

FCC Test Report

Report No.: RFBEDV-WTW-P21031191-3 R3

FCC ID: C3K2010

Test Model: 2010

Received Date: Apr. 06, 2021

Test Date: Apr. 20, 2021 ~ Jul. 28, 2021

Issued Date: Aug. 25, 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 / 788550 / TW0003

Designation Number: 427177 / TW0011



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Release Control Record

Issue No.	Description	Date Issued
RFBEDV-WTW-P21031191-3	Original Release	Jul. 29, 2021
RFBEDV-WTW-P21031191-3 R1	1. Revise accessory information in section 3.1 2. Revise section 3.4	Aug. 16, 2021
RFBEDV-WTW-P21031191-3 R2	Revise Straddle channel power	Aug. 20, 2021
RFBEDV-WTW-P21031191-3 R3	Revise 802.11a/802.11n (HT20)/802.11n (HT40)/802.11ac (VHT20)/802.11ac (VHT40) MIMO Straddle channel power	Aug. 25, 2021

1 Certificate of Conformity

Product: Portable Computing Device

Brand: Microsoft

Test Model: 2010


Sample Status: Engineering Sample


Applicant: Microsoft Corporation

Test Date: Apr. 20, 2021 ~ Jul. 28, 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:** Aug. 25, 2021
Vera Huang / Specialist

Approved by : , **Date:** Aug. 25, 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)(8)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -19.03 dB at 0.16579 MHz.
15.407(b) (1/2/3/4(i/ii)/8)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.53 dB at 5350 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:

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (\pm)
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.79 dB
Radiated Emissions up to 1 GHz	9 kHz ~ 30 MHz	3.04 dB
	30 MHz ~ 200 MHz	2.0153 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	2010
Status of EUT	Engineering Sample
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	OFDM
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 866.7 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): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5250 ~ 5320 MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5500 ~ 5720 MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 12 802.11n (HT40), 802.11ac (VHT40): 6 802.11ac (VHT80): 3 5745 ~ 5825 MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1
Output Power	Chain A 69.024 mW for 5180 ~ 5250 MHz 85.704 mW for 5250 ~ 5320 MHz 85.901 mW for 5500 ~ 5720 MHz 106.66 mW for 5745 ~ 5825 MHz Chain B 71.945 mW for 5180 ~ 5250 MHz 88.716 mW for 5250 ~ 5320 MHz 89.95 mW for 5500 ~ 5720 MHz 109.396 mW for 5745 ~ 5825 MHz MIMO 81.93 mW for 5180 ~ 5250 MHz 149.284 mW for 5250 ~ 5320 MHz 154.655 mW for 5500 ~ 5720 MHz 218.293 mW for 5745 ~ 5825 MHz

HW Version	EV
SW Version (FVIN)	1.01260.1
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 (SISO mode) / 2TX (MIMO mode)
802.11n (HT20)	1TX (SISO mode) / 2TX (MIMO mode)
802.11n (HT40)	1TX (SISO mode) / 2TX (MIMO mode)
802.11ac (VHT20)	1TX (SISO mode) / 2TX (MIMO mode)
802.11ac (VHT40)	1TX (SISO mode) / 2TX (MIMO mode)
802.11ac (VHT80)	1TX (SISO mode) / 2TX (MIMO mode)

* The bandwidth and modulation are similar for HT20/HT40 on 802.11n mode and VHT20/VHT40 on 802.11ac mode. Therefore the investigated worst case is the representative mode in test report. (Final test mode refer section 3.2.1)

2. The EUT contains following accessory devices.

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

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

3. The antenna information is listed as below.

Antenna	Antenna Gain (dBi)	Frequency Range (GHz)	Antenna Type
Left Antenna Antenna 1 WiFi/BT Main	2.6	2.4~2.4835	PIFA
Left Antenna Antenna 1 WiFi/BT Main	3.5	5.15~5.85	PIFA
Right Antenna Antenna 2 WiFi AUX	2.6	2.4~2.4835	PIFA
Right Antenna Antenna 2 WiFi AUX	3.6	5.15~5.85	PIFA

4. 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.
5. 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):

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):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
42	5210

For 5250 ~ 5320 MHz

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

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):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
58	5290

For 5500 ~ 5720 MHz

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

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):

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):

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

For 5745 ~ 5825 MHz:

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

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):

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

1 channel is provided for 802.11ac (VHT80):

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	
-	√	√	√	√	-

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)	
-	5180-5250	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0	
		802.11ac (VHT20)	36 to 48	36, 40, 48	OFDM	BPSK	7.2	
		802.11ac (VHT40)	38 to 46	38, 46	OFDM	BPSK	15	
		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3	
	5250-5320	802.11a	52 to 64	52, 60, 64	52, 60, 64	OFDM	BPSK	6.0
		802.11ac (VHT20)	52 to 64	52, 60, 64	52, 60, 64	OFDM	BPSK	7.2
		802.11ac (VHT40)	54 to 62	54, 62	54, 62	OFDM	BPSK	15
		802.11ac (VHT80)	58	58	58	OFDM	BPSK	29.3
	5500-5720	802.11a	100 to 144	100, 116, 140, 144	100, 116, 140, 144	OFDM	BPSK	6.0
		802.11ac (VHT20)	100 to 144	100, 116, 140, 144	100, 116, 140, 144	OFDM	BPSK	7.2
		802.11ac (VHT40)	102 to 142	102, 110, 134, 142	102, 110, 134, 142	OFDM	BPSK	15
		802.11ac (VHT80)	106 to 138	106, 122, 138	106, 122, 138	OFDM	BPSK	29.3
5745-5825	802.11a	149 to 165	149, 157, 165	149, 157, 165	OFDM	BPSK	6.0	
	802.11ac (VHT20)	149 to 165	149, 157, 165	149, 157, 165	OFDM	BPSK	7.2	
	802.11ac (VHT40)	151 to 159	151, 159	151, 159	OFDM	BPSK	15	
	802.11ac (VHT80)	155	155	155	OFDM	BPSK	29.3	

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)
-	5745-5825	802.11a	149 to 165	157	OFDM	BPSK	6.0

Power Line Conducted Emission Test:

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5745-5825	802.11a	149 to 165	157	OFDM	BPSK	6.0

Bandwidth, Power Spectral Density and Frequency Stability Measurement:

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)	
-	5180-5250	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0	
		802.11ac (VHT20)	36 to 48	36, 40, 48	OFDM	BPSK	7.2	
		802.11ac (VHT40)	38 to 46	38, 46	OFDM	BPSK	15	
		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3	
	5250-5320	802.11a	52 to 64	52, 60, 64	52, 60, 64	OFDM	BPSK	6.0
		802.11ac (VHT20)	52 to 64	52, 60, 64	52, 60, 64	OFDM	BPSK	7.2
		802.11ac (VHT40)	54 to 62	54, 62	54, 62	OFDM	BPSK	15
		802.11ac (VHT80)	58	58	58	OFDM	BPSK	29.3
	5500-5720	802.11a	100 to 144	100, 116, 140, 144	100, 116, 140, 144	OFDM	BPSK	6.0
		802.11ac (VHT20)	100 to 144	100, 116, 140, 144	100, 116, 140, 144	OFDM	BPSK	7.2
		802.11ac (VHT40)	102 to 142	102, 110, 134, 142	102, 110, 134, 142	OFDM	BPSK	15
		802.11ac (VHT80)	106 to 138	106, 122, 138	106, 122, 138	OFDM	BPSK	29.3
	5745-5825	802.11a	149 to 165	149, 157, 165	149, 157, 165	OFDM	BPSK	6.0
		802.11ac (VHT20)	149 to 165	149, 157, 165	149, 157, 165	OFDM	BPSK	7.2
		802.11ac (VHT40)	151 to 159	151, 159	151, 159	OFDM	BPSK	15
		802.11ac (VHT80)	155	155	155	OFDM	BPSK	29.3

Transmit Power Measurement:

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
	5180-5250	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 (VHT20)	36 to 48	36, 40, 48	OFDM	BPSK	7.2
		802.11ac (VHT40)	38 to 46	38, 46	OFDM	BPSK	15
		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
	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 (VHT20)	52 to 64	52, 60, 64	OFDM	BPSK	7.2
		802.11ac (VHT40)	54 to 62	54, 62	OFDM	BPSK	15
		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
	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 (VHT20)	100 to 144	100, 116, 140, 144	OFDM	BPSK	7.2
		802.11ac (VHT40)	102 to 142	102, 110, 134, 142	OFDM	BPSK	15
		802.11ac (VHT80)	106 to 138	106, 122, 138	OFDM	BPSK	29.3
	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 (VHT20)	149 to 165	149, 157, 165	OFDM	BPSK	7.2
		802.11ac (VHT40)	151 to 159	151, 159	OFDM	BPSK	15
		802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Karl Lee, Charles Hsiao
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Karl Lee
PLC	25 deg. C, 75 % RH	120 Vac, 60 Hz	Edison Lee
APCM	25 deg. C, 60 % RH	120 Vac, 60 Hz	Jisyong Wang

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is $\geq 98\%$, duty factor is not required.

Duty cycle of test signal is $< 98\%$, duty factor shall be considered.

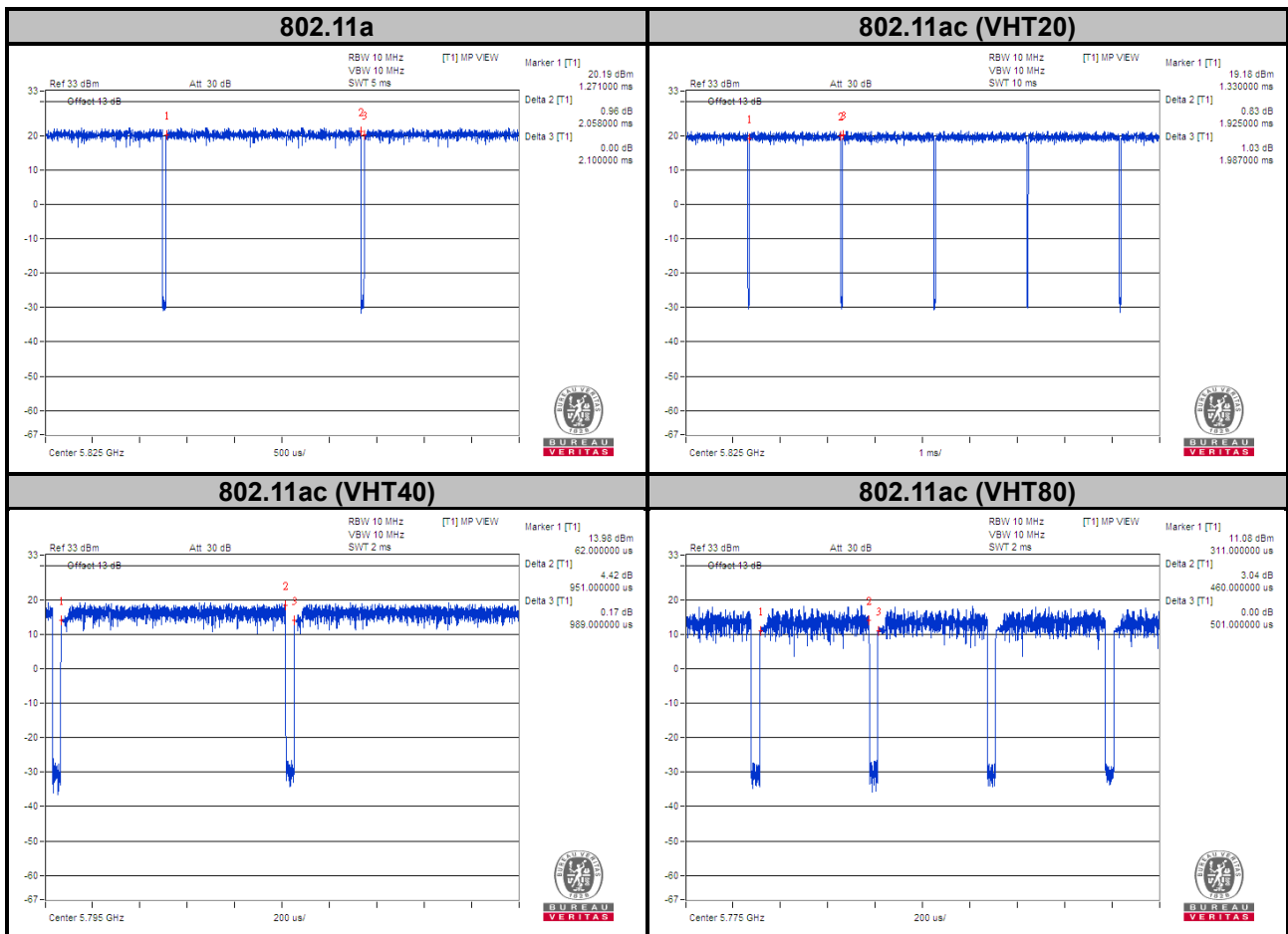
SISO_Chain A

802.11a: Duty cycle = $2.058/2.1 = 0.98$

802.11ac (VHT20): Duty cycle = $1.925/1.987 = 0.969$, Duty factor = $10 * \log(1/0.969) = 0.14$

802.11ac (VHT40): Duty cycle = $0.951/0.989 = 0.962$, Duty factor = $10 * \log(1/0.962) = 0.17$

802.11ac (VHT80): Duty cycle = $0.46/0.501 = 0.918$, Duty factor = $10 * \log(1/0.918) = 0.37$



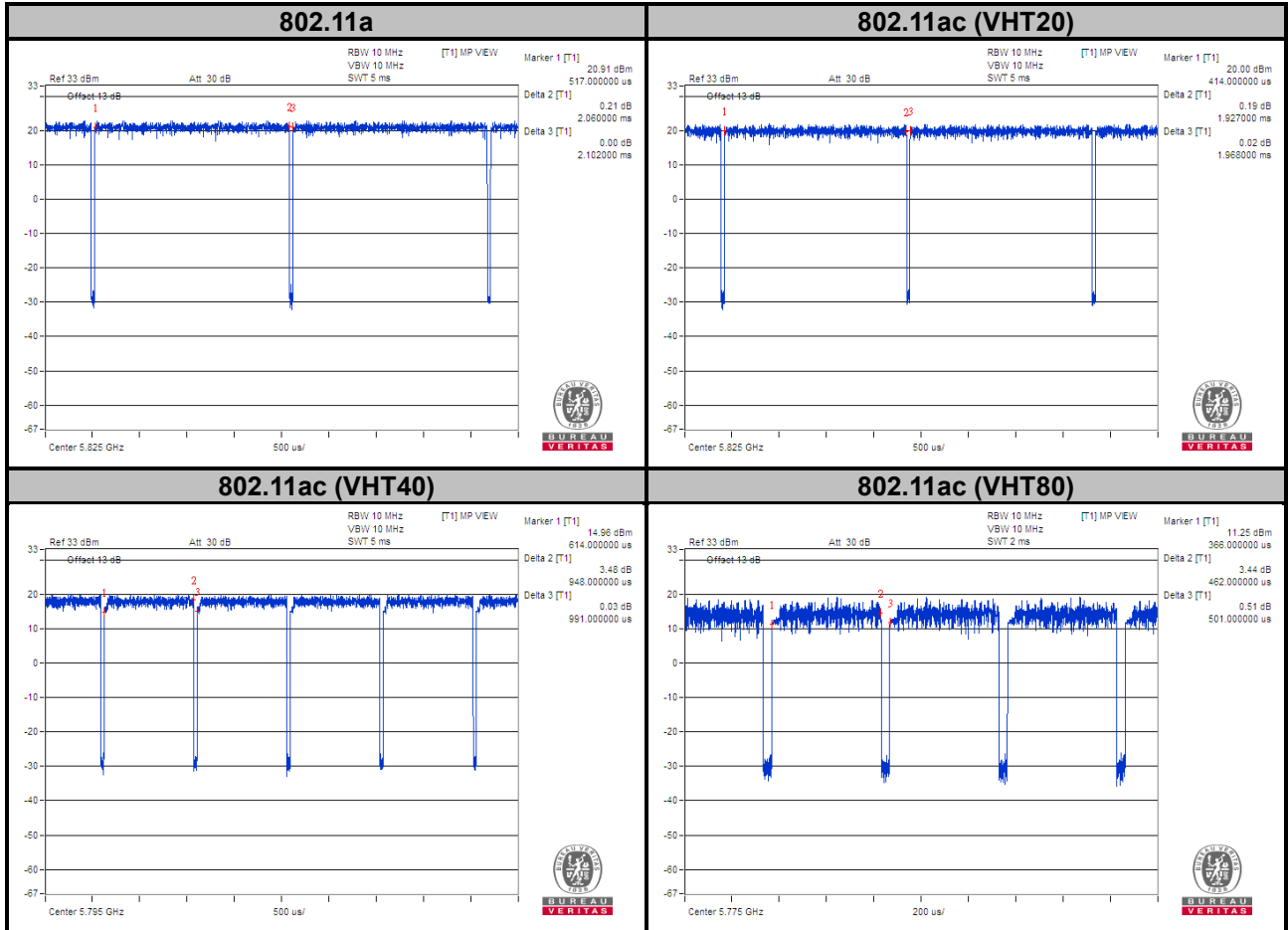
SISO_Chain B

802.11a: Duty cycle = $2.06/2.102 = 0.98$

802.11ac (VHT20): Duty cycle = $1.927/1.968 = 0.979$, Duty factor = $10 * \log(1/0.979) = 0.09$

802.11ac (VHT40): Duty cycle = $0.948/0.991 = 0.957$, Duty factor = $10 * \log(1/0.957) = 0.19$

802.11ac (VHT80): Duty cycle = $0.462/0.501 = 0.922$, Duty factor = $10 * \log(1/0.922) = 0.35$



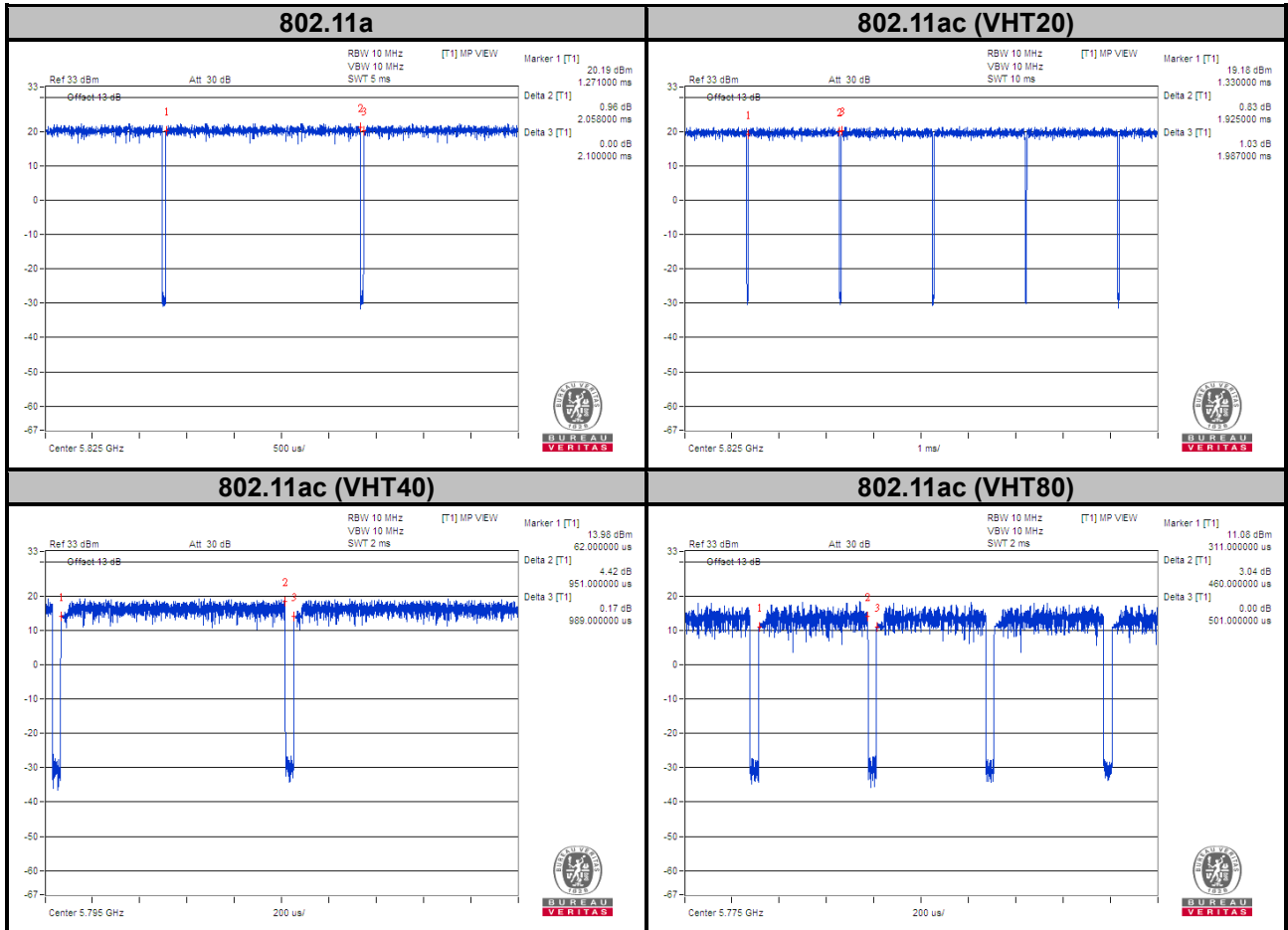
MIMO

802.11a: Duty cycle = $2.058/2.1 = 0.98$

802.11ac (VHT20): Duty cycle = $1.925/1.987 = 0.969$, Duty factor = $10 * \log(1/0.969) = 0.14$

802.11ac (VHT40): Duty cycle = $0.951/0.989 = 0.962$, Duty factor = $10 * \log(1/0.962) = 0.17$

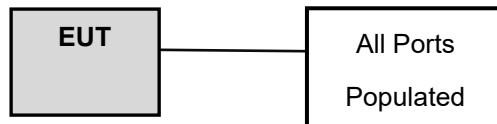
802.11ac (VHT80): Duty cycle = $0.46/0.501 = 0.918$, Duty factor = $10 * \log(1/0.918) = 0.37$



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
*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:

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

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. 12, 2021	Apr. 11, 2022
HORN Antenna ETS-Lindgren	3117	00143293	Nov. 22, 2020	Nov. 21, 2021
BILOG Antenna SCHWARZBECK	VULB 9168	9168-616	Nov. 09, 2020	Nov. 08, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Nov. 22, 2020	Nov. 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 13, 2021	Apr. 12, 2022
Loop Antenna	EM-6879	269	Sep. 17, 2020	Sep. 16, 2021
Preamplifier Agilent	310N	187226	Jun. 17, 2020	Jun. 16, 2021
			Jun. 17, 2021	Jun. 16, 2022
Preamplifier Agilent	83017A	MY39501357	Jun. 17, 2020	Jun. 16, 2021
			Jun. 17, 2021	Jun. 16, 2022
Preamplifier EMCI	EMC 184045	980116	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
			Jun. 17, 2021	Jun. 16, 2022
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(RFC-SMS-100-SMS-24)	Jun. 17, 2020	Jun. 17, 2021
			Jun. 17, 2021	Jun. 16, 2022
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
Spectrum Analyzer ROHDE & SCHWARZ	FSV40	100979	Mar. 29, 2021	Mar. 28, 2022
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55190004/ MY55190007/MY55210005	Jul. 13, 2020	Jul. 12, 2021
			Jul. 12, 2021	Jul. 11, 2022
Temperature & Humidity Chamber GIANT FORCE	GTH-120-40-CP- AR	MAA1306-019	Sep. 09, 2020	Sep. 08, 2021
AC Power Source Extech	6905S	1991553	NA	NA
Digital Multimeter Fluke	87-III	70360742	Jun. 23, 2020	Jun. 22, 2021
			Jun. 24, 2021	Jun. 23, 2022

- 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.
 3. Radiated Emission Test Date: 2021/04/20 ~ 2021/07/28
 4. Antenna Port Conducted Measurement Test Date: 2021/05/13

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 $\geq 1/T$ (Duty cycle < 98 %) or 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz.

SISO_Chain A

802.11a: RBW = 1 MHz, VBW = 10 Hz

802.11ac (VHT20): RBW = 1 MHz, VBW = 1 kHz

802.11ac (VHT40): RBW = 1 MHz, VBW = 2 kHz

802.11ac (VHT80): RBW = 1 MHz, VBW = 3 kHz

SISO_Chain B

802.11a: RBW = 1 MHz, VBW = 10 Hz

802.11ac (VHT20): RBW = 1 MHz, VBW = 1 kHz

802.11ac (VHT40): RBW = 1 MHz, VBW = 2 kHz

802.11ac (VHT80): RBW = 1 MHz, VBW = 3 kHz

MIMO

802.11a: RBW = 1 MHz, VBW = 10 Hz

802.11ac (VHT20): RBW = 1 MHz, VBW = 1 kHz

802.11ac (VHT40): RBW = 1 MHz, VBW = 2 kHz

802.11ac (VHT80): RBW = 1 MHz, VBW = 3 kHz

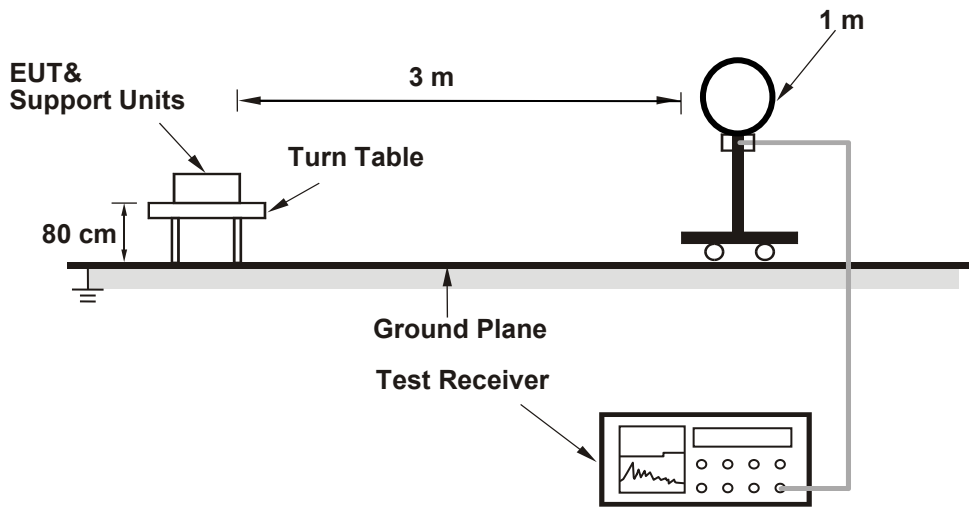
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

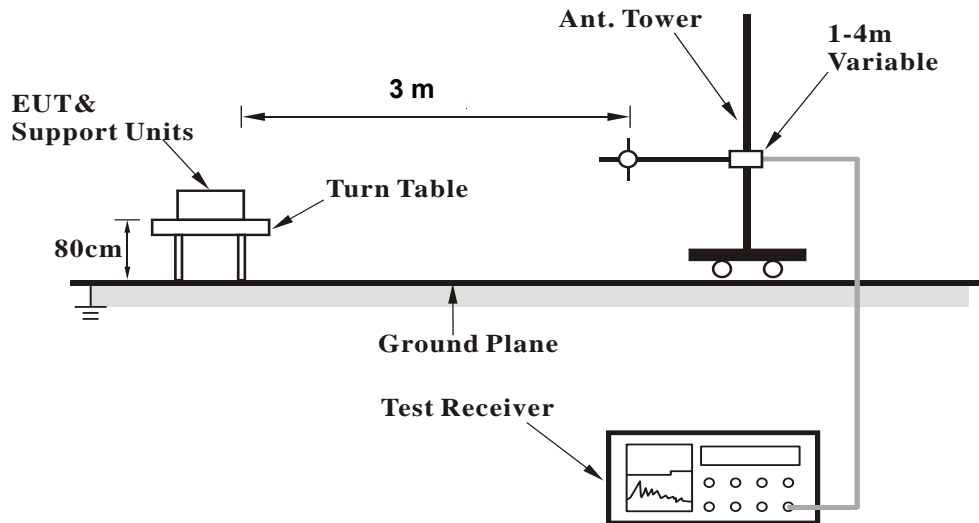
No deviation.

4.1.5 Test Setup

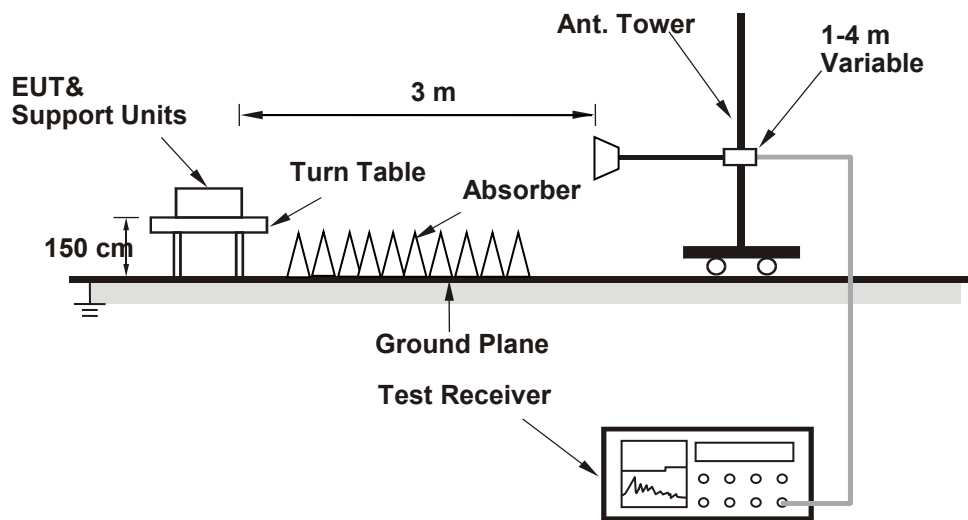
<Radiated Emission below 30 MHz>



<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).

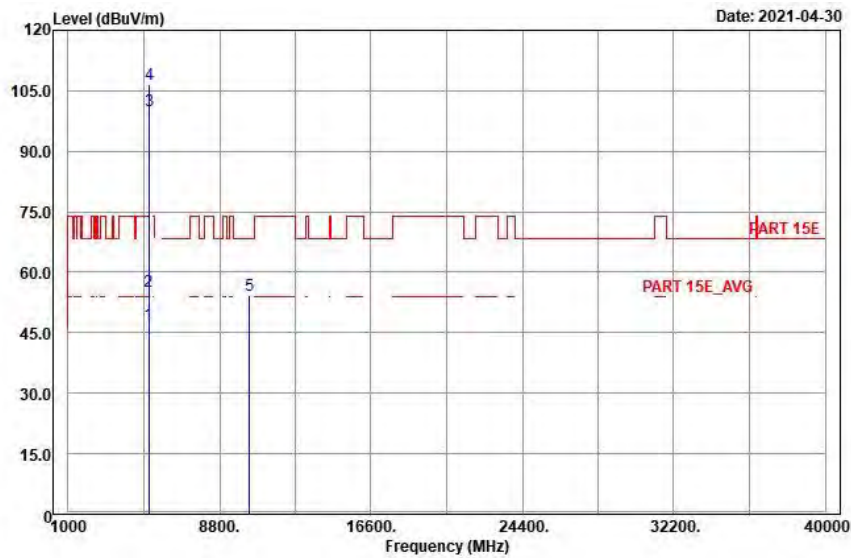
4.1.6 EUT Operating Conditions

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

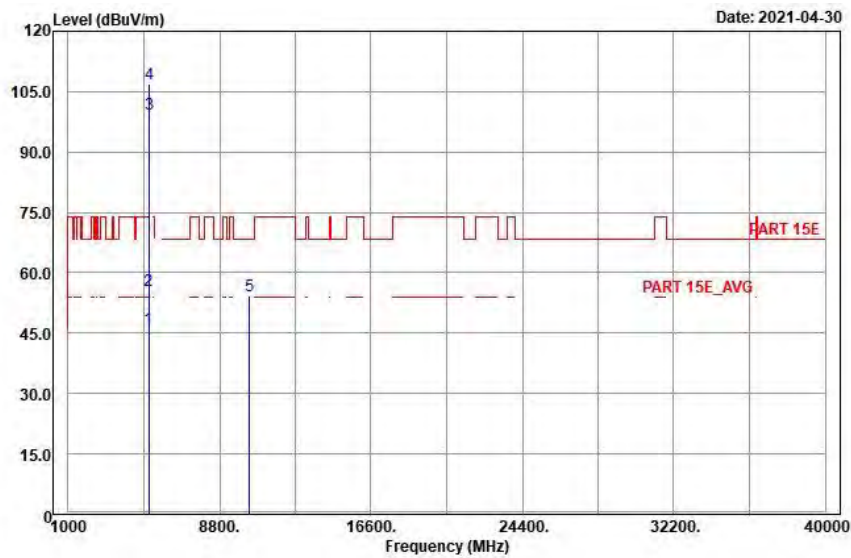
4.1.7 Test Results
 Above 1 GHz Data :
 SISO_Chain A
 802.11a

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	Karl Lee, 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	47.16	37.11	10.05	54	-6.84	162	146	Average
5150	55.26	45.21	10.05	74	-18.74	162	146	Peak
5180	100.19	90.07	10.12			162	146	Average
5180	106.67	96.55	10.12			162	146	Peak
*10360	54.23	38.21	16.02	68.2	-13.97	182	143	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

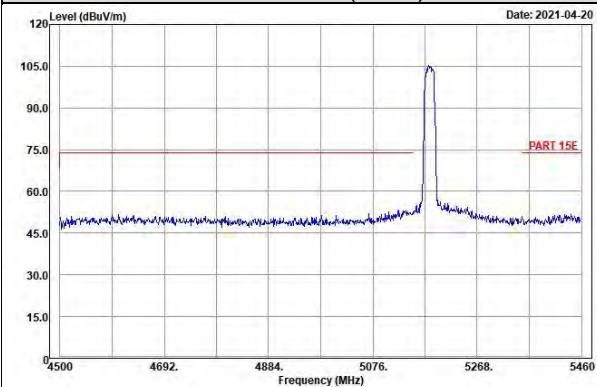
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	46.03	35.98	10.05	54	-7.97	209	93	Average
5150	55.44	45.39	10.05	74	-18.56	209	93	Peak
5180	99.54	89.42	10.12			209	93	Average
5180	106.85	96.73	10.12			209	93	Peak
*10360	54.4	38.38	16.02	68.2	-13.8	253	173	Peak

Remarks:

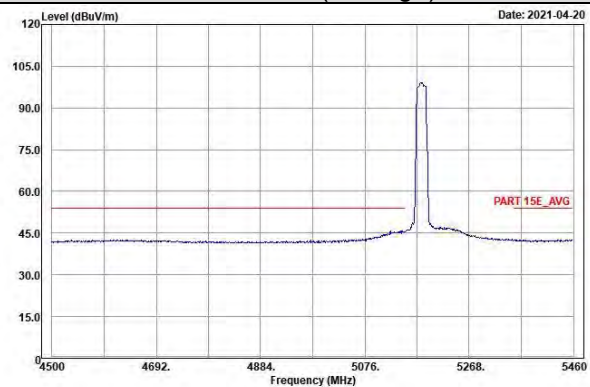
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5180 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 36

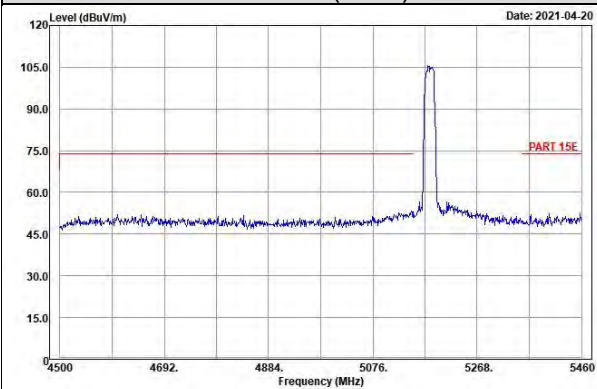
Horizontal (Peak)



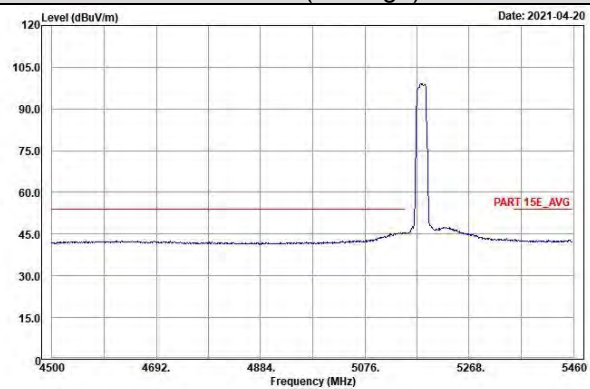
Horizontal (Average)



Vertical (Peak)

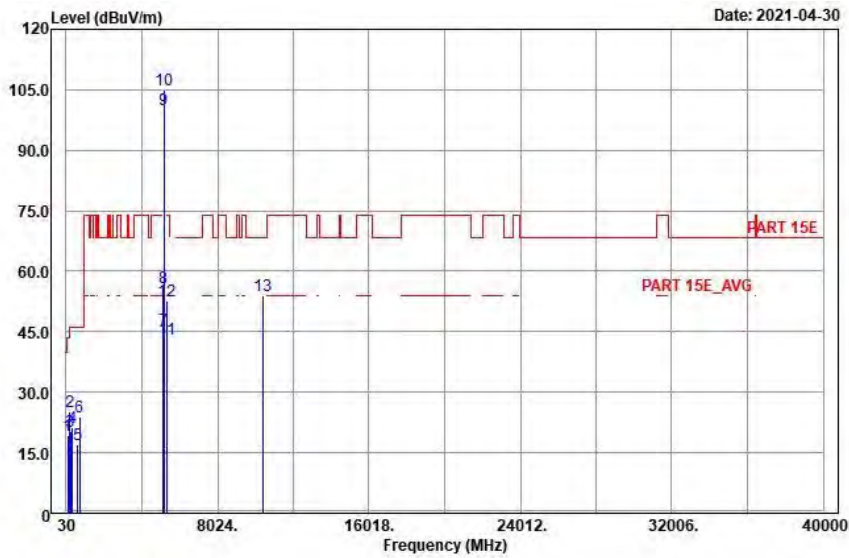


Vertical (Average)

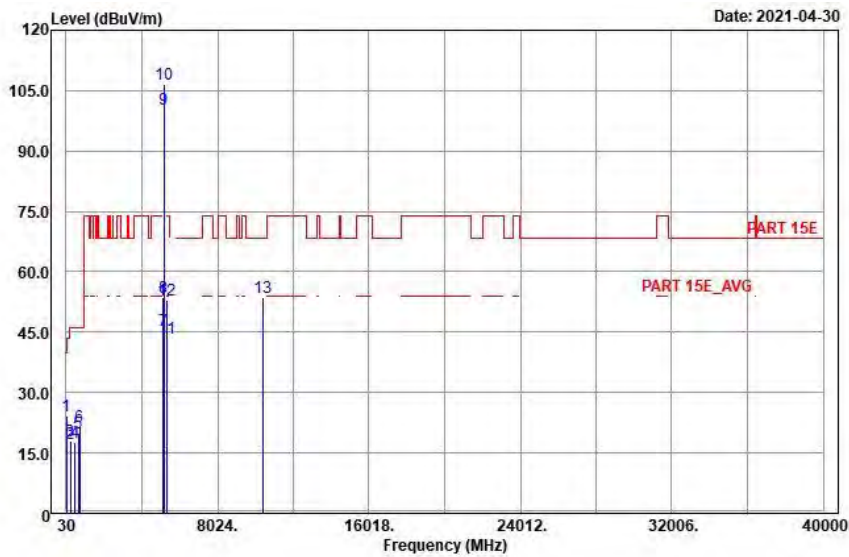


EUT Test Condition		Measurement Detail	
Channel	Channel 40	Frequency Range	30 MHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Above 1GHz: Peak (PK) Average (AV) Below 1GHz: Quasi-Peak(QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



