FCC Test Report

Report No.:	RF190606C07-4
FCC ID:	A4R-H2C
Test Model:	H2C
Received Date:	Jun. 06, 2019
Test Date:	Jun. 27, 2019 ~ Jul. 05, 2019
Issued Date:	Jul. 22, 2019
Applicant:	Google LLC
Address:	1600 Amphitheatre Parkway, Mountain View, CA 94043, USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)
Test Location:	No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan, R.O.C.
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

Table of Contents

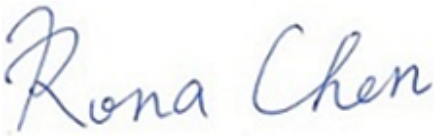
Release Control Record

Issue No.	Description	Date Issued
RF190606C07-4	Original Release	Jul. 22, 2019

1 Certificate of Conformity

Product:	Interactive media streaming device
Test Model:	H2C
Sample Status:	Production Unit
Applicant:	Google LLC
Test Date:	Jun. 27, 2019 ~ Jul. 05, 2019
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:** Jul. 22, 2019

Rona Chen / Specialist

Approved by :  , **Date:** Jul. 22, 2019

Dylan Chiou / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	**Test Item**	**Result**	**Remarks**
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -15.45 dB at 0.59574 MHz.
15.407(b) (1/2/3/4(i)/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.5 dB at 5150 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	**Frequency**	**Expanded Uncertainty (k=2) (±)**
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.44 dB
Radiated Emissions up to 1 GHz	9 kHz ~ 30 MHz	3.04 dB
	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~ 1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Interactive media streaming device
Test Model	H2C
Status of EUT	Production Unit
Power Supply Rating	14 Vdc (Adapter)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
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 150 Mbps 802.11ac: up to 433.3 Mbps
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5720 MHz, 5745 ~ 5825 MHz
Number of Channel	5180 ~ 5240 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5500 ~ 5720 MHz: 12 for 802.11a, 802.11n (HT20) 6 for 802.11n (HT40) 3 for 802.11ac (VHT80) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80)
Output Power	142.561 mW for 5180 ~ 5240 MHz 183.231 mW for 5260 ~ 5320 MHz 138.038 mW for 5500 ~ 5720 MHz 172.187 mW for 5745 ~ 5825 MHz
Antenna Type	Refer to Note as below
Antenna Connector	Refer to Note as below
Accessory Device	Refer to Note as below
Data Cable Supplied	N/A
HW Version	EVT
SW Version	SD8987-16.100.10.P10-C4X15C636a-GPL-<FP100>
SN	9514105APZZ2CR (For APCM Test) 9514105APZZ2CI (For RE / PLC Test)

Note:

1. The EUT provides 1 completed transmitter and 1 receiver.

Modulation Mode	Tx Function
802.11a	1TX (SISO)
802.11n (HT20)	1TX (SISO)
802.11n (HT40)	1TX (SISO)
802.11ac (VHT80)	1TX (SISO)

2. The EUT's accessories list refers to EUT Photo.pdf.

3. The following antennas were provided to the EUT.

Ant. No.	Model	Type	Connector	Antenna Gain (dBi)				
				2.4~2.4835 GHz	5.15~5.25 GHz	5.25~5.35 GHz	5.47~5.725 GHz	5.725~5.85 GHz
1	N/A	PIFA	N/A	0.79	4.06	3.10	5.15	5.23
2	N/A	PIFA	N/A	1.39	3.00	2.69	5.35	5.29

4. 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 ~ 5240 MHz

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
42	5210

For 5260 ~ 5320 MHz

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

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

2 channels are provided for 802.11n (HT40):

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):

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):

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):

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

2 channels are provided for 802.11n (HT40):

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:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.
2. "-" 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)
-	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	13.5
-		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-		802.11n (HT20)	52 to 64	52, 60, 64	OFDM	BPSK	6.5
-		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	13.5
-		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5720	802.11a	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
-		802.11n (HT40)	102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
-		802.11ac (VHT80)	106 to 138	106, 122, 138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
-		802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5
-		802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

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)
-	5180-5240	802.11n (HT40)	38 to 46	38	OFDM	BPSK	13.5

Power Line Conducted Emission Test:

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

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11n (HT40)	38 to 46	38	OFDM	BPSK	13.5

Antenna Port Conducted Measurement:

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

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

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	13.5
-		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-		802.11n (HT20)	52 to 64	52, 60, 64	OFDM	BPSK	6.5
-		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	13.5
-		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5720	802.11a	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
-		802.11n (HT40)	102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
-		802.11ac (VHT80)	106 to 138	106, 122, 138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
-		802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5
-		802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Getaz Yang
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Getaz Yang
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Thomas Wei
APCM	25 deg. C, 65 % RH	14 Vdc	Alan Wu

3.3 Duty Cycle of Test Signal

MODULATION TYPE: BPSK

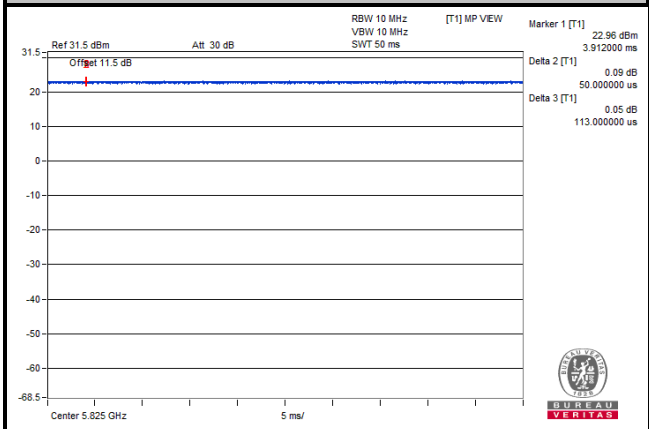
802.11a: Duty cycle of test signal is 100 %, duty factor is not required.

802.11n (HT20): Duty cycle of test signal is 100 %, duty factor is not required.

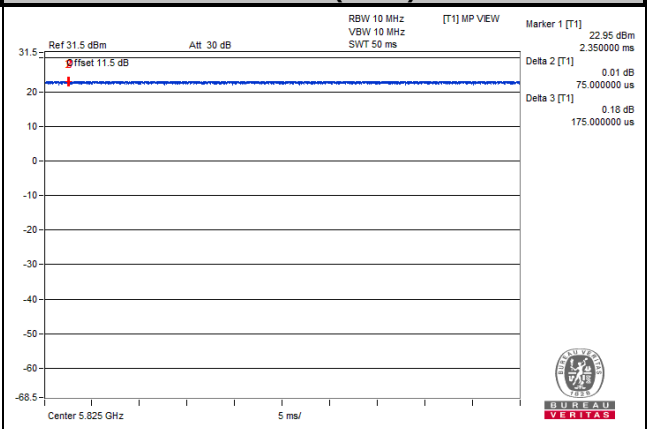
802.11n (HT40): Duty cycle of test signal is 100 %, duty factor is not required.

802.11ac (VHT80): Duty cycle of test signal is 100 %, duty factor is not required.

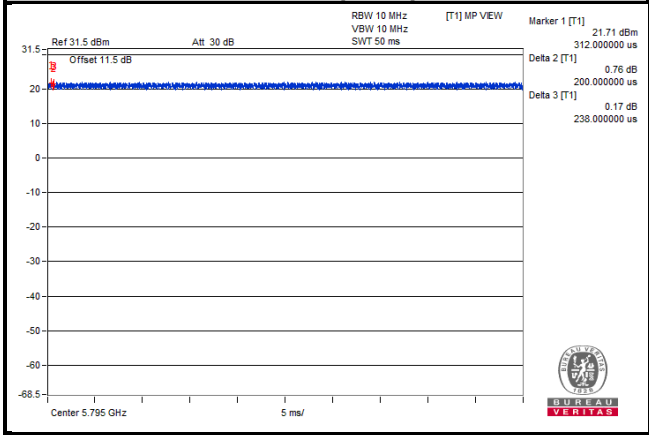
802.11a



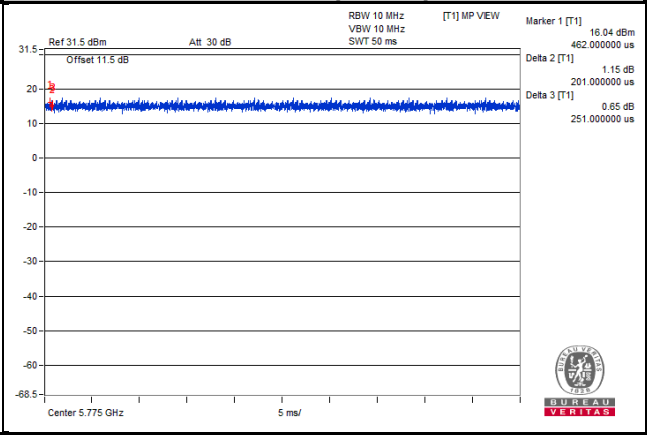
802.11n (HT20)



802.11n (HT40)



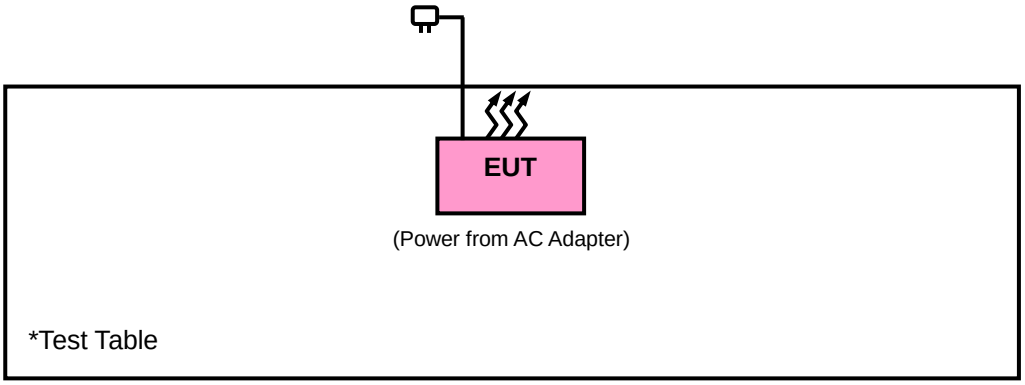
802.11ac (VHT80)



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General UNII Test Procedures New Rules v02r01
ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

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

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

4.1.2 Limits of Unwanted Emission Out of the Restricted Bands

Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v02r01		Field Strength at 3 m	
		PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Frequency Band	**Applicable To**	**EIRP Limit**	**Equivalent Field Strength at 3 m**
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	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:

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

4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Mar. 18, 2019	Mar. 17, 2020
Spectrum Analyzer Agilent	N9010A	MY52220314	Dec. 13, 2018	Dec. 12, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 15, 2019	Apr. 14, 2020
Broadband Horn Antenna SCHWARZBECK	BBHA 9170	148	Nov. 25, 2018	Nov. 24, 2019
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 25, 2018	Nov. 24, 2019
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Nov. 23, 2018	Nov. 22, 2019
Fixed Attenuator WORKEN	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020
Loop Antenna	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
Preamplifier EMCI	EMC001340	980201	Oct. 12, 2018	Oct. 11, 2019
Preamplifier EMCI	EMC 012645	980115	Oct. 12, 2018	Oct. 11, 2019
Preamplifier EMCI	EMC 184045	980116	Oct. 12, 2018	Oct. 11, 2019
Preamplifier EMCI	EMC 330H	980112	Oct. 12, 2018	Oct. 11, 2019
Power Meter Anritsu	ML2495A	1012010	Sep. 05, 2018	Sep. 04, 2019
Power Sensor Anritsu	MA2411B	1315050	Sep. 04, 2018	Sep. 03, 2019
RF Coaxial Cable HUBER+SUHNNER	EMC104-SM-SM-8000&3000	140811+170717	Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 12, 2018	Oct. 11, 2019
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
Temperature & Humidity Chamber	GTH-120-40-CP-AR	MAA1306-019	Sep. 05, 2018	Sep. 04, 2019
DC Power Supply Topward	33010D	807748	Nov. 02, 2018	Nov. 01, 2019
Digital Multimeter Fluke	87-III	70360742	Jun. 27, 2018	Jun. 26, 2019

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.

4.1.4 Test Procedures

For Radiated Emission below 30 MHz

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

Note:

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

For Radiated Emission above 30 MHz

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

Note:

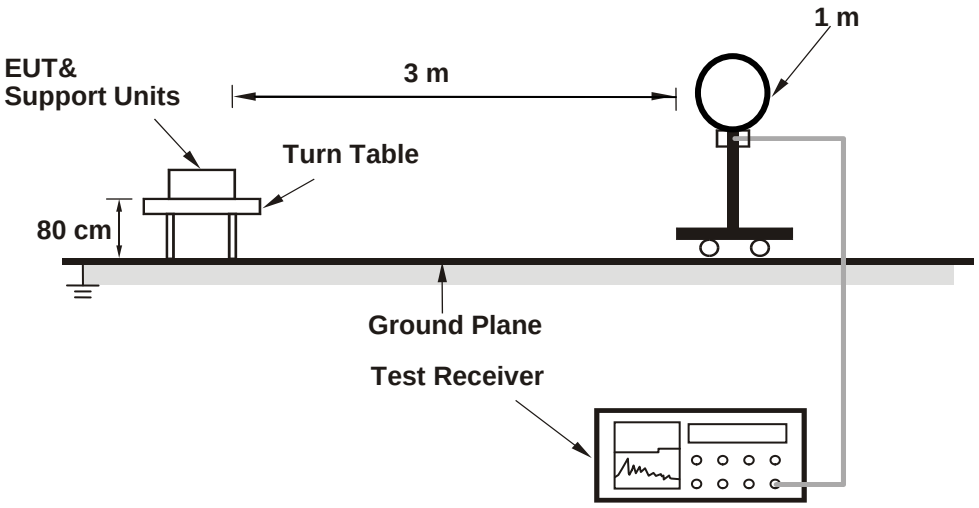
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98 %) or 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz. (11a: RBW = 1 MHz, VBW = 10 Hz ; 11n (HT20): RBW = 1 MHz, VBW = 10 Hz ; 11n (HT40): RBW = 1 MHz, VBW = 10 Hz ; 11ac (VHT80): RBW = 1 MHz, VBW = 10 Hz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 Deviation from Test Standard

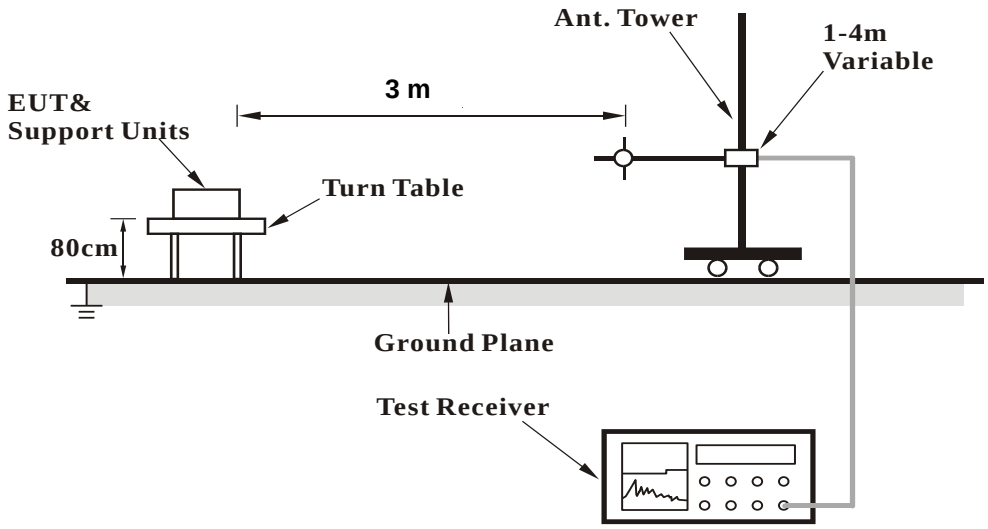
No deviation.

4.1.6 Test Setup

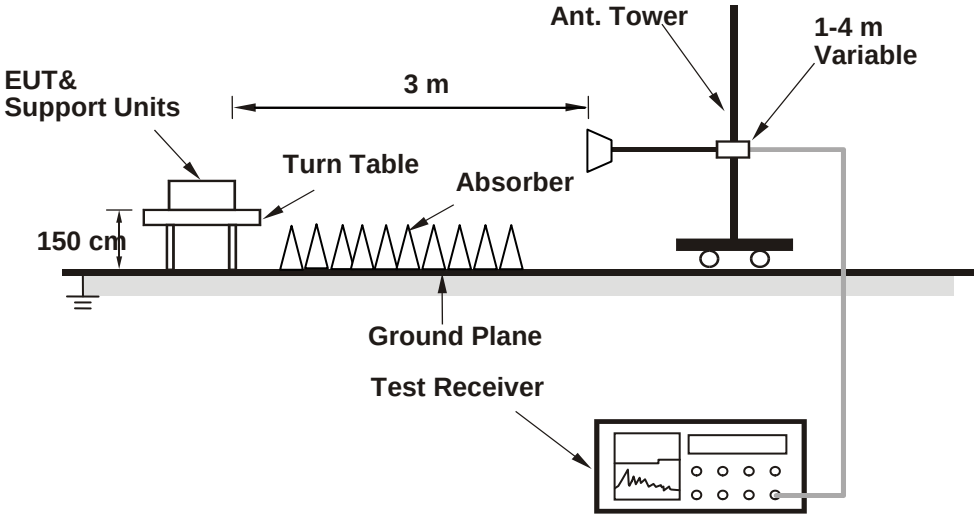
<Radiated Emission below 30 MHz>



<Radiated Emission 30 MHz to 1 GHz>



<Radiated Emission above 1 GHz>



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

4.1.7 EUT Operating Conditions

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

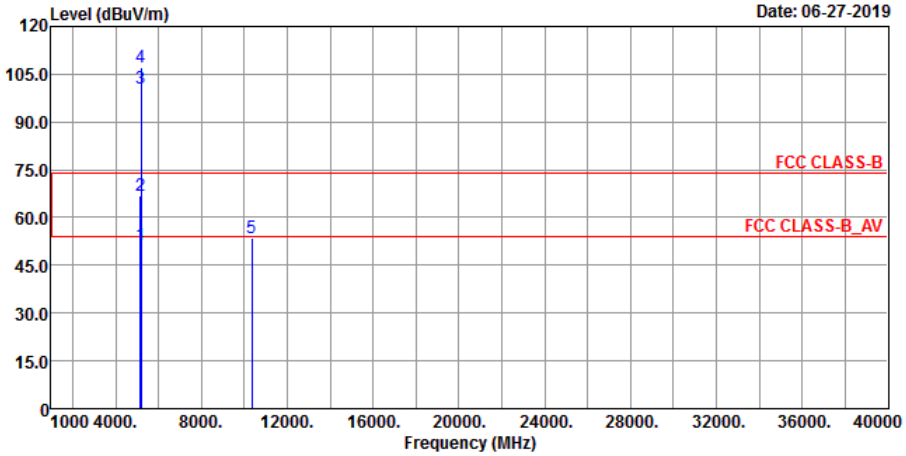
4.1.8 Test Results

Above 1 GHz Data：

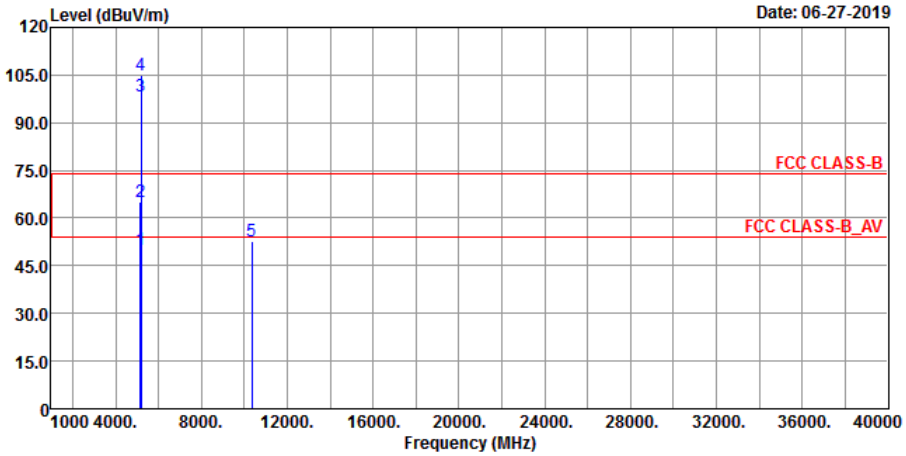
802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 36	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

Horizontal



Vertical



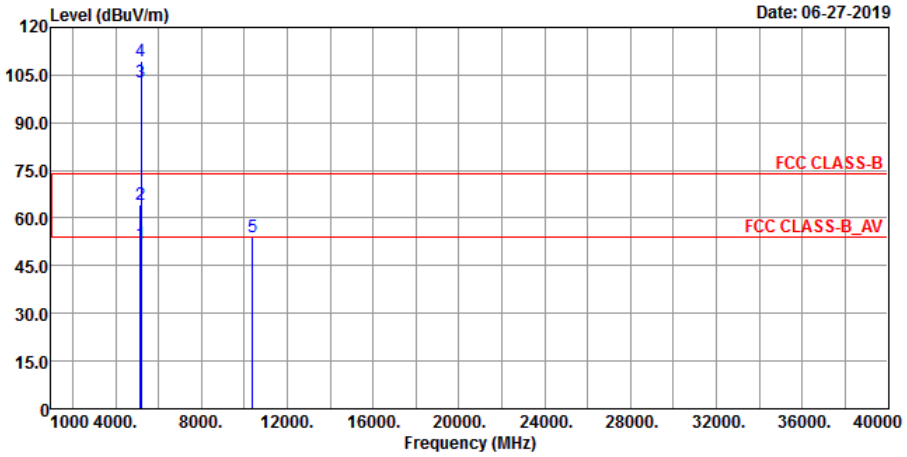
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5149.85	66.86	65.33	1.53	74	-7.14	100	268	Peak
5149.85	51.5	49.97	1.53	54	-2.5	100	268	Average
5180	100.5	61.63	38.87			100	268	Average
5180	107.3	68.43	38.87			100	268	Peak
*10360	53.73	56.57	-2.84	68.2	-14.47	118	29	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5150	49.82	48.29	1.53	54	-4.18	131	249	Average
5150	65.27	63.74	1.53	74	-8.73	131	249	Peak
5180	98.13	59.26	38.87			131	249	Average
5180	105.02	66.15	38.87			131	249	Peak
*10360	52.48	55.32	-2.84	68.2	-15.72	187	75	Peak

Remarks:

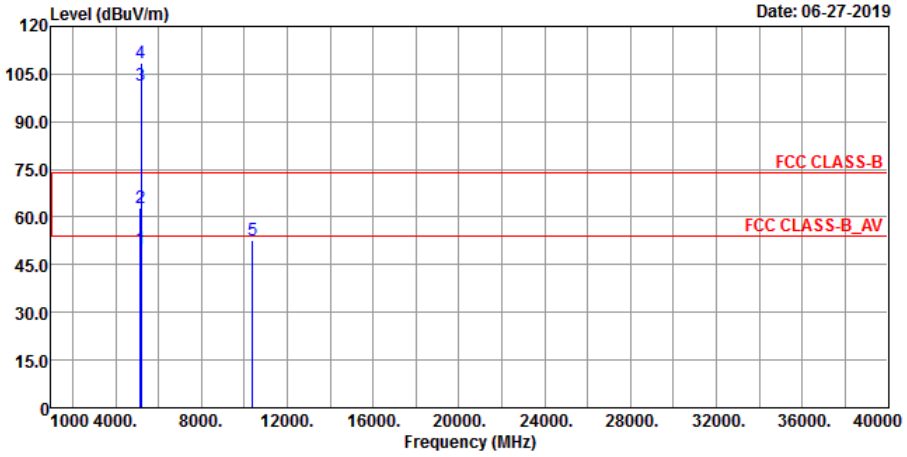
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5180 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



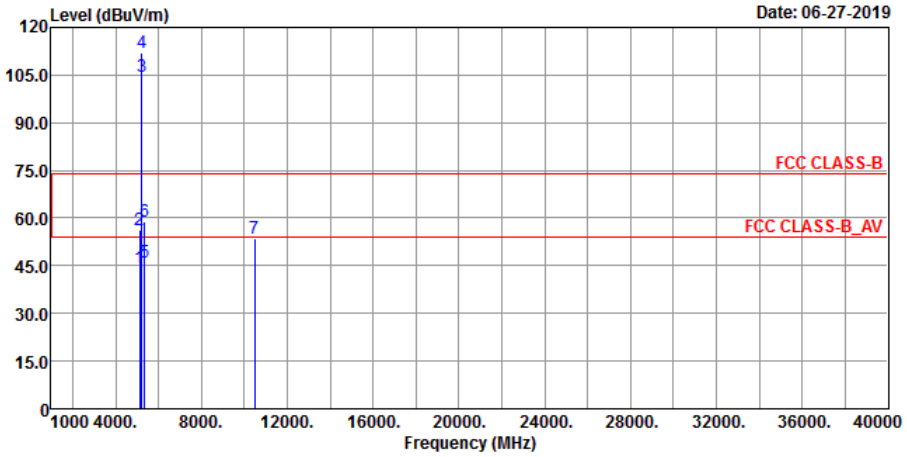
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5150	51.9	50.37	1.53	54	-2.1	100	268	Average
5150	64.05	62.52	1.53	74	-9.95	100	268	Peak
5200	102.85	63.96	38.89			100	268	Average
5200	109.47	70.58	38.89			100	268	Peak
*10400	54.13	57.02	-2.89	68.2	-14.07	115	31	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5150	49.92	48.39	1.53	54	-4.08	130	249	Average
5150	62.89	61.36	1.53	74	-11.11	130	249	Peak
5200	101.31	62.42	38.89			130	249	Average
5200	108.35	69.46	38.89			130	249	Peak
*10400	52.7	55.59	-2.89	68.2	-15.5	186	69	Peak

Remarks:

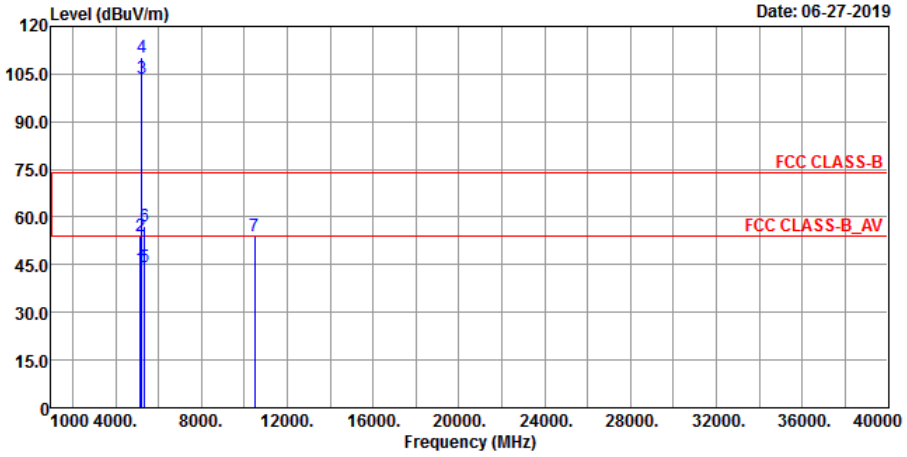
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5200 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



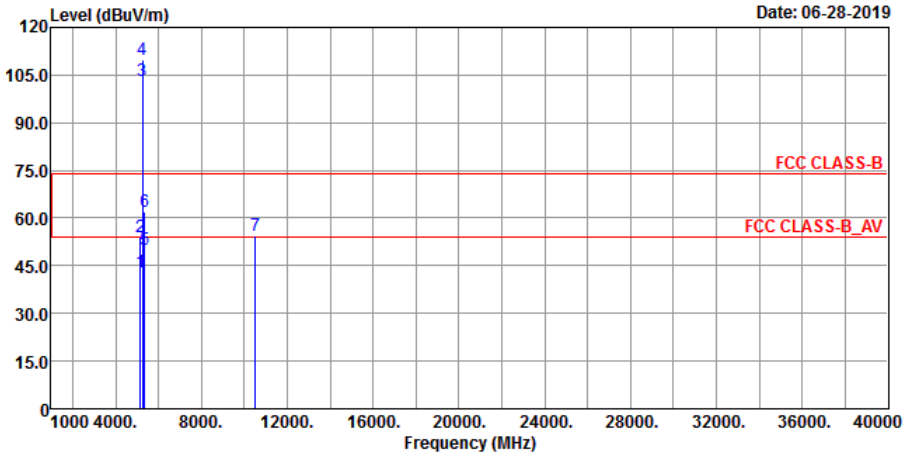
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5111	44.49	43.02	1.47	54	-9.51	100	267	Average
5111	56.07	54.6	1.47	74	-17.93	100	267	Peak
5240	104.7	66	38.7			100	267	Average
5240	111.85	73.15	38.7			100	267	Peak
5350	45.85	44.39	1.46	54	-8.15	100	267	Average
5350	58.86	57.4	1.46	74	-15.14	100	267	Peak
*10480	53.69	56.42	-2.73	68.2	-14.51	117	25	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	43.72	42.19	1.53	54	-10.28	130	250	Average
5150	53.88	52.35	1.53	74	-20.12	130	250	Peak
5240	103.52	64.82	38.7			130	250	Average
5240	110.44	71.74	38.7			130	250	Peak
5350.11	44.09	42.63	1.46	54	-9.91	130	250	Average
5350.11	57.24	55.78	1.46	74	-16.76	130	250	Peak
*10480	53.96	56.69	-2.73	68.2	-14.24	189	77	Peak

Remarks:

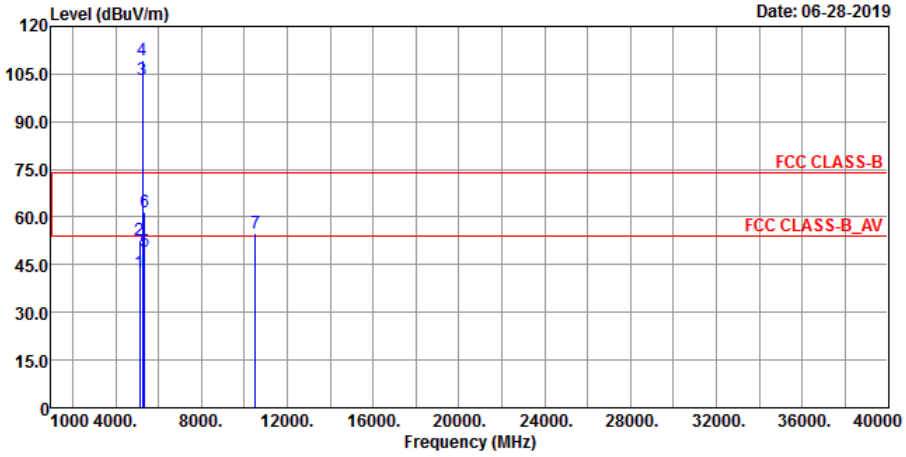
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5240 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



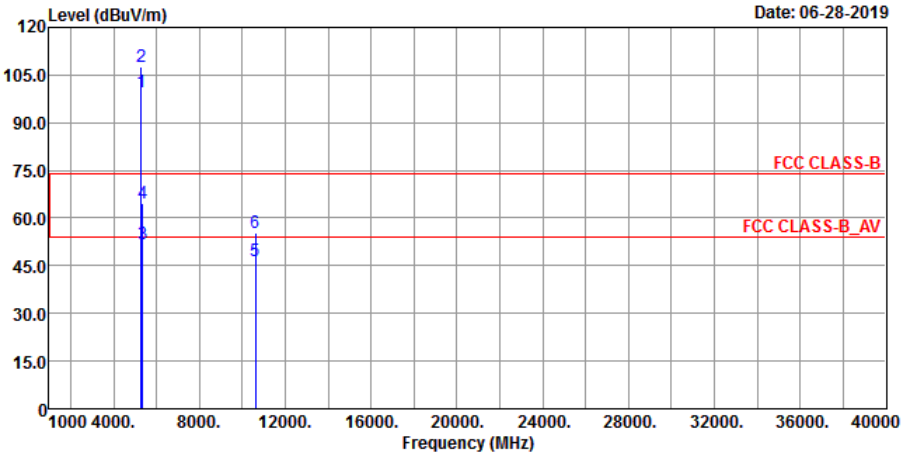
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5149.4	42.79	41.26	1.53	54	-11.21	132	35	Average
5149.4	54.02	52.49	1.53	74	-19.98	132	35	Peak
5260	103.03	101.72	1.31			132	35	Average
5260	109.84	108.53	1.31			132	35	Peak
5350	49.92	48.46	1.46	54	-4.08	132	35	Average
5350	61.81	60.35	1.46	74	-12.19	132	35	Peak
*10520	54.58	57.3	-2.72	68.2	-13.62	171	246	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**
5139.5	42.73	41.18	1.55	54	-11.27	142	266	Average
5139.5	52.5	50.95	1.55	74	-21.5	142	266	Peak
5260	103.02	101.71	1.31			142	266	Average
5260	109.56	108.25	1.31			142	266	Peak
5350	49.22	47.76	1.46	54	-4.78	142	266	Average
5350	61.72	60.26	1.46	74	-12.28	142	266	Peak
*10520	55.07	57.79	-2.72	68.2	-13.13	169	108	Peak

Remarks:

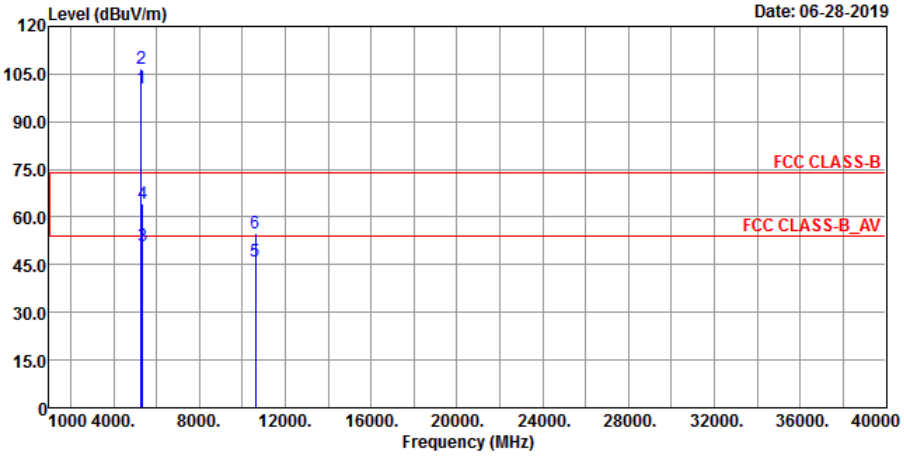
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5260 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



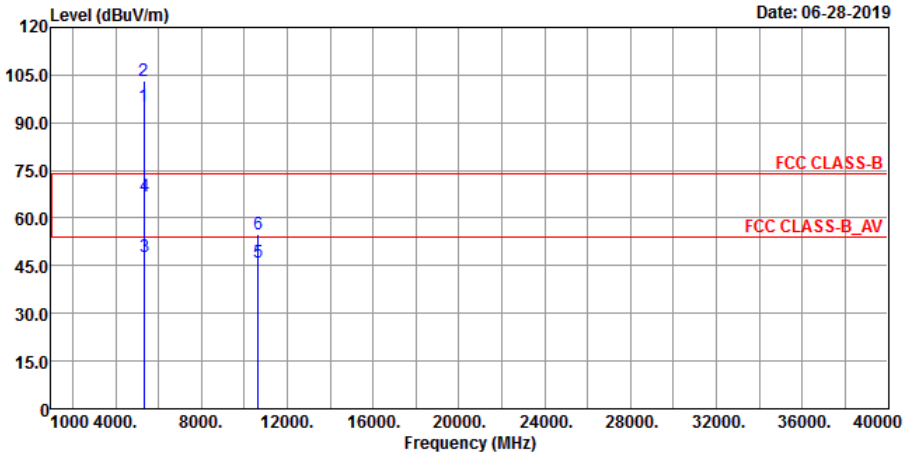
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5300	99.7	98.39	1.31			126	36	Average
5300	107.39	106.08	1.31			126	36	Peak
5350	51.67	50.21	1.46	54	-2.33	126	36	Average
5350	64.83	63.37	1.46	74	-9.17	126	36	Peak
10600	46.37	49.28	-2.91	54	-7.63	159	84	Average
10600	55.34	58.25	-2.91	74	-18.66	159	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**
5300	100.3	98.99	1.31			110	271	Average
5300	106.88	105.57	1.31			110	271	Peak
5350	50.98	49.52	1.46	54	-3.02	110	271	Average
5350	64.22	62.76	1.46	74	-9.78	110	271	Peak
10600	46.12	49.03	-2.91	54	-7.88	184	106	Average
10600	54.99	57.9	-2.91	74	-19.01	184	106	Peak

Remarks:

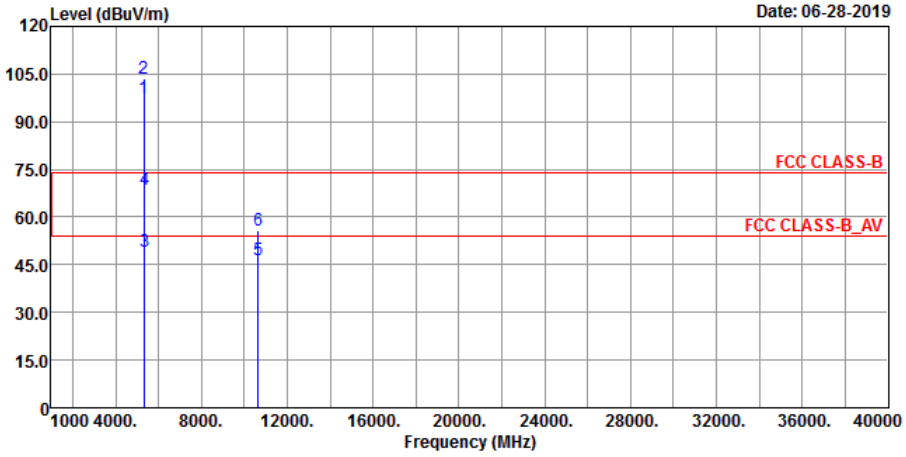
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5300 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



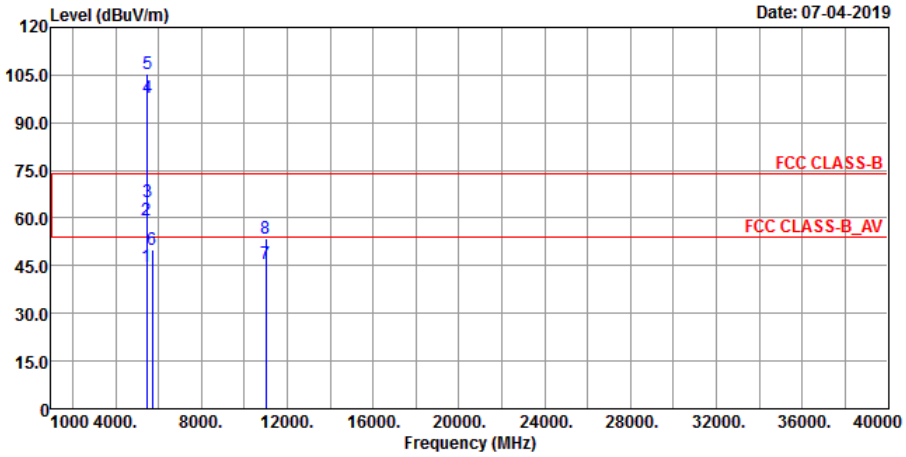
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5320	95.18	93.82	1.36			154	35	Average
5320	103.21	101.85	1.36			154	35	Peak
5350	47.89	46.43	1.46	54	-6.11	154	35	Average
5350	66.83	65.37	1.46	74	-7.17	154	35	Peak
10640	46.26	49.15	-2.89	54	-7.74	170	132	Average
10640	54.95	57.84	-2.89	74	-19.05	170	132	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	97.22	95.86	1.36			179	312	Average
5320	103.7	102.34	1.36			179	312	Peak
5350	49.06	47.6	1.46	54	-4.94	179	312	Average
5350	68.56	67.1	1.46	74	-5.44	179	312	Peak
10640	46.39	49.28	-2.89	54	-7.61	225	103	Average
10640	55.91	58.8	-2.89	74	-18.09	225	103	Peak

Remarks:

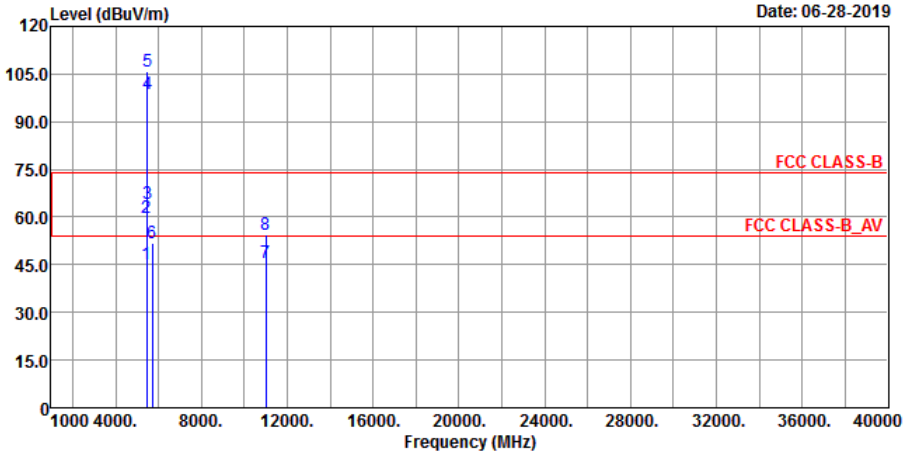
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5320 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



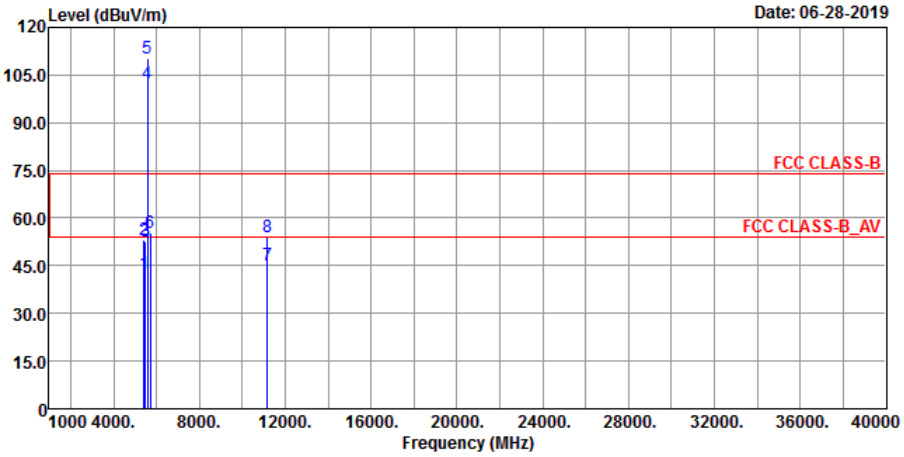
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	44.77	42.9	1.87	54	-9.23	156	28	Average
5460	59.12	57.25	1.87	74	-14.88	156	28	Peak
*5470	64.89	63.03	1.86	68.2	-3.31	156	28	Peak
5500	97.73	95.86	1.87			156	28	Average
5500	105.59	103.72	1.87			156	28	Peak
*5725	49.96	48.2	1.76	68.2	-18.24	156	28	Peak
11000	45.74	48.05	-2.31	54	-8.26	189	206	Average
11000	53.72	56.03	-2.31	74	-20.28	189	206	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	45.03	43.16	1.87	54	-8.97	172	314	Average
5460	59.72	57.85	1.87	74	-14.28	172	314	Peak
*5470	64.38	62.52	1.86	68.2	-3.82	172	314	Peak
5500	98.57	96.7	1.87			172	314	Average
5500	105.66	103.79	1.87			172	314	Peak
*5725	51.7	49.94	1.76	68.2	-16.5	172	314	Peak
11000	45.53	47.84	-2.31	54	-8.47	102	253	Average
11000	54.29	56.6	-2.31	74	-19.71	102	253	Peak

Remarks:

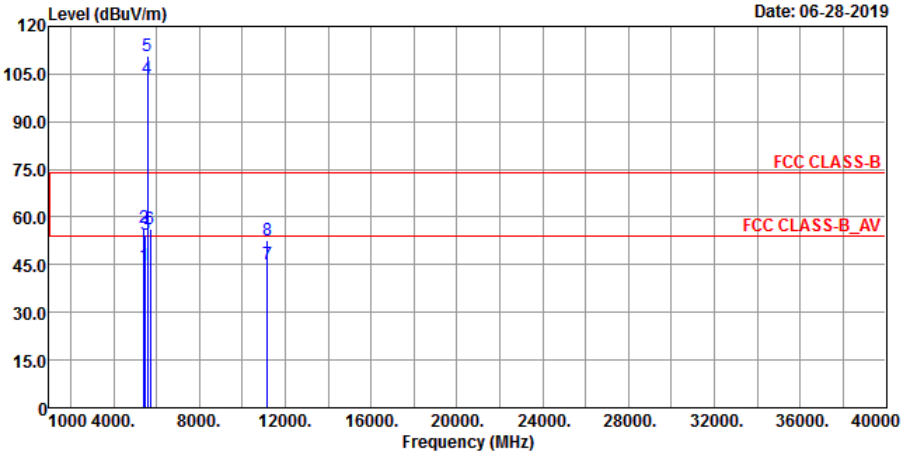
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5500 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



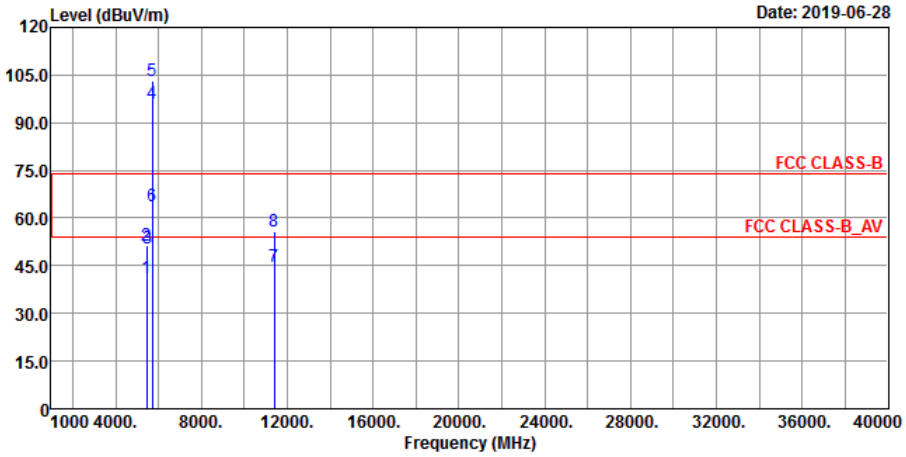
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5427.12	42.64	40.88	1.76	54	-11.36	143	196	Average
5427.12	53.18	51.42	1.76	74	-20.82	143	196	Peak
*5470	52.76	50.9	1.86	68.2	-15.44	143	196	Peak
5580	102.33	100.51	1.82			143	196	Average
5580	110.21	108.39	1.82			143	196	Peak
*5725	55.38	53.62	1.76	68.2	-12.82	143	196	Peak
11160	45.3	47.85	-2.55	54	-8.7	185	211	Average
11160	53.81	56.36	-2.55	74	-20.19	185	211	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5429.52	44.79	43.01	1.78	54	-9.21	138	299	Average
5429.52	56.74	54.96	1.78	74	-17.26	138	299	Peak
*5470	54.59	52.73	1.86	68.2	-13.61	138	299	Peak
5580	103.63	102.22	1.41			138	299	Average
5580	110.73	109.32	1.41			138	299	Peak
*5725	56.42	54.66	1.76	68.2	-11.78	138	299	Peak
11160	45.2	47.75	-2.55	54	-8.8	102	255	Average
11160	52.9	55.45	-2.55	74	-21.1	102	255	Peak

