

Partial FCC Test Report

Report No.: RF190807C14-6

FCC ID: I4L-BM25SD

Test Model: MS-5776-A-H

Received Date: Aug. 07, 2019

Test Date: Sep. 03 ~ Sep. 05, 2019

Issued Date: Sep. 12, 2019

Applicant: Micro Star International Co., Ltd.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Test Location (2): B2F., No.215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231,
Taiwan

FCC Registration / 788550 / TW0003

Designation Number: 427177 / TW0011



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Release Control Record

Issue No.	Description	Date Issued
RF190807C14-6	Original Release	Sep. 12, 2019

1 Certificate of Conformity

Product: Edge Computing Gateway

Brand: Conexio

Test Model: MS-5776-A-H

Sample Status: Mass Product

Applicant: Micro Star International Co., Ltd.

Test Date: Sep. 03 ~ Sep. 05, 2019

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

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

Prepared by : Lena Wang , Date: Sep. 12, 2019
Lena Wang / Specialist

Approved by : Dylan Chiou , Date: Sep. 12, 2019
Dylan Chiou / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	N/A	Without AC power of the EUT
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -4.89 dB at 5145.5 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	N/A	Refer to Note
---	Occupied Bandwidth Measurement	-	Reference only
15.407(a)(1/2/3)	Peak Power Spectral Density	N/A	Refer to Note
15.407(e)	6 dB Bandwidth	N/A	Refer to Note
15.407(g)	Frequency Stability	N/A	Refer to Note
15.203	Antenna Requirement	N/A	Refer to Note

Note:

1. This report is a partial report. Therefore, only test item of Radiated Spurious Emissions tests were performed for this report. Other testing data please refer to BV CPS report no.: RF180518C15-4 for module (Brand: MSI, Model: BM25)
2. For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.
3. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

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

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Edge Computing Gateway
Brand	Conexio
Test Model	MS-5776-A-H
Status of EUT	Mass Product
Power Supply Rating	12.0 Vdc (DC Power Supply)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to 150.0 Mbps 802.11ac: up to 433.3 Mbps
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5700 MHz, 5745 ~ 5825 MHz
Number of Channel	5180 ~ 5240 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5500 ~ 5700 MHz: 11 for 802.11a, 802.11n (HT20) 5 for 802.11n (HT40) 2 for 802.11ac (VHT80) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80)
Antenna Type	Couple antenna with -0.45 dBi gain
Antenna Connector	SMA
Accessory Device	Refer to Note as below
Data Cable Supplied	N/A

Note:

1. The EUT incorporates a SISO function. Physically, 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 (VHT20)	1TX
802.11ac (VHT40)	1TX
802.11ac (VHT80)	1TX

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

2. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

For 5180 ~ 5240 MHz

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
42	5210

For 5260 ~ 5320 MHz

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
58	5290

For 5500 ~ 5700 MHz

11 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		

5 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
102	5510	126	5630
110	5550	134	5670
118	5590		

2 channels are provided for 802.11ac (VHT80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
106	5530	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	
-	√	√	-

Where **RE $\geq$ 1G**: Radiated Emission above 1 GHz **RE<1G**: Radiated Emission below 1 GHz

Note:

1. "-" means no effect..

Radiated Emission Test (Above 1 GHz):

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	13.5
-		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-		802.11n (HT20)	52 to 64	52, 60, 64	OFDM	BPSK	6.5
-		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	13.5
-		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5700	802.11a	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 140	100, 116, 140	OFDM	BPSK	6.5
-		802.11n (HT40)	102 to 134	102, 110, 134	OFDM	BPSK	13.5
-		802.11ac (VHT80)	106 to 122	106, 122	OFDM	BPSK	29.3
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
-		802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5
-		802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Radiated Emission Test (Below 1 GHz):

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11ac (VHT80)	42	42	OFDM	BPSK	29.3

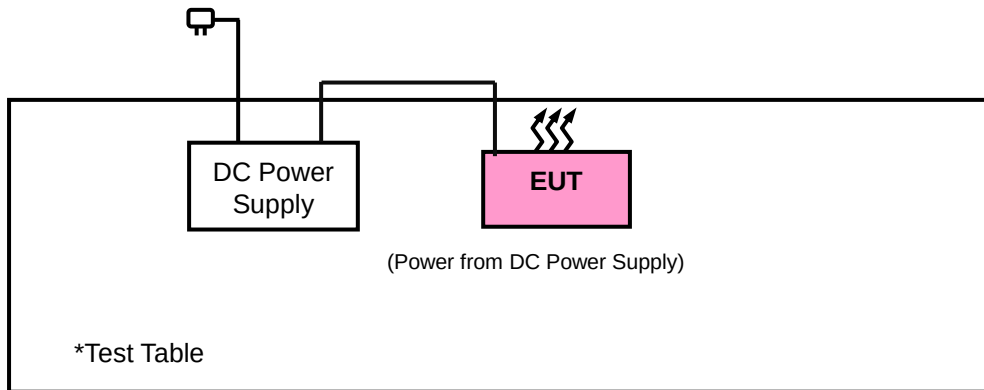
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Karl Lee, Charles Hsiao, Harry Hsueh
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Karl Lee

3.3 Description of Support Units

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

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

Note:

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

4.1.2 Limits of Unwanted Emission Out of the Restricted Bands

Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v02r01		Field Strength at 3 m	
		PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	☒ 15.407(b)(4)(i)	PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4}	PK: 68.2 (dBμV/m) ^{*1} PK:105.2 (dBμV/m) ^{*2} PK: 110.8 (dBμV/m) ^{*3} PK:122.2 (dBμV/m) ^{*4}
	☐ 15.407(b)(4)(ii)	Emission limits in section 15.247(d)	

^{*1} beyond 75 MHz or more above of the band edge.
^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.
^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.
^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note:

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

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

4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY52260177	Aug. 26, 2019	Aug. 25, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSW26	102023	Oct. 11, 2018	Oct. 10, 2019
HORN Antenna ETS-Lindgren	3117	00143293	Nov. 25, 2018	Nov. 24, 2019
BILOG Antenna SCHWARZBECK	VULB 9168	9168-616	Nov. 27, 2018	Nov. 26, 2019
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Nov. 25, 2018	Nov. 24, 2019
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020
Preamplifier Agilent	310N	187226	Jun. 19, 2018	Jun. 18, 2019
Preamplifier Agilent	310N	187226	Jun. 18, 2019	Jun. 17, 2020
Preamplifier EMCI	83017A	MY39501357	Jun. 18, 2019	Jun. 17, 2020
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-400)	Jun. 18, 2019	Jun. 17, 2020
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(RFC-SMS-100-SMS-24)	Jun. 18, 2019	Jun. 17, 2020
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 8.130425b	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
DC Power Supply Topward	33010D	807748	NA	NA

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

4.1.4 Test Procedures

For Radiated Emission below 30 MHz

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

Note:

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

For Radiated Emission above 30 MHz

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

Note:

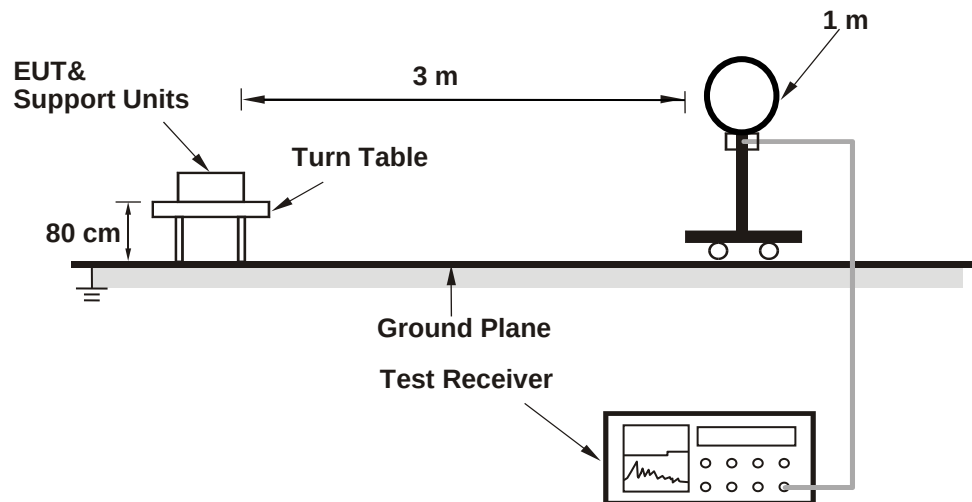
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK)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