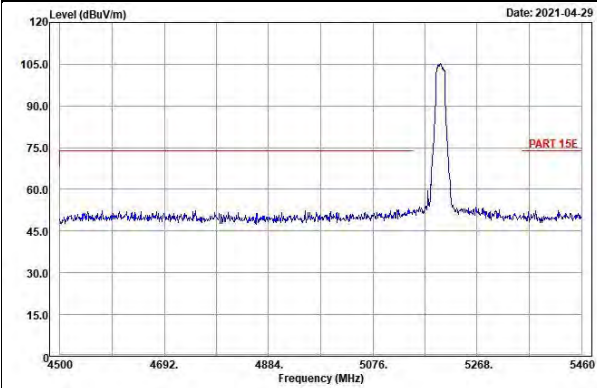
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
115.86	19.42	37.94	-18.52	43.5	-24.08	124	144	QP
213.33	25.2	43.25	-18.05	43.5	-18.3	105	213	QP
265.44	20.24	36.83	-16.59	46	-25.76	188	256	QP
352.5	21.17	35.87	-14.7	46	-24.83	125	269	QP
624.1	17.03	27.38	-10.35	46	-28.97	181	16	QP
738.9	23.82	32.41	-8.59	46	-22.18	138	185	QP
5150	45.33	35.28	10.05	54	-8.67	134	146	Average
5150	55.84	45.79	10.05	74	-18.16	134	146	Peak
5200	99.92	89.76	10.16			134	146	Average
5200	104.88	94.72	10.16			134	146	Peak
5350	43.25	33.02	10.23	54	-10.75	134	146	Average
5350	52.53	42.3	10.23	74	-21.47	134	146	Peak
*10400	54.02	37.84	16.18	68.2	-14.18	138	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
50.52	24.29	39.45	-15.16	40	-15.71	124	145	QP
253.83	17.47	34.25	-16.78	46	-28.53	183	185	QP
260.04	17.98	34.66	-16.68	46	-28.02	188	241	QP
491.1	17.72	30.21	-12.49	46	-28.28	171	134	QP
682.2	20.08	29.56	-9.48	46	-25.92	189	99	QP
742.4	21.72	30.26	-8.54	46	-24.28	127	77	QP
5150	45.32	35.27	10.05	54	-8.68	183	92	Average
5150	53.76	43.71	10.05	74	-20.24	183	92	Peak
5200	100.38	90.22	10.16			183	92	Average
5200	106.48	96.32	10.16			183	92	Peak
5350	43.41	33.18	10.23	54	-10.59	183	92	Average
5350	53.08	42.85	10.23	74	-20.92	183	92	Peak
*10400	53.74	37.56	16.18	68.2	-14.46	232	221	Peak

Remarks:

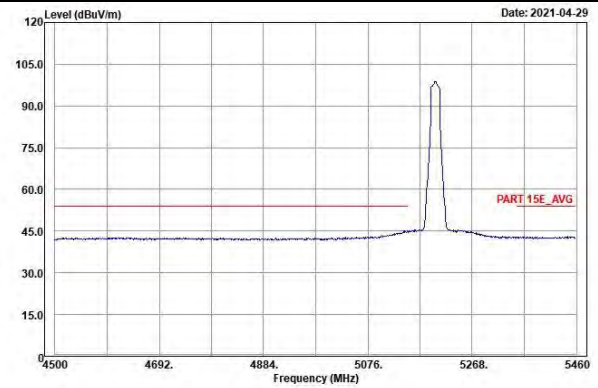
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5200 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 40

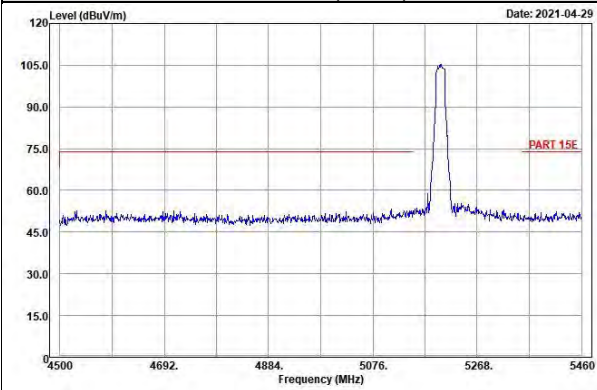
Horizontal (Peak)



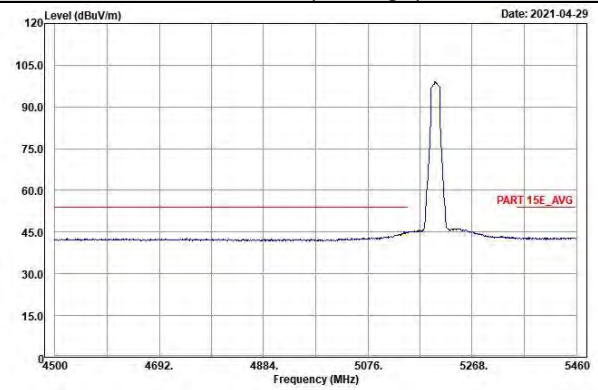
Horizontal (Average)



Vertical (Peak)

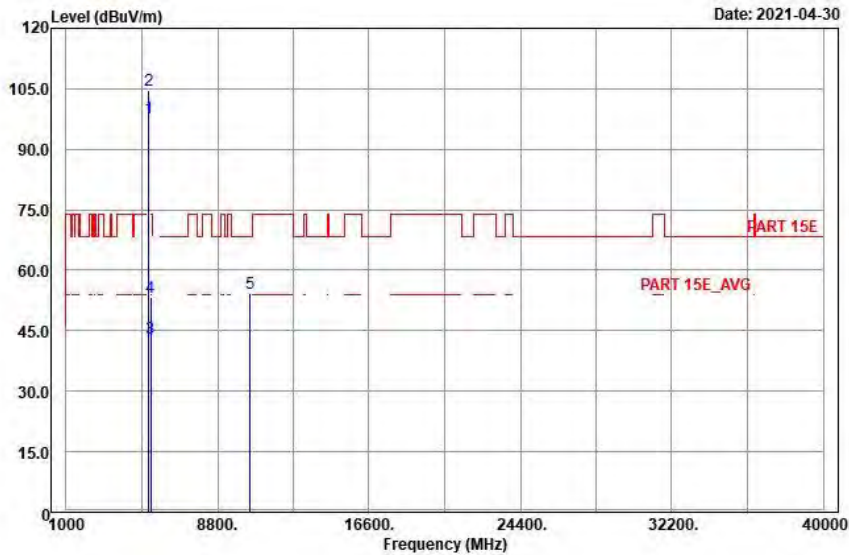


Vertical (Average)

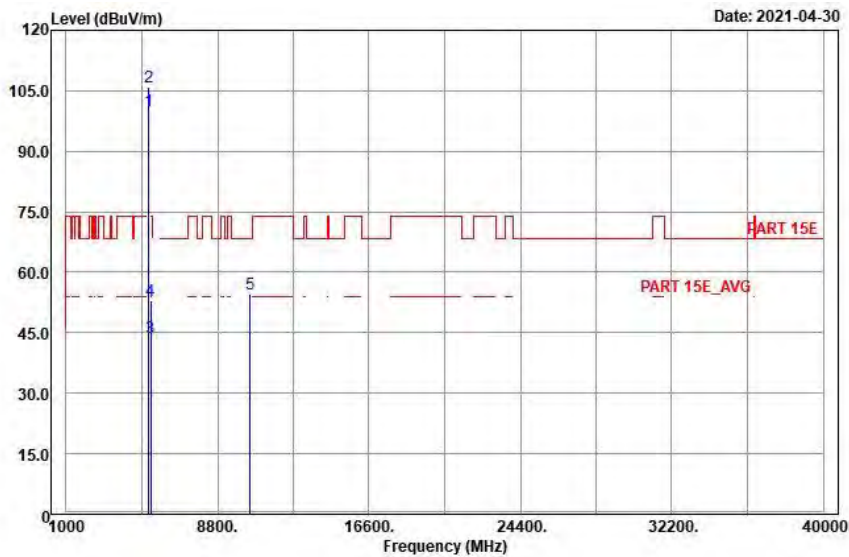


EUT Test Condition		Measurement Detail	
Channel	Channel 48	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



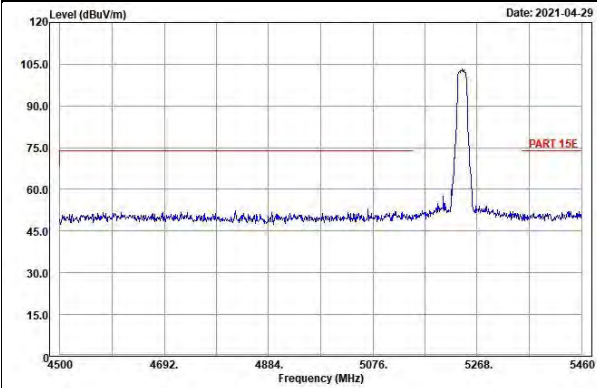
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5240	97.8	87.66	10.14			134	146	Average
5240	104.48	94.34	10.14			134	146	Peak
5350	43.12	32.89	10.23	54	-10.88	134	146	Average
5350	53.24	43.01	10.23	74	-20.76	134	146	Peak
*10480	54.26	38.36	15.9	68.2	-13.94	211	173	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5240	99.94	89.8	10.14			183	93	Average
5240	106.08	95.94	10.14			183	93	Peak
5350	43.66	33.43	10.23	54	-10.34	183	93	Average
5350	53.03	42.8	10.23	74	-20.97	183	93	Peak
*10480	54.6	38.7	15.9	68.2	-13.6	196	236	Peak

Remarks:

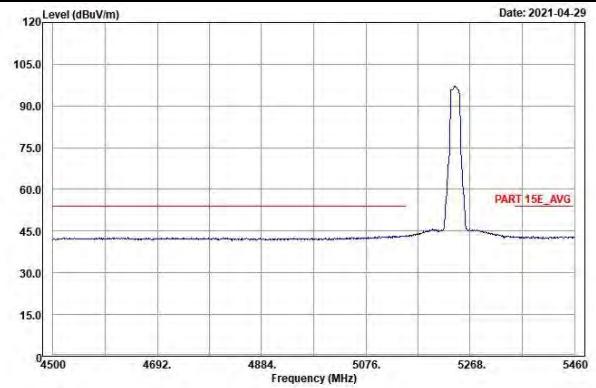
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5240 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 48

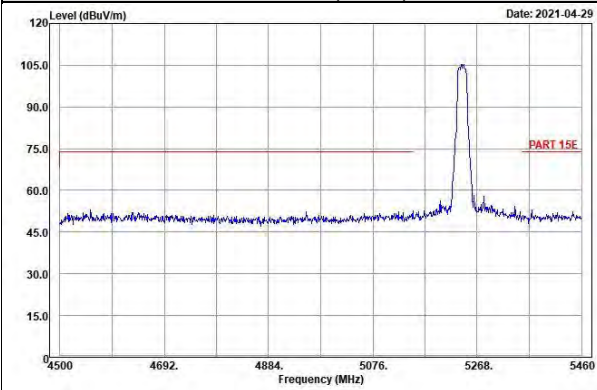
Horizontal (Peak)



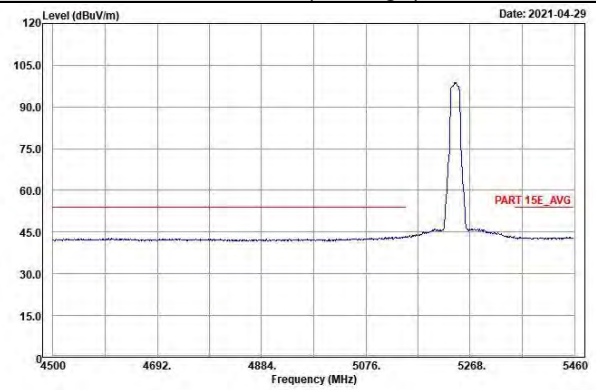
Horizontal (Average)



Vertical (Peak)

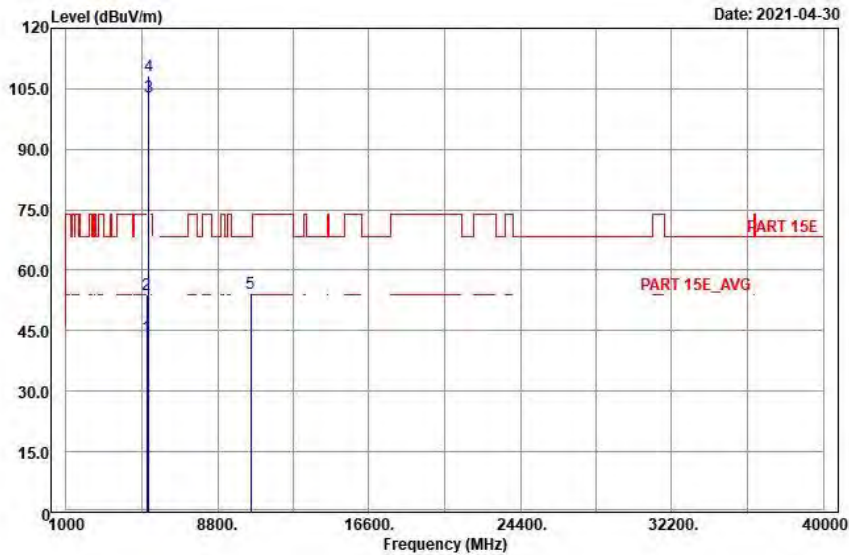


Vertical (Average)

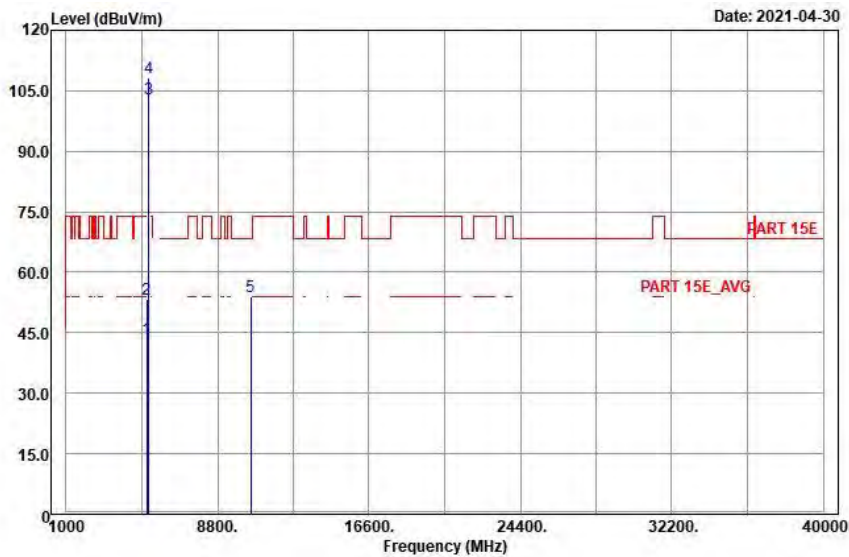


EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



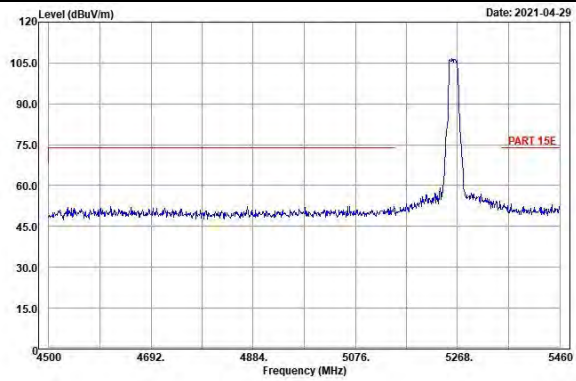
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	43.44	33.39	10.05	54	-10.56	159	112	Average
5150	53.86	43.81	10.05	74	-20.14	159	112	Peak
5260	102.9	92.78	10.12			159	112	Average
5260	108.16	98.04	10.12			159	112	Peak
*10520	54.43	38.55	15.88	68.2	-13.77	181	36	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	43.58	33.53	10.05	54	-10.42	224	94	Average
5150	53.38	43.33	10.05	74	-20.62	224	94	Peak
5260	102.96	92.84	10.12			224	94	Average
5260	108.36	98.24	10.12			224	94	Peak
*10520	53.79	37.91	15.88	68.2	-14.41	196	232	Peak

Remarks:

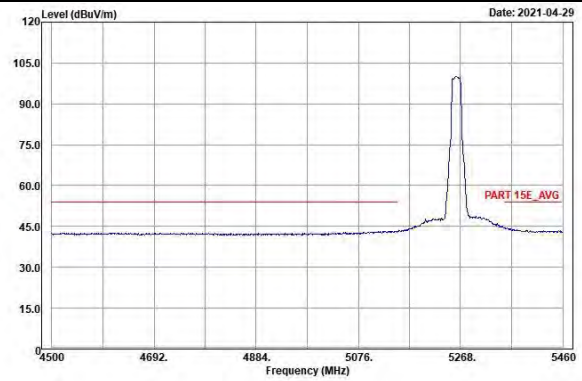
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 5260 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

Channel 52

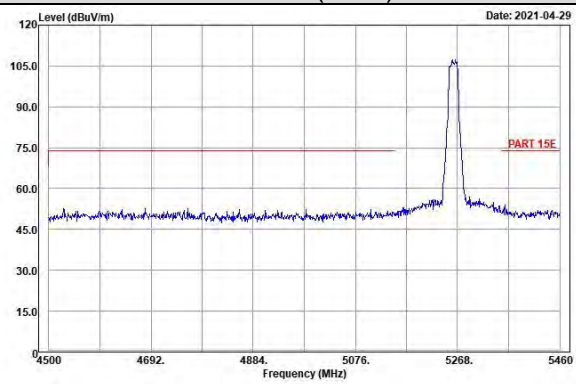
Horizontal (Peak)



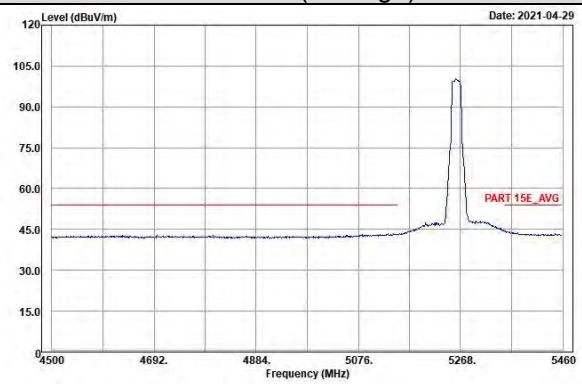
Horizontal (Average)



Vertical (Peak)

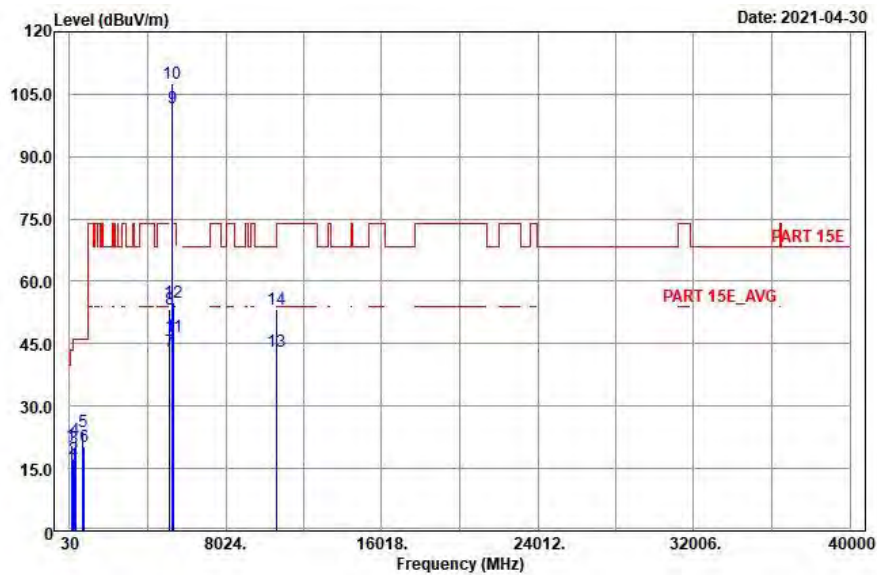


Vertical (Average)

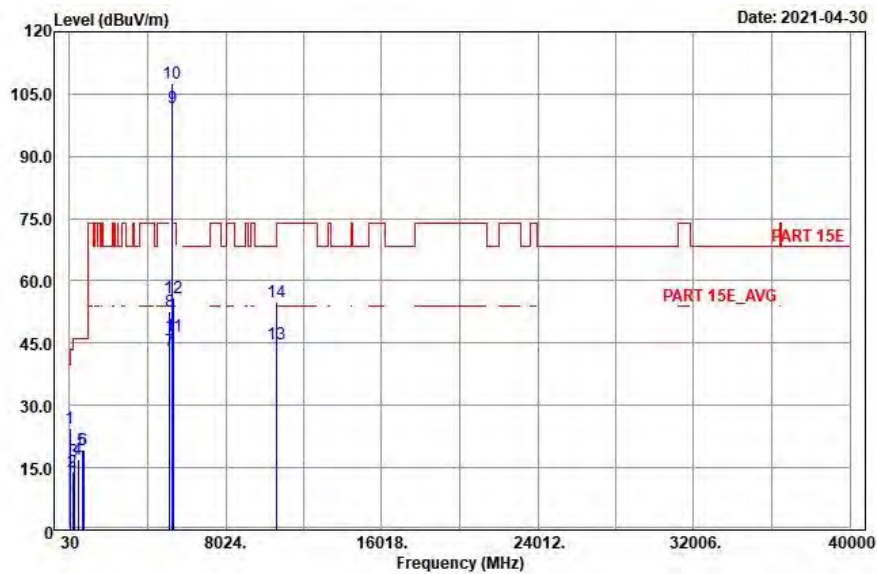


EUT Test Condition		Measurement Detail	
Channel	Channel 60	Frequency Range	30 MHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Above 1GHz: Peak (PK) Average (AV) Below 1GHz: Quasi-Peak(QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



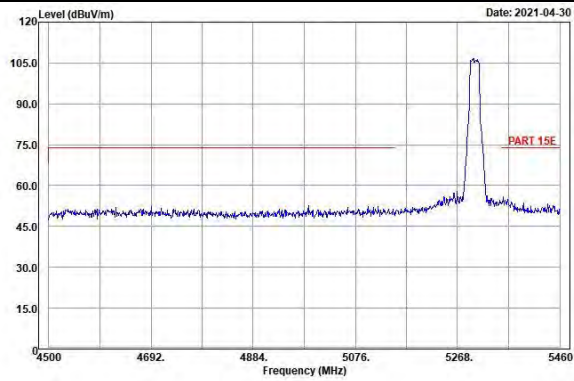
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
112.08	20.5	38.41	-17.91	43.5	-23	112	28	QP
235.2	17.2	34.43	-17.23	46	-28.8	163	32	QP
259.23	20.04	36.73	-16.69	46	-25.96	105	288	QP
339.9	22.04	37.04	-15	46	-23.96	140	156	QP
696.2	24.01	33.27	-9.26	46	-21.99	199	151	QP
786.5	20.35	28.29	-7.94	46	-25.65	154	175	QP
5150	43.2	33.15	10.05	54	-10.8	159	112	Average
5150	53.31	43.26	10.05	74	-20.69	159	112	Peak
5300	101.71	91.65	10.06			159	112	Average
5300	107.43	97.37	10.06			159	112	Peak
5350	46.66	36.43	10.23	54	-7.34	159	112	Average
5350	54.96	44.73	10.23	74	-19.04	159	112	Peak
10600	43.28	27.52	15.76	54	-10.72	231	27	Average
10600	53.38	37.62	15.76	74	-20.62	231	27	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
35.67	24.6	41.98	-17.38	40	-15.4	123	320	QP
203.34	14.17	32.36	-18.19	43.5	-29.33	188	111	QP
258.69	16.53	33.22	-16.69	46	-29.47	158	255	QP
477.8	16.91	29.65	-12.74	46	-29.09	105	164	QP
689.2	19.36	28.67	-9.31	46	-26.64	190	178	QP
752.9	19.43	27.89	-8.46	46	-26.57	154	174	QP
5150	43.28	33.23	10.05	54	-10.72	224	94	Average
5150	52.51	42.46	10.05	74	-21.49	224	94	Peak
5300	101.69	91.63	10.06			224	94	Average
5300	107.48	97.42	10.06			224	94	Peak
5350	46.6	36.37	10.23	54	-7.4	224	94	Average
5350	55.79	45.56	10.23	74	-18.21	224	94	Peak
10600	44.64	28.88	15.76	54	-9.36	194	75	Average
10600	54.82	39.06	15.76	74	-19.18	194	75	Peak

Remarks:

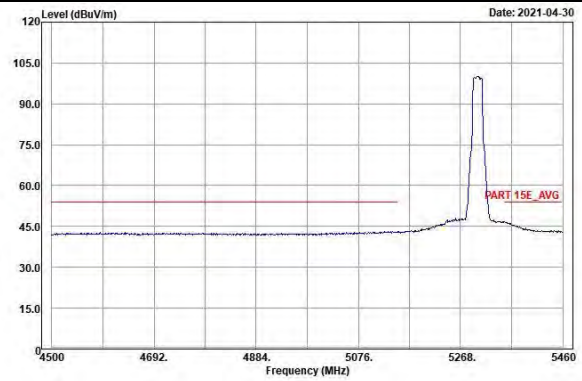
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5300 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 60

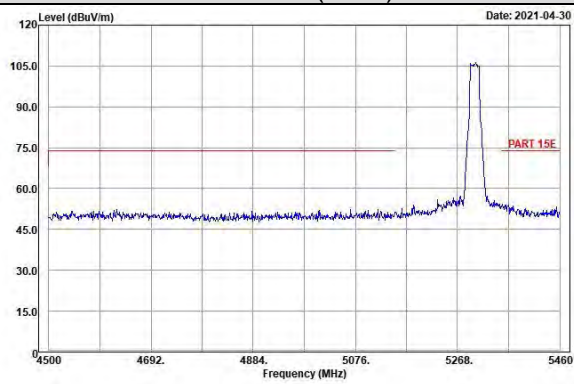
Horizontal (Peak)



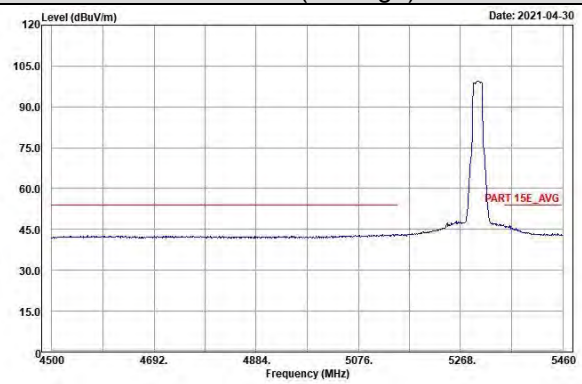
Horizontal (Average)



Vertical (Peak)

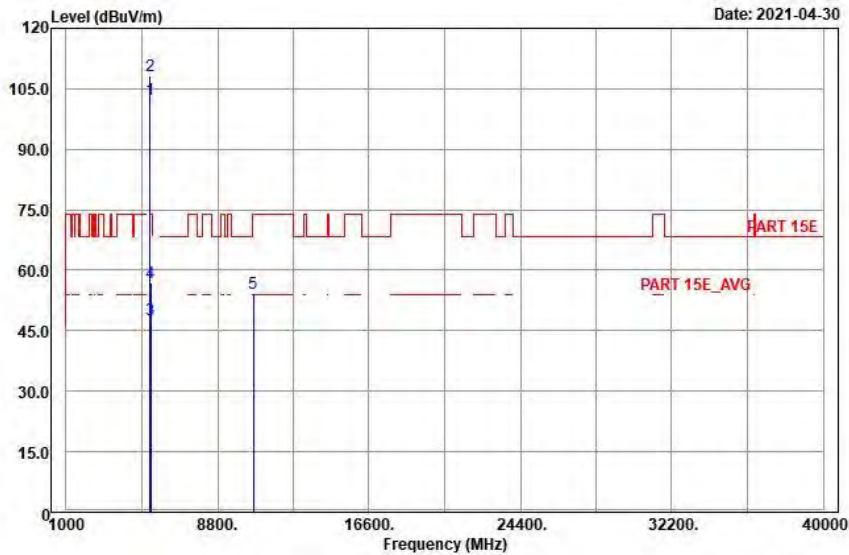


Vertical (Average)

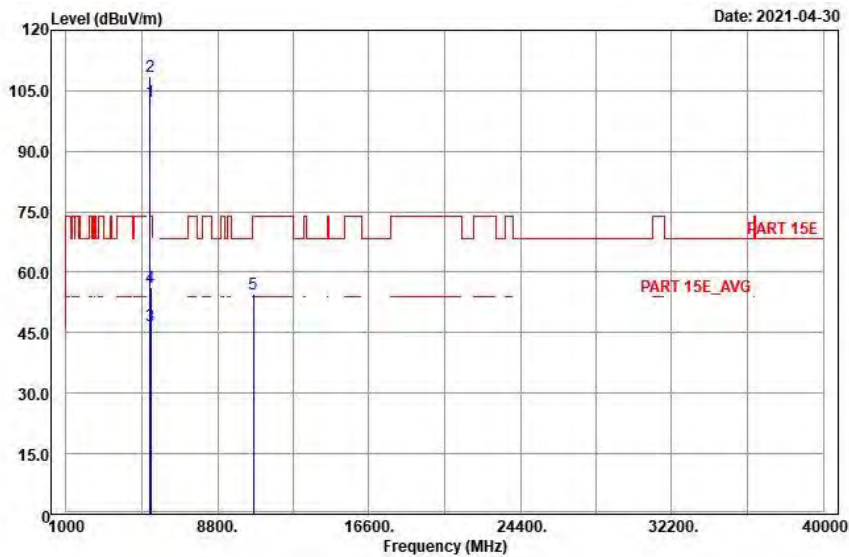


EUT Test Condition		Measurement Detail	
Channel	Channel 64	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



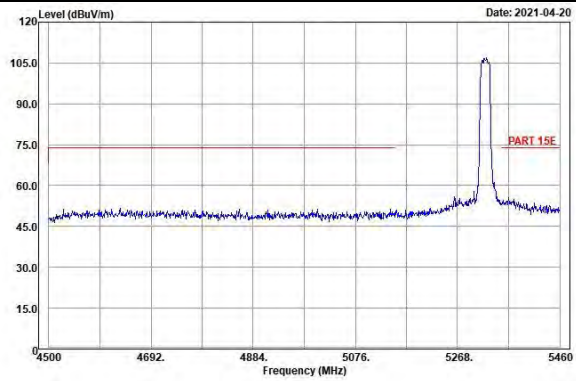
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	102.43	92.34	10.09			158	110	Average
5320	108.2	98.11	10.09			158	110	Peak
5350	47.59	37.36	10.23	54	-6.41	158	110	Average
5350	56.78	46.55	10.23	74	-17.22	158	110	Peak
10640	54.23	38.24	15.99	74	-19.77	215	175	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	102.49	92.4	10.09			212	93	Average
5320	108.69	98.6	10.09			212	93	Peak
5350	46.74	36.51	10.23	54	-7.26	212	93	Average
5350	56.37	46.14	10.23	74	-17.63	212	93	Peak
10640	54.67	38.68	15.99	74	-19.33	167	267	Peak

Remarks:

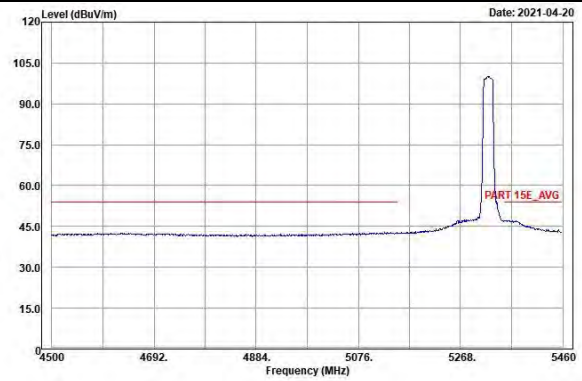
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5320 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 64

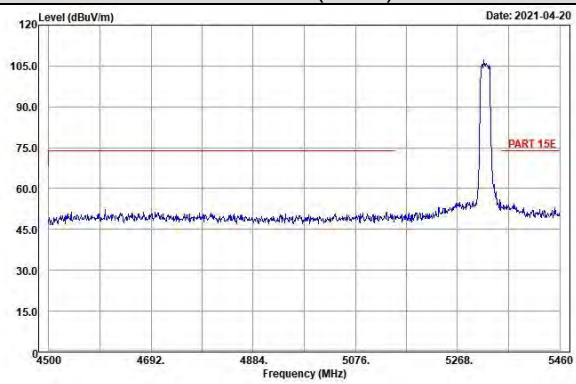
Horizontal (Peak)



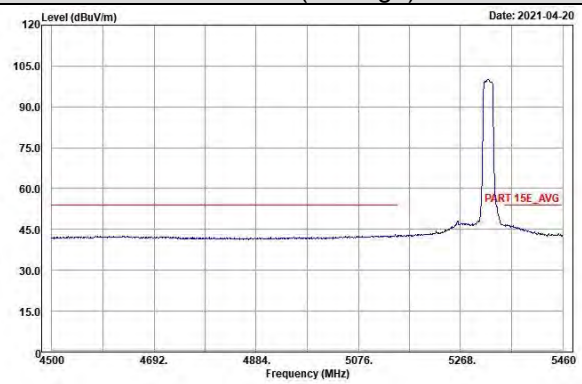
Horizontal (Average)



Vertical (Peak)

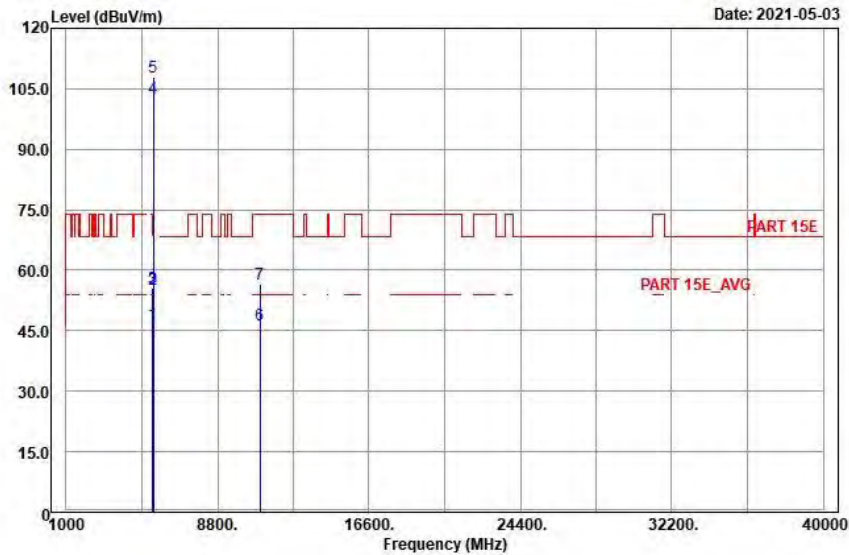


Vertical (Average)

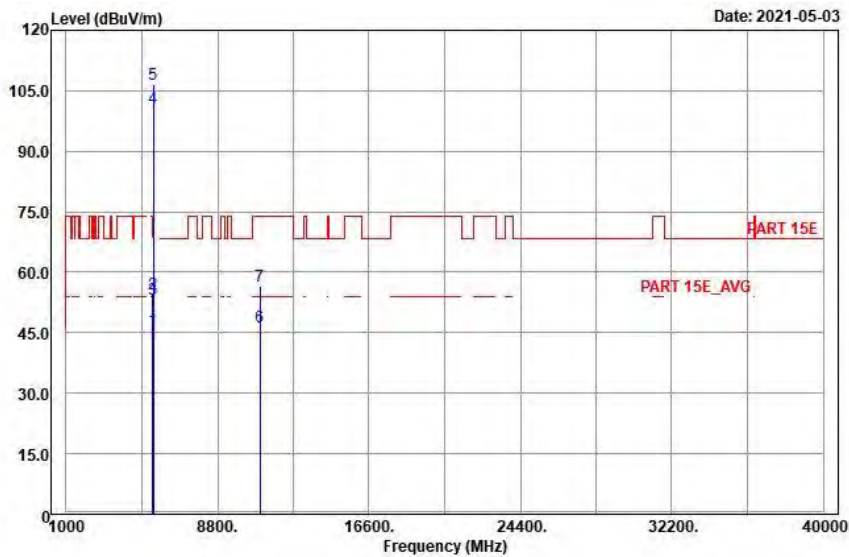


EUT Test Condition		Measurement Detail	
Channel	Channel 100	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



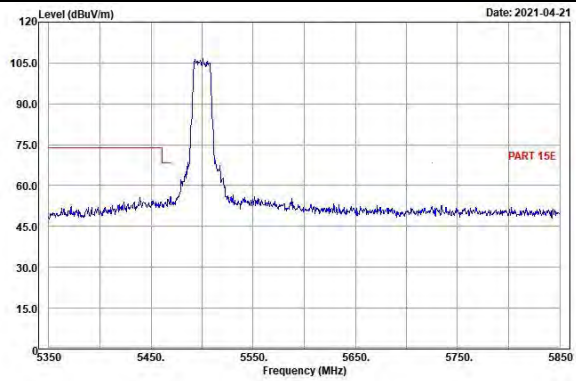
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	46.7	36.19	10.51	54	-7.3	158	110	Average
5460	55.29	44.78	10.51	74	-18.71	158	110	Peak
*5470	55.47	44.94	10.53	68.2	-12.73	158	110	Peak
5500	102.52	91.92	10.6			158	110	Average
5500	108	97.4	10.6			158	110	Peak
11000	46.35	30.22	16.13	54	-7.65	192	116	Average
11000	56.62	40.49	16.13	74	-17.38	192	116	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	45.88	35.37	10.51	54	-8.12	214	88	Average
5460	54.61	44.1	10.51	74	-19.39	214	88	Peak
*5470	53.24	42.71	10.53	68.2	-14.96	214	88	Peak
5500	100.65	90.05	10.6			214	88	Average
5500	106.57	95.97	10.6			214	88	Peak
11000	46.39	30.26	16.13	54	-7.61	132	237	Average
11000	56.58	40.45	16.13	74	-17.42	132	237	Peak

Remarks:

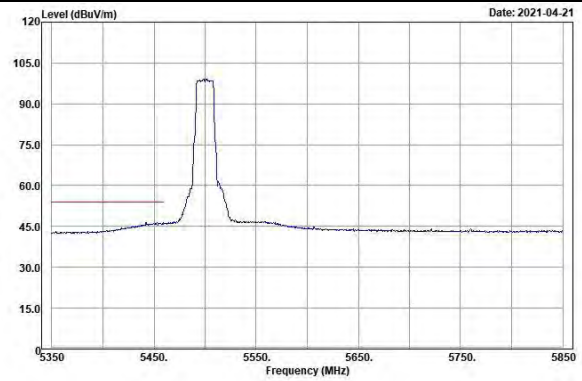
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5500 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 100

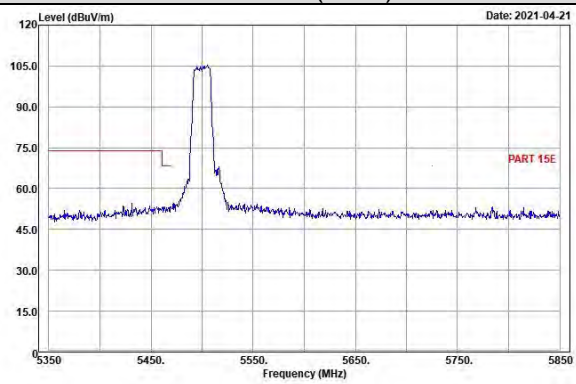
Horizontal (Peak)



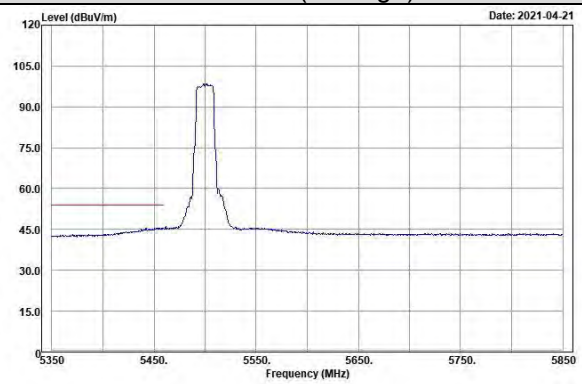
Horizontal (Average)



Vertical (Peak)

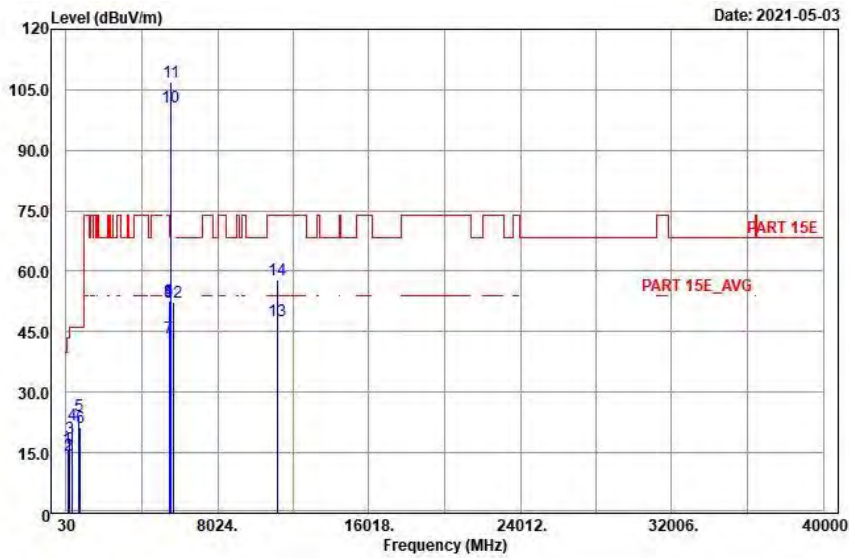


Vertical (Average)

