

## FCC Test Report

**Report No.:** RF160621C21-4

**FCC ID:** PY7-14784Z

**Received Date:** Jun. 21, 2016

**Test Date:** Jul. 05, 2016 ~ Jul. 12, 2016

**Issued Date:** Jul. 15, 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
RF160621C21-4	Original Release	Jul. 15, 2016

## 1 Certificate of Conformity

**Product:** Mobile Phone

**Brand:** Sony

**Sample Status:** Identical Prototype

**Applicant:** Sony Mobile Communications Inc.

**Test Date:** Jul. 05, 2016 ~ Jul. 12, 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 :** Evonne Liu, **Date:** Jul. 15, 2016  
Evonne Liu / Specialist

**Approved by :** Stanley Wu, **Date:** Jul. 15, 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 -22.86 dB at 0.20458 MHz.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.04 dB at 5470 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	Expanded 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

<b>Product</b>	Mobile Phone
<b>Brand</b>	Sony
<b>Status of EUT</b>	Identical Prototype
<b>Power Supply Rating</b>	3.8Vdc (Embedded Battery) 5Vdc or 9Vdc or 12Vdc (Adapter)
<b>Modulation Type</b>	256QAM, 64QAM, 16QAM, QPSK, BPSK
<b>Modulation Technology</b>	OFDM
<b>Transfer Rate</b>	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to MCS7 802.11ac: up to V9
<b>Operating Frequency</b>	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5720 MHz, 5745 ~ 5825 MHz
<b>Number of Channel</b>	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)
<b>Output Power</b>	23.014 mW for 5180 ~ 5240 MHz 23.933 mW for 5260 ~ 5320 MHz 23.659 mW for 5500 ~ 5720 MHz 28.51 mW for 5745 ~ 5825 MHz
<b>Antenna Type</b>	PIFA antenna with -2.8 dBi gain (5180 ~ 5240 MHz) PIFA antenna with -2.8 dBi gain (5260 ~ 5320 MHz) PIFA antenna with -4.2 dBi gain (5500 ~ 5720 MHz) PIFA antenna with -5.4 dBi gain (5725 ~ 5825 MHz)
<b>Antenna Connector</b>	N/A
<b>Accessory Device</b>	Refer to Note as below
<b>Data Cable Supplied</b>	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, O/P: 5.0Vdc, 2700 mA / O/P: 9.0Vdc, 1800 mA / O/P: 12.0Vdc, 1350 mA
Battery	Sony	1303-8269	N/A	3.8Vdc, 2700mAh
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 $\geq$ 1G	RE $<$ 1G	PLC	APCM	
-	√	√	√	√	-

Where **RE $\geq$ 1G**: Radiated Emission above 1 GHz      **RE $<$ 1G**: Radiated Emission below 1 GHz  
**PLC**: Power Line Conducted Emission      **APCM**: Antenna Port Conducted Measurement

**NOTE:**

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.
2. "-" means no effect.

#### **Radiated Emission Test (Above 1 GHz):**

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 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	802.11n (HT40)	38 to 46	38	OFDM	BPSK	MCS0
-	5260-5320	802.11n (HT40)	54 to 62	62	OFDM	BPSK	MCS0
-	5500-5720	802.11ac (VHT80)	106 to 138	106	OFDM	BPSK	MCS0
-	5745-5825	802.11n (HT20)	149 to 165	149	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)
-	5500-5720	802.11ac (VHT80)	106 to 138	106	OFDM	BPSK	MCS0

### 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 $\geq$ 1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao
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

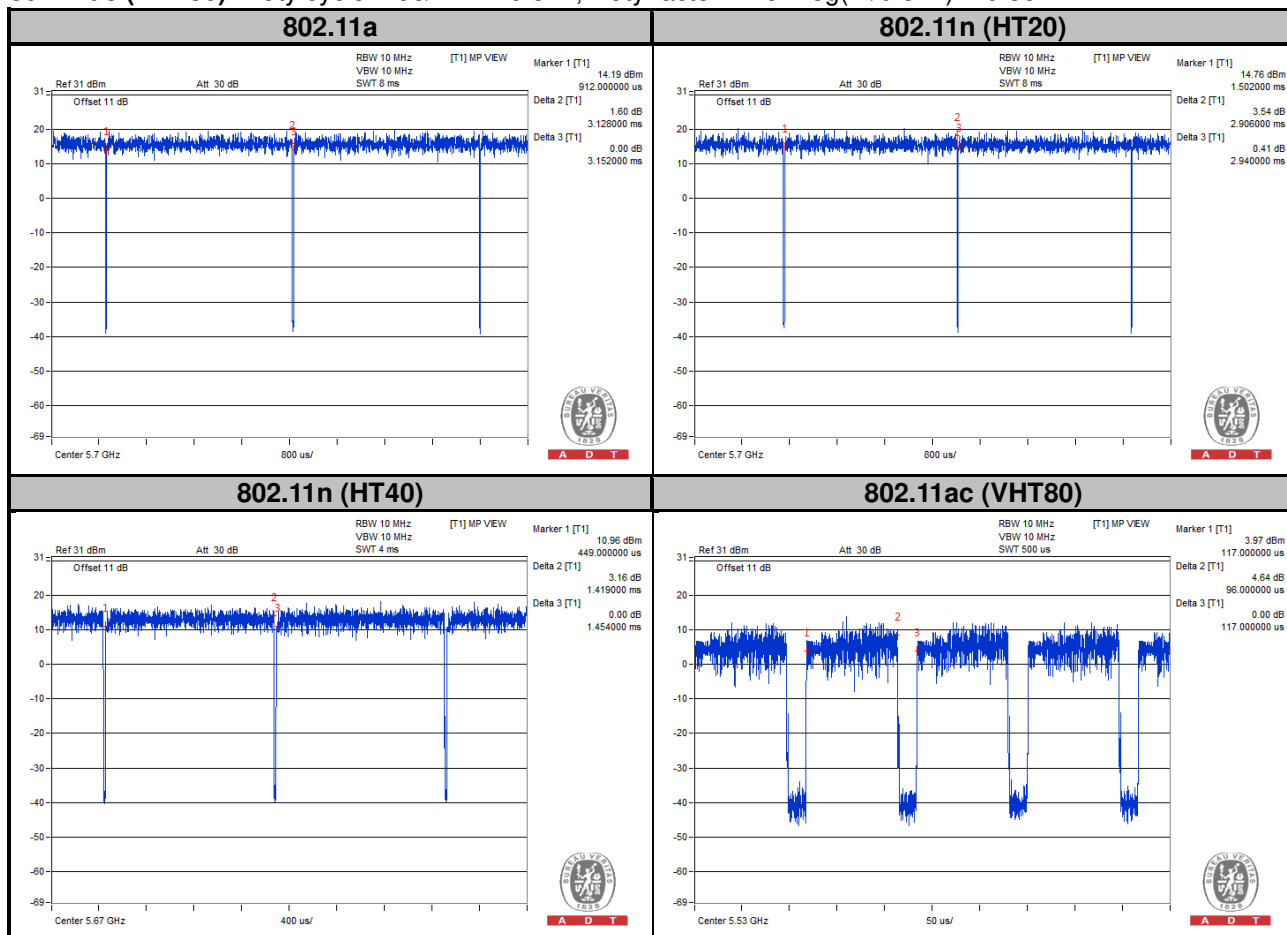
### 3.3 Duty Cycle of Test Signal

**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 =  $1.419/1.454 = 0.976$ , Duty factor =  $10 * \log(1/0.976) = 0.11$

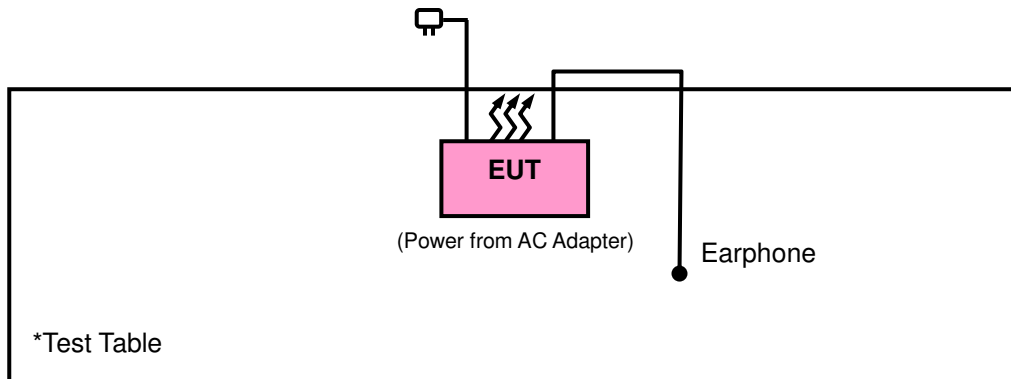
**802.11ac (VHT80):** Duty cycle =  $96/117 = 0.821$ , Duty factor =  $10 * \log(1/0.821) = 0.86$



### 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)**

**789033 D02 General UNII Test Procedures New Rules v01r02**

**644545 D03 Guidance for IEEE 802 11ac v01r02**

**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)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

#### NOTE:

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

#### 4.1.2 Limits of Unwanted Emission Out of the Restricted Bands

Applicable To	Limit	
789033 D02 General UNII Test Procedures New Rules 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) <sup>*1</sup> PK: -17 (dBm/MHz) <sup>*2</sup>	PK: 68.2 (dBμV/m) <sup>*1</sup> PK: 78.2 (dBμV/m) <sup>*2</sup>

**NOTE:** <sup>\*1</sup> beyond 10 MHz of the band edge <sup>\*2</sup> within 10 MHz of band edge

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

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

## 4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY50010135	Jul. 18, 2015	Jul. 17, 2016
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
Bluetooth Tester	CBT	100980	Apr. 27, 2015	Apr. 26, 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(R FC-SMS-100-SM S-120+RFC-SMS -100-SMS-400)	Jun. 24, 2016	Jun. 23, 2017
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(R FC-SMS-100-SM S-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:**

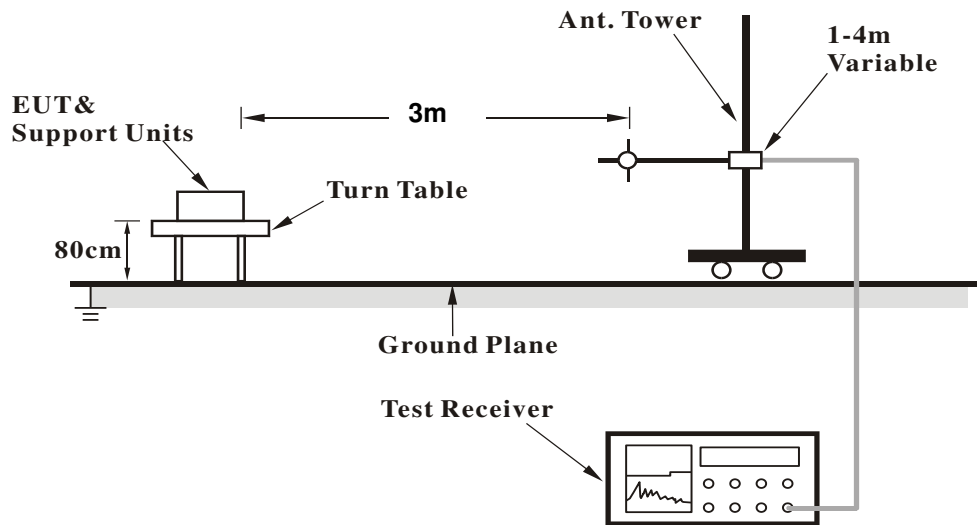
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for RMS Average (Duty cycle < 98 %) for Average detection (AV) at frequency above 1 GHz, then the measurement results was added to a correction factor ( $10 \log(1/\text{duty cycle})$ ).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle  $\geq 98$  %) 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

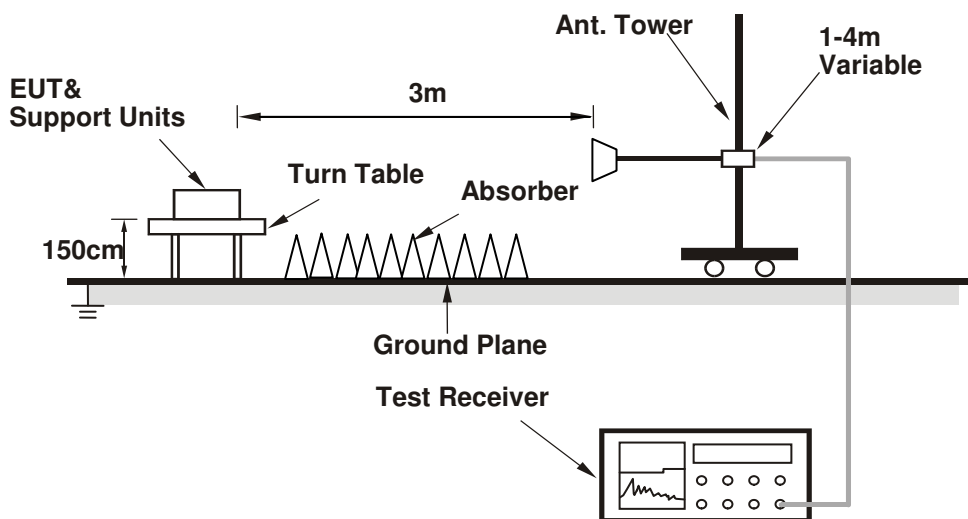
No deviation.

#### 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).

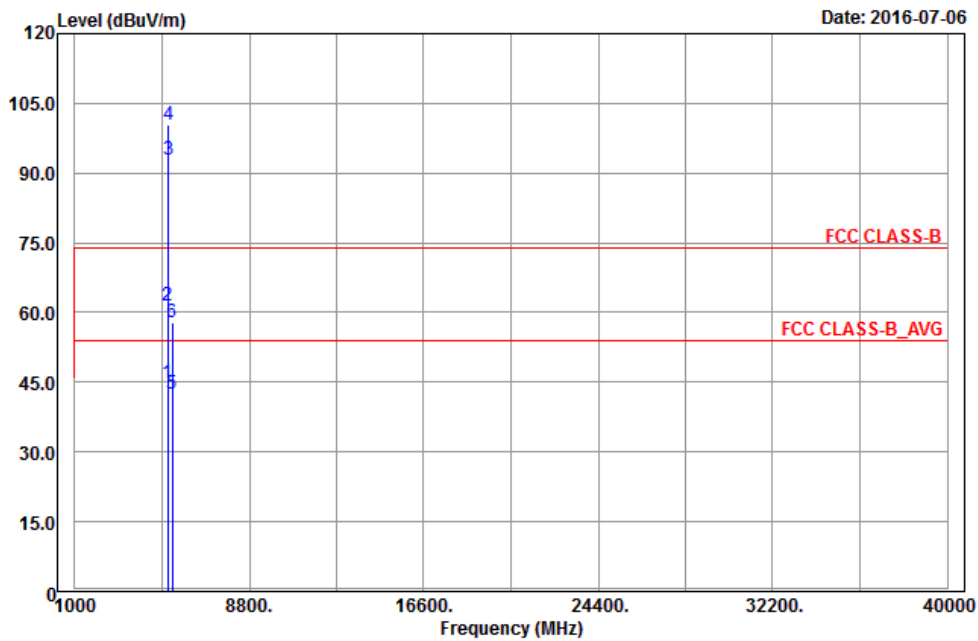
#### 4.1.7 EUT Operating Conditions

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

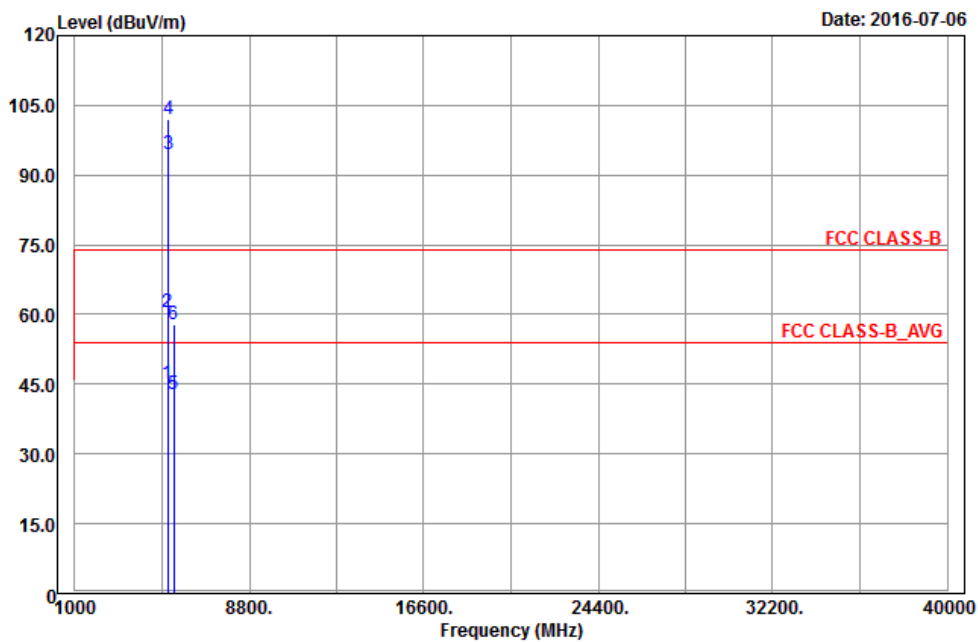
4.1.8 Test Results  
 Above 1 GHz Data :  
 802.11a

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

Horizontal



Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	44.91	36.66	54	-9.09	34.12	8.13	34	113	20	Average
5150	61.39	53.14	74	-12.61	34.12	8.13	34	113	20	Peak
5180	92.79	84.48			34.15	8.16	34	113	20	Average
5180	100.29	91.98			34.15	8.16	34	113	20	Peak
5364	42.62	33.98	54	-11.38	34.29	8.38	34.03	113	20	Average
5364	58.01	49.37	74	-15.99	34.29	8.38	34.03	113	20	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

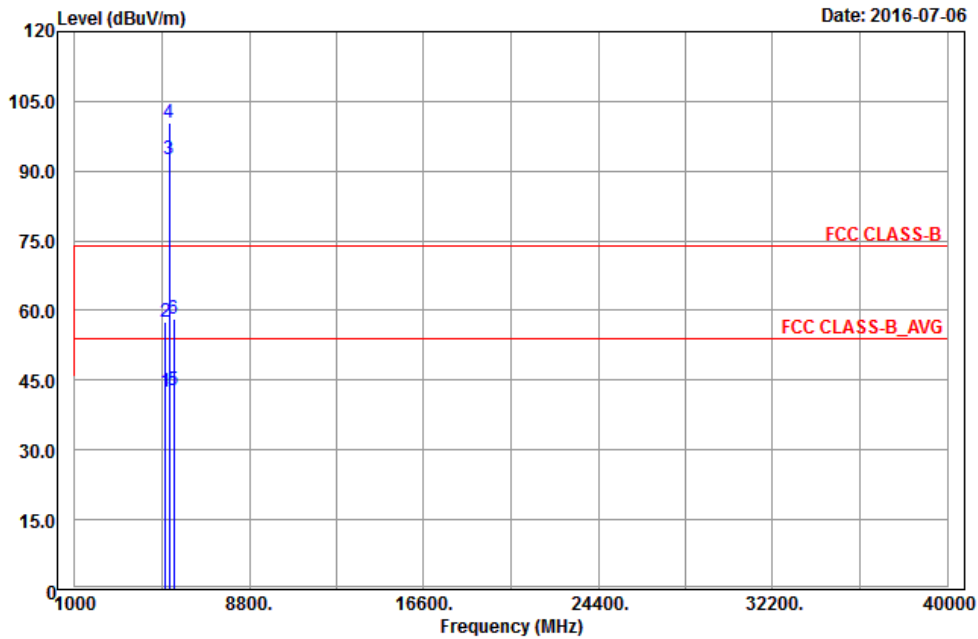
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	45.17	36.92	54	-8.83	34.12	8.13	34	192	294	Average
5150	60.48	52.23	74	-13.52	34.12	8.13	34	192	294	Peak
5180	94.64	86.33			34.15	8.16	34	192	294	Average
5180	101.91	93.6			34.15	8.16	34	192	294	Peak
5418	42.88	34.15	54	-11.12	34.33	8.44	34.04	192	294	Average
5418	58	49.27	74	-16	34.33	8.44	34.04	192	294	Peak

Remarks:

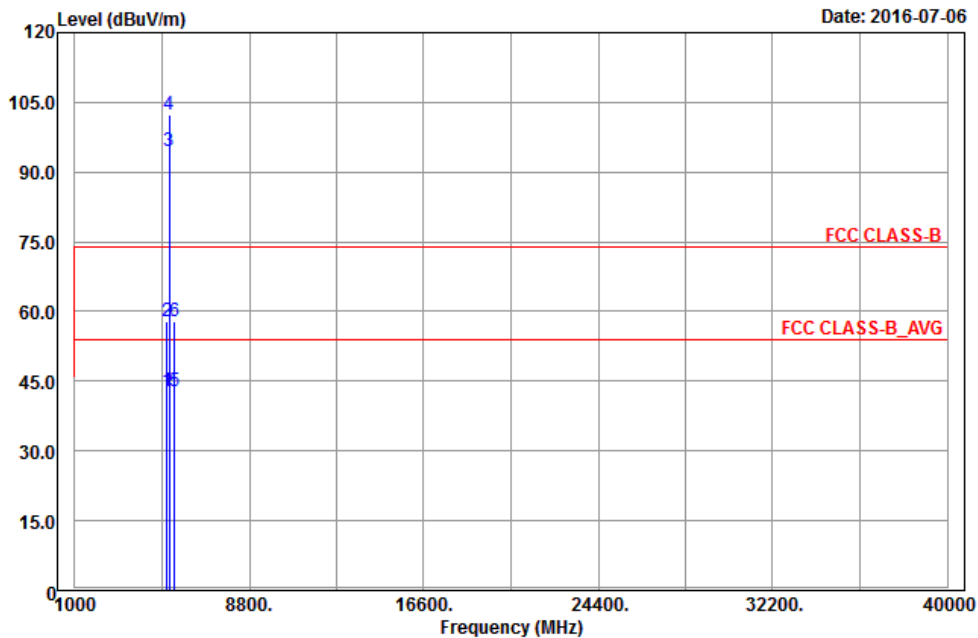
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5180 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 44	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5048	42.47	34.41	54	-11.53	34.04	8	33.98	119	18	Average
5048	57.69	49.63	74	-16.31	34.04	8	33.98	119	18	Peak
5220	92.47	84.08			34.17	8.22	34	119	18	Average
5220	100.46	92.07			34.17	8.22	34	119	18	Peak
5422	42.88	34.11	54	-11.12	34.33	8.48	34.04	119	18	Average
5422	58.27	49.5	74	-15.73	34.33	8.48	34.04	119	18	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

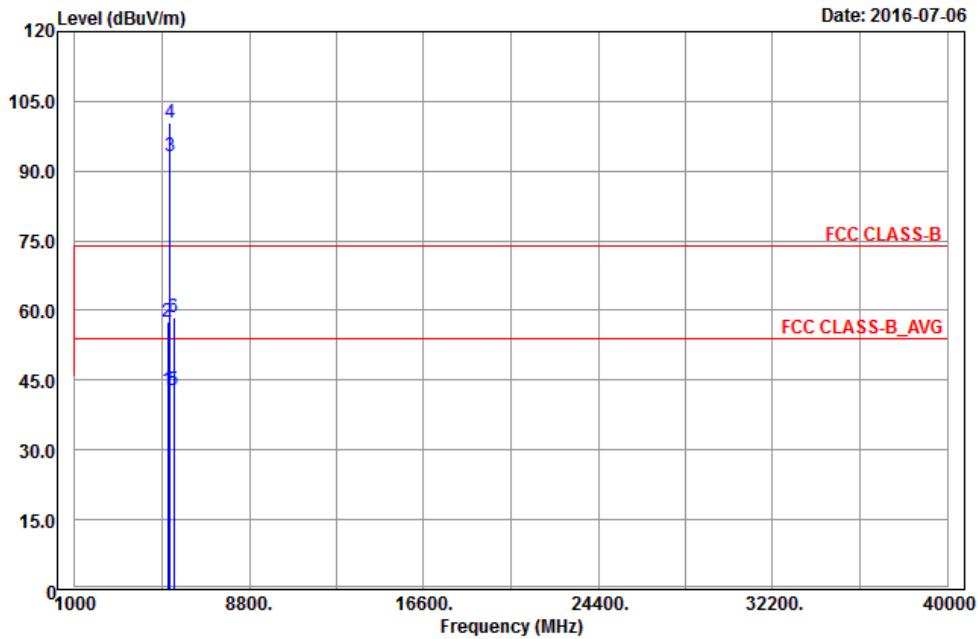
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5116	42.72	34.52	54	-11.28	34.09	8.1	33.99	207	300	Average
5116	57.85	49.65	74	-16.15	34.09	8.1	33.99	207	300	Peak
5220	94.58	86.19			34.17	8.22	34	207	300	Average
5220	102.2	93.81			34.17	8.22	34	207	300	Peak
5450	42.88	34.06	54	-11.12	34.36	8.51	34.05	207	300	Average
5450	57.83	49.01	74	-16.17	34.36	8.51	34.05	207	300	Peak

## Remarks:

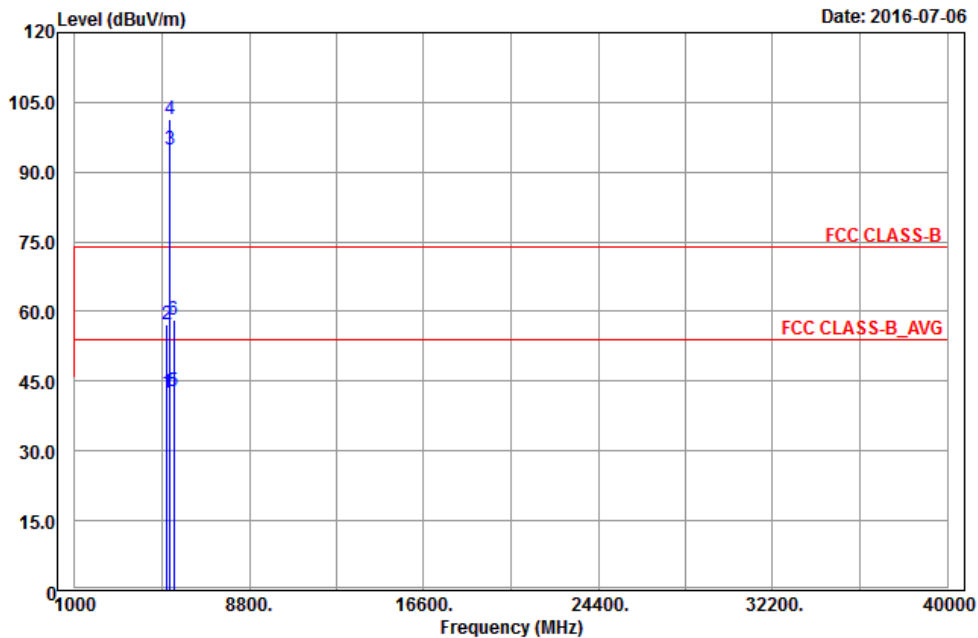
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
 Margin value = Emission level – Limit value
- 5220 MHz: Fundamental Frequency

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5148	42.75	34.5	54	-11.25	34.12	8.13	34	119	153	Average
5148	57.66	49.41	74	-16.34	34.12	8.13	34	119	153	Peak
5240	93.13	84.69			34.19	8.26	34.01	119	153	Average
5240	100.25	91.81			34.19	8.26	34.01	119	153	Peak
5430	42.95	34.16	54	-11.05	34.35	8.48	34.04	119	153	Average
5430	58.41	49.62	74	-15.59	34.35	8.48	34.04	119	153	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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	42.66	34.44	54	-11.34	34.11	8.1	33.99	218	298	Average
5126	57.25	49.03	74	-16.75	34.11	8.1	33.99	218	298	Peak
5240	94.81	86.37			34.19	8.26	34.01	218	298	Average
5240	101.45	93.01			34.19	8.26	34.01	218	298	Peak
5438	42.84	34.05	54	-11.16	34.35	8.48	34.04	218	298	Average
5438	58.04	49.25	74	-15.96	34.35	8.48	34.04	218	298	Peak

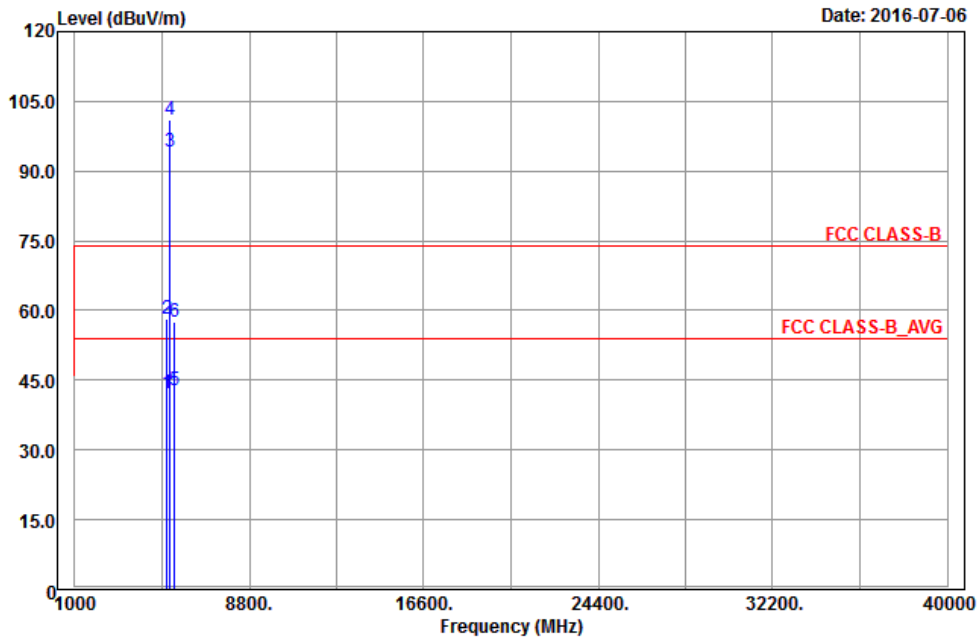
Remarks:

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

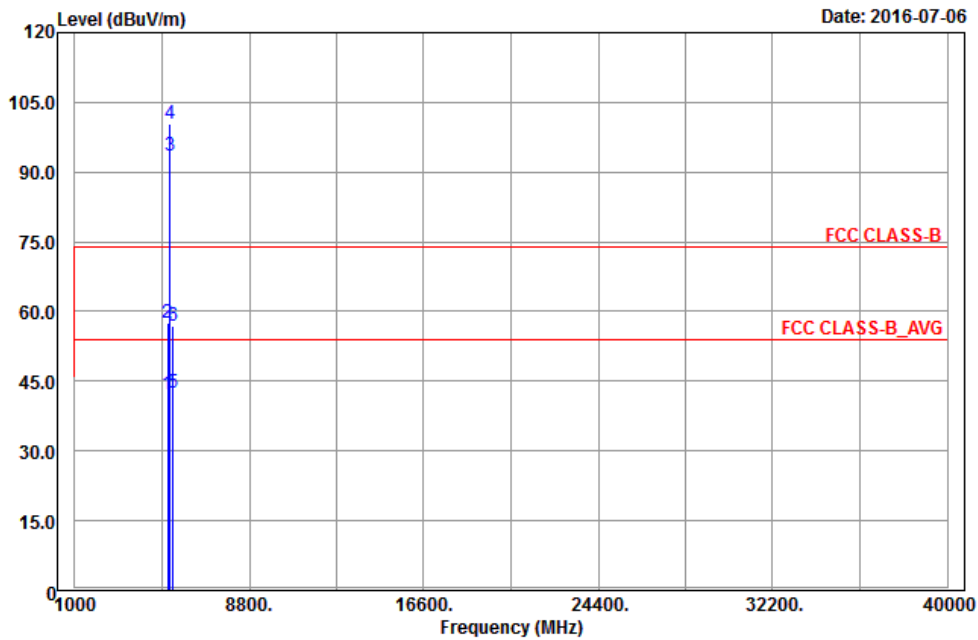


EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5126	42.14	33.92	54	-11.86	34.11	8.1	33.99	100	116	Average
5126	58.14	49.92	74	-15.86	34.11	8.1	33.99	100	116	Peak
5260	94.25	85.79			34.21	8.26	34.01	100	116	Average
5260	101	92.54			34.21	8.26	34.01	100	116	Peak
5458	42.81	33.99	54	-11.19	34.36	8.51	34.05	100	116	Average
5458	57.46	48.64	74	-16.54	34.36	8.51	34.05	100	116	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

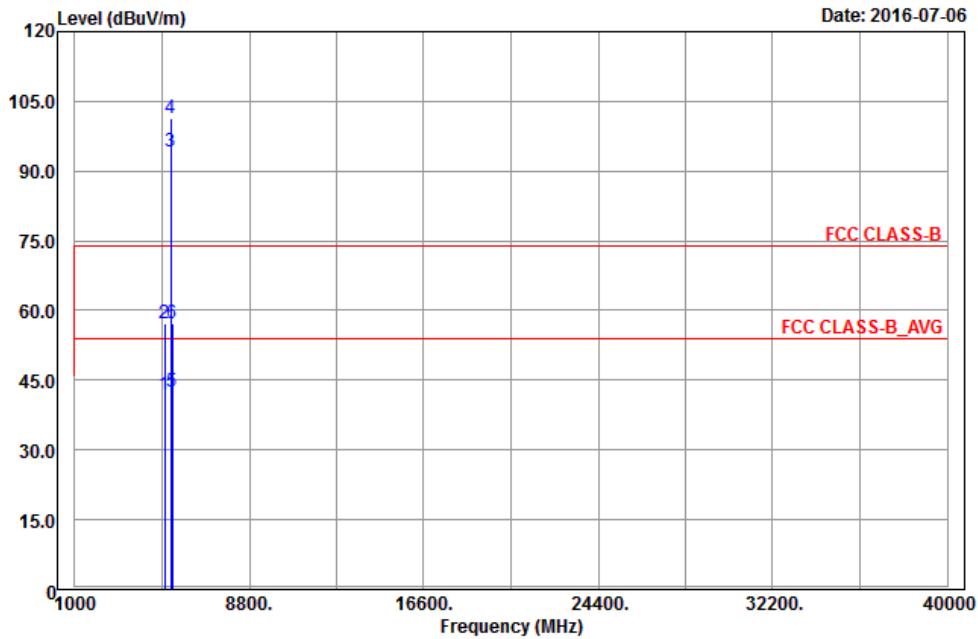
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5138	42.19	33.94	54	-11.81	34.11	8.13	33.99	243	345	Average
5138	57.63	49.38	74	-16.37	34.11	8.13	33.99	243	345	Peak
5260	93.37	84.91			34.21	8.26	34.01	243	345	Average
5260	100.37	91.91			34.21	8.26	34.01	243	345	Peak
5390	42.67	33.99	54	-11.33	34.31	8.41	34.04	243	345	Average
5390	56.99	48.31	74	-17.01	34.31	8.41	34.04	243	345	Peak

