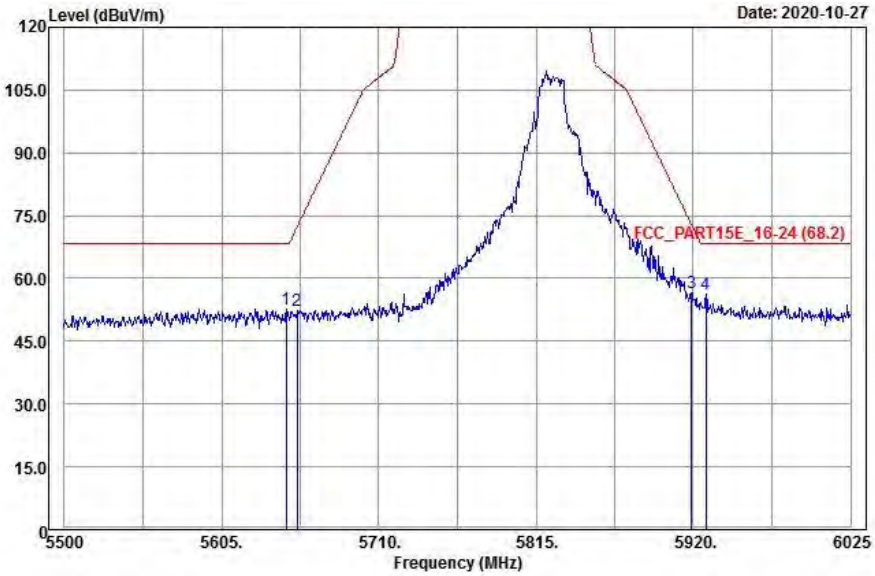
Vertical



<Out of Band Emission (OOBE)>
Horizontal



Vertical



<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	101.44	90.56	10.88			119	28	Average
5825	108.11	97.23	10.88			119	28	Peak
11650	48.62	31.84	16.78	54	-5.38	134	144	Average
11650	56.71	39.93	16.78	74	-17.29	134	144	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	108.58	97.7	10.88			244	324	Average
5825	115.31	104.43	10.88			244	324	Peak
11650	50.98	34.2	16.78	54	-3.02	222	59	Average
11650	60.85	44.07	16.78	74	-13.15	222	59	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
*5575.6	53.22	42.49	10.73	68.2	-14.98	119	28	Peak
5654.35	50.99	40.12	10.87	71.42	-20.43	119	28	Peak
5919.475	52.7	41.61	11.09	72.29	-19.59	119	28	Peak
*5990.875	53.64	42.31	11.33	68.2	-14.56	119	28	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
*5648.05	52.77	41.92	10.85	68.2	-15.43	244	324	Peak
5655.4	52.26	41.39	10.87	72.2	-19.94	244	324	Peak
5918.95	56.53	45.44	11.09	72.68	-16.15	244	324	Peak
*5928.4	56.35	45.24	11.11	68.2	-11.85	244	324	Peak

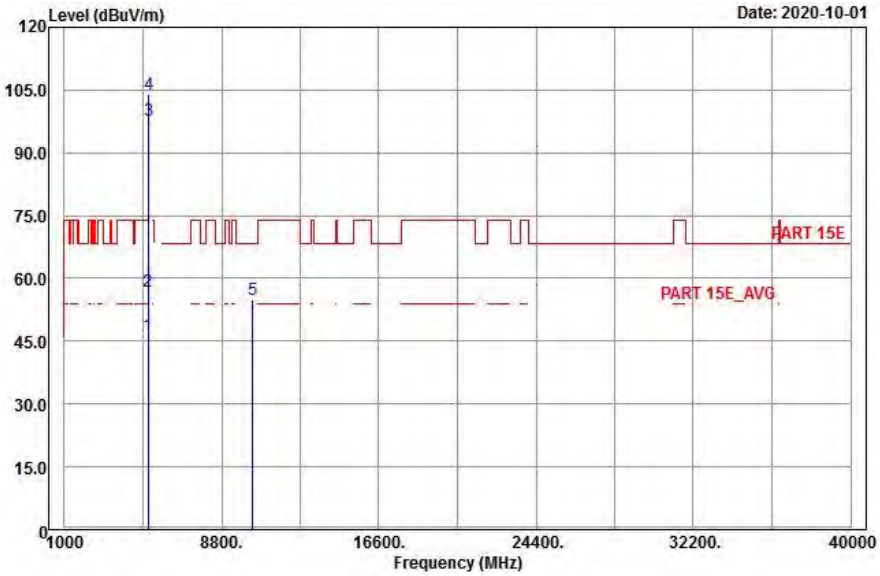
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5825 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

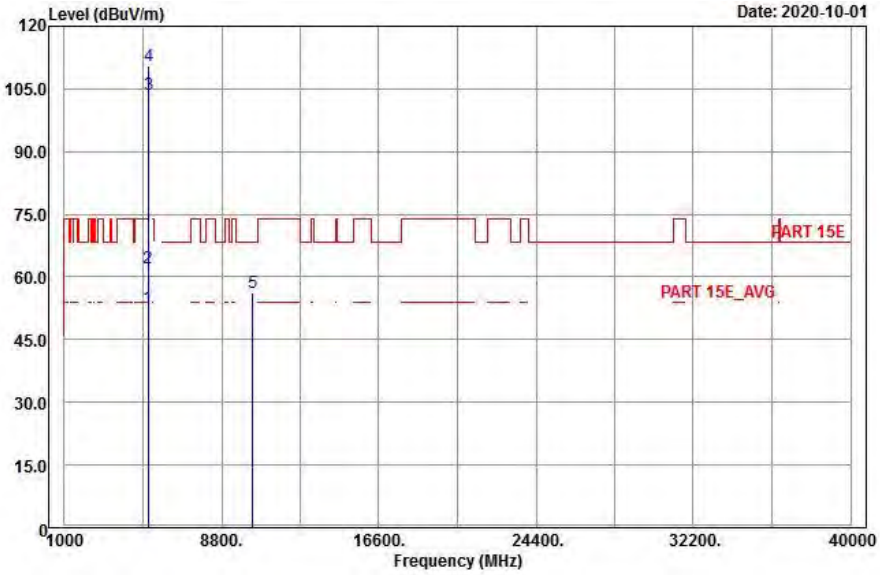
802.11n (HT20)

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**	Charles Hsiao

Horizontal



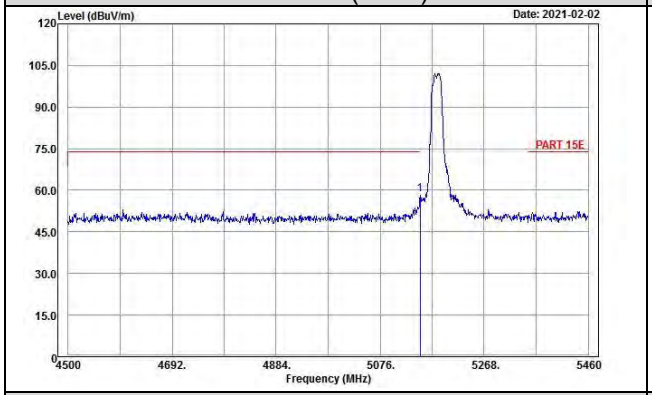
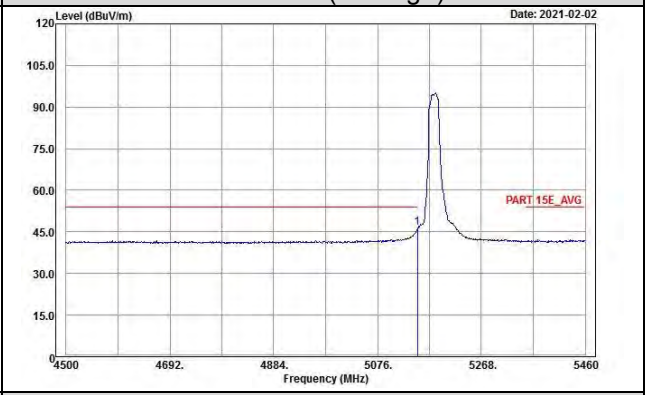
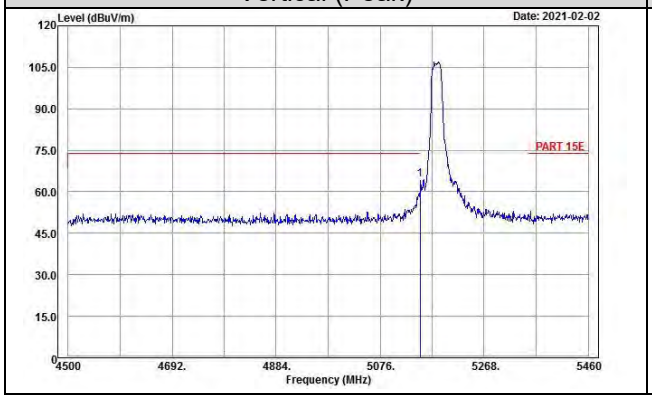
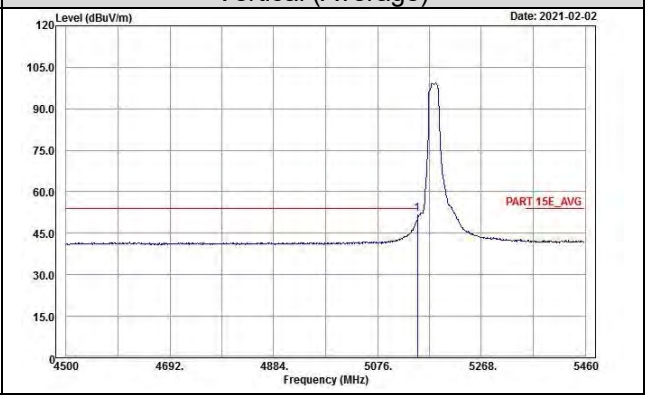
Vertical



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
5150	46.53	36.48	10.05	54	-7.47	211	19	Average
5150	58.59	48.54	10.05	74	-15.41	211	19	Peak
5180	96.95	86.83	10.12			211	19	Average
5180	103.86	93.74	10.12			211	19	Peak
*10360	55.46	39.44	16.02	68.2	-12.74	116	254	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	51.85	41.8	10.05	54	-2.15	188	344	Average
5150	64.42	54.37	10.05	74	-9.58	188	344	Peak
5180	102.25	92.13	10.12			188	344	Average
5180	109.39	99.27	10.12			188	344	Peak
*10360	55.23	39.21	16.02	68.2	-12.97	117	4	Peak

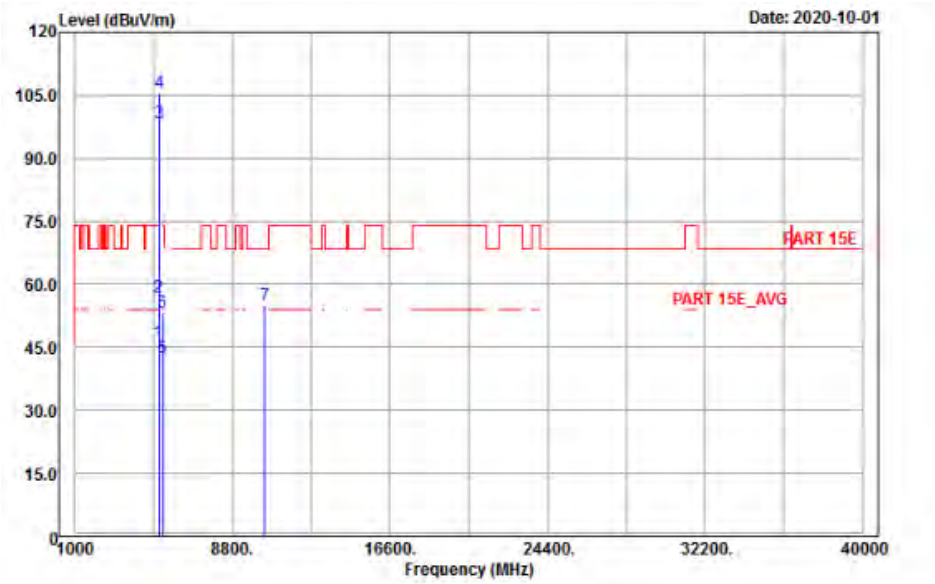
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5180 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

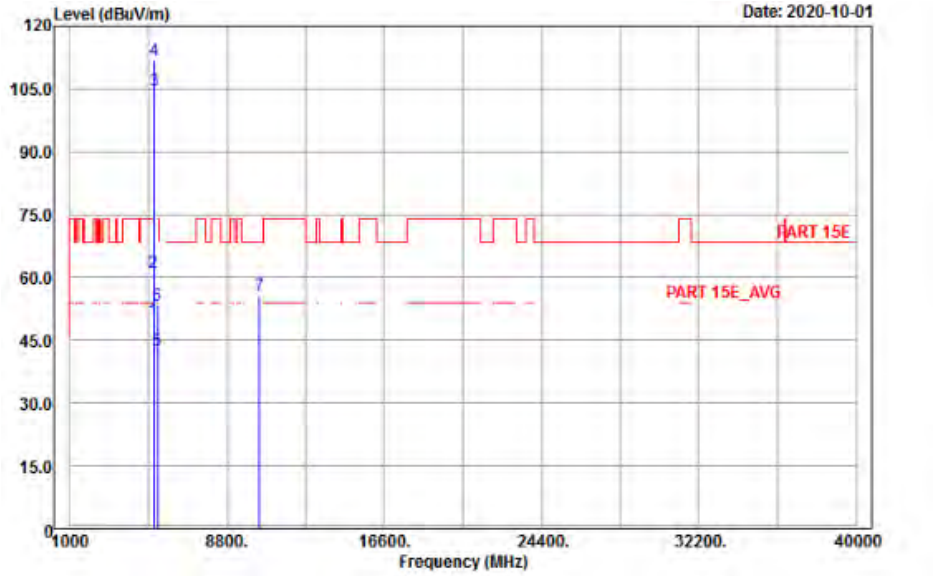
Channel 36	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



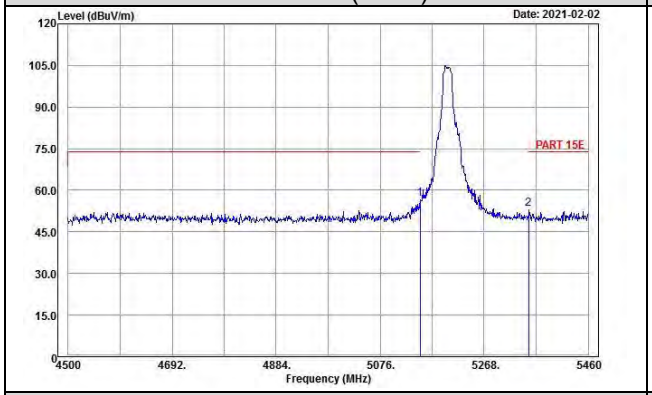
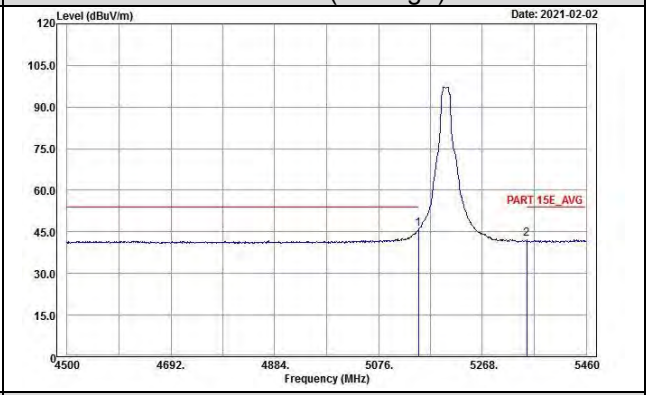
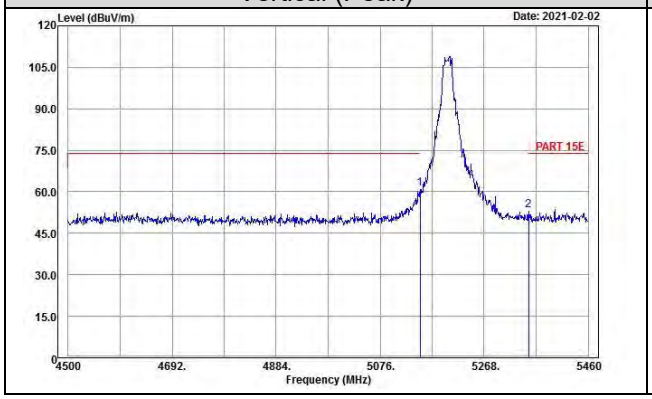
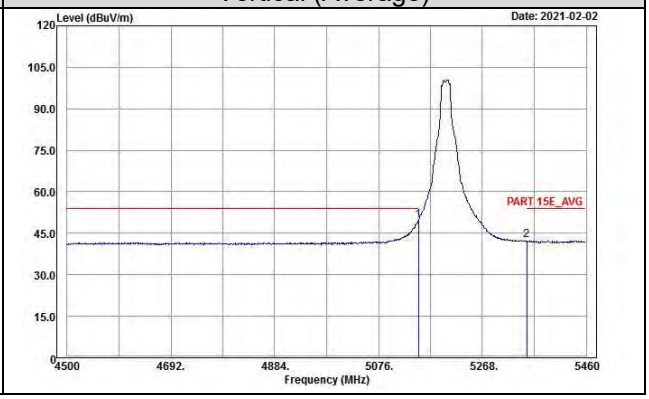
Vertical



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
5150	45.95	35.9	10.05	54	-8.05	211	19	Average
5150	57.05	47	10.05	74	-16.95	211	19	Peak
5200	98.47	88.31	10.16			211	19	Average
5200	105.45	95.29	10.16			211	19	Peak
5350	42.39	32.16	10.23	54	-11.61	211	19	Average
5350	53.24	43.01	10.23	74	-20.76	211	19	Peak
*10400	54.95	38.77	16.18	68.2	-13.25	164	8	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	49.71	39.66	10.05	54	-4.29	188	344	Average
5150	61.22	51.17	10.05	74	-12.78	188	344	Peak
5200	104.47	94.31	10.16			188	344	Average
5200	111.67	101.51	10.16			188	344	Peak
5350	42.56	32.33	10.23	54	-11.44	188	344	Average
5350	53.14	42.91	10.23	74	-20.86	188	344	Peak
*10400	55.67	39.49	16.18	68.2	-12.53	195	64	Peak

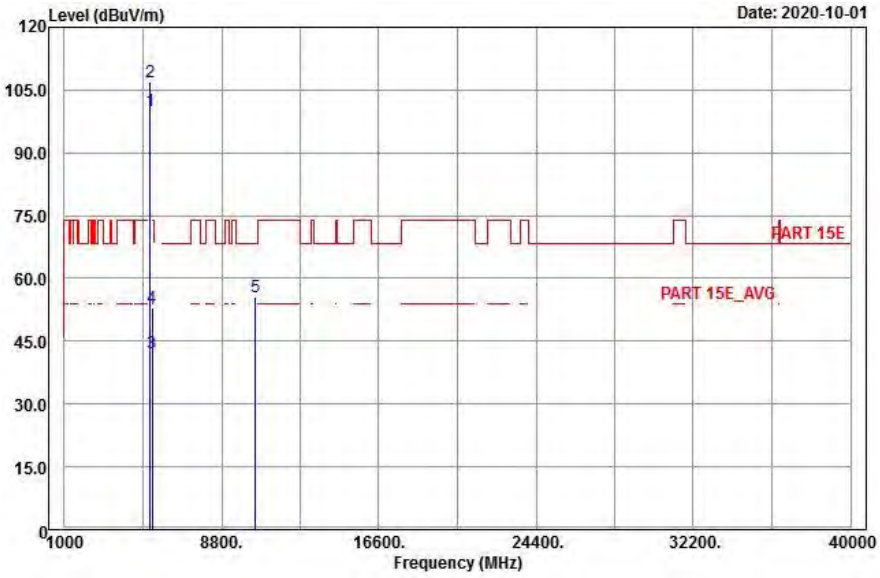
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5200 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

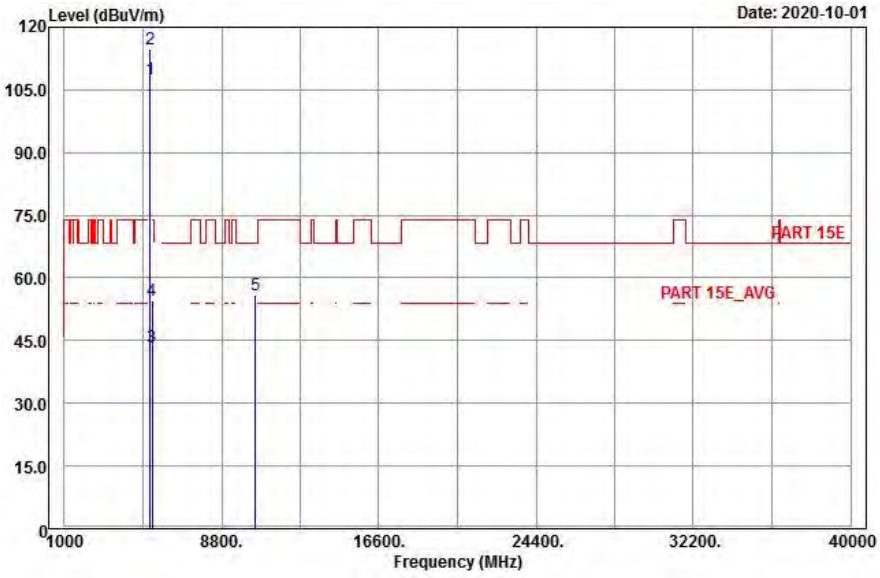
Channel 40	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



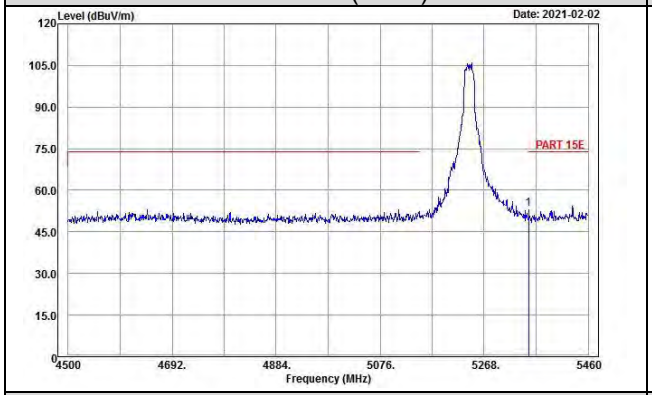
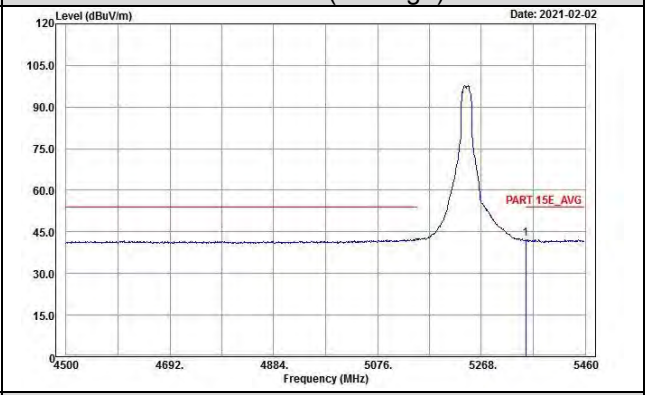
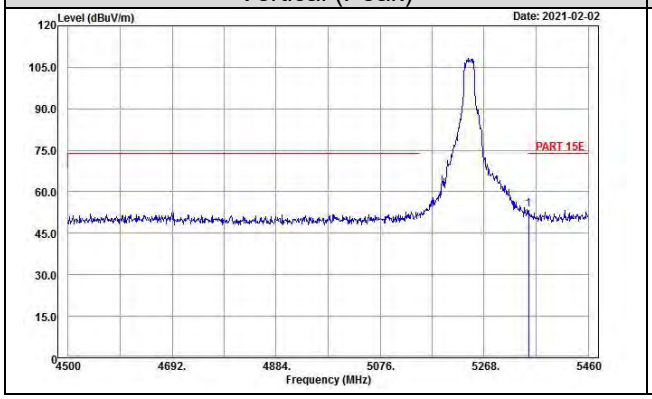
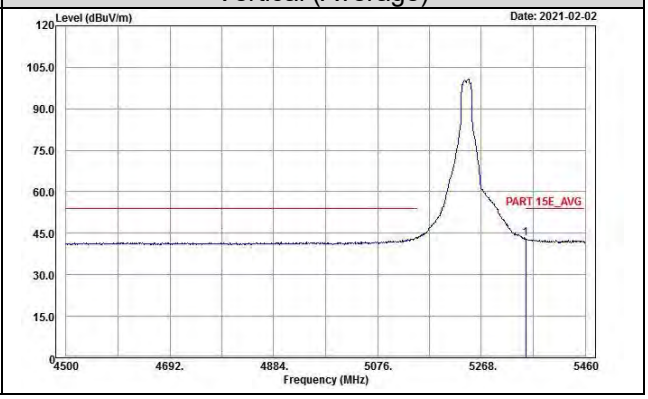
Vertical



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
5240	99.64	89.5	10.14			211	19	Average
5240	106.53	96.39	10.14			211	19	Peak
5350	42.37	32.14	10.23	54	-11.63	211	19	Average
5350	53.35	43.12	10.23	74	-20.65	211	19	Peak
*10480	55.68	39.78	15.9	68.2	-12.52	169	9	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
5240	105.57	95.43	10.14			188	344	Average
5240	112.48	102.34	10.14			188	344	Peak
5350	43.13	32.9	10.23	54	-10.87	188	344	Average
5350	53.52	43.29	10.23	74	-20.48	188	344	Peak
*10480	56.31	40.41	15.9	68.2	-11.89	118	274	Peak

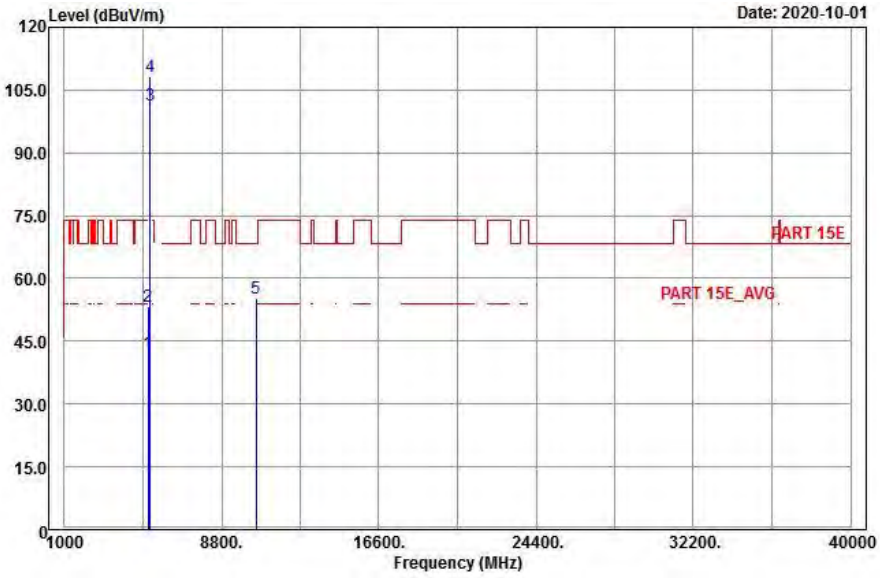
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5240 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

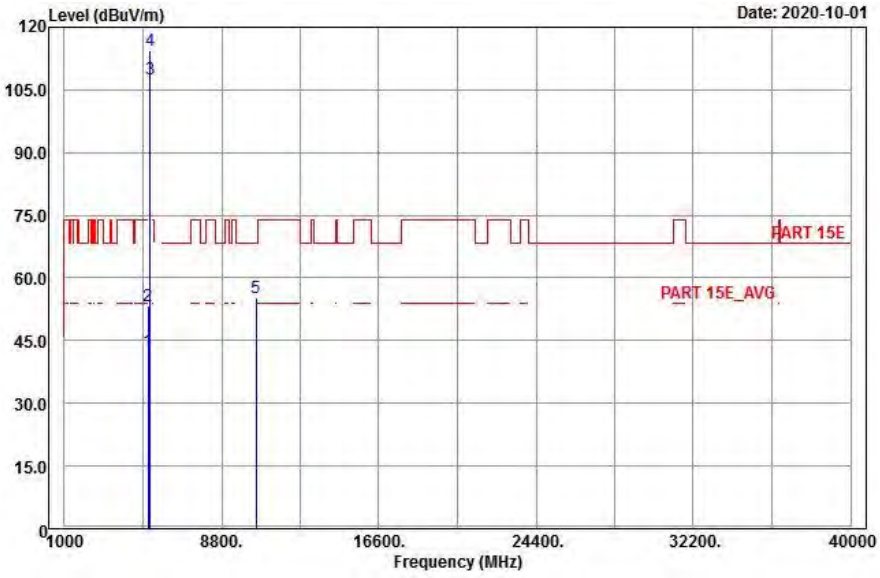
Channel 48	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



