FCC Test Report

Report No.: RF160705C01-4

FCC ID: PY7-93041M

Received Date: Jul. 05, 2016

Test Date: Jul. 19, 2016 ~ Aug. 10, 2016

Issued Date: Aug. 11, 2016

Applicant: Sony Mobile Communications Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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Release Control Record

Issue No.	Description	Date Issued
RF160705C01-4	Original Release	Aug. 11, 2016

1 Certificate of Conformity

Product: Mobile Phone

Brand: Sony

Sample Status: Identical Prototype

Applicant: Sony Mobile Communications Inc.

Test Date: Jul. 19, 2016 ~ Aug. 10, 2016

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 EMC characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Aug. 11, 2016
Gina Liu / Specialist

Approved by : _____ , **Date:** Aug. 11, 2016
Stanley Wu / Assistant Manager

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 -18.41 dB at 0.20511 MHz.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.89 dB at 5150 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
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.

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	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.44 dB
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	2.0153 dB
	200 MHz ~1000 MHz	2.0224 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	1.0121 dB
	18 GHz ~ 40 GHz	1.1508 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Mobile Phone
Brand	Sony
Status of EUT	Identical Prototype
Power Supply Rating	3.8Vdc (Embeded Battery) 5Vdc or 9Vdc or 12Vdc (Adapter)
Modulation Type	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 MCS7 802.11ac: up to V9
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	23.121 mW for 5180 ~ 5240 MHz 23.496 mW for 5260 ~ 5320 MHz 23.281 mW for 5500 ~ 5720 MHz 24.774 mW for 5745 ~ 5825 MHz
Antenna Type	PIFA antenna with -3.9 dBi gain (5180 ~ 5240 MHz) PIFA antenna with -3.9 dBi gain (5260 ~ 5320 MHz) PIFA antenna with -3.7 dBi gain (5500 ~ 5720 MHz) PIFA antenna with -4.2 dBi gain (5725 ~ 5825 MHz)
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

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

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

* The modulation and bandwidth are similar for 802.11n mode for HT20 / HT40 and 802.11ac mode for HT20 / HT40, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

2. The EUT contains following accessory devices.

Product	Brand	Model	Type	Description
Adapter	Sony	UCH12	AC-0051	I/P: 100- 240Vac, 400mA, 50~60 Hz,
Earphone	Sony	MH410c	AG-1100	1.5m non-shielded cable w/o core
USB Cable	Sony	UCB20	AI-0160	0.95m shielded cable w/o core

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer 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 **Z-plane** for 5180-5240MHz, **X-plane** for 5260-5720MHz and **Y-plane** for 5745-5825MHz.
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, 44, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 44, 48	OFDM	BPSK	MCS0
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	42	42	OFDM	BPSK	V8
-	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	MCS0
-		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	58	58	OFDM	BPSK	V8
-	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	MCS0
-		802.11n (HT40)	102 to 142	102, 110, 134, 142	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	106 to 138	106, 122,138	OFDM	BPSK	V8
-	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	MCS0
-		802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	155	155	OFDM	BPSK	V8

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	802.11ac (VHT80)	42	42	OFDM	BPSK	V8
-	5260-5320	802.11ac (VHT80)	58	58	OFDM	BPSK	V8
-	5500-5720	802.11n (HT40)	102 to 142	102	OFDM	BPSK	MCS0
	5745-5825	802.11n (HT40)	151 to 159	151	OFDM	BPSK	MCS0

Power Line Conducted Emission Test:

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

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11ac (VHT80)	42	42	OFDM	BPSK	V8

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, 44, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 44, 48	OFDM	BPSK	MCS0
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	42	42	OFDM	BPSK	V8
-	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	MCS0
-		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	58	58	OFDM	BPSK	V8
-	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	MCS0
-		802.11n (HT40)	102 to 142	102, 110, 134, 142	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	106 to 138	106, 122,138	OFDM	BPSK	V8
-	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	MCS0
-		802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	155	155	OFDM	BPSK	V8

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao, Karl Lee
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Toby Tian
APCM	25 deg. C, 65 % RH	3.8 Vdc	Wayne Lin

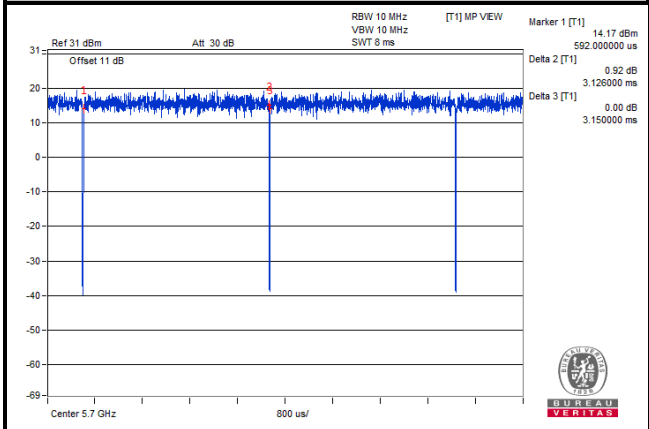
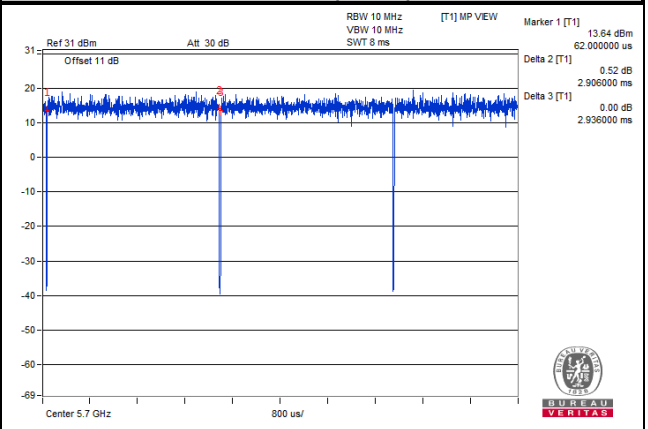
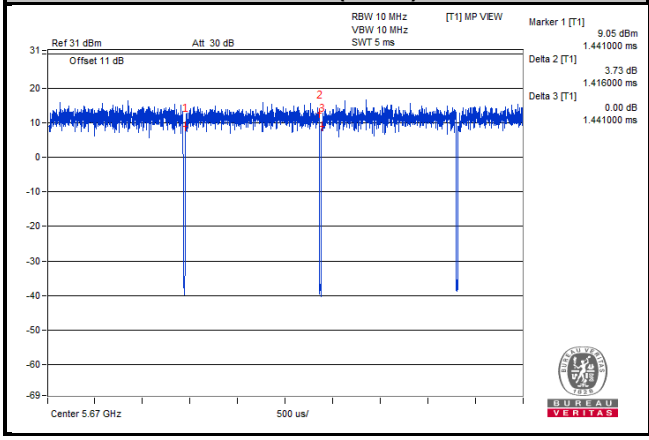
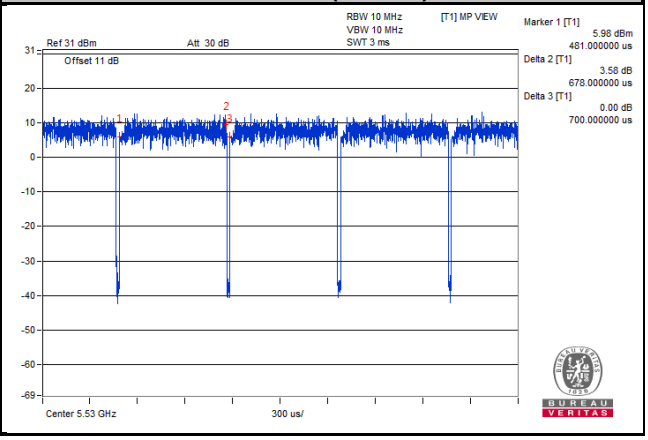
3.3 Duty Cycle of Test Signal

802.11a: Duty cycle of test signal is > 98 %, duty factor is not required.

802.11n (HT20): Duty cycle of test signal is > 98 %, duty factor is not required.

802.11n (HT40): Duty cycle of test signal is > 98 %, duty factor is not required.

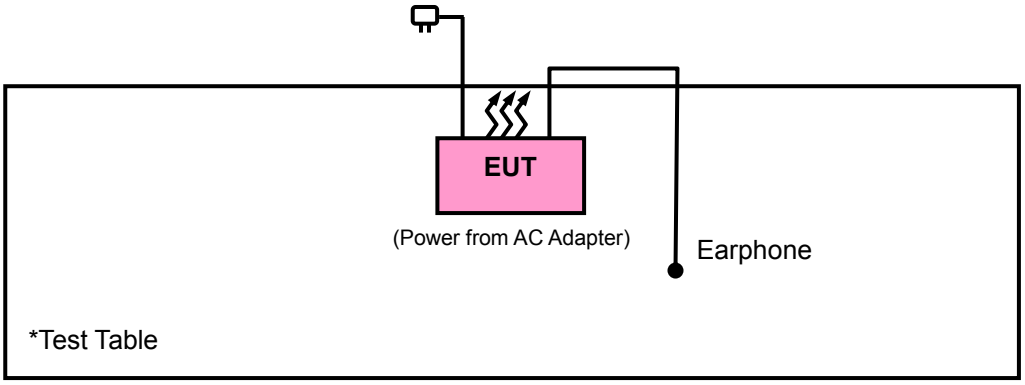
802.11ac (VHT80): Duty cycle = 678/700 = 0.969, Duty factor = 10 * log(1/0.969) = 0.14

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)
644545 D03 Guidance for IEEE 802 11ac New Rules v01
905462 D02 UNII DFS Compliance Procedures New Rules v02
789033 D02 General UNII Test Procedure New Rules V01R02
905462 D03 UNII Clients Without Radar Detection New Rules V01R01
905462 D04 Operational Modes for DFS Testing New Rules V01
594280 D01 Software Configuration Control V02R01
594280 D02 U-NII Device Security Guidance V01R03
905462 D06 802.11 Channel Plans New Rules V02
ANSI C63.10-2013

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (Certification). The test report has been issued separately.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
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 v01r02	Field Strength at 3 m	
	PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Applicable To	**EIRP Limit**	**Equivalent Field Strength at 3 m**
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK: -27 (dBm/MHz) *1 PK: -17 (dBm/MHz) *2	PK: 68.2 (dBμV/m) *1 PK: 78.2 (dBμV/m) *2

NOTE: *1 beyond 10 MHz of the band edge *2 within 10 MHz of band edge

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 Technologies	N9038A	MY51210203	Jan. 21, 2016	Jan. 20, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2015	Dec. 16, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna ETS-Lindgren	3117	00143293	Jan. 04, 2016	Jan. 03, 2017
Loop Antenna	EM-6879	269	Jul. 31, 2015	Jul. 30, 2016
Agilent Communications Tester-Wireless	8960 Series 10	MY53201073	Jul. 03, 2015	Jul. 02, 2017
Preamplifier Agilent	310N	187226	Jun. 24, 2016	Jun. 23, 2017
Preamplifier Agilent	83017A	MY39501357	Jun. 24, 2016	Jun. 23, 2017
Power Meter Anritsu	ML2495A	1232002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor Anritsu	MA2411B	1207325	Sep. 21, 2015	Sep. 20, 2016
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-400)	Jun. 24, 2016	Jun. 23, 2017
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(RFC-SMS-100-SMS-24)	Jun. 24, 2016	Jun. 23, 2017
Software BV ADT	E3 8.130425b	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA

Note:
1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HsinTien Chamber 1.
3. The horn antenna and preamplifier (model: 83017A) are used only for the measurement of emission frequency above 1 GHz if tested.
4. The FCC Site Registration No. is 149147.
5. The IC Site Registration No. is IC7450I-1.

4.1.4 Test Procedures

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 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:

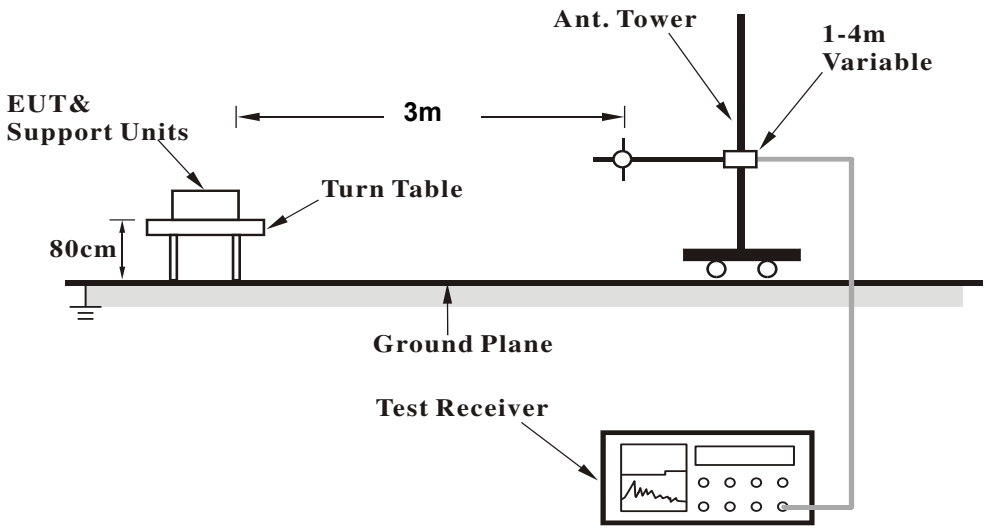
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz & 360 KHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1/T for RMS Average (Duty cycle < 98 %) for Peak detection at frequency above 1 GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 Deviation from Test Standard

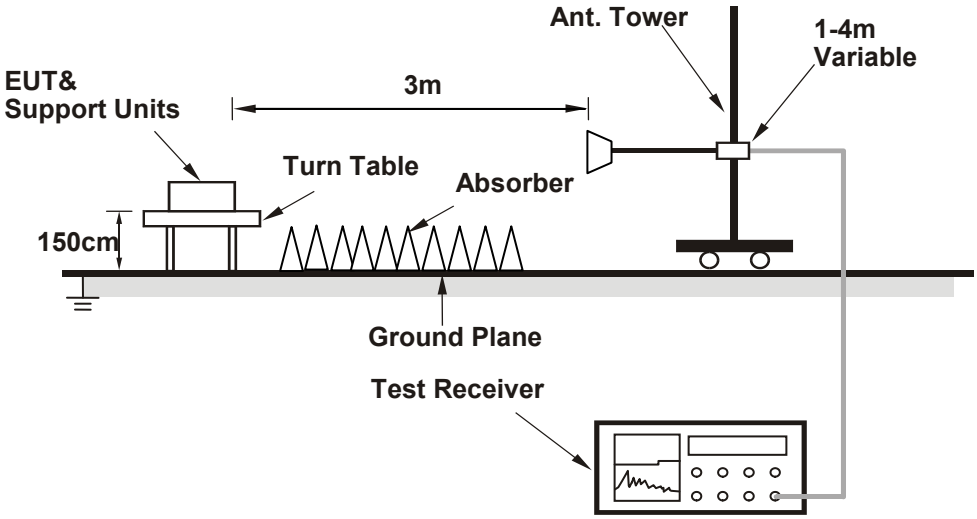
No deviation.

4.1.6 Test Set Up

<Frequency Range below 1 GHz>



<Frequency Range 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.

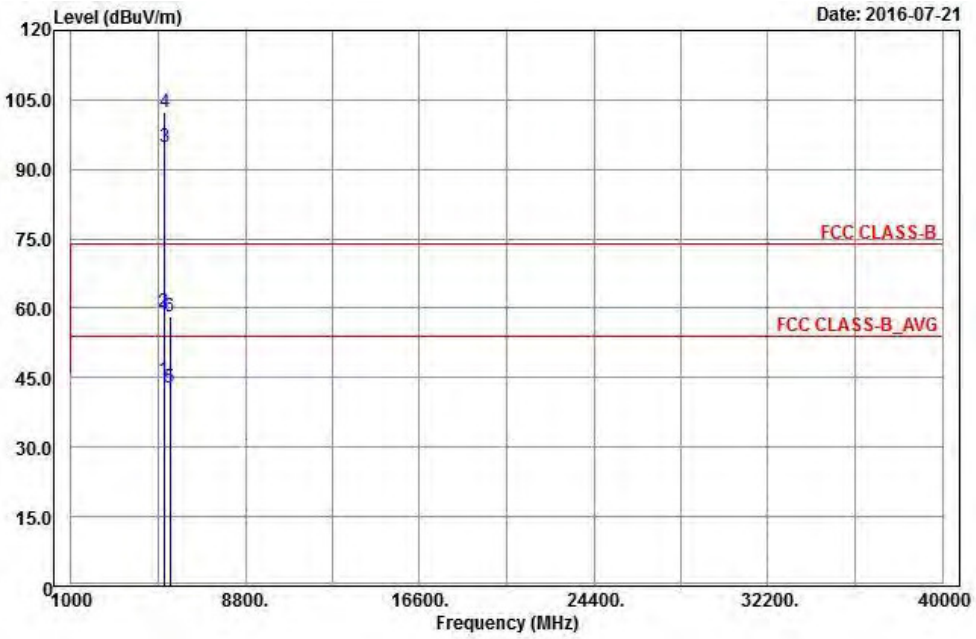
4.1.8 Test Results

Above 1 GHz Data：

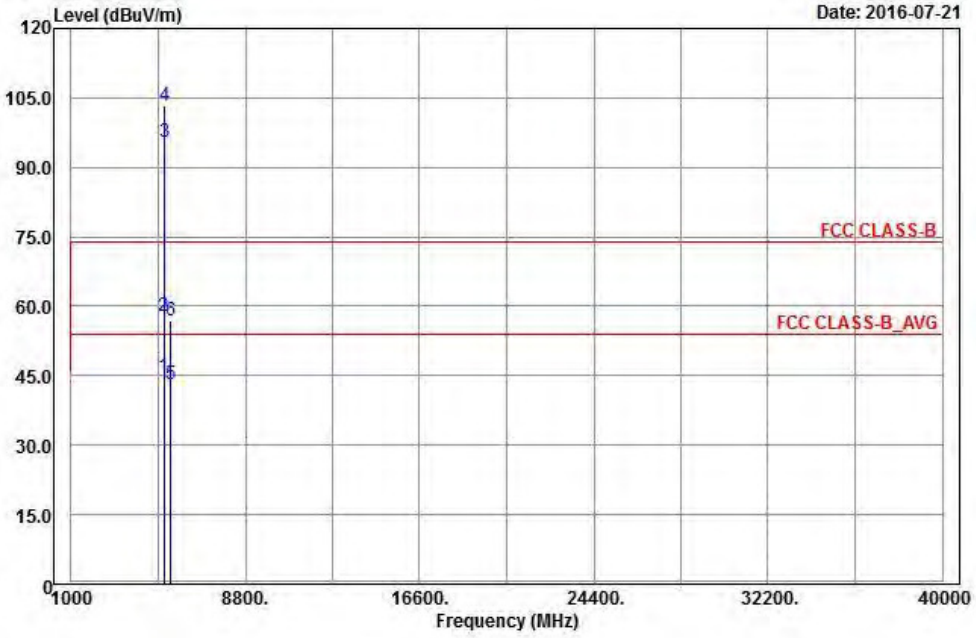
802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 36	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



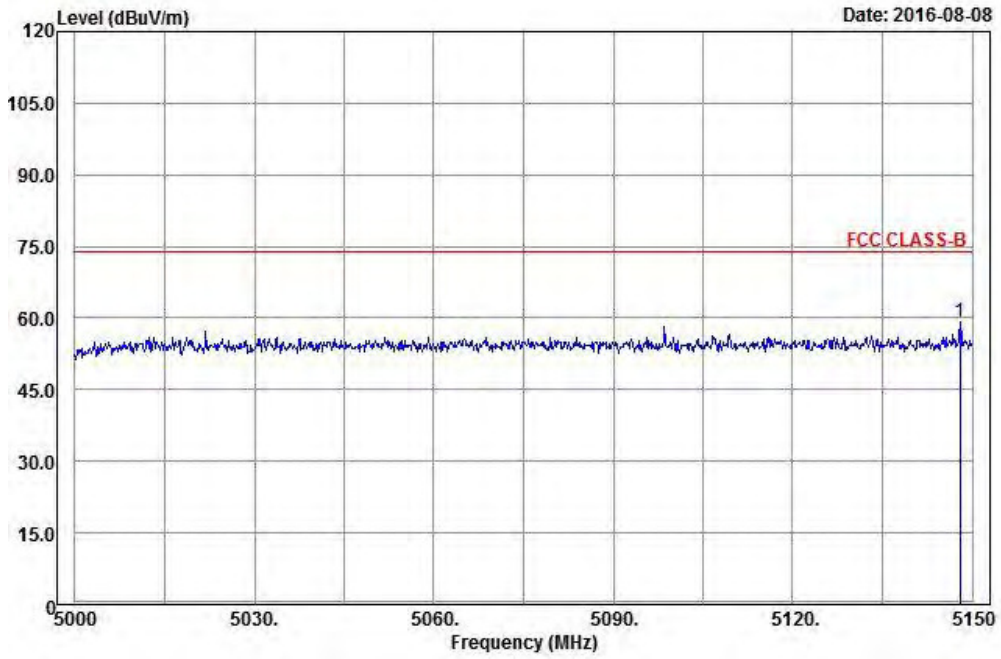
Vertical



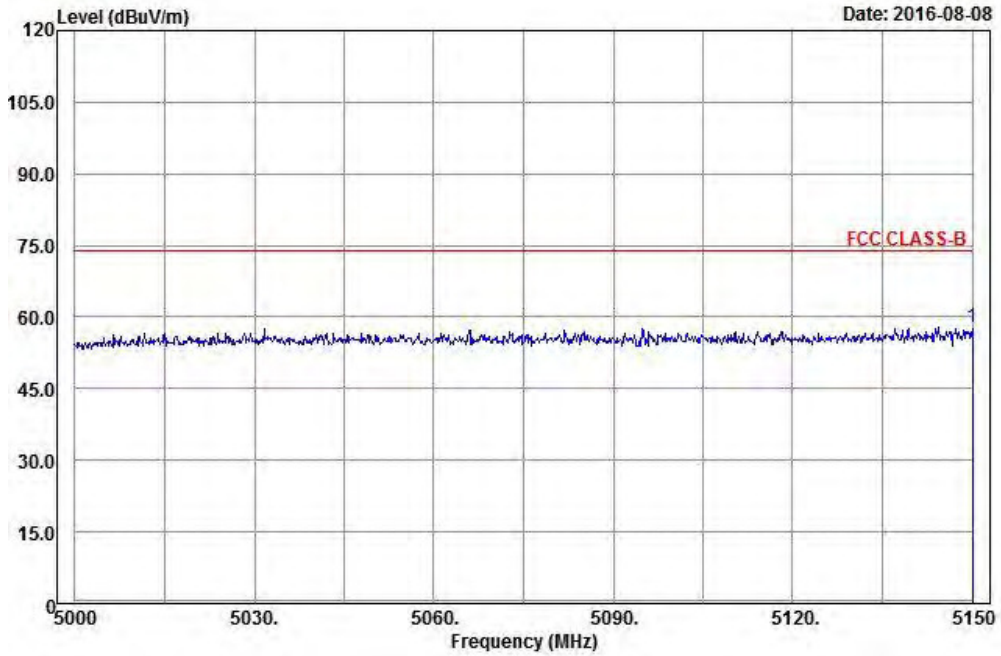
BandEdge

Peak

Horizontal

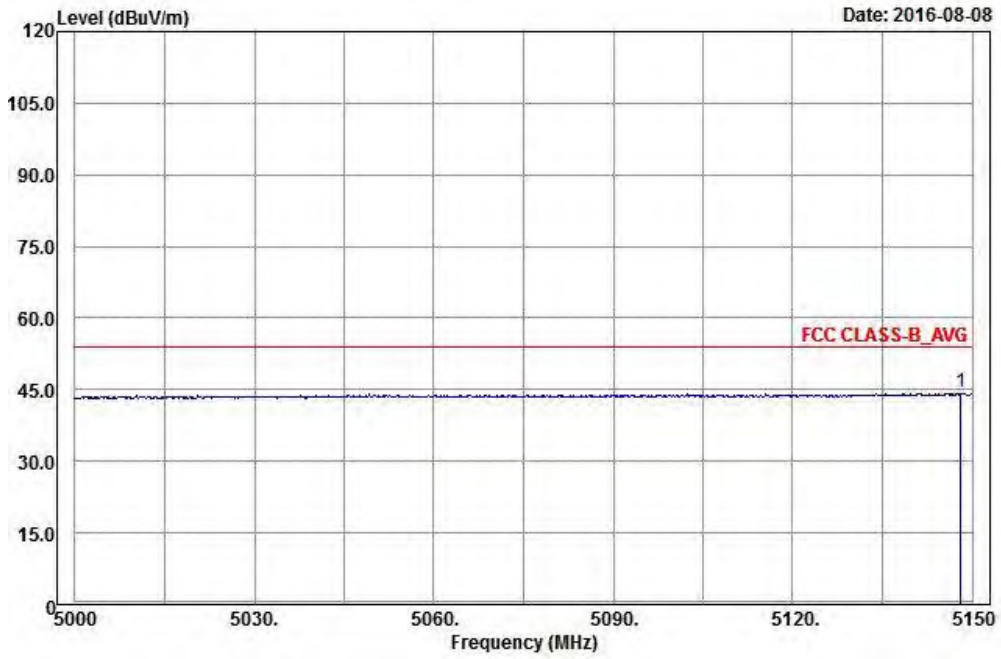


Vertical

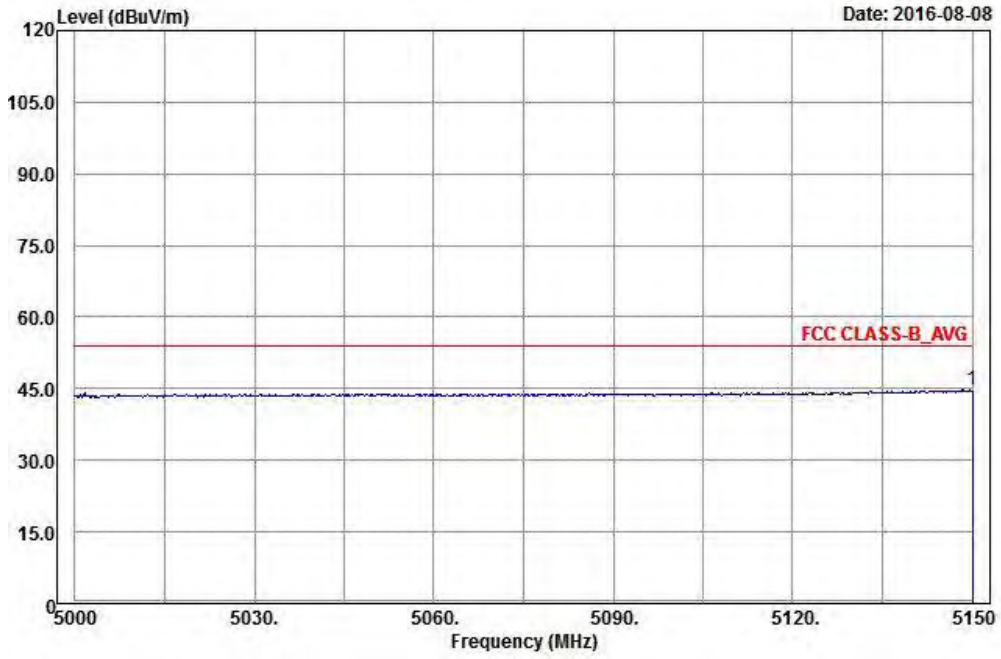


Average

Horizontal



Vertical



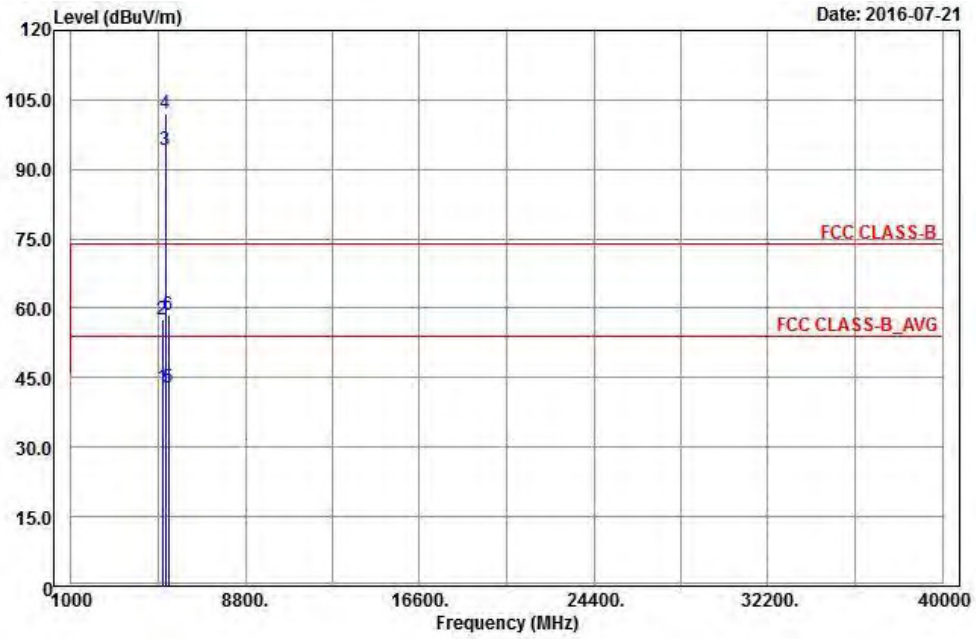
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5148	44.34	36.09	54	-9.66	34.12	8.13	34	100	337	Average
5148	59.07	50.82	74	-14.93	34.12	8.13	34	100	337	Peak
5180	94.86	86.55			34.15	8.16	34	100	337	Average
5180	102.29	93.98			34.15	8.16	34	100	337	Peak
5410	42.87	34.15	54	-11.13	34.32	8.44	34.04	100	337	Average
5410	58.18	49.46	74	-15.82	34.32	8.44	34.04	100	337	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	44.69	36.44	54	-9.31	34.12	8.13	34	136	101	Average
5150	58.03	49.78	74	-15.97	34.12	8.13	34	136	101	Peak
5180	95.61	87.3			34.15	8.16	34	136	101	Average
5180	103.4	95.09			34.15	8.16	34	136	101	Peak
5450	43.15	34.33	54	-10.85	34.36	8.51	34.05	136	101	Average
5450	57.05	48.23	74	-16.95	34.36	8.51	34.05	136	101	Peak

Remarks:

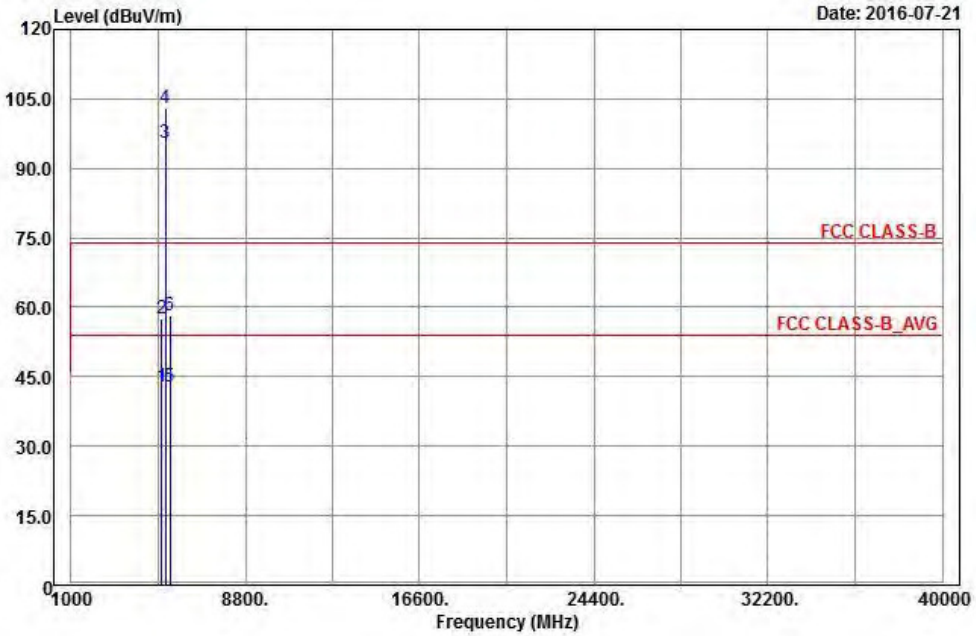
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5180 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 44	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



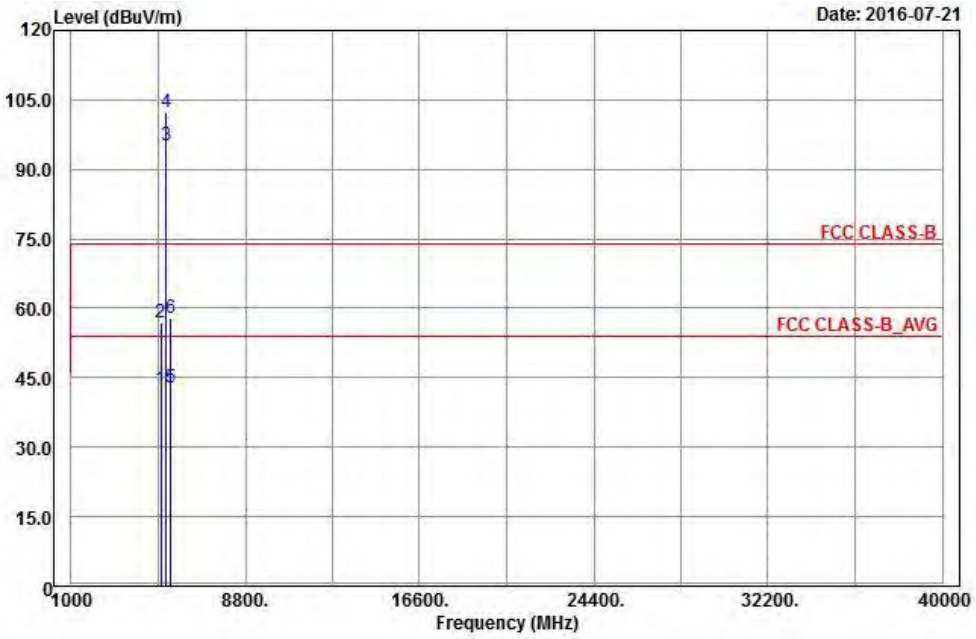
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5090	42.71	34.54	54	-11.29	34.08	8.07	33.98	100	335	Average
5090	57.42	49.25	74	-16.58	34.08	8.07	33.98	100	335	Peak
5220	94.04	85.65			34.17	8.22	34	100	335	Average
5220	101.99	93.6			34.17	8.22	34	100	335	Peak
5350	42.68	34.05	54	-11.32	34.28	8.38	34.03	100	335	Average
5350	58.46	49.83	74	-15.54	34.28	8.38	34.03	100	335	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5056	42.71	34.61	54	-11.29	34.05	8.03	33.98	128	90	Average
5056	57.52	49.42	74	-16.48	34.05	8.03	33.98	128	90	Peak
5220	95.38	86.99			34.17	8.22	34	128	90	Average
5220	102.85	94.46			34.17	8.22	34	128	90	Peak
5418	42.81	34.08	54	-11.19	34.33	8.44	34.04	128	90	Average
5418	58.34	49.61	74	-15.66	34.33	8.44	34.04	128	90	Peak

Remarks:

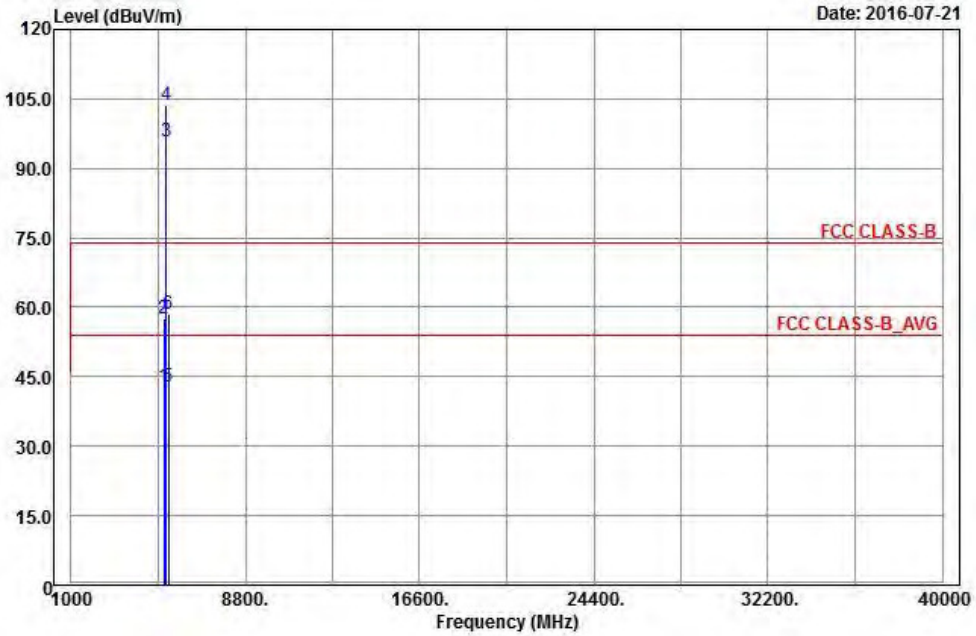
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5220 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 48	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



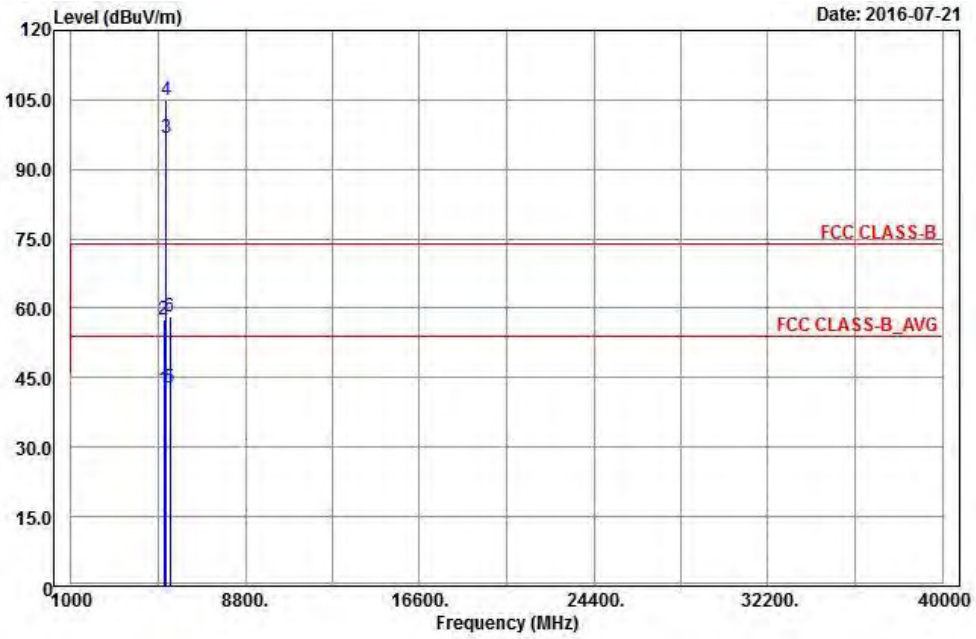
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5016	42.56	34.55	54	-11.44	34.01	7.97	33.97	100	335	Average
5016	56.95	48.94	74	-17.05	34.01	7.97	33.97	100	335	Peak
5240	95.02	86.58			34.19	8.26	34.01	100	335	Average
5240	102.22	93.78			34.19	8.26	34.01	100	335	Peak
5456	42.86	34.04	54	-11.14	34.36	8.51	34.05	100	335	Average
5456	57.97	49.15	74	-16.03	34.36	8.51	34.05	100	335	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5144	42.75	34.5	54	-11.25	34.12	8.13	34	121	98	Average
5144	57.42	49.17	74	-16.58	34.12	8.13	34	121	98	Peak
5240	95.95	87.51			34.19	8.26	34.01	121	98	Average
5240	103.59	95.15			34.19	8.26	34.01	121	98	Peak
5350	42.72	34.09	54	-11.28	34.28	8.38	34.03	121	98	Average
5350	58.48	49.85	74	-15.52	34.28	8.38	34.03	121	98	Peak

Remarks:

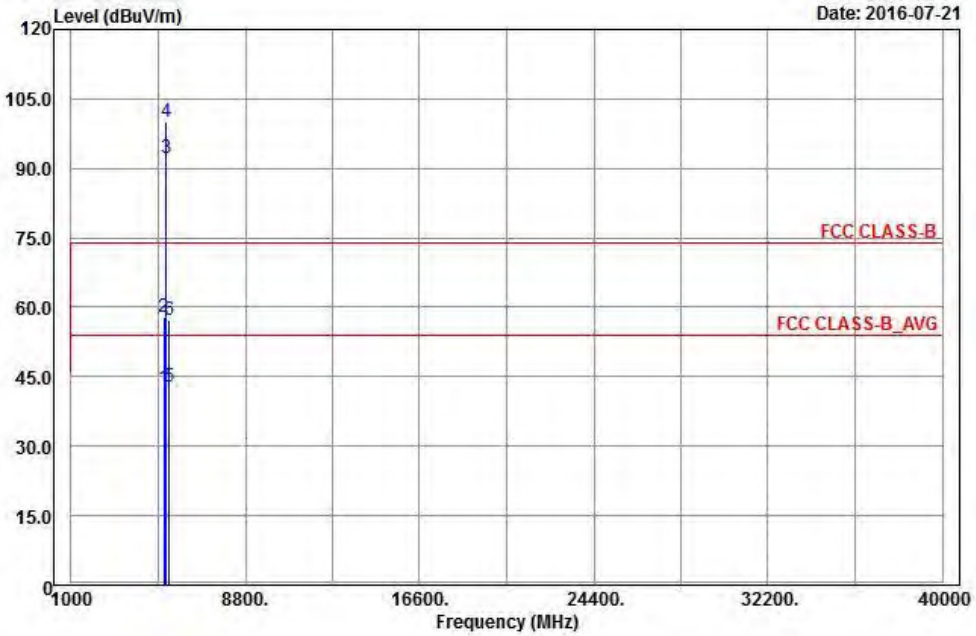
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5240 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 52	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



Vertical



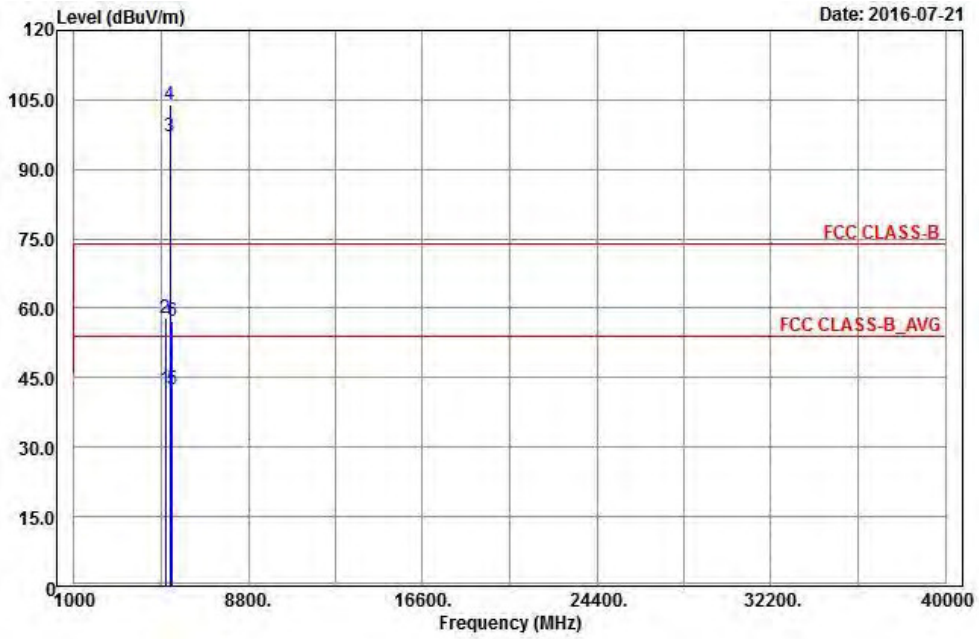
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5142	42.65	34.39	54	-11.35	34.12	8.13	33.99	101	120	Average
5142	57.7	49.44	74	-16.3	34.12	8.13	33.99	101	120	Peak
5260	96.77	88.31			34.21	8.26	34.01	101	120	Average
5260	104.95	96.49			34.21	8.26	34.01	101	120	Peak
5440	43	34.21	54	-11	34.35	8.48	34.04	101	120	Average
5440	58.18	49.39	74	-15.82	34.35	8.48	34.04	101	120	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5138	42.44	34.19	54	-11.56	34.11	8.13	33.99	113	249	Average
5138	58.01	49.76	74	-15.99	34.11	8.13	33.99	113	249	Peak
5260	92.2	83.74			34.21	8.26	34.01	113	249	Average
5260	100.06	91.6			34.21	8.26	34.01	113	249	Peak
5386	42.74	34.06	54	-11.26	34.31	8.41	34.04	113	249	Average
5386	57.28	48.6	74	-16.72	34.31	8.41	34.04	113	249	Peak

Remarks:

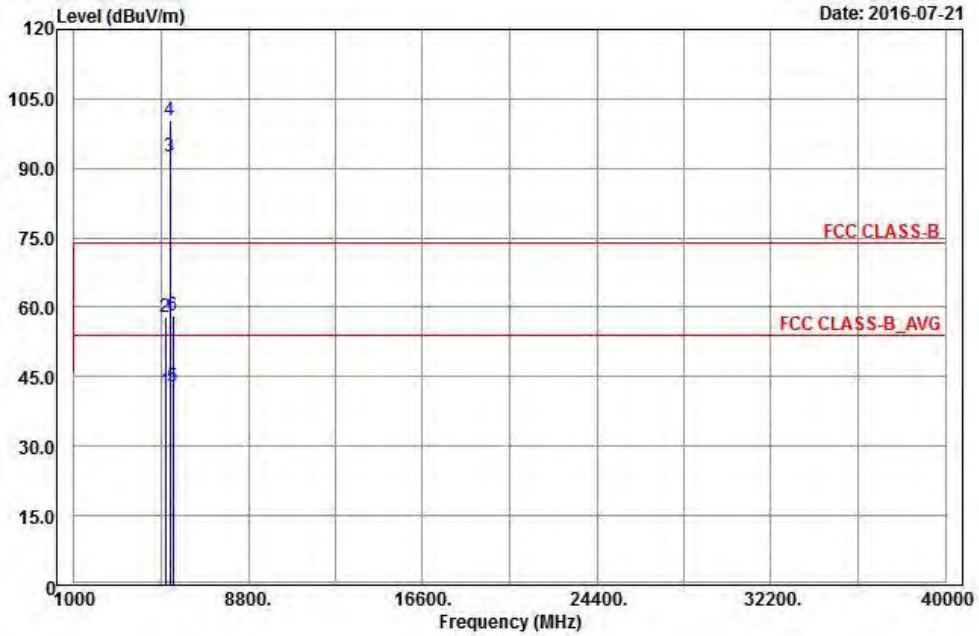
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5260 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 60	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



Vertical



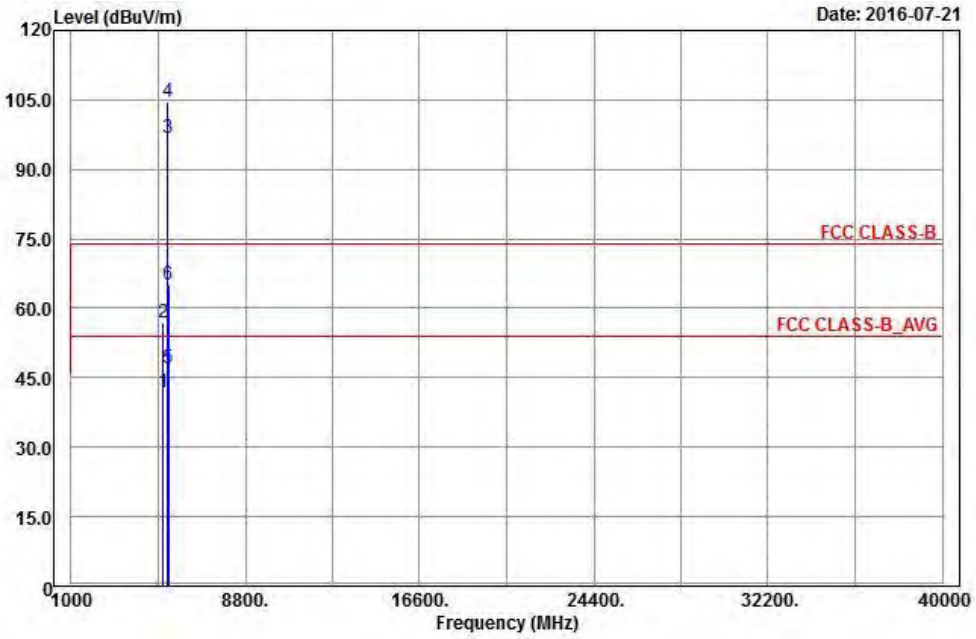
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5088	42.35	34.19	54	-11.65	34.07	8.07	33.98	114	120	Average
5088	57.81	49.65	74	-16.19	34.07	8.07	33.98	114	120	Peak
5300	96.96	88.42			34.24	8.32	34.02	114	120	Average
5300	104.13	95.59			34.24	8.32	34.02	114	120	Peak
5380	42.57	33.89	54	-11.43	34.31	8.41	34.04	114	120	Average
5380	57.17	48.49	74	-16.83	34.31	8.41	34.04	114	120	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5080	41.96	33.84	54	-12.04	34.07	8.03	33.98	111	249	Average
5080	57.9	49.78	74	-16.1	34.07	8.03	33.98	111	249	Peak
5300	92.66	84.12			34.24	8.32	34.02	111	249	Average
5300	100.53	91.99			34.24	8.32	34.02	111	249	Peak
5438	42.68	33.89	54	-11.32	34.35	8.48	34.04	111	249	Average
5438	58.1	49.31	74	-15.9	34.35	8.48	34.04	111	249	Peak

Remarks:

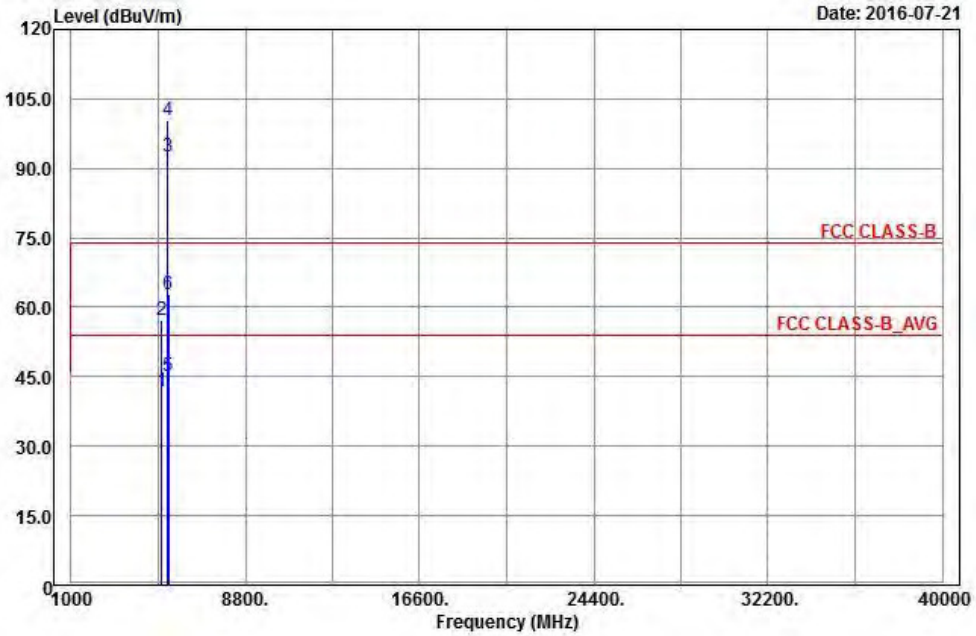
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5300 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 64	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