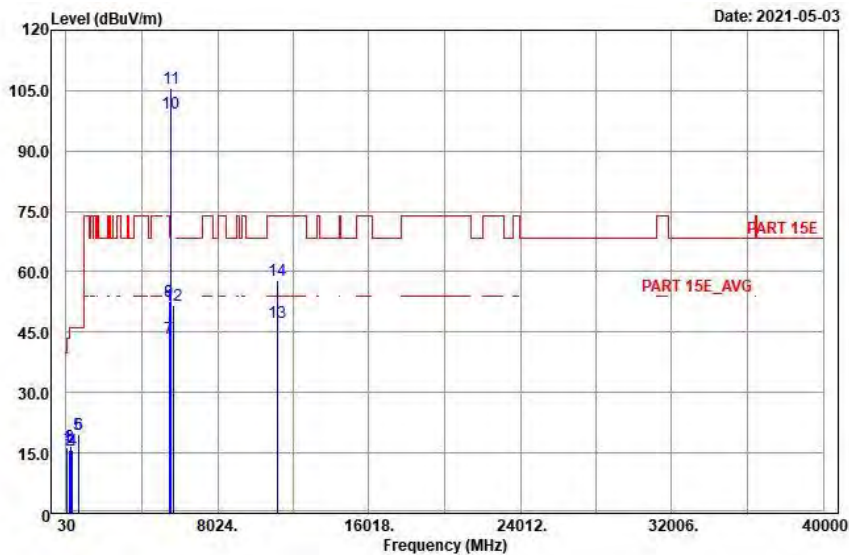


EUT Test Condition		Measurement Detail	
Channel	Channel 116	Frequency Range	30 MHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Above 1GHz: Peak (PK) Average (AV) Below 1GHz: Quasi-Peak(QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



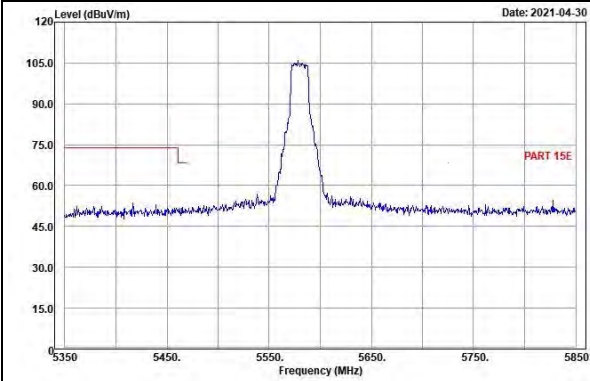
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
103.17	15.87	33.02	-17.15	43.5	-27.63	103	17	QP
175.8	14.34	34.3	-19.96	43.5	-29.16	158	252	QP
220.08	18.56	36.41	-17.85	46	-27.44	118	241	QP
345.5	21.81	36.63	-14.82	46	-24.19	105	244	QP
715.8	24.22	33.13	-8.91	46	-21.78	178	88	QP
782.3	21.27	29.31	-8.04	46	-24.73	183	265	QP
5460	43.57	33.06	10.51	54	-10.43	159	112	Average
5460	52.79	42.28	10.51	74	-21.21	159	112	Peak
*5470	52.4	41.87	10.53	68.2	-15.8	159	112	Peak
5580	100.7	89.99	10.71			159	112	Average
5580	106.82	96.11	10.71			159	112	Peak
*5725	52.46	41.54	10.92	68.2	-15.74	159	112	Peak
11160	47.59	31.23	16.36	54	-6.41	108	134	Average
11160	57.9	41.54	16.36	74	-16.1	108	134	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
70.23	16.22	35.77	-19.55	40	-23.78	170	152	QP
208.2	15.8	33.95	-18.15	43.5	-27.7	111	196	QP
268.68	16.82	33.36	-16.54	46	-29.18	105	255	QP
373.5	15.8	30.15	-14.35	46	-30.2	187	354	QP
657.7	19.59	29.51	-9.92	46	-26.41	144	134	QP
700.4	19.69	28.92	-9.23	46	-26.31	170	17	QP
5460	43.38	32.87	10.51	54	-10.62	255	92	Average
5460	52.74	42.23	10.51	74	-21.26	255	92	Peak
*5470	52.77	42.24	10.53	68.2	-15.43	255	92	Peak
5580	99.56	88.85	10.71			255	92	Average
5580	105.72	95.01	10.71			255	92	Peak
*5725	51.79	40.87	10.92	68.2	-16.41	255	92	Peak
11160	47.38	31.02	16.36	54	-6.62	180	225	Average
11160	57.73	41.37	16.36	74	-16.27	180	225	Peak

Remarks:

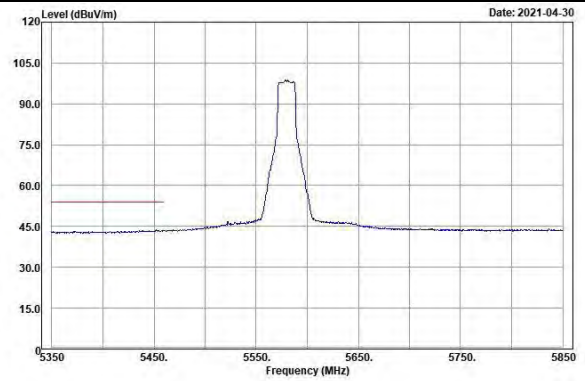
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

Channel 116

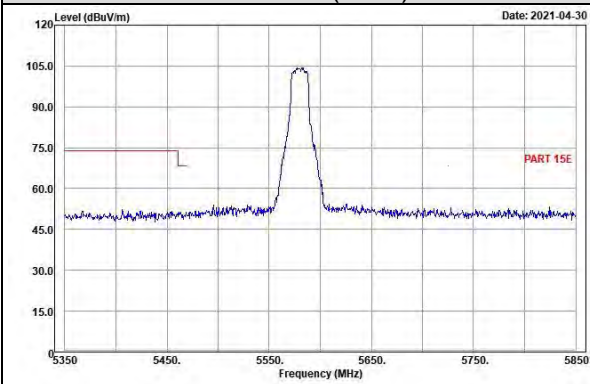
Horizontal (Peak)



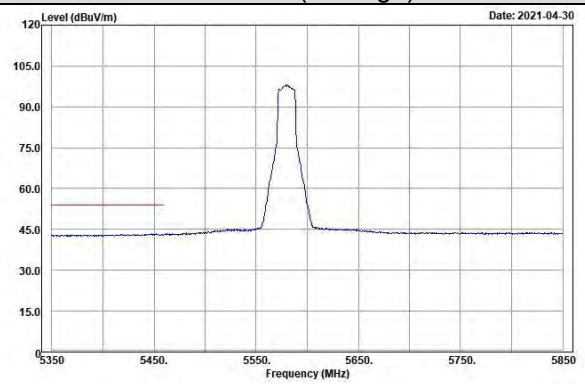
Horizontal (Average)



Vertical (Peak)

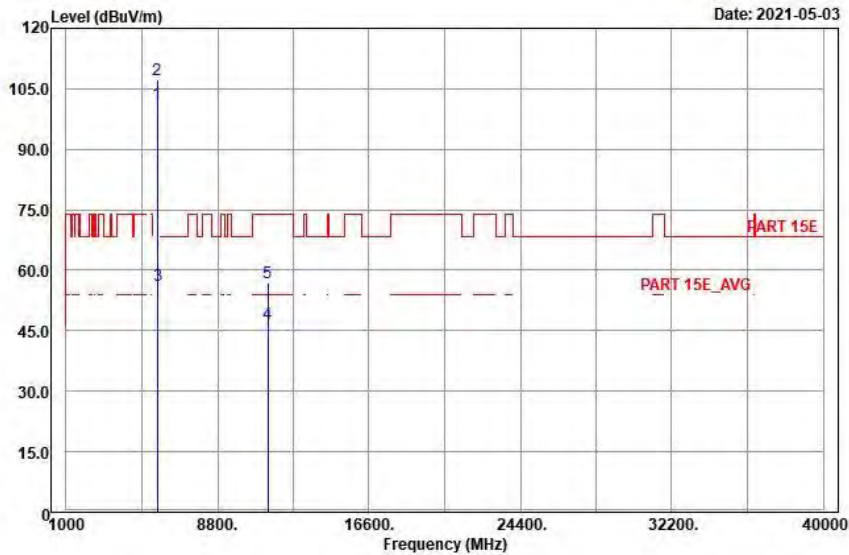


Vertical (Average)

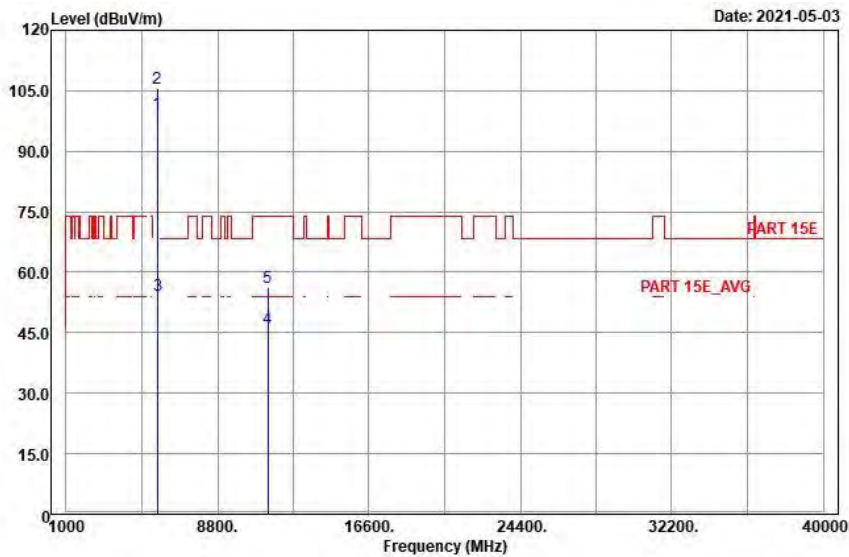


EUT Test Condition		Measurement Detail	
Channel	Channel 140	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical

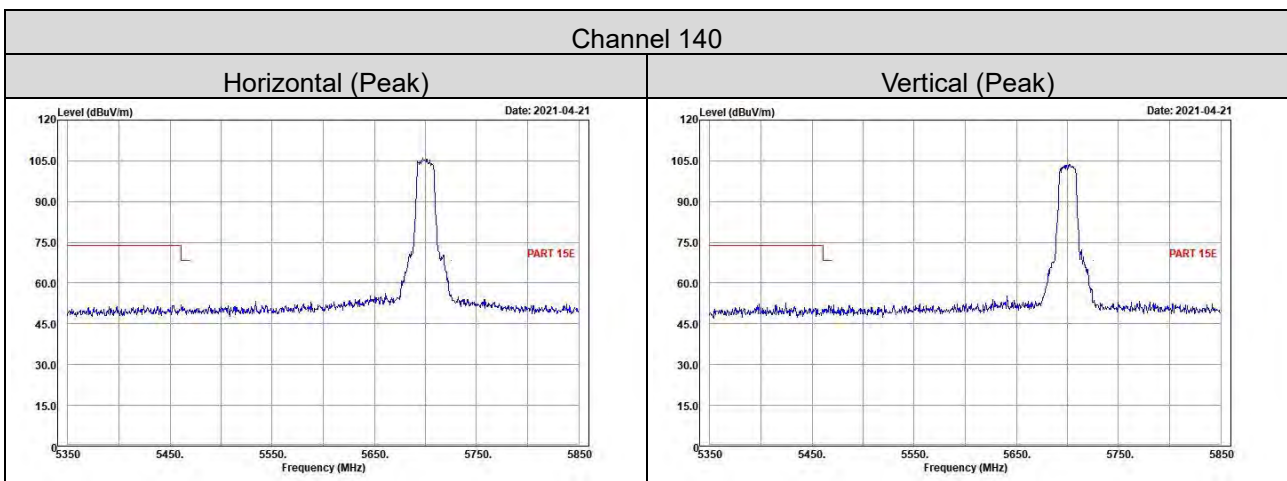


Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5700	101.24	90.29	10.95			148	110	Average
5700	107.33	96.38	10.95			148	110	Peak
*5725	56.17	45.25	10.92	68.2	-12.03	148	110	Peak
11400	46.81	30.62	16.19	54	-7.19	100	360	Average
11400	56.97	40.78	16.19	74	-17.03	100	360	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	99.37	88.42	10.95			230	80	Average
5700	105.75	94.8	10.95			230	80	Peak
*5725	54.29	43.37	10.92	68.2	-13.91	230	80	Peak
11400	46.02	29.83	16.19	54	-7.98	162	149	Average
11400	56.24	40.05	16.19	74	-17.76	162	149	Peak

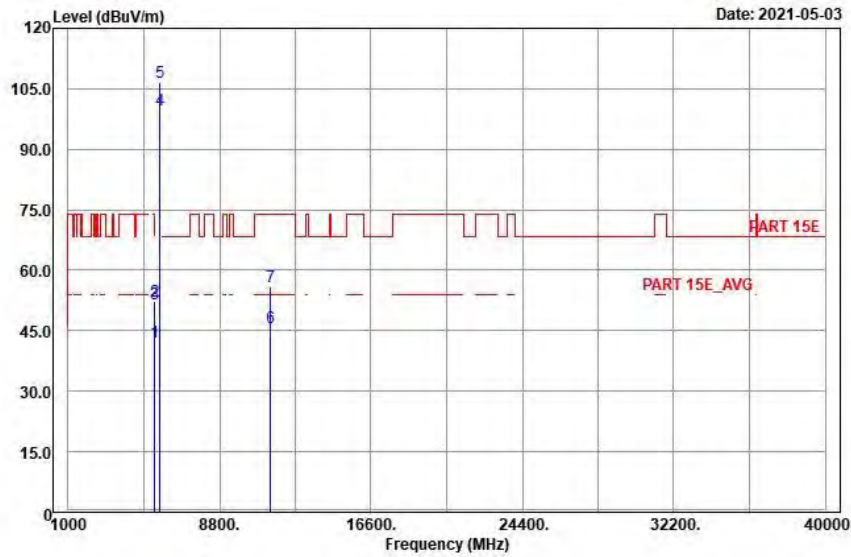
Remarks:

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

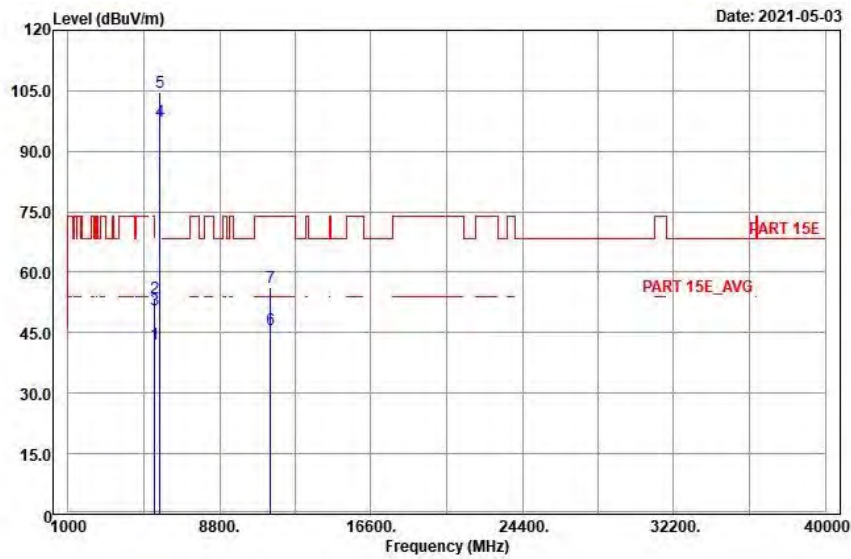


EUT Test Condition		Measurement Detail	
Channel	Channel 144	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



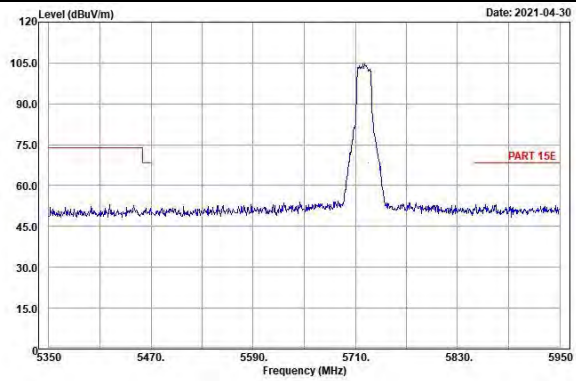
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	42.17	31.66	10.51	54	-11.83	184	110	Average
5460	52.32	41.81	10.51	74	-21.68	184	110	Peak
*5470	51.56	41.03	10.53	68.2	-16.64	184	110	Peak
5720	99.62	88.7	10.92			184	110	Average
5720	106.65	95.73	10.92			184	110	Peak
11440	45.84	29.55	16.29	54	-8.16	236	170	Average
11440	56.04	39.75	16.29	74	-17.96	236	170	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	42.16	31.65	10.51	54	-11.84	211	80	Average
5460	53.55	43.04	10.51	74	-20.45	211	80	Peak
*5470	50.54	40.01	10.53	68.2	-17.66	211	80	Peak
5720	97.58	86.66	10.92			211	80	Average
5720	104.59	93.67	10.92			211	80	Peak
11440	45.83	29.54	16.29	54	-8.17	191	131	Average
11440	56.16	39.87	16.29	74	-17.84	191	131	Peak

Remarks:

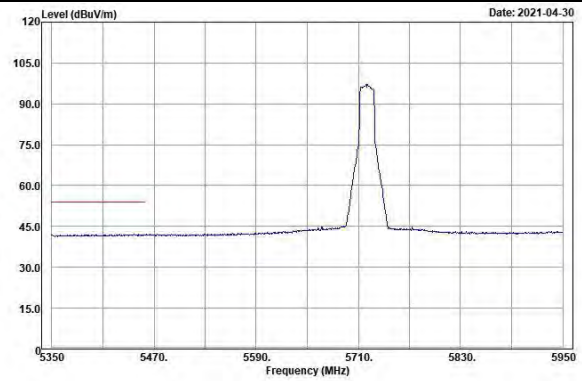
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5720 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 144

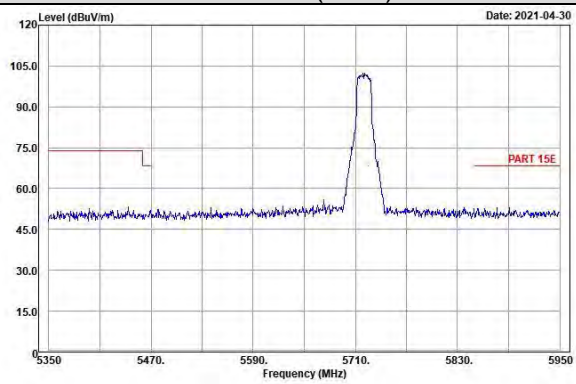
Horizontal (Peak)



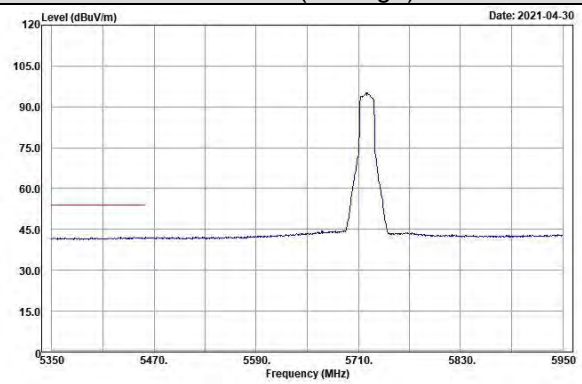
Horizontal (Average)



Vertical (Peak)

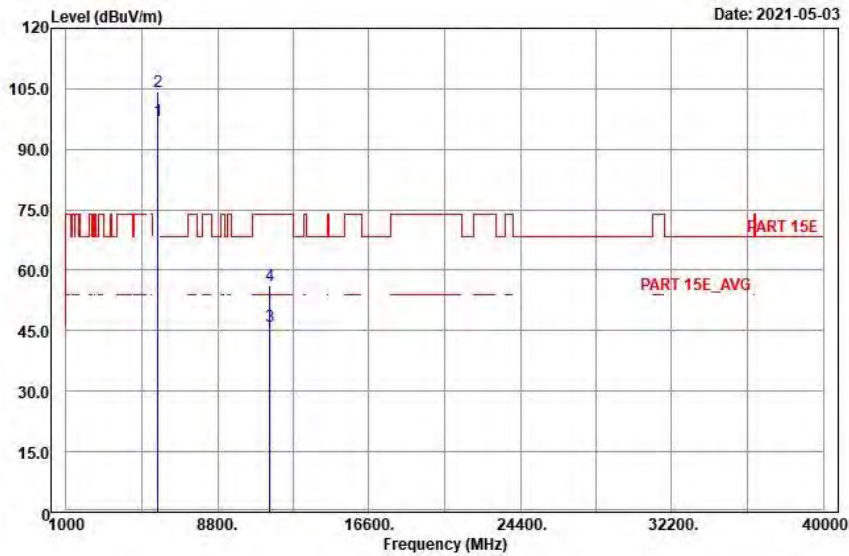


Vertical (Average)

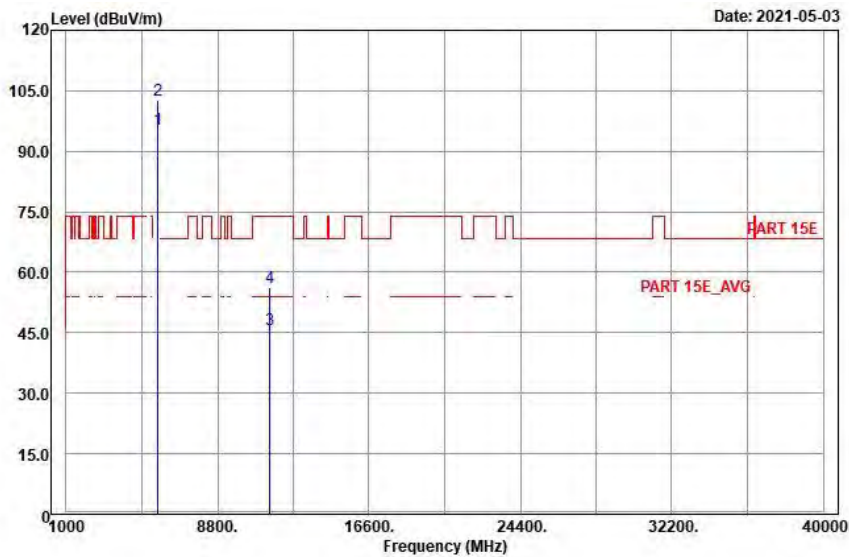


EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

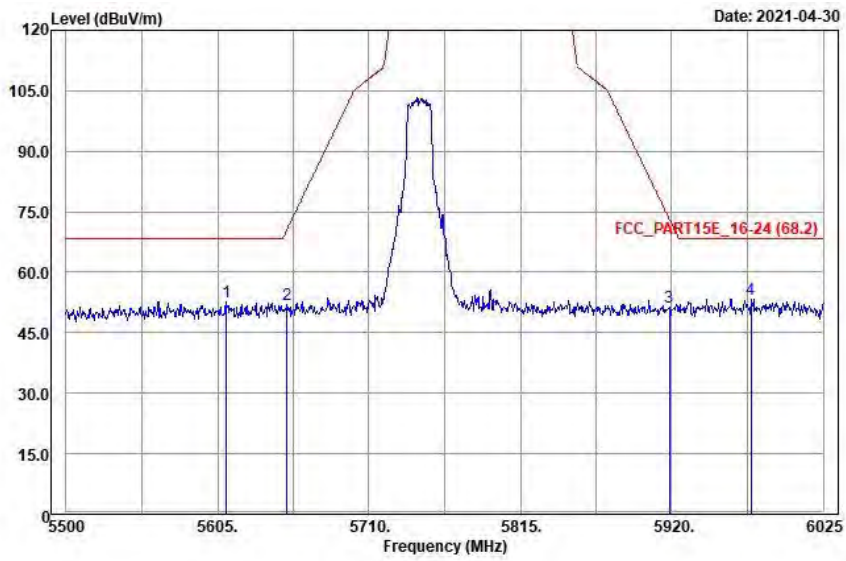
<Spurious Emission>
Horizontal



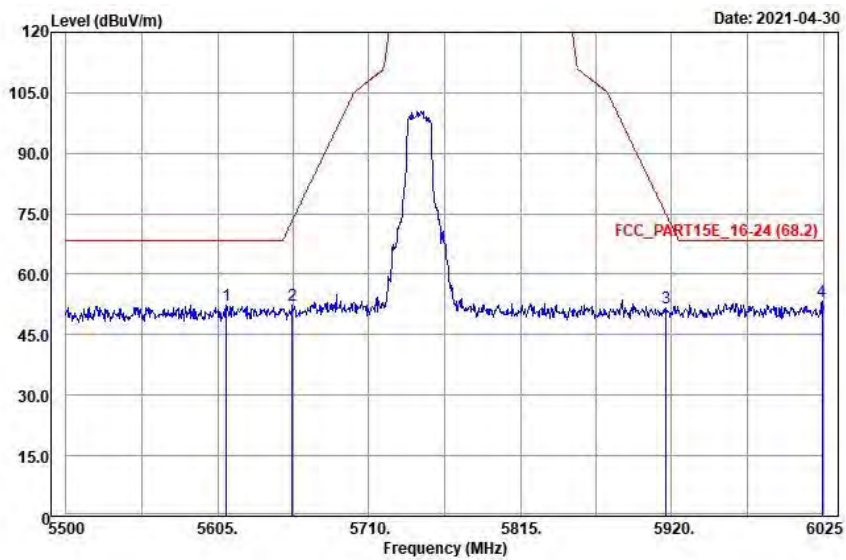
Vertical



<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	97.14	86.26	10.88			184	136	Average
5745	104.26	93.38	10.88			184	136	Peak
11490	46.11	29.64	16.47	54	-7.89	284	236	Average
11490	56.36	39.89	16.47	74	-17.64	284	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
5745	95.53	84.65	10.88			211	80	Average
5745	102.78	91.9	10.88			211	80	Peak
11490	45.91	29.44	16.47	54	-8.09	132	235	Average
11490	56.29	39.82	16.47	74	-17.71	132	235	Peak

<Out of Band Emission (OOBE)>

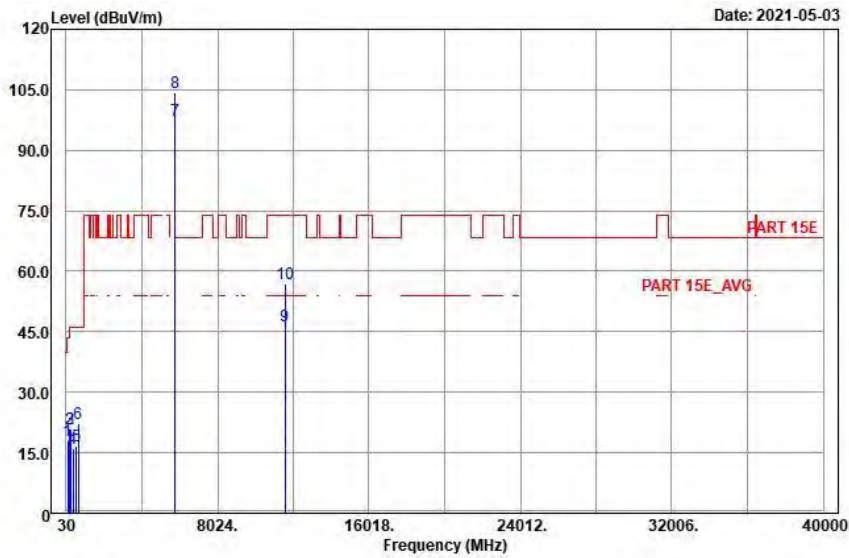
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5611.3	52.62	41.85	10.77	68.2	-15.58	184	136	Peak
5653.3	51.85	40.98	10.87	70.64	-18.79	184	136	Peak
5918.425	51.47	40.38	11.09	73.07	-21.6	184	136	Peak
*5975.125	53.41	42.15	11.26	68.2	-14.79	184	136	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5611.3	52.27	41.5	10.77	68.2	-15.93	211	80	Peak
5656.975	52.17	41.3	10.87	73.36	-21.19	211	80	Peak
5916.325	51.74	40.65	11.09	74.62	-22.88	211	80	Peak
*6024.475	53.22	41.85	11.37	68.2	-14.98	211	80	Peak

Remarks:

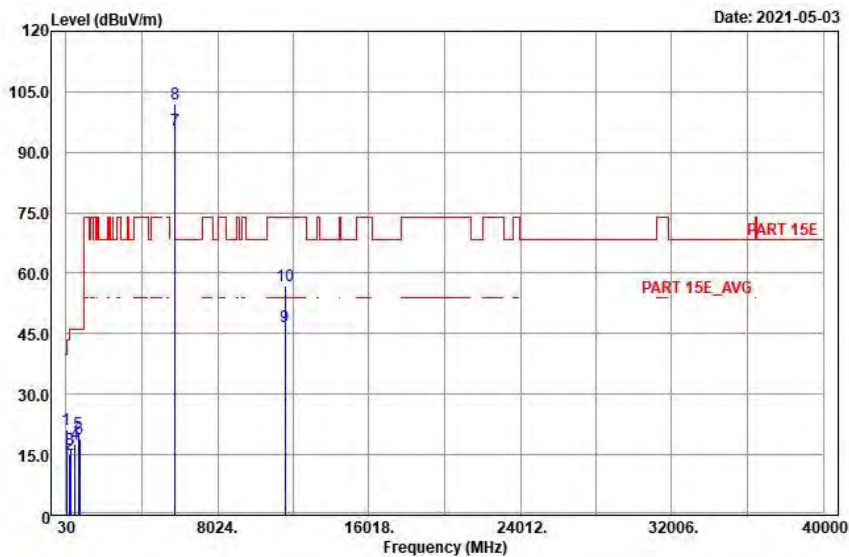
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5745 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 157	Frequency Range	30 MHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Above 1GHz: Peak (PK) Average (AV) Below 1GHz: Quasi-Peak(QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

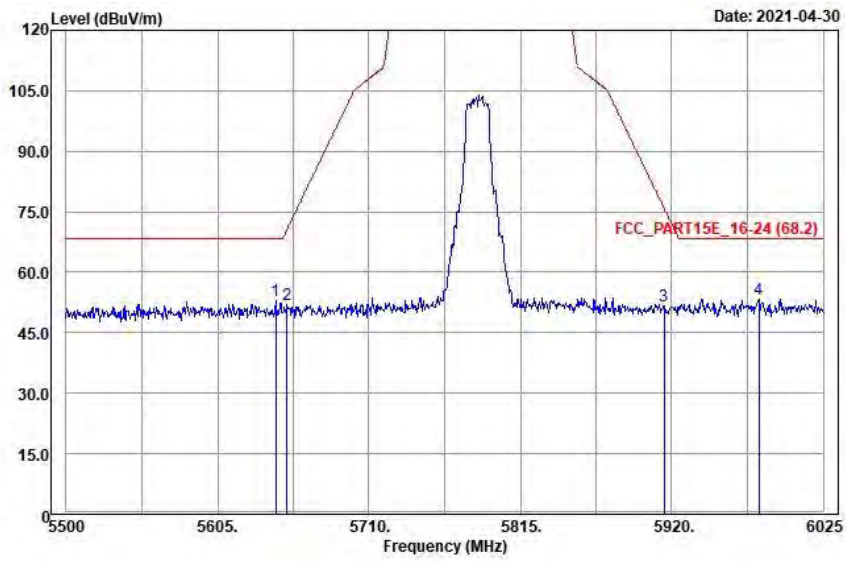
**<Spurious Emission>
Horizontal**



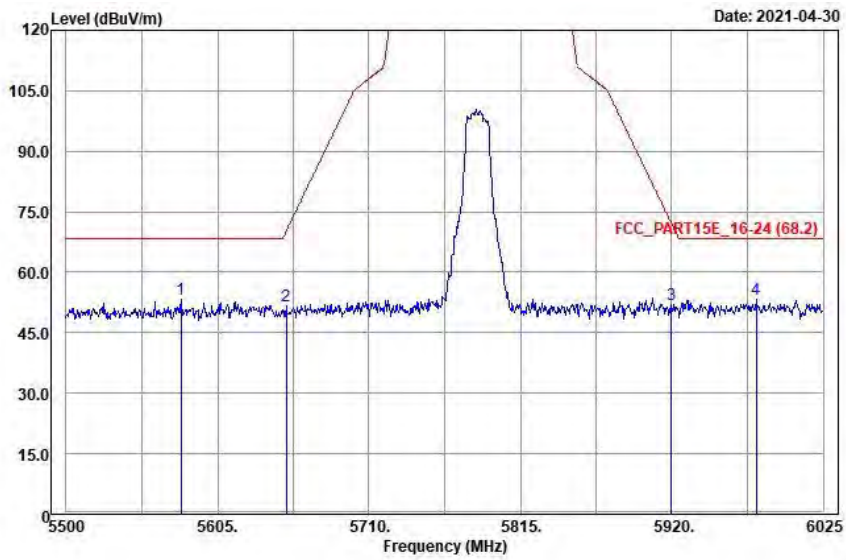
Vertical



**<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
109.38	18.08	35.63	-17.55	43.5	-25.42	120	203	QP
212.25	20.87	38.94	-18.07	43.5	-22.63	155	254	QP
266.52	21.07	37.64	-16.57	46	-24.93	105	121	QP
377.7	16.14	30.43	-14.29	46	-29.86	134	160	QP
570.9	16.61	27.73	-11.12	46	-29.39	174	199	QP
685	22.33	31.77	-9.44	46	-23.67	124	222	QP
5785	97.59	86.78	10.81			184	136	Average
5785	104.23	93.42	10.81			184	136	Peak
11570	46.48	29.99	16.49	54	-7.52	162	229	Average
11570	56.79	40.3	16.49	74	-17.21	162	229	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
53.49	21.26	36.62	-15.36	40	-18.74	149	153	QP
207.66	15.09	33.25	-18.16	43.5	-28.41	115	241	QP
259.77	16.39	33.07	-16.68	46	-29.61	105	256	QP
491.1	17.72	30.21	-12.49	46	-28.28	149	111	QP
682.9	20.31	29.78	-9.47	46	-25.69	105	187	QP
745.9	19.06	27.6	-8.54	46	-26.94	159	256	QP
5785	95.33	84.52	10.81			211	80	Average
5785	102.07	91.26	10.81			211	80	Peak
11570	46.69	30.2	16.49	54	-7.31	291	170	Average
11570	56.88	40.39	16.49	74	-17.12	291	170	Peak

<Out of Band Emission (OOBE)>

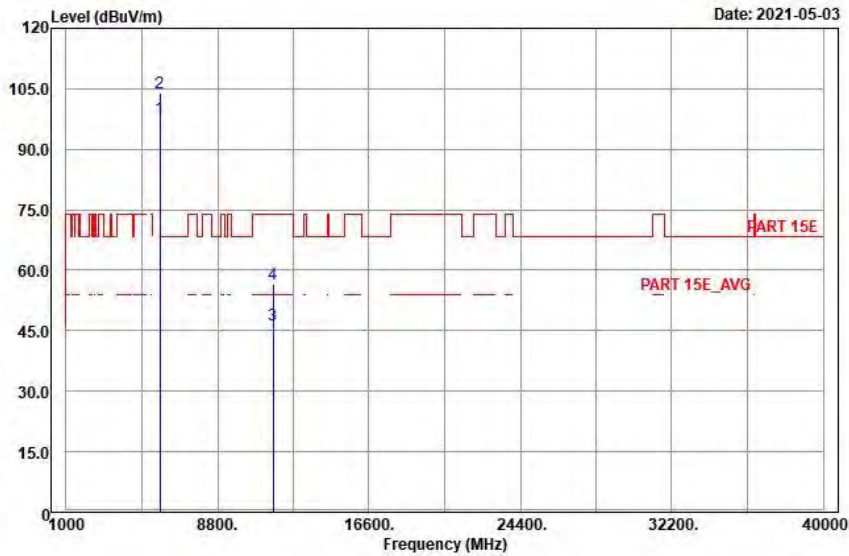
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5645.425	52.84	42.01	10.83	68.2	-15.36	184	136	Peak
5653.3	51.93	41.06	10.87	70.64	-18.71	184	136	Peak
5914.75	51.71	40.64	11.07	75.78	-24.07	184	136	Peak
*5980.375	53.4	42.14	11.26	68.2	-14.8	184	136	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5579.8	53.3	42.59	10.71	68.2	-14.9	211	80	Peak
5652.775	51.58	40.71	10.87	70.25	-18.67	211	80	Peak
5920	52.11	41.02	11.09	71.9	-19.79	211	80	Peak
*5978.8	53.16	41.9	11.26	68.2	-15.04	211	80	Peak

Remarks:

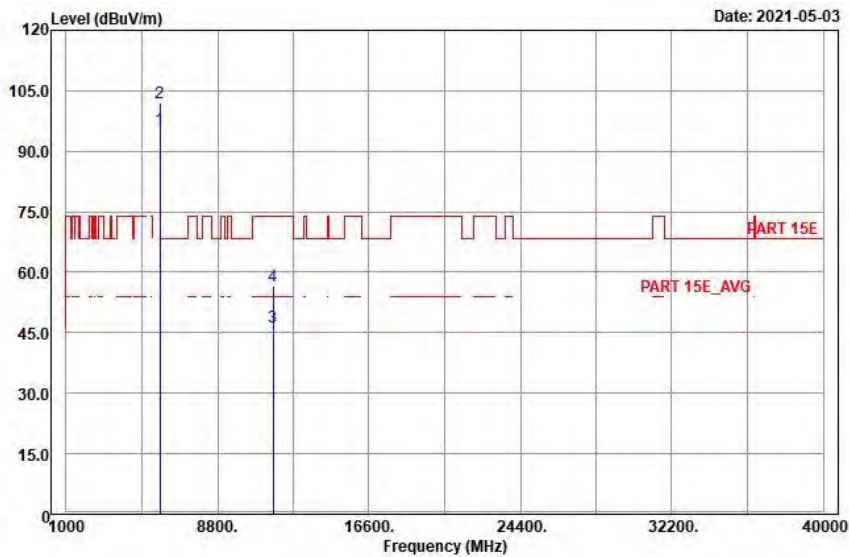
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5785 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

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	Karl Lee, Charles Hsiao

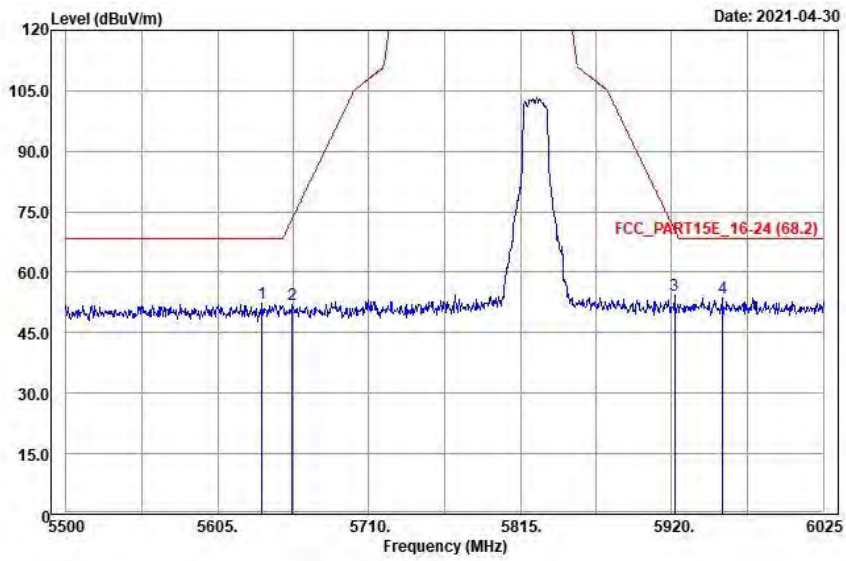
<Spurious Emission>
Horizontal



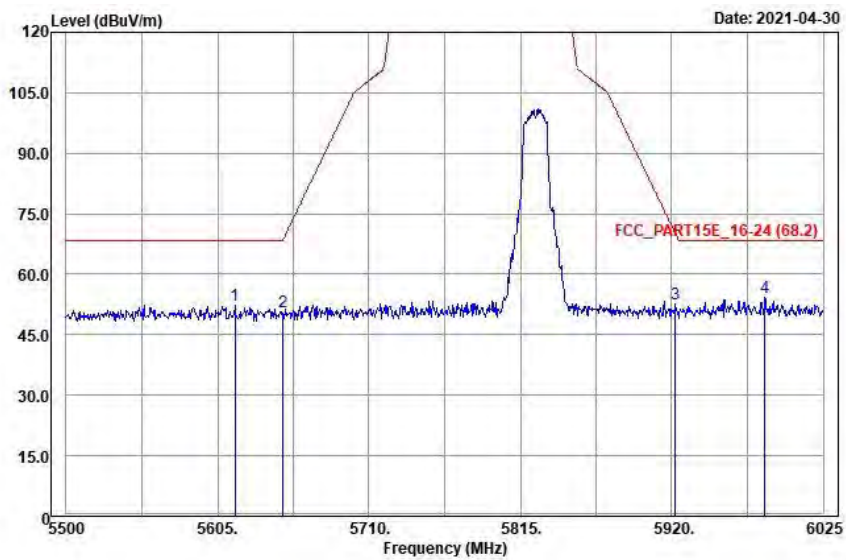
Vertical



**<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	97.66	86.78	10.88			184	136	Average
5825	104.07	93.19	10.88			184	136	Peak
11650	46.35	29.57	16.78	54	-7.65	172	38	Average
11650	56.67	39.89	16.78	74	-17.33	172	38	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	95.48	84.6	10.88			211	129	Average
5825	102.11	91.23	10.88			211	129	Peak
11650	46.44	29.66	16.78	54	-7.56	217	82	Average
11650	56.58	39.8	16.78	74	-17.42	217	82	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
*5635.975	52.18	41.35	10.83	68.2	-16.02	184	136	Peak
5656.975	52.14	41.27	10.87	73.36	-21.22	184	136	Peak
5922.1	54.3	43.19	11.11	70.35	-16.05	184	136	Peak
*5955.175	53.76	42.57	11.19	68.2	-14.44	184	136	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5617.075	52.3	41.51	10.79	68.2	-15.9	211	129	Peak
5650.45	50.78	39.91	10.87	68.53	-17.75	211	129	Peak
5922.625	52.6	41.49	11.11	69.96	-17.36	211	129	Peak
*5984.575	54.25	42.99	11.26	68.2	-13.95	211	129	Peak

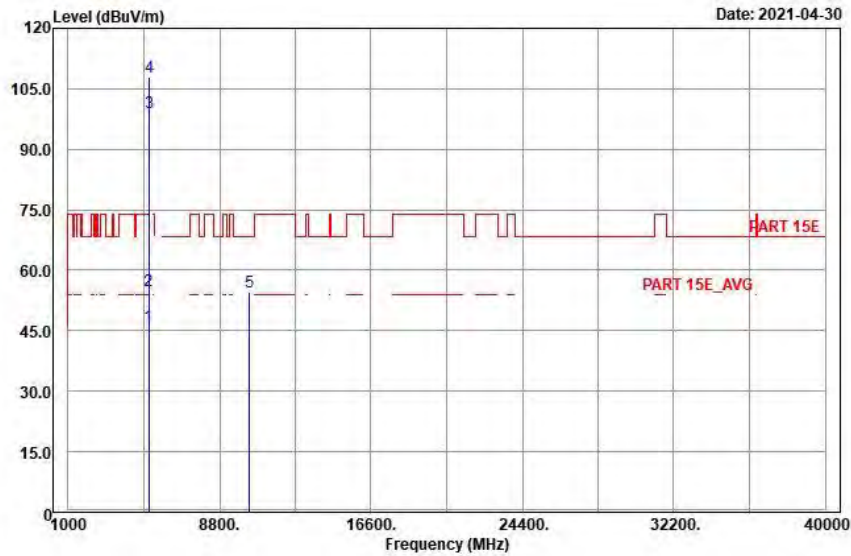
Remarks:

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.