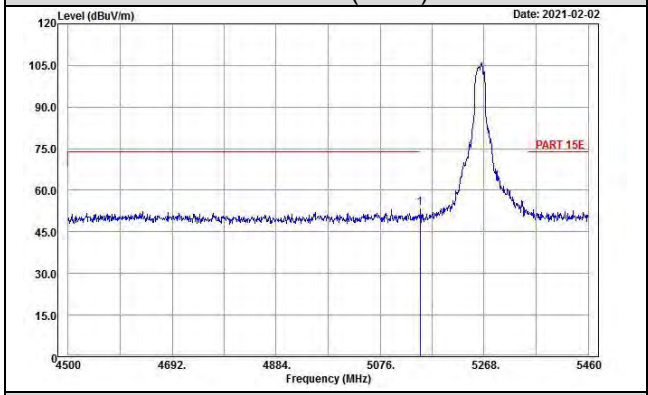
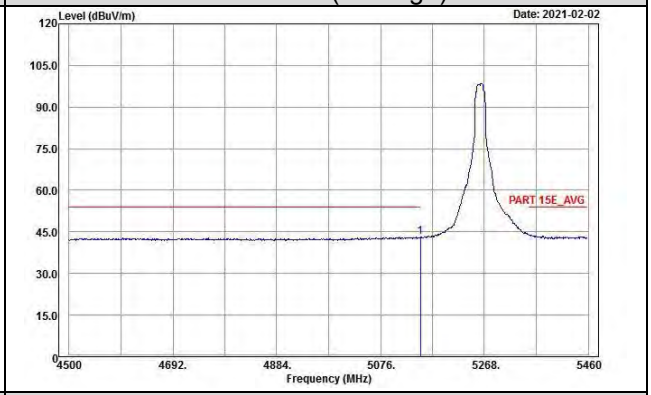
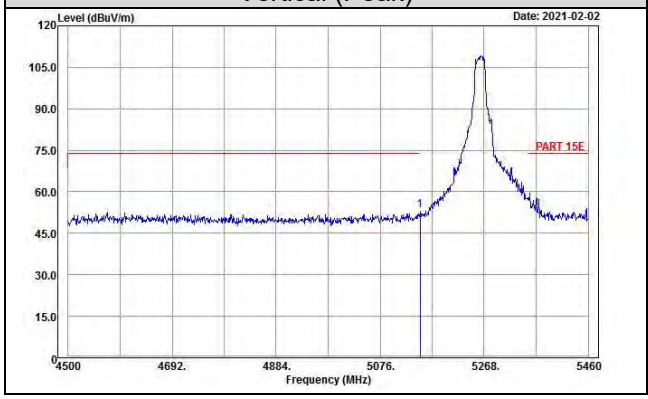
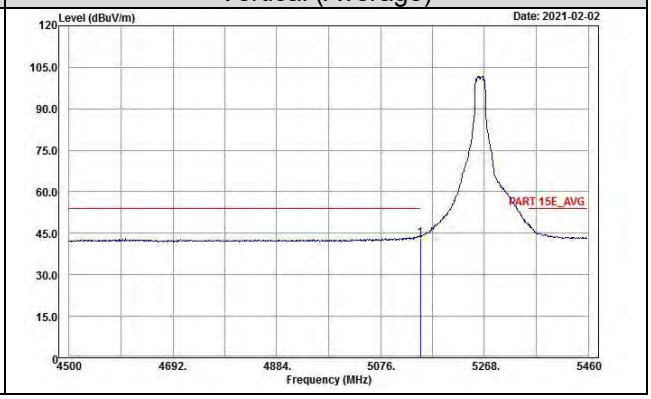
Vertical



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
5150	43.28	33.23	10.05	54	-10.72	172	23	Average
5150	53.74	43.69	10.05	74	-20.26	172	23	Peak
5260	99.52	89.4	10.12			172	23	Average
5260	106.11	95.99	10.12			172	23	Peak
*10520	56.47	40.59	15.88	68.2	-11.73	105	197	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	43.04	32.99	10.05	54	-10.96	202	345	Average
5150	53.2	43.15	10.05	74	-20.8	202	345	Peak
5260	105.38	95.26	10.12			202	345	Average
5260	111.81	101.69	10.12			202	345	Peak
*10520	55.47	39.59	15.88	68.2	-12.73	124	255	Peak

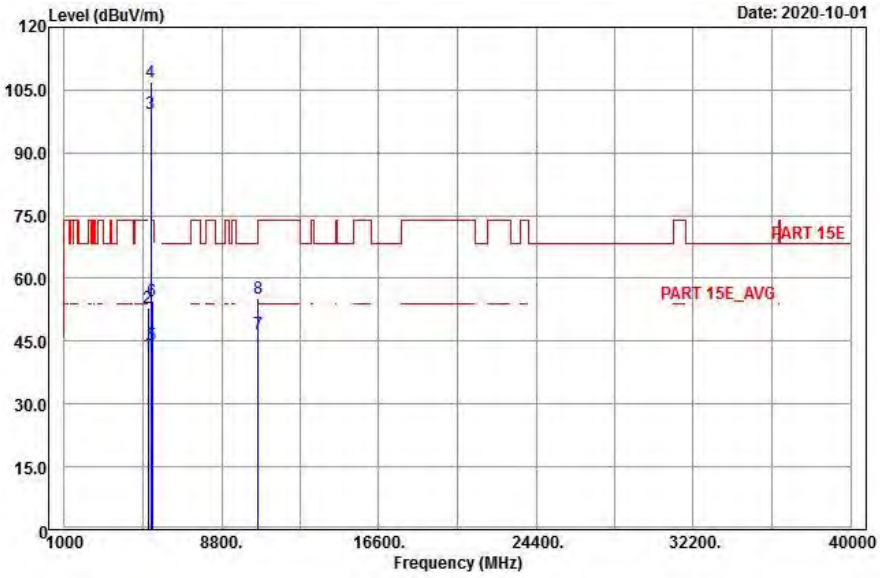
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5260 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

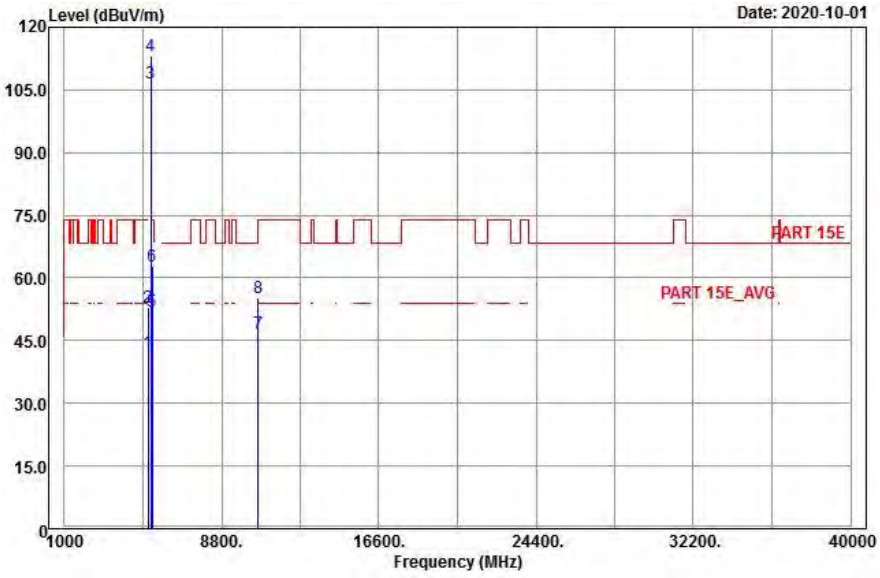
Channel 52	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Karl Lee

Horizontal



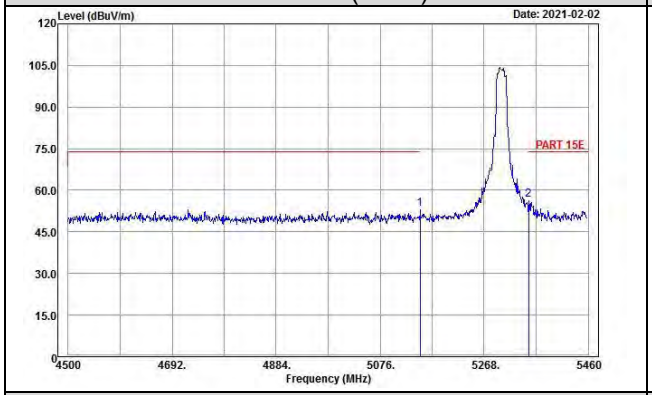
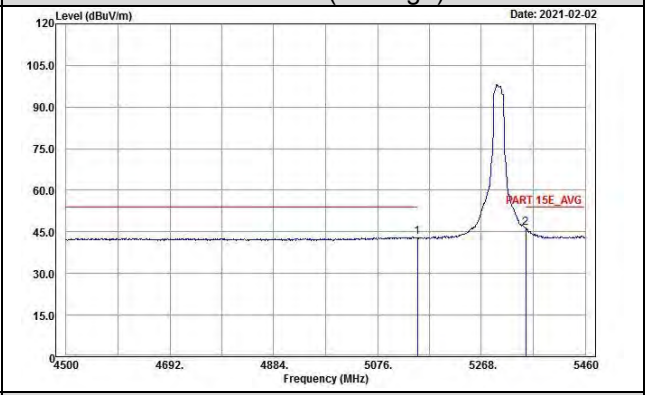
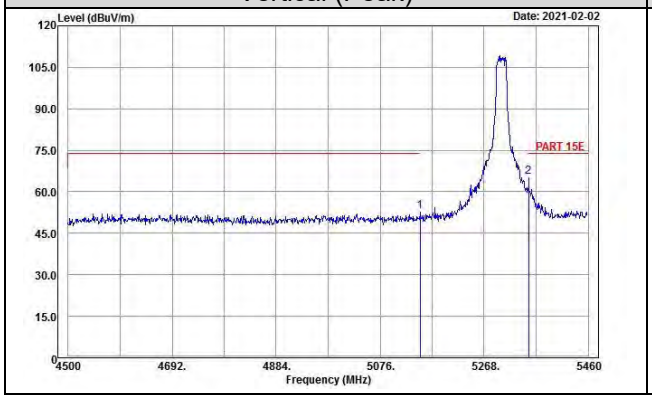
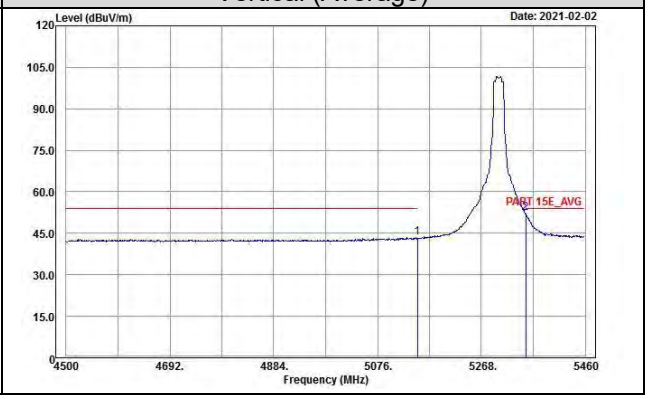
Vertical



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
5150	43.13	33.08	10.05	54	-10.87	172	23	Average
5150	53.2	43.15	10.05	74	-20.8	172	23	Peak
5300	98.75	88.69	10.06			172	23	Average
5300	105.2	95.14	10.06			172	23	Peak
5350	46.33	36.1	10.23	54	-7.67	172	23	Average
5350	56.44	46.21	10.23	74	-17.56	172	23	Peak
10600	46.8	31.04	15.76	54	-7.2	118	8	Average
10600	55.3	39.54	15.76	74	-18.7	118	8	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	43.54	33.49	10.05	54	-10.46	208	345	Average
5150	53.09	43.04	10.05	74	-20.91	208	345	Peak
5300	103.22	93.16	10.06			208	345	Average
5300	110.2	100.14	10.06			208	345	Peak
5350	52.3	42.07	10.23	54	-1.7	208	345	Average
5350	65.37	55.14	10.23	74	-8.63	208	345	Peak
10600	46.87	31.11	15.76	54	-7.13	187	7	Average
10600	55.96	40.2	15.76	74	-18.04	187	7	Peak

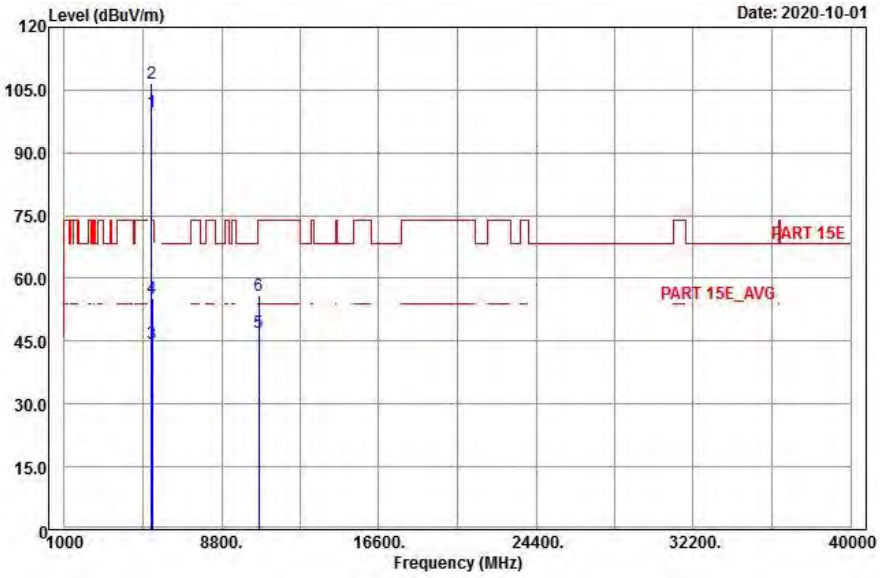
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5300 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

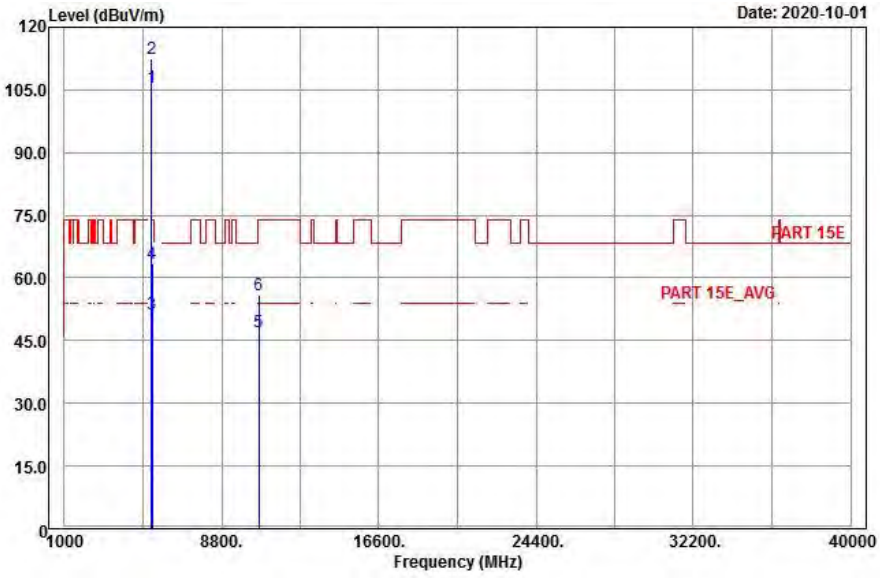
Channel 60	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Karl Lee

Horizontal



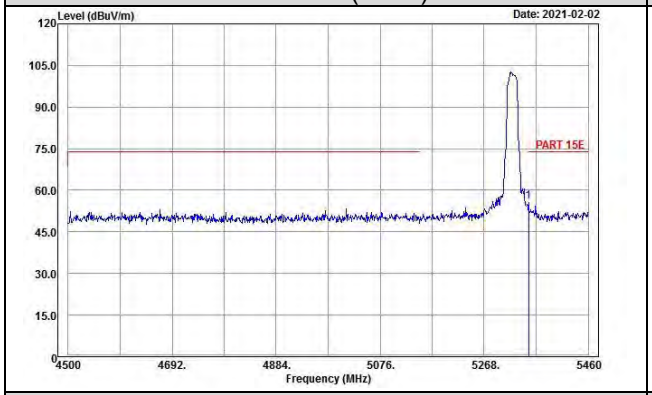
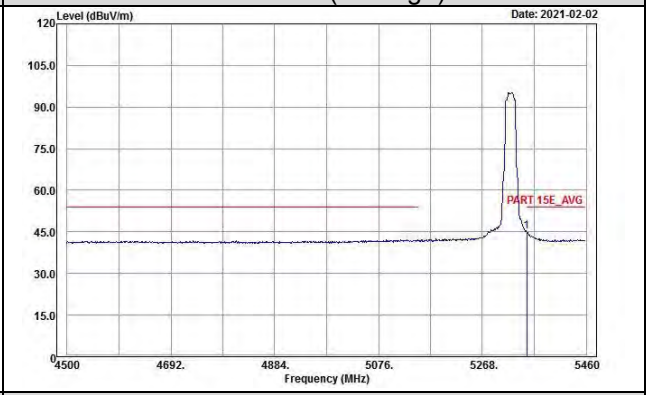
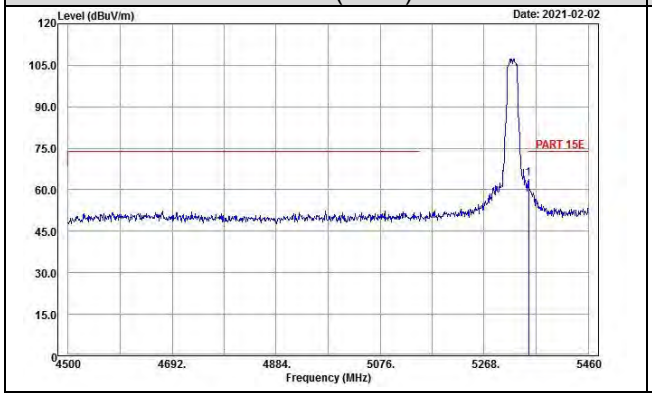
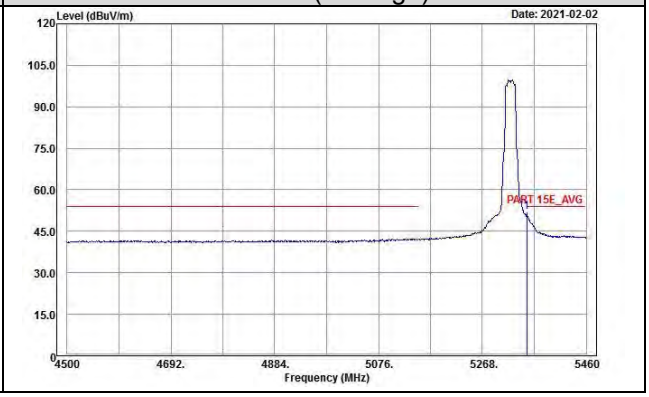
Vertical



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
5320	97.84	87.75	10.09			252	19	Average
5320	104.59	94.5	10.09			252	19	Peak
5350	44.99	34.76	10.23	54	-9.01	252	19	Average
5350	55.77	45.54	10.23	74	-18.23	252	19	Peak
10640	46.77	30.78	15.99	54	-7.23	188	57	Average
10640	55.05	39.06	15.99	74	-18.95	188	57	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	103.69	93.6	10.09			218	341	Average
5320	110.4	100.31	10.09			218	341	Peak
5350	51.97	41.74	10.23	54	-2.03	218	341	Average
5350	63.98	53.75	10.23	74	-10.02	218	341	Peak
10640	47.04	31.05	15.99	54	-6.96	134	341	Average
10640	55.23	39.24	15.99	74	-18.77	134	341	Peak

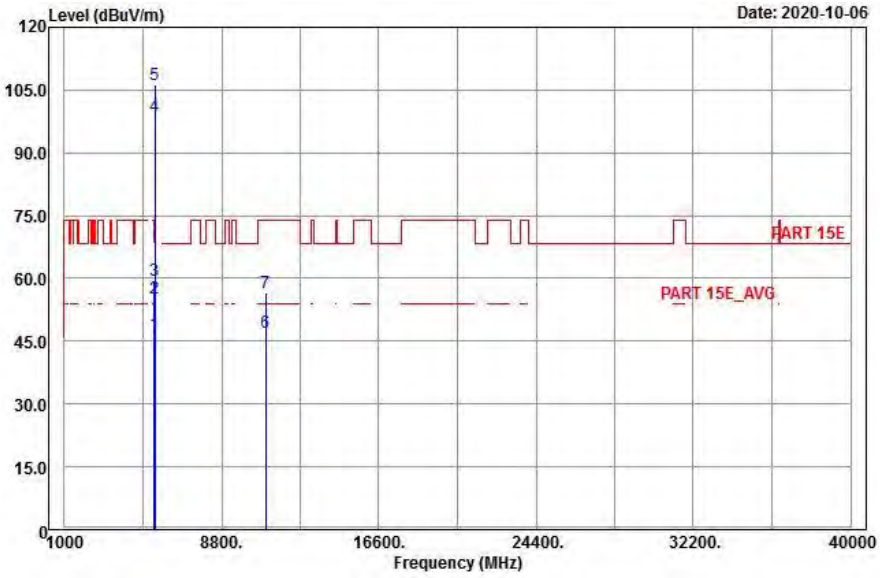
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5320 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

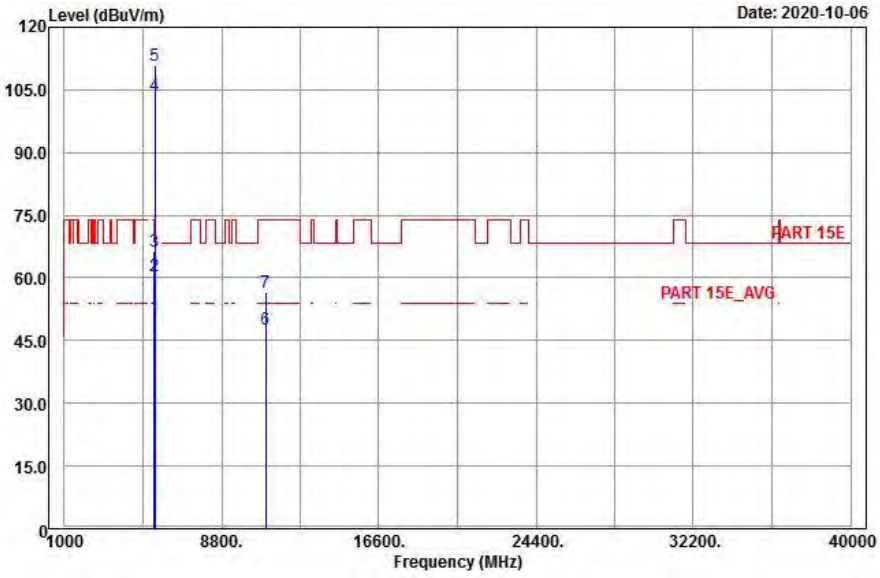
Channel 64	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



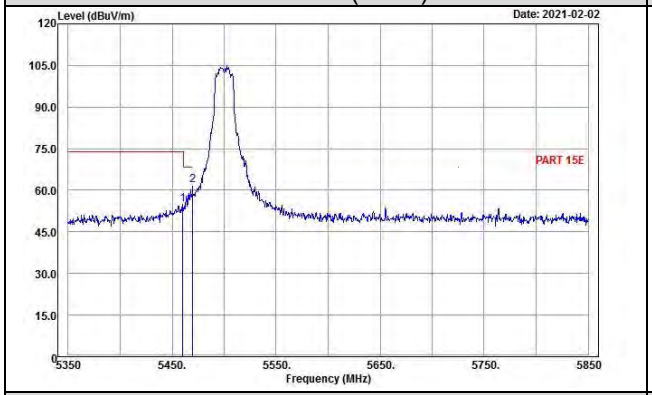
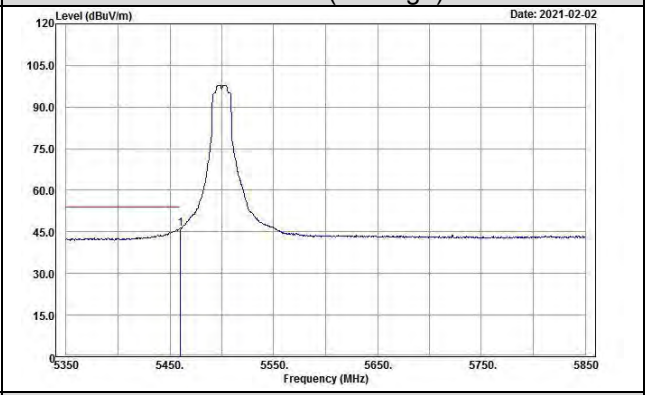
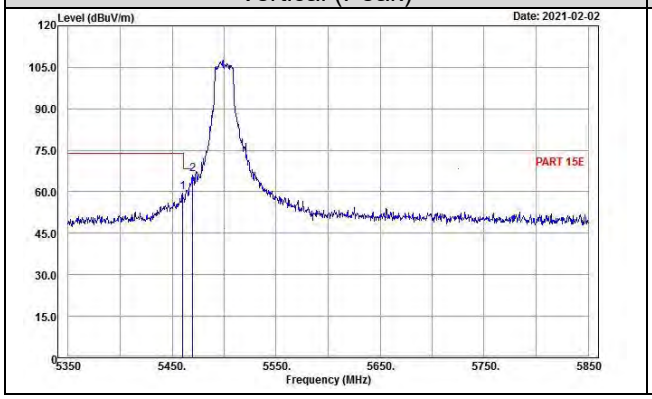
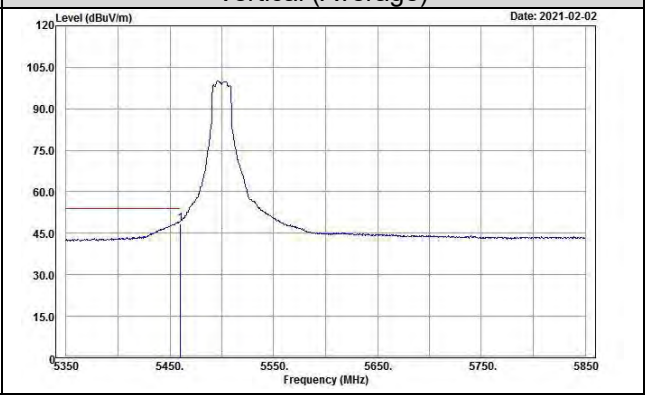
Vertical



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
5460	46.19	35.68	10.51	54	-7.81	127	24	Average
5460	54.83	44.32	10.51	74	-19.17	127	24	Peak
*5470	61.88	51.35	10.53	68.2	-6.32	127	24	Peak
5500	99.54	88.94	10.6			127	24	Average
5500	105.33	94.73	10.6			127	24	Peak
11000	45.84	29.71	16.13	54	-8.16	184	125	Average
11000	55.6	39.47	16.13	74	-18.4	184	125	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	48.46	37.95	10.51	54	-5.54	216	318	Average
5460	59.86	49.35	10.51	74	-14.14	216	318	Peak
*5470	66.53	56	10.53	68.2	-1.67	216	318	Peak
5500	103.91	93.31	10.6			216	318	Average
5500	109.7	99.1	10.6			216	318	Peak
11000	46.39	30.26	16.13	54	-7.61	211	23	Average
11000	55.67	39.54	16.13	74	-18.33	211	23	Peak

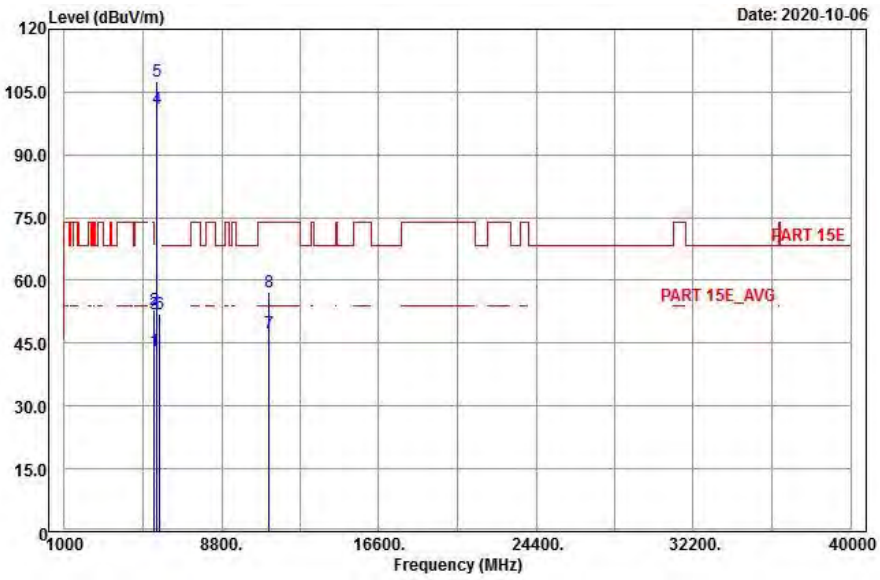
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5500 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