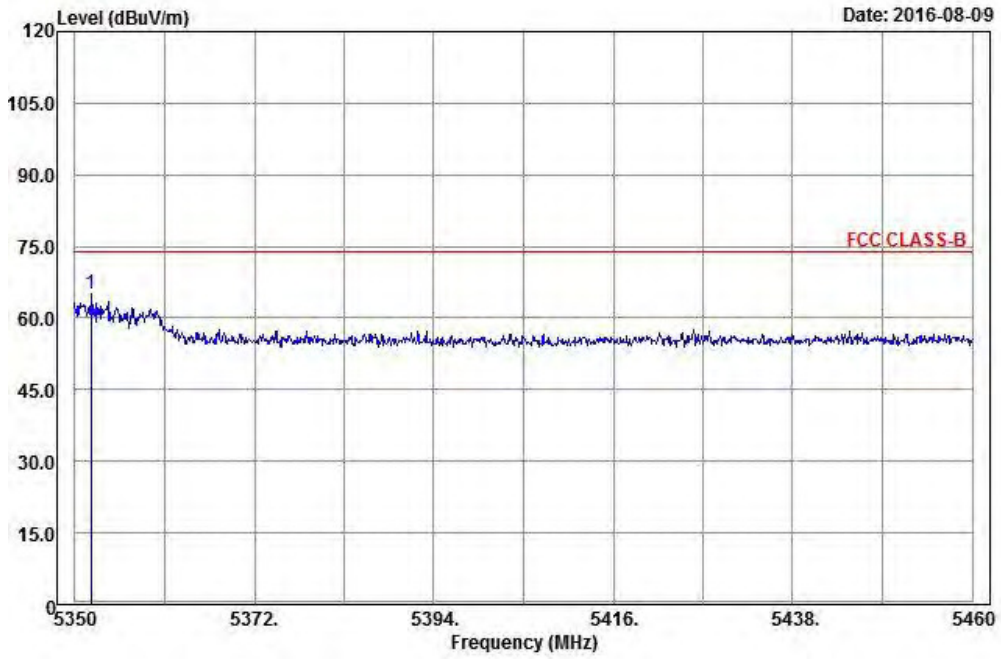
Vertical



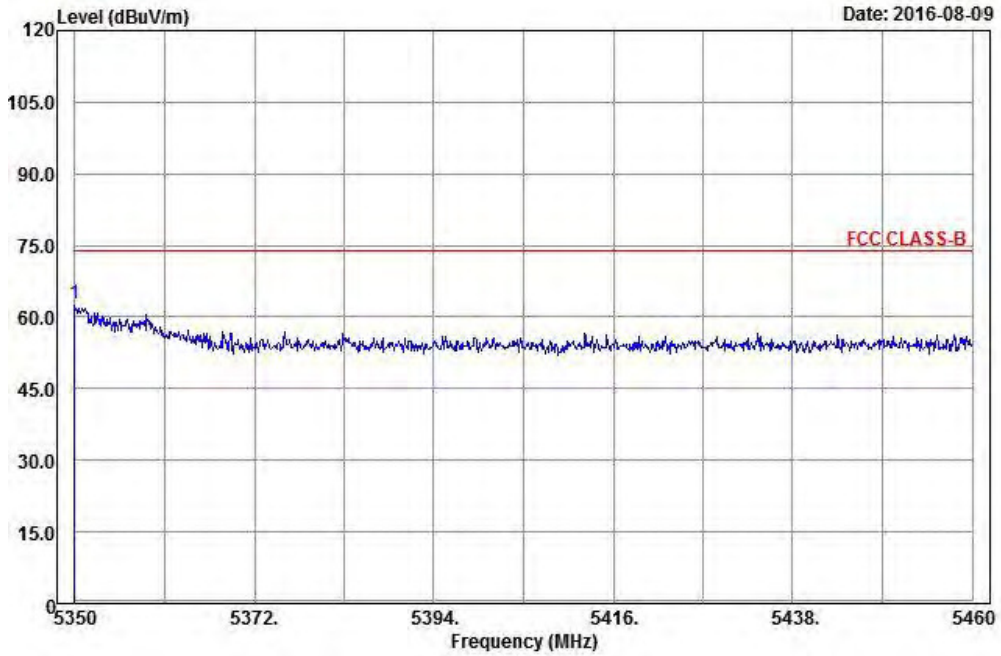
BandEdge

Peak

Horizontal

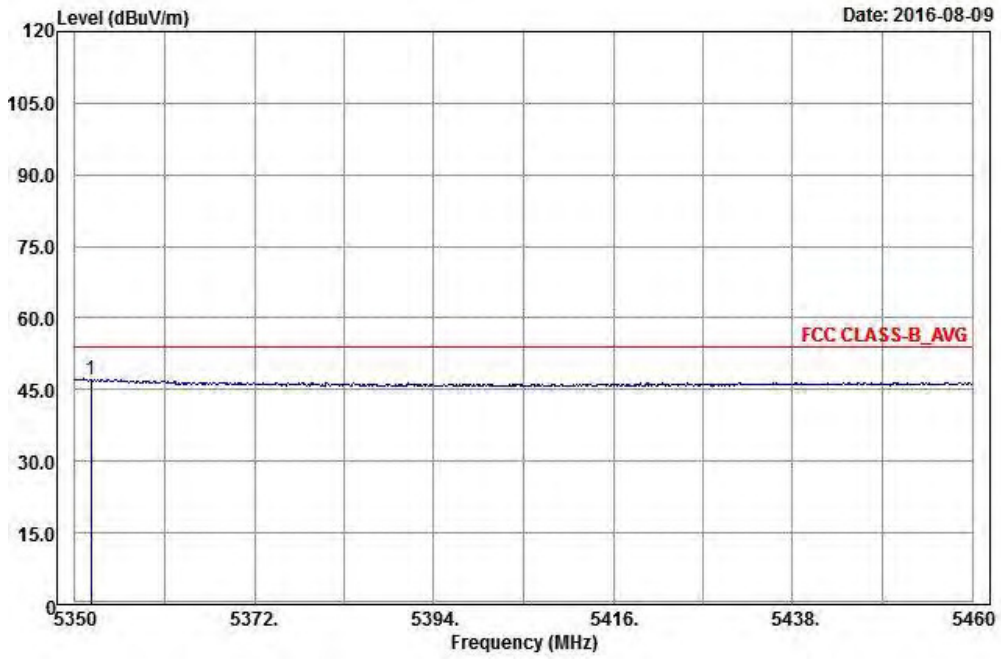


Vertical

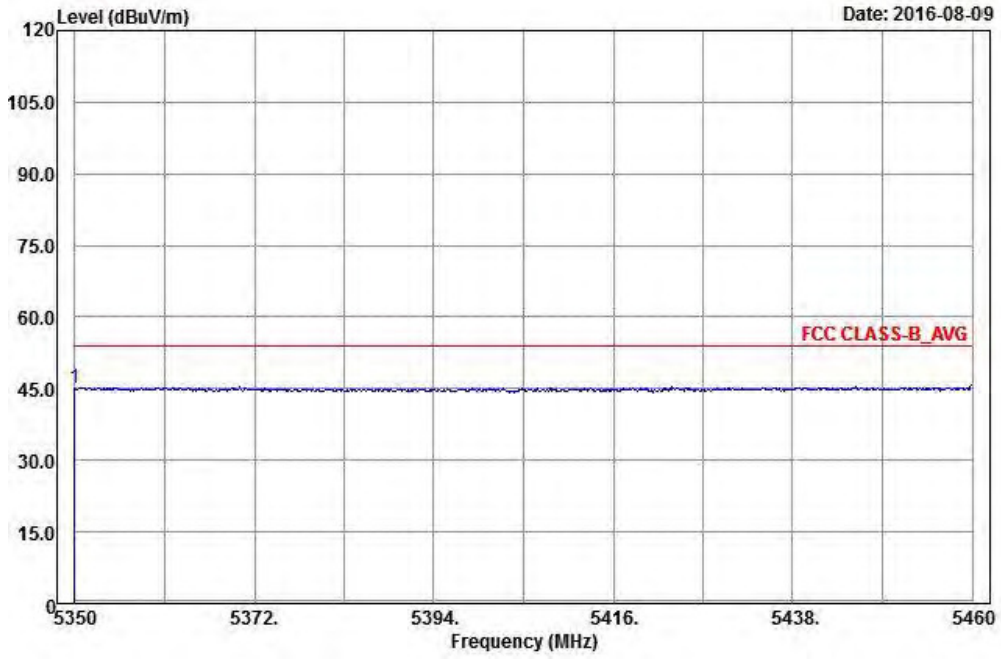


Average

Horizontal



Vertical



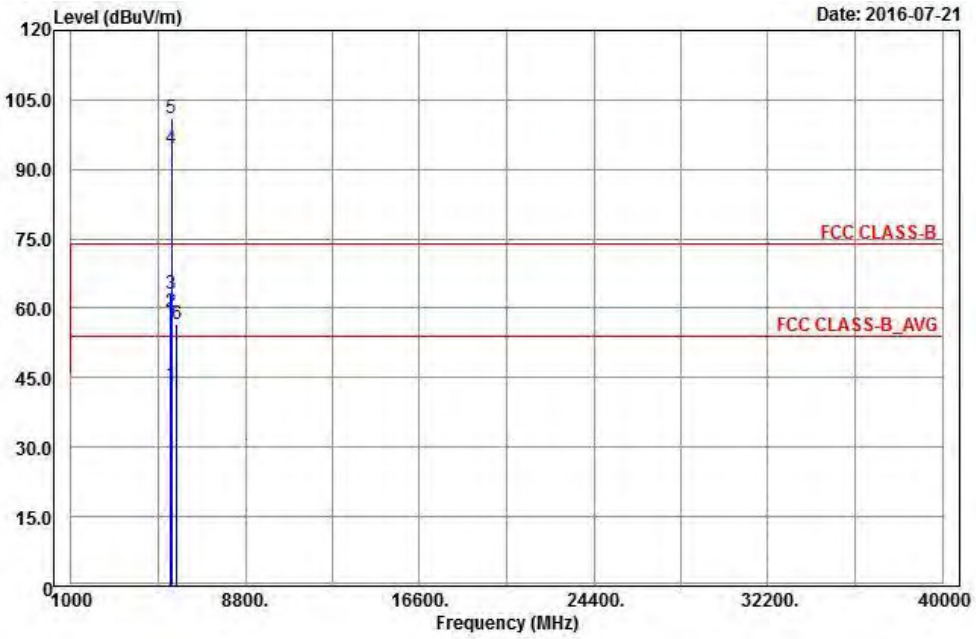
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5104	41.96	33.8	54	-12.04	34.08	8.07	33.99	100	120	Average
5104	56.98	48.82	74	-17.02	34.08	8.07	33.99	100	120	Peak
5320	96.8	88.22			34.25	8.35	34.02	100	120	Average
5320	104.68	96.1			34.25	8.35	34.02	100	120	Peak
5352	47.16	38.53	54	-6.84	34.28	8.38	34.03	100	120	Average
5352	65.18	56.55	74	-8.82	34.28	8.38	34.03	100	120	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5046	41.84	33.78	54	-12.16	34.04	8	33.98	111	249	Average
5046	57.25	49.19	74	-16.75	34.04	8	33.98	111	249	Peak
5320	92.6	84.02			34.25	8.35	34.02	111	249	Average
5320	100.4	91.82			34.25	8.35	34.02	111	249	Peak
5350	45.16	36.53	54	-8.84	34.28	8.38	34.03	111	249	Average
5350	62.79	54.16	74	-11.21	34.28	8.38	34.03	111	249	Peak

Remarks:

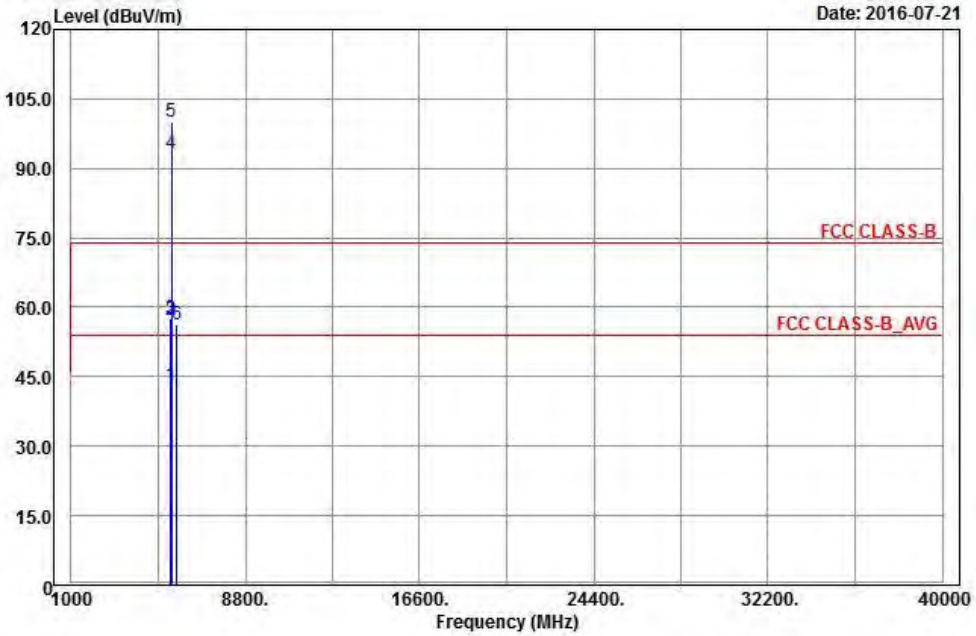
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5320 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 100	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



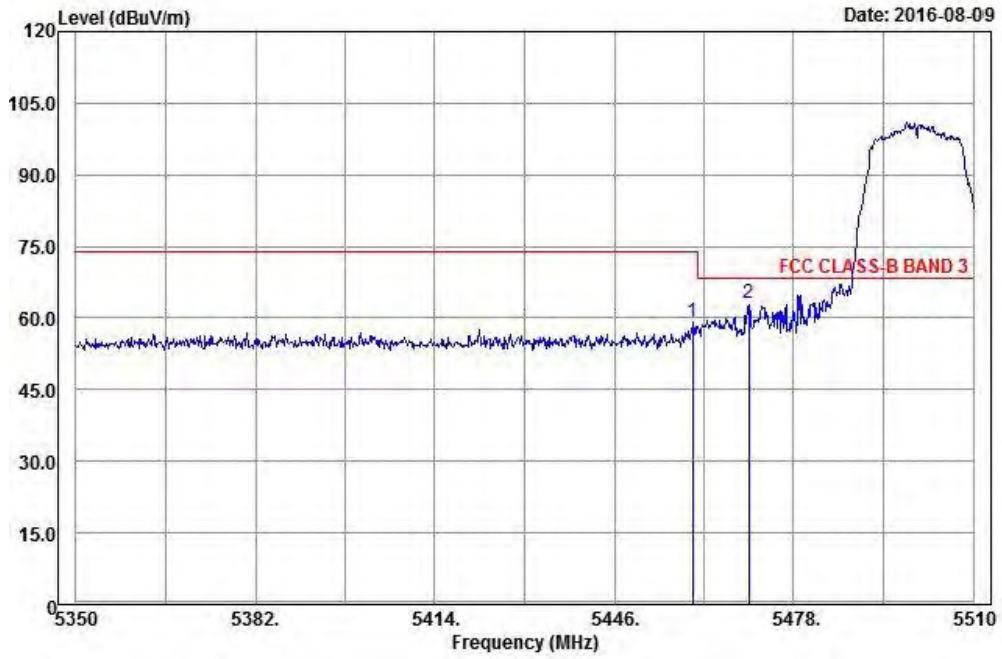
Vertical



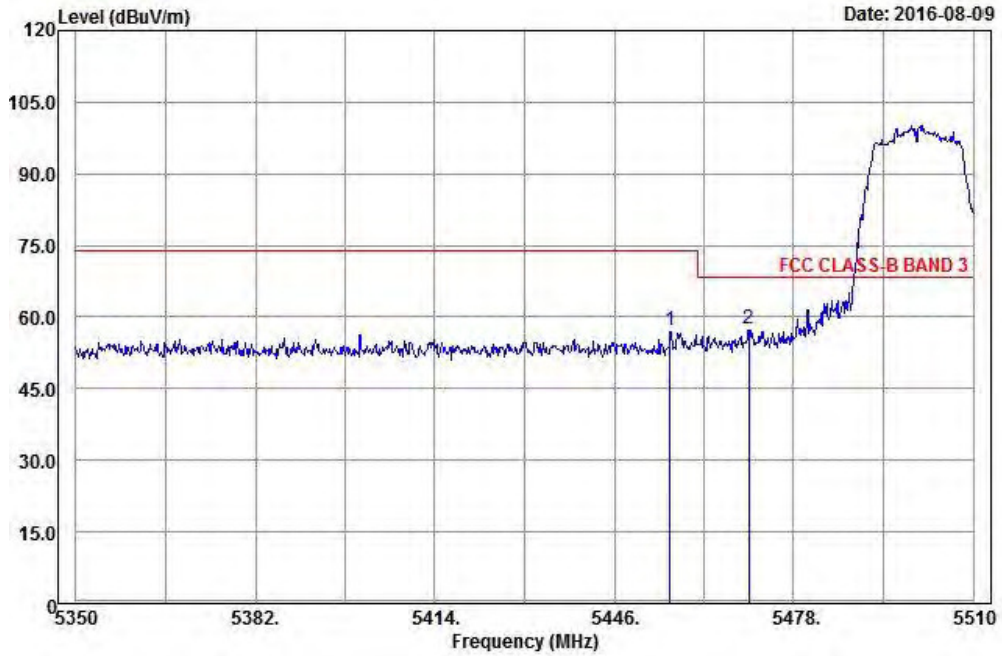
BandEdge

Peak

Horizontal

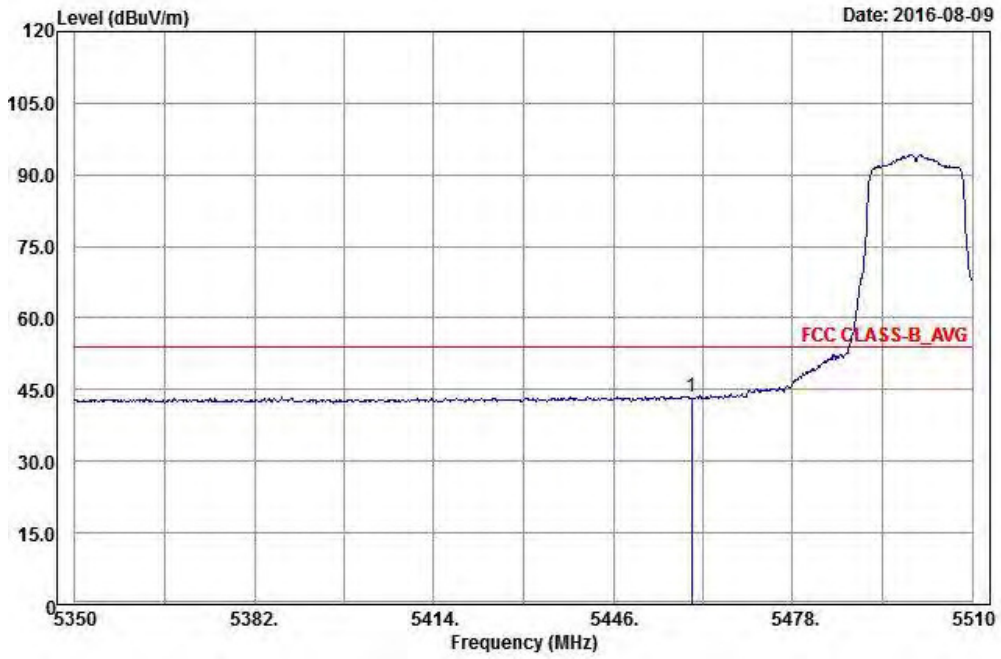


Vertical

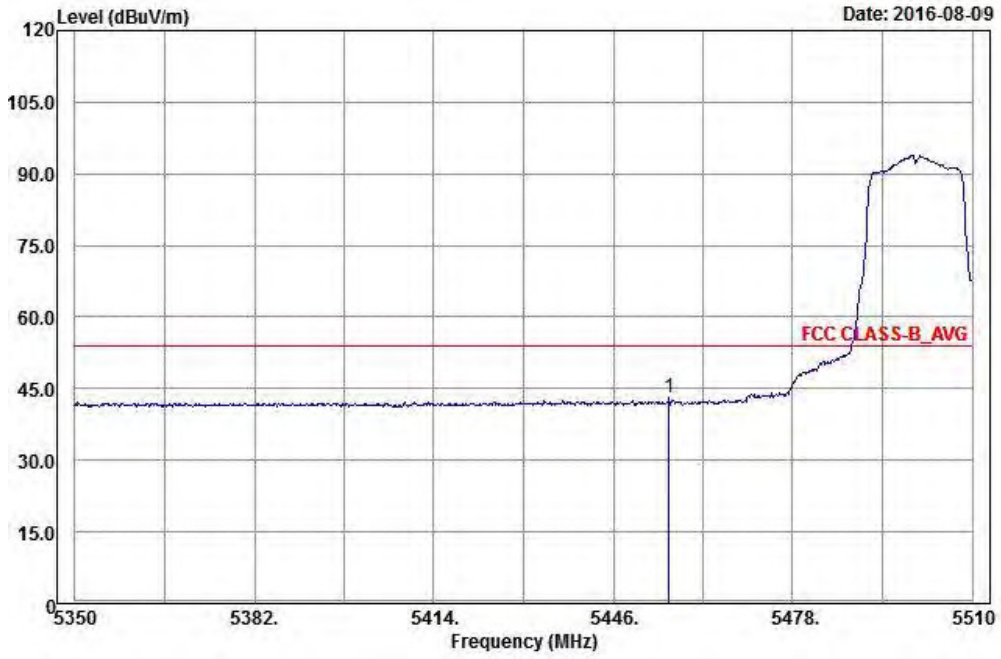


Average

Horizontal



Vertical



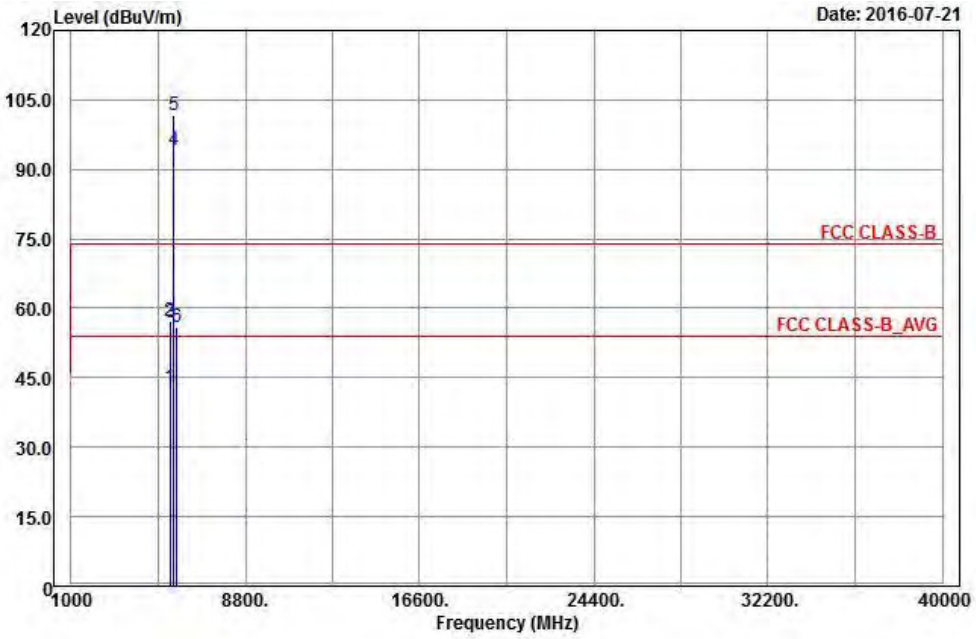
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	43.42	34.6	54	-10.58	34.36	8.51	34.05	226	36	Average
5460	59.14	50.32	74	-14.86	34.36	8.51	34.05	226	36	Peak
5470	62.97	54.14	68.2	-5.23	34.37	8.51	34.05	226	36	Peak
5500	94.47	85.55			34.4	8.57	34.05	226	36	Average
5500	101.14	92.22			34.4	8.57	34.05	226	36	Peak
5725	56.54	47.38	68.2	-11.66	34.62	8.65	34.11	226	36	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5456	43.02	34.2	54	-10.98	34.36	8.51	34.05	100	28	Average
5456	57.08	48.26	74	-16.92	34.36	8.51	34.05	100	28	Peak
5470	57.64	48.81	68.2	-10.56	34.37	8.51	34.05	100	28	Peak
5500	93.07	84.15			34.4	8.57	34.05	100	28	Average
5500	100.07	91.15			34.4	8.57	34.05	100	28	Peak
5725	56.31	47.15	68.2	-11.89	34.62	8.65	34.11	100	28	Peak

Remarks:

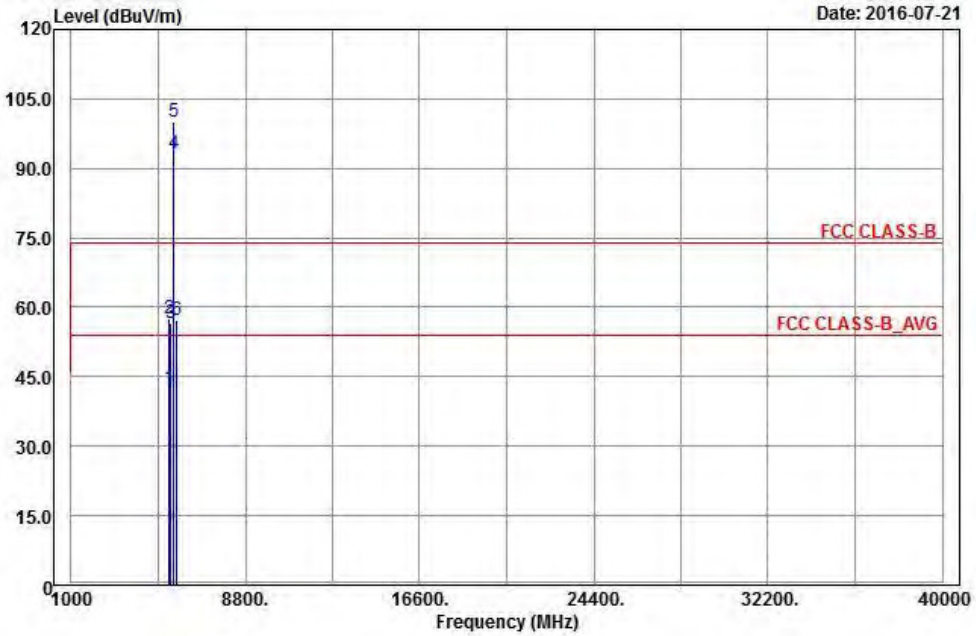
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5500 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 116	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



Vertical



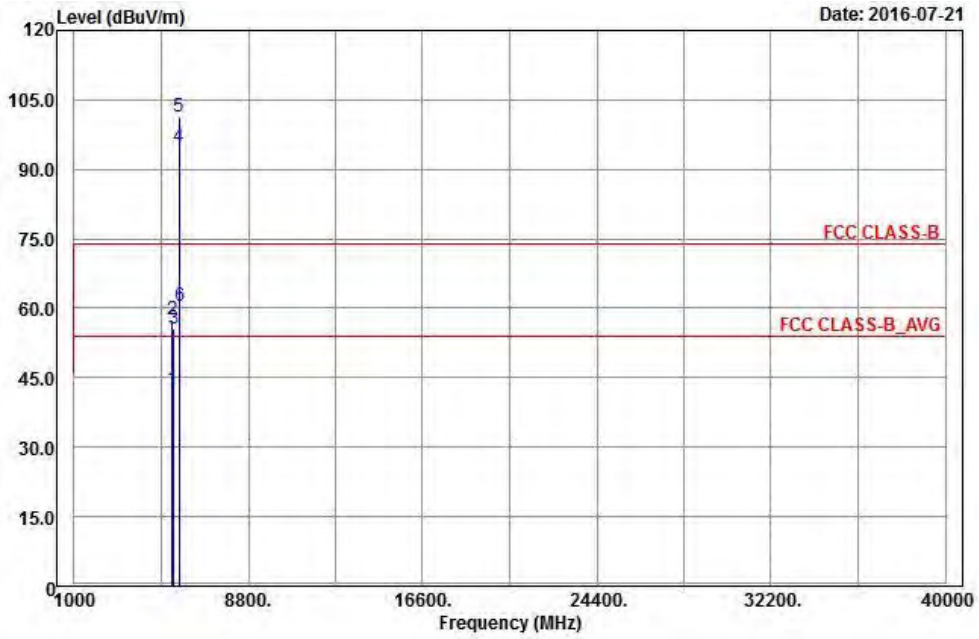
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5424	42.83	34.06	54	-11.17	34.33	8.48	34.04	226	36	Average
5424	57.35	48.58	74	-16.65	34.33	8.48	34.04	226	36	Peak
5470	56.91	48.08	68.2	-11.29	34.37	8.51	34.05	226	36	Peak
5580	94.24	85.25			34.47	8.6	34.08	226	36	Average
5580	101.66	92.67			34.47	8.6	34.08	226	36	Peak
5725	55.85	46.69	68.2	-12.35	34.62	8.65	34.11	226	36	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5402	42.62	33.9	54	-11.38	34.32	8.44	34.04	100	28	Average
5402	57.42	48.7	74	-16.58	34.32	8.44	34.04	100	28	Peak
5470	56.49	47.66	68.2	-11.71	34.37	8.51	34.05	100	28	Peak
5580	93.1	84.11			34.47	8.6	34.08	100	28	Average
5580	100.06	91.07			34.47	8.6	34.08	100	28	Peak
5725	57.31	48.15	68.2	-10.89	34.62	8.65	34.11	100	28	Peak

Remarks:

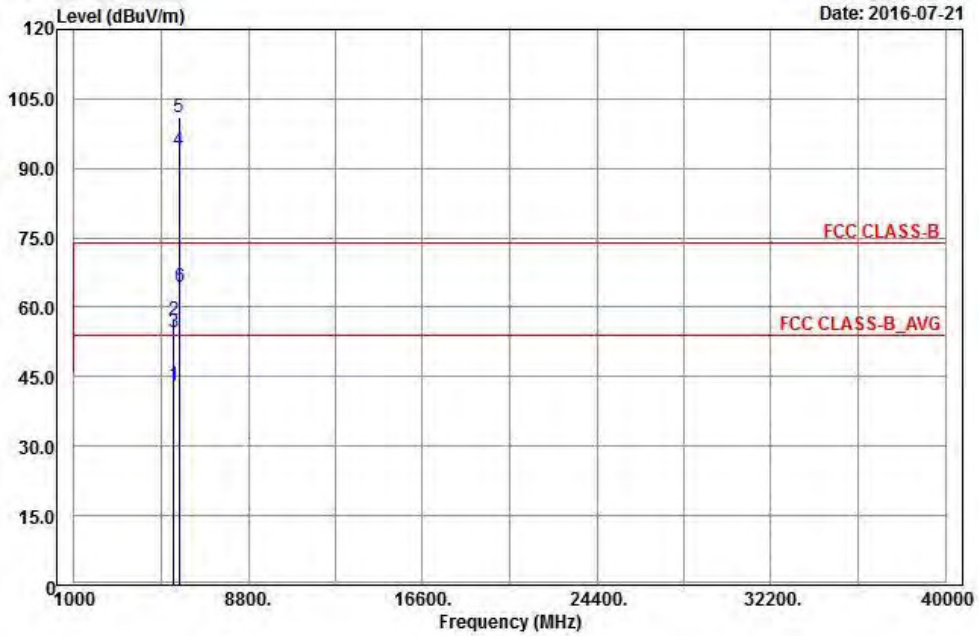
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5580 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 140	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



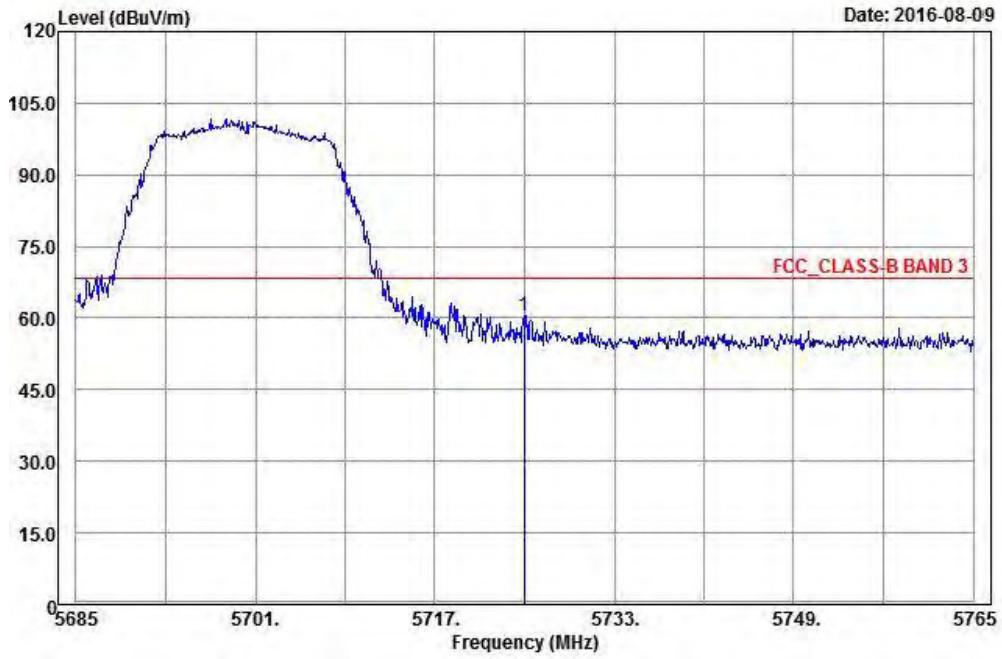
Vertical



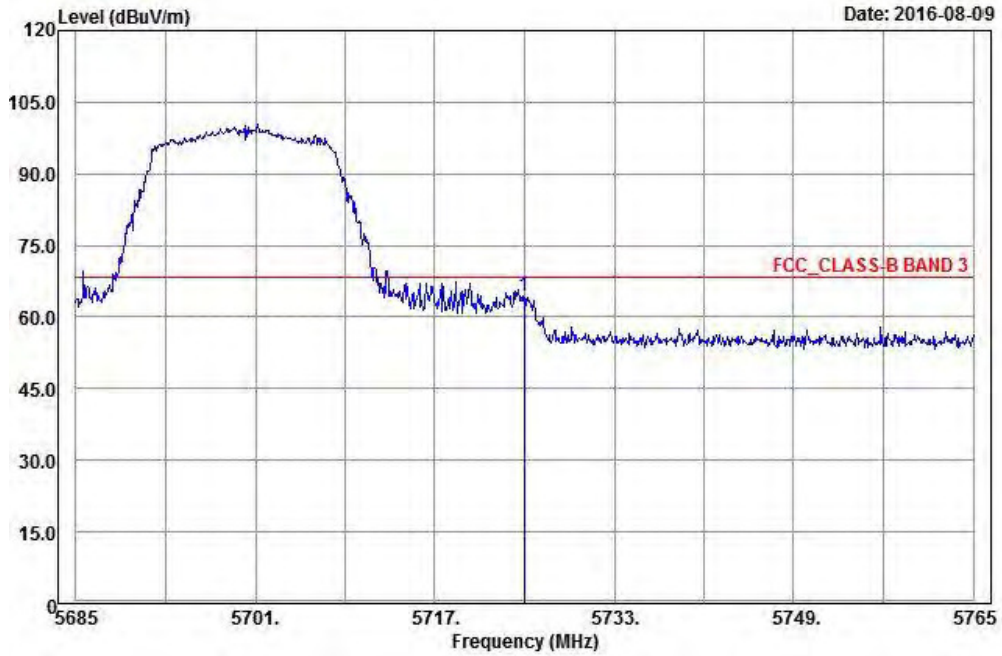
BandEdge

Peak

Horizontal



Vertical



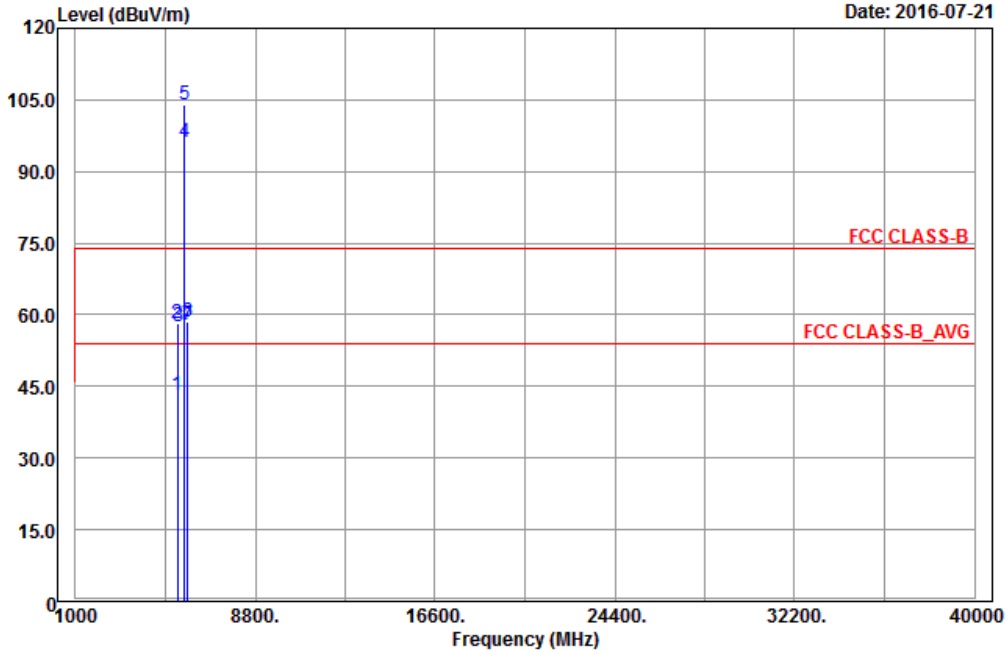
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5390	42.55	33.87	54	-11.45	34.31	8.41	34.04	202	36	Average
5390	57.62	48.94	74	-16.38	34.31	8.41	34.04	202	36	Peak
5470	55.71	46.88	68.2	-12.49	34.37	8.51	34.05	202	36	Peak
5700	94.78	85.65			34.59	8.64	34.1	202	36	Average
5700	101.24	92.11			34.59	8.64	34.1	202	36	Peak
5725	60.41	51.25	68.2	-7.79	34.62	8.65	34.11	202	36	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5456	43.03	34.21	54	-10.97	34.36	8.51	34.05	100	28	Average
5456	57.08	48.26	74	-16.92	34.36	8.51	34.05	100	28	Peak
5470	54.58	45.75	68.2	-13.62	34.37	8.51	34.05	100	28	Peak
5700	93.93	84.8			34.59	8.64	34.1	100	28	Average
5700	100.95	91.82			34.59	8.64	34.1	100	28	Peak
5725	64.54	55.38	68.2	-3.66	34.62	8.65	34.11	100	28	Peak

Remarks:

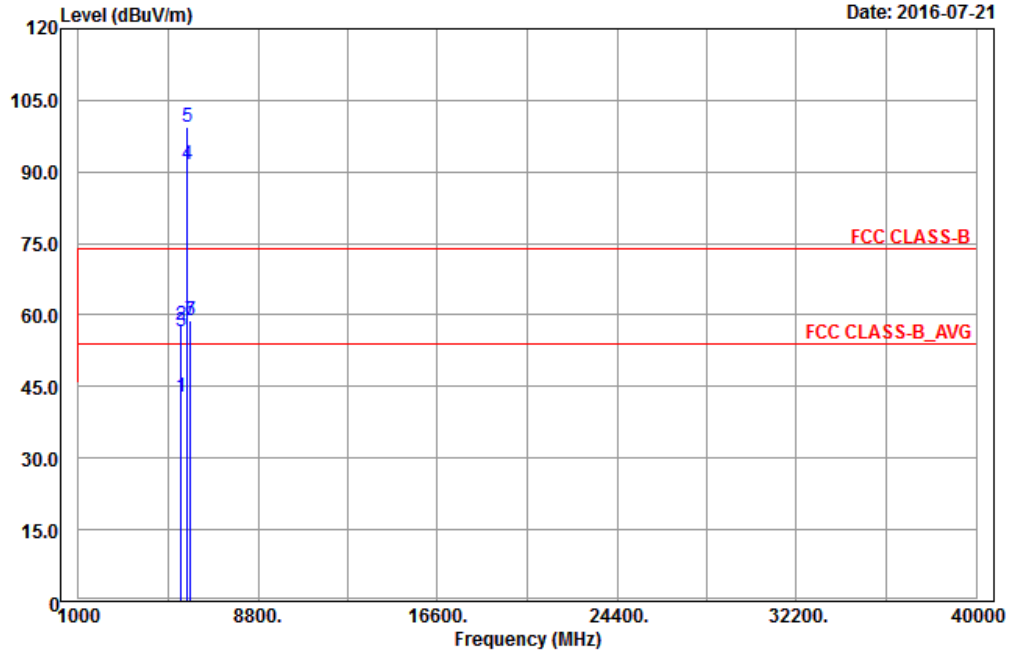
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5700 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 144	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



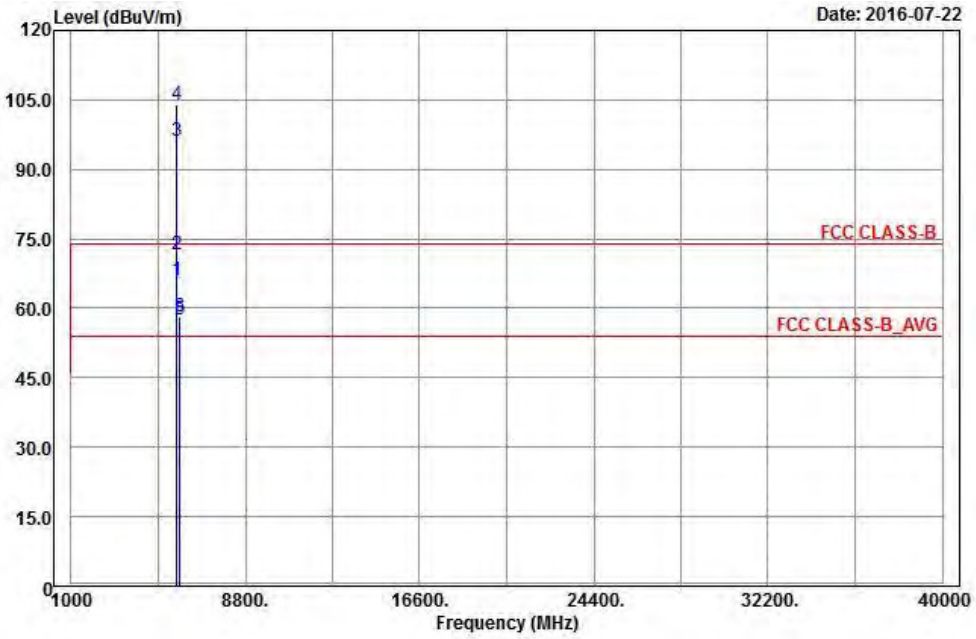
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5430	43.05	34.26	54	-10.95	34.35	8.48	34.04	232	303	Average
5430	58.05	49.26	74	-15.95	34.35	8.48	34.04	232	303	Peak
*5470	57.43	48.6	68.2	-10.77	34.37	8.51	34.05	232	303	Peak
5720	96.15	86.99			34.62	8.65	34.11	232	303	Average
5720	103.88	94.72			34.62	8.65	34.11	232	303	Peak
*5858	58.66	49.34	78.2	-19.54	34.76	8.7	34.14	232	303	Peak
*5864	57.83	48.5	68.2	-10.37	34.76	8.71	34.14	232	303	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	42.85	34.03	54	-11.15	34.36	8.51	34.05	267	3	Average
5460	57.99	49.17	74	-16.01	34.36	8.51	34.05	267	3	Peak
*5470	56.62	47.79	68.2	-11.58	34.37	8.51	34.05	267	3	Peak
5720	91.69	82.53			34.62	8.65	34.11	267	3	Average
5720	99.28	90.12			34.62	8.65	34.11	267	3	Peak
*5860	59.01	49.69	78.2	-19.19	34.76	8.7	34.14	267	3	Peak
*5862	58.89	49.56	68.2	-9.31	34.76	8.71	34.14	267	3	Peak

Remarks:

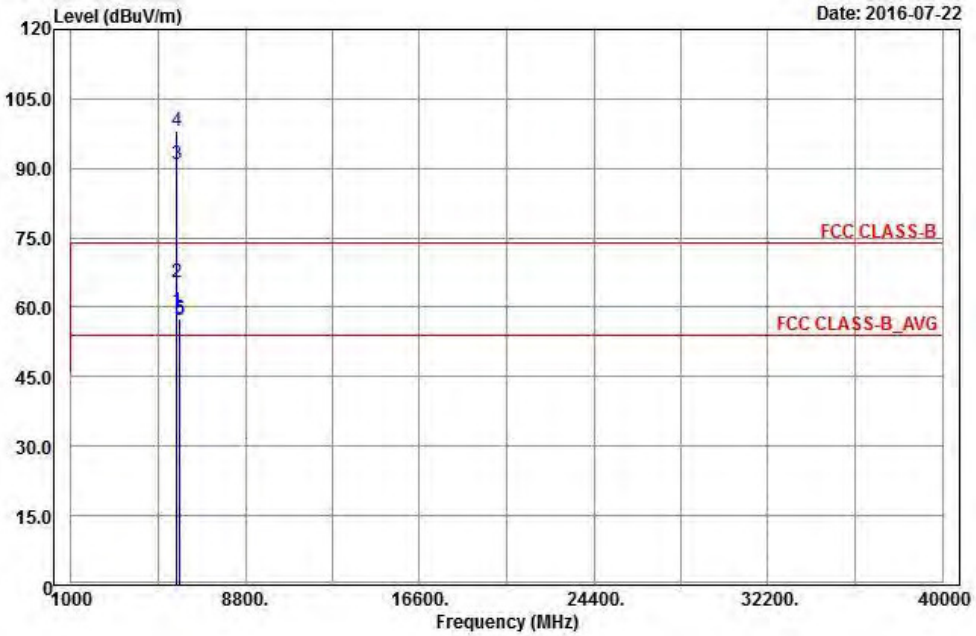
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5720 MHz: Fundamental Frequency
3. *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 149	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



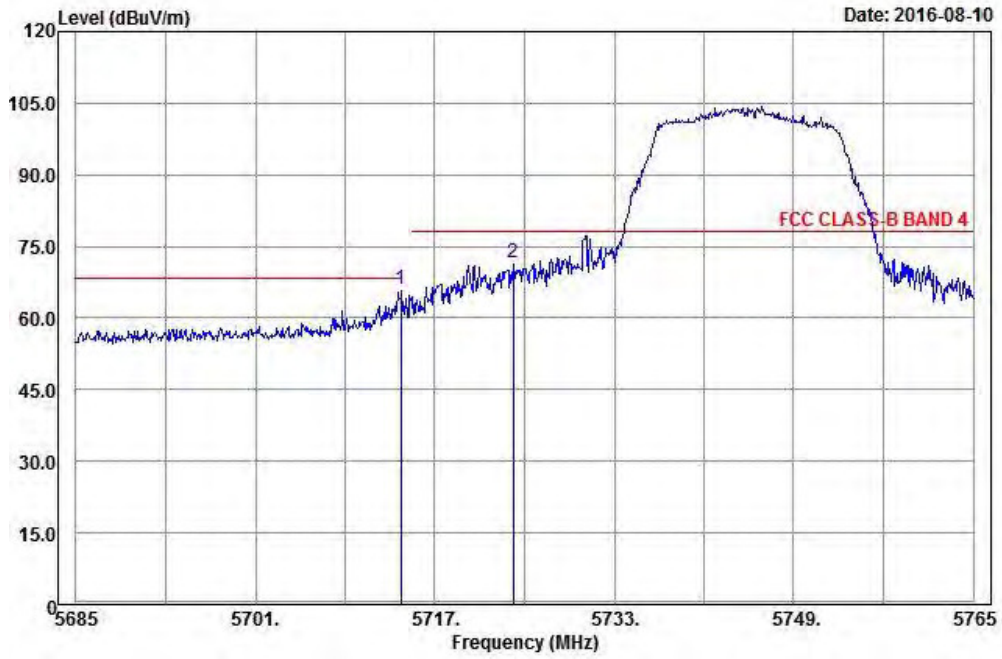
Vertical



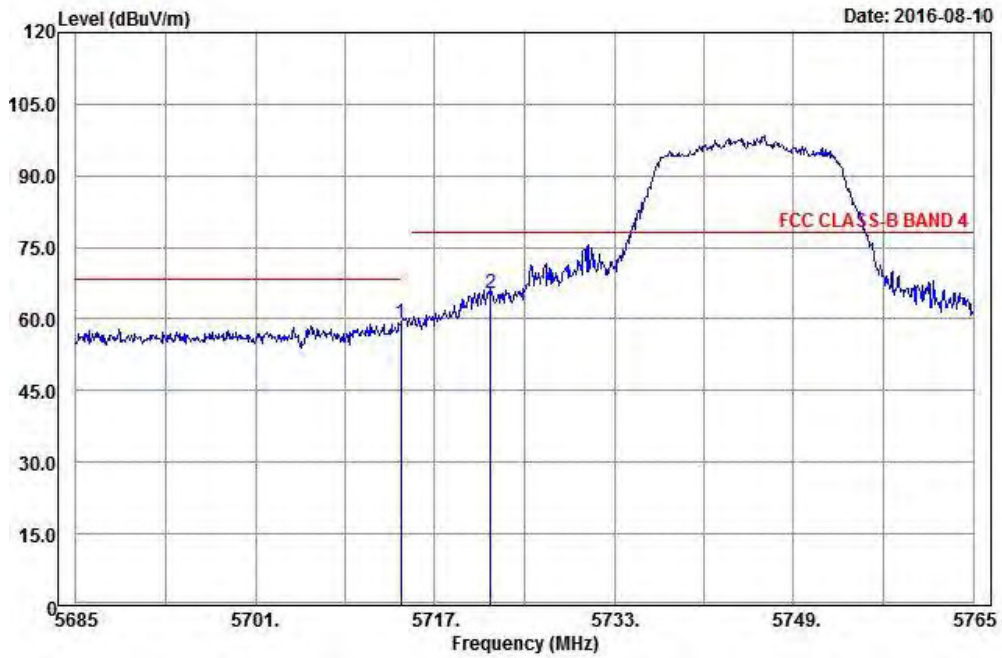
BandEdge

Peak

Horizontal



Vertical



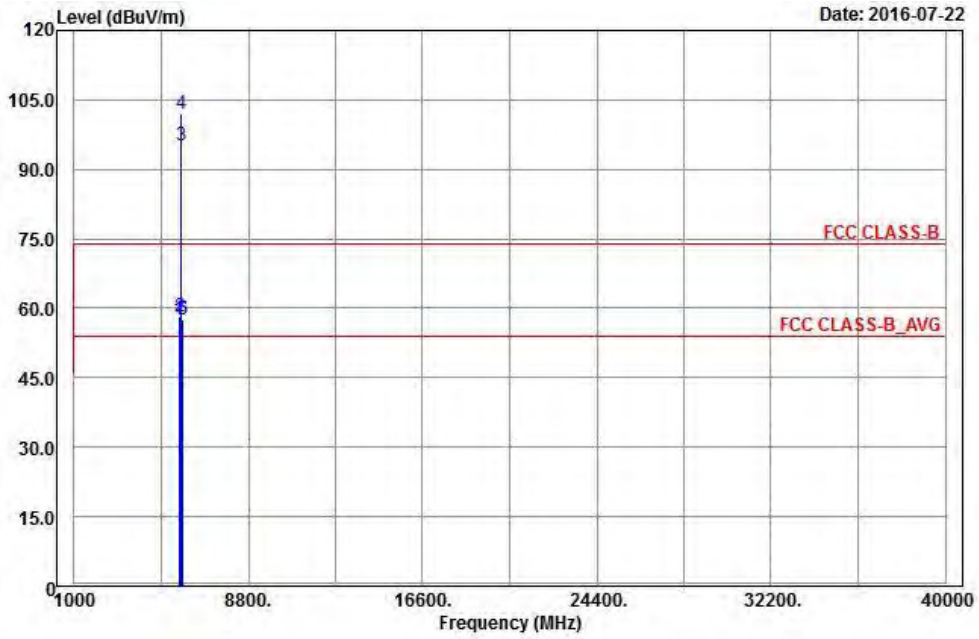
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	65.97	56.82	68.2	-2.23	34.61	8.65	34.11	230	303	Peak
*5724	71.69	62.53	78.2	-6.51	34.62	8.65	34.11	230	303	Peak
5745	96.19	87			34.64	8.66	34.11	230	303	Average
5745	103.91	94.72			34.64	8.66	34.11	230	303	Peak
*5858	57.54	48.22	78.2	-20.66	34.76	8.7	34.14	230	303	Peak
*5866	58.06	48.73	68.2	-10.14	34.76	8.71	34.14	230	303	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	59.33	50.18	68.2	-8.87	34.61	8.65	34.11	274	0	Peak
*5722	65.41	56.25	78.2	-12.79	34.62	8.65	34.11	274	0	Peak
5745	90.82	81.63			34.64	8.66	34.11	274	0	Average
5745	98.24	89.05			34.64	8.66	34.11	274	0	Peak
*5858	57.1	47.78	78.2	-21.1	34.76	8.7	34.14	274	0	Peak
*5868	57.64	48.31	68.2	-10.56	34.76	8.71	34.14	274	0	Peak

Remarks:

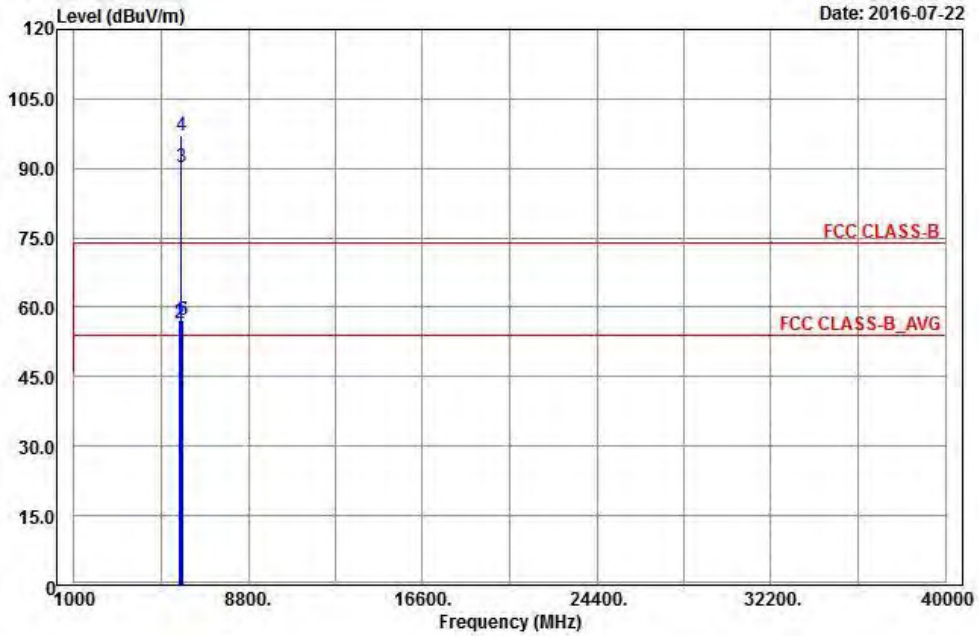
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5745 MHz: Fundamental Frequency
3. *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 157	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