4.1.5 Deviation from Test Standard

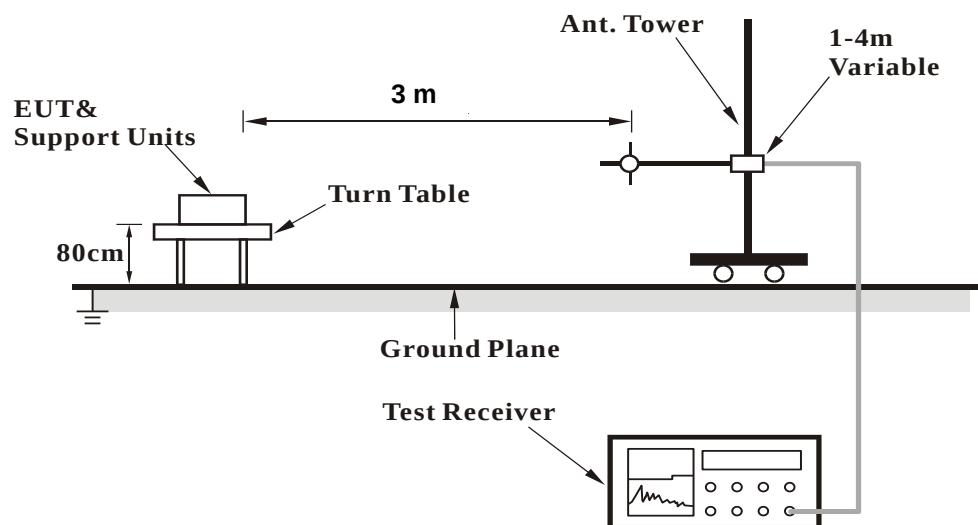
No deviation.