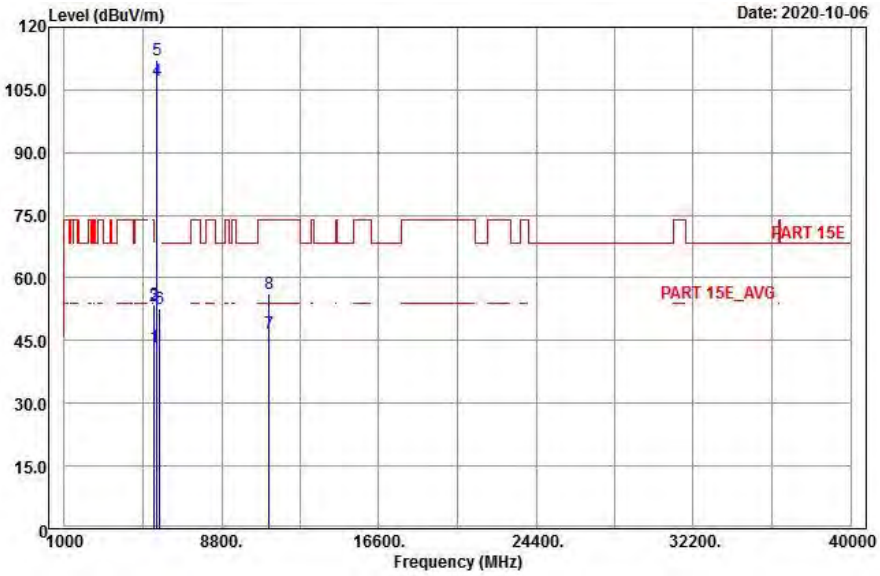
Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



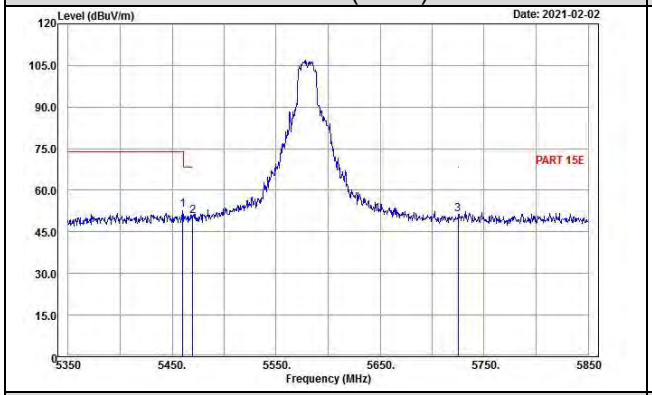
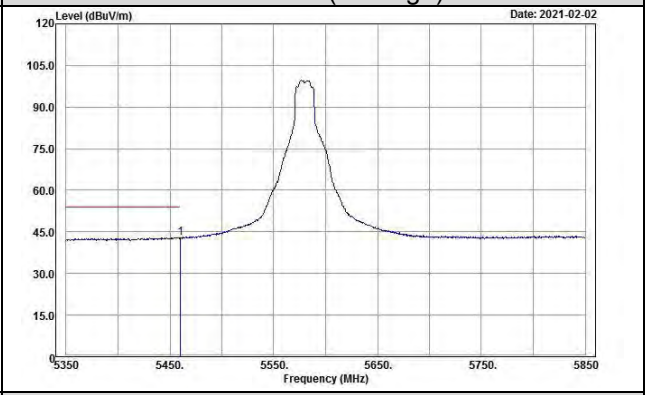
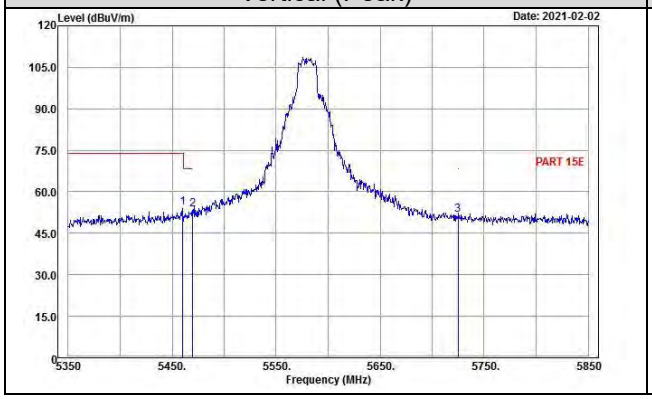
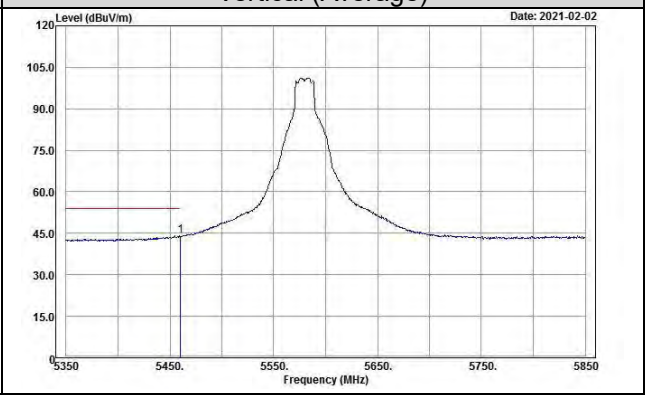
Vertical



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
5460	42.93	32.42	10.51	54	-11.07	126	22	Average
5460	52.84	42.33	10.51	74	-21.16	126	22	Peak
5470	50.84	40.31	10.53	68.2	-17.36	126	22	Peak
5580	101.97	91.26	10.71			126	22	Average
5580	108.89	98.18	10.71			126	22	Peak
5725	51.33	40.41	10.92	68.2	-16.87	126	22	Peak
11160	47.58	31.22	16.36	54	-6.42	196	236	Average
11160	57.26	40.9	16.36	74	-16.74	196	236	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	44.02	33.51	10.51	54	-9.98	252	308	Average
5460	54.37	43.86	10.51	74	-19.63	252	308	Peak
5470	53.49	42.96	10.53	68.2	-14.71	252	308	Peak
5580	108.04	97.33	10.71			252	308	Average
5580	111.34	100.63	10.71			252	308	Peak
5725	51.76	40.84	10.92	68.2	-16.44	252	308	Peak
11160	47.28	30.92	16.36	54	-6.72	145	73	Average
11160	56.81	40.45	16.36	74	-17.19	145	73	Peak

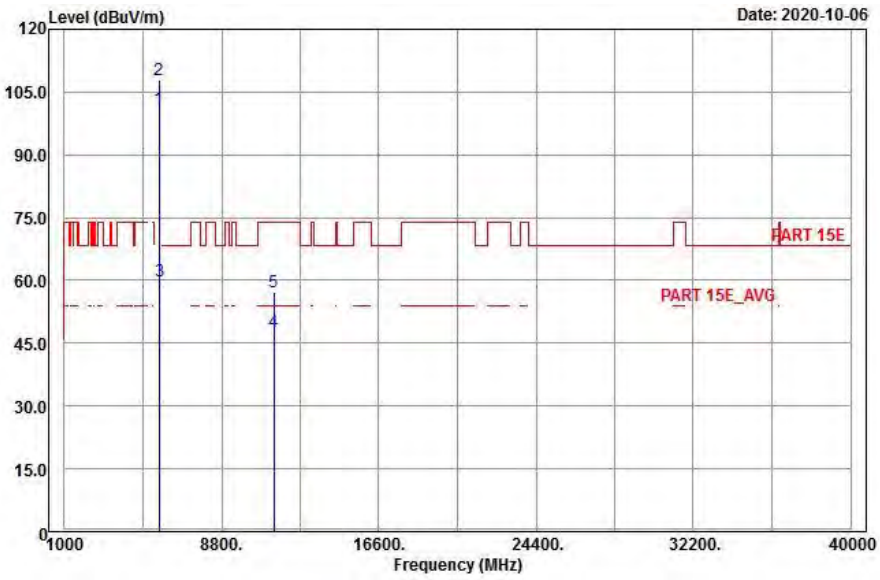
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

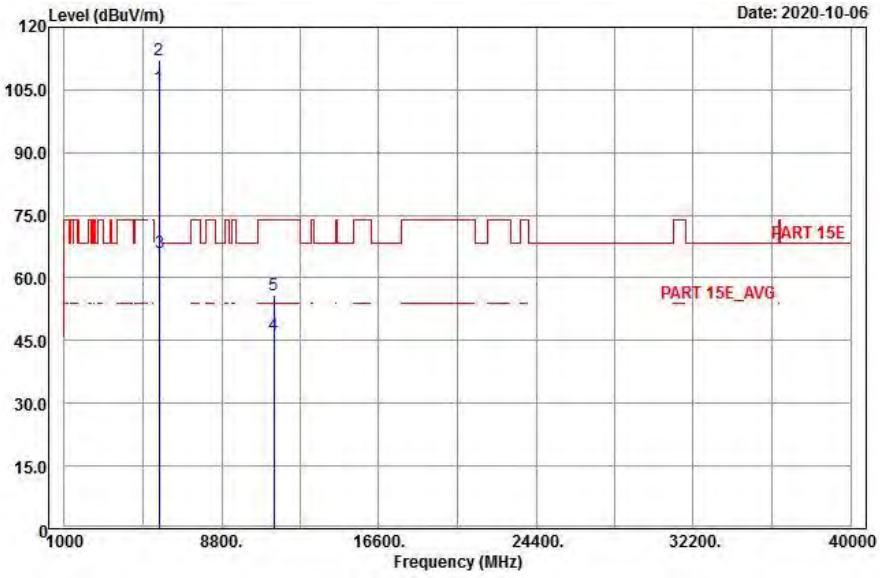
Channel 116	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



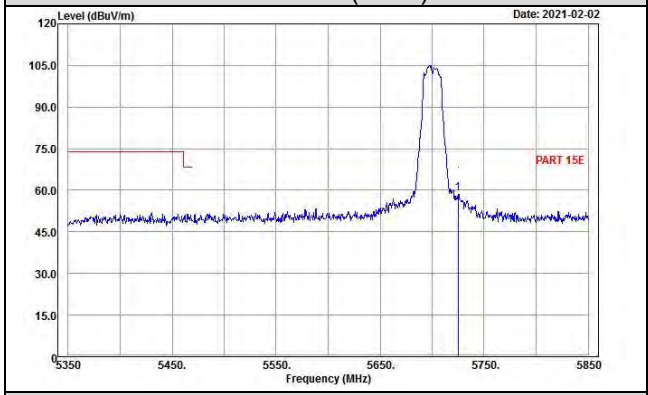
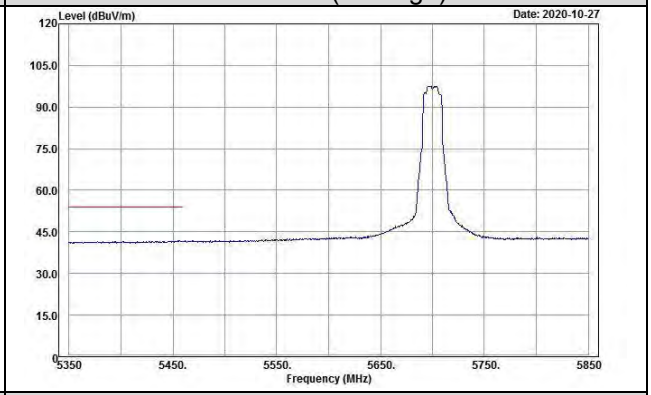
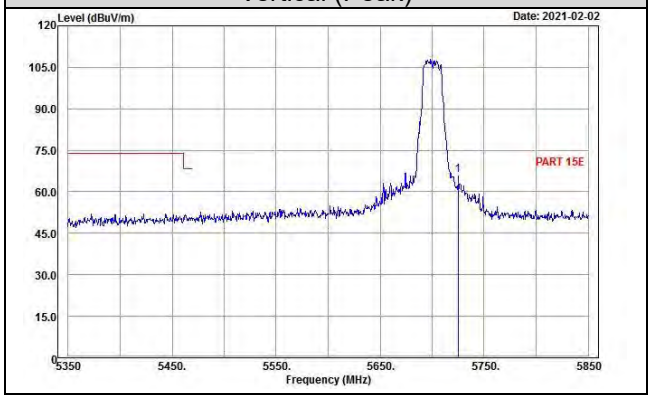
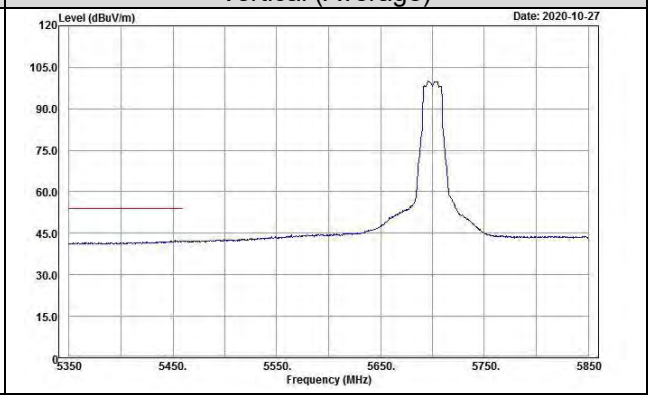
Vertical



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
5700	100.24	89.29	10.95			119	28	Average
5700	107.25	96.3	10.95			119	28	Peak
*5725	58.88	47.96	10.92	68.2	-9.32	119	28	Peak
11140	47.58	31.24	16.34	54	-6.42	135	205	Average
11140	57.16	40.82	16.34	74	-16.84	135	205	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
5700	104.48	93.53	10.95			252	308	Average
5700	111.47	100.52	10.95			252	308	Peak
*5725	66.1	55.18	10.92	68.2	-2.1	252	308	Peak
11140	46.67	30.33	16.34	54	-7.33	198	57	Average
11140	56.21	39.87	16.34	74	-17.79	198	57	Peak

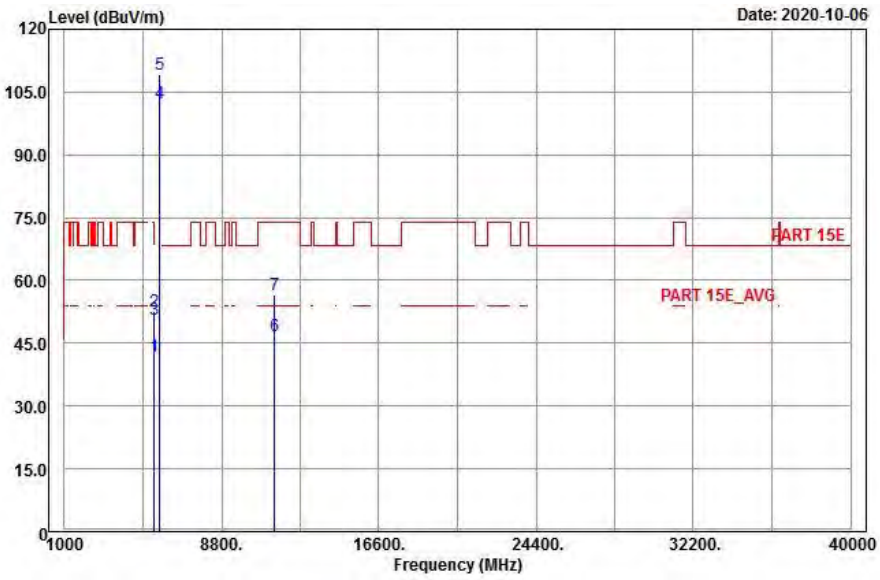
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5700 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

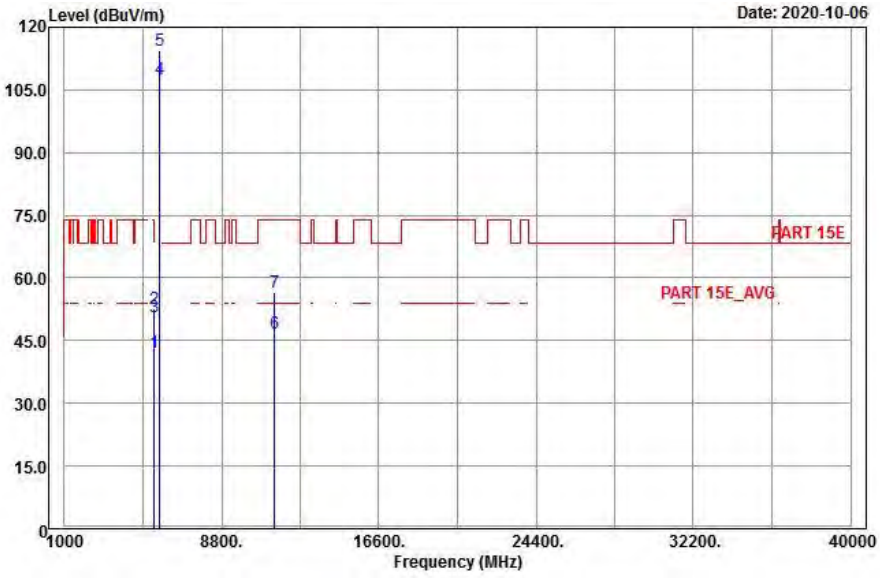
Channel 140	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



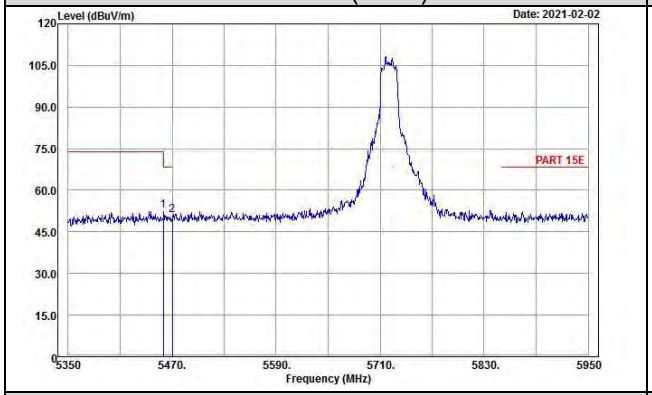
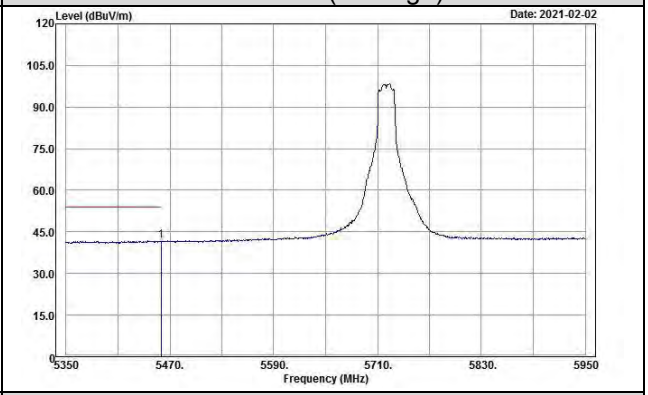
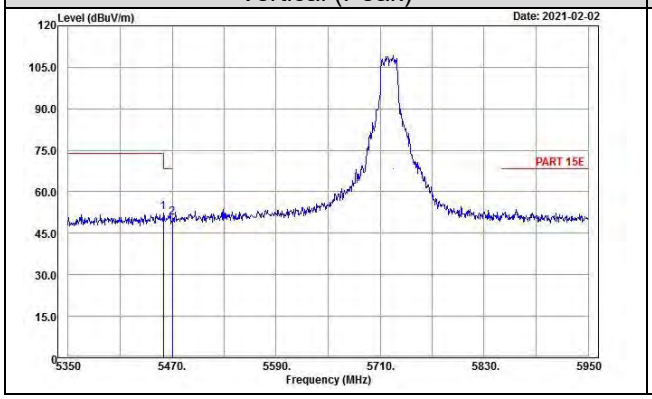
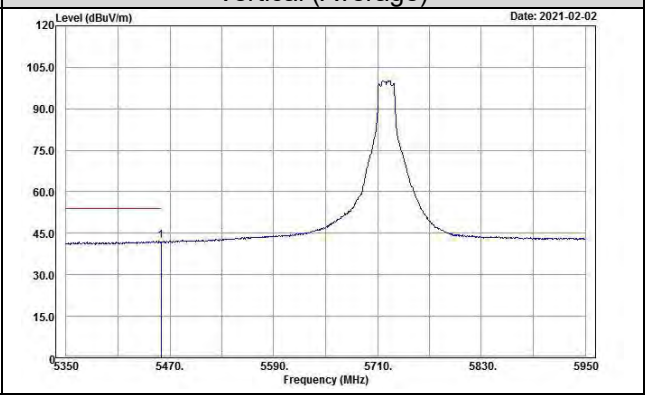
Vertical



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
5460	41.91	31.4	10.51	54	-12.09	119	28	Average
5460	52.58	42.07	10.51	74	-21.42	119	28	Peak
*5470	51.07	40.54	10.53	68.2	-17.13	119	28	Peak
5720	101.25	90.33	10.92			119	28	Average
5720	108.41	97.49	10.92			119	28	Peak
11440	46.74	30.45	16.29	54	-7.26	185	112	Average
11440	56.22	39.93	16.29	74	-17.78	185	112	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	42.14	31.63	10.51	54	-11.86	252	308	Average
5460	52.6	42.09	10.51	74	-21.4	252	308	Peak
*5470	50.8	40.27	10.53	68.2	-17.4	252	308	Peak
5720	106.57	95.65	10.92			252	308	Average
5720	113.11	102.19	10.92			252	308	Peak
11440	47.26	30.97	16.29	54	-6.74	241	75	Average
11440	56.74	40.45	16.29	74	-17.26	241	75	Peak

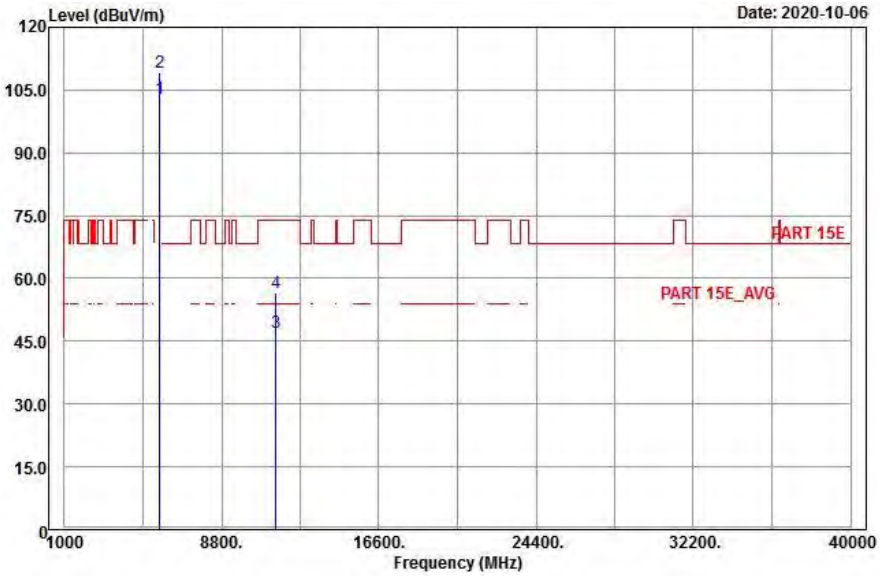
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5720 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

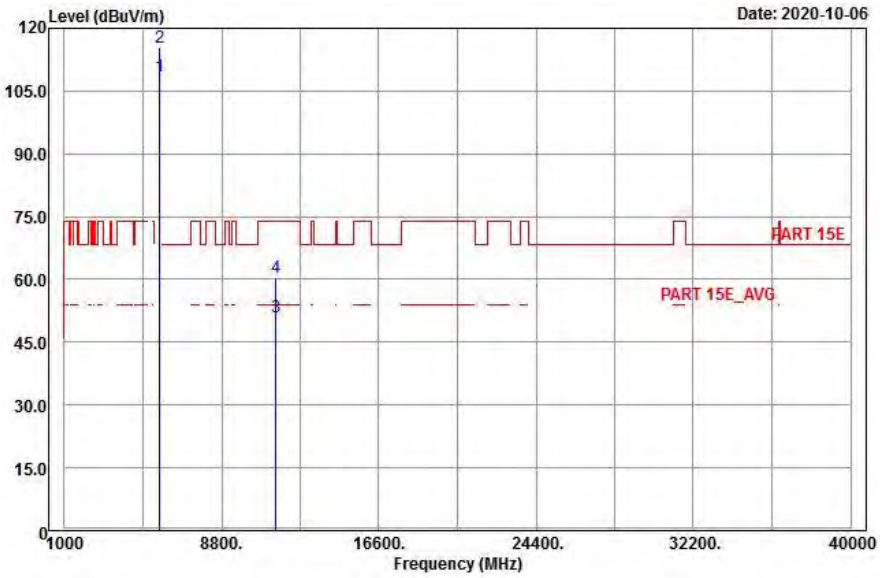
Channel 144	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

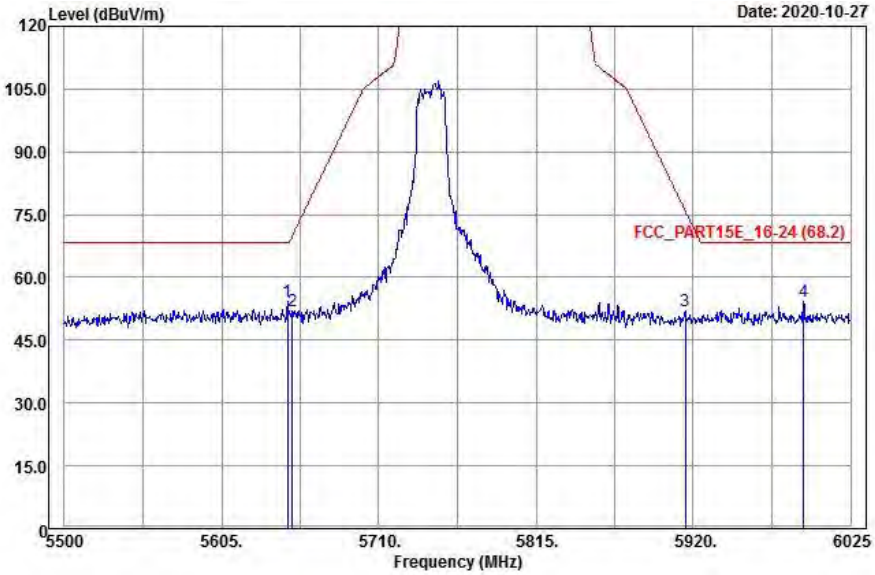
<Spurious Emission>
Horizontal



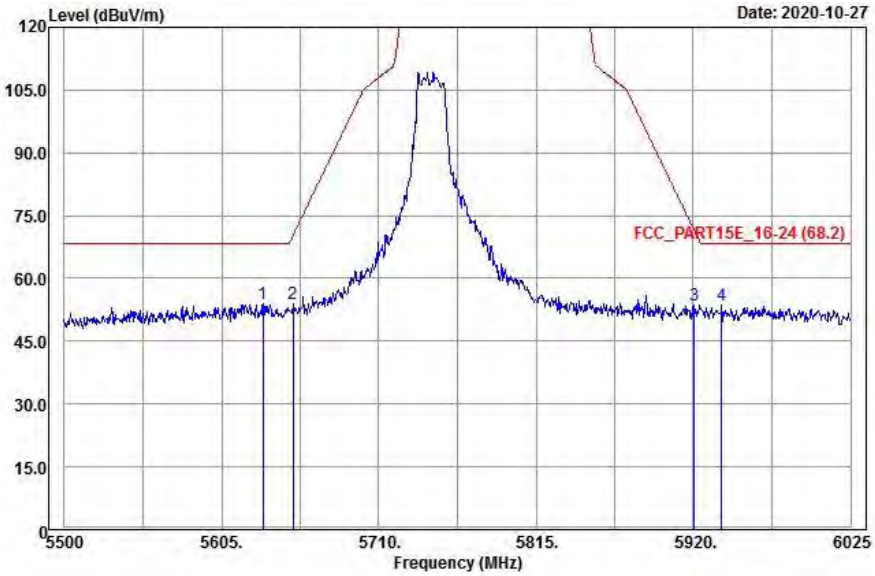
Vertical



<Out of Band Emission (OOBE)>
Horizontal



Vertical



<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	99.58	88.7	10.88			119	28	Average
5745	106.58	95.7	10.88			119	28	Peak
11490	47.69	31.22	16.47	54	-6.31	125	166	Average
11490	56.73	40.26	16.47	74	-17.27	125	166	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	106.59	95.71	10.88			244	324	Average
5745	113.34	102.46	10.88			244	324	Peak
11490	50.88	34.41	16.47	54	-3.12	222	59	Average
11490	60	43.53	16.47	74	-14	222	59	Peak