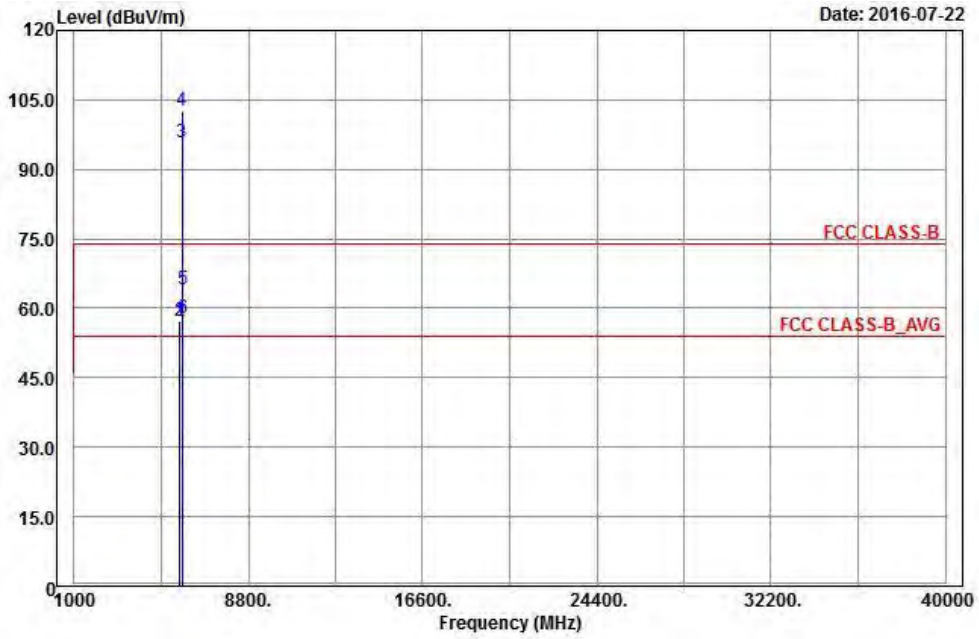
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5710	57.66	48.51	68.2	-10.54	34.61	8.65	34.11	226	302	Peak
*5722	58.11	48.95	78.2	-20.09	34.62	8.65	34.11	226	302	Peak
5785	95.17	85.94			34.68	8.68	34.13	226	302	Average
5785	102.11	92.88			34.68	8.68	34.13	226	302	Peak
*5856	57.47	48.15	78.2	-20.73	34.76	8.7	34.14	226	302	Peak
*5864	57.68	48.35	68.2	-10.52	34.76	8.71	34.14	226	302	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	57.35	48.2	68.2	-10.85	34.61	8.65	34.11	259	0	Peak
*5720	56.46	47.3	78.2	-21.74	34.62	8.65	34.11	259	0	Peak
5785	90.17	80.94			34.68	8.68	34.13	259	0	Average
5785	97.07	87.84			34.68	8.68	34.13	259	0	Peak
*5856	57.07	47.75	78.2	-21.13	34.76	8.7	34.14	259	0	Peak
*5866	57.12	47.79	68.2	-11.08	34.76	8.71	34.14	259	0	Peak

Remarks:

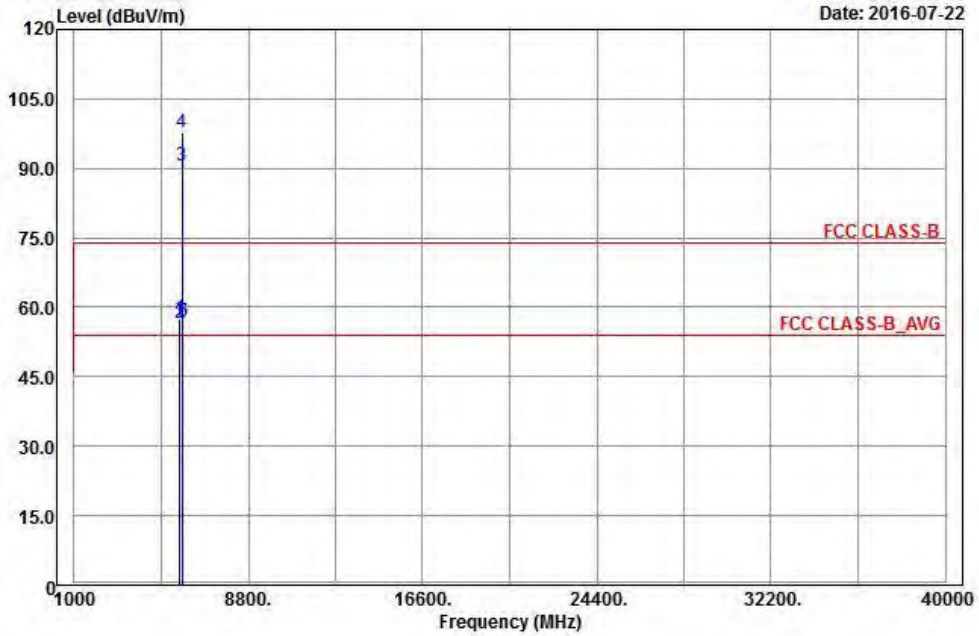
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5785 MHz: Fundamental Frequency
3. *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 165	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



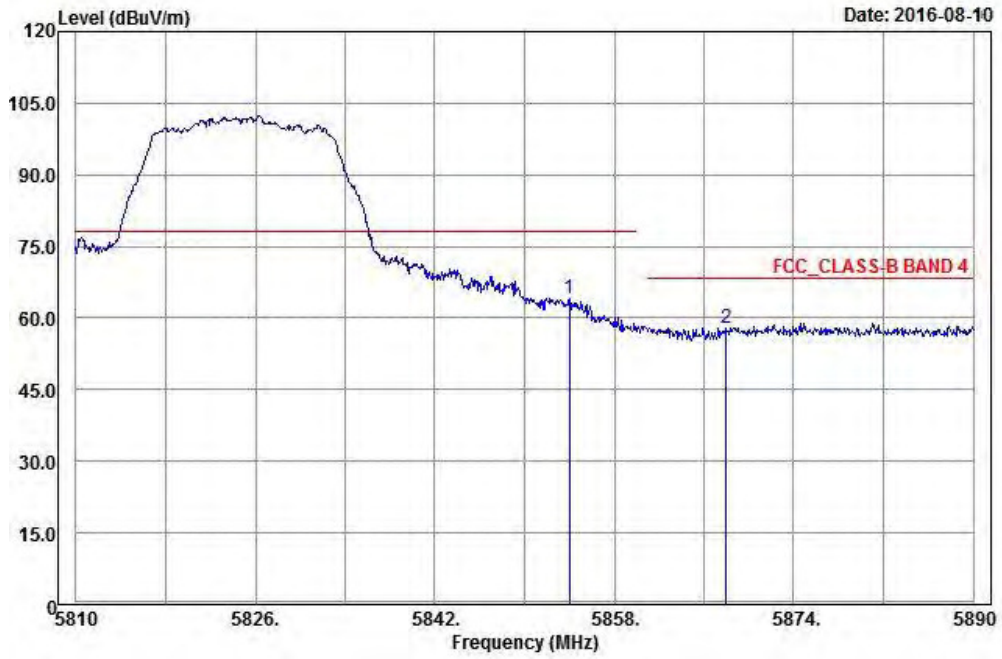
Vertical



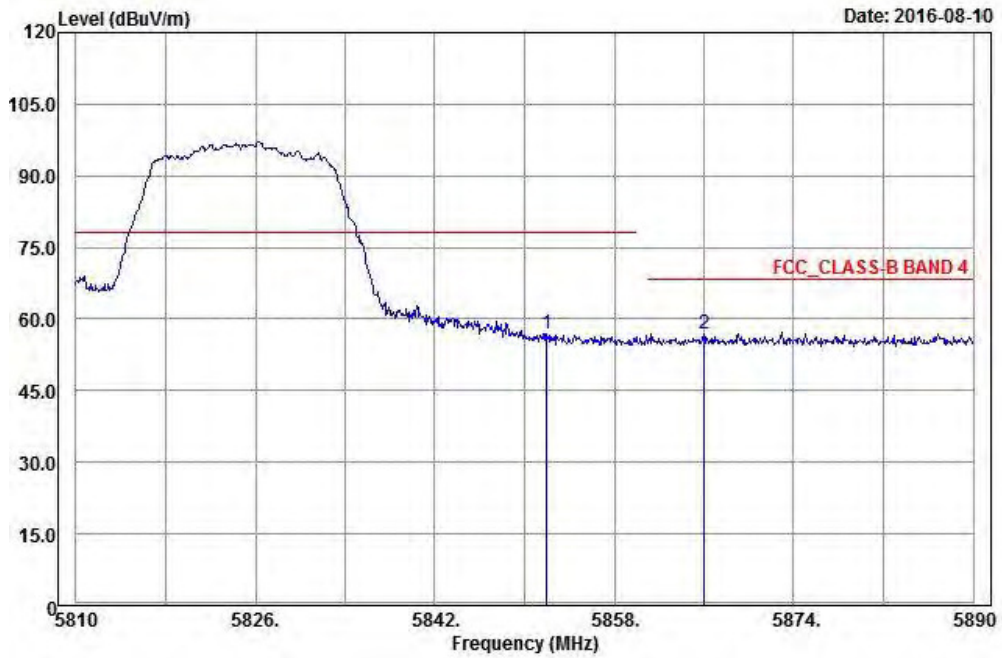
BandEdge

Peak

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	57.12	47.97	68.2	-11.08	34.61	8.65	34.11	226	304	Peak
*5716	57.32	48.17	78.2	-20.88	34.61	8.65	34.11	226	304	Peak
5825	95.67	86.38			34.73	8.69	34.13	226	304	Average
5825	102.63	93.34			34.73	8.69	34.13	226	304	Peak
*5854	64.1	54.78	78.2	-14.1	34.76	8.7	34.14	226	304	Peak
*5868	57.81	48.48	68.2	-10.39	34.76	8.71	34.14	226	304	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	57.39	48.24	68.2	-10.81	34.61	8.65	34.11	254	360	Peak
*5716	56.5	47.35	78.2	-21.7	34.61	8.65	34.11	254	360	Peak
5825	90.52	81.23			34.73	8.69	34.13	254	360	Average
5825	97.61	88.32			34.73	8.69	34.13	254	360	Peak
*5852	56.82	47.52	78.2	-21.38	34.74	8.7	34.14	254	360	Peak
*5866	56.83	47.5	68.2	-11.37	34.76	8.71	34.14	254	360	Peak

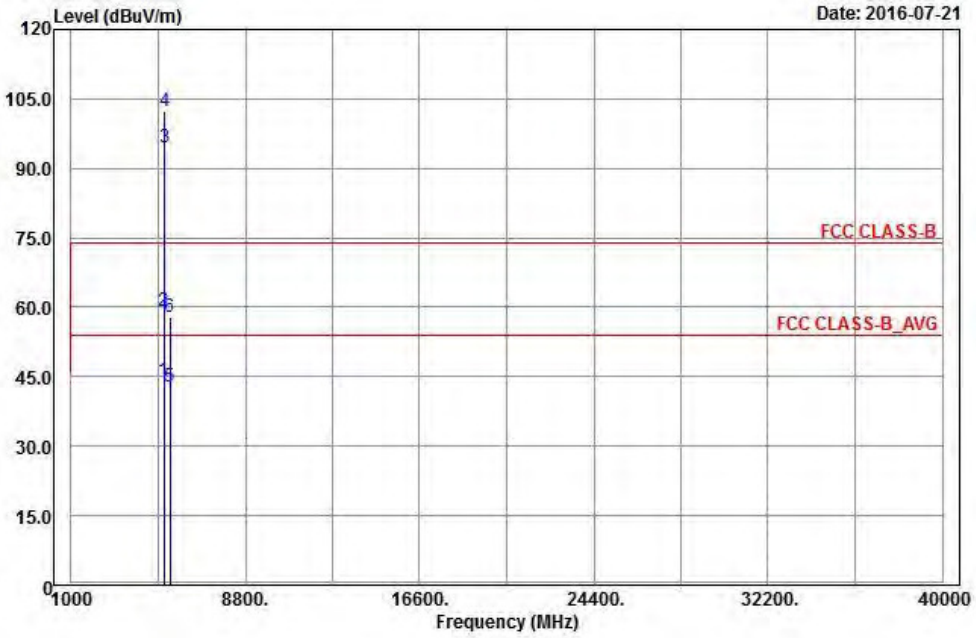
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5825 MHz: Fundamental Frequency
3. *: Out of Restricted Band

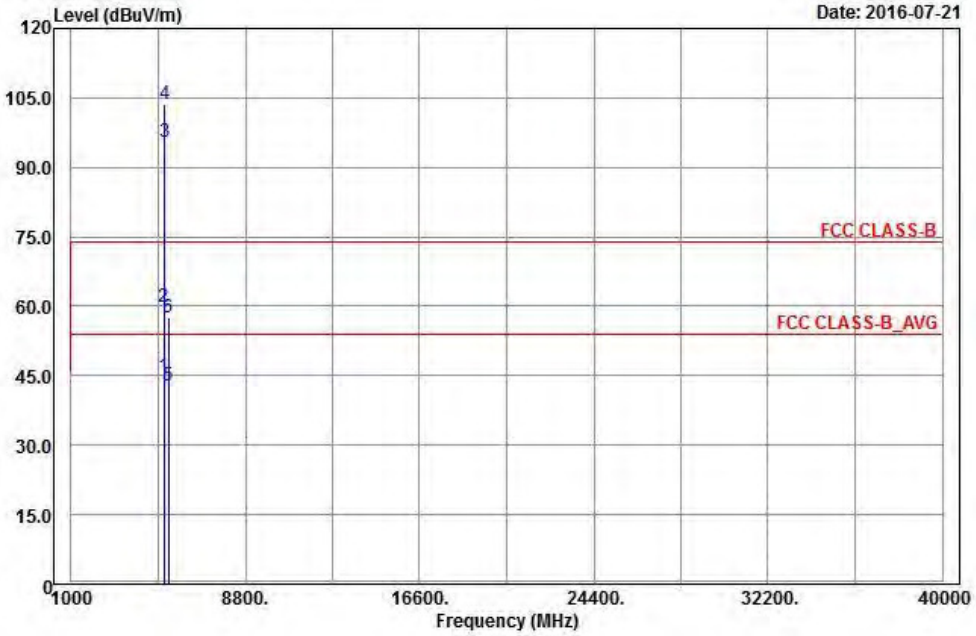
802.11n (HT20)

EUT Test Condition		Measurement Detail	
Channel	Channel 36	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



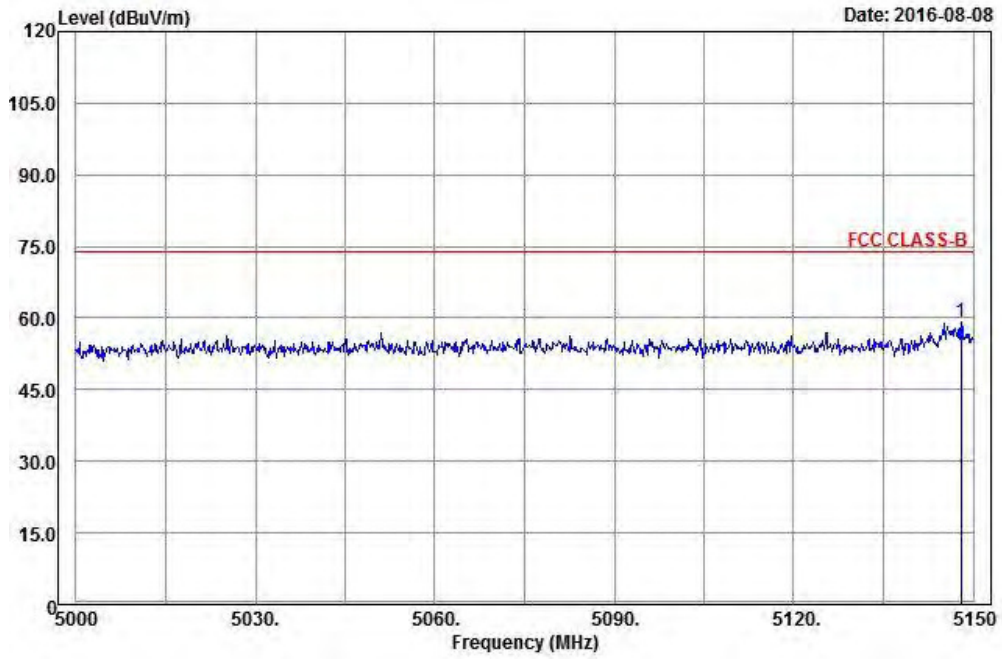
Vertical



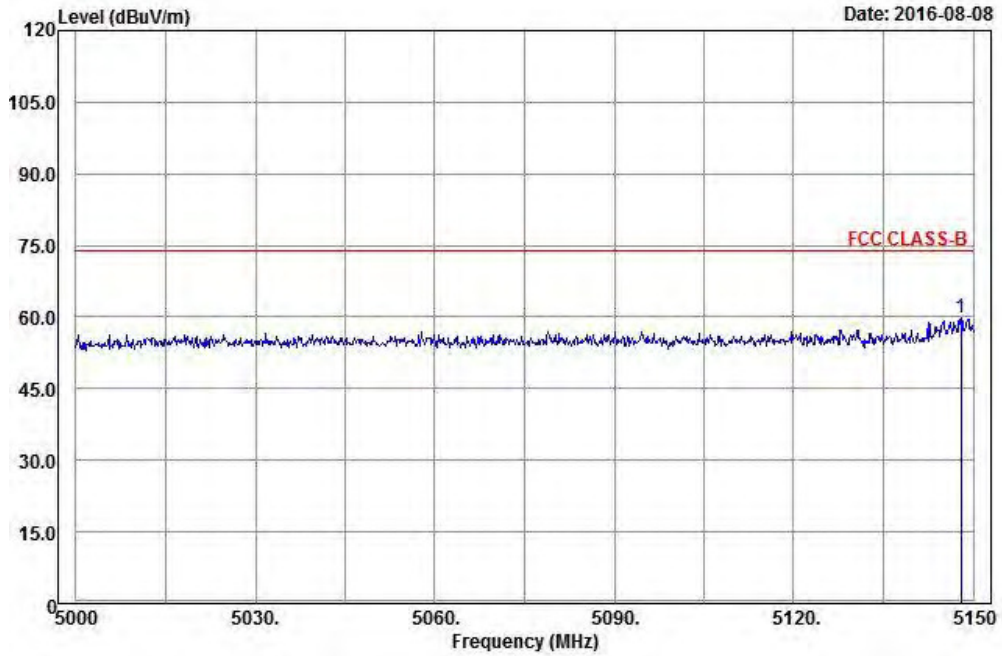
BandEdge

Peak

Horizontal

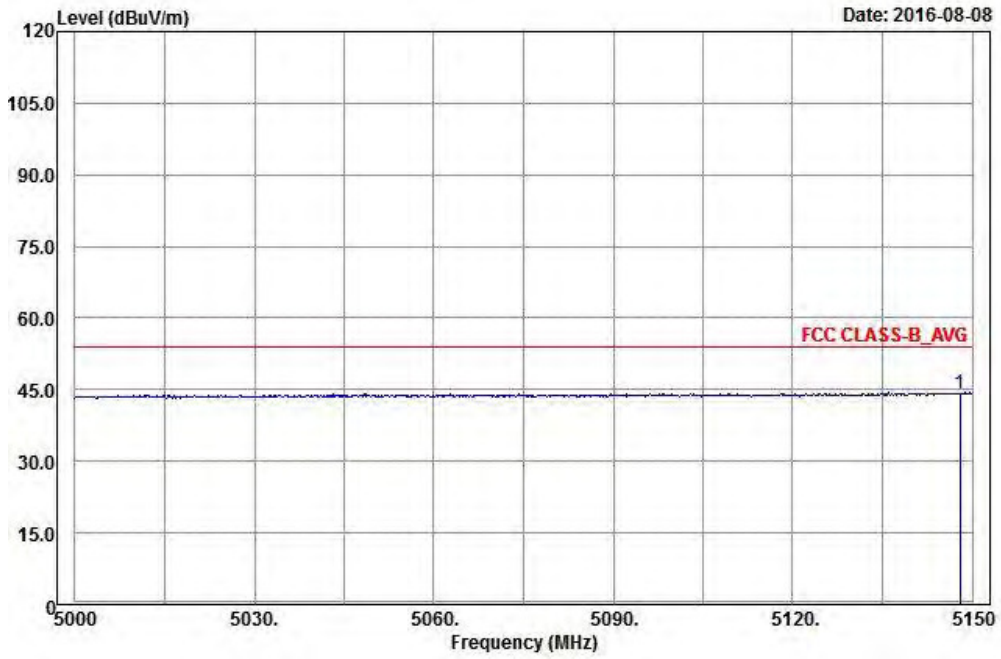


Vertical

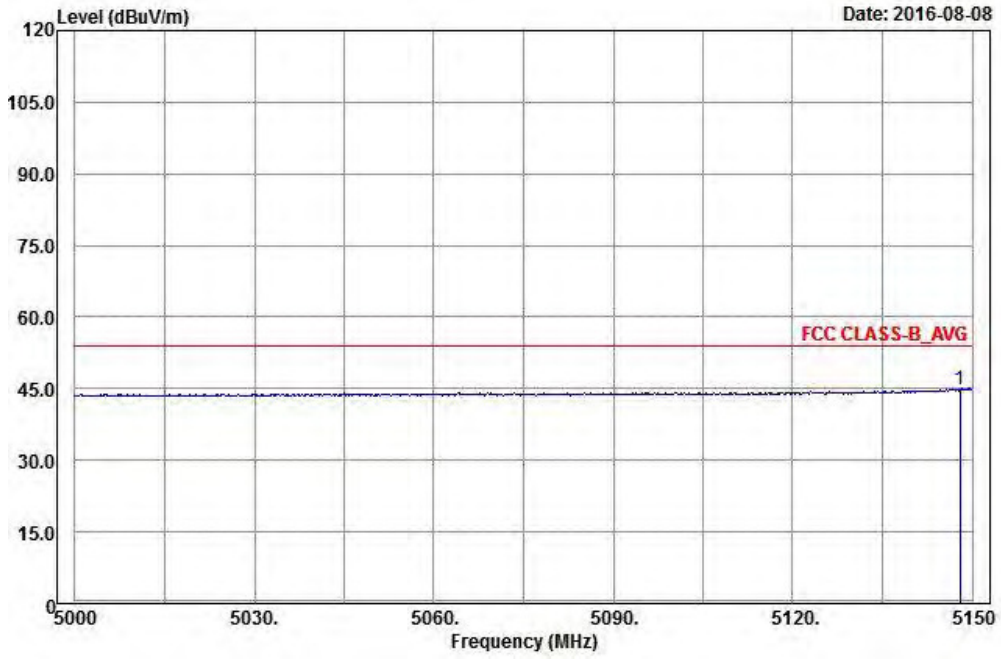


Average

Horizontal



Vertical



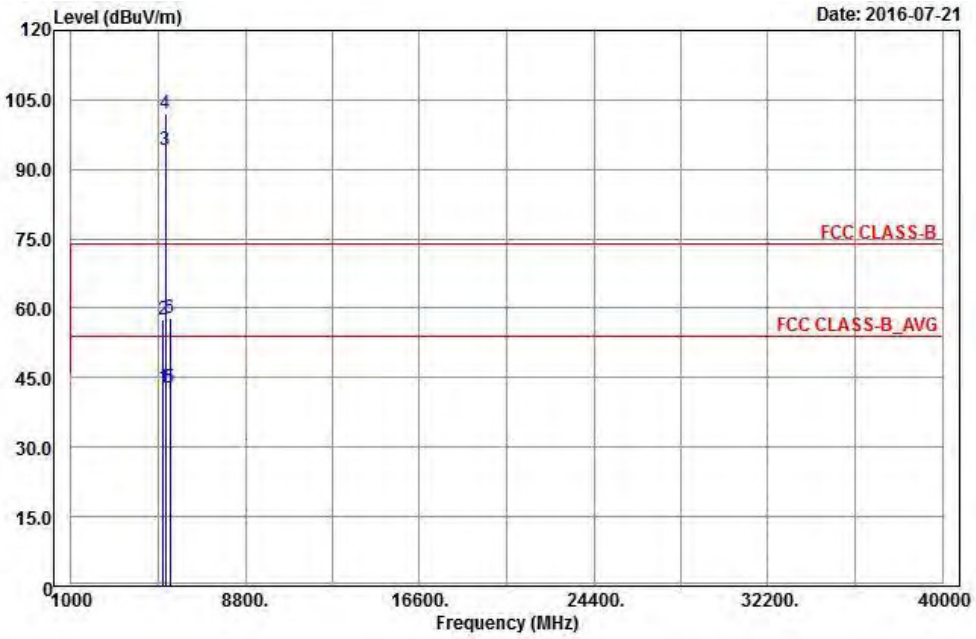
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5148	44.27	36.02	54	-9.73	34.12	8.13	34	100	337	Average
5148	59.12	50.87	74	-14.88	34.12	8.13	34	100	337	Peak
5180	94.58	86.27			34.15	8.16	34	100	337	Average
5180	102.49	94.18			34.15	8.16	34	100	337	Peak
5436	42.93	34.14	54	-11.07	34.35	8.48	34.04	100	337	Average
5436	57.76	48.97	74	-16.24	34.35	8.48	34.04	100	337	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5148	44.87	36.62	54	-9.13	34.12	8.13	34	136	101	Average
5148	59.94	51.69	74	-14.06	34.12	8.13	34	136	101	Peak
5180	95.5	87.19			34.15	8.16	34	136	101	Average
5180	103.67	95.36			34.15	8.16	34	136	101	Peak
5350	42.76	34.13	54	-11.24	34.28	8.38	34.03	136	101	Average
5350	57.68	49.05	74	-16.32	34.28	8.38	34.03	136	101	Peak

Remarks:

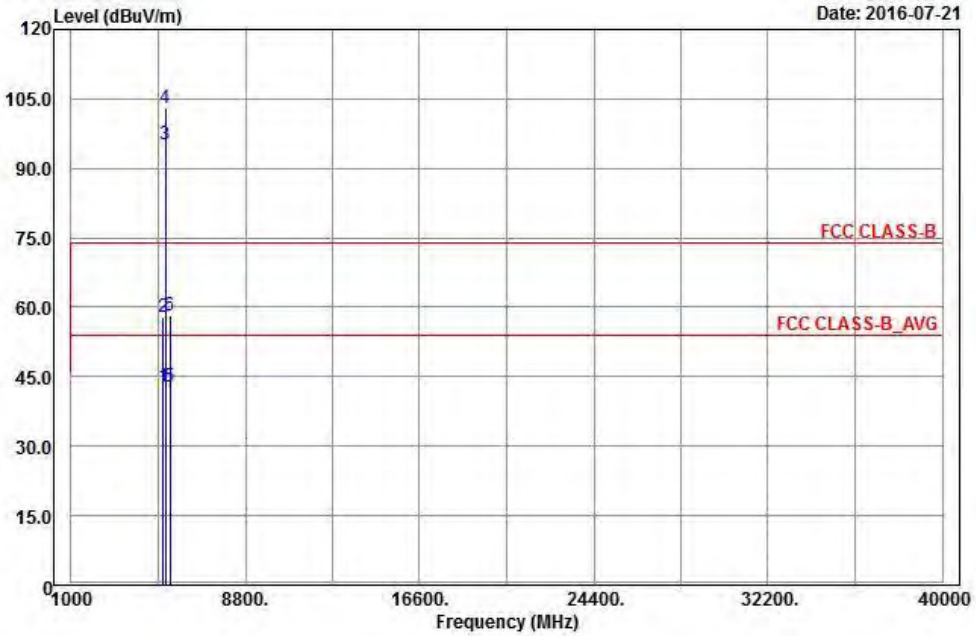
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5180 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 44	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



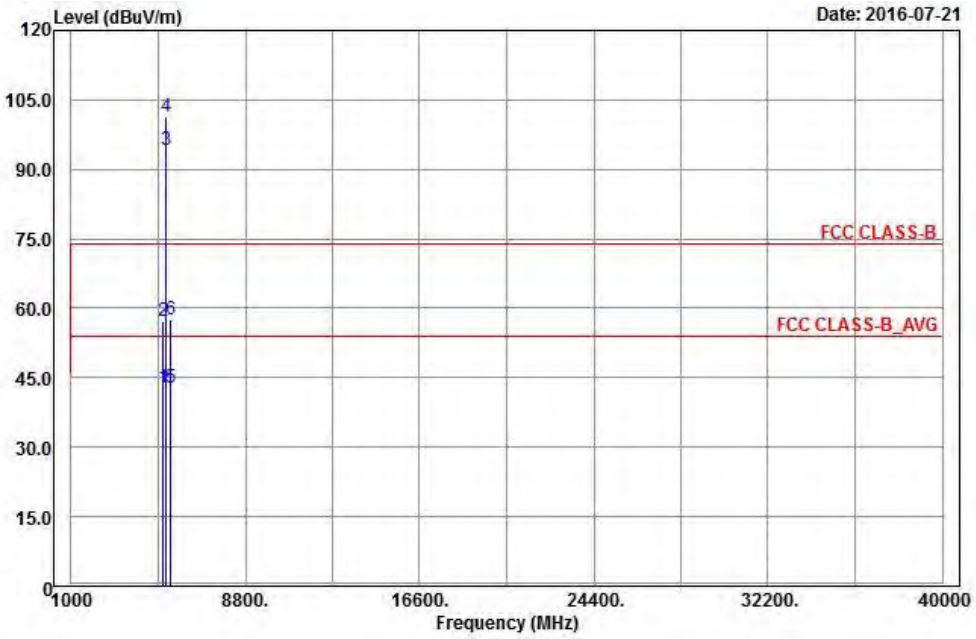
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5128	42.82	34.6	54	-11.18	34.11	8.1	33.99	100	335	Average
5128	57.42	49.2	74	-16.58	34.11	8.1	33.99	100	335	Peak
5220	94.17	85.78			34.17	8.22	34	100	335	Average
5220	101.98	93.59			34.17	8.22	34	100	335	Peak
5428	42.77	34	54	-11.23	34.33	8.48	34.04	100	335	Average
5428	57.96	49.19	74	-16.04	34.33	8.48	34.04	100	335	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5136	42.87	34.62	54	-11.13	34.11	8.13	33.99	128	98	Average
5136	58.01	49.76	74	-15.99	34.11	8.13	33.99	128	98	Peak
5220	95.23	86.84			34.17	8.22	34	128	98	Average
5220	103.06	94.67			34.17	8.22	34	128	98	Peak
5422	42.83	34.06	54	-11.17	34.33	8.48	34.04	128	98	Average
5422	58.14	49.37	74	-15.86	34.33	8.48	34.04	128	98	Peak

Remarks:

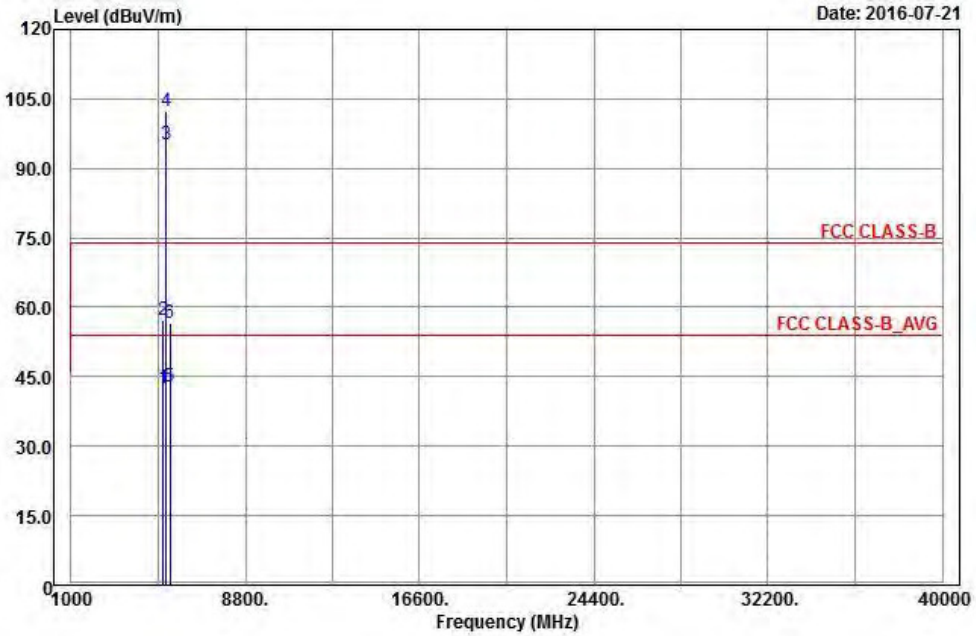
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5220 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 48	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



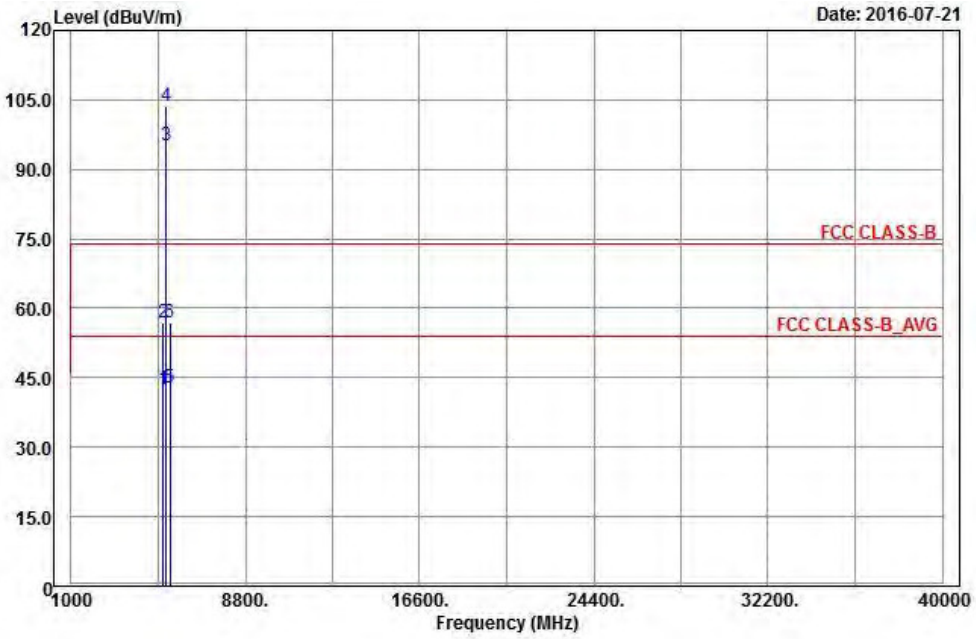
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5118	42.72	34.52	54	-11.28	34.09	8.1	33.99	100	335	Average
5118	57.29	49.09	74	-16.71	34.09	8.1	33.99	100	335	Peak
5240	94.28	85.84			34.19	8.26	34.01	100	335	Average
5240	101.28	92.84			34.19	8.26	34.01	100	335	Peak
5452	42.98	34.16	54	-11.02	34.36	8.51	34.05	100	335	Average
5452	57.65	48.83	74	-16.35	34.36	8.51	34.05	100	335	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5130	42.61	34.39	54	-11.39	34.11	8.1	33.99	121	98	Average
5130	57.15	48.93	74	-16.85	34.11	8.1	33.99	121	98	Peak
5240	95.11	86.67			34.19	8.26	34.01	121	98	Average
5240	102.51	94.07			34.19	8.26	34.01	121	98	Peak
5424	42.93	34.16	54	-11.07	34.33	8.48	34.04	121	98	Average
5424	56.51	47.74	74	-17.49	34.33	8.48	34.04	121	98	Peak

Remarks:

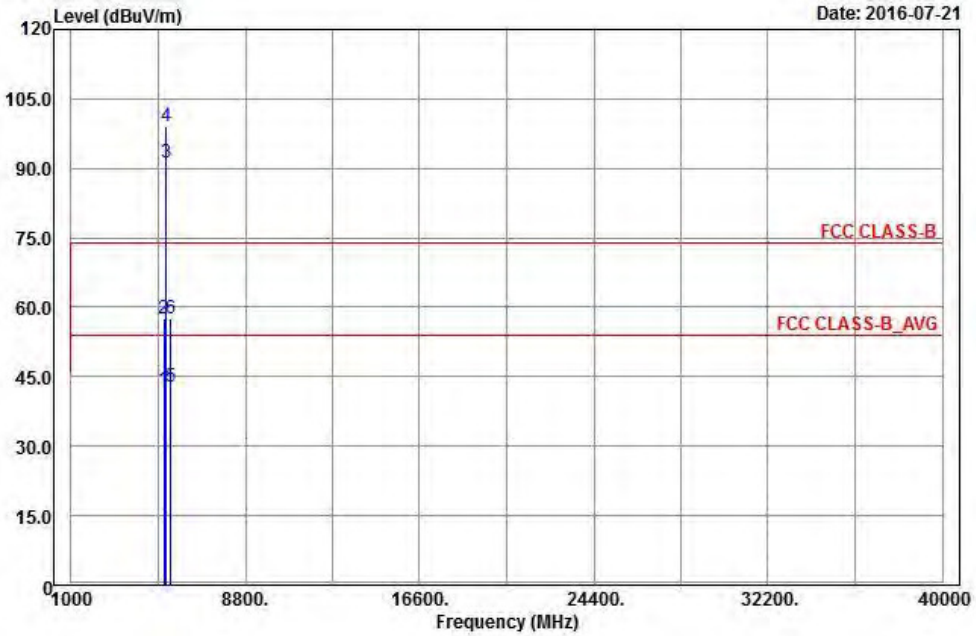
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5240 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 52	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



Vertical



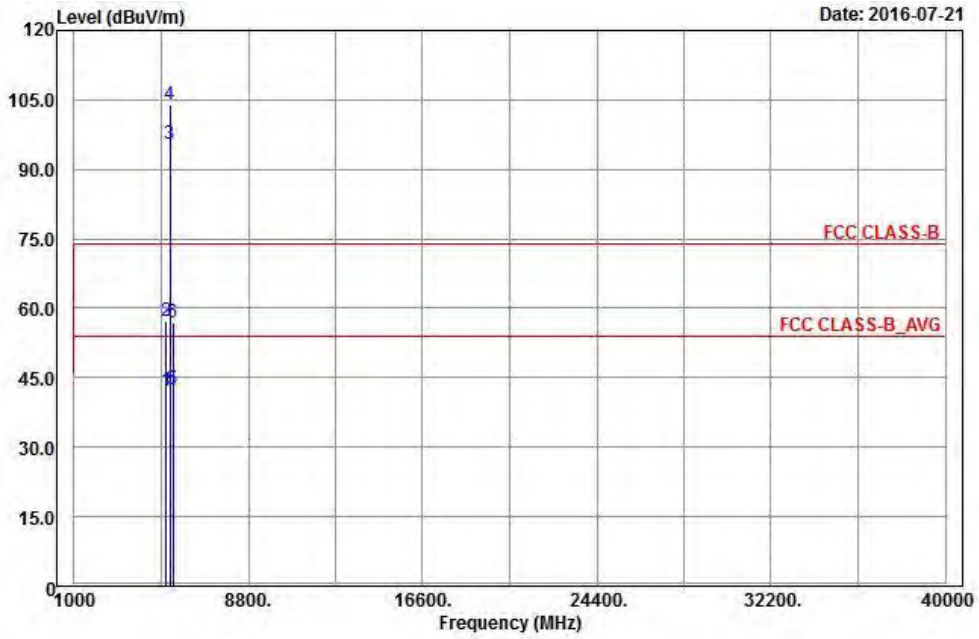
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5108	42.39	34.19	54	-11.61	34.09	8.1	33.99	101	120	Average
5108	57.05	48.85	74	-16.95	34.09	8.1	33.99	101	120	Peak
5260	95.07	86.61			34.21	8.26	34.01	101	120	Average
5260	103.73	95.27			34.21	8.26	34.01	101	120	Peak
5412	42.76	34.03	54	-11.24	34.33	8.44	34.04	101	120	Average
5412	56.77	48.04	74	-17.23	34.33	8.44	34.04	101	120	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	42.27	34.02	54	-11.73	34.12	8.13	34	111	249	Average
5150	57.65	49.4	74	-16.35	34.12	8.13	34	111	249	Peak
5260	91.21	82.75			34.21	8.26	34.01	111	249	Average
5260	99.16	90.7			34.21	8.26	34.01	111	249	Peak
5448	42.98	34.15	54	-11.02	34.36	8.51	34.04	111	249	Average
5448	57.69	48.86	74	-16.31	34.36	8.51	34.04	111	249	Peak

Remarks:

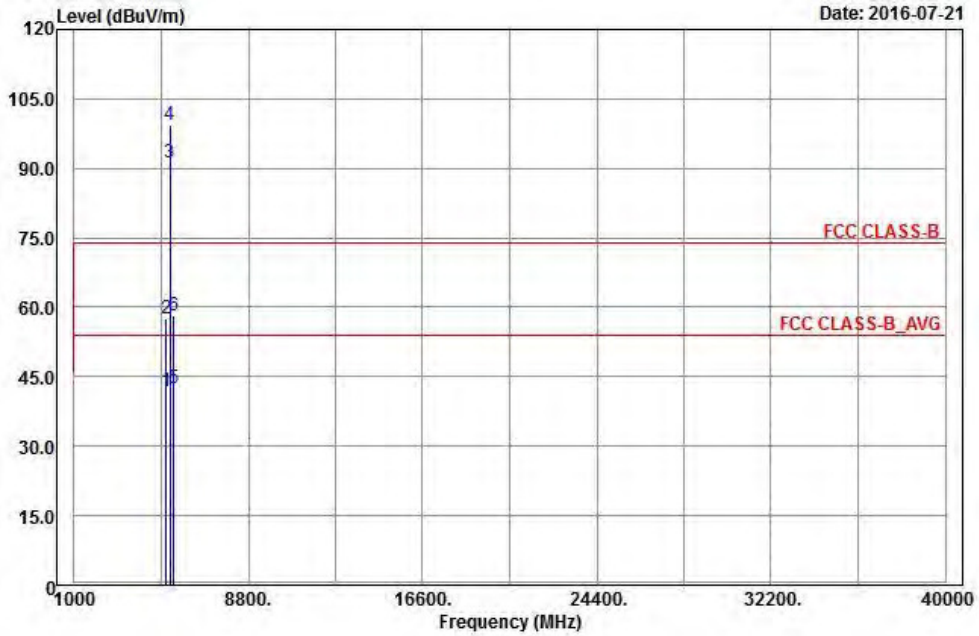
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5260 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 60	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



Vertical



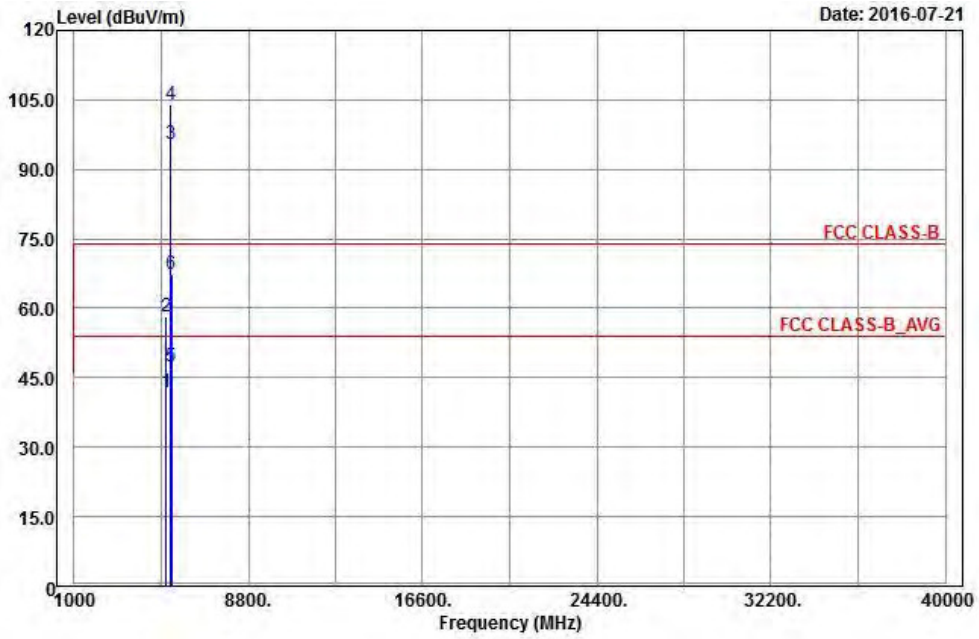
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5122	42.03	33.83	54	-11.97	34.09	8.1	33.99	114	120	Average
5122	57.2	49	74	-16.8	34.09	8.1	33.99	114	120	Peak
5300	95.51	86.97			34.24	8.32	34.02	114	120	Average
5300	103.88	95.34			34.24	8.32	34.02	114	120	Peak
5424	42.65	33.88	54	-11.35	34.33	8.48	34.04	114	120	Average
5424	57.04	48.27	74	-16.96	34.33	8.48	34.04	114	120	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5108	41.89	33.69	54	-12.11	34.09	8.1	33.99	111	249	Average
5108	57.53	49.33	74	-16.47	34.09	8.1	33.99	111	249	Peak
5300	91.21	82.67			34.24	8.32	34.02	111	249	Average
5300	99.24	90.7			34.24	8.32	34.02	111	249	Peak
5454	42.57	33.75	54	-11.43	34.36	8.51	34.05	111	249	Average
5454	58.08	49.26	74	-15.92	34.36	8.51	34.05	111	249	Peak

Remarks:

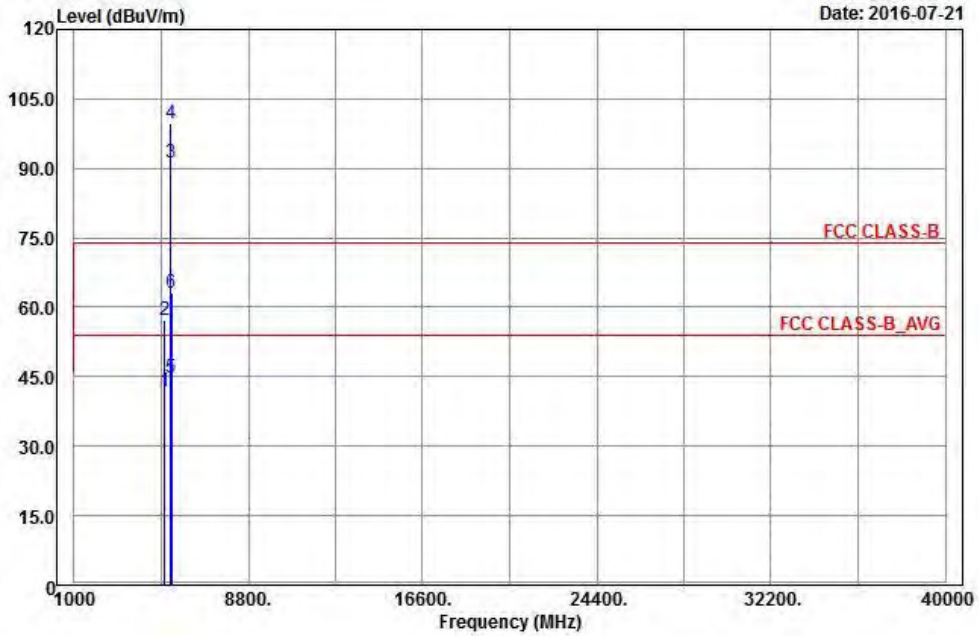
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5300 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 64	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



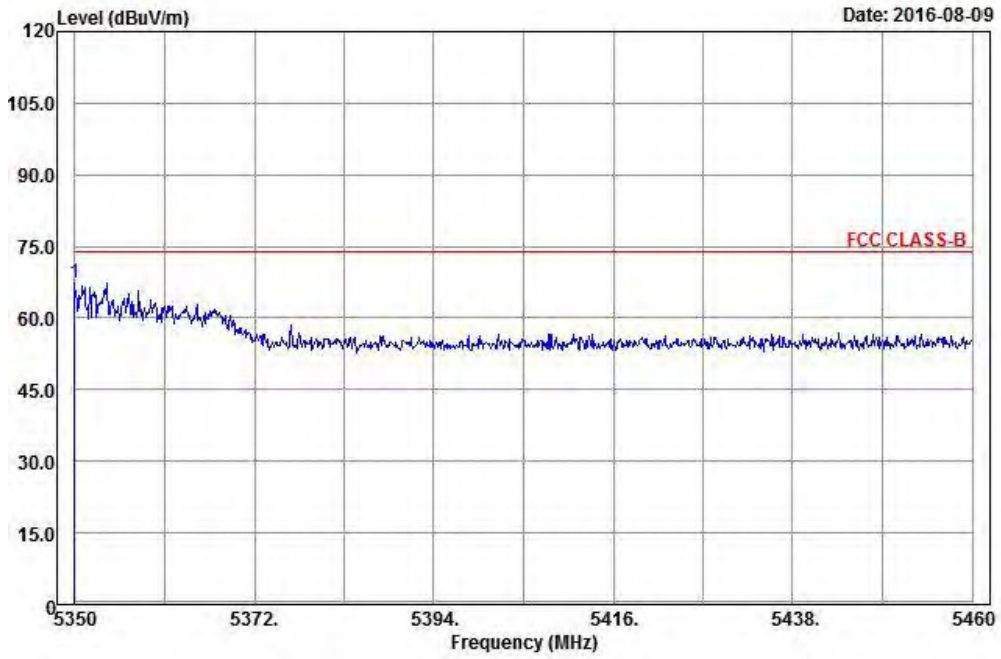
Vertical



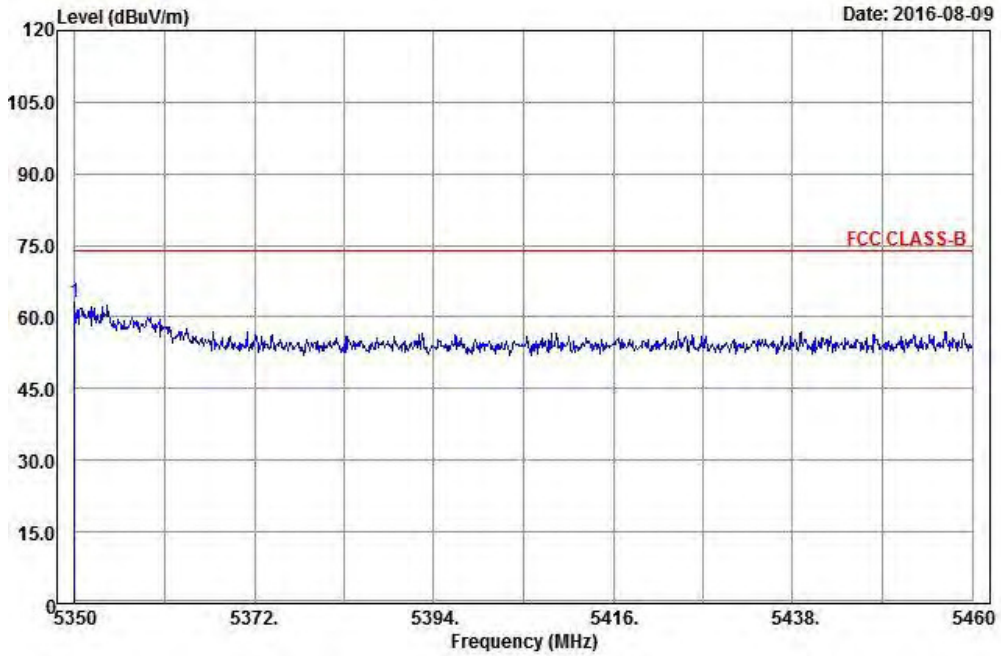
BandEdge

Peak

Horizontal

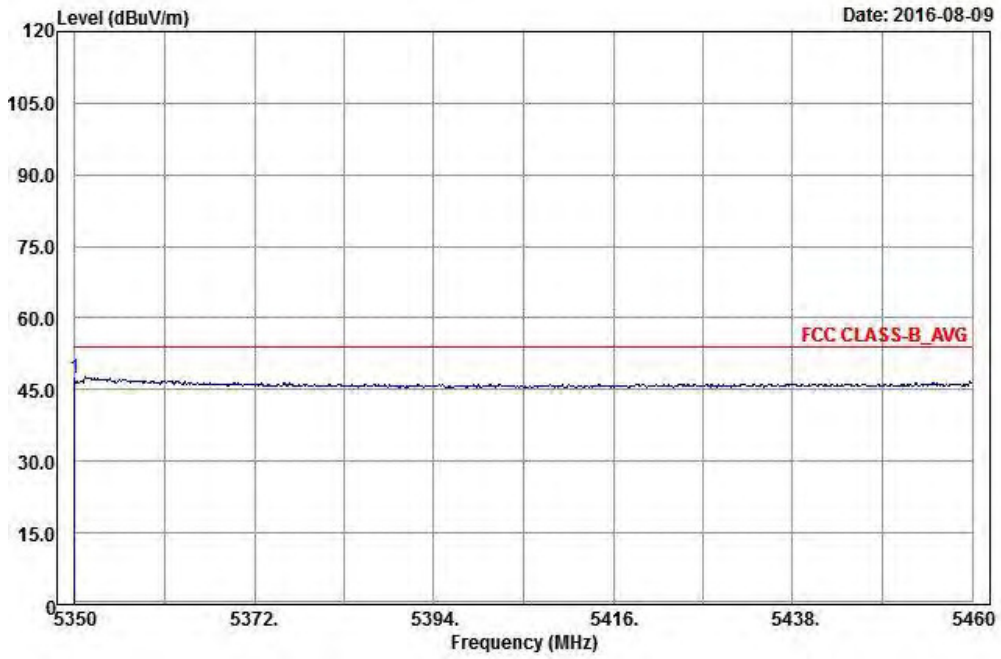


Vertical

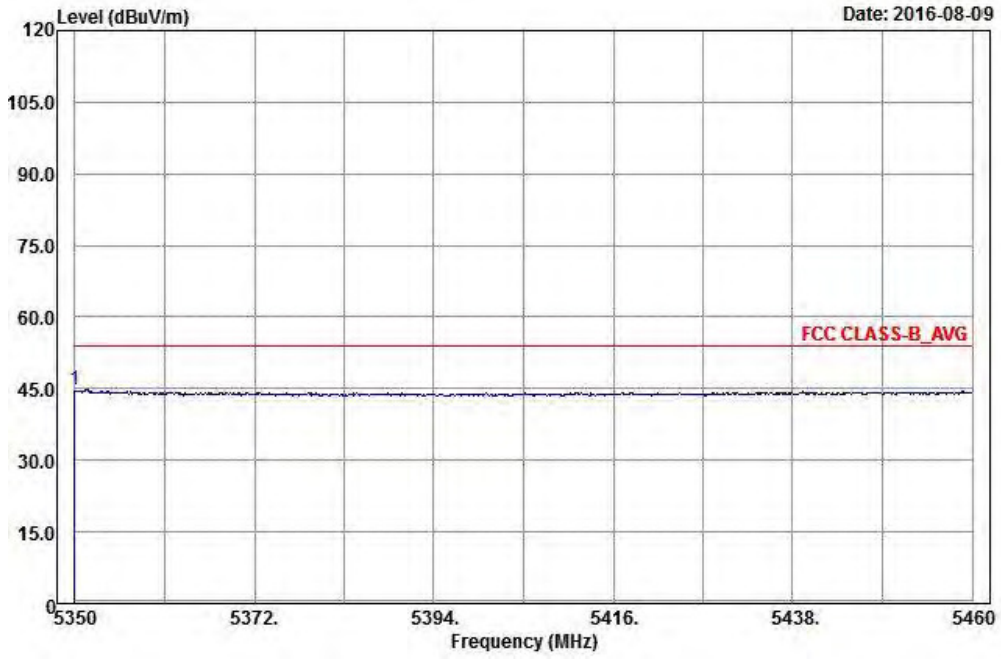


Average

Horizontal



Vertical



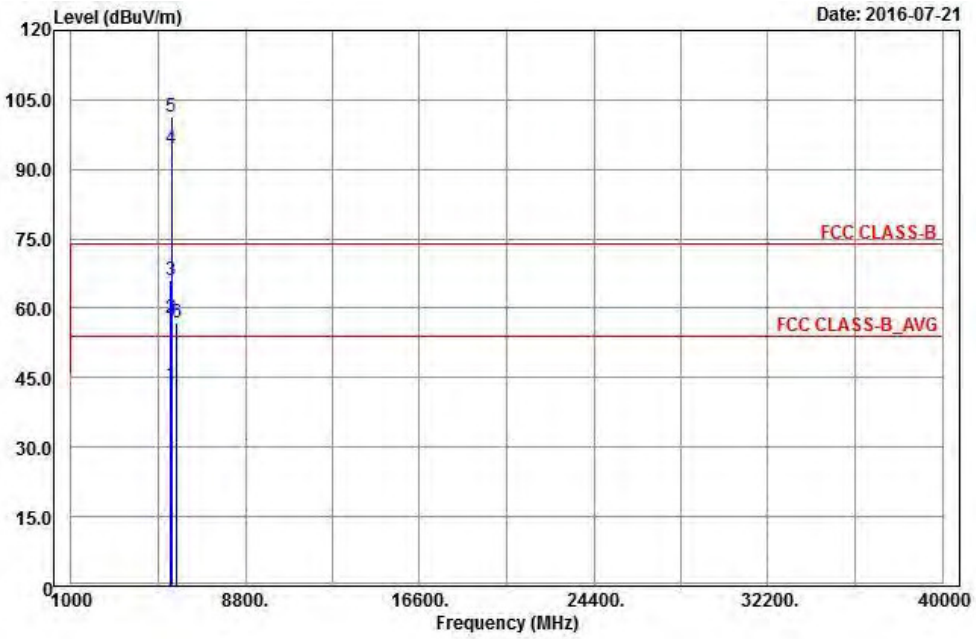
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5120	41.94	33.74	54	-12.06	34.09	8.1	33.99	100	120	Average
5120	58.1	49.9	74	-15.9	34.09	8.1	33.99	100	120	Peak
5320	95.47	86.89			34.25	8.35	34.02	100	120	Average
5320	103.84	95.26			34.25	8.35	34.02	100	120	Peak
5350	47.55	38.92	54	-6.45	34.28	8.38	34.03	100	120	Average
5350	67.24	58.61	74	-6.76	34.28	8.38	34.03	100	120	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5036	41.83	33.77	54	-12.17	34.03	8	33.97	111	249	Average
5036	57.07	49.01	74	-16.93	34.03	8	33.97	111	249	Peak
5320	91.1	82.52			34.25	8.35	34.02	111	249	Average
5320	99.77	91.19			34.25	8.35	34.02	111	249	Peak
5350	44.76	36.13	54	-9.24	34.28	8.38	34.03	111	249	Average
5350	63.13	54.5	74	-10.87	34.28	8.38	34.03	111	249	Peak