Remarks:

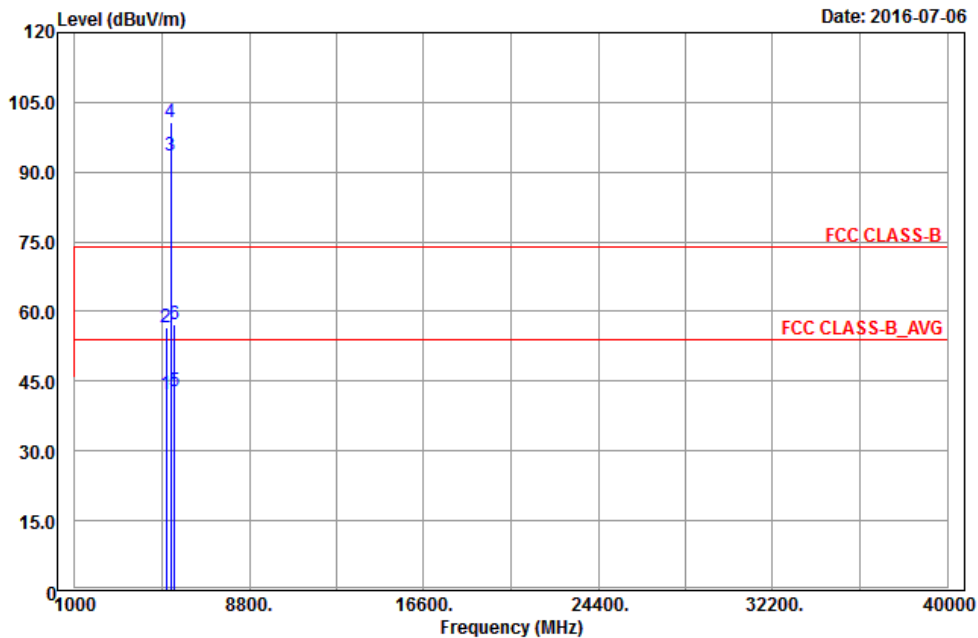
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5260 MHz: Fundamental Frequency

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5032	41.93	33.87	54	-12.07	34.03	8	33.97	100	116	Average
5032	57.17	49.11	74	-16.83	34.03	8	33.97	100	116	Peak
5300	94.01	85.47			34.24	8.32	34.02	100	116	Average
5300	101.45	92.91			34.24	8.32	34.02	100	116	Peak
5350	42.56	33.93	54	-11.44	34.28	8.38	34.03	100	116	Average
5350	57.26	48.63	74	-16.74	34.28	8.38	34.03	100	116	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

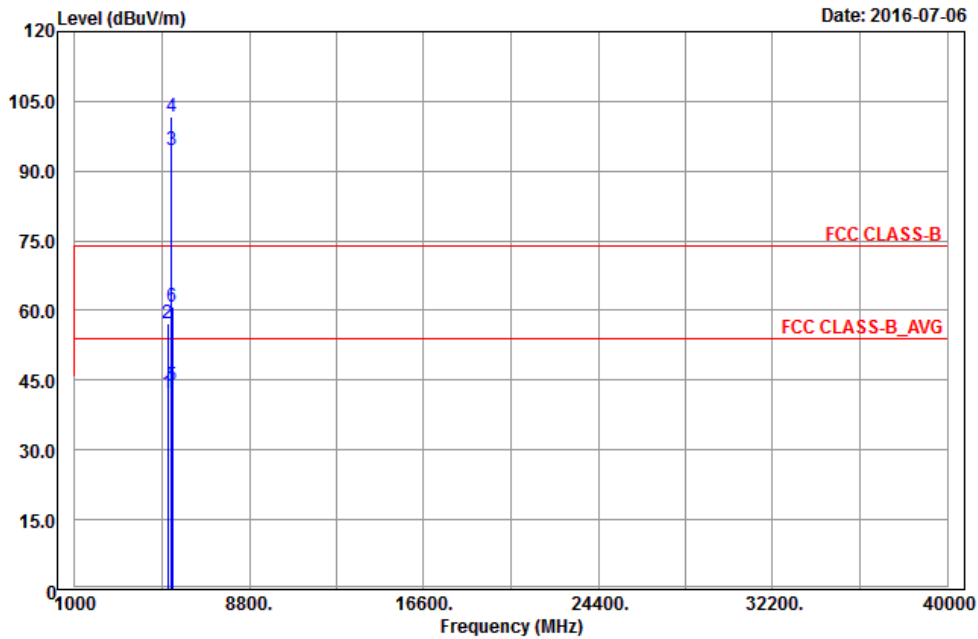
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5100	42.14	33.98	54	-11.86	34.08	8.07	33.99	243	345	Average
5100	56.6	48.44	74	-17.4	34.08	8.07	33.99	243	345	Peak
5300	93.55	85.01			34.24	8.32	34.02	243	345	Average
5300	100.55	92.01			34.24	8.32	34.02	243	345	Peak
5454	42.86	34.04	54	-11.14	34.36	8.51	34.05	243	345	Average
5454	57.32	48.5	74	-16.68	34.36	8.51	34.05	243	345	Peak

Remarks:

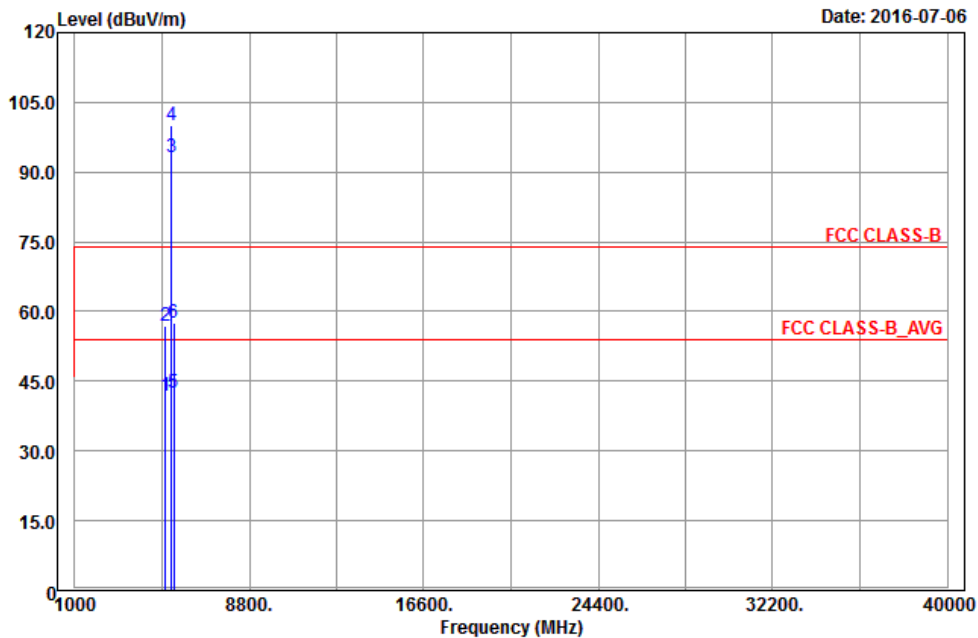
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5300 MHz: Fundamental Frequency

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5138	42.18	33.93	54	-11.82	34.11	8.13	33.99	100	116	Average
5138	57.08	48.83	74	-16.92	34.11	8.13	33.99	100	116	Peak
5320	94.61	86.03			34.25	8.35	34.02	100	116	Average
5320	101.6	93.02			34.25	8.35	34.02	100	116	Peak
5350	43.86	35.23	54	-10.14	34.28	8.38	34.03	100	116	Average
5350	60.86	52.23	74	-13.14	34.28	8.38	34.03	100	116	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

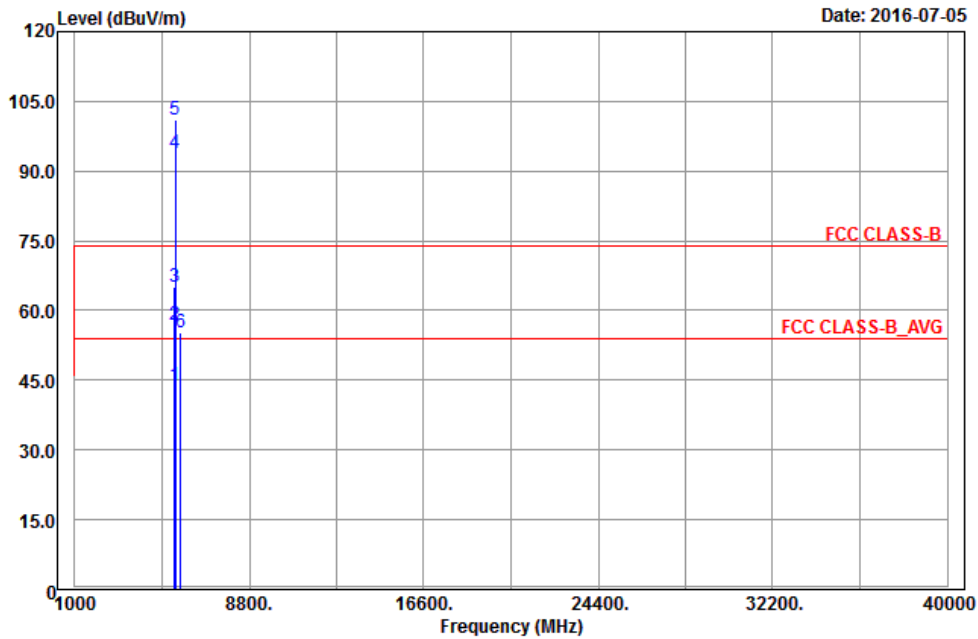
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5064	41.84	33.74	54	-12.16	34.05	8.03	33.98	243	345	Average
5064	56.87	48.77	74	-17.13	34.05	8.03	33.98	243	345	Peak
5320	93.15	84.57			34.25	8.35	34.02	243	345	Average
5320	100.18	91.6			34.25	8.35	34.02	243	345	Peak
5420	42.56	33.79	54	-11.44	34.33	8.48	34.04	243	345	Average
5420	57.42	48.65	74	-16.58	34.33	8.48	34.04	243	345	Peak

Remarks:

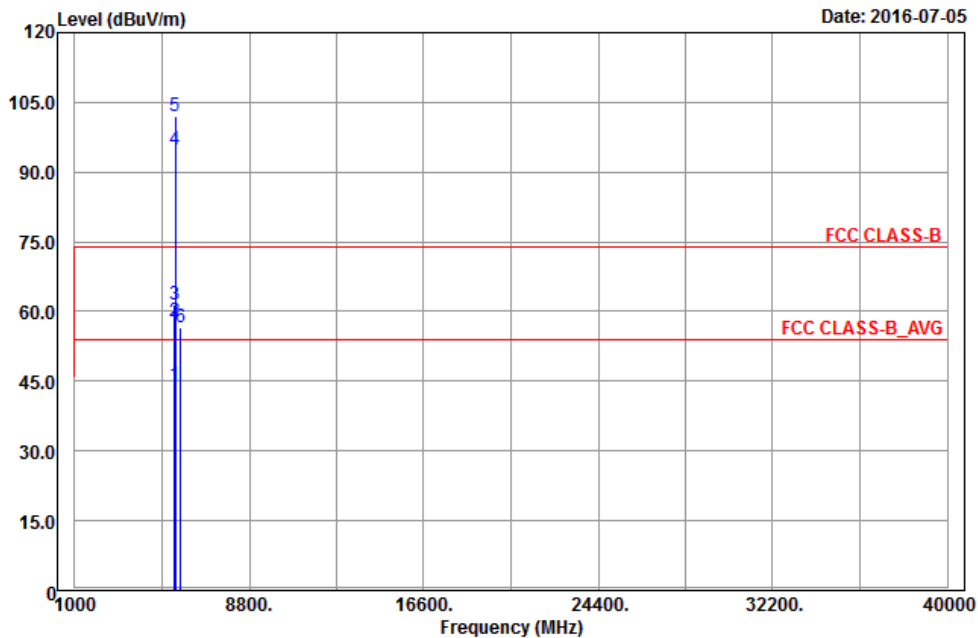
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5320 MHz: Fundamental Frequency

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5450	43.87	35.05	54	-10.13	34.36	8.51	34.05	191	354	Average
5450	56.83	48.01	74	-17.17	34.36	8.51	34.05	191	354	Peak
5470	64.99	56.16	68.2	-3.21	34.37	8.51	34.05	191	354	Peak
5500	93.97	85.05			34.4	8.57	34.05	191	354	Average
5500	101.03	92.11			34.4	8.57	34.05	191	354	Peak
5725	55.38	46.22	68.2	-12.82	34.62	8.65	34.11	191	354	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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
5454	44.17	35.35	54	-9.83	34.36	8.51	34.05	100	272	Average
5454	57.89	49.07	74	-16.11	34.36	8.51	34.05	100	272	Peak
5470	61.58	52.75	68.2	-6.62	34.37	8.51	34.05	100	272	Peak
5500	94.71	85.79			34.4	8.57	34.05	100	272	Average
5500	102.06	93.14			34.4	8.57	34.05	100	272	Peak
5725	56.51	47.35	68.2	-11.69	34.62	8.65	34.11	100	272	Peak

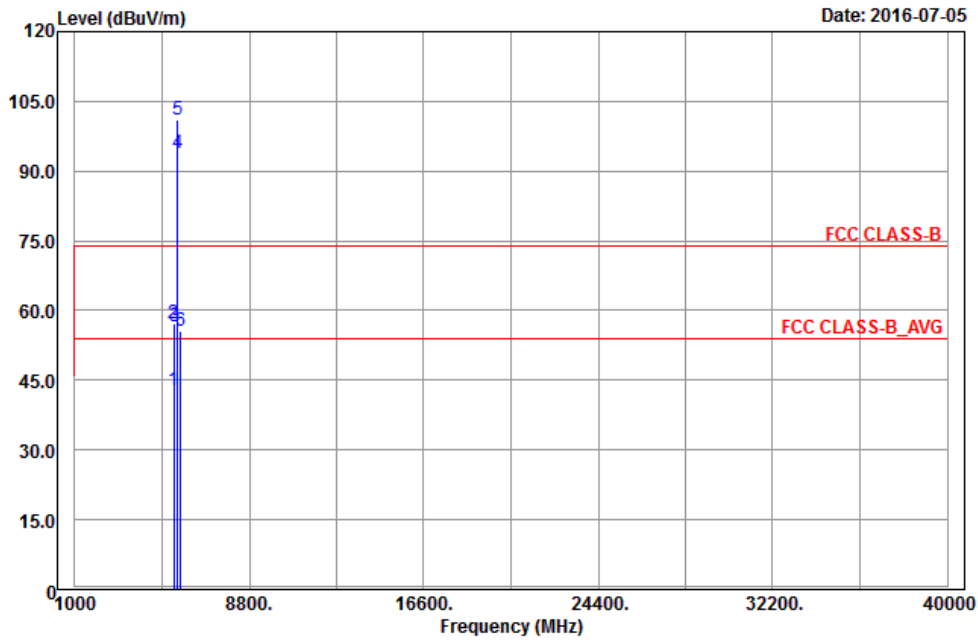
Remarks:

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

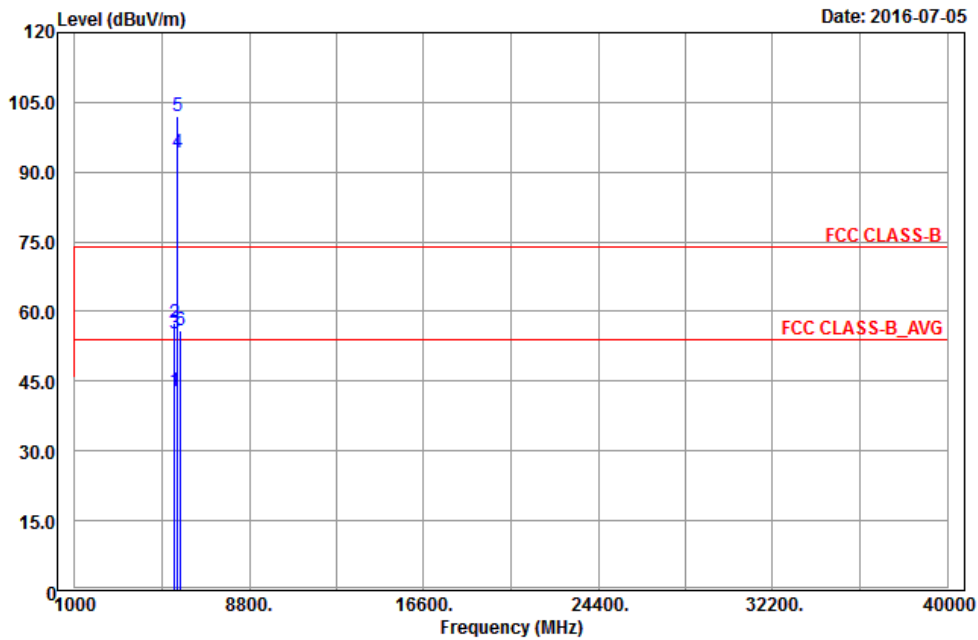


EUT Test Condition		Measurement Detail	
Channel	Channel 116	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5442	42.73	33.94	54	-11.27	34.35	8.48	34.04	191	354	Average
5442	57.36	48.57	74	-16.64	34.35	8.48	34.04	191	354	Peak
5470	56.5	47.67	68.2	-11.7	34.37	8.51	34.05	191	354	Peak
5580	93.85	84.86			34.47	8.6	34.08	191	354	Average
5580	101.15	92.16			34.47	8.6	34.08	191	354	Peak
5725	55.54	46.38	68.2	-12.66	34.62	8.65	34.11	191	354	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

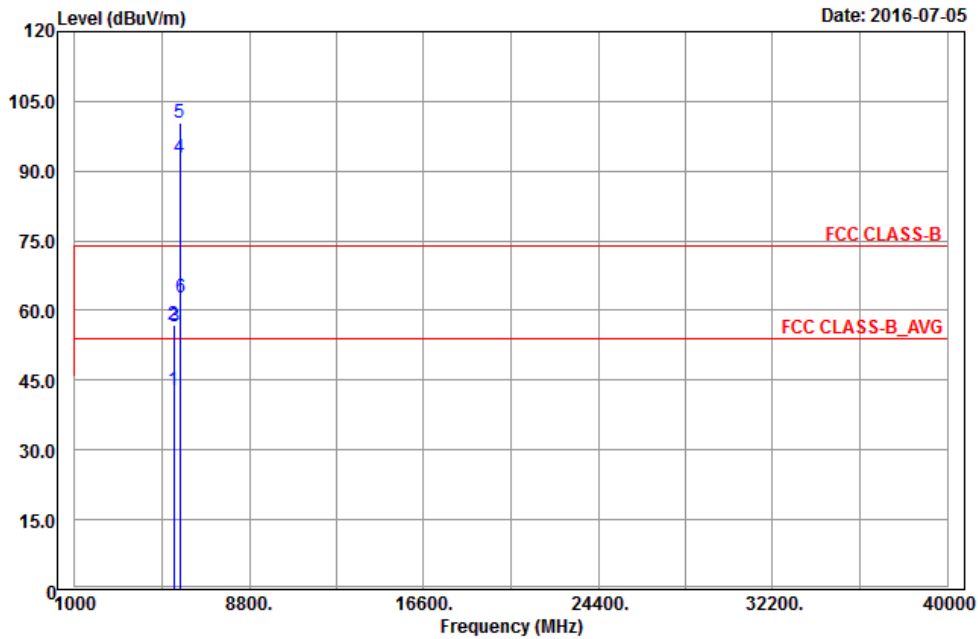
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5448	42.77	33.94	54	-11.23	34.36	8.51	34.04	100	272	Average
5448	57.48	48.65	74	-16.52	34.36	8.51	34.04	100	272	Peak
5470	55.1	46.27	68.2	-13.1	34.37	8.51	34.05	100	272	Peak
5580	94.18	85.19			34.47	8.6	34.08	100	272	Average
5580	102.09	93.1			34.47	8.6	34.08	100	272	Peak
5725	55.88	46.72	68.2	-12.32	34.62	8.65	34.11	100	272	Peak

Remarks:

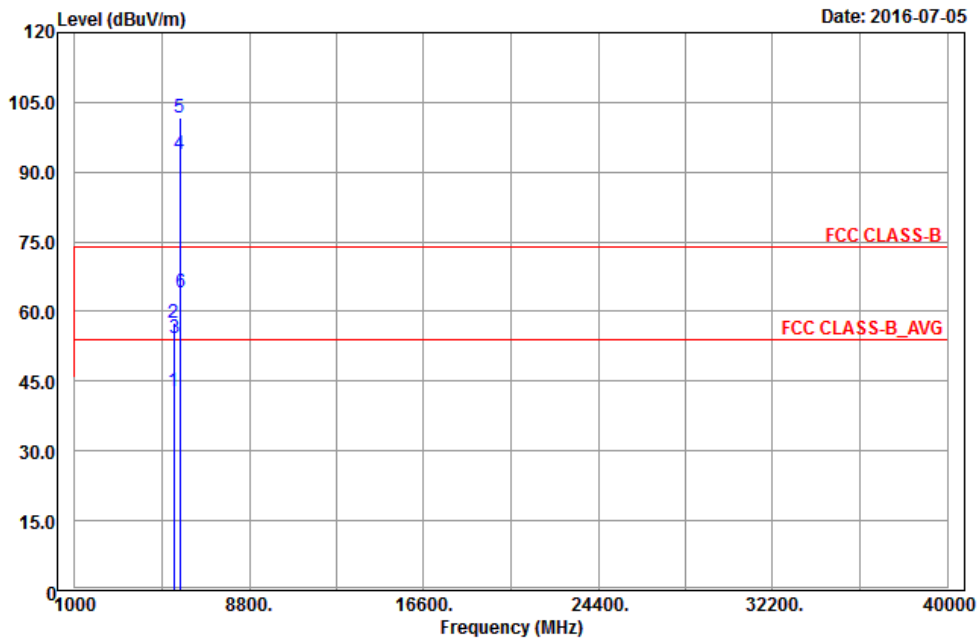
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5580 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5428	42.74	33.97	54	-11.26	34.33	8.48	34.04	173	354	Average
5428	56.87	48.1	74	-17.13	34.33	8.48	34.04	173	354	Peak
5470	56.69	47.86	68.2	-11.51	34.37	8.51	34.05	173	354	Peak
5700	92.83	83.7			34.59	8.64	34.1	173	354	Average
5700	100.39	91.26			34.59	8.64	34.1	173	354	Peak
5725	62.65	53.49	68.2	-5.55	34.62	8.65	34.11	173	354	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

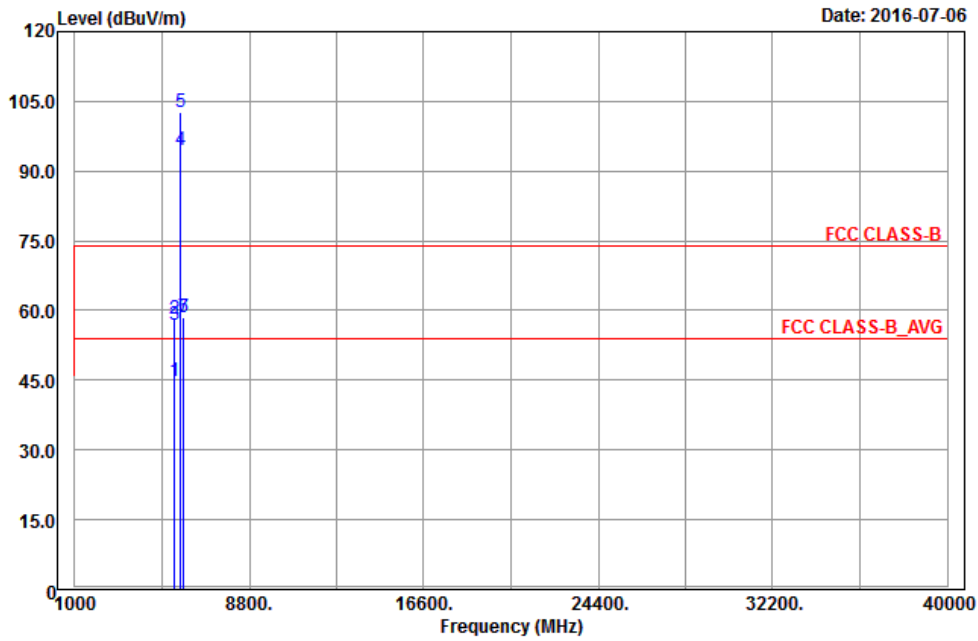
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5440	42.79	34	54	-11.21	34.35	8.48	34.04	115	250	Average
5440	57.43	48.64	74	-16.57	34.35	8.48	34.04	115	250	Peak
5470	54.29	45.46	68.2	-13.91	34.37	8.51	34.05	115	250	Peak
5700	93.78	84.65			34.59	8.64	34.1	115	250	Average
5700	101.73	92.6			34.59	8.64	34.1	115	250	Peak
5725	64	54.84	68.2	-4.2	34.62	8.65	34.11	115	250	Peak

Remarks:

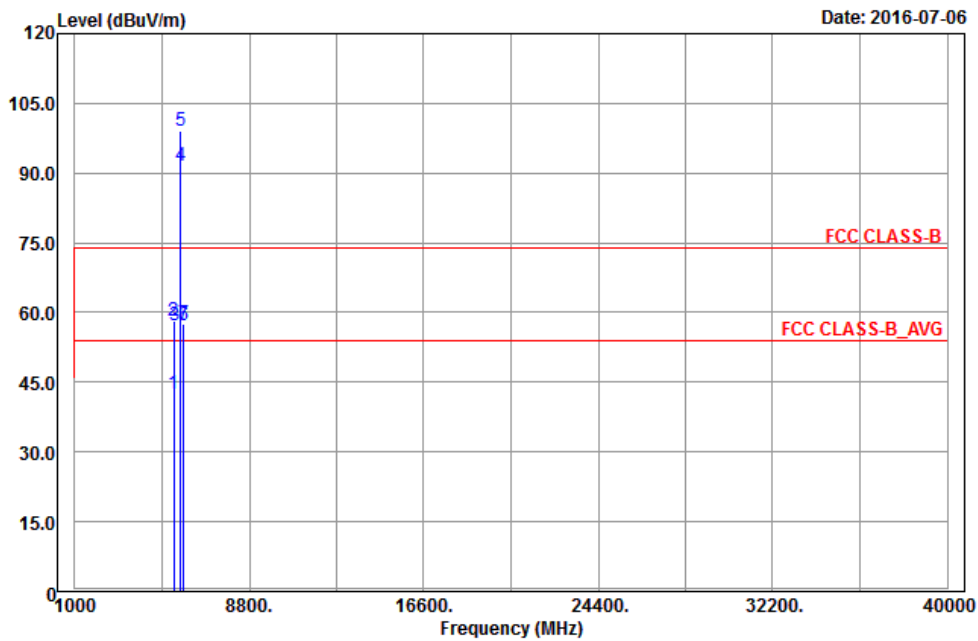
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5700 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5444	44.82	36.03	54	-9.18	34.35	8.48	34.04	112	118	Average
5444	58.09	49.3	74	-15.91	34.35	8.48	34.04	112	118	Peak
*5470	57.02	48.19	68.2	-11.18	34.37	8.51	34.05	112	118	Peak
5720	94.64	85.48			34.62	8.65	34.11	112	118	Average
5720	102.57	93.41			34.62	8.65	34.11	112	118	Peak
*5860	58.47	49.15	78.2	-19.73	34.76	8.7	34.14	112	118	Peak
*5868	58.54	49.21	68.2	-9.66	34.76	8.71	34.14	112	118	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

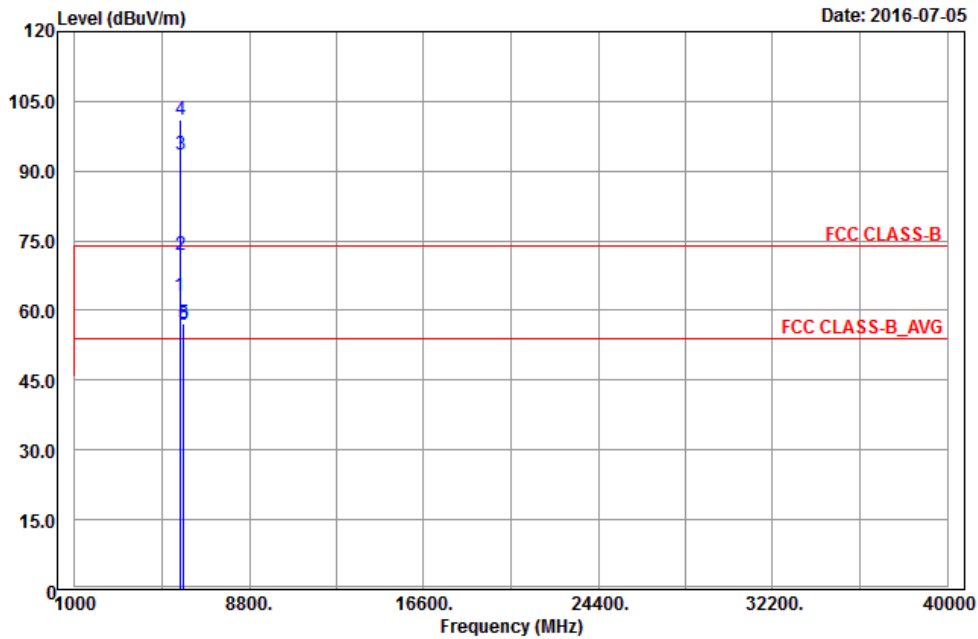
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5430	42.64	33.85	54	-11.36	34.35	8.48	34.04	268	330	Average
5430	58.06	49.27	74	-15.94	34.35	8.48	34.04	268	330	Peak
*5470	57.1	48.27	68.2	-11.1	34.37	8.51	34.05	268	330	Peak
5720	91.44	82.28			34.62	8.65	34.11	268	330	Average
5720	99.23	90.07			34.62	8.65	34.11	268	330	Peak
*5858	57.36	48.04	78.2	-20.84	34.76	8.7	34.14	268	330	Peak
*5868	57.5	48.17	68.2	-10.7	34.76	8.71	34.14	268	330	Peak

Remarks:

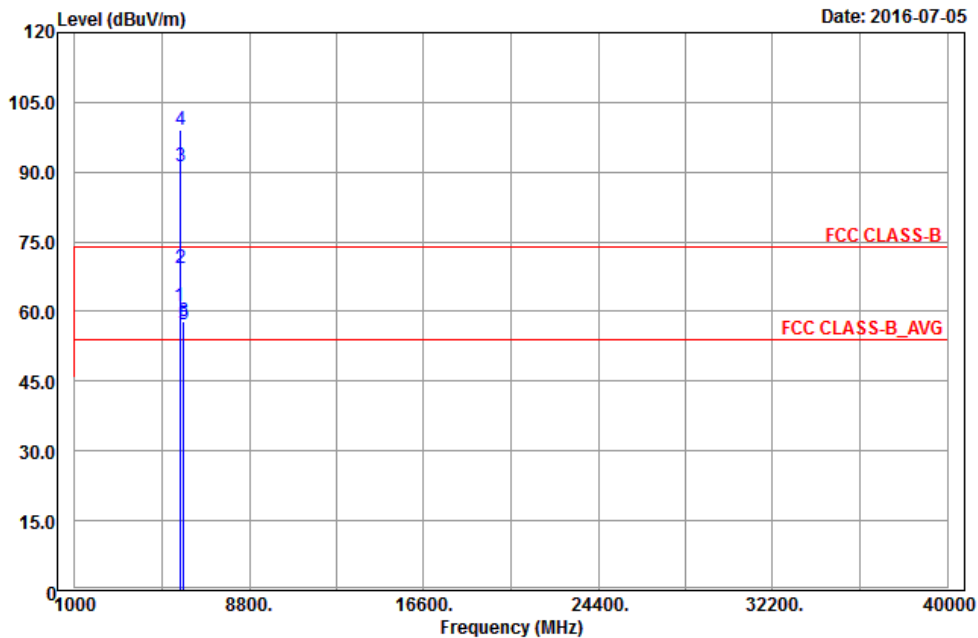
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5720 MHz: Fundamental Frequency
- \*: Out of Restricted Band

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5710	63.15	54	68.2	-5.05	34.61	8.65	34.11	104	109	Peak
*5724	71.99	62.83	78.2	-6.21	34.62	8.65	34.11	104	109	Peak
5745	93.55	84.36			34.64	8.66	34.11	104	109	Average
5745	101.16	91.97			34.64	8.66	34.11	104	109	Peak
*5858	57.08	47.76	78.2	-21.12	34.76	8.7	34.14	104	109	Peak
*5862	57.03	47.7	68.2	-11.17	34.76	8.71	34.14	104	109	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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	61.21	52.06	68.2	-6.99	34.61	8.65	34.11	101	63	Peak
*5724	69.19	60.03	78.2	-9.01	34.62	8.65	34.11	101	63	Peak
5745	91.35	82.16			34.64	8.66	34.11	101	63	Average
5745	99.16	89.97			34.64	8.66	34.11	101	63	Peak
*5860	57.06	47.74	78.2	-21.14	34.76	8.7	34.14	101	63	Peak
*5864	57.74	48.41	68.2	-10.46	34.76	8.71	34.14	101	63	Peak

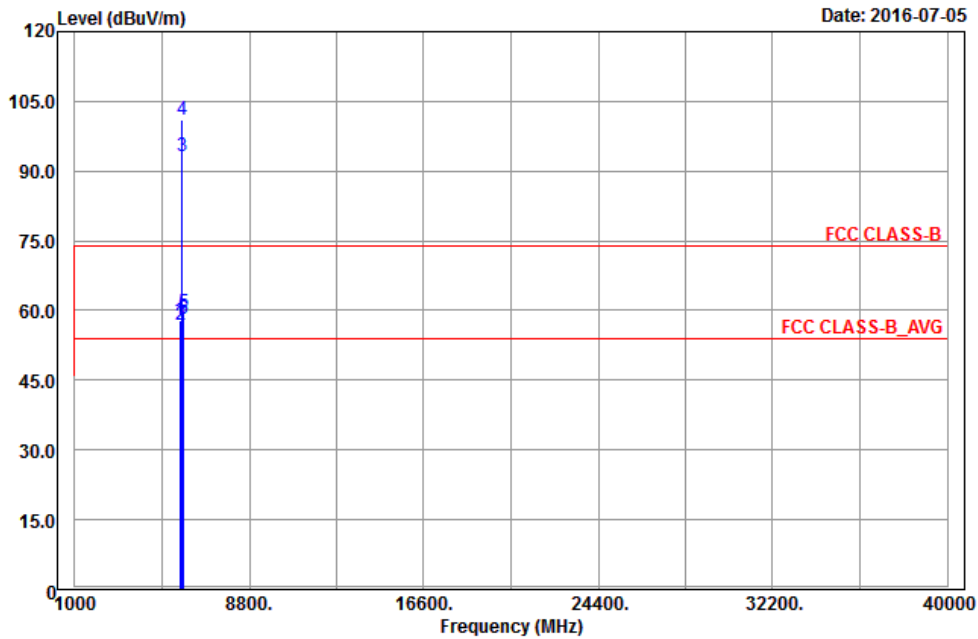
Remarks:

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

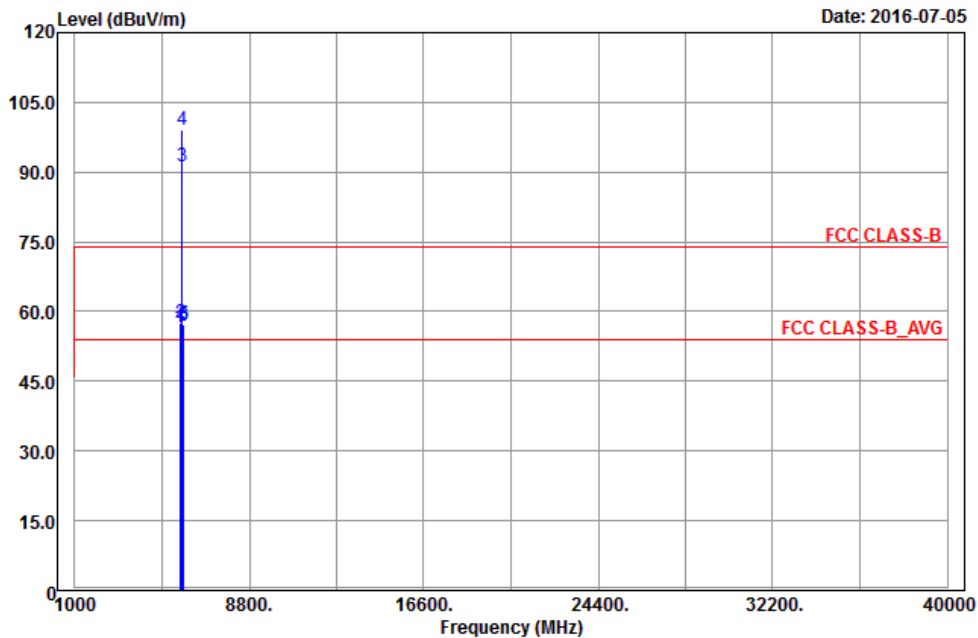


EUT Test Condition		Measurement Detail	
Channel	Channel 157	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5712	57.86	48.71	68.2	-10.34	34.61	8.65	34.11	104	109	Peak
*5720	56.99	47.83	78.2	-21.21	34.62	8.65	34.11	104	109	Peak
5785	93.22	83.99			34.68	8.68	34.13	104	109	Average
5785	101.13	91.9			34.68	8.68	34.13	104	109	Peak
*5854	59.38	50.06	78.2	-18.82	34.76	8.7	34.14	104	109	Peak
*5868	58.33	49	68.2	-9.87	34.76	8.71	34.14	104	109	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

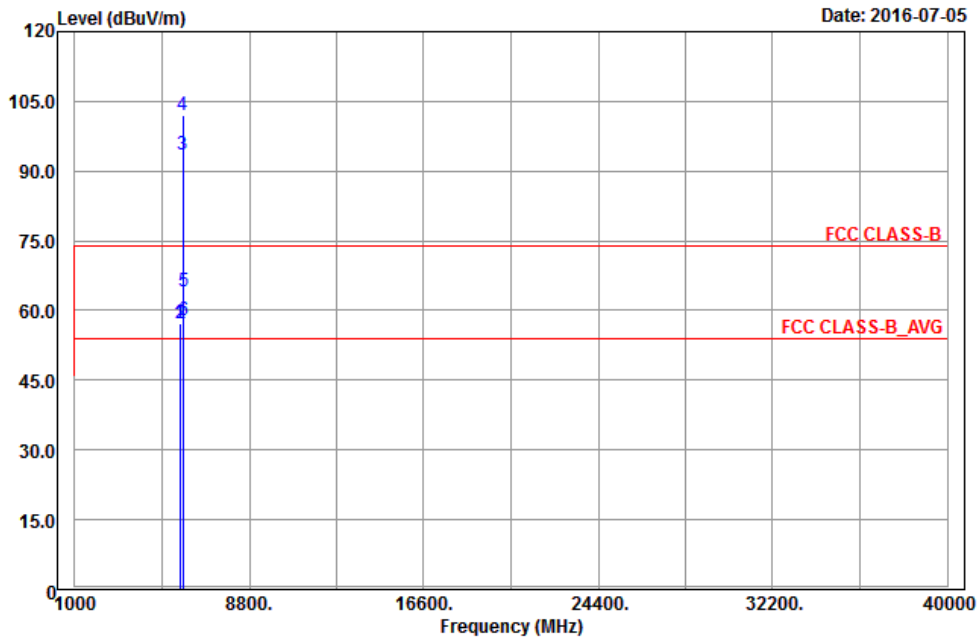
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5708	56.7	47.55	68.2	-11.5	34.61	8.65	34.11	101	63	Peak
*5716	57.49	48.34	78.2	-20.71	34.61	8.65	34.11	101	63	Peak
5785	91.36	82.13			34.68	8.68	34.13	101	63	Average
5785	99.02	89.79			34.68	8.68	34.13	101	63	Peak
*5860	57.13	47.81	78.2	-21.07	34.76	8.7	34.14	101	63	Peak
*5864	56.87	47.54	68.2	-11.33	34.76	8.71	34.14	101	63	Peak

Remarks:

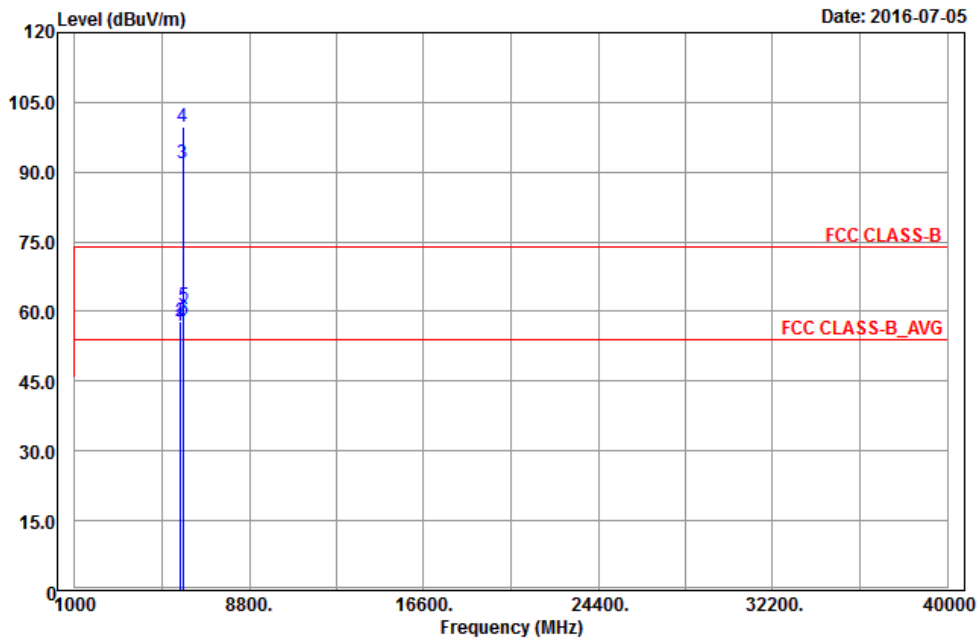
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5785 MHz: Fundamental Frequency
- \*: Out of Restricted Band

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission 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	57.29	48.14	68.2	-10.91	34.61	8.65	34.11	104	109	Peak
*5718	57.24	48.08	78.2	-20.96	34.62	8.65	34.11	104	109	Peak
5825	93.42	84.13			34.73	8.69	34.13	104	109	Average
5825	101.97	92.68			34.73	8.69	34.13	104	109	Peak
*5856	63.94	54.62	78.2	-14.26	34.76	8.7	34.14	104	109	Peak
*5866	57.72	48.39	68.2	-10.48	34.76	8.71	34.14	104	109	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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
*5706	56.95	47.8	68.2	-11.25	34.61	8.65	34.11	101	63	Peak
*5724	57.81	48.65	78.2	-20.39	34.62	8.65	34.11	101	63	Peak
5825	91.72	82.43			34.73	8.69	34.13	101	63	Average
5825	99.57	90.28			34.73	8.69	34.13	101	63	Peak
*5852	61.24	51.94	78.2	-16.96	34.74	8.7	34.14	101	63	Peak
*5862	58.27	48.94	68.2	-9.93	34.76	8.71	34.14	101	63	Peak

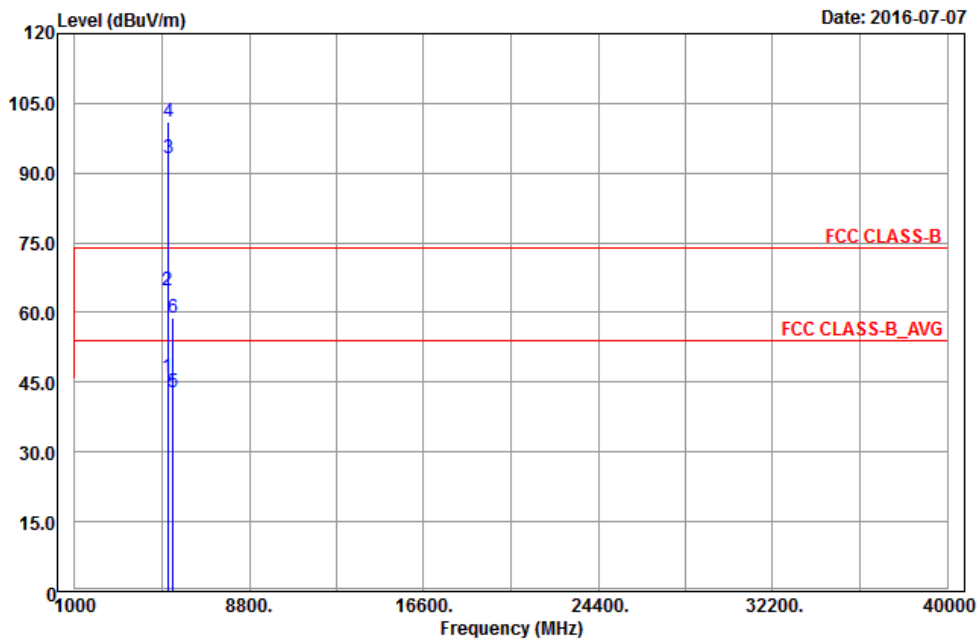
## Remarks:

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

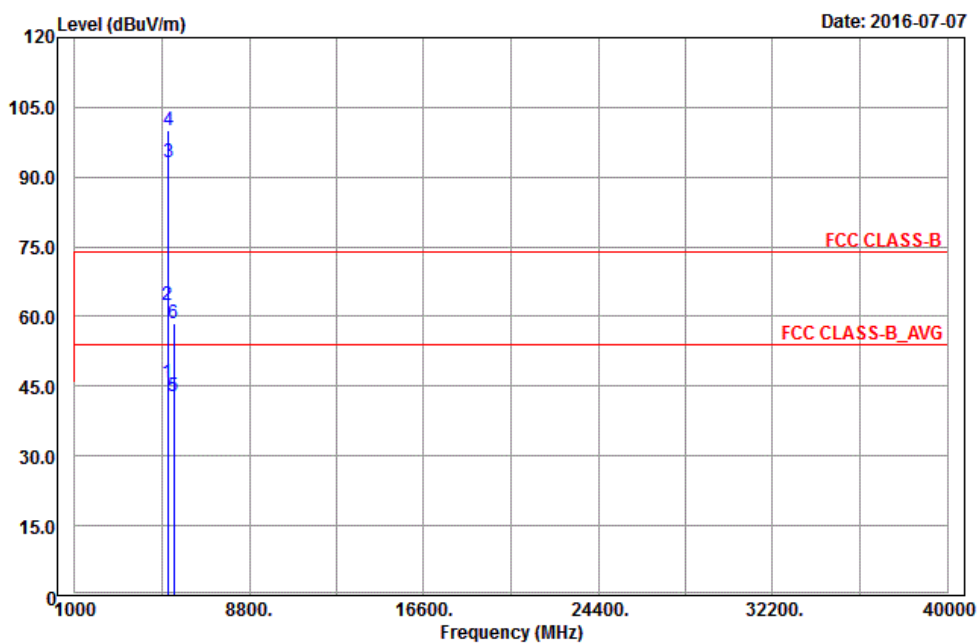
802.11n (HT20)

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

Horizontal



Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5148	46.01	37.76	54	-7.99	34.12	8.13	34	113	20	Average
5148	64.69	56.44	74	-9.31	34.12	8.13	34	113	20	Peak
5180	93.33	85.02			34.15	8.16	34	113	20	Average
5180	101.07	92.76			34.15	8.16	34	113	20	Peak
5376	42.77	34.11	54	-11.23	34.29	8.41	34.04	113	20	Average
5376	59	50.34	74	-15	34.29	8.41	34.04	113	20	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

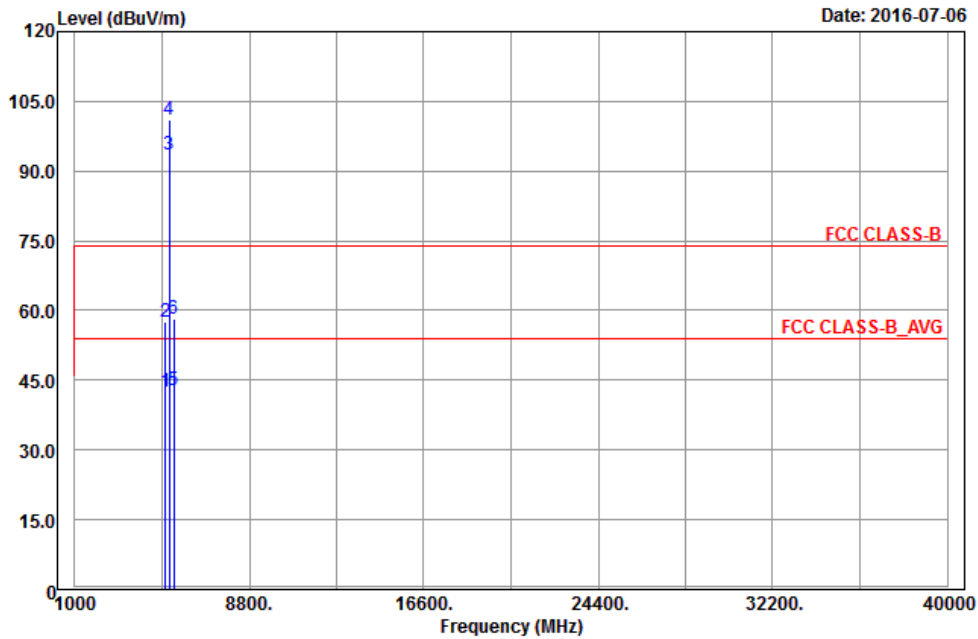
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	45.65	37.4	54	-8.35	34.12	8.13	34	192	294	Average
5150	62.49	54.24	74	-11.51	34.12	8.13	34	192	294	Peak
5180	93.2	84.89			34.15	8.16	34	192	294	Average
5180	99.92	91.61			34.15	8.16	34	192	294	Peak
5436	42.88	34.09	54	-11.12	34.35	8.48	34.04	192	294	Average
5436	58.42	49.63	74	-15.58	34.35	8.48	34.04	192	294	Peak

Remarks:

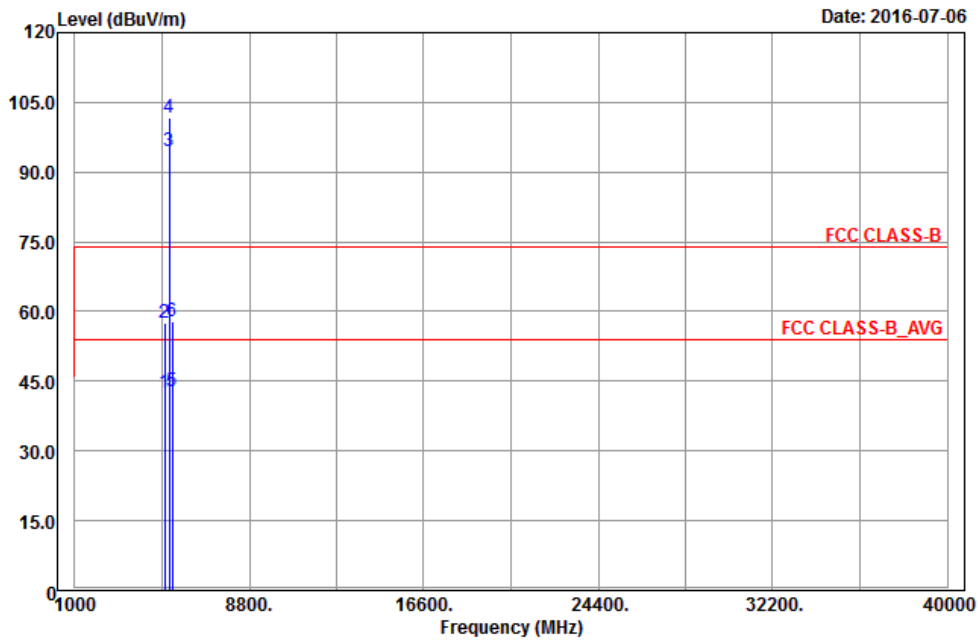
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5180 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 44	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5038	42.44	34.37	54	-11.56	34.04	8	33.97	119	153	Average
5038	57.67	49.6	74	-16.33	34.04	8	33.97	119	153	Peak
5220	93.64	85.25			34.17	8.22	34	119	153	Average
5220	100.9	92.51			34.17	8.22	34	119	153	Peak
5414	42.8	34.07	54	-11.2	34.33	8.44	34.04	119	153	Average
5414	58.34	49.61	74	-15.66	34.33	8.44	34.04	119	153	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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
5030	42.47	34.41	54	-11.53	34.03	8	33.97	207	300	Average
5030	57.58	49.52	74	-16.42	34.03	8	33.97	207	300	Peak
5220	94.35	85.96			34.17	8.22	34	207	300	Average
5220	101.74	93.35			34.17	8.22	34	207	300	Peak
5352	42.74	34.11	54	-11.26	34.28	8.38	34.03	207	300	Average
5352	58	49.37	74	-16	34.28	8.38	34.03	207	300	Peak

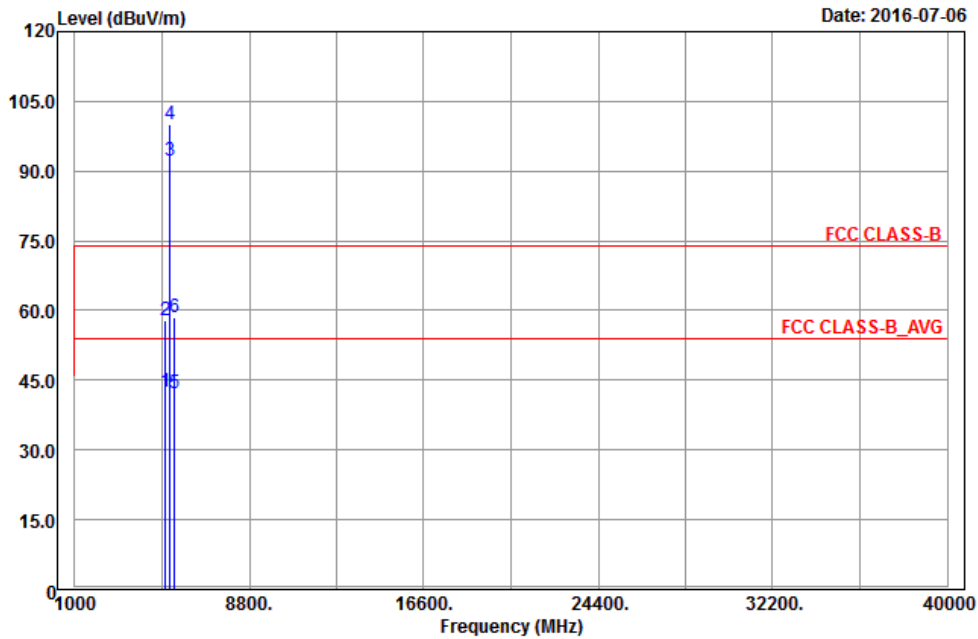
## Remarks:

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

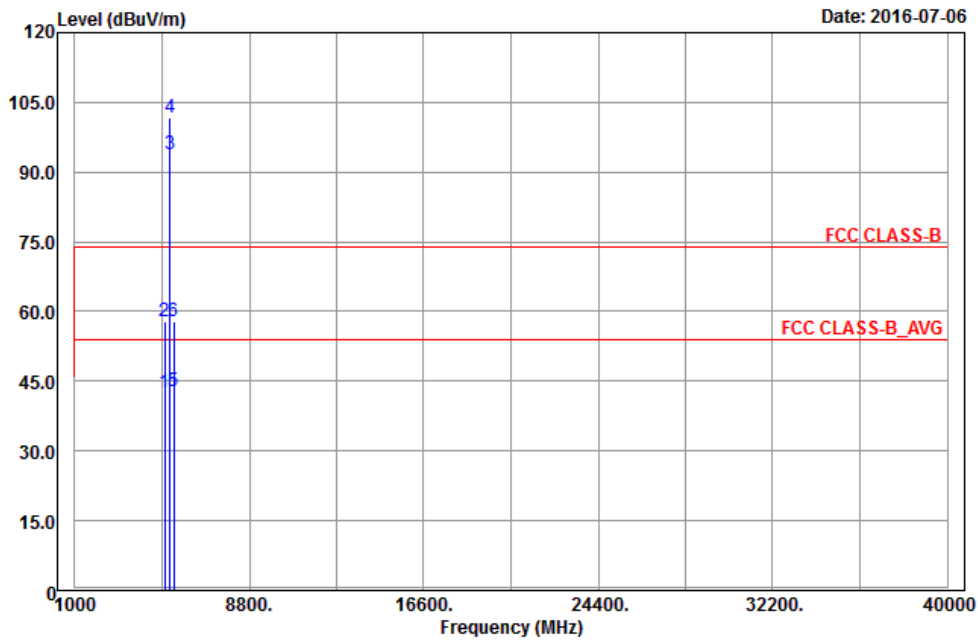


EUT Test Condition		Measurement Detail	
Channel	Channel 48	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5050	42.55	34.49	54	-11.45	34.04	8	33.98	119	153	Average
5050	58.04	49.98	74	-15.96	34.04	8	33.98	119	153	Peak
5240	92.08	83.64			34.19	8.26	34.01	119	153	Average
5240	100.13	91.69			34.19	8.26	34.01	119	153	Peak
5444	42.29	33.5	54	-11.71	34.35	8.48	34.04	119	153	Average
5444	58.46	49.67	74	-15.54	34.35	8.48	34.04	119	153	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

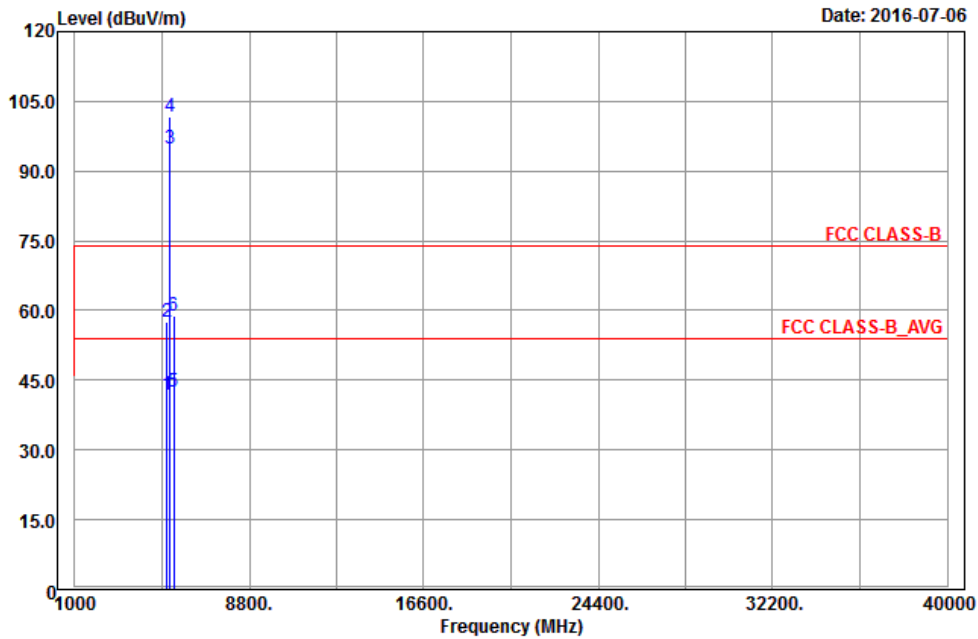
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5030	42.45	34.39	54	-11.55	34.03	8	33.97	217	298	Average
5030	57.96	49.9	74	-16.04	34.03	8	33.97	217	298	Peak
5240	93.69	85.25			34.19	8.26	34.01	217	298	Average
5240	101.61	93.17			34.19	8.26	34.01	217	298	Peak
5418	42.83	34.1	54	-11.17	34.33	8.44	34.04	217	298	Average
5418	57.87	49.14	74	-16.13	34.33	8.44	34.04	217	298	Peak

Remarks:

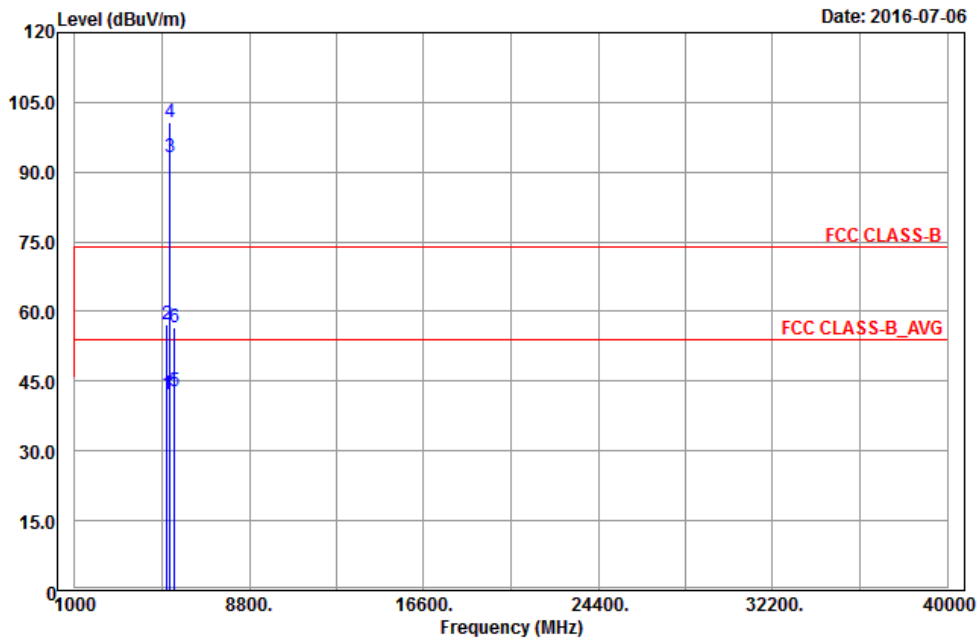
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5240 MHz: Fundamental Frequency

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5130	41.97	33.75	54	-12.03	34.11	8.1	33.99	100	116	Average
5130	57.67	49.45	74	-16.33	34.11	8.1	33.99	100	116	Peak
5260	94.87	86.41			34.21	8.26	34.01	100	116	Average
5260	101.76	93.3			34.21	8.26	34.01	100	116	Peak
5442	42.59	33.8	54	-11.41	34.35	8.48	34.04	100	116	Average
5442	58.75	49.96	74	-15.25	34.35	8.48	34.04	100	116	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

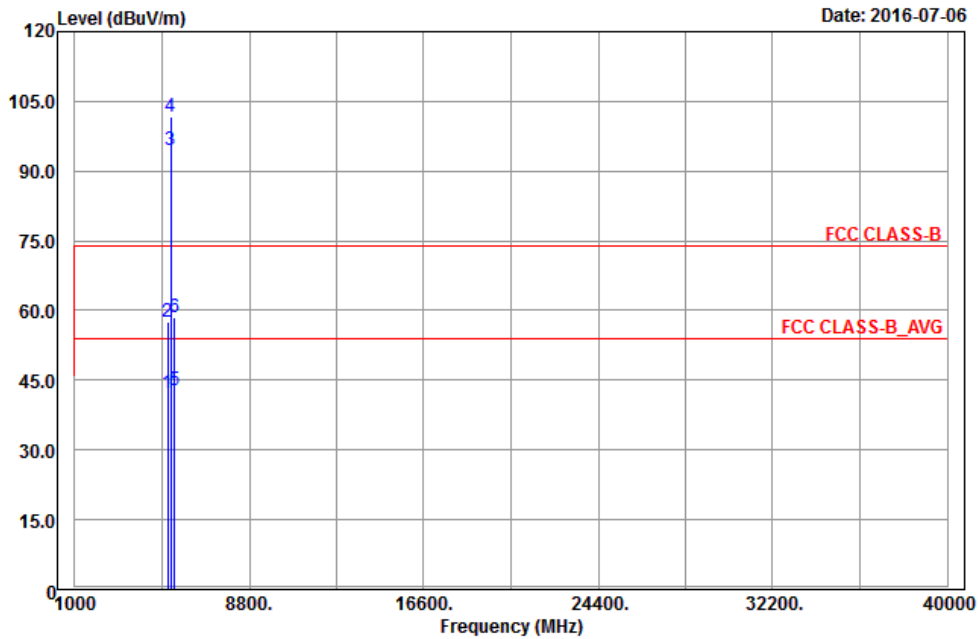
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5114	42.03	33.83	54	-11.97	34.09	8.1	33.99	243	345	Average
5114	57.36	49.16	74	-16.64	34.09	8.1	33.99	243	345	Peak
5260	93.33	84.87			34.21	8.26	34.01	243	345	Average
5260	100.84	92.38			34.21	8.26	34.01	243	345	Peak
5446	42.71	33.88	54	-11.29	34.36	8.51	34.04	243	345	Average
5446	56.65	47.82	74	-17.35	34.36	8.51	34.04	243	345	Peak

Remarks:

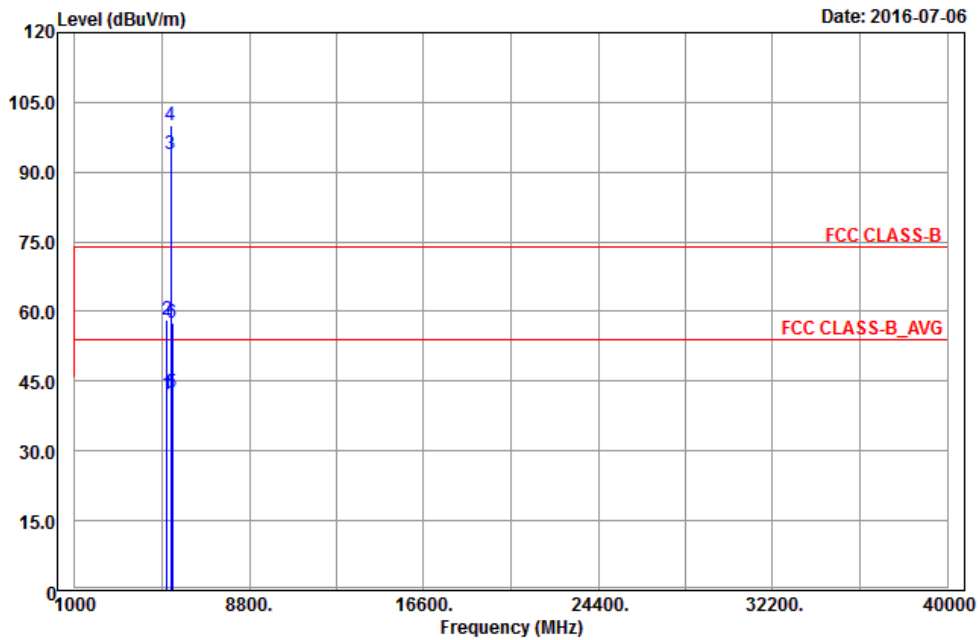
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5260 MHz: Fundamental Frequency

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5144	42.07	33.82	54	-11.93	34.12	8.13	34	100	116	Average
5144	57.59	49.34	74	-16.41	34.12	8.13	34	100	116	Peak
5300	94.62	86.08			34.24	8.32	34.02	100	116	Average
5300	101.81	93.27			34.24	8.32	34.02	100	116	Peak
5446	42.69	33.86	54	-11.31	34.36	8.51	34.04	100	116	Average
5446	58.55	49.72	74	-15.45	34.36	8.51	34.04	100	116	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

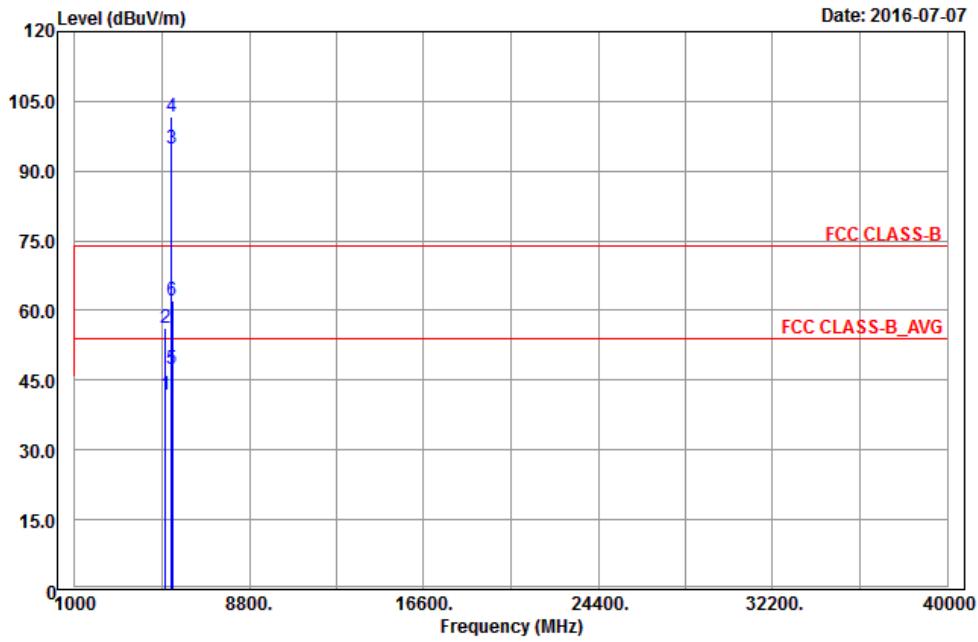
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5120	42.05	33.85	54	-11.95	34.09	8.1	33.99	243	345	Average
5120	58.34	50.14	74	-15.66	34.09	8.1	33.99	243	345	Peak
5300	93.83	85.29			34.24	8.32	34.02	243	345	Average
5300	100.12	91.58			34.24	8.32	34.02	243	345	Peak
5374	42.57	33.91	54	-11.43	34.29	8.41	34.04	243	345	Average
5374	57.66	49	74	-16.34	34.29	8.41	34.04	243	345	Peak