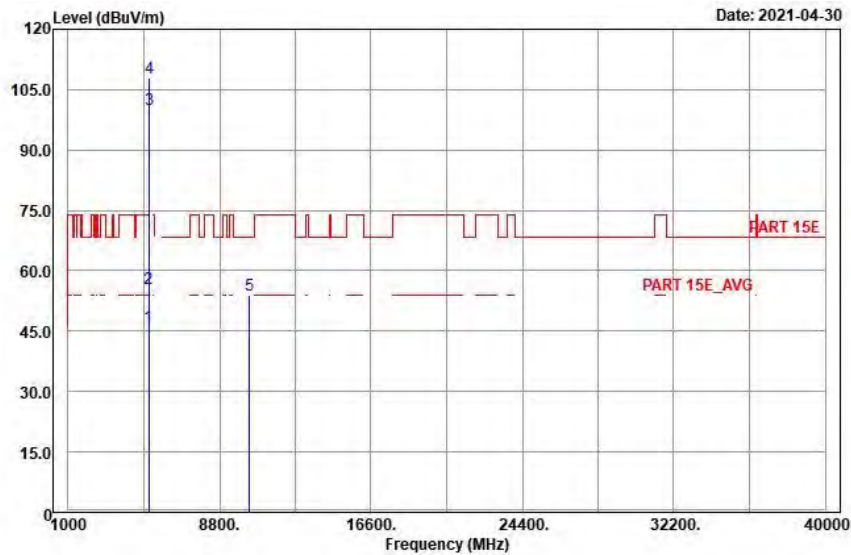
802.11ac (VHT20)

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	Karl Lee, Charles Hsiao

Horizontal



Vertical



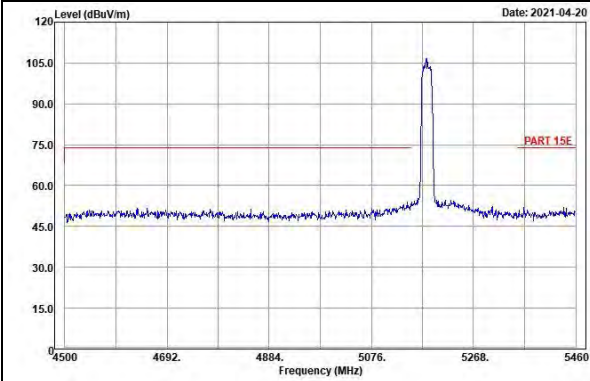
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	46.16	36.11	10.05	54	-7.84	162	146	Average
5150	54.94	44.89	10.05	74	-19.06	162	146	Peak
5180	99.23	89.11	10.12			162	146	Average
5180	107.74	97.62	10.12			162	146	Peak
*10360	54.6	38.58	16.02	68.2	-13.6	222	272	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	46.25	36.2	10.05	54	-7.75	209	93	Average
5150	55.43	45.38	10.05	74	-18.57	209	93	Peak
5180	100.07	89.95	10.12			209	93	Average
5180	107.75	97.63	10.12			209	93	Peak
*10360	53.91	37.89	16.02	68.2	-14.29	116	27	Peak

Remarks:

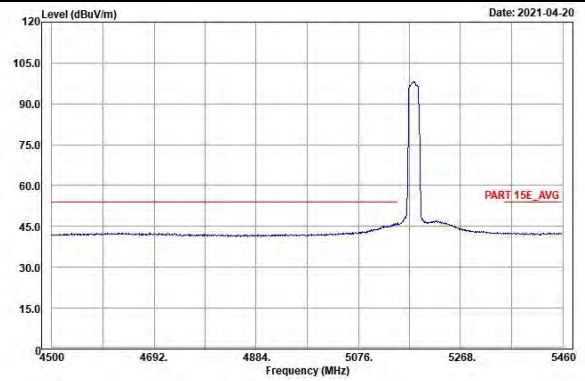
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5180 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 36

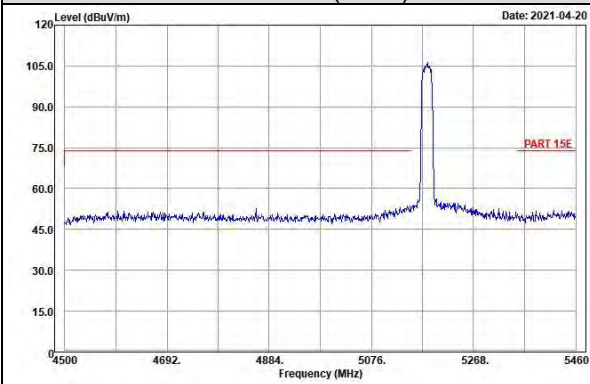
Horizontal (Peak)



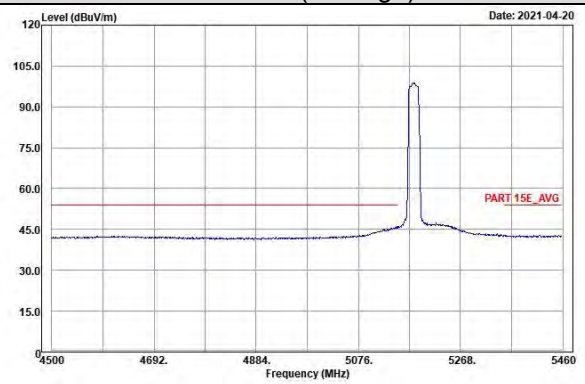
Horizontal (Average)



Vertical (Peak)

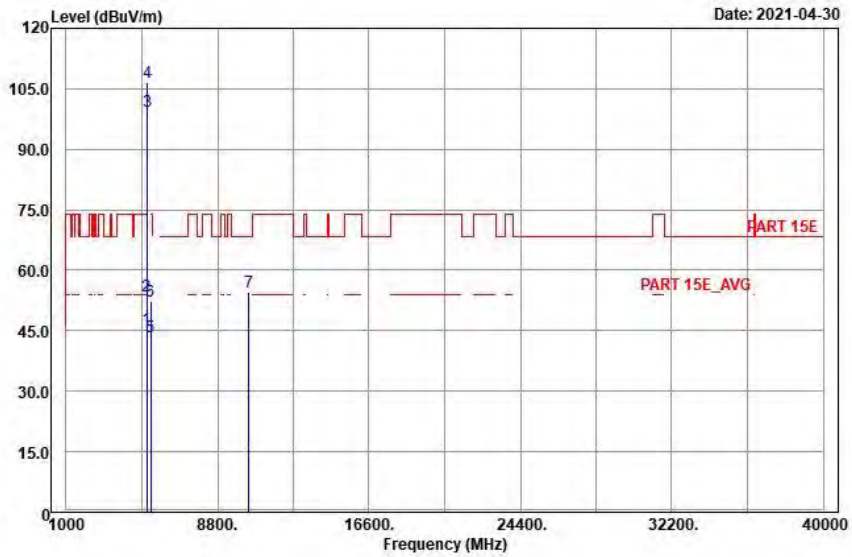


Vertical (Average)

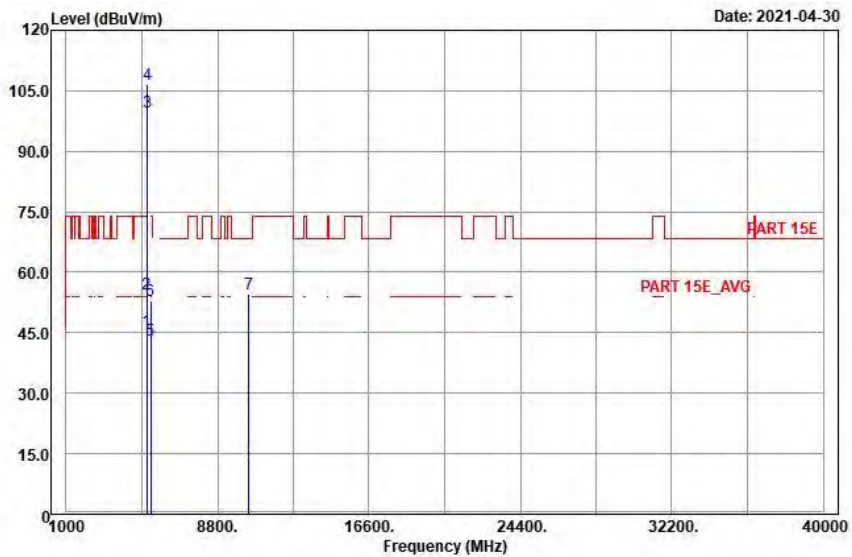


EUT Test Condition		Measurement Detail	
Channel	Channel 40	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



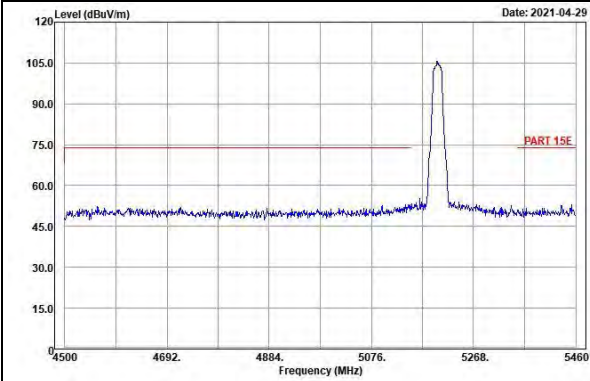
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	45.35	35.3	10.05	54	-8.65	134	146	Average
5150	53.65	43.6	10.05	74	-20.35	134	146	Peak
5200	99.43	89.27	10.16			134	146	Average
5200	106.59	96.43	10.16			134	146	Peak
5350	43.36	33.13	10.23	54	-10.64	134	146	Average
5350	52.43	42.2	10.23	74	-21.57	134	146	Peak
*10400	54.6	38.42	16.18	68.2	-13.6	118	227	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	45.57	35.52	10.05	54	-8.43	183	93	Average
5150	54.48	44.43	10.05	74	-19.52	183	93	Peak
5200	99.8	89.64	10.16			183	93	Average
5200	106.69	96.53	10.16			183	93	Peak
5350	43.23	33	10.23	54	-10.77	183	93	Average
5350	53.05	42.82	10.23	74	-20.95	183	93	Peak
*10400	54.53	38.35	16.18	68.2	-13.67	146	356	Peak

Remarks:

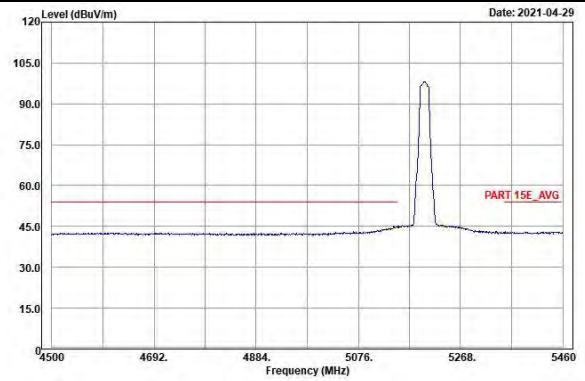
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5200 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 40

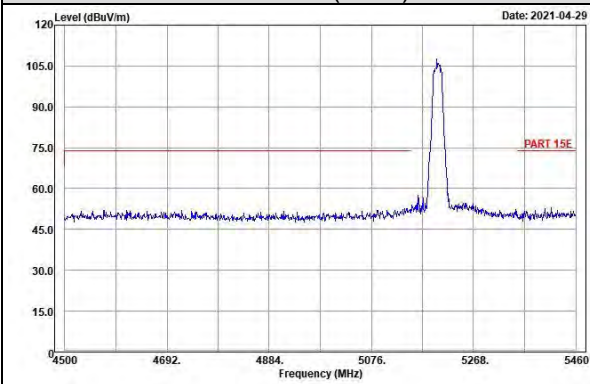
Horizontal (Peak)



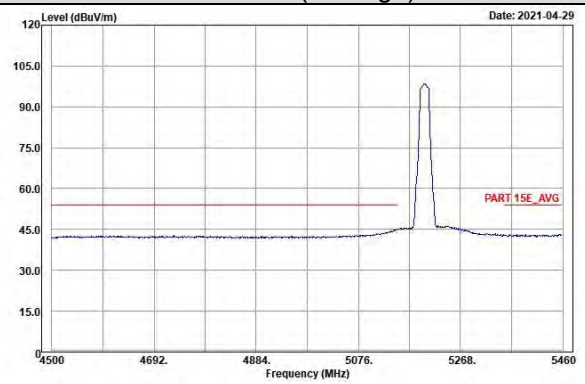
Horizontal (Average)



Vertical (Peak)

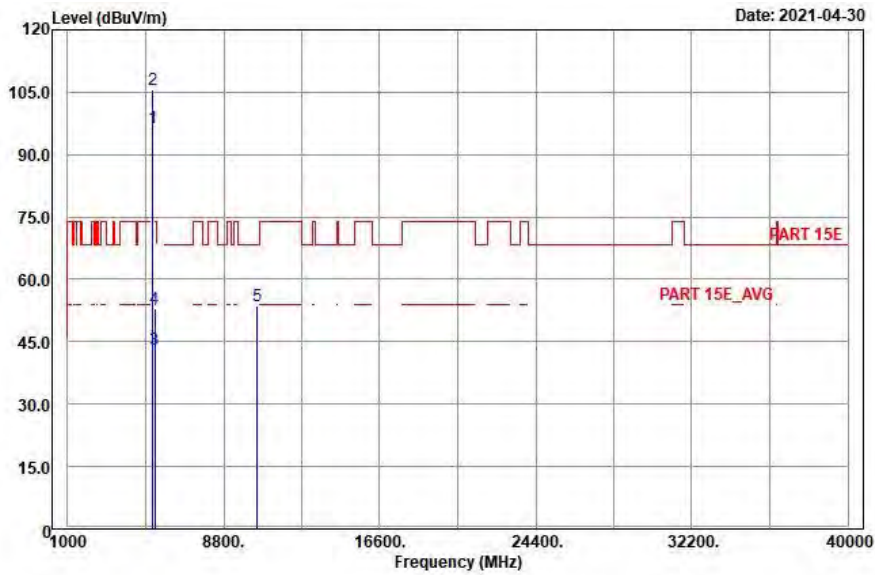


Vertical (Average)

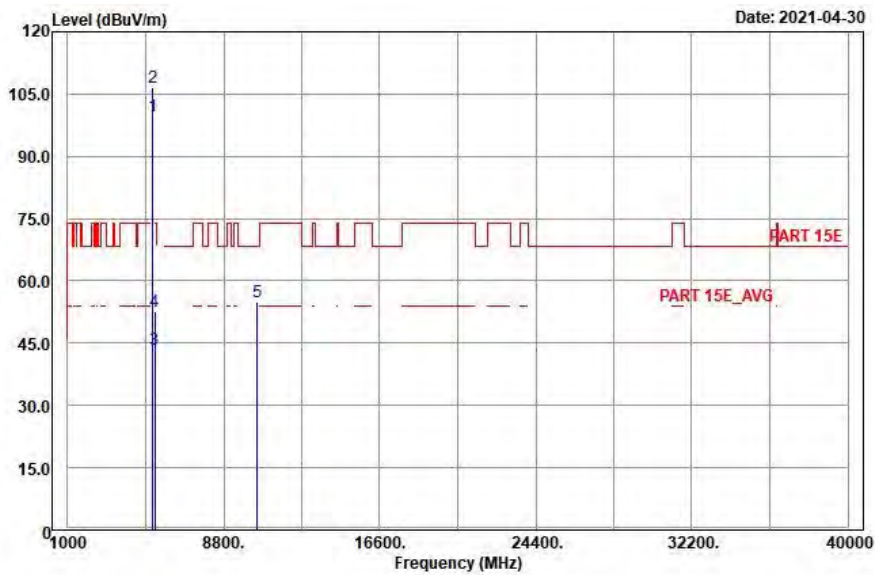


EUT Test Condition		Measurement Detail	
Channel	Channel 48	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



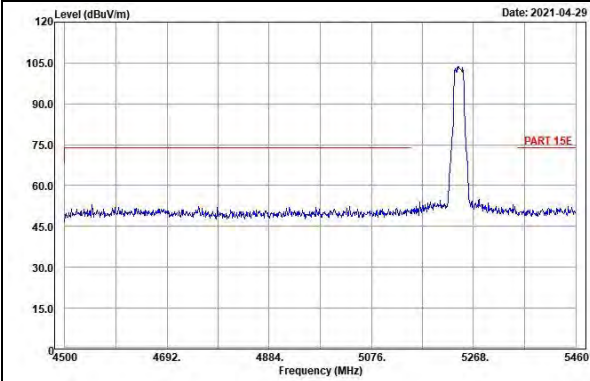
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5240	96.48	86.34	10.14			134	146	Average
5240	105.73	95.59	10.14			134	146	Peak
5350	43.17	32.94	10.23	54	-10.83	134	146	Average
5350	52.87	42.64	10.23	74	-21.13	134	146	Peak
*10480	53.6	37.7	15.9	68.2	-14.6	314	118	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	99.62	89.48	10.14			183	93	Average
5240	106.45	96.31	10.14			183	93	Peak
5350	43.4	33.17	10.23	54	-10.6	183	93	Average
5350	52.66	42.43	10.23	74	-21.34	183	93	Peak
*10480	54.88	38.98	15.9	68.2	-13.32	153	28	Peak

Remarks:

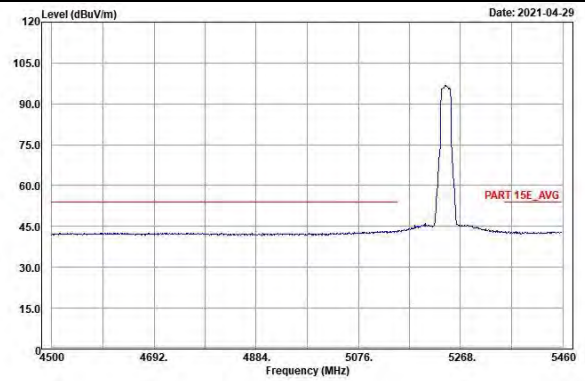
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5240 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 48

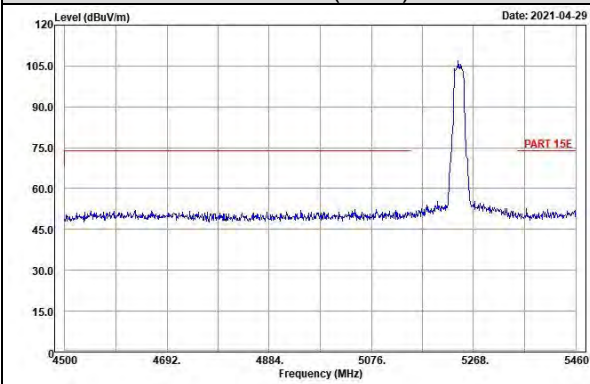
Horizontal (Peak)



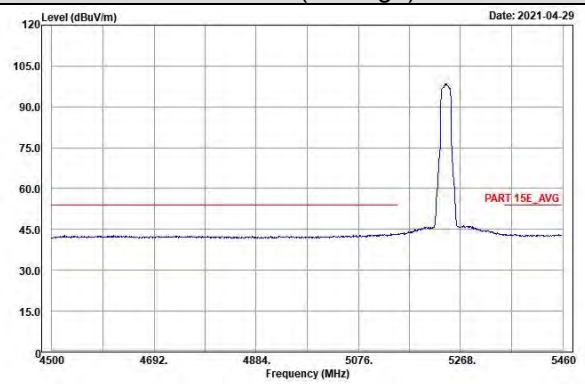
Horizontal (Average)



Vertical (Peak)

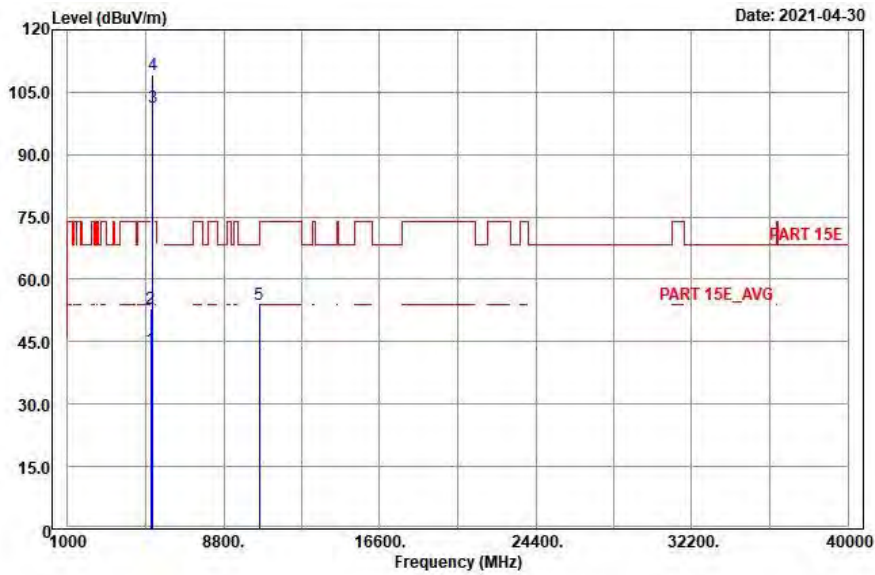


Vertical (Average)

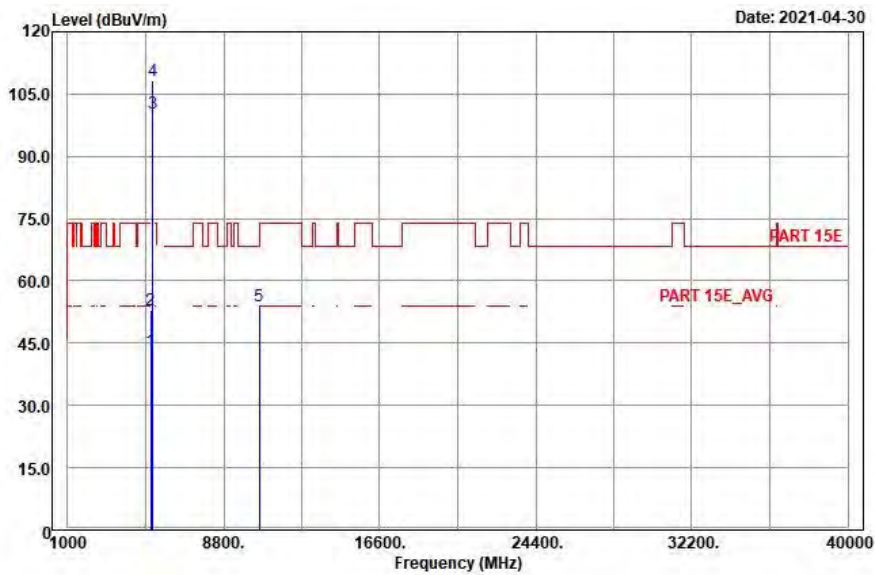


EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



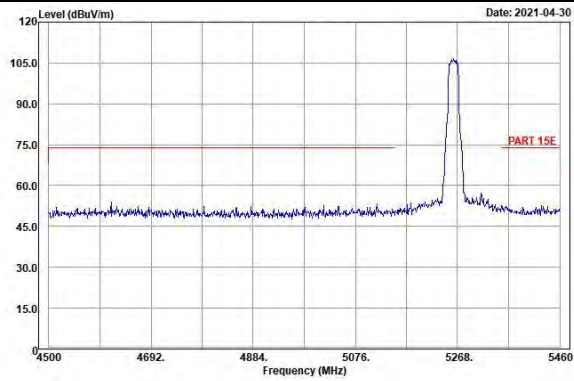
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	43.27	33.22	10.05	54	-10.73	159	112	Average
5150	52.89	42.84	10.05	74	-21.11	159	112	Peak
5260	101.4	91.28	10.12			159	112	Average
5260	109.22	99.1	10.12			159	112	Peak
*10580	53.89	38.18	15.71	68.2	-14.31	211	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
5150	43.32	33.27	10.05	54	-10.68	224	94	Average
5150	53.01	42.96	10.05	74	-20.99	224	94	Peak
5260	100.41	90.29	10.12			224	94	Average
5260	108.38	98.26	10.12			224	94	Peak
*10580	53.83	38.12	15.71	68.2	-14.37	147	290	Peak

Remarks:

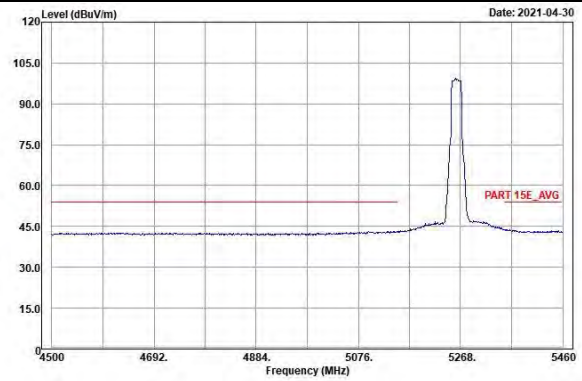
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5260 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 52

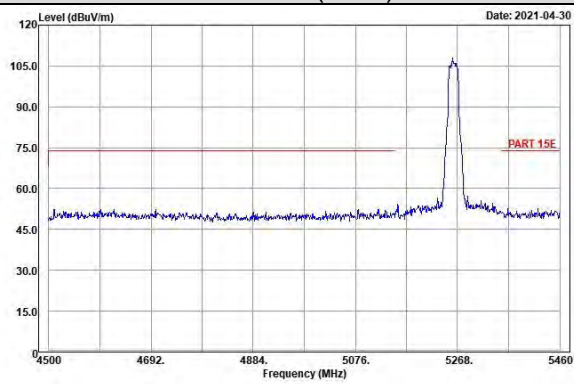
Horizontal (Peak)



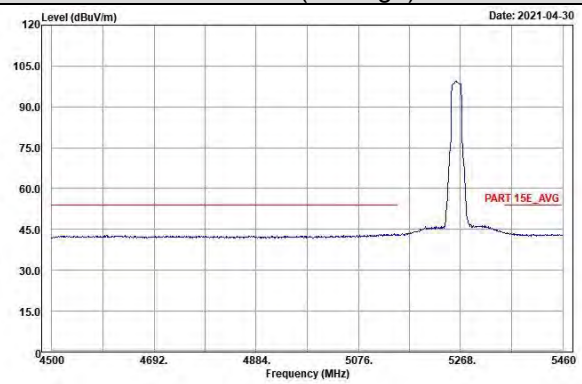
Horizontal (Average)



Vertical (Peak)

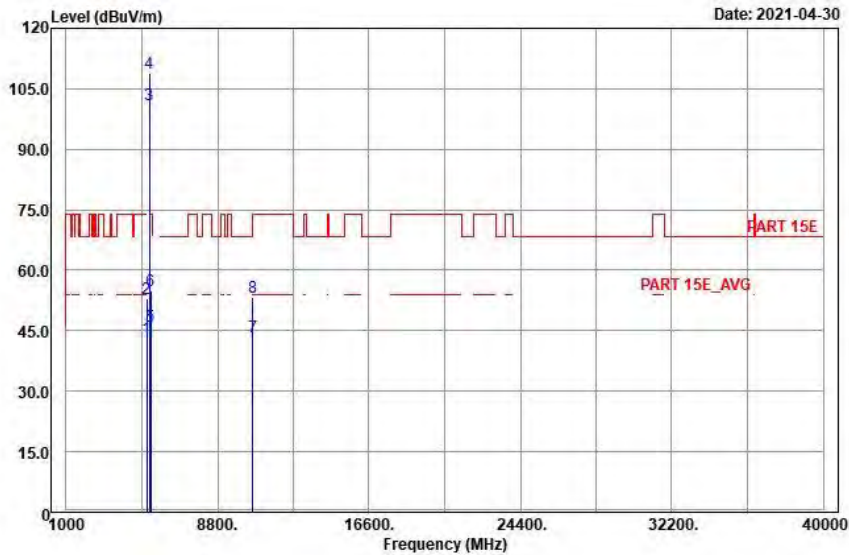


Vertical (Average)

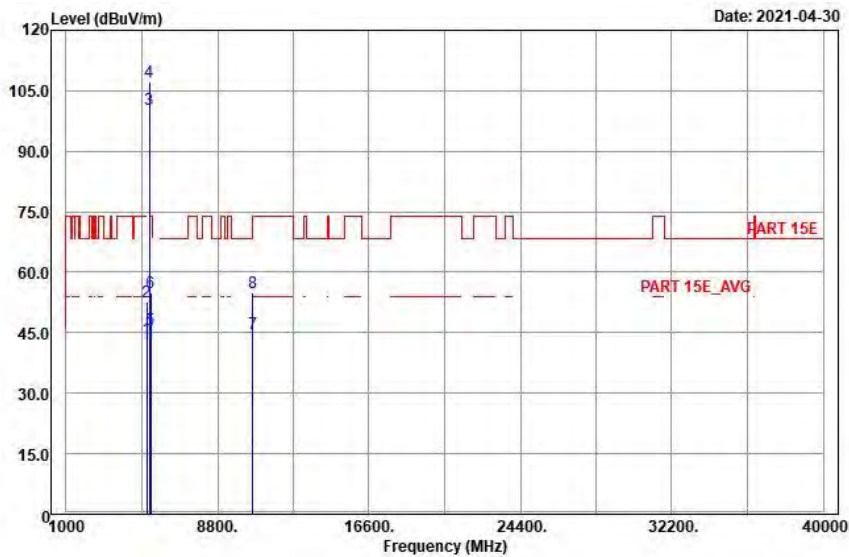


EUT Test Condition		Measurement Detail	
Channel	Channel 60	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



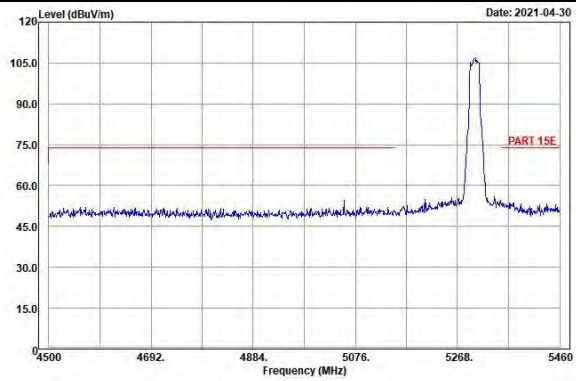
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	43.32	33.27	10.05	54	-10.68	159	112	Average
5150	53.01	42.96	10.05	74	-20.99	159	112	Peak
5300	101.19	91.13	10.06			159	112	Average
5300	108.77	98.71	10.06			159	112	Peak
5350	46.14	35.91	10.23	54	-7.86	159	112	Average
5350	54.88	44.65	10.23	74	-19.12	159	112	Peak
10600	43.48	27.72	15.76	54	-10.52	127	142	Average
10600	53.38	37.62	15.76	74	-20.62	127	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
5150	43.45	33.4	10.05	54	-10.55	224	94	Average
5150	52.68	42.63	10.05	74	-21.32	224	94	Peak
5300	100.38	90.32	10.06			224	94	Average
5300	107.27	97.21	10.06			224	94	Peak
5350	45.9	35.67	10.23	54	-8.1	224	94	Average
5350	54.99	44.76	10.23	74	-19.01	224	94	Peak
10600	44.67	28.91	15.76	54	-9.33	163	28	Average
10600	54.82	39.06	15.76	74	-19.18	163	28	Peak

Remarks:

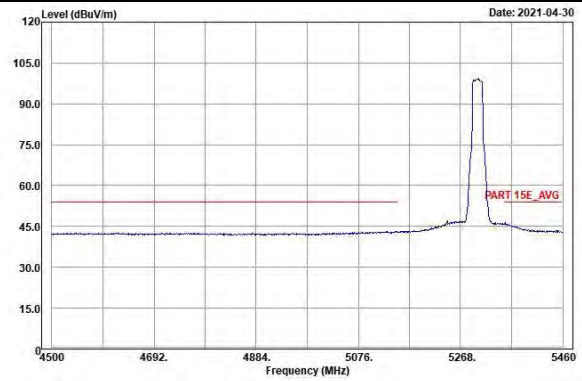
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 5300 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

Channel 60

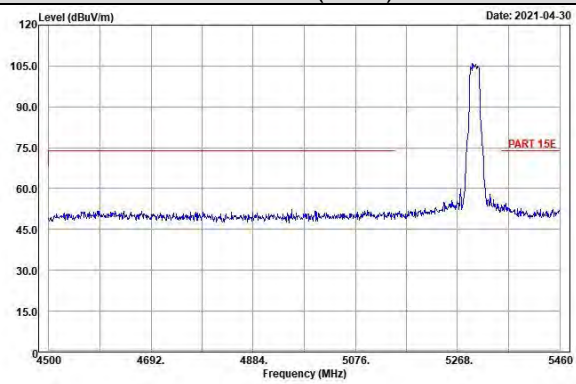
Horizontal (Peak)



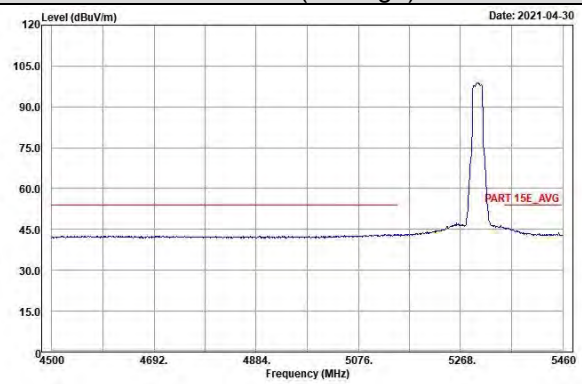
Horizontal (Average)



Vertical (Peak)

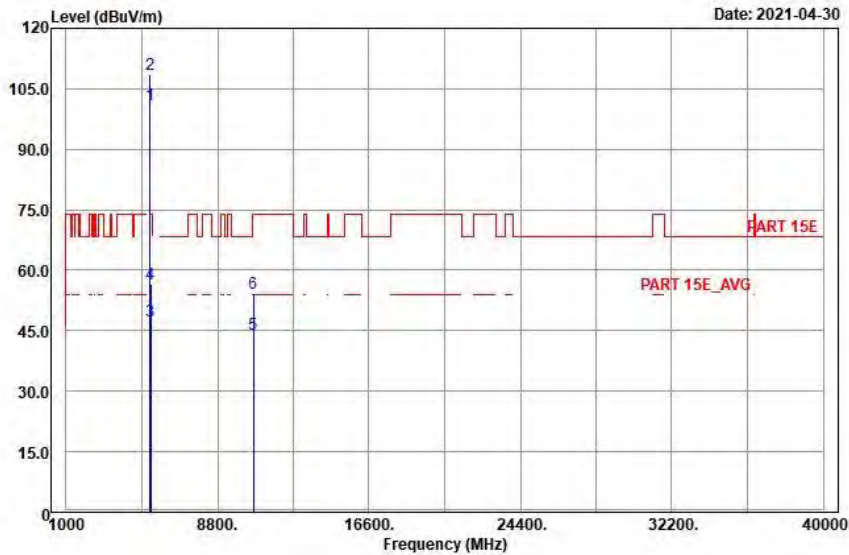


Vertical (Average)

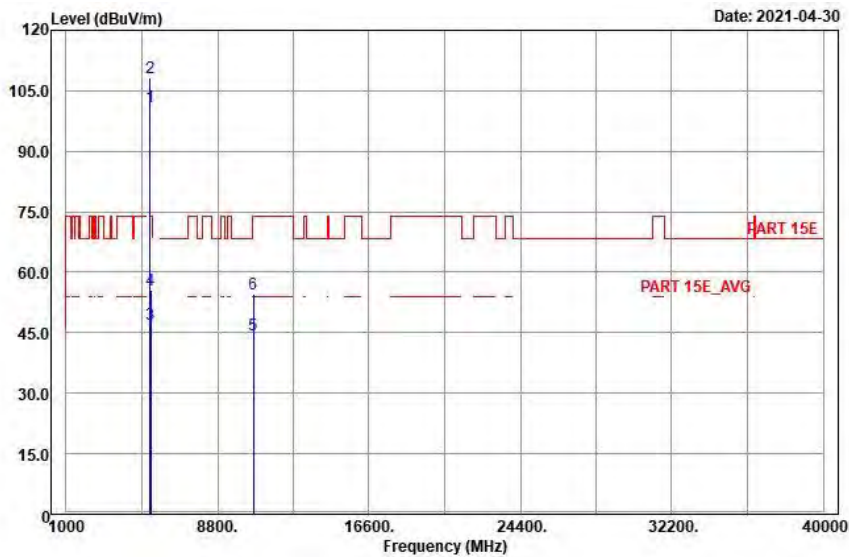


EUT Test Condition		Measurement Detail	
Channel	Channel 64	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



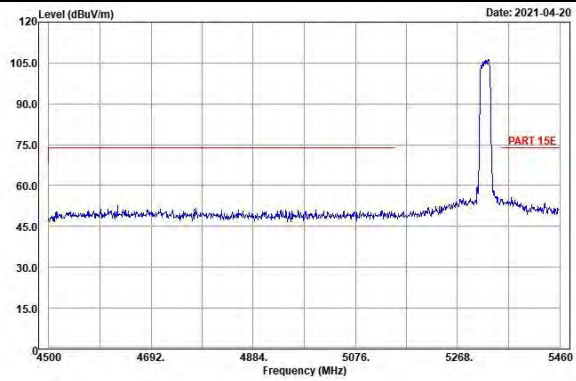
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	101	90.91	10.09			158	110	Average
5320	108.56	98.47	10.09			158	110	Peak
5350	47.39	37.16	10.23	54	-6.61	158	110	Average
5350	56.69	46.46	10.23	74	-17.31	158	110	Peak
10640	44.18	28.19	15.99	54	-9.82	292	143	Average
10640	54.23	38.24	15.99	74	-19.77	292	143	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	101.05	90.96	10.09			212	93	Average
5320	108.21	98.12	10.09			212	93	Peak
5350	47.01	36.78	10.23	54	-6.99	212	93	Average
5350	55.61	45.38	10.23	74	-18.39	212	93	Peak
10640	44.57	28.58	15.99	54	-9.43	121	173	Average
10640	54.67	38.68	15.99	74	-19.33	121	173	Peak

Remarks:

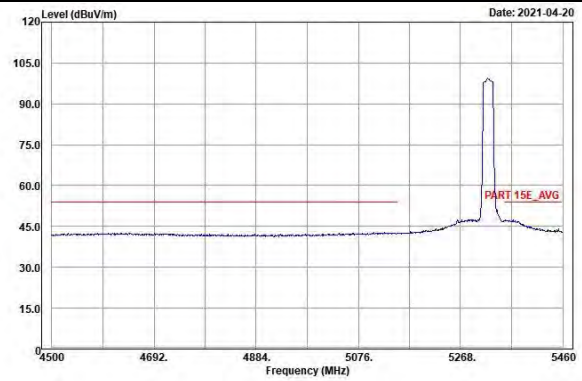
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5320 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 64