Remarks:

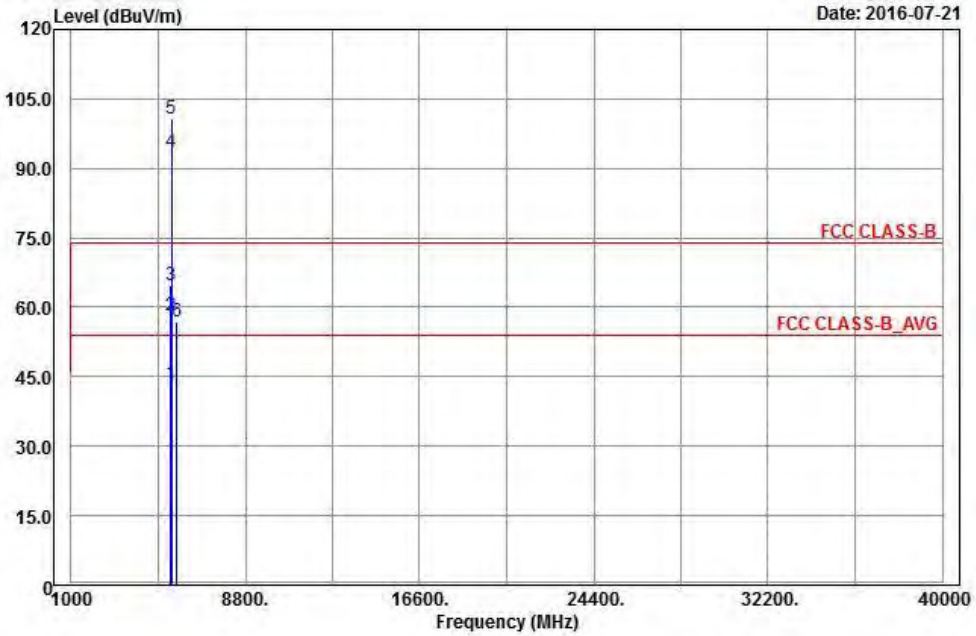
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5320 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 100	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



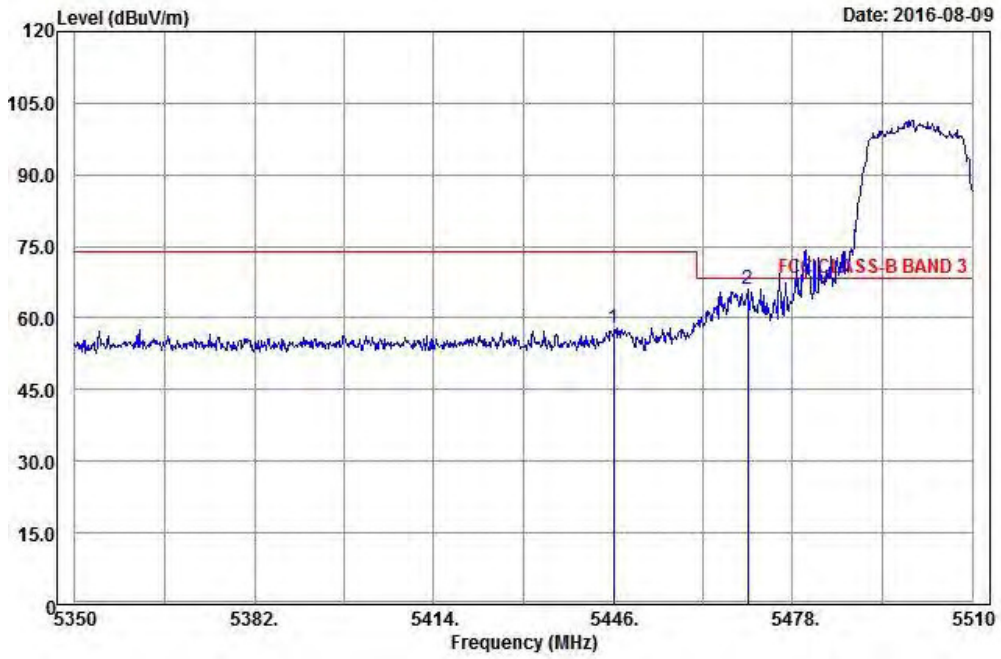
Vertical



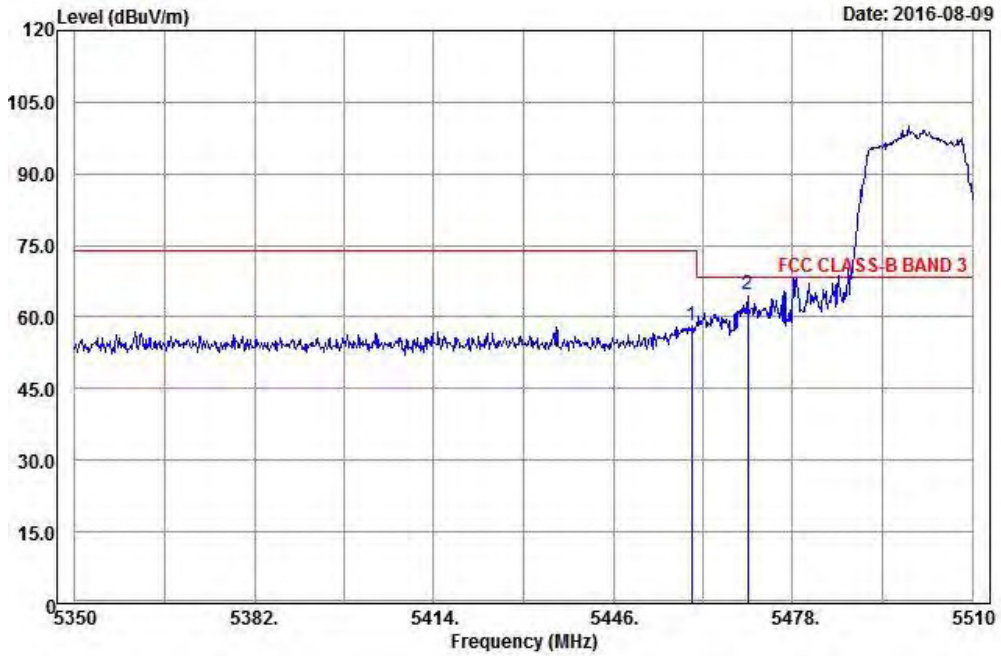
BandEdge

Peak

Horizontal

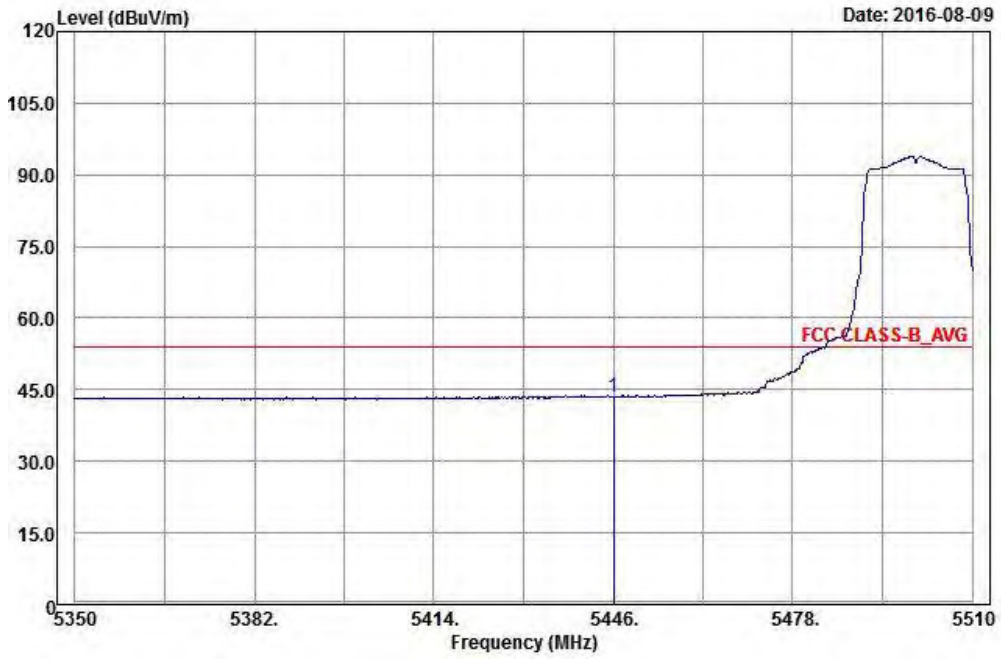


Vertical

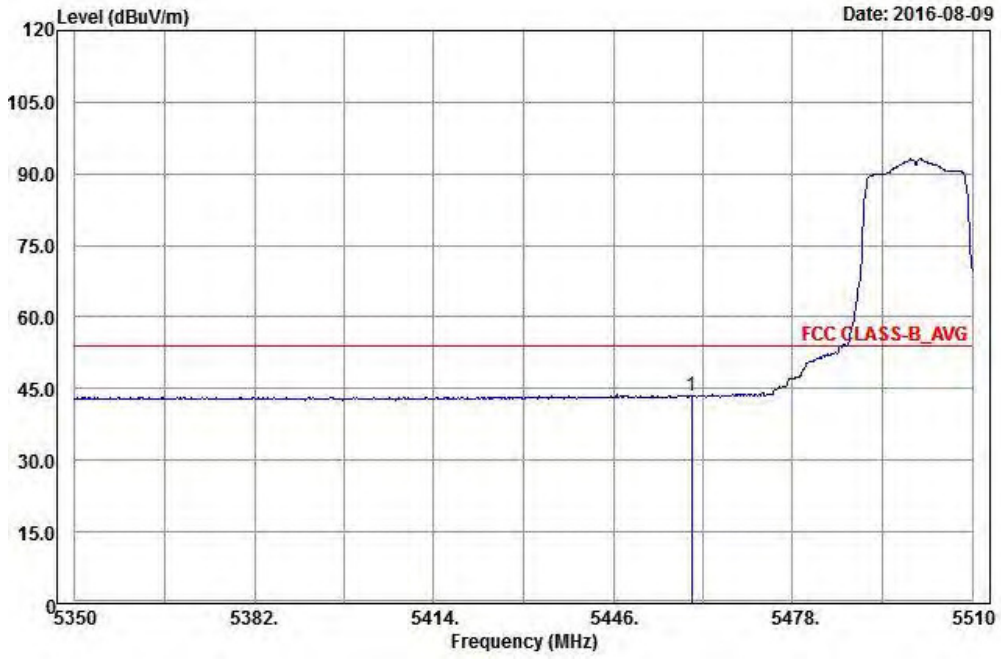


Average

Horizontal



Vertical



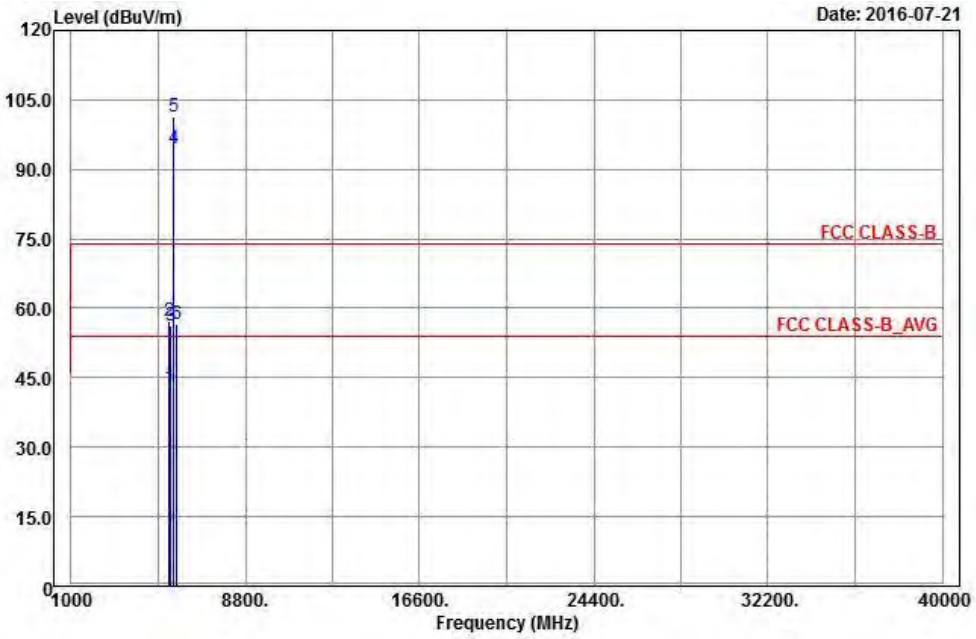
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5446	43.54	34.71	54	-10.46	34.36	8.51	34.04	226	36	Average
5446	57.91	49.08	74	-16.09	34.36	8.51	34.04	226	36	Peak
5470	65.93	57.1	68.2	-2.27	34.37	8.51	34.05	226	36	Peak
5500	94.57	85.65			34.4	8.57	34.05	226	36	Average
5500	101.24	92.32			34.4	8.57	34.05	226	36	Peak
5725	56.87	47.71	68.2	-11.33	34.62	8.65	34.11	226	36	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	43.41	34.59	54	-10.59	34.36	8.51	34.05	100	28	Average
5460	58.23	49.41	74	-15.77	34.36	8.51	34.05	100	28	Peak
5470	64.88	56.05	68.2	-3.32	34.37	8.51	34.05	100	28	Peak
5500	93.52	84.6			34.4	8.57	34.05	100	28	Average
5500	100.56	91.64			34.4	8.57	34.05	100	28	Peak
5725	56.92	47.76	68.2	-11.28	34.62	8.65	34.11	100	28	Peak

Remarks:

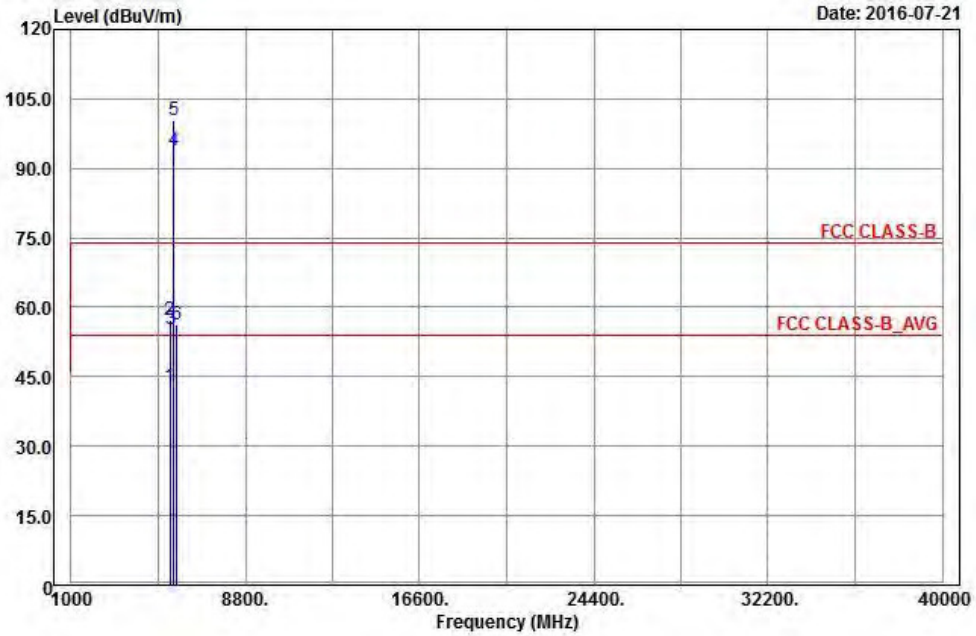
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5500 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 116	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



Vertical



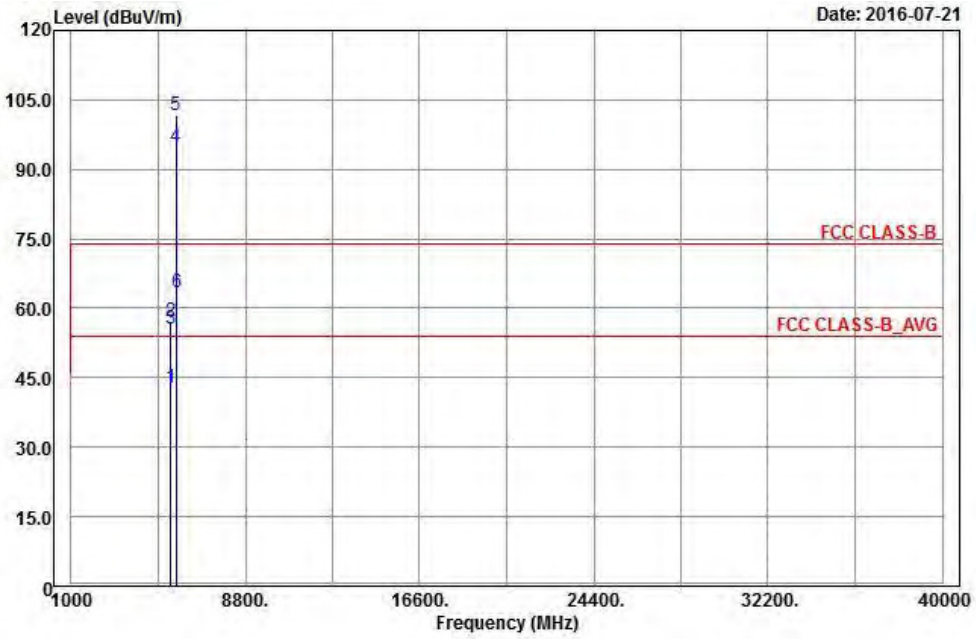
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5398	42.87	34.15	54	-11.13	34.32	8.44	34.04	226	36	Average
5398	57.32	48.6	74	-16.68	34.32	8.44	34.04	226	36	Peak
5470	56.14	47.31	68.2	-12.06	34.37	8.51	34.05	226	36	Peak
5580	94.53	85.54			34.47	8.6	34.08	226	36	Average
5580	101.37	92.38			34.47	8.6	34.08	226	36	Peak
5725	56.59	47.43	68.2	-11.61	34.62	8.65	34.11	226	36	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5442	42.96	34.17	54	-11.04	34.35	8.48	34.04	106	28	Average
5442	57.26	48.47	74	-16.74	34.35	8.48	34.04	106	28	Peak
5470	55.25	46.42	68.2	-12.95	34.37	8.51	34.05	106	28	Peak
5580	93.77	84.78			34.47	8.6	34.08	106	28	Average
5580	100.49	91.5			34.47	8.6	34.08	106	28	Peak
5725	56.14	46.98	68.2	-12.06	34.62	8.65	34.11	106	28	Peak

Remarks:

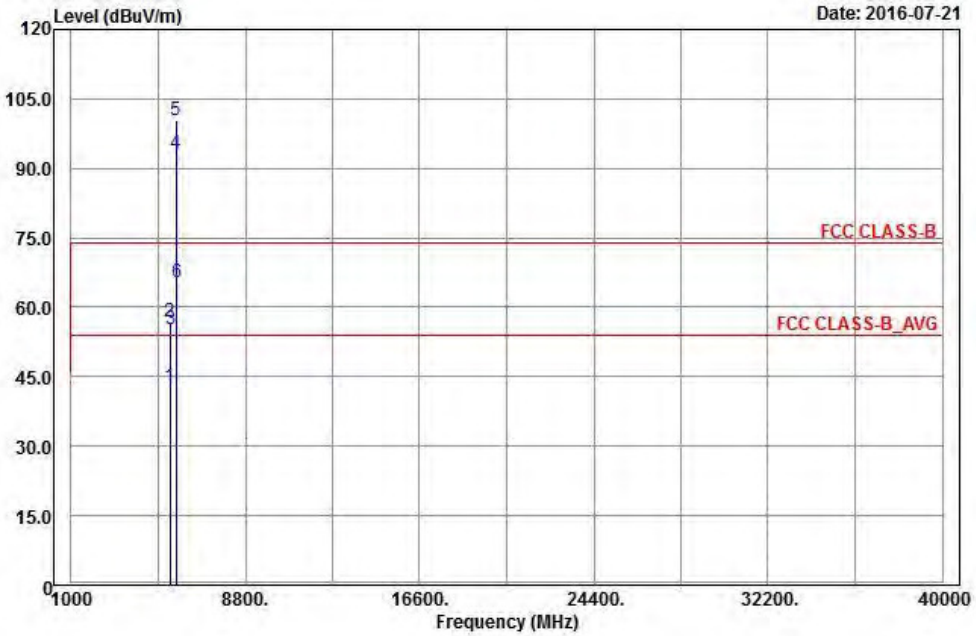
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5580 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 140	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



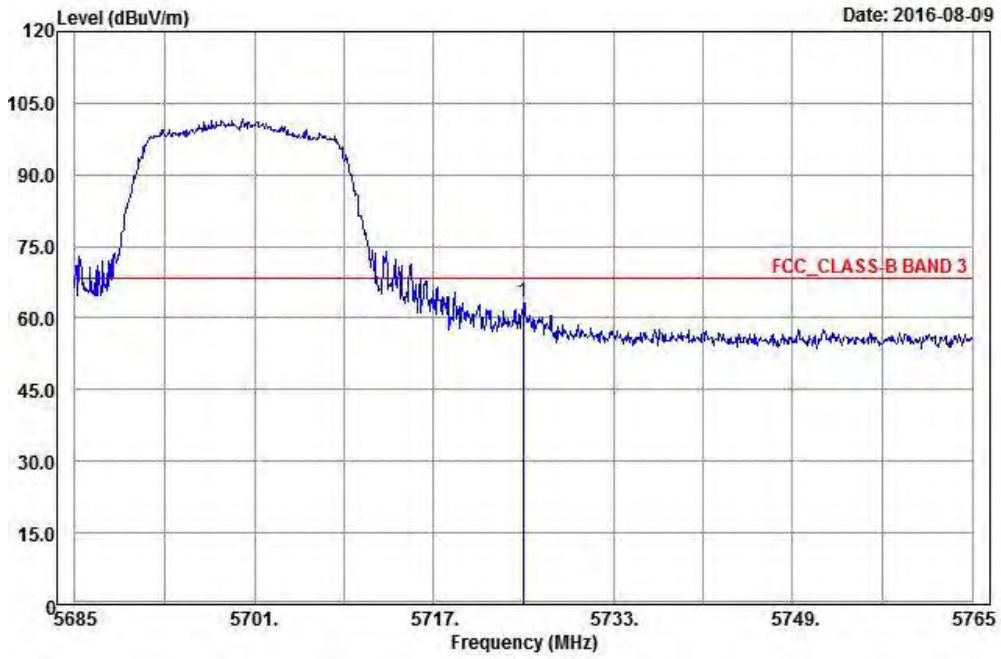
Vertical



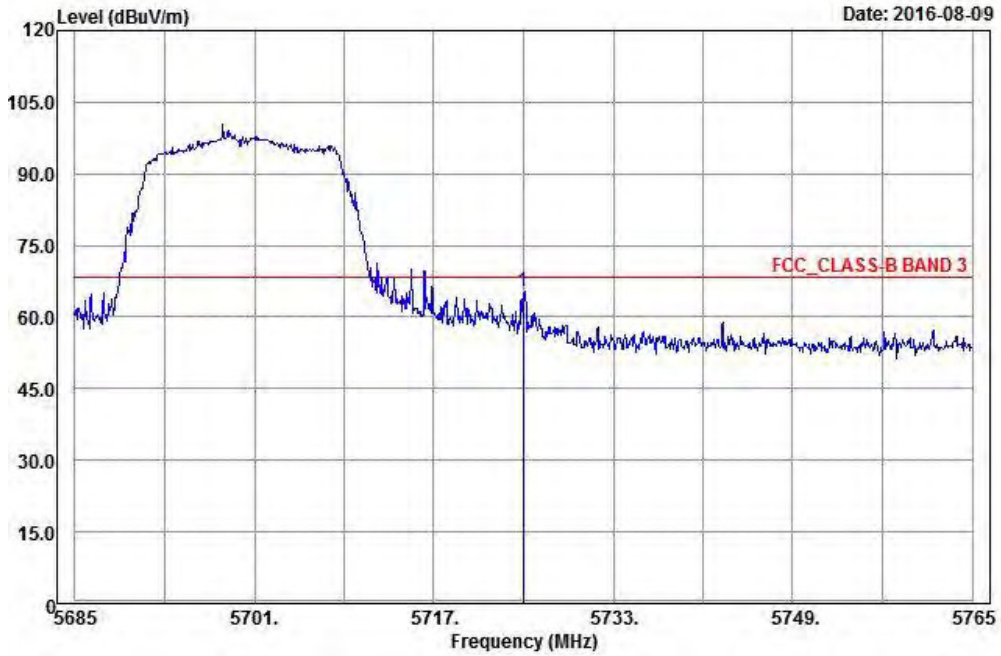
BandEdge

Peak

Horizontal



Vertical



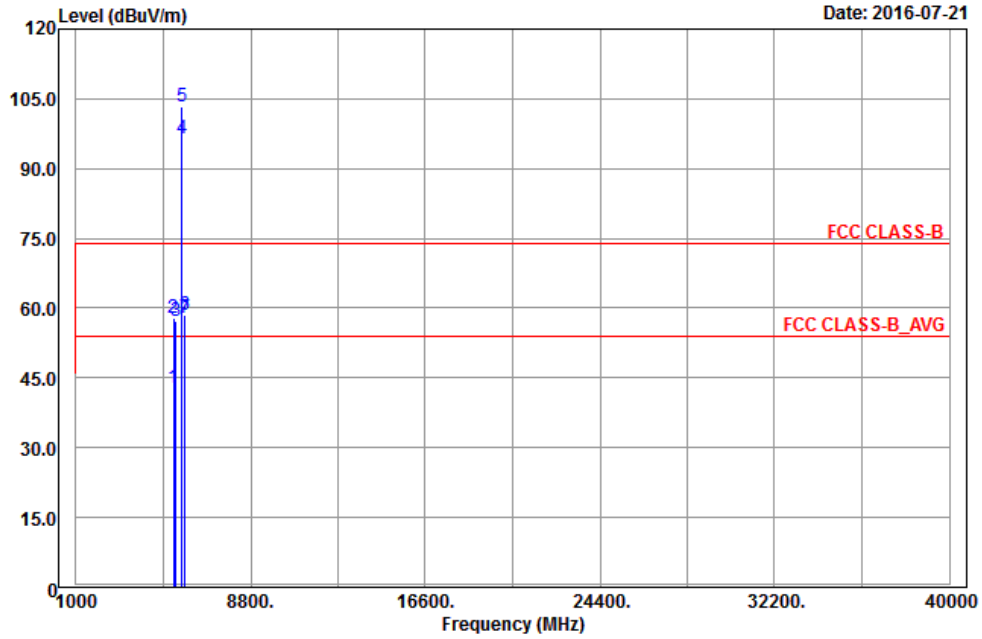
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5456	42.84	34.02	54	-11.16	34.36	8.51	34.05	202	36	Average
5456	57.27	48.45	74	-16.73	34.36	8.51	34.05	202	36	Peak
5470	55.6	46.77	68.2	-12.6	34.37	8.51	34.05	202	36	Peak
5700	94.9	85.77			34.59	8.64	34.1	202	36	Average
5700	101.7	92.57			34.59	8.64	34.1	202	36	Peak
5725	63.28	54.12	68.2	-4.92	34.62	8.65	34.11	202	36	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5438	42.77	33.98	54	-11.23	34.35	8.48	34.04	100	28	Average
5438	56.95	48.16	74	-17.05	34.35	8.48	34.04	100	28	Peak
5470	55.36	46.53	68.2	-12.84	34.37	8.51	34.05	100	28	Peak
5700	93.08	83.95			34.59	8.64	34.1	100	28	Average
5700	100.31	91.18			34.59	8.64	34.1	100	28	Peak
5725	65.33	56.17	68.2	-2.87	34.62	8.65	34.11	100	28	Peak

Remarks:

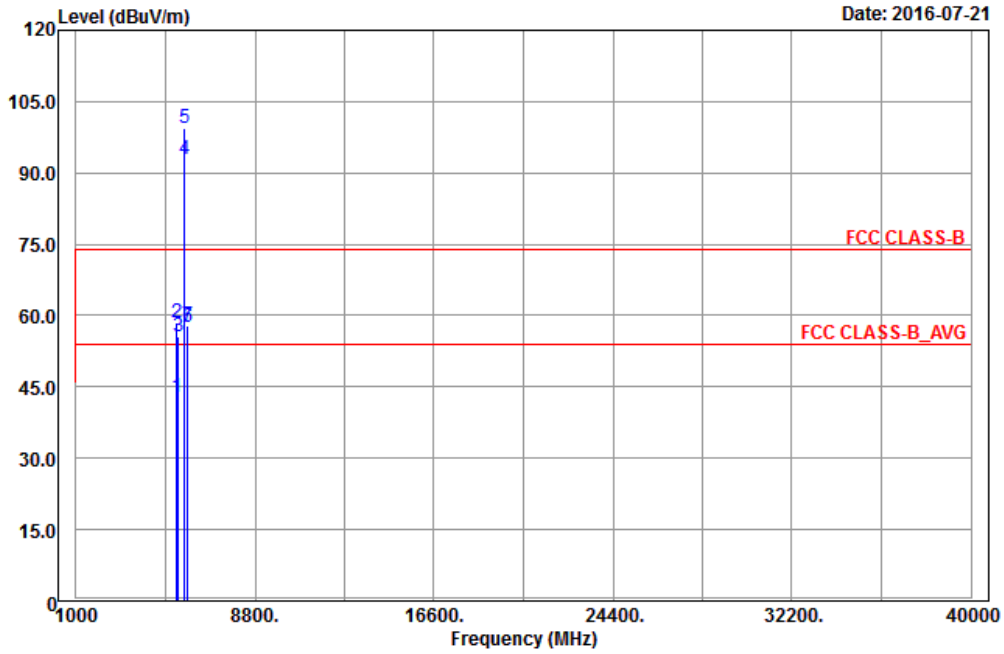
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5700 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 144	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



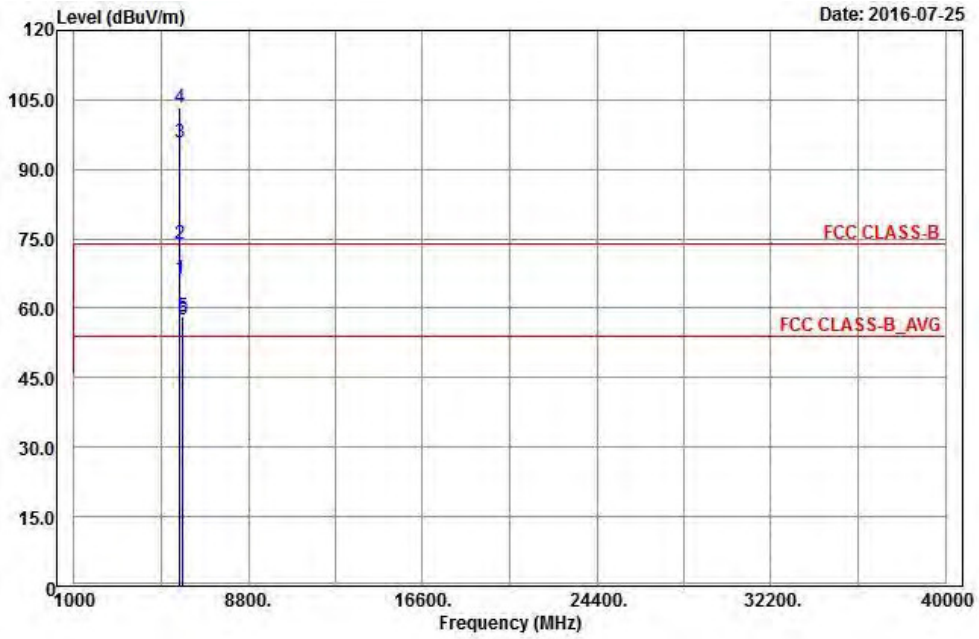
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5360	42.82	34.19	54	-11.18	34.28	8.38	34.03	232	303	Average
5360	57.95	49.32	74	-16.05	34.28	8.38	34.03	232	303	Peak
*5470	57.38	48.55	68.2	-10.82	34.37	8.51	34.05	232	303	Peak
5720	96.48	87.32			34.62	8.65	34.11	232	303	Average
5720	103.45	94.29			34.62	8.65	34.11	232	303	Peak
*5860	58.46	49.14	78.2	-19.74	34.76	8.7	34.14	232	303	Peak
*5864	57.95	48.62	68.2	-10.25	34.76	8.71	34.14	232	303	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5390	42.83	34.15	54	-11.17	34.31	8.41	34.04	267	3	Average
5390	58.39	49.71	74	-15.61	34.31	8.41	34.04	267	3	Peak
*5470	55.55	46.72	68.2	-12.65	34.37	8.51	34.05	267	3	Peak
5720	92.71	83.55			34.62	8.65	34.11	267	3	Average
5720	99.3	90.14			34.62	8.65	34.11	267	3	Peak
*5854	57.46	48.14	78.2	-20.74	34.76	8.7	34.14	267	3	Peak
*5864	57.81	48.48	68.2	-10.39	34.76	8.71	34.14	267	3	Peak

Remarks:

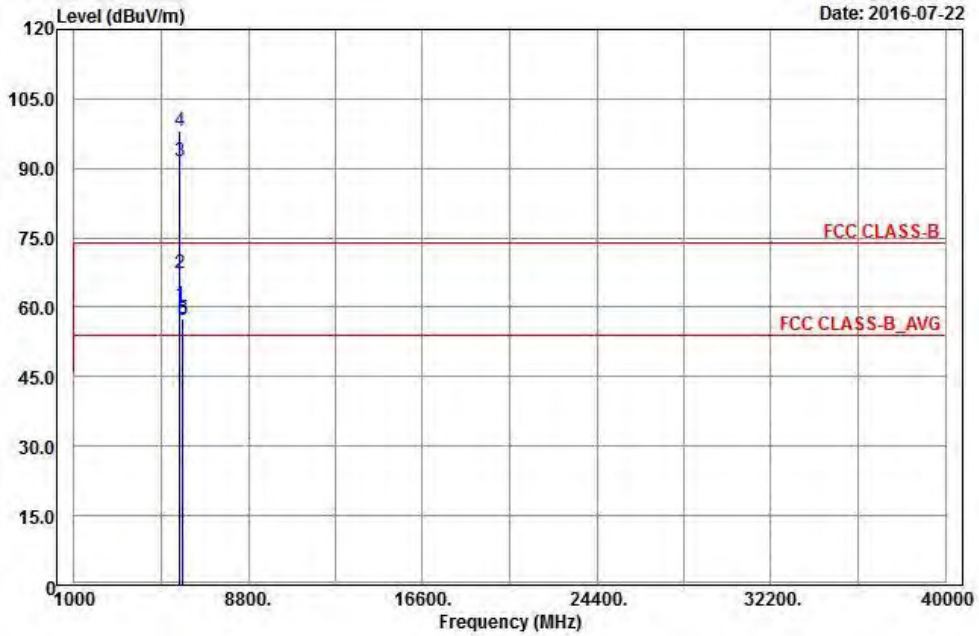
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5720 MHz: Fundamental Frequency
3. *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 149	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



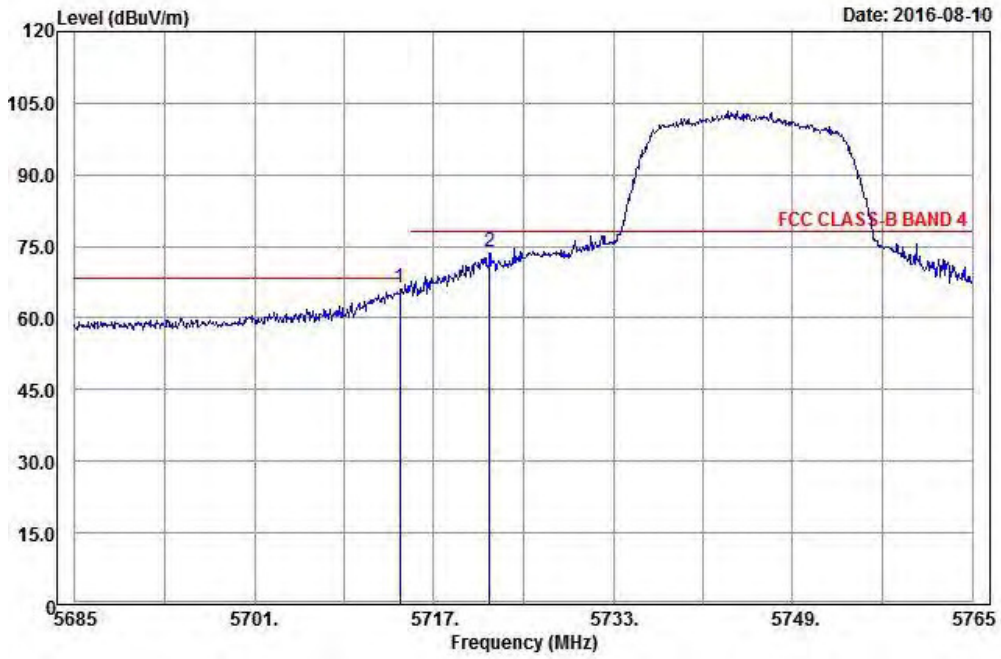
Vertical



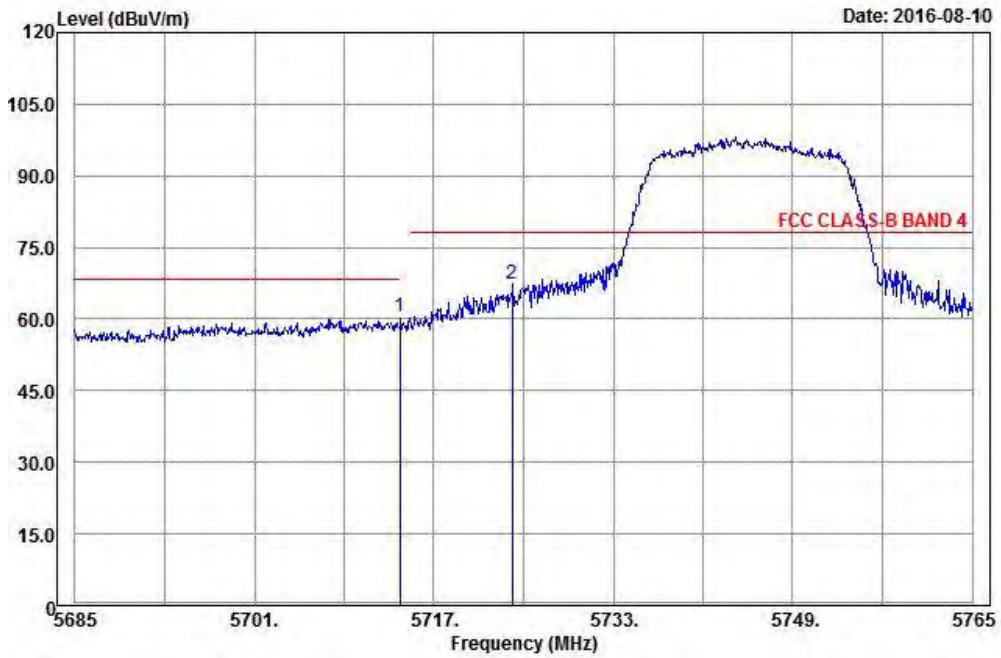
BandEdge

Peak

Horizontal



Vertical



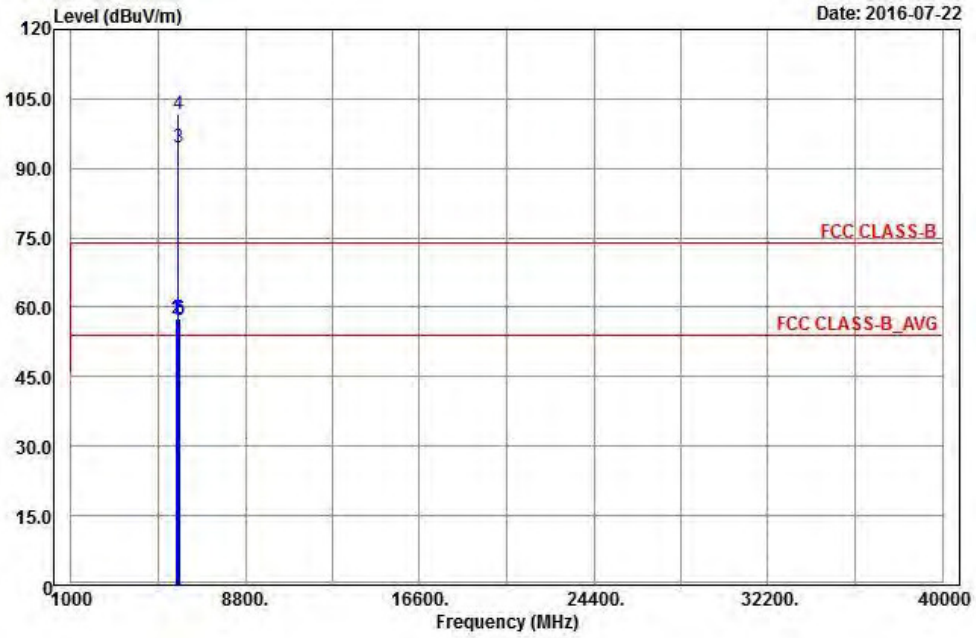
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	66.48	58.33	68.2	-1.72	34.61	8.65	34.11	230	303	Peak
*5722	73.88	64.72	78.2	-4.32	34.62	8.65	34.11	230	303	Peak
5745	95.92	86.73			34.64	8.66	34.11	230	303	Average
5745	103.18	93.99			34.64	8.66	34.11	230	303	Peak
*5860	58.12	48.8	78.2	-20.08	34.76	8.7	34.14	230	303	Peak
*5866	57.62	48.29	68.2	-10.58	34.76	8.71	34.14	230	303	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	60.59	51.44	68.2	-7.61	34.61	8.65	34.11	274	0	Peak
*5724	67.22	58.06	78.2	-10.98	34.62	8.65	34.11	274	0	Peak
5745	91.56	82.37			34.64	8.66	34.11	274	0	Average
5745	98.05	88.86			34.64	8.66	34.11	274	0	Peak
*5860	57.53	48.21	78.2	-20.67	34.76	8.7	34.14	274	0	Peak
*5868	57.12	47.79	68.2	-11.08	34.76	8.71	34.14	274	0	Peak

Remarks:

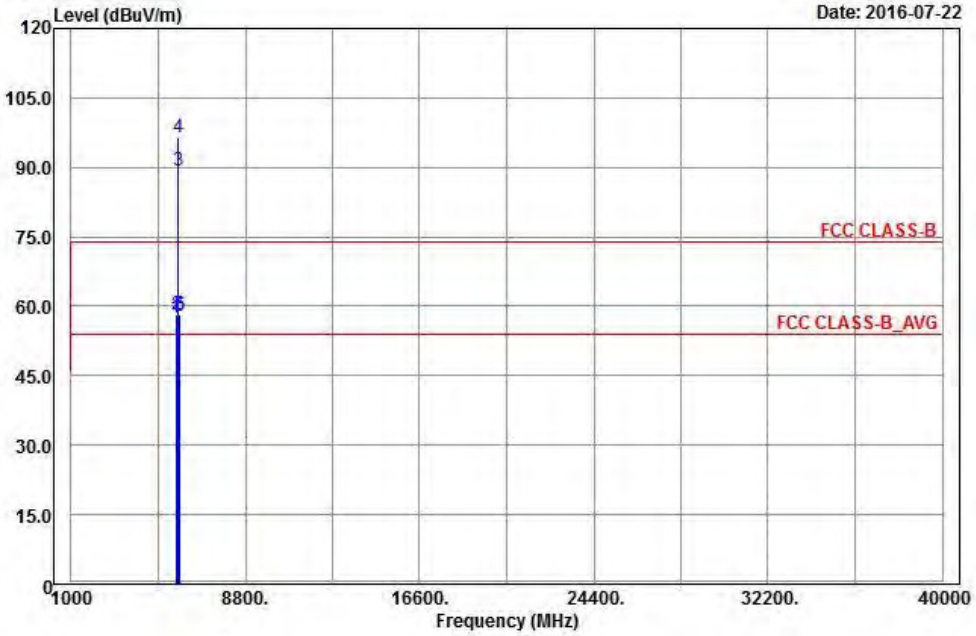
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5745 MHz: Fundamental Frequency
3. *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 157	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



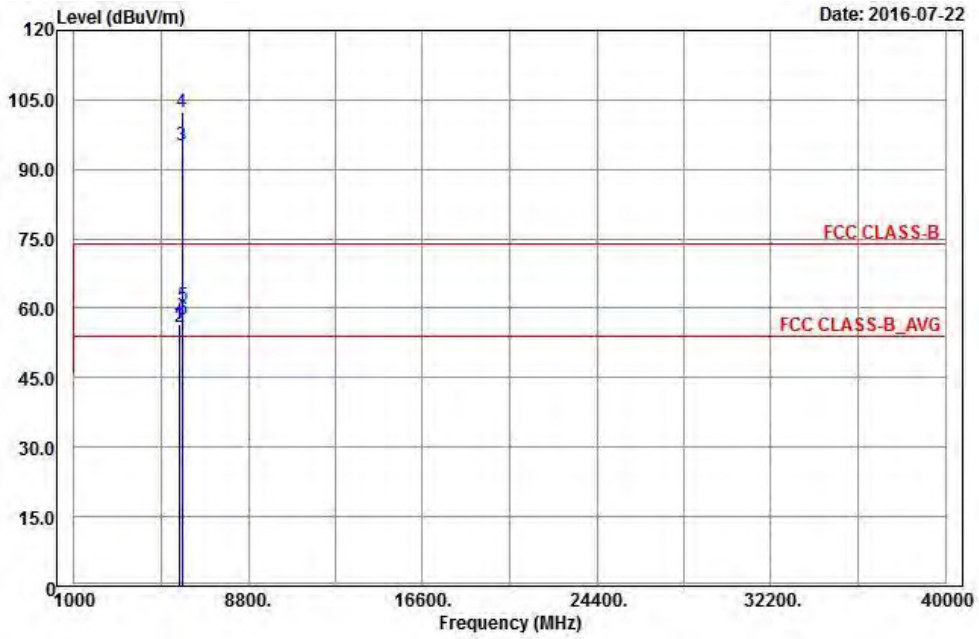
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5712	57.63	48.48	68.2	-10.57	34.61	8.65	34.11	226	302	Peak
*5722	57.52	48.36	78.2	-20.68	34.62	8.65	34.11	226	302	Peak
5785	94.52	85.29			34.68	8.68	34.13	226	302	Average
5785	101.79	92.56			34.68	8.68	34.13	226	302	Peak
*5856	57.35	48.03	78.2	-20.85	34.76	8.7	34.14	226	302	Peak
*5862	57.42	48.09	68.2	-10.78	34.76	8.71	34.14	226	302	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5708	57.47	48.32	68.2	-10.73	34.61	8.65	34.11	226	133	Peak
*5716	58.26	49.11	78.2	-19.94	34.61	8.65	34.11	226	133	Peak
5785	89.34	80.11			34.68	8.68	34.13	226	133	Average
5785	96.5	87.27			34.68	8.68	34.13	226	133	Peak
*5852	57.84	48.54	78.2	-20.36	34.74	8.7	34.14	226	133	Peak
*5862	58.06	48.73	68.2	-10.14	34.76	8.71	34.14	226	133	Peak

Remarks:

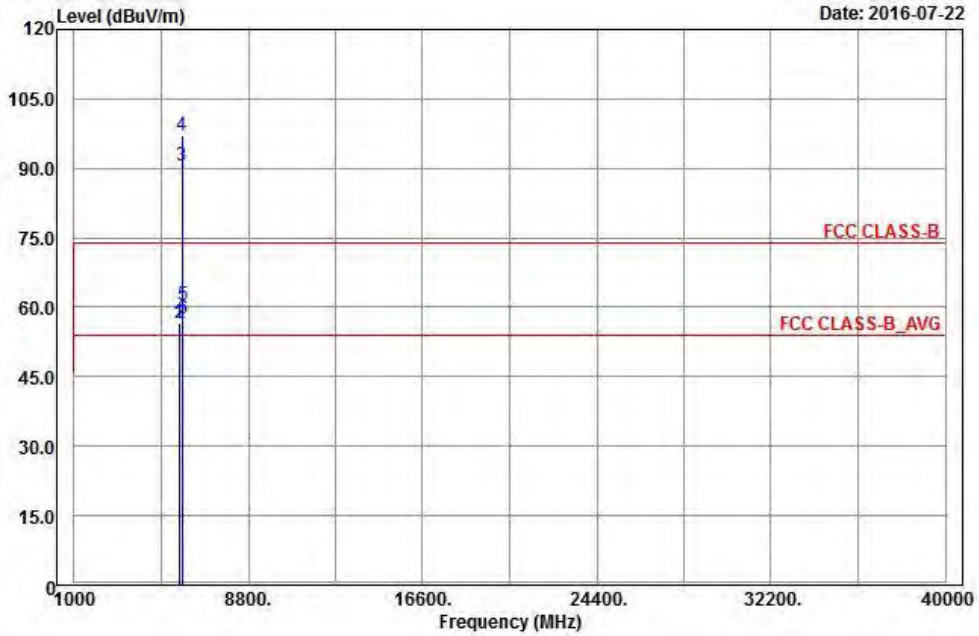
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5785 MHz: Fundamental Frequency
3. *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 165	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