Remarks:

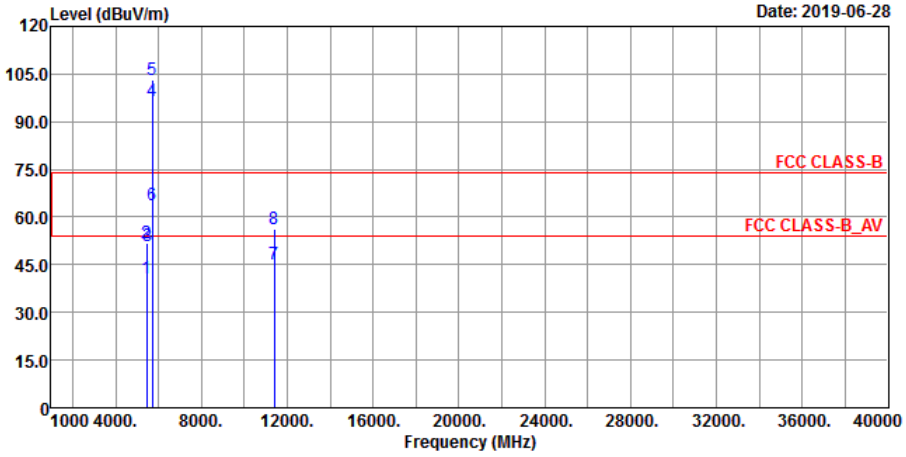
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



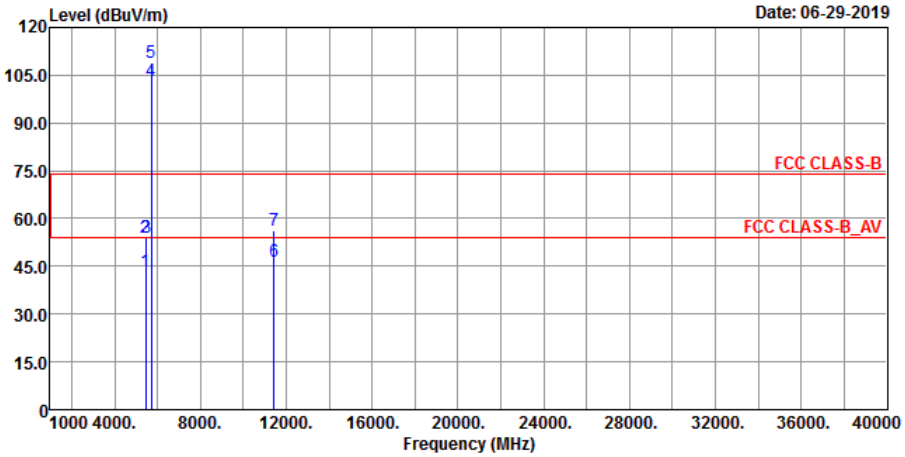
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	41.11	39.24	1.87	54	-12.89	108	239	Average
5460	51.18	49.31	1.87	74	-22.82	108	239	Peak
*5470	50.44	48.58	1.86	68.2	-17.76	108	239	Peak
5700	96.18	94.59	1.59			108	239	Average
5700	103.28	101.69	1.59			108	239	Peak
*5725	63.7	61.94	1.76	68.2	-4.5	108	239	Peak
11400	44.7	46.93	-2.23	54	-9.3	188	206	Average
11400	55.98	58.21	-2.23	74	-18.02	188	206	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**
5448.24	40.82	39	1.82	54	-13.18	149	300	Average
5448.24	51.78	49.96	1.82	74	-22.22	149	300	Peak
*5470	50.74	48.88	1.86	68.2	-17.46	149	300	Peak
5700	96.34	94.75	1.59			149	300	Average
5700	103.04	101.45	1.59			149	300	Peak
*5725	63.98	62.22	1.76	68.2	-4.22	149	300	Peak
11400	45.35	47.58	-2.23	54	-8.65	103	251	Average
11400	56.44	58.67	-2.23	74	-17.56	103	251	Peak

Remarks:

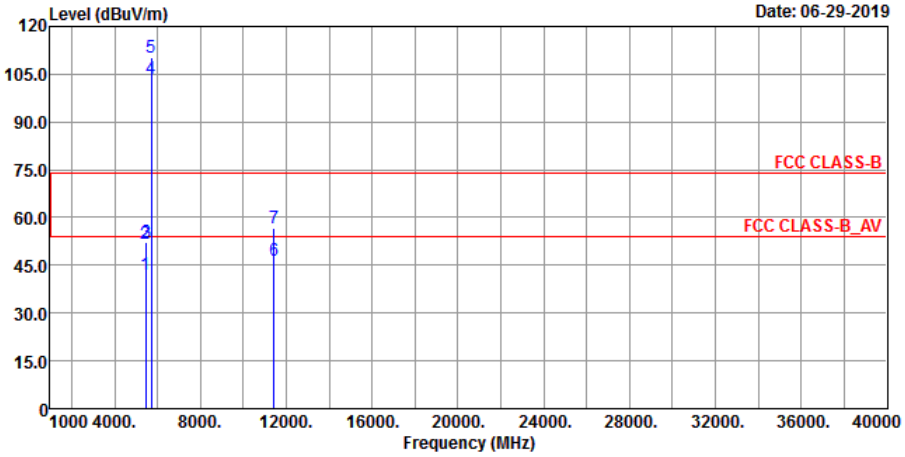
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5700 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



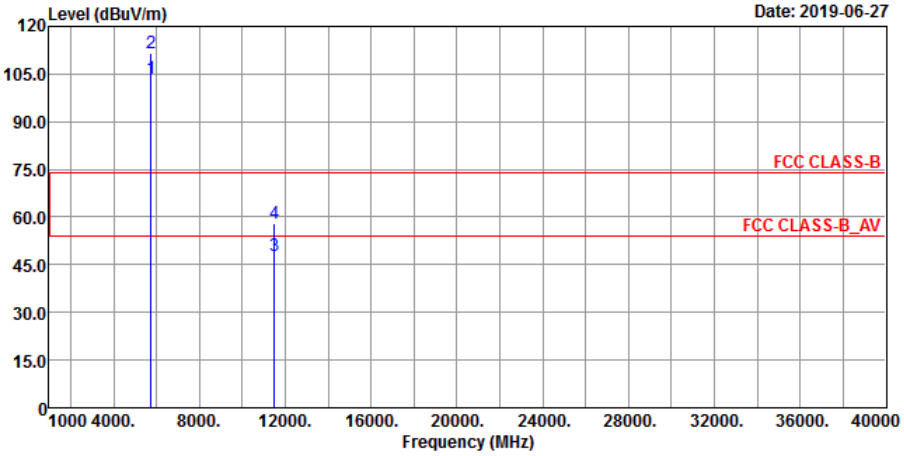
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5444.88	43.23	41.45	1.78	54	-10.77	112	40	Average
5444.88	53.98	52.2	1.78	74	-20.02	112	40	Peak
*5470	54.11	52.25	1.86	68.2	-14.09	112	40	Peak
5720	103.04	101.28	1.76			112	40	Average
5720	109.07	107.31	1.76			112	40	Peak
11440	46.39	48.61	-2.22	54	-7.61	182	171	Average
11440	56.2	58.42	-2.22	74	-17.8	182	171	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5446.48	42.27	40.45	1.82	54	-11.73	128	301	Average
5446.48	51.84	50.02	1.82	74	-22.16	128	301	Peak
*5470	52.47	50.61	1.86	68.2	-15.73	128	301	Peak
5720	103.44	101.68	1.76			128	301	Average
5720	110.21	108.45	1.76			128	301	Peak
11440	46.54	48.76	-2.22	54	-7.46	159	128	Average
11440	56.53	58.75	-2.22	74	-17.47	159	128	Peak

Remarks:

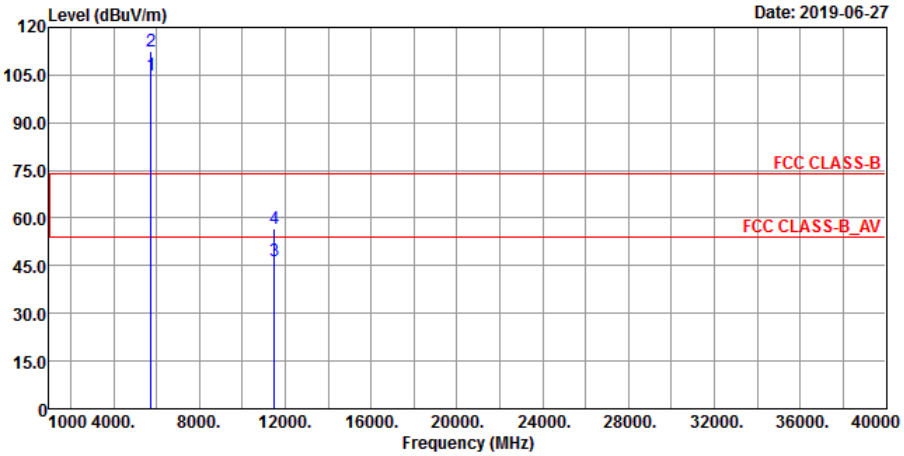
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5720 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

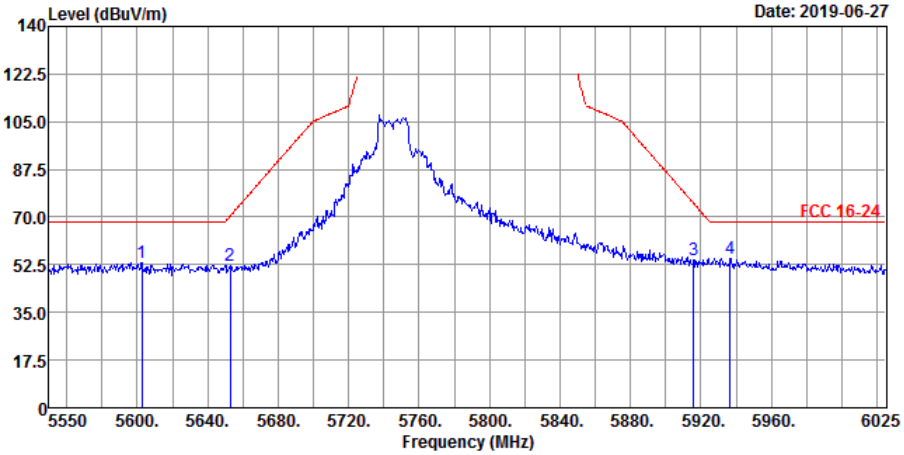
<Spurious Emission>
Horizontal



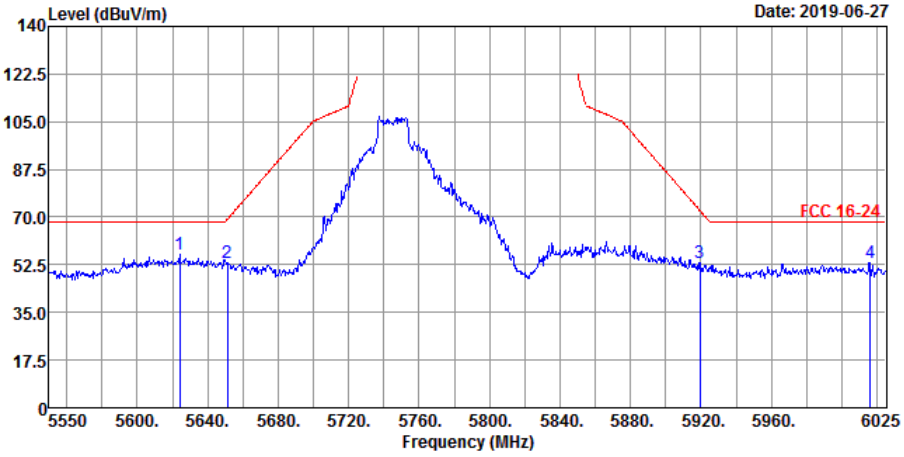
Vertical



<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	103.76	101.94	1.82			271	142	Average
5745	111.39	109.57	1.82			271	142	Peak
11490	48.01	50.21	-2.2	54	-5.99	206	313	Average
11490	57.84	60.04	-2.2	74	-16.16	206	313	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	105.01	103.19	1.82			371	262	Average
5745	112.55	110.73	1.82			371	262	Peak
11490	46.31	48.51	-2.2	54	-7.69	108	306	Average
11490	56.54	58.74	-2.2	74	-17.46	108	306	Peak

<Out of Band Emission (OOBE)>

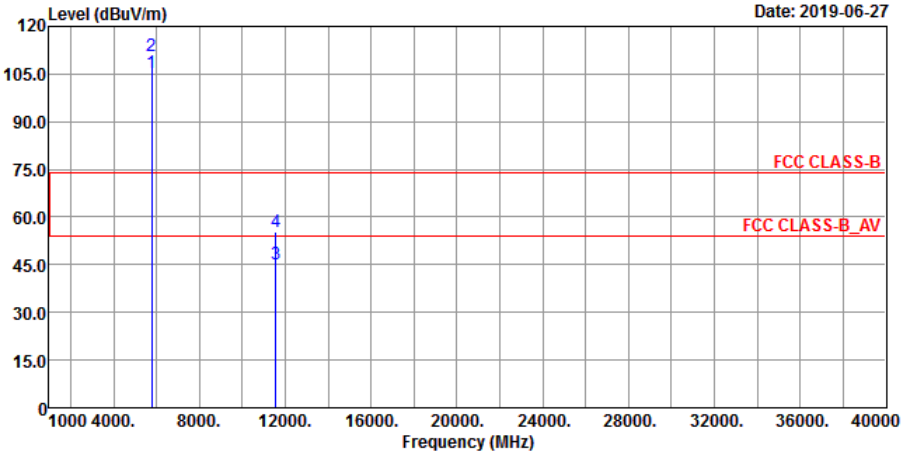
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5602.725	52.99	51.06	1.93	68.2	-15.21	271	142	Peak
5652.6	52.14	50.23	1.91	70.13	-17.99	271	142	Peak
5915.75	54.43	52.12	2.31	75.02	-20.59	271	142	Peak
5936.65	54.99	52.69	2.3	68.2	-13.21	271	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**
5624.1	56.55	54.65	1.9	68.2	-11.65	371	262	Peak
5651.175	53.11	51.2	1.91	69.07	-15.96	371	262	Peak
5919.55	53.25	50.94	2.31	72.22	-18.97	371	262	Peak
6015.975	53.4	51	2.4	68.2	-14.8	371	262	Peak

Remarks:

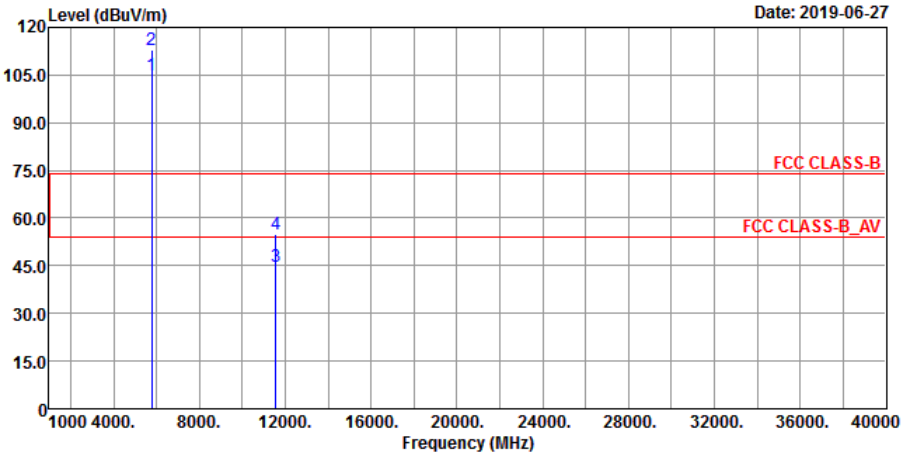
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5745 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

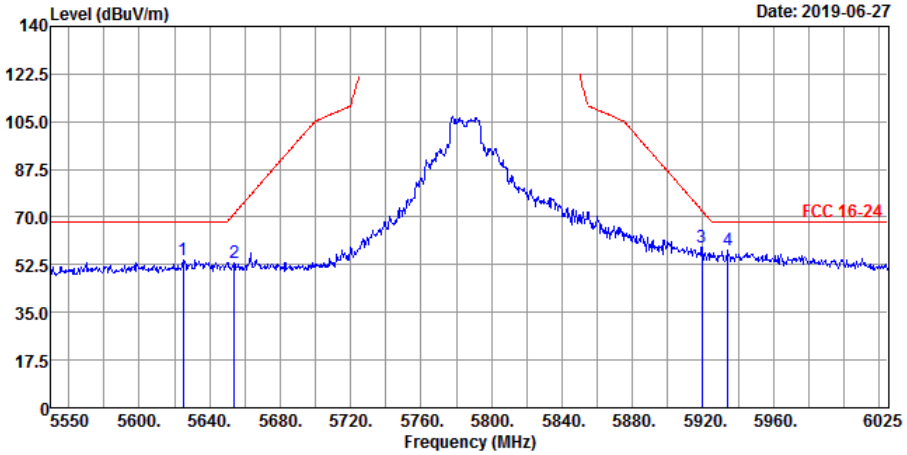
<Spurious Emission>
Horizontal



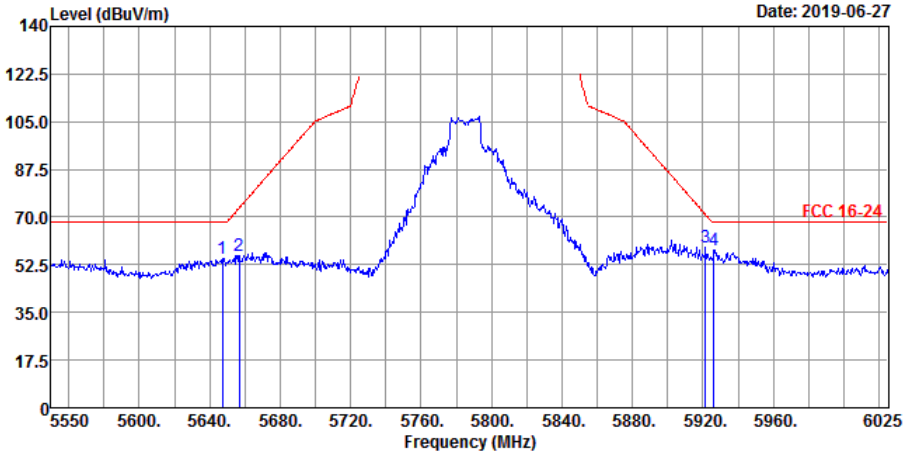
Vertical



<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	105.18	103.26	1.92			254	141	Average
5785	110.86	108.94	1.92			254	141	Peak
11570	45.04	47.24	-2.2	54	-8.96	207	164	Average
11570	55.53	57.73	-2.2	74	-18.47	207	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**
5785	104.92	103	1.92			384	262	Average
5785	112.85	110.93	1.92			384	262	Peak
11570	44.53	46.73	-2.2	54	-9.47	103	67	Average
11570	54.83	57.03	-2.2	74	-19.17	103	67	Peak

<Out of Band Emission (OOBE)>

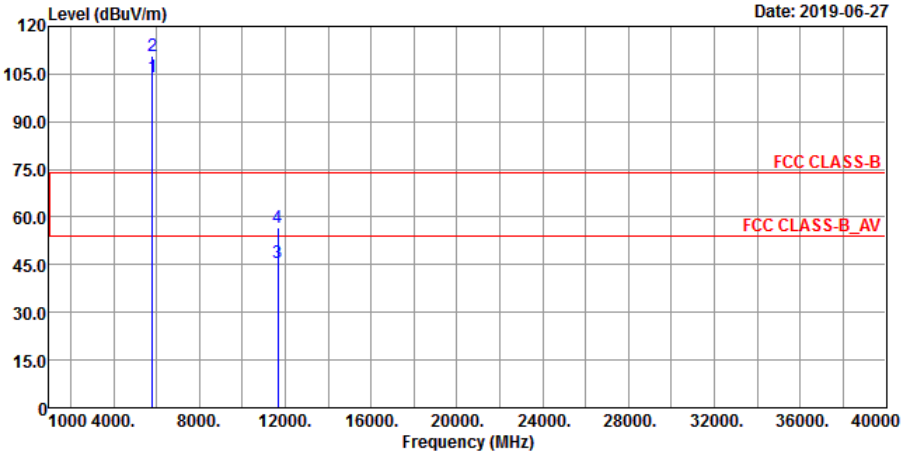
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5625.05	54.26	52.36	1.9	68.2	-13.94	254	141	Peak
5654.025	53.02	51.17	1.85	71.19	-18.17	254	141	Peak
5919.55	59.08	56.77	2.31	72.22	-13.14	254	141	Peak
5934.275	57.79	55.49	2.3	68.2	-10.41	254	141	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5647.375	54.74	52.86	1.88	68.2	-13.46	384	262	Peak
5656.875	55.9	54.05	1.85	73.31	-17.41	384	262	Peak
5921.45	59.06	56.75	2.31	70.82	-11.76	384	262	Peak
5926.2	58.09	55.79	2.3	68.2	-10.11	384	262	Peak

Remarks:

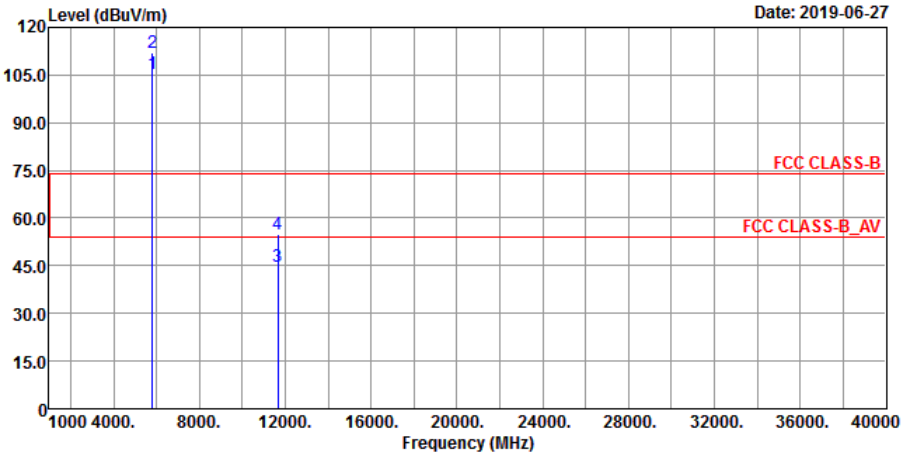
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5785 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

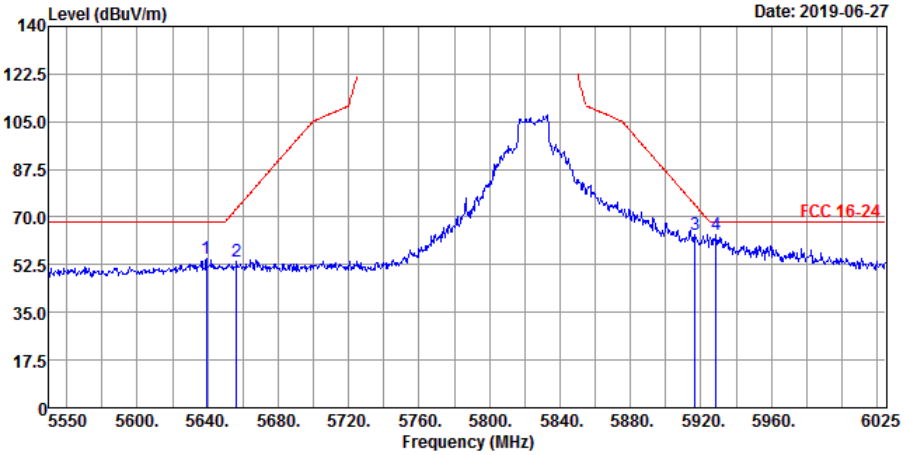
<Spurious Emission>
Horizontal



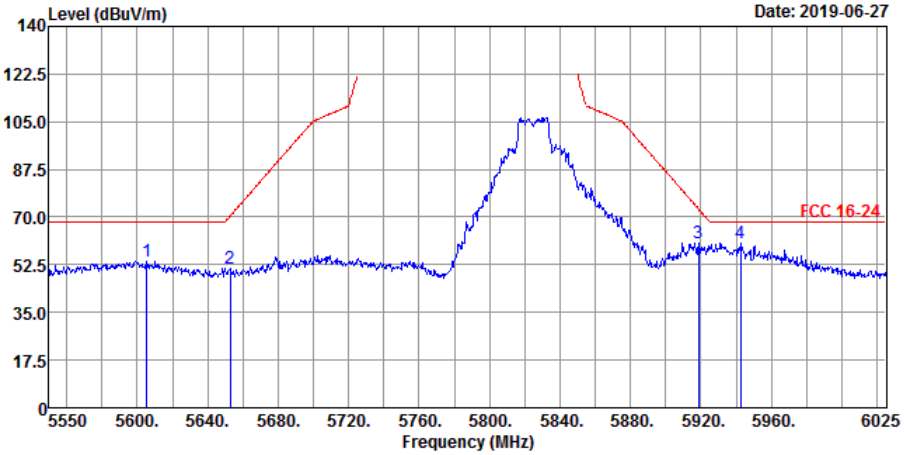
Vertical



<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	104.19	102.11	2.08			266	141	Average
5825	110.61	108.53	2.08			266	141	Peak
11650	45.83	48.22	-2.39	54	-8.17	172	108	Average
11650	56.56	58.95	-2.39	74	-17.44	172	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**
5825	105.4	103.32	2.08			397	261	Average
5825	111.81	109.73	2.08			397	261	Peak
11650	44.72	47.11	-2.39	54	-9.28	106	355	Average
11650	54.96	57.35	-2.39	74	-19.04	106	355	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**
5639.3	54.55	52.67	1.88	68.2	-13.65	266	141	Peak
5656.4	53.5	51.65	1.85	72.95	-19.45	266	141	Peak
5916.7	63.74	61.43	2.31	74.32	-10.58	266	141	Peak
5928.575	63.33	61.03	2.3	68.2	-4.87	266	141	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**
5605.575	53.86	51.99	1.87	68.2	-14.34	397	261	Peak
5652.6	51.25	49.34	1.91	70.13	-18.88	397	261	Peak
5918.6	60.61	58.3	2.31	72.92	-12.31	397	261	Peak
5942.35	60.45	58.16	2.29	68.2	-7.75	397	261	Peak

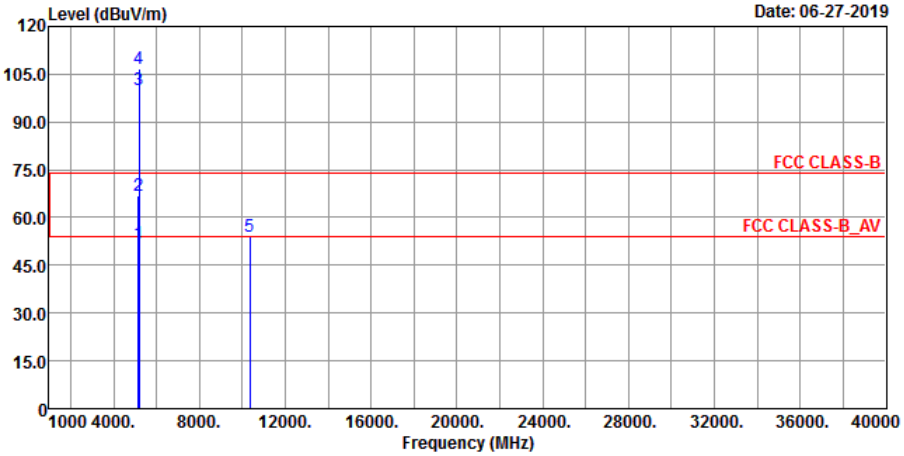
Remarks:

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

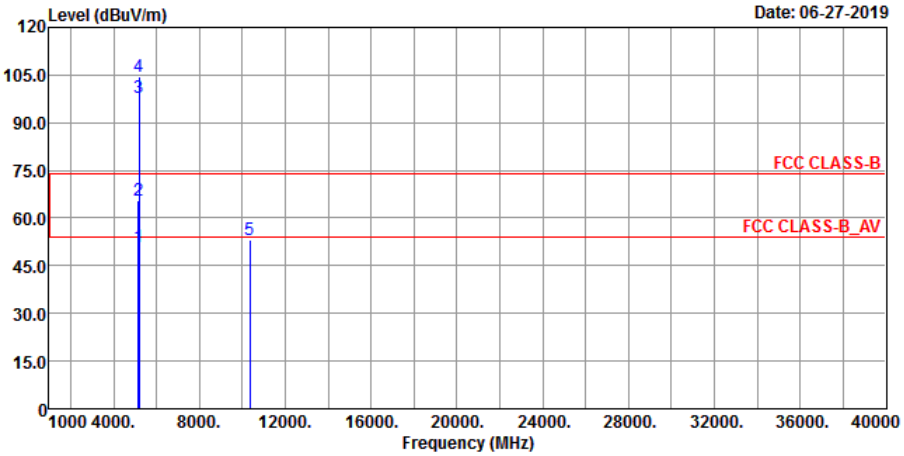
802.11n (HT20)

EUT Test Condition		Measurement Detail	
Channel	Channel 36	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

Horizontal



Vertical



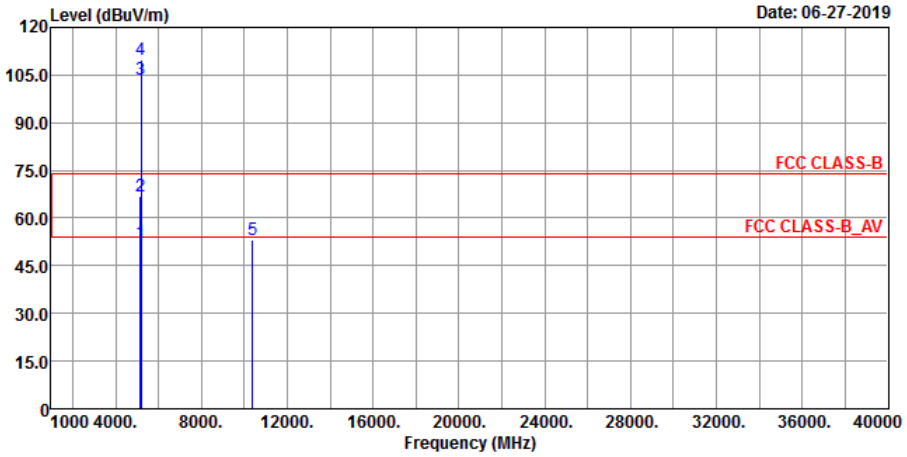
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5150	51.59	50.06	1.53	54	-2.41	100	267	Average
5150	66.75	65.22	1.53	74	-7.25	100	267	Peak
5180	100.17	61.3	38.87			100	267	Average
5180	106.71	67.84	38.87			100	267	Peak
*10360	53.93	56.77	-2.84	68.2	-14.27	115	31	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	50.83	49.3	1.53	54	-3.17	116	247	Average
5150	65.62	64.09	1.53	74	-8.38	116	247	Peak
5180	97.76	58.89	38.87			116	247	Average
5180	104.41	65.54	38.87			116	247	Peak
*10360	53.09	55.93	-2.84	68.2	-15.11	191	74	Peak

Remarks:

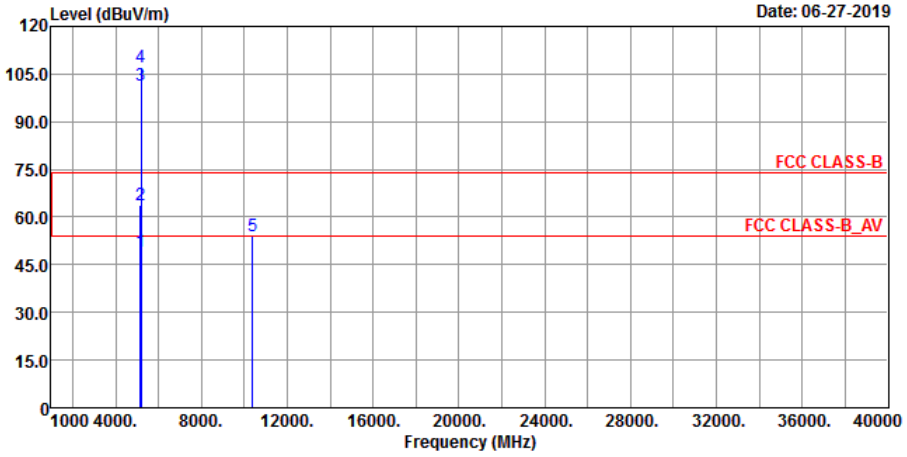
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5180 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



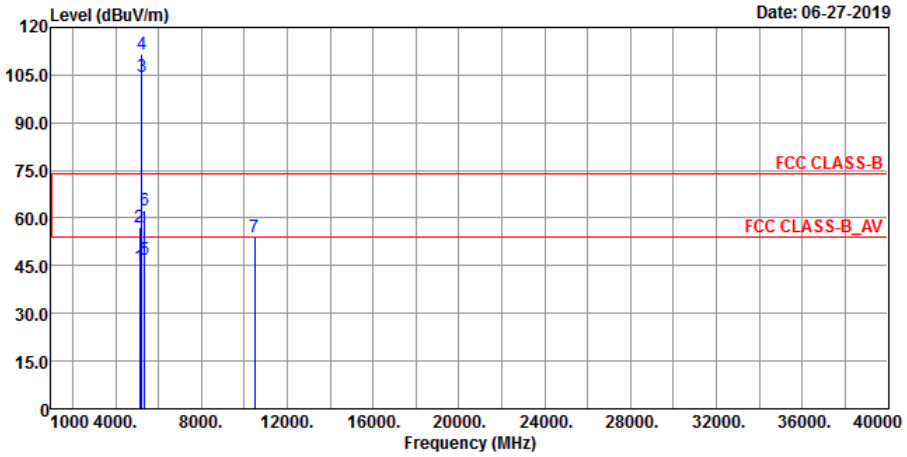
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5150	52.27	50.74	1.53	54	-1.73	115	267	Average
5150	66.86	65.33	1.53	74	-7.14	115	267	Peak
5200	103.47	64.58	38.89			115	267	Average
5200	109.79	70.9	38.89			115	267	Peak
*10400	53.21	56.1	-2.89	68.2	-14.99	115	33	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5150	49.14	47.61	1.53	54	-4.86	112	248	Average
5150	63.63	62.1	1.53	74	-10.37	112	248	Peak
5200	101.49	62.6	38.89			112	248	Average
5200	107.23	68.34	38.89			112	248	Peak
*10400	54.23	57.12	-2.89	68.2	-13.97	194	81	Peak

Remarks:

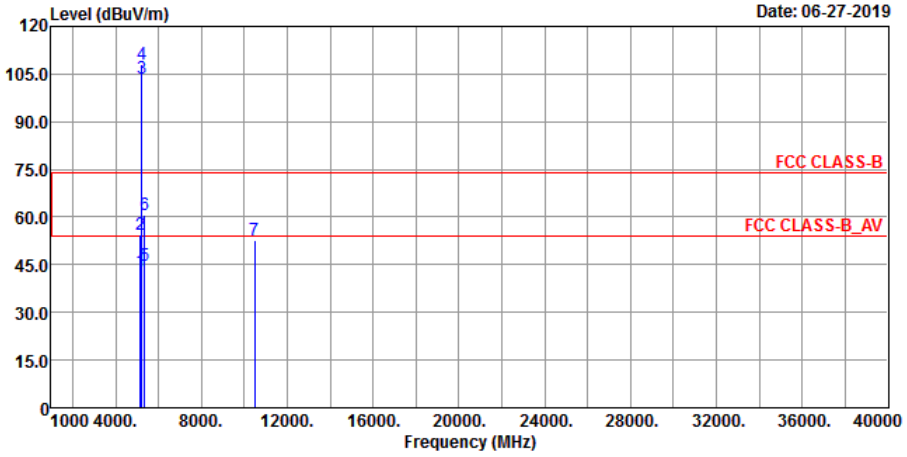
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5200 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



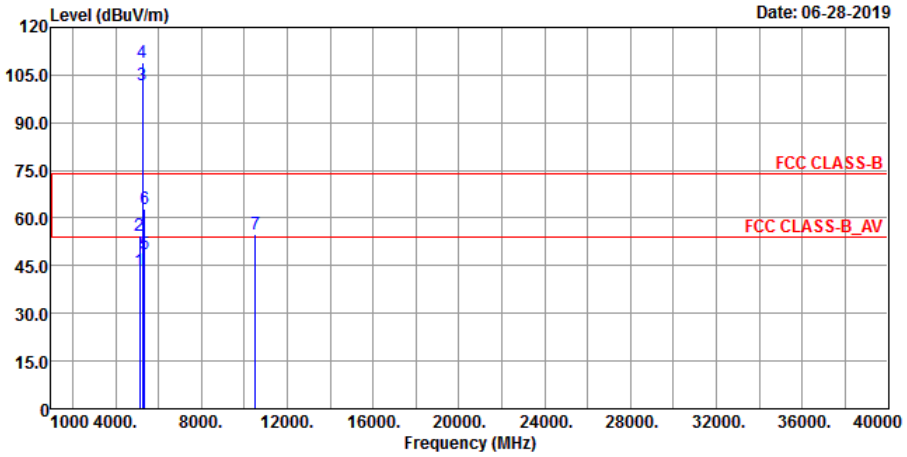
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5117.45	44.91	43.44	1.47	54	-9.09	100	267	Average
5117.45	57.25	55.78	1.47	74	-16.75	100	267	Peak
5240	104.72	66.02	38.7			100	267	Average
5240	111.58	72.88	38.7			100	267	Peak
5350	46.82	45.36	1.46	54	-7.18	100	267	Average
5350	62.6	61.14	1.46	74	-11.4	100	267	Peak
*10480	53.93	56.66	-2.73	68.2	-14.27	111	31	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**
5149.85	43.08	41.55	1.53	54	-10.92	130	248	Average
5149.85	54.51	52.98	1.53	74	-19.49	130	248	Peak
5240	103.43	64.73	38.7			130	248	Average
5240	108.05	69.35	38.7			130	248	Peak
5350	44.85	43.39	1.46	54	-9.15	130	248	Average
5350	60.75	59.29	1.46	74	-13.25	130	248	Peak
*10480	52.78	55.51	-2.73	68.2	-15.42	182	79	Peak

Remarks:

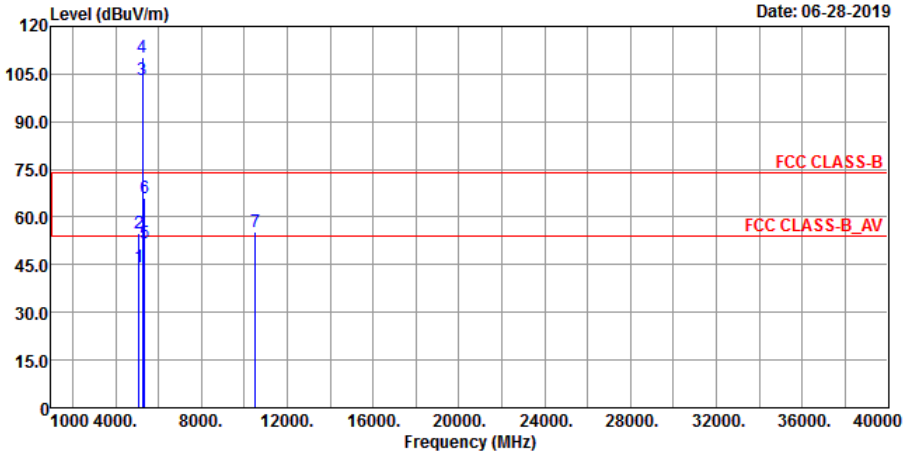
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5240 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



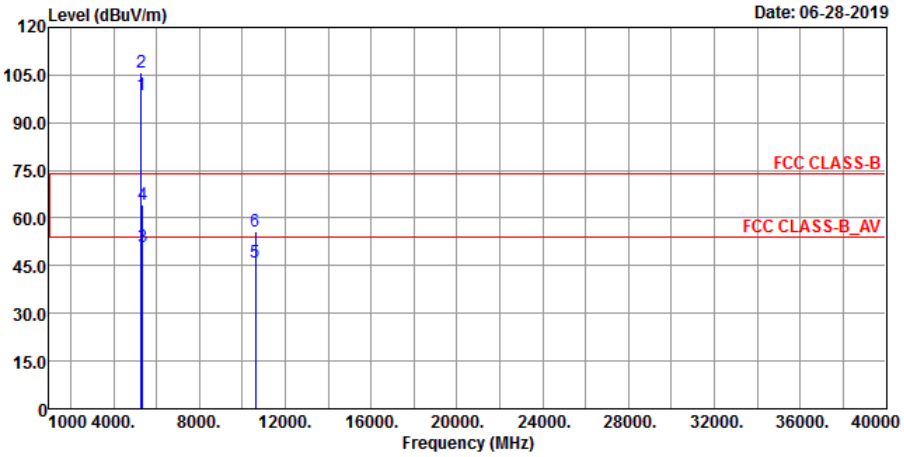
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5114.48	43.23	41.76	1.47	54	-10.77	219	235	Average
5114.48	54.28	52.81	1.47	74	-19.72	219	235	Peak
5260	101.88	100.57	1.31			219	235	Average
5260	109.14	107.83	1.31			219	235	Peak
5350	48.56	47.1	1.46	54	-5.44	219	235	Average
5350	62.98	61.52	1.46	74	-11.02	219	235	Peak
*10520	54.75	57.47	-2.72	68.2	-13.45	136	124	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5099.36	44.1	42.69	1.41	54	-9.9	158	357	Average
5099.36	54.83	53.42	1.41	74	-19.17	158	357	Peak
5260	103.22	101.91	1.31			158	357	Average
5260	110.46	109.15	1.31			158	357	Peak
5350.11	51.99	50.53	1.46	54	-2.01	158	357	Average
5350.11	66.01	64.55	1.46	74	-7.99	158	357	Peak
*10520	55.24	57.96	-2.72	68.2	-12.96	184	105	Peak

Remarks:

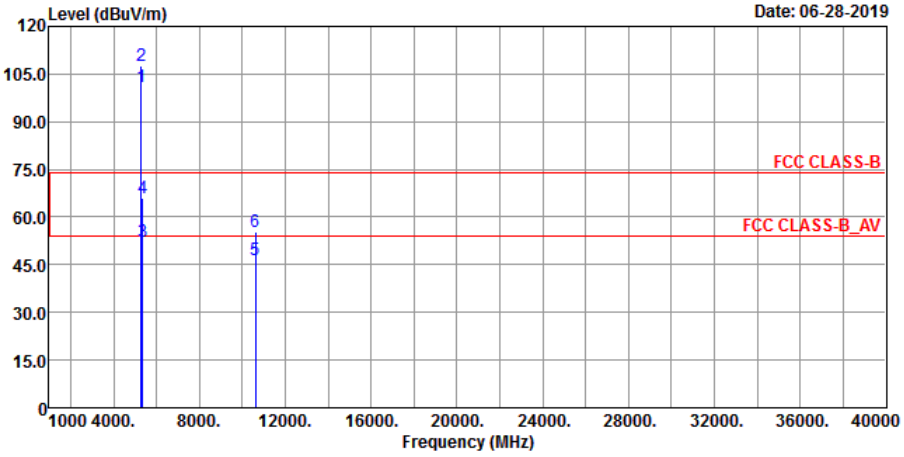
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5260 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



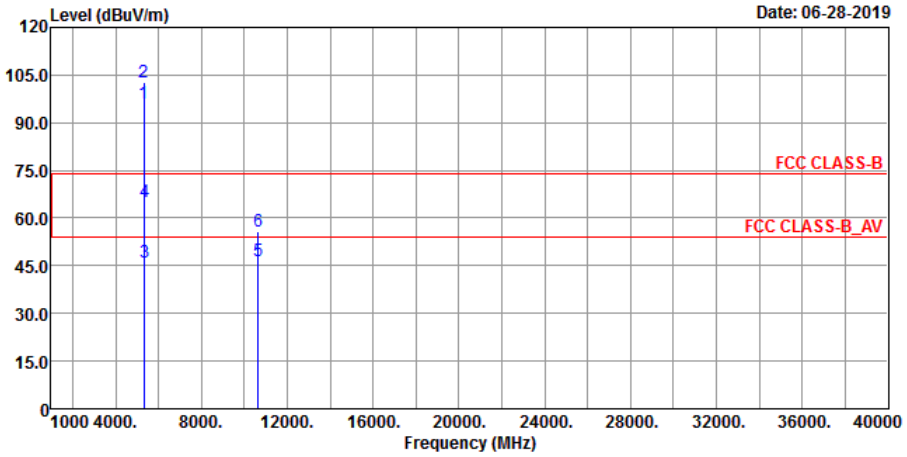
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5300	98.88	97.57	1.31			153	34	Average
5300	105.64	104.33	1.31			153	34	Peak
5350	50.75	49.29	1.46	54	-3.25	153	34	Average
5350	64.34	62.88	1.46	74	-9.66	153	34	Peak
10600	46.2	49.11	-2.91	54	-7.8	163	248	Average
10600	55.67	58.58	-2.91	74	-18.33	163	248	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5300	100.76	99.45	1.31			176	315	Average
5300	107.62	106.31	1.31			176	315	Peak
5350	52.37	50.91	1.46	54	-1.63	176	315	Average
5350	66.01	64.55	1.46	74	-7.99	176	315	Peak
10600	46.4	49.31	-2.91	54	-7.6	156	172	Average
10600	55.38	58.29	-2.91	74	-18.62	156	172	Peak

Remarks:

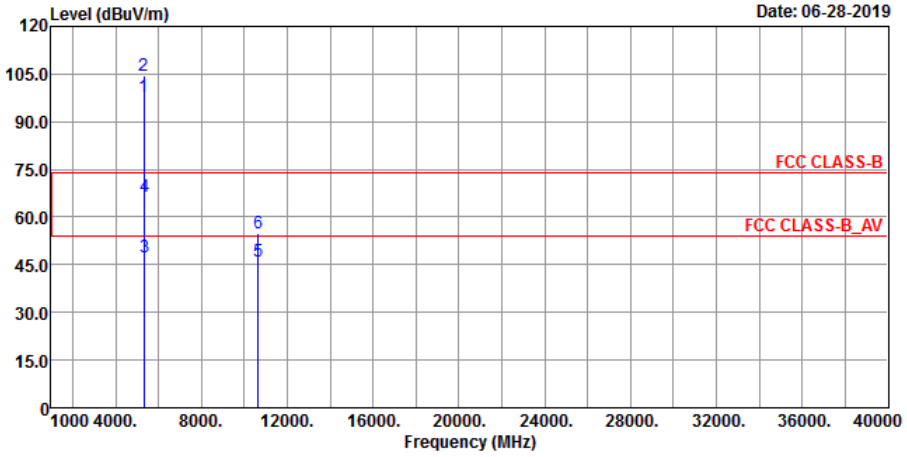
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5300 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