Remarks:

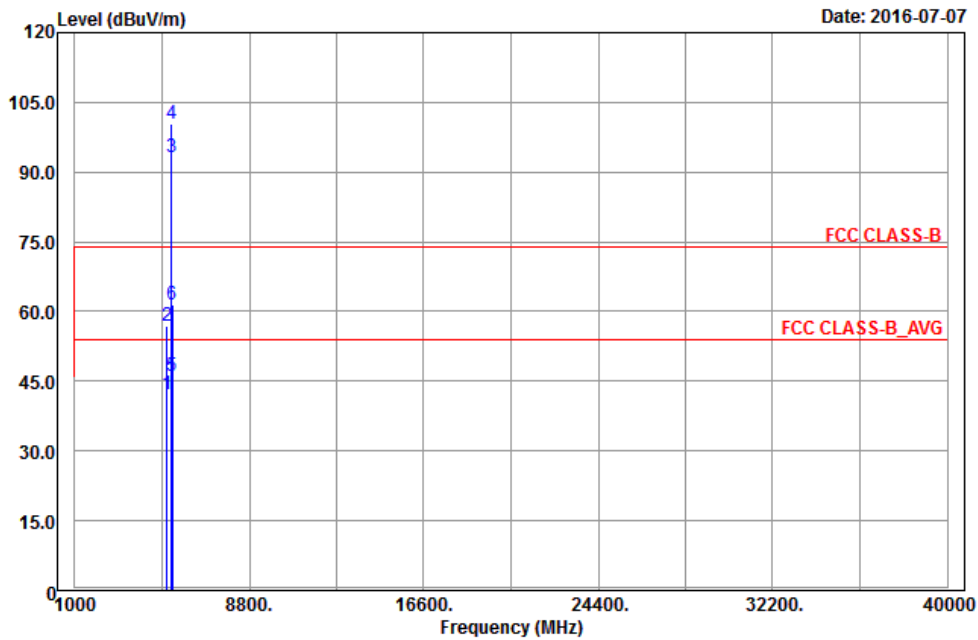
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5300 MHz: Fundamental Frequency

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5062	41.85	33.75	54	-12.15	34.05	8.03	33.98	100	116	Average
5062	56.37	48.27	74	-17.63	34.05	8.03	33.98	100	116	Peak
5320	94.71	86.13			34.25	8.35	34.02	100	116	Average
5320	101.6	93.02			34.25	8.35	34.02	100	116	Peak
5350	47.47	38.84	54	-6.53	34.28	8.38	34.03	100	116	Average
5350	62.26	53.63	74	-11.74	34.28	8.38	34.03	100	116	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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	42.2	33.98	54	-11.8	34.11	8.1	33.99	243	345	Average
5130	56.85	48.63	74	-17.15	34.11	8.1	33.99	243	345	Peak
5320	93.16	84.58			34.25	8.35	34.02	243	345	Average
5320	100.31	91.73			34.25	8.35	34.02	243	345	Peak
5350	45.99	37.36	54	-8.01	34.28	8.38	34.03	243	345	Average
5350	61.53	52.9	74	-12.47	34.28	8.38	34.03	243	345	Peak

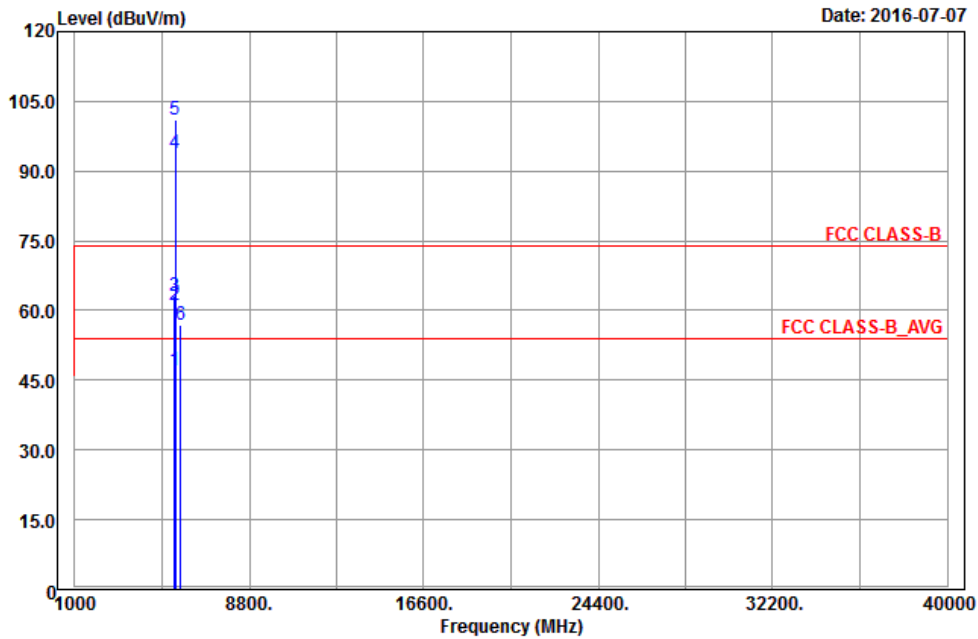
Remarks:

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

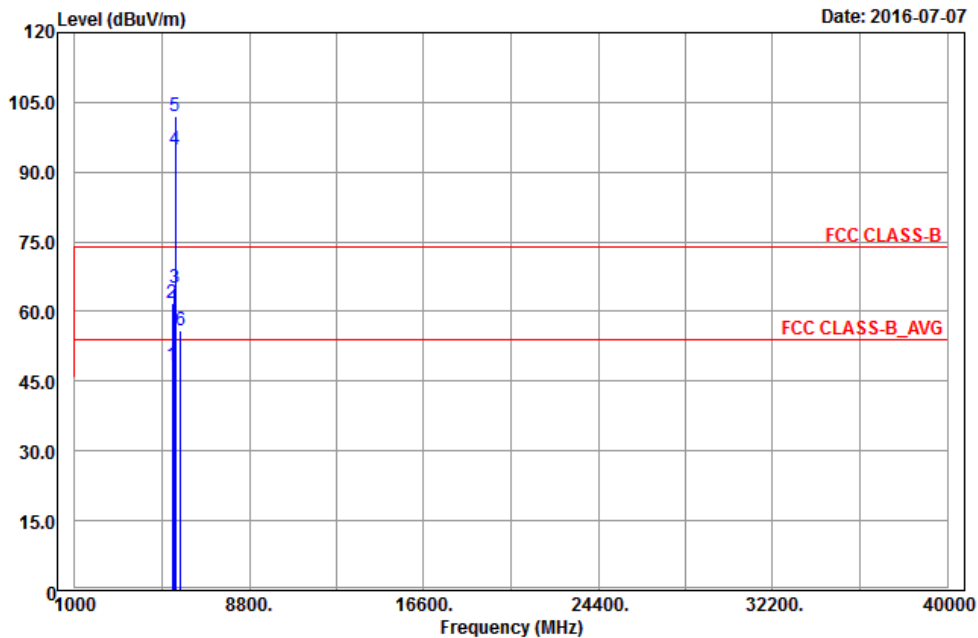


EUT Test Condition		Measurement Detail	
Channel	Channel 100	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5458	47.07	38.25	54	-6.93	34.36	8.51	34.05	191	354	Average
5458	61.24	52.42	74	-12.76	34.36	8.51	34.05	191	354	Peak
5470	63.19	54.36	68.2	-5.01	34.37	8.51	34.05	191	354	Peak
5500	93.97	85.05			34.4	8.57	34.05	191	354	Average
5500	101.02	92.1			34.4	8.57	34.05	191	354	Peak
5725	56.83	47.67	68.2	-11.37	34.62	8.65	34.11	191	354	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

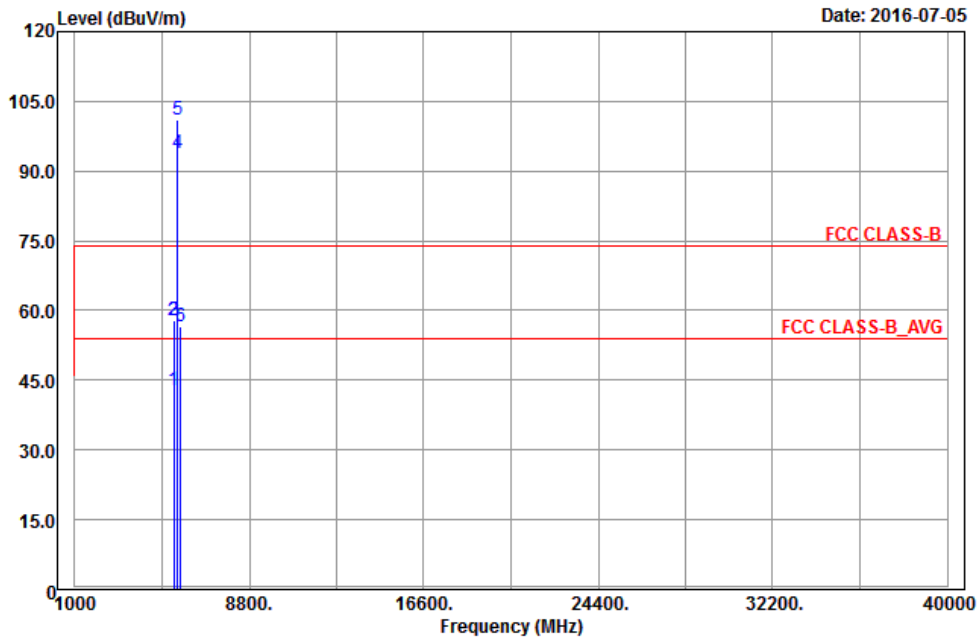
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5350	48.46	39.83	54	-5.54	34.28	8.38	34.03	100	272	Average
5350	61.87	53.24	74	-12.13	34.28	8.38	34.03	100	272	Peak
5470	65.13	56.3	68.2	-3.07	34.37	8.51	34.05	100	272	Peak
5500	94.74	85.82			34.4	8.57	34.05	100	272	Average
5500	102.12	93.2			34.4	8.57	34.05	100	272	Peak
5725	56.03	46.87	68.2	-12.17	34.62	8.65	34.11	100	272	Peak

## Remarks:

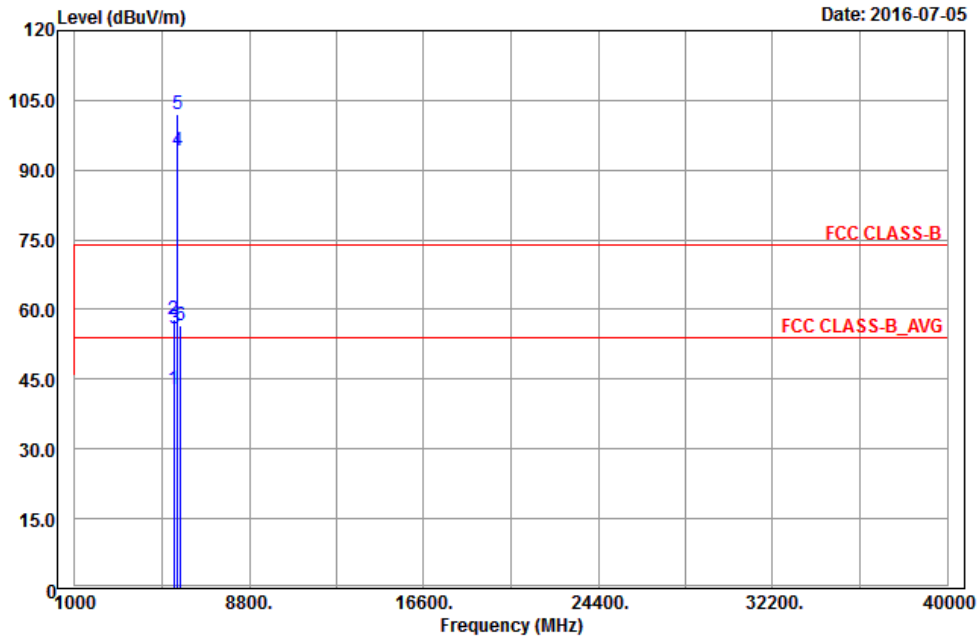
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5500 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5416	42.77	34.04	54	-11.23	34.33	8.44	34.04	191	354	Average
5416	57.94	49.21	74	-16.06	34.33	8.44	34.04	191	354	Peak
5470	58.03	49.2	68.2	-10.17	34.37	8.51	34.05	191	354	Peak
5580	93.77	84.78			34.47	8.6	34.08	191	354	Average
5580	101.14	92.15			34.47	8.6	34.08	191	354	Peak
5725	56.41	47.25	68.2	-11.79	34.62	8.65	34.11	191	354	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

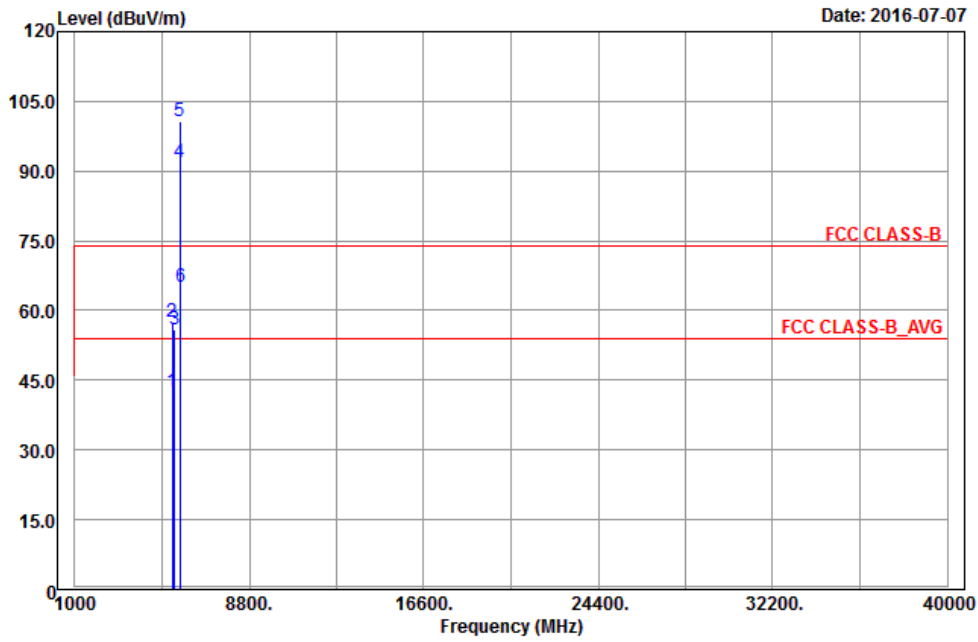
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5412	42.74	34.01	54	-11.26	34.33	8.44	34.04	105	272	Average
5412	57.71	48.98	74	-16.29	34.33	8.44	34.04	105	272	Peak
5470	56.06	47.23	68.2	-12.14	34.37	8.51	34.05	105	272	Peak
5580	94.17	85.18			34.47	8.6	34.08	105	272	Average
5580	102.09	93.1			34.47	8.6	34.08	105	272	Peak
5725	56.68	47.52	68.2	-11.52	34.62	8.65	34.11	105	272	Peak

## Remarks:

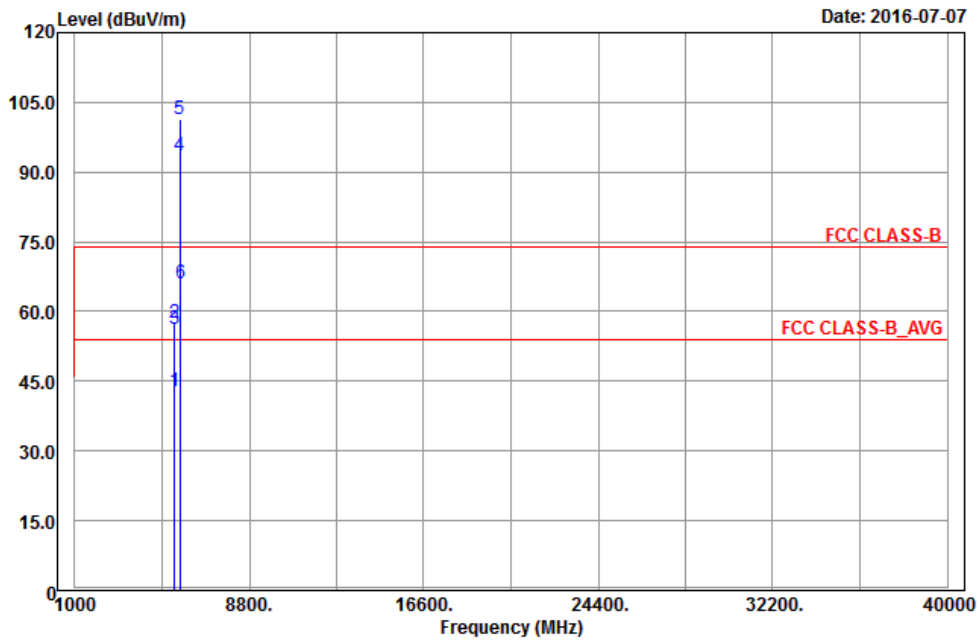
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5580 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5360	42.58	33.95	54	-11.42	34.28	8.38	34.03	173	354	Average
5360	57.59	48.96	74	-16.41	34.28	8.38	34.03	173	354	Peak
5470	55.76	46.93	68.2	-12.44	34.37	8.51	34.05	173	354	Peak
5700	92.03	82.9			34.59	8.64	34.1	173	354	Average
5700	100.83	91.7			34.59	8.64	34.1	173	354	Peak
5725	65.16	56	68.2	-3.04	34.62	8.65	34.11	173	354	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

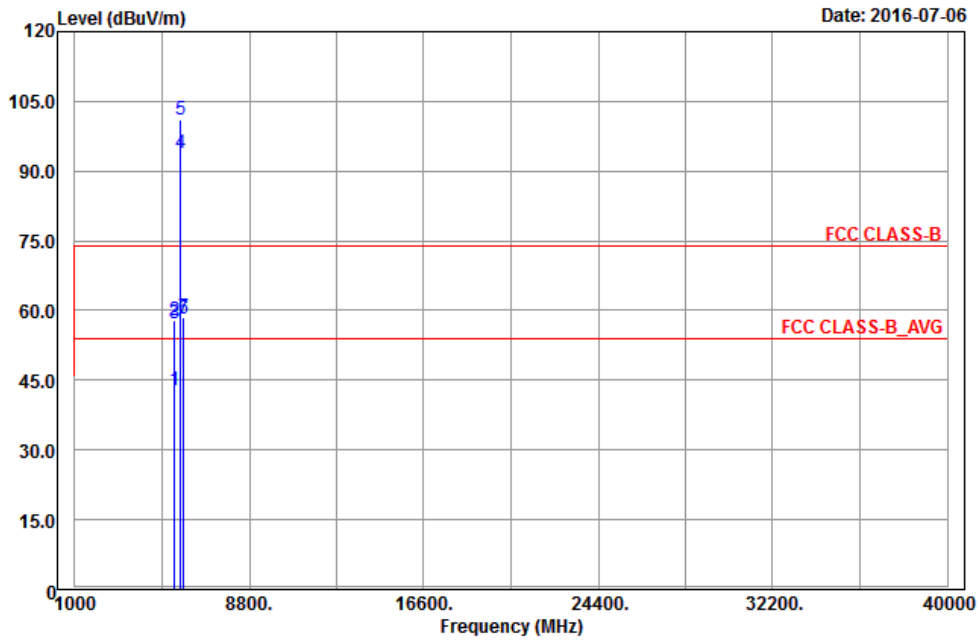
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5446	42.84	34.01	54	-11.16	34.36	8.51	34.04	115	250	Average
5446	57.57	48.74	74	-16.43	34.36	8.51	34.04	115	250	Peak
5470	56.37	47.54	68.2	-11.83	34.37	8.51	34.05	115	250	Peak
5700	93.56	84.43			34.59	8.64	34.1	115	250	Average
5700	101.44	92.31			34.59	8.64	34.1	115	250	Peak
5725	66.02	56.86	68.2	-2.18	34.62	8.65	34.11	115	250	Peak

Remarks:

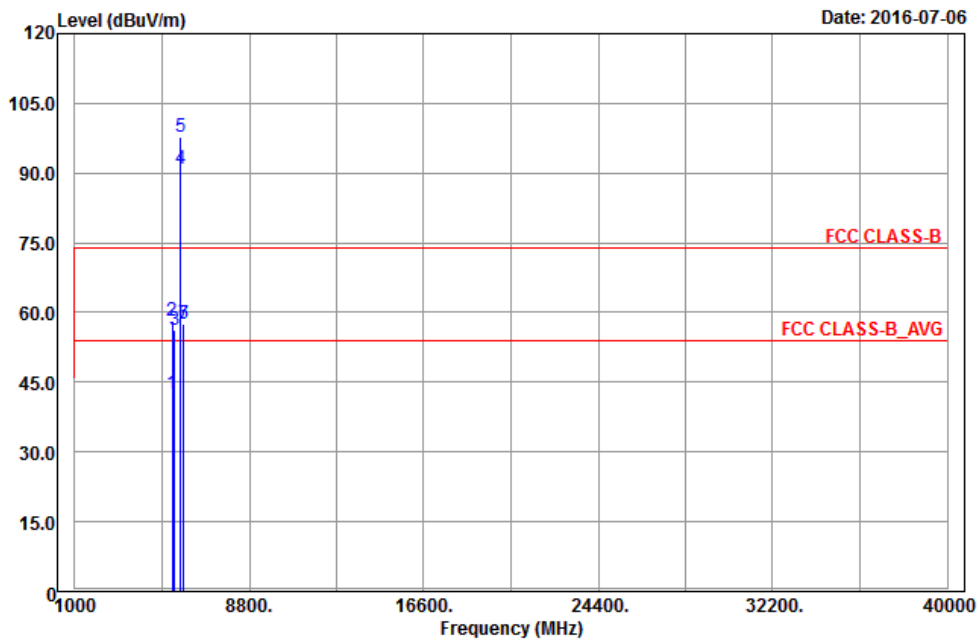
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5700 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5450	42.72	33.9	54	-11.28	34.36	8.51	34.05	112	118	Average
5450	58.03	49.21	74	-15.97	34.36	8.51	34.05	112	118	Peak
*5470	57.07	48.24	68.2	-11.13	34.37	8.51	34.05	112	118	Peak
5720	93.91	84.75			34.62	8.65	34.11	112	118	Average
5720	101.15	91.99			34.62	8.65	34.11	112	118	Peak
*5858	58.29	48.97	78.2	-19.91	34.76	8.7	34.14	112	118	Peak
*5864	58.45	49.12	68.2	-9.75	34.76	8.71	34.14	112	118	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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
5362	42.6	33.96	54	-11.4	34.29	8.38	34.03	268	330	Average
5362	58.31	49.67	74	-15.69	34.29	8.38	34.03	268	330	Peak
*5470	56.25	47.42	68.2	-11.95	34.37	8.51	34.05	268	330	Peak
5720	90.97	81.81			34.62	8.65	34.11	268	330	Average
5720	97.65	88.49			34.62	8.65	34.11	268	330	Peak
*5856	57.41	48.09	78.2	-20.79	34.76	8.7	34.14	268	330	Peak
*5864	57.57	48.24	68.2	-10.63	34.76	8.71	34.14	268	330	Peak

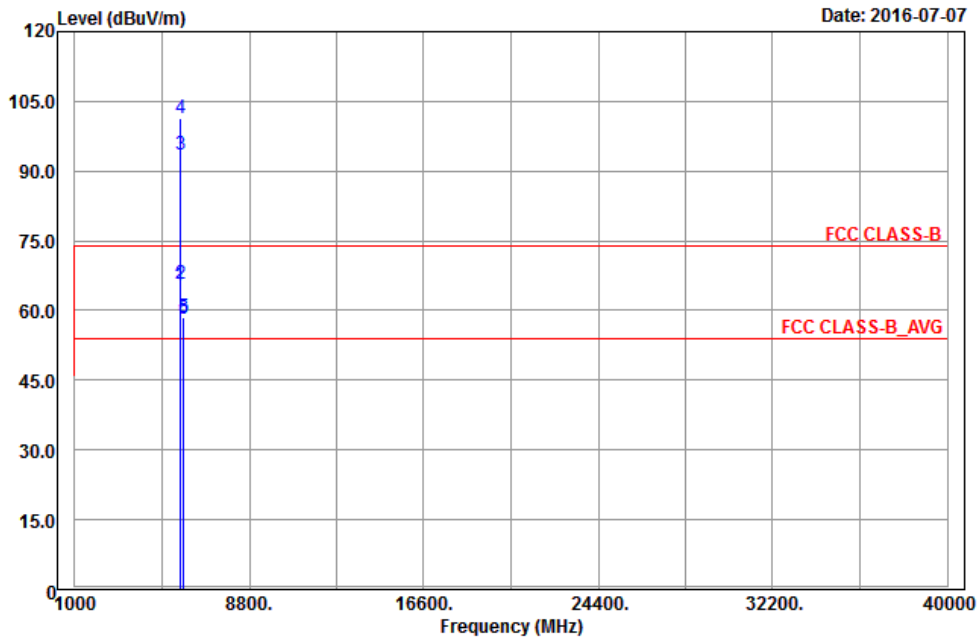
Remarks:

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

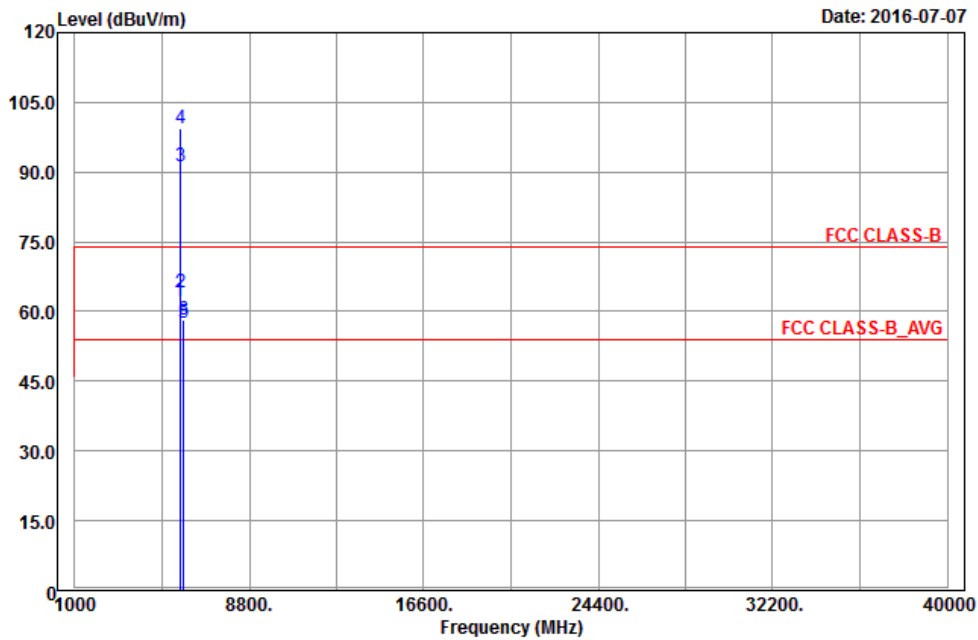


EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5712	65.26	56.11	68.2	-2.94	34.61	8.65	34.11	104	109	Peak
*5724	65.59	56.43	78.2	-12.61	34.62	8.65	34.11	104	109	Peak
5745	93.6	84.41			34.64	8.66	34.11	104	109	Average
5745	101.32	92.13			34.64	8.66	34.11	104	109	Peak
*5856	58.66	49.34	78.2	-19.54	34.76	8.7	34.14	104	109	Peak
*5862	58.17	48.84	68.2	-10.03	34.76	8.71	34.14	104	109	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

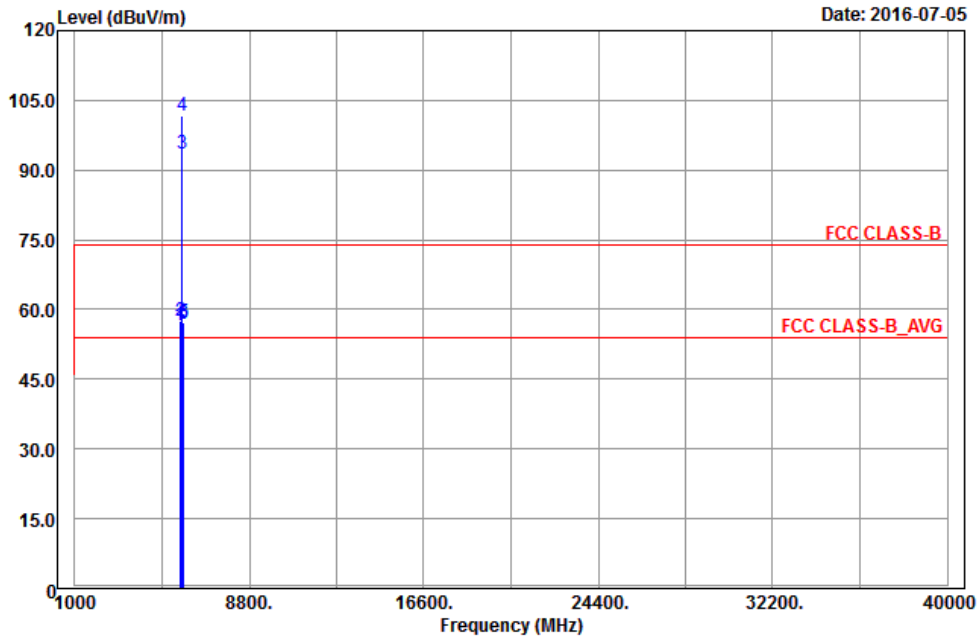
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5712	62.16	53.01	68.2	-6.04	34.61	8.65	34.11	101	63	Peak
*5724	64.09	54.93	78.2	-14.11	34.62	8.65	34.11	101	63	Peak
5745	91.18	81.99			34.64	8.66	34.11	101	63	Average
5745	99.28	90.09			34.64	8.66	34.11	101	63	Peak
*5858	57.48	48.16	78.2	-20.72	34.76	8.7	34.14	101	63	Peak
*5864	58.13	48.8	68.2	-10.07	34.76	8.71	34.14	101	63	Peak

## Remarks:

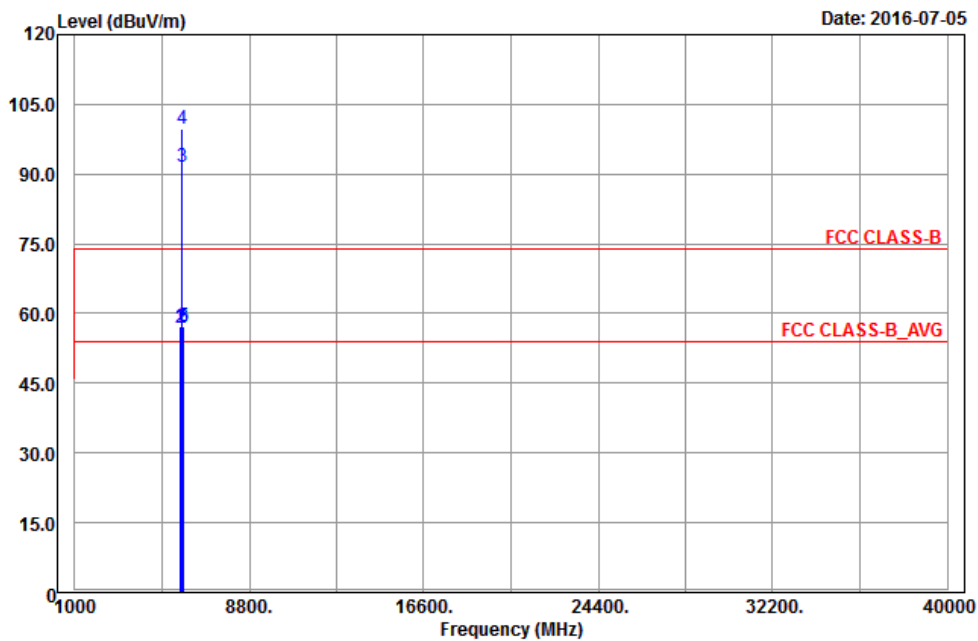
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5745 MHz: Fundamental Frequency
- \*: Out of Restricted Band

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5706	56.49	47.34	68.2	-11.71	34.61	8.65	34.11	104	109	Peak
*5724	57.59	48.43	78.2	-20.61	34.62	8.65	34.11	104	109	Peak
5785	93.65	84.42			34.68	8.68	34.13	104	109	Average
5785	101.77	92.54			34.68	8.68	34.13	104	109	Peak
*5852	57.3	48	78.2	-20.9	34.74	8.7	34.14	104	109	Peak
*5864	56.94	47.61	68.2	-11.26	34.76	8.71	34.14	104	109	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

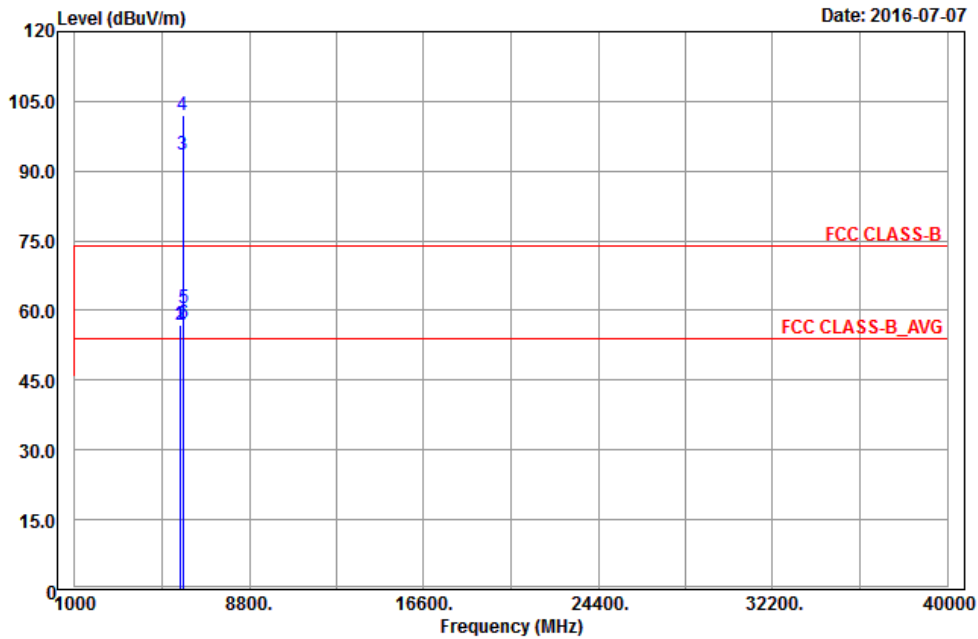
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	57.21	48.06	68.2	-10.99	34.61	8.65	34.11	101	63	Peak
*5718	56.88	47.72	78.2	-21.32	34.62	8.65	34.11	101	63	Peak
5785	91.51	82.28			34.68	8.68	34.13	101	63	Average
5785	99.83	90.6			34.68	8.68	34.13	101	63	Peak
*5854	57.18	47.86	78.2	-21.02	34.76	8.7	34.14	101	63	Peak
*5870	57.02	47.69	68.2	-11.18	34.76	8.71	34.14	101	63	Peak