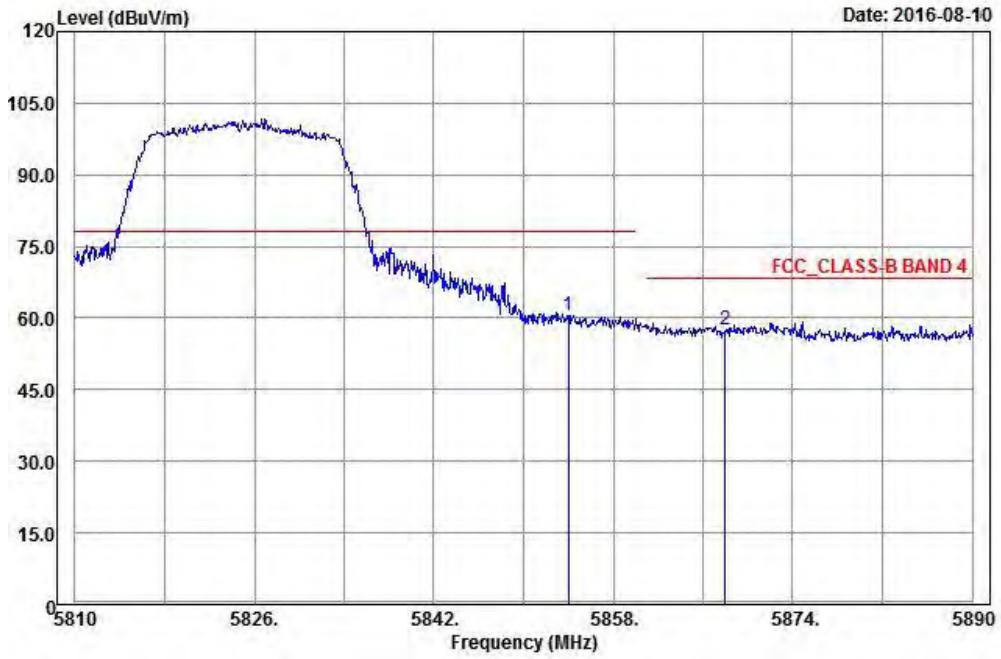
Vertical



BandEdge

Peak

Horizontal



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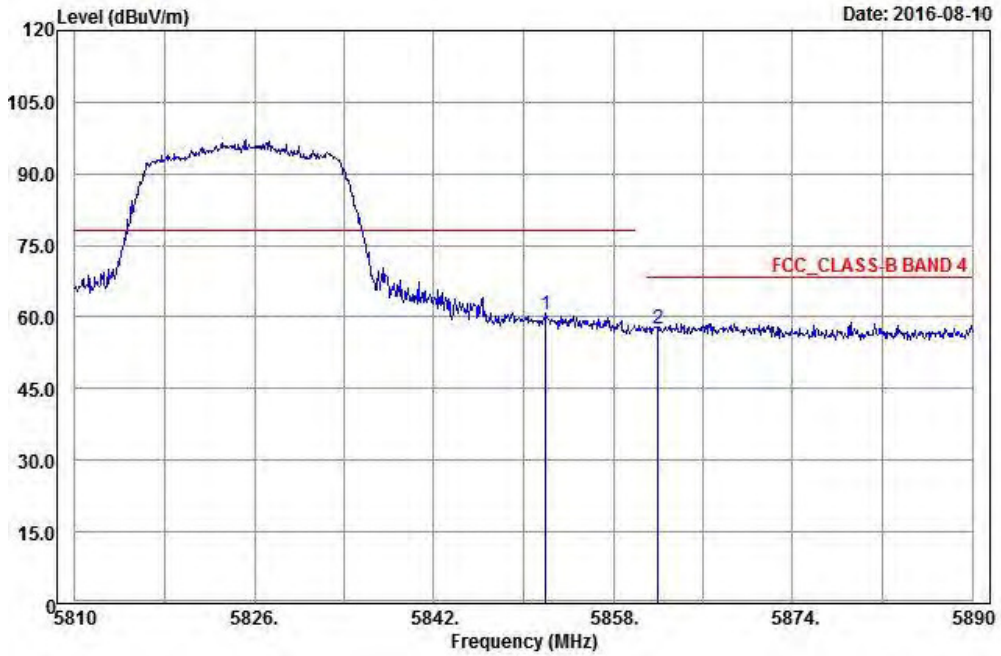


Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5712	56.45	47.3	68.2	-11.75	34.61	8.65	34.11	226	304	Peak
5724	55.77	46.61	78.2	-22.43	34.62	8.65	34.11	226	304	Peak
5825	95.16	85.87	54			8.69	34.13	226	304	Average
5825	102.27	92.98	74			8.69	34.13	226	304	Peak
5854	60.46	51.14	78.2	-17.74	34.76	8.7	34.14	226	304	Peak
5868	57.54	48.21	68.2	-10.66	34.76	8.71	34.14	226	304	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5708	56.47	47.32	68.2	-11.73	34.61	8.65	34.11	254	360	Peak
5716	56.66	47.51	78.2	-21.54	34.61	8.65	34.11	254	360	Peak
5825	90.68	81.39	54			8.69	34.13	254	360	Average
5825	97.25	87.96	74			8.69	34.13	254	360	Peak
5852	60.51	51.21	78.2	-17.69	34.74	8.7	34.14	254	360	Peak
5862	57.66	48.33	68.2	-10.54	34.76	8.71	34.14	254	360	Peak

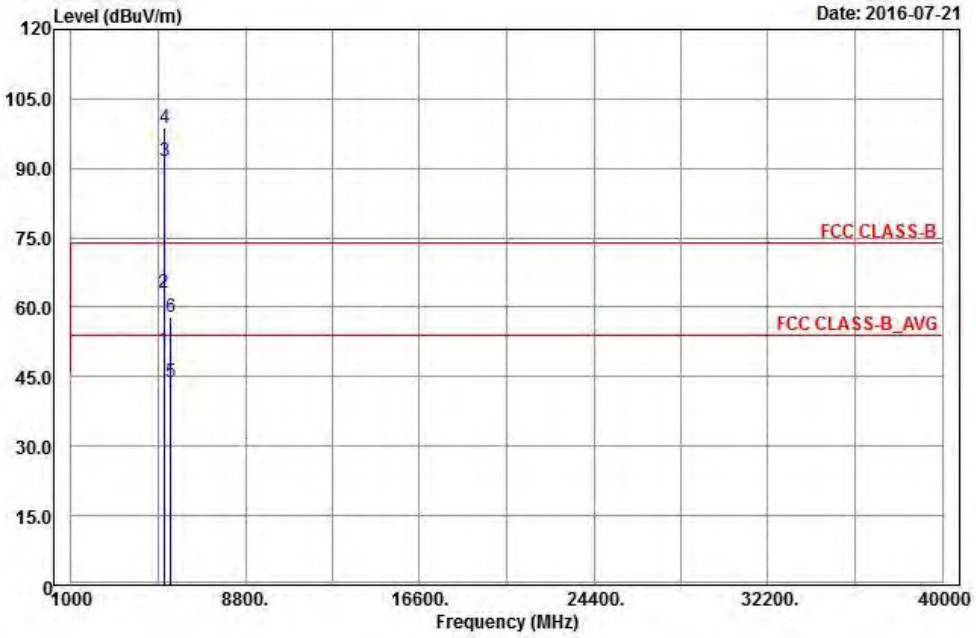
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5825 MHz: Fundamental Frequency
3. *: Out of Restricted Band

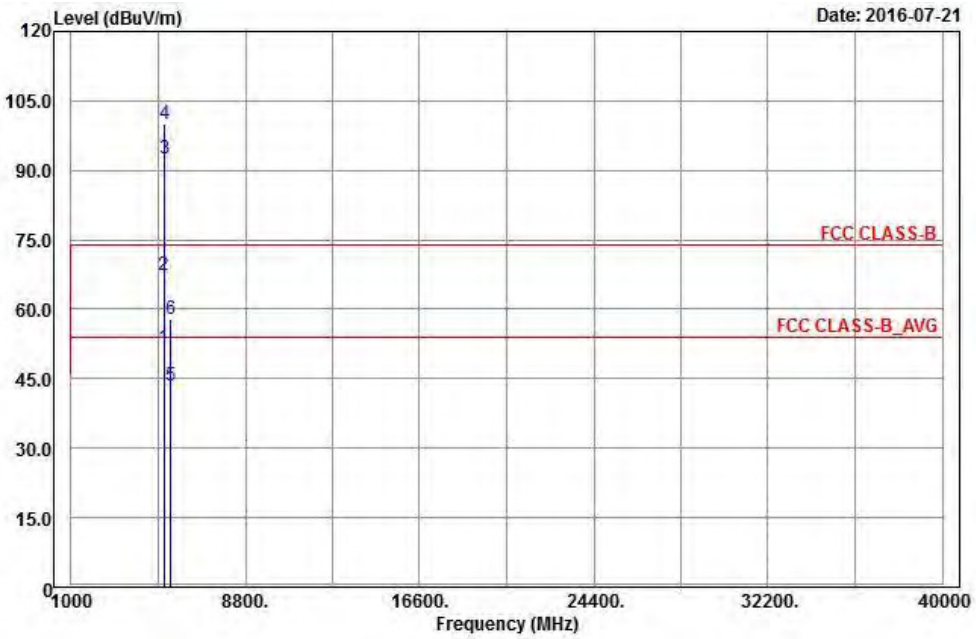
802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 38	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



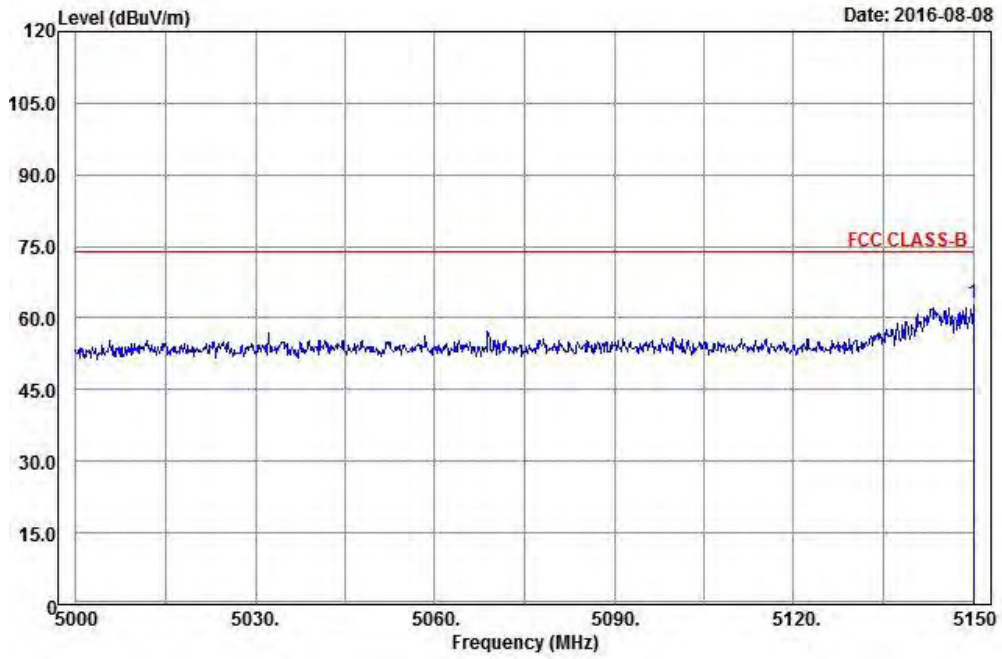
Vertical



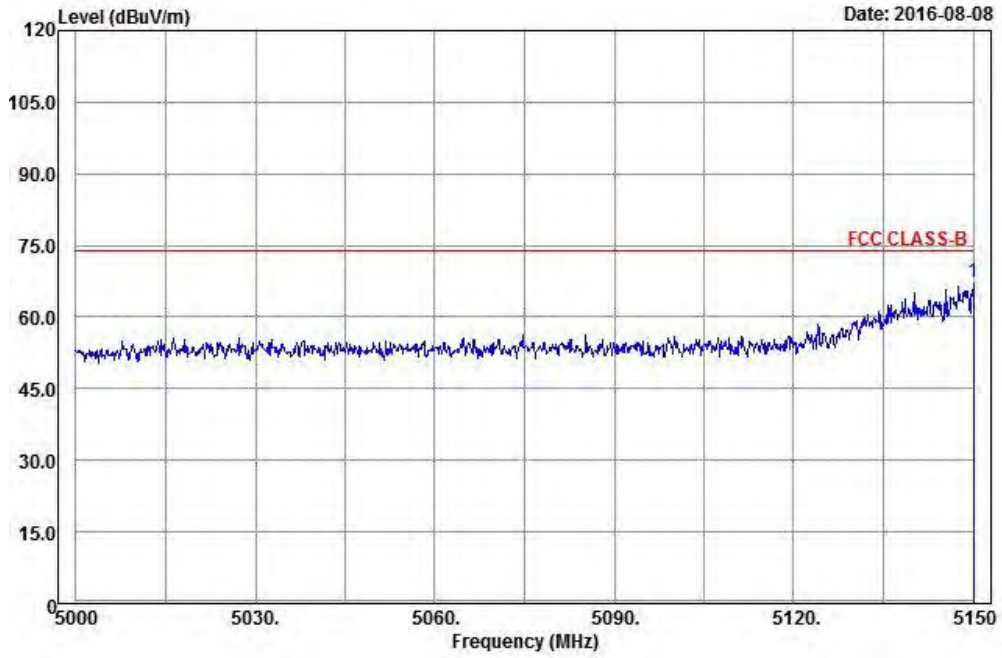
BandEdge

Peak

Horizontal

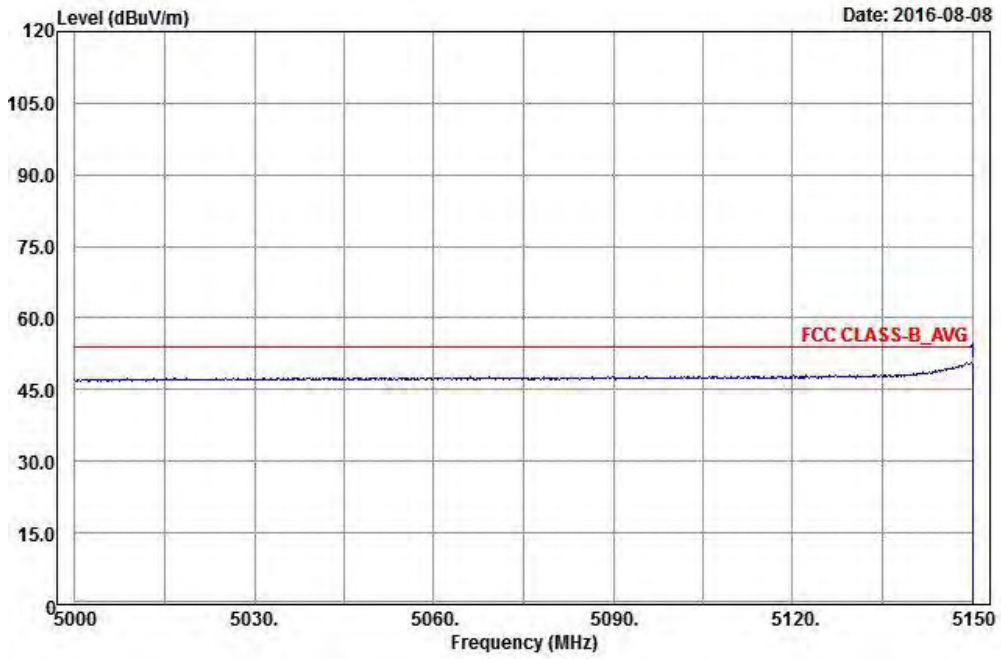


Vertical

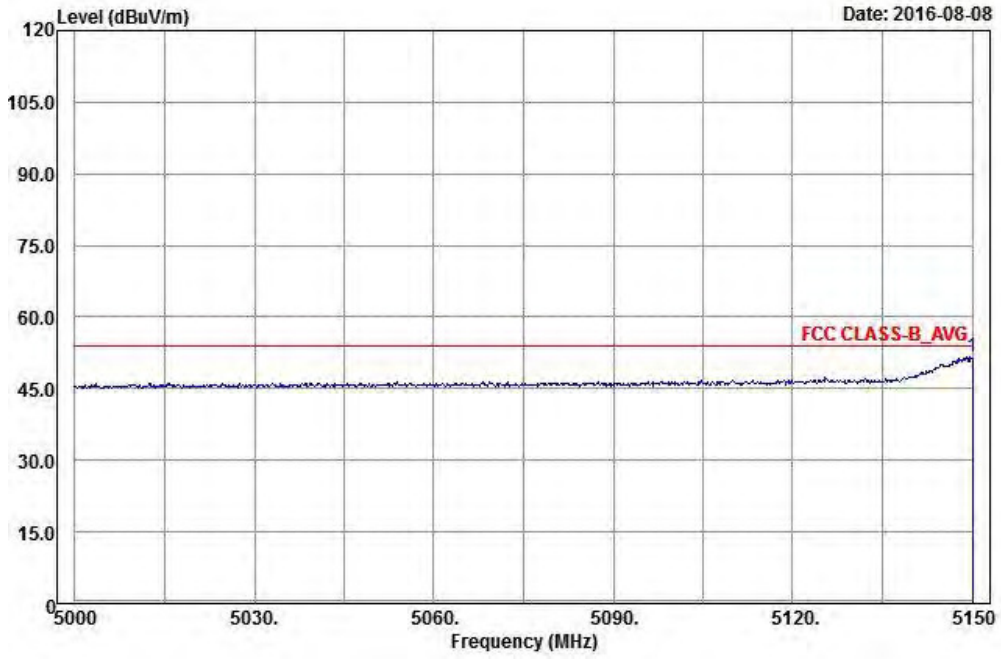


Average

Horizontal



Vertical



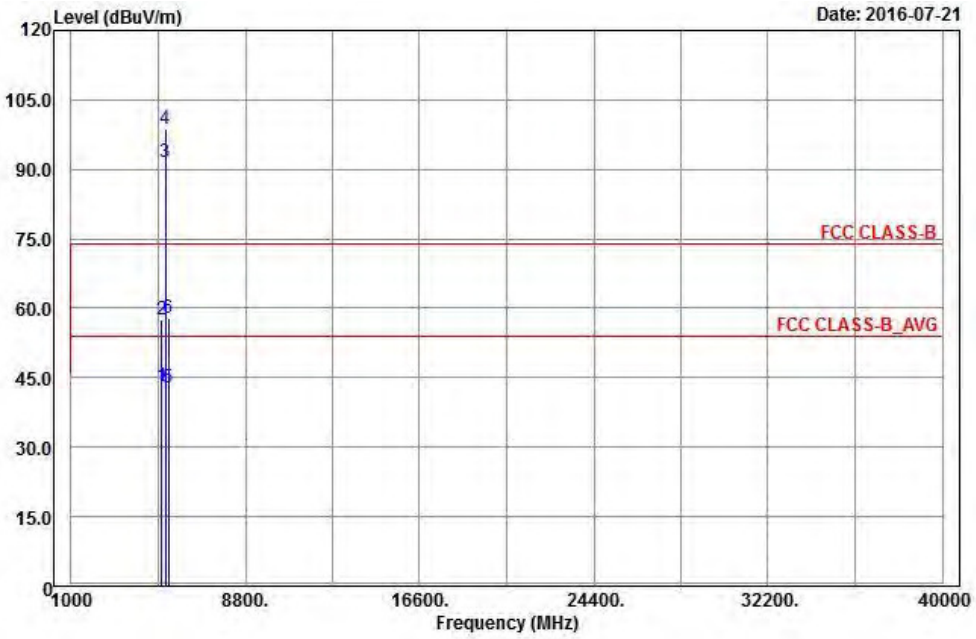
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	50.72	42.47	54	-3.28	34.12	8.13	34	100	337	Average
5150	63.01	54.76	74	-10.99	34.12	8.13	34	100	337	Peak
5190	91.5	83.16			34.15	8.19	34	100	337	Average
5190	98.67	90.33			34.15	8.19	34	100	337	Peak
5446	43.76	34.93	54	-10.24	34.36	8.51	34.04	100	337	Average
5446	57.81	48.98	74	-16.19	34.36	8.51	34.04	100	337	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	51.59	43.34	54	-2.41	34.12	8.13	34	122	101	Average
5150	67.31	59.06	74	-6.69	34.12	8.13	34	122	101	Peak
5190	92.54	84.2			34.15	8.19	34	122	101	Average
5190	99.91	91.57			34.15	8.19	34	122	101	Peak
5456	43.4	34.58	54	-10.6	34.36	8.51	34.05	122	101	Average
5456	57.88	49.06	74	-16.12	34.36	8.51	34.05	122	101	Peak

Remarks:

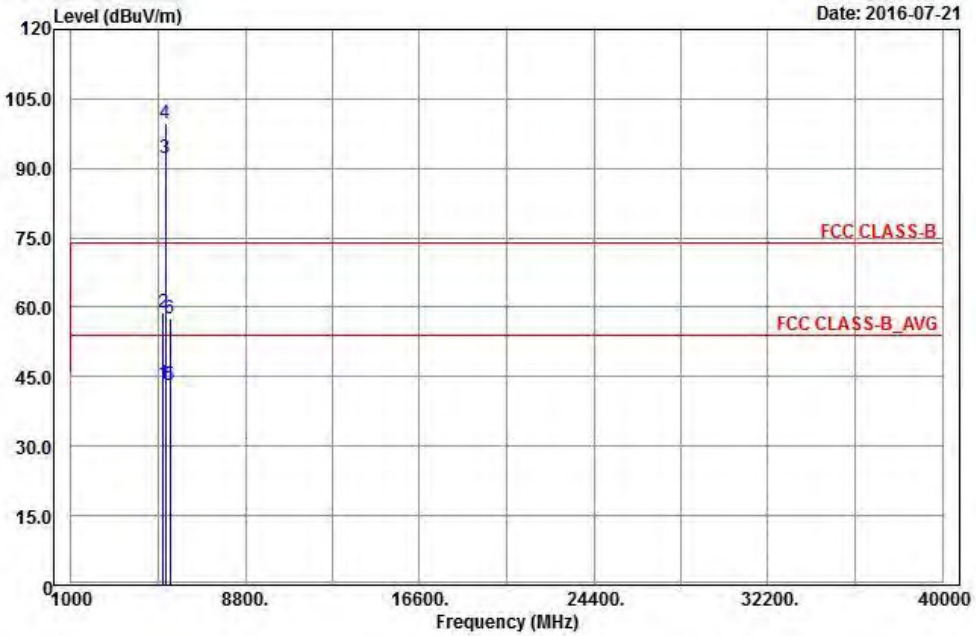
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5190 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 46	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



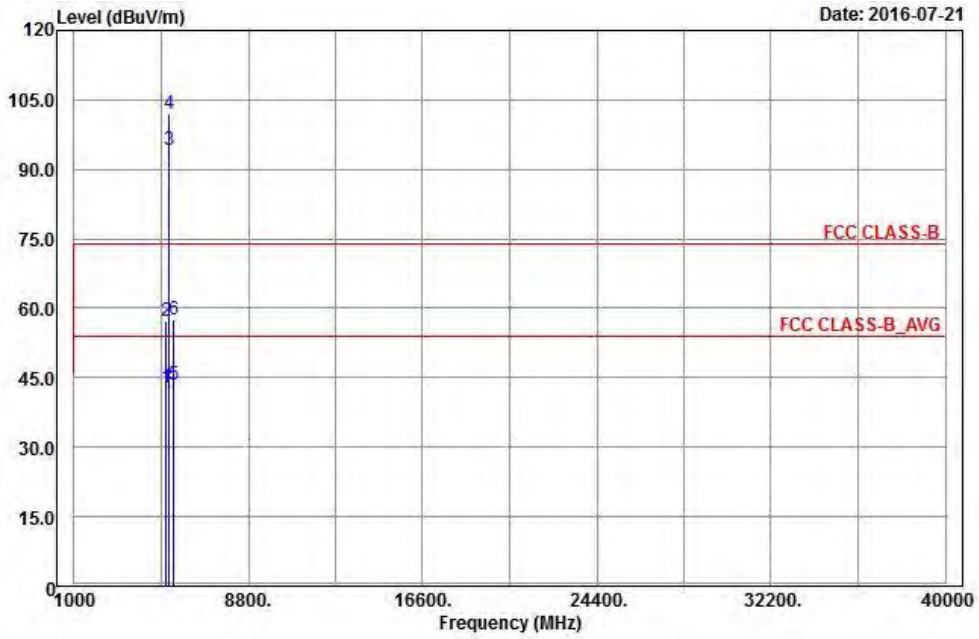
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5058	43.16	35.06	54	-10.84	34.05	8.03	33.98	100	335	Average
5058	57.6	49.5	74	-16.4	34.05	8.03	33.98	100	335	Peak
5230	91.52	83.12			34.19	8.22	34.01	100	335	Average
5230	98.88	90.48			34.19	8.22	34.01	100	335	Peak
5350	42.69	34.06	54	-11.31	34.28	8.38	34.03	100	335	Average
5350	57.94	49.31	74	-16.06	34.28	8.38	34.03	100	335	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5126	43.59	35.37	54	-10.41	34.11	8.1	33.99	128	98	Average
5126	58.83	50.61	74	-15.17	34.11	8.1	33.99	128	98	Peak
5230	92.25	83.85			34.19	8.22	34.01	128	98	Average
5230	99.67	91.27			34.19	8.22	34.01	128	98	Peak
5442	43.27	34.48	54	-10.73	34.35	8.48	34.04	128	98	Average
5442	57.66	48.87	74	-16.34	34.35	8.48	34.04	128	98	Peak

Remarks:

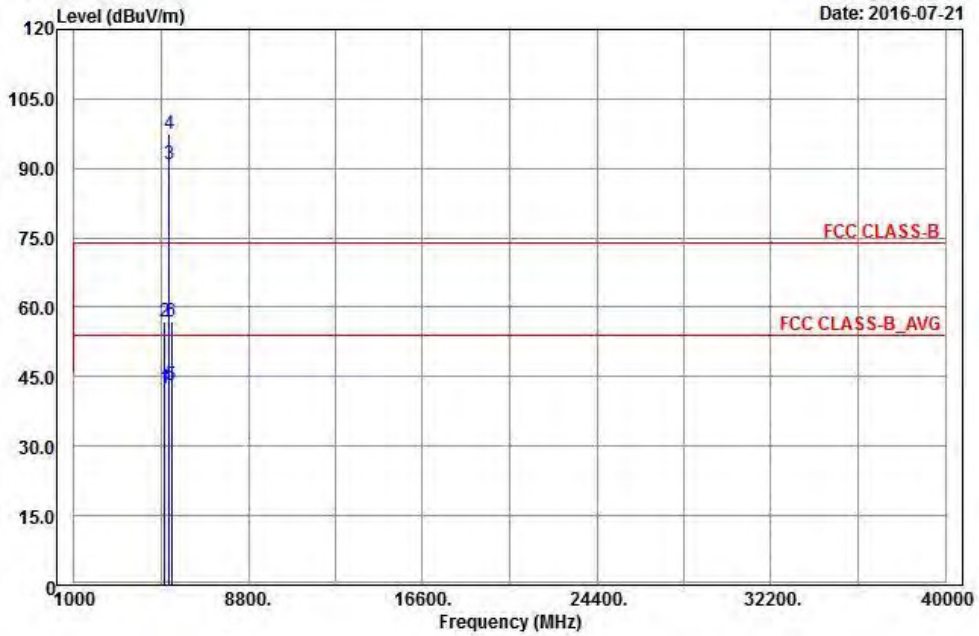
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5230 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 54	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



Vertical



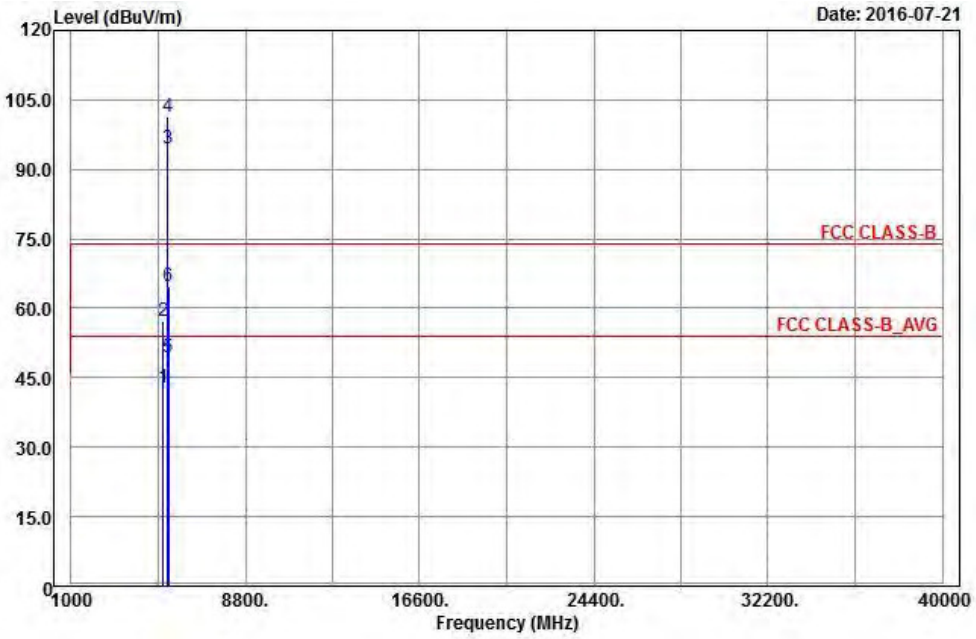
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5114	42.75	34.55	54	-11.25	34.09	8.1	33.99	101	120	Average
5114	57.36	49.16	74	-16.64	34.09	8.1	33.99	101	120	Peak
5270	94.2	85.71			34.21	8.29	34.01	101	120	Average
5270	101.87	93.38			34.21	8.29	34.01	101	120	Peak
5458	43.43	34.61	54	-10.57	34.36	8.51	34.05	101	120	Average
5458	57.45	48.63	74	-16.55	34.36	8.51	34.05	101	120	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5042	42.57	34.51	54	-11.43	34.04	8	33.98	105	249	Average
5042	56.87	48.81	74	-17.13	34.04	8	33.98	105	249	Peak
5270	90.9	82.41			34.21	8.29	34.01	105	249	Average
5270	97.49	89			34.21	8.29	34.01	105	249	Peak
5350	43.1	34.47	54	-10.9	34.28	8.38	34.03	105	249	Average
5350	56.96	48.33	74	-17.04	34.28	8.38	34.03	105	249	Peak

Remarks:

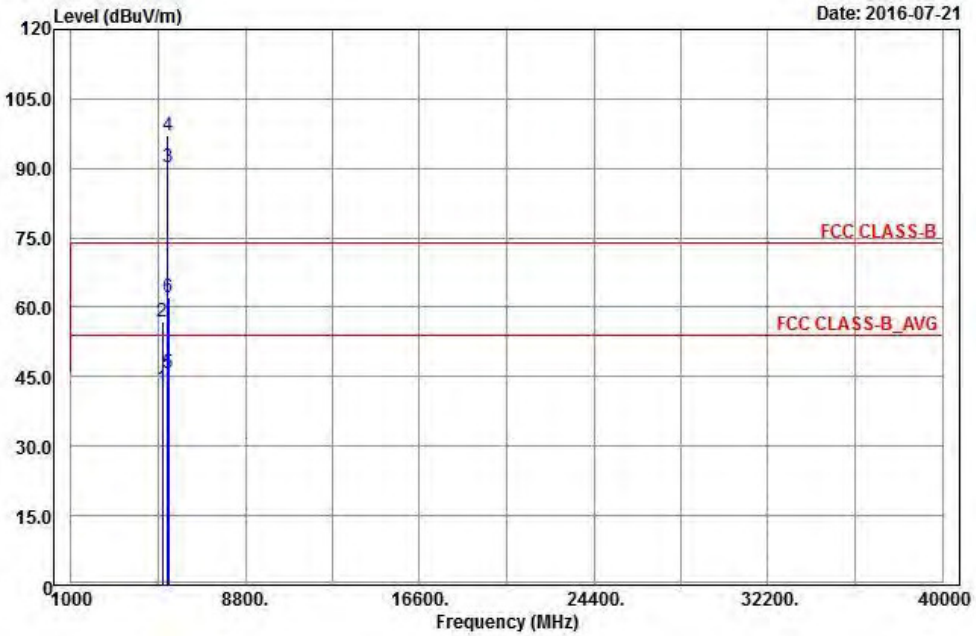
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5270 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 62	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



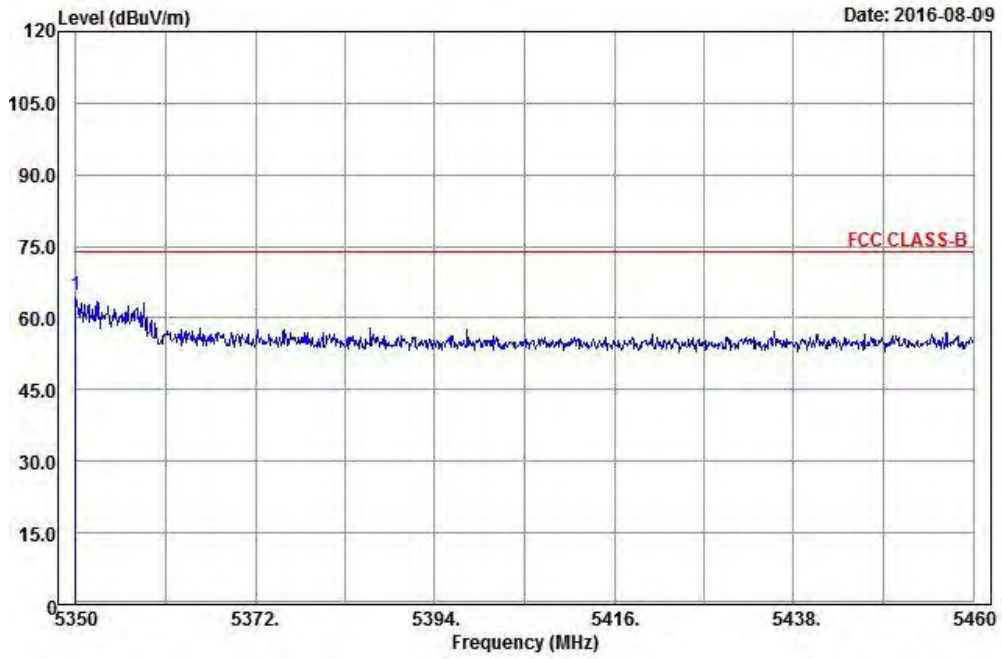
Vertical



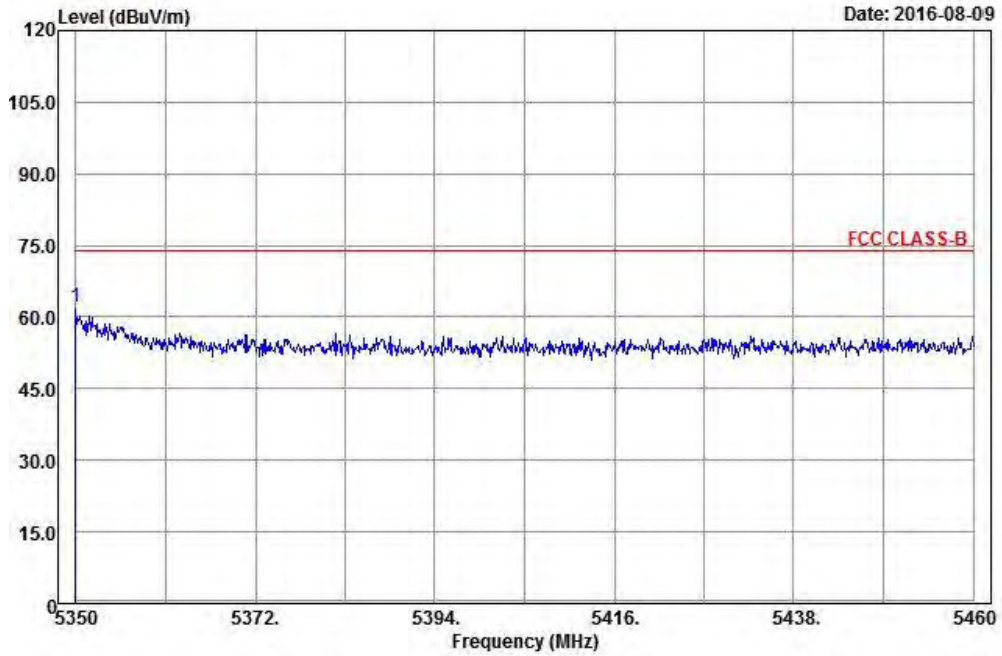
BandEdge

Peak

Horizontal

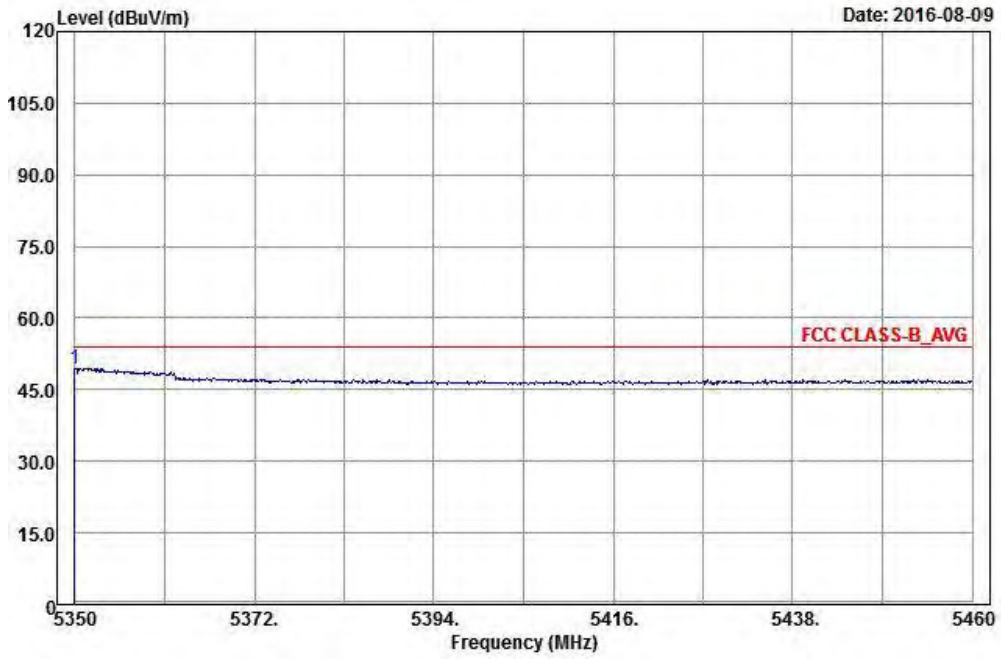


Vertical

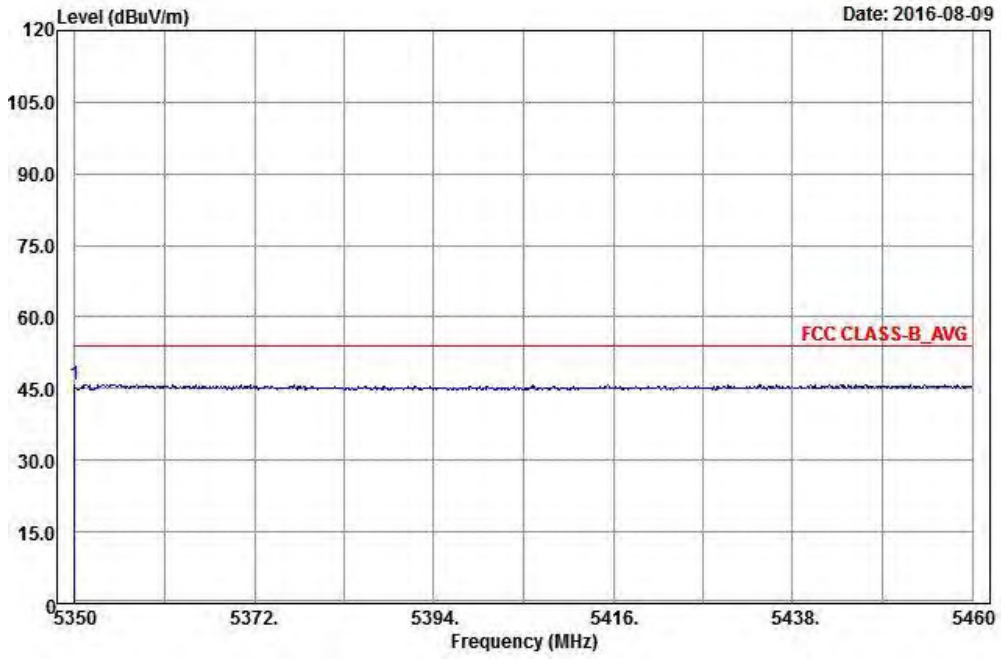


Average

Horizontal



Vertical



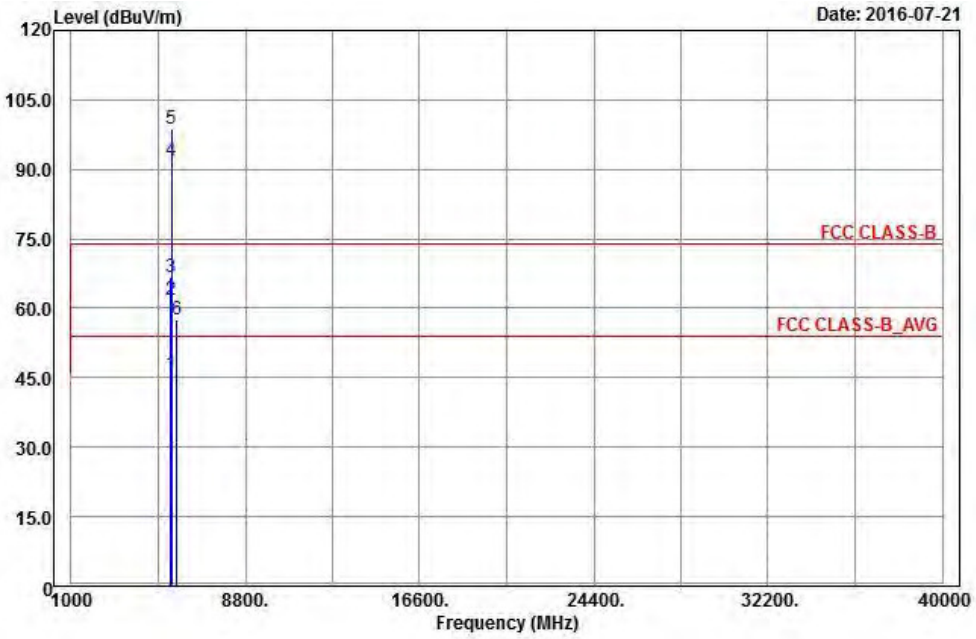
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5134	42.8	34.55	54	-11.2	34.11	8.13	33.99	100	120	Average
5134	57.07	48.82	74	-16.93	34.11	8.13	33.99	100	120	Peak
5310	94.57	86.02			34.25	8.32	34.02	100	120	Average
5310	101.49	92.94			34.25	8.32	34.02	100	120	Peak
5350	49.33	40.7	54	-4.67	34.28	8.38	34.03	100	120	Average
5350	64.58	55.95	74	-9.42	34.28	8.38	34.03	100	120	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5094	42.6	34.44	54	-11.4	34.08	8.07	33.99	105	249	Average
5094	56.77	48.61	74	-17.23	34.08	8.07	33.99	105	249	Peak
5310	90.27	81.72			34.25	8.32	34.02	105	249	Average
5310	97.26	88.71			34.25	8.32	34.02	105	249	Peak
5350	45.86	37.23	54	-8.14	34.28	8.38	34.03	105	249	Average
5350	61.97	53.34	74	-12.03	34.28	8.38	34.03	105	249	Peak

Remarks:

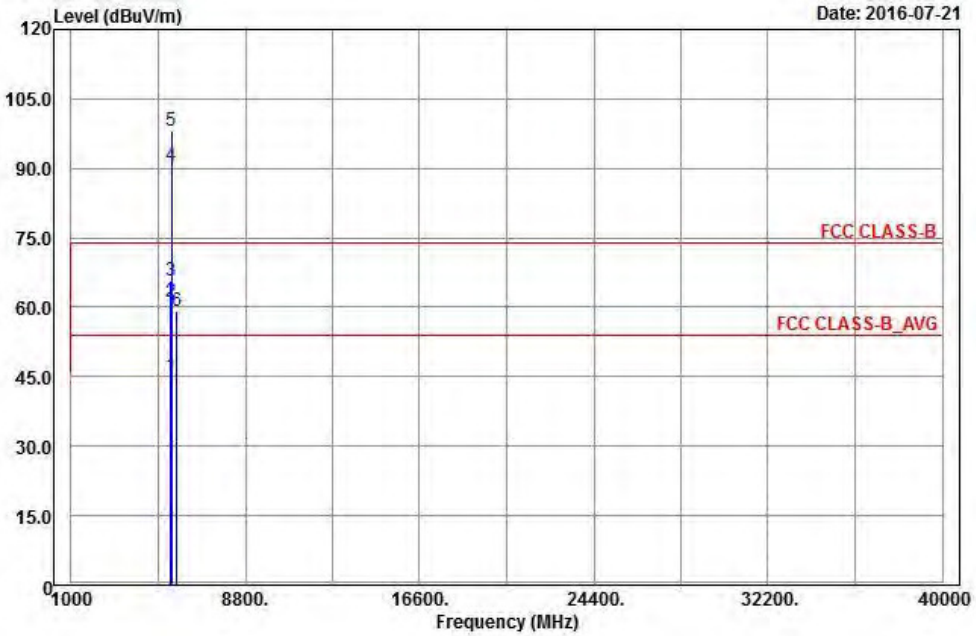
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5310 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 102	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



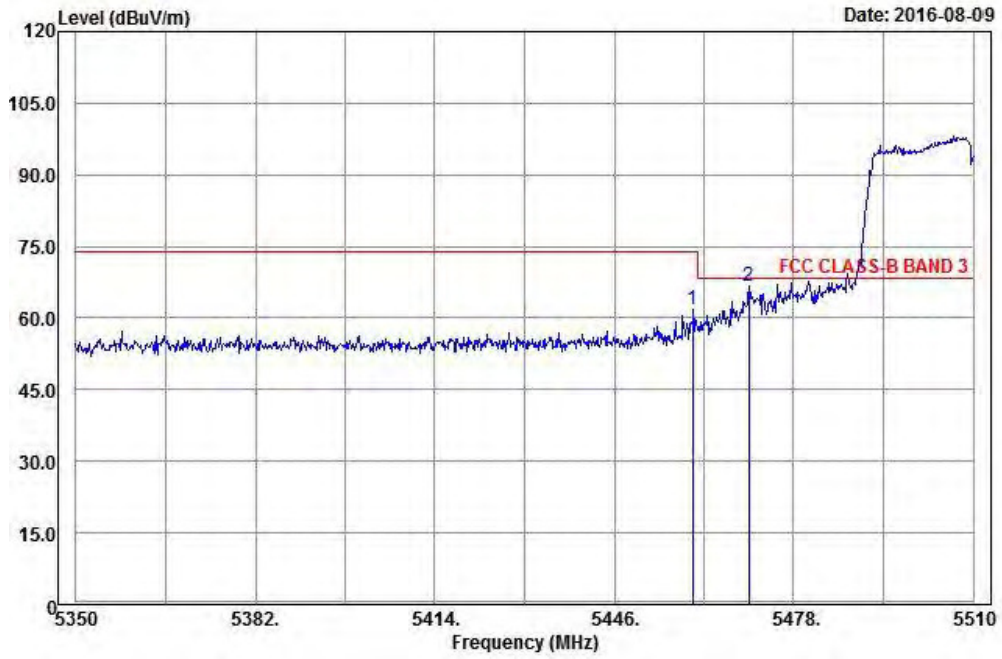
Vertical



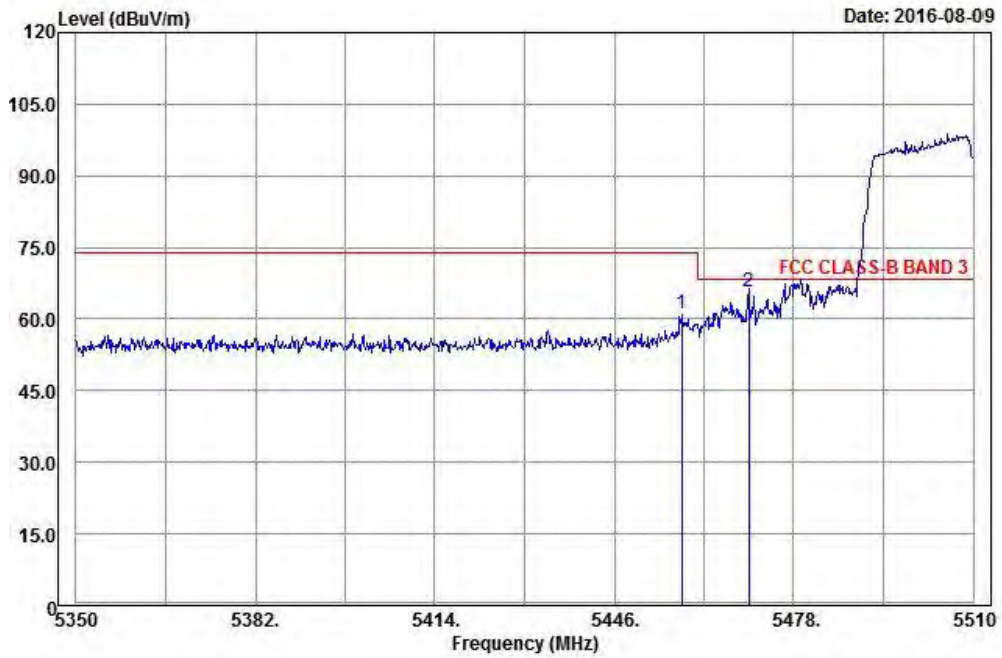
BandEdge

Peak

Horizontal

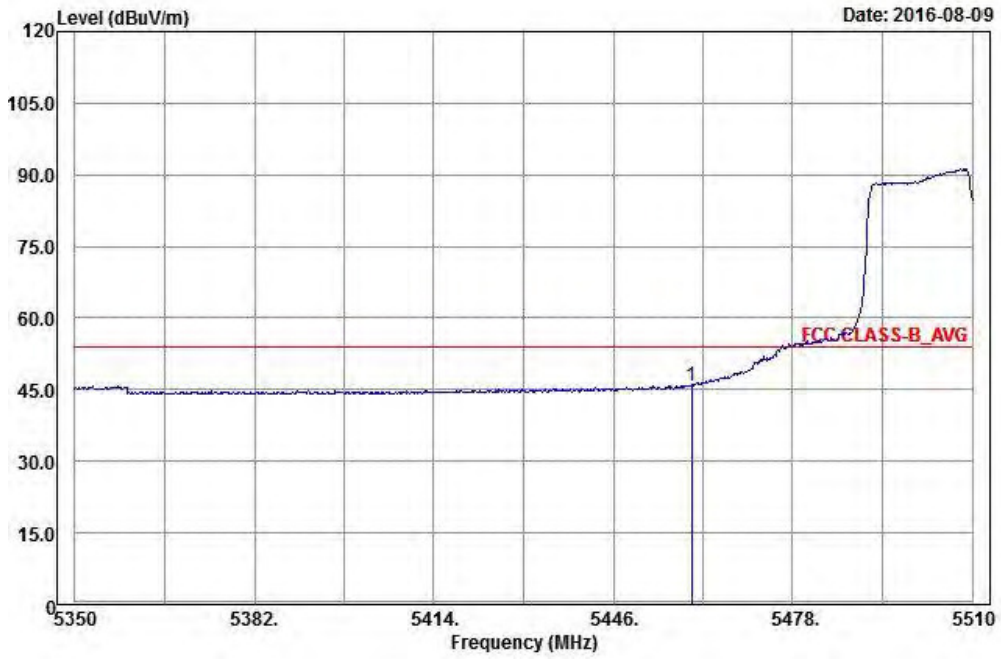


Vertical

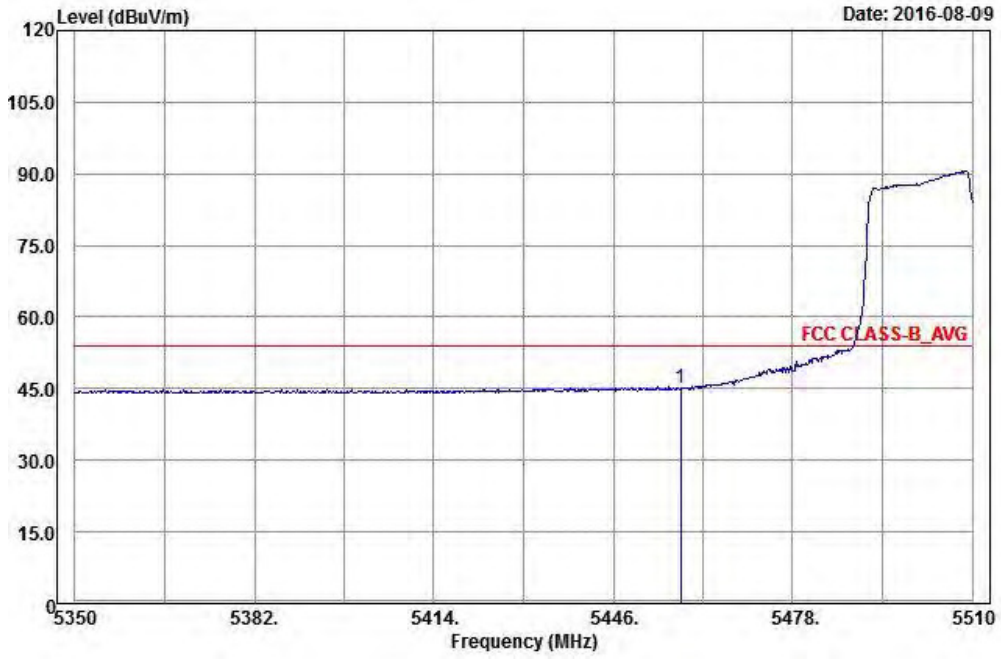


Average

Horizontal



Vertical



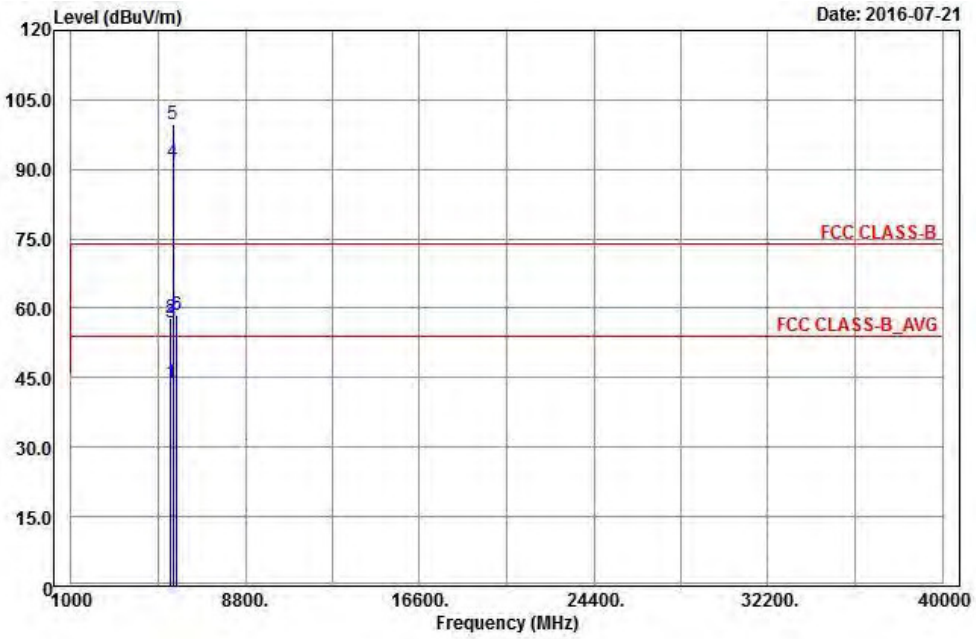
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	45.78	36.96	54	-8.22	34.36	8.51	34.05	220	29	Average
5460	61.85	53.03	74	-12.15	34.36	8.51	34.05	220	29	Peak
5470	66.59	57.76	68.2	-1.61	34.37	8.51	34.05	220	29	Peak
5510	91.74	82.83			34.4	8.57	34.06	220	29	Average
5510	98.8	89.89			34.4	8.57	34.06	220	29	Peak
5725	57.65	48.49	68.2	-10.55	34.62	8.65	34.11	220	29	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5458	45.04	36.22	54	-8.96	34.36	8.51	34.05	100	28	Average
5458	61.12	52.3	74	-12.88	34.36	8.51	34.05	100	28	Peak
5470	65.85	57.02	68.2	-2.35	34.37	8.51	34.05	100	28	Peak
5510	90.43	81.52			34.4	8.57	34.06	100	28	Average
5510	98.12	89.21			34.4	8.57	34.06	100	28	Peak
5725	59.16	50	68.2	-9.04	34.62	8.65	34.11	100	28	Peak