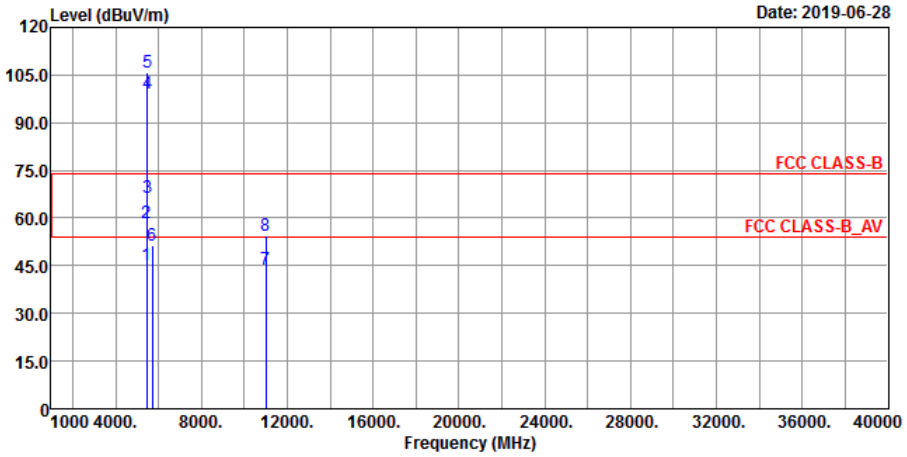
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5320	96.21	94.85	1.36			155	35	Average
5320	102.89	101.53	1.36			155	35	Peak
5351.76	46.11	44.65	1.46	54	-7.89	155	35	Average
5351.76	65.12	63.66	1.46	74	-8.88	155	35	Peak
10640	46.49	49.38	-2.89	54	-7.51	183	261	Average
10640	55.6	58.49	-2.89	74	-18.4	183	261	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5320	97.86	96.5	1.36			177	314	Average
5320	104.44	103.08	1.36			177	314	Peak
5350.55	47.34	45.88	1.46	54	-6.66	177	314	Average
5350.55	66.51	65.05	1.46	74	-7.49	177	314	Peak
10640	46.25	49.14	-2.89	54	-7.75	176	100	Average
10640	54.87	57.76	-2.89	74	-19.13	176	100	Peak

Remarks:

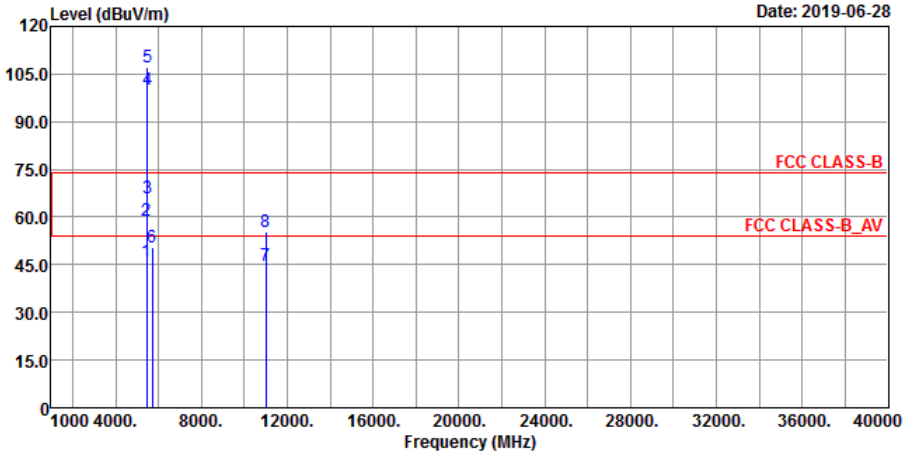
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5320 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



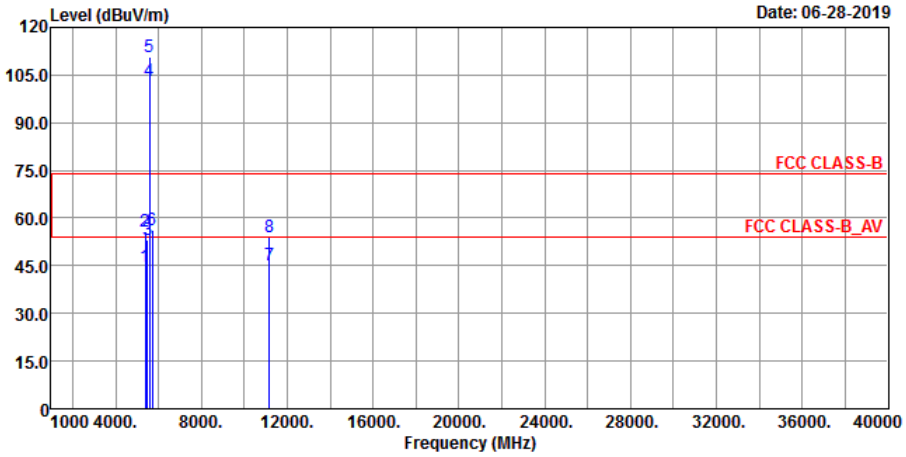
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	45.15	43.28	1.87	54	-8.85	104	45	Average
5460	58.24	56.37	1.87	74	-15.76	104	45	Peak
*5470	66.58	64.72	1.86	68.2	-1.62	104	45	Peak
5500	99.12	60.22	38.9			104	45	Average
5500	105.93	67.03	38.9			104	45	Peak
*5725	51.22	49.46	1.76	68.2	-16.98	104	45	Peak
11000	44.01	46.32	-2.31	54	-9.99	219	94	Average
11000	54.44	56.75	-2.31	74	-19.56	219	94	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	45.94	44.07	1.87	54	-8.06	112	276	Average
5460	58.74	56.87	1.87	74	-15.26	112	276	Peak
*5470	65.92	64.06	1.86	68.2	-2.28	112	276	Peak
5500	99.99	98.12	1.87			112	276	Average
5500	106.99	105.12	1.87			112	276	Peak
*5725	50.37	48.61	1.76	68.2	-17.83	112	276	Peak
11000	44.51	46.82	-2.31	54	-9.49	101	217	Average
11000	55.33	57.64	-2.31	74	-18.67	101	217	Peak

Remarks:

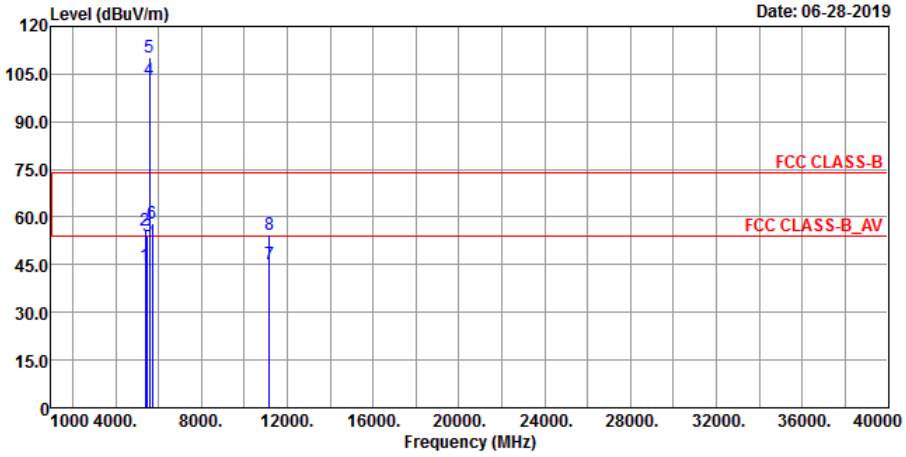
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5500 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



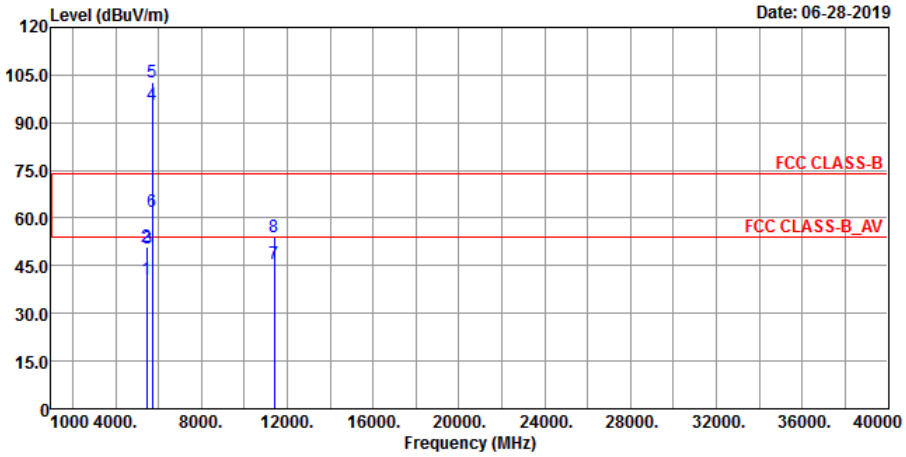
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5404.08	44.66	42.99	1.67	54	-9.34	103	45	Average
5404.08	55.93	54.26	1.67	74	-18.07	103	45	Peak
*5470	53.21	51.35	1.86	68.2	-14.99	103	45	Peak
5580	103.16	64.18	38.98			103	45	Average
5580	110.6	71.62	38.98			103	45	Peak
*5725	56.11	54.35	1.76	68.2	-12.09	103	45	Peak
11160	45.11	47.66	-2.55	54	-8.89	189	203	Average
11160	54.08	56.63	-2.55	74	-19.92	189	203	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5403.44	44.5	42.83	1.67	54	-9.5	108	276	Average
5403.44	55.98	54.31	1.67	74	-18.02	108	276	Peak
*5470	53.92	52.06	1.86	68.2	-14.28	108	276	Peak
5580	103.14	64.16	38.98			108	276	Average
5580	110.39	71.41	38.98			108	276	Peak
*5725	58.01	56.25	1.76	68.2	-10.19	108	276	Peak
11160	45.1	47.65	-2.55	54	-8.9	107	245	Average
11160	54.53	57.08	-2.55	74	-19.47	107	245	Peak

Remarks:

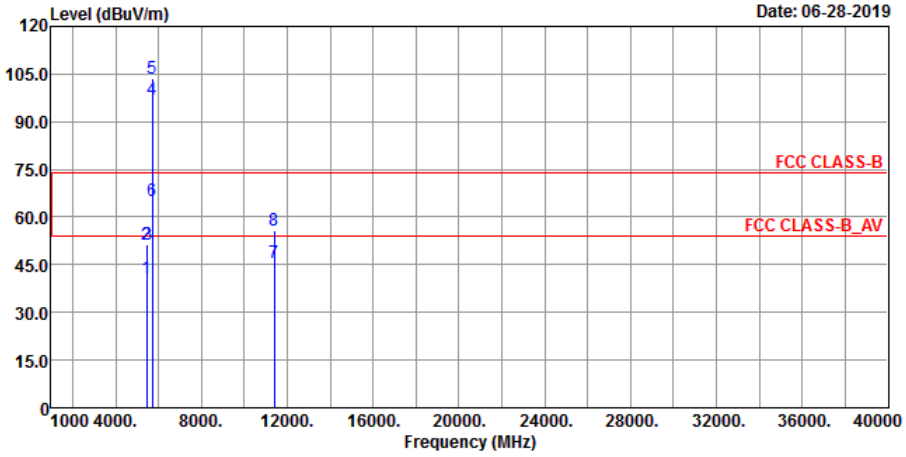
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



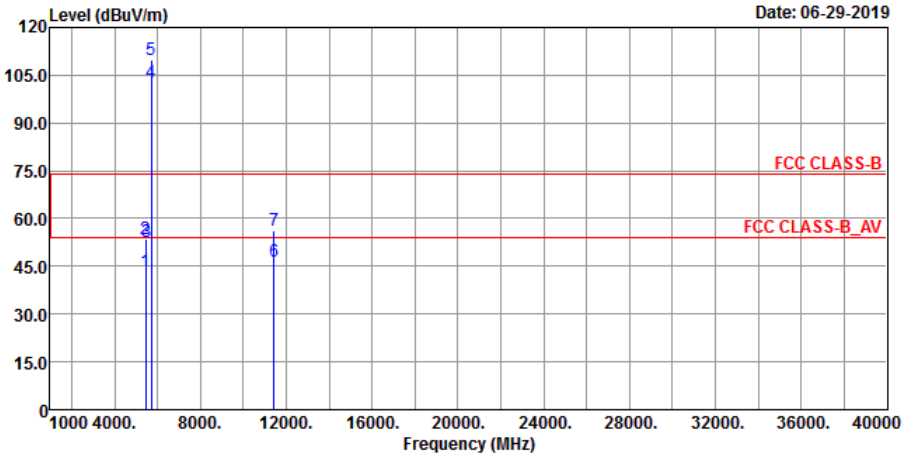
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5457.04	40.82	38.95	1.87	54	-13.18	106	38	Average
5457.04	50.93	49.06	1.87	74	-23.07	106	38	Peak
*5470	50.32	48.46	1.86	68.2	-17.88	106	38	Peak
5700	95.85	56.86	38.99			106	38	Average
5700	102.71	63.72	38.99			106	38	Peak
*5725	62.09	60.33	1.76	68.2	-6.11	106	38	Peak
11400	45.52	47.75	-2.23	54	-8.48	188	205	Average
11400	53.96	56.19	-2.23	74	-20.04	188	205	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	40.85	38.98	1.87	54	-13.15	114	266	Average
5460	51.2	49.33	1.87	74	-22.8	114	266	Peak
*5470	51.2	49.34	1.86	68.2	-17	114	266	Peak
5700	96.93	57.94	38.99			114	266	Average
5700	103.82	64.83	38.99			114	266	Peak
*5725	65.06	63.3	1.76	68.2	-3.14	114	266	Peak
11400	45.72	47.95	-2.23	54	-8.28	103	255	Average
11400	55.84	58.07	-2.23	74	-18.16	103	255	Peak

Remarks:

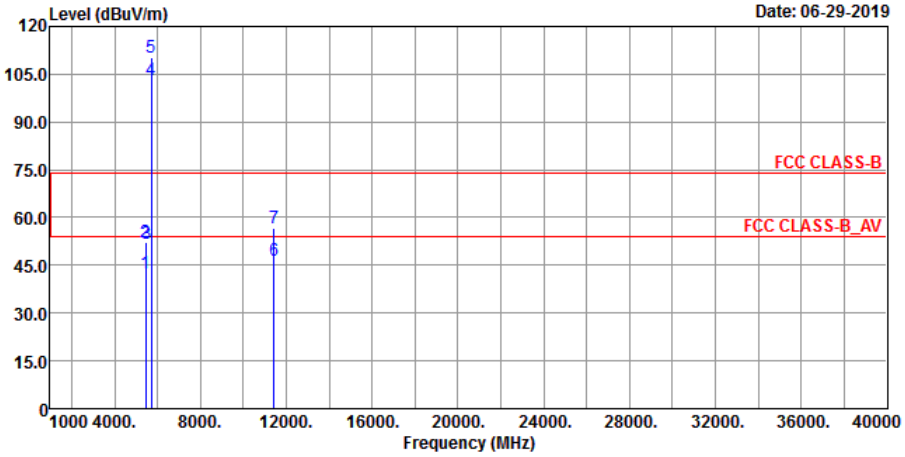
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5700 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



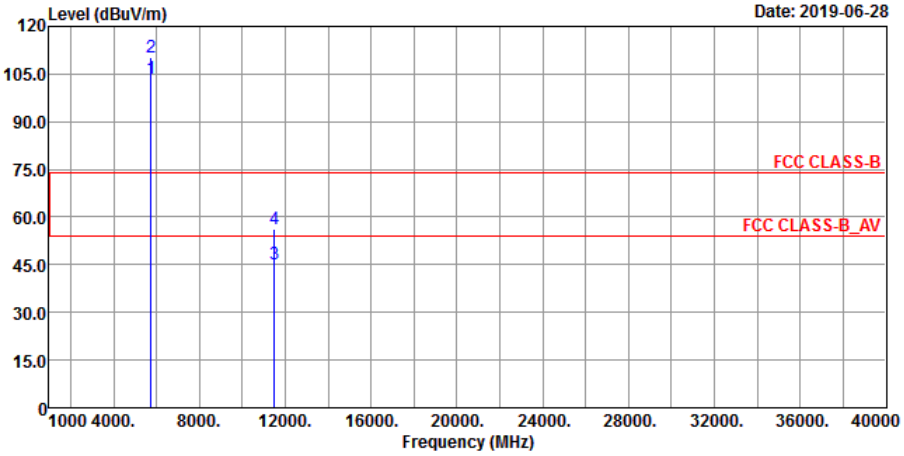
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5459.44	43.6	41.73	1.87	54	-10.4	118	41	Average
5459.44	53.47	51.6	1.87	74	-20.53	118	41	Peak
*5470	52.62	50.76	1.86	68.2	-15.58	118	41	Peak
5720	102.79	101.03	1.76			118	41	Average
5720	110	108.24	1.76			118	41	Peak
11440	46.37	48.59	-2.22	54	-7.63	151	48	Average
11440	56.14	58.36	-2.22	74	-17.86	151	48	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5444.56	42.37	40.59	1.78	54	-11.63	128	301	Average
5444.56	52.12	50.34	1.78	74	-21.88	128	301	Peak
*5470	51.79	49.93	1.86	68.2	-16.41	128	301	Peak
5720	103.36	101.6	1.76			128	301	Average
5720	110.14	108.38	1.76			128	301	Peak
11440	46.6	48.82	-2.22	54	-7.4	177	154	Average
11440	56.68	58.9	-2.22	74	-17.32	177	154	Peak

Remarks:

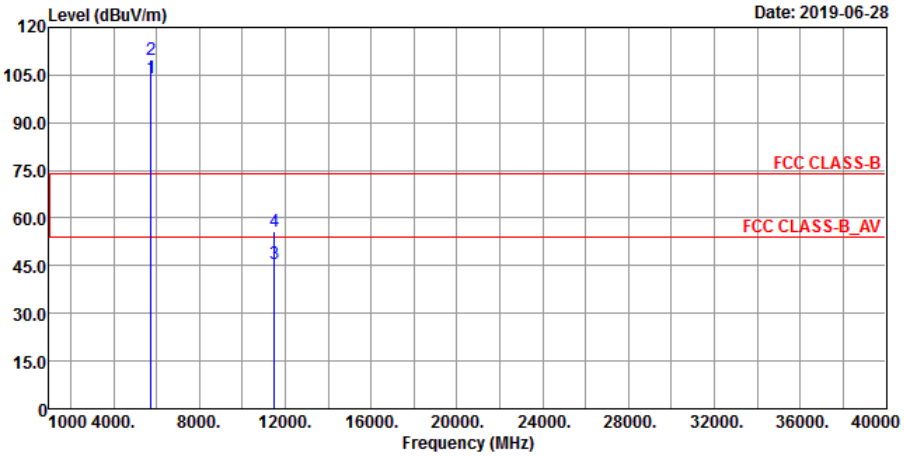
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5720 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

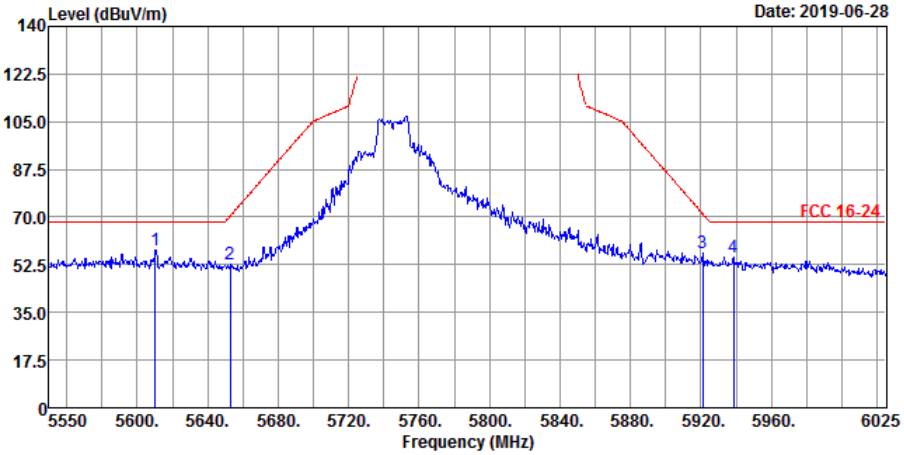
<Spurious Emission>
Horizontal



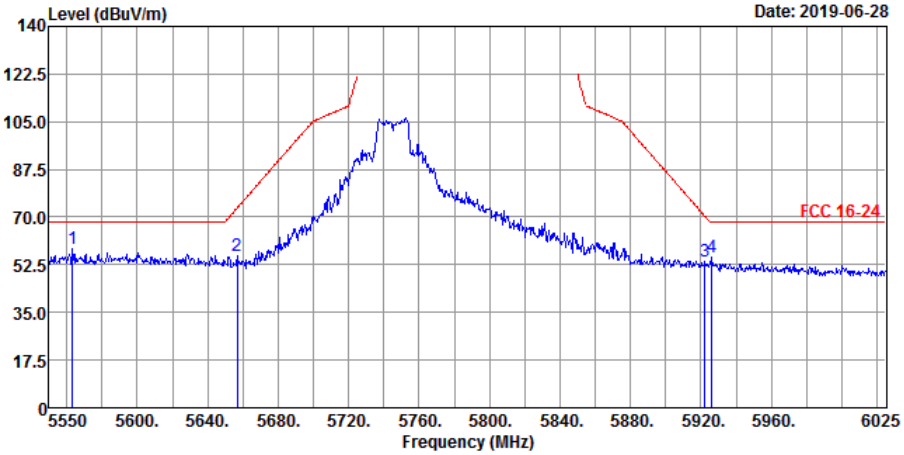
Vertical



<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	103.51	101.69	1.82			106	115	Average
5745	110.07	108.25	1.82			106	115	Peak
11490	45.02	47.22	-2.2	54	-8.98	202	177	Average
11490	56.11	58.31	-2.2	74	-17.89	202	177	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	103.91	102.09	1.82			100	287	Average
5745	109.77	107.95	1.82			100	287	Peak
11490	45.65	47.85	-2.2	54	-8.35	123	304	Average
11490	55.97	58.17	-2.2	74	-18.03	123	304	Peak

<Out of Band Emission (OOBE)>

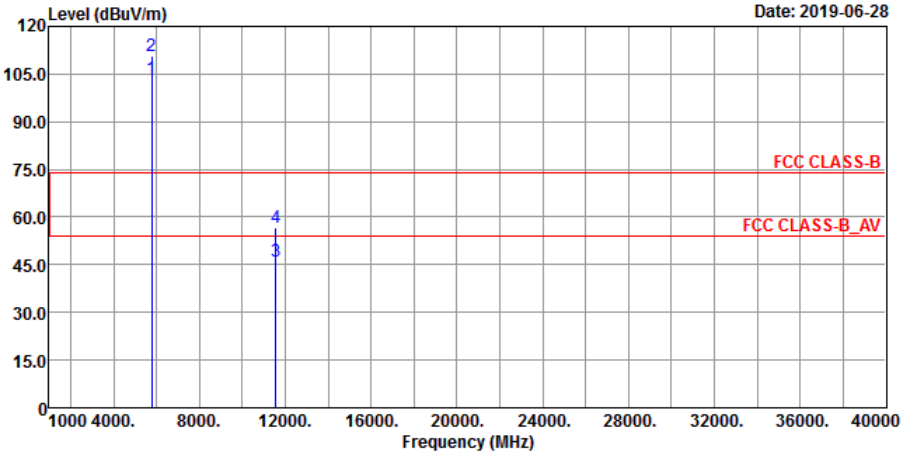
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5610.325	57.86	55.99	1.87	68.2	-10.34	106	115	Peak
5652.6	52.62	50.71	1.91	70.13	-17.51	106	115	Peak
5920.975	56.81	54.5	2.31	71.17	-14.36	106	115	Peak
5938.55	55.22	52.93	2.29	68.2	-12.98	106	115	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5563.3	58.24	56.44	1.8	68.2	-9.96	100	287	Peak
5656.875	55.84	53.99	1.85	73.31	-17.47	100	287	Peak
5922.4	53.54	51.24	2.3	70.12	-16.58	100	287	Peak
5926.2	55.36	53.06	2.3	68.2	-12.84	100	287	Peak

Remarks:

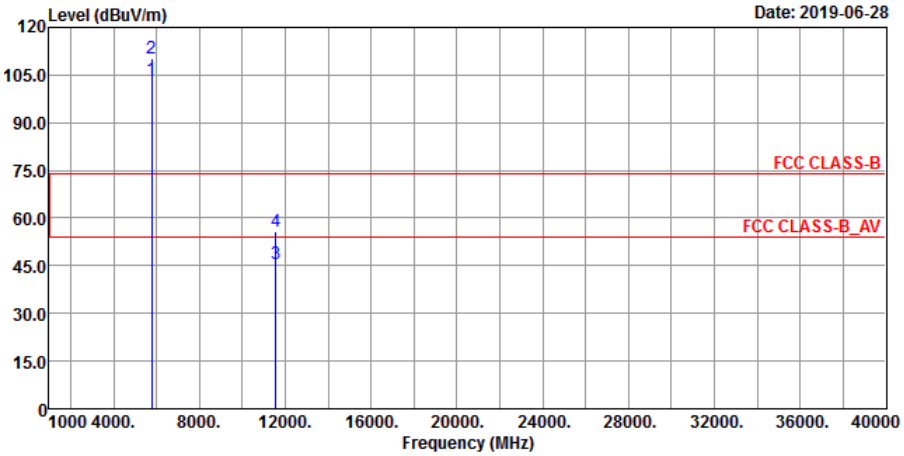
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5745 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

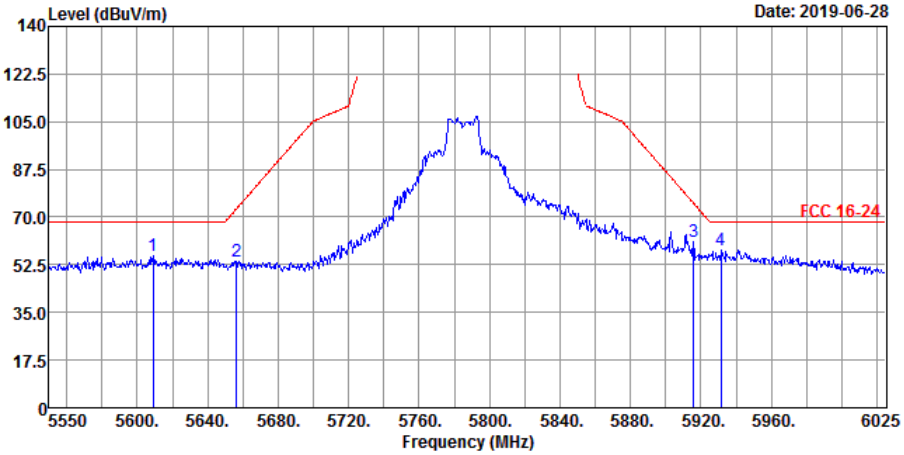
<Spurious Emission>
Horizontal



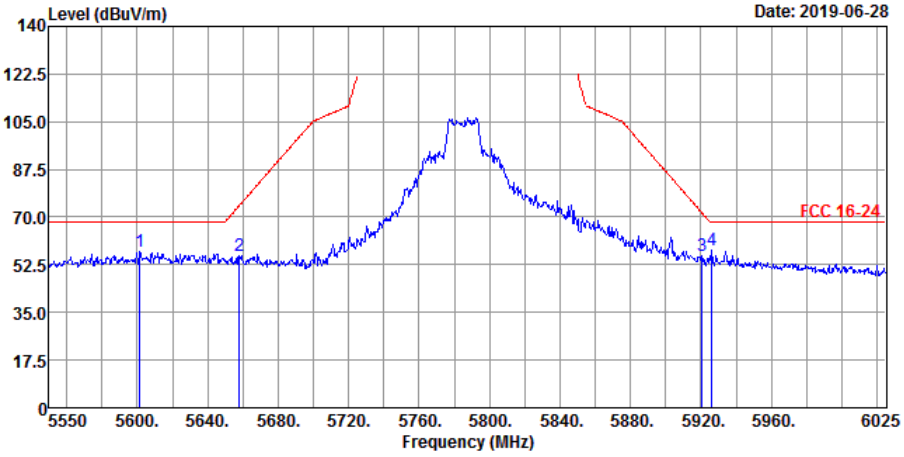
Vertical



<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	103.45	101.53	1.92			105	114	Average
5785	110.76	108.84	1.92			105	114	Peak
11570	46	48.2	-2.2	54	-8	193	122	Average
11570	56.66	58.86	-2.2	74	-17.34	193	122	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5785	103.74	101.82	1.92			100	287	Average
5785	110.07	108.15	1.92			100	287	Peak
11570	45.53	47.73	-2.2	54	-8.47	116	108	Average
11570	55.78	57.98	-2.2	74	-18.22	116	108	Peak

<Out of Band Emission (OOBE)>

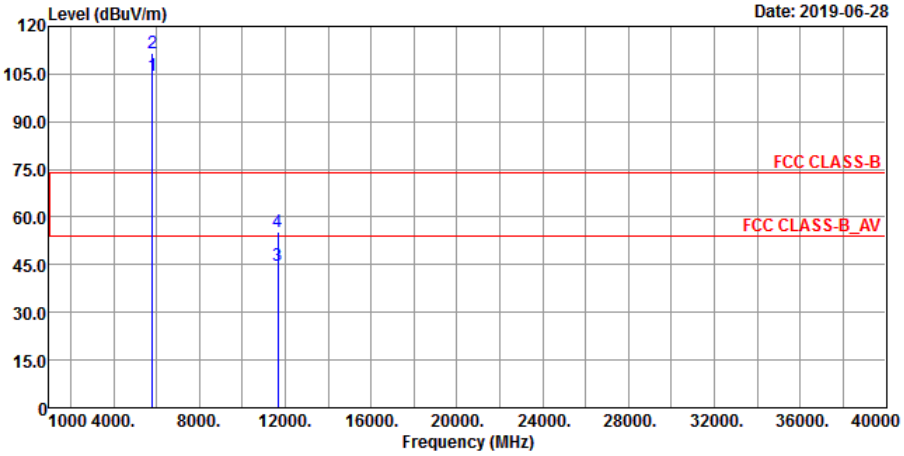
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5608.9	55.89	54.02	1.87	68.2	-12.31	105	114	Peak
5656.4	53.83	51.98	1.85	72.95	-19.12	105	114	Peak
5915.75	60.82	58.51	2.31	75.02	-14.2	105	114	Peak
5931.425	58.03	55.73	2.3	68.2	-10.17	105	114	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5601.3	57.09	55.16	1.93	68.2	-11.11	100	287	Peak
5657.825	55.97	54.12	1.85	74.01	-18.04	100	287	Peak
5920.5	55.95	53.64	2.31	71.52	-15.57	100	287	Peak
5926.2	58.03	55.73	2.3	68.2	-10.17	100	287	Peak

Remarks:

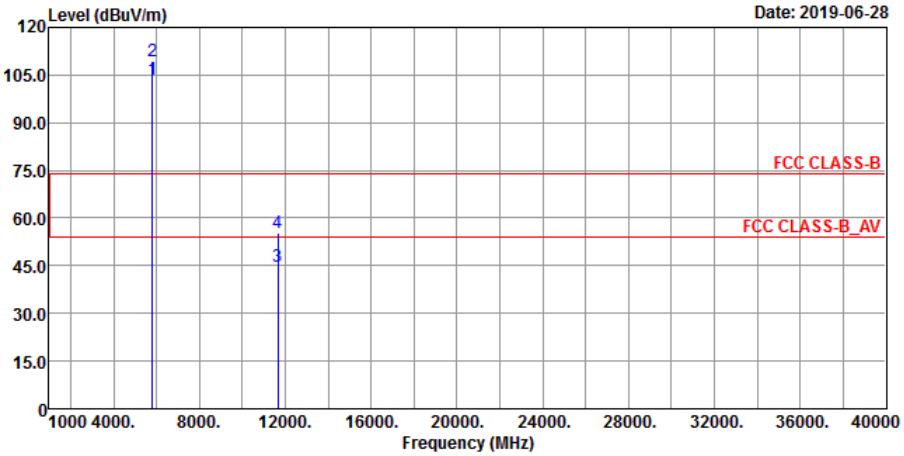
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5785 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

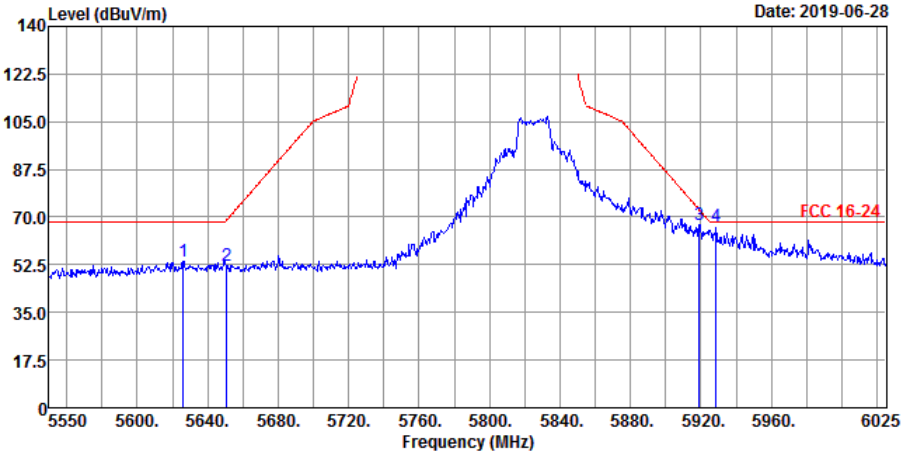
<Spurious Emission>
Horizontal



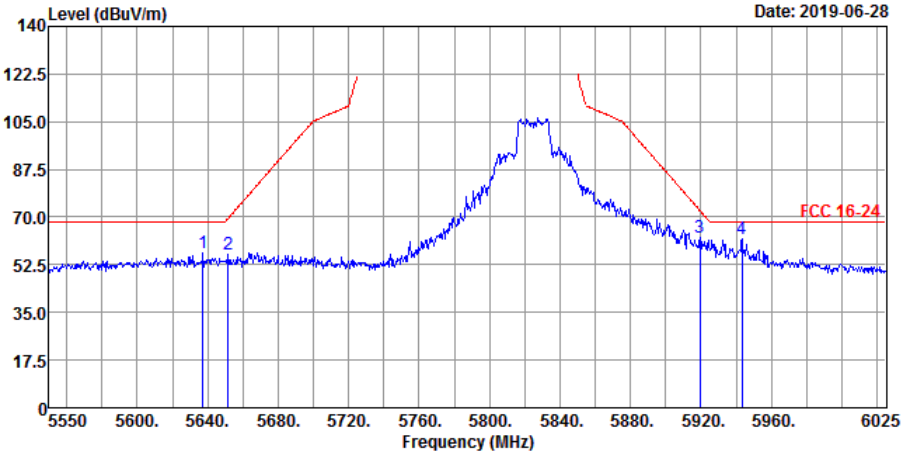
Vertical



<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	104.62	102.54	2.08			108	102	Average
5825	111.75	109.67	2.08			108	102	Peak
11650	44.72	47.11	-2.39	54	-9.28	167	305	Average
11650	55.18	57.57	-2.39	74	-18.82	167	305	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5825	103.68	101.6	2.08			112	288	Average
5825	109.55	107.47	2.08			112	288	Peak
11650	44.85	47.24	-2.39	54	-9.15	108	193	Average
11650	55.33	57.72	-2.39	74	-18.67	108	193	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**
5626	53.72	51.82	1.9	68.2	-14.48	108	102	Peak
5650.7	52.38	50.47	1.91	68.72	-16.34	108	102	Peak
5919.075	67.23	64.92	2.31	72.57	-5.34	108	102	Peak
5928.575	66.56	64.26	2.3	68.2	-1.64	108	102	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5637.4	56.92	55.04	1.88	68.2	-11.28	112	288	Peak
5651.65	56.13	54.22	1.91	69.43	-13.3	112	288	Peak
5919.55	62.75	60.44	2.31	72.22	-9.47	112	288	Peak
5943.3	61.76	59.47	2.29	68.2	-6.44	112	288	Peak

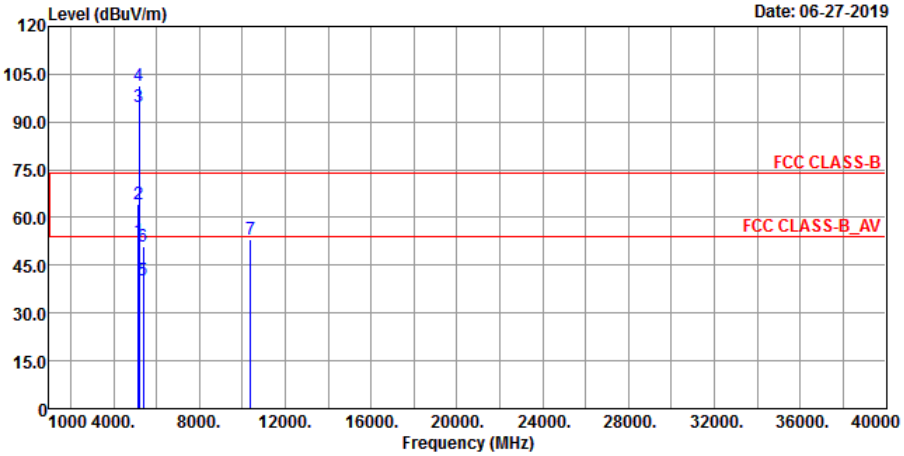
Remarks:

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

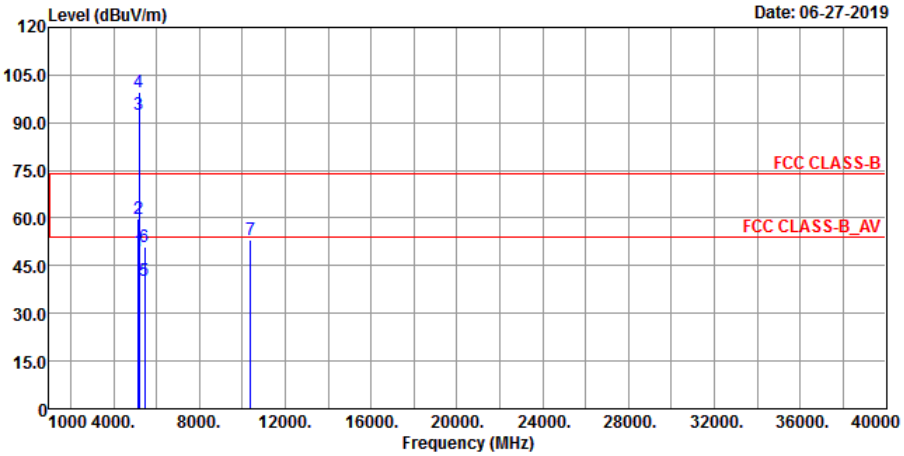
802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 38	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

Horizontal



Vertical



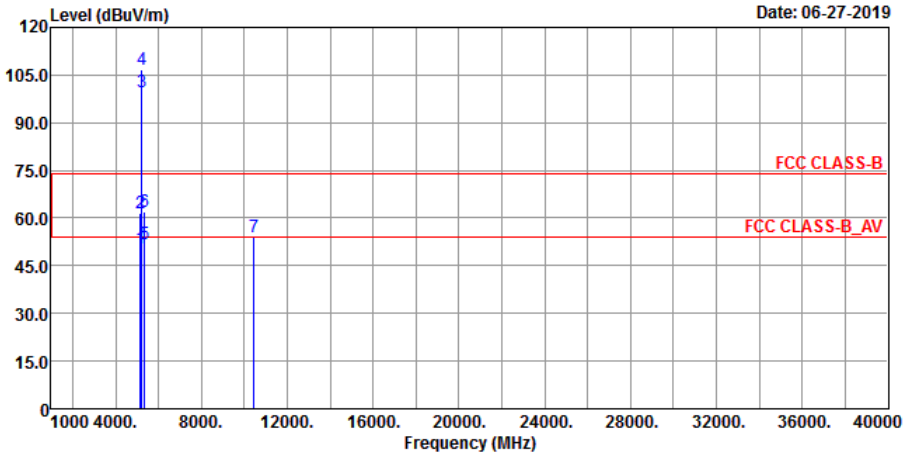
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5150	**52.5**	**50.97**	**1.53**	**54**	**-1.5**	**100**	**267**	**Average**
5150	64.08	62.55	1.53	74	-9.92	100	267	Peak
5190	94.78	55.91	38.87			100	267	Average
5190	101.48	62.61	38.87			100	267	Peak
5384.98	40.27	38.67	1.6	54	-13.73	100	267	Average
5384.98	50.71	49.11	1.6	74	-23.29	100	267	Peak
*10380	52.92	55.79	-2.87	68.2	-15.28	118	22	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5150	49.7	48.17	1.53	54	-4.3	115	249	Average
5150	59.96	58.43	1.53	74	-14.04	115	249	Peak
5190	92.36	53.49	38.87			115	249	Average
5190	99.84	60.97	38.87			115	249	Peak
5449.44	40.13	38.31	1.82	54	-13.87	115	249	Average
5449.44	50.74	48.92	1.82	74	-23.26	115	249	Peak
*10380	52.93	55.8	-2.87	68.2	-15.27	184	74	Peak

Remarks:

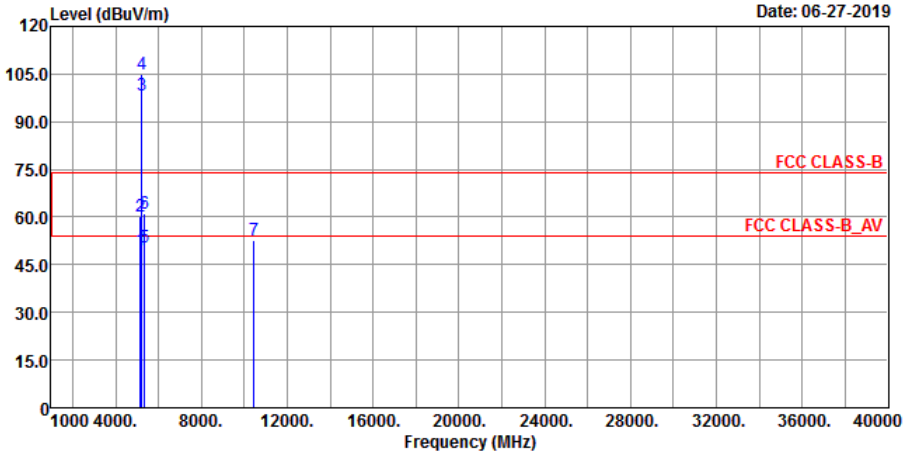
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5190 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



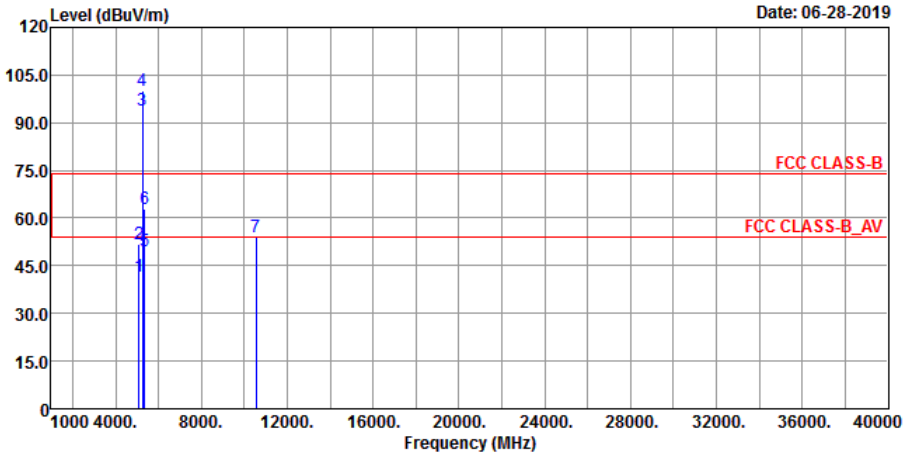
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5150	50.44	48.91	1.53	54	-3.56	100	268	Average
5150	61.65	60.12	1.53	74	-12.35	100	268	Peak
5230	99.81	61.11	38.7			100	268	Average
5230	106.72	68.02	38.7			100	268	Peak
5350.66	51.99	50.53	1.46	54	-2.01	100	268	Average
5350.66	62.04	60.58	1.46	74	-11.96	100	268	Peak
*10460	54.09	56.88	-2.79	68.2	-14.11	116	23	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5150	49.5	47.97	1.53	54	-4.5	118	251	Average
5150	60.33	58.8	1.53	74	-13.67	118	251	Peak
5230	98.11	59.41	38.7			118	251	Average
5230	105	66.3	38.7			118	251	Peak
5350.22	50.68	49.22	1.46	54	-3.32	118	251	Average
5350.22	61.33	59.87	1.46	74	-12.67	118	251	Peak
*10460	52.53	55.32	-2.79	68.2	-15.67	188	64	Peak

Remarks:

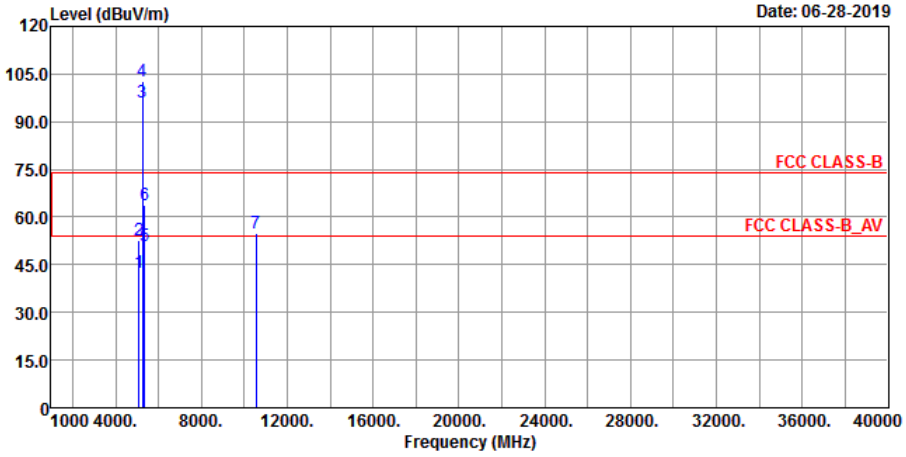
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5230 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



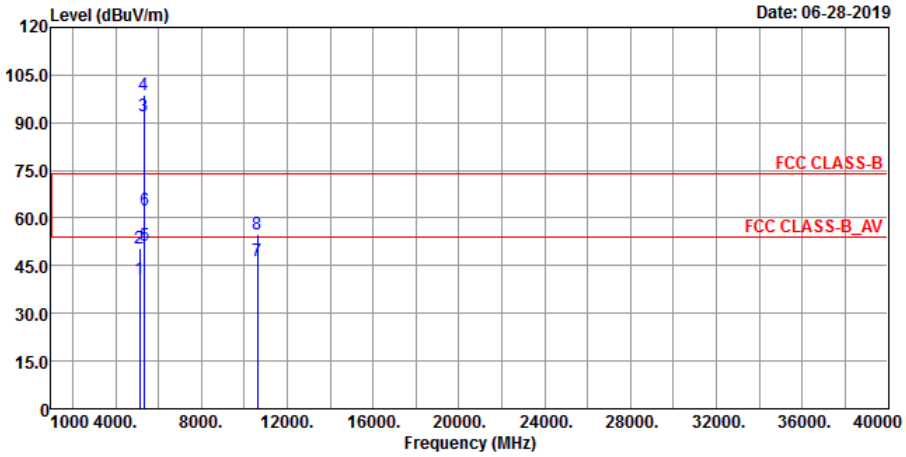
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5099.72	41.5	40.09	1.41	54	-12.5	136	34	Average
5099.72	51.64	50.23	1.41	74	-22.36	136	34	Peak
5270	93.83	92.52	1.31			136	34	Average
5270	100.08	98.77	1.31			136	34	Peak
5350.11	49.75	48.29	1.46	54	-4.25	136	34	Average
5350.11	62.8	61.34	1.46	74	-11.2	136	34	Peak
*10540	54.15	56.92	-2.77	68.2	-14.05	154	103	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**
5102.06	42.61	41.2	1.41	54	-11.39	159	356	Average
5102.06	52.75	51.34	1.41	74	-21.25	159	356	Peak
5270	96.14	94.83	1.31			159	356	Average
5270	102.88	101.57	1.31			159	356	Peak
5350.11	51.05	49.59	1.46	54	-2.95	159	356	Average
5350.11	63.72	62.26	1.46	74	-10.28	159	356	Peak
*10540	54.84	57.61	-2.77	68.2	-13.36	149	237	Peak