<Out of Band Emission (OOBE)>

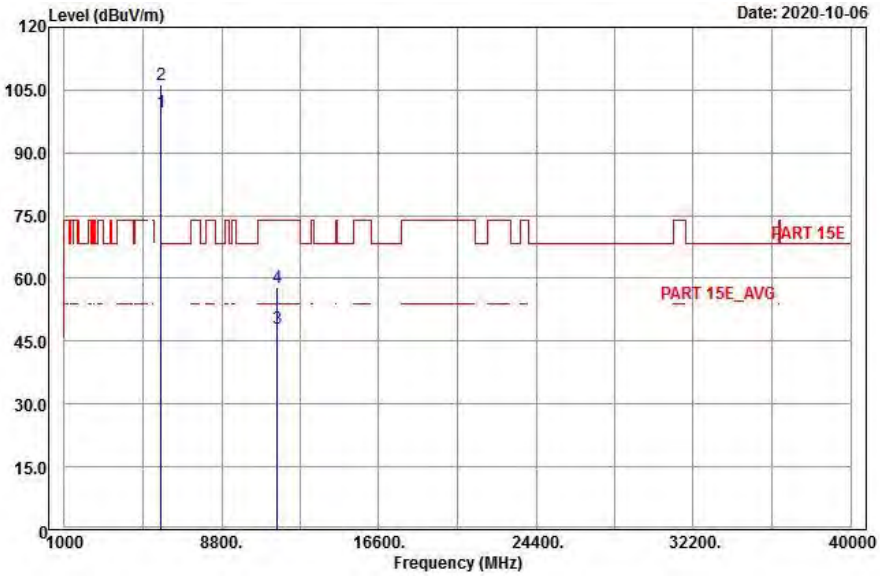
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5593.45	52.93	42.18	10.75	68.2	-15.27	119	28	Peak
5651.725	51.98	41.11	10.87	69.48	-17.5	119	28	Peak
5924.725	51.73	40.62	11.11	68.4	-16.67	119	28	Peak
*5974.6	52.47	41.21	11.26	68.2	-15.73	119	28	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
*5611.3	53.67	42.9	10.77	68.2	-14.53	244	324	Peak
5655.925	54.04	43.17	10.87	72.58	-18.54	244	324	Peak
5921.575	54.05	42.94	11.11	70.73	-16.68	244	324	Peak
*5937.325	55.06	43.9	11.16	68.2	-13.14	244	324	Peak

Remarks:

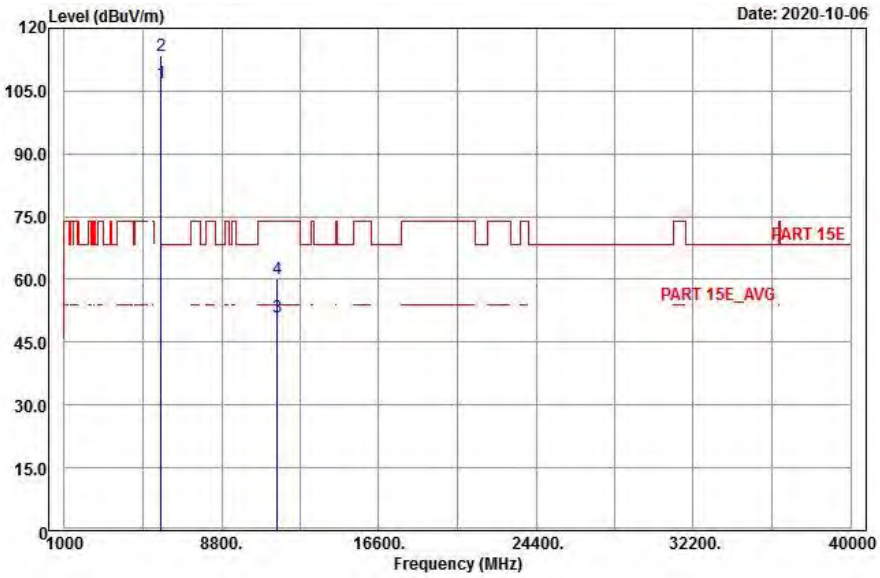
1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5745 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

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**	Charles Hsiao

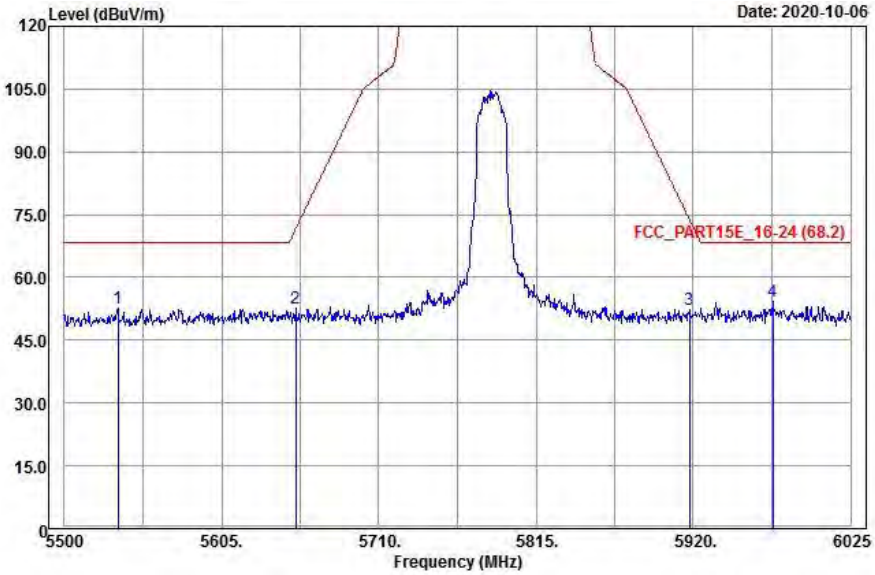
<Spurious Emission>
Horizontal



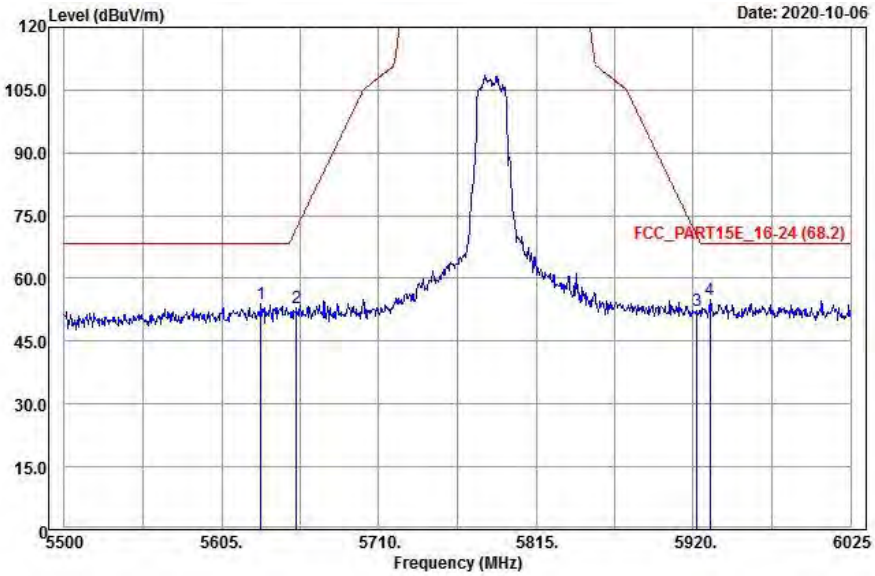
Vertical



<Out of Band Emission (OOBE)>
Horizontal



Vertical



<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	98.57	87.76	10.81			119	28	Average
5785	105.46	94.65	10.81			119	28	Peak
11570	47.61	31.12	16.49	54	-6.39	125	226	Average
11570	56.77	40.28	16.49	74	-17.23	125	226	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	105.51	94.7	10.81			244	324	Average
5785	112.89	102.08	10.81			244	324	Peak
11570	50.77	34.28	16.49	54	-3.23	222	59	Average
11570	62.5	46.01	16.49	74	-11.5	222	59	Peak

<Out of Band Emission (OOBE)>

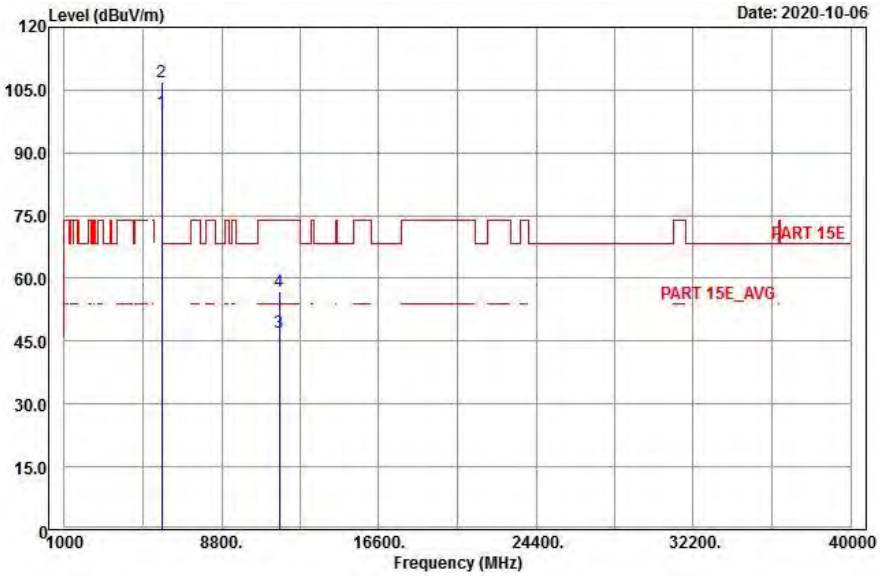
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5631.25	53.8	42.99	10.81	68.2	-14.4	119	28	Peak
5655.925	52.32	41.45	10.87	72.58	-20.26	119	28	Peak
5924.2	51.3	40.19	11.11	68.79	-17.49	119	28	Peak
*5950.45	52.75	41.57	11.18	68.2	-15.45	119	28	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
*5615.5	53.99	43.2	10.79	68.2	-14.21	244	324	Peak
5650.15	53.77	42.9	10.87	68.31	-14.54	244	324	Peak
5923.675	53.29	42.18	11.11	69.18	-15.89	244	324	Peak
*5936.275	54.39	43.23	11.16	68.2	-13.81	244	324	Peak

Remarks:

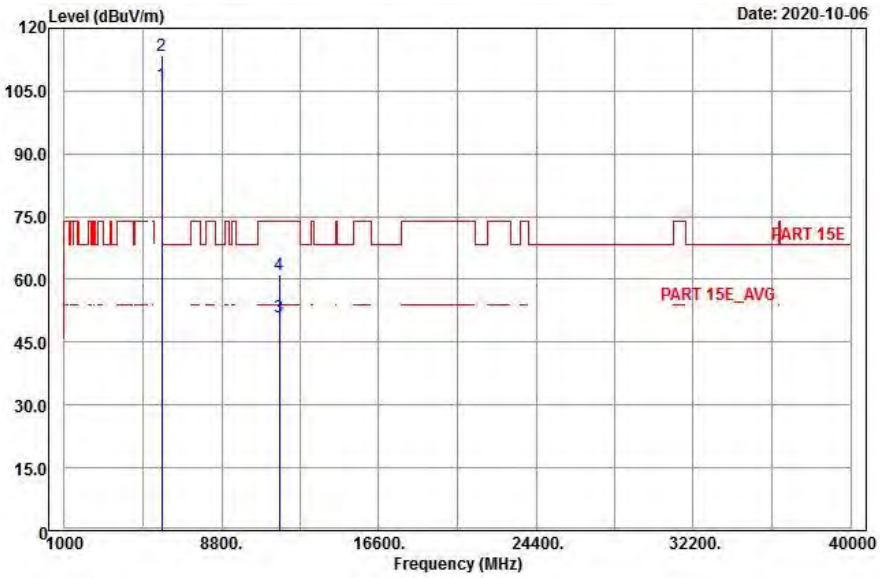
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin Value = Emission Level – Limit value
2. 5785 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

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**	Charles Hsiao

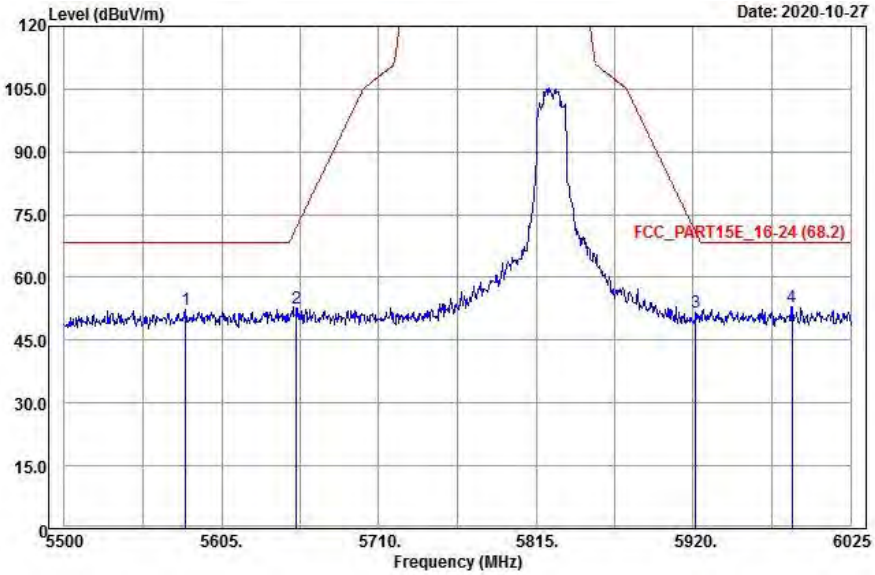
<Spurious Emission>
Horizontal



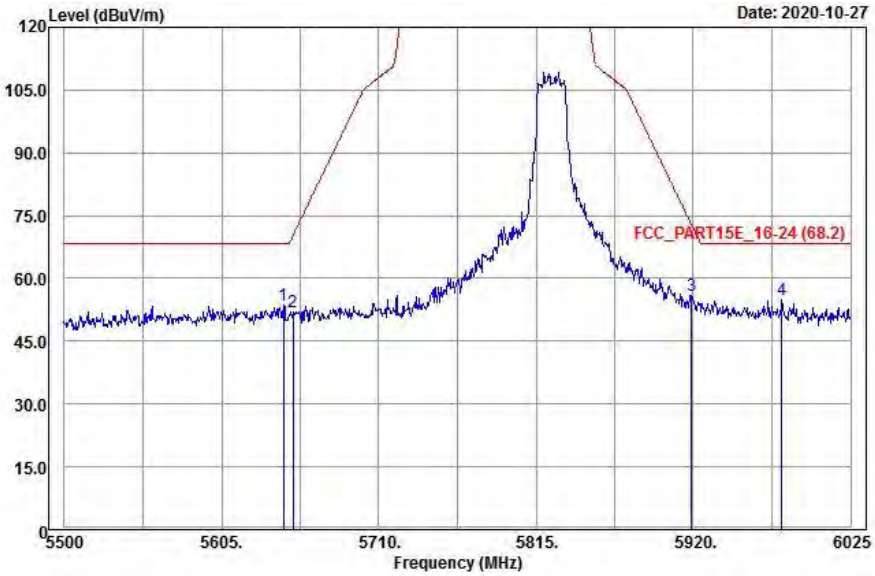
Vertical



<Out of Band Emission (OOBE)>
Horizontal



Vertical



<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	100.84	89.96	10.88			119	28	Average
5825	107.58	96.7	10.88			119	28	Peak
11650	48.06	31.28	16.78	54	-5.94	119	345	Average
11650	55.7	38.92	16.78	74	-18.3	119	345	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	108.58	97.7	10.88			244	324	Average
5825	115.22	104.34	10.88			244	324	Peak
11650	50.96	34.18	16.78	54	-3.04	222	59	Average
11650	60.02	43.24	16.78	74	-13.98	222	59	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
*5538.85	52.53	41.87	10.66	68.2	-15.67	119	28	Peak
5653.825	52.21	41.34	10.87	71.03	-18.82	119	28	Peak
5921.575	51.17	40.06	11.11	70.73	-19.56	119	28	Peak
*5985.625	53.92	42.63	11.29	68.2	-14.28	119	28	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
*5648.05	53.38	42.53	10.85	68.2	-14.82	244	324	Peak
5653.3	52.31	41.44	10.87	70.64	-18.33	244	324	Peak
5923.15	56.17	45.06	11.11	69.57	-13.4	244	324	Peak
*5925.25	55.73	44.62	11.11	68.2	-12.47	244	324	Peak

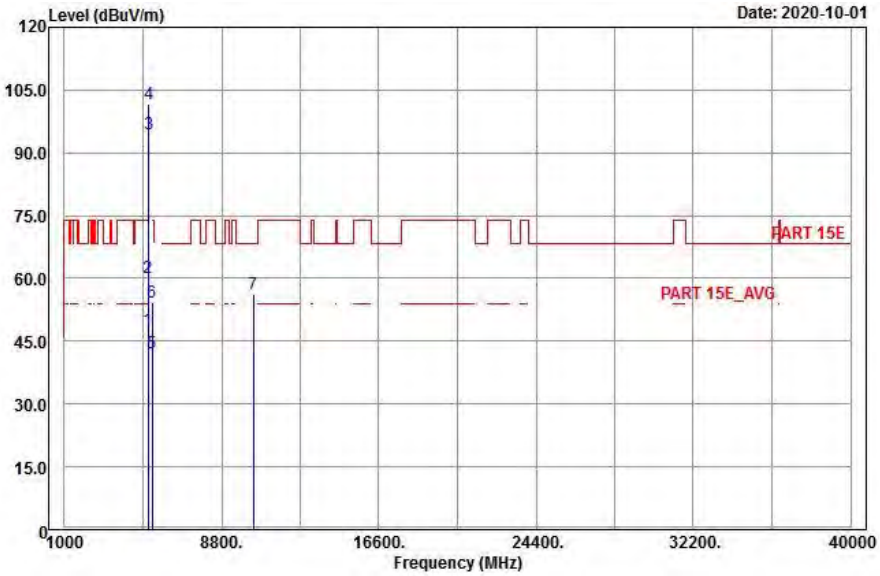
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin Value = Emission Level – Limit value
2. 5825 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

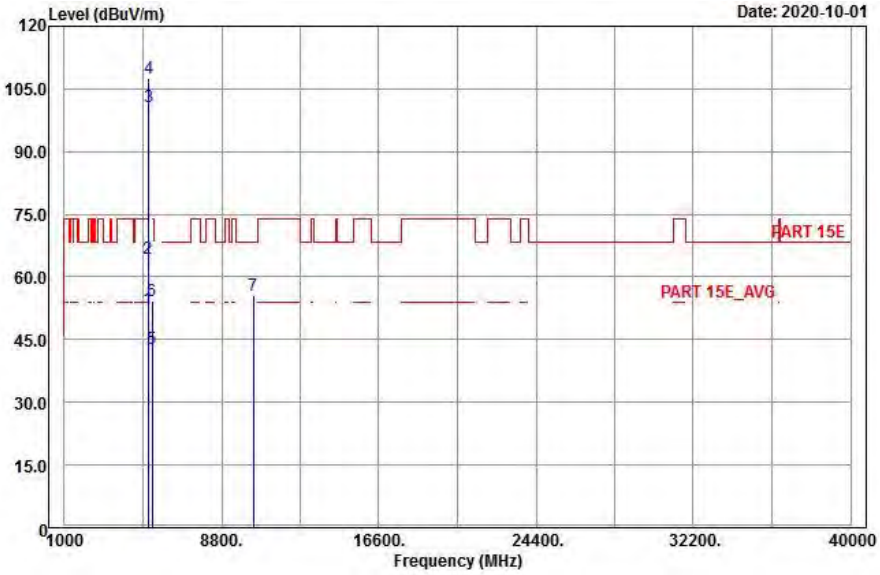
802.11n (HT40)

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**	Charles Hsiao

Horizontal



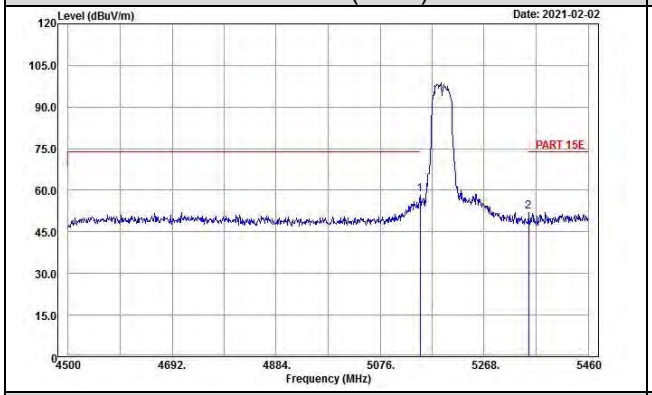
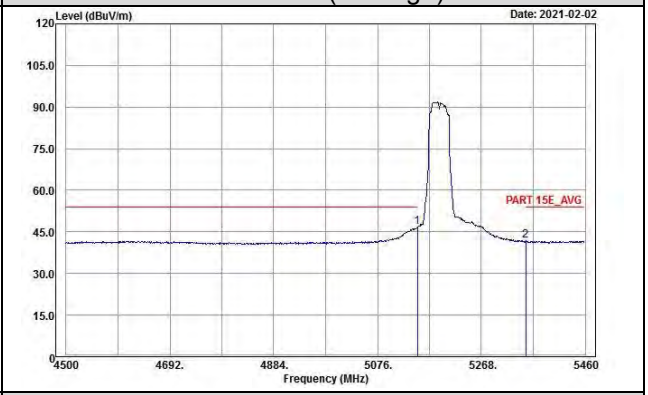
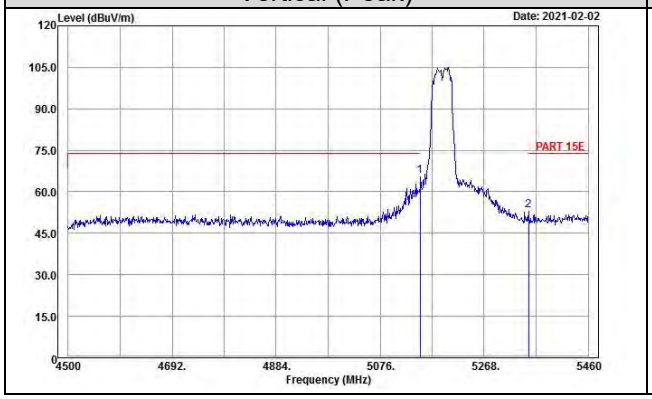
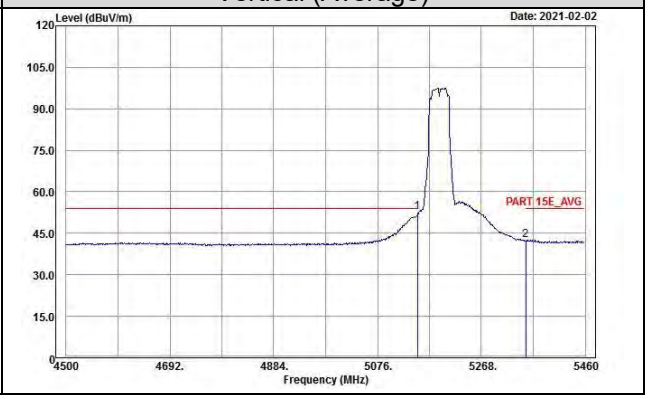
Vertical



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
5150	46.69	36.64	10.05	54	-7.31	211	19	Average
5150	58.51	48.46	10.05	74	-15.49	211	19	Peak
5190	92.31	82.19	10.12			211	19	Average
5190	99.34	89.22	10.12			211	19	Peak
5350	42.01	31.78	10.23	54	-11.99	211	19	Average
5350	52.24	42.01	10.23	74	-21.76	211	19	Peak
*10380	55.83	39.73	16.1	68.2	-12.37	118	241	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	52.5	42.45	10.05	54	-1.5	188	344	Average
5150	65.68	55.63	10.05	74	-8.32	188	344	Peak
5190	98.58	88.46	10.12			188	344	Average
5190	105.99	95.87	10.12			188	344	Peak
5350	42.66	32.43	10.23	54	-11.34	188	344	Average
5350	53.14	42.91	10.23	74	-20.86	188	344	Peak
*10380	55.4	39.3	16.1	68.2	-12.8	125	222	Peak

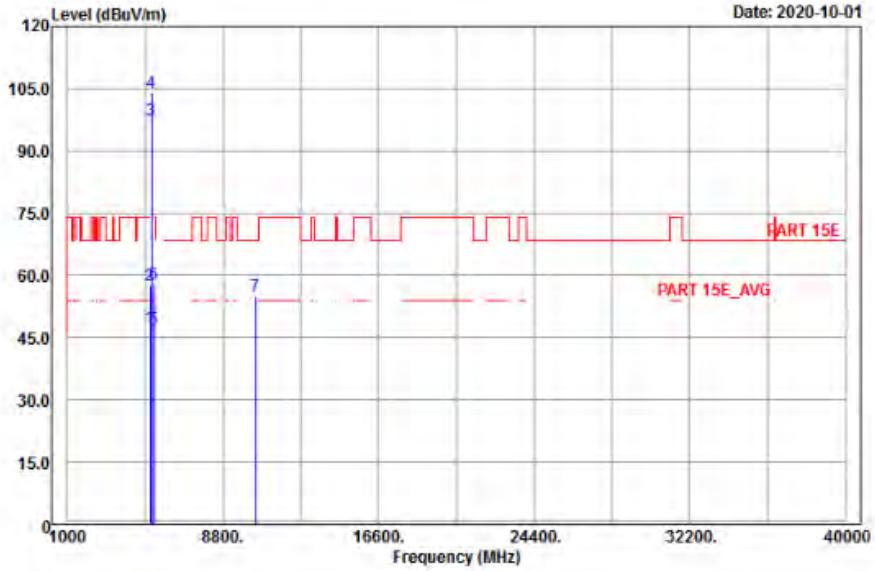
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5190 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

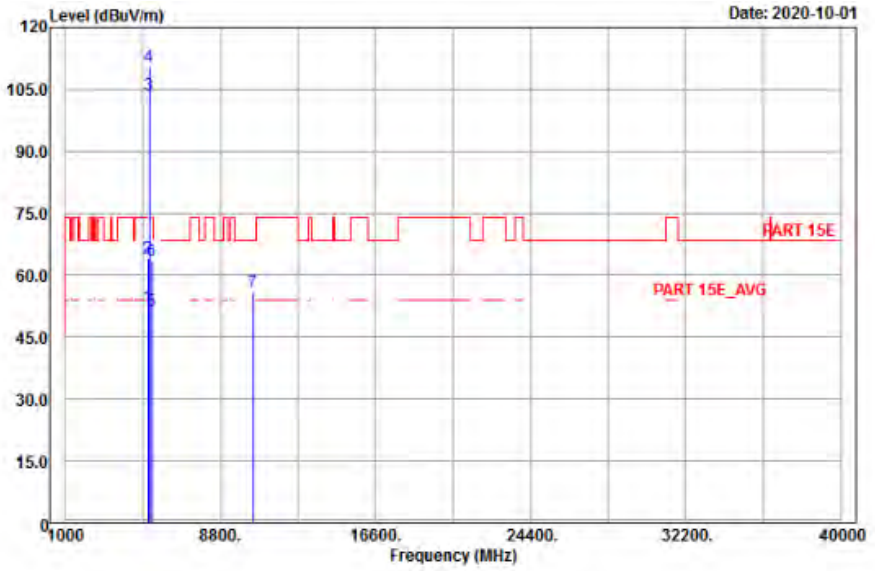
Channel 38	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



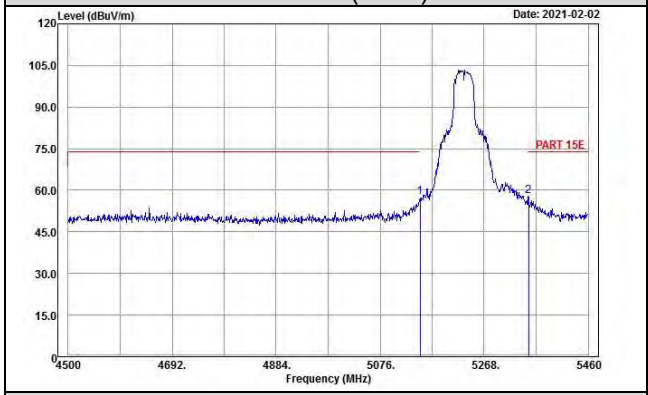
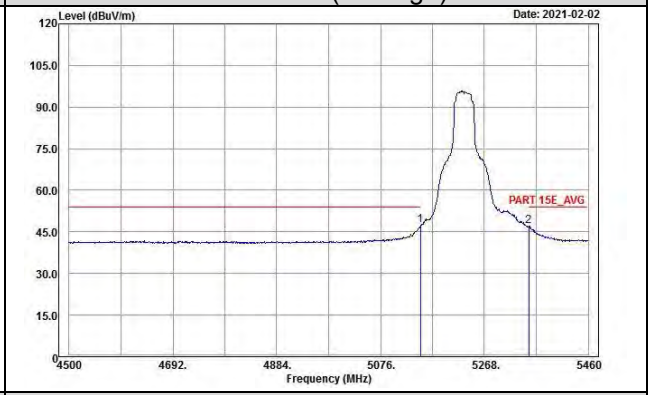
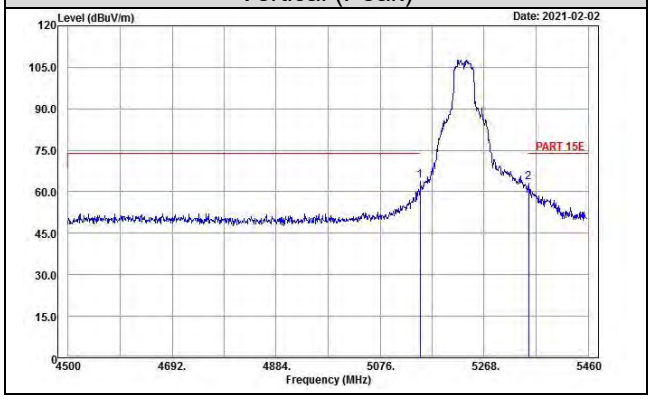
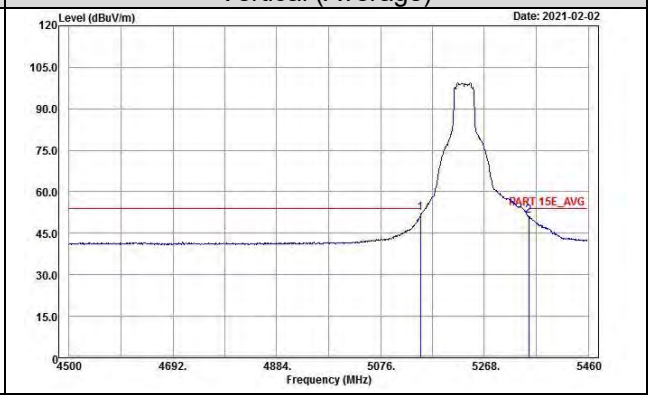
Vertical