## Remarks:

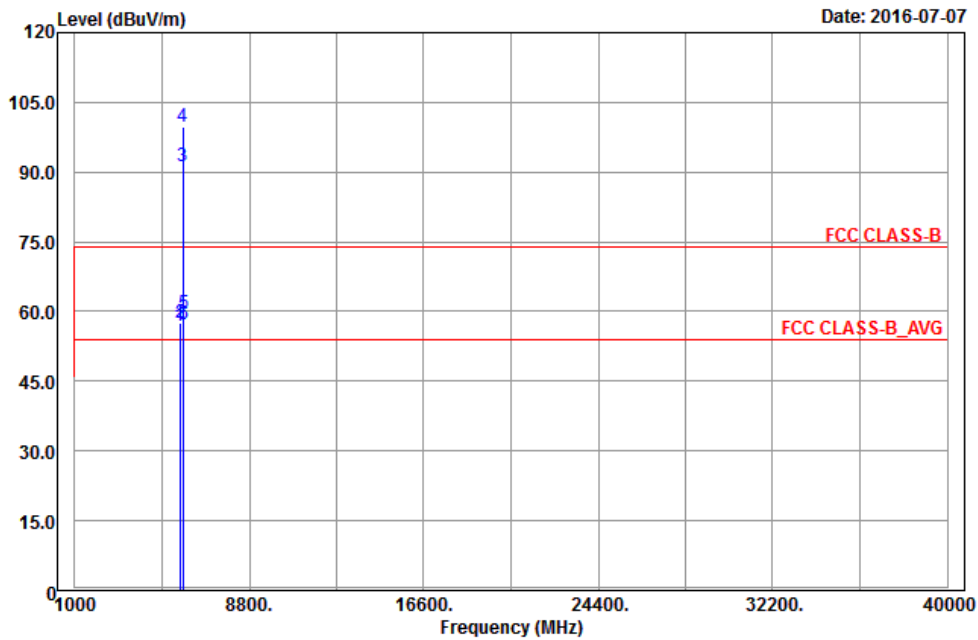
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
 Margin value = Emission level – Limit value
- 5785 MHz: Fundamental Frequency
- \*: Out of Restricted Band

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission 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	56.95	47.8	68.2	-11.25	34.61	8.65	34.11	104	109	Peak
*5720	56.94	47.78	78.2	-21.26	34.62	8.65	34.11	104	109	Peak
5825	93.67	84.38			34.73	8.69	34.13	104	109	Average
5825	101.89	92.6			34.73	8.69	34.13	104	109	Peak
*5852	60.51	51.21	78.2	-17.69	34.74	8.7	34.14	104	109	Peak
*5862	57.19	47.86	68.2	-11.01	34.76	8.71	34.14	104	109	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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	56.82	47.67	68.2	-11.38	34.61	8.65	34.11	101	63	Peak
*5718	57.7	48.54	78.2	-16.3	34.62	8.65	34.11	101	63	Peak
5825	91.17	81.88			34.73	8.69	34.13	101	63	Average
5825	99.87	90.58			34.73	8.69	34.13	101	63	Peak
*5852	59.56	50.26	78.2	-18.64	34.74	8.7	34.14	101	63	Peak
*5866	57.09	47.76	68.2	-11.11	34.76	8.71	34.14	101	63	Peak

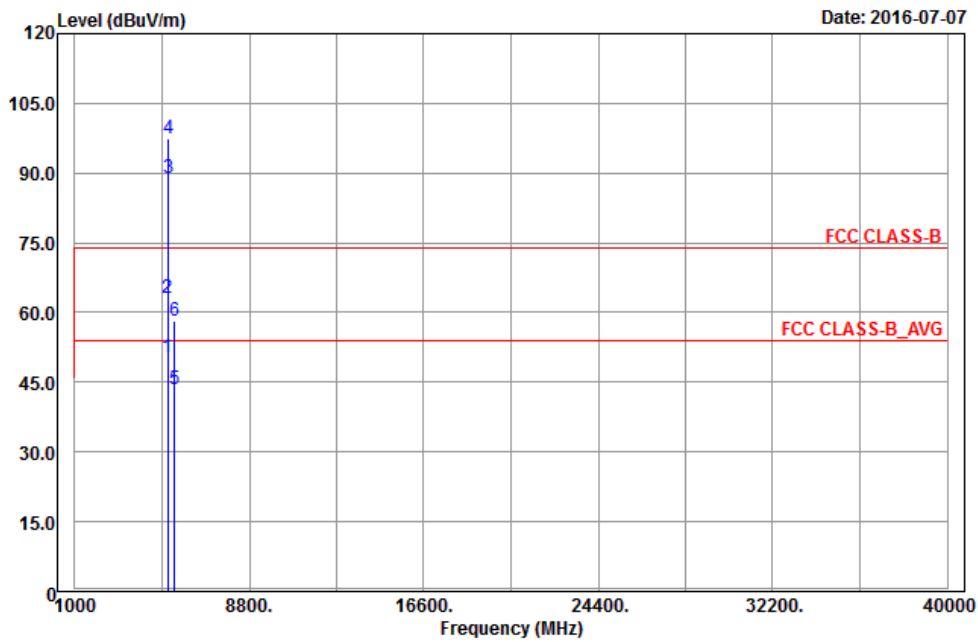
Remarks:

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

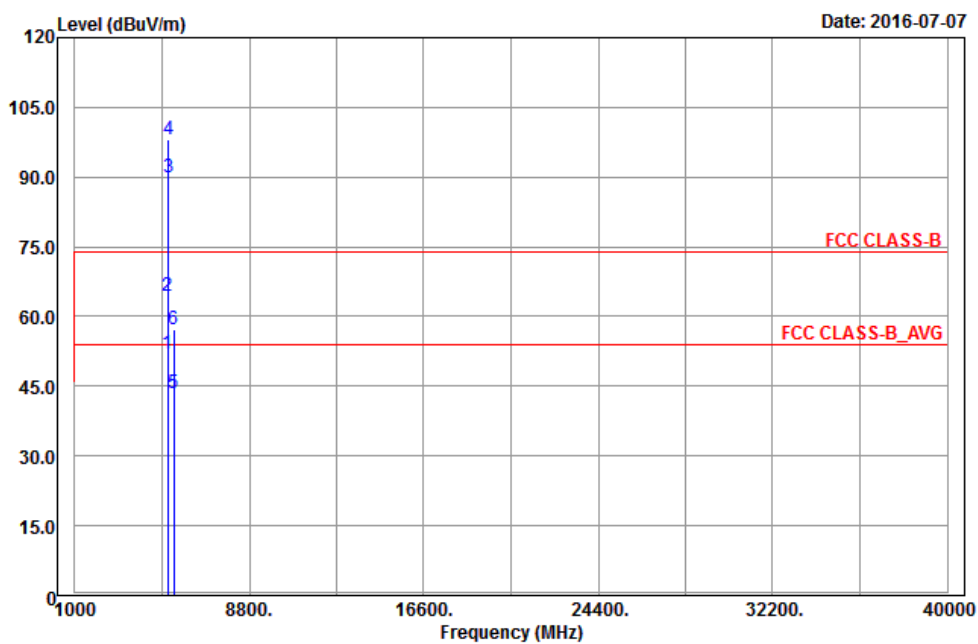
802.11n (HT40)

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

Horizontal



Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	50.32	42.07	54	-3.68	34.12	8.13	34	113	20	Average
5150	63.06	54.81	74	-10.94	34.12	8.13	34	113	20	Peak
5190	89.04	80.7			34.15	8.19	34	113	20	Average
5190	97.57	89.23			34.15	8.19	34	113	20	Peak
5460	43.37	34.55	54	-10.63	34.36	8.51	34.05	113	20	Average
5460	58.28	49.46	74	-15.72	34.36	8.51	34.05	113	20	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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	51.88	43.63	54	-2.12	34.12	8.13	34	192	294	Average
5150	64.29	56.04	74	-9.71	34.12	8.13	34	192	294	Peak
5190	89.96	81.62			34.15	8.19	34	192	294	Average
5190	97.97	89.63			34.15	8.19	34	192	294	Peak
5440	43.41	34.62	54	-10.59	34.35	8.48	34.04	192	294	Average
5440	57.19	48.4	74	-16.81	34.35	8.48	34.04	192	294	Peak

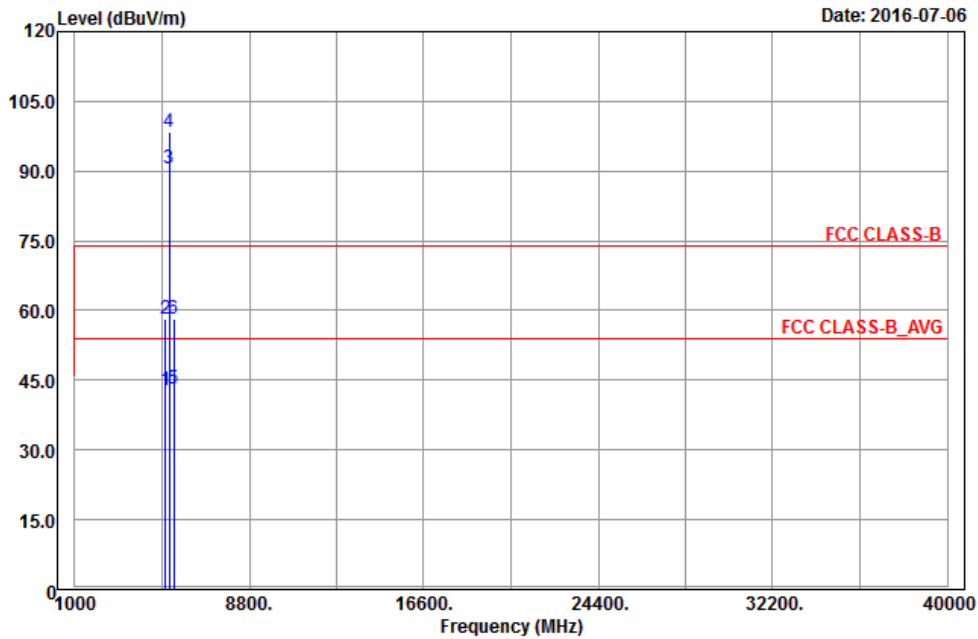
Remarks:

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

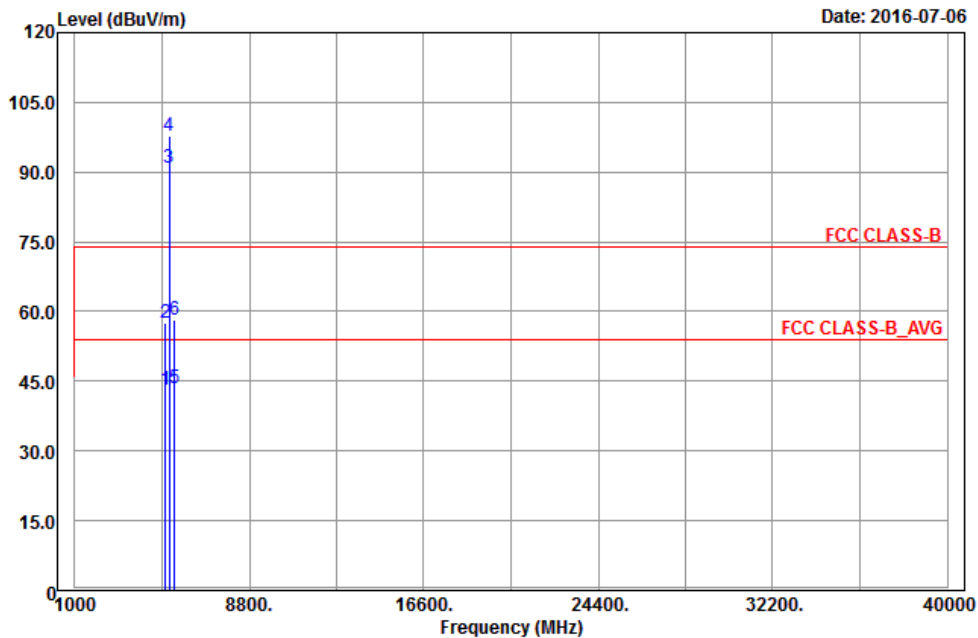


EUT Test Condition		Measurement Detail	
Channel	Channel 46	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5048	42.98	34.92	54	-11.02	34.04	8	33.98	119	153	Average
5048	58.05	49.99	74	-15.95	34.04	8	33.98	119	153	Peak
5230	90.6	82.2			34.19	8.22	34.01	119	153	Average
5230	98.43	90.03			34.19	8.22	34.01	119	153	Peak
5424	43.27	34.5	54	-10.73	34.33	8.48	34.04	119	153	Average
5424	58.28	49.51	74	-15.72	34.33	8.48	34.04	119	153	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

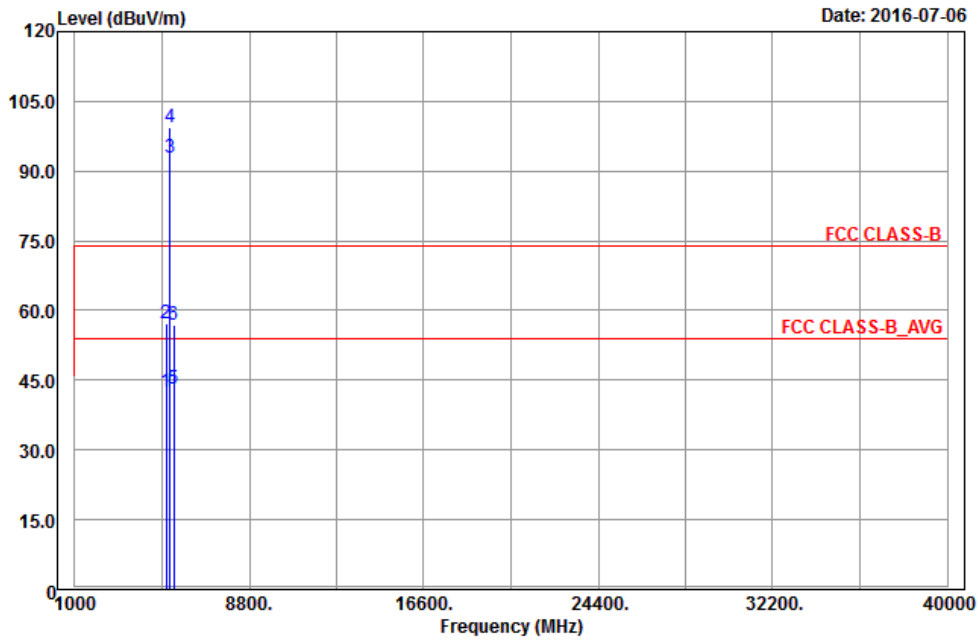
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5058	43.12	35.02	54	-10.88	34.05	8.03	33.98	217	298	Average
5058	57.52	49.42	74	-16.48	34.05	8.03	33.98	217	298	Peak
5230	90.87	82.47			34.19	8.22	34.01	217	298	Average
5230	97.85	89.45			34.19	8.22	34.01	217	298	Peak
5454	43.6	34.78	54	-10.4	34.36	8.51	34.05	217	298	Average
5454	58.28	49.46	74	-15.72	34.36	8.51	34.05	217	298	Peak

Remarks:

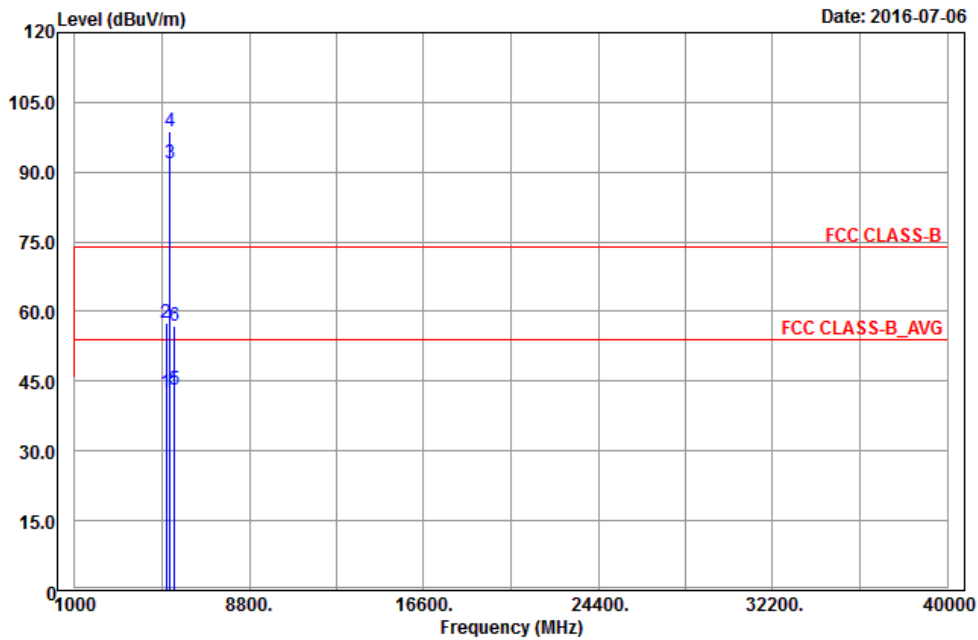
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5230 MHz: Fundamental Frequency

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5088	42.5	34.34	54	-11.5	34.07	8.07	33.98	100	116	Average
5088	57.32	49.16	74	-16.68	34.07	8.07	33.98	100	116	Peak
5270	92.86	84.37			34.21	8.29	34.01	100	116	Average
5270	99.38	90.89			34.21	8.29	34.01	100	116	Peak
5432	43.19	34.4	54	-10.81	34.35	8.48	34.04	100	116	Average
5432	56.79	48	74	-17.21	34.35	8.48	34.04	100	116	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

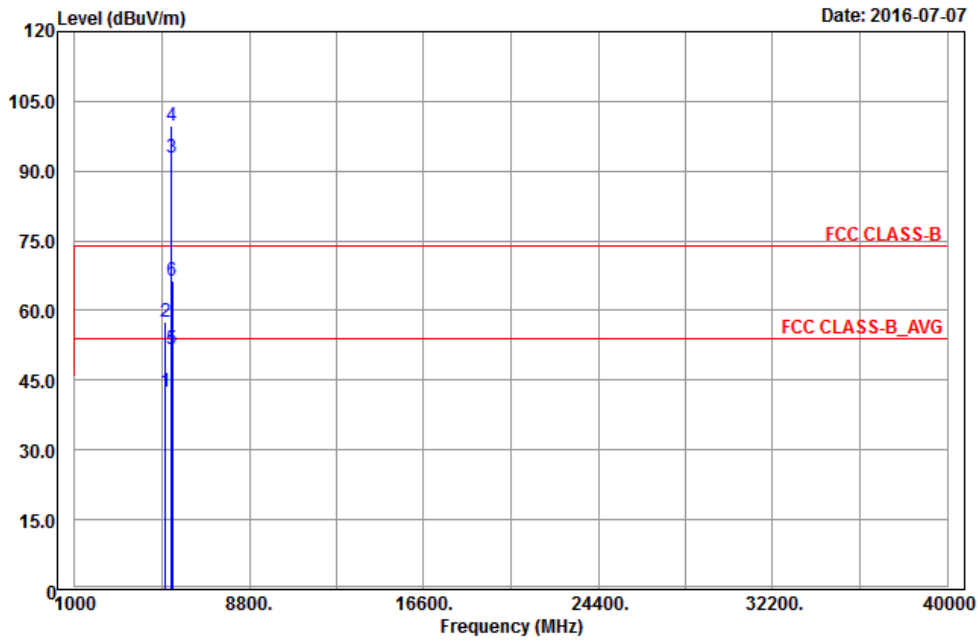
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5098	42.51	34.35	54	-11.49	34.08	8.07	33.99	243	345	Average
5098	57.53	49.37	74	-16.47	34.08	8.07	33.99	243	345	Peak
5270	91.8	83.31			34.21	8.29	34.01	243	345	Average
5270	98.86	90.37			34.21	8.29	34.01	243	345	Peak
5456	43.23	34.41	54	-10.77	34.36	8.51	34.05	243	345	Average
5456	57.02	48.2	74	-16.98	34.36	8.51	34.05	243	345	Peak

Remarks:

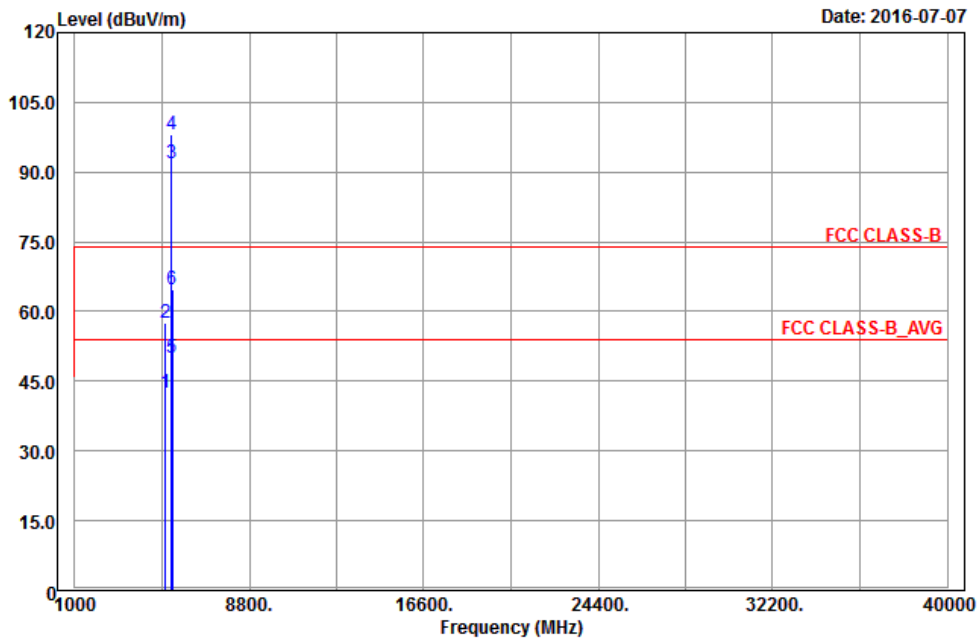
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5270 MHz: Fundamental Frequency

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5046	42.49	34.43	54	-11.51	34.04	8	33.98	100	116	Average
5046	57.42	49.36	74	-16.58	34.04	8	33.98	100	116	Peak
5310	92.82	84.27			34.25	8.32	34.02	100	116	Average
5310	99.7	91.15			34.25	8.32	34.02	100	116	Peak
5350	51.66	43.03	54	-2.34	34.28	8.38	34.03	100	116	Average
5350	66.49	57.86	74	-7.51	34.28	8.38	34.03	100	116	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

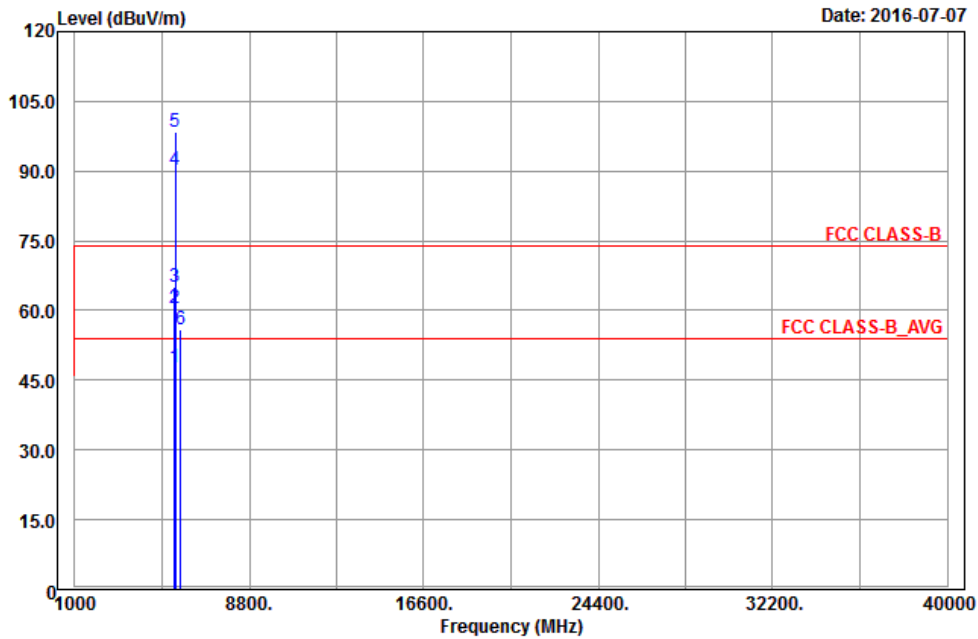
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5050	42.44	34.38	54	-11.56	34.04	8	33.98	243	345	Average
5050	57.65	49.59	74	-16.35	34.04	8	33.98	243	345	Peak
5310	91.74	83.19			34.25	8.32	34.02	243	345	Average
5310	98.15	89.6			34.25	8.32	34.02	243	345	Peak
5354	49.91	41.28	54	-4.09	34.28	8.38	34.03	243	345	Average
5354	64.78	56.15	74	-9.22	34.28	8.38	34.03	243	345	Peak

Remarks:

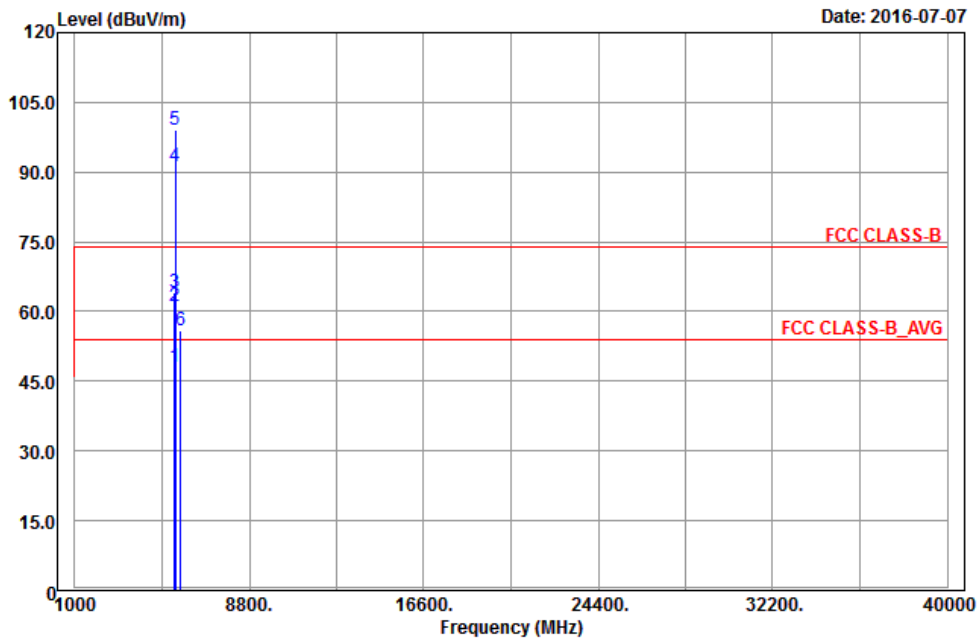
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5310 MHz: Fundamental Frequency

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	47.87	39.05	54	-6.13	34.36	8.51	34.05	191	354	Average
5460	60.37	51.55	74	-13.63	34.36	8.51	34.05	191	354	Peak
5470	65.02	56.19	68.2	-3.18	34.37	8.51	34.05	191	354	Peak
5510	90.11	81.2			34.4	8.57	34.06	191	354	Average
5510	98.48	89.57			34.4	8.57	34.06	191	354	Peak
5725	55.85	46.69	68.2	-12.35	34.62	8.65	34.11	191	354	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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
5454	48.17	39.35	54	-5.83	34.36	8.51	34.05	100	272	Average
5454	61.16	52.34	74	-12.84	34.36	8.51	34.05	100	272	Peak
5470	64.09	55.26	68.2	-4.11	34.37	8.51	34.05	100	272	Peak
5510	91.22	82.31			34.4	8.57	34.06	100	272	Average
5510	99.05	90.14			34.4	8.57	34.06	100	272	Peak
5725	55.82	46.66	68.2	-12.38	34.62	8.65	34.11	100	272	Peak

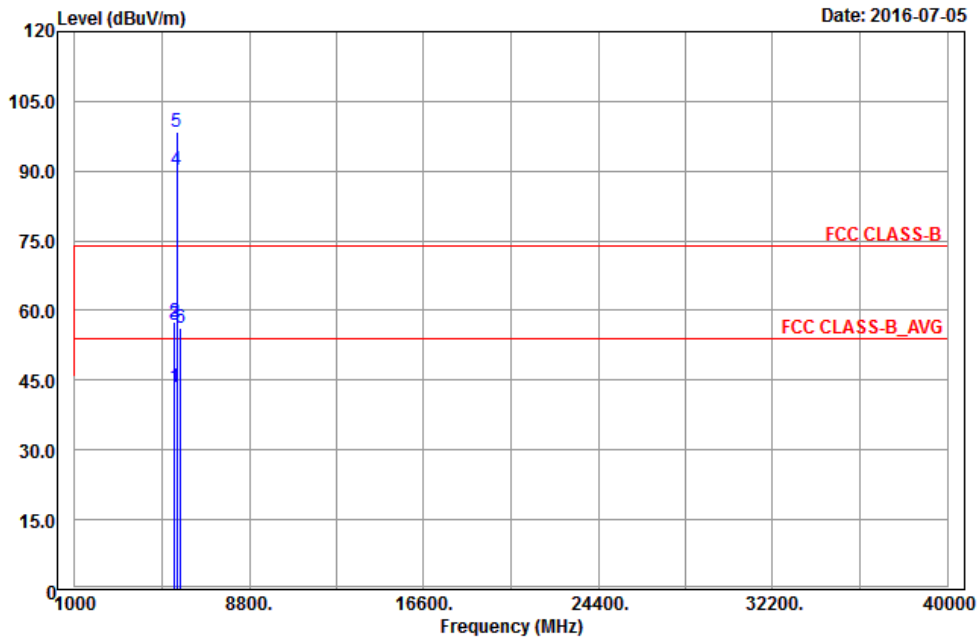
Remarks:

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

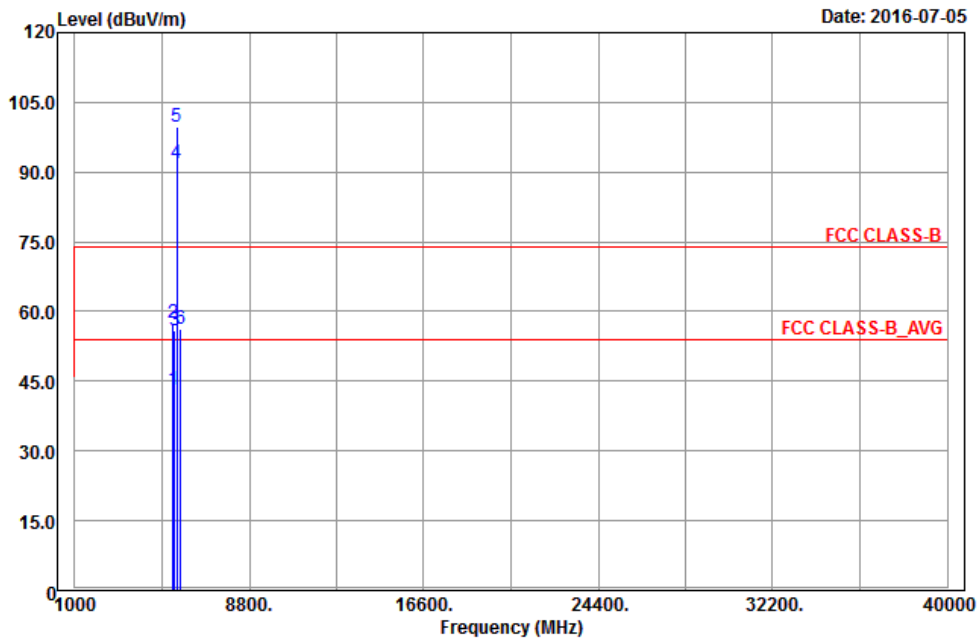


EUT Test Condition		Measurement Detail	
Channel	Channel 110	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5458	43.47	34.65	54	-10.53	34.36	8.51	34.05	191	354	Average
5458	57.42	48.6	74	-16.58	34.36	8.51	34.05	191	354	Peak
5470	56.95	48.12	68.2	-11.25	34.37	8.51	34.05	191	354	Peak
5550	90.29	81.32			34.45	8.59	34.07	191	354	Average
5550	98.39	89.42			34.45	8.59	34.07	191	354	Peak
5725	56.35	47.19	68.2	-11.85	34.62	8.65	34.11	191	354	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

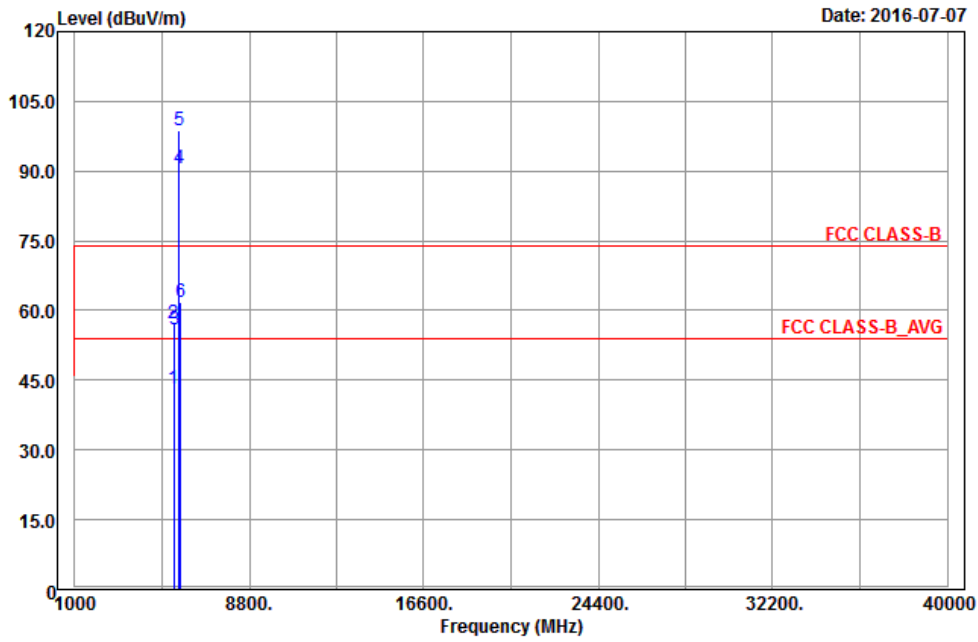
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5382	43.27	34.59	54	-10.73	34.31	8.41	34.04	105	272	Average
5382	57.53	48.85	74	-16.47	34.31	8.41	34.04	105	272	Peak
5470	56	47.17	68.2	-12.2	34.37	8.51	34.05	105	272	Peak
5550	91.83	82.86			34.45	8.59	34.07	105	272	Average
5550	99.85	90.88			34.45	8.59	34.07	105	272	Peak
5725	56.38	47.22	68.2	-11.82	34.62	8.65	34.11	105	272	Peak