Remarks:

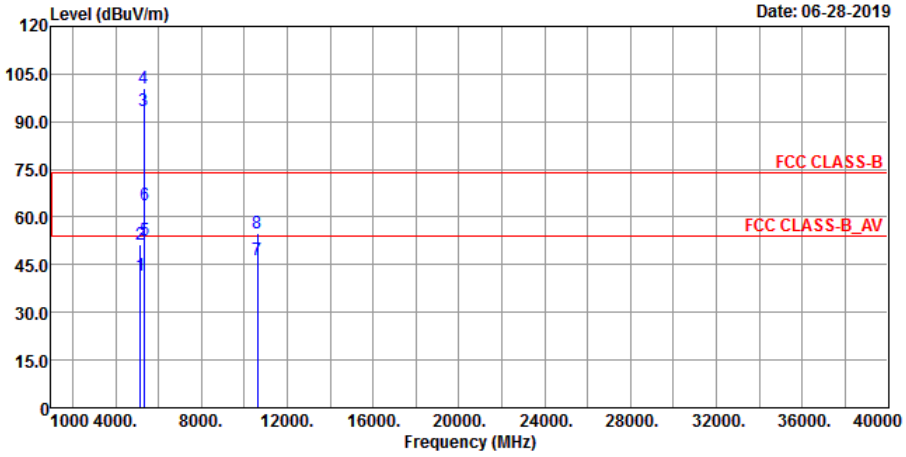
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5270 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



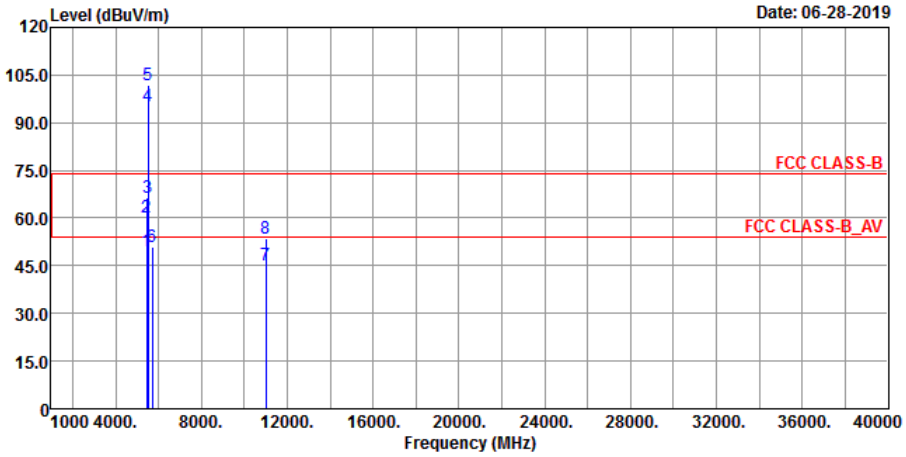
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5132.66	40.53	39.04	1.49	54	-13.47	155	35	Average
5132.66	50.65	49.16	1.49	74	-23.35	155	35	Peak
5310	92.16	90.8	1.36			155	35	Average
5310	98.72	97.36	1.36			155	35	Peak
5350	51.22	49.76	1.46	54	-2.78	155	35	Average
5350	62.22	60.76	1.46	74	-11.78	155	35	Peak
10620	46.47	49.36	-2.89	54	-7.53	151	267	Average
10620	54.7	57.59	-2.89	74	-19.3	151	267	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5149.22	41.55	40.02	1.53	54	-12.45	176	314	Average
5149.22	51.31	49.78	1.53	74	-22.69	176	314	Peak
5310	93.65	92.29	1.36			176	314	Average
5310	100.57	99.21	1.36			176	314	Peak
5350	52.49	51.03	1.46	54	-1.51	176	314	Average
5350	63.55	62.09	1.46	74	-10.45	176	314	Peak
10620	46.35	49.24	-2.89	54	-7.65	183	117	Average
10620	54.94	57.83	-2.89	74	-19.06	183	117	Peak

Remarks:

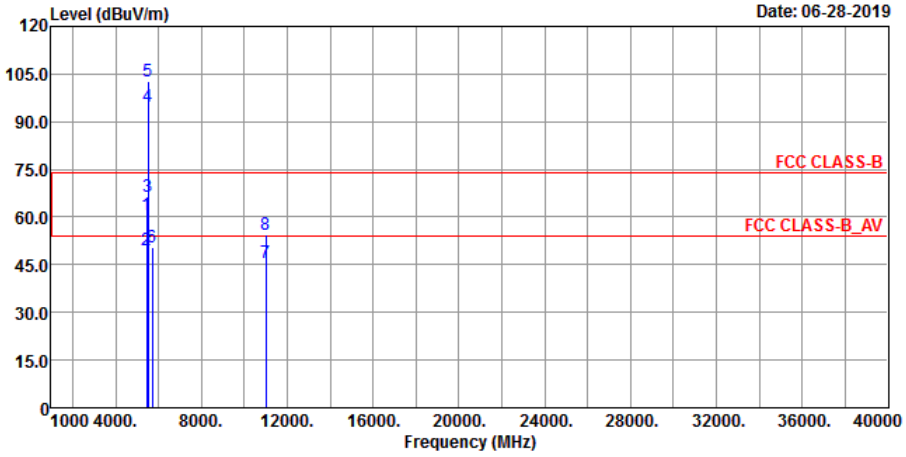
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5310 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



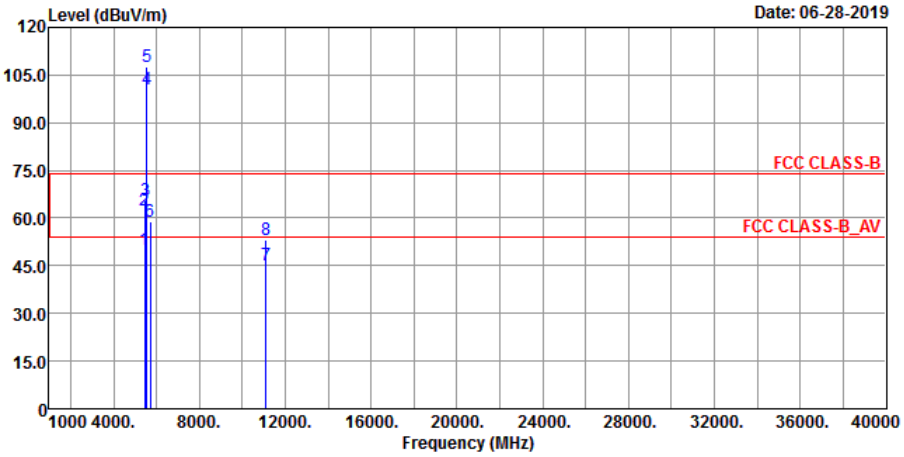
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	49.74	47.87	1.87	54	-4.26	154	181	Average
5460	60.3	58.43	1.87	74	-13.7	154	181	Peak
*5470	66.32	64.46	1.86	68.2	-1.88	154	181	Peak
5510	95.04	56.14	38.9			154	181	Average
5510	101.91	63.01	38.9			154	181	Peak
*5725	51.05	49.29	1.76	68.2	-17.15	154	181	Peak
11020	45.35	47.69	-2.34	54	-8.65	184	202	Average
11020	53.42	55.76	-2.34	74	-20.58	184	202	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	60.67	58.8	1.87	74	-13.33	116	267	Peak
5460.08	49.65	47.78	1.87	54	-4.35	116	267	Average
*5470	66.61	64.75	1.86	68.2	-1.59	116	267	Peak
5510	94.9	56	38.9			116	267	Average
5510	102.56	63.66	38.9			116	267	Peak
*5725	50.28	48.52	1.76	68.2	-17.92	116	267	Peak
11020	45.51	47.85	-2.34	54	-8.49	105	249	Average
11020	54.42	56.76	-2.34	74	-19.58	105	249	Peak

Remarks:

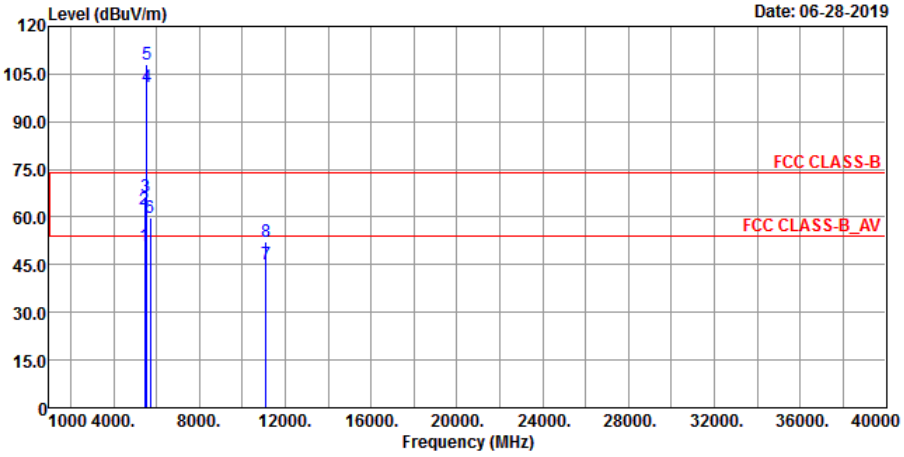
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5510 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



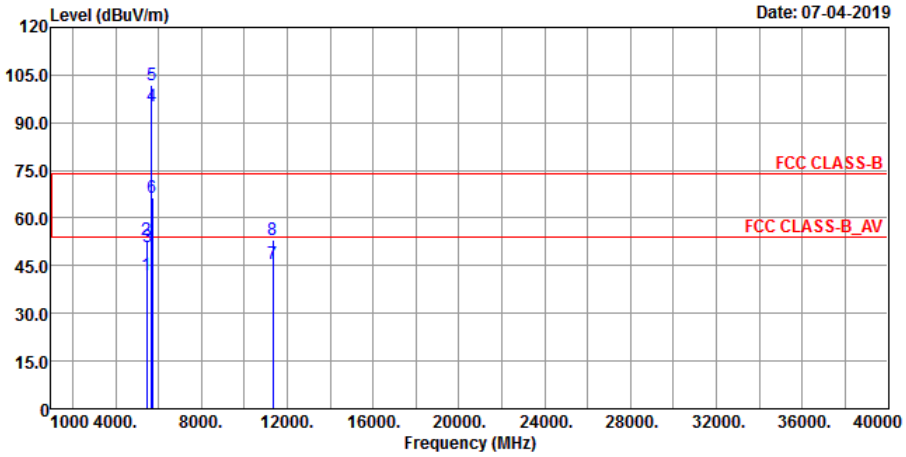
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	50.19	48.32	1.87	54	-3.81	125	34	Average
5460	62.4	60.53	1.87	74	-11.6	125	34	Peak
*5470	65.63	63.77	1.86	68.2	-2.57	125	34	Peak
5550	100.53	61.61	38.92			125	34	Average
5550	107.65	68.73	38.92			125	34	Peak
*5725	58.82	57.06	1.76	68.2	-9.38	125	34	Peak
11110	45.14	47.66	-2.52	54	-8.86	198	199	Average
11110	53.21	55.73	-2.52	74	-20.79	198	199	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	50.83	48.96	1.87	54	-3.17	115	281	Average
5460	62.55	60.68	1.87	74	-11.45	115	281	Peak
*5470	66.52	64.66	1.86	68.2	-1.68	115	281	Peak
5550	101.04	62.12	38.92			115	281	Average
5550	108	69.08	38.92			115	281	Peak
*5725	59.83	58.07	1.76	68.2	-8.37	115	281	Peak
11110	45.33	47.85	-2.52	54	-8.67	112	265	Average
11110	52.36	54.88	-2.52	74	-21.64	112	265	Peak

Remarks:

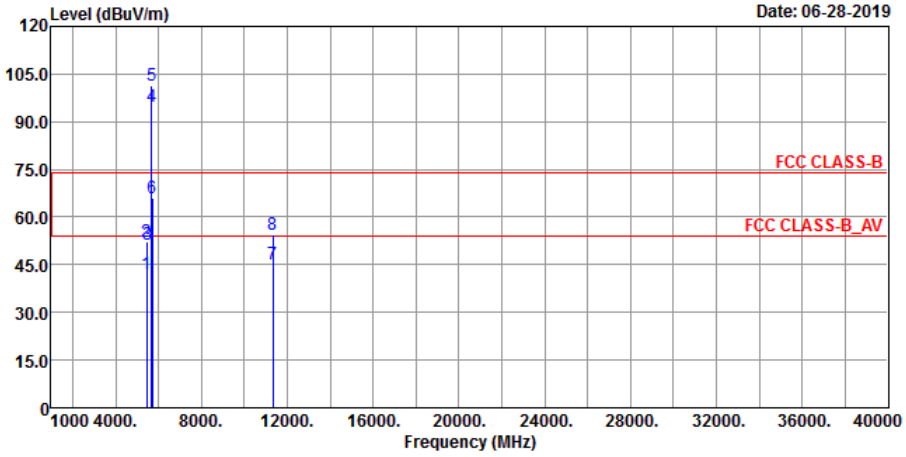
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5550 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



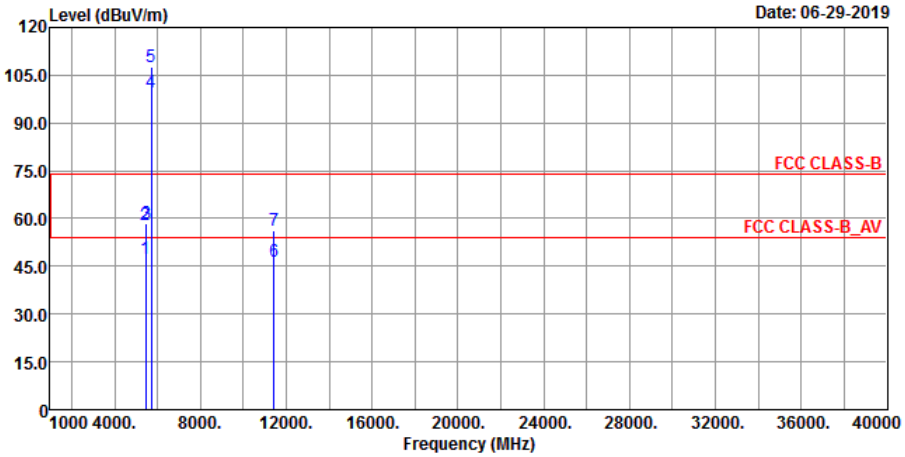
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5450.32	41.86	39.99	1.87	54	-12.14	134	36	Average
5450.32	53.08	51.21	1.87	74	-20.92	134	36	Peak
*5470	50.71	48.85	1.86	68.2	-17.49	134	36	Peak
5670	95.22	56.12	39.1			134	36	Average
5670	101.85	62.75	39.1			134	36	Peak
*5725	66.23	64.47	1.76	68.2	-1.97	134	36	Peak
11340	45.59	47.95	-2.36	54	-8.41	184	210	Average
11340	53.17	55.53	-2.36	74	-20.83	184	210	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5459.92	41.9	40.03	1.87	54	-12.1	127	277	Average
5459.92	52.12	50.25	1.87	74	-21.88	127	277	Peak
*5470	51.47	49.61	1.86	68.2	-16.73	127	277	Peak
5670	94.6	55.5	39.1			127	277	Average
5670	101.41	62.31	39.1			127	277	Peak
*5725	66	64.24	1.76	68.2	-2.2	127	277	Peak
11340	45.39	47.75	-2.36	54	-8.61	102	255	Average
11340	54.61	56.97	-2.36	74	-19.39	102	255	Peak

Remarks:

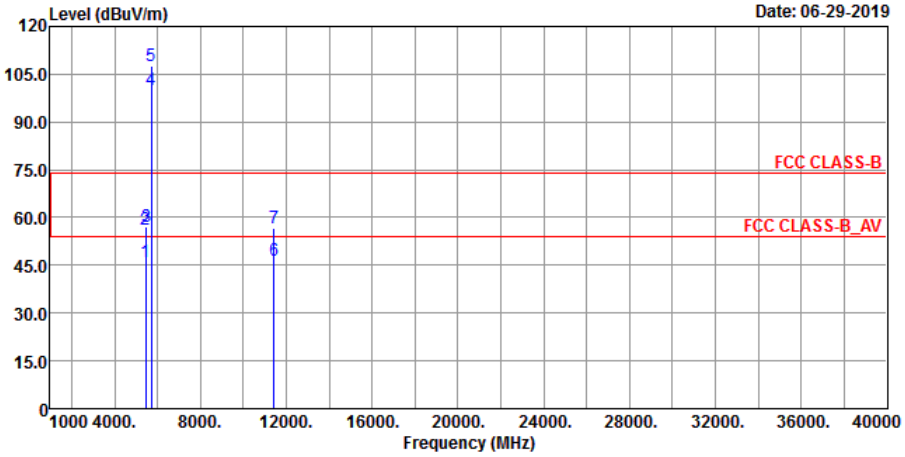
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5670 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



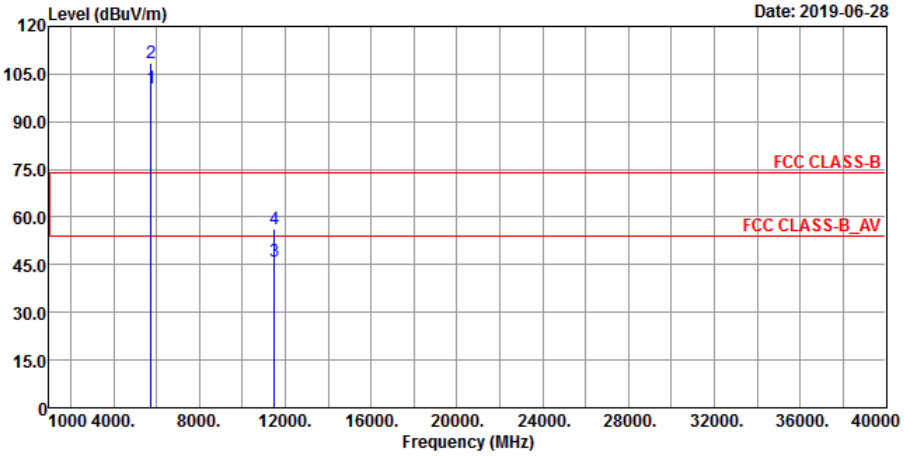
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5459.6	47.57	45.7	1.87	54	-6.43	119	41	Average
5459.6	57.92	56.05	1.87	74	-16.08	119	41	Peak
*5470	58.29	56.43	1.86	68.2	-9.91	119	41	Peak
5710	99.84	98.18	1.66			119	41	Average
5710	107.59	105.93	1.66			119	41	Peak
11420	46.43	48.67	-2.24	54	-7.57	147	195	Average
11420	56.39	58.63	-2.24	74	-17.61	147	195	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**
5459.76	45.87	44	1.87	54	-8.13	128	301	Average
5459.76	56.4	54.53	1.87	74	-17.6	128	301	Peak
*5470	56.99	55.13	1.86	68.2	-11.21	128	301	Peak
5710	100.27	98.61	1.66			128	300	Average
5710	107.59	105.93	1.66			128	300	Peak
11420	46.66	48.9	-2.24	54	-7.34	164	257	Average
11420	56.51	58.75	-2.24	74	-17.49	164	257	Peak

Remarks:

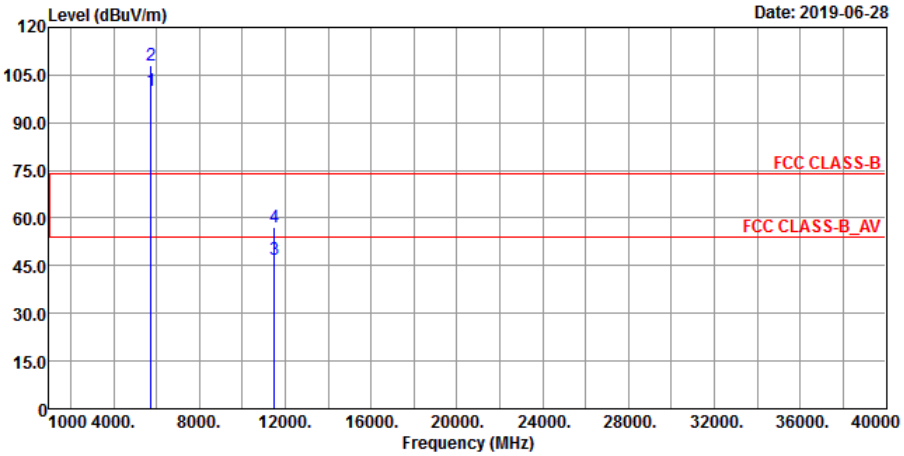
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5710 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

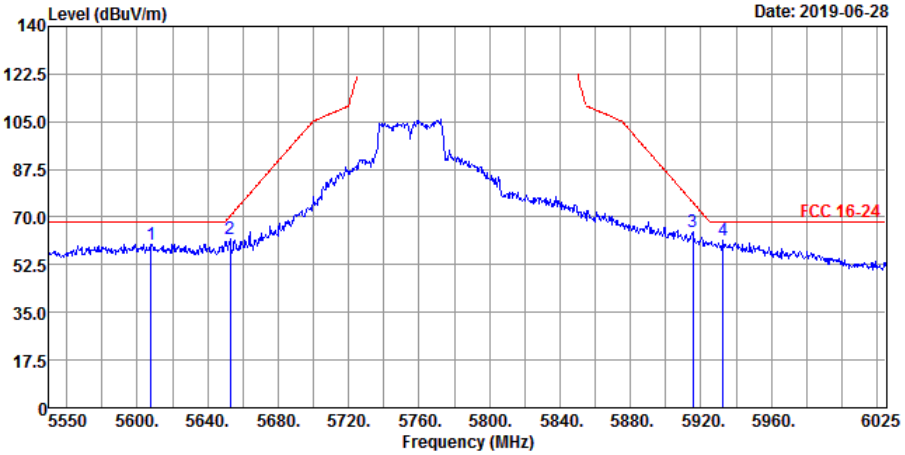
<Spurious Emission>
Horizontal



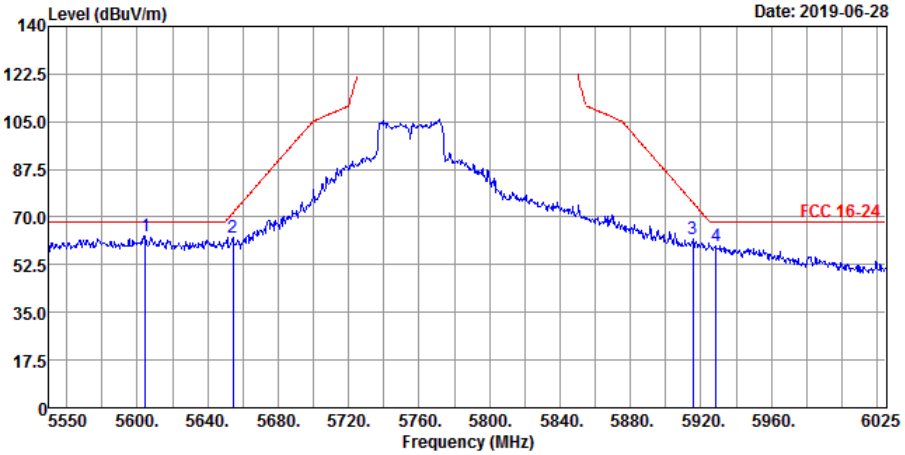
Vertical



<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	100.72	98.82	1.9			107	115	Average
5755	108.29	106.39	1.9			107	115	Peak
11510	46.1	48.31	-2.21	54	-7.9	195	166	Average
11510	56.4	58.61	-2.21	74	-17.6	195	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**
5755	100.22	98.32	1.9			105	288	Average
5755	108	106.1	1.9			105	288	Peak
11510	47.01	49.22	-2.21	54	-6.99	137	91	Average
11510	57.13	59.34	-2.21	74	-16.87	137	91	Peak

<Out of Band Emission (OOBE)>

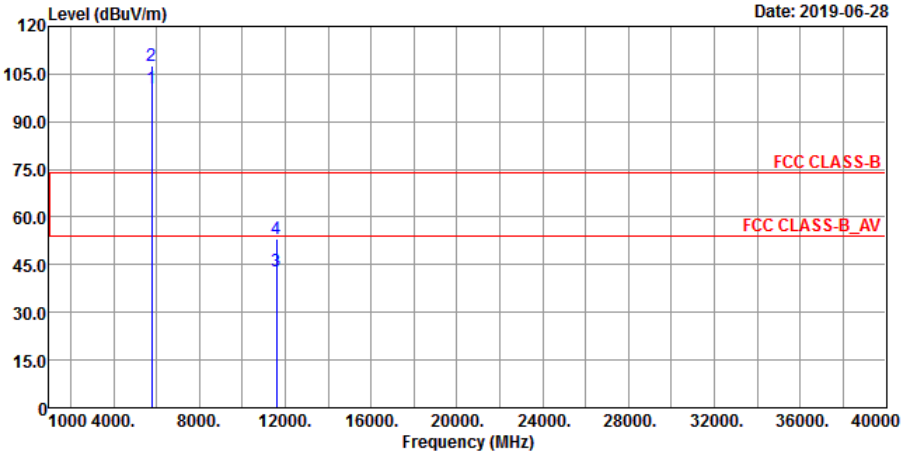
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5607.95	60.13	58.26	1.87	68.2	-8.07	107	115	Peak
5652.6	62.08	60.17	1.91	70.13	-8.05	107	115	Peak
5915.275	64.5	62.19	2.31	75.37	-10.87	107	115	Peak
5932.375	61.64	59.34	2.3	68.2	-6.56	107	115	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5604.625	62.97	61.1	1.87	68.2	-5.23	105	288	Peak
5654.5	62.5	60.65	1.85	71.54	-9.04	105	288	Peak
5915.275	61.93	59.62	2.31	75.37	-13.44	105	288	Peak
5928.575	59.54	57.24	2.3	68.2	-8.66	105	288	Peak

Remarks:

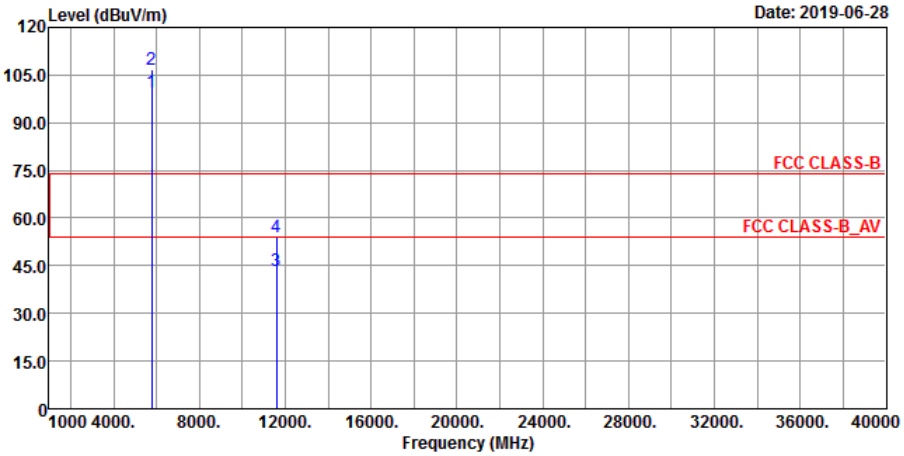
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5755 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

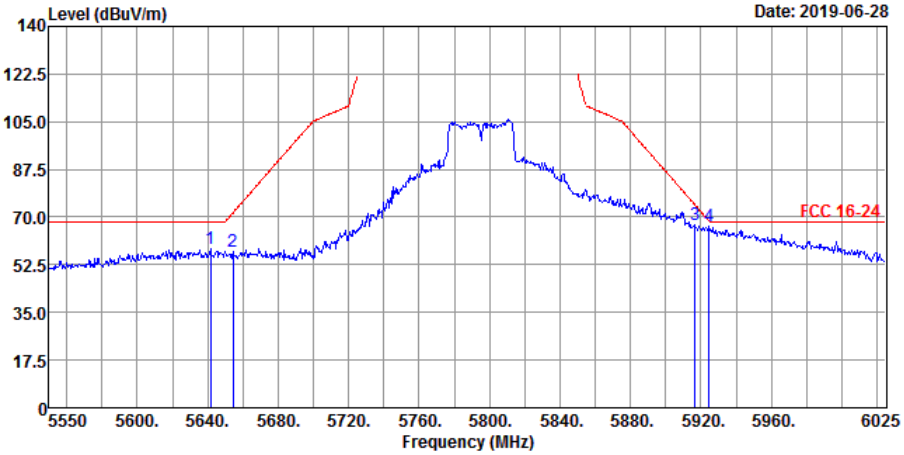
<Spurious Emission>
Horizontal



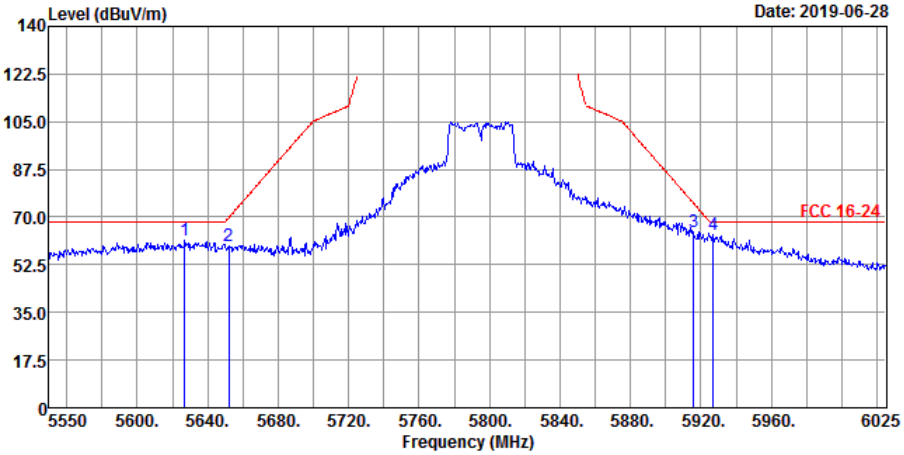
Vertical



<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	100.32	98.32	2			118	105	Average
5795	107.69	105.69	2			118	105	Peak
11590	42.74	44.93	-2.19	54	-11.26	158	147	Average
11590	53.23	55.42	-2.19	74	-20.77	158	147	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	99.47	97.47	2			100	288	Average
5795	106.88	104.88	2			100	288	Peak
11590	43.19	45.38	-2.19	54	-10.81	119	273	Average
11590	53.89	56.08	-2.19	74	-20.11	119	273	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**
5641.675	58.25	56.37	1.88	68.2	-9.95	118	105	Peak
5654.5	57.18	55.33	1.85	71.54	-14.36	118	105	Peak
5916.7	67.06	64.75	2.31	74.32	-7.26	118	105	Peak
5924.775	66.83	64.53	2.3	68.37	-1.54	118	105	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5626.95	61.28	59.38	1.9	68.2	-6.92	100	288	Peak
5652.125	59.56	57.65	1.91	69.78	-10.22	100	288	Peak
5915.75	64.56	62.25	2.31	75.02	-10.46	100	288	Peak
5927.15	63.39	61.09	2.3	68.2	-4.81	100	288	Peak

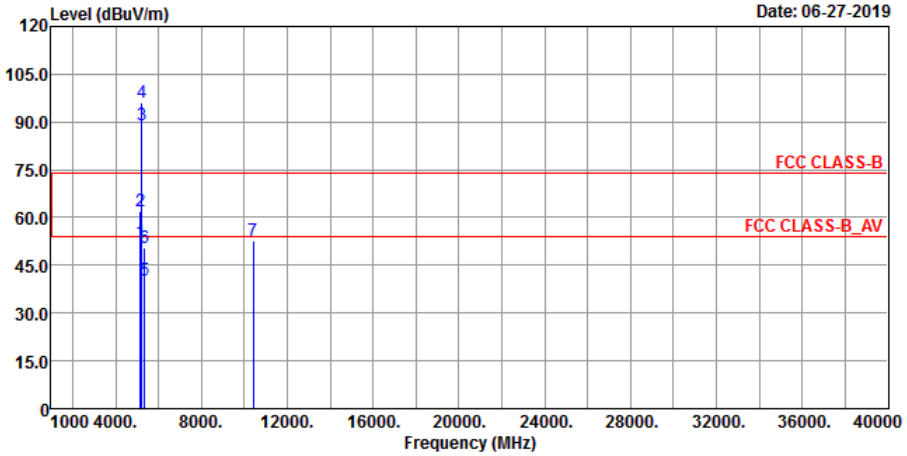
Remarks:

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

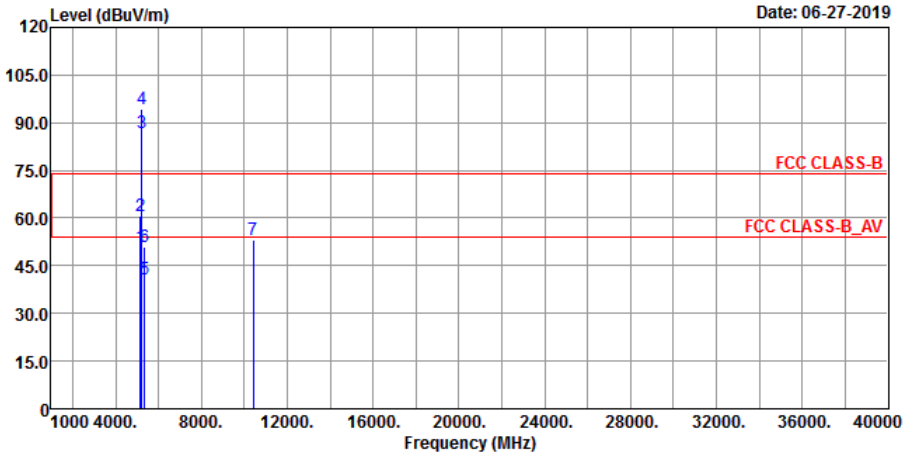
802.11ac (VHT80)

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**	Getaz Yang

Horizontal



Vertical



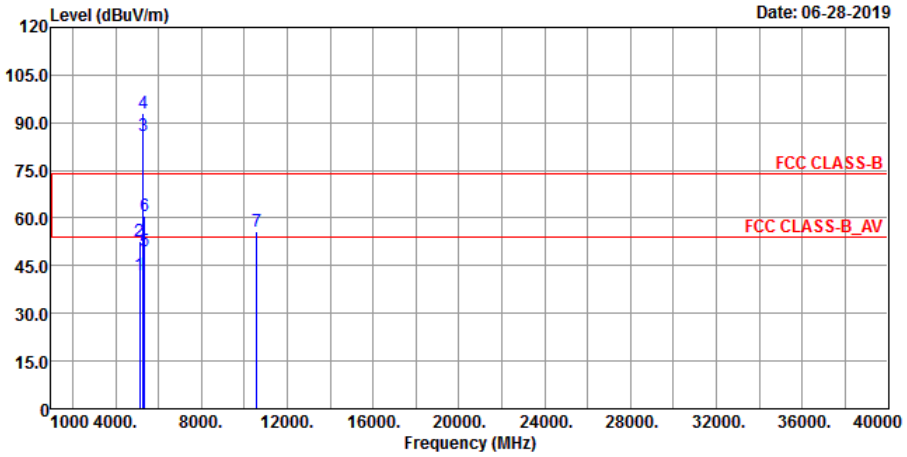
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5145.2	52.37	50.84	1.53	54	-1.63	100	268	Average
5145.2	62.15	60.62	1.53	74	-11.85	100	268	Peak
5210	88.79	49.99	38.8			100	268	Average
5210	95.88	57.08	38.8			100	268	Peak
5357.48	40.49	39.03	1.46	54	-13.51	100	268	Average
5357.48	50.37	48.91	1.46	74	-23.63	100	268	Peak
*10420	52.56	55.41	-2.85	68.2	-15.64	112	22	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	50.88	49.35	1.53	54	-3.12	115	251	Average
5150	60.46	58.93	1.53	74	-13.54	115	251	Peak
5210	86.81	48.01	38.8			115	251	Average
5210	94.19	55.39	38.8			115	251	Peak
5350.22	40.56	39.1	1.46	54	-13.44	115	251	Average
5350.22	50.97	49.51	1.46	74	-23.03	115	251	Peak
*10420	53.33	56.18	-2.85	68.2	-14.87	193	88	Peak

Remarks:

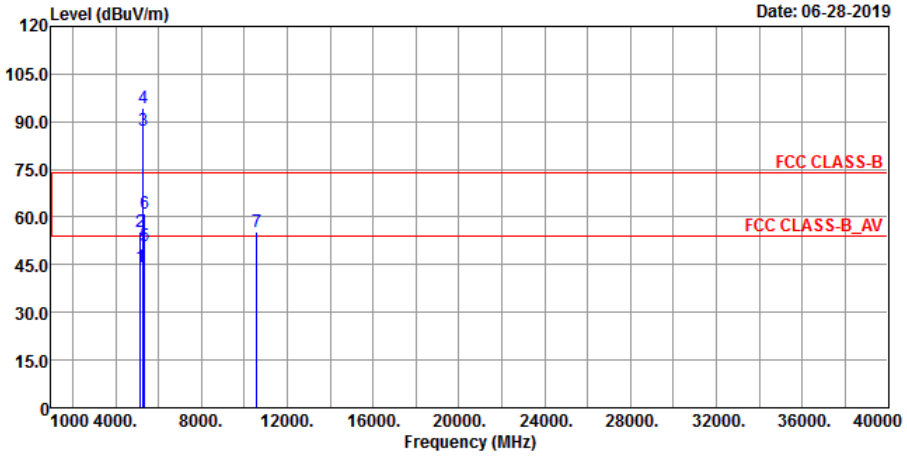
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5210 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



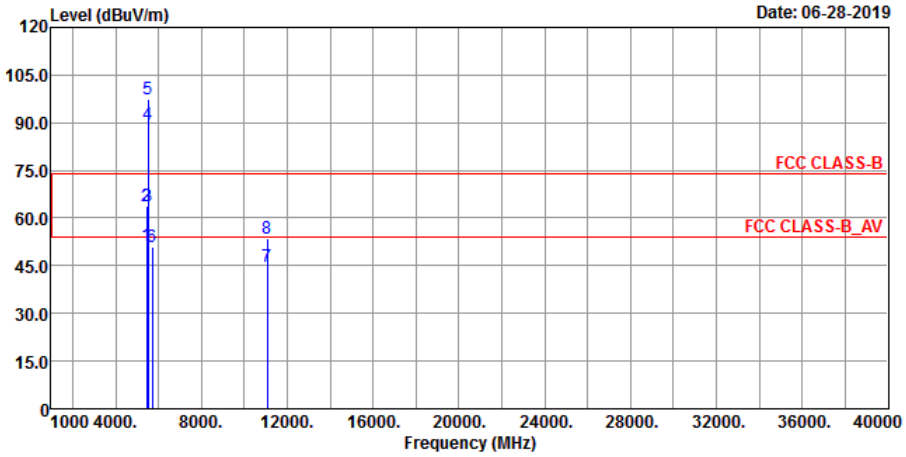
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5134.64	42.02	40.53	1.49	54	-11.98	137	36	Average
5134.64	52.67	51.18	1.49	74	-21.33	137	36	Peak
5290	85.85	84.54	1.31			137	36	Average
5290	93	91.69	1.31			137	36	Peak
5350	49.68	48.22	1.46	54	-4.32	137	36	Average
5350	60.47	59.01	1.46	74	-13.53	137	36	Peak
*10580	55.69	58.57	-2.88	68.2	-12.51	149	128	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**
5149.4	44.48	42.95	1.53	54	-9.52	177	314	Average
5149.4	55.21	53.68	1.53	74	-18.79	177	314	Peak
5290	87.39	86.08	1.31			177	314	Average
5290	94.16	92.85	1.31			177	314	Peak
5350	50.8	49.34	1.46	54	-3.2	177	314	Average
5350	61.01	59.55	1.46	74	-12.99	177	314	Peak
*10580	55.22	58.1	-2.88	68.2	-12.98	156	203	Peak

Remarks:

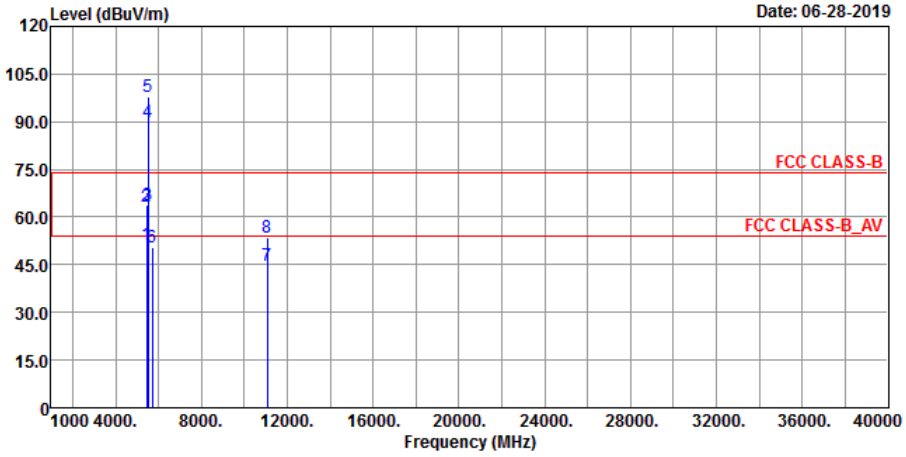
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5290 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



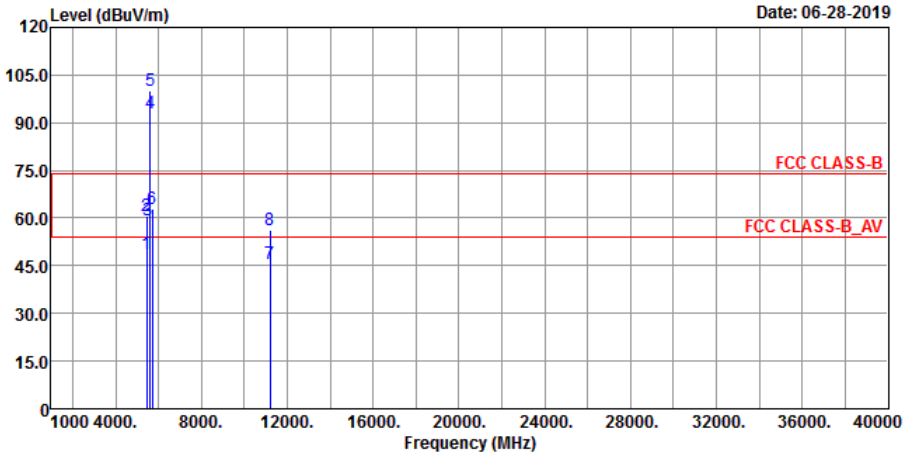
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	51.53	49.66	1.87	54	-2.47	124	38	Average
5460	63.61	61.74	1.87	74	-10.39	124	38	Peak
*5470	63.54	61.68	1.86	68.2	-4.66	124	38	Peak
5530	89.46	50.56	38.9			124	38	Average
5530	97.22	58.32	38.9			124	38	Peak
*5725	50.88	49.12	1.76	68.2	-17.32	124	38	Peak
11060	44.94	47.36	-2.42	54	-9.06	185	205	Average
11060	53.53	55.95	-2.42	74	-20.47	185	205	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	51.49	49.62	1.87	54	-2.51	137	278	Average
5460	63.41	61.54	1.87	74	-10.59	137	278	Peak
*5470	63.85	61.99	1.86	68.2	-4.35	137	278	Peak
5530	89.81	50.91	38.9			137	278	Average
5530	97.67	58.77	38.9			137	278	Peak
*5725	50.67	48.91	1.76	68.2	-17.53	137	278	Peak
11060	44.75	47.17	-2.42	54	-9.25	121	221	Average
11060	53.65	56.07	-2.42	74	-20.35	121	221	Peak

Remarks:

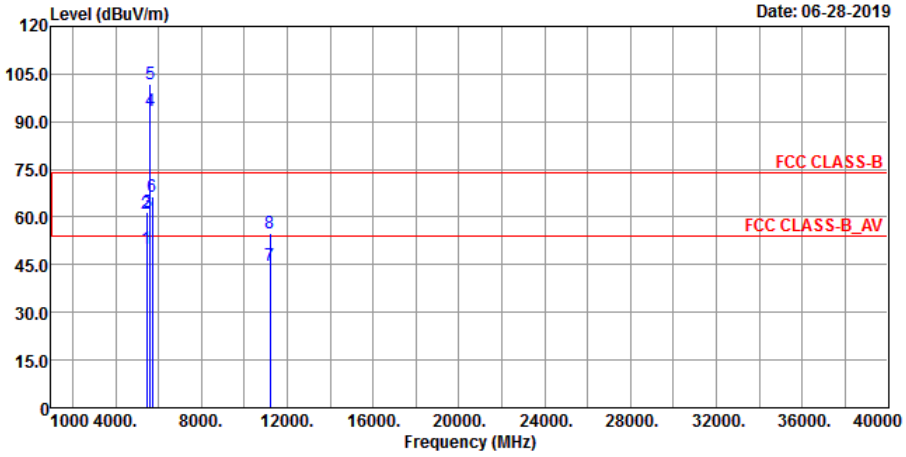
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5530 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



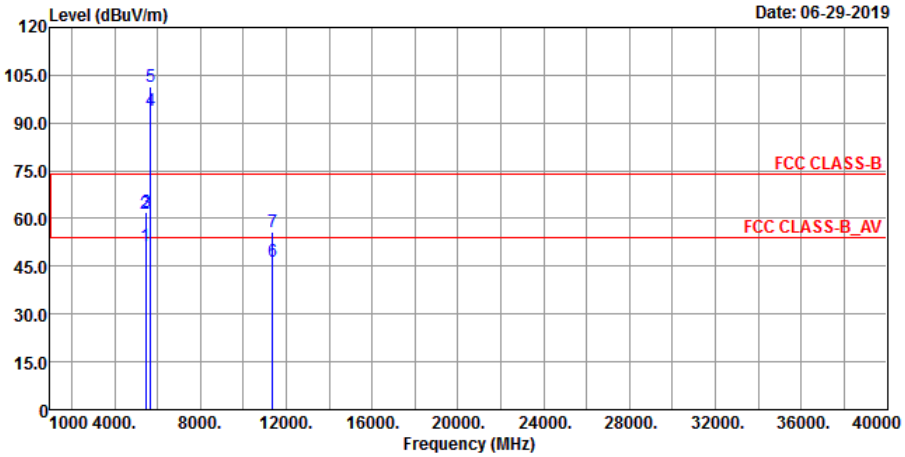
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	48.67	46.8	1.87	54	-5.33	146	36	Average
5460	60.65	58.78	1.87	74	-13.35	146	36	Peak
*5470	59.49	57.63	1.86	68.2	-8.71	146	36	Peak
5610	92.95	53.86	39.09			146	36	Average
5610	99.96	60.87	39.09			146	36	Peak
*5725	62.97	61.21	1.76	68.2	-5.23	146	36	Peak
11220	45.5	48.02	-2.52	54	-8.5	187	204	Average
11220	56.14	58.66	-2.52	74	-17.86	187	204	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5460	49.85	47.98	1.87	54	-4.15	137	294	Average
5460	60.99	59.12	1.87	74	-13.01	137	294	Peak
*5470	61.49	59.63	1.86	68.2	-6.71	137	294	Peak
5610	93.37	54.28	39.09			137	294	Average
5610	101.63	62.54	39.09			137	294	Peak
*5725	66.29	64.53	1.76	68.2	-1.91	137	294	Peak
11220	44.94	47.46	-2.52	54	-9.06	108	257	Average
11220	54.75	57.27	-2.52	74	-19.25	108	257	Peak