4.1.6 Test Setup

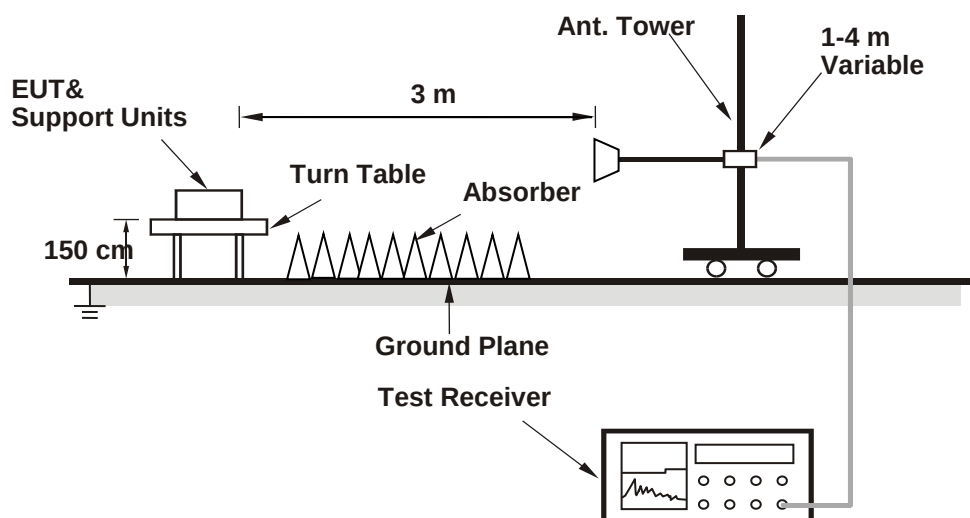
<Radiated Emission below 30 MHz>



<Radiated Emission 30 MHz to 1 GHz>



<Radiated Emission above 1 GHz>



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

4.1.7 EUT Operating Conditions

- Placed the EUT on a testing table.
- 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	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.55	43.23	33.18	10.05	54	-10.77	160	175	Average
5149.55	54.57	44.52	10.05	74	-19.43	160	175	Peak
5180	92.88	82.76	10.12			160	175	Average
5180	100.04	89.92	10.12			160	175	Peak
*10360	56.48	40.46	16.02	68.2	-11.72	177	182	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.55	43.94	33.89	10.05	54	-10.06	100	11	Average
5149.55	57.36	47.31	10.05	74	-16.64	100	11	Peak
5180	92.32	82.2	10.12			100	11	Average
5180	98.68	88.56	10.12			100	11	Peak
*10360	55.89	39.87	16.02	68.2	-12.31	112	176	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.4	44.15	34.1	10.05	54	-9.85	160	179	Average
5149.4	54.16	44.11	10.05	74	-19.84	160	179	Peak
5200	96.87	86.71	10.16			160	179	Average
5200	105.26	95.1	10.16			160	179	Peak
5445.59	42.21	31.72	10.49	54	-11.79	160	179	Average
5445.59	52.95	42.46	10.49	74	-21.05	160	179	Peak
*10400	56.79	40.61	16.18	68.2	-11.41	162	226	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	45.43	35.38	10.05	54	-8.57	100	11	Average
5150	55.41	45.36	10.05	74	-18.59	100	11	Peak
5200	95.81	85.65	10.16			100	11	Average
5200	103.59	93.43	10.16			100	11	Peak
5358.47	42.19	31.94	10.25	54	-11.81	100	11	Average
5358.47	52.7	42.45	10.25	74	-21.3	100	11	Peak
*10400	56.21	40.03	16.18	68.2	-11.99	114	175	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5240	98.18	88.04	10.14			160	179	Average
5240	105.69	95.55	10.14			160	179	Peak
5377.61	42.44	32.1	10.34	54	-11.56	160	179	Average
5377.61	53.39	43.05	10.34	74	-20.61	160	179	Peak
*10480	55.45	39.55	15.9	68.2	-12.75	119	25	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5240	96.63	86.49	10.14			100	11	Average
5240	103.96	93.82	10.14			100	11	Peak
5390.26	42.33	31.99	10.34	54	-11.67	100	11	Average
5390.26	52.9	42.56	10.34	74	-21.1	100	11	Peak
*10480	55.36	39.46	15.9	68.2	-12.84	119	357	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5114	42.4	32.44	9.96	54	-11.6	100	45	Average
5114	52.59	42.63	9.96	74	-21.41	100	45	Peak
5260	96.33	86.21	10.12			100	45	Average
5260	104.5	94.38	10.12			100	45	Peak
*10520	56.31	40.43	15.88	68.2	-11.89	164	141	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5126.6	42.27	32.27	10	54	-11.73	113	113	Average
5126.6	53.79	43.79	10	74	-20.21	113	113	Peak
5260	95.43	85.31	10.12			113	113	Average
5260	103.18	93.06	10.12			113	113	Peak
*10520	56.7	40.82	15.88	68.2	-11.5	169	235	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.55	42.47	32.42	10.05	54	-11.53	100	45	Average
5149.55	53.4	43.35	10.05	74	-20.6	100	45	Peak
5300	96.42	86.36	10.06			100	45	Average
5300	104.62	94.56	10.06			100	45	Peak
5350.11	44.57	34.34	10.23	54	-9.43	100	45	Average
5350.11	55.01	44.78	10.23	74	-18.99	100	45	Peak
10600	46.73	30.97	15.76	54	-7.27	139	157	Average
10600	56.36	40.6	15.76	74	-17.64	139	157	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5091.2	42.35	32.42	9.93	54	-11.65	113	113	Average
5091.2	52.96	43.03	9.93	74	-21.04	113	113	Peak
5300	96.15	86.09	10.06			113	113	Average
5300	103.57	93.51	10.06			113	113	Peak
5350	43.4	33.17	10.23	54	-10.6	113	113	Average
5350	54.11	43.88	10.23	74	-19.89	113	113	Peak
10600	46.85	31.09	15.76	54	-7.15	196	304	Average
10600	56.51	40.75	15.76	74	-17.49	196	304	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	96.57	86.48	10.09			100	45	Average
5320	102.55	92.46	10.09			100	45	Peak
5350.44	46.92	36.69	10.23	54	-7.08	100	45	Average
5350.44	62.01	51.78	10.23	74	-11.99	100	45	Peak
10640	46.85	30.86	15.99	54	-7.15	186	204	Average
10640	56.36	40.37	15.99	74	-17.64	186	204	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	94.03	83.94	10.09			113	113	Average
5320	101.25	91.16	10.09			113	113	Peak
5350	45.67	35.44	10.23	54	-8.33	113	113	Average
5350	59.17	48.94	10.23	74	-14.83	113	113	Peak
10640	47.04	31.05	15.99	54	-6.96	133	84	Average
10640	56.56	40.57	15.99	74	-17.44	133	84	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5458.48	43.89	33.38	10.51	54	-10.11	100	50	Average
5458.48	55.65	45.14	10.51	74	-18.35	100	50	Peak
*5469.84	61.94	51.41	10.53	68.2	-6.26	100	50	Peak
5500	94.49	83.89	10.6			100	50	Average
5500	101.17	90.57	10.6			100	50	Peak
11000	47.42	31.29	16.13	54	-6.58	176	286	Average
11000	57.04	40.91	16.13	74	-16.96	176	286	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5458.64	43.1	32.59	10.51	54	-10.9	100	108	Average
5458.64	53.31	42.8	10.51	74	-20.69	100	108	Peak
*5469.36	59.51	48.98	10.53	68.2	-8.69	100	108	Peak
5500	93.57	82.97	10.6			100	108	Average
5500	100.6	90	10.6			100	108	Peak
11000	47.6	31.47	16.13	54	-6.4	164	238	Average
11000	57.39	41.26	16.13	74	-16.61	164	238	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5431.44	42.62	32.14	10.48	54	-11.38	100	50	Average
5431.44	52.59	42.11	10.48	74	-21.41	100	50	Peak
*5470	52.69	42.16	10.53	68.2	-15.51	100	50	Peak
5580	97.44	86.73	10.71			100	50	Average
5580	104.98	94.27	10.71			100	50	Peak
*5725	53.17	42.25	10.92	68.2	-15.03	100	50	Peak
11160	47.52	31.16	16.36	54	-6.48	134	156	Average
11160	58.48	42.12	16.36	74	-15.52	134	156	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5436.72	42.4	31.92	10.48	54	-11.6	100	108	Average
5436.72	53.29	42.81	10.48	74	-20.71	100	108	Peak
*5469.04	51.78	41.25	10.53	68.2	-16.42	100	108	Peak
5580	96.65	85.94	10.71			100	108	Average
5580	103.8	93.09	10.71			100	108	Peak
*5725	53.59	42.67	10.92	68.2	-14.61	100	108	Peak
11160	47.63	31.27	16.36	54	-6.37	182	266	Average
11160	57.62	41.26	16.36	74	-16.38	182	266	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5700	93.79	82.84	10.95			100	50	Average
5700	100.93	89.98	10.95			100	50	Peak
*5725.08	57.32	46.4	10.92	68.2	-10.88	100	50	Peak
11400	47.6	31.41	16.19	54	-6.4	138	15	Average
11400	56.88	40.69	16.19	74	-17.12	138	15	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5700	92.49	81.54	10.95			100	108	Average
5700	99.68	88.73	10.95			100	108	Peak
*5725.72	53.19	42.27	10.92	68.2	-15.01	100	108	Peak
11400	47.65	31.46	16.19	54	-6.35	159	199	Average
11400	56.27	40.08	16.19	74	-17.73	159	199	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	94.9	84.02	10.88			100	50	Average
5745	101.81	90.93	10.88			100	50	Peak
11490	47.56	31.09	16.47	54	-6.44	112	6	Average
11490	57.18	40.71	16.47	74	-16.82	112	6	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	92.9	82.02	10.88			100	108	Average
5745	100.32	89.44	10.88			100	108	Peak
11490	47.88	31.41	16.47	54	-6.12	183	75	Average
11490	57.51	41.04	16.47	74	-16.49	183	75	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5580.325	53.93	43.22	10.71	68.2	-14.27	100	50	Peak
5652.25	53.51	42.64	10.87	69.86	-16.35	100	50	Peak
5917.9	53.06	41.97	11.09	73.45	-20.39	100	50	Peak
*5961.475	53.52	42.29	11.23	68.2	-14.68	100	50	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5586.625	53.1	42.37	10.73	68.2	-15.1	100	108	Peak
5654.35	50.94	40.07	10.87	71.42	-20.48	100	108	Peak
5923.15	52.13	41.02	11.11	69.57	-17.44	100	108	Peak
*5991.4	53.42	42.09	11.33	68.2	-14.78	100	108	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	95.04	84.23	10.81			100	50	Average
5785	103.31	92.5	10.81			100	50	Peak
11570	47.34	30.85	16.49	54	-6.66	143	57	Average
11570	56.94	40.45	16.49	74	-17.06	143	57	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	92.93	82.12	10.81			100	108	Average
5785	100.28	89.47	10.81			100	108	Peak
11570	46.89	30.4	16.49	54	-7.11	146	207	Average
11570	56.61	40.12	16.49	74	-17.39	146	207	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5568.775	53.22	42.52	10.7	68.2	-14.98	100	50	Peak
5653.3	51.36	40.49	10.87	70.64	-19.28	100	50	Peak
5922.1	50	38.89	11.11	70.35	-20.35	100	50	Peak
*5962.525	53.41	42.18	11.23	68.2	-14.79	100	50	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5559.85	52.56	41.88	10.68	68.2	-15.64	100	108	Peak
5655.4	51.12	40.25	10.87	72.2	-21.08	100	108	Peak
5923.15	51.14	40.03	11.11	69.57	-18.43	100	108	Peak
*5928.4	53.78	42.67	11.11	68.2	-14.42	100	108	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	94.44	83.56	10.88			100	50	Average
5825	101.99	91.11	10.88			100	50	Peak
11650	47.28	30.5	16.78	54	-6.72	130	211	Average
11650	56.86	40.08	16.78	74	-17.14	130	211	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	92.99	82.11	10.88			100	108	Average
5825	100.19	89.31	10.88			100	108	Peak
11650	47.62	30.84	16.78	54	-6.38	158	226	Average
11650	57.22	40.44	16.78	74	-16.78	158	226	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5501.575	53.82	43.24	10.58	68.2	-14.38	100	50	Peak
5653.3	51.92	41.05	10.87	70.64	-18.72	100	50	Peak
5923.675	50.14	39.03	11.11	69.18	-19.04	100	50	Peak
*5983.525	53.7	42.44	11.26	68.2	-14.5	100	50	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5628.1	53.21	42.4	10.81	68.2	-14.99	100	108	Peak
5651.725	52.48	41.61	10.87	69.48	-17	100	108	Peak
5923.15	50.41	39.3	11.11	69.57	-19.16	100	108	Peak
*5940.475	53.68	42.5	11.18	68.2	-14.52	100	108	Peak

Remarks:

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

802.11n (HT20)