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
5150	47.27	37.22	10.05	54	-6.73	211	19	Average
5150	57.46	47.41	10.05	74	-16.54	211	19	Peak
5230	97.44	87.3	10.14			211	19	Average
5230	104.06	93.92	10.14			211	19	Peak
5350	46.99	36.76	10.23	54	-7.01	211	19	Average
5350	57.78	47.55	10.23	74	-16.22	211	19	Peak
*10460	54.78	38.78	16	68.2	-13.42	185	6	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	52.46	42.41	10.05	54	-1.54	188	344	Average
5150	63.96	53.91	10.05	74	-10.04	188	344	Peak
5230	103.69	93.55	10.14			188	344	Average
5230	110.58	100.44	10.14			188	344	Peak
5350	51.46	41.23	10.23	54	-2.54	188	344	Average
5350	63.35	53.12	10.23	74	-10.65	188	344	Peak
*10460	55.78	39.78	16	68.2	-12.42	118	348	Peak

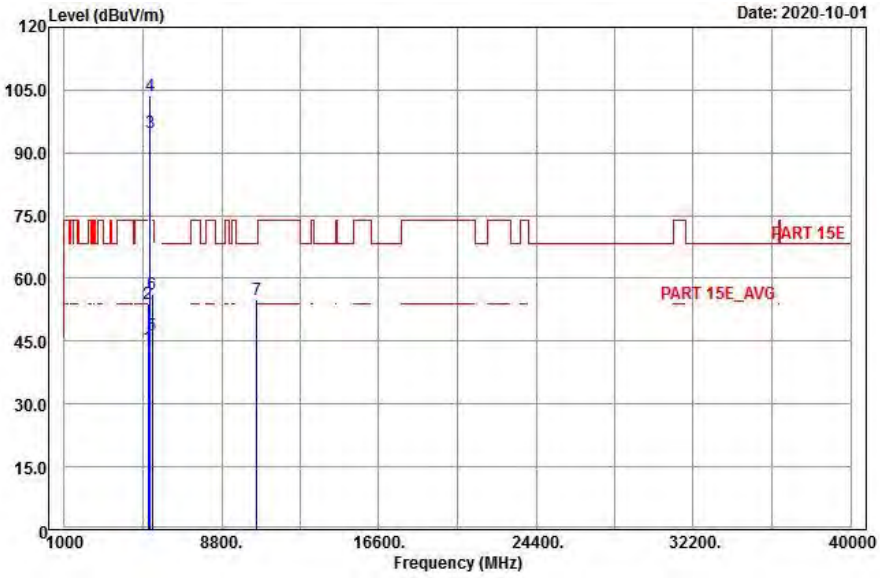
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5230 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

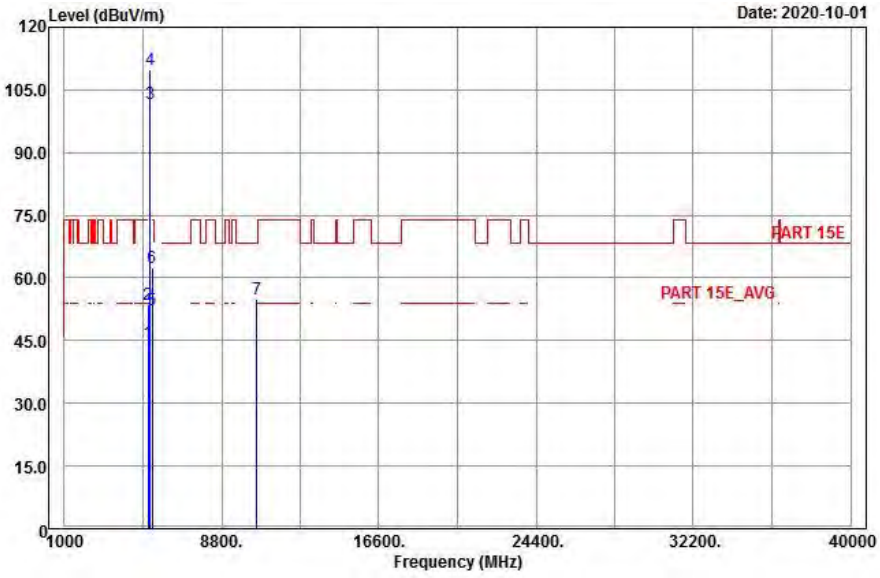
Channel 46	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



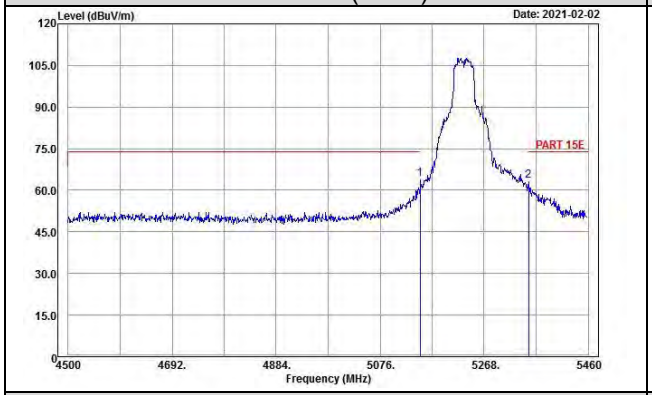
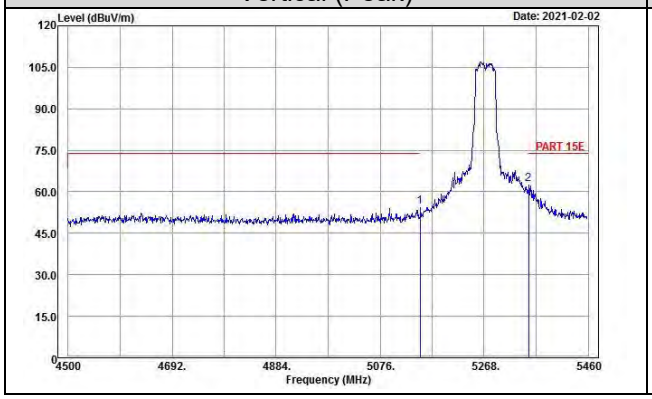
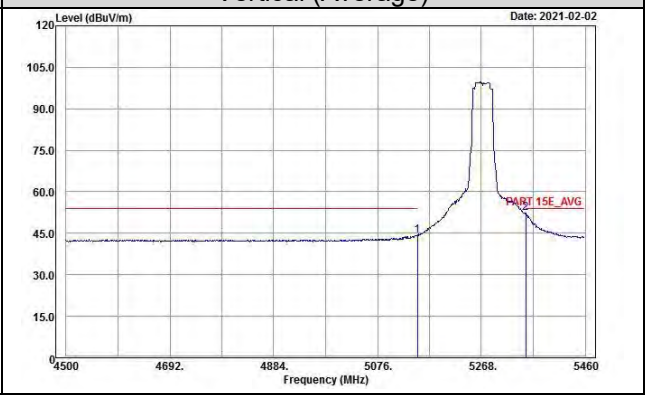
Vertical



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
5150	43.39	33.34	10.05	54	-10.61	172	23	Average
5150	53.22	43.17	10.05	74	-20.78	172	23	Peak
5270	95.33	85.21	10.12			172	23	Average
5270	102.33	92.21	10.12			172	23	Peak
5350	46.42	36.19	10.23	54	-7.58	172	23	Average
5350	56.3	46.07	10.23	74	-17.7	172	23	Peak
*10540	54.94	39.11	15.83	68.2	-13.26	164	6	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	44.28	34.23	10.05	54	-9.72	202	344	Average
5150	54.62	44.57	10.05	74	-19.38	202	344	Peak
5270	102.3	92.18	10.12			202	344	Average
5270	108.56	98.44	10.12			202	344	Peak
5350	52.43	42.2	10.23	54	-1.57	202	344	Average
5350	62.62	52.39	10.23	74	-11.38	202	344	Peak
*10540	54.69	38.86	15.83	68.2	-13.51	185	118	Peak

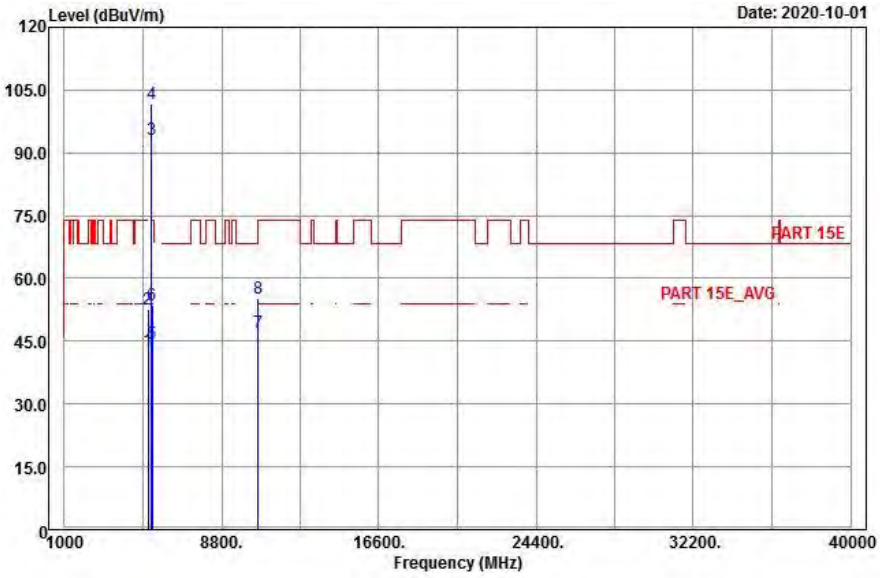
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5270 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

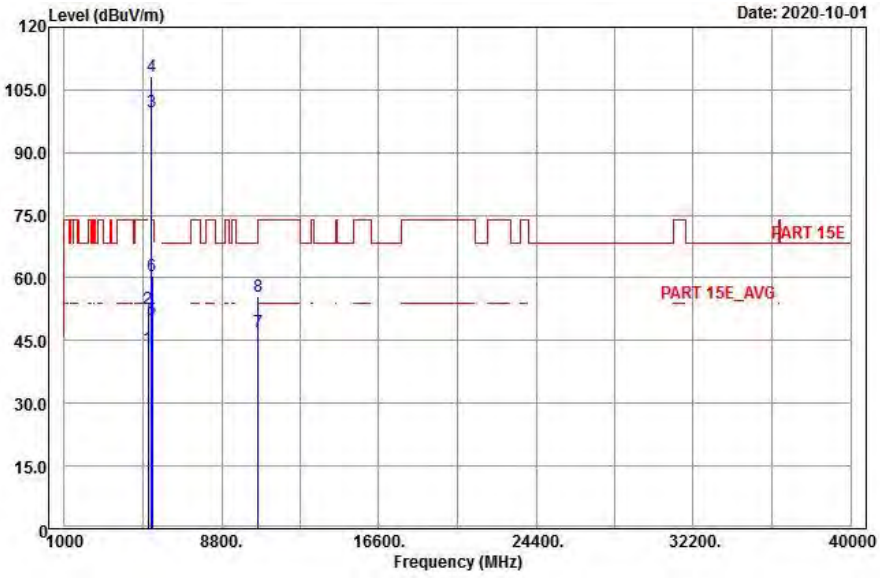
Channel 54	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



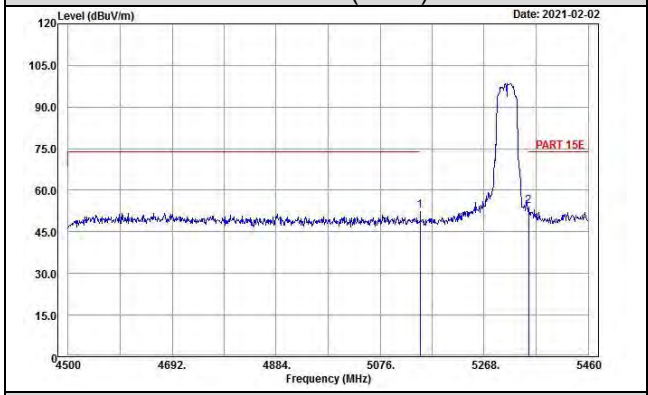
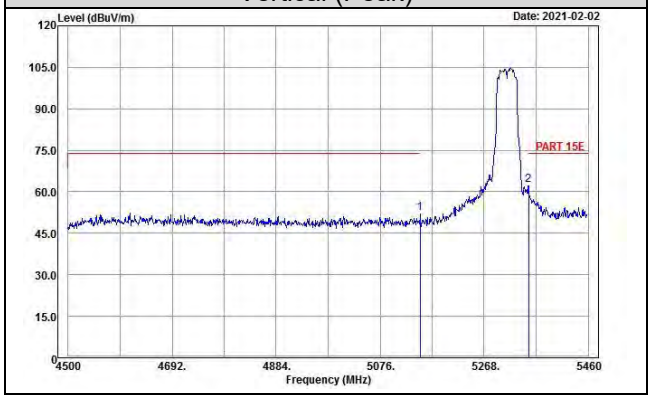
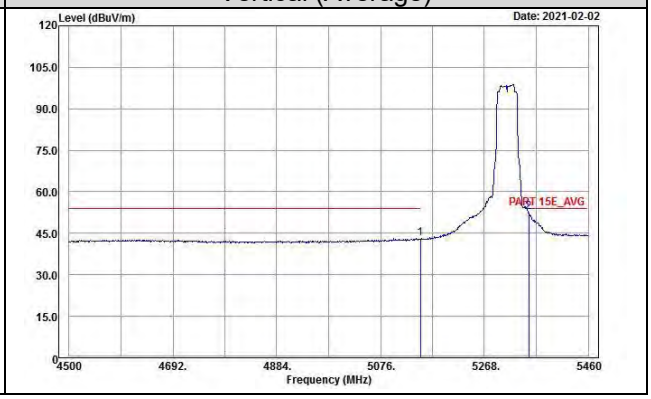
Vertical



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
5150	42.99	32.94	10.05	54	-11.01	252	19	Average
5150	52.74	42.69	10.05	74	-21.26	252	19	Peak
5310	93.87	83.78	10.09			252	19	Average
5310	100.11	90.02	10.09			252	19	Peak
5350	44.88	34.65	10.23	54	-9.12	252	19	Average
5350	54.18	43.95	10.23	74	-19.82	252	19	Peak
10620	46.94	31.06	15.88	54	-7.06	118	57	Average
10620	56.62	40.74	15.88	74	-17.38	118	57	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	43.26	33.21	10.05	54	-10.74	218	342	Average
5150	52.23	42.18	10.05	74	-21.77	218	342	Peak
5310	100.43	90.34	10.09			218	342	Average
5310	106.3	96.21	10.09			218	342	Peak
5350	52.49	42.26	10.23	54	-1.51	218	342	Average
5350	62.47	52.24	10.23	74	-11.53	218	342	Peak
10620	46.99	31.11	15.88	54	-7.01	119	345	Average
10620	55.41	39.53	15.88	74	-18.59	119	345	Peak

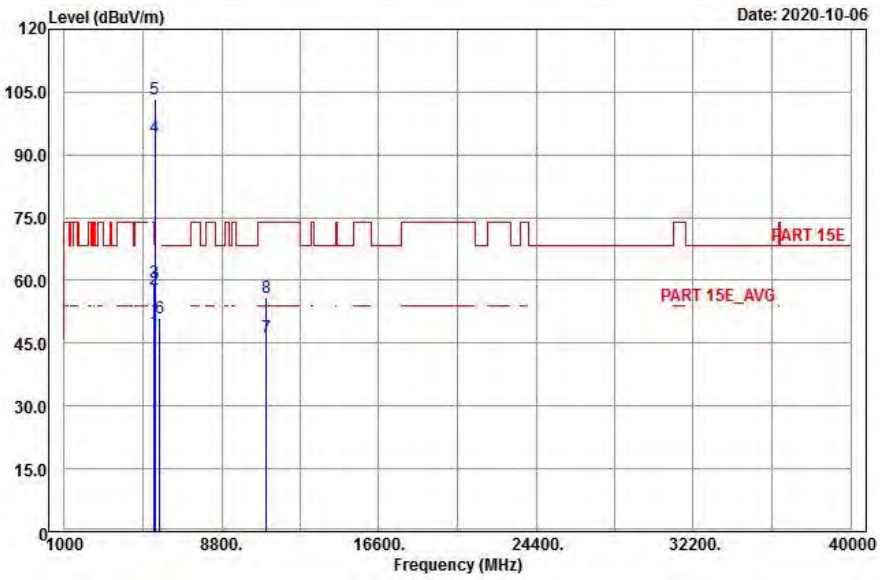
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5310 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

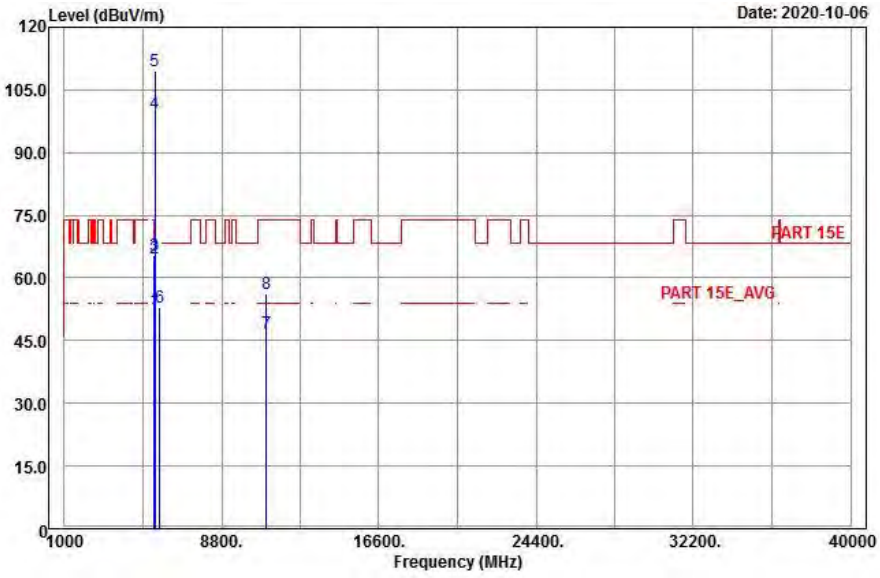
Channel 62	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



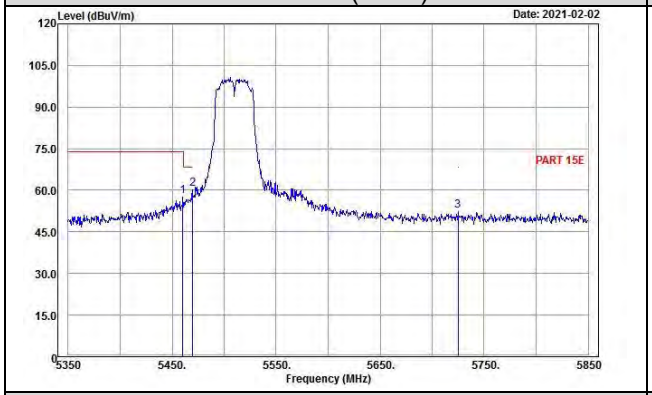
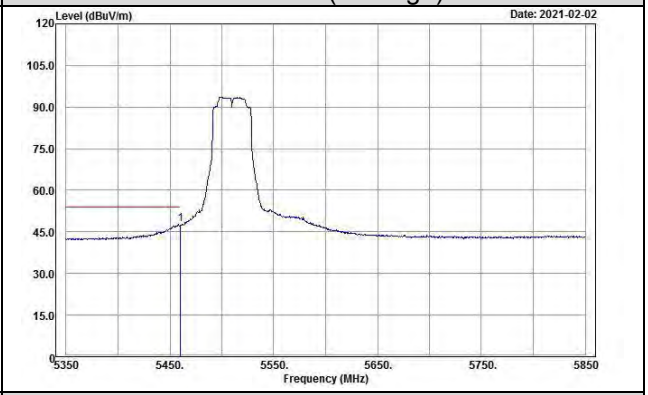
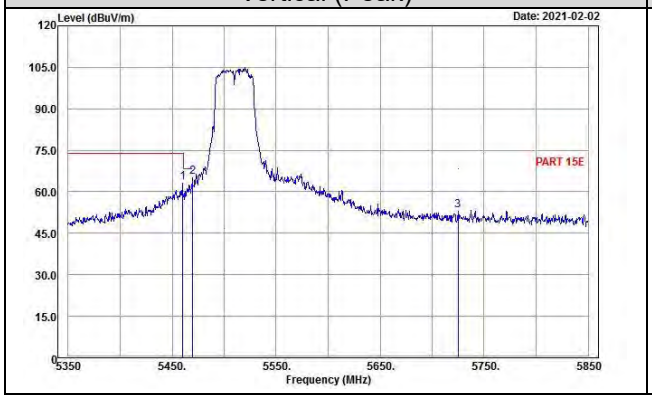
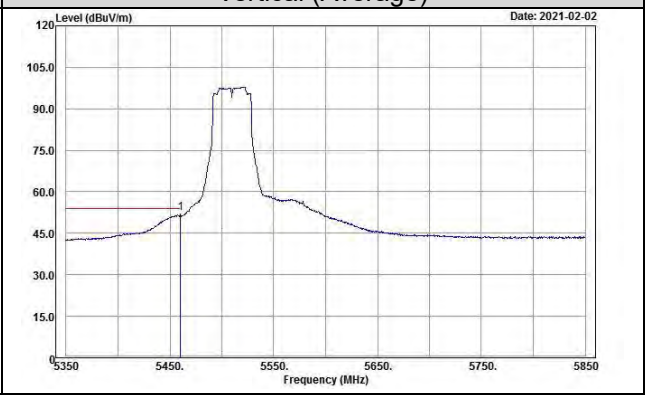
Vertical



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
5460	47.81	37.3	10.51	54	-6.19	127	24	Average
5460	57.94	47.43	10.51	74	-16.06	127	24	Peak
*5470	60.35	49.82	10.53	68.2	-7.85	127	24	Peak
5510	94.36	83.76	10.6			127	24	Average
5510	101.55	90.95	10.6			127	24	Peak
*5725	52.67	41.75	10.92	68.2	-15.53	127	24	Peak
11020	47.68	31.52	16.16	54	-6.32	152	74	Average
11020	57.23	41.07	16.16	74	-16.77	152	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	52.41	41.9	10.51	54	-1.59	216	318	Average
5460	63.51	53	10.51	74	-10.49	216	318	Peak
*5470	65.27	54.74	10.53	68.2	-2.93	216	318	Peak
5510	99.83	89.23	10.6			216	318	Average
5510	106.39	95.79	10.6			216	318	Peak
*5725	53.29	42.37	10.92	68.2	-14.91	216	318	Peak
11020	46.97	30.81	16.16	54	-7.03	184	112	Average
11020	56.49	40.33	16.16	74	-17.51	184	112	Peak

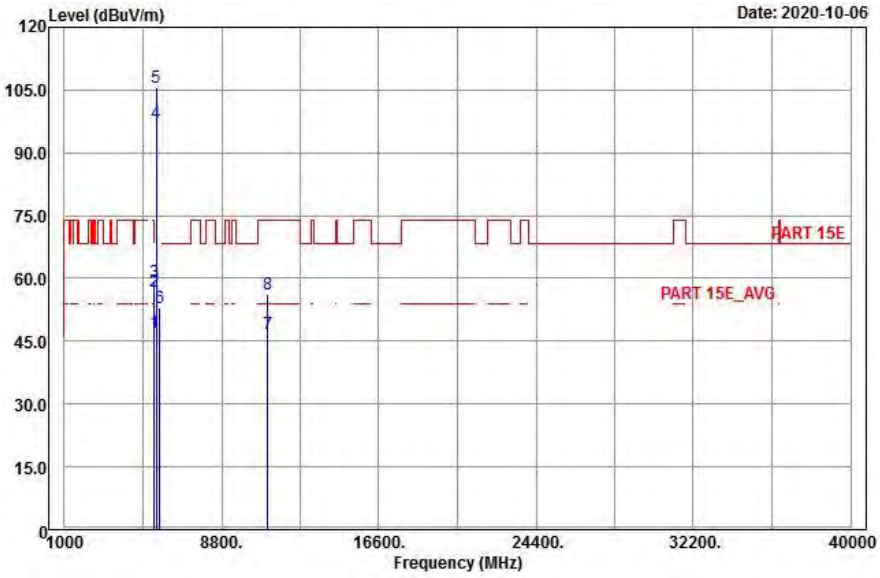
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5510 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

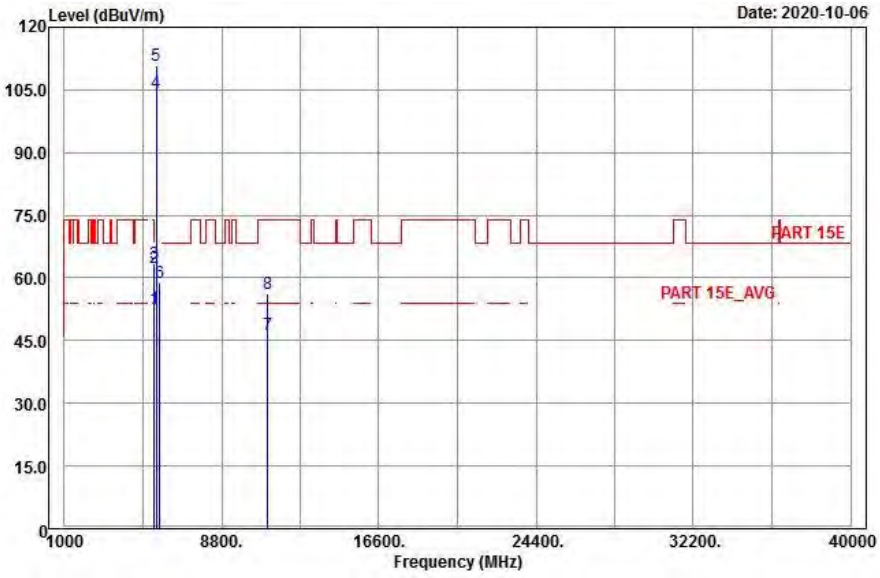
Channel 102	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