Remarks:

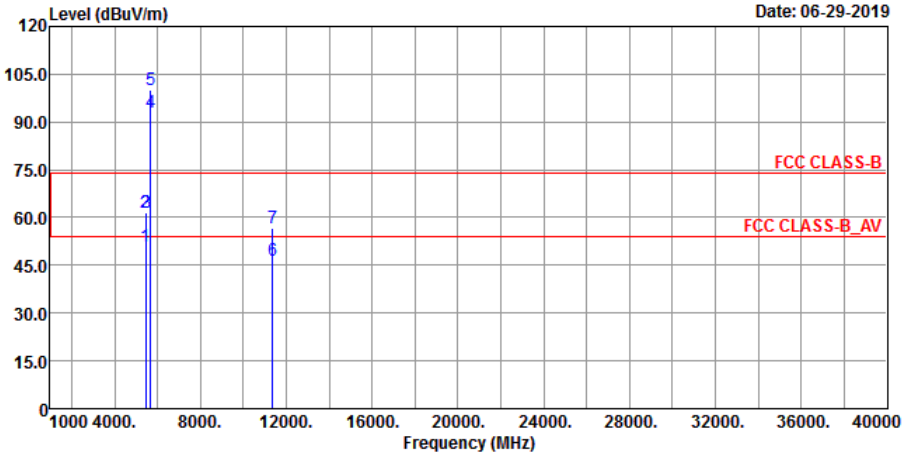
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5610 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

Horizontal



Vertical



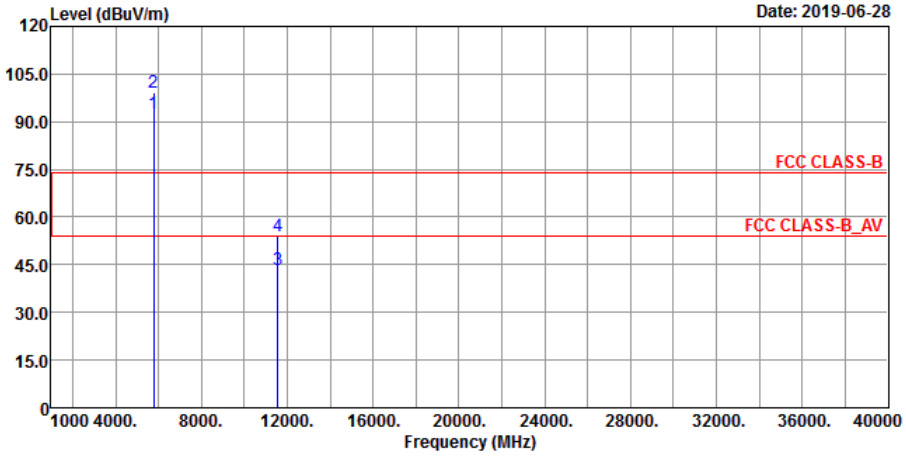
Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5459.92	51.42	49.55	1.87	54	-2.58	133	40	Average
5459.92	61.37	59.5	1.87	74	-12.63	133	40	Peak
*5470	62	60.14	1.86	68.2	-6.2	133	40	Peak
5690	93.77	92.18	1.59			133	40	Average
5690	101.25	99.66	1.59			133	40	Peak
11380	46.44	48.7	-2.26	54	-7.56	143	215	Average
11380	55.93	58.19	-2.26	74	-18.07	143	215	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**
5459.92	50.74	48.87	1.87	54	-3.26	130	285	Average
5459.92	61.74	59.87	1.87	74	-12.26	130	285	Peak
*5470	61.51	59.65	1.86	68.2	-6.69	130	285	Peak
5690	92.94	91.35	1.59			130	285	Average
5690	100.28	98.69	1.59			130	285	Peak
11380	46.67	48.93	-2.26	54	-7.33	167	103	Average
11380	56.62	58.88	-2.26	74	-17.38	167	103	Peak

Remarks:

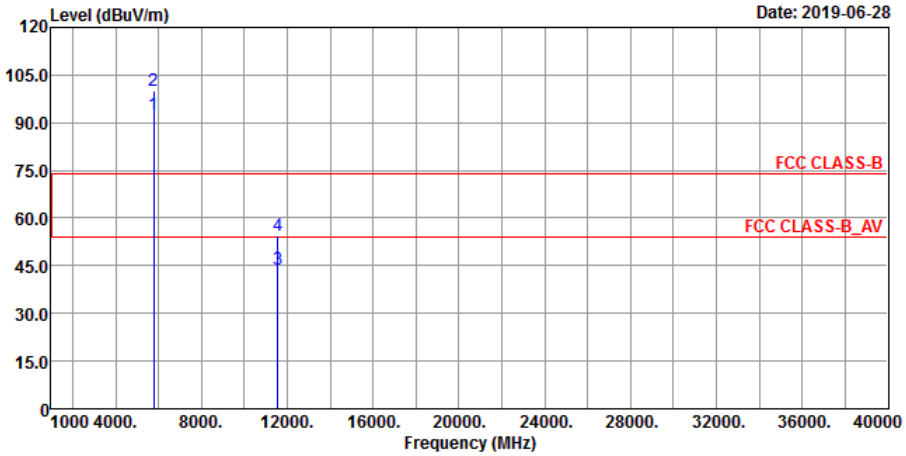
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5690 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

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

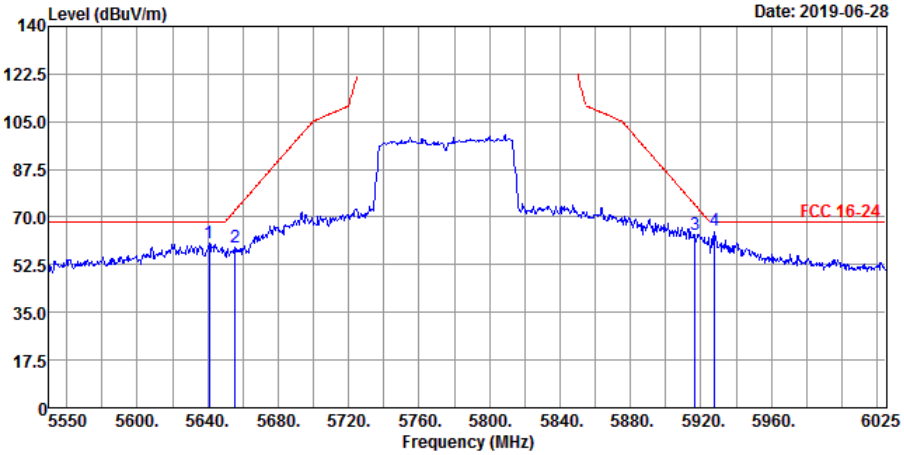
<Spurious Emission>
Horizontal



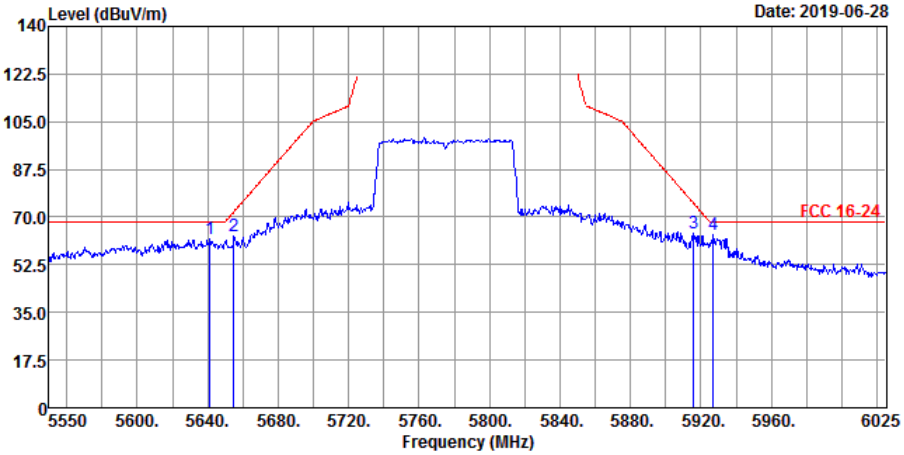
Vertical



<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	92.4	90.44	1.96			100	213	Average
5775	99.23	97.27	1.96			100	213	Peak
11550	43.52	45.72	-2.2	54	-10.48	142	261	Average
11550	53.8	56	-2.2	74	-20.2	142	261	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5775	92.34	90.38	1.96			100	288	Average
5775	100.2	98.24	1.96			100	288	Peak
11550	44.03	46.23	-2.2	54	-9.97	204	95	Average
11550	54.59	56.79	-2.2	74	-19.41	204	95	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**
5640.725	60.53	58.65	1.88	68.2	-7.67	100	213	Peak
5655.45	58.89	57.04	1.85	72.25	-13.36	100	213	Peak
5916.7	63.67	61.36	2.31	74.32	-10.65	100	213	Peak
5927.625	65.15	62.85	2.3	68.2	-3.05	100	213	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5641.2	61.81	59.93	1.88	68.2	-6.39	100	288	Peak
5654.975	63.1	61.25	1.85	71.9	-8.8	100	288	Peak
5915.75	63.87	61.56	2.31	75.02	-11.15	100	288	Peak
5927.15	63.65	61.35	2.3	68.2	-4.55	100	288	Peak

Remarks:

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

9 kHz ~ 30 MHz Data:

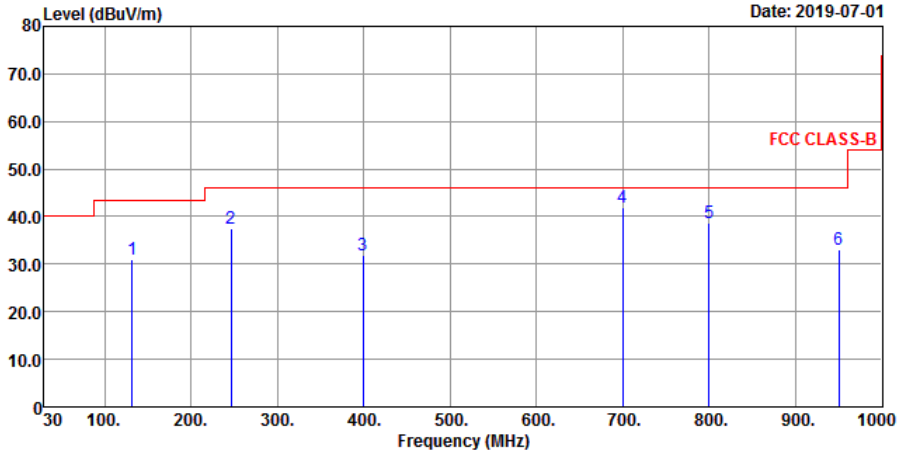
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1 GHz Worst-Case Data:

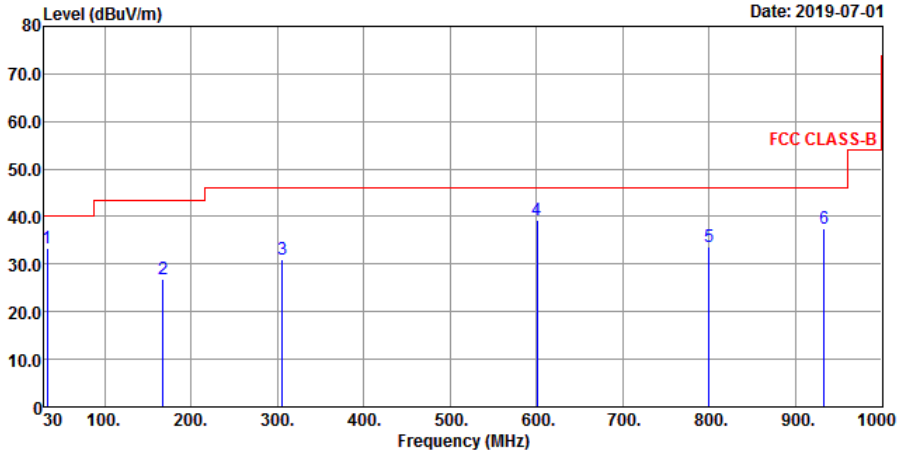
802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 38	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

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**
131.85	31.12	49.88	-18.76	43.5	-12.38	192	111	Peak
246.31	37.55	55.33	-17.78	46	-8.45	178	233	Peak
399.57	31.85	45.89	-14.04	46	-14.15	196	247	Peak
700.27	41.99	48.98	-6.99	46	-4.01	189	177	Peak
800.18	38.58	43.85	-5.27	46	-7.42	193	306	Peak
950.53	33.15	36.05	-2.9	46	-12.85	177	144	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
33.88	33.44	50.39	-16.95	40	-6.56	102	151	Peak
167.74	26.76	44.18	-17.42	43.5	-16.74	126	193	Peak
305.48	31.01	47.5	-16.49	46	-14.99	107	188	Peak
600.36	39.32	47.61	-8.29	46	-6.68	115	346	Peak
800.18	33.72	38.99	-5.27	46	-12.28	109	185	Peak
933.07	37.57	40.39	-2.82	46	-8.43	106	144	Peak

Remarks:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 10, 2018	Dec. 09, 2019
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 05, 2018	Sep. 04, 2019
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 21, 2019	Feb. 20, 2020
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 19, 2018	Aug. 18, 2019
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

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

4.2.3 Test Procedures

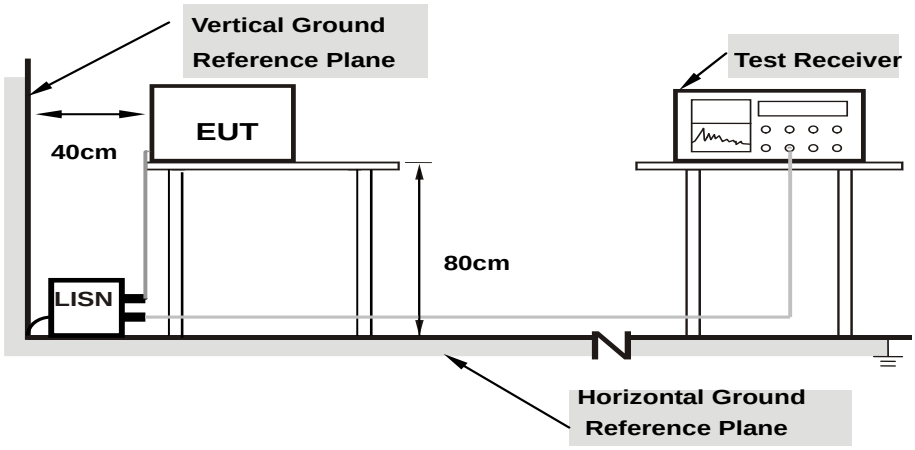
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

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

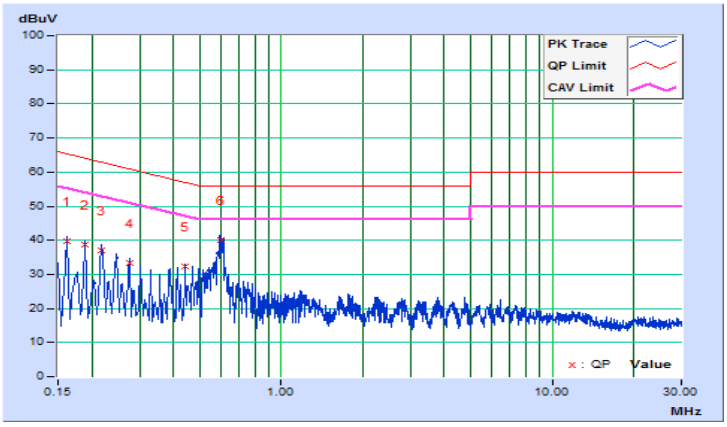
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 75%RH
Tested by	Thomas Wei	Test Date	2019/6/29

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16173	9.84	29.76	12.54	39.60	22.38	65.37	55.37	-25.77	-32.99
2	0.18903	9.85	28.72	12.52	38.57	22.37	64.08	54.08	-25.51	-31.71
3	0.21679	9.85	27.34	11.86	37.19	21.71	62.94	52.94	-25.75	-31.23
4	0.27512	9.86	23.55	8.45	33.41	18.31	60.96	50.96	-27.55	-32.65
5	0.44325	9.88	22.32	8.28	32.20	18.16	57.00	47.00	-24.80	-28.84
6	**0.59574**	**9.89**	**30.17**	**20.66**	**40.06**	**30.55**	**56.00**	**46.00**	**-15.94**	**-15.45**

Remarks:

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

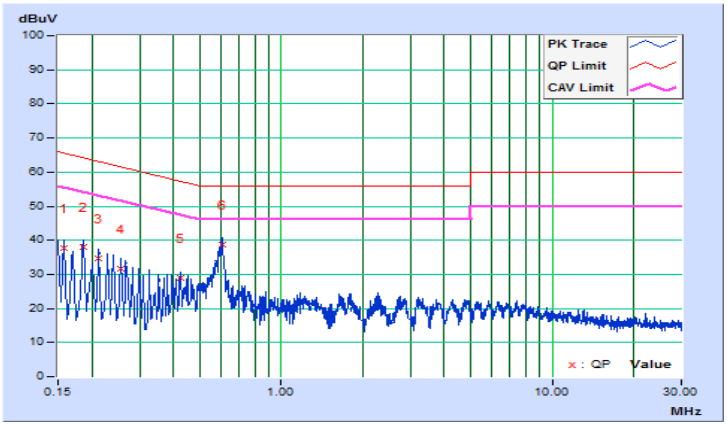


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 75%RH
Tested by	Thomas Wei	Test Date	2019/6/29

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15782	9.82	27.82	11.71	37.64	21.53	65.58	55.58	-27.94	-34.05
2	0.18519	9.83	28.25	11.20	38.08	21.03	64.25	54.25	-26.17	-33.22
3	0.21256	9.84	24.80	10.63	34.64	20.47	63.10	53.10	-28.46	-32.63
4	0.25557	9.85	21.83	8.61	31.68	18.46	61.57	51.57	-29.89	-33.11
5	0.42370	9.87	18.95	7.44	28.82	17.31	57.38	47.38	-28.56	-30.07
6	0.60418	9.87	28.92	20.00	38.79	29.87	56.00	46.00	-17.21	-16.13

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

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

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

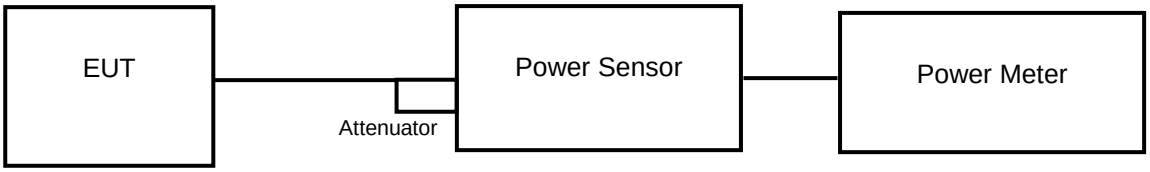
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

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

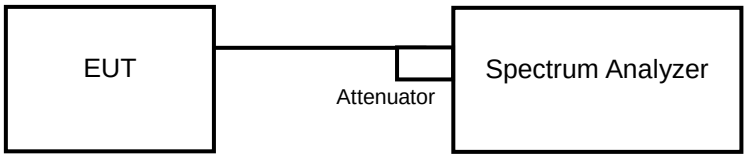
For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Test Setup

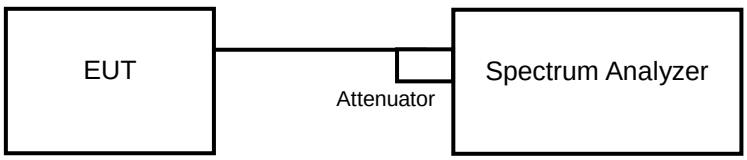
<Power Output Measurement>



or



<26 dB Bandwidth>



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

Average Power Measurement

<802.11a, 802.11n (HT20), 802.11n (HT40)>

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

<802.11ac (VHT80)>

a. Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99 % occupied bandwidth) of the signal.
b. Set sweep trigger to “free run”.
c. Set RBW = 1 MHz.
d. Set VBW ≥ 3 MHz
e. Number of points in sweep ≥ 2 Span / RBW.
f. Sweep time ≤ (number of points in sweep) * T
g. Using emission bandwidth to determine the frequency span for integration the channel bandwidth.
h. Detector = RMS.
i. Trace mode = max hold.
j. Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

26 dB Bandwidth

a. Set RBW = approximately 1 % of the emission bandwidth.
b. Set the VBW > RBW.
c. Detector = Peak.
d. Trace mode = max hold.
e. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Results

Power Output:

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	60.395	17.81	24	Pass
40	5200	135.831	21.33	24	Pass
48	5240	112.202	20.50	24	Pass
52	5260	178.649	22.52	24	Pass
60	5300	93.972	19.73	24	Pass
64	5320	47.424	16.76	24	Pass
100	5500	62.517	17.96	24	Pass
116	5580	135.831	21.33	24	Pass
140	5700	28.642	14.57	24	Pass
144	5720 (U-NII-2C)	86.099	19.35	24	Pass
144	5720 (U-NII-3)	23.067	13.63	30	Pass
149	5745	161.436	22.08	30	Pass
157	5785	164.437	22.16	30	Pass
165	5825	160.694	22.06	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. 11 dBm + 10log (44.83) = 27.51 dBm > 24 dBm.
2. 11 dBm + 10log (35.43) = 26.49 dBm > 24 dBm.
3. 11 dBm + 10log (20.17) = 24.04 dBm > 24 dBm.
4. 11 dBm + 10log (26.99) = 25.31 dBm > 24 dBm.
5. 11 dBm + 10log (45.32) = 27.56 dBm > 24 dBm.
6. 11 dBm + 10log (20.09) = 24.02 dBm > 24 dBm.
7. 11 dBm + 10log (5725.00 – 5697.17) = 25.44 dBm > 24 dBm.

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	63.68	18.04	24	Pass
40	5200	142.561	21.54	24	Pass
48	5240	116.145	20.65	24	Pass
52	5260	183.231	22.63	24	Pass
60	5300	98.175	19.92	24	Pass
64	5320	51.05	17.08	24	Pass
100	5500	66.374	18.22	24	Pass
116	5580	138.038	21.40	24	Pass
140	5700	30.549	14.85	24	Pass
144	5720 (U-NII-2C)	86.298	19.36	24	Pass
144	5720 (U-NII-3)	26.002	14.15	30	Pass
149	5745	172.187	22.36	30	Pass
157	5785	169.434	22.29	30	Pass
165	5825	165.959	22.20	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. 11 dBm + 10log (49.03) = 27.90 dBm > 24 dBm.
2. 11 dBm + 10log (36.63) = 26.63 dBm > 24 dBm.
3. 11 dBm + 10log (20.40) = 24.09 dBm > 24 dBm.
4. 11 dBm + 10log (20.77) = 24.17 dBm > 24 dBm.
5. 11 dBm + 10log (49.11) = 27.91 dBm > 24 dBm.
6. 11 dBm + 10log (20.39) = 24.09 dBm > 24 dBm.
7. 11 dBm + 10log (5725.00 – 5695.00) = 25.77 dBm > 24 dBm.

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	39.811	16.00	24	Pass
46	5230	137.404	21.38	24	Pass
54	5270	77.446	18.89	24	Pass
62	5310	40.365	16.06	24	Pass
102	5510	52.119	17.17	24	Pass
110	5550	136.144	21.34	24	Pass
134	5670	47.753	16.79	24	Pass
142	5710 (U-NII-2C)	101.859	20.08	24	Pass
142	5710 (U-NII-3)	12.618	11.01	30	Pass
151	5755	167.88	22.25	30	Pass
159	5795	151.356	21.80	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. 11 dBm + 10log (73.37) = 29.65 dBm > 24 dBm.
2. 11 dBm + 10log (42.13) = 27.24 dBm > 24 dBm.
3. 11 dBm + 10log (42.06) = 27.23 dBm > 24 dBm.
4. 11 dBm + 10log (101.53) = 31.06 dBm > 24 dBm.
5. 11 dBm + 10log (42.15) = 27.24 dBm > 24 dBm.
6. 11 dBm + 10log (5725.00 – 5668.33) = 28.53 dBm > 24 dBm.

802.11ac (VHT80)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	42.462	16.28	24	Pass
58	5290	22.182	13.46	24	Pass
106	5530	23.442	13.70	24	Pass
122	5610	56.494	17.52	24	Pass
138	5690 (U-NII-2C)	66.834	18.25	24	Pass
138	5690 (U-NII-3)	3.597	5.56	30	Pass
155	5775	54.2	17.34	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. 11 dBm + 10log (82.51) = 30.16 dBm > 24 dBm.
2. 11 dBm + 10log (82.49) = 30.16 dBm > 24 dBm.
3. 11 dBm + 10log (86.38) = 30.36 dBm > 24 dBm.
4. 11 dBm + 10log (5725.00 – 5604.31) = 31.81 dBm > 24 dBm.

26 dB Bandwidth:

802.11a

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	25.76
40	5200	39.51
48	5240	38.61
52	5260	44.83
60	5300	35.43
64	5320	20.17
100	5500	26.99
116	5580	45.32
140	5700	20.09
144	5720 (U-NII-2C)	27.83
144	5720 (U-NII-3)	16.93

802.11n (HT20)

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	20.59
40	5200	44.04
48	5240	42.30
52	5260	49.03
60	5300	36.63
64	5320	20.40
100	5500	20.77
116	5580	49.11
140	5700	20.39
144	5720 (U-NII-2C)	30.00
144	5720 (U-NII-3)	19.23

802.11n (HT40)

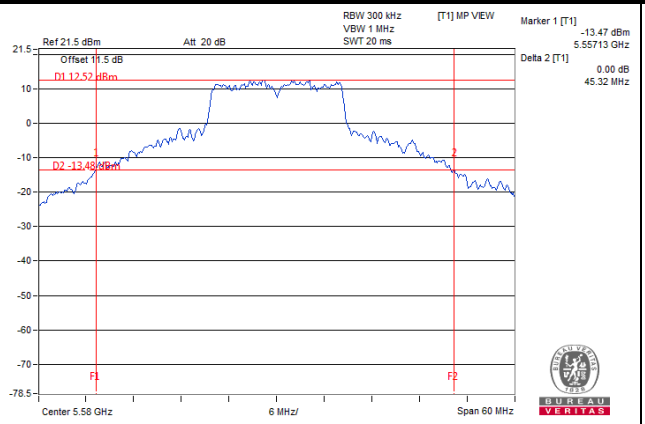
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
38	5190	42.06
46	5230	90.21
54	5270	73.37
62	5310	42.13
102	5510	42.06
110	5550	101.53
134	5670	42.15
142	5710 (U-NII-2C)	56.67
142	5710 (U-NII-3)	32.85

802.11ac (VHT80)

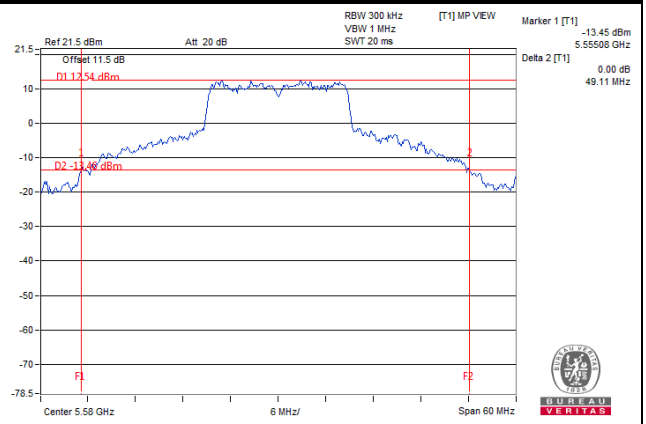
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
42	5210	82.75
58	5290	82.51
106	5530	82.49
122	5610	86.38
138	5690 (U-NII-2C)	120.69
138	5690 (U-NII-3)	69.35

Spectrum Plot of Worst Value

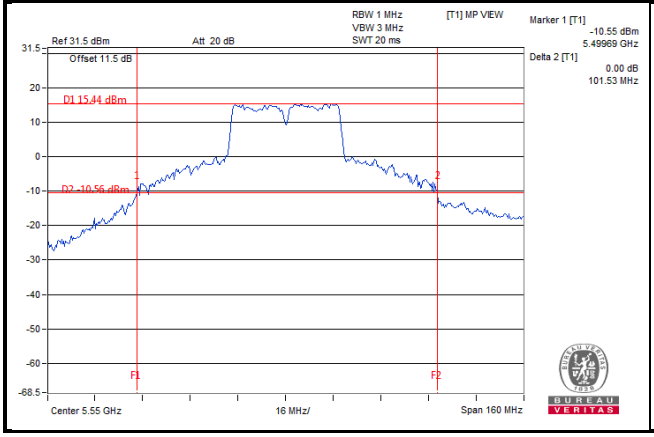
802.11a



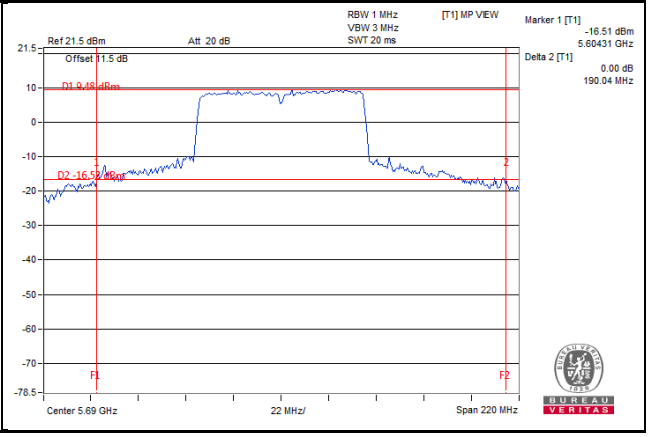
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



EUT Maximum Conducted Power

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	178.649	22.52
5470~5725	135.831	21.33

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	183.231	22.63
5470~5725	138.038	21.40

802.11n (HT40)

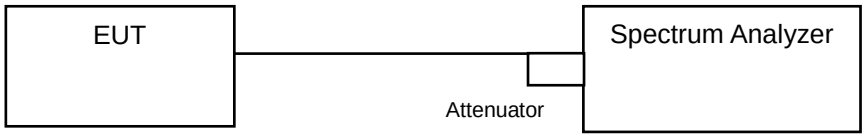
Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	77.446	18.89
5470~5725	136.144	21.34

802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	22.182	13.46
5470~5725	66.834	18.25

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1 % to 5 % of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to SAMPLE. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

4.4.4 Test Results

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	16.92
40	5200	23.04
48	5240	18.24
52	5260	29.16
60	5300	17.64
64	5320	16.92
100	5500	17.16
116	5580	30.24
140	5700	16.80
144	5720 (U-NII-2C)	19.52
144	5720 (U-NII-3)	9.64
149	5745	31.08
157	5785	31.20
165	5825	30.96

802.11n (HT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.76
40	5200	23.76
48	5240	18.96
52	5260	31.92
60	5300	18.12
64	5320	17.76
100	5500	17.76
116	5580	32.64
140	5700	17.64
144	5720 (U-NII-2C)	20.72
144	5720 (U-NII-3)	10.84
149	5745	33.84
157	5785	33.96
165	5825	33.24

802.11n (HT40)

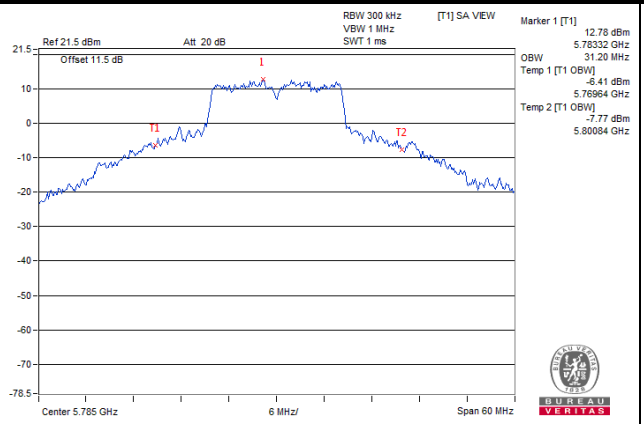
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.48
46	5230	37.92
54	5270	36.72
62	5310	36.48
102	5510	36.60
110	5550	44.40
134	5670	36.60
142	5710 (U-NII-2C)	37.08
142	5710 (U-NII-3)	7.32
151	5755	45.48
159	5795	42.00

802.11ac (VHT80)

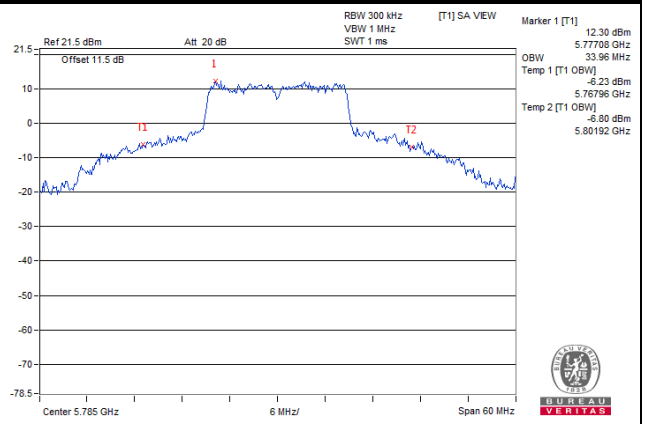
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
42	5210	76.32
58	5290	76.32
106	5530	76.32
122	5610	76.56
138	5690 (U-NII-2C)	73.40
138	5690 (U-NII-3)	3.40
155	5775	76.32

Spectrum Plot of Worst Value

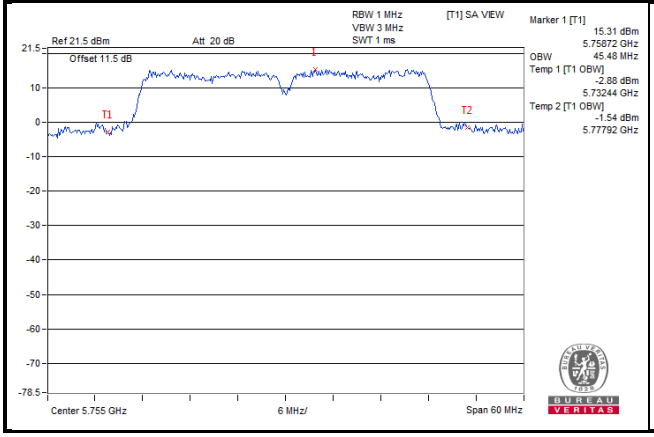
802.11a



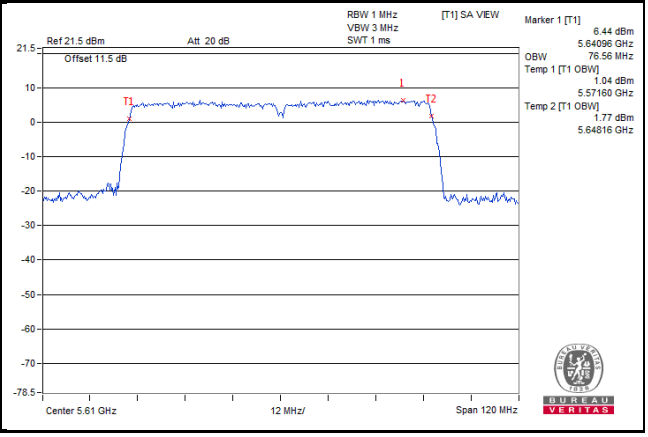
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

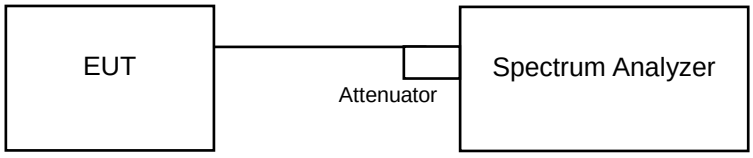


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17 dBm/MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11 dBm/MHz
U-NII-2A	√		11 dBm/MHz
U-NII-2C	√		11 dBm/MHz
U-NII-3	√		30 dBm/500 kHz

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.5.4 Test Procedures

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 3 RBW, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value

※For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW ≥ 1 RBW, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz / 300 kHz).
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

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

4.5.7 Test Results

For U-NII-1, U-NII-2A, U-NII-2C Band

802.11a

Channel	Frequency (MHz)	PSD (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
36	5180	3.64	11	Pass
40	5200	7.15	11	Pass
48	5240	6.48	11	Pass
52	5260	8.48	11	Pass
60	5300	5.82	11	Pass
64	5320	2.96	11	Pass
100	5500	3.93	11	Pass
116	5580	7.75	11	Pass
140	5700	0.80	11	Pass
144	5720 (U-NII-2C)	8.41	11	Pass

802.11n (HT20)

Channel	Frequency (MHz)	PSD (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
36	5180	3.63	11	Pass
40	5200	7.07	11	Pass
48	5240	6.44	11	Pass
52	5260	8.29	11	Pass
60	5300	5.76	11	Pass
64	5320	2.90	11	Pass
100	5500	3.92	11	Pass
116	5580	8.02	11	Pass
140	5700	0.72	11	Pass
144	5720 (U-NII-2C)	8.16	11	Pass

802.11n (HT40)

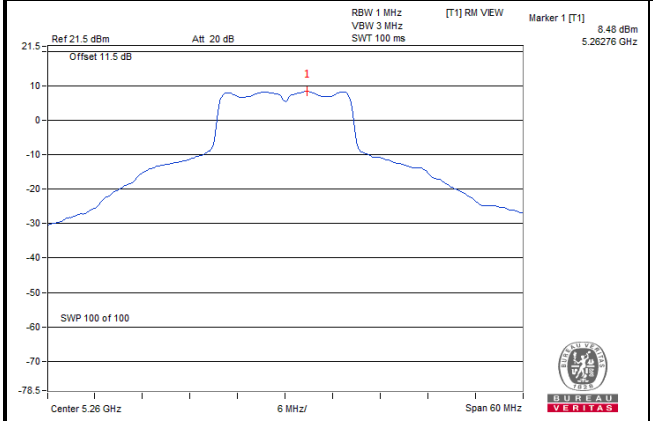
Channel	Frequency (MHz)	PSD (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
38	5190	-1.35	11	Pass
46	5230	4.31	11	Pass
54	5270	1.88	11	Pass
62	5310	-0.97	11	Pass
102	5510	0.08	11	Pass
110	5550	5.12	11	Pass
134	5670	-0.16	11	Pass
142	5710 (U-NII-2C)	5.23	11	Pass

802.11ac (VHT80):

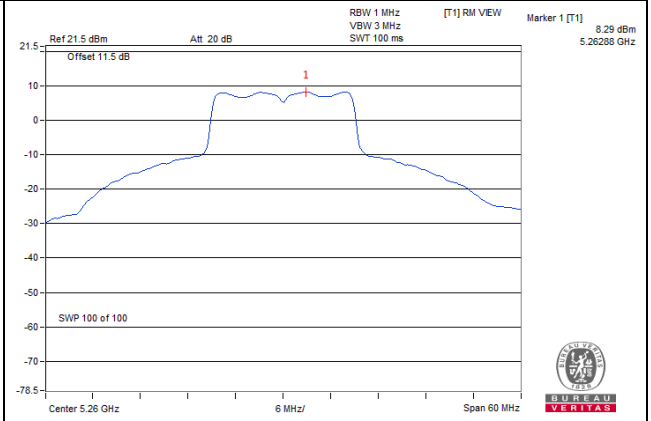
Channel	Frequency (MHz)	PSD (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
42	5210	-4.63	11	Pass
58	5290	-7.40	11	Pass
106	5530	-7.26	11	Pass
122	5610	-3.13	11	Pass
138	5690 (U-NII-2C)	-0.61	11	Pass

Spectrum Plot of Worst Value

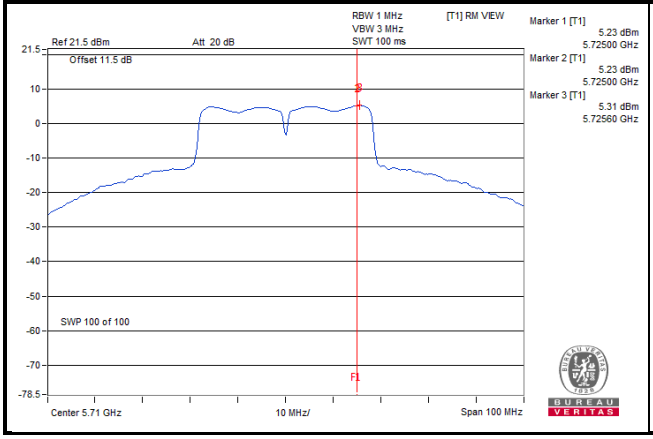
802.11a



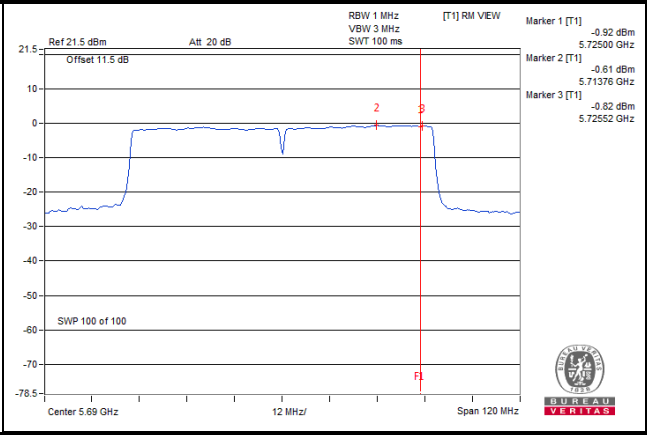
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



For U-NII-3 Band

802.11a

Channel	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
144	5720 (U-NII-3)	-0.04	2.18	30	Pass
149	5745	0.26	2.48	30	Pass
157	5785	0.34	2.56	30	Pass
165	5825	0.32	2.54	30	Pass

802.11n (HT20)

Channel	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
144	5720 (U-NII-3)	-0.36	1.86	30	Pass
149	5745	0.18	2.40	30	Pass
157	5785	0.08	2.30	30	Pass
165	5825	0.04	2.26	30	Pass

802.11n (HT40)

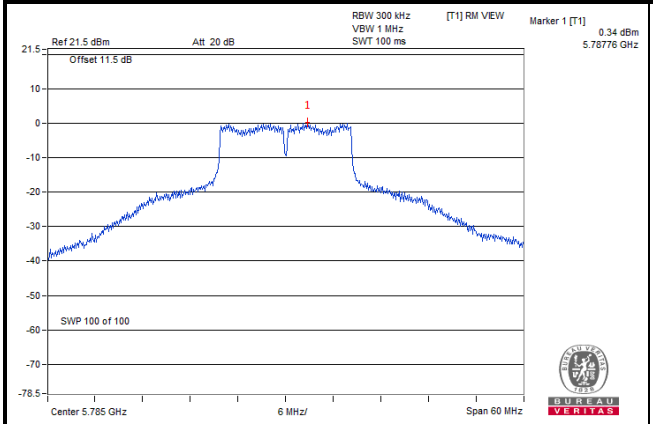
Channel	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
142	5710 (U-NII-3)	-3.53	-1.31	30	Pass
151	5755	-3.41	-1.19	30	Pass
159	5795	-3.79	-1.57	30	Pass

802.11ac (VHT80)

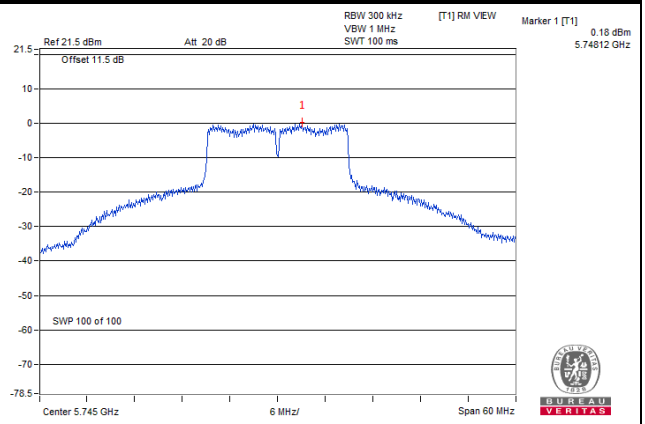
Channel	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
138	5690 (U-NII-3)	-9.86	-7.64	30	Pass
155	5775	-11.59	-9.37	30	Pass

Spectrum Plot of Worst Value

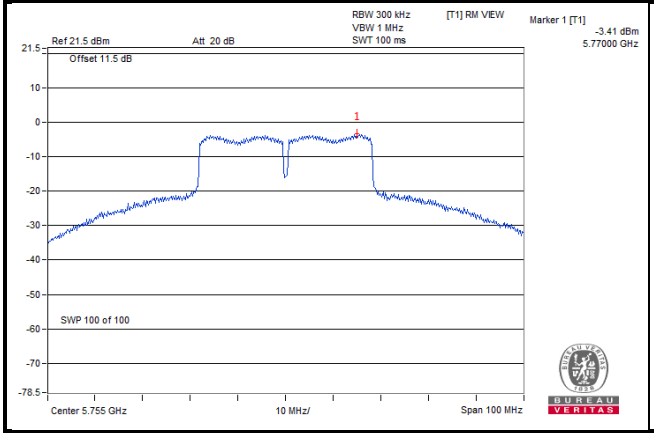
802.11a



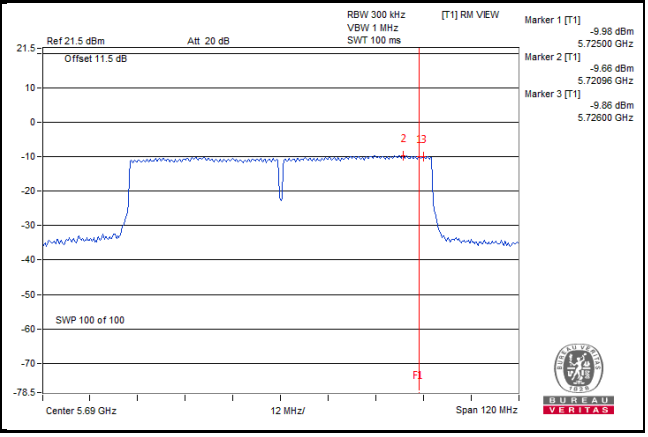
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

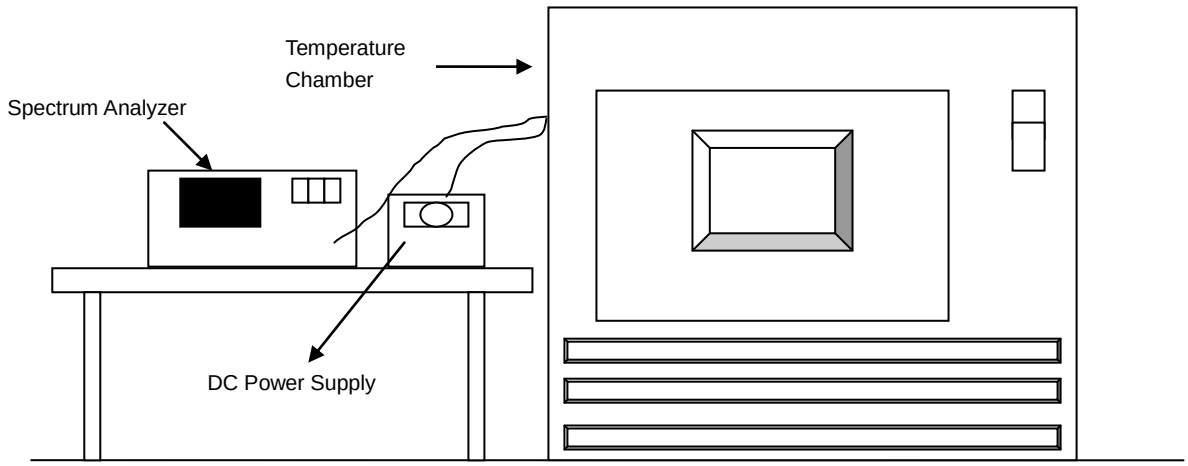


4.6 Frequency Stability

4.6.1 Limit of Frequency Stability Measurement

The frequency of the carrier signal shall be maintained within band of operation.