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.85	44.88	34.83	10.05	54	-9.12	160	175	Average
5149.85	57.52	47.47	10.05	74	-16.48	160	175	Peak
5180	93.39	83.27	10.12			160	175	Average
5180	100.57	90.45	10.12			160	175	Peak
*10360	56.73	40.71	16.02	68.2	-11.47	185	199	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.85	45.78	35.73	10.05	54	-8.22	100	11	Average
5149.85	58.01	47.96	10.05	74	-15.99	100	11	Peak
5180	92.33	82.21	10.12			100	11	Average
5180	99.38	89.26	10.12			100	11	Peak
*10360	55.71	39.69	16.02	68.2	-12.49	164	344	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.7	43.52	33.47	10.05	54	-10.48	160	175	Average
5149.7	53.85	43.8	10.05	74	-20.15	160	175	Peak
5200	96.45	86.29	10.16			160	175	Average
5200	103.82	93.66	10.16			160	175	Peak
5438.44	42.17	31.69	10.48	54	-11.83	160	175	Average
5438.44	53.89	43.41	10.48	74	-20.11	160	175	Peak
*10400	55.69	39.51	16.18	68.2	-12.51	104	165	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.7	44.09	34.04	10.05	54	-9.91	100	11	Average
5149.7	54.81	44.76	10.05	74	-19.19	100	11	Peak
5200	95.47	85.31	10.16			100	11	Average
5200	102.57	92.41	10.16			100	11	Peak
5438	42.28	31.8	10.48	54	-11.72	100	11	Average
5438	52.73	42.25	10.48	74	-21.27	100	11	Peak
*10400	55.79	39.61	16.18	68.2	-12.41	185	228	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5240	96.82	86.68	10.14			160	175	Average
5240	103.54	93.4	10.14			160	175	Peak
5381.68	42.23	31.89	10.34	54	-11.77	160	175	Average
5381.68	53.25	42.91	10.34	74	-20.75	160	175	Peak
*10480	56.04	40.14	15.9	68.2	-12.16	158	344	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5240	94.98	84.84	10.14			100	11	Average
5240	102.38	92.24	10.14			100	11	Peak
5416.77	42.44	32.02	10.42	54	-11.56	100	11	Average
5416.77	53.11	42.69	10.42	74	-20.89	100	11	Peak
*10480	55.18	39.28	15.9	68.2	-13.02	169	166	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5108.15	42.38	32.42	9.96	54	-11.62	100	45	Average
5108.15	52.81	42.85	9.96	74	-21.19	100	45	Peak
5260	98.34	88.22	10.12			100	45	Average
5260	105.56	95.44	10.12			100	45	Peak
*10520	55.71	39.83	15.88	68.2	-12.49	188	280	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5115.5	42.33	32.37	9.96	54	-11.67	113	113	Average
5115.5	53.62	43.66	9.96	74	-20.38	113	113	Peak
5260	97.78	87.66	10.12			113	113	Average
5260	104.04	93.92	10.12			113	113	Peak
*10520	56.6	40.72	15.88	68.2	-11.6	134	216	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5120.9	42.46	32.49	9.97	54	-11.54	100	45	Average
5120.9	53.37	43.4	9.97	74	-20.63	100	45	Peak
5300	97.28	87.22	10.06			100	45	Average
5300	105.18	95.12	10.06			100	45	Peak
5350.22	45.17	34.94	10.23	54	-8.83	100	45	Average
5350.22	55.77	45.54	10.23	74	-18.23	100	45	Peak
10600	47.44	31.68	15.76	54	-6.56	170	199	Average
10600	55.41	39.65	15.76	74	-18.59	170	199	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5147.9	42.26	32.21	10.05	54	-11.74	113	113	Average
5147.9	53.1	43.05	10.05	74	-20.9	113	113	Peak
5300	97.69	87.63	10.06			113	113	Average
5300	104.36	94.3	10.06			113	113	Peak
5350	43.58	33.35	10.23	54	-10.42	113	113	Average
5350	54.28	44.05	10.23	74	-19.72	113	113	Peak
10600	47.16	31.4	15.76	54	-6.84	140	166	Average
10600	56.6	40.84	15.76	74	-17.4	140	166	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	94.42	84.33	10.09			100	45	Average
5320	101.27	91.18	10.09			100	45	Peak
5350.11	44.32	34.09	10.23	54	-9.68	100	45	Average
5350.11	55.51	45.28	10.23	74	-18.49	100	45	Peak
10640	47.09	31.1	15.99	54	-6.91	181	104	Average
10640	56.24	40.25	15.99	74	-17.76	181	104	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	94.05	83.96	10.09			113	113	Average
5320	100.26	90.17	10.09			113	113	Peak
5350	43.04	32.81	10.23	54	-10.96	113	113	Average
5350	55.6	45.37	10.23	74	-18.4	113	113	Peak
10640	47.21	31.22	15.99	54	-6.79	105	113	Average
10640	56.53	40.54	15.99	74	-17.47	105	113	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	43.4	32.89	10.51	54	-10.6	100	50	Average
5460	53.5	42.99	10.51	74	-20.5	100	50	Peak
*5469.36	57.69	47.16	10.53	68.2	-10.51	100	50	Peak
5500	93.44	82.84	10.6			100	50	Average
5500	100.29	89.69	10.6			100	50	Peak
11000	47.46	31.33	16.13	54	-6.54	174	19	Average
11000	56.89	40.76	16.13	74	-17.11	174	19	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5459.6	42.84	32.33	10.51	54	-11.16	100	108	Average
5459.6	53.14	42.63	10.51	74	-20.86	100	108	Peak
*5469.36	53.22	42.69	10.53	68.2	-14.98	100	108	Peak
5500	92.33	81.73	10.6			100	108	Average
5500	99.9	89.3	10.6			100	108	Peak
11000	47.41	31.28	16.13	54	-6.59	164	285	Average
11000	56.96	40.83	16.13	74	-17.04	164	285	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5451.76	42.43	31.92	10.51	54	-11.57	100	50	Average
5451.76	53.12	42.61	10.51	74	-20.88	100	50	Peak
*5469.84	51.67	41.14	10.53	68.2	-16.53	100	50	Peak
5580	97.25	86.54	10.71			100	50	Average
5580	104.09	93.38	10.71			100	50	Peak
*5725.08	51.72	40.8	10.92	68.2	-16.48	100	50	Peak
11160	47.9	31.54	16.36	54	-6.1	195	2	Average
11160	56.81	40.45	16.36	74	-17.19	195	2	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5448.24	42.36	31.87	10.49	54	-11.64	100	108	Average
5448.24	52.94	42.45	10.49	74	-21.06	100	108	Peak
*5469.68	50.85	40.32	10.53	68.2	-17.35	100	108	Peak
5580	96.37	85.66	10.71			100	108	Average
5580	103.96	93.25	10.71			100	108	Peak
*5725.4	51.98	41.06	10.92	68.2	-16.22	100	108	Peak
11160	47.75	31.39	16.36	54	-6.25	154	215	Average
11160	57.63	41.27	16.36	74	-16.37	154	215	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5700	95.71	84.76	10.95			100	50	Average
5700	102.55	91.6	10.95			100	50	Peak
*5725.56	59.25	48.33	10.92	68.2	-8.95	100	50	Peak
11400	47.62	31.43	16.19	54	-6.38	165	9	Average
11400	57.32	41.13	16.19	74	-16.68	165	9	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5700	94.44	83.49	10.95			100	108	Average
5700	101.17	90.22	10.95			100	108	Peak
*5725.64	56.72	45.8	10.92	68.2	-11.48	100	108	Peak
11400	47.41	31.22	16.19	54	-6.59	184	276	Average
11400	56.14	39.95	16.19	74	-17.86	184	276	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	93.01	82.13	10.88			100	50	Average
5745	101.55	90.67	10.88			100	50	Peak
11490	46.64	30.17	16.47	54	-7.36	124	167	Average
11490	56.23	39.76	16.47	74	-17.77	124	167	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	92.78	81.9	10.88			100	108	Average
5745	100.47	89.59	10.88			100	108	Peak
11490	47.05	30.58	16.47	54	-6.95	137	196	Average
11490	56.9	40.43	16.47	74	-17.1	137	196	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5563	53.62	42.94	10.68	68.2	-14.58	100	50	Peak
5652.25	51.07	40.2	10.87	69.86	-18.79	100	50	Peak
5923.15	53.49	42.38	11.11	69.57	-16.08	100	50	Peak
*5966.725	53.08	41.85	11.23	68.2	-15.12	100	50	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5570.35	53.87	43.17	10.7	68.2	-14.33	100	108	Peak
5652.25	51.42	40.55	10.87	69.86	-18.44	100	108	Peak
5920.525	50.89	39.8	11.09	71.51	-20.62	100	108	Peak
*5969.35	53.47	42.22	11.25	68.2	-14.73	100	108	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	94.93	84.12	10.81			100	50	Average
5785	102.13	91.32	10.81			100	50	Peak
11570	46.48	29.99	16.49	54	-7.52	157	131	Average
11570	56.19	39.7	16.49	74	-17.81	157	131	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	92.93	82.12	10.81			100	108	Average
5785	101	90.19	10.81			100	108	Peak
11570	47.32	30.83	16.49	54	-6.68	185	346	Average
11570	56.74	40.25	16.49	74	-17.26	185	346	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5633.35	53.33	42.5	10.83	68.2	-14.87	100	50	Peak
5654.35	52.42	41.55	10.87	71.42	-19	100	50	Peak
5921.575	50.43	39.32	11.11	70.73	-20.3	100	50	Peak
*6010.3	54.76	43.41	11.35	68.2	-13.44	100	50	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5621.275	53.78	42.99	10.79	68.2	-14.42	100	108	Peak
5654.35	50.28	39.41	10.87	71.42	-21.14	100	108	Peak
5922.625	50.93	39.82	11.11	69.96	-19.03	100	108	Peak
*5965.15	53.97	42.74	11.23	68.2	-14.23	100	108	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	93.1	82.22	10.88			100	50	Average
5825	101.92	91.04	10.88			100	50	Peak
11650	47.31	30.53	16.78	54	-6.69	163	151	Average
11650	56.77	39.99	16.78	74	-17.23	163	151	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	92.99	82.11	10.88			100	108	Average
5825	100.61	89.73	10.88			100	108	Peak
11650	47.88	31.1	16.78	54	-6.12	159	273	Average
11650	57.6	40.82	16.78	74	-16.4	159	273	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5627.575	52.65	41.86	10.79	68.2	-15.55	100	50	Peak
5652.775	50.11	39.24	10.87	70.25	-20.14	100	50	Peak
5922.625	49.79	38.68	11.11	69.96	-20.17	100	50	Peak
*5988.25	54.62	43.31	11.31	68.2	-13.58	100	50	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5542	53.49	42.83	10.66	68.2	-14.71	100	108	Peak
5651.725	50.54	39.67	10.87	69.48	-18.94	100	108	Peak
5922.625	51.93	40.82	11.11	69.96	-18.03	100	108	Peak
*5974.075	54.28	43.02	11.26	68.2	-13.92	100	108	Peak