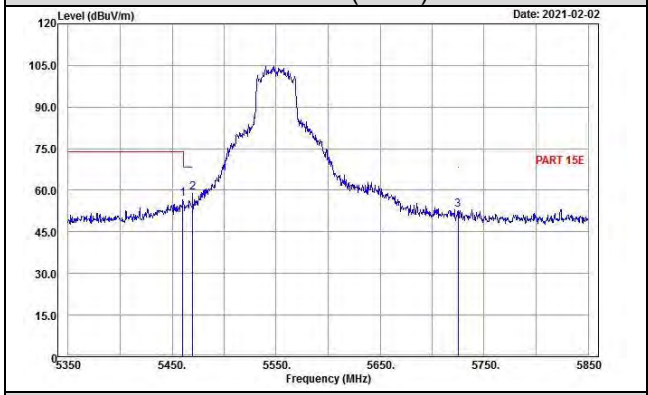
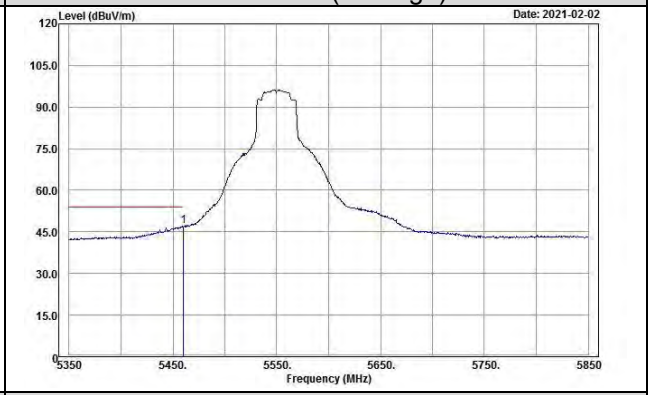
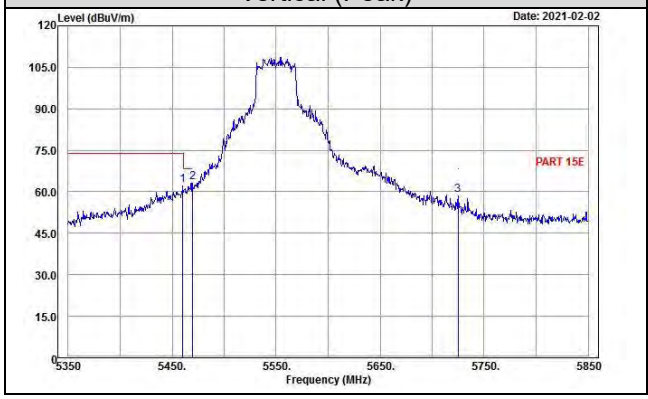
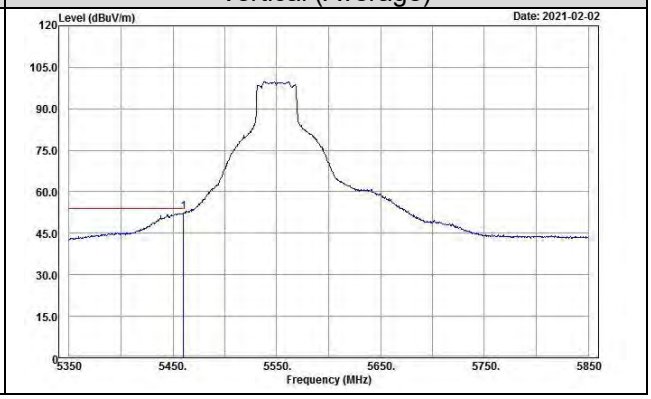
Vertical



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
5460	46.39	35.88	10.51	54	-7.61	126	22	Average
5460	55.9	45.39	10.51	74	-18.1	126	22	Peak
*5470	55.42	44.89	10.53	68.2	-12.78	126	22	Peak
5550	97.68	87	10.68			126	22	Average
5550	104.37	93.69	10.68			126	22	Peak
*5725	51.35	40.43	10.92	68.2	-16.85	126	22	Peak
11100	46.27	30	16.27	54	-7.73	141	356	Average
11100	55.9	39.63	16.27	74	-18.1	141	356	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	51.64	41.13	10.51	54	-2.36	252	308	Average
5460	63.61	53.1	10.51	74	-10.39	252	308	Peak
*5470	63.27	52.74	10.53	68.2	-4.93	252	308	Peak
5550	104.01	93.33	10.68			252	308	Average
5550	109.69	99.01	10.68			252	308	Peak
*5725	55.72	44.8	10.92	68.2	-12.48	252	308	Peak
11100	46.81	30.54	16.27	54	-7.19	218	74	Average
11100	56.53	40.26	16.27	74	-17.47	218	74	Peak

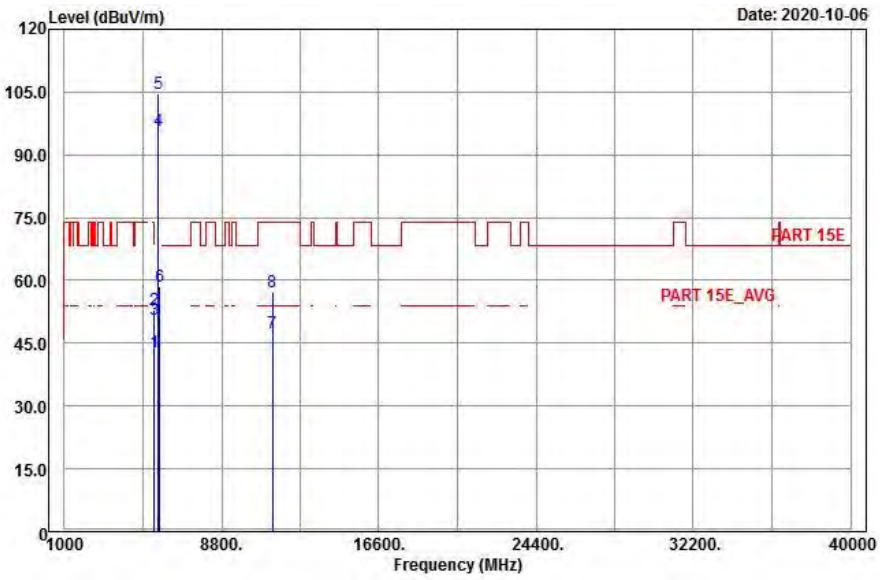
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5550 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

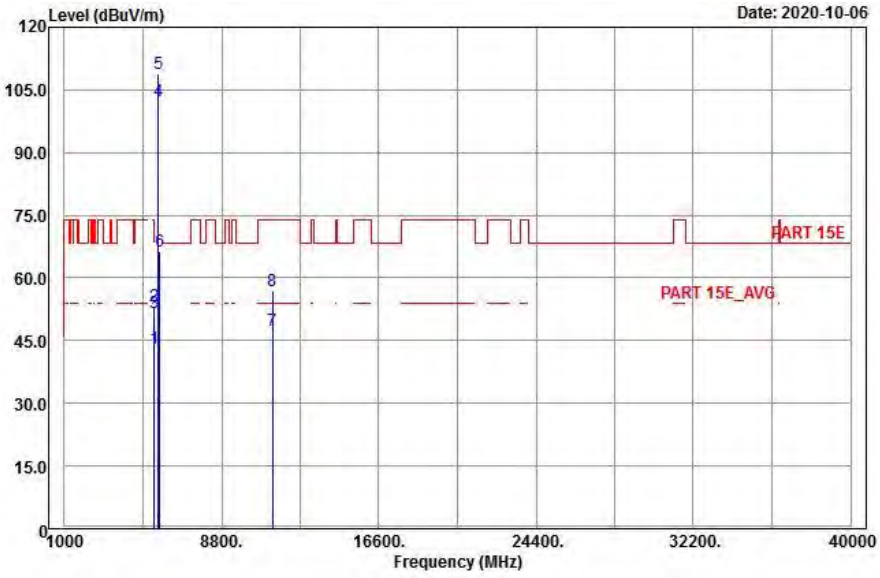
Channel 110	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



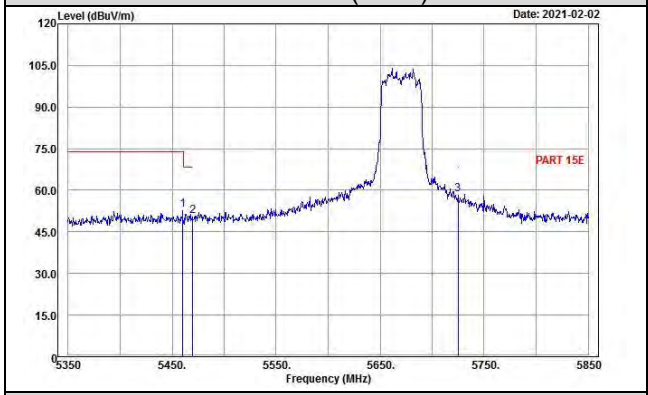
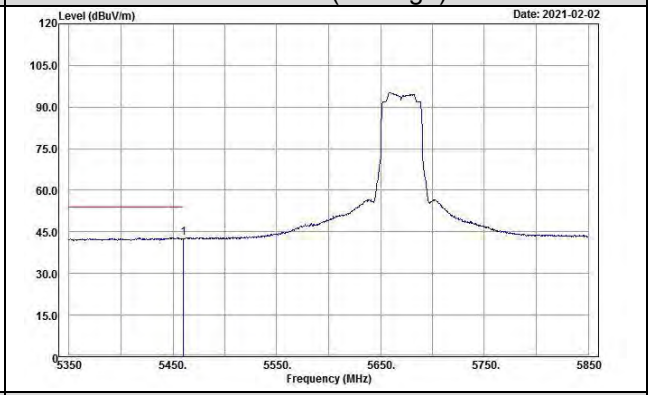
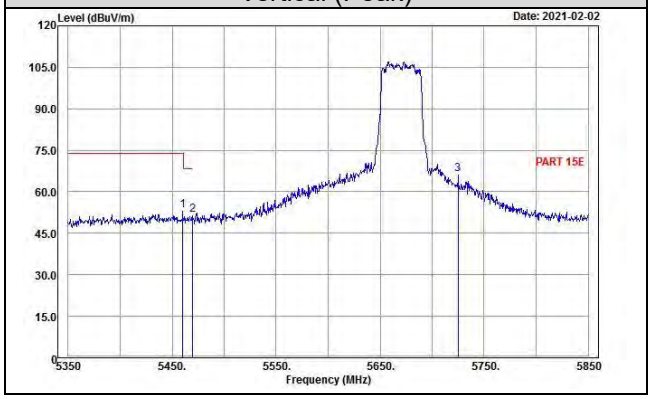
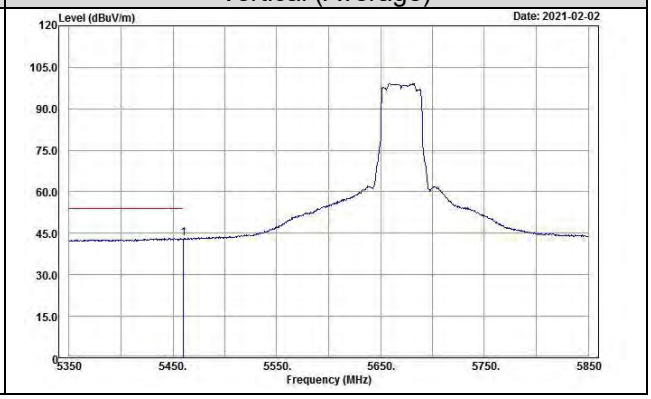
Vertical



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
5460	42.92	32.41	10.51	54	-11.08	126	26	Average
5460	52.38	41.87	10.51	74	-21.62	126	26	Peak
*5470	51.44	40.91	10.53	68.2	-16.76	126	26	Peak
5670	96.04	85.14	10.9			126	26	Average
5670	103.72	92.82	10.9			126	26	Peak
*5725	58.11	47.19	10.92	68.2	-10.09	126	26	Peak
11340	47.26	30.84	16.42	54	-6.74	104	98	Average
11340	56.71	40.29	16.42	74	-17.29	104	98	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	42.18	31.67	10.51	54	-11.82	228	315	Average
5460	52.58	42.07	10.51	74	-21.42	228	315	Peak
*5470	51.22	40.69	10.53	68.2	-16.98	228	315	Peak
5670	102.47	91.57	10.9			228	315	Average
5670	108.64	97.74	10.9			228	315	Peak
*5725	65.73	54.81	10.92	68.2	-2.47	228	315	Peak
11340	47.59	31.17	16.42	54	-6.41	165	114	Average
11340	57.13	40.71	16.42	74	-16.87	165	114	Peak

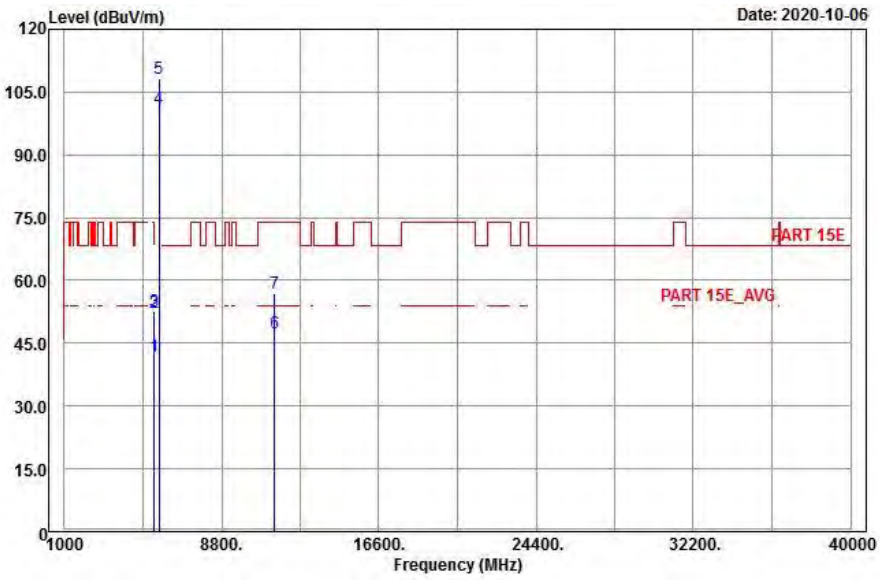
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5670 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

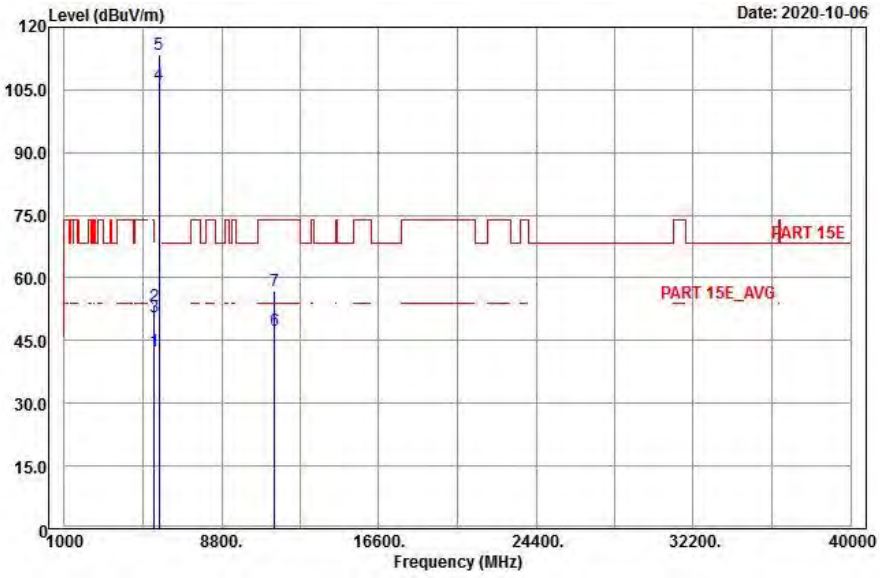
Channel 134	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



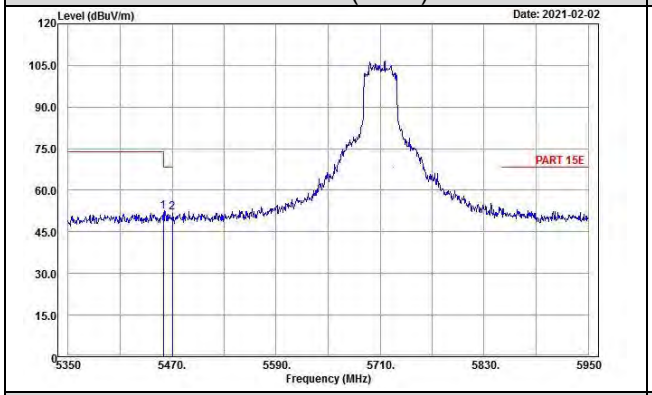
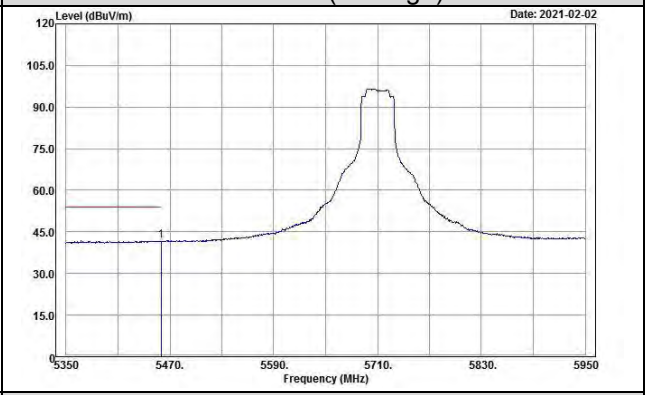
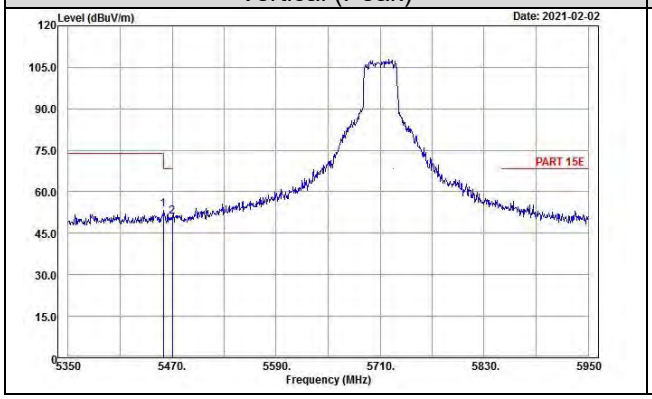
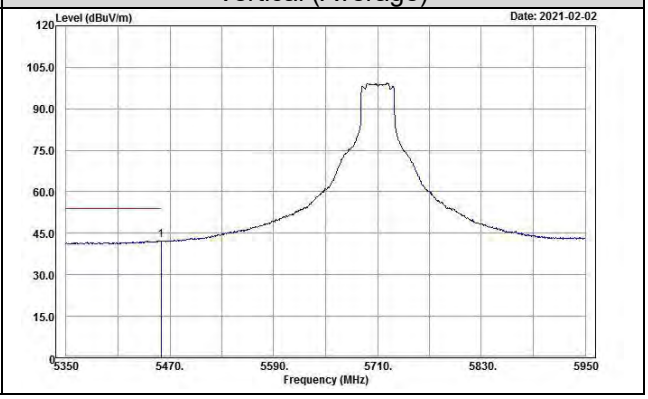
Vertical



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
5460	41.89	31.38	10.51	54	-12.11	119	28	Average
5460	52.23	41.72	10.51	74	-21.77	119	28	Peak
*5470	51.83	41.3	10.53	68.2	-16.37	119	28	Peak
5710	100.39	89.48	10.91			119	28	Average
5710	107.53	96.62	10.91			119	28	Peak
11420	47.36	31.1	16.26	54	-6.64	129	14	Average
11420	56.96	40.7	16.26	74	-17.04	129	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	42.44	31.93	10.51	54	-11.56	252	308	Average
5460	53.54	43.03	10.51	74	-20.46	252	308	Peak
*5470	51	40.47	10.53	68.2	-17.2	252	308	Peak
5710	105.59	94.68	10.91			252	308	Average
5710	112.02	101.11	10.91			252	308	Peak
11420	47.59	31.33	16.26	54	-6.41	205	175	Average
11420	56.99	40.73	16.26	74	-17.01	205	175	Peak

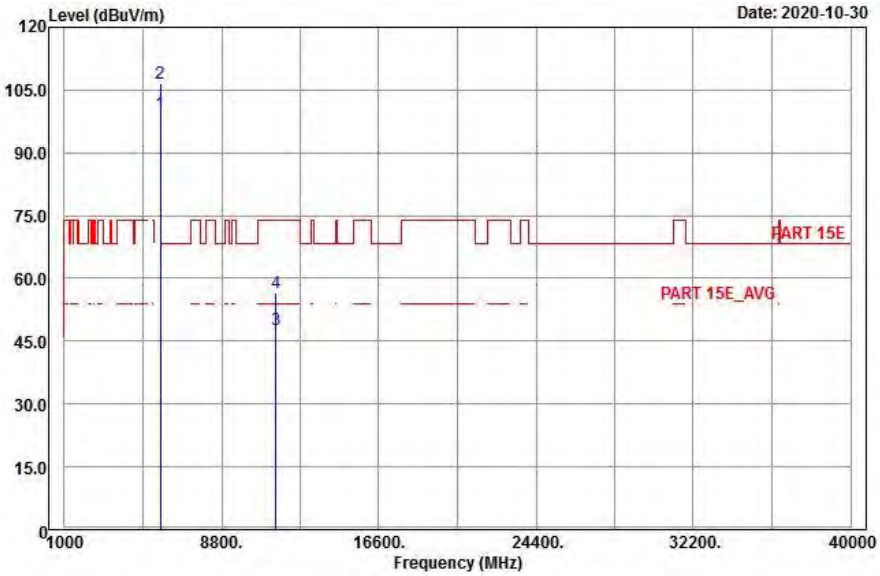
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5710 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

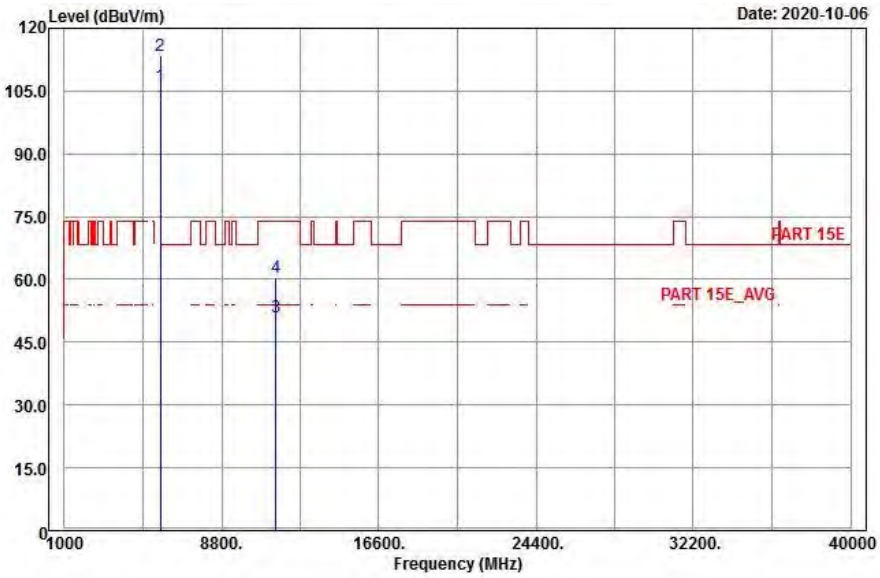
Channel 142	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

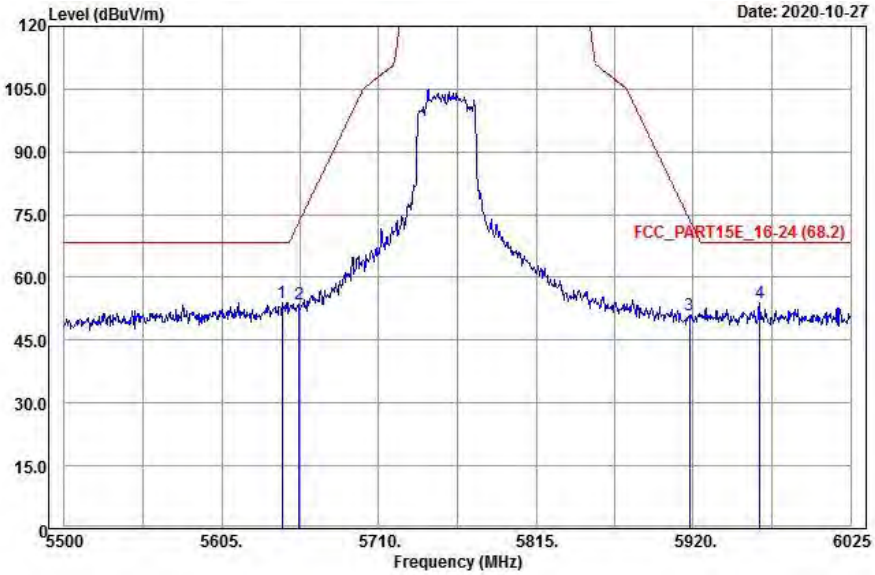
<Spurious Emission>
Horizontal



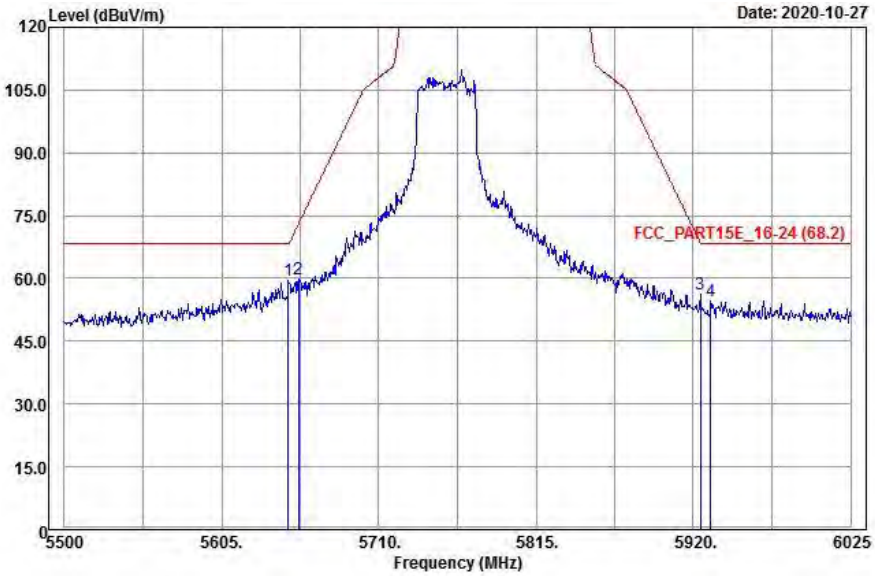
Vertical



<Out of Band Emission (OOBE)>
Horizontal



Vertical



<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	97.64	86.74	10.9			119	28	Average
5755	104.88	93.98	10.9			119	28	Peak
11510	47.89	31.38	16.51	54	-6.11	118	274	Average
11510	56.66	40.15	16.51	74	-17.34	118	274	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5755	104.48	93.58	10.9			244	324	Average
5755	111.74	100.84	10.9			244	324	Peak
11510	50.95	34.44	16.51	54	-3.05	222	59	Average
11510	60.6	44.09	16.51	74	-13.4	222	59	Peak

<Out of Band Emission (OOBE)>

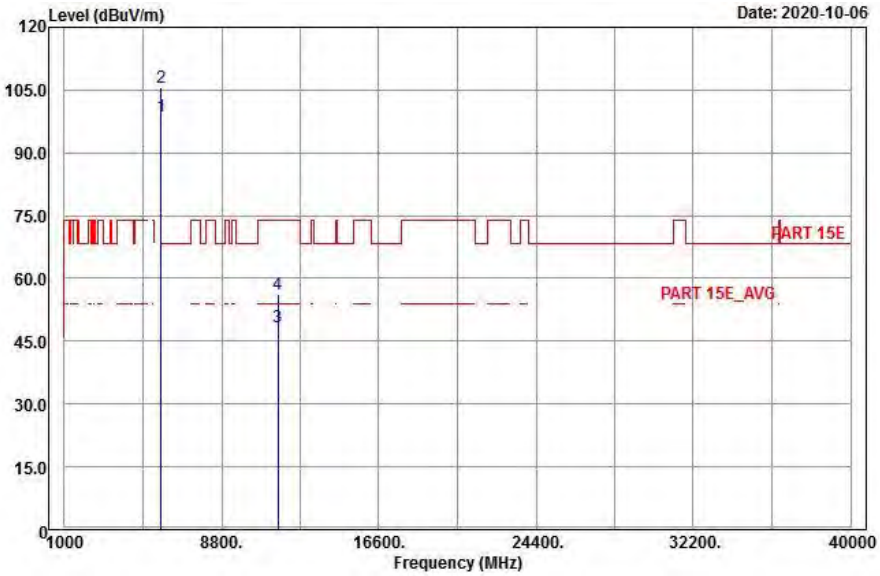
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5645.95	52.73	41.88	10.85	68.2	-15.47	119	28	Peak
5652.775	53.04	42.17	10.87	70.25	-17.21	119	28	Peak
5921.575	51.73	40.62	11.11	70.73	-19	119	28	Peak
*5970.925	54.04	42.79	11.25	68.2	-14.16	119	28	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
*5641.225	55.81	44.98	10.83	68.2	-12.39	244	324	Peak
5652.775	53.93	43.06	10.87	70.25	-16.32	244	324	Peak
5923.15	53.22	42.11	11.11	69.57	-16.35	244	324	Peak
*5928.4	57.88	46.77	11.11	68.2	-10.32	244	324	Peak

Remarks:

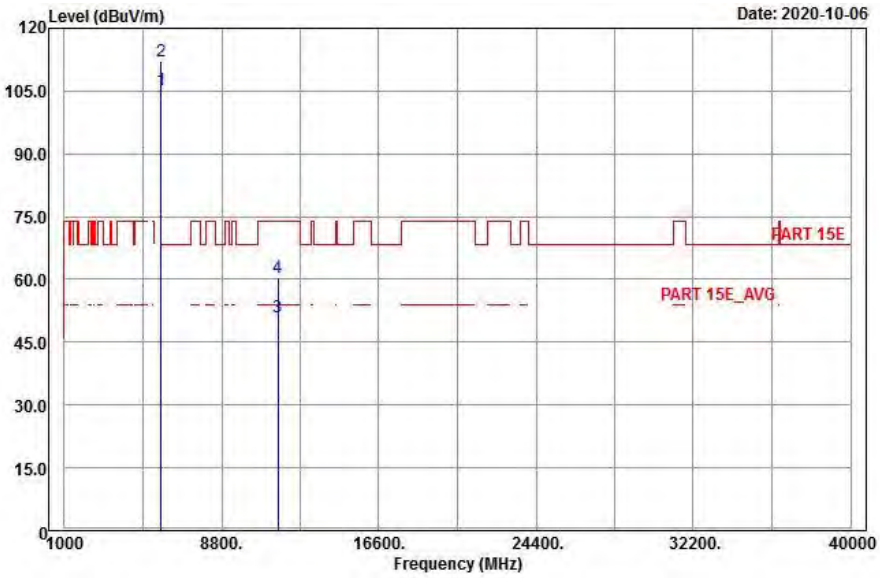
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin Value = Emission Level – Limit value
2. 5755 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

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**	Charles Hsiao

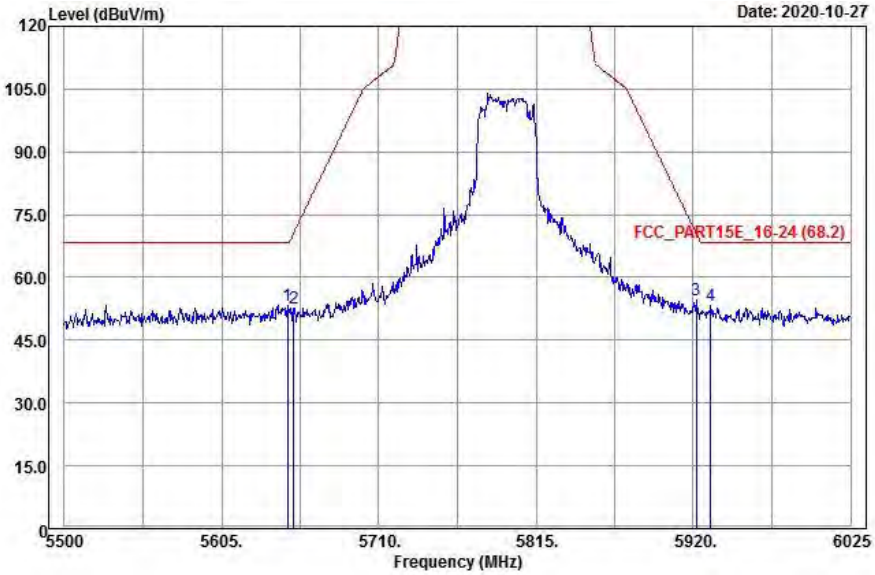
<Spurious Emission>
Horizontal



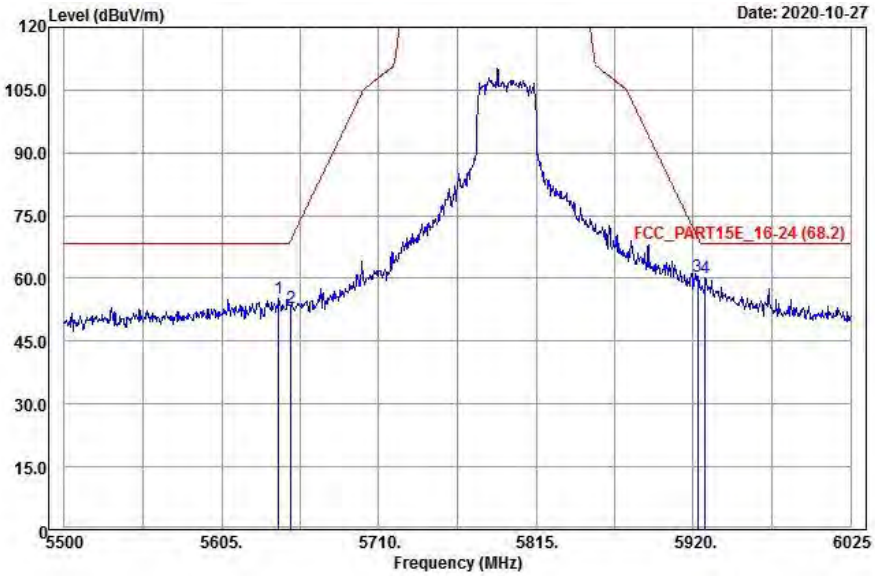
Vertical



<Out of Band Emission (OOBE)>
Horizontal



Vertical



<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	98.48	87.66	10.82			119	28	Average
5795	105.8	94.98	10.82			119	28	Peak
11590	47.84	31.33	16.51	54	-6.16	118	274	Average
11590	56.54	40.03	16.51	74	-17.46	118	274	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5795	106.54	95.72	10.82			244	324	Average
5795	113.12	102.3	10.82			244	324	Peak
11590	50.66	34.15	16.51	54	-3.34	222	59	Average
11590	60.93	44.42	16.51	74	-13.07	222	59	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
*5650.15	55.61	44.74	10.87	68.31	-12.7	119	28	Peak
5653.825	56.7	45.83	10.87	71.03	-14.33	119	28	Peak
5919.475	59.59	48.5	11.09	72.29	-12.7	119	28	Peak
*5926.3	57.44	46.33	11.11	68.2	-10.76	119	28	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
*5647.525	61.2	50.35	10.85	68.2	-7	244	324	Peak
5652.25	60.25	49.38	10.87	69.86	-9.61	244	324	Peak
5922.625	66.57	55.46	11.11	69.96	-3.39	244	324	Peak
*5925.775	65.45	54.34	11.11	68.2	-2.75	244	324	Peak

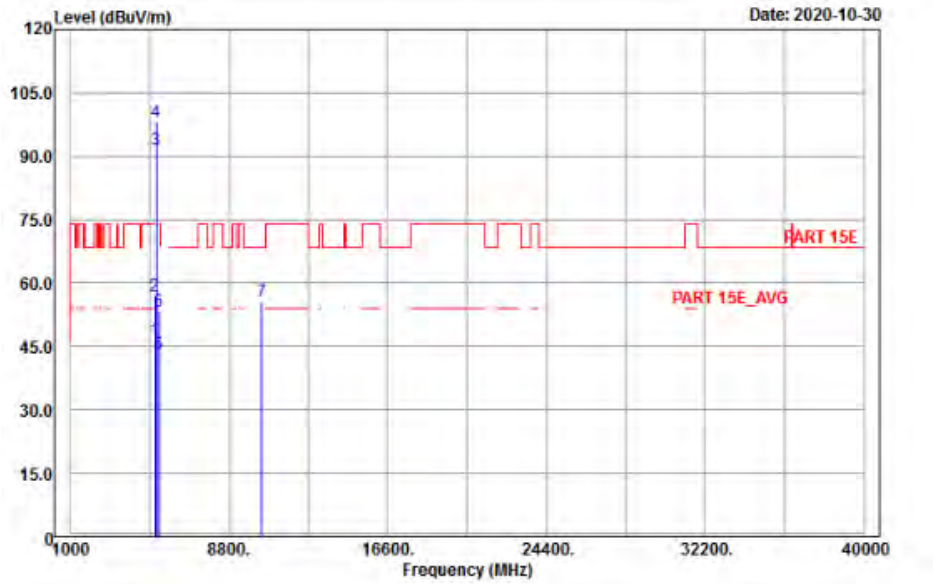
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin Value = Emission Level – Limit value
2. 5795 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

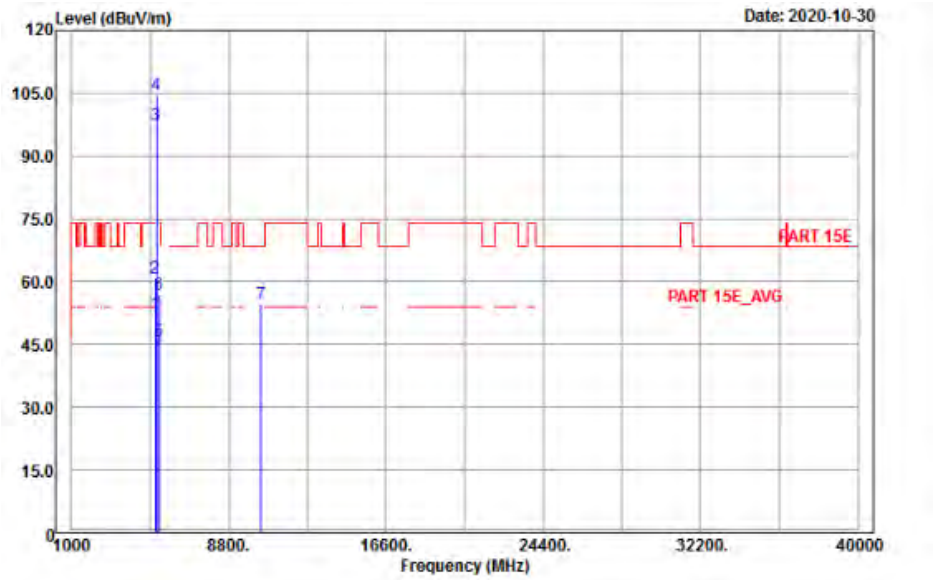
802.11ac (VHT80)

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**	Charles Hsiao

Horizontal



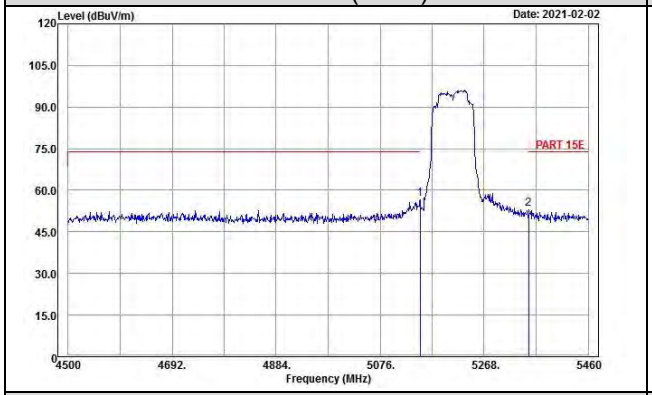
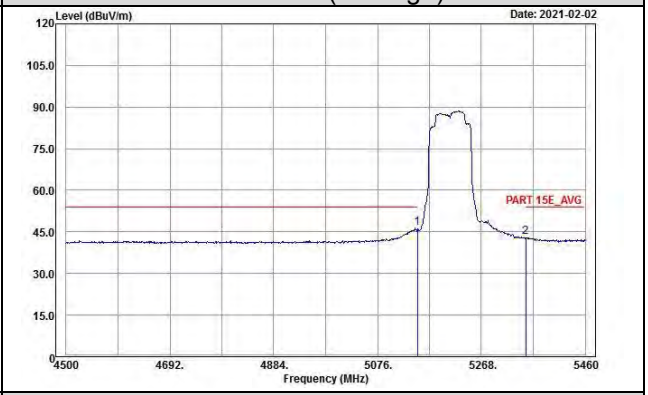
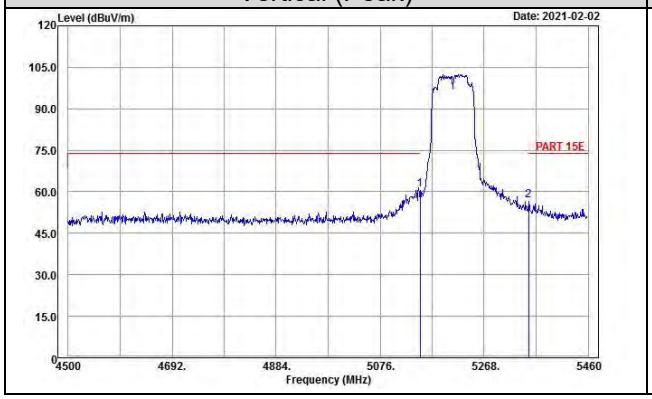
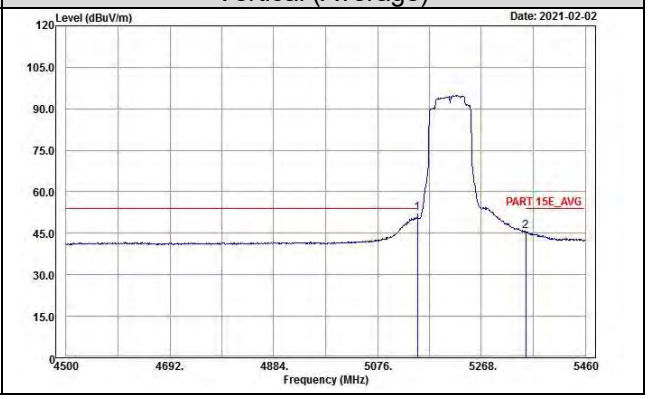
Vertical



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
5150	46.34	36.29	10.05	54	-7.66	211	19	Average
5150	57.04	46.99	10.05	74	-16.96	211	19	Peak
5210	91.41	81.24	10.17			211	19	Average
5210	98.01	87.84	10.17			211	19	Peak
5350	43.04	32.81	10.23	54	-10.96	211	19	Average
5350	53.15	42.92	10.23	74	-20.85	211	19	Peak
*10420	55.53	39.37	16.16	68.2	-12.67	115	241	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	52.42	42.37	10.05	54	-1.58	267	343	Average
5150	60.7	50.65	10.05	74	-13.3	267	343	Peak
5210	97.48	87.31	10.17			267	343	Average
5210	104.75	94.58	10.17			267	343	Peak
5350	45.88	35.65	10.23	54	-8.12	267	343	Average
5350	56.94	46.71	10.23	74	-17.06	267	343	Peak
*10420	54.67	38.51	16.16	68.2	-13.53	169	35	Peak

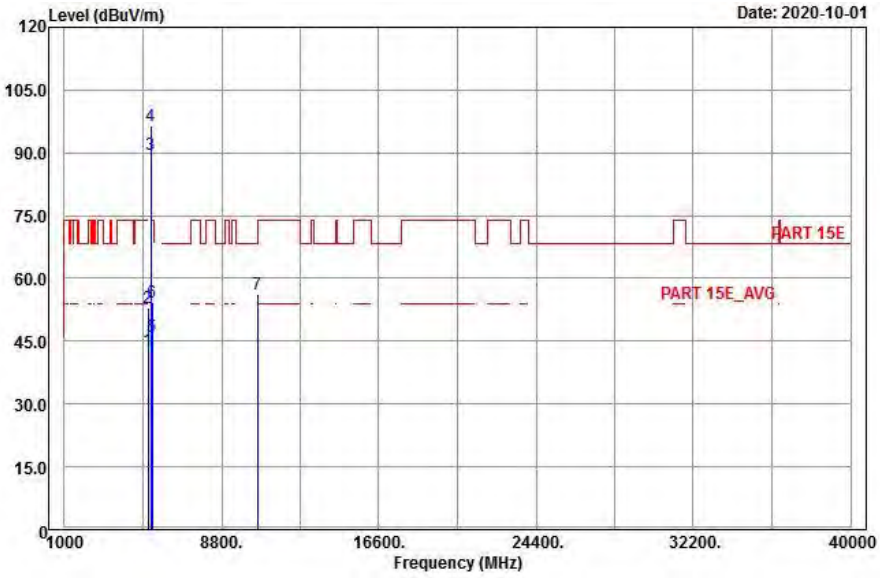
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5210 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

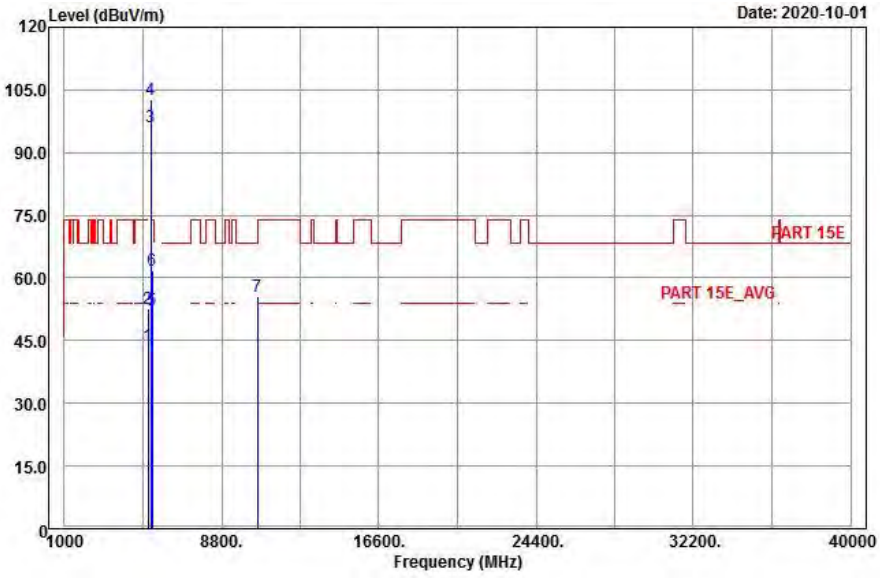
Channel 42	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



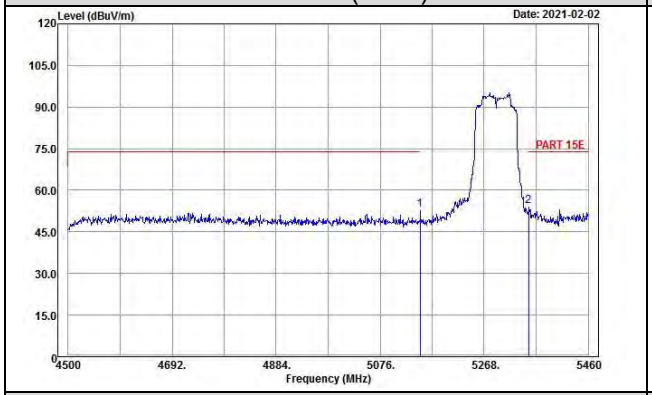
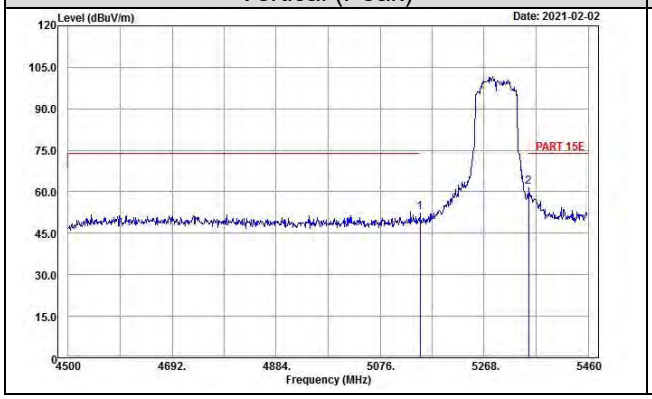
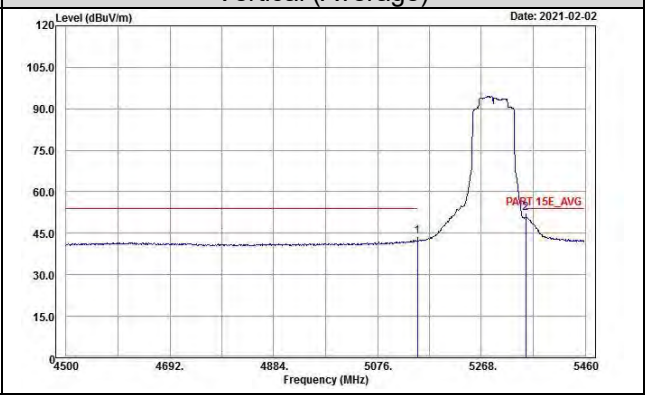
Vertical



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
5150	42.92	32.87	10.05	54	-11.08	252	19	Average
5150	53.05	43	10.05	74	-20.95	252	19	Peak
5290	89.68	79.58	10.1			252	19	Average
5290	96.52	86.42	10.1			252	19	Peak
5350	46.13	35.9	10.23	54	-7.87	252	19	Average
5350	54.27	44.04	10.23	74	-19.73	252	19	Peak
*10580	56.15	40.44	15.71	68.2	-12.05	119	346	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	43.81	33.76	10.05	54	-10.19	218	341	Average
5150	52.55	42.5	10.05	74	-21.45	218	341	Peak
5290	95.98	85.88	10.1			218	341	Average
5290	102.75	92.65	10.1			218	341	Peak
5350	52.32	42.09	10.23	54	-1.68	218	341	Average
5350	61.83	51.6	10.23	74	-12.17	218	341	Peak
*10580	55.48	39.77	15.71	68.2	-12.72	170	77	Peak

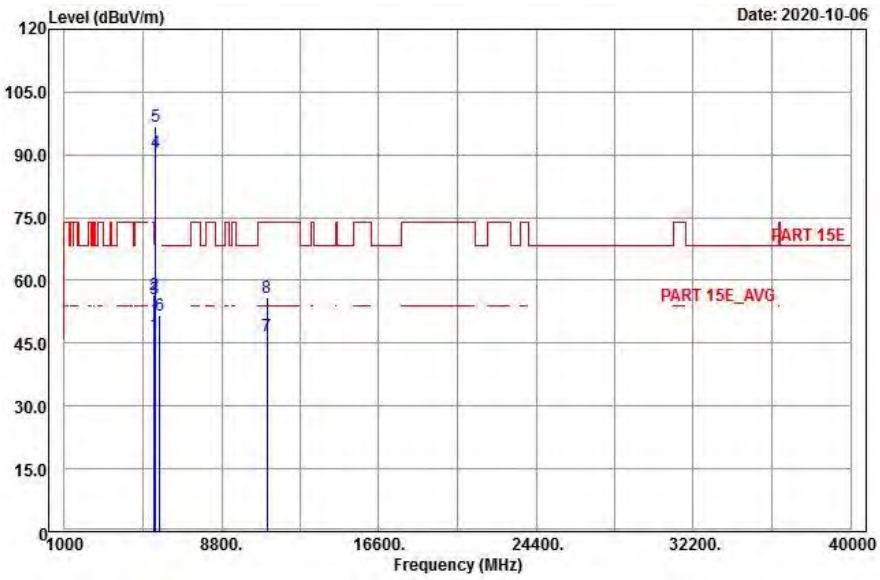
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5290 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

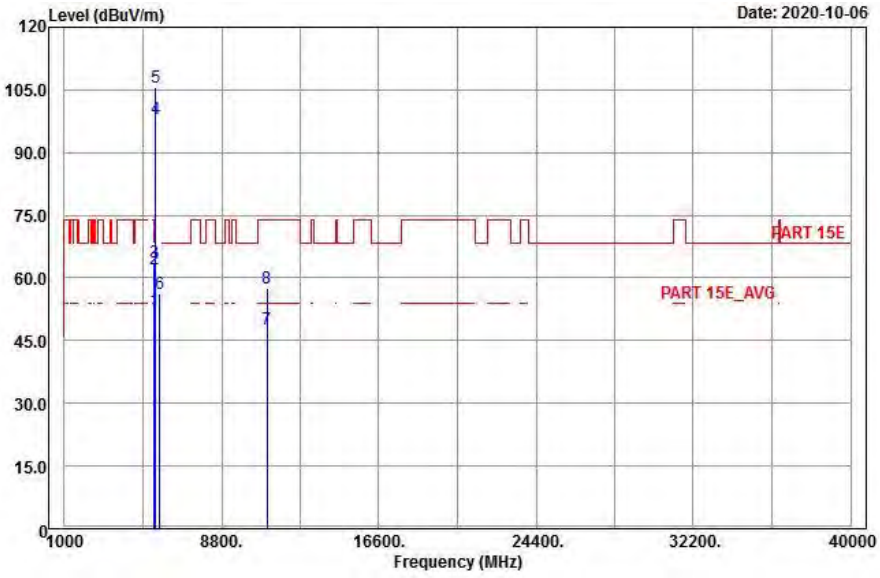
Channel 58	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Karl Lee

Horizontal



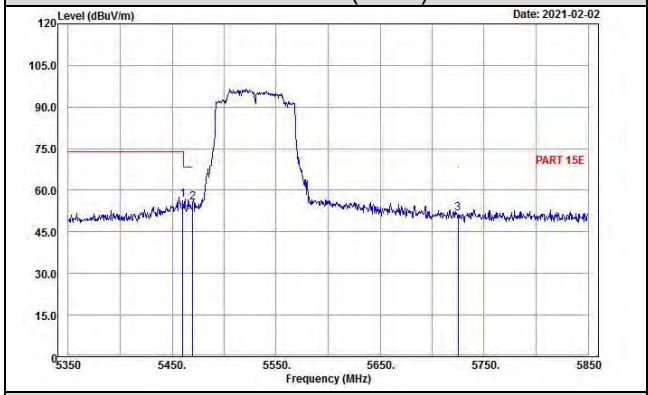
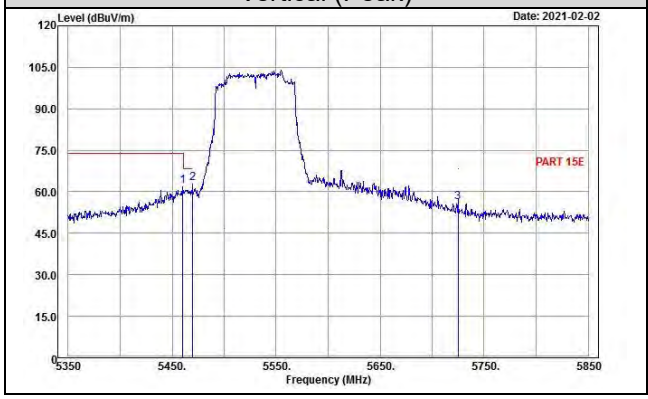
Vertical



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
5460	47.18	36.67	10.51	54	-6.82	127	67	Average
5460	56.67	46.16	10.51	74	-17.33	127	67	Peak
*5470	55.67	45.14	10.53	68.2	-12.53	127	67	Peak
5530	90.59	79.96	10.63			127	67	Average
5530	96.72	86.09	10.63			127	67	Peak
*5725	51.8	40.88	10.92	68.2	-16.4	127	67	Peak
11060	46.68	30.45	16.23	54	-7.32	149	262	Average
11060	56	39.77	16.23	74	-18	149	262	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	52.39	41.88	10.51	54	-1.61	236	308	Average
5460	62.13	51.62	10.51	74	-11.87	236	308	Peak
*5470	63.7	53.17	10.53	68.2	-4.5	236	308	Peak
5530	98.17	87.54	10.63			236	308	Average
5530	105.67	95.04	10.63			236	308	Peak
*5725	56.09	45.17	10.92	68.2	-12.11	236	308	Peak
11060	47.82	31.59	16.23	54	-6.18	157	82	Average
11060	57.53	41.3	16.23	74	-16.47	157	82	Peak

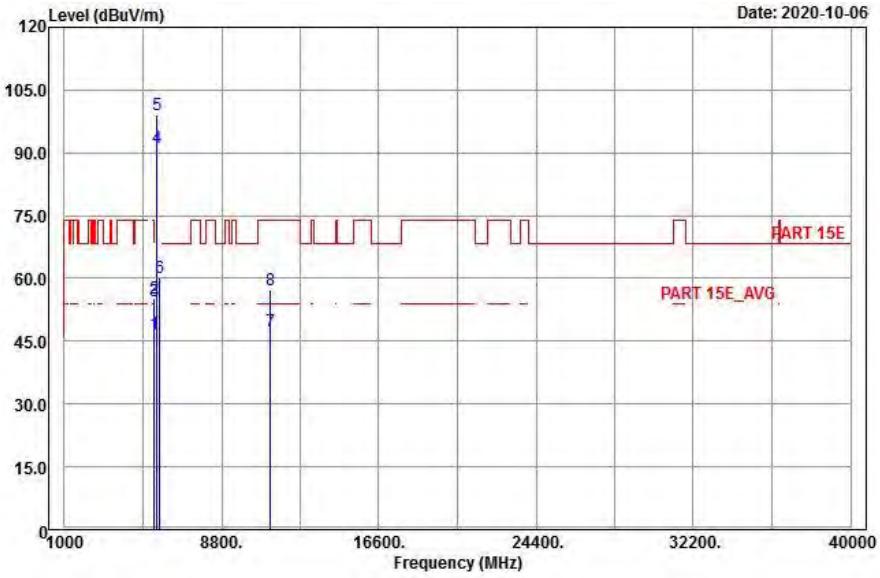
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5530 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