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.6.4 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
e. Repeat step c and d with every 10 degrees reduction until the lowest temperature achieved.
f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
60	120	5179.9818	PASS	5179.9834	PASS	5179.9816	PASS	5179.9813	PASS
50	120	5180.001	PASS	5180.0001	PASS	5179.9979	PASS	5179.9983	PASS
40	120	5180.006	PASS	5180.0099	PASS	5180.0087	PASS	5180.0076	PASS
30	120	5179.9852	PASS	5179.9859	PASS	5179.9847	PASS	5179.9875	PASS
20	120	5179.9938	PASS	5179.9966	PASS	5179.9942	PASS	5179.9975	PASS
10	120	5179.9847	PASS	5179.9839	PASS	5179.9834	PASS	5179.9829	PASS
0	120	5179.9788	PASS	5179.9776	PASS	5179.9783	PASS	5179.9805	PASS
-10	120	5180.0064	PASS	5180.003	PASS	5180.0023	PASS	5180.0034	PASS
-20	120	5180.0227	PASS	5180.0232	PASS	5180.0223	PASS	5180.0214	PASS

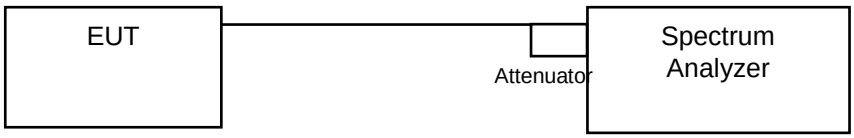
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5179.9945	PASS	5179.9965	PASS	5179.9952	PASS	5179.9983	PASS
	120	5179.9938	PASS	5179.9966	PASS	5179.9942	PASS	5179.9975	PASS
	102	5179.9943	PASS	5179.9969	PASS	5179.9938	PASS	5179.9968	PASS

4.7 6 dB Bandwidth Measurement

4.7.1 Limits of 6 dB Bandwidth Measurement

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

a. Set resolution bandwidth (RBW) = 100 kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
144	5720 (U-NII-3)	16.60	0.5	Pass
149	5745	16.60	0.5	Pass
157	5785	16.60	0.5	Pass
165	5825	16.60	0.5	Pass

802.11n (HT20)

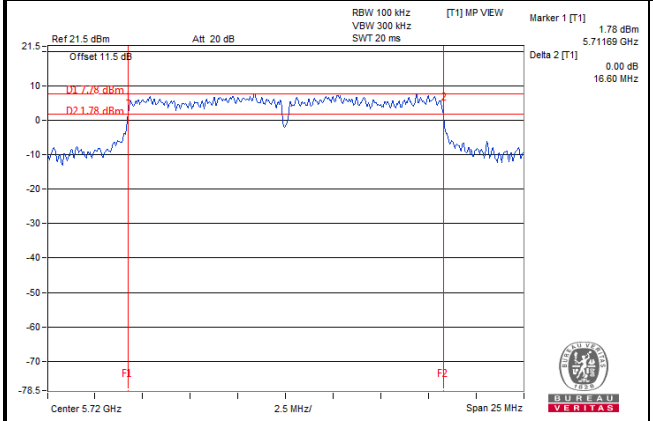
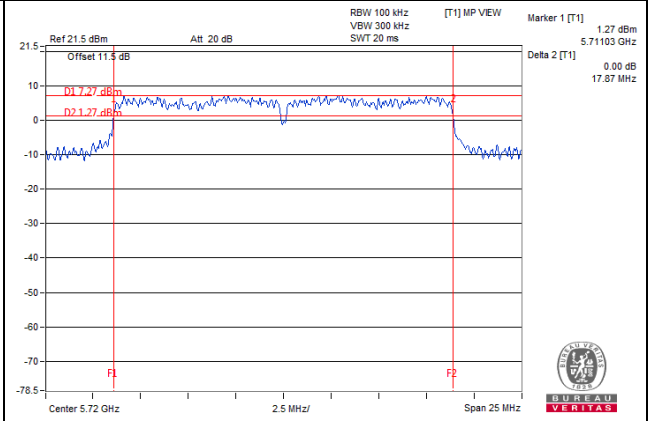
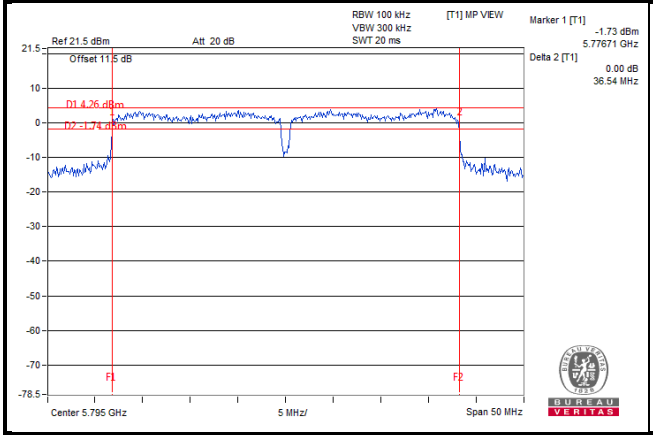
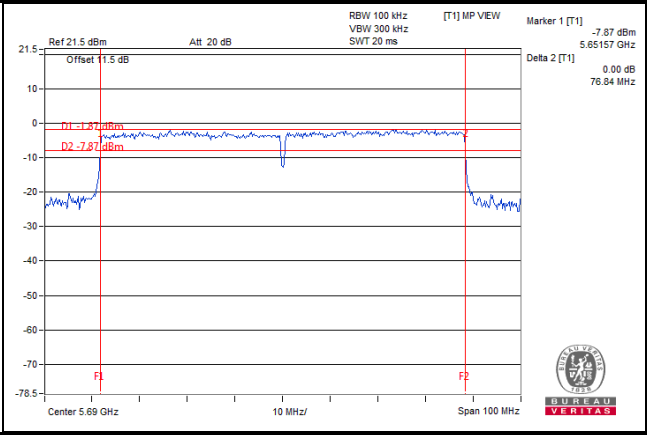
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
144	5720 (U-NII-3)	17.87	0.5	Pass
149	5745	17.88	0.5	Pass
157	5785	17.87	0.5	Pass
165	5825	17.87	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
142	5710 (U-NII-3)	36.56	0.5	Pass
151	5755	36.58	0.5	Pass
159	5795	36.54	0.5	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
138	5690 (U-NII-3)	76.84	0.5	Pass
155	5775	76.86	0.5	Pass

Spectrum Plot of Worst Value	
802.11a	802.11n (HT20)
	
802.11n (HT40)	802.11ac (VHT80)
	

Note:
For CH144 (UNII-3 Band): The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz
For CH142 (UNII-3 Band): The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz
For CH138 (UNII-3 Band): The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

5 Pictures of Test Arrangements

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

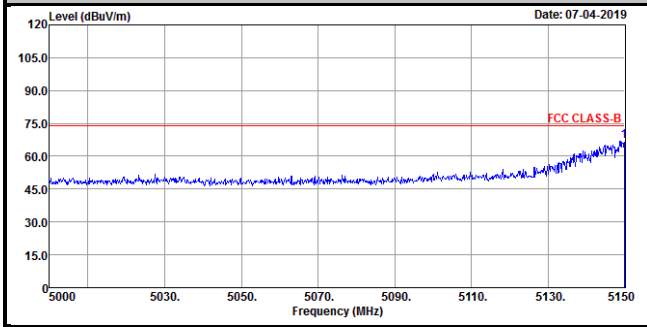
Annex A- Band-edge Measurement (U-NII-1, U-NII-2A, U-NII-2C Band)

802.11a

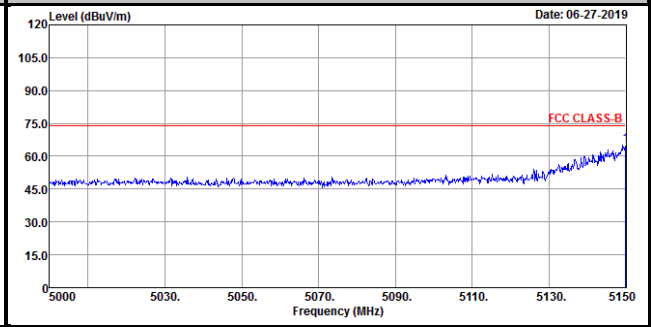
Ch 36

Peak

Horizontal

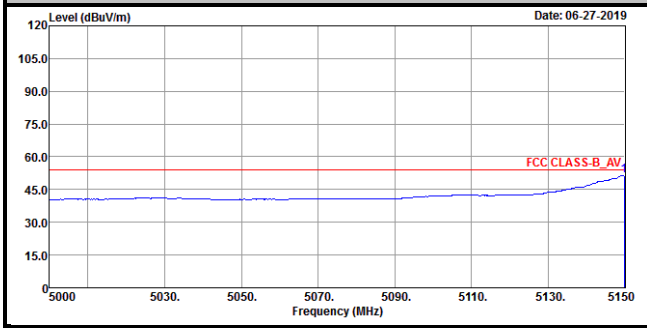


Vertical

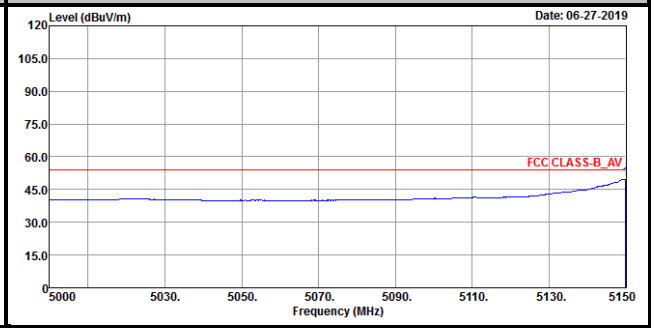


Average

Horizontal



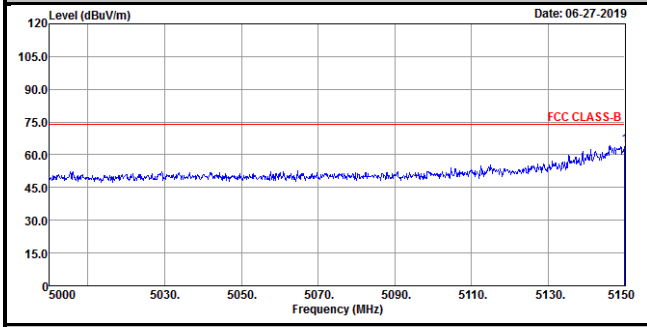
Vertical



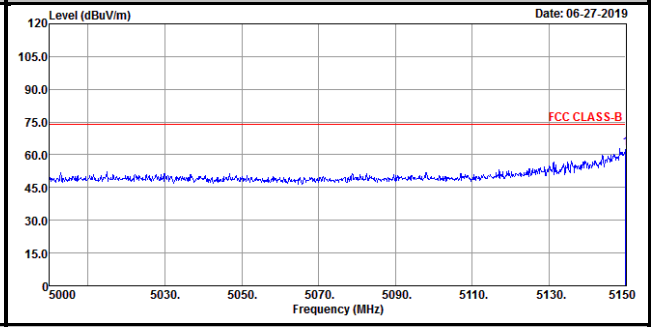
Ch 40

Peak

Horizontal

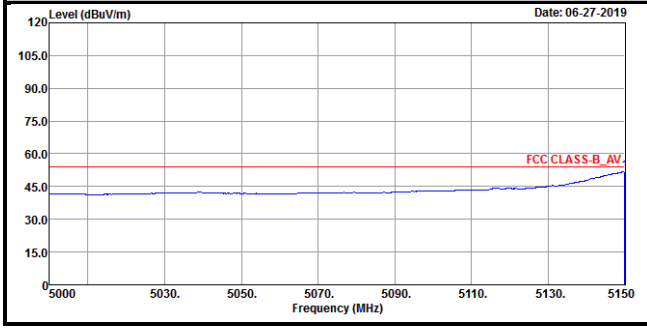


Vertical

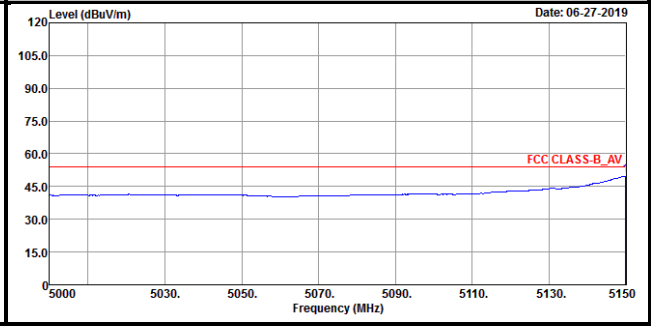


Average

Horizontal



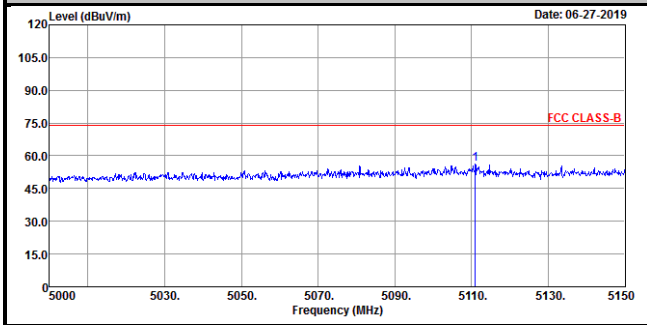
Vertical

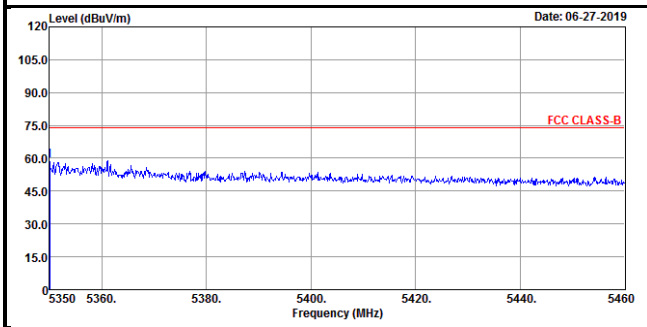


Ch 48

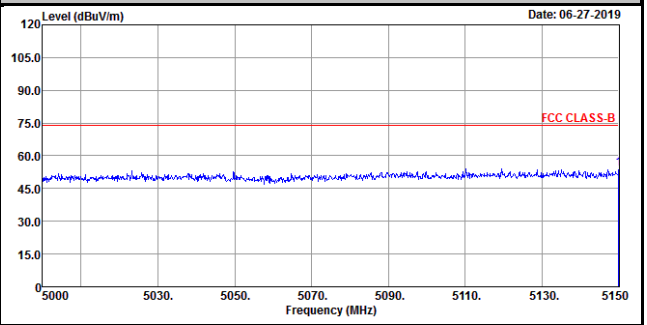
Peak

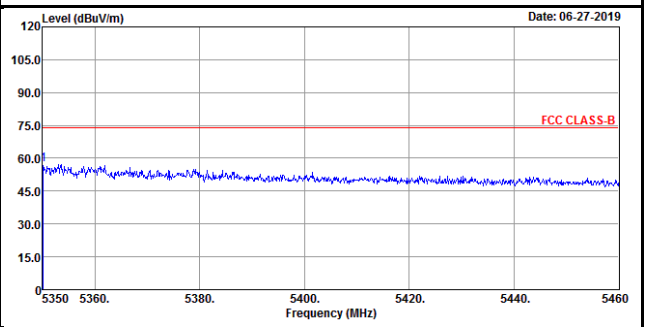
Horizontal





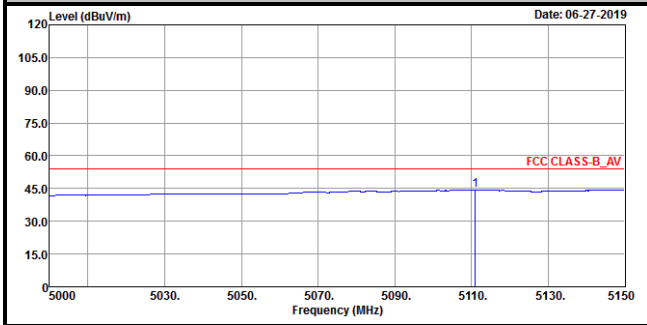
Vertical

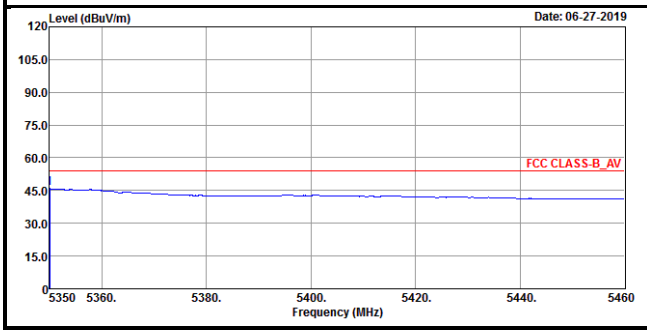




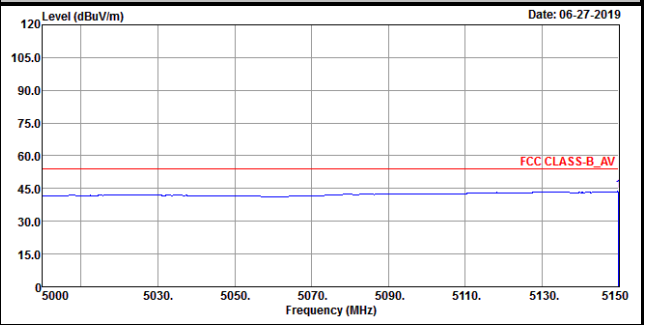
Average

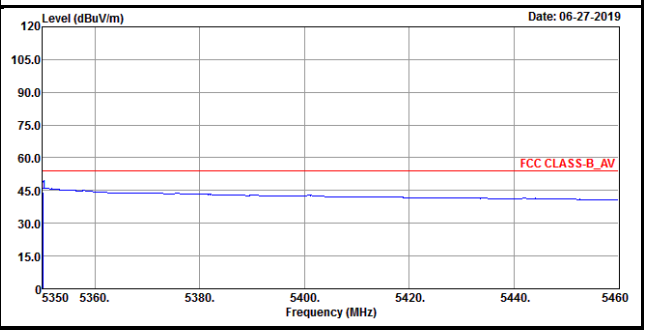
Horizontal





Vertical

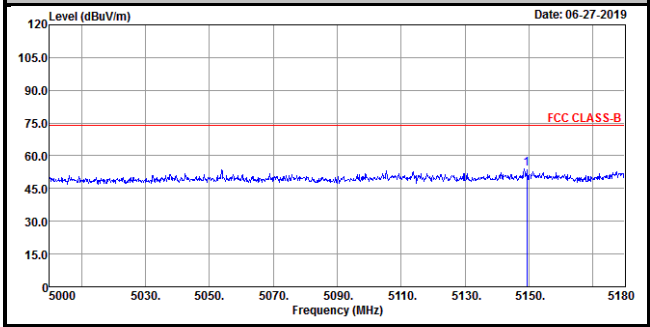


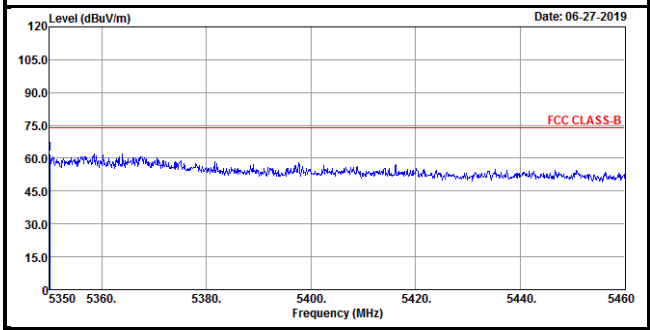


Ch 52

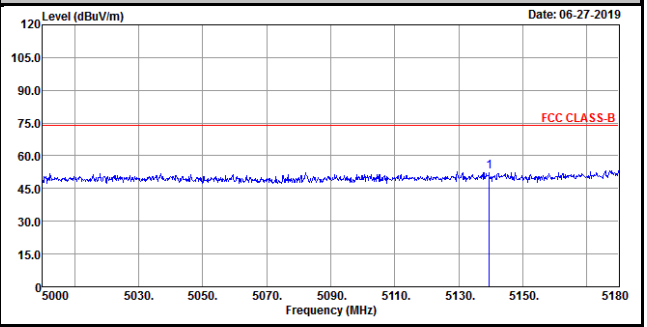
Peak

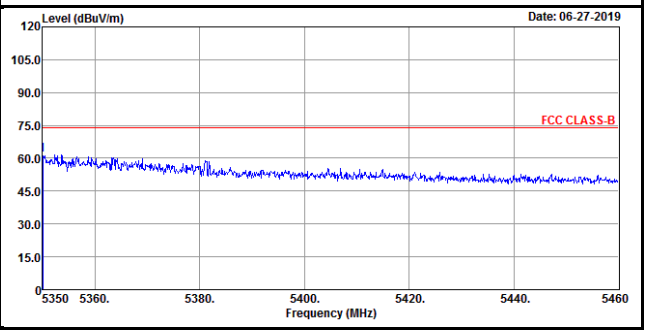
Horizontal





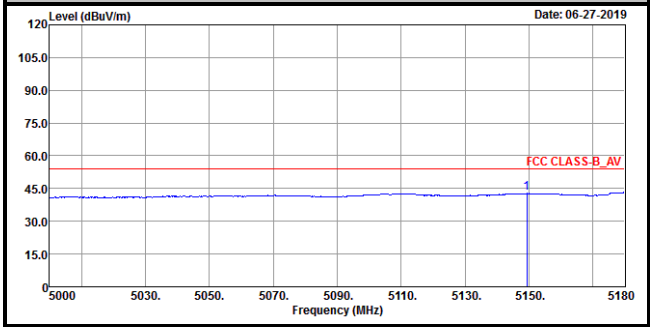
Vertical

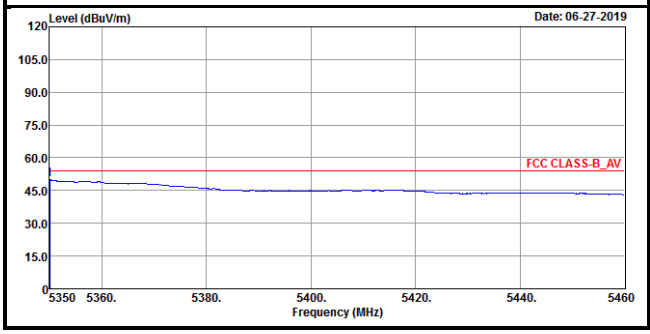




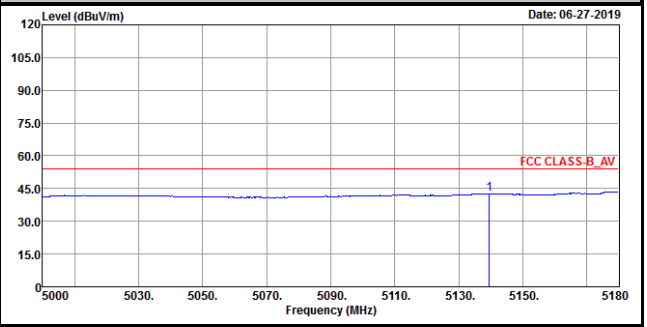
Average

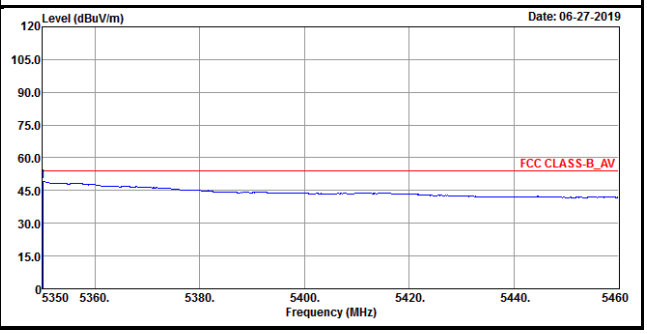
Horizontal





Vertical

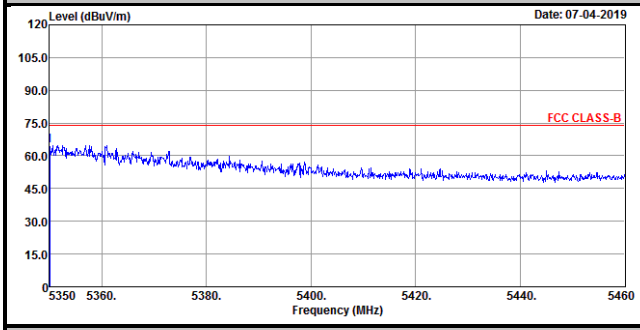




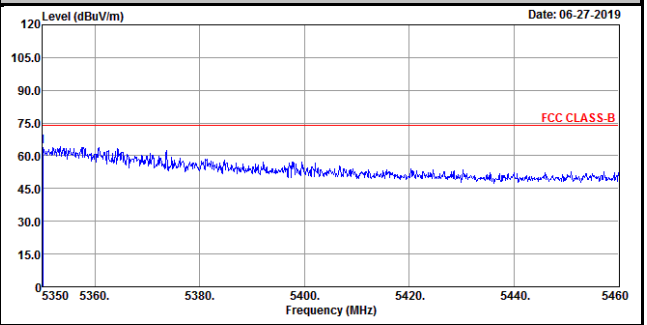
Ch 60

Peak

Horizontal

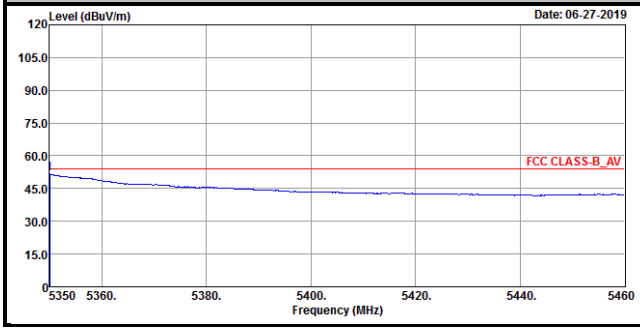


Vertical

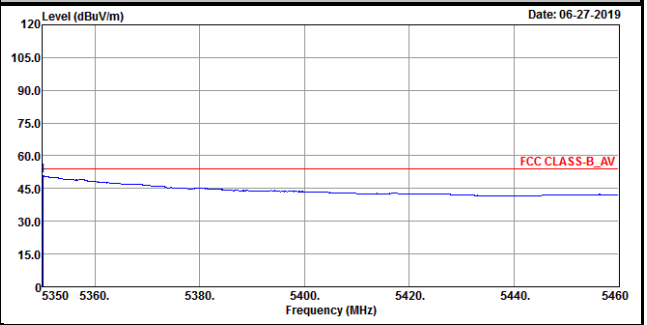


Average

Horizontal



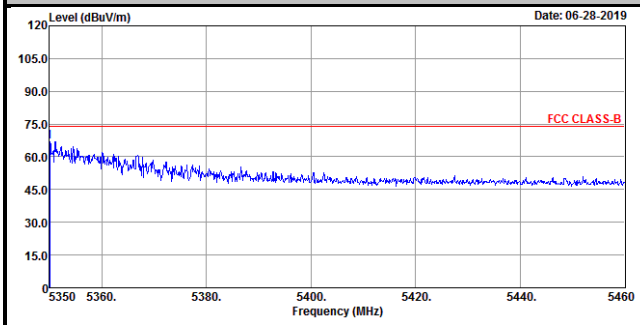
Vertical



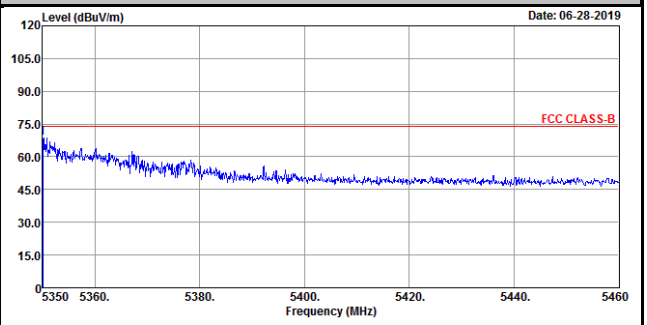
Ch 64

Peak

Horizontal

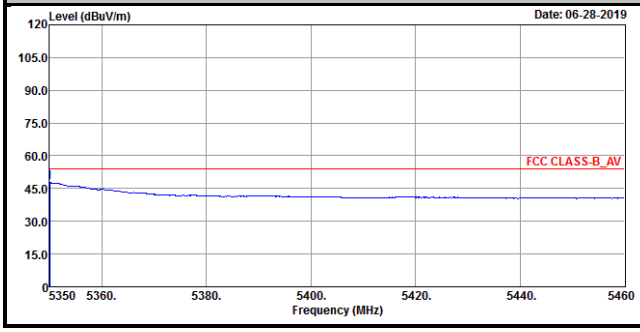


Vertical

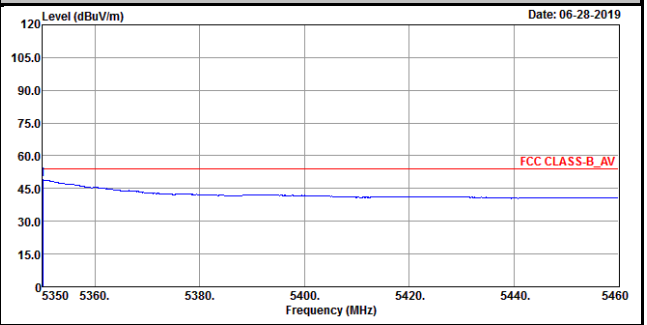


Average

Horizontal



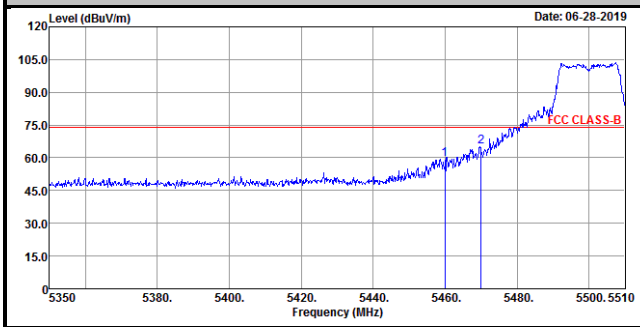
Vertical

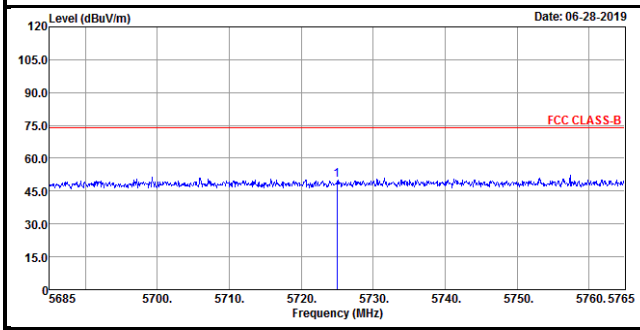


Ch 100

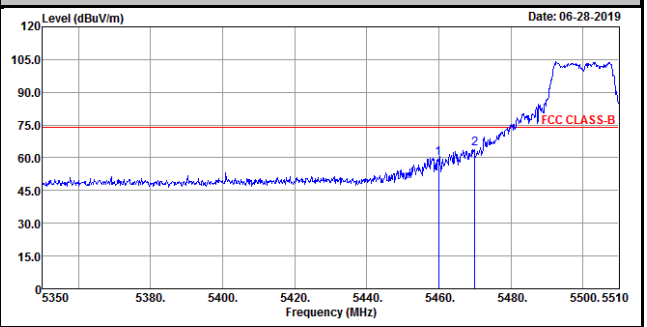
Peak

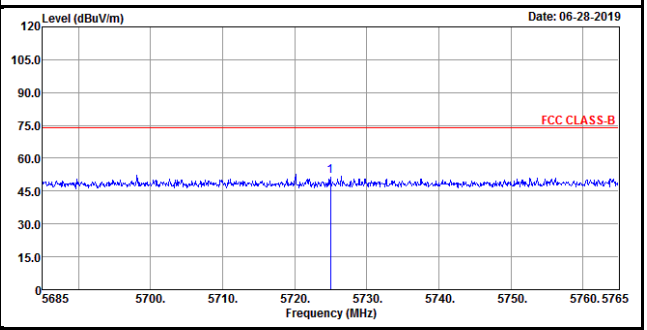
Horizontal





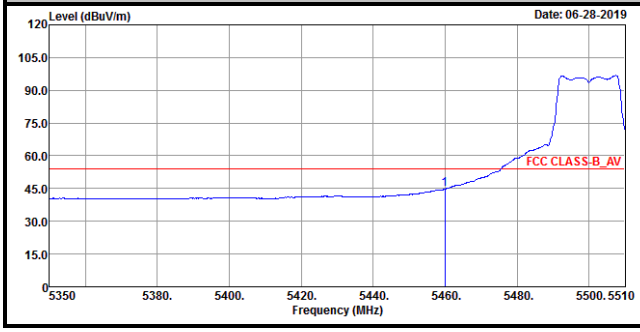
Vertical



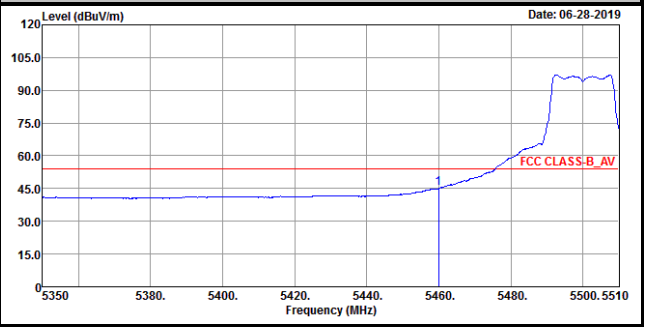


Average

Horizontal



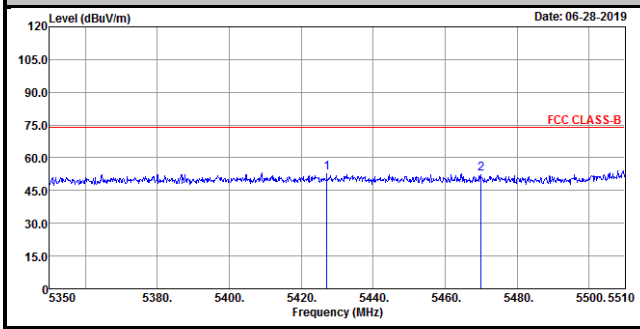
Vertical

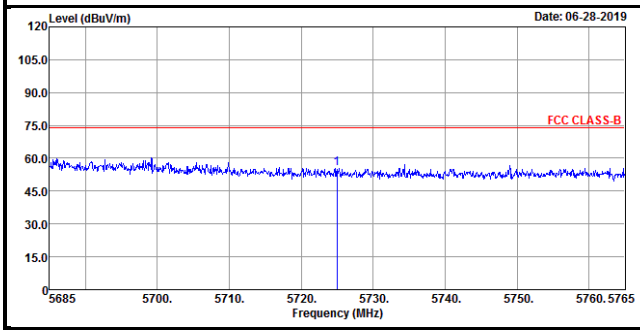


Ch 116

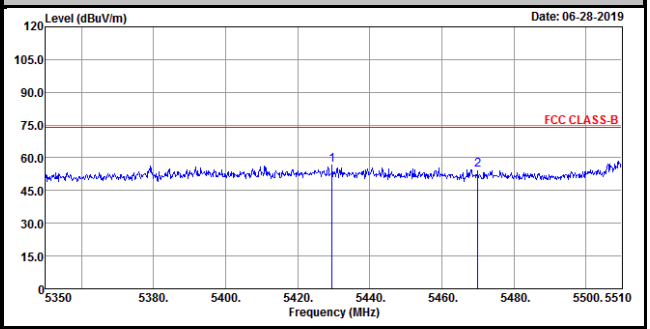
Peak

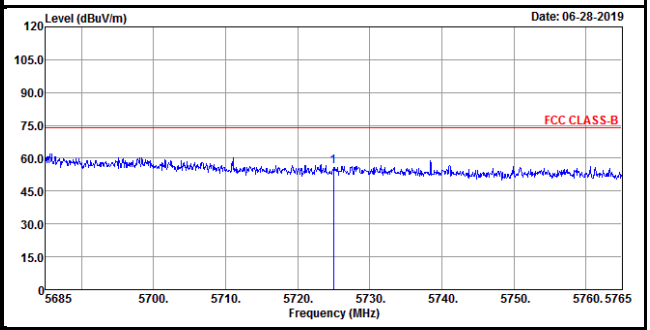
Horizontal





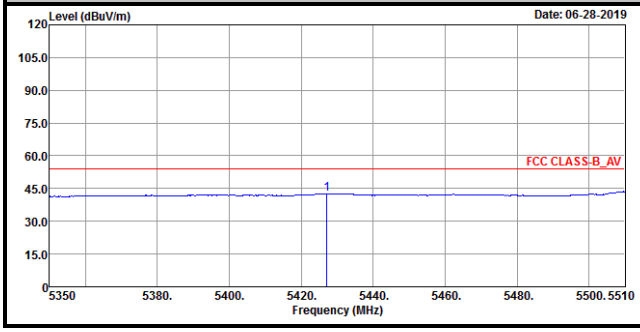
Vertical



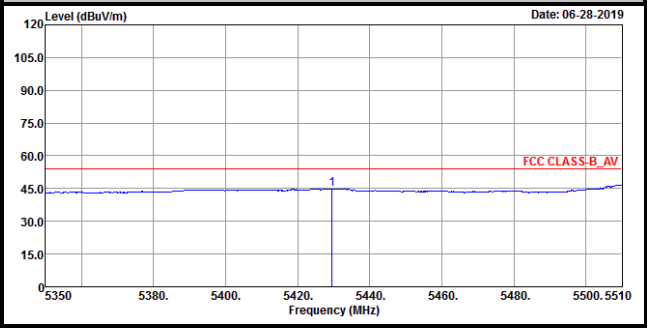


Average

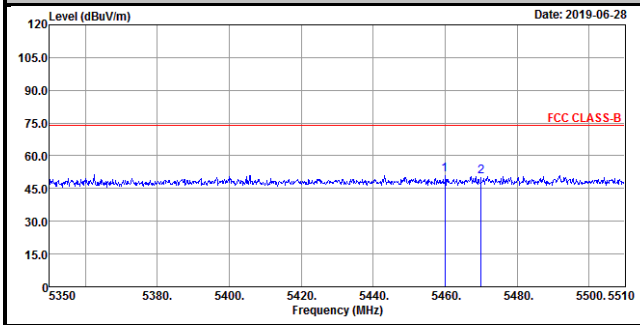
Horizontal

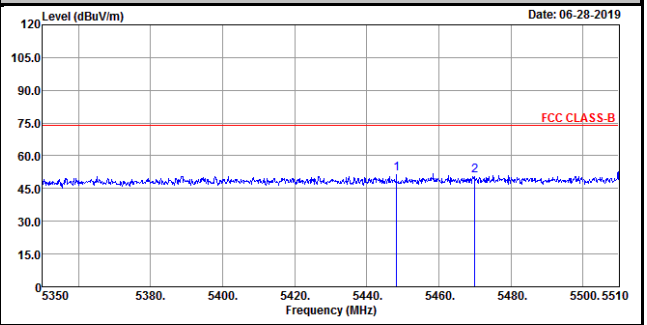


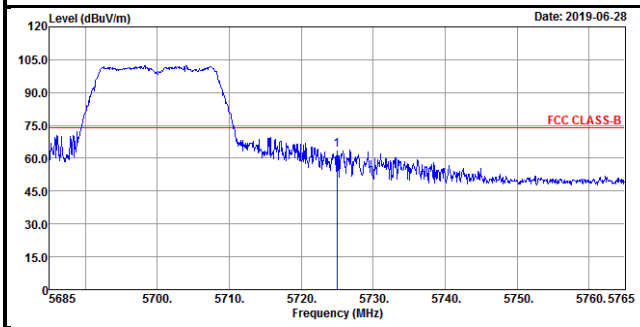
Vertical

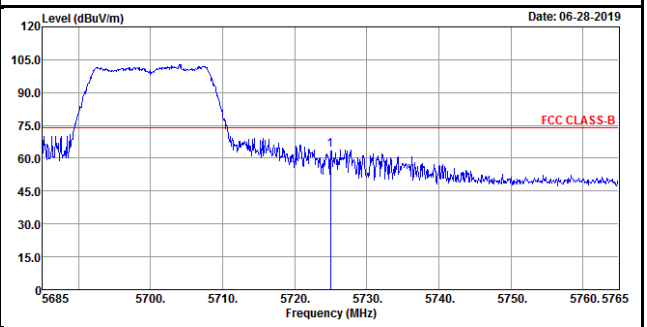


Ch 140	
Peak	
Horizontal	Vertical

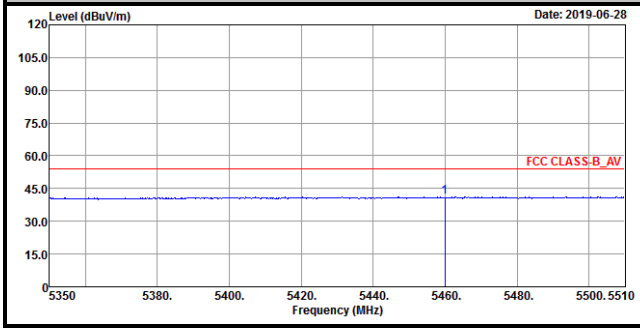


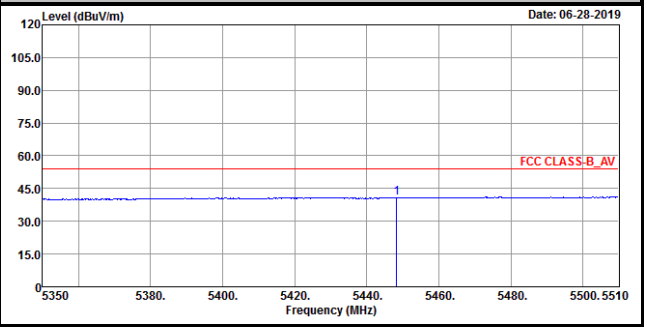


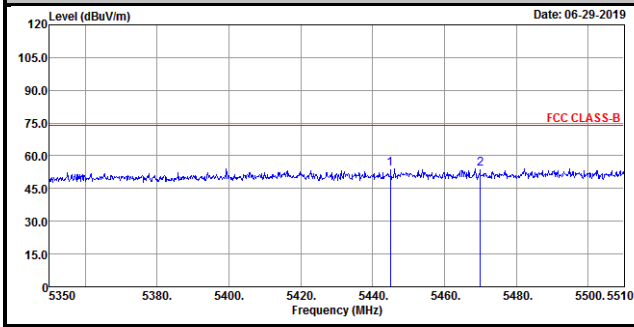
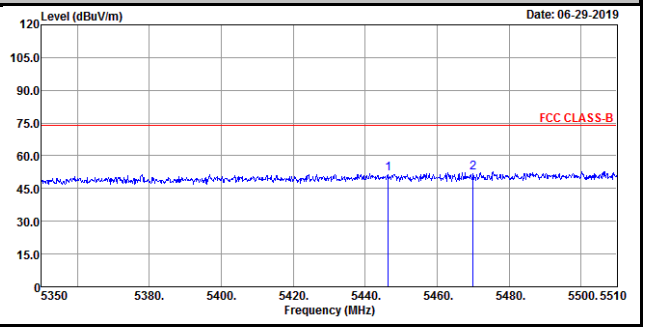
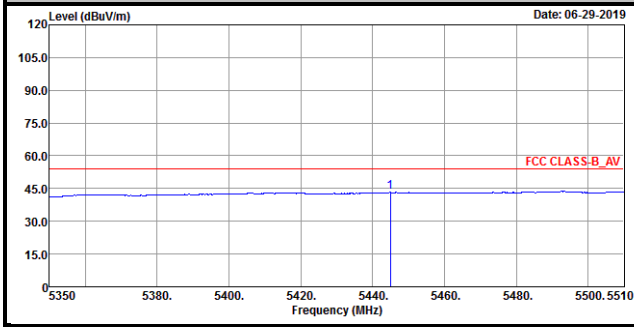
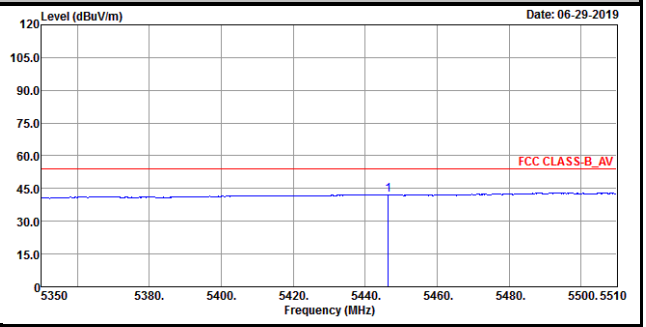




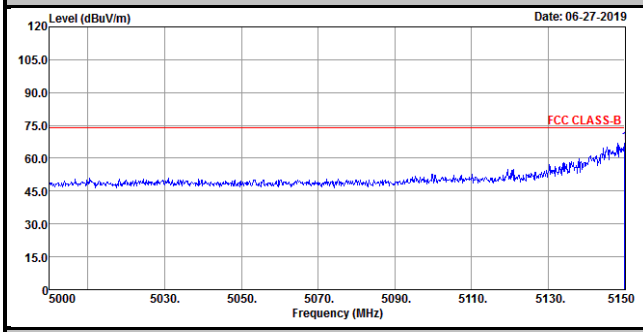
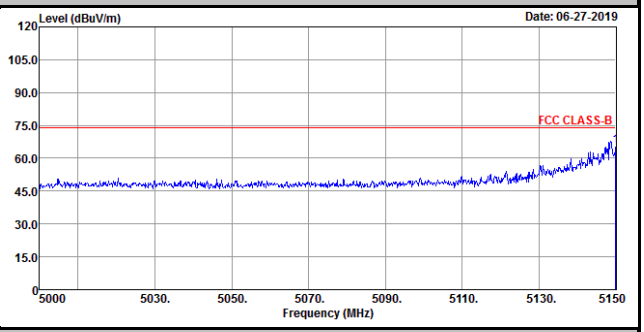
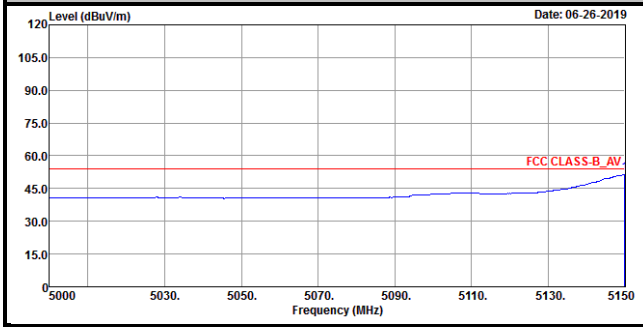
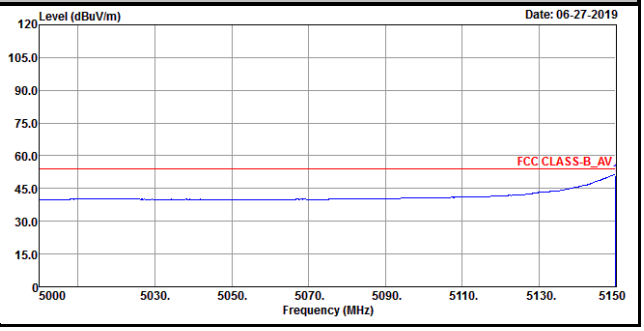
Average	
Horizontal	Vertical