Remarks:

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

802.11n (HT40)

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.7	45.94	35.89	10.05	54	-8.06	160	175	Average
5149.7	55.97	45.92	10.05	74	-18.03	160	175	Peak
5190	89.59	79.47	10.12			160	175	Average
5190	96.37	86.25	10.12			160	175	Peak
5391.69	42.73	32.39	10.34	54	-11.27	160	175	Average
5391.69	54.38	44.04	10.34	74	-19.62	160	175	Peak
*10380	55.92	39.82	16.1	68.2	-12.28	174	188	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	46.82	36.77	10.05	54	-7.18	100	11	Average
5150	56.72	46.67	10.05	74	-17.28	100	11	Peak
5190	88.65	78.53	10.12			100	11	Average
5190	95.05	84.93	10.12			100	11	Peak
5441.41	42.74	32.26	10.48	54	-11.26	100	11	Average
5441.41	53.4	42.92	10.48	74	-20.6	100	11	Peak
*10380	55.56	39.46	16.1	68.2	-12.64	113	262	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5121.35	42.76	32.79	9.97	54	-11.24	160	175	Average
5121.35	53.36	43.39	9.97	74	-20.64	160	175	Peak
5230	89.33	79.19	10.14			160	175	Average
5230	96.54	86.4	10.14			160	175	Peak
5441.74	42.82	32.34	10.48	54	-11.18	160	175	Average
5441.74	53.38	42.9	10.48	74	-20.62	160	175	Peak
*10460	55.43	39.43	16	68.2	-12.77	154	188	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5129.45	42.8	32.8	10	54	-11.2	100	11	Average
5129.45	53.77	43.77	10	74	-20.23	100	11	Peak
5230	88.57	78.43	10.14			100	11	Average
5230	95.58	85.44	10.14			100	11	Peak
5447.24	43.02	32.53	10.49	54	-10.98	100	11	Average
5447.24	53.57	43.08	10.49	74	-20.43	100	11	Peak
*10460	55.76	39.76	16	68.2	-12.44	154	118	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5148.65	42.75	32.7	10.05	54	-11.25	100	45	Average
5148.65	52.99	42.94	10.05	74	-21.01	100	45	Peak
5270	89.9	79.78	10.12			100	45	Average
5270	97	86.88	10.12			100	45	Peak
5352.31	43.05	32.82	10.23	54	-10.95	100	45	Average
5352.31	53.37	43.14	10.23	74	-20.63	100	45	Peak
*10540	55.9	40.07	15.83	68.2	-12.3	154	99	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5119.55	42.81	32.84	9.97	54	-11.19	113	113	Average
5119.55	52.84	42.87	9.97	74	-21.16	113	113	Peak
5270	87.82	77.7	10.12			113	113	Average
5270	96.26	86.14	10.12			113	113	Peak
5363.64	42.82	32.56	10.26	54	-11.18	113	113	Average
5363.64	52.91	42.65	10.26	74	-21.09	113	113	Peak
*10540	55.74	39.91	15.83	68.2	-12.46	177	1	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5147.9	42.58	32.53	10.05	54	-11.42	100	45	Average
5147.9	52.85	42.8	10.05	74	-21.15	100	45	Peak
5310	90.76	80.67	10.09			100	45	Average
5310	97.31	87.22	10.09			100	45	Peak
5350	47.41	37.18	10.23	54	-6.59	100	45	Average
5350	58.76	48.53	10.23	74	-15.24	100	45	Peak
10620	47.34	31.46	15.88	54	-6.66	174	14	Average
10620	55.55	39.67	15.88	74	-18.45	174	14	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5143.7	42.56	32.53	10.03	54	-11.44	113	113	Average
5143.7	52.86	42.83	10.03	74	-21.14	113	113	Peak
5310	88.91	78.82	10.09			113	113	Average
5310	96.15	86.06	10.09			113	113	Peak
5350.33	45.68	35.45	10.23	54	-8.32	113	113	Average
5350.33	58.37	48.14	10.23	74	-15.63	113	113	Peak
10620	47.17	31.29	15.88	54	-6.83	165	296	Average
10620	56.53	40.65	15.88	74	-17.47	165	296	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5459.92	46.04	35.53	10.51	54	-7.96	101	50	Average
5459.92	54.96	44.45	10.51	74	-19.04	101	50	Peak
*5469.36	62.15	51.62	10.53	68.2	-6.05	101	50	Peak
5510	89.88	79.28	10.6			101	50	Average
5510	96.96	86.36	10.6			101	50	Peak
*5725.96	51.32	40.4	10.92	68.2	-16.88	101	50	Peak
11020	47.21	31.05	16.16	54	-6.79	199	286	Average
11020	56.94	40.78	16.16	74	-17.06	199	286	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	44.37	33.86	10.51	54	-9.63	100	102	Average
5460	54.76	44.25	10.51	74	-19.24	100	102	Peak
*5470	57.69	47.16	10.53	68.2	-10.51	100	102	Peak
5510	88.25	77.65	10.6			100	102	Average
5510	95.14	84.54	10.6			100	102	Peak
*5725.4	52.2	41.28	10.92	68.2	-16	100	102	Peak
11020	47.56	31.4	16.16	54	-6.44	161	344	Average
11020	57.97	41.81	16.16	74	-16.03	161	344	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5446.8	42.98	32.49	10.49	54	-11.02	101	50	Average
5446.8	53.51	43.02	10.49	74	-20.49	101	50	Peak
*5469.52	51.78	41.25	10.53	68.2	-16.42	101	50	Peak
5550	89.44	78.76	10.68			101	50	Average
5550	96.86	86.18	10.68			101	50	Peak
*5725.64	51.31	40.39	10.92	68.2	-16.89	101	50	Peak
11100	47.49	31.22	16.27	54	-6.51	187	199	Average
11100	56.09	39.82	16.27	74	-17.91	187	199	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5458.48	42.97	32.46	10.51	54	-11.03	100	102	Average
5458.48	52.96	42.45	10.51	74	-21.04	100	102	Peak
*5469.2	52	41.47	10.53	68.2	-16.2	100	102	Peak
5550	88.59	77.91	10.68			100	102	Average
5550	95.32	84.64	10.68			100	102	Peak
*5725.56	52.36	41.44	10.92	68.2	-15.84	100	102	Peak
11100	47.6	31.33	16.27	54	-6.4	140	155	Average
11100	56.85	40.58	16.27	74	-17.15	140	155	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5447.92	43.04	32.55	10.49	54	-10.96	101	50	Average
5447.92	53.5	43.01	10.49	74	-20.5	101	50	Peak
*5469.2	52.06	41.53	10.53	68.2	-16.14	101	50	Peak
5670	89.73	78.83	10.9			101	50	Average
5670	96.47	85.57	10.9			101	50	Peak
*5725.24	53.97	43.05	10.92	68.2	-14.23	101	50	Peak
11340	47.85	31.43	16.42	54	-6.15	164	199	Average
11340	58.19	41.77	16.42	74	-15.81	164	199	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5449.84	42.83	32.32	10.51	54	-11.17	100	108	Average
5449.84	52.53	42.02	10.51	74	-21.47	100	108	Peak
*5469.68	52.42	41.89	10.53	68.2	-15.78	100	108	Peak
5670	88.82	77.92	10.9			100	108	Average
5670	95.5	84.6	10.9			100	108	Peak
*5725.24	53.14	42.22	10.92	68.2	-15.06	100	108	Peak
11340	47.83	31.41	16.42	54	-6.17	135	285	Average
11340	56.6	40.18	16.42	74	-17.4	135	285	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5755	88.8	77.9	10.9			100	59	Average
5755	96	85.1	10.9			100	59	Peak
11510	47.76	31.25	16.51	54	-6.24	134	105	Average
11510	57.11	40.6	16.51	74	-16.89	134	105	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5755	86.22	75.32	10.9			100	99	Average
5755	95.16	84.26	10.9			100	99	Peak
11510	47.54	31.03	16.51	54	-6.46	190	314	Average
11510	57.29	40.78	16.51	74	-16.71	190	314	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5640.175	52.48	41.65	10.83	68.2	-15.72	100	59	Peak
5653.825	51.77	40.9	10.87	71.03	-19.26	100	59	Peak
5922.1	51.72	40.61	11.11	70.35	-18.63	100	59	Peak
*6016.6	53.19	41.84	11.35	68.2	-15.01	100	59	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5600.275	53.21	42.45	10.76	68.2	-14.99	100	99	Peak
5654.35	52.66	41.79	10.87	71.42	-18.76	100	99	Peak
5921.575	52.56	41.45	11.11	70.73	-18.17	100	99	Peak
*6007.675	53.03	41.68	11.35	68.2	-15.17	100	99	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5795	90.21	79.39	10.82			100	56	Average
5795	96.84	86.02	10.82			100	56	Peak
11590	47.48	30.97	16.51	54	-6.52	167	226	Average
11590	57.19	40.68	16.51	74	-16.81	167	226	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5795	88.39	77.57	10.82			100	99	Average
5795	95.57	84.75	10.82			100	99	Peak
11590	47.12	30.61	16.51	54	-6.88	131	87	Average
11590	56.84	40.33	16.51	74	-17.16	131	87	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5587.675	52.69	41.96	10.73	68.2	-15.51	100	56	Peak
5655.4	52.1	41.23	10.87	72.2	-20.1	100	56	Peak
5920.525	50.43	39.34	11.09	71.51	-21.08	100	56	Peak
*5957.8	53.84	42.63	11.21	68.2	-14.36	100	56	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5587.675	52.64	41.91	10.73	68.2	-15.56	100	99	Peak
5654.35	50.05	39.18	10.87	71.42	-21.37	100	99	Peak
5922.625	53.75	42.64	11.11	69.96	-16.21	100	99	Peak
*5955.7	53.75	42.54	11.21	68.2	-14.45	100	99	Peak