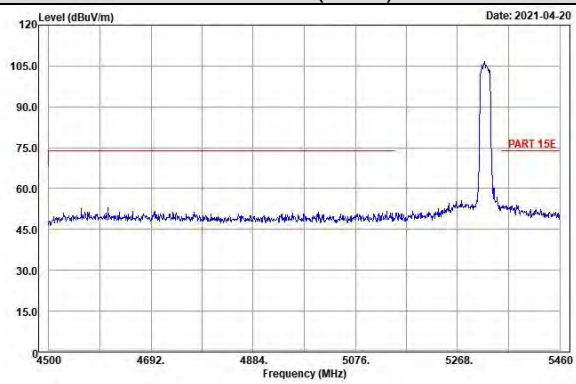
Horizontal (Peak)



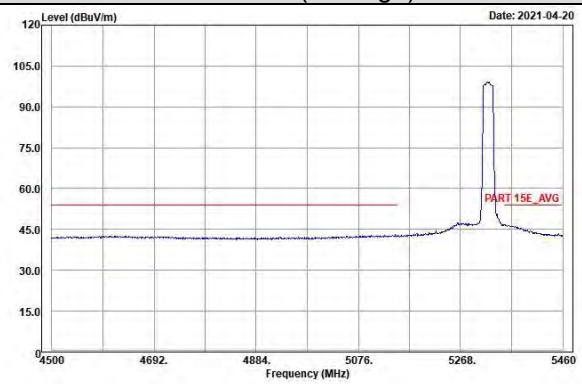
Horizontal (Average)



Vertical (Peak)

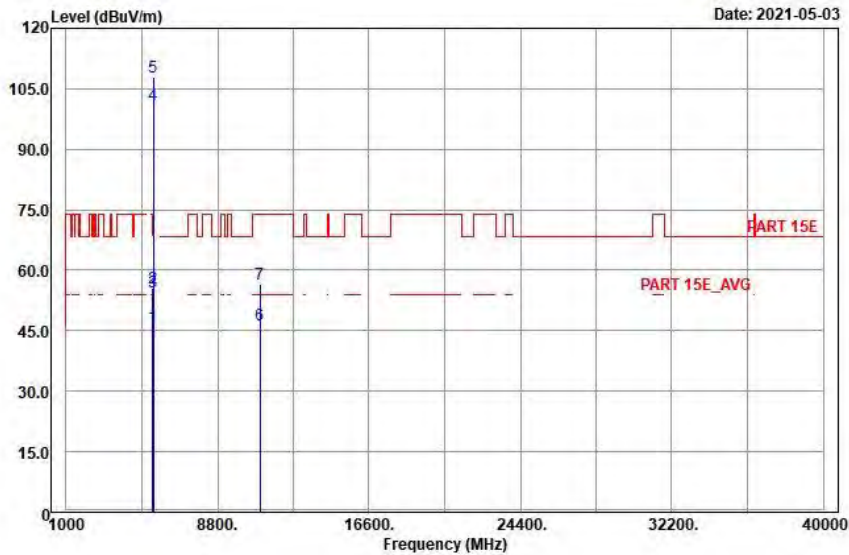


Vertical (Average)

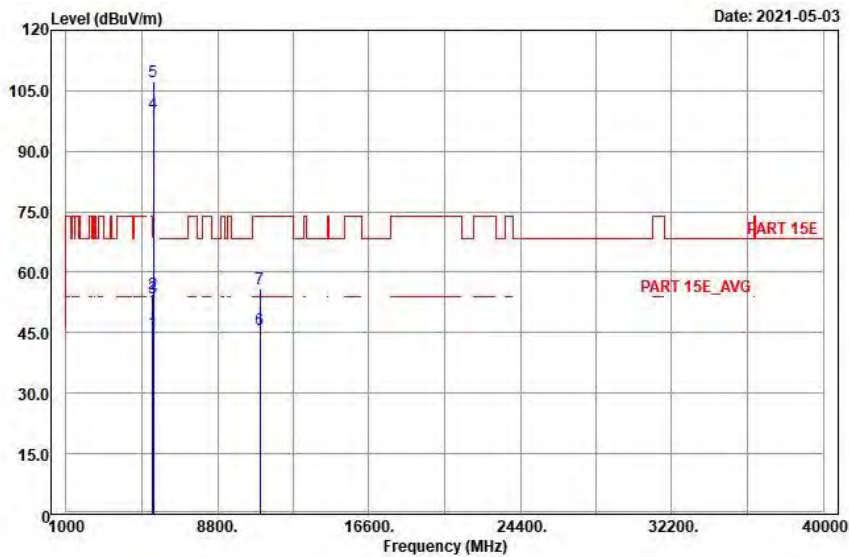


EUT Test Condition		Measurement Detail	
Channel	Channel 100	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	46.04	35.53	10.51	54	-7.96	158	110	Average
5460	55.5	44.99	10.51	74	-18.5	158	110	Peak
*5470	54.58	44.05	10.53	68.2	-13.62	158	110	Peak
5500	101.17	90.57	10.6			158	110	Average
5500	108.04	97.44	10.6			158	110	Peak
11000	46.39	30.26	16.13	54	-7.61	280	121	Average
11000	56.52	40.39	16.13	74	-17.48	280	121	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

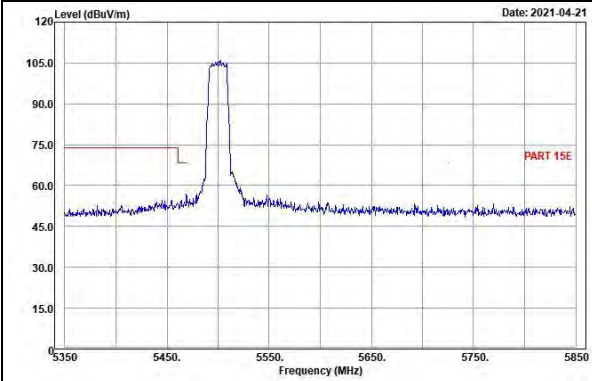
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	45.04	34.53	10.51	54	-8.96	214	88	Average
5460	54.61	44.1	10.51	74	-19.39	214	88	Peak
*5470	53.74	43.21	10.53	68.2	-14.46	214	88	Peak
5500	99.43	88.83	10.6			214	88	Average
5500	107.09	96.49	10.6			214	88	Peak
11000	45.87	29.74	16.13	54	-8.13	126	271	Average
11000	56.06	39.93	16.13	74	-17.94	126	271	Peak

Remarks:

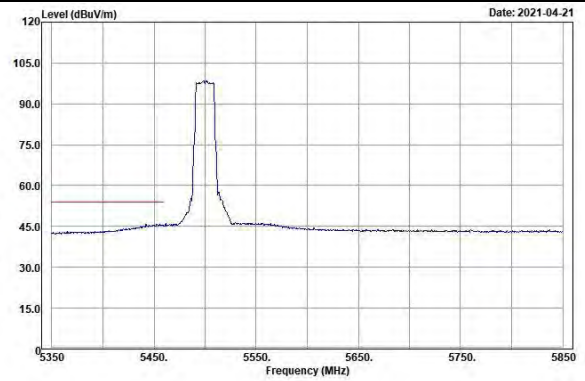
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5500 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 100

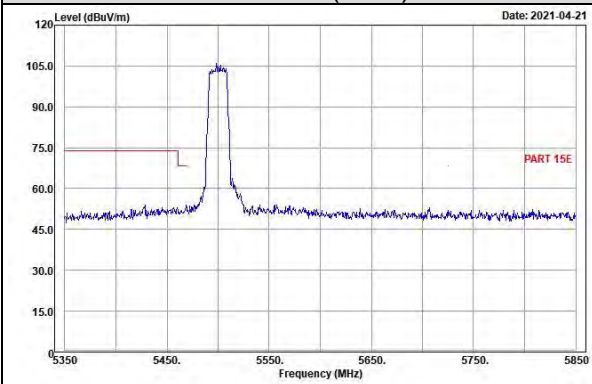
Horizontal (Peak)



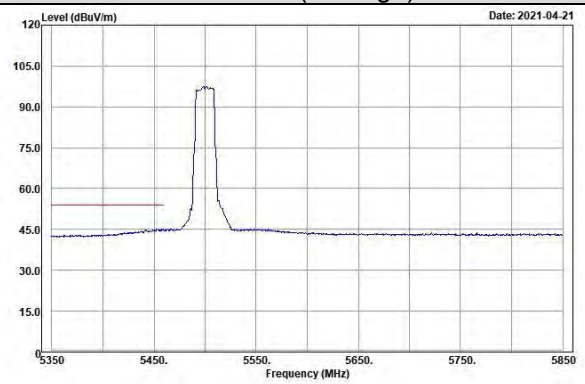
Horizontal (Average)



Vertical (Peak)

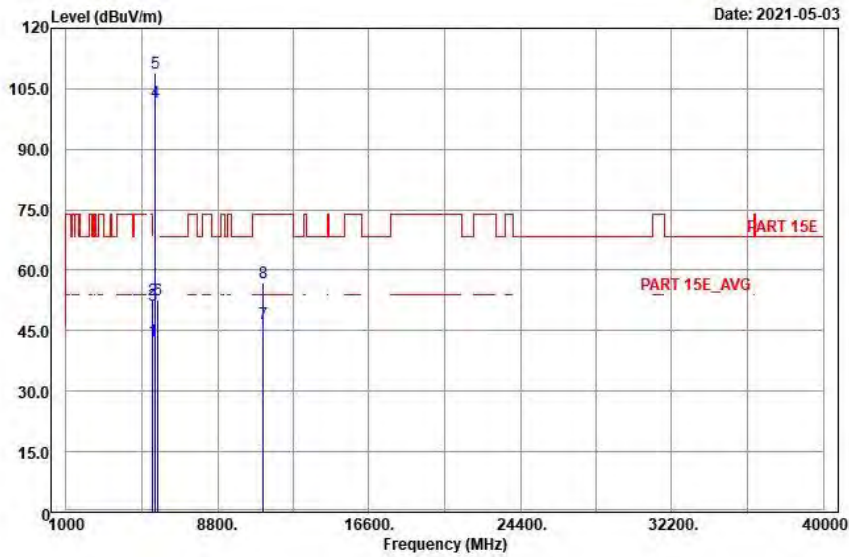


Vertical (Average)

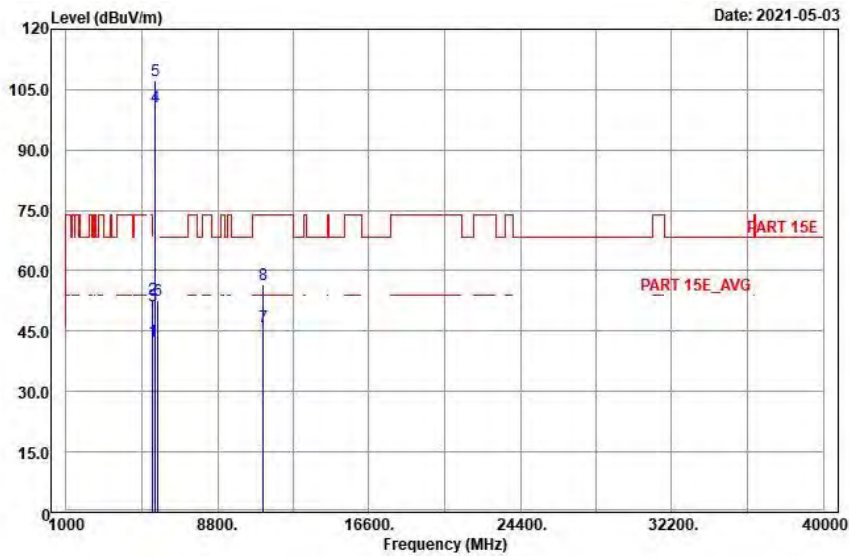


EUT Test Condition		Measurement Detail	
Channel	Channel 116	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical



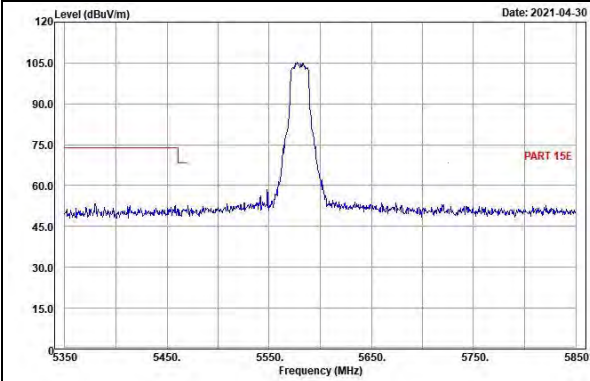
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	42.64	32.13	10.51	54	-11.36	158	110	Average
5460	52.53	42.02	10.51	74	-21.47	158	110	Peak
*5470	51.18	40.65	10.53	68.2	-17.02	158	110	Peak
5580	101.57	90.86	10.71			158	110	Average
5580	108.74	98.03	10.71			158	110	Peak
*5725	52.79	41.87	10.92	68.2	-15.41	158	110	Peak
11160	46.64	30.28	16.36	54	-7.36	263	108	Average
11160	56.85	40.49	16.36	74	-17.15	263	108	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	42.53	32.02	10.51	54	-11.47	226	288	Average
5460	52.88	42.37	10.51	74	-21.12	226	288	Peak
*5470	51.25	40.72	10.53	68.2	-16.95	226	288	Peak
5580	100.59	89.88	10.71			226	288	Average
5580	107.34	96.63	10.71			226	288	Peak
*5725	52.55	41.63	10.92	68.2	-15.65	226	288	Peak
11160	46.23	29.87	16.36	54	-7.77	217	152	Average
11160	56.53	40.17	16.36	74	-17.47	217	152	Peak

Remarks:

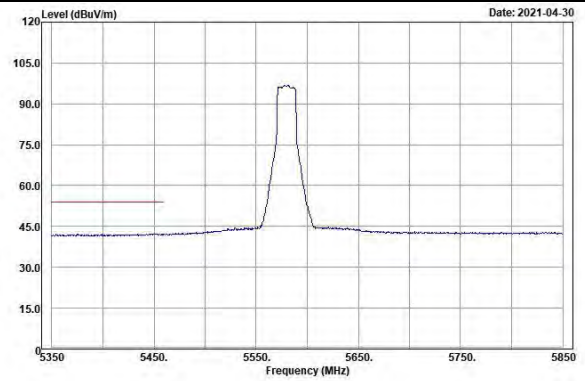
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

Channel 116

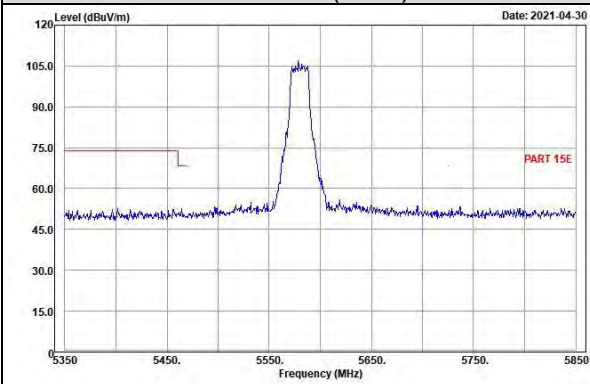
Horizontal (Peak)



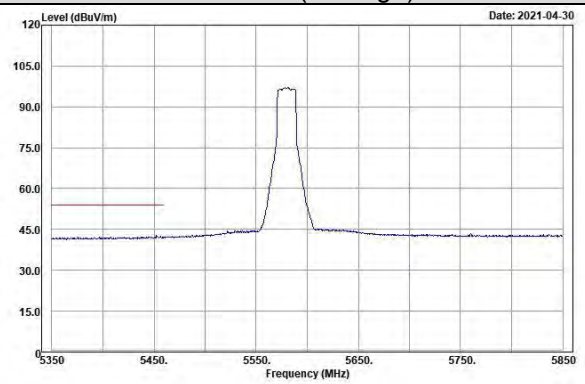
Horizontal (Average)



Vertical (Peak)

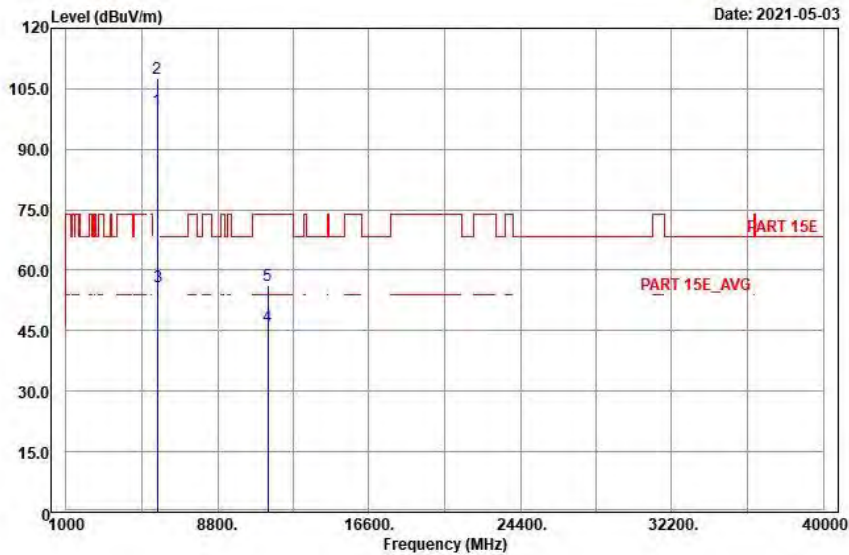


Vertical (Average)

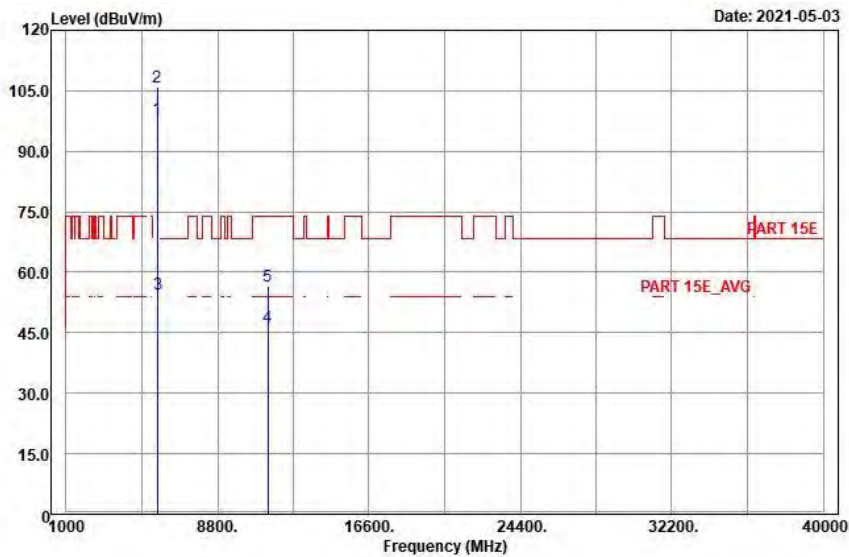


EUT Test Condition		Measurement Detail	
Channel	Channel 140	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

Horizontal



Vertical

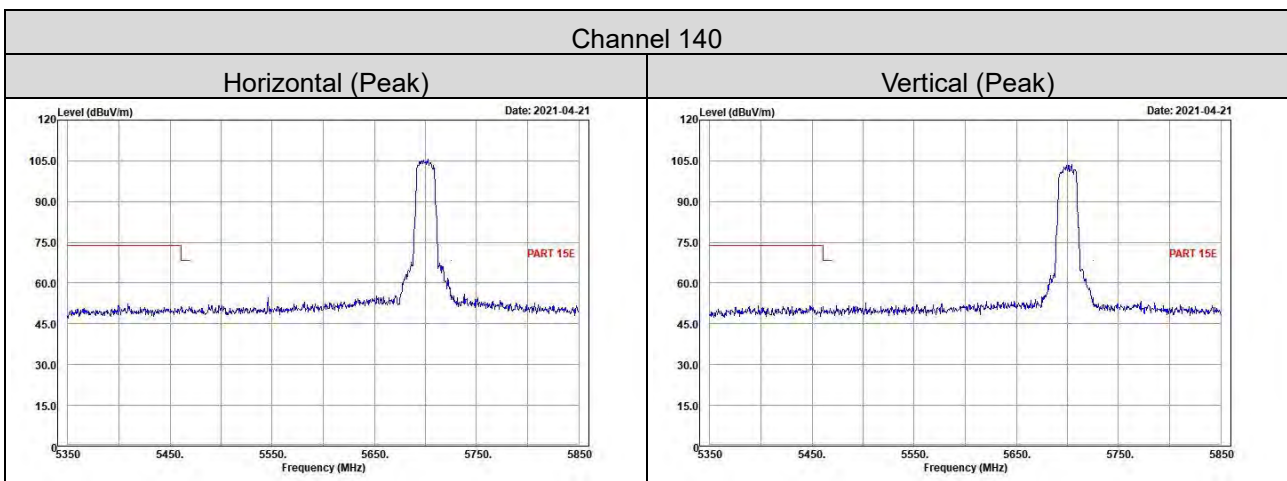


Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5700	99.86	88.91	10.95			148	110	Average
5700	107.61	96.66	10.95			148	110	Peak
*5725	55.8	44.88	10.92	68.2	-12.4	148	110	Peak
11400	46.14	29.95	16.19	54	-7.86	134	188	Average
11400	56.3	40.11	16.19	74	-17.7	134	188	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	98.1	87.15	10.95			230	80	Average
5700	106.05	95.1	10.95			230	80	Peak
*5725	54.72	43.8	10.92	68.2	-13.48	230	80	Peak
11400	46.39	30.2	16.19	54	-7.61	193	142	Average
11400	56.47	40.28	16.19	74	-17.53	193	142	Peak

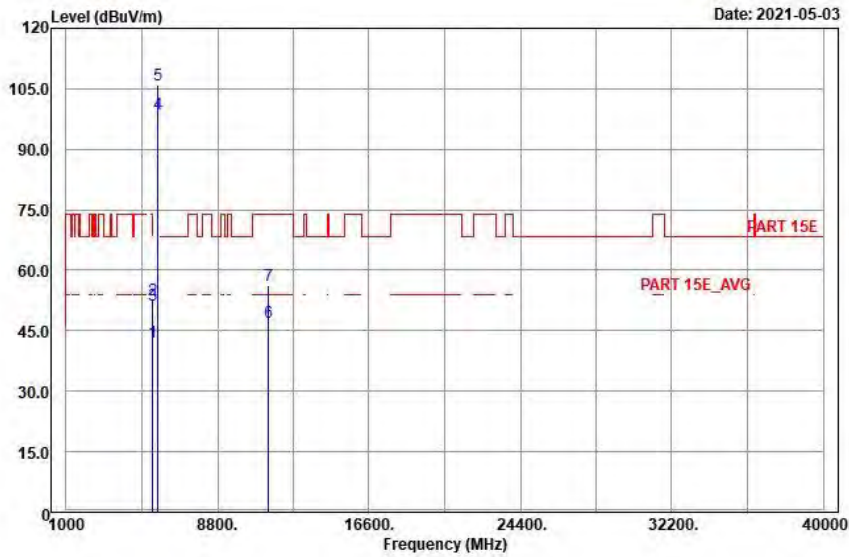
Remarks:

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

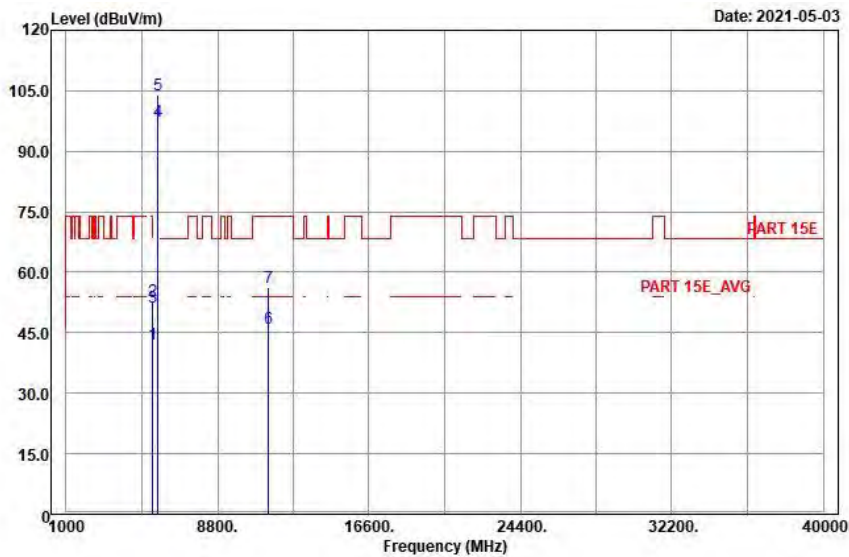


EUT Test Condition		Measurement Detail	
Channel	Channel 144	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	42.33	31.82	10.51	54	-11.67	184	110	Average
5460	52.57	42.06	10.51	74	-21.43	184	110	Peak
*5470	51.35	40.82	10.53	68.2	-16.85	184	110	Peak
5720	98.59	87.67	10.92			184	110	Average
5720	105.82	94.9	10.92			184	110	Peak
11440	46.96	30.67	16.29	54	-7.04	273	152	Average
11440	56.12	39.83	16.29	74	-17.88	273	152	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

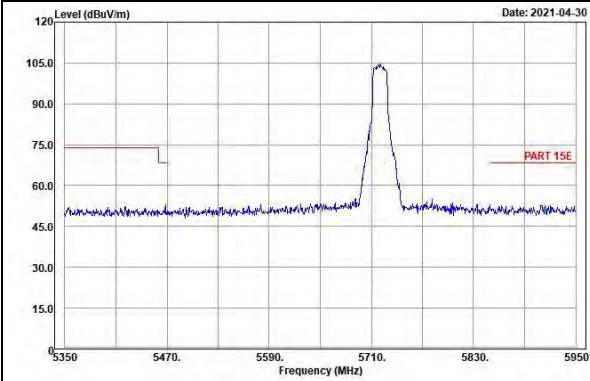
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	42.25	31.74	10.51	54	-11.75	211	80	Average
5460	52.81	42.3	10.51	74	-21.19	211	80	Peak
*5470	51.42	40.89	10.53	68.2	-16.78	211	80	Peak
5720	97.48	86.56	10.92			211	80	Average
5720	104.04	93.12	10.92			211	80	Peak
11440	46.14	29.85	16.29	54	-7.86	181	214	Average
11440	56.29	40	16.29	74	-17.71	181	214	Peak

Remarks:

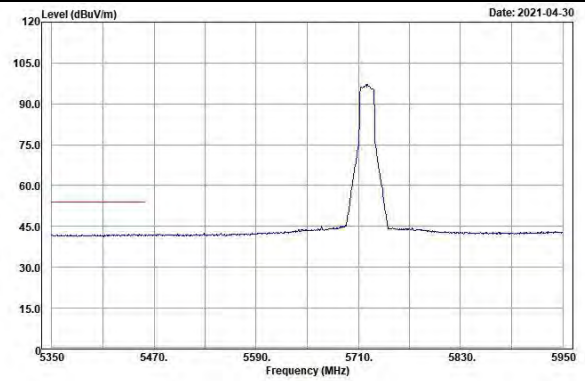
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5720 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 144

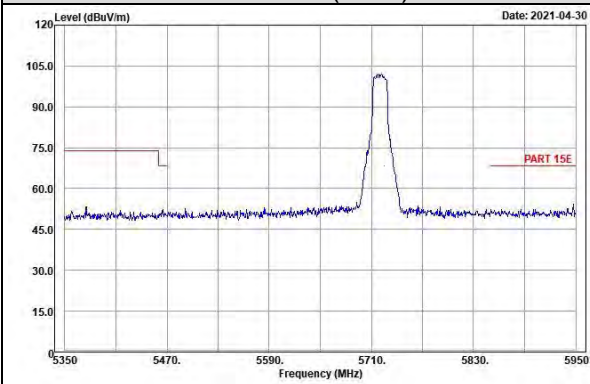
Horizontal (Peak)



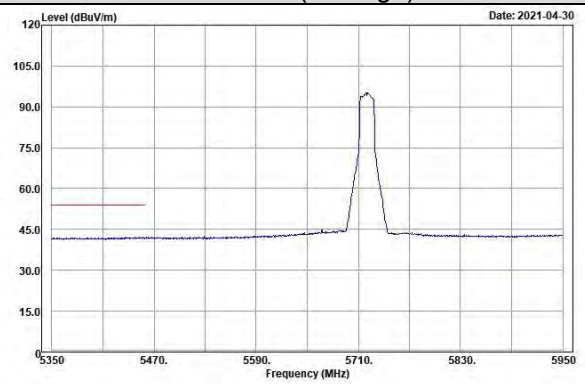
Horizontal (Average)



Vertical (Peak)

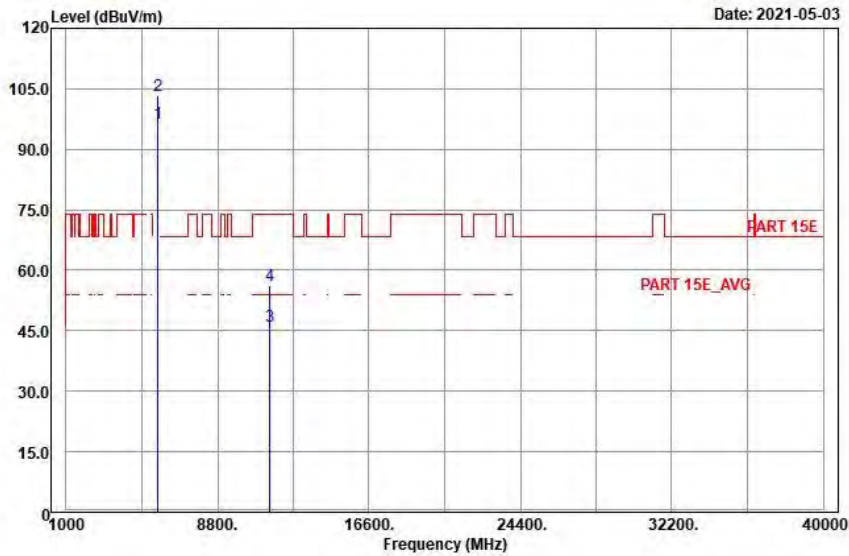


Vertical (Average)

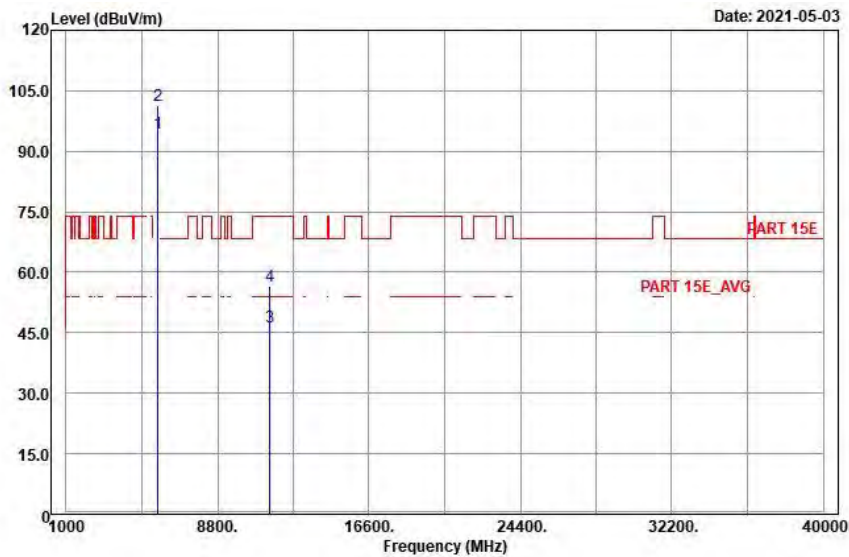


EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

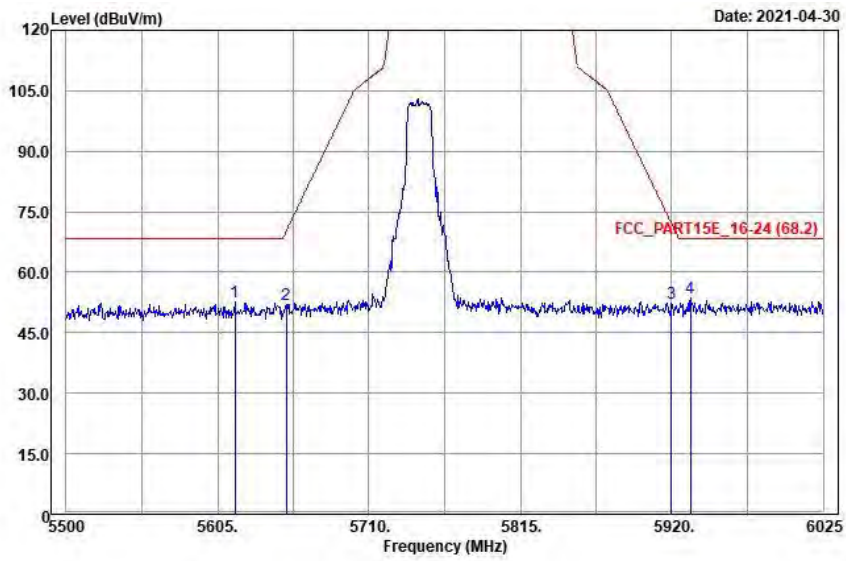
<Spurious Emission>
Horizontal



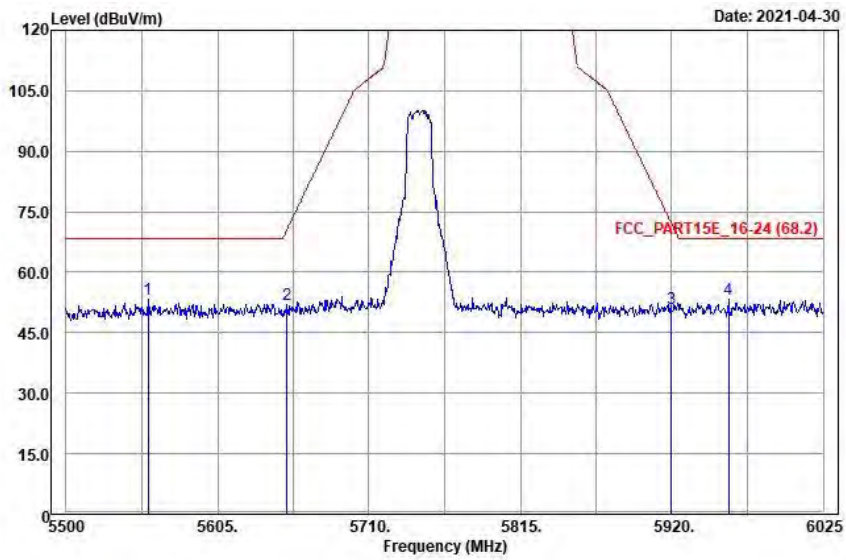
Vertical



**<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	96.59	85.71	10.88			184	136	Average
5745	103.29	92.41	10.88			184	136	Peak
11490	46.07	29.6	16.47	54	-7.93	115	39	Average
11490	56.15	39.68	16.47	74	-17.85	115	39	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	94.52	83.64	10.88			211	80	Average
5745	101.29	90.41	10.88			211	80	Peak
11490	46.37	29.9	16.47	54	-7.63	136	291	Average
11490	56.5	40.03	16.47	74	-17.5	136	291	Peak

<Out of Band Emission (OOBE)>

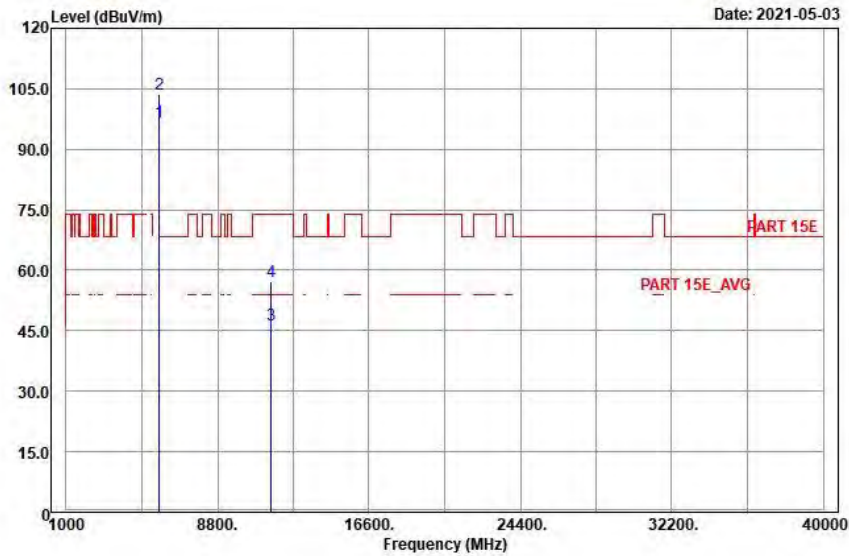
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5617.075	52.52	41.73	10.79	68.2	-15.68	184	136	Peak
5652.775	51.92	41.05	10.87	70.25	-18.33	184	136	Peak
5920	52.17	41.08	11.09	71.9	-19.73	184	136	Peak
*5933.125	53.49	42.38	11.11	68.2	-14.71	184	136	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5556.7	53.14	42.46	10.68	68.2	-15.06	211	80	Peak
5653.3	52.06	41.19	10.87	70.64	-18.58	211	80	Peak
5920	50.96	39.87	11.09	71.9	-20.94	211	80	Peak
*5959.375	53.16	41.95	11.21	68.2	-15.04	211	80	Peak

Remarks:

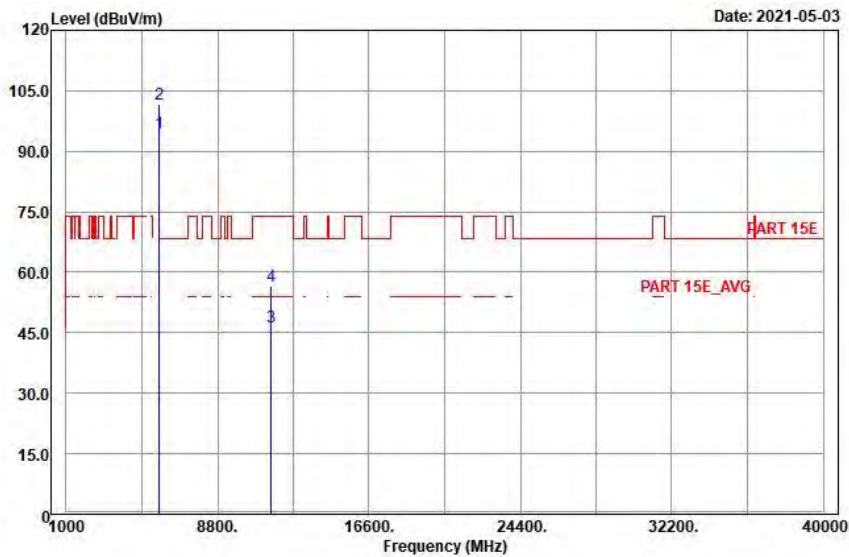
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 5745 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

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	Karl Lee, Charles Hsiao

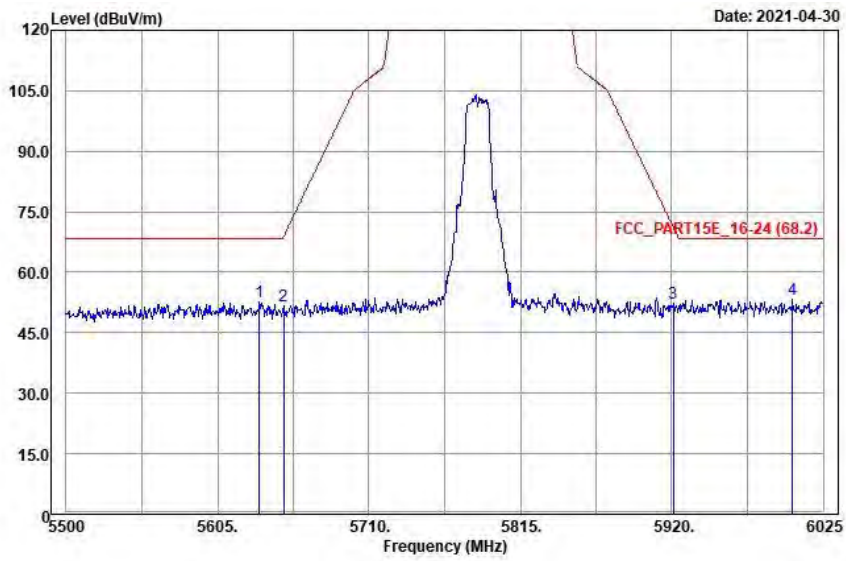
**<Spurious Emission>
Horizontal**



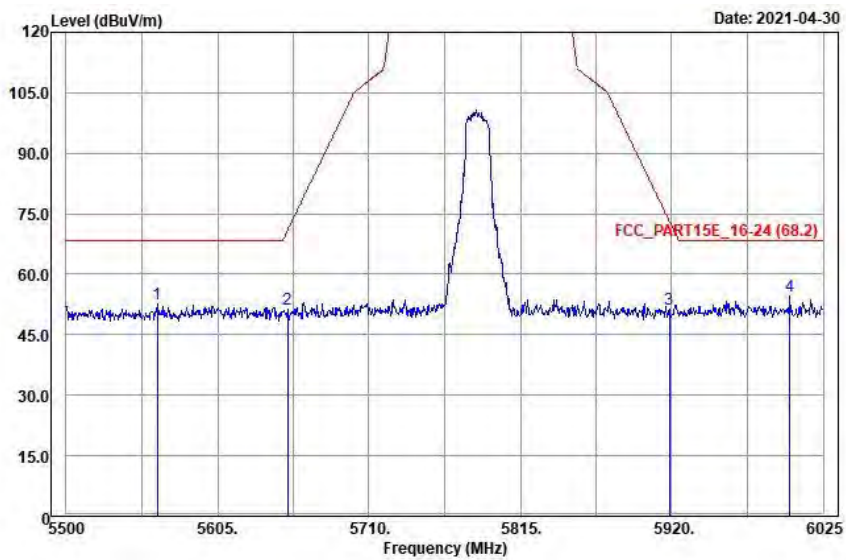
Vertical



**<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	96.63	85.82	10.81			184	136	Average
5785	103.68	92.87	10.81			184	136	Peak
11570	46.59	30.1	16.49	54	-7.41	254	108	Average
11570	57.06	40.57	16.49	74	-16.94	254	108	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	94.57	83.76	10.81			211	80	Average
5785	101.58	90.77	10.81			211	80	Peak
11570	46.32	29.83	16.49	54	-7.68	139	151	Average
11570	56.45	39.96	16.49	74	-17.55	139	151	Peak