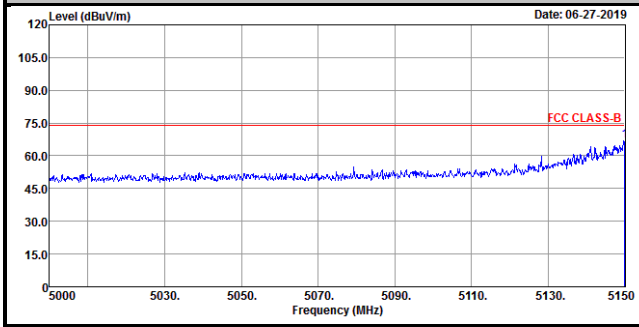
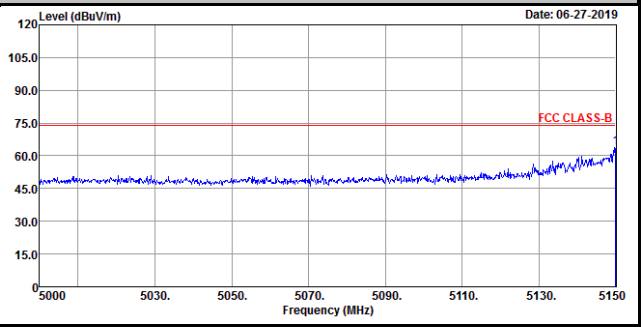
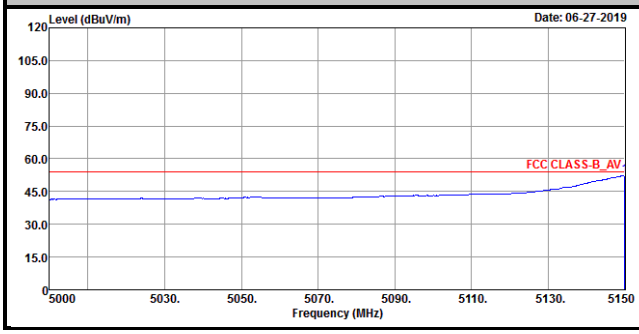
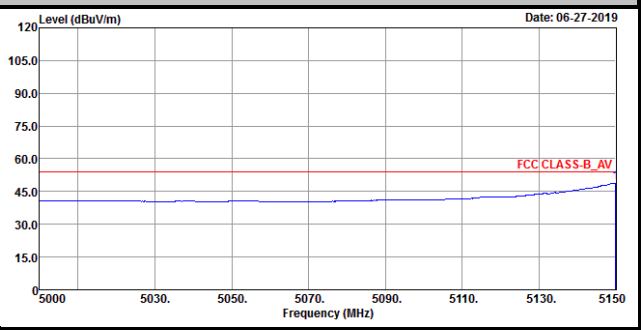


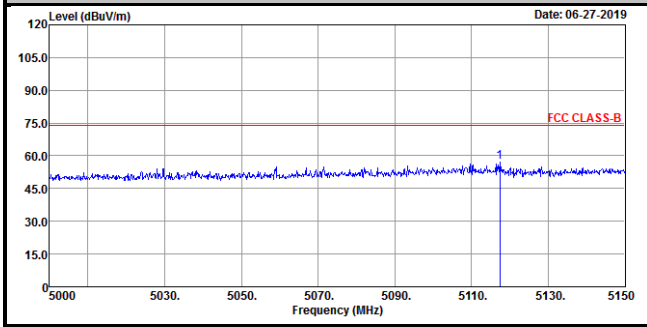
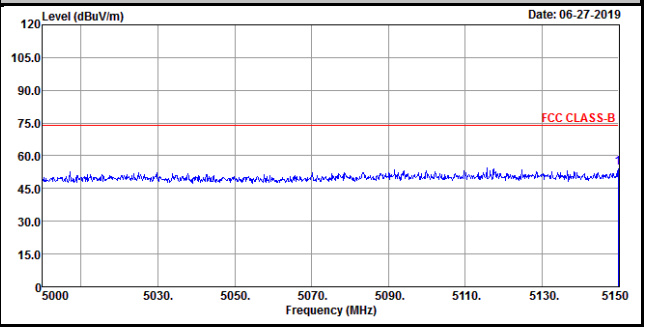
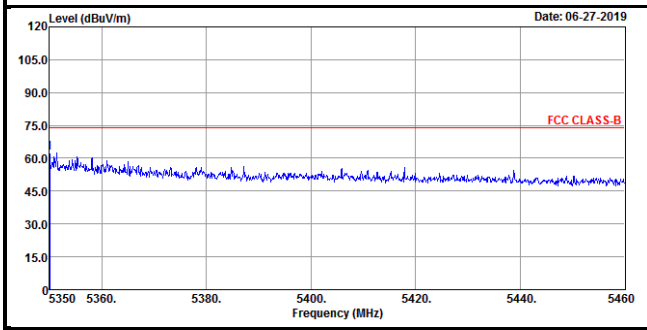
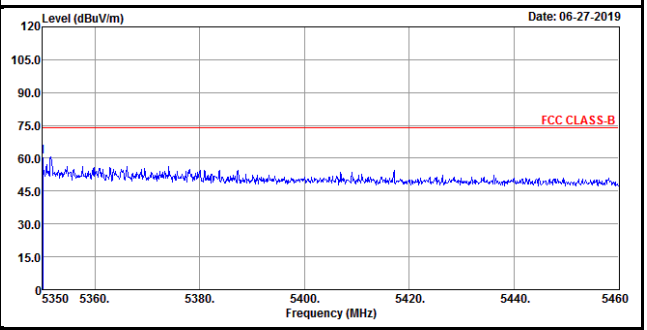
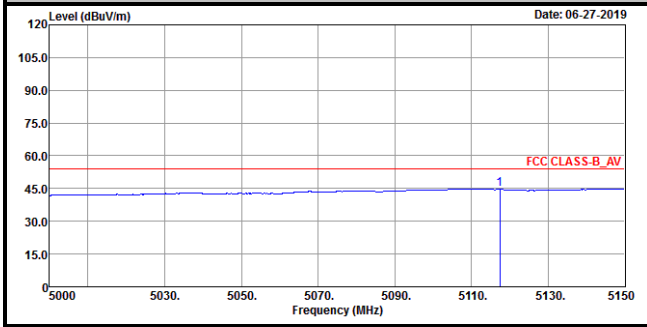
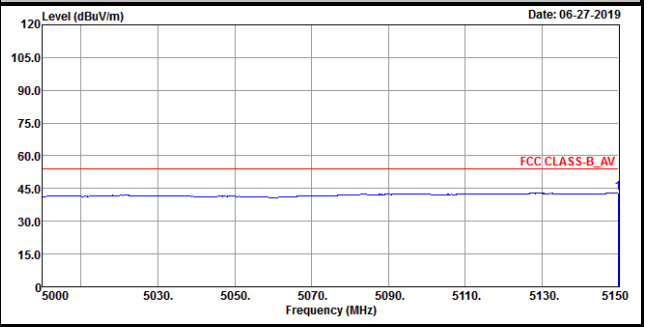
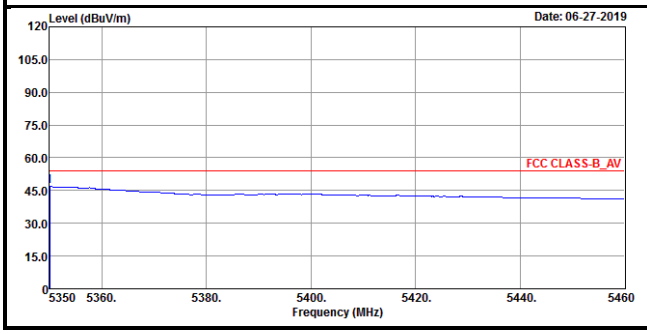
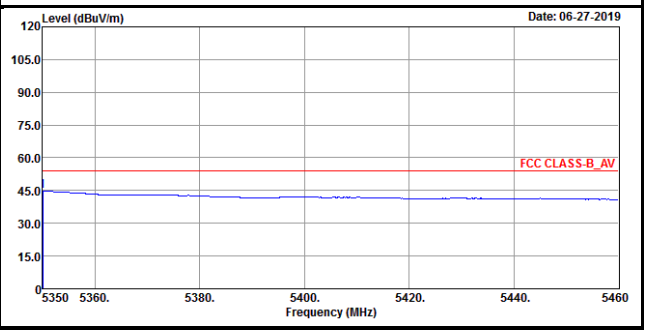


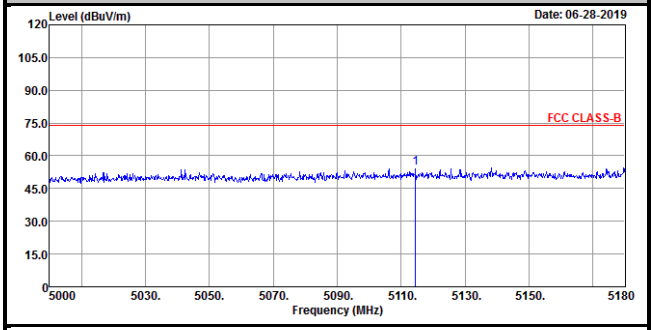
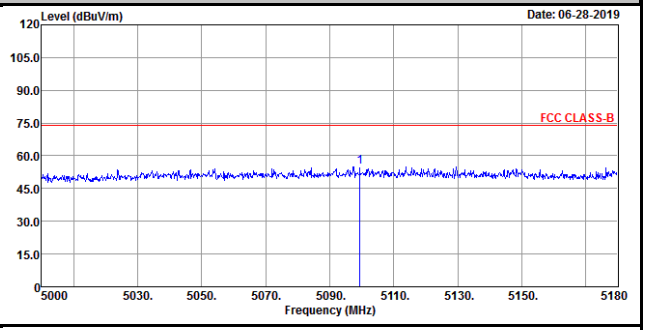
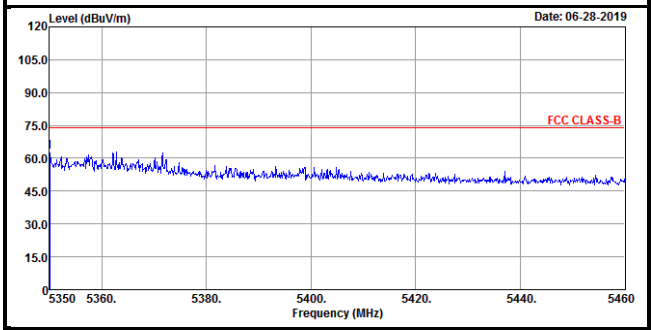
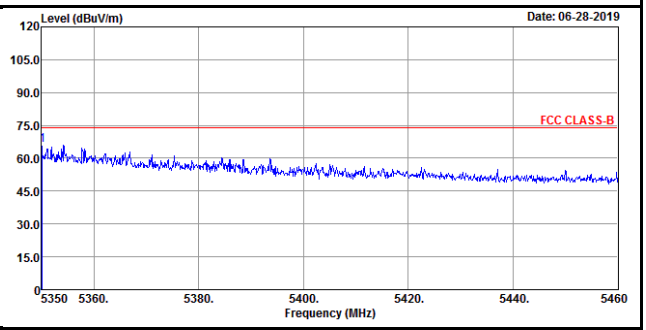
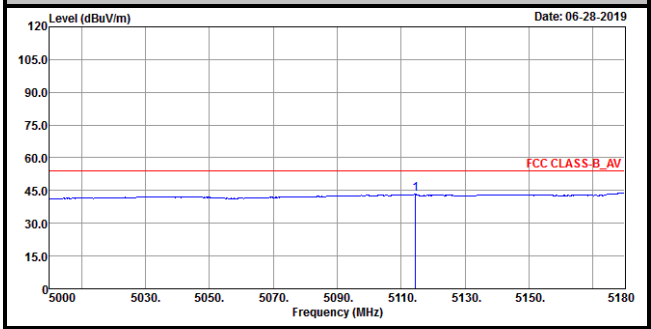
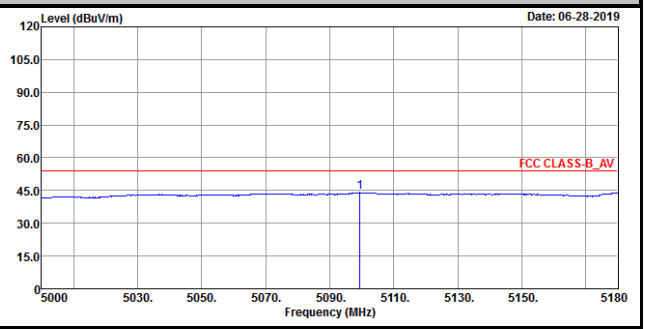
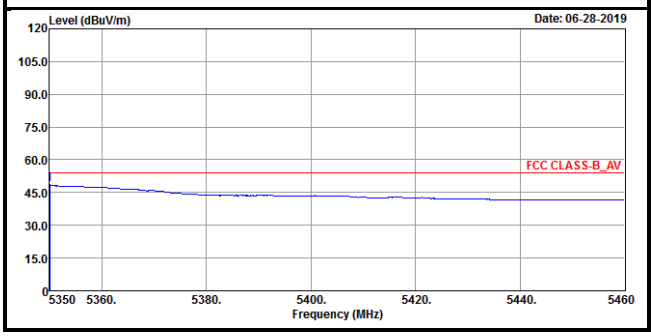
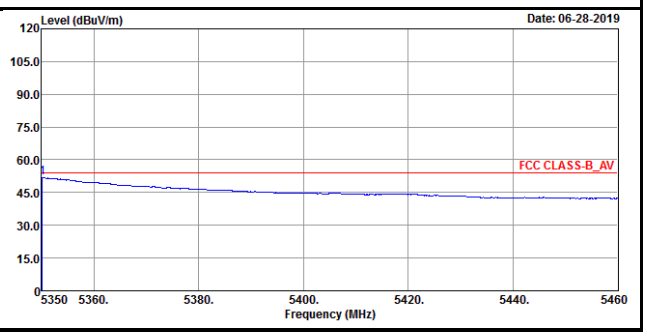
Ch 144	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	

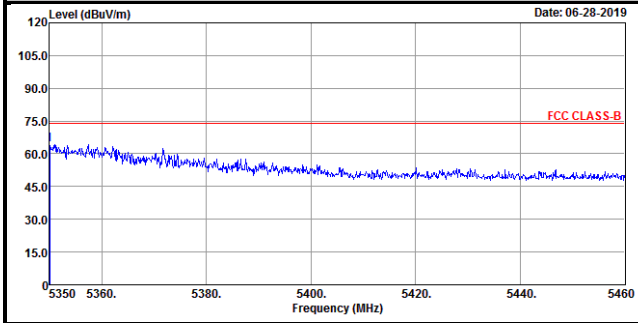
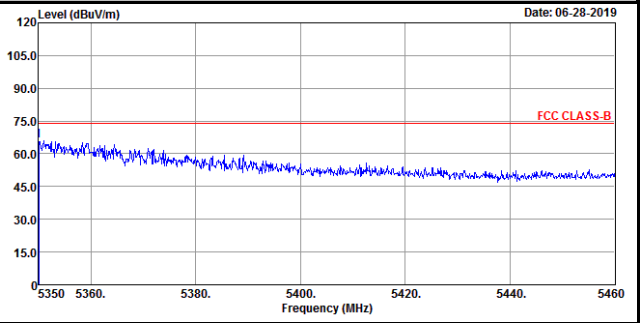
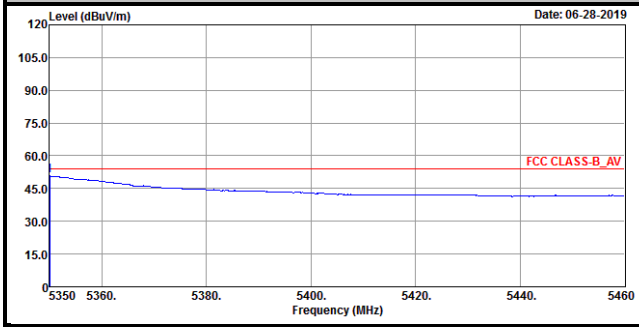
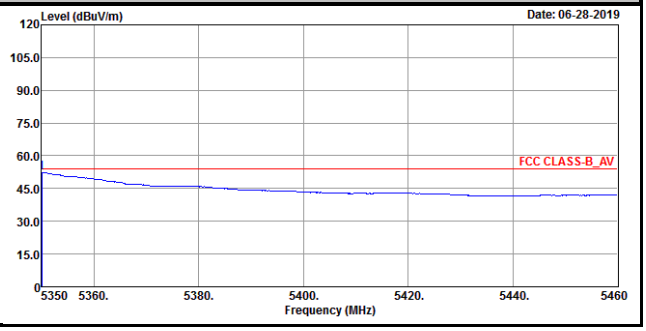
802.11n (HT20)

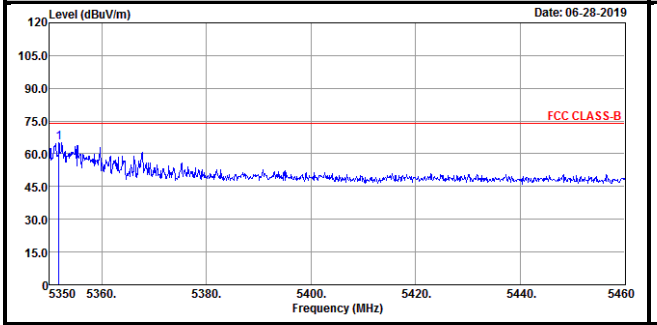
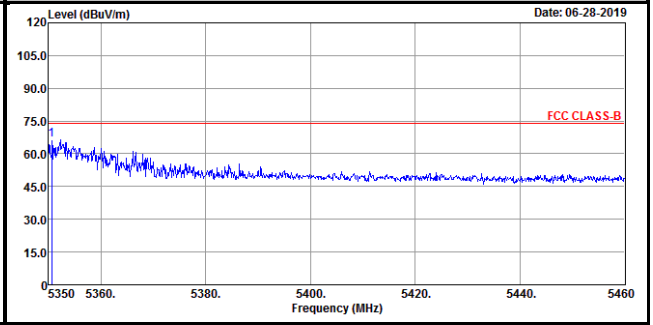
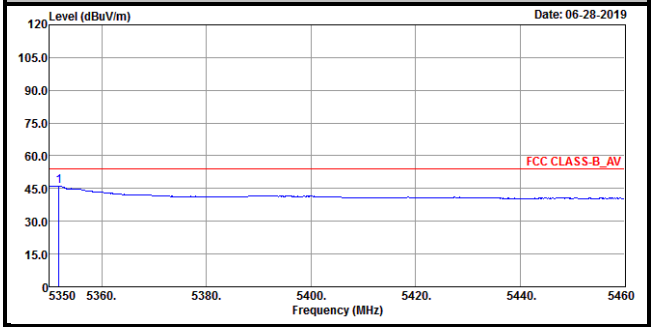
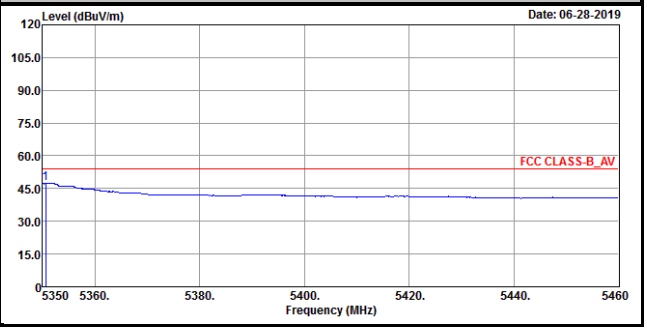
Ch 36	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	

Ch 40	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	

Ch 48	
Peak	
Horizontal	Vertical
	
	
Average	
Horizontal	Vertical
	
	

Ch 52	
Peak	
Horizontal	Vertical
	
	
Average	
Horizontal	Vertical
	
	

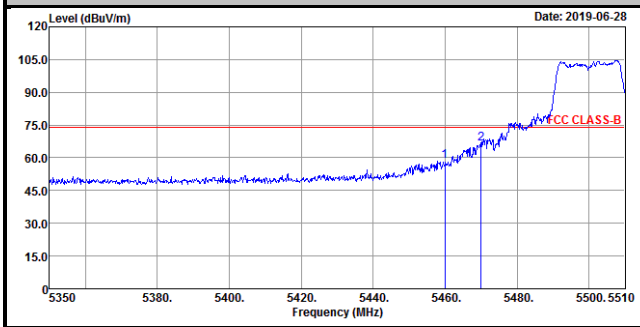
Ch 60	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	

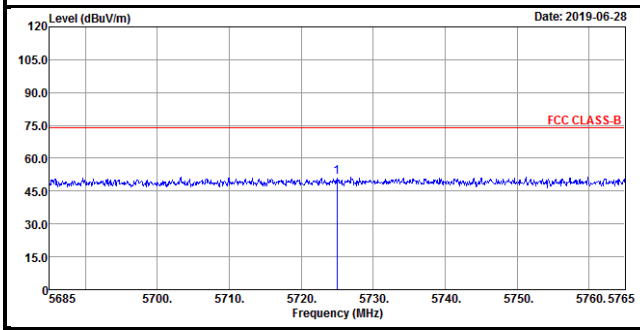
Ch 64	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	

Ch 100

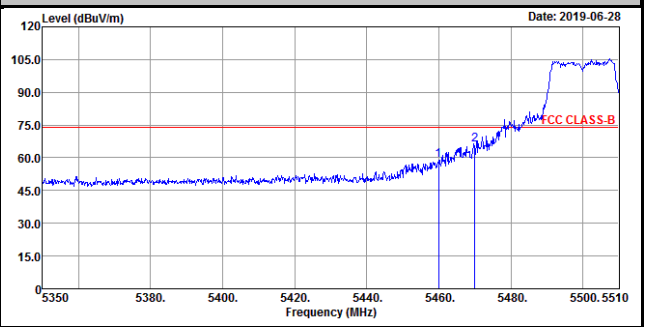
Peak

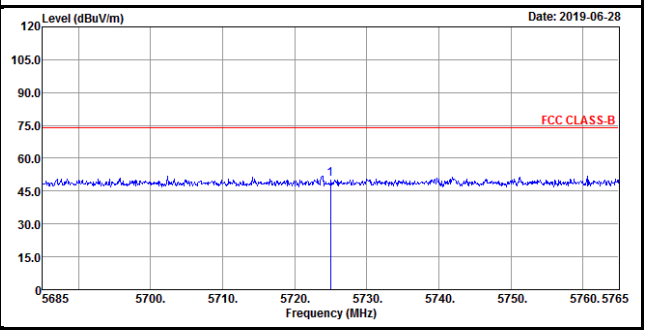
Horizontal





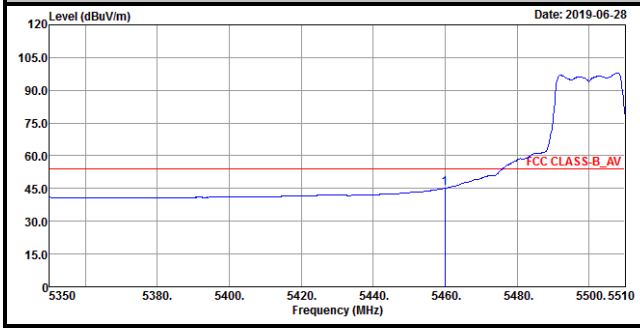
Vertical



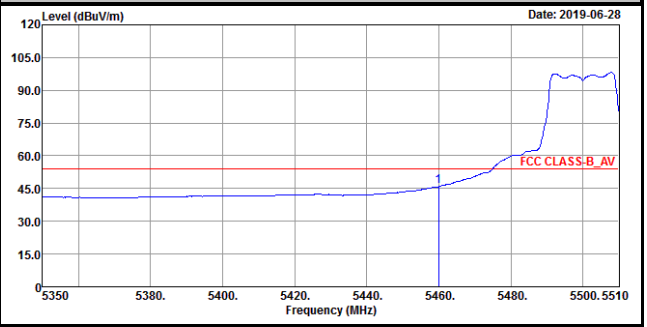


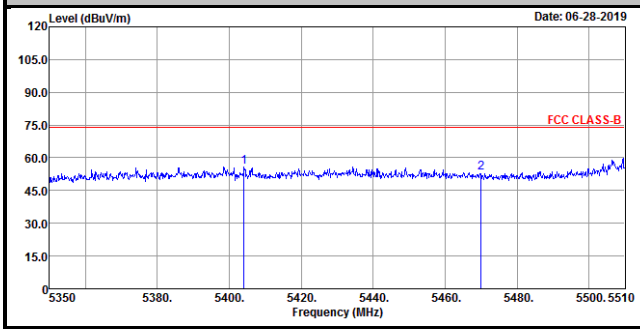
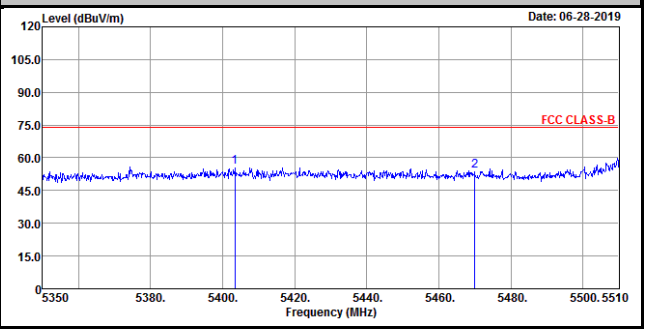
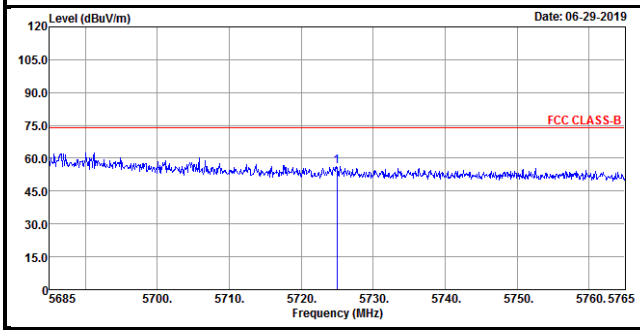
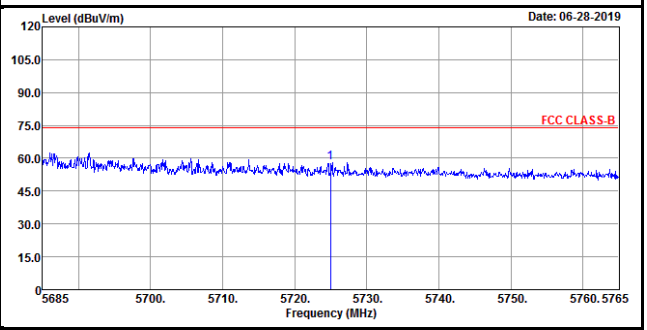
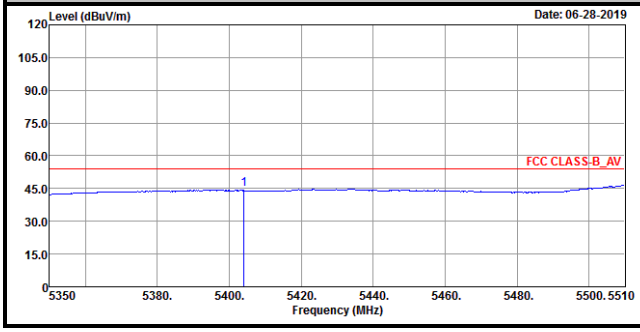
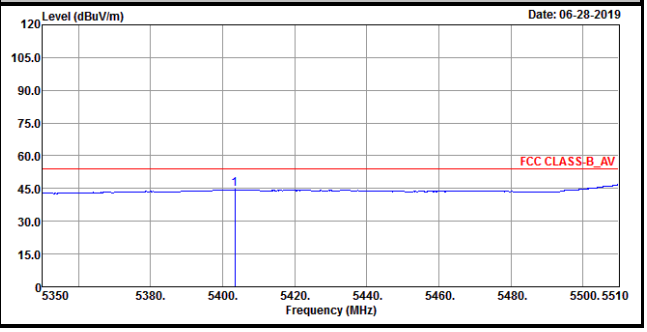
Average

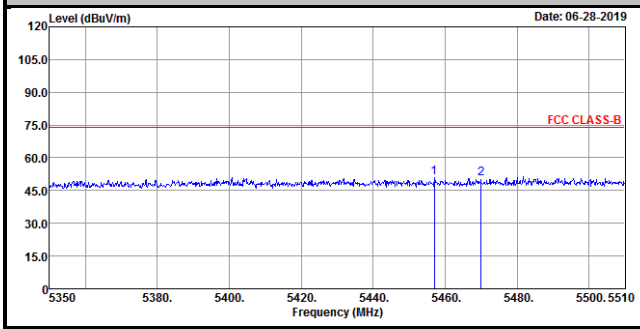
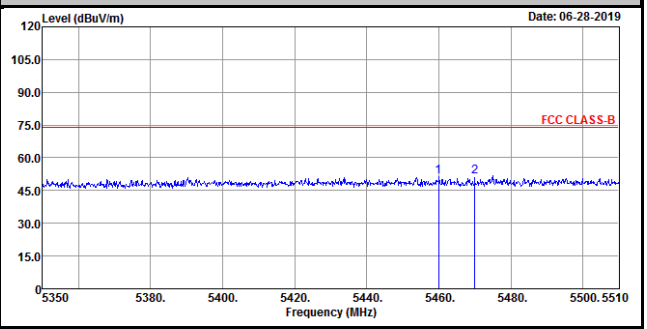
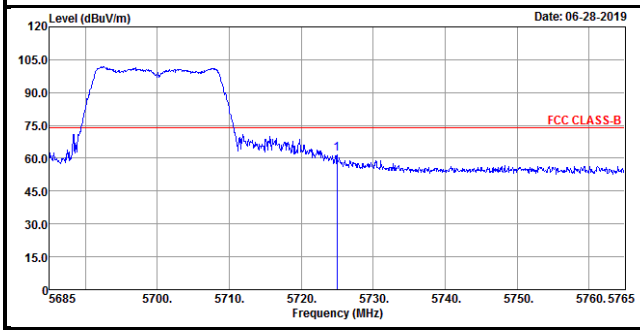
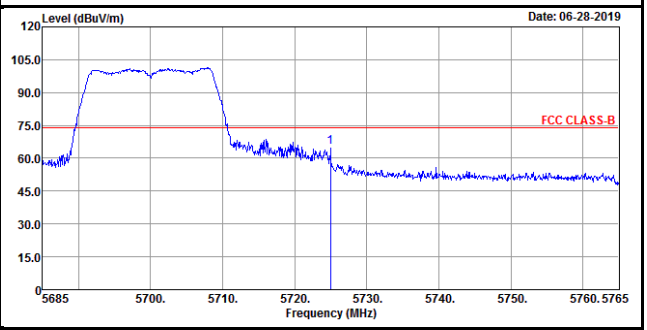
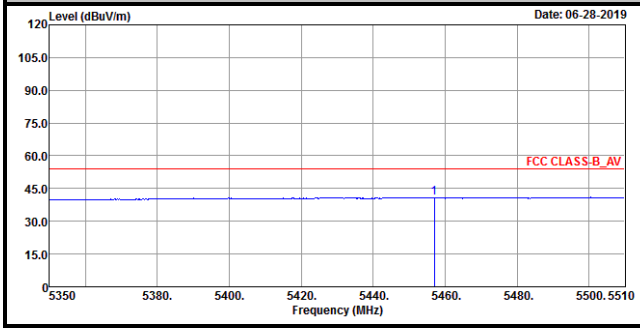
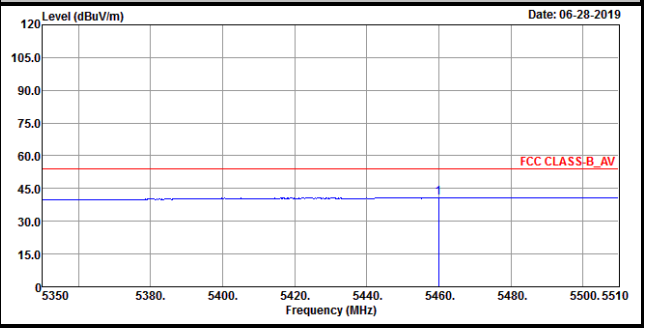
Horizontal

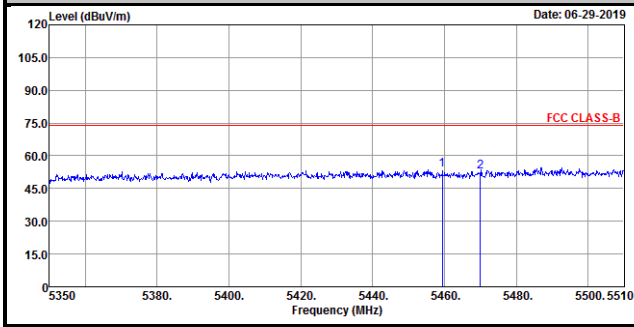
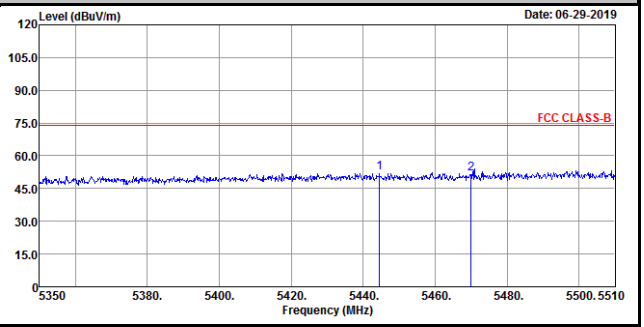
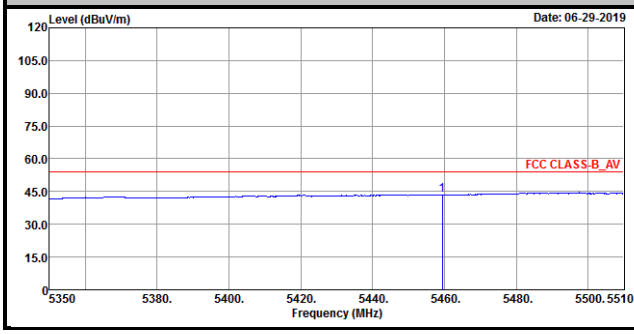
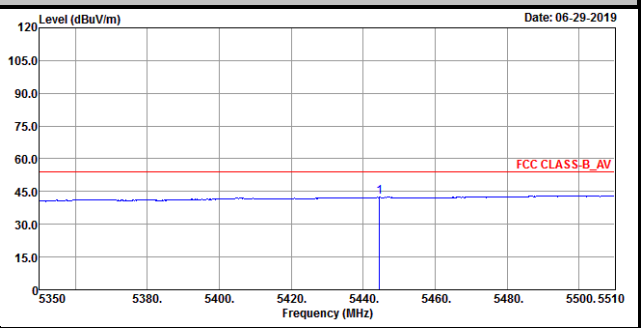


Vertical



Ch 116	
Peak	
Horizontal	Vertical
	
	
Average	
Horizontal	Vertical
	

Ch 140	
Peak	
Horizontal	Vertical
	
	
Average	
Horizontal	Vertical
	

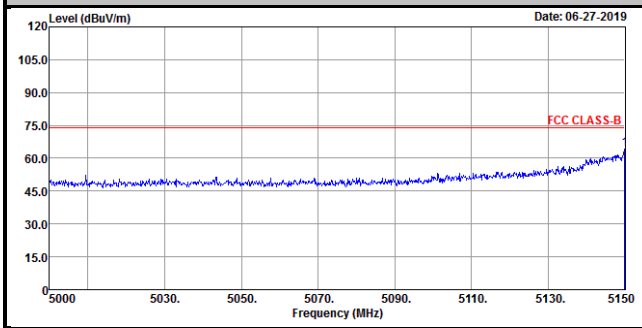
Ch 144	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	

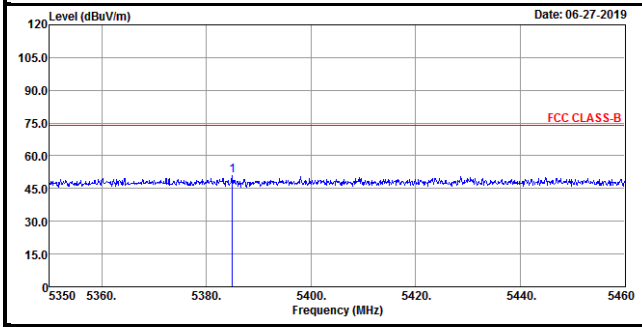
802.11n (HT40)

Ch 38

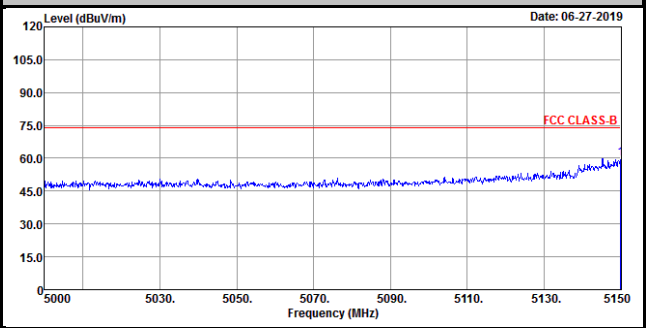
Peak

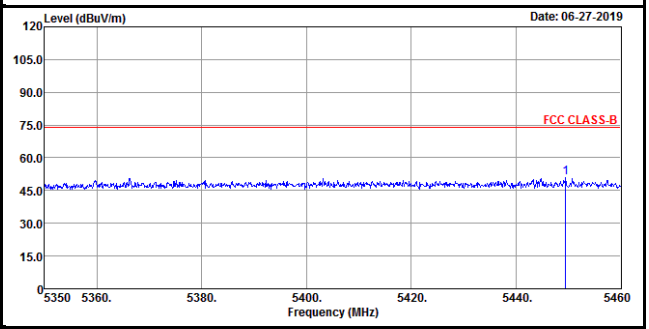
Horizontal





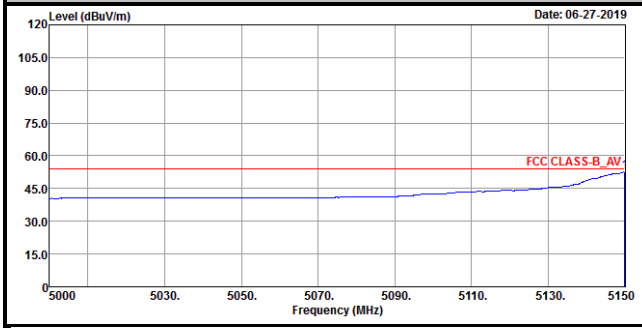
Vertical

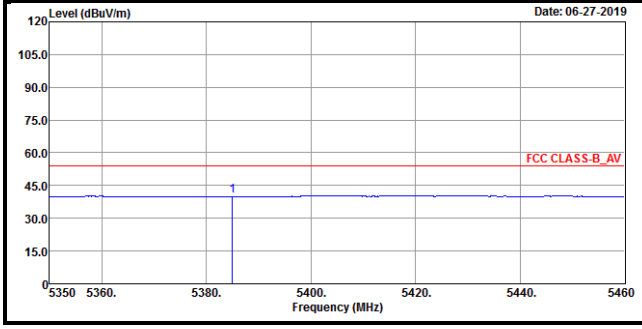




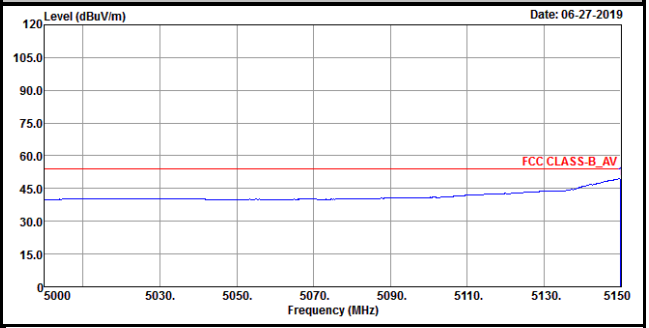
Average

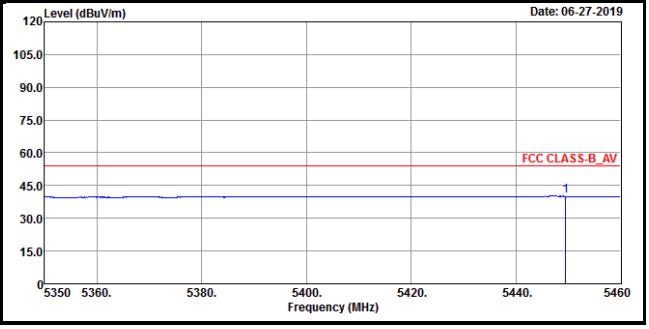
Horizontal

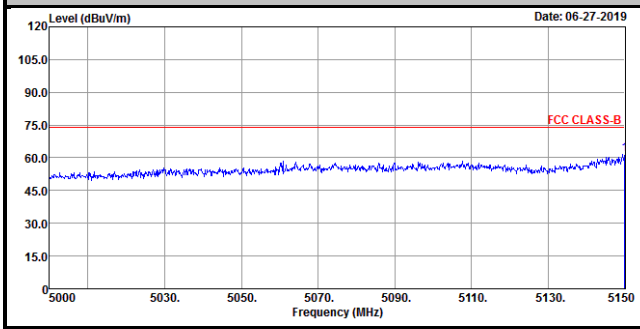
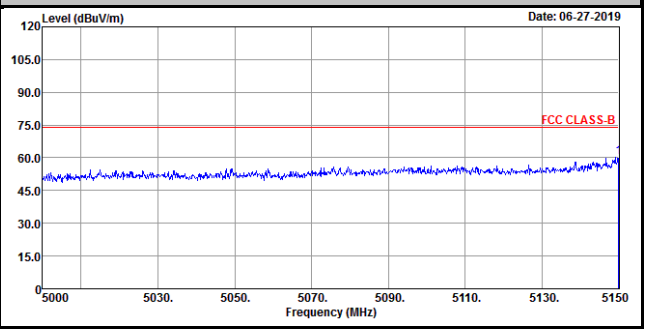
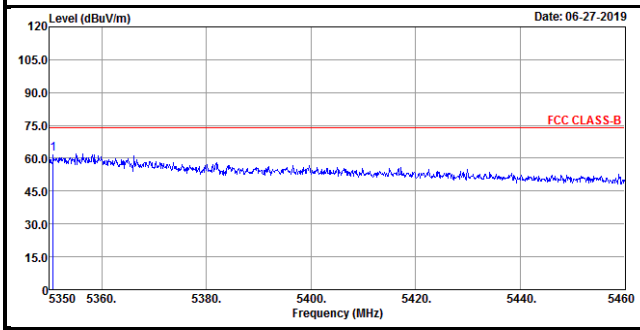
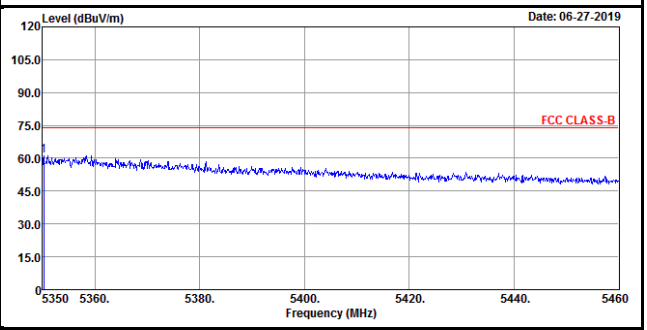
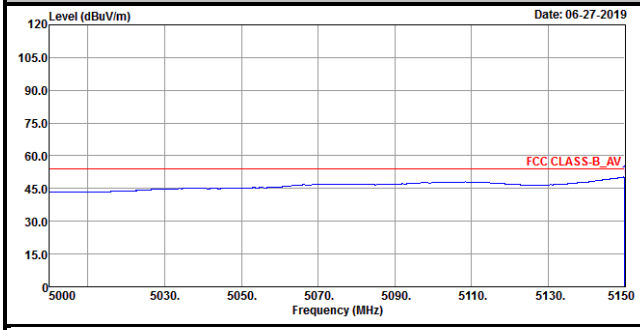
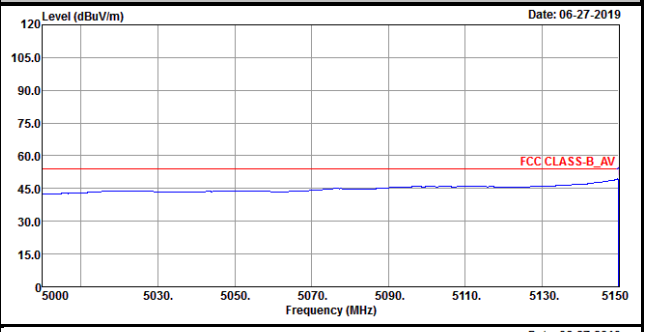
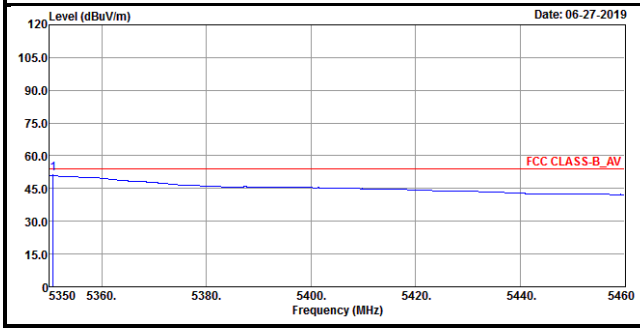
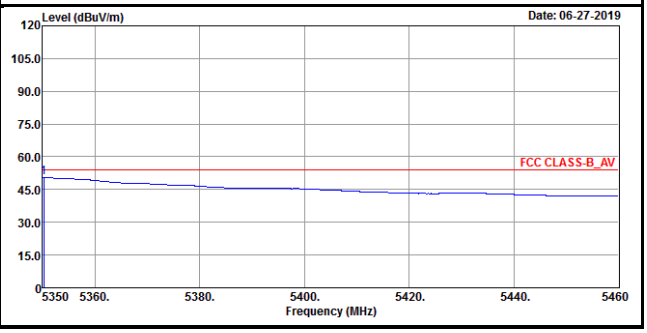




Vertical



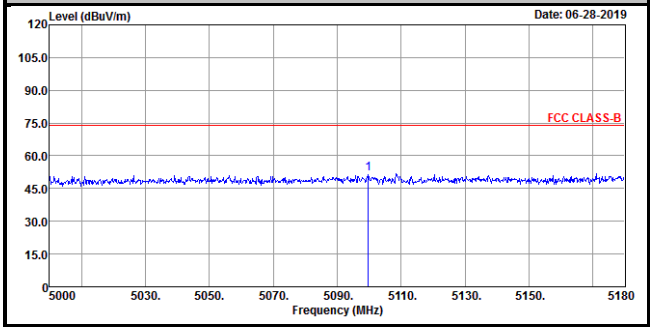


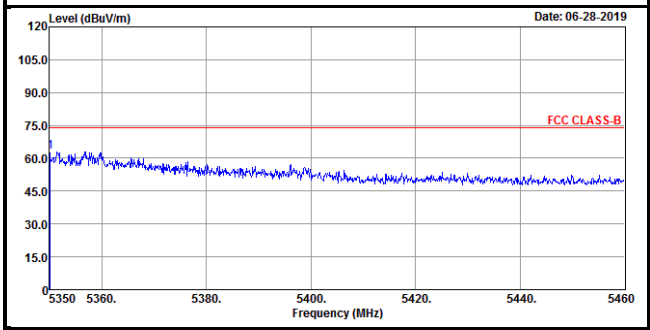
Ch 46	
Peak	
Horizontal	Vertical
	
	
Average	
Horizontal	Vertical
	
	