Remarks:

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

802.11ac (VHT80)

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.25	48.39	38.34	10.05	54	-5.61	160	165	Average
5149.25	58.92	48.87	10.05	74	-15.08	160	165	Peak
5210	86.14	75.97	10.17			160	165	Average
5210	93.88	83.71	10.17			160	165	Peak
5357.04	43.03	32.8	10.23	54	-10.97	160	165	Average
5357.04	53.03	42.8	10.23	74	-20.97	160	165	Peak
*10420	55.99	39.83	16.16	68.2	-12.21	158	199	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5145.5	49.11	39.06	10.05	54	-4.89	100	11	Average
5145.5	58.04	47.99	10.05	74	-15.96	100	11	Peak
5210	85.44	75.27	10.17			100	11	Average
5210	92.9	82.73	10.17			100	11	Peak
5371.67	42.85	32.59	10.26	54	-11.15	100	11	Average
5371.67	53.33	43.07	10.26	74	-20.67	100	11	Peak
*10420	55.29	39.13	16.16	68.2	-12.91	115	273	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	43.36	33.31	10.05	54	-10.64	100	45	Average
5150	53.82	43.77	10.05	74	-20.18	100	45	Peak
5290	86.86	76.76	10.1			100	45	Average
5290	94.75	84.65	10.1			100	45	Peak
5351.76	48.96	38.73	10.23	54	-5.04	100	45	Average
5351.76	59.97	49.74	10.23	74	-14.03	100	45	Peak
*10580	55.4	39.69	15.71	68.2	-12.8	142	286	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5148.35	43.18	33.13	10.05	54	-10.82	113	113	Average
5148.35	52.84	42.79	10.05	74	-21.16	113	113	Peak
5290	86.42	76.32	10.1			113	113	Average
5290	93.94	83.84	10.1			113	113	Peak
5350.44	46.89	36.66	10.23	54	-7.11	113	113	Average
5350.44	56.93	46.7	10.23	74	-17.07	113	113	Peak
*10580	56.64	40.93	15.71	68.2	-11.56	187	44	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5457.84	46.05	35.54	10.51	54	-7.95	101	50	Average
5457.84	54.43	43.92	10.51	74	-19.57	101	50	Peak
*5470	56.05	45.52	10.53	68.2	-12.15	101	50	Peak
5530	84.06	73.43	10.63			101	50	Average
5530	91.29	80.66	10.63			101	50	Peak
*5725.88	51.96	41.04	10.92	68.2	-16.24	101	50	Peak
11060	47.69	31.46	16.23	54	-6.31	195	222	Average
11060	56.17	39.94	16.23	74	-17.83	195	222	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5459.6	44.37	33.86	10.51	54	-9.63	100	108	Average
5459.6	54.5	43.99	10.51	74	-19.5	100	108	Peak
*5470	54.59	44.06	10.53	68.2	-13.61	100	108	Peak
5530	83.11	72.48	10.63			100	108	Average
5530	90.93	80.3	10.63			100	108	Peak
*5725.48	52.44	41.52	10.92	68.2	-15.76	100	108	Peak
11060	47.78	31.55	16.23	54	-6.22	142	37	Average
11060	56.12	39.89	16.23	74	-17.88	142	37	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5454.48	44.62	34.11	10.51	54	-9.38	101	50	Average
5454.48	53.51	43	10.51	74	-20.49	101	50	Peak
*5470	54.37	43.84	10.53	68.2	-13.83	101	50	Peak
5610	89.41	46.88	42.53			101	50	Average
5610	96.71	54.18	42.53			101	50	Peak
*5725.48	53.93	43.01	10.92	68.2	-14.27	101	50	Peak
11220	47.99	31.57	16.42	54	-6.01	147	122	Average
11220	57.85	41.43	16.42	74	-16.15	147	122	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5442.64	43.62	33.14	10.48	54	-10.38	100	108	Average
5442.64	53.99	43.51	10.48	74	-20.01	100	108	Peak
*5469.04	53.06	42.53	10.53	68.2	-15.14	100	108	Peak
5610	88.94	78.17	10.77			100	108	Average
5610	95.9	85.13	10.77			100	108	Peak
*5725.56	52.45	41.53	10.92	68.2	-15.75	100	108	Peak
11220	47.9	31.48	16.42	54	-6.1	159	155	Average
11220	57.46	41.04	16.42	74	-16.54	159	155	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5775	83.39	72.52	10.87			100	54	Average
5775	91.03	80.16	10.87			100	54	Peak
11550	47.63	31.13	16.5	54	-6.37	187	150	Average
11550	57.01	40.51	16.5	74	-16.99	187	150	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5775	87.16	76.29	10.87			100	99	Average
5775	93.68	82.81	10.87			100	99	Peak
11550	47.45	30.95	16.5	54	-6.55	108	274	Average
11550	57.05	40.55	16.5	74	-16.95	108	274	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5626	53.1	42.31	10.79	68.2	-15.1	100	54	Peak
5658.025	54.07	43.2	10.87	74.14	-20.07	100	54	Peak
5917.375	52.43	41.34	11.09	73.84	-21.41	100	54	Peak
*5971.975	53.22	41.97	11.25	68.2	-14.98	100	54	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5633.875	53.77	42.94	10.83	68.2	-14.43	100	99	Peak
5659.075	56.61	45.74	10.87	74.92	-18.31	100	99	Peak
5921.05	51.77	40.68	11.09	71.12	-19.35	100	99	Peak
*5938.375	53.56	42.4	11.16	68.2	-14.64	100	99	Peak

Remarks:

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

9 kHz ~ 30 MHz Data:

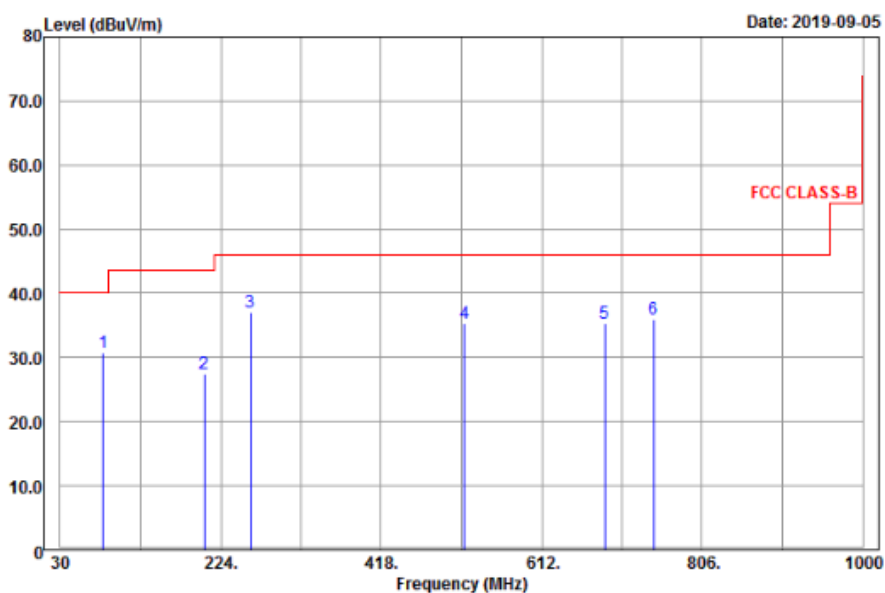
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1 GHz Worst-Case Data:

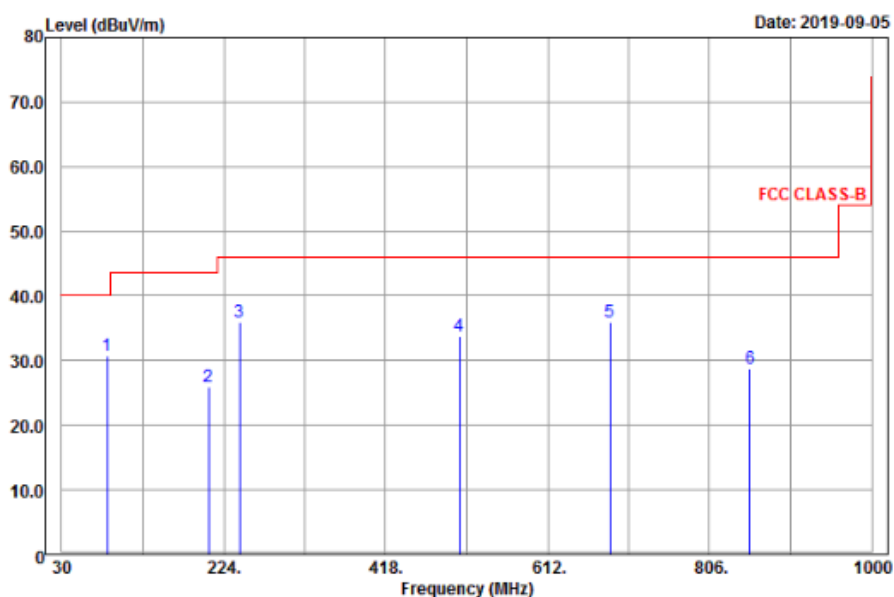
802.11ac (VHT80)

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

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
81.57	30.63	51.79	-21.16	40	-9.37	151	137	Peak
204.42	27.36	45.54	-18.18	43.5	-16.14	191	216	Peak
259.77	36.95	53.63	-16.68	46	-9.05	165	133	Peak
519.1	35.27	47.37	-12.1	46	-10.73	182	134	Peak
688.5	35.39	44.72	-9.33	46	-10.61	192	267	Peak
747.3	35.88	44.42	-8.54	46	-10.12	131	50	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
84.81	30.74	51.09	-20.35	40	-9.26	187	136	Peak
205.5	26.04	44.22	-18.18	43.5	-17.46	195	161	Peak
242.76	35.98	52.97	-16.99	46	-10.02	127	242	Peak
505.8	33.76	46.04	-12.28	46	-12.24	165	82	Peak
686.4	35.91	45.27	-9.36	46	-10.09	194	112	Peak
854.4	28.79	35.5	-6.71	46	-17.21	195	208	Peak

Remarks:

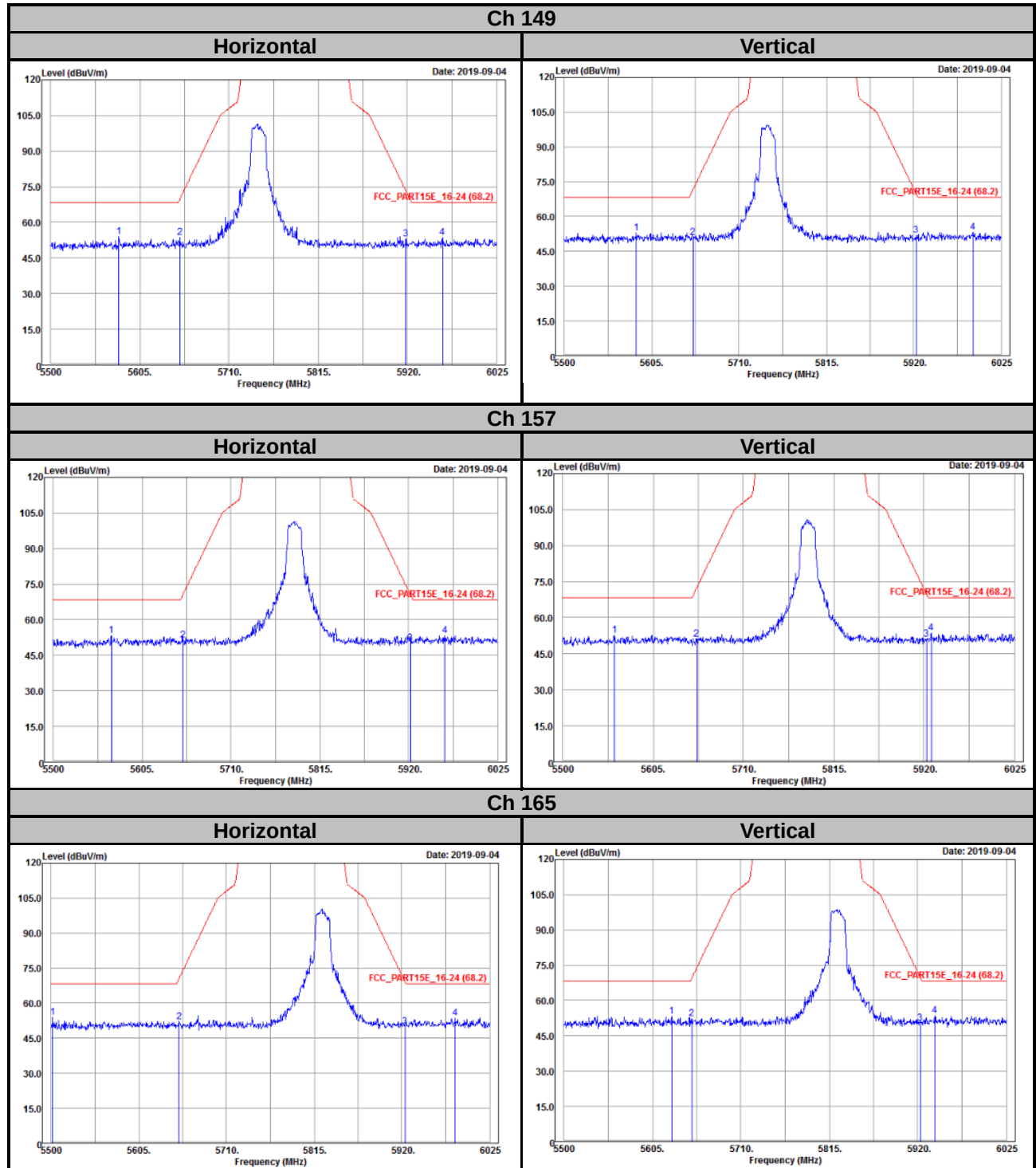
1. Emission Level = Read Level + Factor
Margin value = Emission level – Limit value
2. The emission levels of other frequencies were very low against the limit