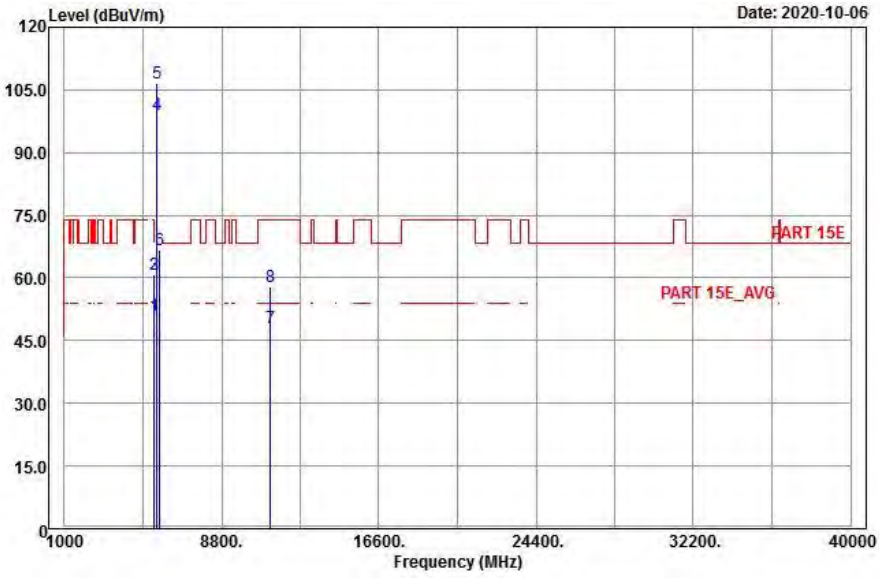
Channel 106	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Karl Lee

Horizontal



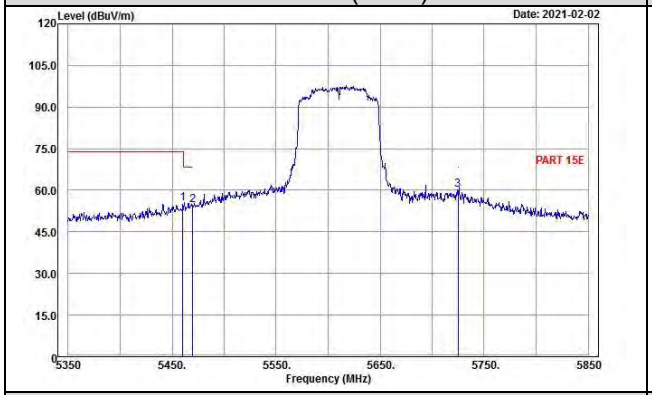
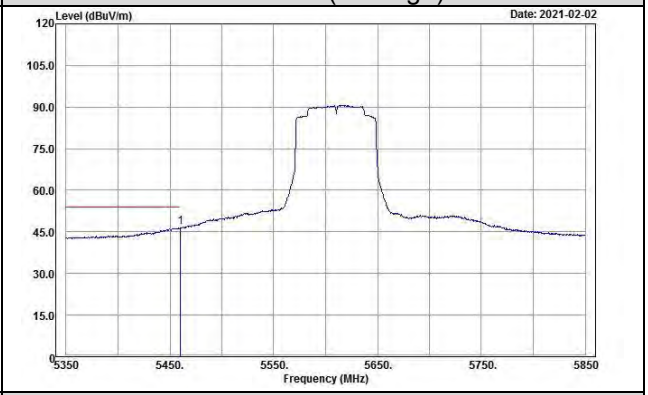
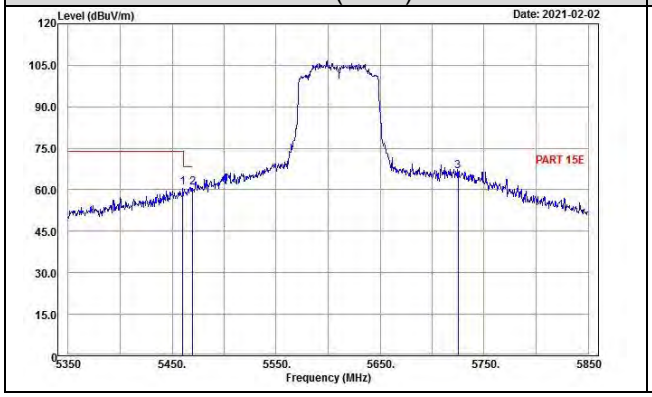
Vertical



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
5460	46.61	36.1	10.51	54	-7.39	127	67	Average
5460	55.17	44.66	10.51	74	-18.83	127	67	Peak
*5470	54.5	43.97	10.53	68.2	-13.7	127	67	Peak
5610	91.15	80.38	10.77			127	67	Average
5610	99.01	88.24	10.77			127	67	Peak
*5725	60.21	49.29	10.92	68.2	-7.99	127	67	Peak
11220	47.37	30.95	16.42	54	-6.63	128	146	Average
11220	57.07	40.65	16.42	74	-16.93	128	146	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	51.1	40.59	10.51	54	-2.9	236	308	Average
5460	60.77	50.26	10.51	74	-13.23	236	308	Peak
*5470	60.92	50.39	10.53	68.2	-7.28	236	308	Peak
5610	99.15	88.38	10.77			236	308	Average
5610	106.63	95.86	10.77			236	308	Peak
*5725	66.54	23.79	42.75	68.2	-1.66	236	308	Peak
11220	48.17	31.75	16.42	54	-5.83	184	16	Average
11220	57.8	41.38	16.42	74	-16.2	184	16	Peak

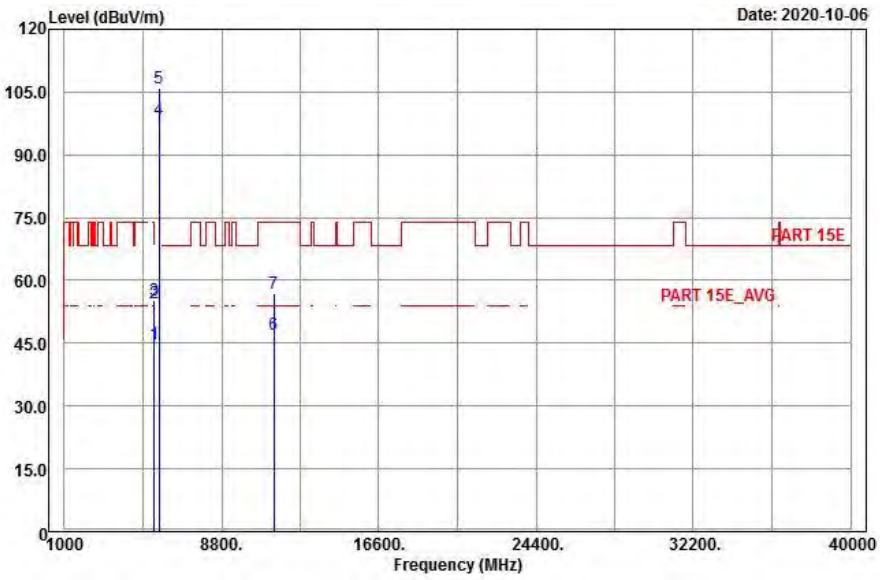
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5610 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

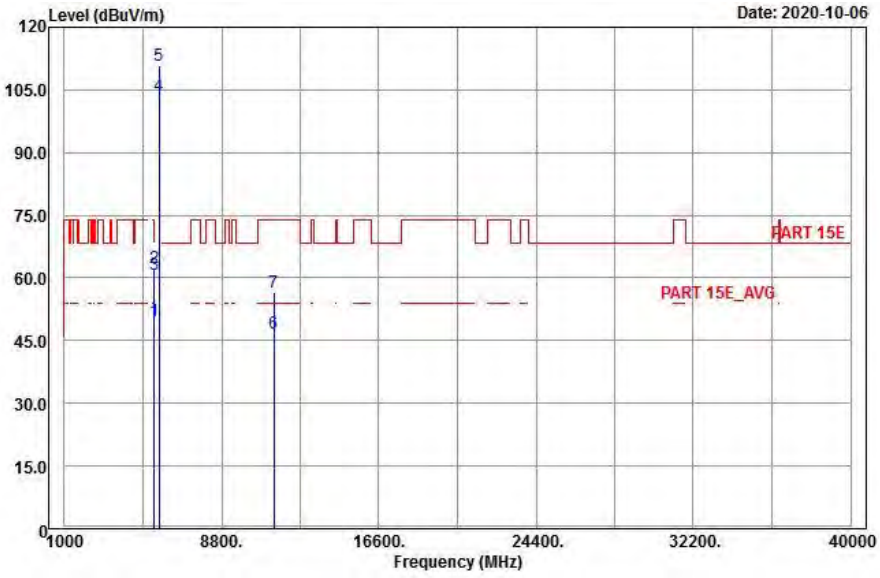
Channel 122	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

Horizontal



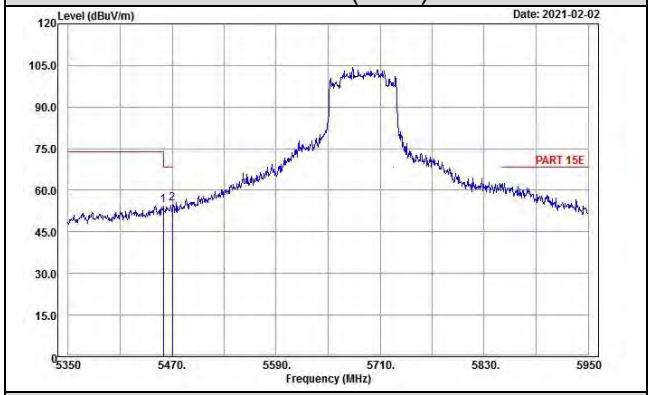
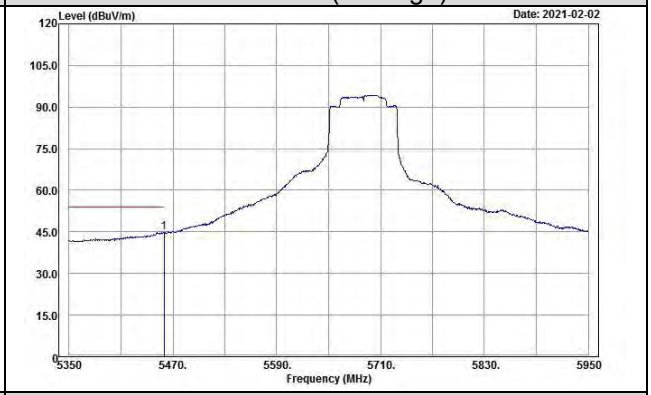
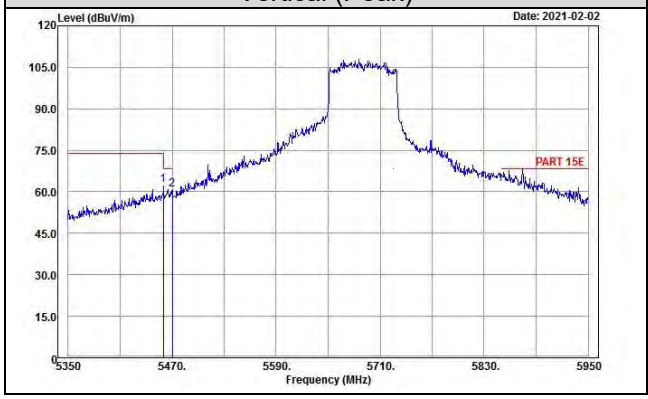
Vertical



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
5460	44.75	34.24	10.51	54	-9.25	119	28	Average
5460	54.6	44.09	10.51	74	-19.4	119	28	Peak
*5470	55.34	44.81	10.53	68.2	-12.86	119	28	Peak
5690	98.57	87.64	10.93			119	28	Average
5690	105.9	94.97	10.93			119	28	Peak
11380	47.14	30.87	16.27	54	-6.86	122	54	Average
11380	56.89	40.62	16.27	74	-17.11	122	54	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	49.77	39.26	10.51	54	-4.23	252	308	Average
5460	62.42	51.91	10.51	74	-11.58	252	308	Peak
*5470	60.75	50.22	10.53	68.2	-7.45	252	308	Peak
5690	103.64	92.71	10.93			252	308	Average
5690	110.88	99.95	10.93			252	308	Peak
11380	46.89	30.62	16.27	54	-7.11	161	81	Average
11380	56.55	40.28	16.27	74	-17.45	161	81	Peak

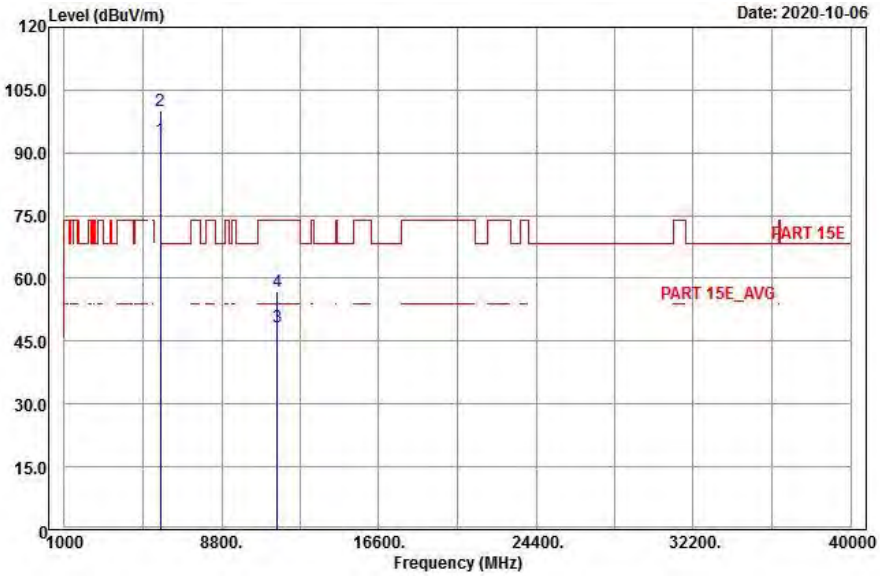
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5690 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

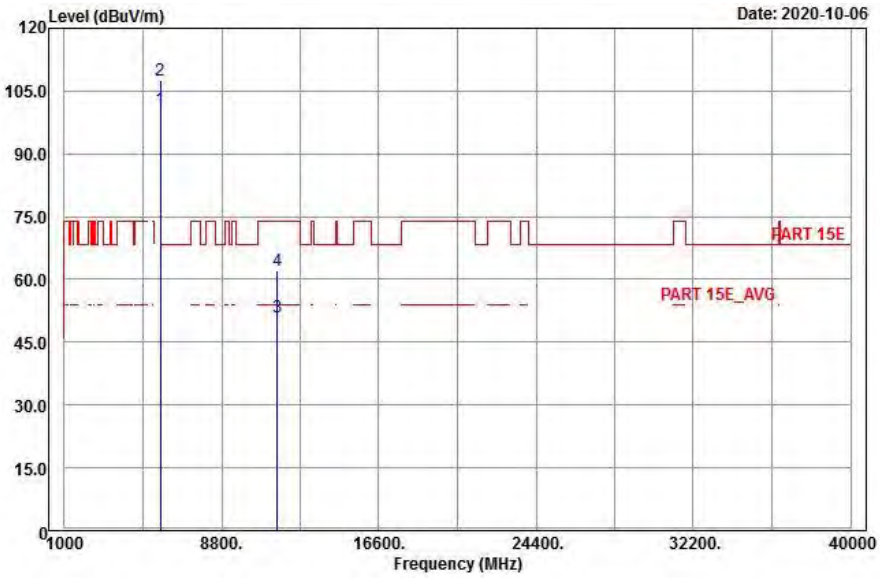
Channel 138	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Charles Hsiao

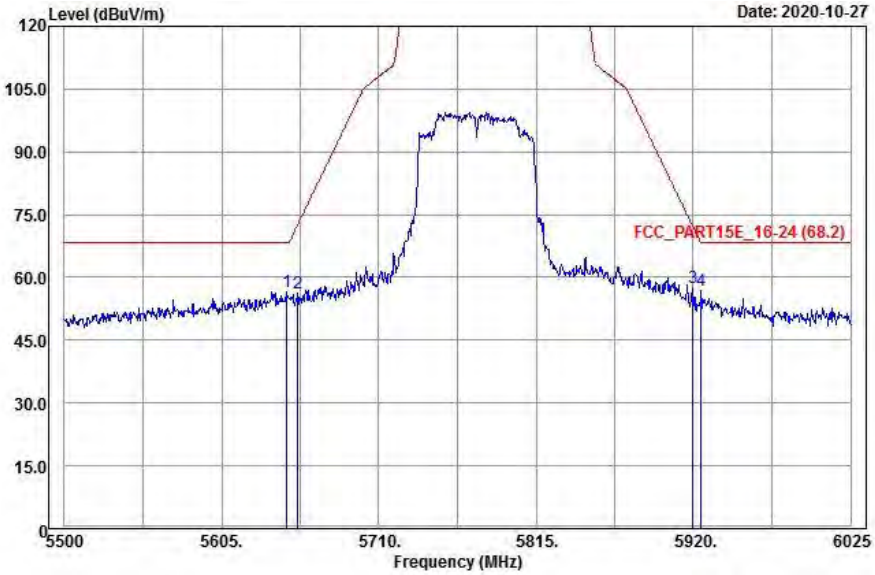
<Spurious Emission>
Horizontal



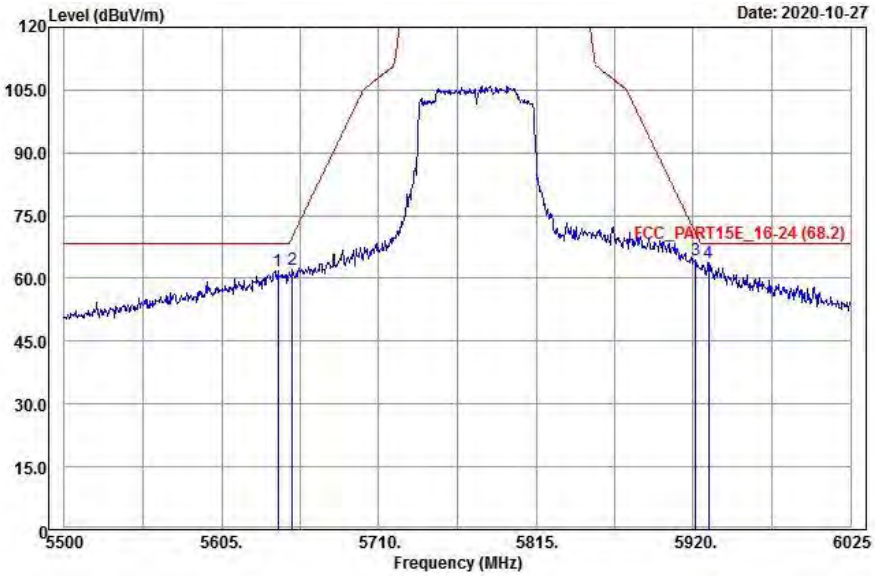
Vertical



<Out of Band Emission (OOBE)>
Horizontal



Vertical



<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	93.14	82.27	10.87			119	28	Average
5775	100.04	89.17	10.87			119	28	Peak
11550	48.39	31.89	16.5	54	-5.61	117	142	Average
11550	56.88	40.38	16.5	74	-17.12	117	142	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	100.67	89.8	10.87			244	324	Average
5775	107.74	96.87	10.87			244	324	Peak
11550	50.91	34.41	16.5	54	-3.09	222	65	Average
11550	62.17	45.67	16.5	74	-11.83	222	65	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
*5648.575	56.5	45.65	10.85	68.2	-11.7	119	28	Peak
5655.925	56.16	45.29	10.87	72.58	-16.42	119	28	Peak
5920	57.65	46.56	11.09	71.9	-14.25	119	28	Peak
*5925.25	56.95	45.84	11.11	68.2	-11.25	119	28	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
*5642.8	61.74	50.91	10.83	68.2	-6.46	244	324	Peak
5652.25	62.05	51.18	10.87	69.86	-7.81	244	324	Peak
5921.575	64.29	53.18	11.11	70.73	-6.44	244	324	Peak
*5930.5	63.72	52.61	11.11	68.2	-4.48	244	324	Peak

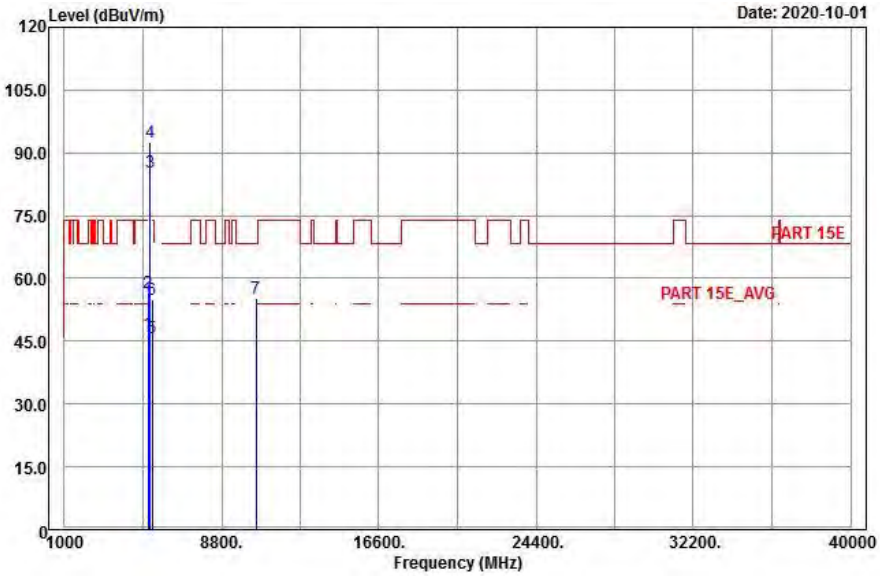
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin Value = Emission Level – Limit value
2. 5775 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

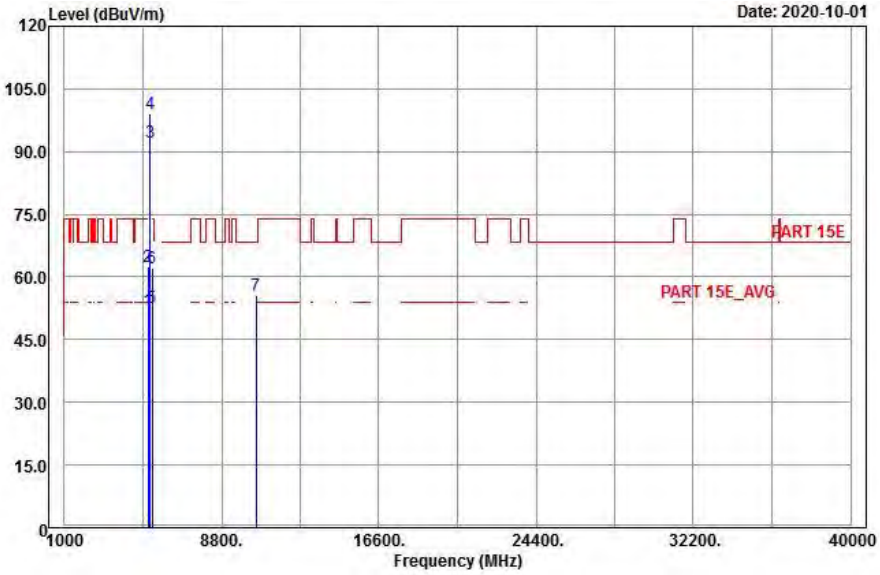
802.11ac (VHT160)

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**	Karl Lee

Horizontal



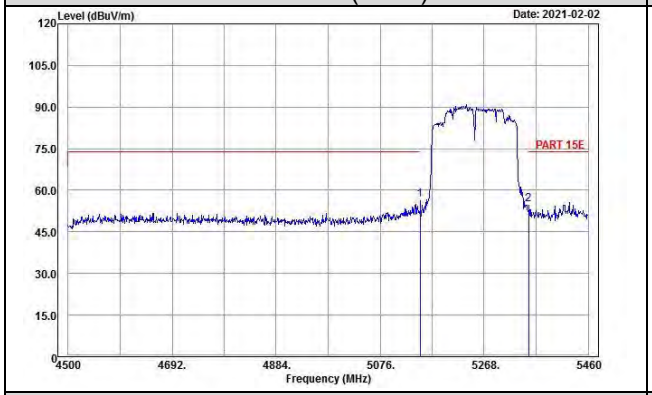
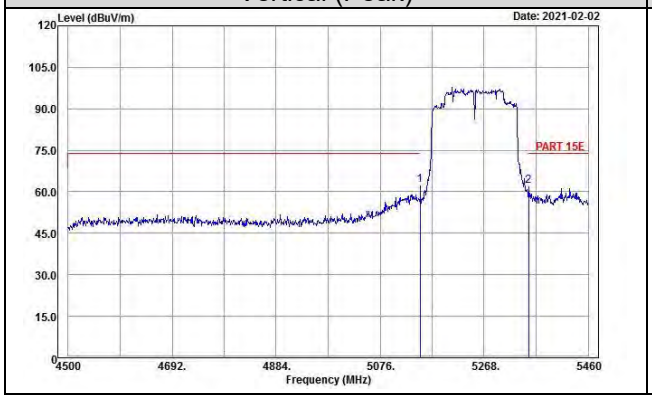
Vertical



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
5150	46.67	36.62	10.05	54	-7.33	252	19	Average
5150	56.58	46.53	10.05	74	-17.42	252	19	Peak
5250	85.36	75.26	10.1			252	19	Average
5250	92.54	82.44	10.1			252	19	Peak
5350	45.91	35.68	10.23	54	-8.09	252	19	Average
5350	54.9	44.67	10.23	74	-19.1	252	19	Peak
*10500	55.39	39.56	15.83	68.2	-12.81	164	222	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	52.08	42.03	10.05	54	-1.92	215	342	Average
5150	62.39	52.34	10.05	74	-11.61	215	342	Peak
5250	92.1	82	10.1			215	342	Average
5250	98.92	88.82	10.1			215	342	Peak
5350	52.48	42.25	10.23	54	-1.52	215	342	Average
5350	62.11	51.88	10.23	74	-11.89	215	342	Peak
*10500	55.53	39.7	15.83	68.2	-12.67	117	145	Peak

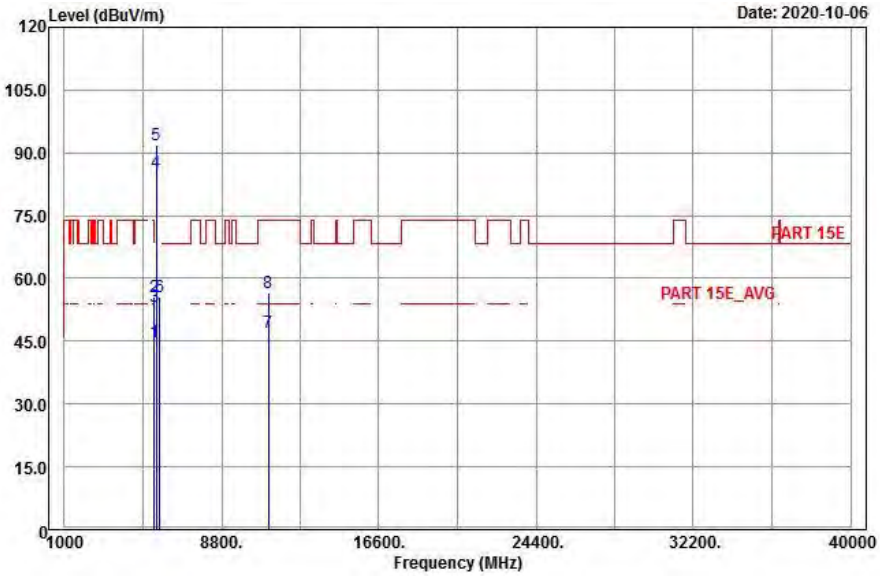
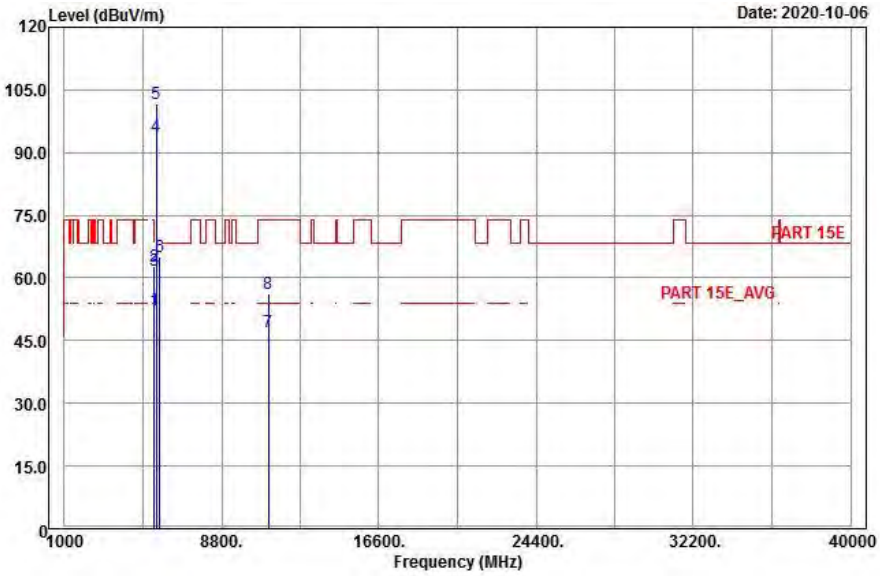
Remarks:

1. Emission Level = Read Level + Factor
   Margin Value = Emission Level – Limit value
2. 5250 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

Channel 50	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

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**	Karl Lee

Horizontal



Vertical