## Remarks:

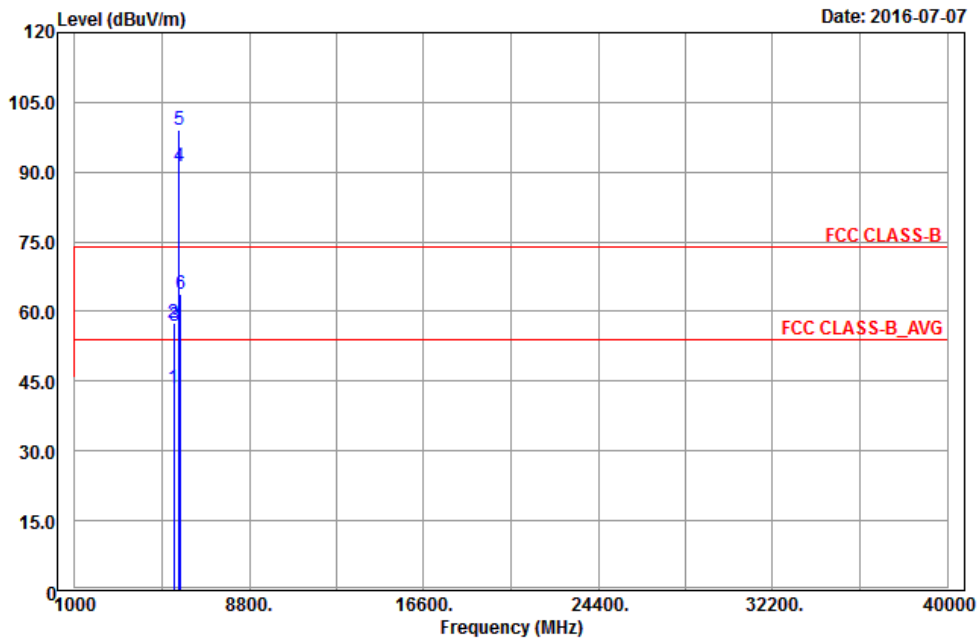
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5550 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: Out of Restricted Band

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5432	43.3	34.51	54	-10.7	34.35	8.48	34.04	173	354	Average
5432	57.29	48.5	74	-16.71	34.35	8.48	34.04	173	354	Peak
5470	55.82	46.99	68.2	-12.38	34.37	8.51	34.05	173	354	Peak
5670	90.56	81.46			34.57	8.63	34.1	173	354	Average
5670	98.83	89.73			34.57	8.63	34.1	173	354	Peak
5725	61.79	52.63	68.2	-6.41	34.62	8.65	34.11	173	354	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

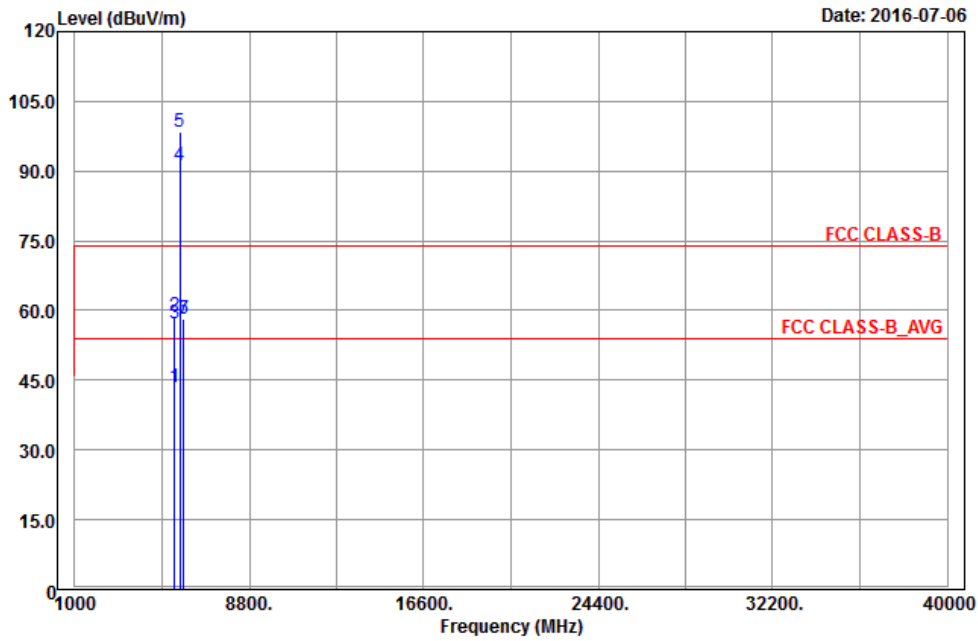
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5438	43.36	34.57	54	-10.64	34.35	8.48	34.04	117	250	Average
5438	57.5	48.71	74	-16.5	34.35	8.48	34.04	117	250	Peak
5470	56.8	47.97	68.2	-11.4	34.37	8.51	34.05	117	250	Peak
5670	91.08	81.98			34.57	8.63	34.1	117	250	Average
5670	99.19	90.09			34.57	8.63	34.1	117	250	Peak
5725	63.72	54.56	68.2	-4.48	34.62	8.65	34.11	117	250	Peak

Remarks:

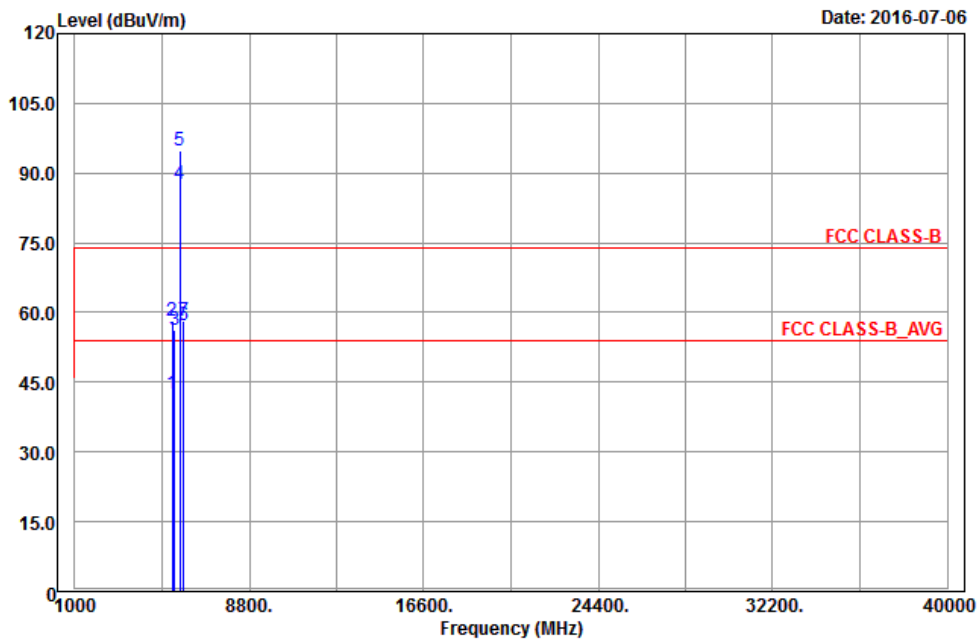
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5670 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	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	112	118	Average
5460	58.91	50.09	74	-15.09	34.36	8.51	34.05	112	118	Peak
*5470	57.26	48.43	68.2	-10.94	34.37	8.51	34.05	112	118	Peak
5710	91.14	81.99			34.61	8.65	34.11	112	118	Average
5710	98.36	89.21			34.61	8.65	34.11	112	118	Peak
*5852	58.15	48.85	78.2	-20.05	34.74	8.7	34.14	112	118	Peak
*5866	58.23	48.9	68.2	-9.97	34.76	8.71	34.14	112	118	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

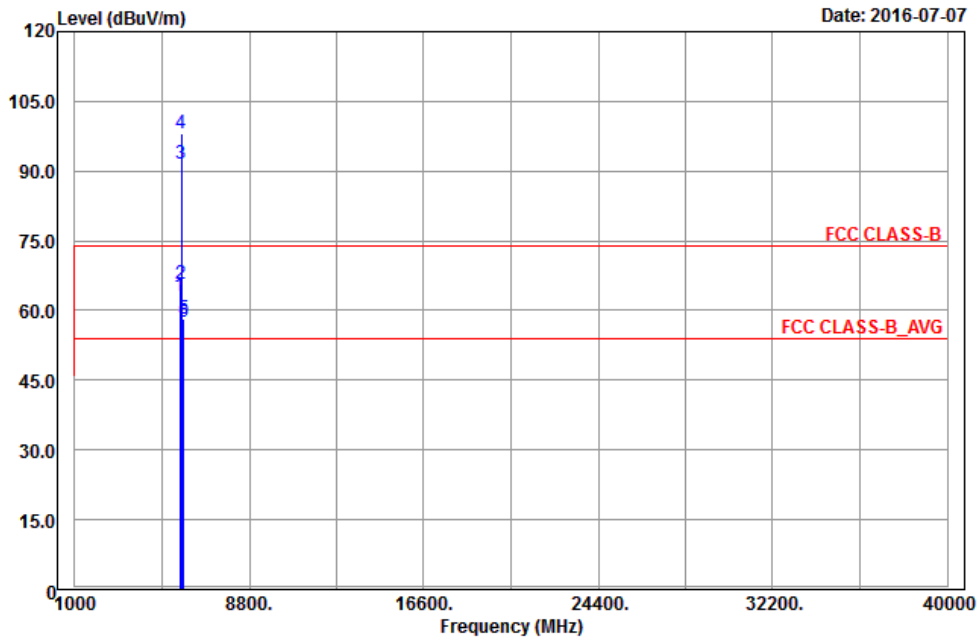
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5364	42.64	34	54	-11.36	34.29	8.38	34.03	268	331	Average
5364	58.19	49.55	74	-15.81	34.29	8.38	34.03	268	331	Peak
*5470	56.27	47.44	68.2	-11.93	34.37	8.51	34.05	268	331	Peak
5710	87.64	78.49			34.61	8.65	34.11	268	331	Average
5710	94.75	85.6			34.61	8.65	34.11	268	331	Peak
*5858	57.24	47.92	78.2	-20.96	34.76	8.7	34.14	268	331	Peak
*5864	58.18	48.85	68.2	-10.02	34.76	8.71	34.14	268	331	Peak

## Remarks:

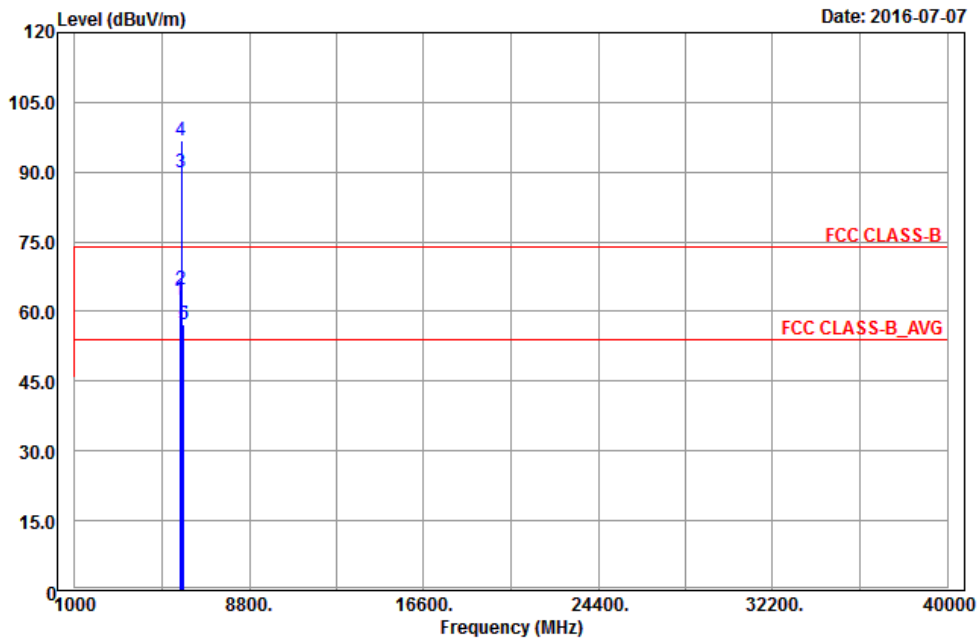
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5710 MHz: Fundamental Frequency
3. \*: Out of Restricted Band

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5710	63.14	53.99	68.2	-5.06	34.61	8.65	34.11	104	109	Peak
*5718	65.68	56.52	78.2	-12.52	34.62	8.65	34.11	104	109	Peak
5755	91.42	82.21			34.66	8.66	34.11	104	109	Average
5755	98.09	88.88			34.66	8.66	34.11	104	109	Peak
*5854	58.21	48.89	78.2	-19.99	34.76	8.7	34.14	104	109	Peak
*5870	57.7	48.37	68.2	-10.5	34.76	8.71	34.14	104	109	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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	62.54	53.39	68.2	-5.66	34.61	8.65	34.11	101	63	Peak
*5722	64.7	55.54	78.2	-13.5	34.62	8.65	34.11	101	63	Peak
5755	89.92	80.71			34.66	8.66	34.11	101	63	Average
5755	96.84	87.63			34.66	8.66	34.11	101	63	Peak
*5854	57.12	47.8	78.2	-21.08	34.76	8.7	34.14	101	63	Peak
*5870	57.13	47.8	68.2	-11.07	34.76	8.71	34.14	101	63	Peak

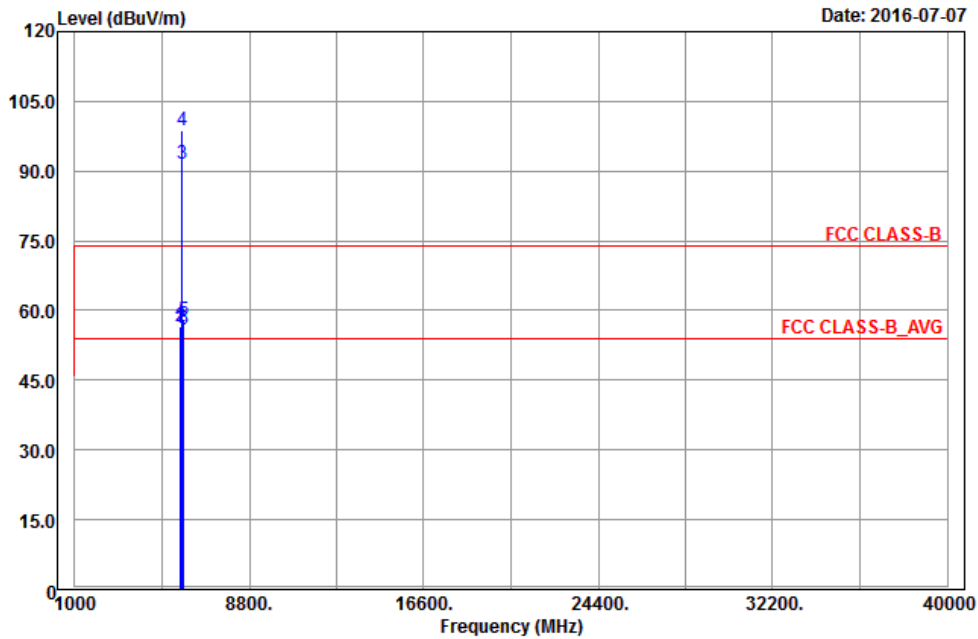
Remarks:

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

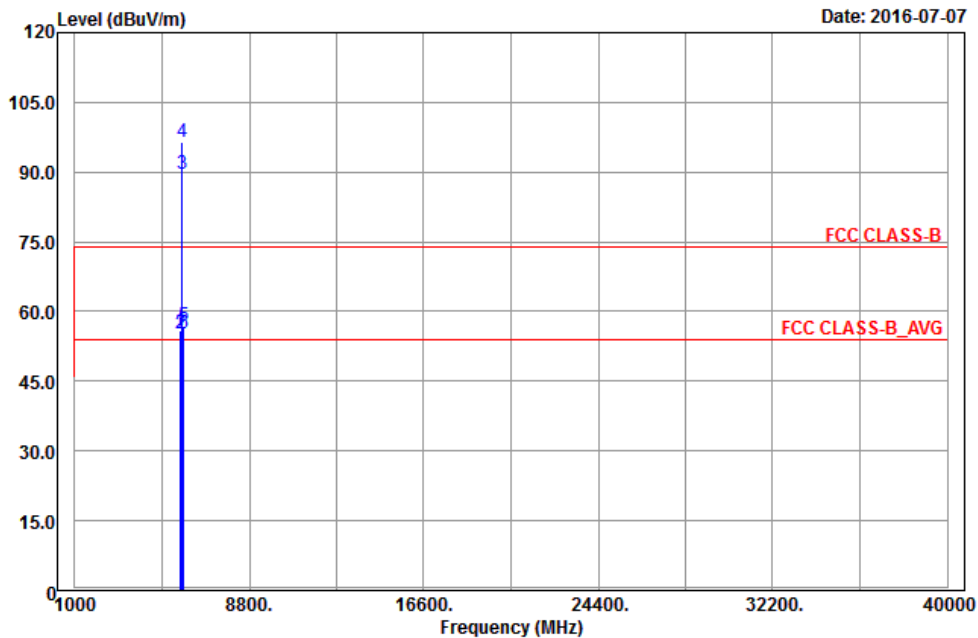


EUT Test Condition		Measurement Detail	
Channel	Channel 159	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission 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	56.39	47.24	68.2	-11.81	34.61	8.65	34.11	104	109	Peak
*5718	56.41	47.25	78.2	-21.79	34.62	8.65	34.11	104	109	Peak
5795	91.66	82.42			34.69	8.68	34.13	104	109	Average
5795	98.79	89.55			34.69	8.68	34.13	104	109	Peak
*5852	57.74	48.44	78.2	-20.46	34.74	8.7	34.14	104	109	Peak
*5870	56.06	46.73	68.2	-12.14	34.76	8.71	34.14	104	109	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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	55.93	46.78	68.2	-12.27	34.61	8.65	34.11	101	63	Peak
*5716	55.32	46.17	78.2	-22.88	34.61	8.65	34.11	101	63	Peak
5795	89.62	80.38			34.69	8.68	34.13	101	63	Average
5795	96.5	87.26			34.69	8.68	34.13	101	63	Peak
*5852	56.73	47.43	78.2	-21.47	34.74	8.7	34.14	101	63	Peak
*5866	55.15	45.82	68.2	-13.05	34.76	8.71	34.14	101	63	Peak

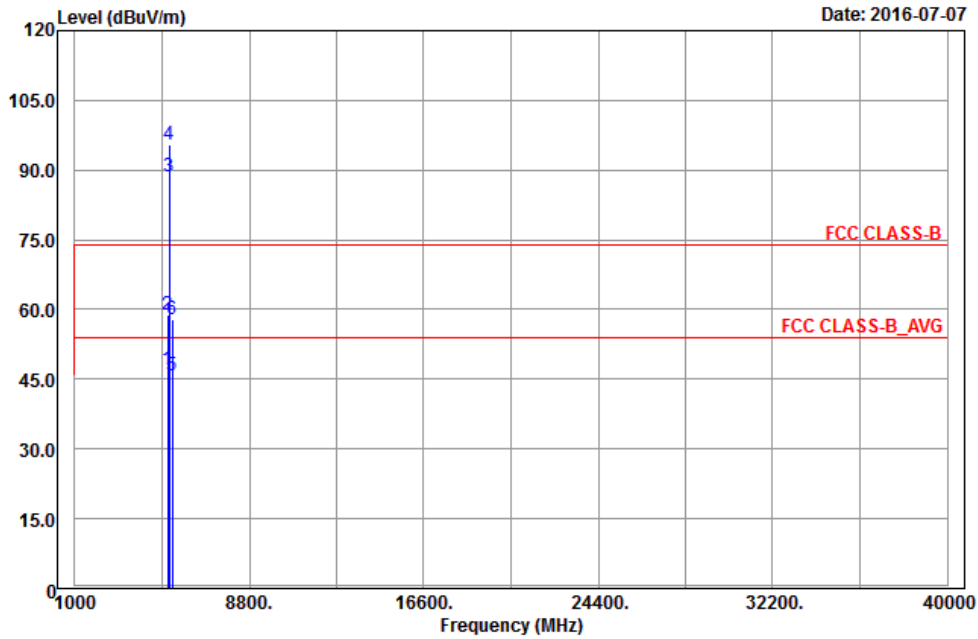
Remarks:

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

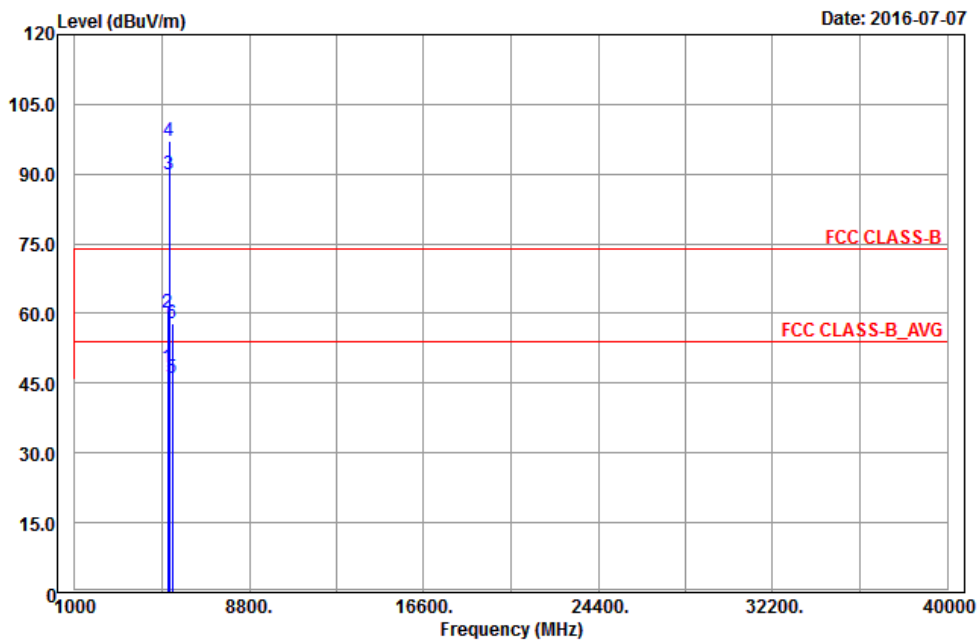
802.11ac (VHT80)

EUT Test Condition		Measurement Detail	
Channel	Channel 42	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Horizontal



Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	47.18	38.93	54	-6.82	34.12	8.13	34	119	153	Average
5150	58.8	50.55	74	-15.2	34.12	8.13	34	119	153	Peak
5210	88.57	80.21			34.17	8.19	34	119	153	Average
5210	95.39	87.03			34.17	8.19	34	119	153	Peak
5348	45.64	37.01	54	-8.36	34.28	8.38	34.03	119	153	Average
5348	57.8	49.17	74	-16.2	34.28	8.38	34.03	119	153	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

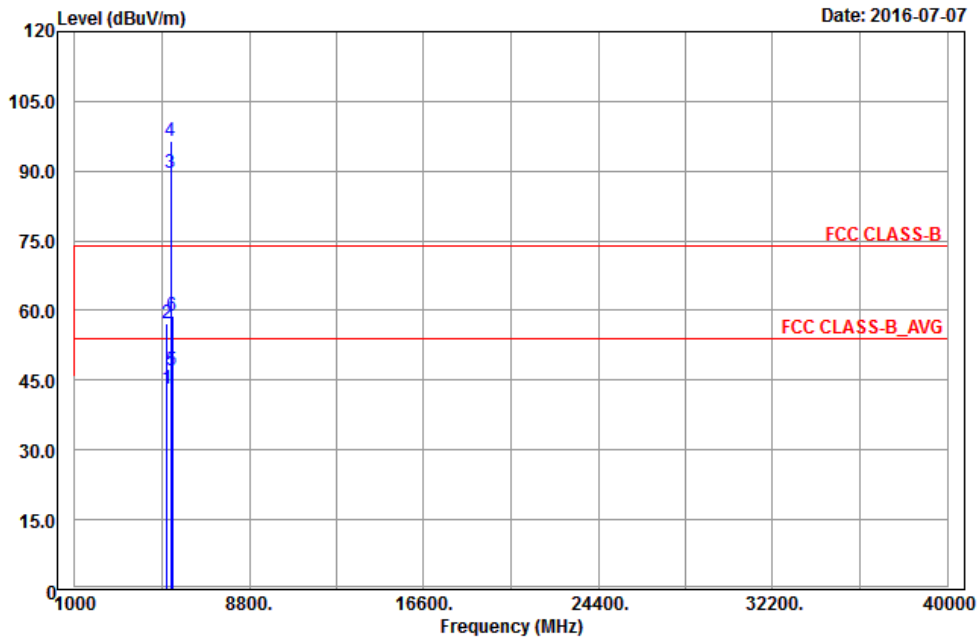
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	48.48	40.23	54	-5.52	34.12	8.13	34	207	300	Average
5150	60.09	51.84	74	-13.91	34.12	8.13	34	207	300	Peak
5210	89.9	81.54			34.17	8.19	34	207	300	Average
5210	97.26	88.9			34.17	8.19	34	207	300	Peak
5366	46.27	37.63	54	-7.73	34.29	8.38	34.03	207	300	Average
5366	57.81	49.17	74	-16.19	34.29	8.38	34.03	207	300	Peak

Remarks:

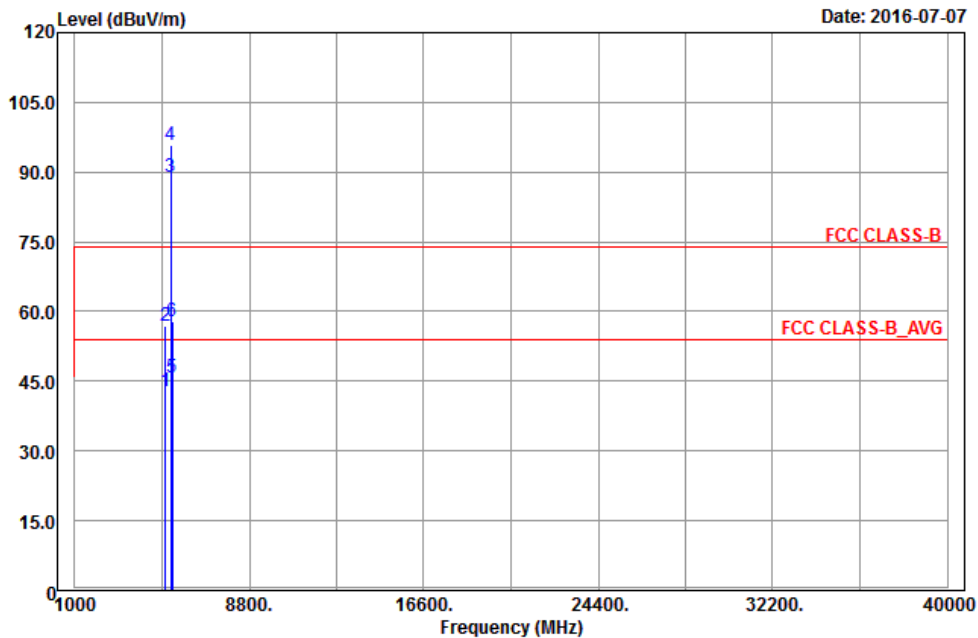
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5210 MHz: Fundamental Frequency

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5118	43.07	34.87	54	-10.93	34.09	8.1	33.99	100	116	Average
5118	57.3	49.1	74	-16.7	34.09	8.1	33.99	100	116	Peak
5290	89.54	81.01			34.23	8.32	34.02	100	116	Average
5290	96.54	88.01			34.23	8.32	34.02	100	116	Peak
5350	46.96	38.33	54	-7.04	34.28	8.38	34.03	100	116	Average
5350	58.95	50.32	74	-15.05	34.28	8.38	34.03	100	116	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

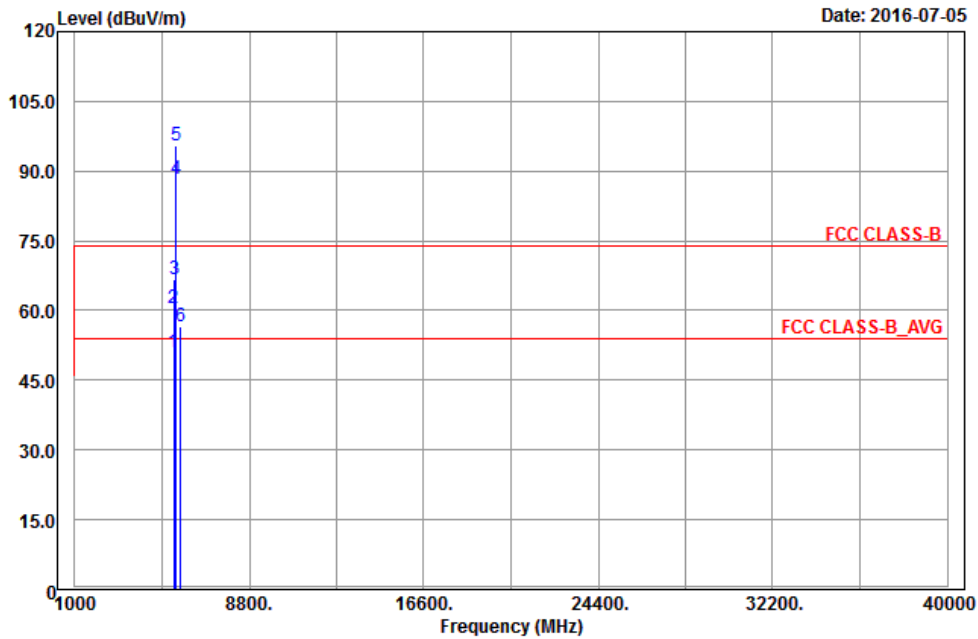
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5056	42.89	34.79	54	-11.11	34.05	8.03	33.98	243	345	Average
5056	56.87	48.77	74	-17.13	34.05	8.03	33.98	243	345	Peak
5290	88.84	80.31			34.23	8.32	34.02	243	345	Average
5290	95.79	87.26			34.23	8.32	34.02	243	345	Peak
5350	45.66	37.03	54	-8.34	34.28	8.38	34.03	243	345	Average
5350	58.04	49.41	74	-15.96	34.28	8.38	34.03	243	345	Peak

Remarks:

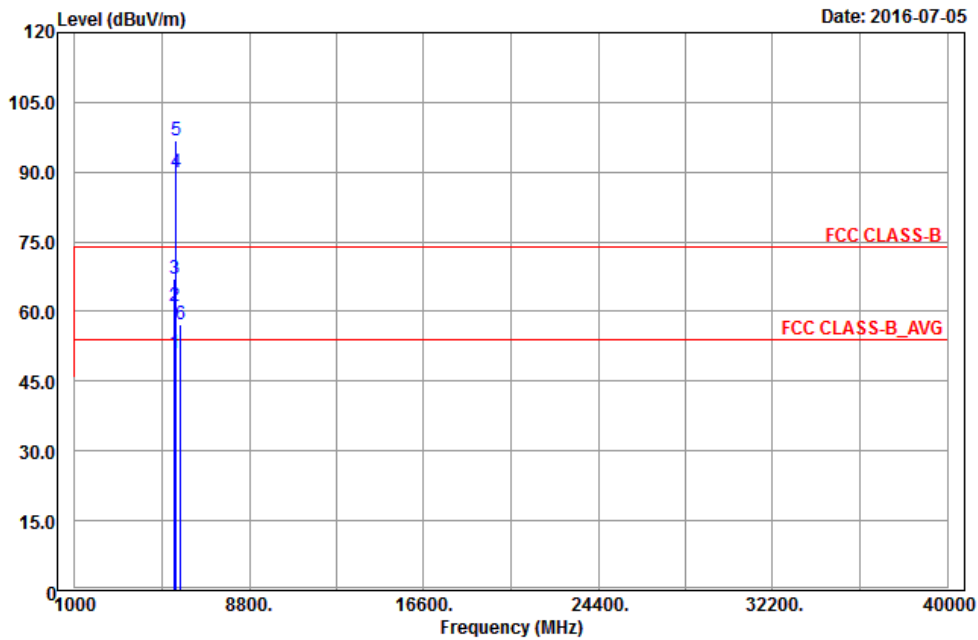
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5290 MHz: Fundamental Frequency

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5438	50.87	42.08	54	-3.13	34.35	8.48	34.04	191	354	Average
5438	60.56	51.77	74	-13.44	34.35	8.48	34.04	191	354	Peak
5470	66.64	57.81	68.2	-1.56	34.37	8.51	34.05	191	354	Peak
5530	88.25	79.32			34.42	8.58	34.07	191	354	Average
5530	95.36	86.43			34.42	8.58	34.07	191	354	Peak
5725	56.67	47.51	68.2	-11.53	34.62	8.65	34.11	191	354	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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	51.07	42.25	54	-2.93	34.36	8.51	34.05	106	272	Average
5456	61.13	52.31	74	-12.87	34.36	8.51	34.05	106	272	Peak
5470	67.16	58.33	68.2	-1.04	34.37	8.51	34.05	106	272	Peak
5530	89.8	80.87			34.42	8.58	34.07	106	272	Average
5530	96.83	87.9			34.42	8.58	34.07	106	272	Peak
5725	57.15	47.99	68.2	-11.05	34.62	8.65	34.11	106	272	Peak

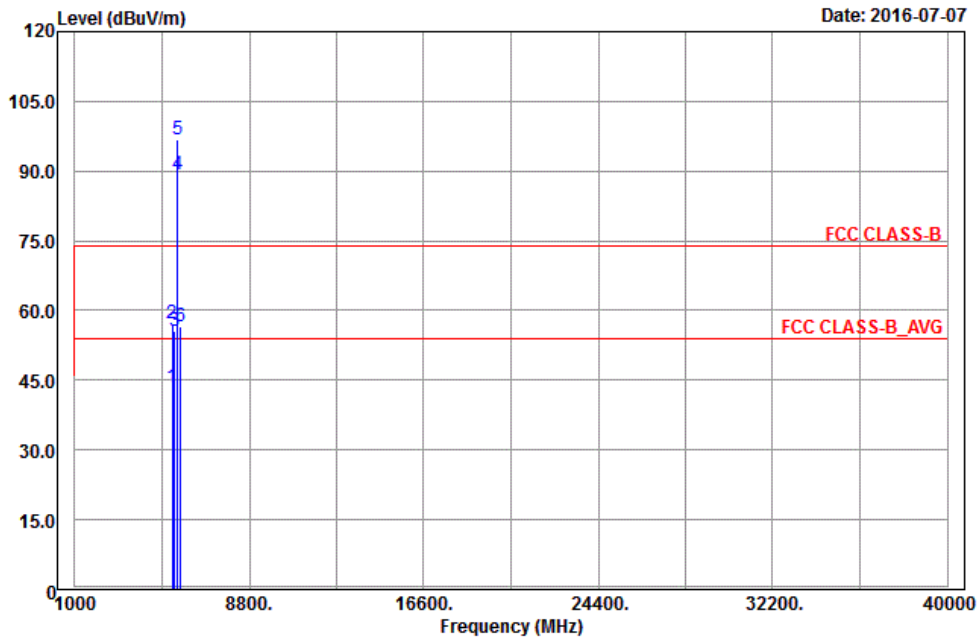
Remarks:

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

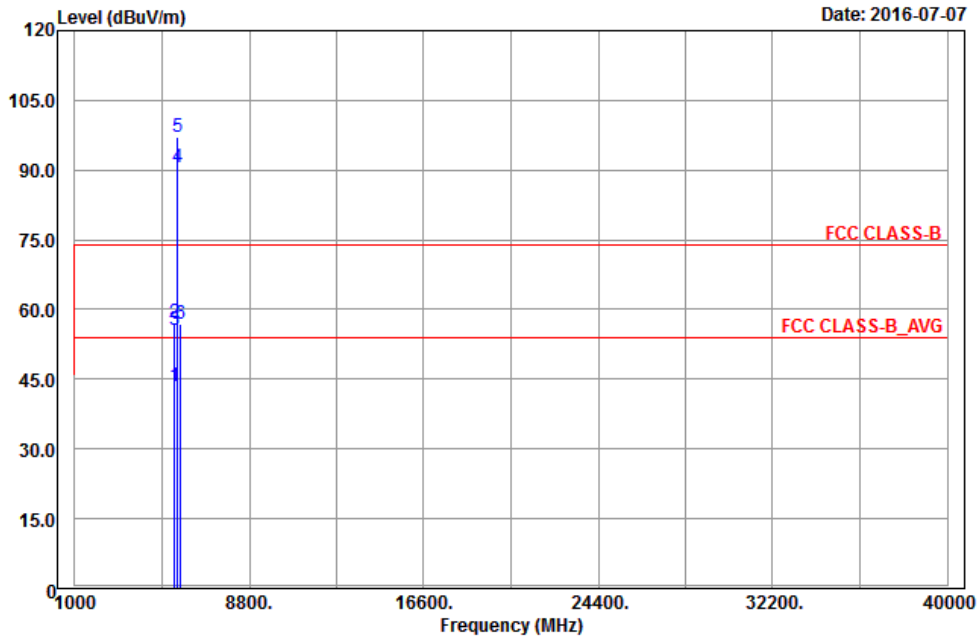


EUT Test Condition		Measurement Detail	
Channel	Channel 122	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5350	43.54	34.91	54	-10.46	34.28	8.38	34.03	205	354	Average
5350	57.37	48.74	74	-16.63	34.28	8.38	34.03	205	354	Peak
5470	55.62	46.79	68.2	-12.58	34.37	8.51	34.05	205	354	Peak
5610	89.23	80.2			34.5	8.61	34.08	205	354	Average
5610	96.74	87.71			34.5	8.61	34.08	205	354	Peak
5725	56.61	47.45	68.2	-11.59	34.62	8.65	34.11	205	354	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

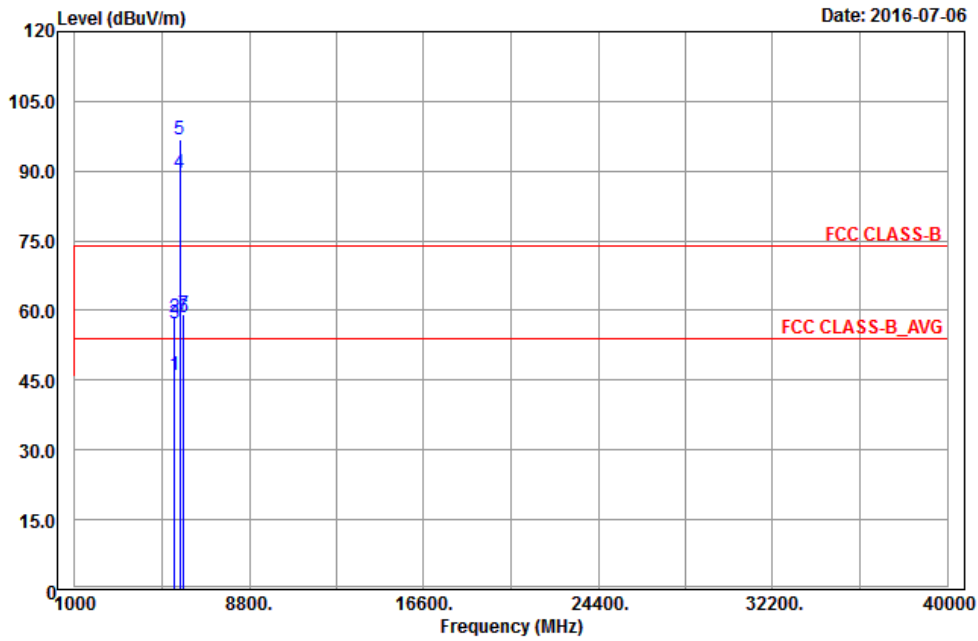
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5448	43.64	34.81	54	-10.36	34.36	8.51	34.04	118	272	Average
5448	57.2	48.37	74	-16.8	34.36	8.51	34.04	118	272	Peak
5470	55.5	46.67	68.2	-12.7	34.37	8.51	34.05	118	272	Peak
5610	90.71	81.68			34.5	8.61	34.08	118	272	Average
5610	97.03	88			34.5	8.61	34.08	118	272	Peak
5725	56.9	47.74	68.2	-11.3	34.62	8.65	34.11	118	272	Peak

Remarks:

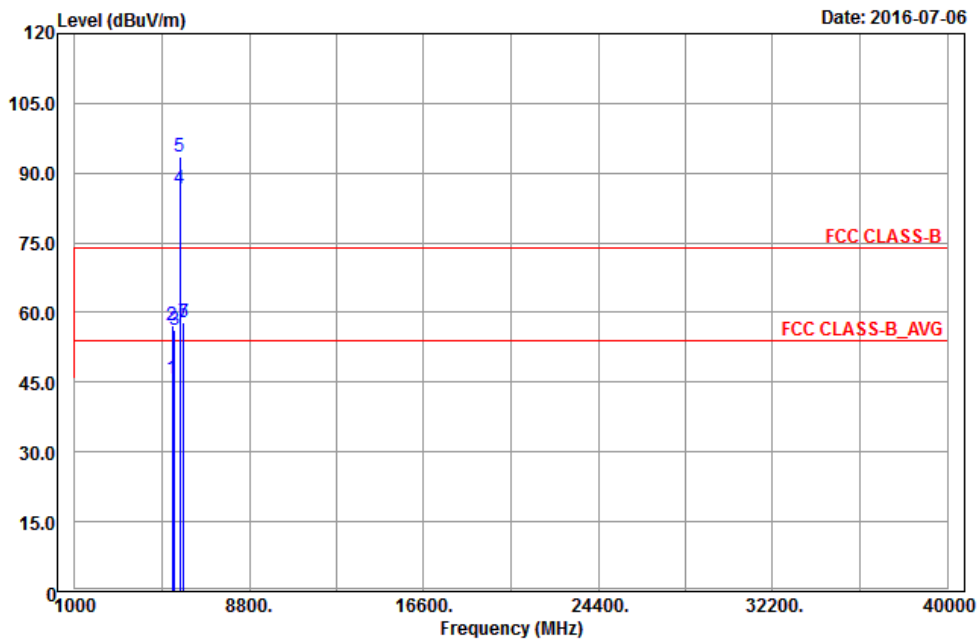
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5610 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

### Horizontal



### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5456	46.01	37.19	54	-7.99	34.36	8.51	34.05	112	118	Average
5456	58.68	49.86	74	-15.32	34.36	8.51	34.05	112	118	Peak
*5470	57.31	48.48	68.2	-10.89	34.37	8.51	34.05	112	118	Peak
5690	89.72	80.59			34.59	8.64	34.1	112	118	Average
5690	96.69	87.56			34.59	8.64	34.1	112	118	Peak
*5858	58.37	49.05	78.2	-19.83	34.76	8.7	34.14	112	118	Peak
*5862	59.15	49.82	68.2	-9.05	34.76	8.71	34.14	112	118	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

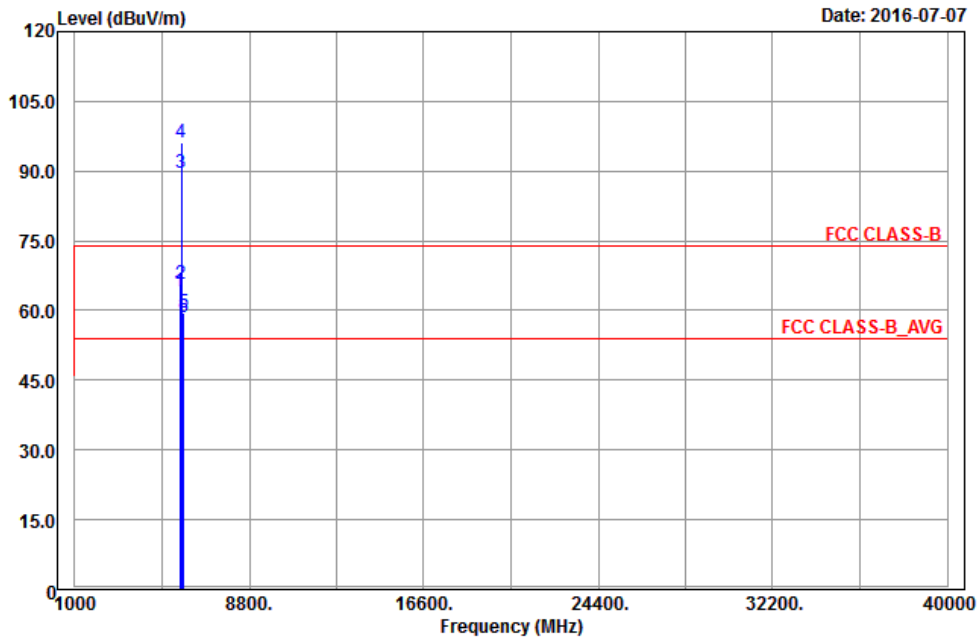
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5350	45.77	37.14	54	-8.23	34.28	8.38	34.03	211	330	Average
5350	57.3	48.67	74	-16.7	34.28	8.38	34.03	211	330	Peak
*5470	56.23	47.4	68.2	-11.97	34.37	8.51	34.05	211	330	Peak
5690	86.7	77.57			34.59	8.64	34.1	211	330	Average
5690	93.37	84.24			34.59	8.64	34.1	211	330	Peak
*5858	58.01	48.69	78.2	-20.19	34.76	8.7	34.14	211	330	Peak
*5870	57.79	48.46	68.2	-10.41	34.76	8.71	34.14	211	330	Peak

Remarks:

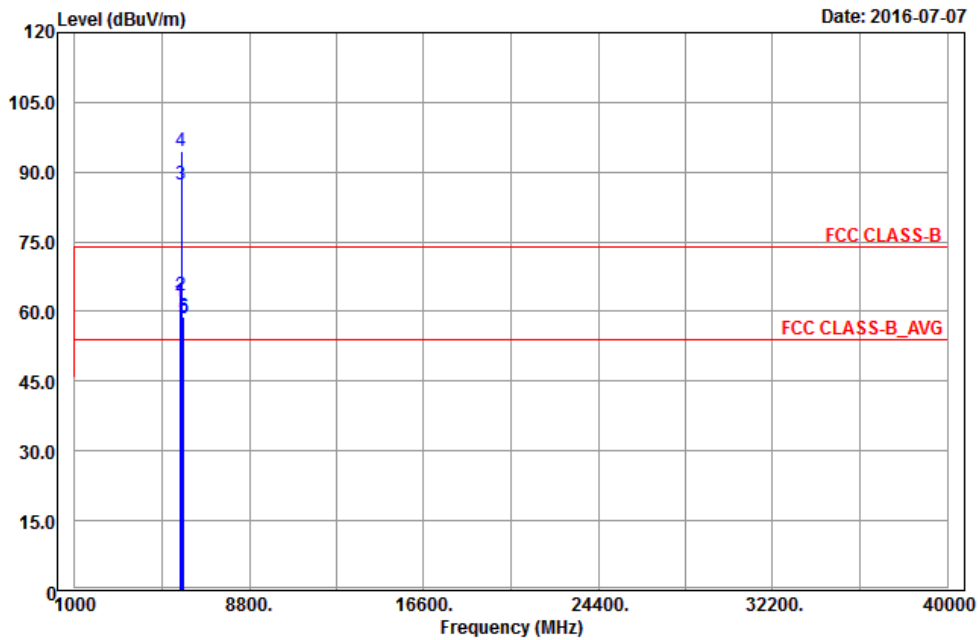
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5690 MHz: Fundamental Frequency
- \*: Out of Restricted Band

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5710	64.17	55.02	68.2	-4.03	34.61	8.65	34.11	103	109	Peak
5724	65.82	56.66	78.2	-12.38	34.62	8.65	34.11	103	109	Peak
5775	89.71	80.48			34.68	8.67	34.12	103	109	Average
5775	96.02	86.79			34.68	8.67	34.12	103	109	Peak
5854	59.64	50.32	78.2	-18.56	34.76	8.7	34.14	103	109	Peak
5870	58.55	49.22	68.2	-9.65	34.76	8.71	34.14	103	109	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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	61.99	52.84	68.2	-6.21	34.61	8.65	34.11	101	63	Peak
5724	63.42	54.26	78.2	-14.78	34.62	8.65	34.11	101	63	Peak
5775	87.46	78.23			34.68	8.67	34.12	101	63	Average
5775	94.45	85.22			34.68	8.67	34.12	101	63	Peak
5856	58.47	49.15	78.2	-19.73	34.76	8.7	34.14	101	63	Peak
5862	58.88	49.55	68.2	-9.32	34.76	8.71	34.14	101	63	Peak

Remarks:

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

**9 kHz ~ 30 MHz DATA:**

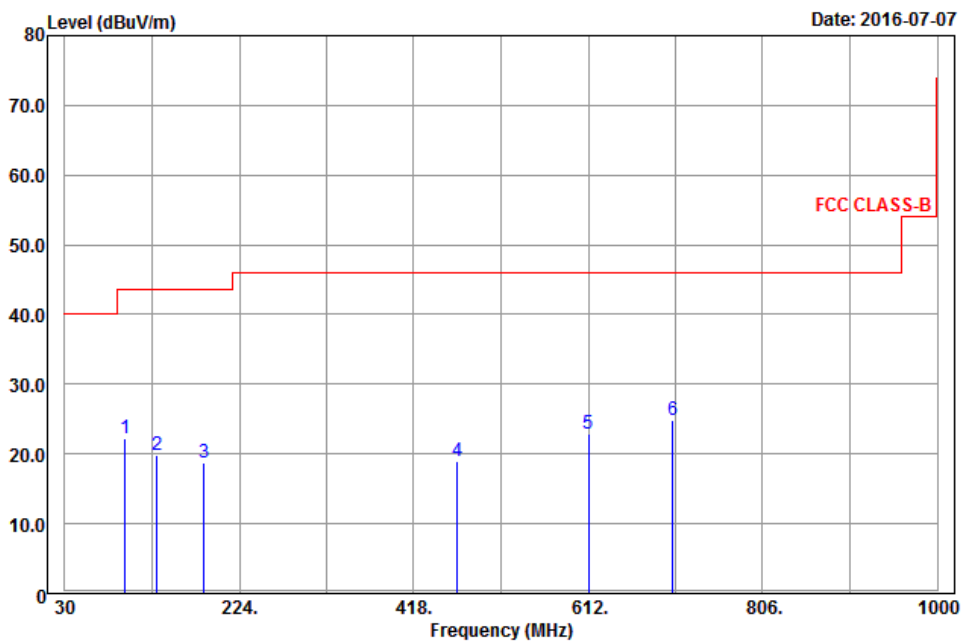
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

**30 MHz ~ 1 GHz WORST-CASE DATA:**

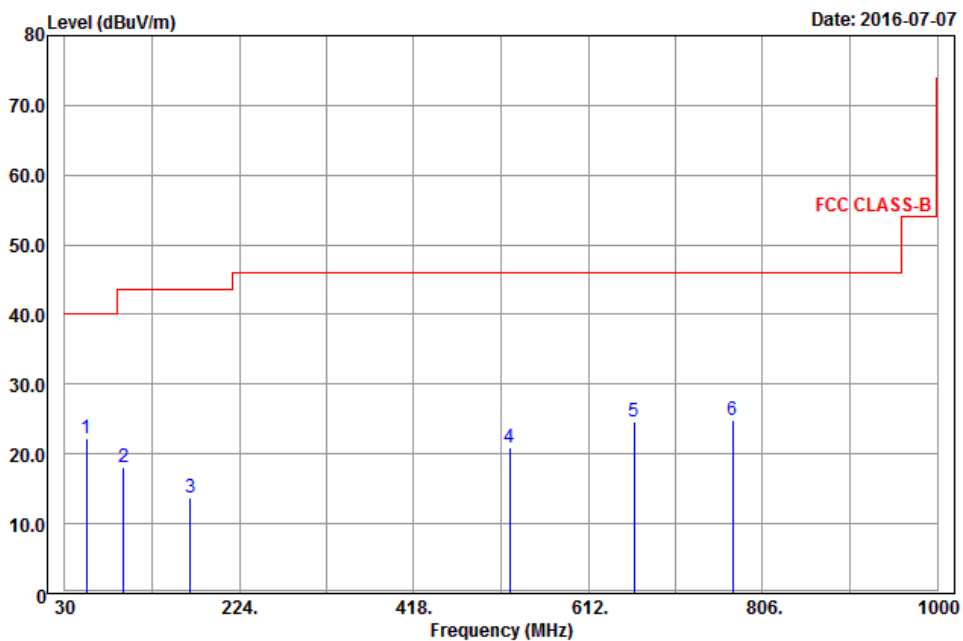
**802.11n (HT40)**

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

**Horizontal**



**Vertical**



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission 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
96.69	22.23	43.63	43.5	-21.27	9.42	1.28	32.1	122	230	Peak
132.33	19.85	41.49	43.5	-23.65	9.22	1.38	32.24	194	248	Peak
184.71	18.74	38.97	43.5	-24.76	10.4	1.61	32.24	143	293	Peak
466.6	18.88	29.82	46	-27.12	18.63	2.56	32.13	188	8	Peak
612.2	22.95	30.59	46	-23.05	21.67	2.87	32.18	143	180	Peak
706	24.83	30.62	46	-21.17	23.19	3.11	32.09	183	334	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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	22.32	46.26	40	-17.68	7.39	0.9	32.23	153	276	Peak
95.34	18.11	39.48	43.5	-25.39	9.34	1.28	31.99	194	111	Peak
169.59	13.75	34.47	43.5	-29.75	10	1.52	32.24	196	99	Peak
524.7	20.91	29.66	46	-25.09	20.7	2.7	32.15	150	100	Peak
663.3	24.59	30.98	46	-21.41	22.75	2.99	32.13	166	333	Peak
772.5	24.84	30.23	46	-21.16	23.45	3.27	32.11	106	10	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

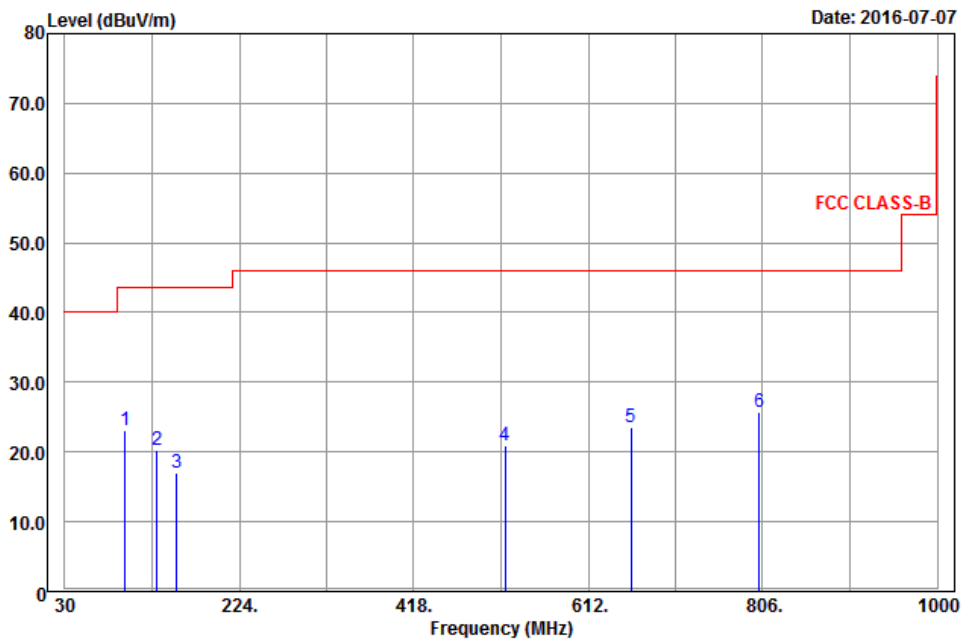
Margin value = Emission level – Limit value



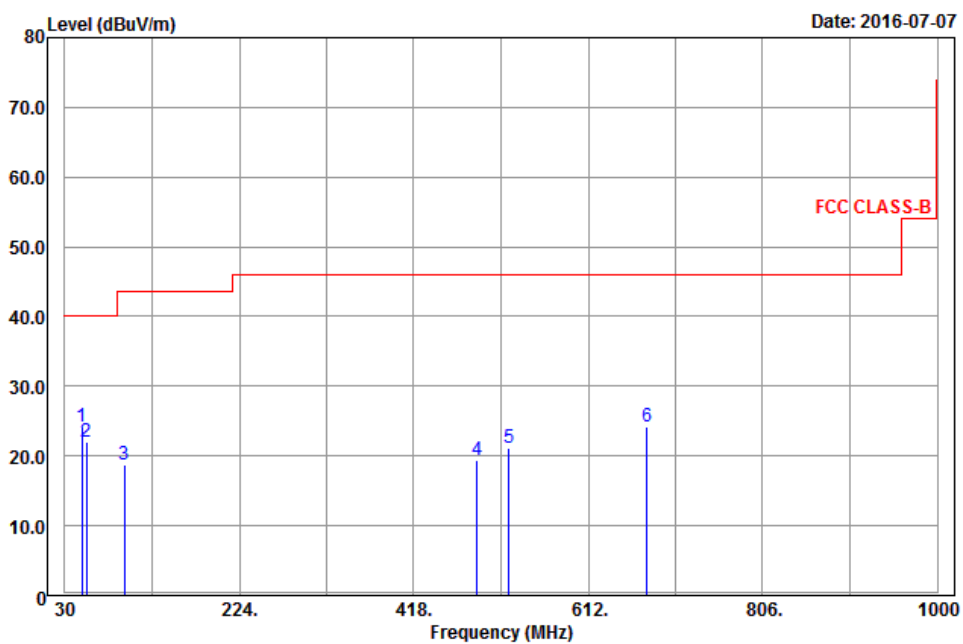
802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 62	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Horizontal



Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission 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
96.69	23.04	44.44	43.5	-20.46	9.42	1.28	32.1	200	265	Peak
132.87	20.34	41.97	43.5	-23.16	9.23	1.38	32.24	187	322	Peak
154.47	17.04	37.4	43.5	-26.46	10.39	1.52	32.27	167	103	Peak
519.8	21.03	30.15	46	-24.97	20.32	2.7	32.14	121	210	Peak
659.8	23.64	30.26	46	-22.36	22.53	2.99	32.14	165	298	Peak
802.6	25.77	29.9	46	-20.23	24.6	3.32	32.05	146	73	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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
48.9	24.23	47.41	40	-15.77	8.14	0.9	32.22	181	227	Peak
54.3	21.98	45.95	40	-18.02	7.36	0.9	32.23	109	106	Peak
96.42	18.65	39.99	43.5	-24.85	9.42	1.28	32.04	186	185	Peak
488.3	19.39	29.91	46	-26.61	18.96	2.63	32.11	148	3	Peak
524	21.17	29.91	46	-24.83	20.7	2.7	32.14	124	211	Peak
677.3	24.29	30	46	-21.71	23.36	3.05	32.12	114	305	Peak

Remarks:

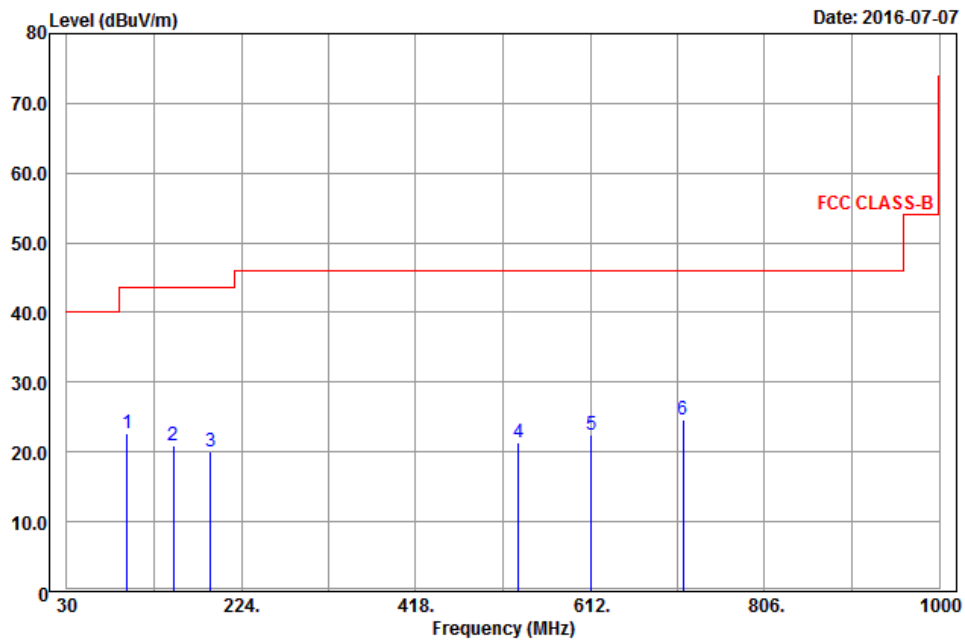
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value

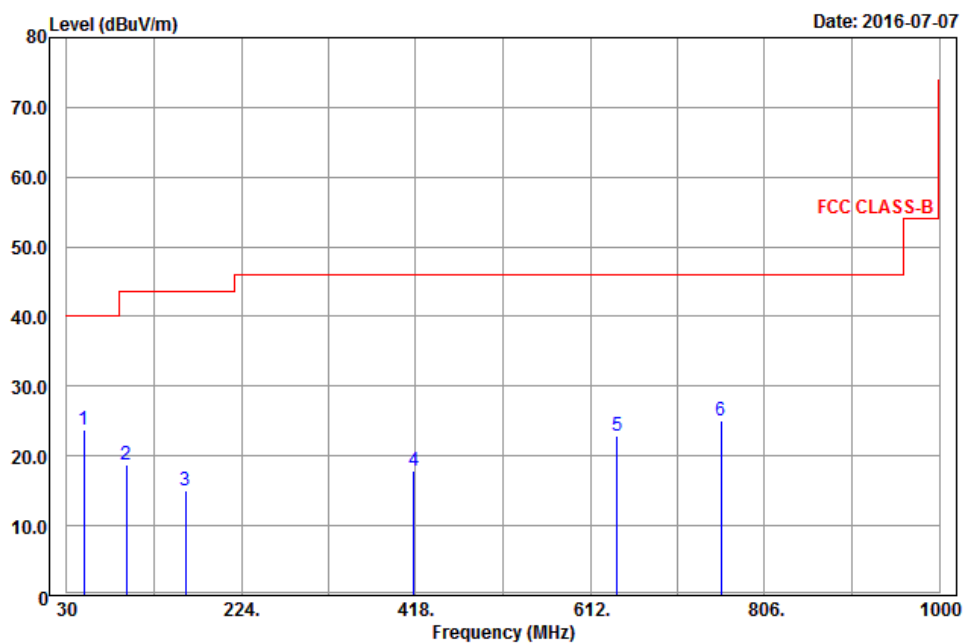
### 802.11ac (VHT80)

EUT Test Condition		Measurement Detail	
Channel	Channel 106	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

#### Horizontal



#### Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission 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
96.69	22.63	44.03	43.5	-20.87	9.42	1.28	32.1	169	66	Peak
148.53	20.86	41.63	43.5	-22.64	9.98	1.52	32.27	172	8	Peak
190.11	20.16	40.4	43.5	-23.34	10.4	1.61	32.25	159	347	Peak
532.4	21.3	30.19	46	-24.7	20.57	2.7	32.16	152	324	Peak
612.9	22.41	30.05	46	-23.59	21.67	2.87	32.18	127	216	Peak
715.1	24.61	30.33	46	-21.39	23.27	3.11	32.1	160	248	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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
48.9	23.71	46.89	40	-16.29	8.14	0.9	32.22	170	265	Peak
96.42	18.84	40.18	43.5	-24.66	9.42	1.28	32.04	180	1	Peak
161.76	15.05	35.14	43.5	-28.45	10.65	1.52	32.26	153	152	Peak
415.5	17.97	29.91	46	-28.03	17.85	2.41	32.2	179	52	Peak
642.3	22.96	30.03	46	-23.04	22.1	2.99	32.16	122	211	Peak
757.8	24.99	30.6	46	-21.01	23.3	3.22	32.13	132	331	Peak

Remarks:

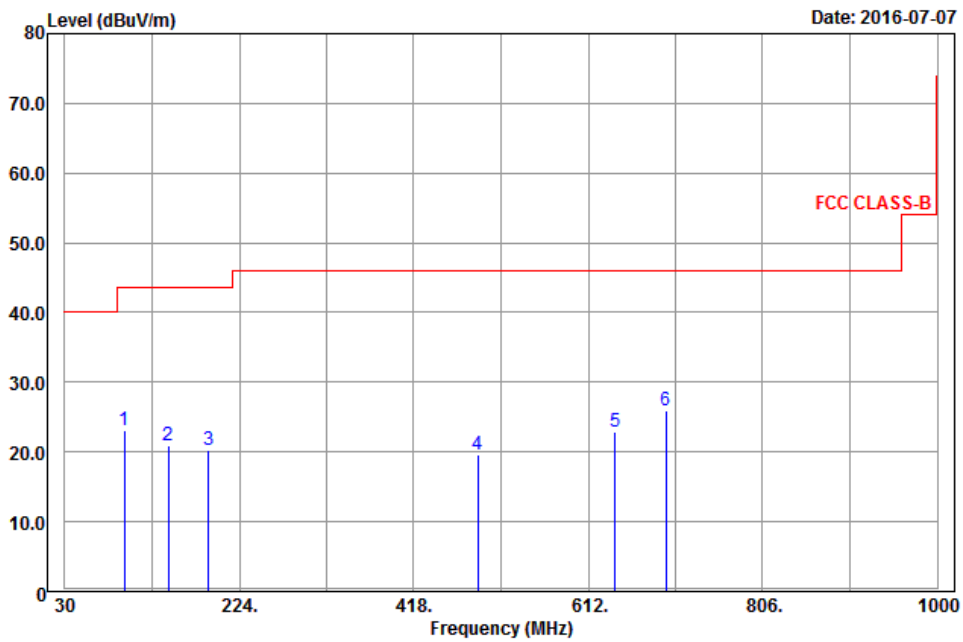
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value

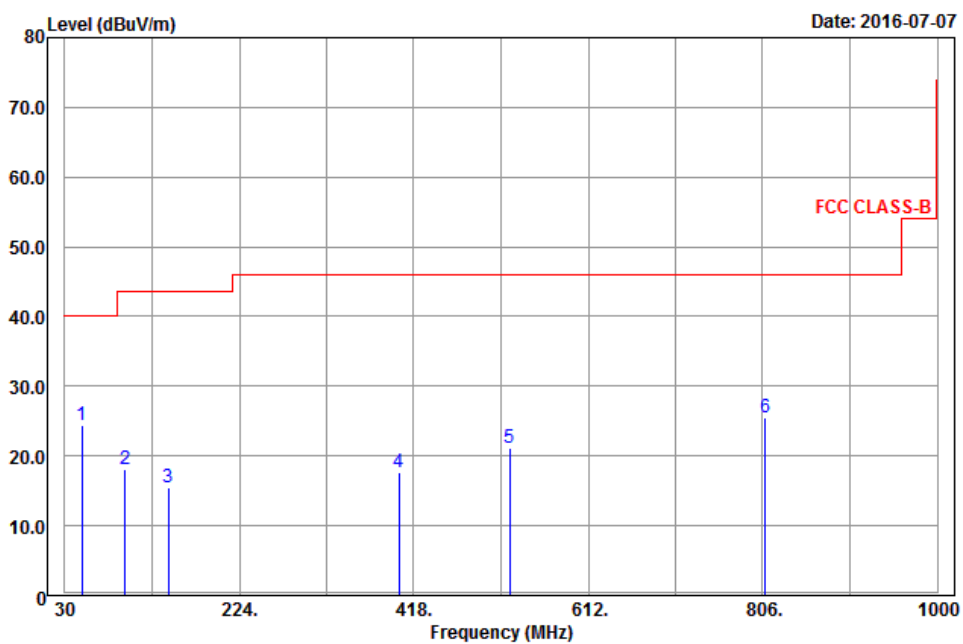
802.11n (HT20)

EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Horizontal



Vertical



**Antenna Polarity & Test Distance: Horizontal at 3 m**

Frequency (MHz)	Emission 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
96.42	23.13	44.47	43.5	-20.37	9.42	1.28	32.04	124	48	Peak
144.75	21.01	42.17	43.5	-22.49	9.73	1.38	32.27	197	137	Peak
189.84	20.31	40.55	43.5	-23.19	10.4	1.61	32.25	184	308	Peak
489	19.68	30.2	46	-26.32	18.96	2.63	32.11	188	177	Peak
641.6	22.87	29.94	46	-23.13	22.1	2.99	32.16	122	299	Peak
698.3	25.98	31.86	46	-20.02	23.1	3.11	32.09	109	190	Peak

**Antenna Polarity & Test Distance: Vertical at 3 m**

Frequency (MHz)	Emission 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
49.17	24.34	47.6	40	-15.66	8.06	0.9	32.22	149	71	Peak
96.96	18.04	39.4	43.5	-25.46	9.46	1.28	32.1	164	336	Peak
145.02	15.58	36.74	43.5	-27.92	9.73	1.38	32.27	155	25	Peak
401.5	17.6	29.42	46	-28.4	18.06	2.34	32.22	140	15	Peak
524.7	21.22	29.97	46	-24.78	20.7	2.7	32.15	108	6	Peak
808.9	25.57	30.1	46	-20.43	24.16	3.32	32.01	124	241	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)	ESH3-Z5	835239/001	Feb. 26, 2016	Feb. 25, 2017
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 24, 2015	Jul. 23, 2016
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