<Out of Band Emission (OOBE)>

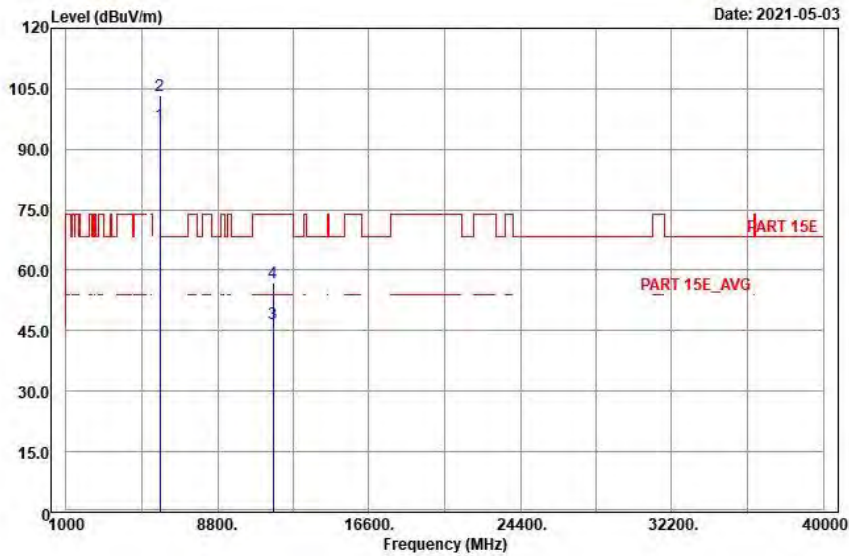
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5633.875	52.54	41.71	10.83	68.2	-15.66	184	136	Peak
5650.675	51.77	40.9	10.87	68.7	-16.93	184	136	Peak
5921.05	52.42	41.33	11.09	71.12	-18.7	184	136	Peak
*6004	53.24	41.91	11.33	68.2	-14.96	184	136	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5563	52.76	42.08	10.68	68.2	-15.44	211	80	Peak
5653.825	51.26	40.39	10.87	71.03	-19.77	211	80	Peak
5918.425	51.27	40.18	11.09	73.07	-21.8	211	80	Peak
*6001.9	54.73	43.4	11.33	68.2	-13.47	211	80	Peak

Remarks:

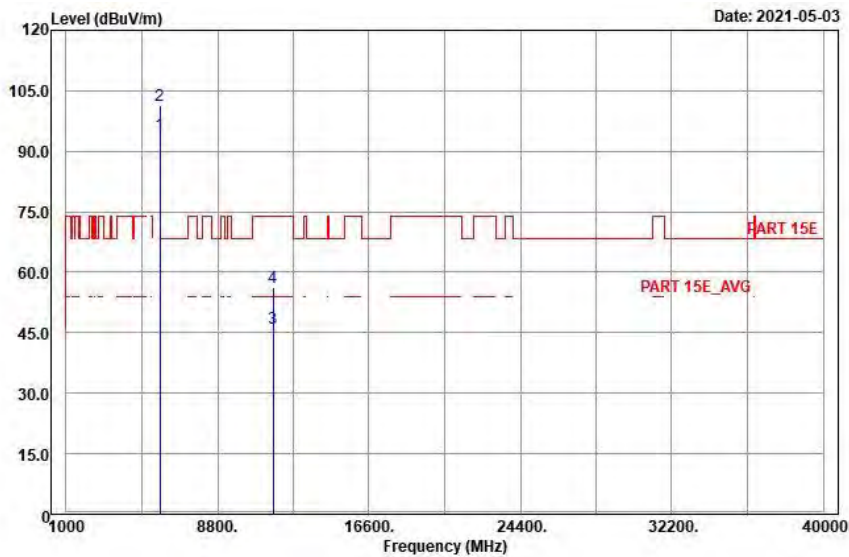
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin Value = Emission Level – Limit value
- 5785 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

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	Karl Lee, Charles Hsiao

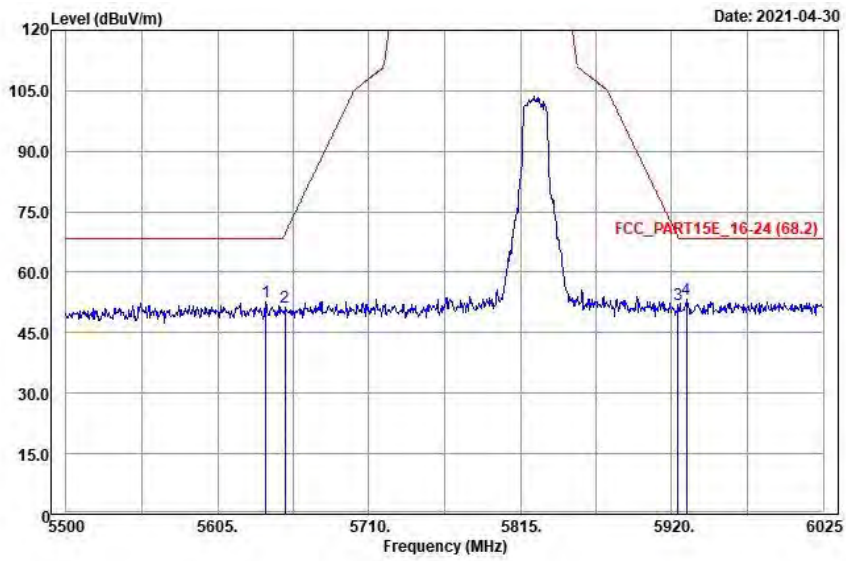
<Spurious Emission>
Horizontal



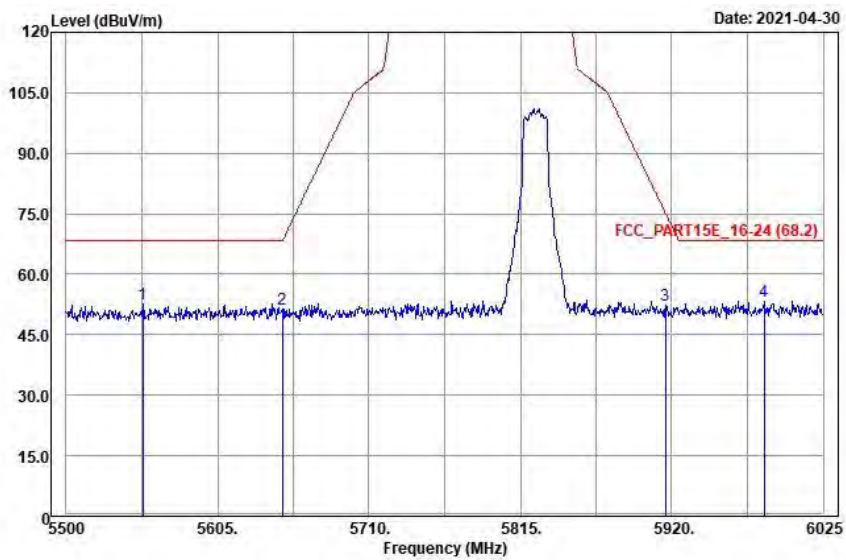
Vertical



<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	96.22	85.34	10.88			184	136	Average
5825	103.48	92.6	10.88			184	136	Peak
11650	46.82	30.04	16.78	54	-7.18	266	234	Average
11650	56.96	40.18	16.78	74	-17.04	266	234	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	94.11	83.23	10.88			211	129	Average
5825	101.36	90.48	10.88			211	129	Peak
11650	46.26	29.48	16.78	54	-7.74	226	185	Average
11650	56.34	39.56	16.78	74	-17.66	226	185	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5638.6	52.5	41.67	10.83	68.2	-15.7	184	136	Peak
5651.725	51.28	40.41	10.87	69.48	-18.2	184	136	Peak
5924.2	52.02	40.91	11.11	68.79	-16.77	184	136	Peak
*5930.5	53.45	42.34	11.11	68.2	-14.75	184	136	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5553.025	52.54	41.88	10.66	68.2	-15.66	211	129	Peak
5650.15	51.47	40.6	10.87	68.31	-16.84	211	129	Peak
5915.8	52.15	41.06	11.09	75.01	-22.86	211	129	Peak
*5984.05	53.35	42.09	11.26	68.2	-14.85	211	129	Peak

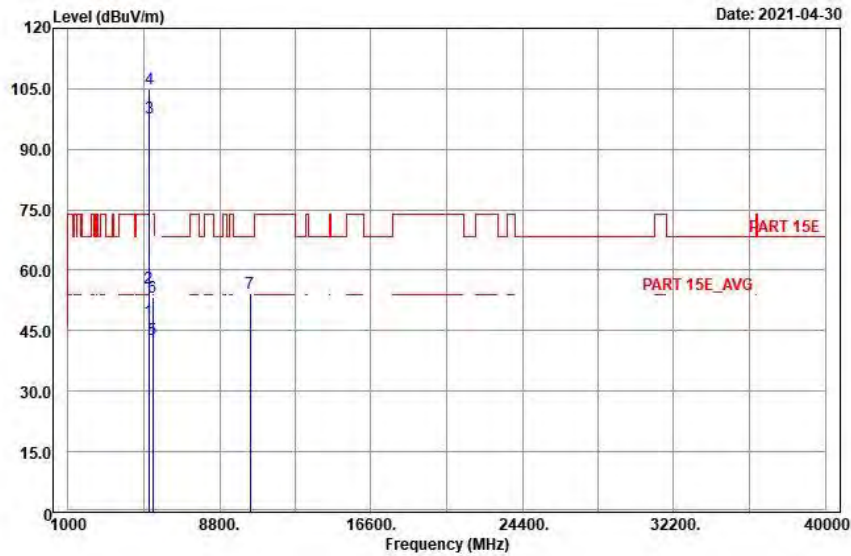
Remarks:

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

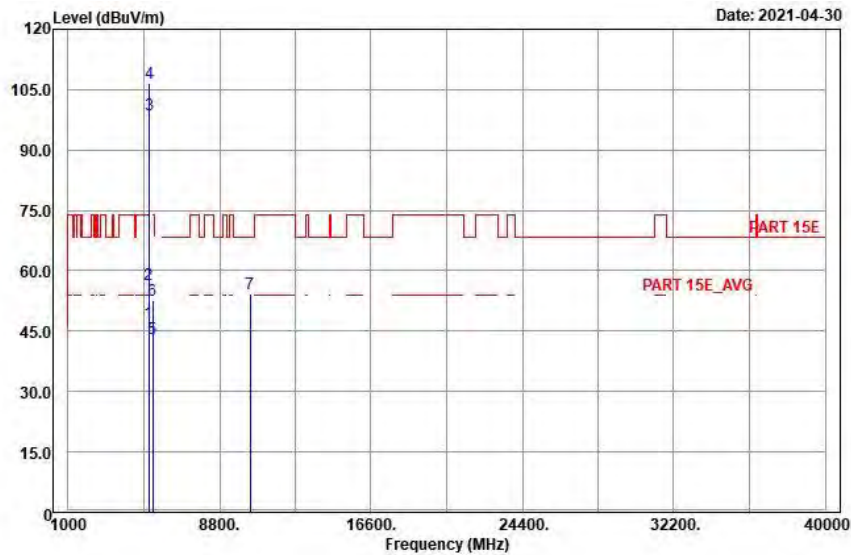
802.11ac (VHT40)

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	Karl Lee, 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	47.42	37.37	10.05	54	-6.58	162	146	Average
5150	55.71	45.66	10.05	74	-18.29	162	146	Peak
5190	97.65	87.53	10.12			162	146	Average
5190	105.01	94.89	10.12			162	146	Peak
5350	42.97	32.74	10.23	54	-11.03	162	146	Average
5350	53.25	43.02	10.23	74	-20.75	162	146	Peak
*10380	54.39	38.29	16.1	68.2	-13.81	132	72	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

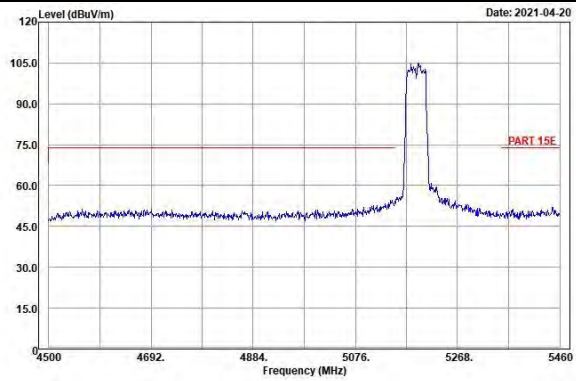
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	47.22	37.17	10.05	54	-6.78	207	93	Average
5150	56.7	46.65	10.05	74	-17.3	207	93	Peak
5190	98.8	88.68	10.12			207	93	Average
5190	106.68	96.56	10.12			207	93	Peak
5350	43.2	32.97	10.23	54	-10.8	207	93	Average
5350	52.75	42.52	10.23	74	-21.25	207	93	Peak
*10380	54.12	38.02	16.1	68.2	-14.08	159	224	Peak

Remarks:

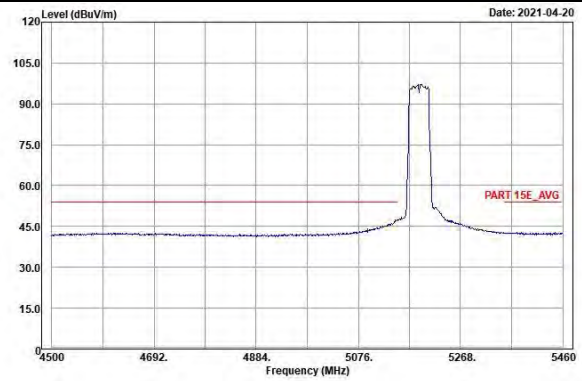
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5190 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 38

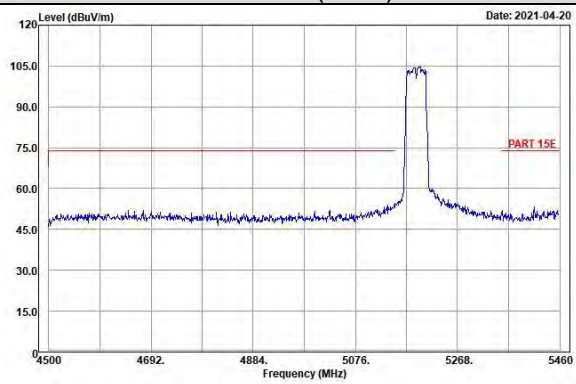
Horizontal (Peak)



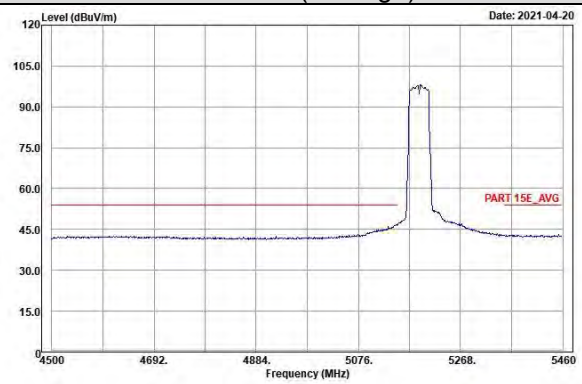
Horizontal (Average)



Vertical (Peak)

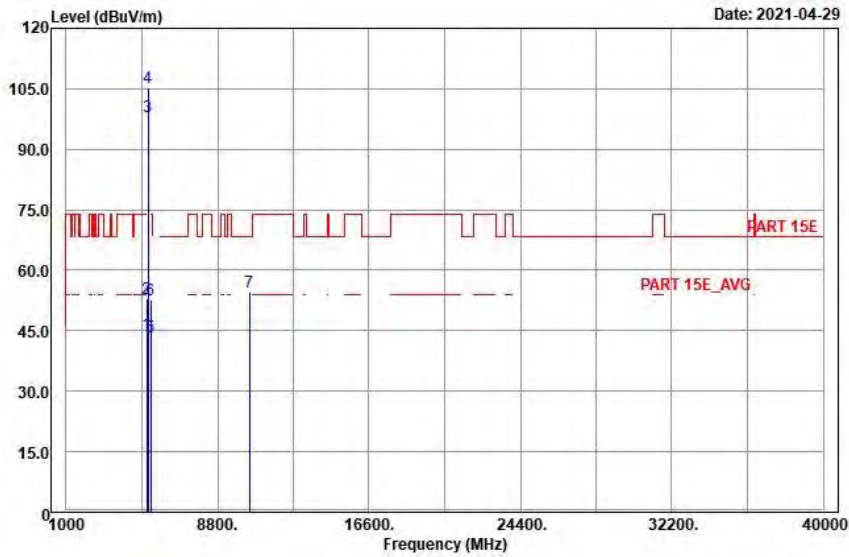


Vertical (Average)

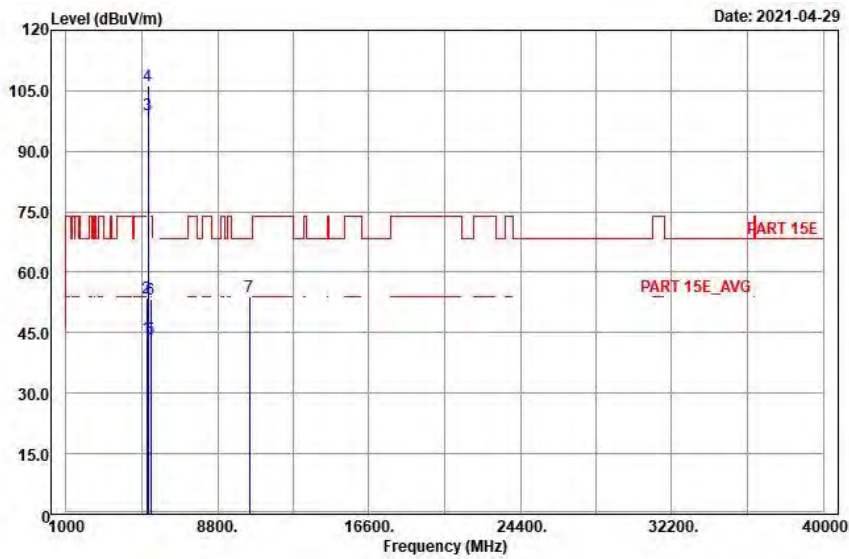


EUT Test Condition		Measurement Detail	
Channel	Channel 46	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	44.1	34.05	10.05	54	-9.9	134	146	Average
5150	53.06	43.01	10.05	74	-20.94	134	146	Peak
5230	94.04	83.9	10.14			134	146	Average
5230	101.14	91	10.14			134	146	Peak
5350	43.34	33.11	10.23	54	-10.66	134	146	Average
5350	52.79	42.56	10.23	74	-21.21	134	146	Peak
10460	54.62	38.62	16	68.2	-13.58	138	117	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

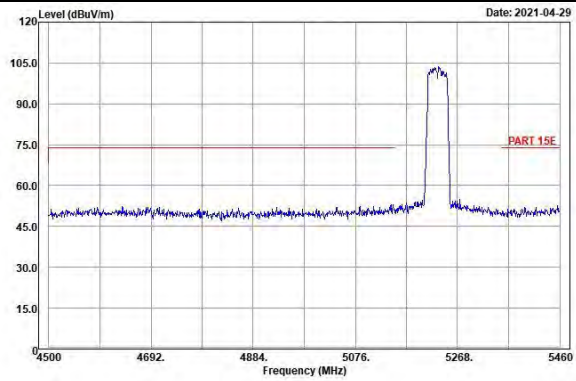
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	43.96	33.91	10.05	54	-10.04	183	93	Average
5150	53.71	43.66	10.05	74	-20.29	183	93	Peak
5230	95.05	84.91	10.14			183	93	Average
5230	102.33	92.19	10.14			183	93	Peak
5350	43.34	33.11	10.23	54	-10.66	183	93	Average
5350	53.36	43.13	10.23	74	-20.64	183	93	Peak
10460	54	38	16	68.2	-14.2	182	114	Peak

Remarks:

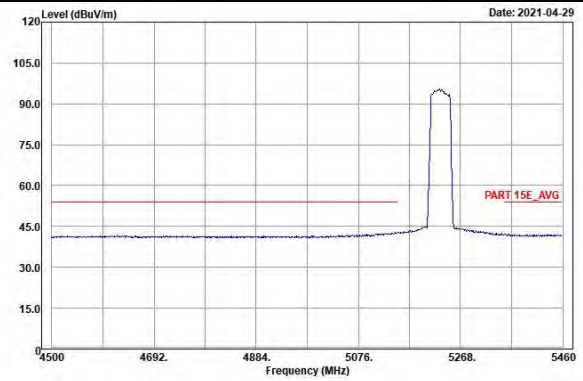
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5230 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 46

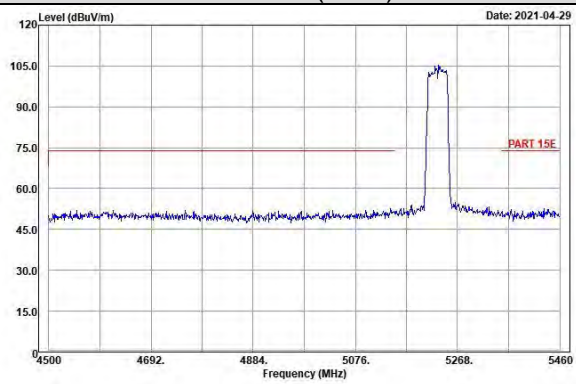
Horizontal (Peak)



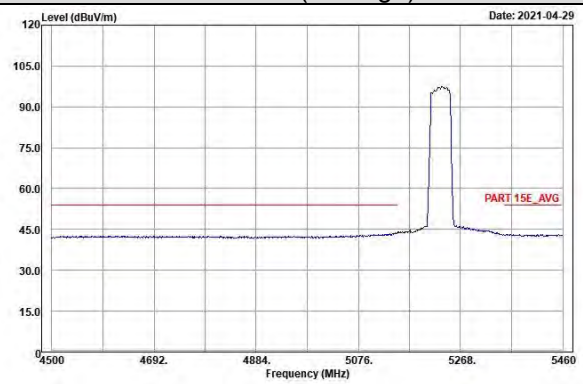
Horizontal (Average)



Vertical (Peak)

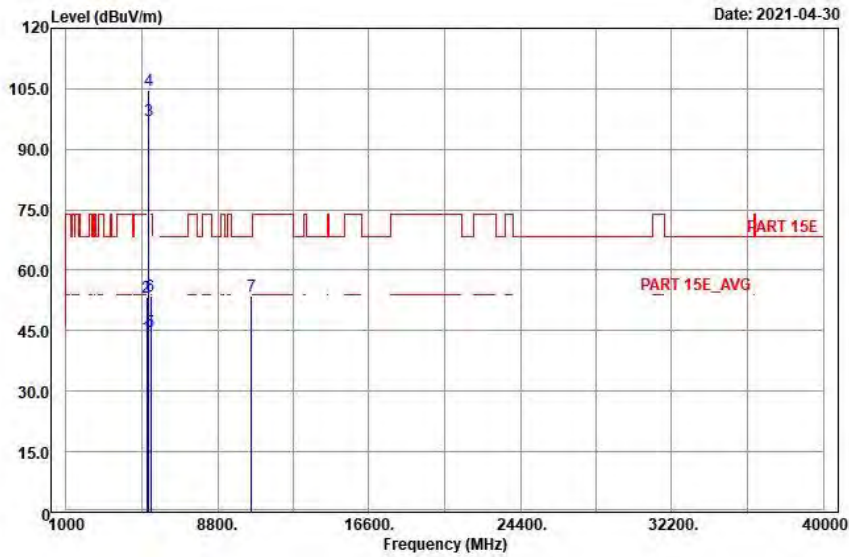


Vertical (Average)

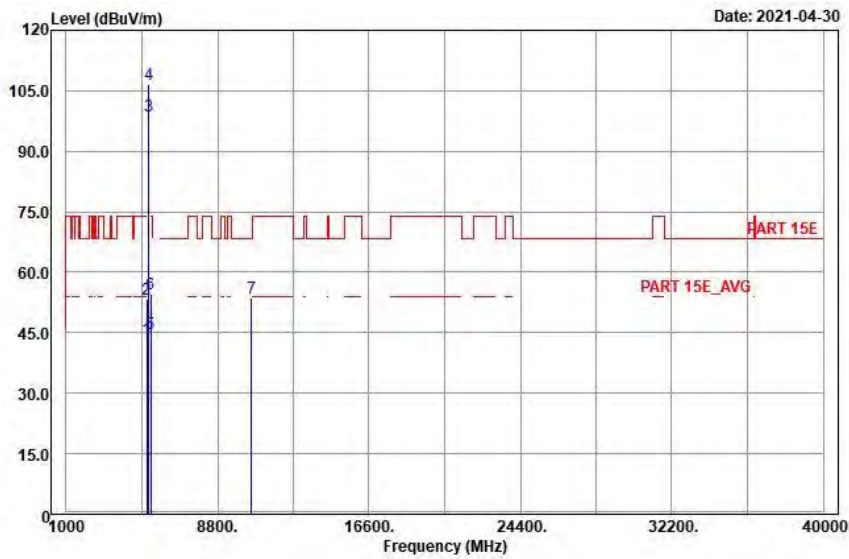


EUT Test Condition		Measurement Detail	
Channel	Channel 54	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	43.49	33.44	10.05	54	-10.51	134	146	Average
5150	53.35	43.3	10.05	74	-20.65	134	146	Peak
5270	97.08	86.96	10.12			134	146	Average
5270	104.57	94.45	10.12			134	146	Peak
5350	44.82	34.59	10.23	54	-9.18	134	146	Average
5350	53.77	43.54	10.23	74	-20.23	134	146	Peak
*10540	53.75	37.92	15.83	68.2	-14.45	245	172	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

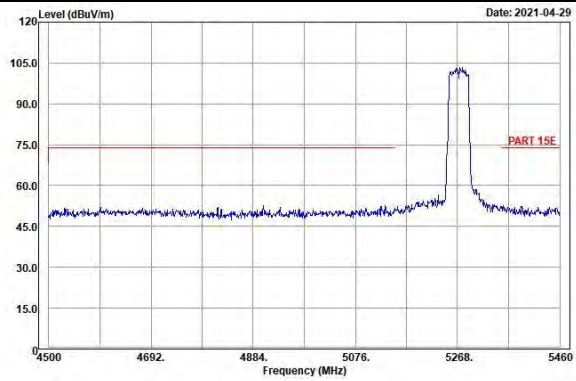
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	43.41	33.36	10.05	54	-10.59	183	93	Average
5150	53.42	43.37	10.05	74	-20.58	183	93	Peak
5270	98.69	88.57	10.12			183	93	Average
5270	106.64	96.52	10.12			183	93	Peak
5350	44.92	34.69	10.23	54	-9.08	183	93	Average
5350	54.55	44.32	10.23	74	-19.45	183	93	Peak
*10540	53.58	37.75	15.83	68.2	-14.62	221	170	Peak

Remarks:

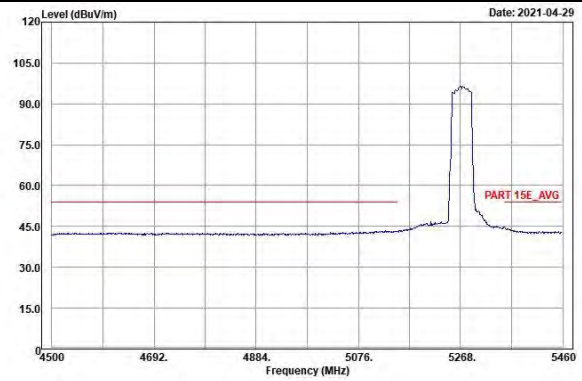
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5270 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 54

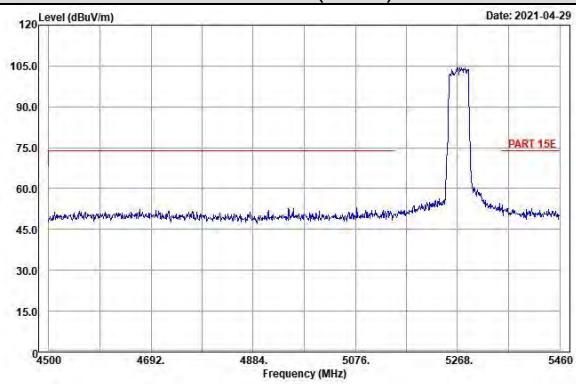
Horizontal (Peak)



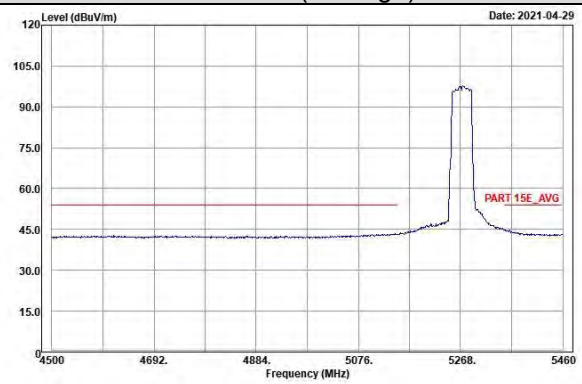
Horizontal (Average)



Vertical (Peak)

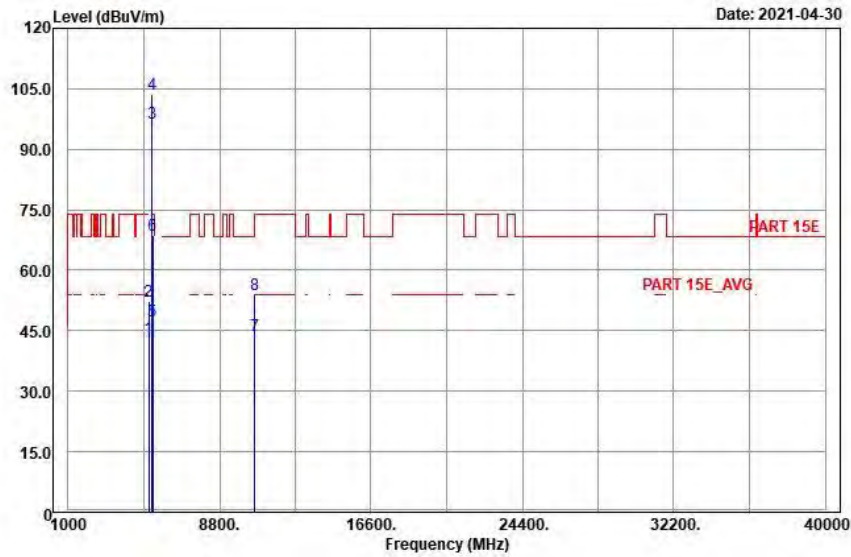


Vertical (Average)

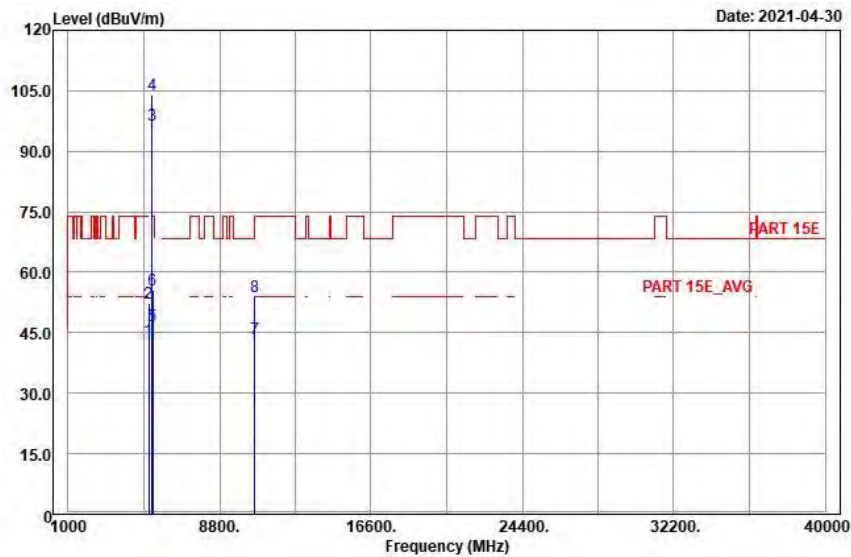


EUT Test Condition		Measurement Detail	
Channel	Channel 62	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	43.16	33.11	10.05	54	-10.84	158	110	Average
5150	52.47	42.42	10.05	74	-21.53	158	110	Peak
5310	96.5	86.41	10.09			158	110	Average
5310	103.71	93.62	10.09			158	110	Peak
5350	47.55	37.32	10.23	54	-6.45	158	110	Average
5350	68.73	58.5	10.23	74	-5.27	158	110	Peak
10620	43.95	28.07	15.88	54	-10.05	234	185	Average
10620	54.11	38.23	15.88	74	-19.89	234	185	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

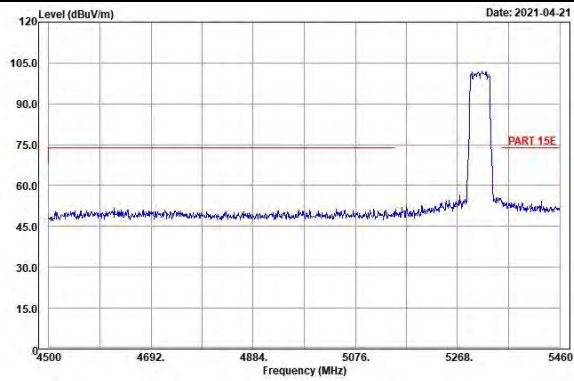
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	43.21	33.16	10.05	54	-10.79	212	93	Average
5150	52.33	42.28	10.05	74	-21.67	212	93	Peak
5310	96.59	86.5	10.09			212	93	Average
5310	104.05	93.96	10.09			212	93	Peak
5350	46.84	36.61	10.23	54	-7.16	212	93	Average
5350	55.56	45.33	10.23	74	-18.44	212	93	Peak
10620	43.49	27.61	15.88	54	-10.51	133	58	Average
10620	53.83	37.95	15.88	74	-20.17	133	58	Peak

Remarks:

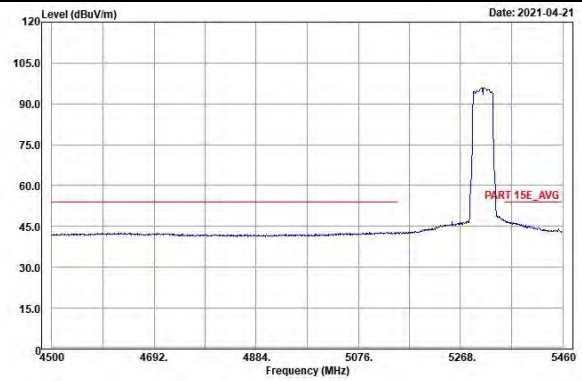
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5310 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 62

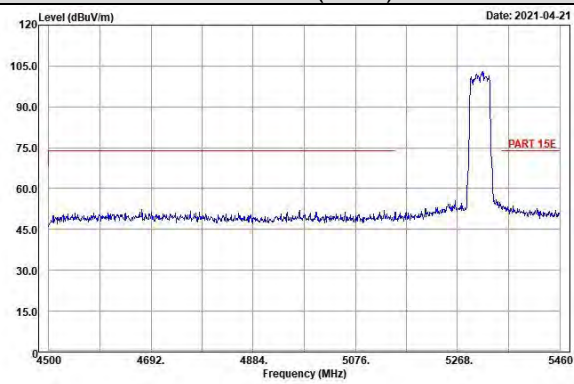
Horizontal (Peak)



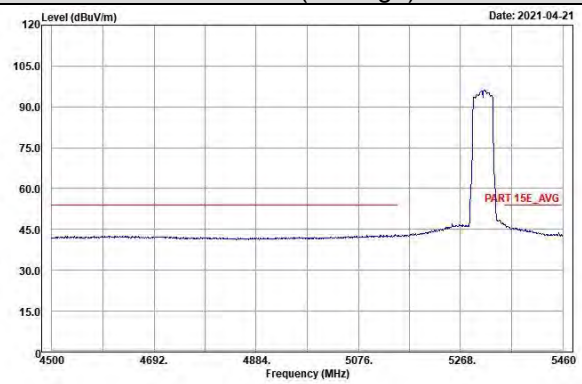
Horizontal (Average)



Vertical (Peak)

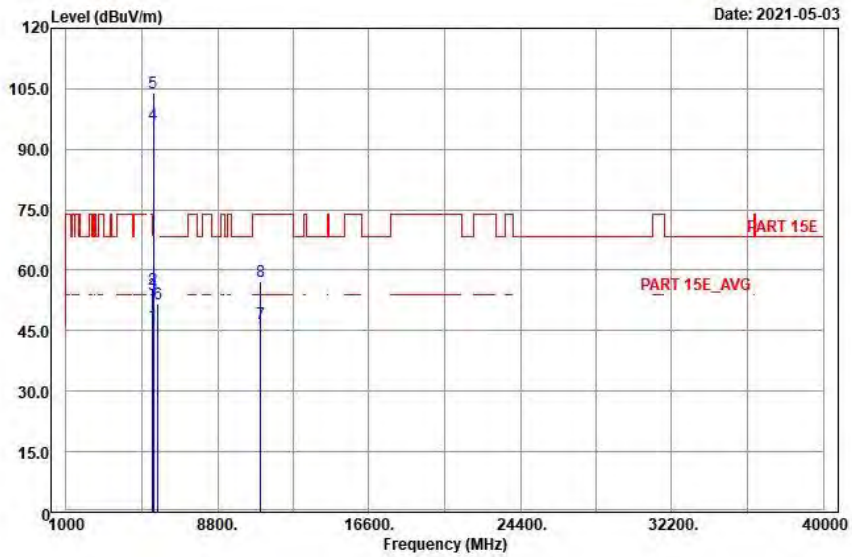


Vertical (Average)

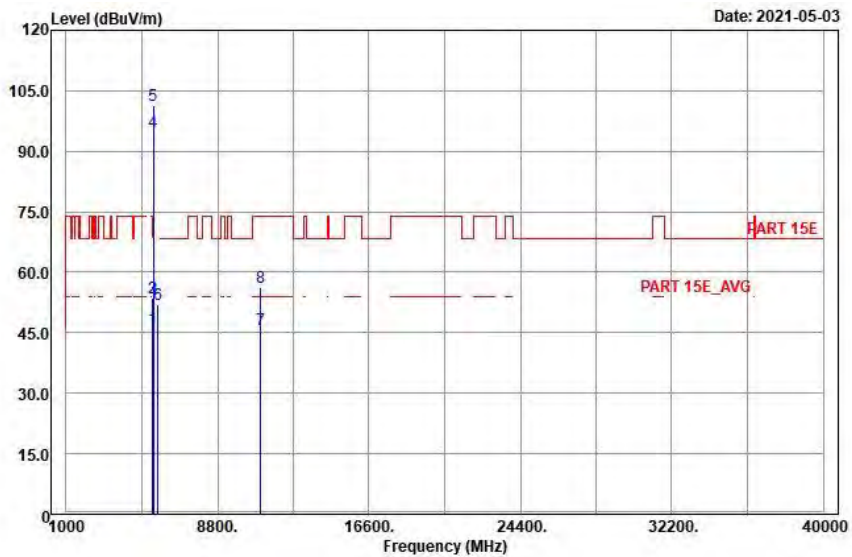


EUT Test Condition		Measurement Detail	
Channel	Channel 102	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	46.51	36	10.51	54	-7.49	154	110	Average
5460	55.31	44.8	10.51	74	-18.69	154	110	Peak
*5470	54.05	43.52	10.53	68.2	-14.15	154	110	Peak
5510	96.18	85.58	10.6			154	110	Average
5510	104.1	93.5	10.6			154	110	Peak
*5725	51.7	40.78	10.92	68.2	-16.5	154	110	Peak
11020	46.91	30.75	16.16	54	-7.09	158	131	Average
11020	57.13	40.97	16.16	74	-16.87	158	131	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