Ch 54

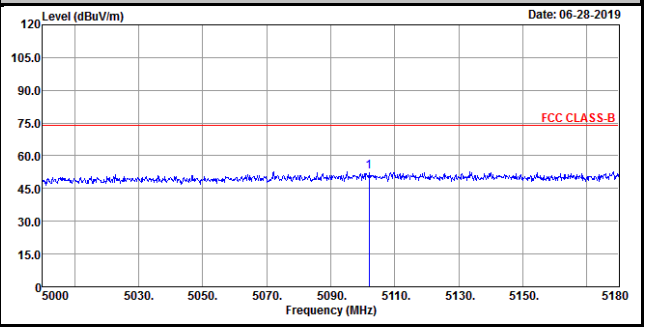
Peak

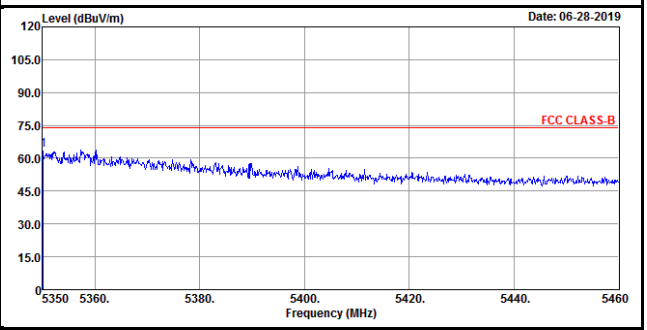
Horizontal





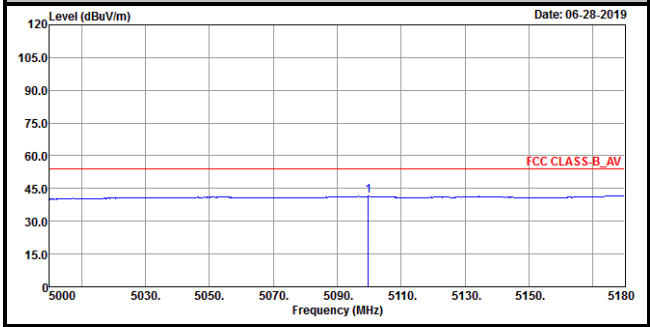
Vertical

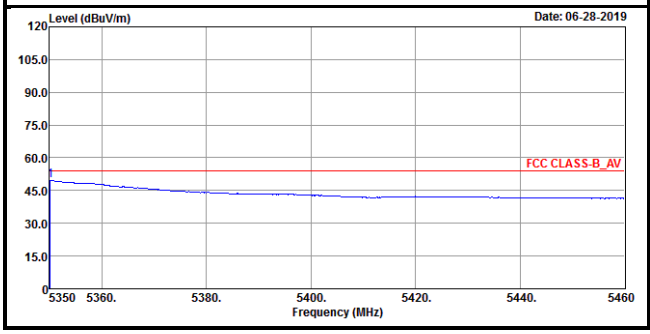




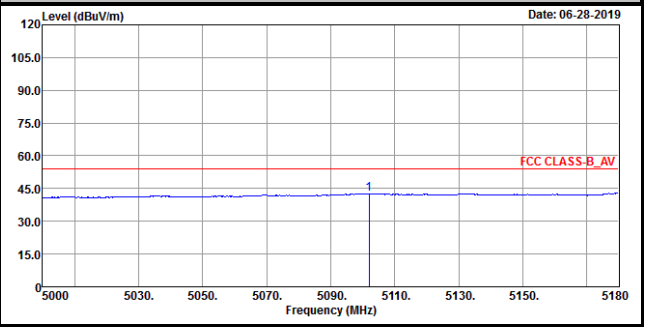
Average

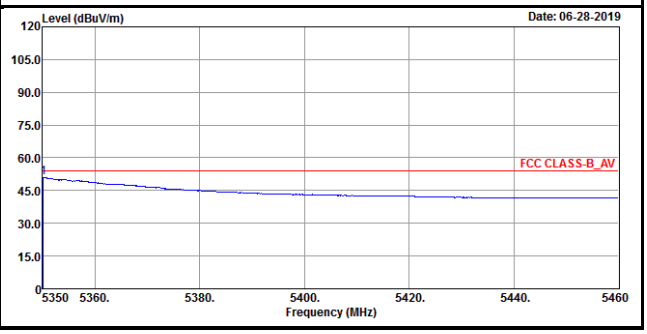
Horizontal





Vertical

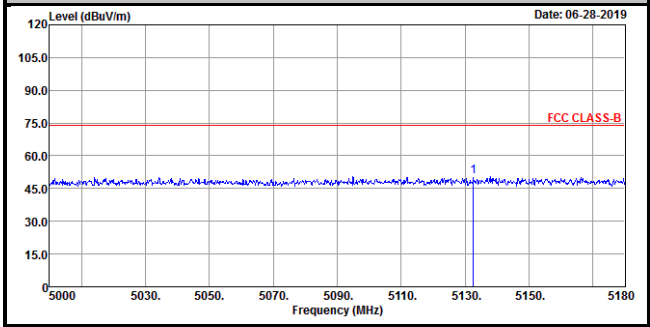


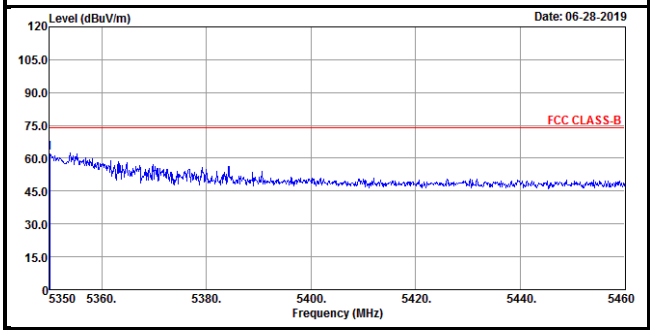


Ch 62

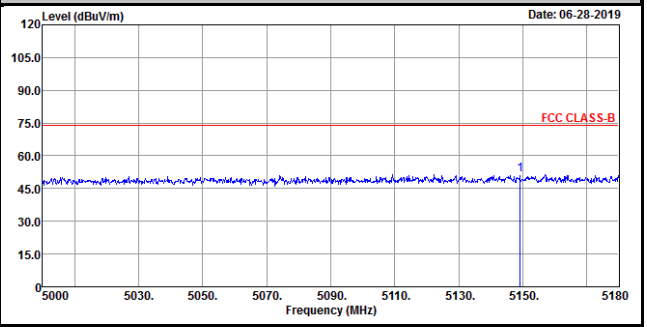
Peak

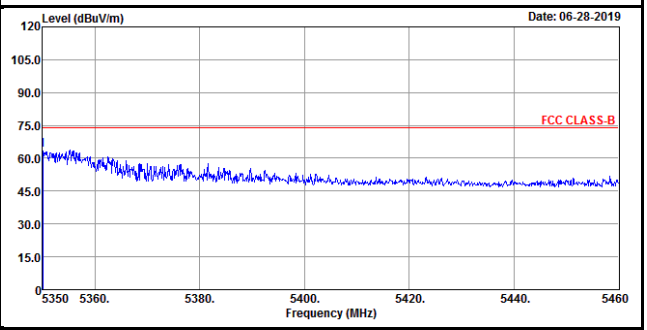
Horizontal





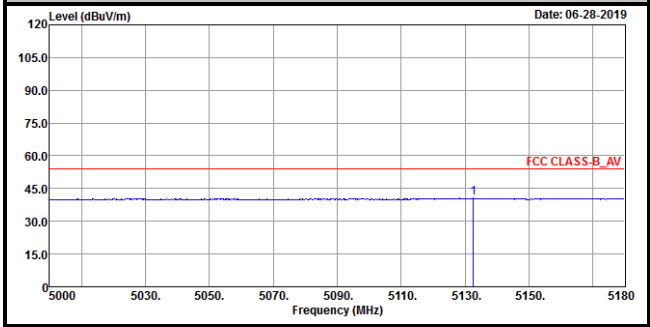
Vertical

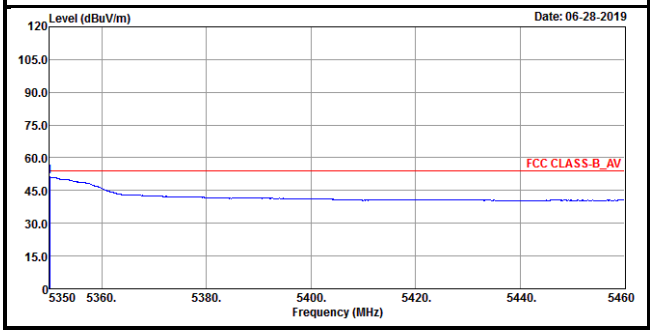




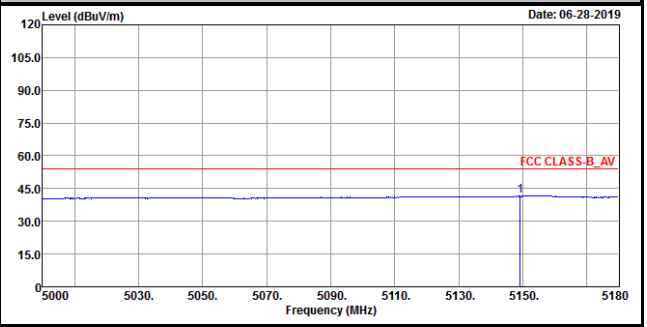
Average

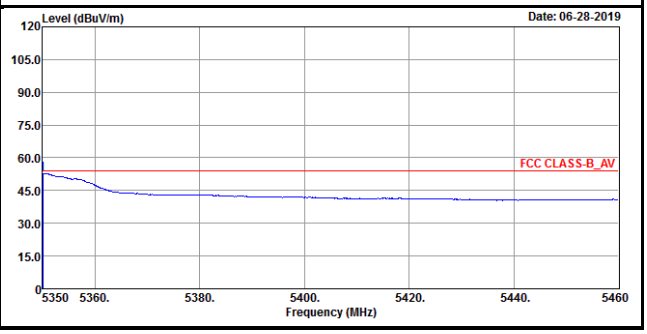
Horizontal





Vertical

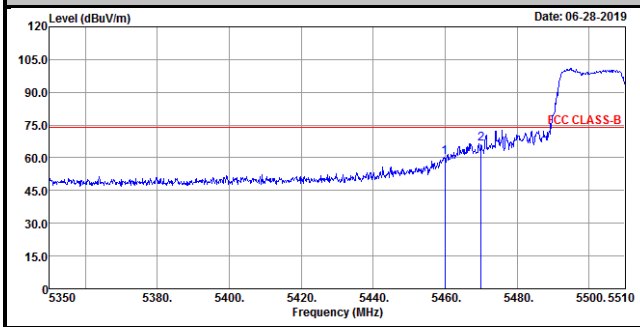


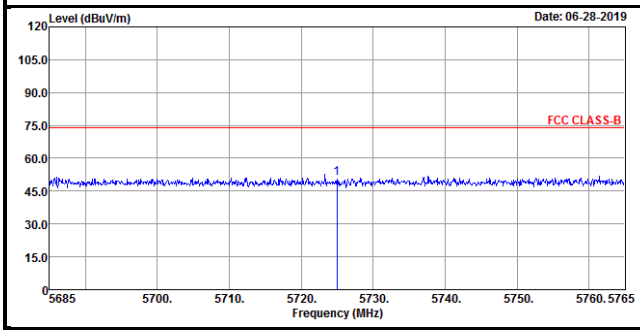


Ch 102

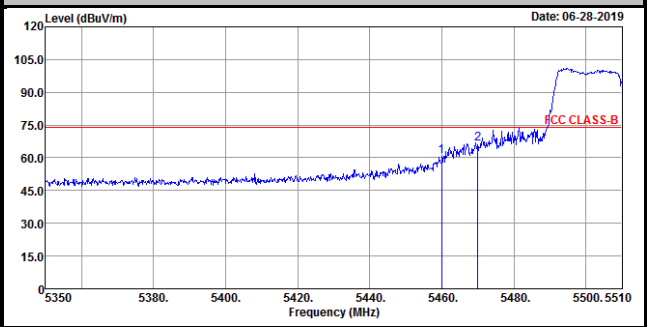
Peak

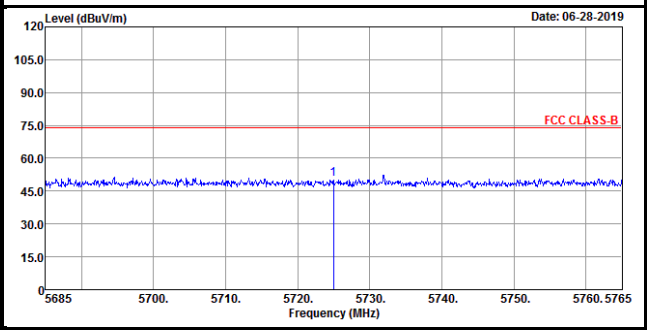
Horizontal





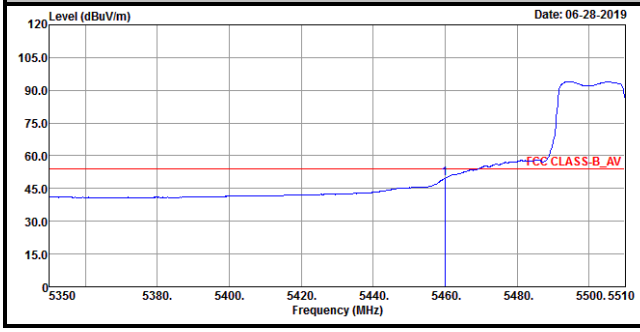
Vertical



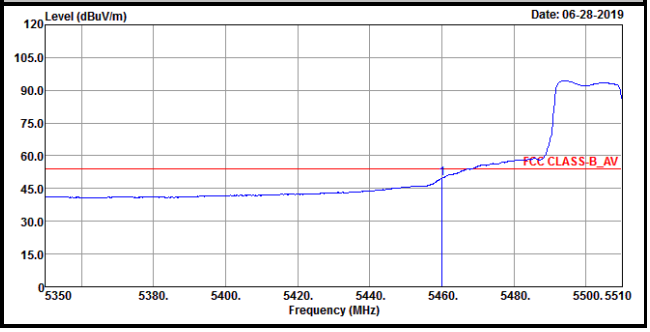


Average

Horizontal



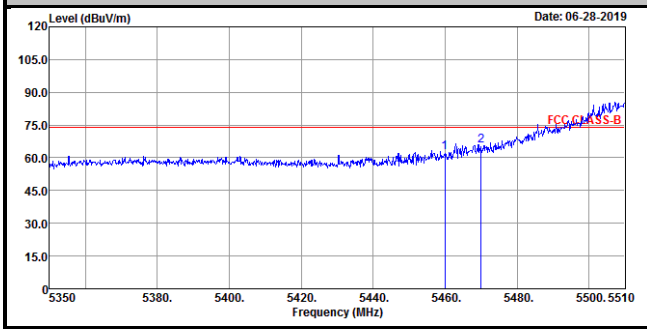
Vertical

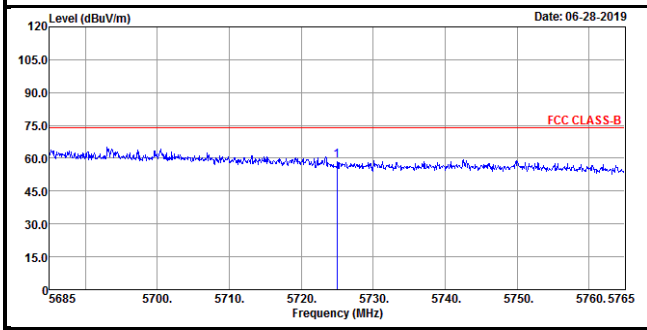


Ch 110

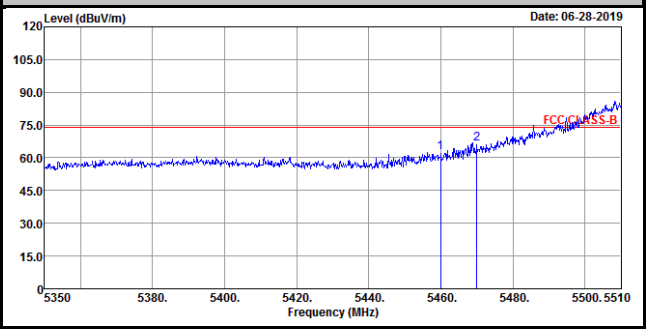
Peak

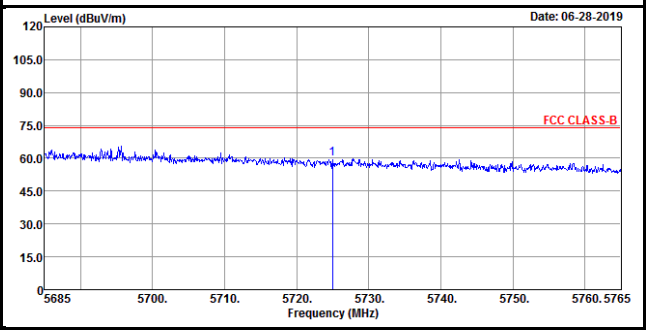
Horizontal





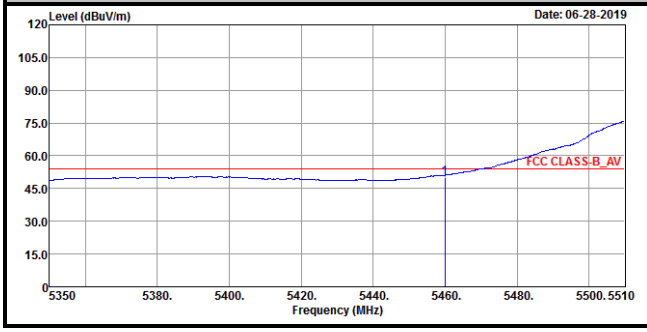
Vertical



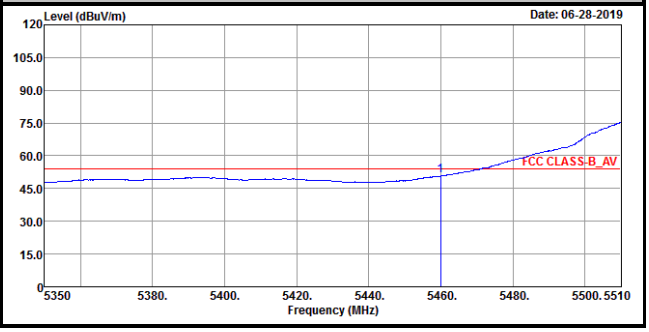


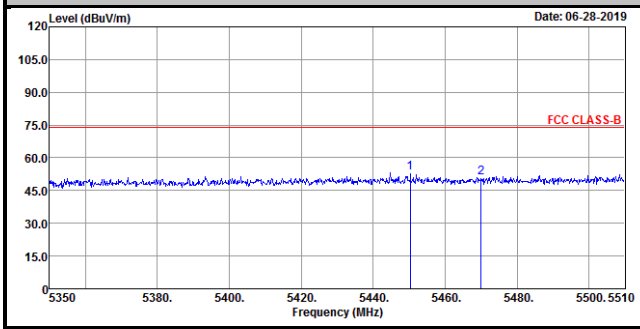
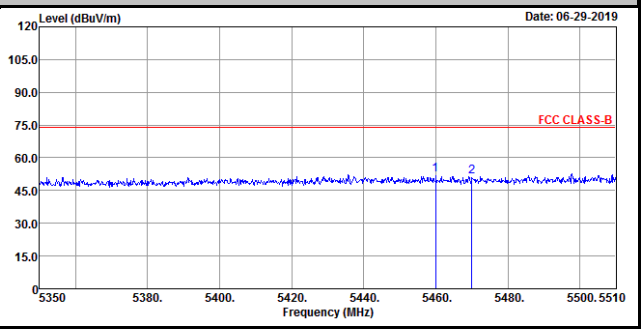
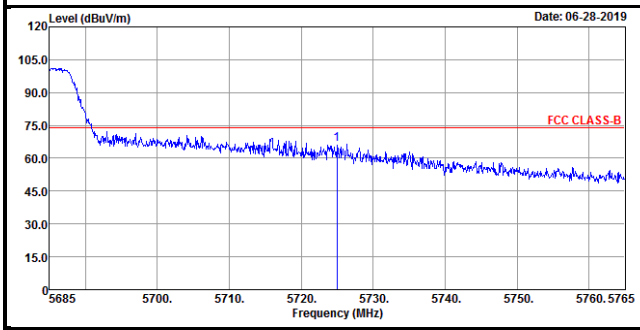
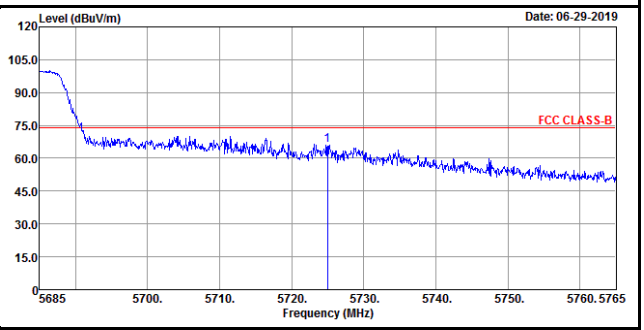
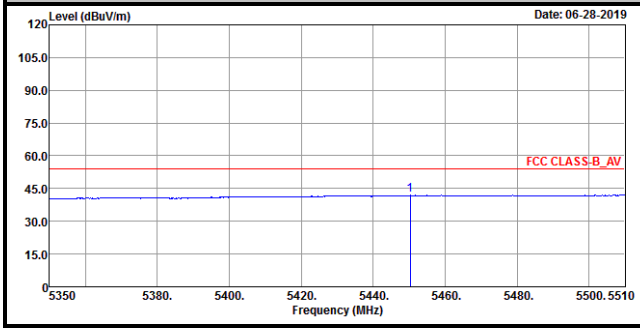
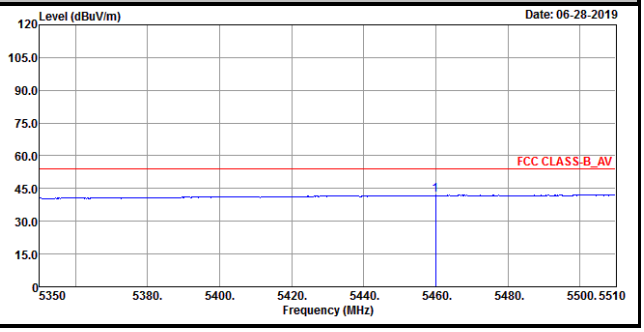
Average

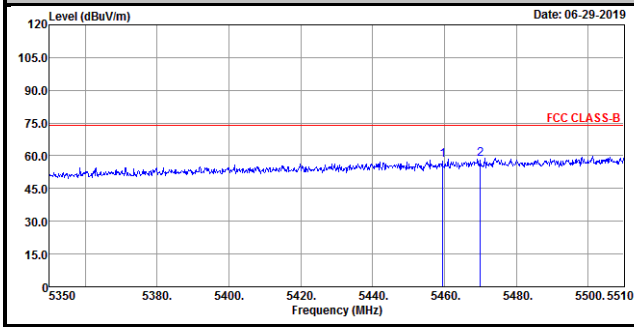
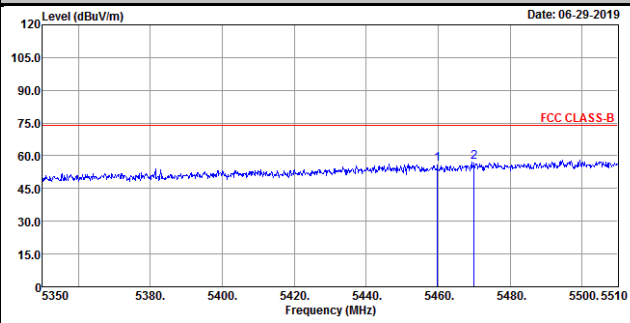
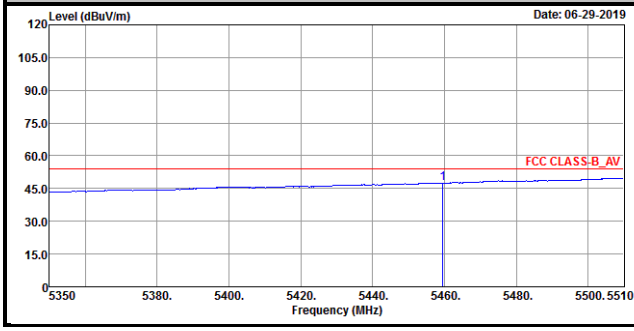
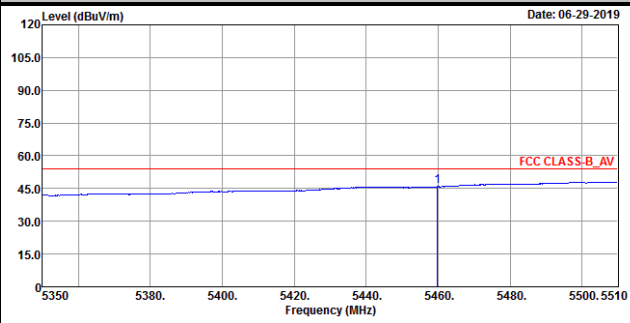
Horizontal



Vertical



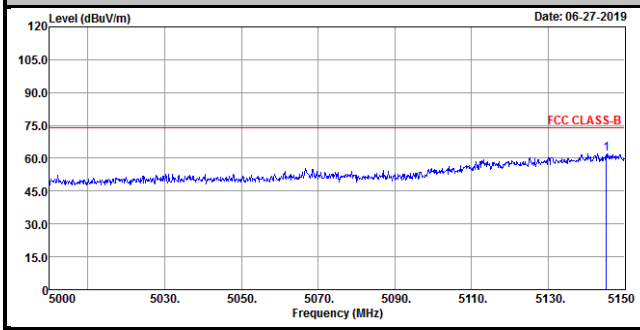
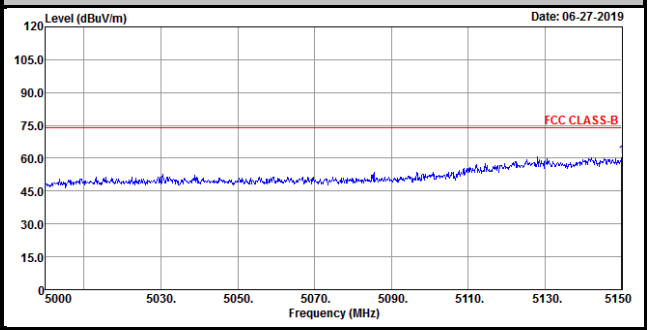
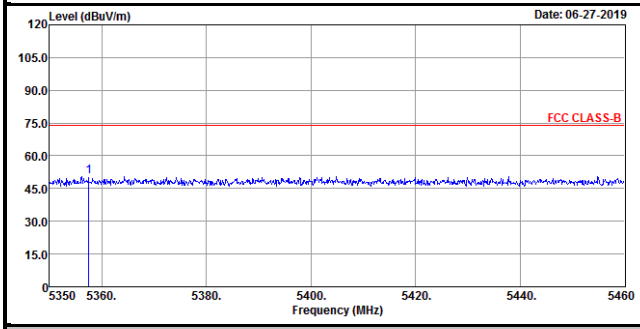
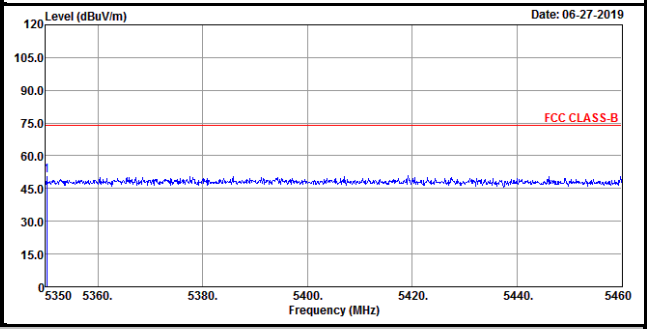
Ch 134	
Peak	
Horizontal	Vertical
	
	
Average	
Horizontal	Vertical
	

Ch 142	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	

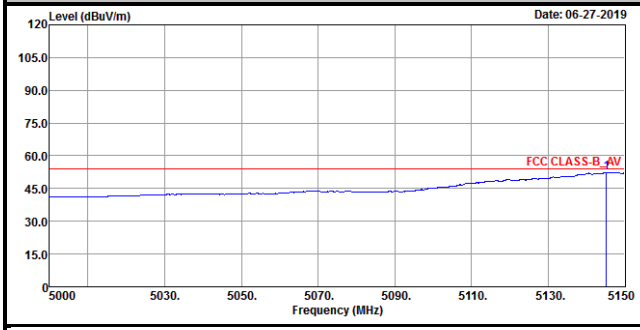
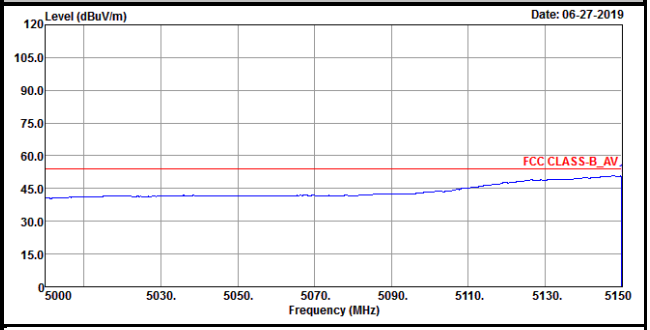
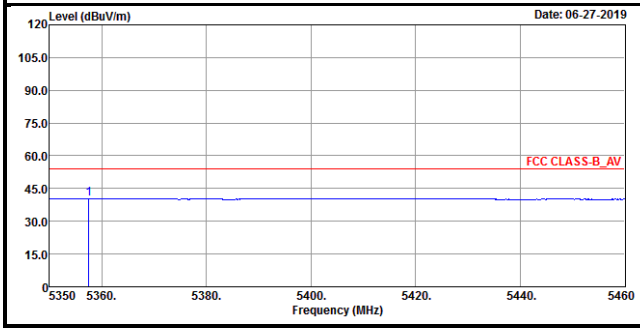
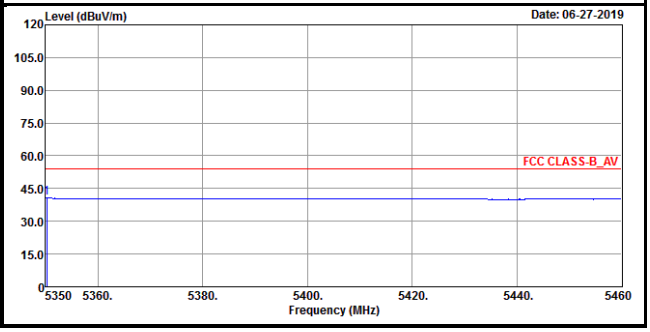
802.11ac (VHT80)

Ch 42

Peak

Horizontal	Vertical
	
	

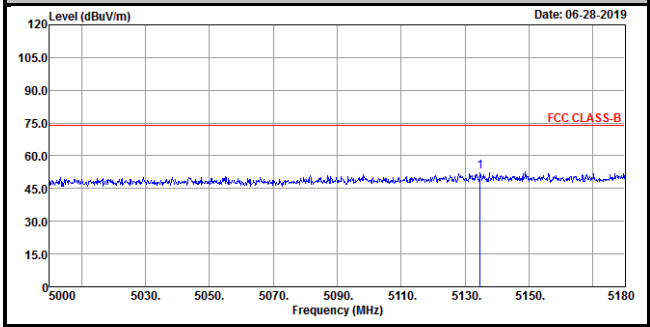
Average

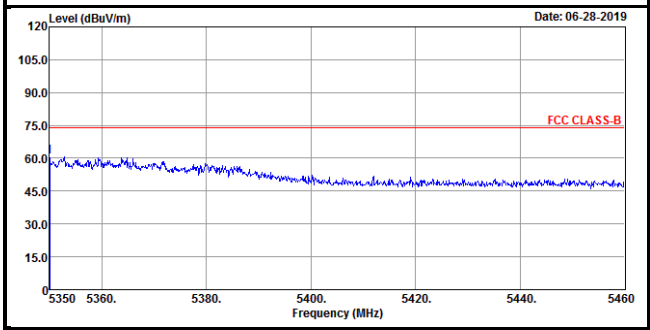
Horizontal	Vertical
	
	

Ch 58

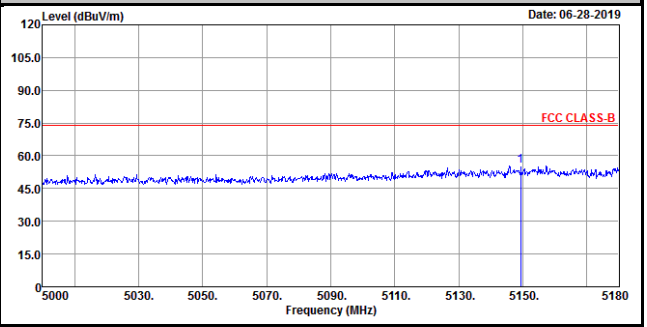
Peak

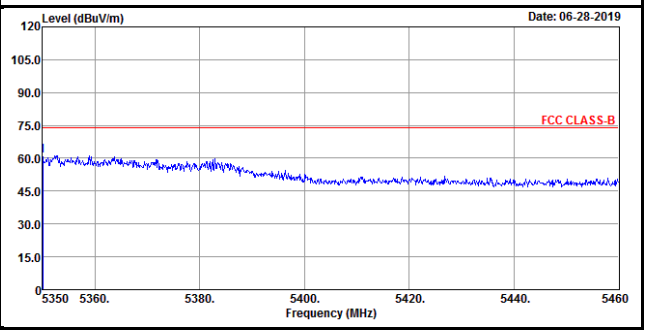
Horizontal





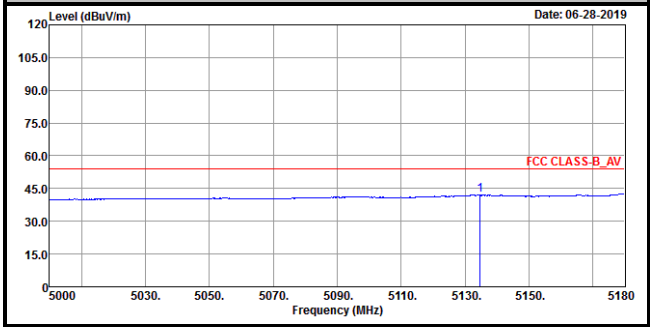
Vertical

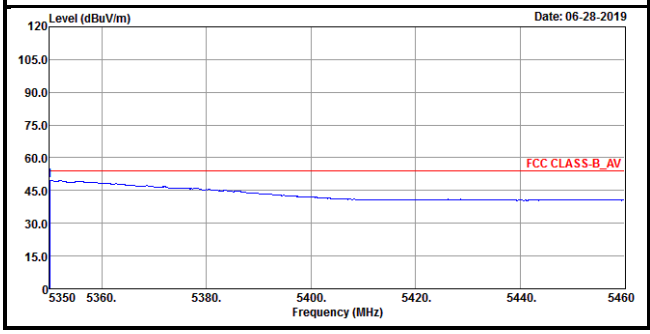




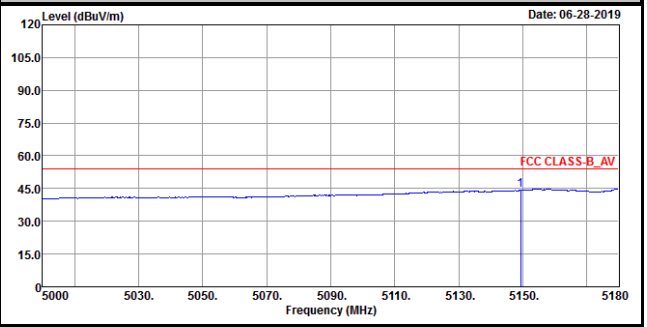
Average

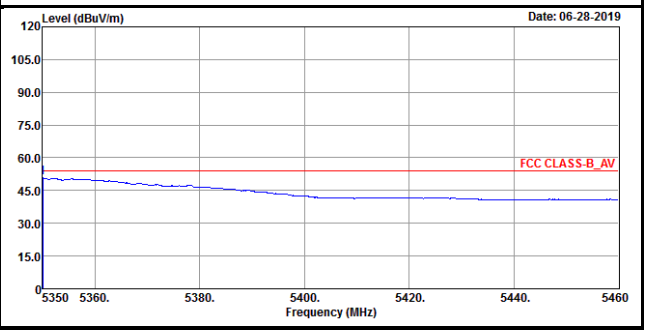
Horizontal





Vertical

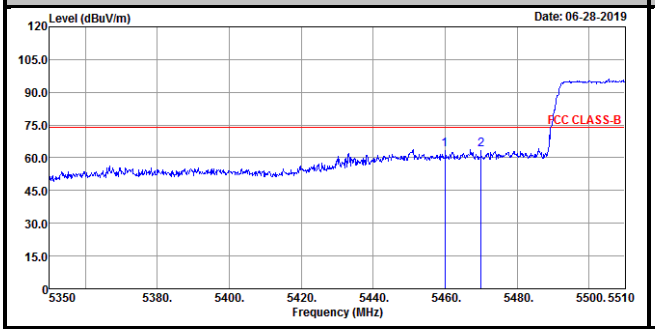


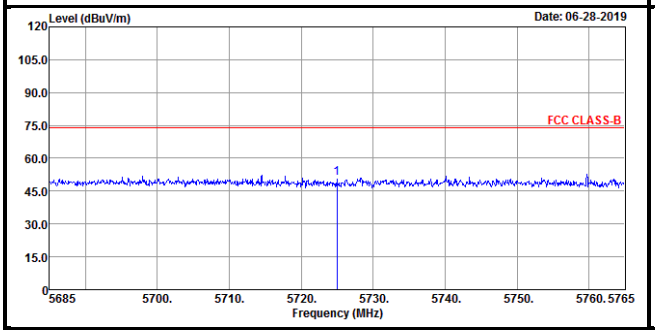


Ch 106

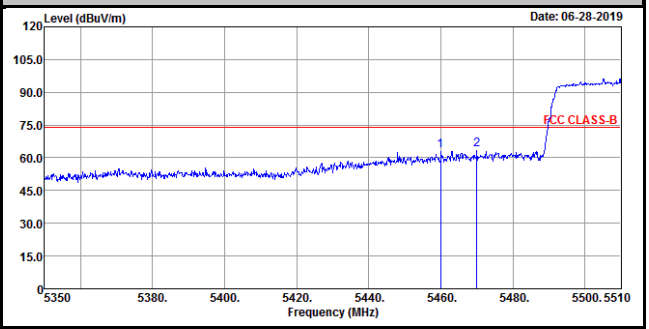
Peak

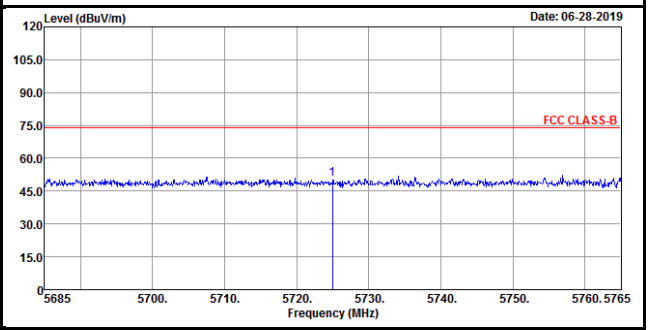
Horizontal





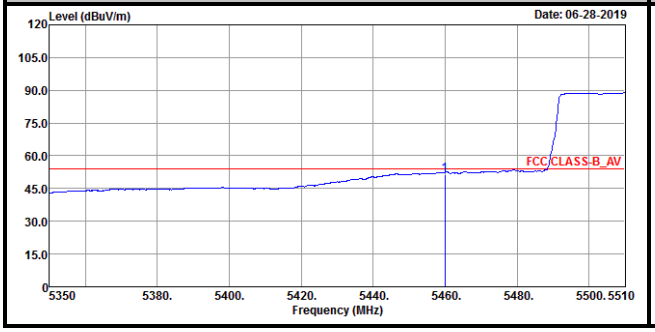
Vertical



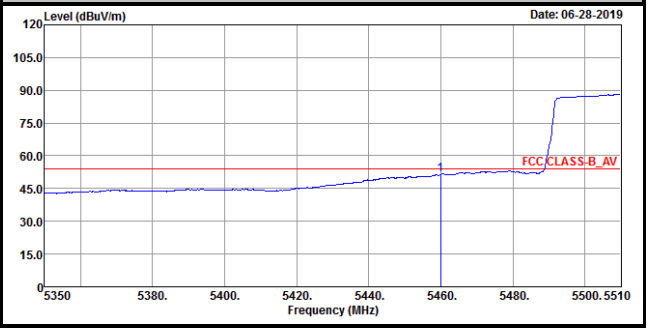


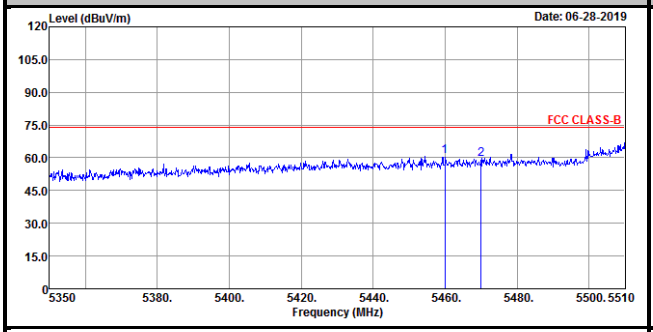
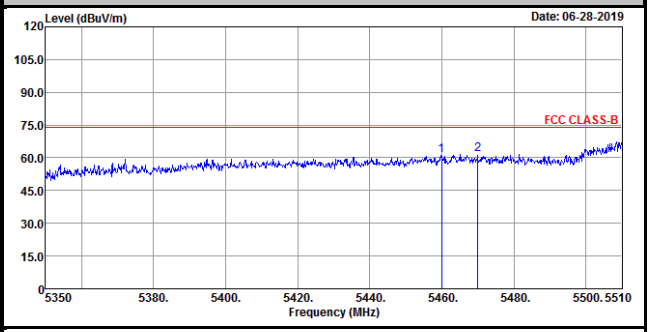
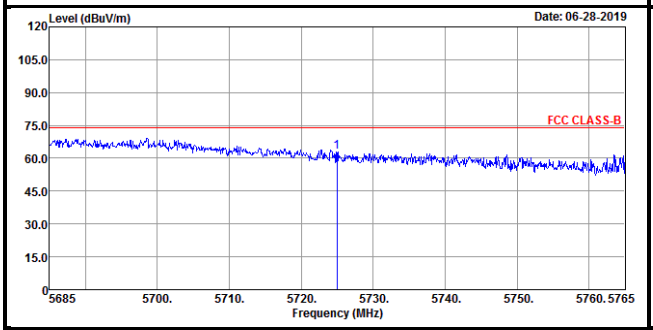
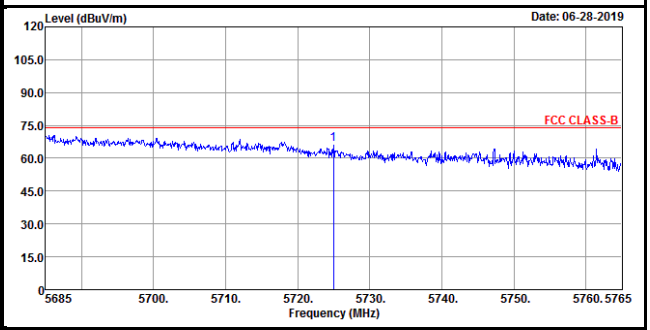
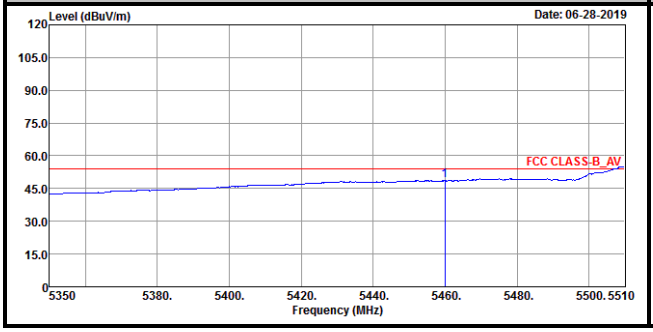
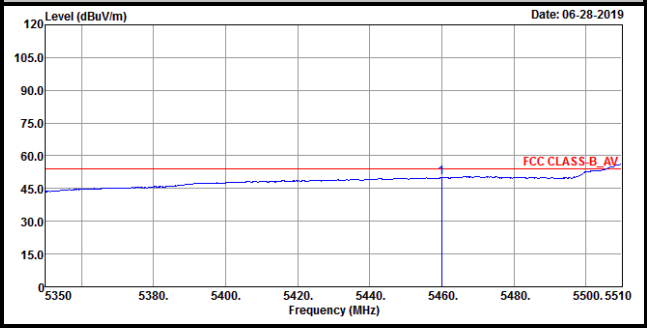
Average

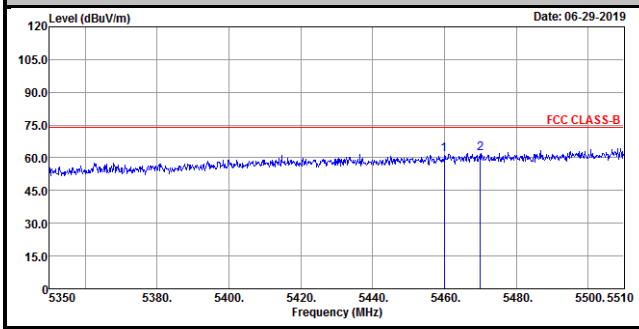
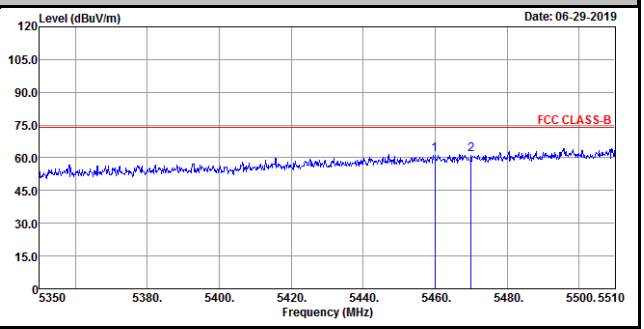
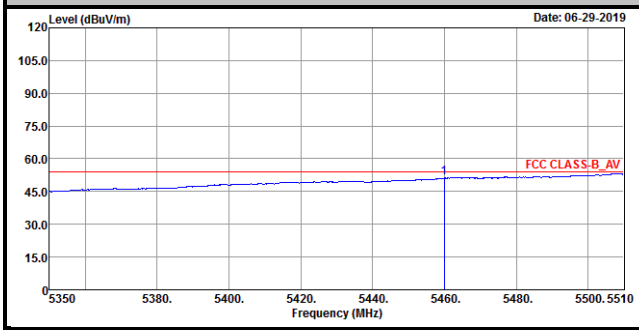
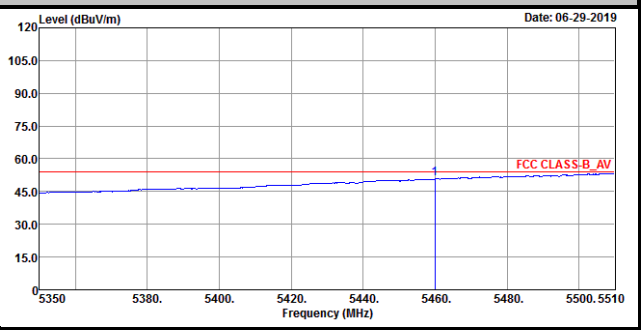
Horizontal



Vertical



Ch 122	
Peak	
Horizontal	Vertical
	
	
Average	
Horizontal	Vertical
	

Ch 138	
Peak	
Horizontal	Vertical
	
Average	
Horizontal	Vertical
	

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Lin Kou EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

--- END ---