Remarks:

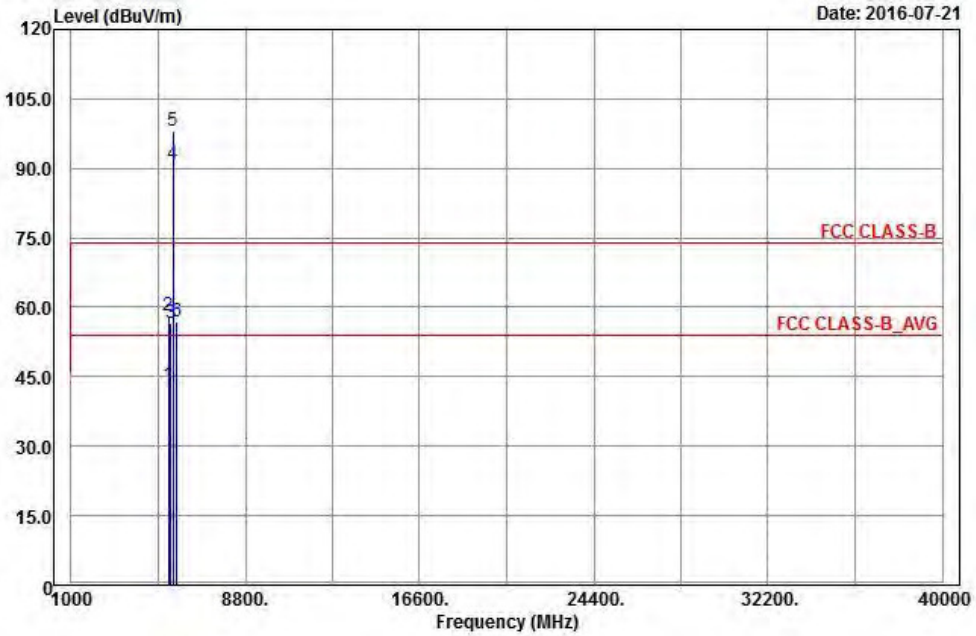
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5510 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 110	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



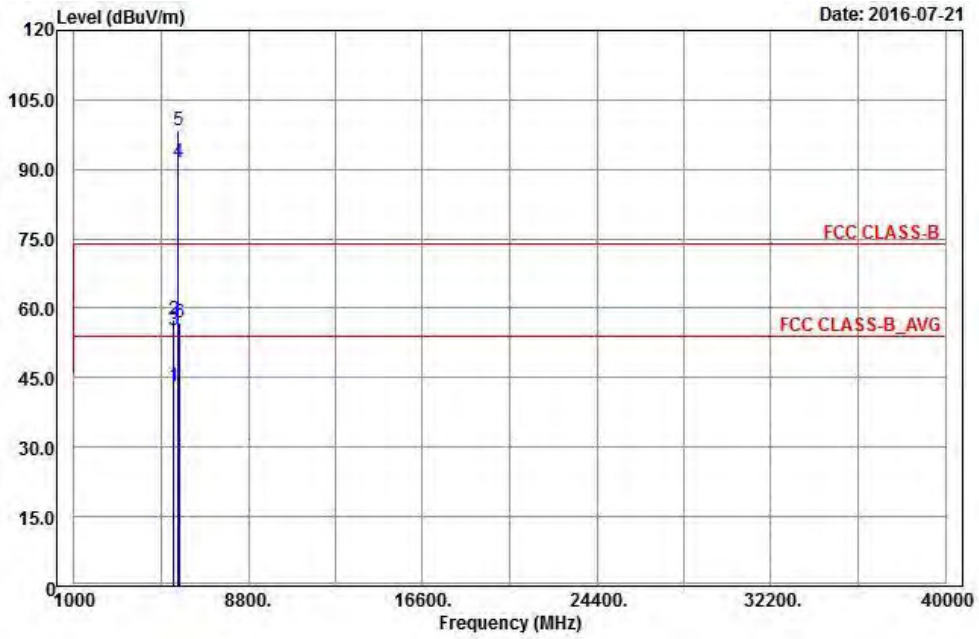
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5448	43.71	34.88	54	-10.29	34.36	8.51	34.04	197	29	Average
5448	57.97	49.14	74	-16.03	34.36	8.51	34.04	197	29	Peak
5470	56.85	48.02	68.2	-11.35	34.37	8.51	34.05	197	29	Peak
5550	91.57	82.6			34.45	8.59	34.07	197	29	Average
5550	99.73	90.76			34.45	8.59	34.07	197	29	Peak
5725	58.55	49.39	68.2	-9.65	34.62	8.65	34.11	197	29	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5358	43.31	34.68	54	-10.69	34.28	8.38	34.03	100	32	Average
5358	58.25	49.62	74	-15.75	34.28	8.38	34.03	100	32	Peak
5470	56.67	47.84	68.2	-11.53	34.37	8.51	34.05	100	32	Peak
5550	90.77	81.8			34.45	8.59	34.07	100	32	Average
5550	98.08	89.11			34.45	8.59	34.07	100	32	Peak
5725	57.03	47.87	68.2	-11.17	34.62	8.65	34.11	100	32	Peak

Remarks:

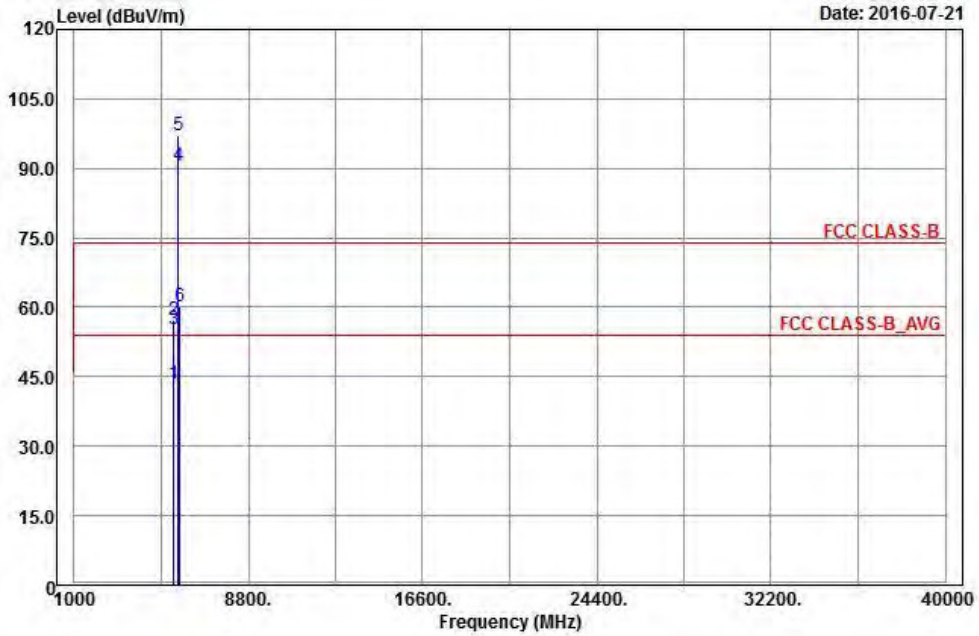
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5550 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 134	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



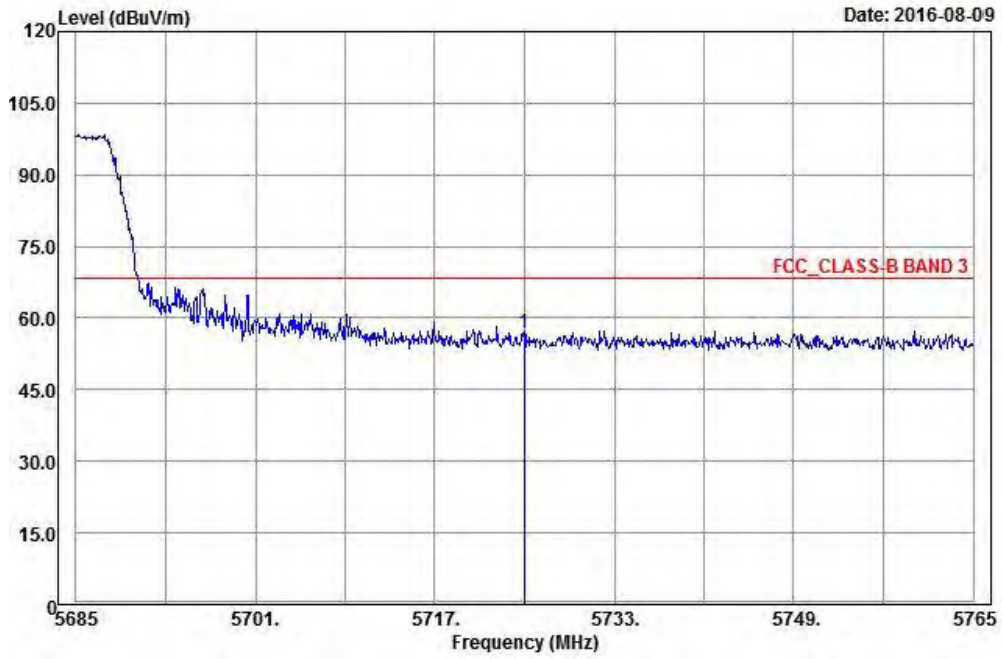
Vertical



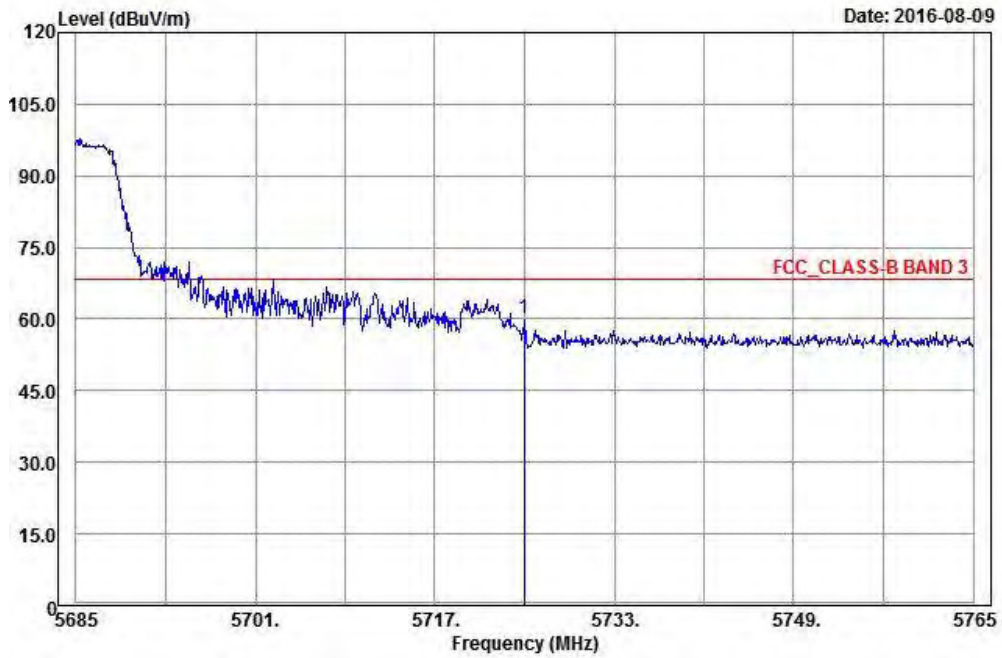
BandEdge

Peak

Horizontal



Vertical



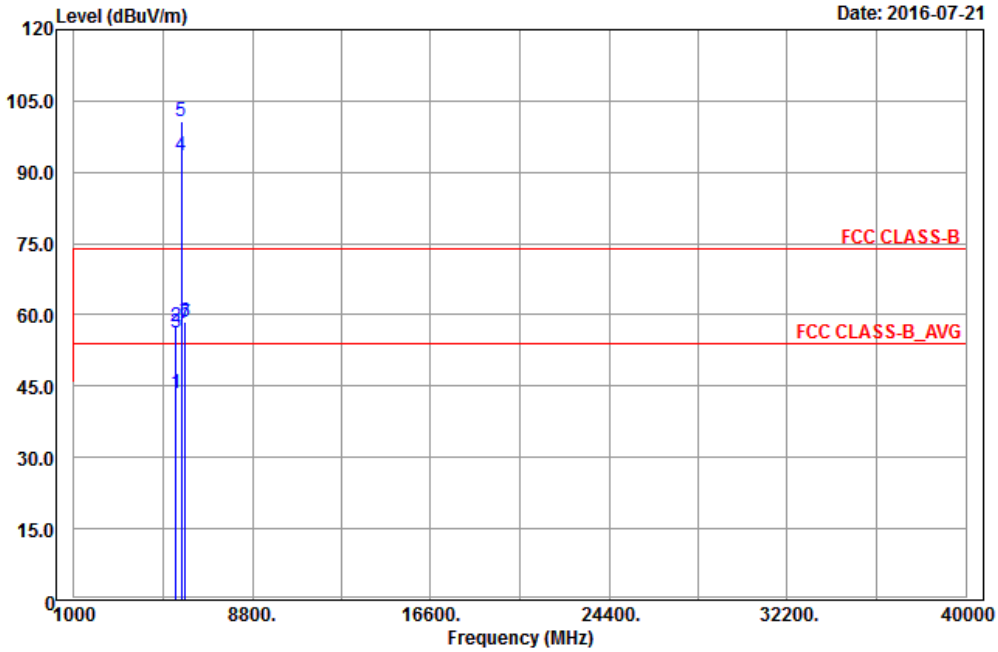
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5446	43.32	34.49	54	-10.68	34.36	8.51	34.04	202	36	Average
5446	57.57	48.74	74	-16.43	34.36	8.51	34.04	202	36	Peak
5470	55.27	46.44	68.2	-12.93	34.37	8.51	34.05	202	36	Peak
5670	91.7	82.6			34.57	8.63	34.1	202	36	Average
5670	98.35	89.25			34.57	8.63	34.1	202	36	Peak
5725	57	47.84	68.2	-11.2	34.62	8.65	34.11	202	36	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	43.33	34.51	54	-10.67	34.36	8.51	34.05	104	28	Average
5460	57.32	48.5	74	-16.68	34.36	8.51	34.05	104	28	Peak
5470	55.36	46.53	68.2	-12.84	34.37	8.51	34.05	104	28	Peak
5670	90.7	81.6			34.57	8.63	34.1	104	28	Average
5670	97.14	88.04			34.57	8.63	34.1	104	28	Peak
5725	60.14	50.98	68.2	-8.06	34.62	8.65	34.11	104	28	Peak

Remarks:

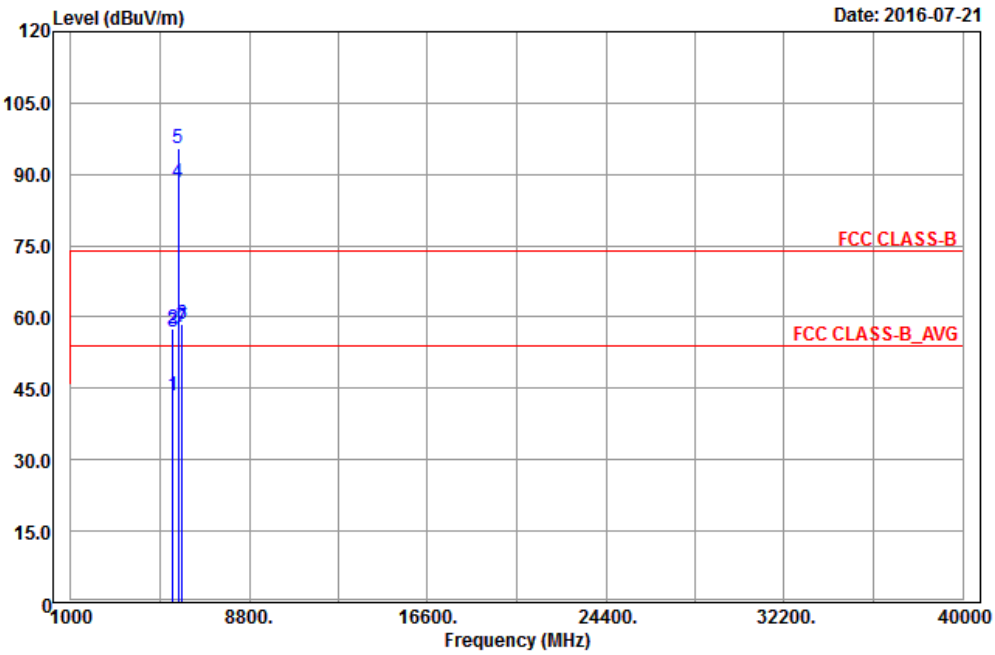
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5670 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 142	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



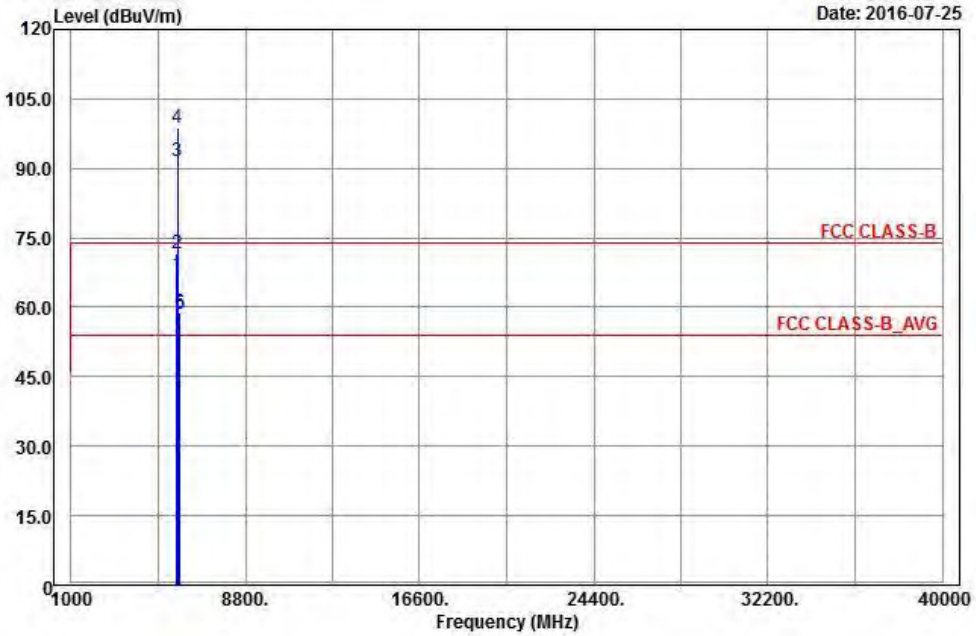
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5446	43.51	34.68	54	-10.49	34.36	8.51	34.04	230	303	Average
5446	57.6	48.77	74	-16.4	34.36	8.51	34.04	230	303	Peak
*5470	56.14	47.31	68.2	-12.06	34.37	8.51	34.05	230	303	Peak
5710	93.54	84.39			34.61	8.65	34.11	230	303	Average
5710	100.55	91.4			34.61	8.65	34.11	230	303	Peak
*5858	58.43	49.11	78.2	-19.77	34.76	8.7	34.14	230	303	Peak
*5866	58.11	48.78	68.2	-10.09	34.76	8.71	34.14	230	303	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5446	43.43	34.6	54	-10.57	34.36	8.51	34.04	267	3	Average
5446	57.67	48.84	74	-16.33	34.36	8.51	34.04	267	3	Peak
*5470	56.93	48.1	68.2	-11.27	34.37	8.51	34.05	267	3	Peak
5710	88.19	79.04			34.61	8.65	34.11	267	3	Average
5710	95.59	86.44	74	21.59	34.61	8.65	34.11	267	3	Peak
*5854	58.5	49.18	78.2	-19.7	34.76	8.7	34.14	267	3	Peak
*5862	57.86	48.53	68.2	-10.34	34.76	8.71	34.14	267	3	Peak

Remarks:

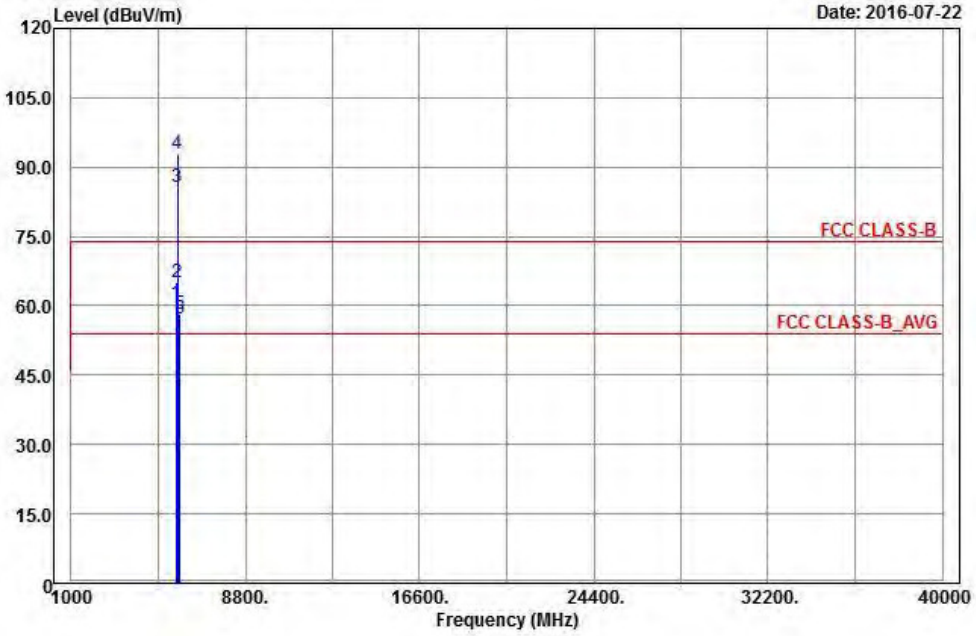
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5710 MHz: Fundamental Frequency
3. *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 151	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



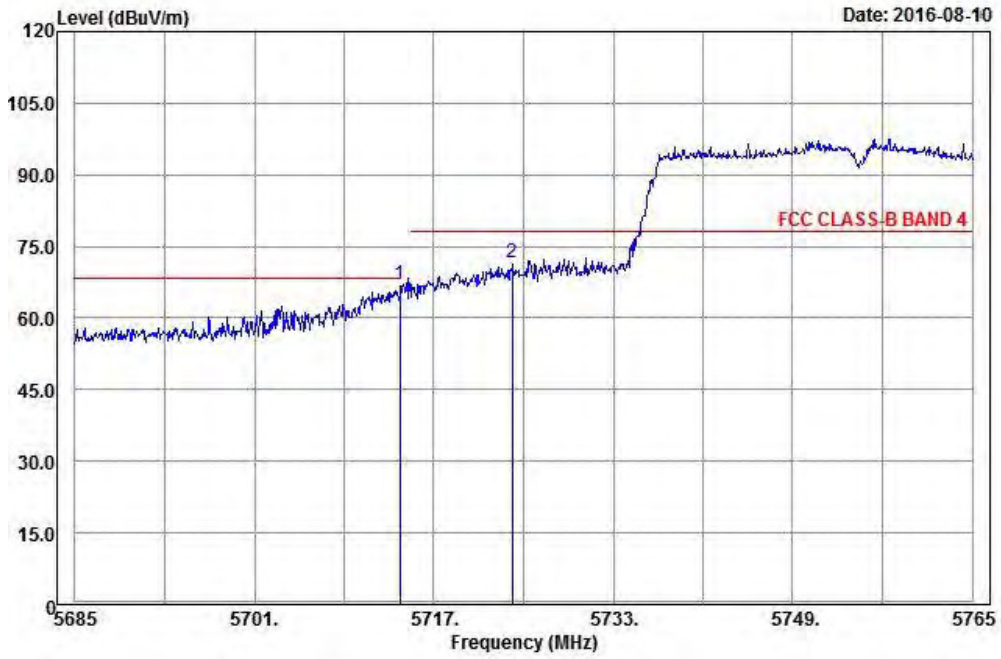
Vertical



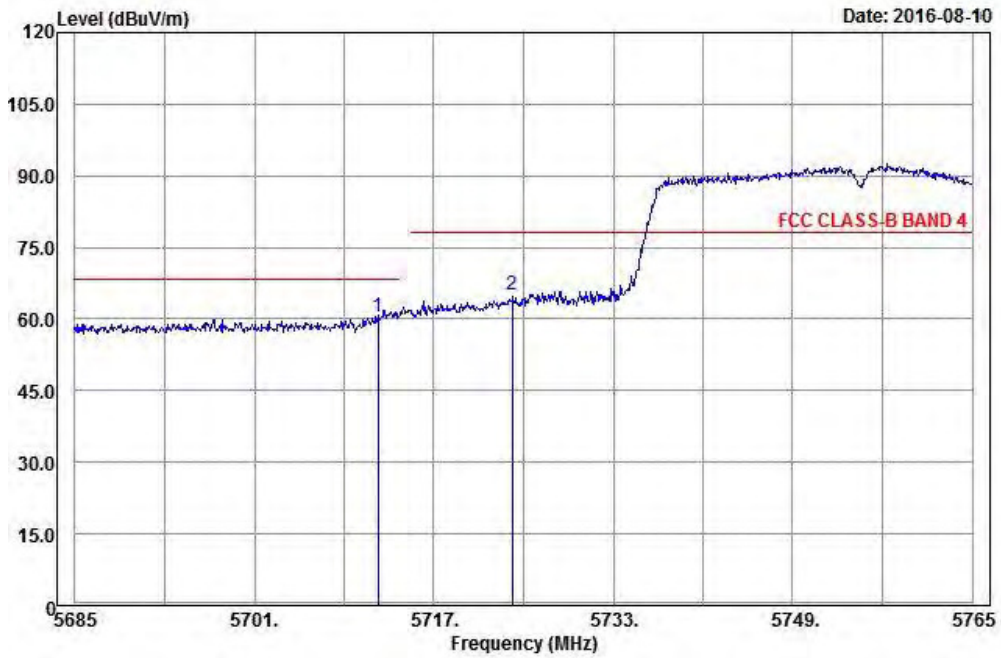
BandEdge

Peak

Horizontal



Vertical



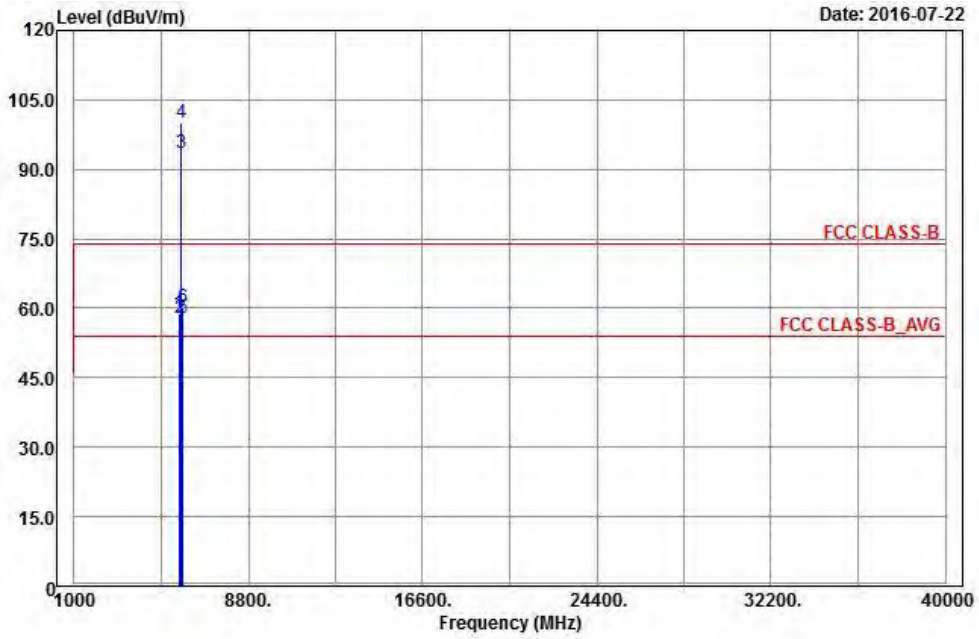
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	66.98	58.83	68.2	-1.22	34.61	8.65	34.11	230	303	Peak
*5724	71.53	62.37	78.2	-6.67	34.62	8.65	34.11	230	303	Peak
5755	91.54	82.33			34.66	8.66	34.11	230	303	Average
5755	98.76	89.55			34.66	8.66	34.11	230	303	Peak
*5860	58.65	49.33	78.2	-19.55	34.76	8.7	34.14	230	303	Peak
*5868	58.75	49.42	68.2	-9.45	34.76	8.71	34.14	230	303	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5712	60.42	51.27	68.2	-7.78	34.61	8.65	34.11	274	0	Peak
*5724	64.99	55.83	78.2	-13.21	34.62	8.65	34.11	274	0	Peak
5755	85.79	76.58			34.66	8.66	34.11	274	0	Average
5755	93.01	83.8			34.66	8.66	34.11	274	0	Peak
*5858	58.09	48.77	78.2	-20.11	34.76	8.7	34.14	274	0	Peak
*5866	57.34	48.01	68.2	-10.86	34.76	8.71	34.14	274	0	Peak

Remarks:

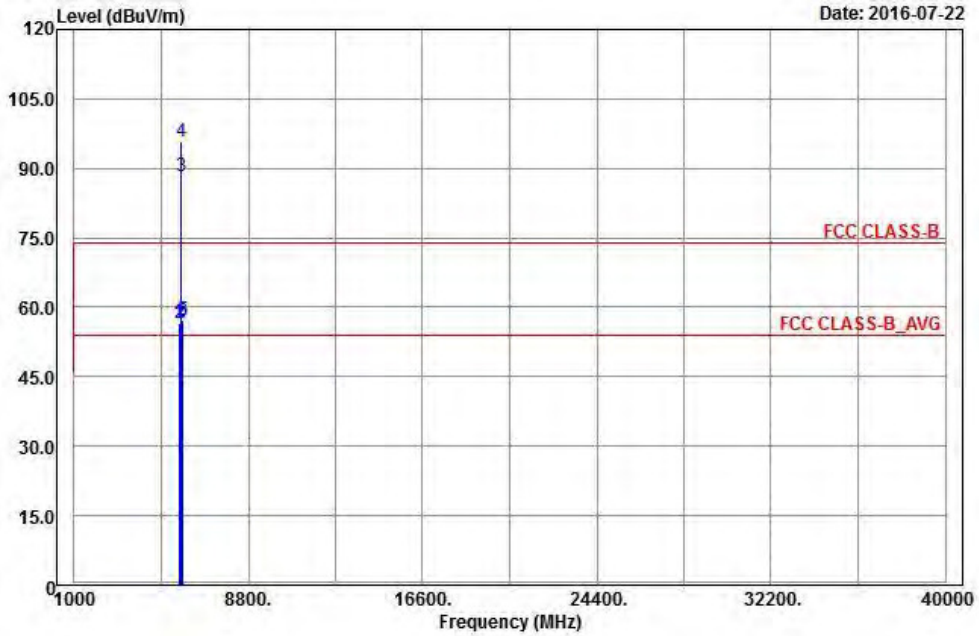
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5755 MHz: Fundamental Frequency
3. *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 159	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 10Hz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



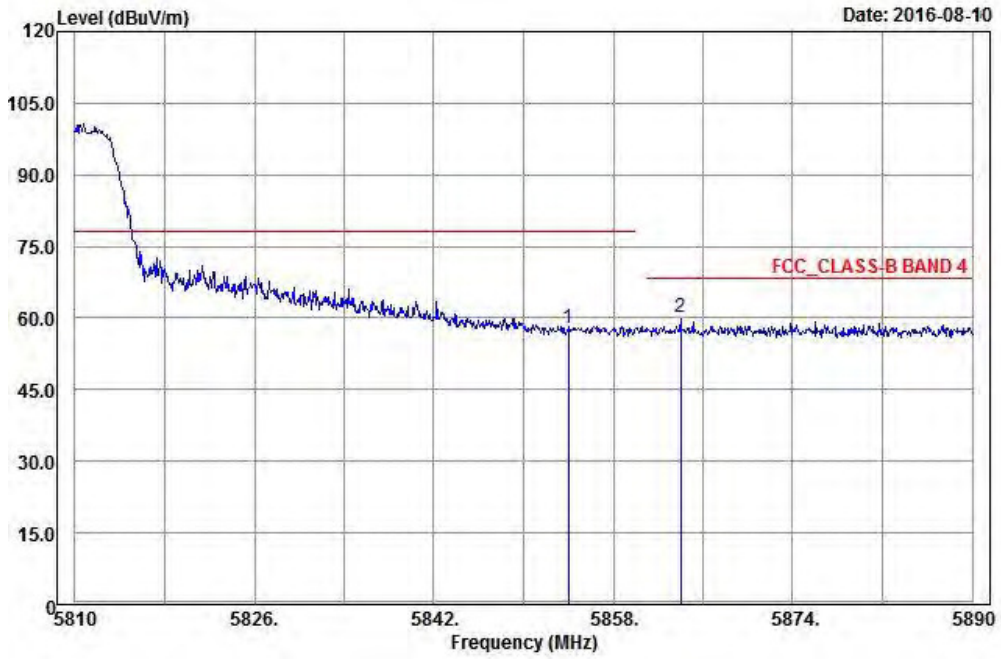
Vertical



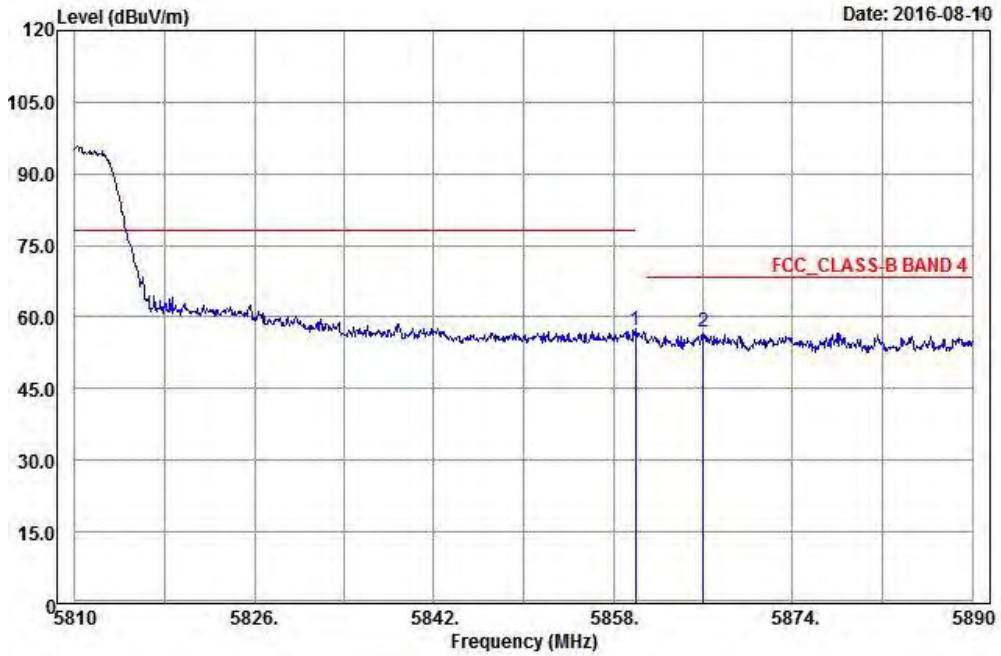
BandEdge

Peak

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5708	59	49.85	68.2	-9.2	34.61	8.65	34.11	226	302	Peak
*5724	57.8	48.64	78.2	-20.4	34.62	8.65	34.11	226	302	Peak
5795	93.55	84.31			34.69	8.68	34.13	226	302	Average
5795	100.13	90.89			34.69	8.68	34.13	226	302	Peak
*5854	57.81	48.49	78.2	-20.39	34.76	8.7	34.14	226	302	Peak
*5864	60.08	50.75	68.2	-8.12	34.76	8.71	34.14	226	302	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5708	56.51	47.36	68.2	-11.69	34.61	8.65	34.11	260	360	Peak
*5716	56.58	47.43	78.2	-21.62	34.61	8.65	34.11	260	360	Peak
5795	88.4	79.16			34.69	8.68	34.13	260	360	Average
5795	95.83	86.59			34.69	8.68	34.13	260	360	Peak
*5860	57.17	47.85	78.2	-21.03	34.76	8.7	34.14	260	360	Peak
*5866	56.82	47.49	68.2	-11.38	34.76	8.71	34.14	260	360	Peak

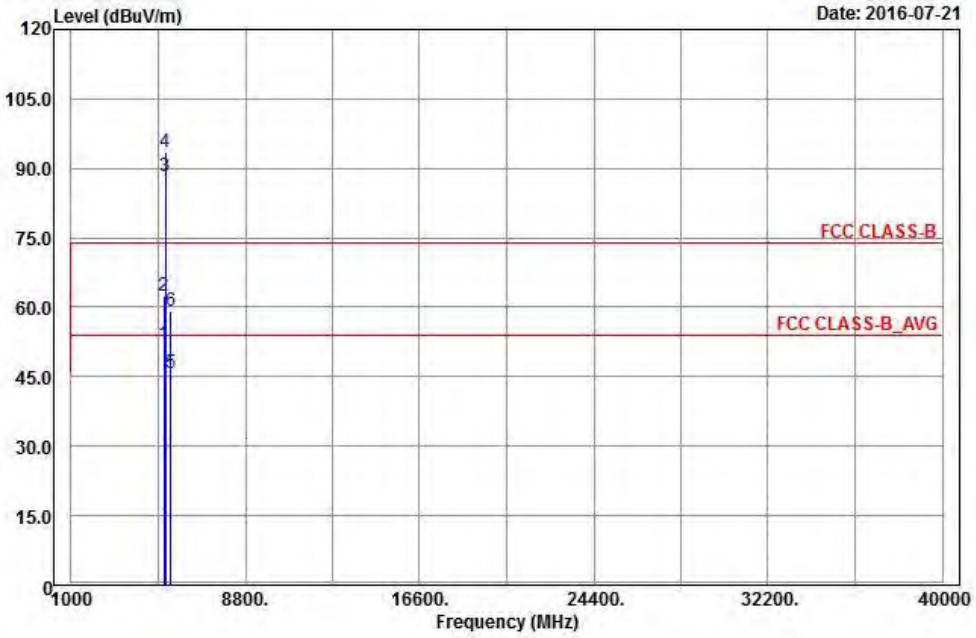
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5795 MHz: Fundamental Frequency
3. *: Out of Restricted Band

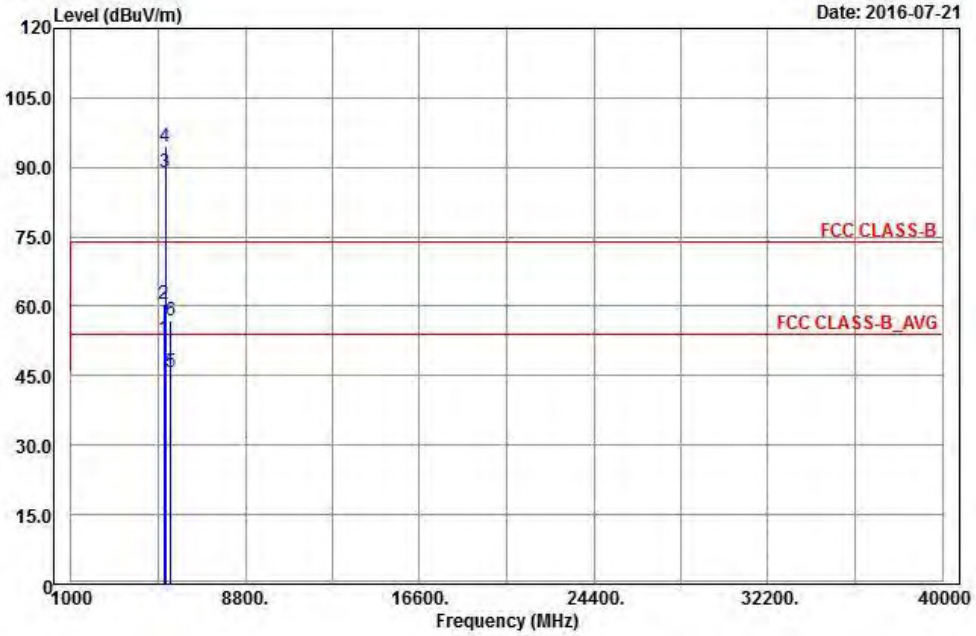
802.11ac (VHT80)

EUT Test Condition		Measurement Detail	
Channel	Channel 42	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 2KHz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



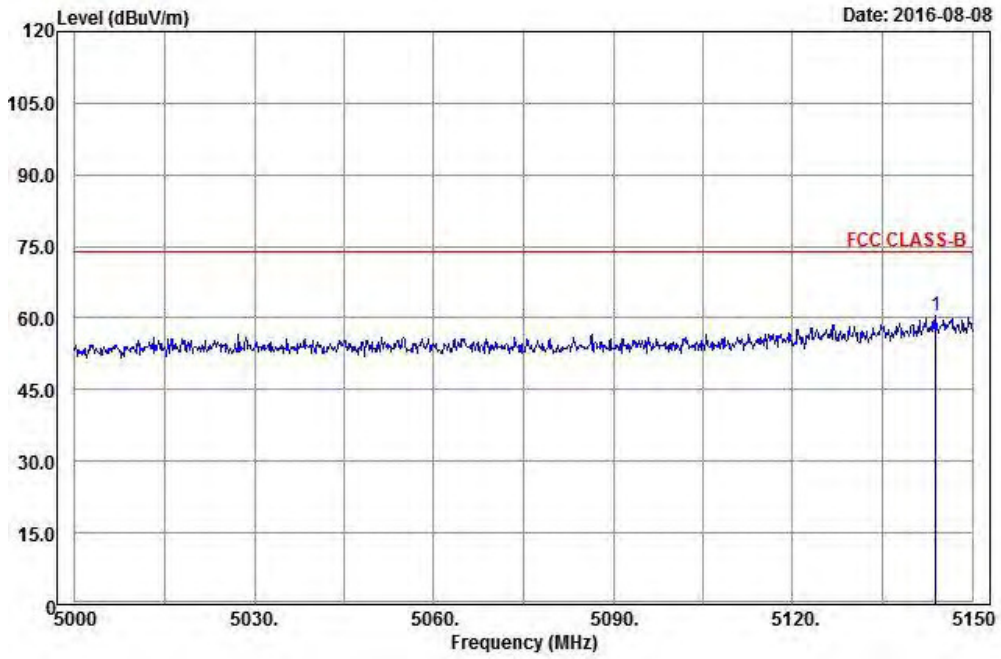
Vertical



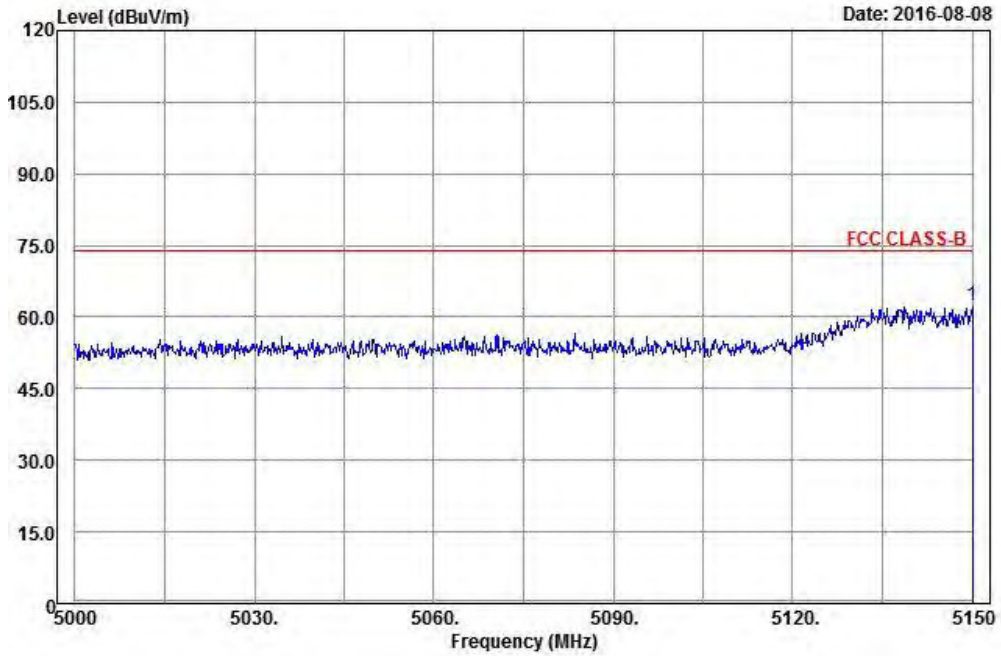
BandEdge

Peak

Horizontal

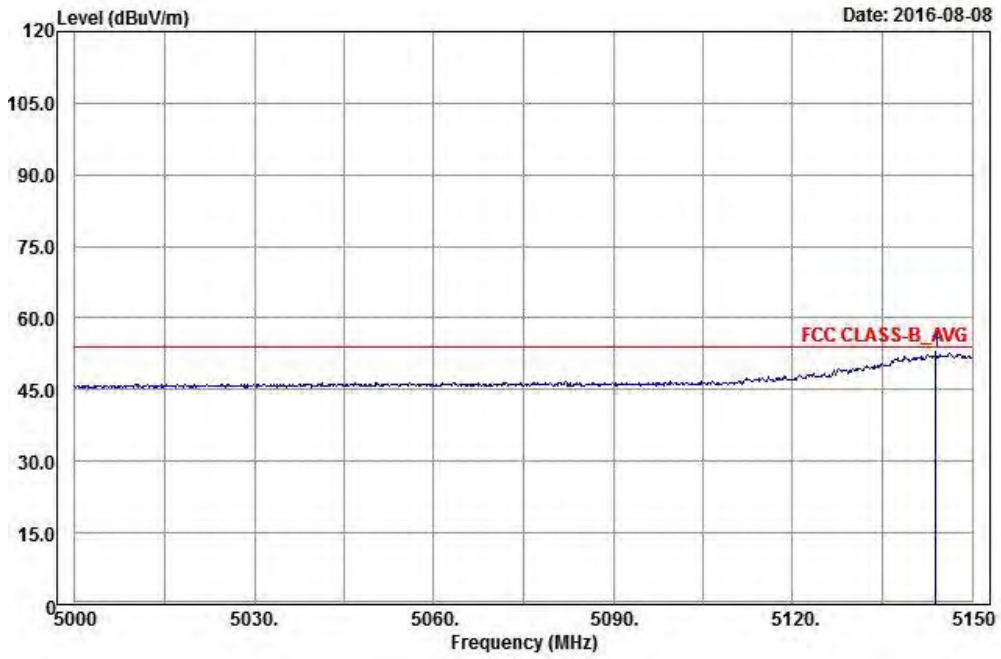


Vertical

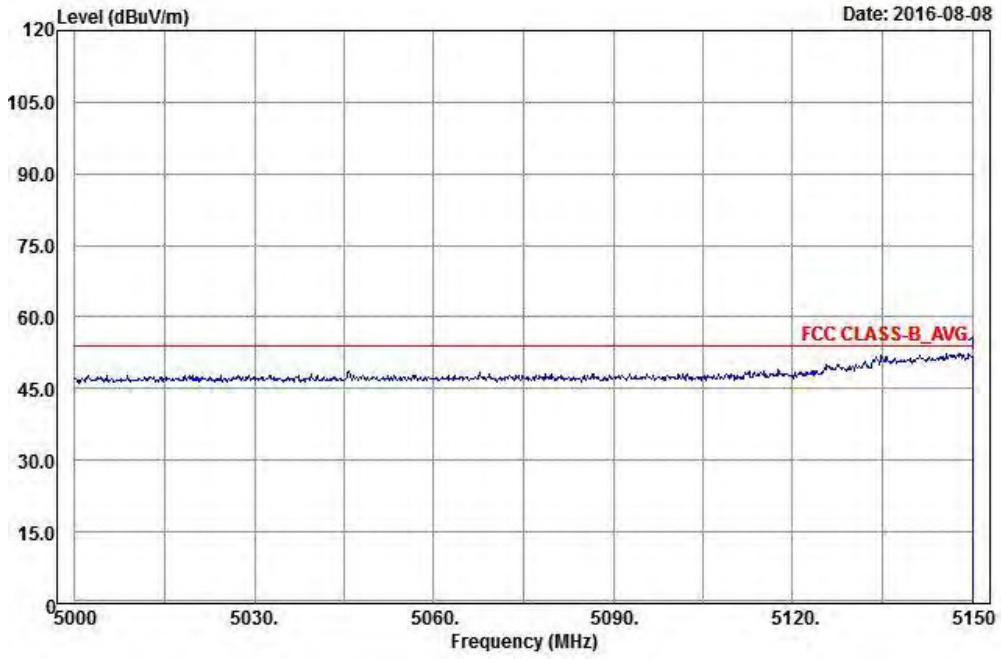


Average

Horizontal



Vertical



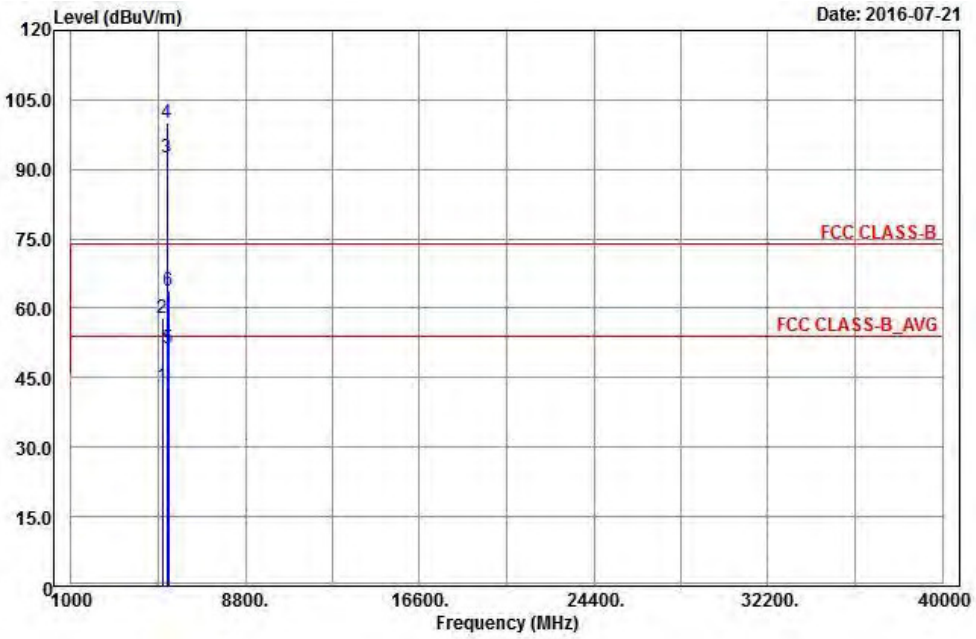
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	52.11	43.86	54	-1.89	34.12	8.13	34	100	335	Average
5150	62.42	54.17	74	-11.58	34.12	8.13	34	100	335	Peak
5210	88.22	79.86			34.17	8.19	34	100	335	Average
5210	93.62	85.26			34.17	8.19	34	100	335	Peak
5448	45.75	36.92	54	-8.25	34.36	8.51	34.04	100	335	Average
5448	59.09	50.26	74	-14.91	34.36	8.51	34.04	100	335	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5144	52.89	44.64	54	-1.11	34.12	8.13	34	128	98	Average
5144	60.56	52.31	74	-13.44	34.12	8.13	34	128	98	Peak
5210	89.04	80.68			34.17	8.19	34	128	98	Average
5210	94.45	86.09			34.17	8.19	34	128	98	Peak
5454	45.77	36.95	54	-8.23	34.36	8.51	34.05	128	98	Average
5454	57.04	48.22	74	-16.96	34.36	8.51	34.05	128	98	Peak

Remarks:

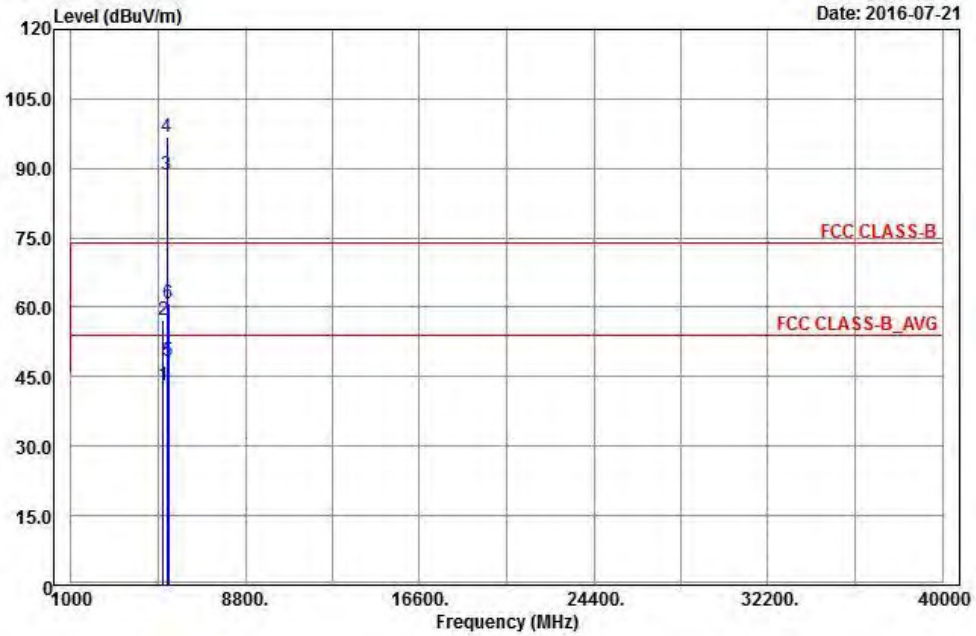
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5210 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 58	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 2KHz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