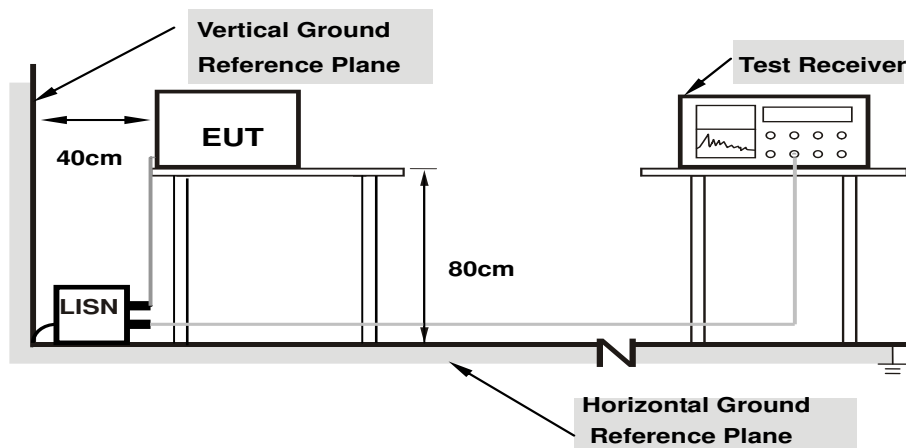
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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



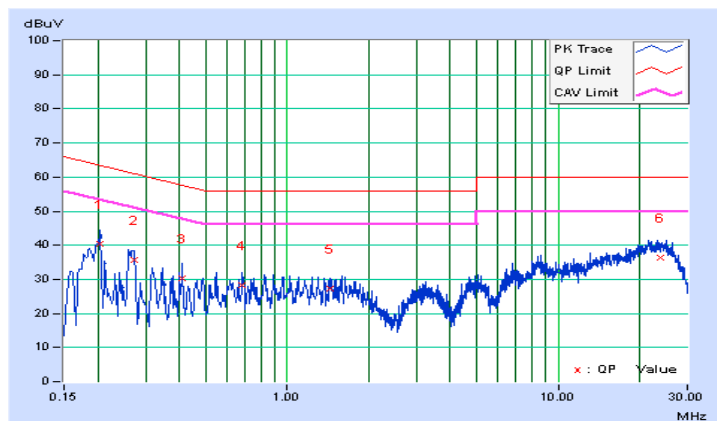
#### 4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2016/7/8

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.
<b>1</b>	<b>0.20458</b>	<b>10.03</b>	<b>30.53</b>	<b>18.67</b>	<b>40.56</b>	<b>28.70</b>	<b>63.42</b>	<b>53.42</b>	<b>-22.86</b>	<b>-24.72</b>
2	0.27120	10.06	25.74	11.67	35.80	21.73	61.08	51.08	-25.28	-29.35
3	0.40806	10.12	20.19	8.93	30.31	19.05	57.69	47.69	-27.38	-28.64
4	0.68176	10.16	18.14	10.84	28.30	21.00	56.00	46.00	-27.70	-25.00
5	1.43248	10.23	16.97	10.13	27.20	20.36	56.00	46.00	-28.80	-25.64
6	23.74685	11.59	24.78	14.62	36.37	26.21	60.00	50.00	-23.63	-23.79

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

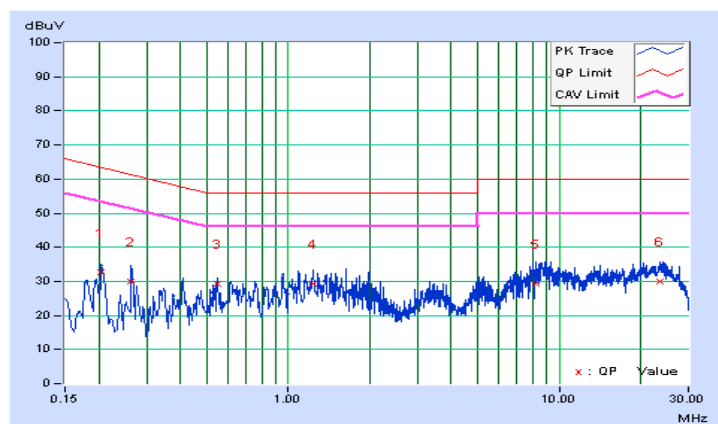


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2016/7/8

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	0.20474	10.04	22.53	12.41	32.57	22.45	63.42	53.42	-30.85	-30.97
2	0.26346	10.07	19.74	7.05	29.81	17.12	61.32	51.32	-31.51	-34.20
3	0.54518	10.15	19.07	10.54	29.22	20.69	56.00	46.00	-26.78	-25.31
4	1.23307	10.23	19.13	12.32	29.36	22.55	56.00	46.00	-26.64	-23.45
5	8.21633	10.69	18.65	9.94	29.34	20.63	60.00	50.00	-30.66	-29.37
6	23.68429	11.73	18.37	10.50	30.10	22.23	60.00	50.00	-29.90	-27.77

Remarks:

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



### 4.3 Transmit Power Measurement

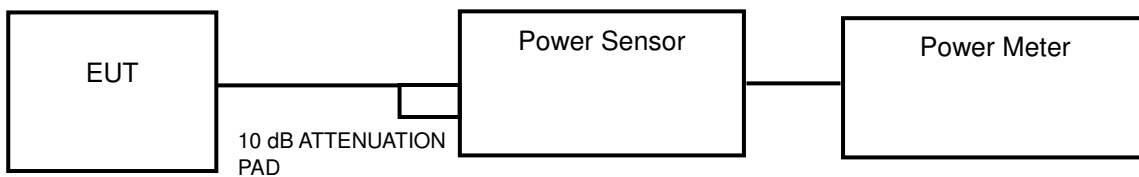
#### 4.3.1 Limits of Transmit Power Measurement

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

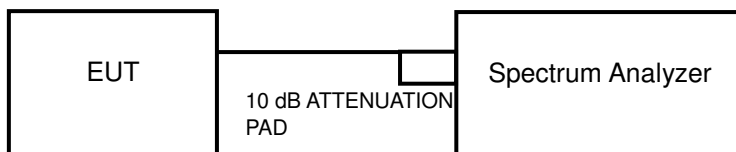
\*B is the 26 dB emission bandwidth in megahertz

#### 4.3.2 Test Setup

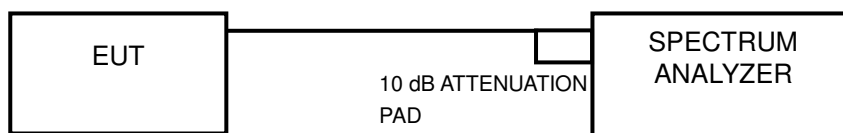
##### <Power Output Measurement>



or



##### <26 dB Bandwidth>



#### 4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

#### 4.3.4 Test Procedure

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

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

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

<802.11ac (VHT80)>

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 from Test Standard

No deviation.

#### 4.3.6 EUT Operating Conditions

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

#### 4.3.7 Test Result

##### Power Output:

##### 802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	21.928	13.41	24	Pass
44	5220	21.727	13.37	24	Pass
48	5240	22.336	13.49	24	Pass
52	5260	23.933	13.79	24	Pass
60	5300	23.55	13.72	24	Pass
64	5320	23.659	13.74	24	Pass
100	5500	21.429	13.31	24	Pass
116	5580	23.659	13.74	24	Pass
140	5700	18.707	12.72	24	Pass
2c-144	5720	14.289	11.55	23.01	Pass
3-144	5720	3.228	5.09	30	Pass
149	5745	21.135	13.25	30	Pass
157	5785	24.774	13.94	30	Pass
165	5825	21.677	13.36	30	Pass

##### Note:

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

- $11 \text{ dBm} + 10\log(21.72) = 24.37 \text{ dBm} > 24 \text{ dBm}$ .
- $11 \text{ dBm} + 10\log(21.82) = 24.39 \text{ dBm} > 24 \text{ dBm}$ .
- $11 \text{ dBm} + 10\log(21.74) = 24.37 \text{ dBm} > 24 \text{ dBm}$ .
- $11 \text{ dBm} + 10\log(21.65) = 24.35 \text{ dBm} > 24 \text{ dBm}$ .
- $11 \text{ dBm} + 10\log(21.78) = 24.38 \text{ dBm} > 24 \text{ dBm}$ .
- $11 \text{ dBm} + 10\log(21.63) = 24.35 \text{ dBm} > 24 \text{ dBm}$ .
- $11 \text{ dBm} + 10\log(15.88) = 23.01 \text{ dBm} < 24 \text{ dBm}$ .

### 802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	22.336	13.49	24	Pass
44	5220	22.803	13.58	24	Pass
48	5240	23.014	13.62	24	Pass
52	5260	22.233	13.47	24	Pass
60	5300	23.067	13.63	24	Pass
64	5320	23.714	13.75	24	Pass
100	5500	20.893	13.20	24	Pass
116	5580	23.388	13.69	24	Pass
140	5700	19.231	12.84	24	Pass
2c-144	5720	14.223	11.53	23.04	Pass
3-144	5720	3.606	5.57	30	Pass
149	5745	21.281	13.28	30	Pass
157	5785	23.55	13.72	30	Pass
165	5825	21.727	13.37	30	Pass

**Note:**

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

1.  $11 \text{ dBm} + 10\log(21.65) = 24.35 \text{ dBm} > 24 \text{ dBm}$ .
2.  $11 \text{ dBm} + 10\log(21.92) = 24.41 \text{ dBm} > 24 \text{ dBm}$ .
3.  $11 \text{ dBm} + 10\log(21.82) = 24.39 \text{ dBm} > 24 \text{ dBm}$ .
4.  $11 \text{ dBm} + 10\log(21.66) = 24.36 \text{ dBm} > 24 \text{ dBm}$ .
5.  $11 \text{ dBm} + 10\log(21.82) = 24.39 \text{ dBm} > 24 \text{ dBm}$ .
6.  $11 \text{ dBm} + 10\log(21.89) = 24.40 \text{ dBm} > 24 \text{ dBm}$ .
7.  $11 \text{ dBm} + 10\log(15.99) = 23.04 \text{ dBm} < 24 \text{ dBm}$ .

### 802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	22.233	13.47	24	Pass
46	5230	22.387	13.50	24	Pass
54	5270	23.067	13.63	24	Pass
62	5310	21.928	13.41	24	Pass
102	5510	19.454	12.89	24	Pass
110	5550	21.777	13.38	24	Pass
134	5670	22.542	13.53	24	Pass
2c-142	5710	9.594	9.82	24	Pass
3-142	5710	0.9727	-0.12	30	Pass
151	5755	21.478	13.32	30	Pass
159	5795	21.33	13.29	30	Pass

**Note:**

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

1.  $11 \text{ dBm} + 10\log(41.51) = 27.18 \text{ dBm} > 24 \text{ dBm}$ .
2.  $11 \text{ dBm} + 10\log(41.33) = 27.16 \text{ dBm} > 24 \text{ dBm}$ .
3.  $11 \text{ dBm} + 10\log(41.47) = 27.18 \text{ dBm} > 24 \text{ dBm}$ .
4.  $11 \text{ dBm} + 10\log(41.49) = 27.18 \text{ dBm} > 24 \text{ dBm}$ .
5.  $11 \text{ dBm} + 10\log(43.08) = 27.34 \text{ dBm} > 24 \text{ dBm}$ .
6.  $11 \text{ dBm} + 10\log(35.68) = 26.52 \text{ dBm} > 24 \text{ dBm}$ .

### 802.11ac (VHT80)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	21.827	13.39	24	Pass
58	5290	22.387	13.50	24	Pass
106	5530	18.281	12.62	24	Pass
122	5610	22.909	13.60	24	Pass
2c-138	5690	23.067	13.63	24	Pass
3-138	5690	23.067	13.63	30	Pass
155	5775	28.51	14.55	30	Pass

**Note:**

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

1.  $11 \text{ dBm} + 10\log(81.82) = 30.13 \text{ dBm} > 24 \text{ dBm}$ .
2.  $11 \text{ dBm} + 10\log(82.18) = 30.15 \text{ dBm} > 24 \text{ dBm}$ .
3.  $11 \text{ dBm} + 10\log(81.78) = 30.13 \text{ dBm} > 24 \text{ dBm}$ .
4.  $11 \text{ dBm} + 10\log(75.78) = 29.80 \text{ dBm} > 24 \text{ dBm}$ .

**26 dB Bandwidth:**

**802.11a**

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	21.55
44	5220	21.67
48	5240	21.71
52	5260	21.72
60	5300	21.82
64	5320	21.74
100	5500	21.65
116	5580	21.78
140	5700	21.63
2c-144	5720	15.88

**802.11n (HT20)**

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	21.82
44	5220	21.77
48	5240	21.81
52	5260	21.65
60	5300	21.92
64	5320	21.82
100	5500	21.66
116	5580	21.82
140	5700	21.89
2c-144	5720	15.99



### 802.11n (HT40)

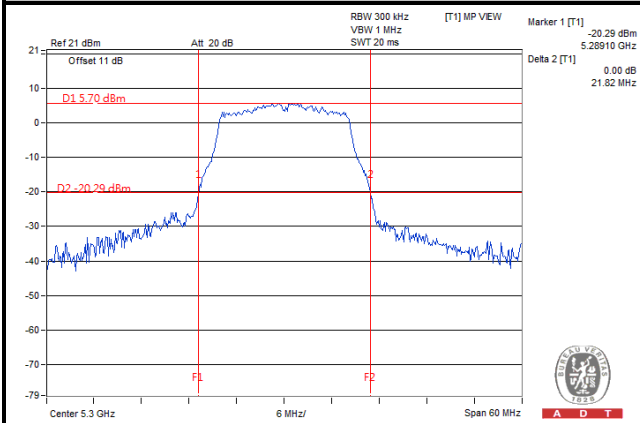
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
38	5190	41.41
46	5230	41.46
54	5270	41.51
62	5310	41.33
102	5510	41.47
110	5550	41.49
134	5670	43.08
2c-142	5710	35.68

### 802.11ac (VHT80)

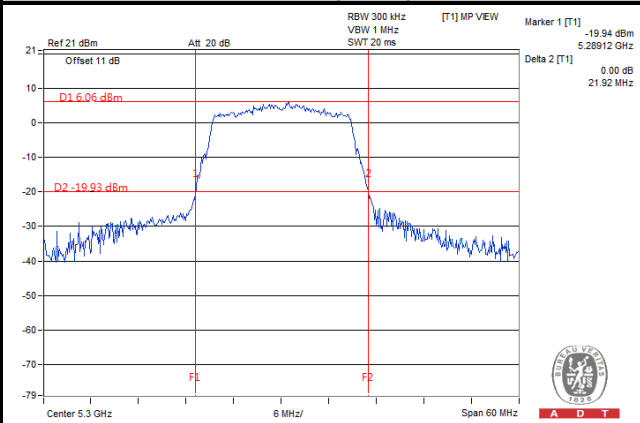
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
42	5210	81.73
58	5290	81.82
106	5530	82.18
122	5610	81.78
2c-138	5690	75.78

### Spectrum Plot of Worst Value

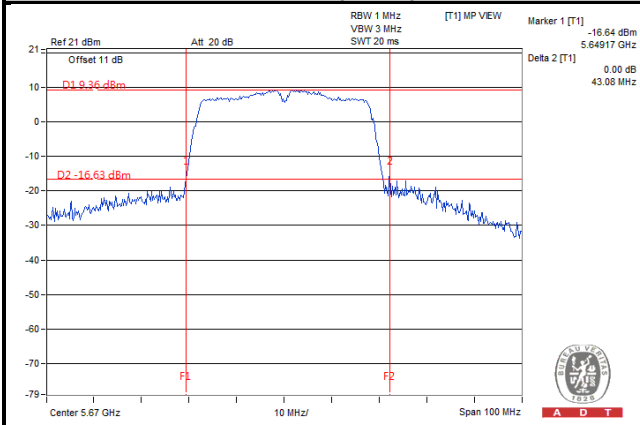
#### 802.11a



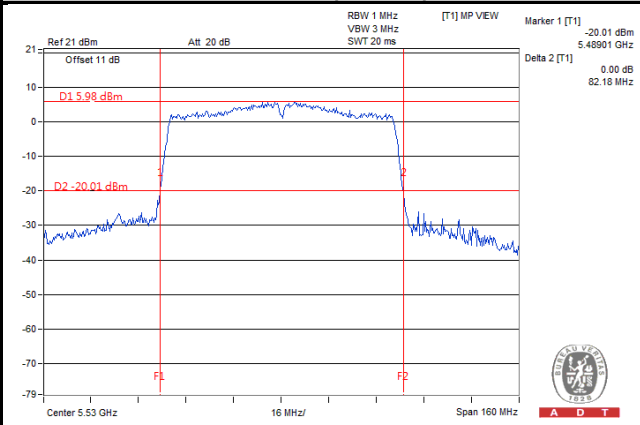
#### 802.11n (HT20)



#### 802.11n (HT40)



#### 802.11ac (VHT80)

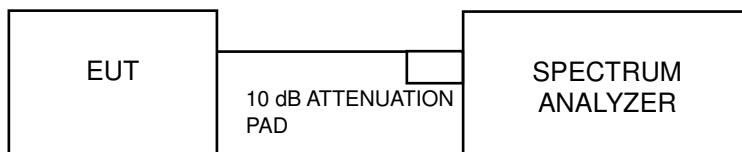


#### 4.4 Peak Power Spectral Density Measurement

##### 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  $\geq$  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  $\geq$  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  $10 \log(1/\text{duty cycle})$

※For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 500 kHz, Set VBW  $\geq$  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  $\geq$  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  $10 \log (1/\text{duty cycle})$

#### 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	2.65	11	Pass
44	5220	2.53	11	Pass
48	5240	2.78	11	Pass
52	5260	3.03	11	Pass
60	5300	3.27	11	Pass
64	5320	3.33	11	Pass
100	5500	4.19	11	Pass
116	5580	4.07	11	Pass
140	5700	2.46	11	Pass
2c-144	5720	1.07	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	2.43	11	Pass
44	5220	2.43	11	Pass
48	5240	2.73	11	Pass
52	5260	2.60	11	Pass
60	5300	2.85	11	Pass
64	5320	3.26	11	Pass
100	5500	3.79	11	Pass
116	5580	3.73	11	Pass
140	5700	2.36	11	Pass
2c-144	5720	0.89	11	Pass

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

### 802.11n (HT40)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
38	5190	-0.61	0.11	-0.50	11	Pass
46	5230	-0.32	0.11	-0.21	11	Pass
54	5270	0.00	0.11	0.11	11	Pass
62	5310	0.28	0.11	0.39	11	Pass
102	5510	0.28	0.11	0.39	11	Pass
110	5550	1.23	0.11	1.34	11	Pass
134	5670	0.59	0.11	0.70	11	Pass
2c-142	5710	-1.84	0.11	-1.73	11	Pass

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

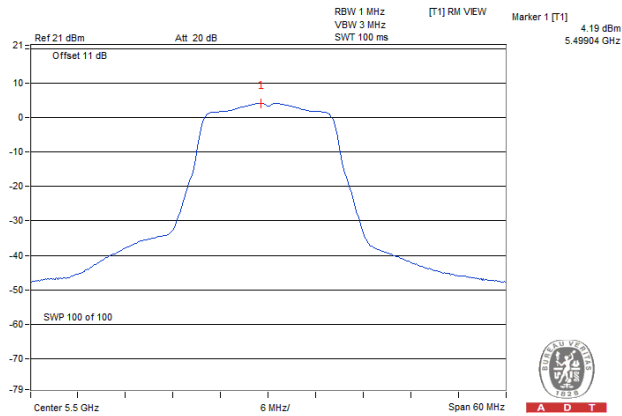
### 802.11ac (VHT80)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
42	5210	-4.42	0.86	-3.56	11	Pass
58	5290	-4.26	0.86	-3.40	11	Pass
106	5530	-4.19	0.86	-3.33	11	Pass
122	5610	-3.90	0.86	-3.04	11	Pass
2c-138	5690	-4.26	0.86	-3.40	11	Pass

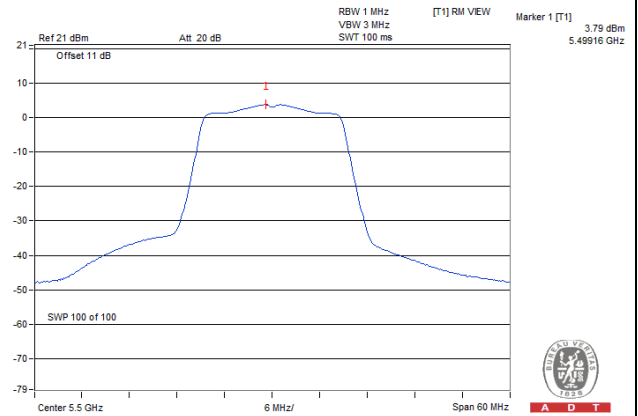
**Note:** Refer to section 3.3 for duty cycle spectrum plot.

### Spectrum Plot of Worst Value

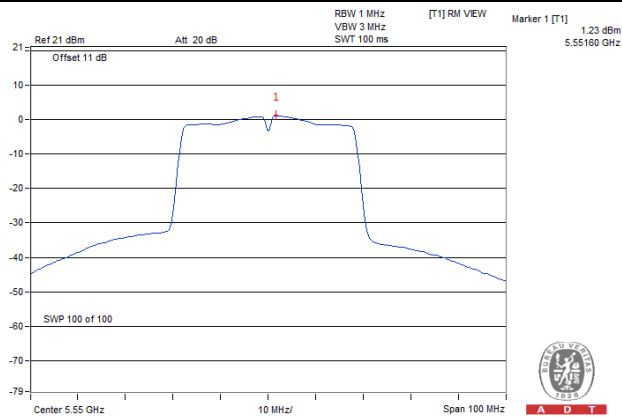
#### 802.11a



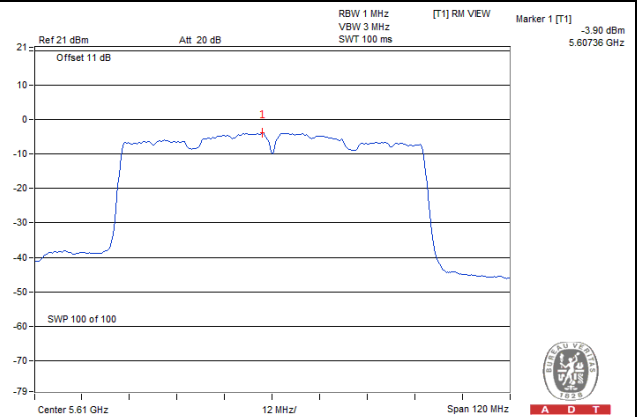
#### 802.11n (HT20)



#### 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	-3.01	30	Pass
149	5745	-0.23	30	Pass
157	5785	0.07	30	Pass
165	5825	0.18	30	Pass

#### 802.11n (HT20)

Channel	Freq. (MHz)	PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
3-144	5720	-3.17	30	Pass
149	5745	-0.36	30	Pass
157	5785	-0.29	30	Pass
165	5825	0.08	30	Pass

#### 802.11n (HT40)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
3-142	5710	-6.35	0.11	-6.24	30	Pass
151	5755	-3.28	0.11	-3.17	30	Pass
159	5795	-3.15	0.11	-3.04	30	Pass

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

#### 802.11ac (VHT80)

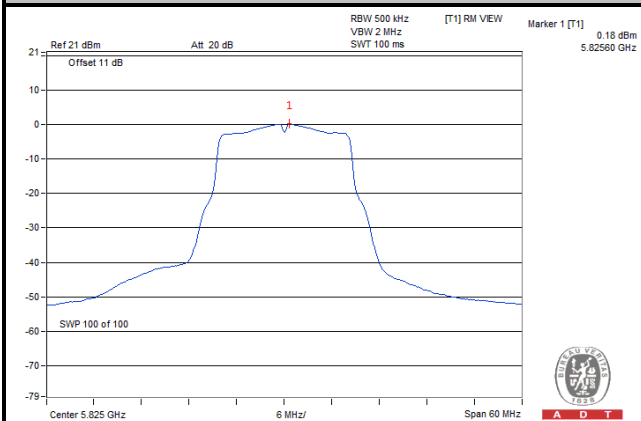
Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
3-138	5690	-10.94	0.86	-10.08	30	Pass
155	5775	-6.49	0.86	-5.63	30	Pass

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

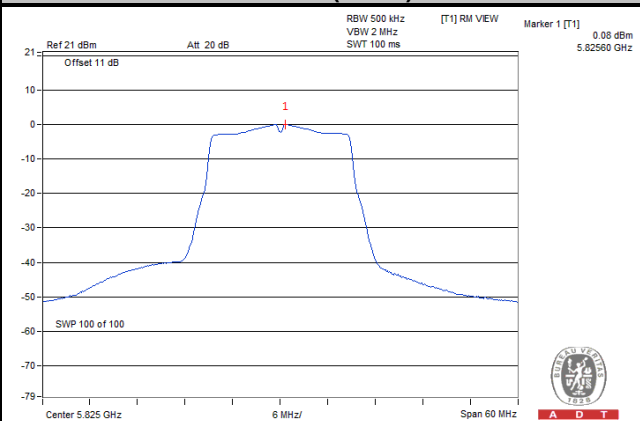


### Spectrum Plot of Worst Value

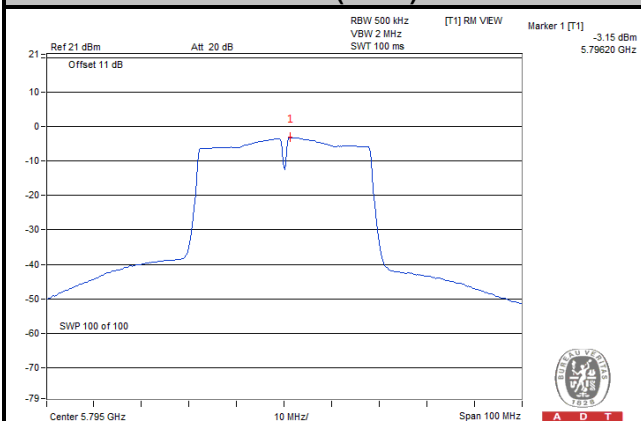
#### 802.11a



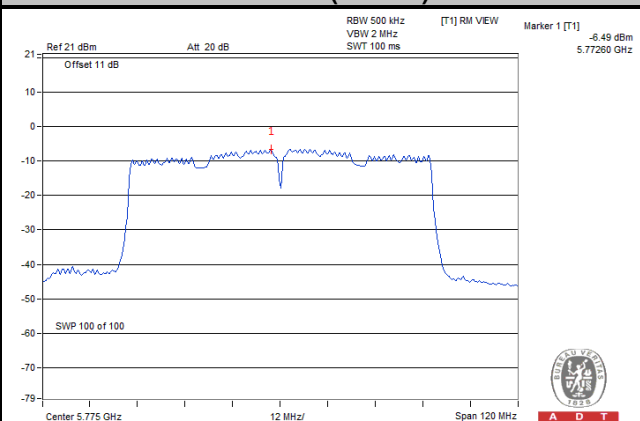
#### 802.11n (HT20)



#### 802.11n (HT40)



#### 802.11ac (VHT80)

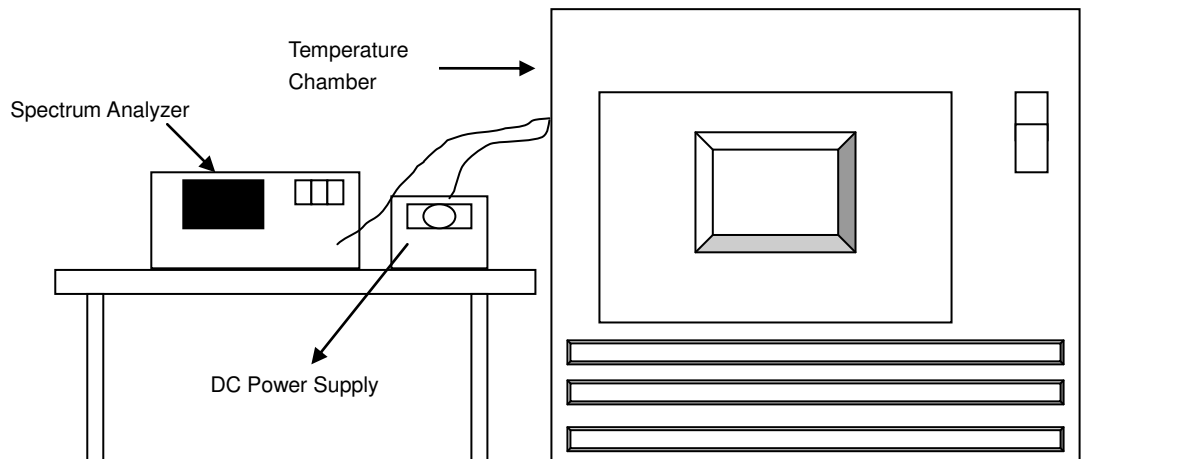


## 4.5 Frequency Stability

### 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

- 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.
- 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.
- 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. (°C)	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	5320.016085	3.023	5320.015759	2.962	5320.016183	3.042	5320.015763	2.963
50	3.8	5320.016874	3.172	5320.016734	3.145	5320.016592	3.119	5320.016628	3.126
40	3.8	5320.016320	3.068	5320.016229	3.051	5320.016418	3.086	5320.016530	3.107
30	3.8	5320.017477	3.285	5320.017594	3.307	5320.018063	3.395	5320.017825	3.351
20	3.8	5320.018719	3.519	5320.018620	3.500	5320.018855	3.544	5320.018589	3.494
10	3.8	5320.020342	3.824	5320.020251	3.807	5320.019874	3.736	5320.020122	3.782
0	3.8	5320.018693	3.514	5320.018528	3.483	5320.018733	3.521	5320.018533	3.484
-10	3.8	5320.017403	3.271	5320.016889	3.175	5320.016687	3.137	5320.017566	3.302
-20	3.8	5320.016462	3.094	5320.016968	3.189	5320.016677	3.135	5320.016369	3.077
-30	3.8	5320.015787	2.967	5320.015849	2.979	5320.015562	2.925	5320.015607	2.934

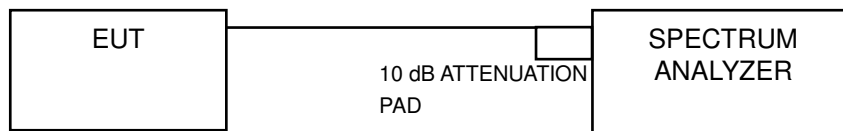
Frequency Stability Versus Temp.									
Operating Frequency: 5320 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.6	5320.018467	3.471	5320.018561	3.489	5320.018322	3.444	5320.018185	3.418
	3.8	5320.018719	3.519	5320.018620	3.500	5320.018855	3.544	5320.018589	3.494
	4.2	5320.019861	3.733	5320.019702	3.703	5320.019947	3.749	5320.020172	3.792

## 4.6 6 dB Bandwidth Measurement

### 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

- Set resolution bandwidth (RBW) = 100 kHz
- Set the video bandwidth (VBW)  $\geq 3 \times$  RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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	3.21	0.5	Pass
149	5745	16.37	0.5	Pass
157	5785	16.38	0.5	Pass
165	5825	16.38	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	17.35	0.5	Pass
165	5825	17.38	0.5	Pass

## 802.11n (HT40)

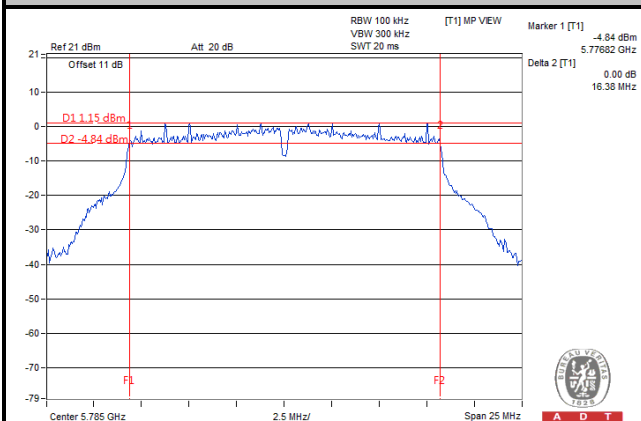
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3-142	5710	2.87	0.5	Pass
151	5755	35.94	0.5	Pass
159	5795	36.07	0.5	Pass

## 802.11ac (VHT80)

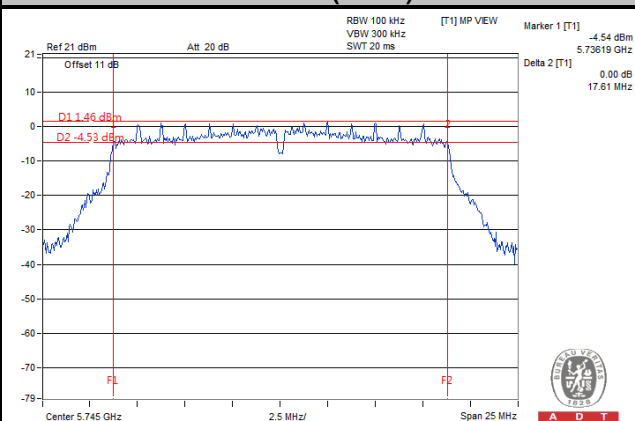
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3-138	5690	2.78	0.5	Pass
155	5775	75.96	0.5	Pass

### Spectrum Plot of Worst Value

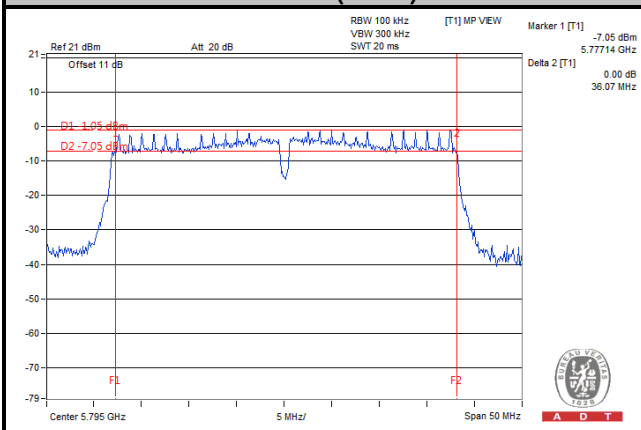
#### 802.11a



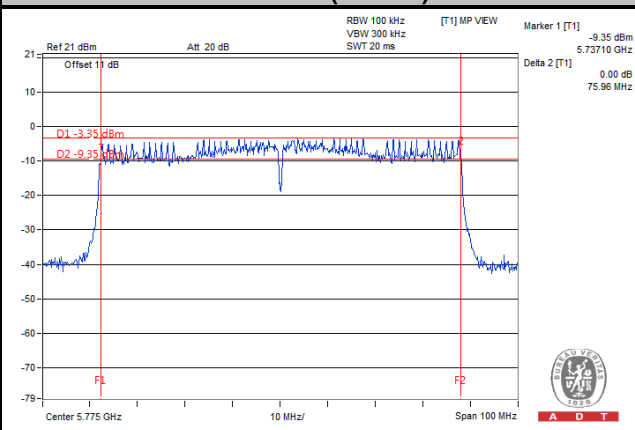
#### 802.11n (HT20)



#### 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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**Email:** [service.adt@tw.bureauveritas.com](mailto:service.adt@tw.bureauveritas.com)

**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

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

--- END ---