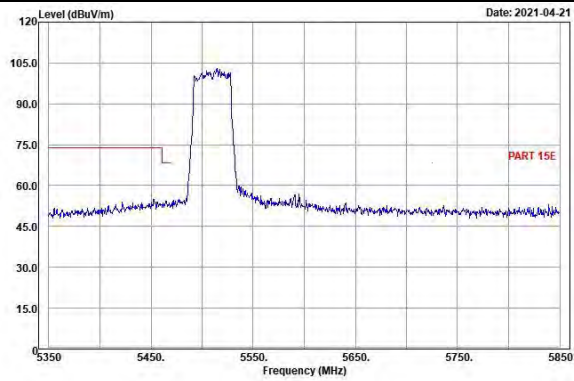
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	45.96	35.45	10.51	54	-8.04	214	88	Average
5460	53.77	43.26	10.51	74	-20.23	214	88	Peak
*5470	53.67	43.14	10.53	68.2	-14.53	214	88	Peak
5510	94.88	84.28	10.6			214	88	Average
5510	101.21	90.61	10.6			214	88	Peak
*5725	51.91	40.99	10.92	68.2	-16.29	214	88	Peak
11020	45.84	29.68	16.16	54	-8.16	193	14	Average
11020	56.1	39.94	16.16	74	-17.9	193	14	Peak

Remarks:

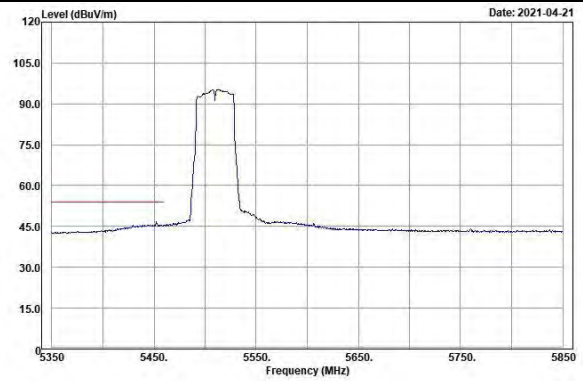
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5510 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 102

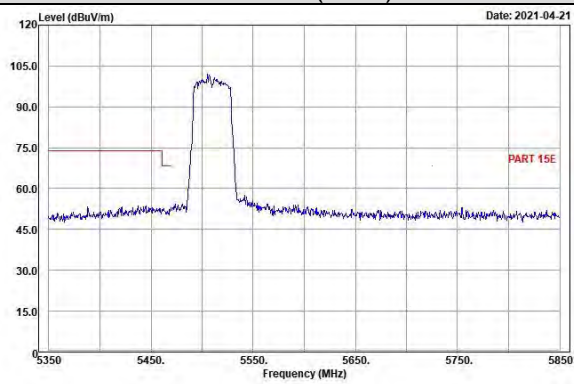
Horizontal (Peak)



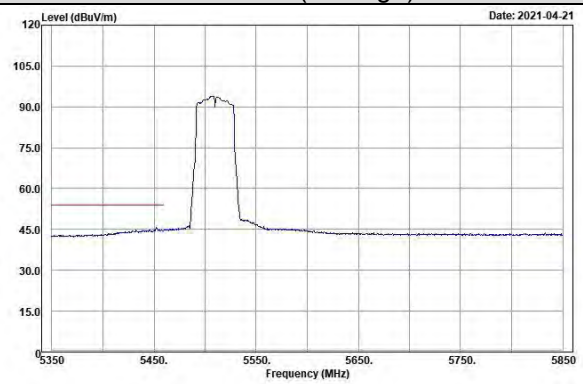
Horizontal (Average)



Vertical (Peak)

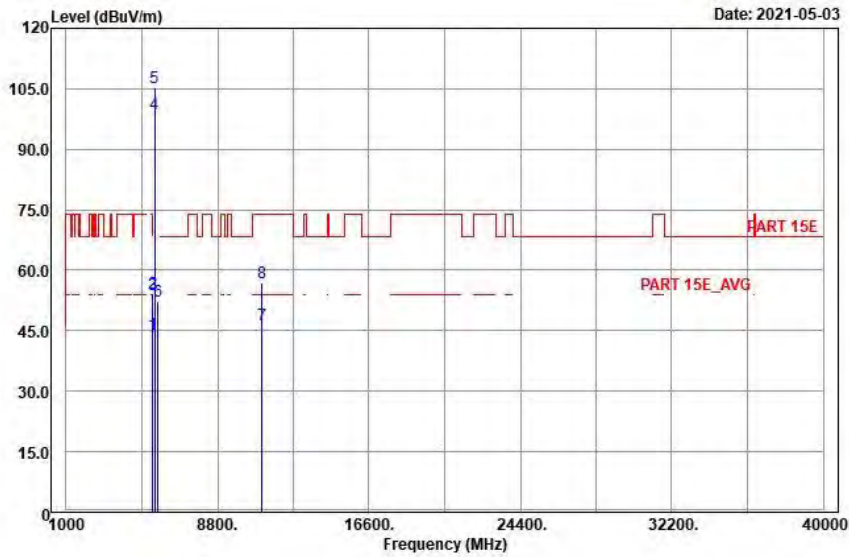


Vertical (Average)

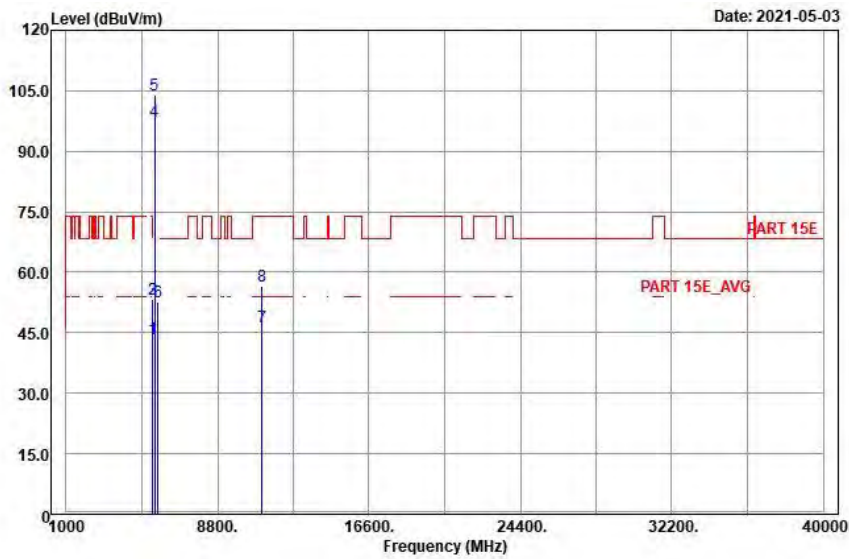


EUT Test Condition		Measurement Detail	
Channel	Channel 110	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	44.12	33.61	10.51	54	-9.88	158	110	Average
5460	54.29	43.78	10.51	74	-19.71	158	110	Peak
*5470	53.81	43.28	10.53	68.2	-14.39	158	110	Peak
5550	98.85	88.17	10.68			158	110	Average
5550	105.34	94.66	10.68			158	110	Peak
*5725	52.34	41.42	10.92	68.2	-15.86	158	110	Peak
11100	46.55	30.28	16.27	54	-7.45	108	226	Average
11100	56.78	40.51	16.27	74	-17.22	108	226	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

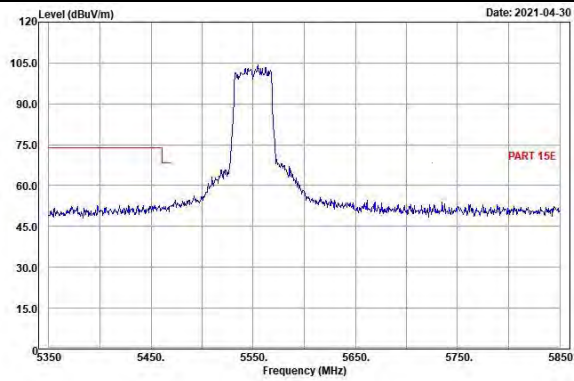
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	43.63	33.12	10.51	54	-10.37	226	288	Average
5460	53.37	42.86	10.51	74	-20.63	226	288	Peak
*5470	53.26	42.73	10.53	68.2	-14.94	226	288	Peak
5550	97.5	86.82	10.68			226	288	Average
5550	104.13	93.45	10.68			226	288	Peak
*5725	52.79	41.87	10.92	68.2	-15.41	226	288	Peak
11100	46.35	30.08	16.27	54	-7.65	261	170	Average
11100	56.56	40.29	16.27	74	-17.44	261	170	Peak

Remarks:

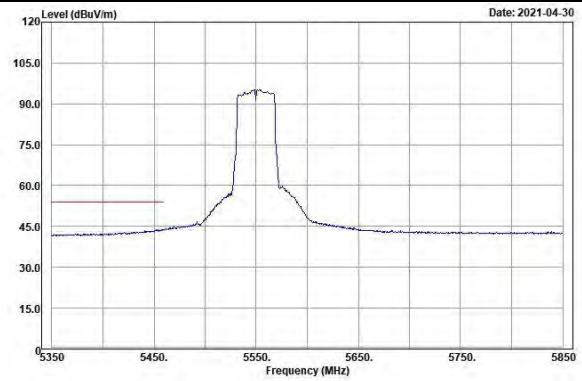
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5550 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 110

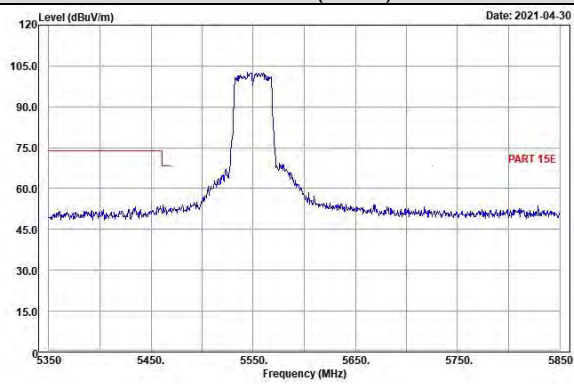
Horizontal (Peak)



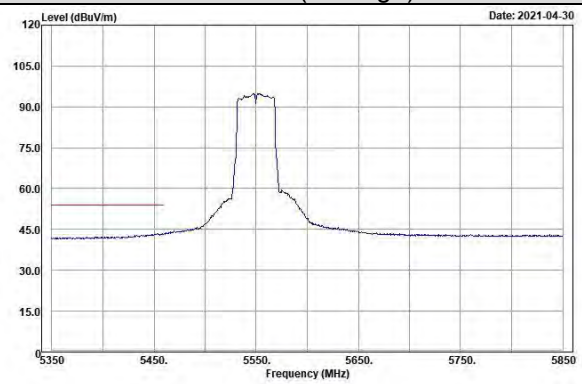
Horizontal (Average)



Vertical (Peak)

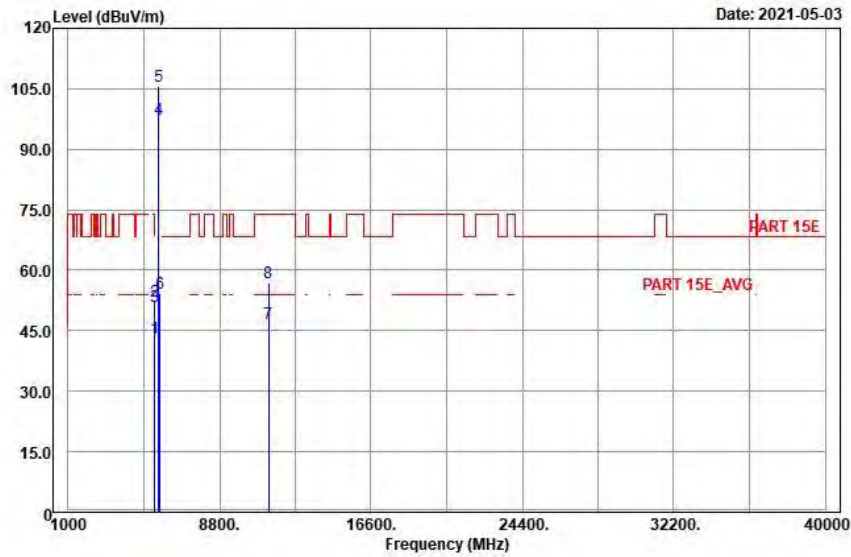


Vertical (Average)

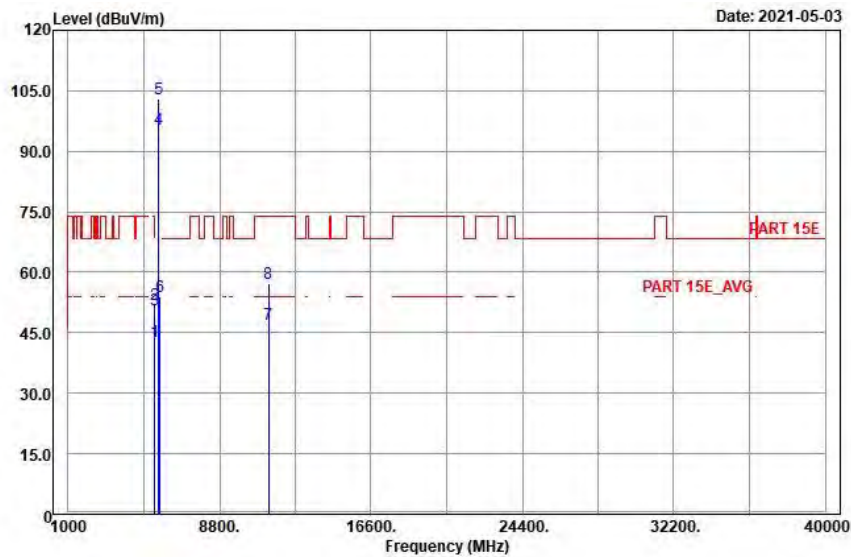


EUT Test Condition		Measurement Detail	
Channel	Channel 134	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	43.14	32.63	10.51	54	-10.86	158	111	Average
5460	52.27	41.76	10.51	74	-21.73	158	111	Peak
*5470	50.96	40.43	10.53	68.2	-17.24	158	111	Peak
5670	97.5	86.6	10.9			158	111	Average
5670	105.62	94.72	10.9			158	111	Peak
*5725	54.28	43.36	10.92	68.2	-13.92	158	111	Peak
11340	46.65	30.23	16.42	54	-7.35	158	112	Average
11340	56.87	40.45	16.42	74	-17.13	158	112	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

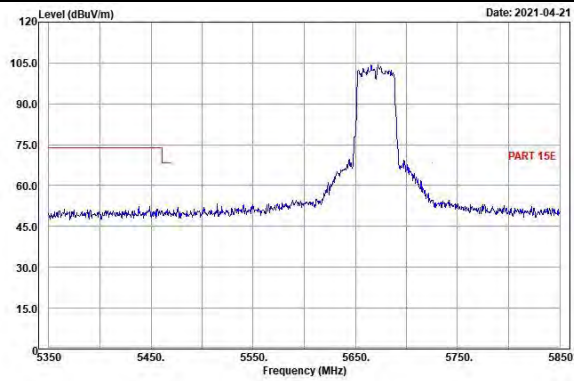
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	42.91	32.4	10.51	54	-11.09	211	80	Average
5460	52.15	41.64	10.51	74	-21.85	211	80	Peak
*5470	50.69	40.16	10.53	68.2	-17.51	211	80	Peak
5670	95.42	84.52	10.9			211	80	Average
5670	102.93	92.03	10.9			211	80	Peak
*5725	53.79	42.87	10.92	68.2	-14.41	211	80	Peak
11340	47.05	30.63	16.42	54	-6.95	235	91	Average
11340	57.14	40.72	16.42	74	-16.86	235	91	Peak

Remarks:

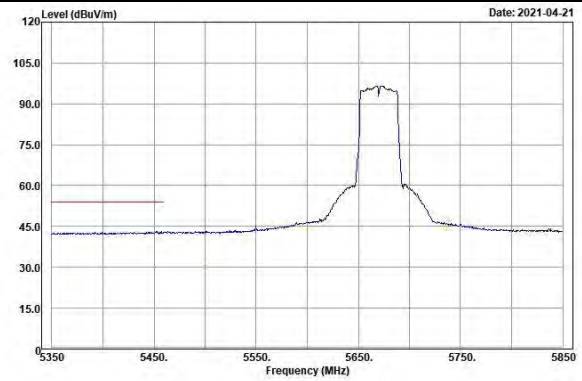
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5670 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 134

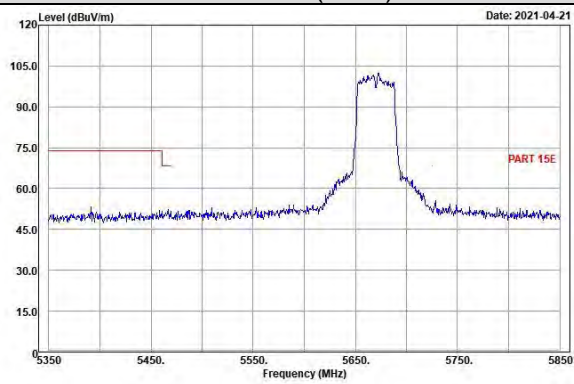
Horizontal (Peak)



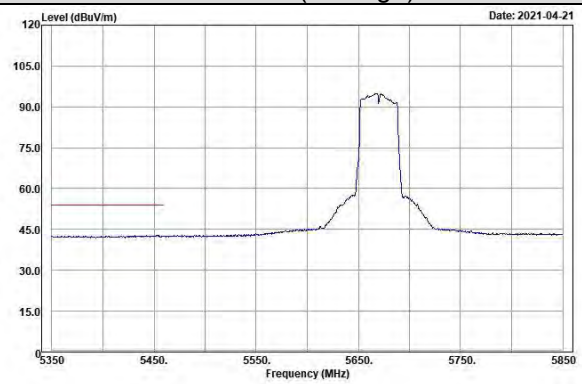
Horizontal (Average)



Vertical (Peak)

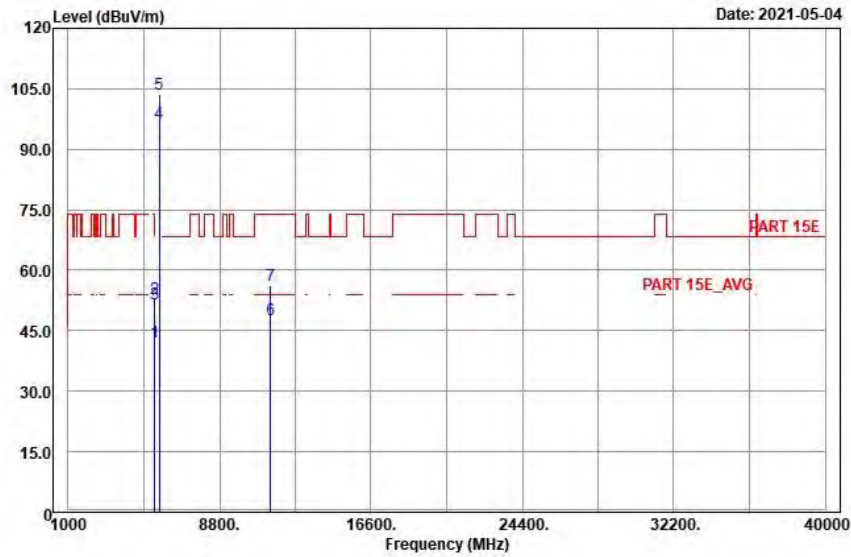


Vertical (Average)

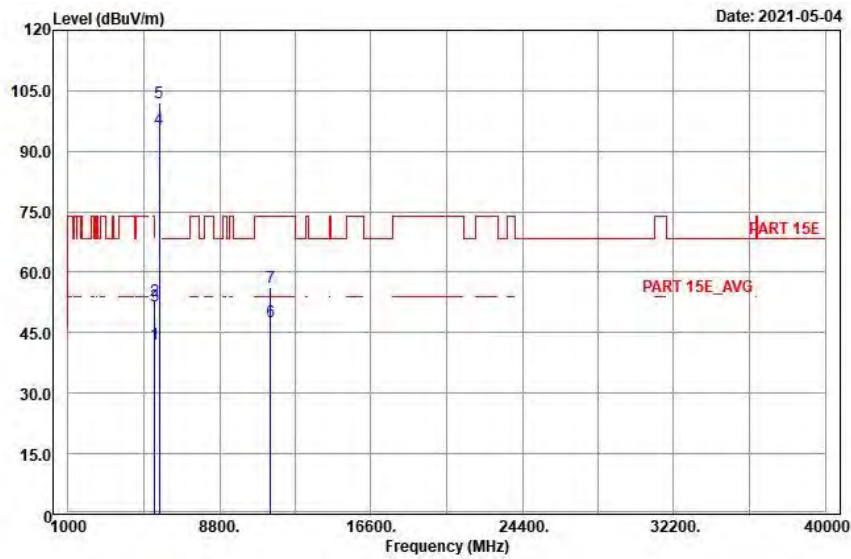


EUT Test Condition		Measurement Detail	
Channel	Channel 142	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	42.31	31.8	10.51	54	-11.69	184	110	Average
5460	52.99	42.48	10.51	74	-21.01	184	110	Peak
*5470	51.7	41.17	10.53	68.2	-16.5	184	110	Peak
5710	96.59	85.68	10.91			184	110	Average
5710	103.72	92.81	10.91			184	110	Peak
11420	47.61	31.35	16.26	54	-6.39	138	255	Average
11420	56.1	39.84	16.26	74	-17.9	138	255	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

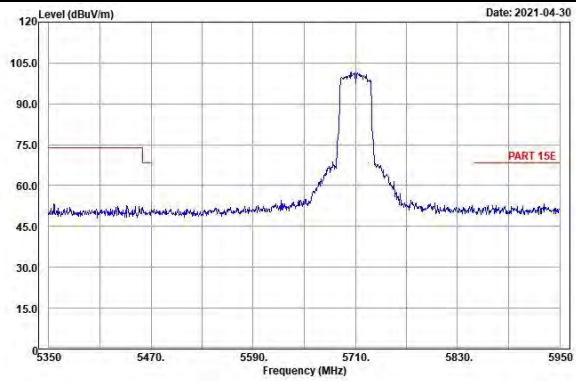
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	42.17	31.66	10.51	54	-11.83	211	80	Average
5460	52.94	42.43	10.51	74	-21.06	211	80	Peak
*5470	51.52	40.99	10.53	68.2	-16.68	211	80	Peak
5710	95.53	84.62	10.91			211	80	Average
5710	102.11	91.2	10.91			211	80	Peak
11420	47.74	31.48	16.26	54	-6.26	180	25	Average
11420	56.39	40.13	16.26	74	-17.61	180	25	Peak

Remarks:

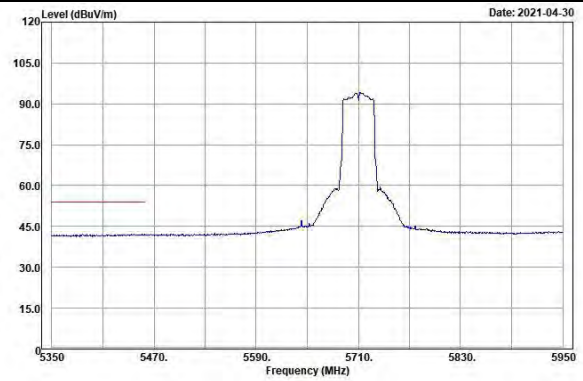
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5710 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 142

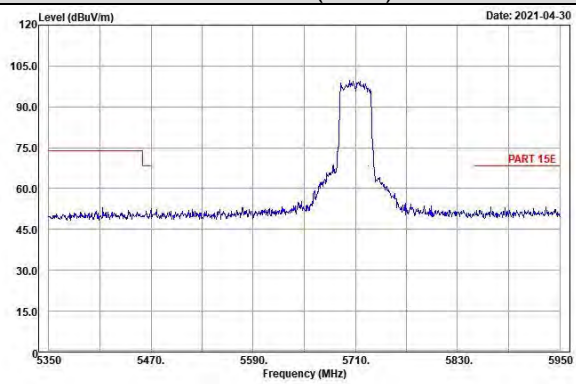
Horizontal (Peak)



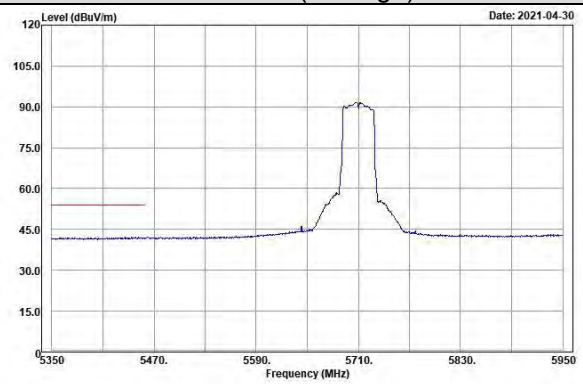
Horizontal (Average)



Vertical (Peak)

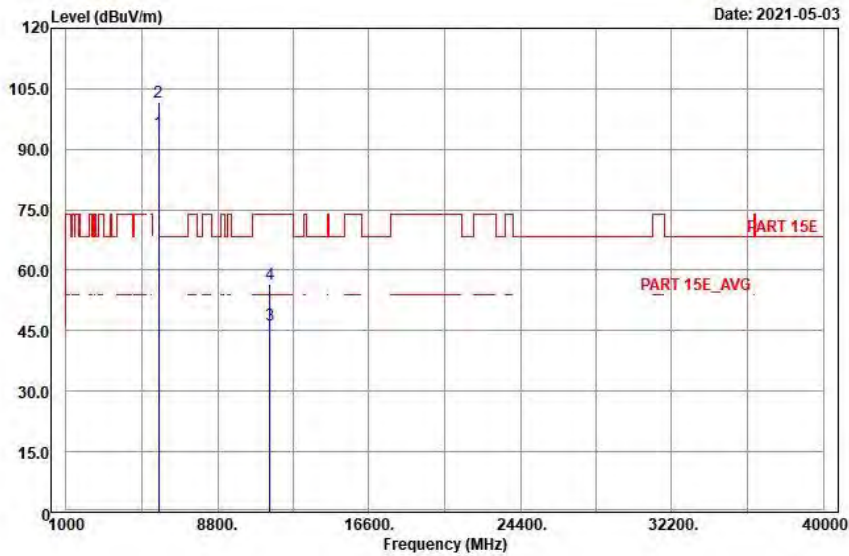


Vertical (Average)

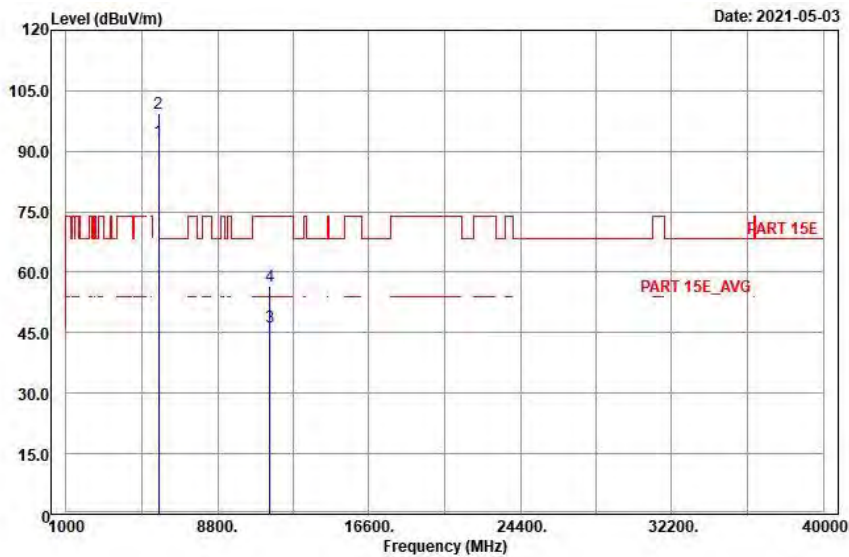


EUT Test Condition		Measurement Detail	
Channel	Channel 151	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

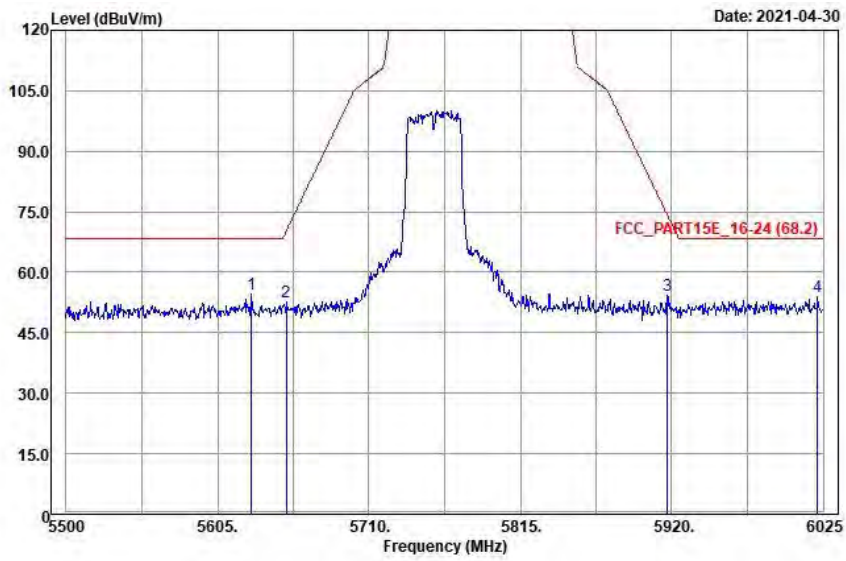
<Spurious Emission>
Horizontal



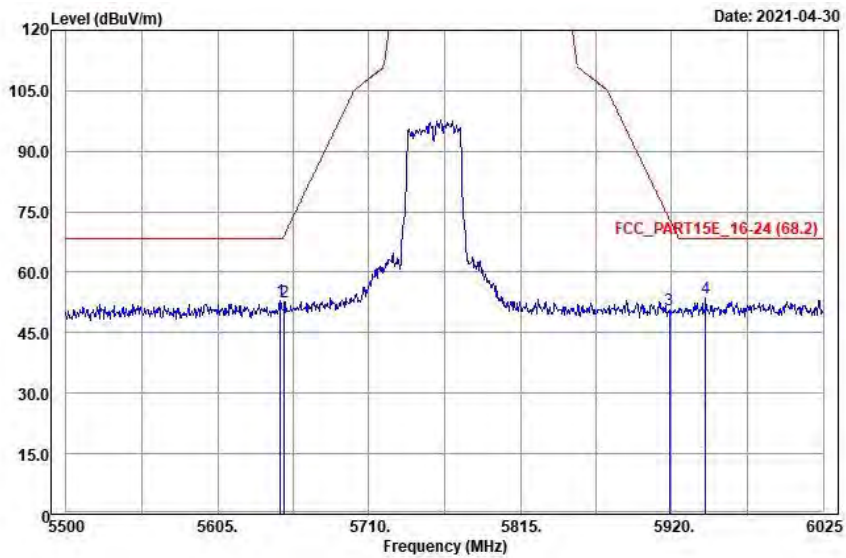
Vertical



**<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	94.29	83.39	10.9			184	136	Average
5755	101.61	90.71	10.9			184	136	Peak
11510	46.49	29.98	16.51	54	-7.51	193	24	Average
11510	56.67	40.16	16.51	74	-17.33	193	24	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	92.64	81.74	10.9			211	80	Average
5755	99.37	88.47	10.9			211	80	Peak
11510	46.47	29.96	16.51	54	-7.53	243	336	Average
11510	56.59	40.08	16.51	74	-17.41	243	336	Peak

<Out of Band Emission (OOBE)>

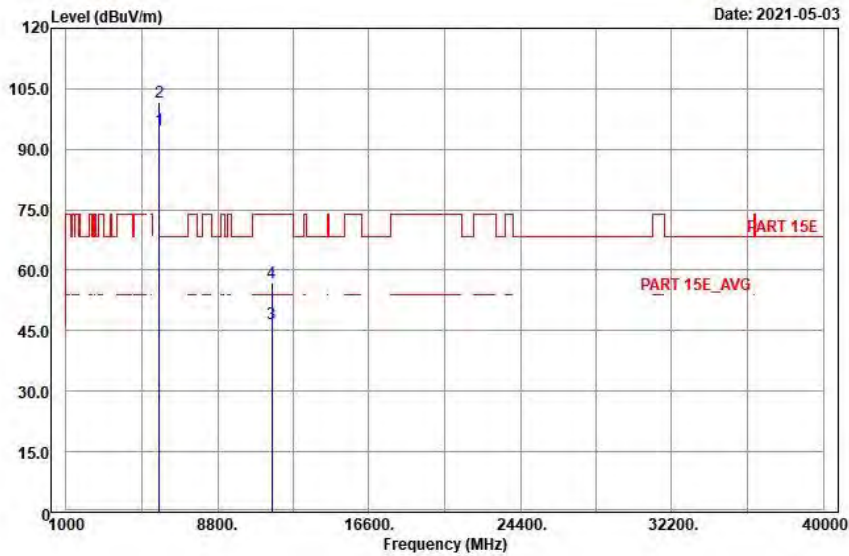
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5628.625	54.5	43.69	10.81	68.2	-13.7	184	136	Peak
5652.775	52.65	41.78	10.87	70.25	-17.6	184	136	Peak
5916.85	54.37	43.28	11.09	74.23	-19.86	184	136	Peak
*6021.325	54.07	42.72	11.35	68.2	-14.13	184	136	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5648.575	52.85	42	10.85	68.2	-15.35	211	80	Peak
5651.2	52.68	41.81	10.87	69.09	-16.41	211	80	Peak
5918.425	50.71	39.62	11.09	73.07	-22.36	211	80	Peak
*5943.625	53.48	42.3	11.18	68.2	-14.72	211	80	Peak

Remarks:

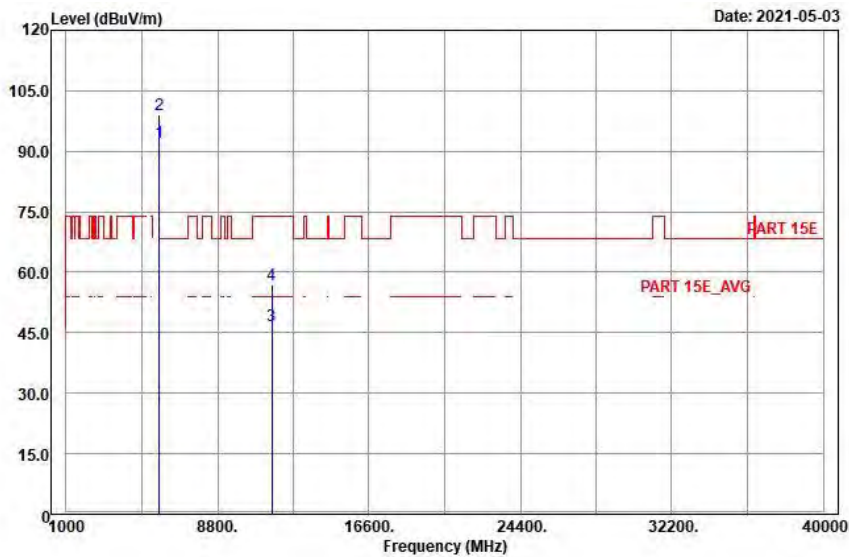
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin Value = Emission Level – Limit value
- 5755 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

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	Karl Lee, Charles Hsiao

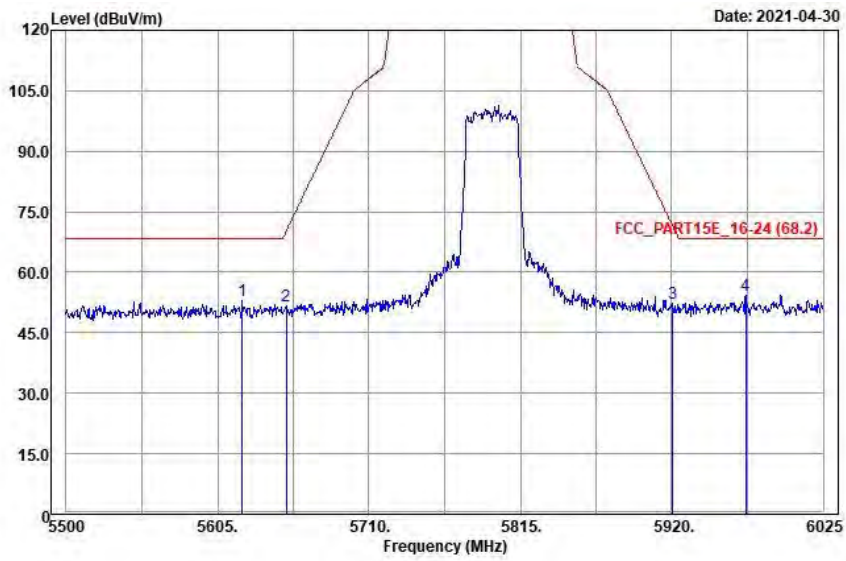
<Spurious Emission>
Horizontal



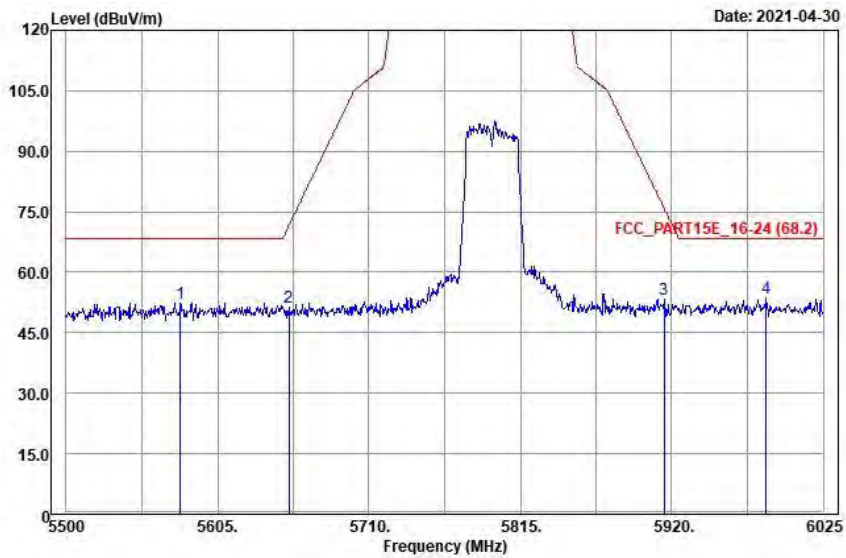
Vertical



<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	94.9	84.08	10.82			184	136	Average
5795	101.78	90.96	10.82			184	136	Peak
11590	46.69	30.18	16.51	54	-7.31	158	164	Average
11590	56.81	40.3	16.51	74	-17.19	158	164	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5795	92.26	81.44	10.82			211	129	Average
5795	99.01	88.19	10.82			211	129	Peak
11590	46.77	30.26	16.51	54	-7.23	211	147	Average
11590	56.84	40.33	16.51	74	-17.16	211	147	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
*5622.325	52.96	42.17	10.79	68.2	-15.24	184	136	Peak
5652.775	51.69	40.82	10.87	70.25	-18.56	184	136	Peak
5920.525	52.39	41.3	11.09	71.51	-19.12	184	136	Peak
*5971.45	54.18	42.93	11.25	68.2	-14.02	184	136	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5579.275	52.41	41.7	10.71	68.2	-15.79	211	129	Peak
5654.35	51.31	40.44	10.87	71.42	-20.11	211	129	Peak
5914.75	53.24	42.17	11.07	75.78	-22.54	211	129	Peak
*5985.625	53.65	42.36	11.29	68.2	-14.55	211	129	Peak

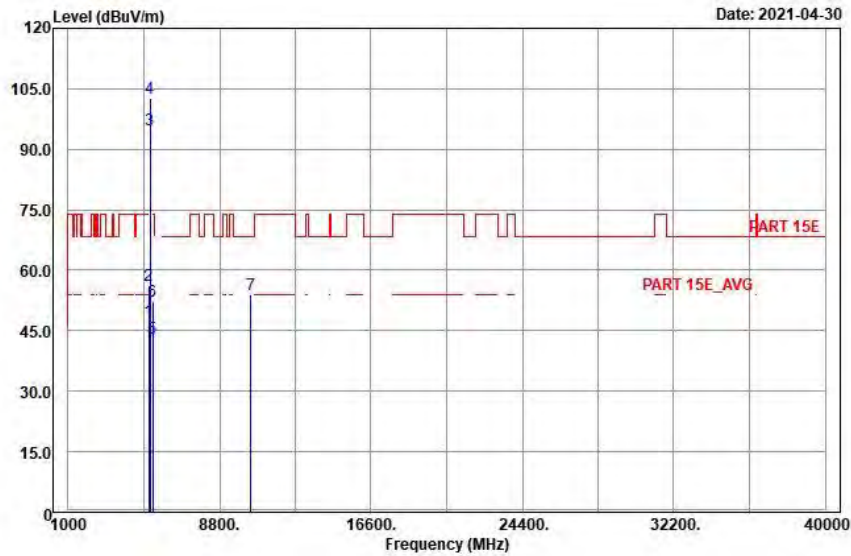
Remarks:

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

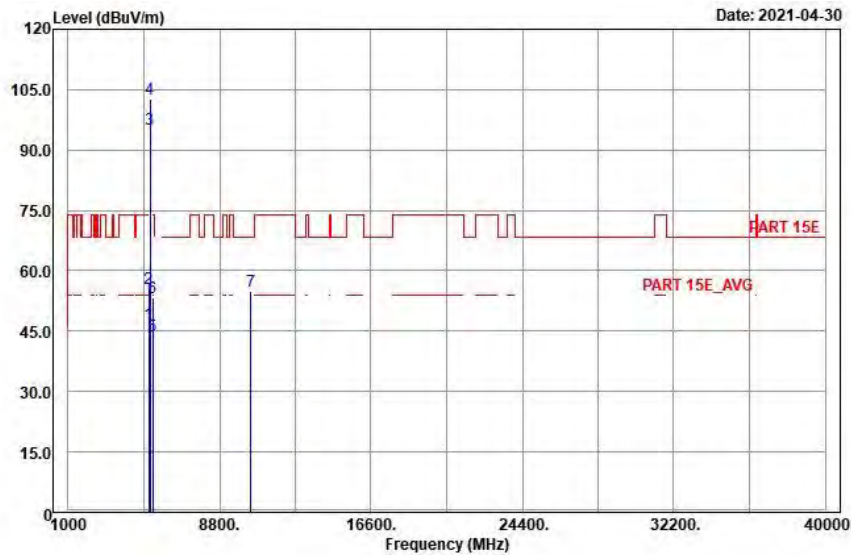
802.11ac (VHT80)

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	Karl Lee, 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	47.39	37.34	10.05	54	-6.61	192	145	Average
5150	56.09	46.04	10.05	74	-17.91	192	145	Peak
5210	94.75	84.58	10.17			192	145	Average
5210	102.61	92.44	10.17			192	145	Peak
5350	43.12	32.89	10.23	54	-10.88	192	145	Average
5350	52.44	42.21	10.23	74	-21.56	192	145	Peak
*10420	53.96	37.8	16.16	68.2	-14.24	162	238	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

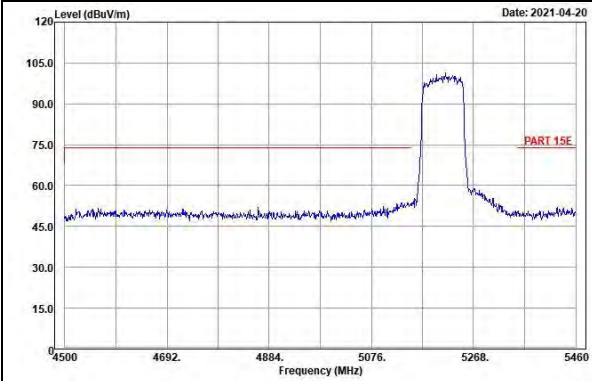
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	46.67	36.62	10.05	54	-7.33	226	93	Average
5150	55.44	45.39	10.05	74	-18.56	226	93	Peak
5210	95.04	84.87	10.17			226	93	Average
5210	102.72	92.55	10.17			226	93	Peak
5350	43.83	33.6	10.23	54	-10.17	226	93	Average
5350	53.19	42.96	10.23	74	-20.81	226	93	Peak
*10420	54.93	38.77	16.16	68.2	-13.27	111	172	Peak

Remarks:

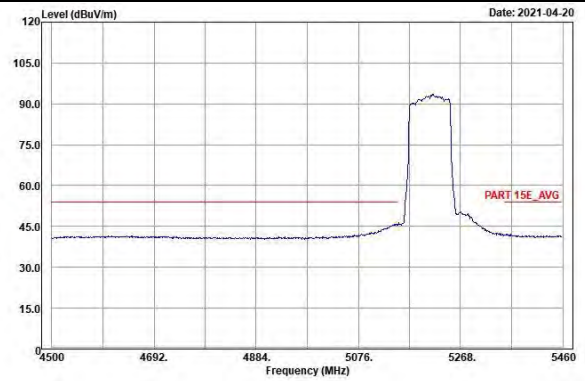
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5210 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 42

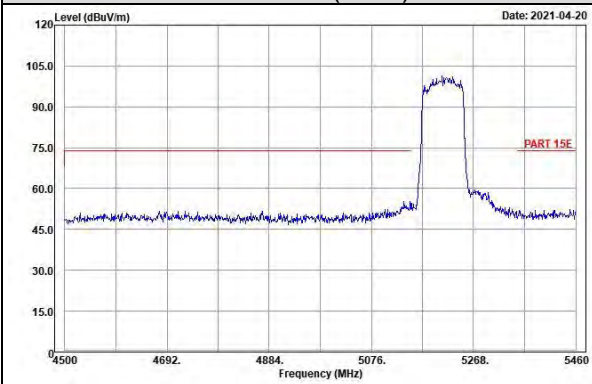
Horizontal (Peak)



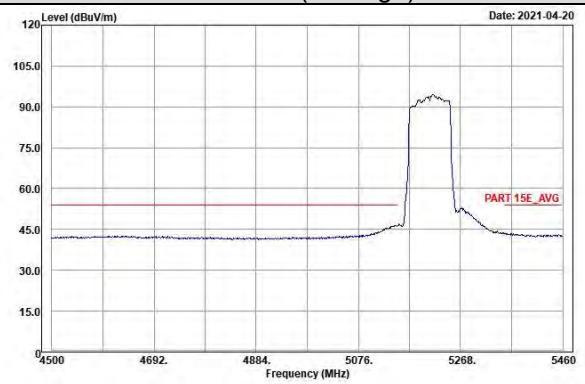
Horizontal (Average)



Vertical (Peak)

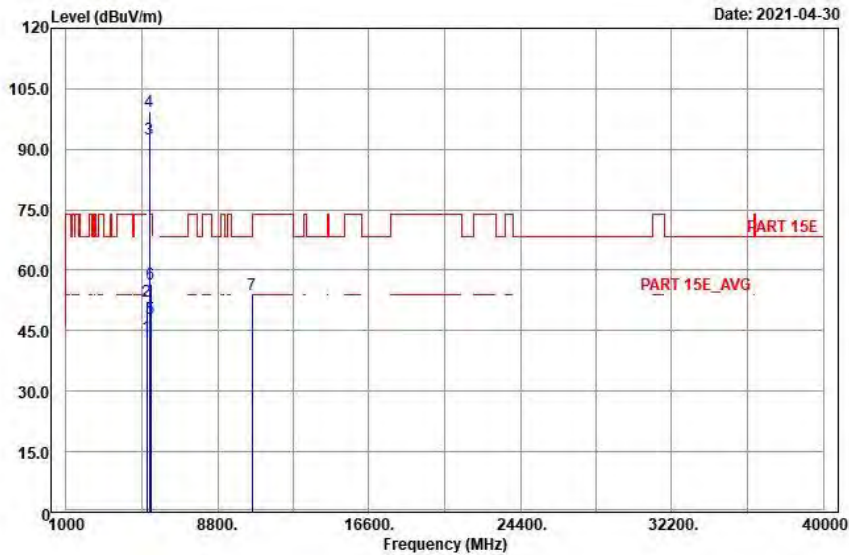


Vertical (Average)

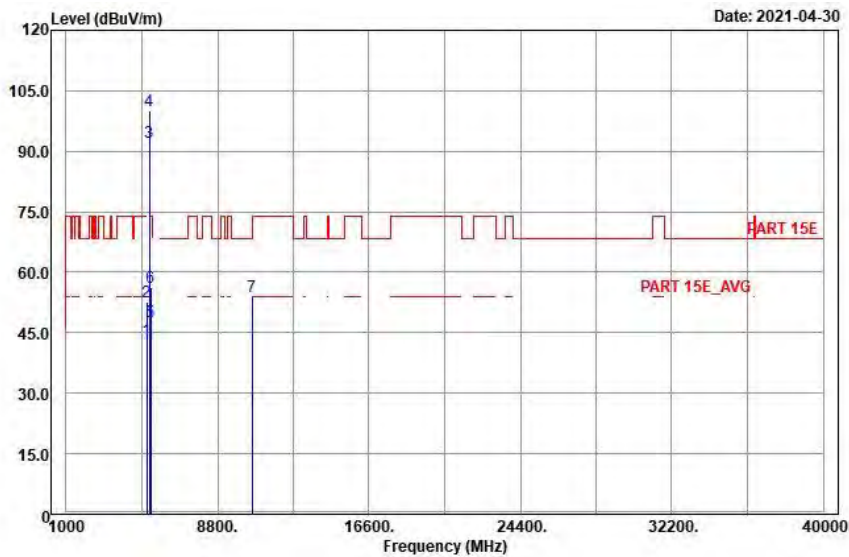


EUT Test Condition		Measurement Detail	
Channel	Channel 58	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	43.37	33.32	10.05	54	-10.63	158	110	Average
5150	52.39	42.34	10.05	74	-21.61	158	110	Peak
5290	92.46	82.36	10.1			158	110	Average
5290	99.44	89.34	10.1			158	110	Peak
5350	48.04	37.81	10.23	54	-5.96	158	110	Average
5350	56.68	46.45	10.23	74	-17.32	158	110	Peak
*10580	53.89	38.18	15.71	68.2	-14.31	211	166	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

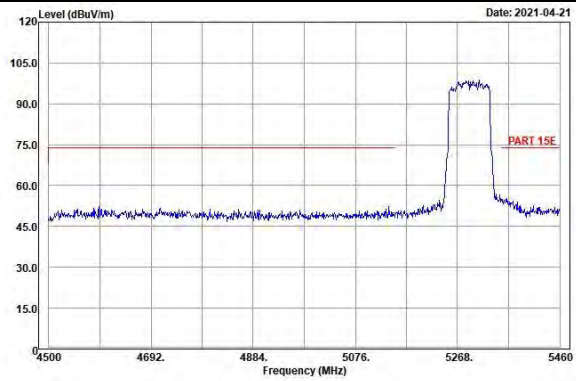
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	43.06	33.01	10.05	54	-10.94	212	93	Average
5150	52.69	42.64	10.05	74	-21.31	212	93	Peak
5290	92.05	81.95	10.1			212	93	Average
5290	100.13	90.03	10.1			212	93	Peak
5350	47.58	37.35	10.23	54	-6.42	212	93	Average
5350	56.17	45.94	10.23	74	-17.83	212	93	Peak
*10580	53.83	38.12	15.71	68.2	-14.37	147	290	Peak

Remarks:

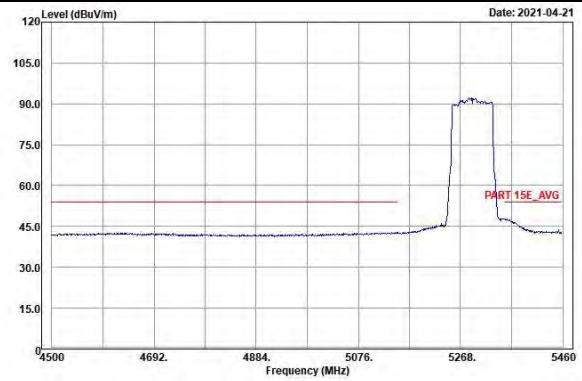
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5290 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 58

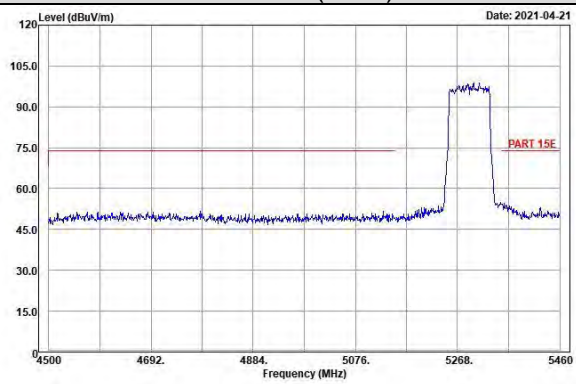
Horizontal (Peak)



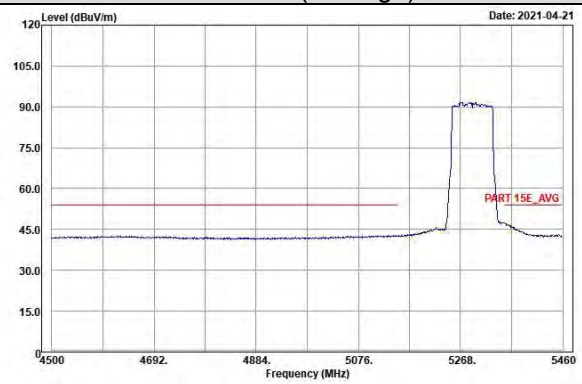
Horizontal (Average)



Vertical (Peak)

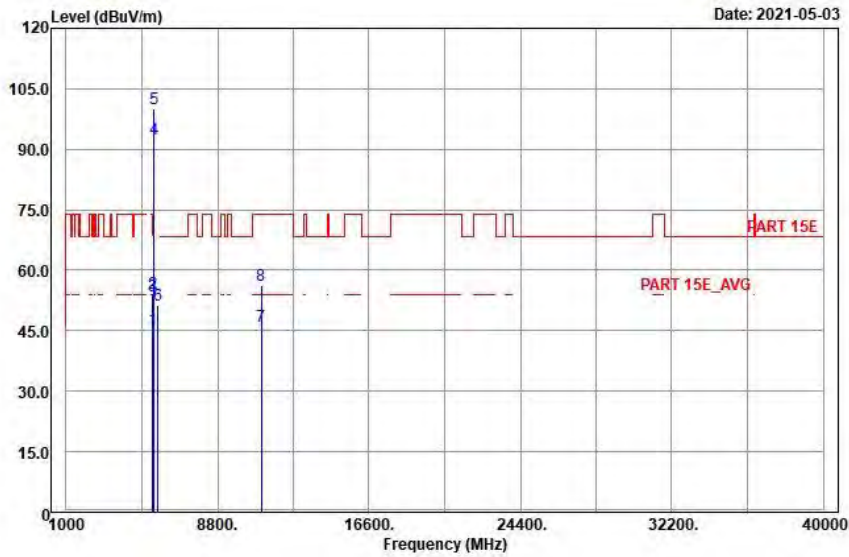


Vertical (Average)

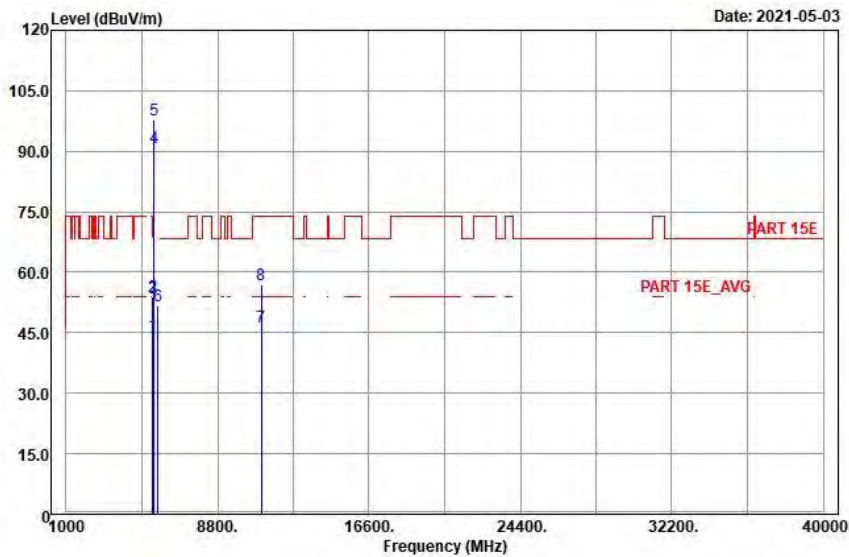


EUT Test Condition		Measurement Detail	
Channel	Channel 106	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	45.44	34.93	10.51	54	-8.56	147	111	Average
5460	54.32	43.81	10.51	74	-19.68	147	111	Peak
*5470	53.5	42.97	10.53	68.2	-14.7	147	111	Peak
5530	92.57	81.94	10.63			147	111	Average
5530	99.98	89.35	10.63			147	111	Peak
*5725	51.39	40.47	10.92	68.2	-16.81	147	111	Peak
11060	46.15	29.92	16.23	54	-7.85	112	184	Average
11060	56.25	40.02	16.23	74	-17.75	112	184	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

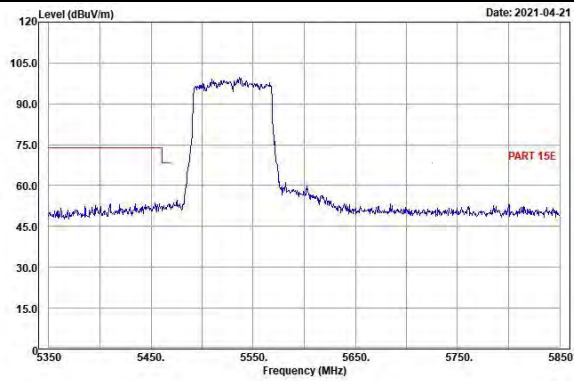
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	44.44	33.93	10.51	54	-9.56	224	82	Average
5460	53.95	43.44	10.51	74	-20.05	224	82	Peak
*5470	53.51	42.98	10.53	68.2	-14.69	224	82	Peak
5530	90.96	80.33	10.63			224	82	Average
5530	97.72	87.09	10.63			224	82	Peak
*5725	51.66	40.74	10.92	68.2	-16.54	224	82	Peak
11060	46.37	30.14	16.23	54	-7.63	236	118	Average
11060	56.8	40.57	16.23	74	-17.2	236	118	Peak

Remarks:

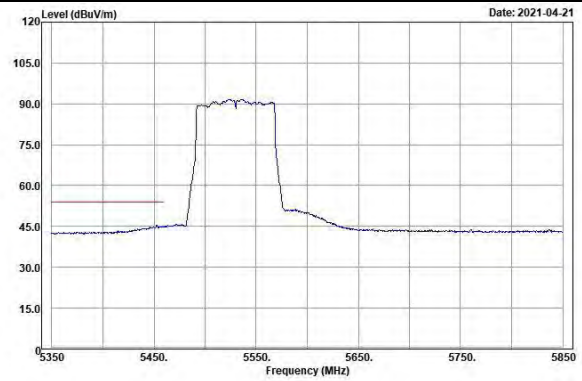
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5530 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 106

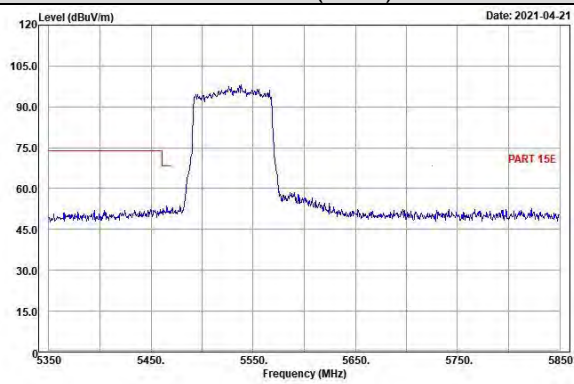
Horizontal (Peak)



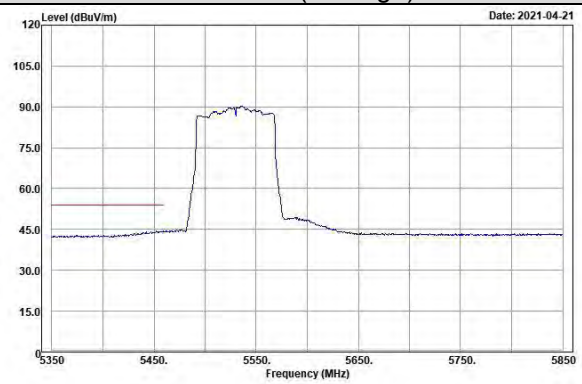
Horizontal (Average)



Vertical (Peak)

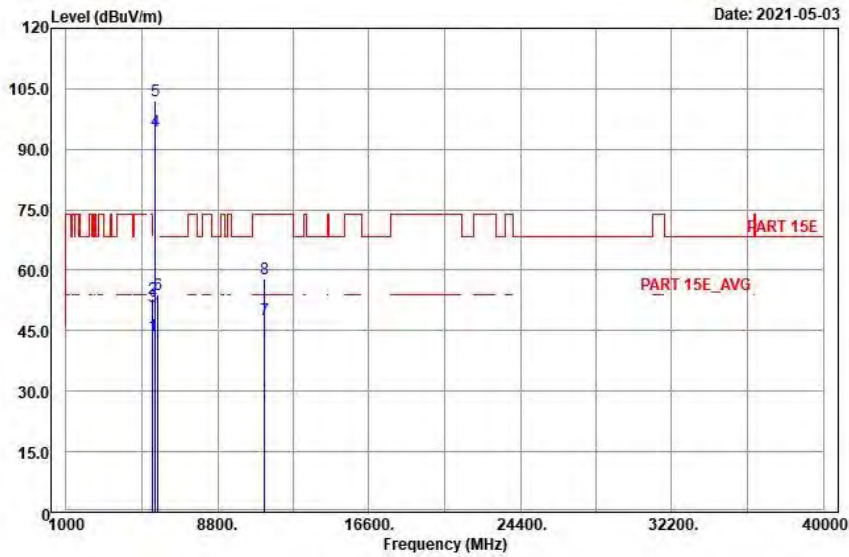


Vertical (Average)

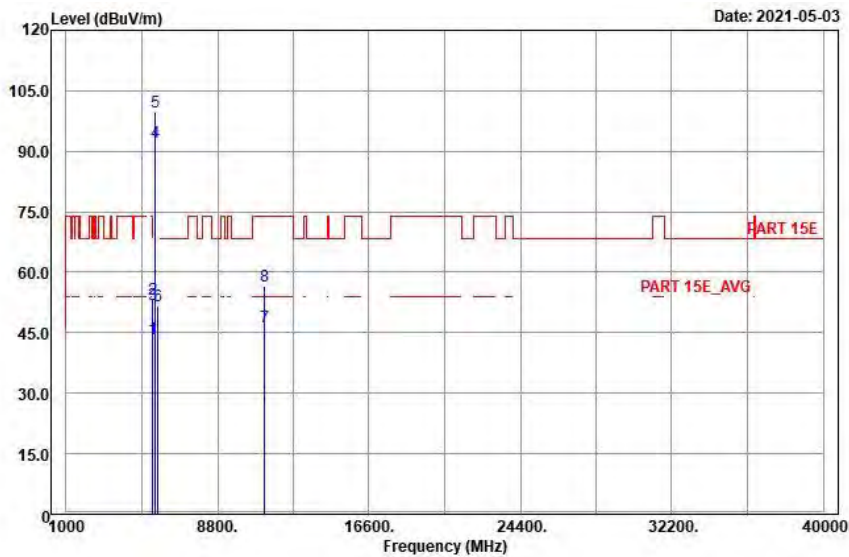


EUT Test Condition		Measurement Detail	
Channel	Channel 122	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	43.73	33.22	10.51	54	-10.27	132	110	Average
5460	53.11	42.6	10.51	74	-20.89	132	110	Peak
*5470	51.16	40.63	10.53	68.2	-17.04	132	110	Peak
5610	94.61	83.84	10.77			132	110	Average
5610	101.98	91.21	10.77			132	110	Peak
*5725	53.85	42.93	10.92	68.2	-14.35	132	110	Peak
11220	47.66	31.24	16.42	54	-6.34	215	172	Average
11220	57.83	41.41	16.42	74	-16.17	215	172	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

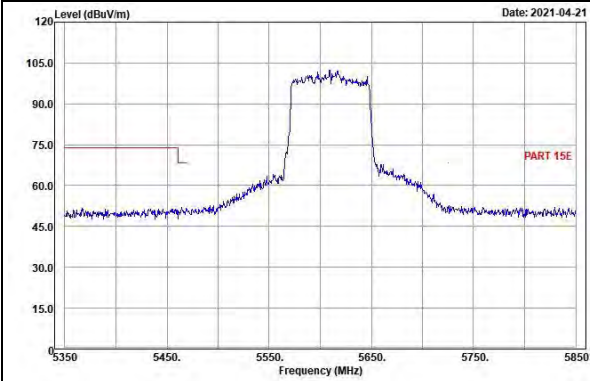
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	43.34	32.83	10.51	54	-10.66	224	82	Average
5460	53.17	42.66	10.51	74	-20.83	224	82	Peak
*5470	51.98	41.45	10.53	68.2	-16.22	224	82	Peak
5610	92.18	81.41	10.77			224	82	Average
5610	99.82	89.05	10.77			224	82	Peak
*5725	51.68	40.76	10.92	68.2	-16.52	224	82	Peak
11220	46.39	29.97	16.42	54	-7.61	161	120	Average
11220	56.53	40.11	16.42	74	-17.47	161	120	Peak

Remarks:

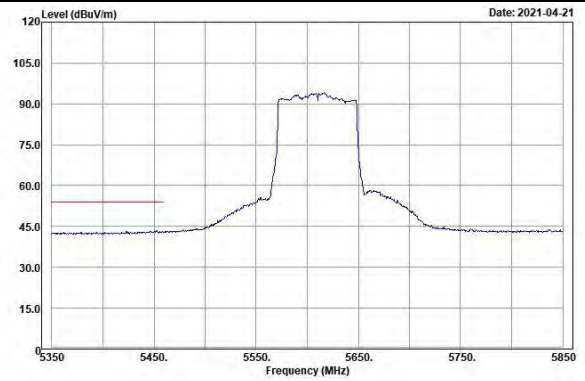
1. Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
2. 5610 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The other emission levels were very low against the limit.

Channel 122

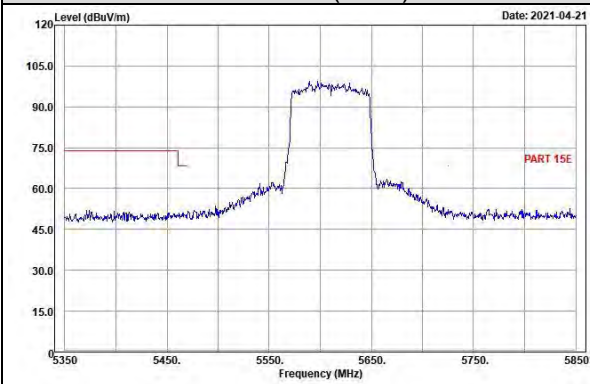
Horizontal (Peak)



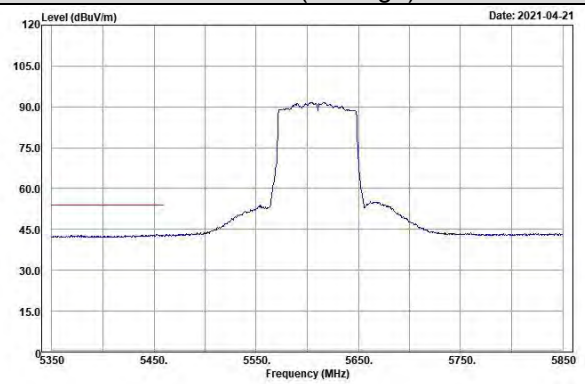
Horizontal (Average)



Vertical (Peak)

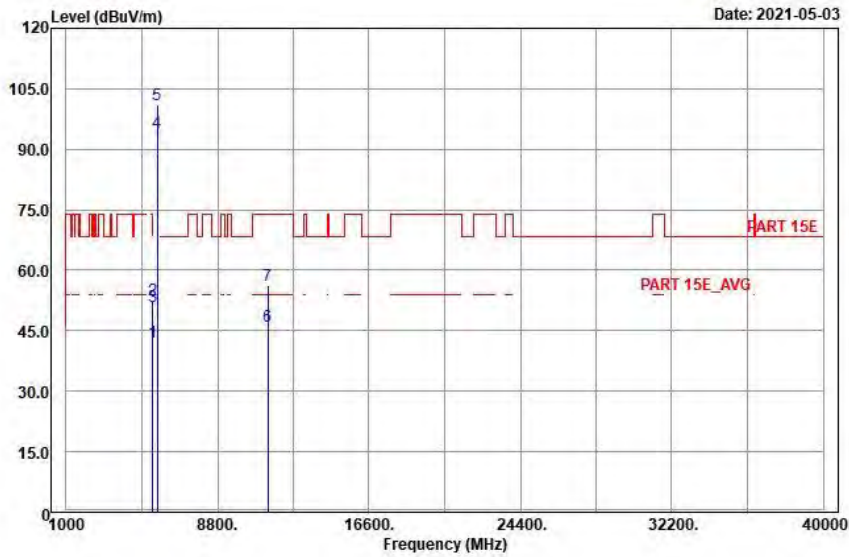


Vertical (Average)

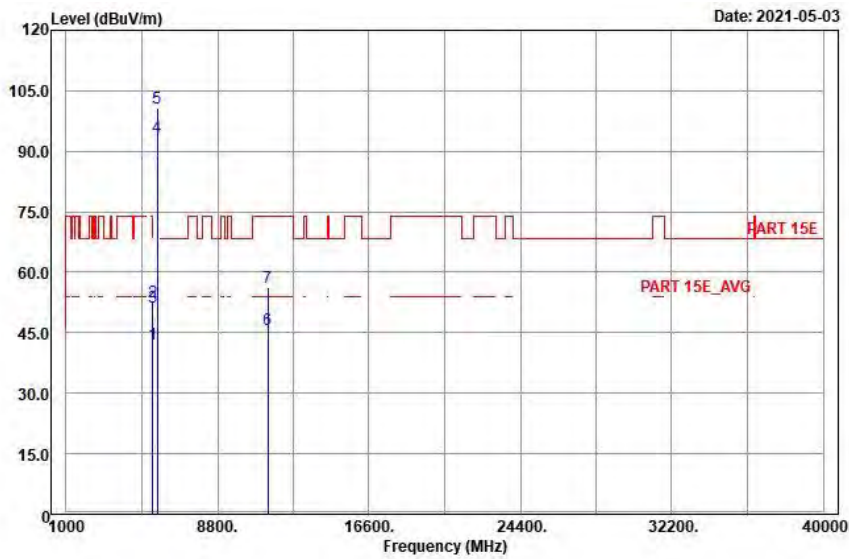


EUT Test Condition		Measurement Detail	
Channel	Channel 138	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

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	42.16	31.65	10.51	54	-11.84	184	110	Average
5460	52.57	42.06	10.51	74	-21.43	184	110	Peak
*5470	51.15	40.62	10.53	68.2	-17.05	184	110	Peak
5690	94.16	83.23	10.93			184	110	Average
5690	101	90.07	10.93			184	110	Peak
11380	46.22	29.95	16.27	54	-7.78	123	84	Average
11380	56.34	40.07	16.27	74	-17.66	123	84	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

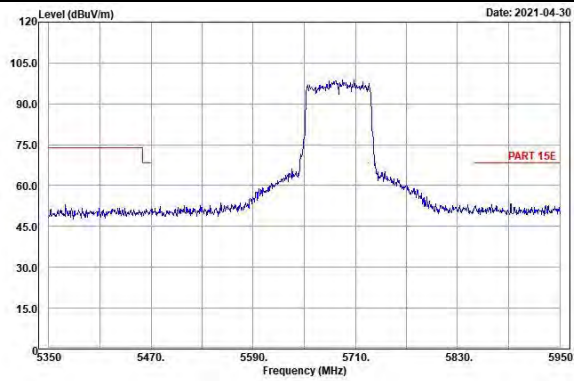
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	42.31	31.8	10.51	54	-11.69	211	80	Average
5460	52.6	42.09	10.51	74	-21.4	211	80	Peak
*5470	51.46	40.93	10.53	68.2	-16.74	211	80	Peak
5690	93.57	82.64	10.93			211	80	Average
5690	100.6	89.67	10.93			211	80	Peak
11380	45.91	29.64	16.27	54	-8.09	126	304	Average
11380	56.09	39.82	16.27	74	-17.91	126	304	Peak

Remarks:

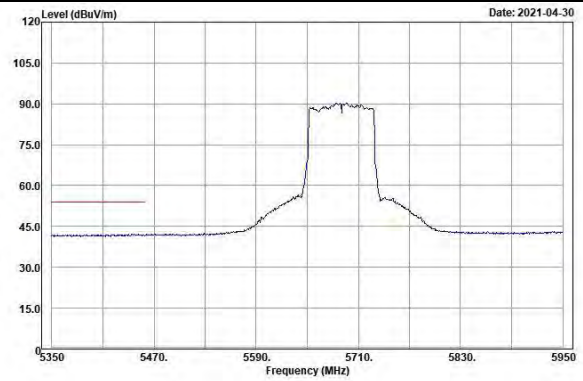
- Emission Level = Read Level + Factor
Margin Value = Emission Level – Limit value
- 5690 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The other emission levels were very low against the limit.

Channel 138

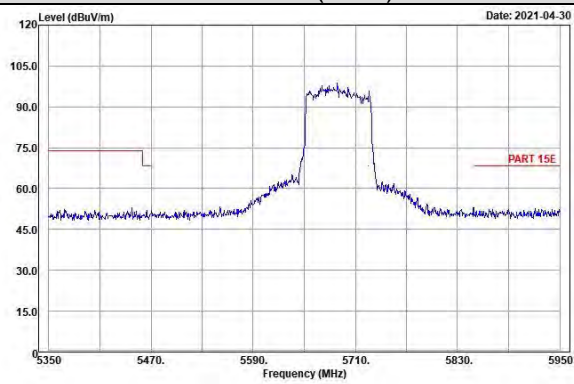
Horizontal (Peak)



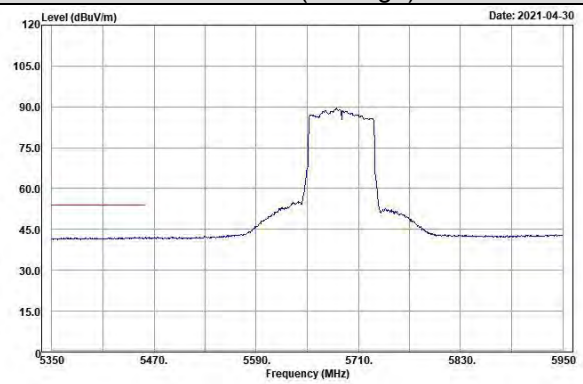
Horizontal (Average)



Vertical (Peak)

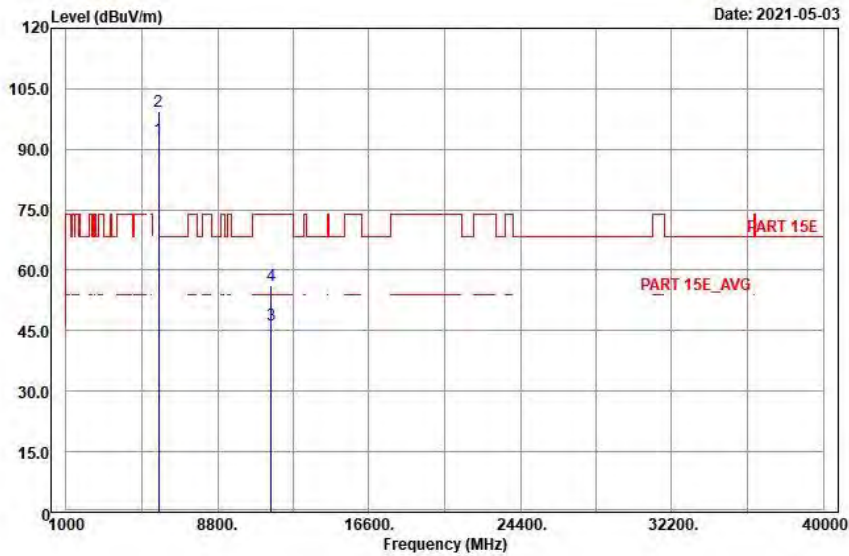


Vertical (Average)

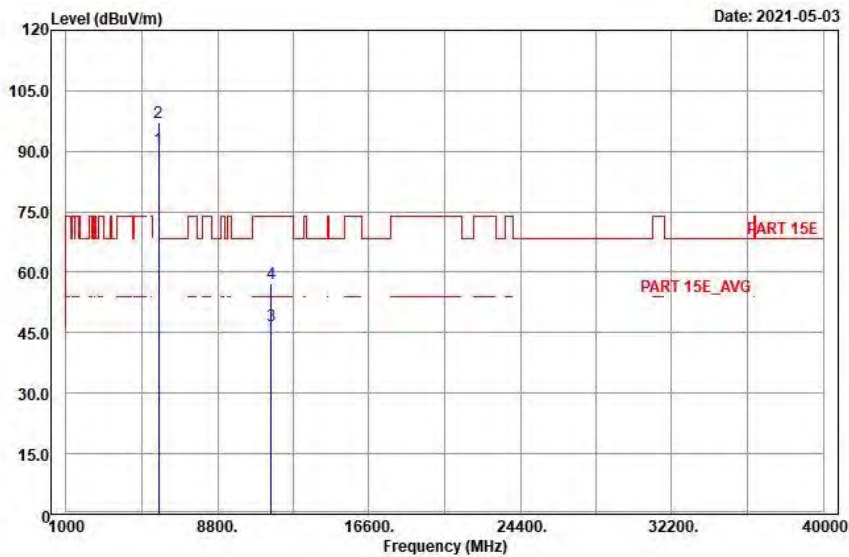


EUT Test Condition		Measurement Detail	
Channel	Channel 155	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Karl Lee, Charles Hsiao

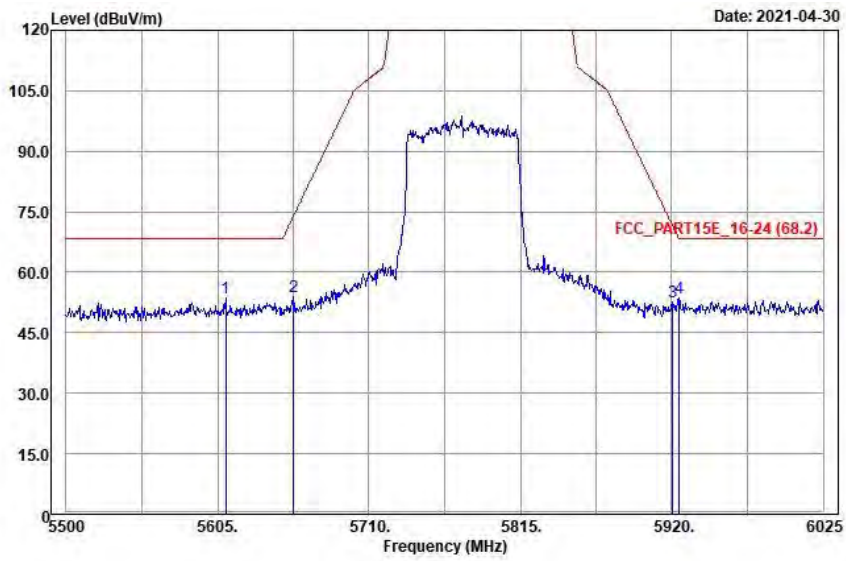
<Spurious Emission>
Horizontal



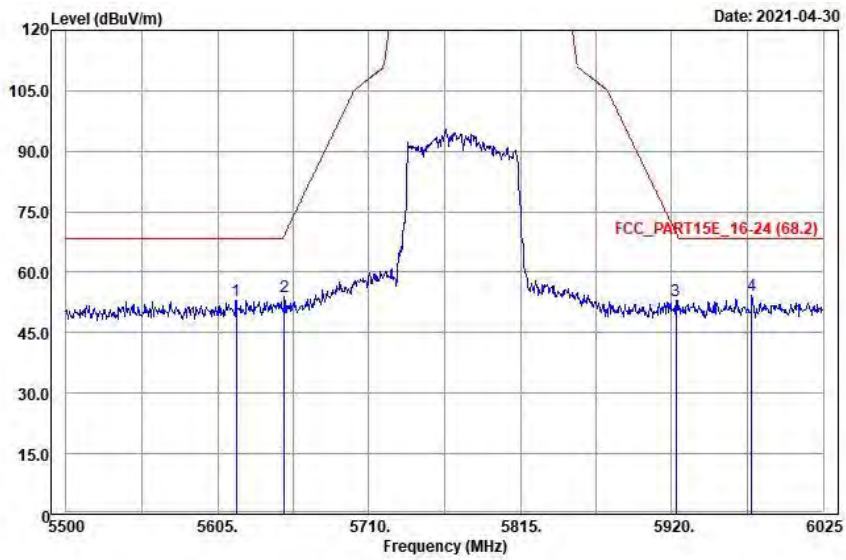
Vertical



<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	92.54	81.67	10.87			184	136	Average
5775	99.54	88.67	10.87			184	136	Peak
11550	46.28	29.78	16.5	54	-7.72	121	184	Average
11550	56.35	39.85	16.5	74	-17.65	121	184	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	90.53	79.66	10.87			211	80	Average
5775	97.07	86.2	10.87			211	80	Peak
11550	46.75	30.25	16.5	54	-7.25	262	143	Average
11550	57.13	40.63	16.5	74	-16.87	262	143	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
*5610.775	53.75	42.98	10.77	68.2	-14.45	184	136	Peak
5657.5	53.87	43	10.87	73.75	-19.88	184	136	Peak
5920.525	52.51	41.42	11.09	71.51	-19	184	136	Peak
*5925.25	53.71	42.6	11.11	68.2	-14.49	184	136	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5618.125	53.09	42.3	10.79	68.2	-15.11	211	80	Peak
5651.2	53.97	43.1	10.87	69.09	-15.12	211	80	Peak
5923.15	53.1	41.99	11.11	69.57	-16.47	211	80	Peak
*5975.65	54.13	42.87	11.26	68.2	-14.07	211	80	Peak

Remarks:

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