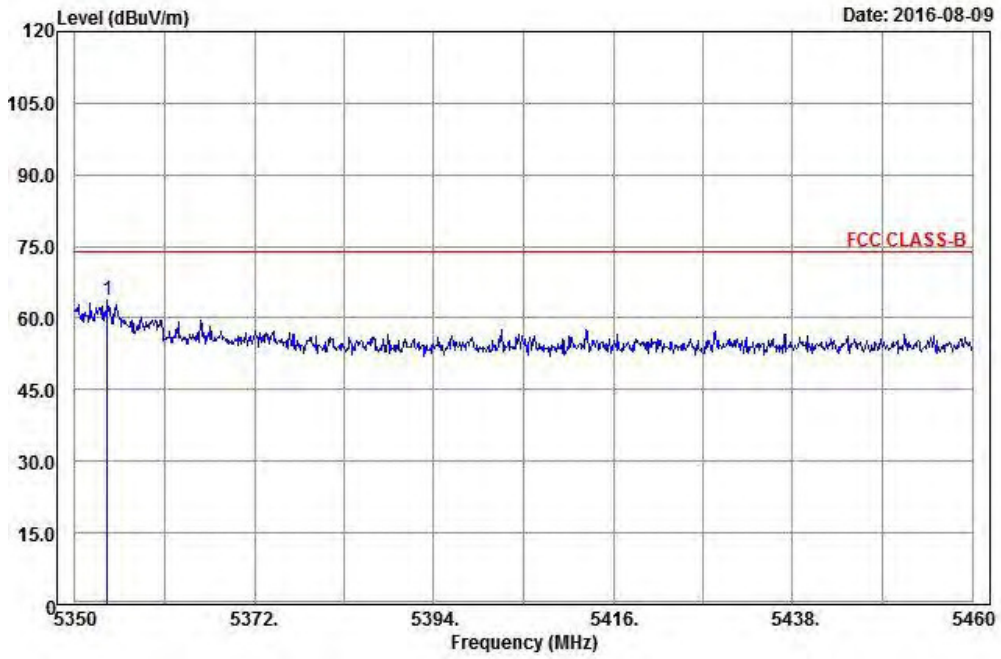
Vertical



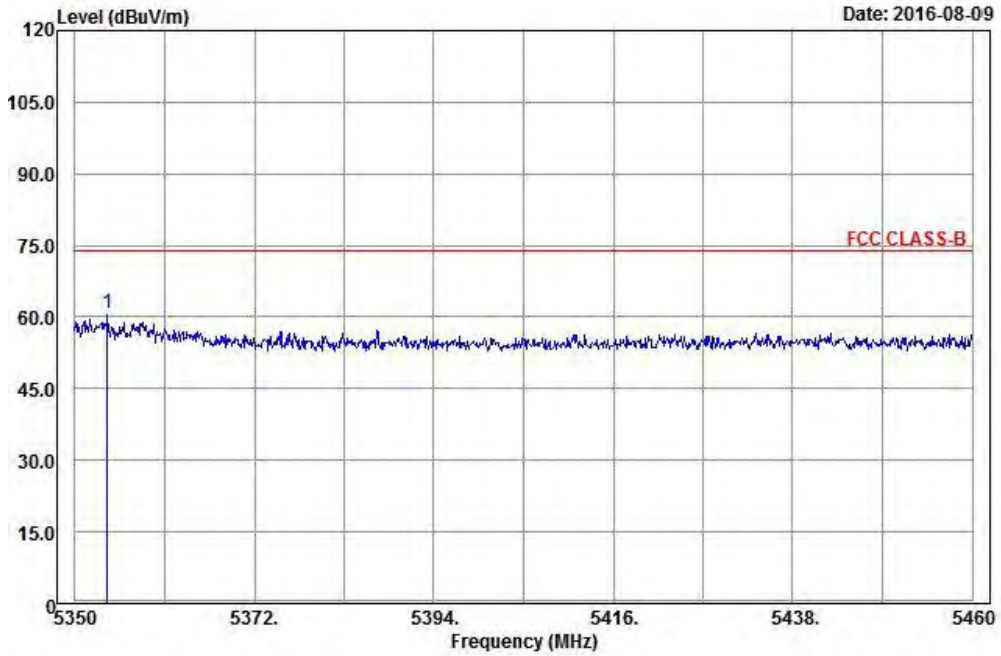
BandEdge

Peak

Horizontal

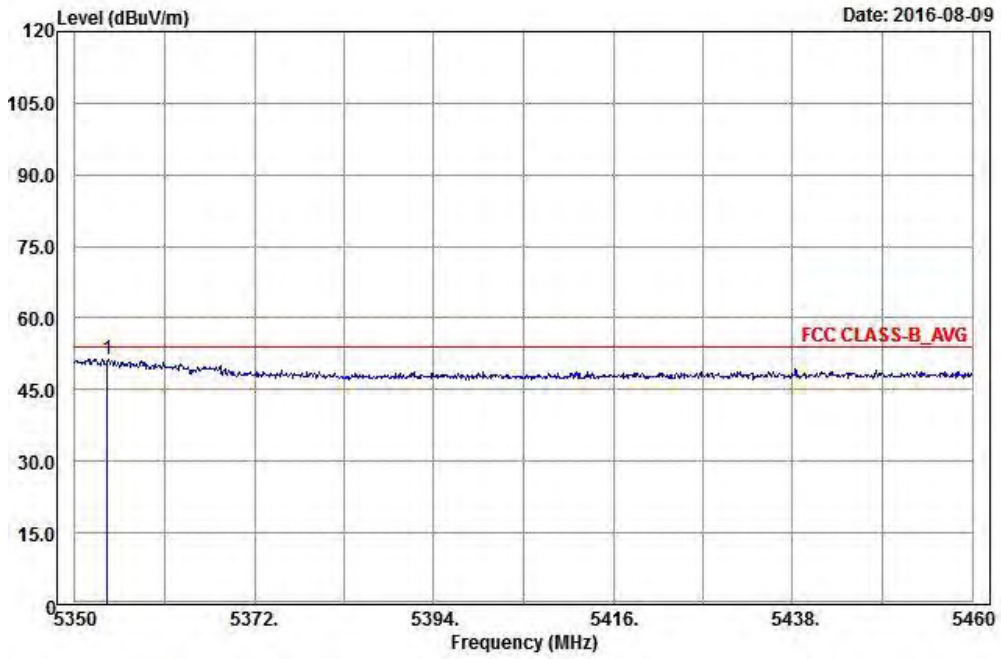


Vertical

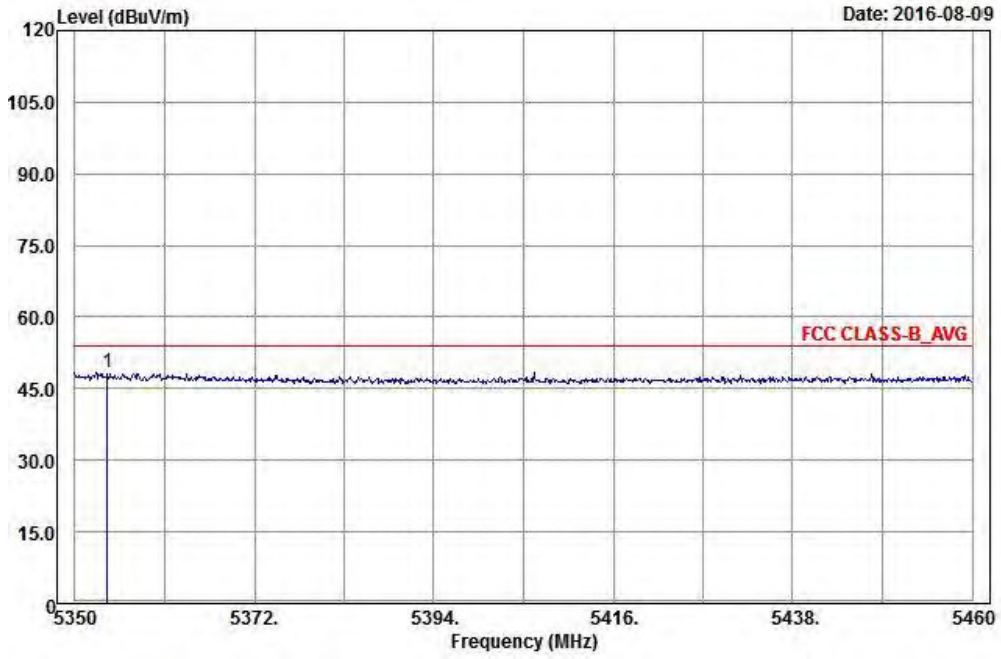


Average

Horizontal



Vertical



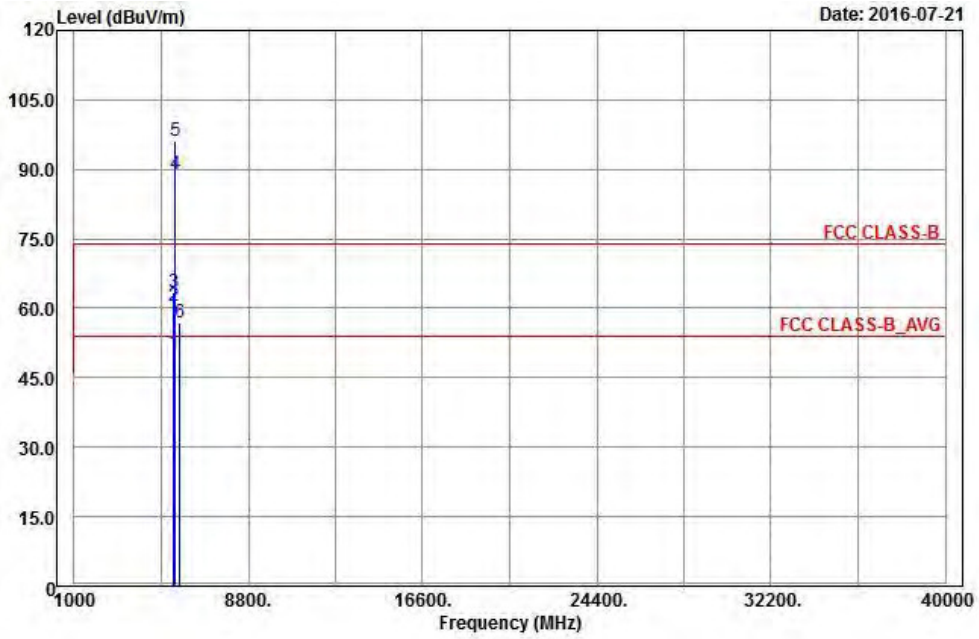
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5088	43.13	34.97	54	-10.87	34.07	8.07	33.98	101	120	Average
5088	57.81	49.65	74	-16.19	34.07	8.07	33.98	101	120	Peak
5290	92.54	84.01			34.23	8.32	34.02	101	120	Average
5290	100.2	91.67	74	26.2	34.23	8.32	34.02	101	120	Peak
5354	51.46	42.83	54	-2.54	34.28	8.38	34.03	101	120	Average
5354	63.92	55.29	74	-10.08	34.28	8.38	34.03	101	120	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5116	43.08	34.88	54	-10.92	34.09	8.1	33.99	111	249	Average
5116	57.11	48.91	74	-16.89	34.09	8.1	33.99	111	249	Peak
5290	88.74	80.21			34.23	8.32	34.02	111	249	Average
5290	96.78	88.25			34.23	8.32	34.02	111	249	Peak
5354	48.26	39.63	54	-5.74	34.28	8.38	34.03	111	249	Average
5354	60.89	52.26	74	-13.11	34.28	8.38	34.03	111	249	Peak

Remarks:

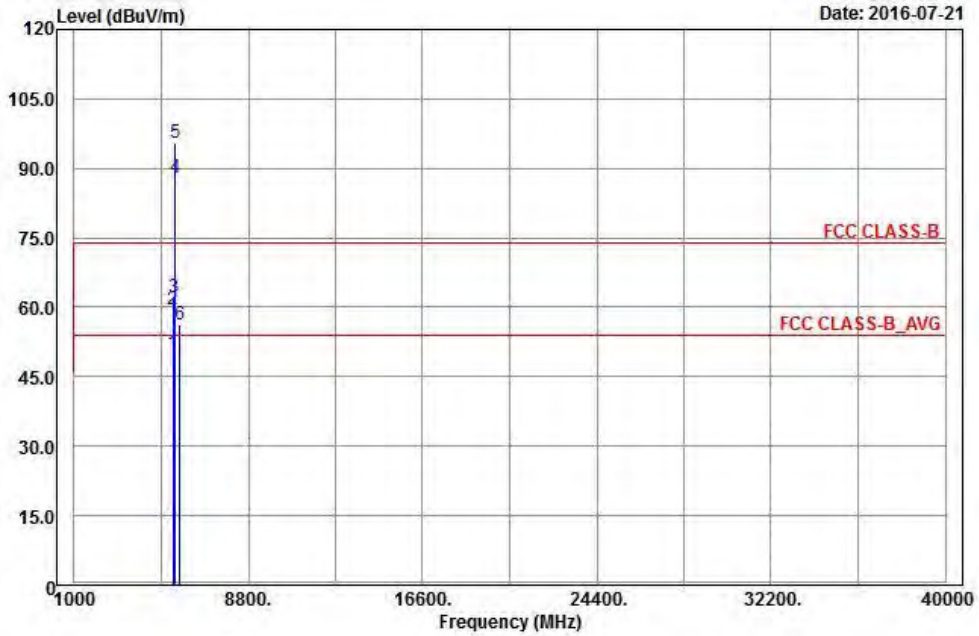
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5290 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 106	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 2KHz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



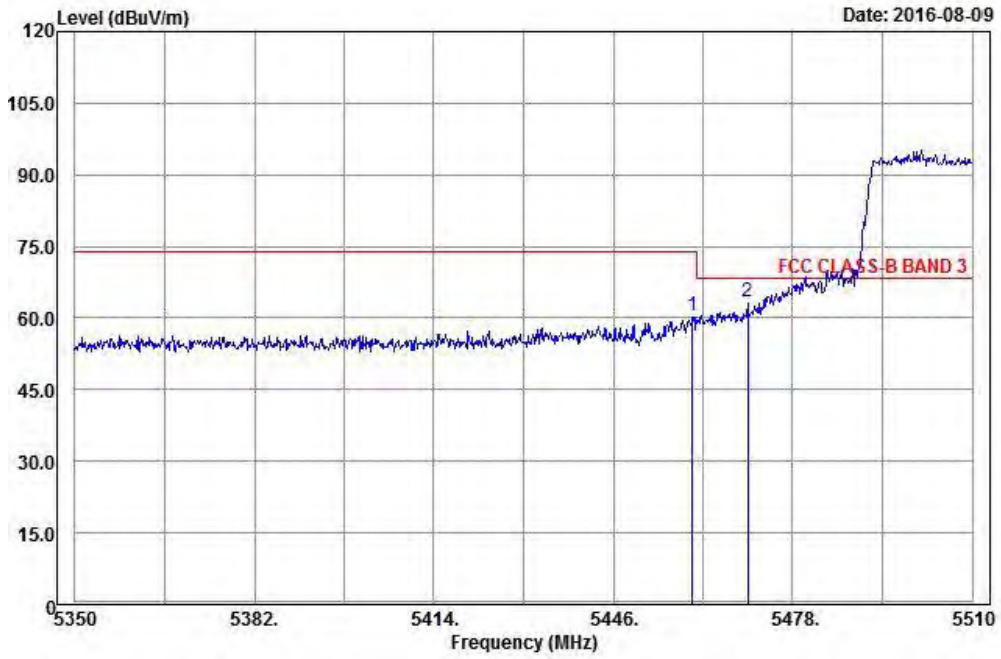
Vertical



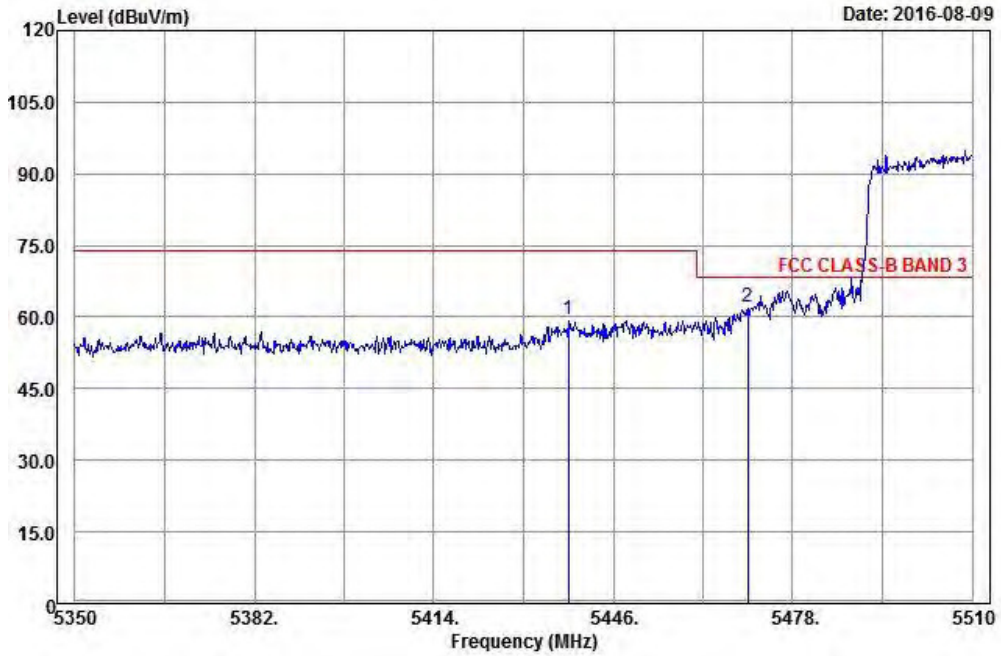
BandEdge

Peak

Horizontal

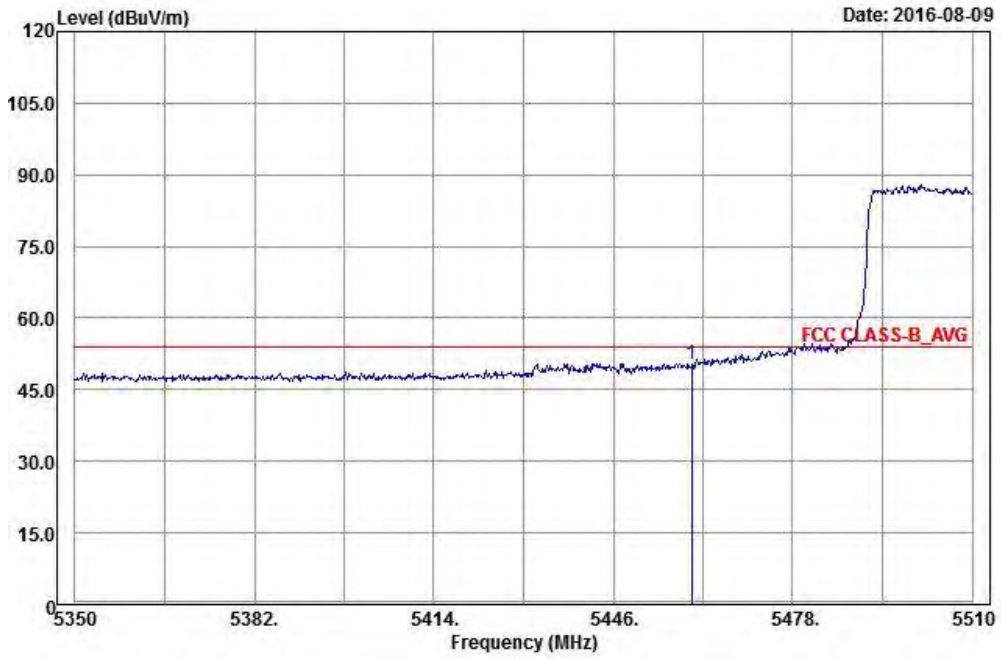


Vertical

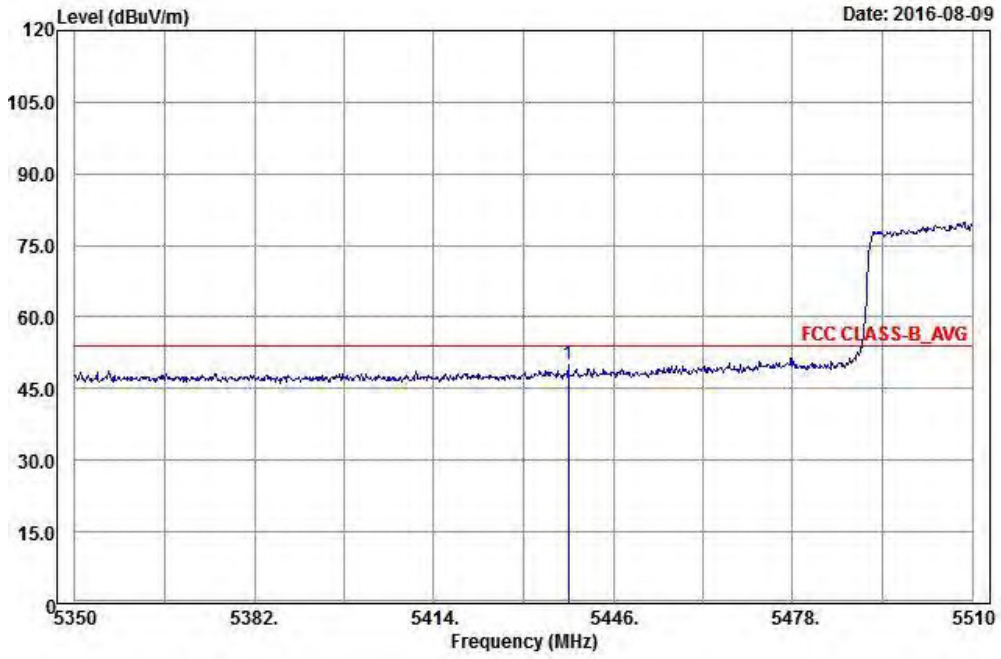


Average

Horizontal



Vertical



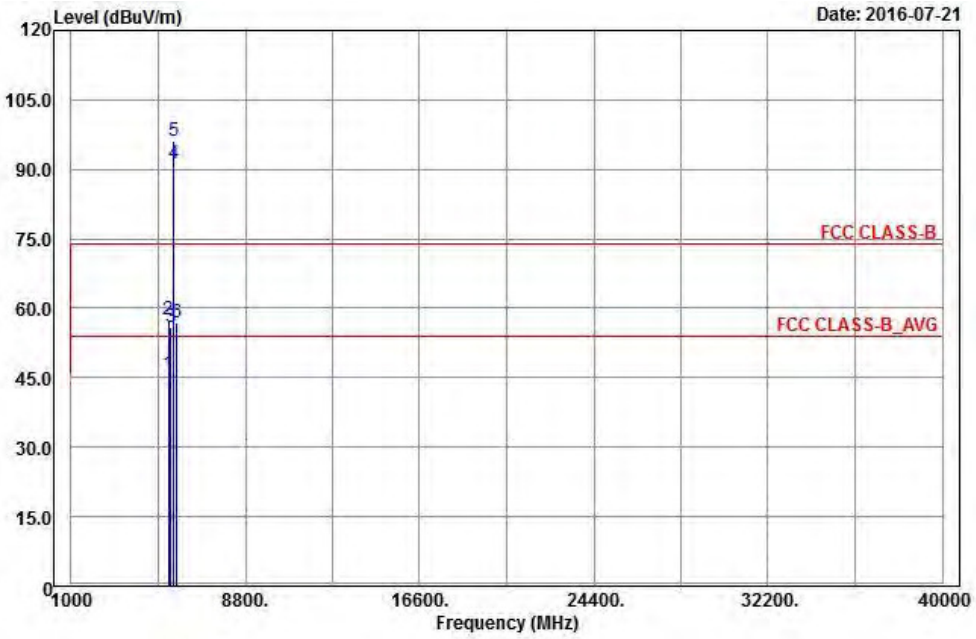
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	50.43	41.61	54	-3.57	34.36	8.51	34.05	217	36	Average
5460	60.6	51.78	74	-13.4	34.36	8.51	34.05	217	36	Peak
5470	63.27	54.44	68.2	-4.93	34.37	8.51	34.05	217	36	Peak
5530	88.8	79.87			34.42	8.58	34.07	217	36	Average
5530	96.03	87.1			34.42	8.58	34.07	217	36	Peak
5725	56.86	47.7	68.2	-11.34	34.62	8.65	34.11	217	36	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5438	49.97	41.18	54	-4.03	34.35	8.48	34.04	107	28	Average
5438	59.56	50.77	74	-14.44	34.35	8.48	34.04	107	28	Peak
5470	62.17	53.34	68.2	-6.03	34.37	8.51	34.05	107	28	Peak
5530	87.9	78.97			34.42	8.58	34.07	107	28	Average
5530	95.52	86.59			34.42	8.58	34.07	107	28	Peak
5725	56.31	47.15	68.2	-11.89	34.62	8.65	34.11	107	28	Peak

Remarks:

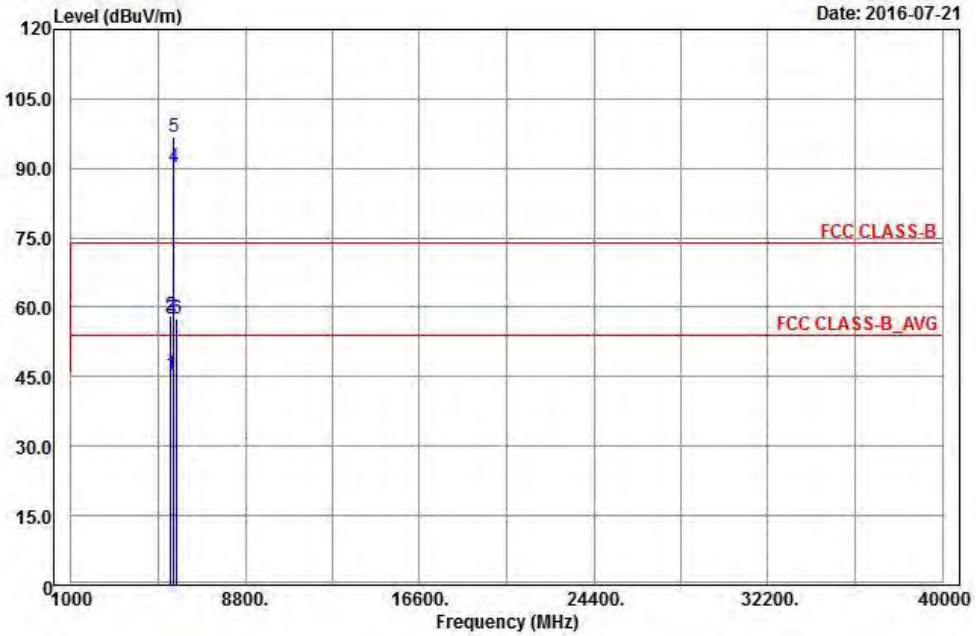
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5530 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 122	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 2KHz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



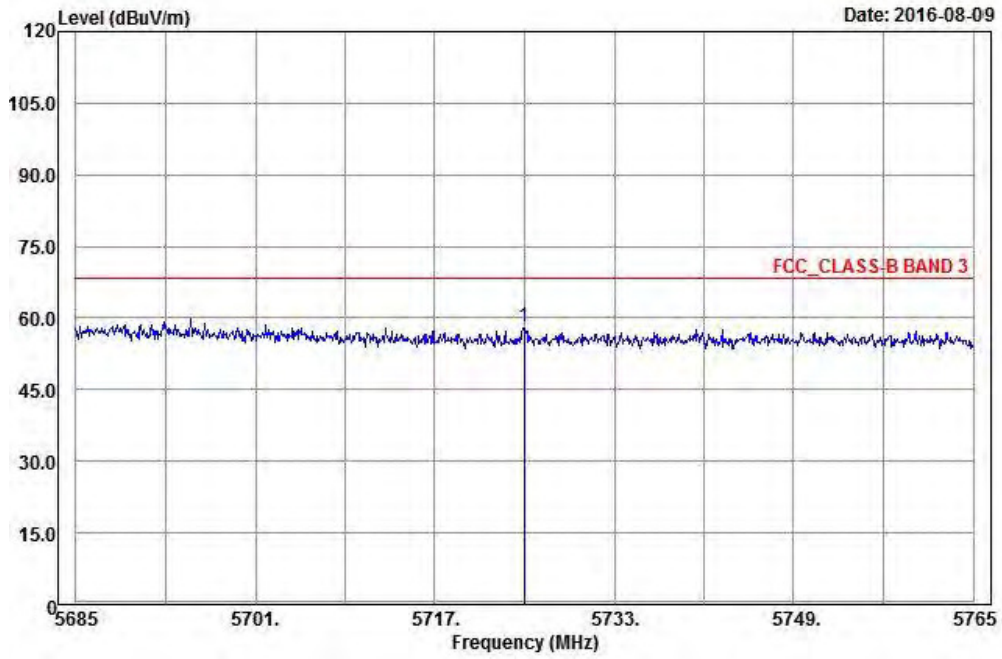
Vertical



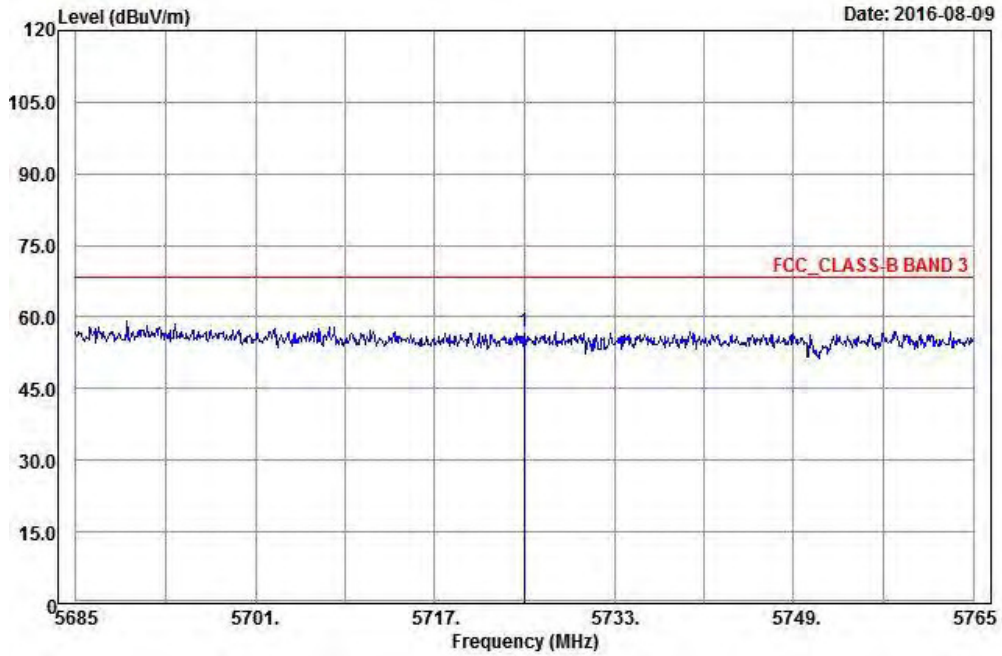
BandEdge

Peak

Horizontal



Vertical



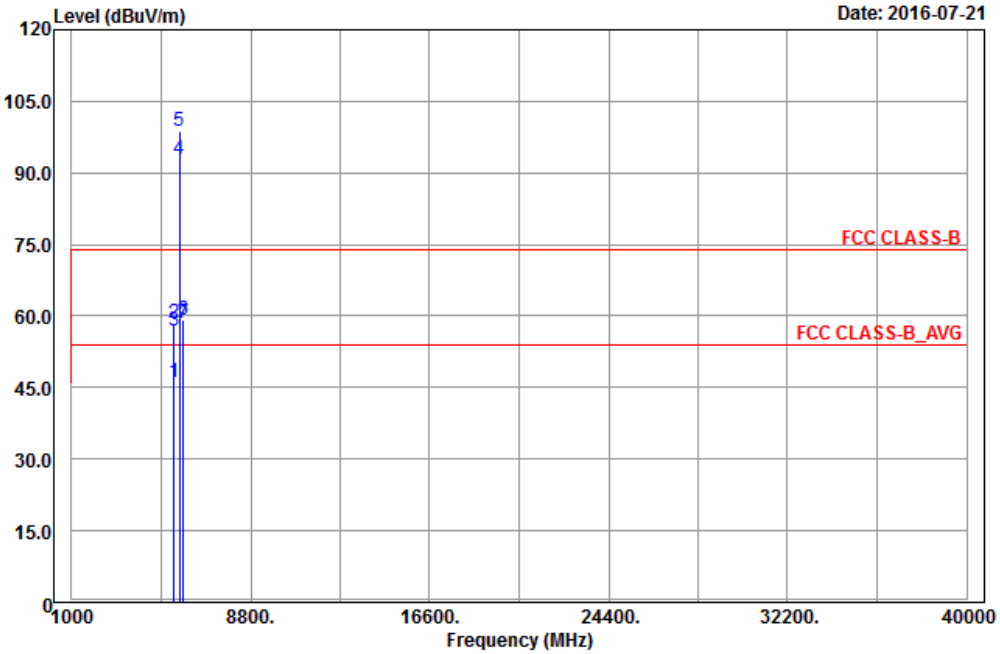
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5350	45.71	37.08	54	-8.29	34.28	8.38	34.03	199	29	Average
5350	57.57	48.94	74	-16.43	34.28	8.38	34.03	199	29	Peak
5470	55.9	47.07	68.2	-12.3	34.37	8.51	34.05	199	29	Peak
5610	91.15	82.12			34.5	8.61	34.08	199	29	Average
5610	96.24	87.21			34.5	8.61	34.08	199	29	Peak
5725	56.89	47.73	68.2	-11.31	34.62	8.65	34.11	199	29	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5450	45.57	36.75	54	-8.43	34.36	8.51	34.05	105	32	Average
5450	58.08	49.26	74	-15.92	34.36	8.51	34.05	105	32	Peak
5470	57.58	48.75	68.2	-10.62	34.37	8.51	34.05	105	32	Peak
5610	90.32	81.29			34.5	8.61	34.08	105	32	Average
5610	96.87	87.84			34.5	8.61	34.08	105	32	Peak
5725	57.67	48.51	68.2	-10.53	34.62	8.65	34.11	105	32	Peak

Remarks:

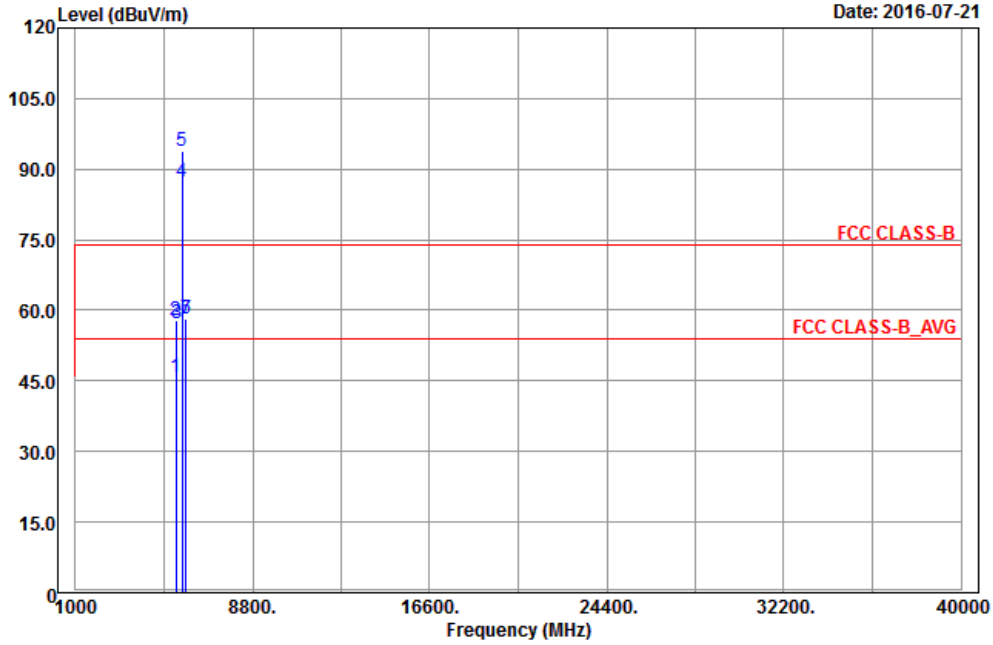
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5610 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 138	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 2KHz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Horizontal



Vertical



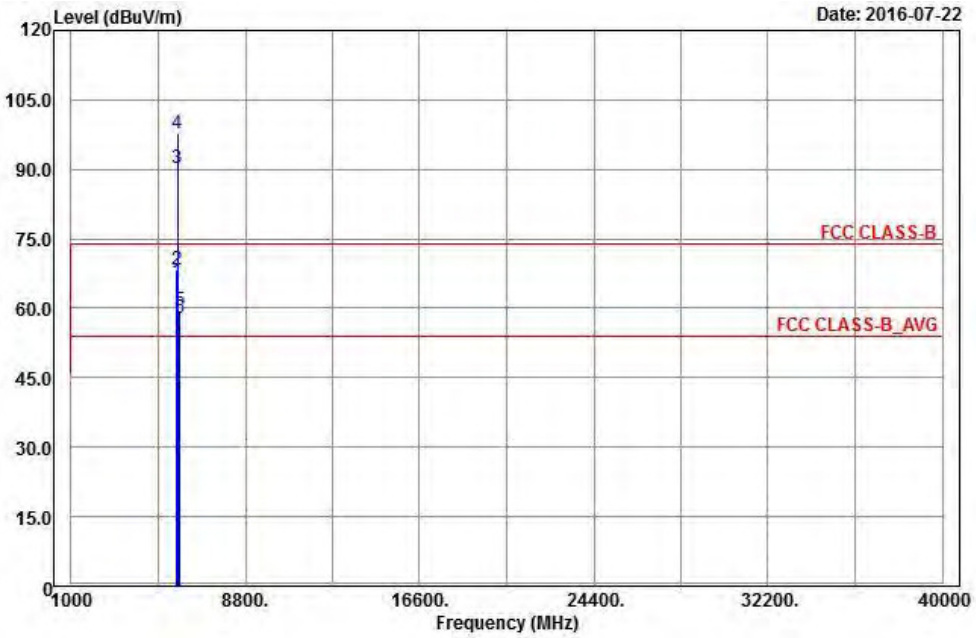
Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5446	45.99	37.16	54	-8.01	34.36	8.51	34.04	230	303	Average
5446	58.45	49.62	74	-15.55	34.36	8.51	34.04	230	303	Peak
*5470	57	48.17	68.2	-11.2	34.37	8.51	34.05	230	303	Peak
5690	92.76	83.63			34.59	8.64	34.1	230	303	Average
5690	98.74	89.61			34.59	8.64	34.1	230	303	Peak
*5860	59.18	49.86	78.2	-19.02	34.76	8.7	34.14	230	303	Peak
*5864	58.41	49.08	68.2	-9.79	34.76	8.71	34.14	230	303	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5424	45.72	36.95	54	-8.28	34.33	8.48	34.04	267	3	Average
5424	58.02	49.25	74	-15.98	34.33	8.48	34.04	267	3	Peak
*5470	57.13	48.3	68.2	-11.07	34.37	8.51	34.05	267	3	Peak
5690	87.15	78.02			34.59	8.64	34.1	267	3	Average
5690	93.72	84.59			34.59	8.64	34.1	267	3	Peak
*5856	58.07	48.75	78.2	-20.13	34.76	8.7	34.14	267	3	Peak
*5864	58.15	48.82	68.2	-10.05	34.76	8.71	34.14	267	3	Peak

Remarks:

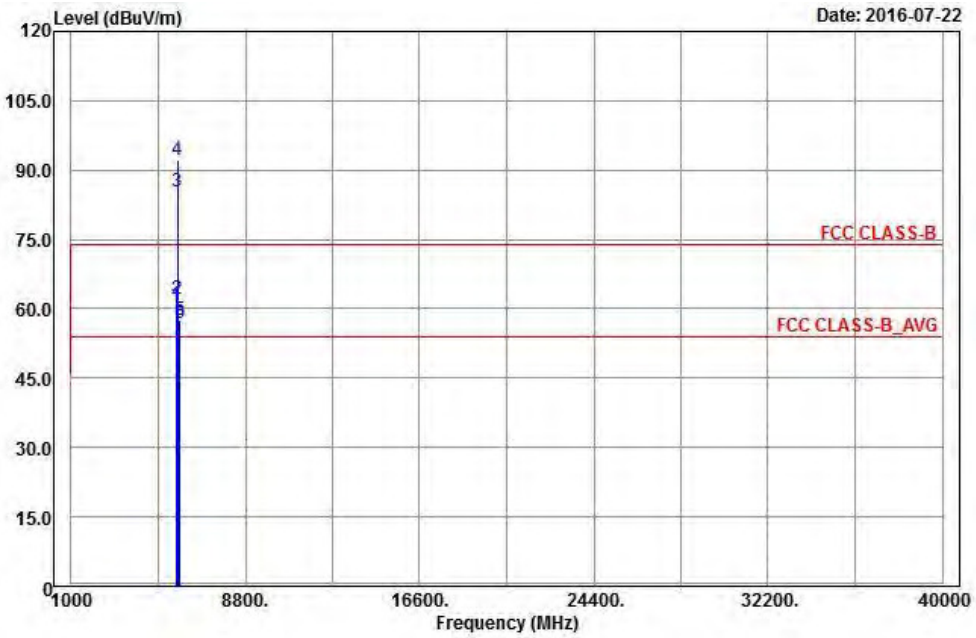
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5690 MHz: Fundamental Frequency
3. *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 155	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 1MHz , VBW : 3MHz Average (AV) RBW : 1MHz , VBW : 2KHz
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



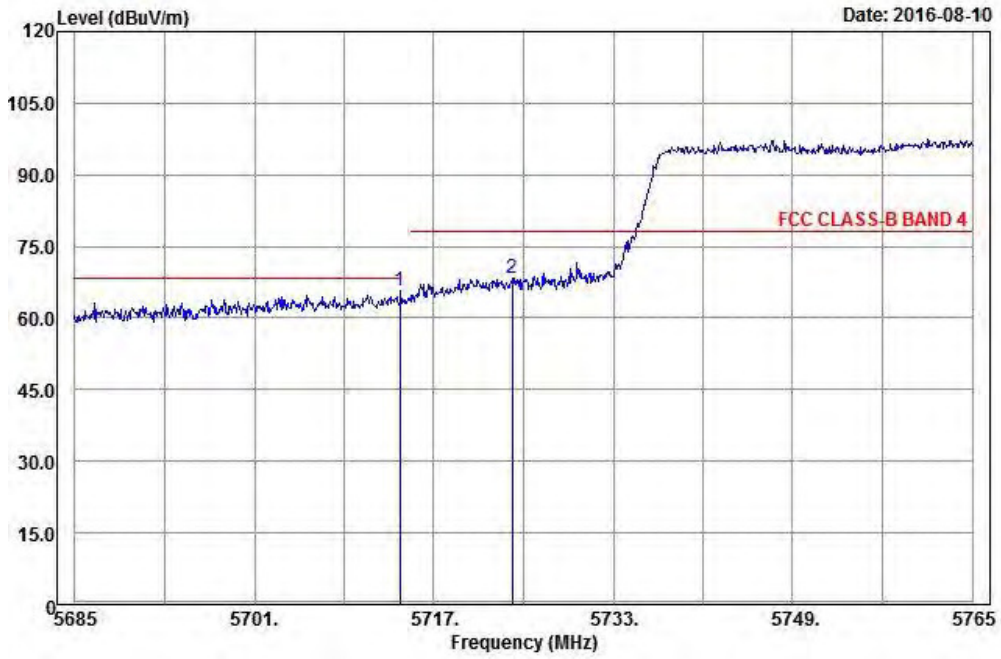
Vertical



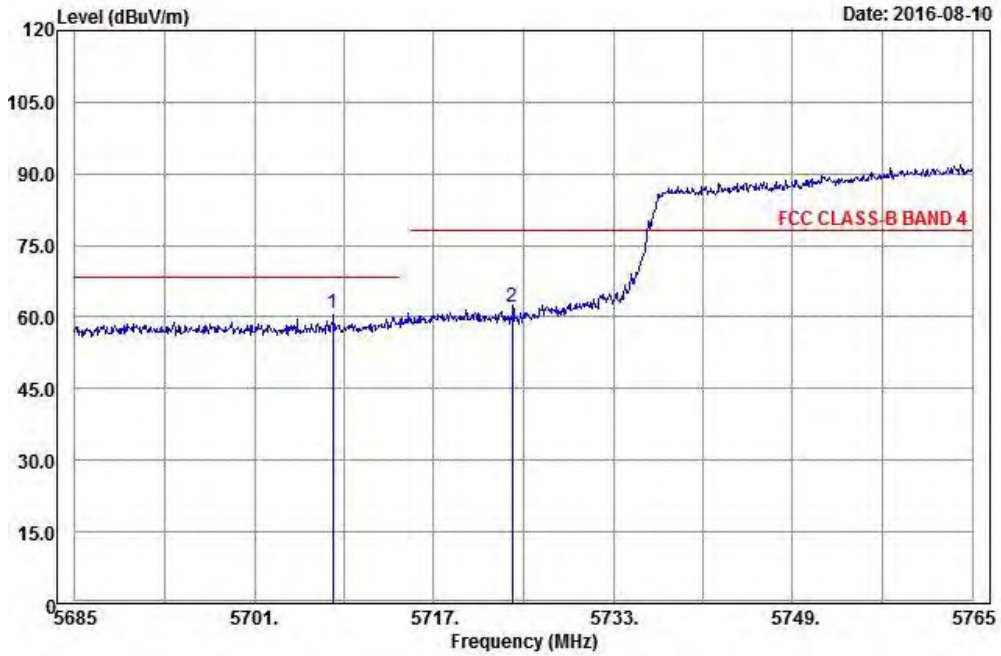
BandEdge

Peak

Horizontal

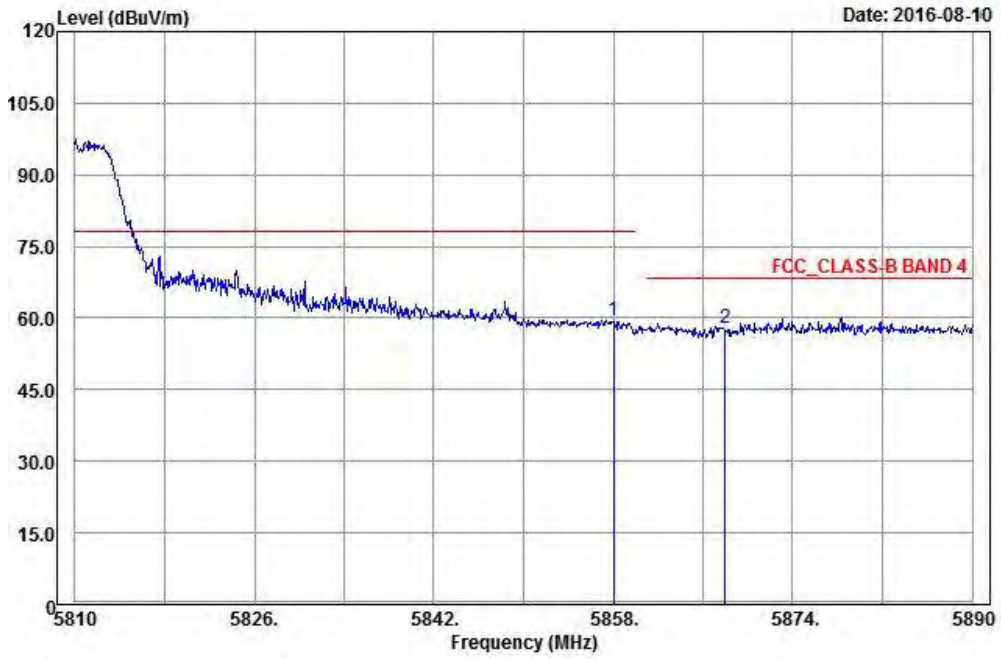


Vertical

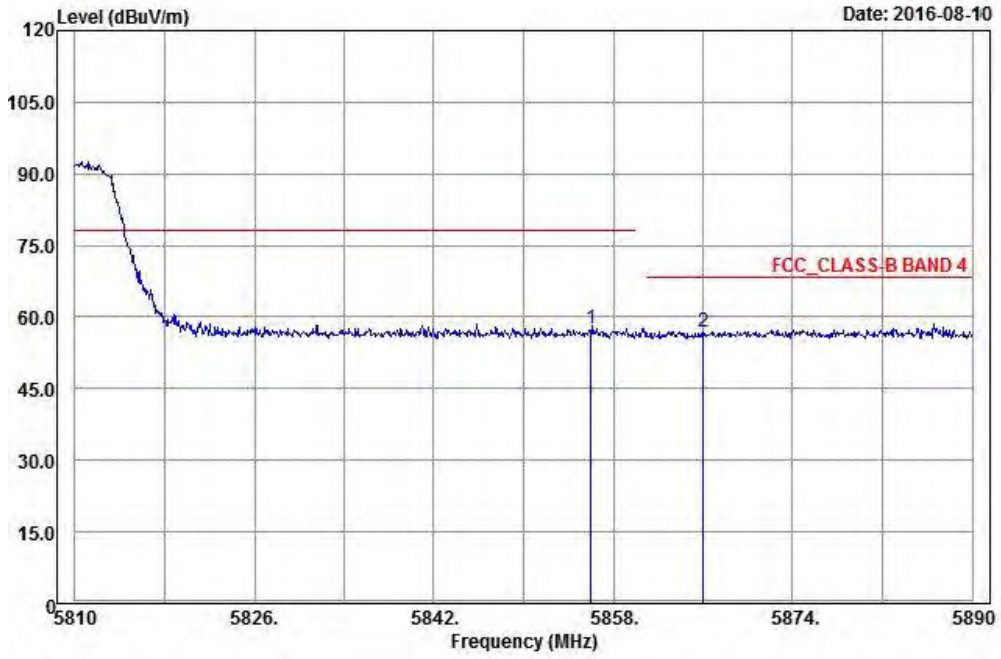


Average

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	65.76	56.61	68.2	-2.44	34.61	8.65	34.11	226	302	Peak
*5724	68.4	59.24	78.2	-9.8	34.62	8.65	34.11	226	302	Peak
5775	90.35	81.12			34.68	8.67	34.12	226	302	Average
5775	97.75	88.52			34.68	8.67	34.12	226	302	Peak
*5858	59.64	50.32	78.2	-18.56	34.76	8.7	34.14	226	302	Peak
*5868	57.78	48.45	68.2	-10.42	34.76	8.71	34.14	226	302	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5708	60.74	51.59	68.2	-7.46	34.61	8.65	34.11	259	360	Peak
*5724	62.09	52.93	78.2	-16.11	34.62	8.65	34.11	259	360	Peak
5775	85.35	76.12			34.68	8.67	34.12	259	360	Average
5775	92.22	82.99			34.68	8.67	34.12	259	360	Peak
*5856	57.67	48.35	78.2	-20.53	34.76	8.7	34.14	259	360	Peak
*5866	56.97	47.64	68.2	-11.23	34.76	8.71	34.14	259	360	Peak

Remarks:

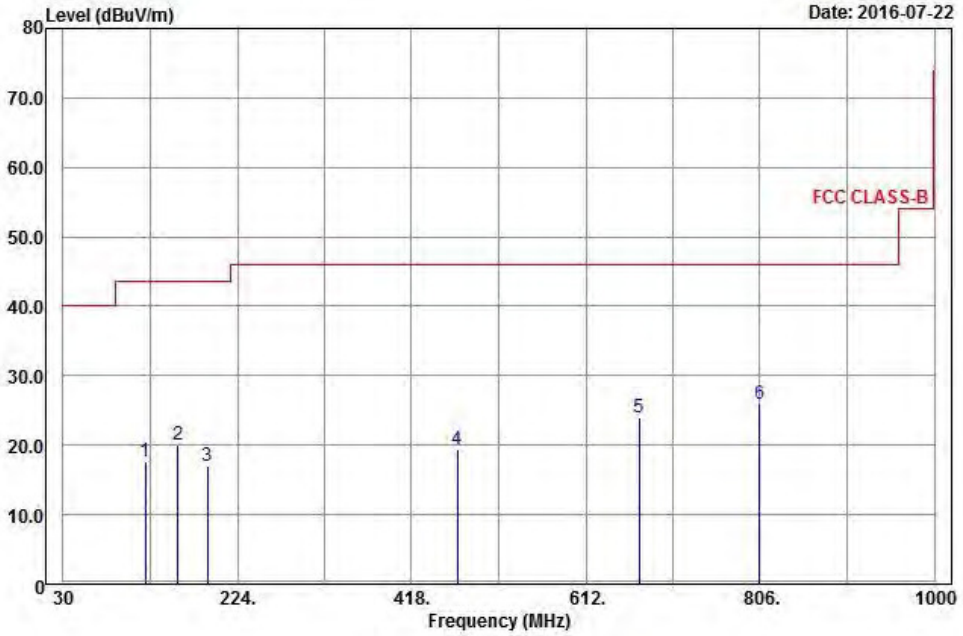
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5775 MHz: Fundamental Frequency
3. *: Out of Restricted Band