5 Pictures of Test Arrangements

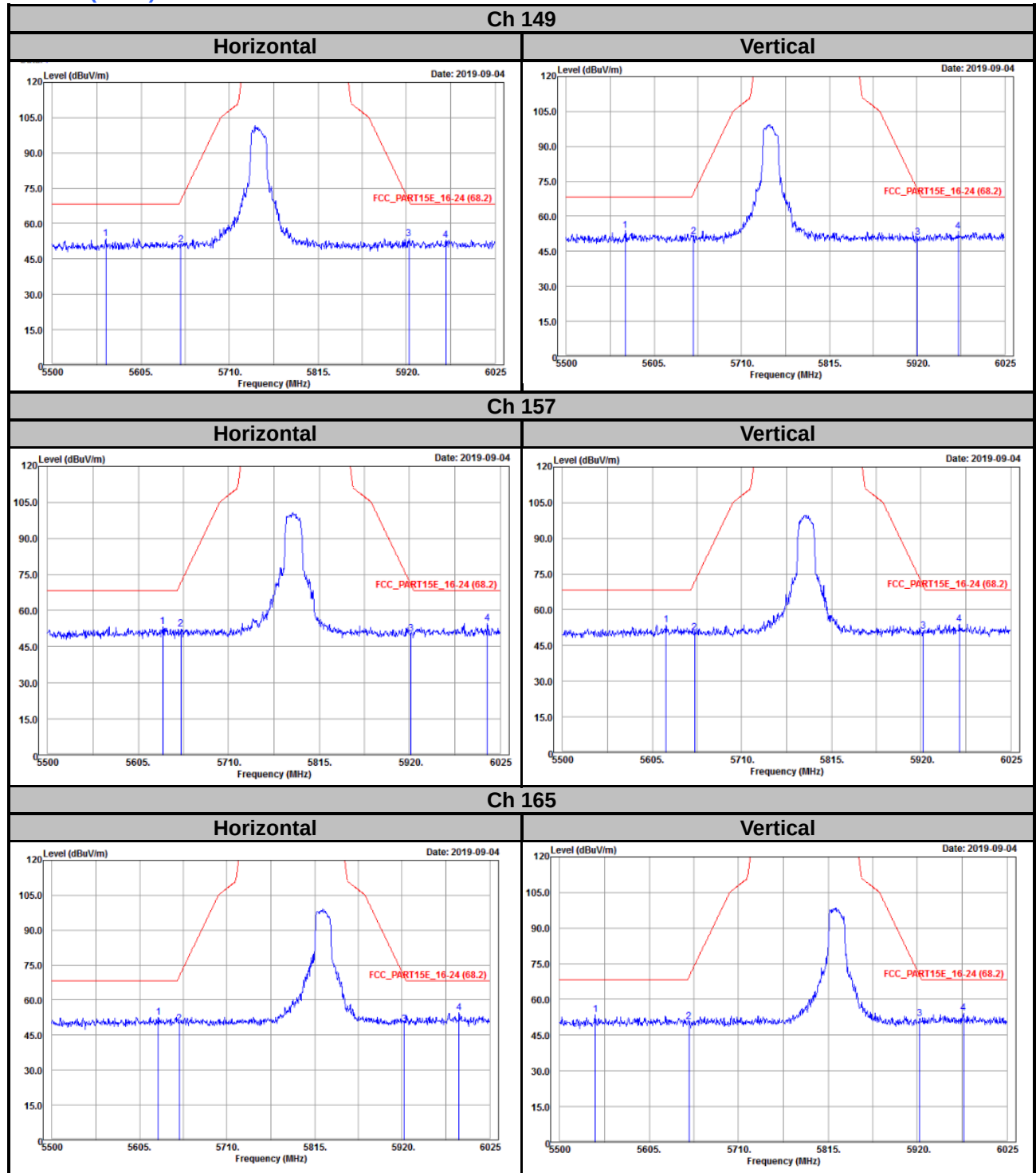
Please refer to the attached file (Test Setup Photo).

Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

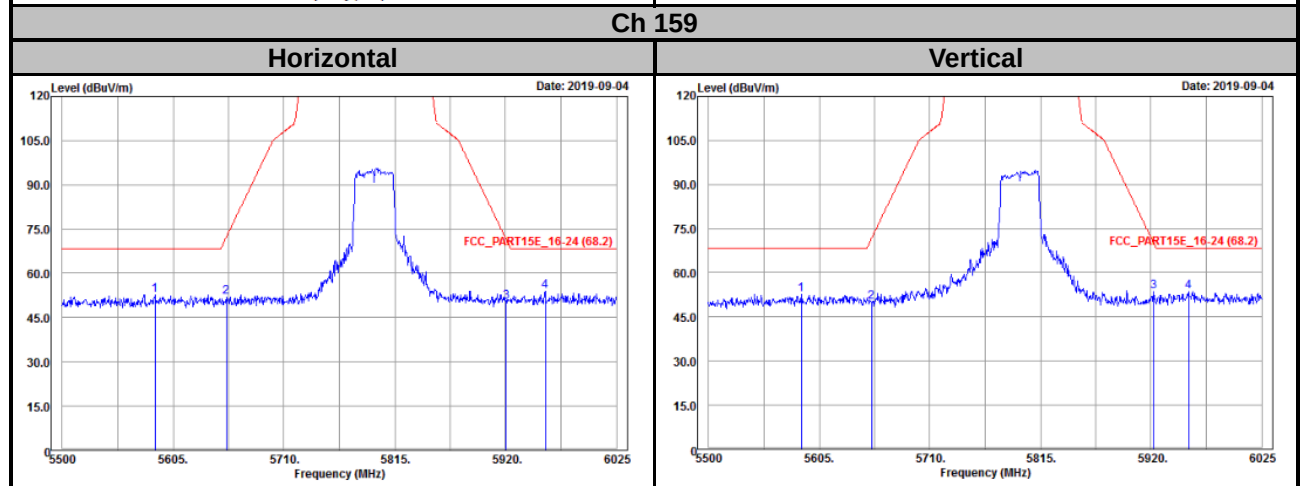
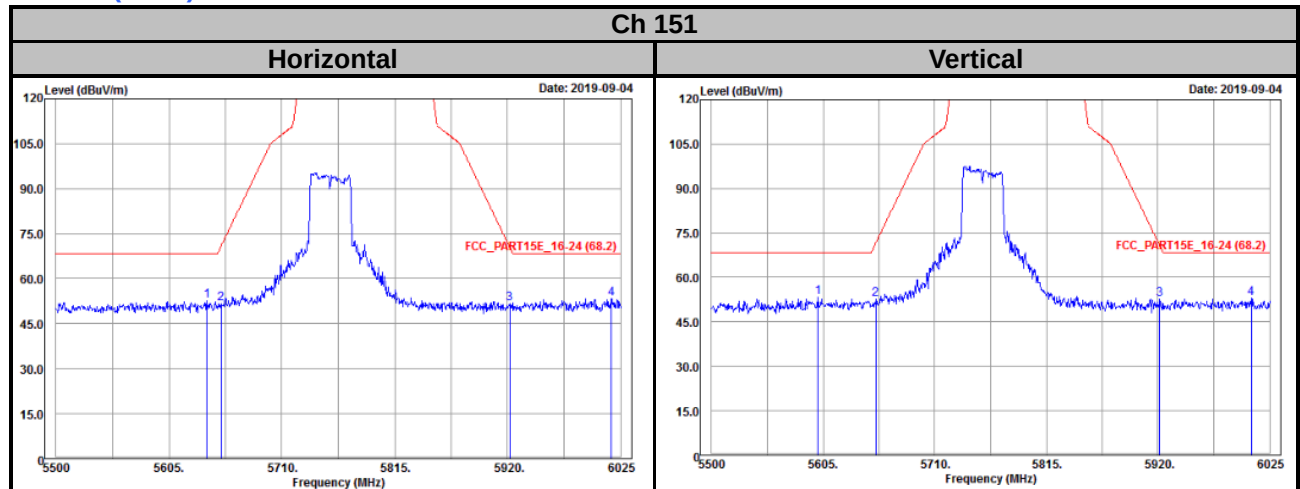
802.11a



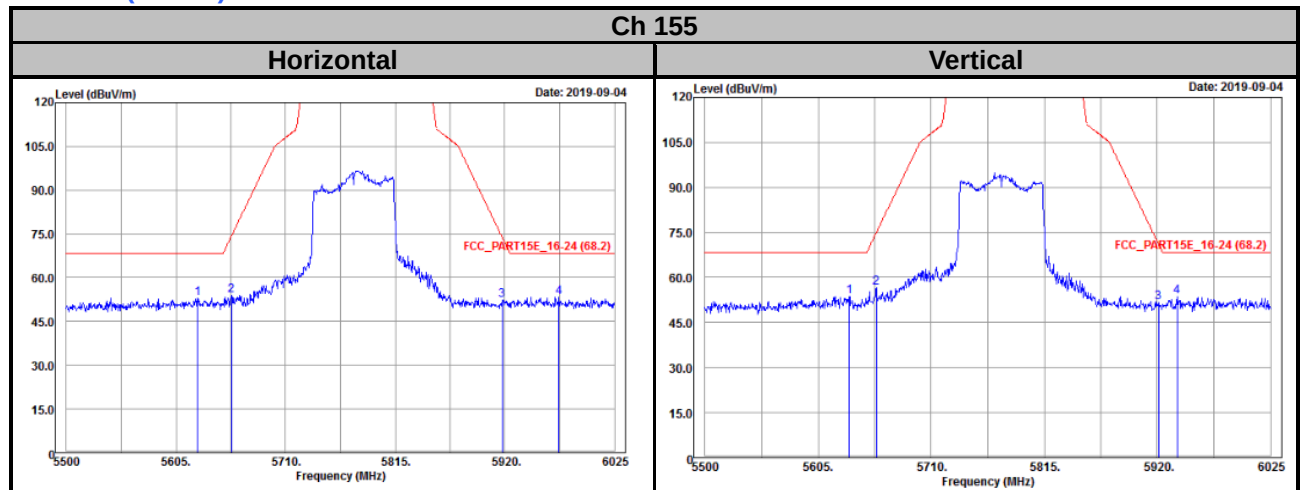
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



Appendix – Information of the Testing Laboratories

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

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

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