30 MHz ~ 1 GHz WORST-CASE DATA:

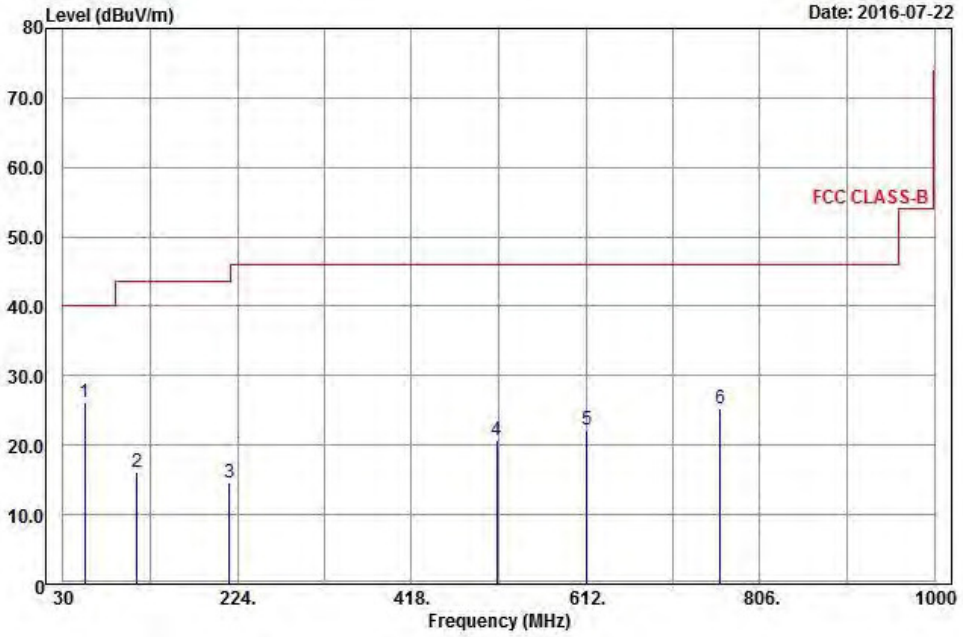
802.11ac (VHT80)

EUT Test Condition		Measurement Detail	
Channel	Channel 42	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 120KHz , VBW : 360KHz Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
121.8	17.56	39.62	43.5	-25.94	8.8	1.38	32.24	134	246	Peak
157.98	19.99	40.06	43.5	-23.51	10.68	1.52	32.27	199	190	Peak
190.38	16.92	37.16	43.5	-26.58	10.4	1.61	32.25	164	255	Peak
469.4	19.33	30.18	46	-26.67	18.72	2.56	32.13	188	215	Peak
671.7	24.04	29.71	46	-21.96	23.4	3.05	32.12	167	240	Peak
805.4	25.84	30.17	46	-20.16	24.38	3.32	32.03	131	333	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
53.76	26.16	50.1	40	-13.84	7.39	0.9	32.23	155	274	Peak
112.62	16.22	37.97	43.5	-27.28	9.22	1.28	32.25	160	350	Peak
215.49	14.6	33.65	43.5	-28.9	11.54	1.65	32.24	115	124	Peak
512.8	20.63	30.11	46	-25.37	19.94	2.7	32.12	135	355	Peak
612.9	22.27	29.91	46	-23.73	21.67	2.87	32.18	170	18	Peak
762	25.2	30.75	46	-20.8	23.35	3.22	32.12	198	113	Peak

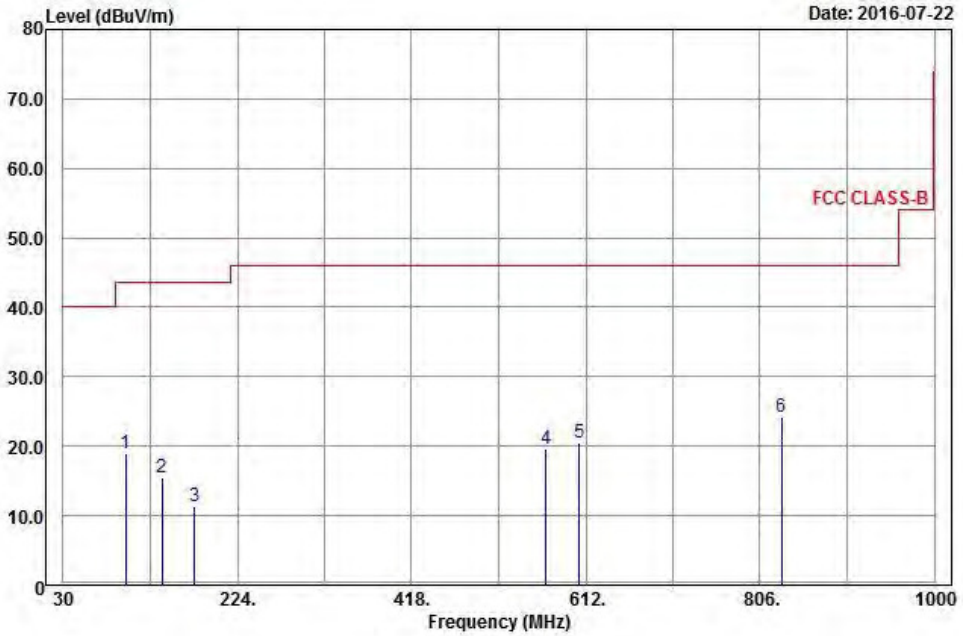
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value

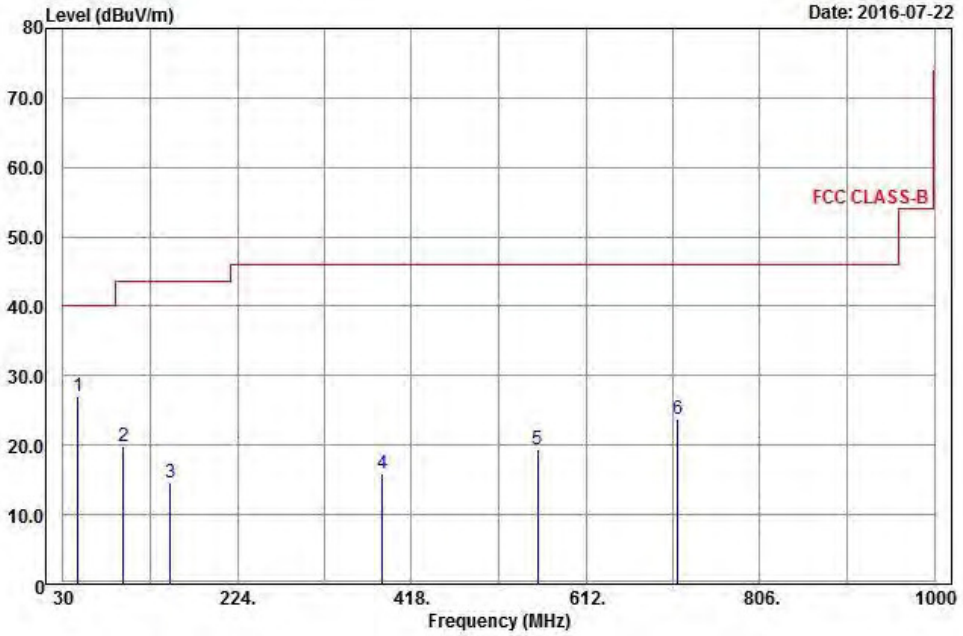
802.11ac (VHT80)

EUT Test Condition		Measurement Detail	
Channel	Channel 58	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 120KHz , VBW : 360KHz Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
99.93	19.05	40.37	43.5	-24.45	9.66	1.28	32.26	134	240	Peak
140.43	15.48	37.01	43.5	-28.02	9.36	1.38	32.27	140	144	Peak
176.34	11.31	31.69	43.5	-32.19	10.25	1.61	32.24	190	160	Peak
567.4	19.69	28.92	46	-26.31	20.15	2.82	32.2	196	248	Peak
605.2	20.48	28.56	46	-25.52	21.24	2.87	32.19	160	188	Peak
829.9	24.16	29.13	46	-21.84	23.55	3.38	31.9	124	344	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
46.2	27.13	49.45	40	-12.87	9	0.9	32.22	133	333	Peak
96.96	19.78	41.14	43.5	-23.72	9.46	1.28	32.1	197	159	Peak
149.34	14.54	35.25	43.5	-28.96	10.04	1.52	32.27	102	102	Peak
385.4	15.87	28.66	46	-30.13	17.05	2.34	32.18	170	155	Peak
558.3	19.46	28.67	46	-26.54	20.23	2.76	32.2	102	225	Peak
714.4	23.66	29.38	46	-22.34	23.27	3.11	32.1	165	222	Peak

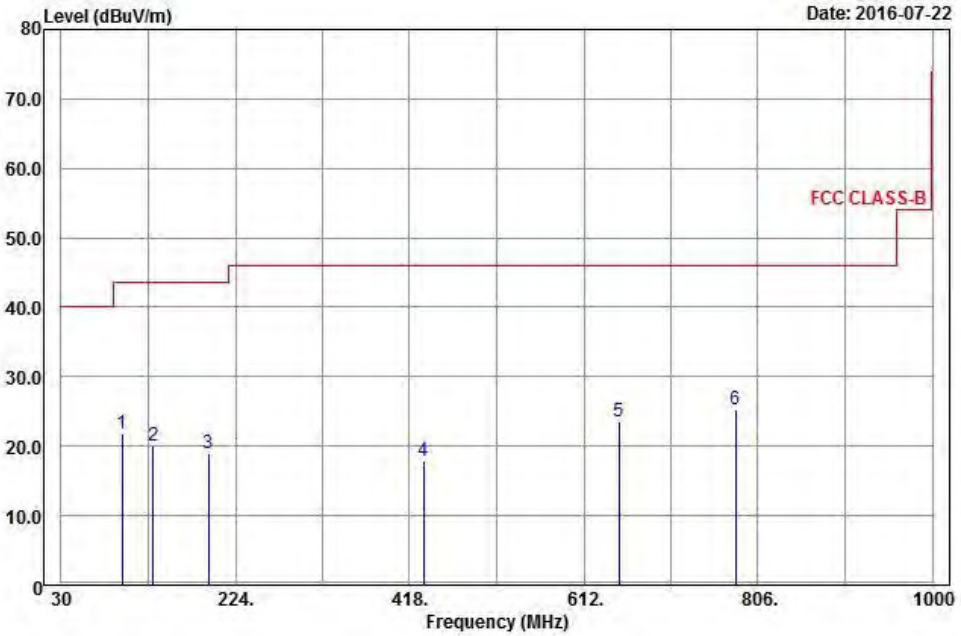
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value

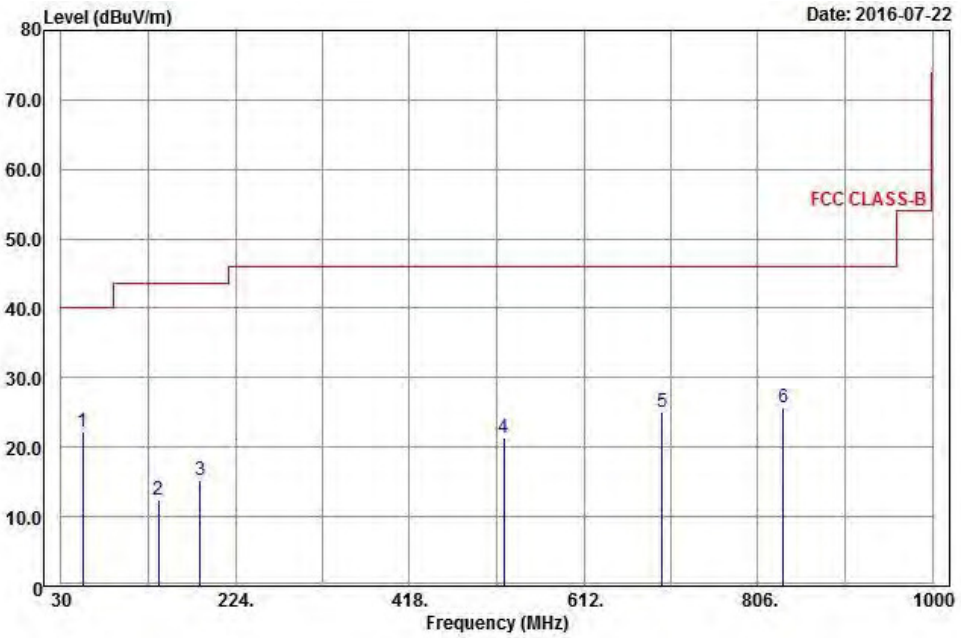
802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 102	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 120KHz , VBW : 360KHz Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
97.77	21.76	43.13	43.5	-21.74	9.5	1.28	32.15	125	85	Peak
132.87	20.1	41.73	43.5	-23.4	9.23	1.38	32.24	123	320	Peak
194.16	19	39.09	43.5	-24.5	10.57	1.61	32.27	190	184	Peak
433.7	17.81	29.68	46	-28.19	17.81	2.49	32.17	178	112	Peak
651.4	23.56	30.62	46	-22.44	22.1	2.99	32.15	146	50	Peak
780.9	25.22	30.36	46	-20.78	23.68	3.27	32.09	197	319	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
54.03	22.13	46.07	40	-17.87	7.39	0.9	32.23	124	246	Peak
138	12.52	34.12	43.5	-30.98	9.28	1.38	32.26	160	262	Peak
184.71	15.25	35.48	43.5	-28.25	10.4	1.61	32.24	154	178	Peak
523.3	21.43	30.17	46	-24.57	20.7	2.7	32.14	143	288	Peak
699	25.04	30.92	46	-20.96	23.1	3.11	32.09	160	318	Peak
834.1	25.69	30.59	46	-20.31	23.6	3.38	31.88	137	122	Peak

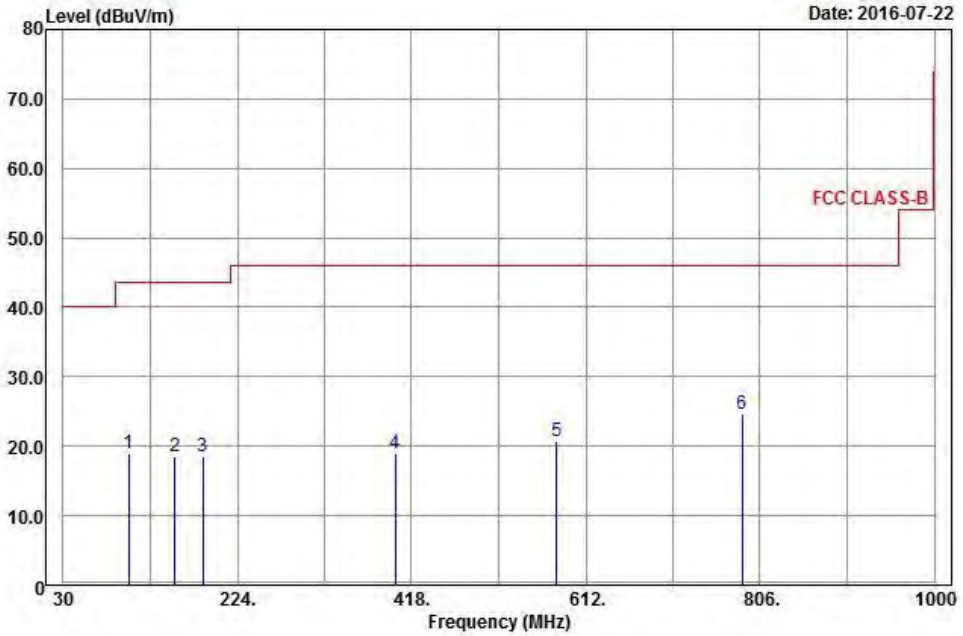
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value

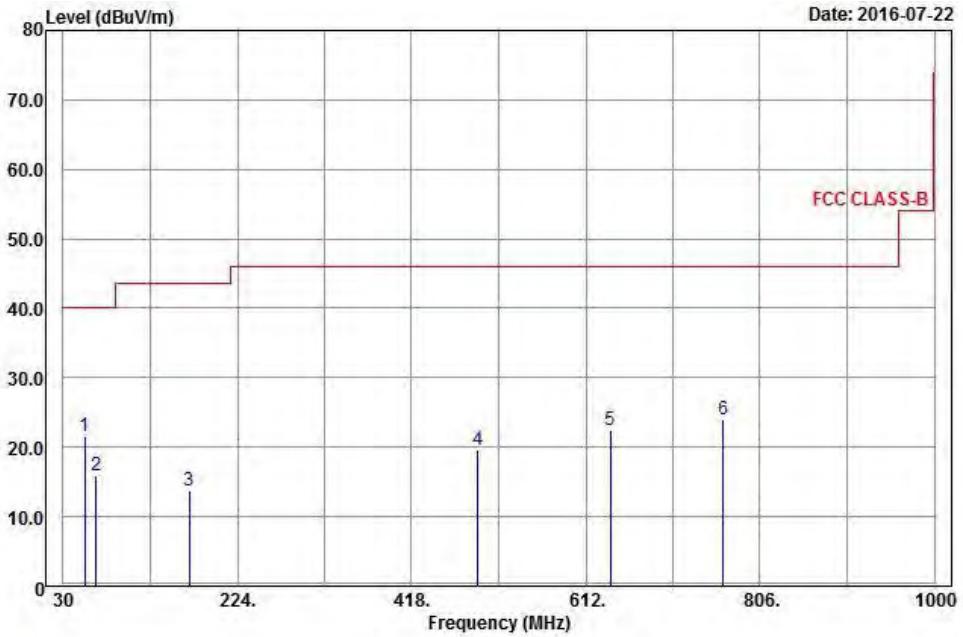
802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 151	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) RBW : 120KHz , VBW : 360KHz Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
102.63	18.99	40.34	43.5	-24.51	9.63	1.28	32.26	128	177	Peak
154.2	18.45	38.81	43.5	-25.05	10.39	1.52	32.27	184	145	Peak
185.25	18.59	38.82	43.5	-24.91	10.4	1.61	32.24	185	246	Peak
400.1	18.88	30.66	46	-27.12	18.1	2.34	32.22	188	178	Peak
579.3	20.75	29.9	46	-25.25	20.23	2.82	32.2	125	250	Peak
786.5	24.53	29.29	46	-21.47	24.05	3.27	32.08	160	196	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
54.03	21.69	45.63	40	-18.31	7.39	0.9	32.23	188	265	Peak
66.99	16.01	39.6	40	-23.99	7.73	0.9	32.22	140	109	Peak
170.13	13.78	34.5	43.5	-29.72	10	1.52	32.24	160	165	Peak
491.8	19.57	30.07	46	-26.43	18.97	2.63	32.1	168	80	Peak
639.5	22.53	29.66	46	-23.47	22.1	2.93	32.16	190	296	Peak
764.8	24.02	29.57	46	-21.98	23.35	3.22	32.12	176	339	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value

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	Nov. 16, 2015	Nov. 15, 2016
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 26, 2015	Dec. 25, 2016
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 11, 2016	Jan. 10, 2017
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	835239/001	Feb. 26, 2016	Feb. 25, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	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-2040.

4.2.3 Test Procedures

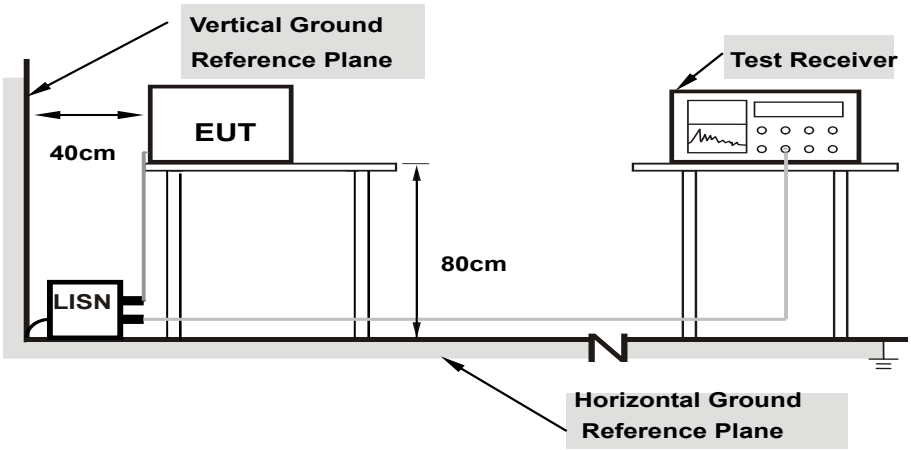
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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.

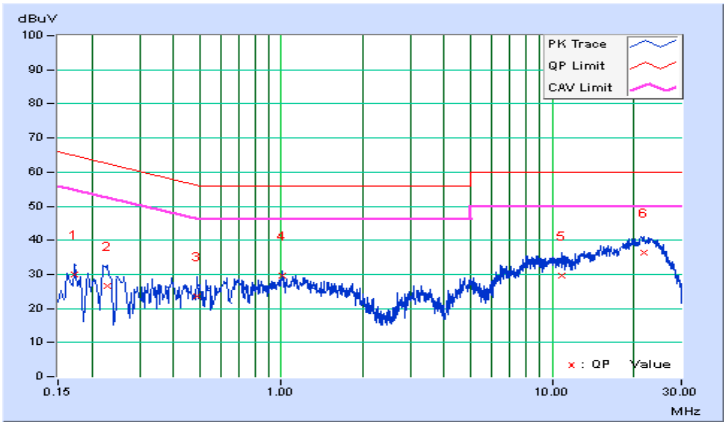
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Toby Tian	Test Date	2016/7/26

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	0.17346	10.02	19.87	8.93	29.89	18.95	64.79	54.79	-34.90	-35.84
2	0.22731	10.04	16.48	5.25	26.52	15.29	62.55	52.55	-36.03	-37.26
3	0.49017	10.13	13.54	5.00	23.67	15.13	56.16	46.16	-32.49	-31.03
4	1.00998	10.20	19.56	13.20	29.76	23.40	56.00	46.00	-26.24	-22.60
5	10.82039	10.78	18.92	10.51	29.70	21.29	60.00	50.00	-30.30	-28.71
6	21.76057	11.47	24.95	14.84	36.42	26.31	60.00	50.00	-23.58	-23.69

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

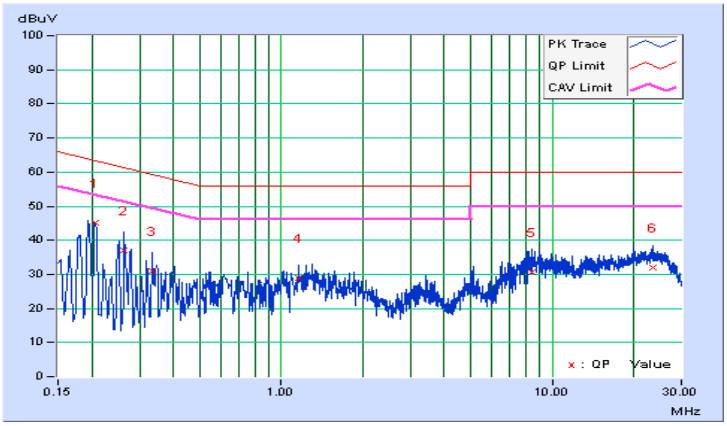


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Toby Tian	Test Date	2016/7/26

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	**0.20511**	**10.04**	**34.95**	**23.06**	**44.99**	**33.10**	**63.40**	**53.40**	**-18.41**	**-20.30**
2	0.26339	10.07	27.07	13.11	37.14	23.18	61.32	51.32	-24.18	-28.14
3	0.33377	10.10	20.97	10.97	31.07	21.07	59.36	49.36	-28.29	-28.29
4	1.16269	10.22	18.88	12.35	29.10	22.57	56.00	46.00	-26.90	-23.43
5	8.41965	10.70	20.05	11.34	30.75	22.04	60.00	50.00	-29.25	-27.96
6	23.51616	11.72	20.17	12.80	31.89	24.52	60.00	50.00	-28.11	-25.48

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 Measurment

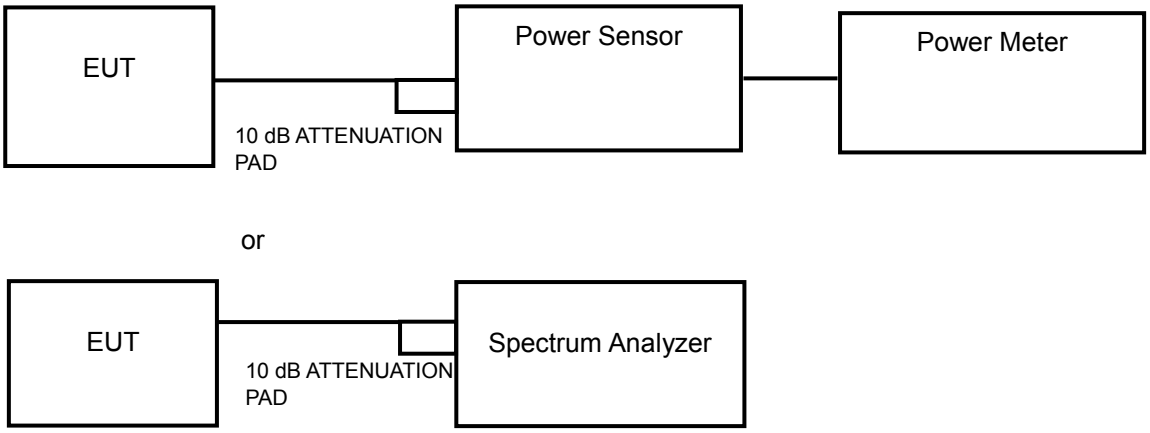
4.3.1 Limits of Transmit Power Measurement

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)

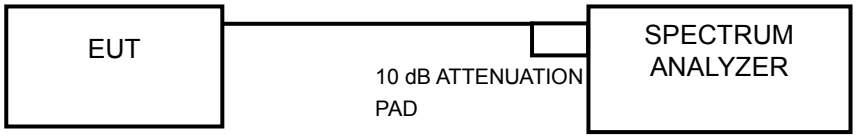
*B is the 26 dB emission bandwidth in megahertz

4.3.2 Test Setup

<Power Output Measurement>



<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)>

Method SA-1 is used to perform output power measurement, trigger and gating function of spectrum analyzer is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

26 dB Bandwidth

1) Set RBW = approximately 1 % of the emission bandwidth.
2) Set the VBW > RBW.
3) Detector = Peak.
4) Trace mode = max hold.
5) 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 fromTest 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 Result

Power Output:

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	22.542	13.53	24	Pass
44	5220	20.701	13.16	24	Pass
48	5240	20.845	13.19	24	Pass
52	5260	21.038	13.23	24	Pass
60	5300	21.577	13.34	24	Pass
64	5320	22.699	13.56	24	Pass
100	5500	21.928	13.41	24	Pass
116	5580	20.464	13.11	24	Pass
140	5700	21.33	13.29	24	Pass
2c-144	5720	10.593	10.25	22.98	Pass
3-144	5720	2.399	3.80	30	Pass
149	5745	23.335	13.68	30	Pass
157	5785	24.774	13.94	30	Pass
165	5825	24.155	13.83	30	Pass

Note:

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

1. 11 dBm + 10log (21.60) = 24.34 dBm > 24 dBm.
2. 11 dBm + 10log (21.80) = 24.38 dBm > 24 dBm.
3. 11 dBm + 10log (21.66) = 24.36 dBm > 24 dBm.
4. 11 dBm + 10log (21.61) = 24.35 dBm > 24 dBm.
5. 11 dBm + 10log (21.64) = 24.35 dBm > 24 dBm.
6. 11 dBm + 10log (21.61) = 24.35 dBm > 24 dBm.
7. 11 dBm + 10log (15.77) = 22.98 dBm < 24 dBm.

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	21.429	13.31	24	Pass
44	5220	20.701	13.16	24	Pass
48	5240	23.121	13.64	24	Pass
52	5260	22.594	13.54	24	Pass
60	5300	23.496	13.71	24	Pass
64	5320	22.491	13.52	24	Pass
100	5500	23.174	13.65	24	Pass
116	5580	20.559	13.13	24	Pass
140	5700	21.281	13.28	24	Pass
2c-144	5720	10.069	10.03	23.06	Pass
3-144	5720	2.547	4.06	30	Pass
149	5745	20.37	13.09	30	Pass
157	5785	22.491	13.52	30	Pass
165	5825	21.528	13.33	30	Pass

Note:

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

1. 11 dBm + 10log (21.87) = 24.40 dBm > 24 dBm.
2. 11 dBm + 10log (21.86) = 24.40 dBm > 24 dBm.
3. 11 dBm + 10log (22.03) = 24.43 dBm > 24 dBm.
4. 11 dBm + 10log (21.86) = 24.40 dBm > 24 dBm.
5. 11 dBm + 10log (22.00) = 24.42 dBm > 24 dBm.
6. 11 dBm + 10log (21.87) = 24.40 dBm > 24 dBm.
7. 11 dBm + 10log (16.07) = 23.06 dBm < 24 dBm.

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	21.184	13.26	24	Pass
46	5230	20.464	13.11	24	Pass
54	5270	21.528	13.33	24	Pass
62	5310	21.627	13.35	24	Pass
102	5510	21.135	13.25	24	Pass
110	5550	21.33	13.29	24	Pass
134	5670	22.594	13.54	24	Pass
2c-142	5710	10.471	10.20	24	Pass
3-142	5710	1.057	0.24	30	Pass
151	5755	22.491	13.52	30	Pass
159	5795	22.699	13.56	30	Pass

Note:

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

1. 11 dBm + 10log (41.34) = 27.16 dBm > 24 dBm.
2. 11 dBm + 10log (41.44) = 27.17 dBm > 24 dBm.
3. 11 dBm + 10log (41.35) = 27.16 dBm > 24 dBm.
4. 11 dBm + 10log (41.39) = 27.17 dBm > 24 dBm.
5. 11 dBm + 10log (41.33) = 27.16 dBm > 24 dBm.
6. 11 dBm + 10log (35.75) = 26.53 dBm > 24 dBm.

802.11ac (VHT80)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	20.184	13.05	24	Pass
58	5290	20.893	13.20	24	Pass
106	5530	18.072	12.57	24	Pass
122	5610	23.227	13.66	24	Pass
2c-138	5690	11.376	10.56	24	Pass
3-138	5690	2.104	3.23	30	Pass
155	5775	23.281	13.67	30	Pass

Note:

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

1. 11 dBm + 10log (81.96) = 30.14 dBm > 24 dBm.
2. 11 dBm + 10log (82.04) = 30.14 dBm > 24 dBm.
3. 11 dBm + 10log (82.28) = 30.15 dBm > 24 dBm.
4. 11 dBm + 10log (75.83) = 29.80 dBm > 24 dBm.

26 dB Bandwidth:

802.11a

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	21.60
44	5220	21.69
48	5240	21.77
52	5260	21.60
60	5300	21.80
64	5320	21.66
100	5500	21.61
116	5580	21.64
140	5700	21.61
2c-144	5720	15.77

802.11n (HT20)

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	21.85
44	5220	21.67
48	5240	21.82
52	5260	21.87
60	5300	21.86
64	5320	22.03
100	5500	21.86
116	5580	22.00
140	5700	21.87
2c-144	5720	16.07

802.11n (HT40)

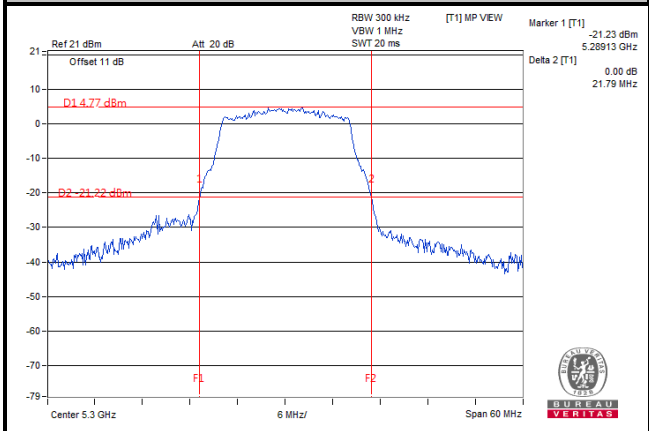
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
38	5190	41.35
46	5230	41.39
54	5270	41.34
62	5310	41.44
102	5510	41.35
110	5550	41.39
134	5670	41.33
2c-142	5710	35.75

802.11ac (VHT80)

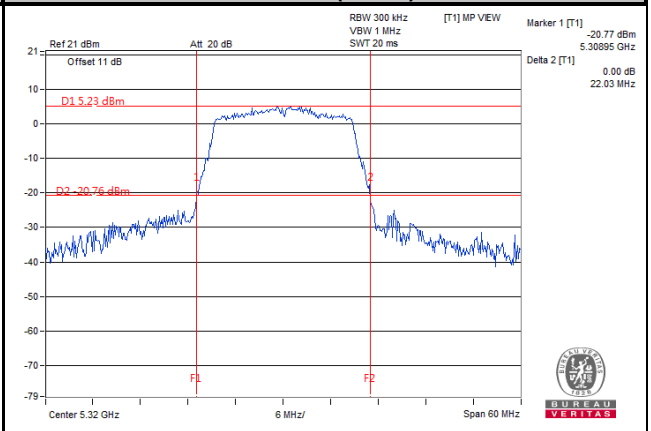
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
42	5210	81.98
58	5290	81.96
106	5530	82.04
122	5610	82.28
2c-138	5690	75.83

Spectrum Plot of Worst Value

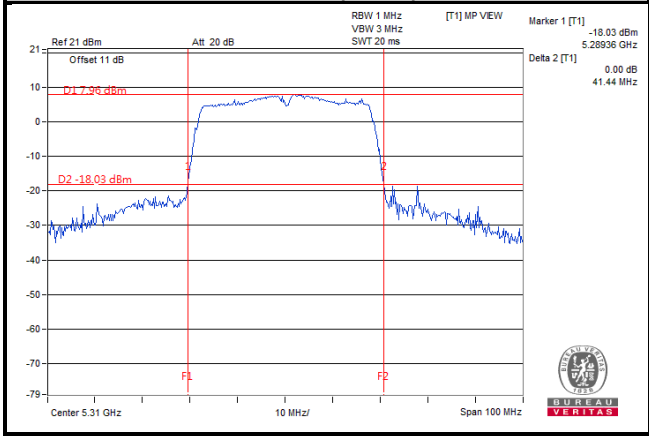
802.11a



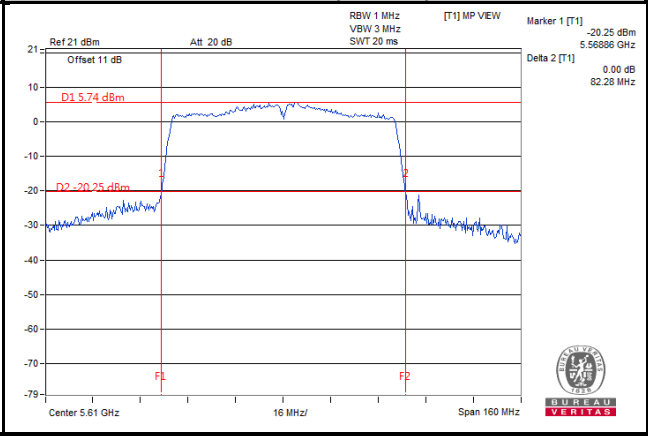
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

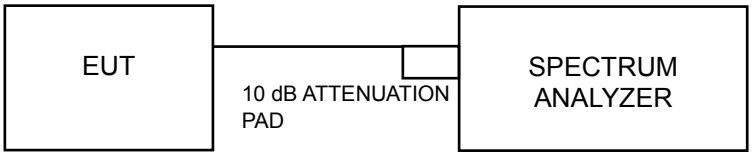


4.4 Peak Power Spectral Density Measurement

4.4.1 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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.4.4 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

Using method SA-2

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 and add 10 log (1/duty cycle)

※For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 500 kHz, Set VBW ≥ 3 RBW, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 500 kHz band segment within the fundamental EBW.
4. Sweep time = auto, trigger set to “free run”.
5. Trace average at least 100 traces in power averaging mode.
6. Record the max value

※For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 500 kHz, Set VBW ≥ 3 RBW, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 500 kHz band segment within the fundamental EBW.
4. Sweep time = auto, trigger set to “free run”.
5. Trace average at least 100 traces in power averaging mode.
6. Record the max value and add 10 log (1/duty cycle)

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

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

4.4.7 Test Results

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

802.11a

Channel	Frequency (MHz)	PSD (dBm)	Maximum Limit (dBm)	Pass / Fail
36	5180	1.46	11	Pass
44	5220	1.59	11	Pass
48	5240	1.73	11	Pass
52	5260	1.92	11	Pass
60	5300	2.17	11	Pass
64	5320	2.38	11	Pass
100	5500	2.98	11	Pass
116	5580	2.51	11	Pass
140	5700	1.73	11	Pass
2c-144	5720	1.74	11	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Channel	Frequency (MHz)	PSD (dBm)	Maximum Limit (dBm)	Pass / Fail
36	5180	1.23	11	Pass
44	5220	1.35	11	Pass
48	5240	1.49	11	Pass
52	5260	1.75	11	Pass
60	5300	2.05	11	Pass
64	5320	2.22	11	Pass
100	5500	2.81	11	Pass
116	5580	2.21	11	Pass
140	5700	1.34	11	Pass
2c-144	5720	1.32	11	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Channel	Frequency (MHz)	PSD (dBm)	Maximum Limit (dBm)	Pass / Fail
38	5190	-1.59	11	Pass
46	5230	-1.46	11	Pass
54	5270	-0.89	11	Pass
62	5310	-0.70	11	Pass
102	5510	-0.18	11	Pass
110	5550	-0.39	11	Pass
134	5670	-1.40	11	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

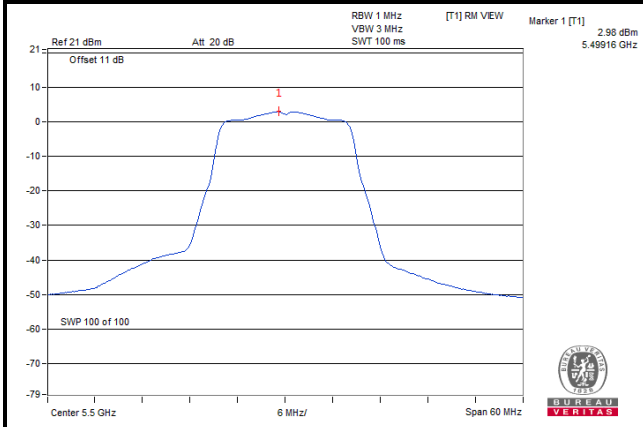
802.11ac (VHT80)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
42	5210	-4.45	0.14	-4.31	11	Pass
58	5290	-3.72	0.14	-3.58	11	Pass
106	5530	-4.10	0.14	-3.96	11	Pass
122	5610	-3.59	0.14	-3.45	11	Pass
2c-138	5690	-4.04	0.14	-3.90	11	Pass

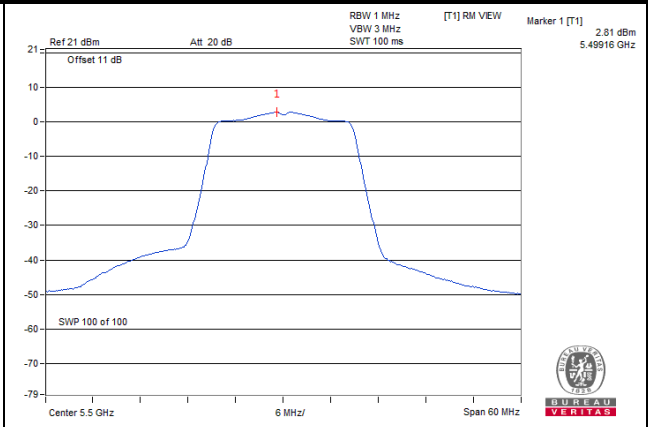
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

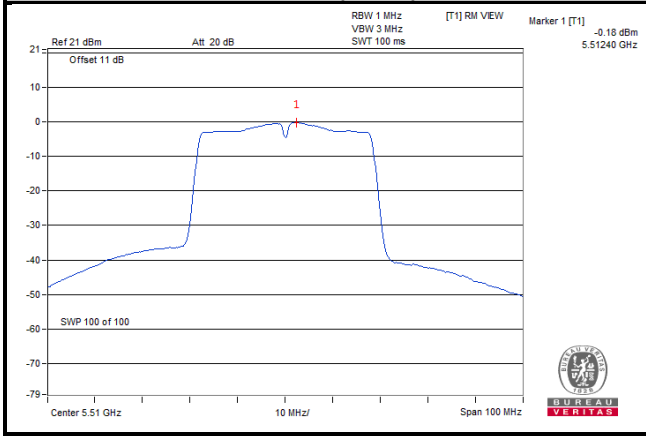
802.11a



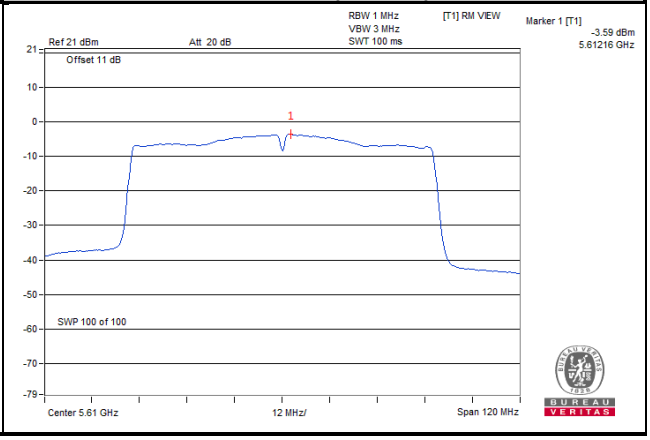
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



For U-NII-3 Band

802.11a

Channel	Freq. (MHz)	PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
3-144	5720	-3.42	30	Pass
149	5745	-1.08	30	Pass
157	5785	-1.19	30	Pass
165	5825	-0.75	30	Pass

802.11n (HT20)

Channel	Freq. (MHz)	PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
3-144	5720	-3.87	30	Pass
149	5745	-1.64	30	Pass
157	5785	-1.18	30	Pass
165	5825	-0.89	30	Pass

802.11n (HT40)

Channel	Freq. (MHz)	PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
3-142	5710	-7.02	30	Pass
151	5755	-4.52	30	Pass
159	5795	-4.10	30	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

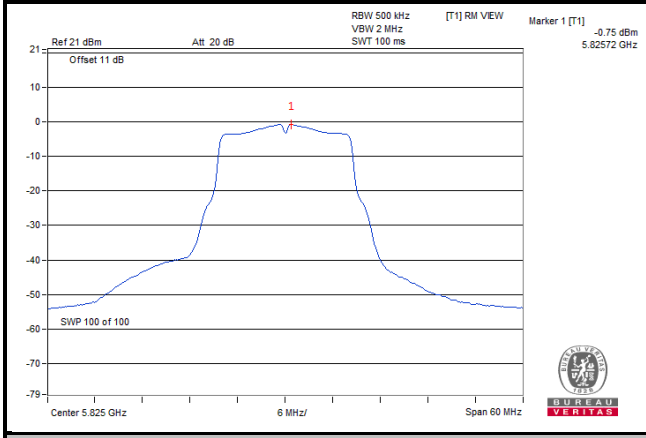
802.11ac (VHT80)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
3-138	5690	-10.55	0.14	-10.41	30	Pass
155	5775	-7.34	0.14	-7.20	30	Pass

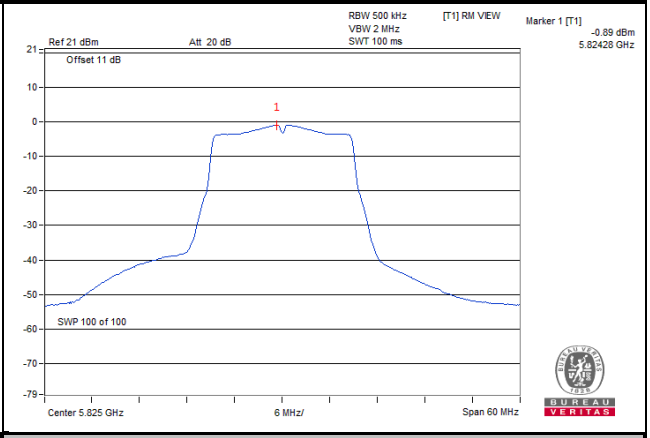
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

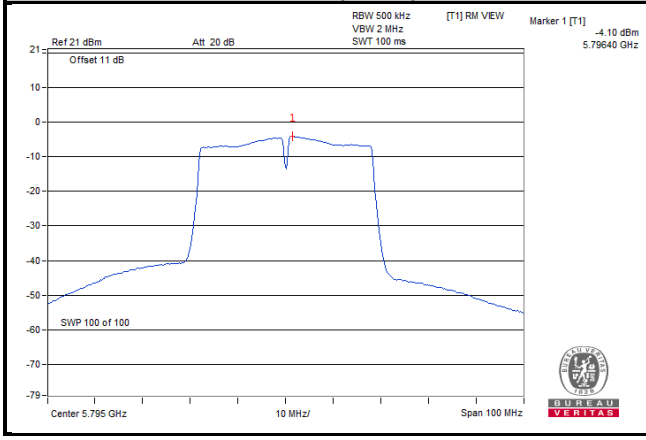
802.11a



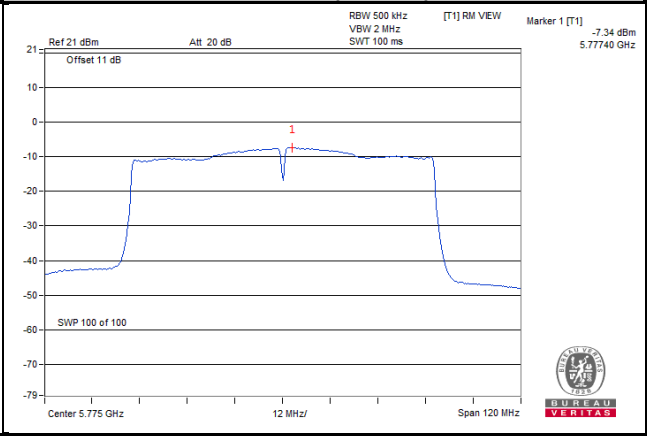
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

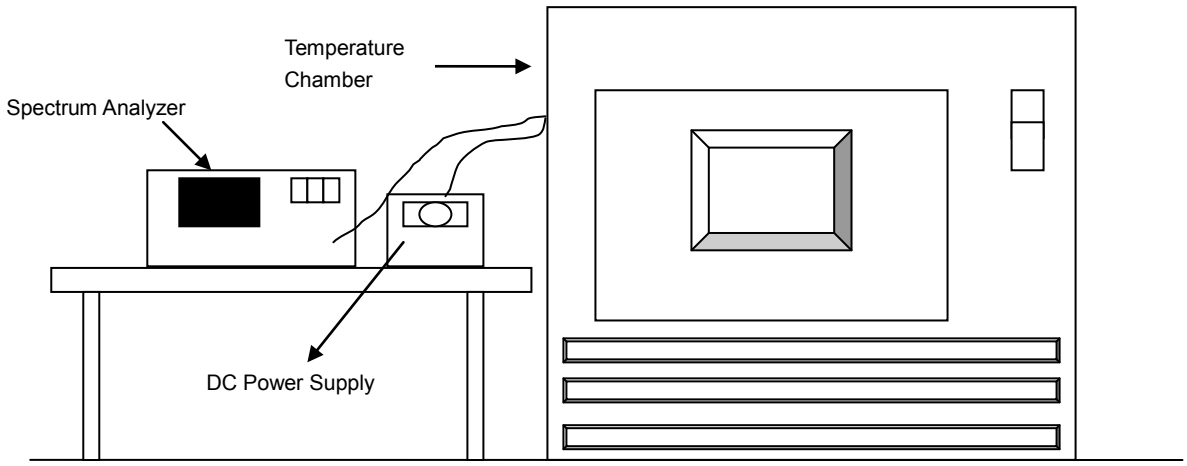


4.5 Frequency Stability

4.5.1 Limit of Frequency Stability Measurement

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

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 Procedure

a. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
b. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.
c. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5320 MHz									
Temp. (℃)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
55	3.8	5320.016574	3.115	5320.016855	3.168	5320.016620	3.124	5320.016398	3.082
50	3.8	5320.017495	3.289	5320.017503	3.290	5320.017452	3.280	5320.017757	3.338
40	3.8	5320.017475	3.285	5320.016680	3.135	5320.017050	3.205	5320.017145	3.223
30	3.8	5320.017731	3.333	5320.018151	3.412	5320.018322	3.444	5320.017972	3.378
20	3.8	5320.019327	3.633	5320.019493	3.664	5320.019094	3.589	5320.019666	3.697
10	3.8	5320.020696	3.890	5320.021311	4.006	5320.021365	4.016	5320.021507	4.043
0	3.8	5320.019435	3.653	5320.019907	3.742	5320.019247	3.618	5320.019358	3.639
-10	3.8	5320.018205	3.422	5320.018267	3.434	5320.018426	3.464	5320.018077	3.398
-20	3.8	5320.016811	3.160	5320.017443	3.279	5320.016855	3.168	5320.017323	3.256
-30	3.8	5320.016614	3.123	5320.016659	3.131	5320.016026	3.012	5320.016111	3.028

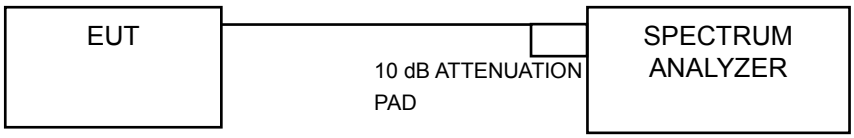
Frequency Stability Versus Temp.									
Operating Frequency: 5320 MHz									
Temp. (℃)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.6	5320.019004	3.572	5320.019204	3.610	5320.019354	3.638	5320.019003	3.572
	3.8	5320.019327	3.633	5320.019493	3.664	5320.019094	3.589	5320.019666	3.697
	4.2	5320.020546	3.862	5320.020311	3.818	5320.020603	3.873	5320.020492	3.852

4.6 6 dB Bandwidth Measurment

4.6.1 Limits of 6 dB Bandwidth Measurement

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

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

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3-144	5720	3.20	0.5	Pass
149	5745	16.37	0.5	Pass
157	5785	16.37	0.5	Pass
165	5825	16.39	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3-144	5720	3.80	0.5	Pass
149	5745	17.61	0.5	Pass
157	5785	17.59	0.5	Pass
165	5825	17.30	0.5	Pass

802.11n (HT40)

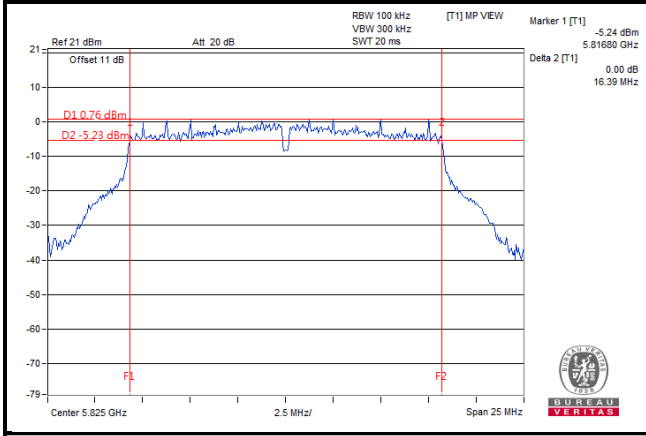
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3-142	5710	3.03	0.5	Pass
151	5755	36.10	0.5	Pass
159	5795	36.08	0.5	Pass

802.11ac (VHT80)

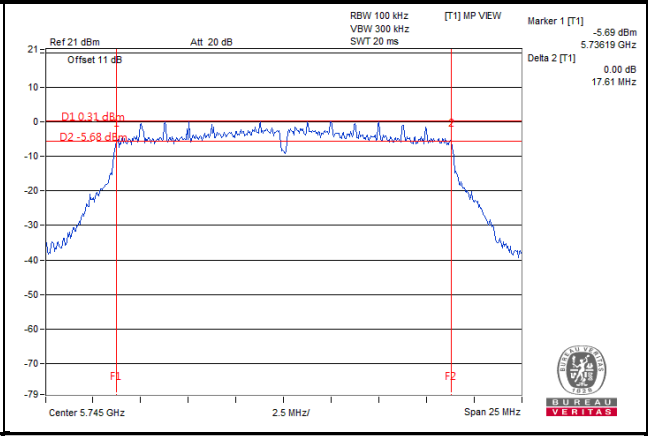
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3-138	5690	2.77	0.5	Pass
155	5775	75.82	0.5	Pass

Spectrum Plot of Worst Value

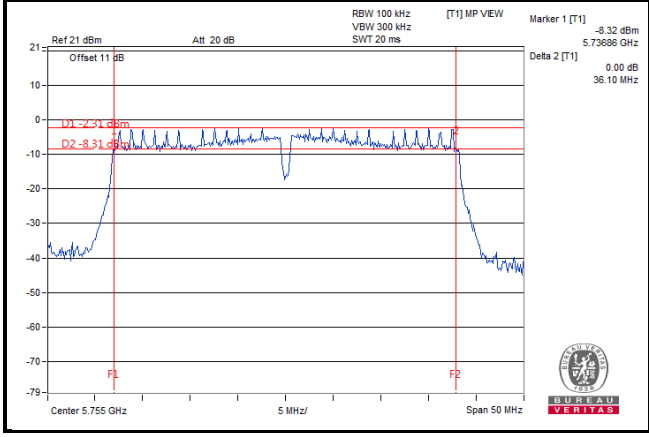
802.11a



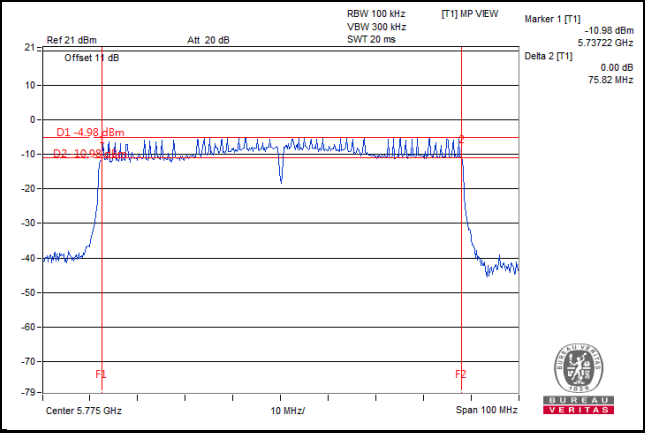
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



5 Pictures of Test Arrangements

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

Appendix – Information on 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 accredited and approved according to ISO/IEC 17025.

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

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Web Site: www.bureauveritas-adt.com

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

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