

Partial FCC Test Report

Report No.: RF180629C33-3

FCC ID: B94-9560D2WZ

Test Model: TPN-Q213

Received Date: Jun. 29, 2018

Test Date: Jul. 21, 2018 ~ Jul. 22, 2018

Issued Date: Aug. 14, 2018

Applicant: HP Inc.

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

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(R.O.C)

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FCC Registration /
Designation Number: 427177 / TW0011



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Release Control Record

Issue No.	Description	Date Issued
RF180629C33-3	Original Release	Aug. 14, 2018

1 Certificate of Conformity

Product: Notebook PC

Brand: HP

Test Model: TPN-Q213

Sample Status: ENGINEERING SAMPLE

Applicant: HP Inc.

Test Date: Jul. 21, 2018 ~ Jul. 22, 2018

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 : Gina Liu, **Date:** Aug. 14, 2018
Gina Liu / Specialist

Approved by : Dylan Chiou, **Date:** Aug. 14, 2018
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	Refer to Note
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 -1.02 dB at 5724.84 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	N/A	Refer to Note
---	Occupied Bandwidth Measurement	N/A	Refer to Note
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

*For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.

Note: This report is a partial report, only test item of Radiated Emissions tests was performed for this report. Other testing data please refer to Intel report no.: 170919-03.TR02 and 170919-03.TR03 for module (Brand: Intel, Model: 9560D2W).

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

Product	Notebook PC
Brand	HP
Test Model	TPN-Q213
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	19.5 Vdc (adapter)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to 300.0 Mbps 802.11ac: up to 1733.3 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) 1 for 802.11 ac (VHT160) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5500 ~ 5700 MHz: 12 for 802.11a, 802.11n (HT20) 6 for 802.11n (HT40) 3 for 802.11ac (VHT80) 1 for 802.11 ac (VHT160) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80)
Antenna Type	Refer to Note as below
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	N/A

Note:

1. The WLAN/BT module (Brand: Intel, Model: 9560D2W) was installed in the EUT.
2. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

Modulation Mode	Tx Function
802.11a	1TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX
802.11ac (VHT80)	2TX
802.11ac (VHT160)	2TX

3. The antenna information is listed as below.

Antenna Type	Manufacturer	Parts Number	Antenna Gain			
			WLAN 2.4 GHz / Bluetooth	WLAN 5.15~5.35 GHz	WLAN 5.47~5.725 GHz	WLAN 5.725~5.875 GHz
PIFA	Tablet Mode					
	INPAQ	Main Antenna: DQ6LB040500 (WA-P-LBLB-04-050) Aux Antenna: DQ6LB040500 (WA-P-LBLB-04-050)	Main: -0.3 Aux: -0.9	Main: 1.0 Aux: 1.1	Main: 2.9 Aux: 0.8	Main: 2.9 Aux: 1.2
	Laptop Mode					
	INPAQ	Main Antenna: DQ6LB040500 (WA-P-LBLB-04-050) Aux Antenna: DQ6LB040500 (WA-P-LBLB-04-050)	Main: -1.0 Aux: -1.1	Main: 2.1 Aux: 0	Main: 0.4 Aux: -0.8	Main: -0.8 Aux: -0.1

4. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter 1	HP	TPN-DA11	I/P: 100-240 Vac, 50/60 Hz, 1.9 A O/P: 19.5 Vdc, 6.9 A 1.78M/0 core
Adapter 2	HP	TPN-CA09	I/P: 100-240 Vac, 50/60 Hz, 1.7 A O/P: 19.5 Vdc, 4.62 A, 90W 1.74M/0 core

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

3.2 Description of Test Modes

For 5180 ~ 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

1 channel is provided for 802.11ac (VHT160):

Channel	Frequency (MHz)
50	5250

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

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		

1 channel is provided for 802.11ac (VHT160):

Channel	Frequency (MHz)
114	5570

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

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 **Y-plane**.
2. "-" means no effect.

Radiated Emission Test (Above 1 GHz):

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	13.5
-		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-		802.11ac (VHT160)	50	50	OFDM	BPSK	58.5
-	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 144	100, 116, 140, 144	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
-		802.11n (HT40)	102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
-		802.11ac (VHT80)	106 to 138	106, 122, 138	OFDM	BPSK	29.3
-		802.11ac (VHT160)	114	114	OFDM	BPSK	58.5
-	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.

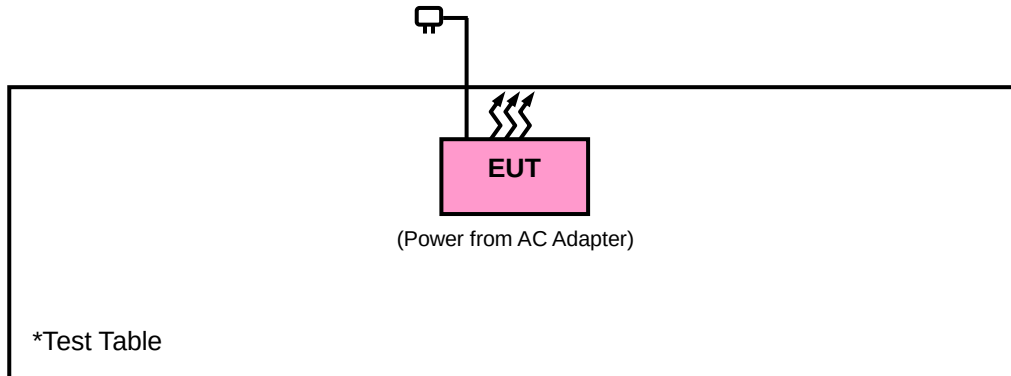
EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	40	OFDM	BPSK	6.0

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

3.3 Description of 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

KDB 662911 D01 Multiple Transmitter Output 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. 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 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:

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

4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY51210203	Mar. 16, 2018	Mar. 15, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Jan. 11, 2018	Jan. 10, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-616	Dec. 14, 2017	Dec. 13, 2018
HORN Antenna ETS-Lindgren	3117	00143293	Dec. 13, 2017	Dec. 12, 2018
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 01, 2017	Nov. 30, 2018
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 16, 2018	Apr. 15, 2019
Preamplifier EMCI	EMC 184045	980116	Oct. 20, 2017	Oct. 19, 2018
Loop Antenna	EM-6879	269	Aug. 11, 2017	Aug. 10, 2018
Preamplifier Agilent	310N	187226	Jun. 19, 2018	Jun. 18, 2019
Preamplifier Agilent	83017A	MY39501357	Jun. 19, 2018	Jun. 18, 2019
Power Meter Anritsu	ML2495A	1012010	Aug. 15, 2017	Aug. 14, 2018
Power Sensor Anritsu	MA2411B	1315050	Aug. 15, 2017	Aug. 14, 2018
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(RFC -SMS-100-SMS-12 0+RFC-SMS-100-S MS-400)	Jun. 19, 2018	Jun. 18, 2019
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(RFC -SMS-100-SMS-24)	Jun. 19, 2018	Jun. 18, 2019
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 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 IC Site Registration No. is IC7450I-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:

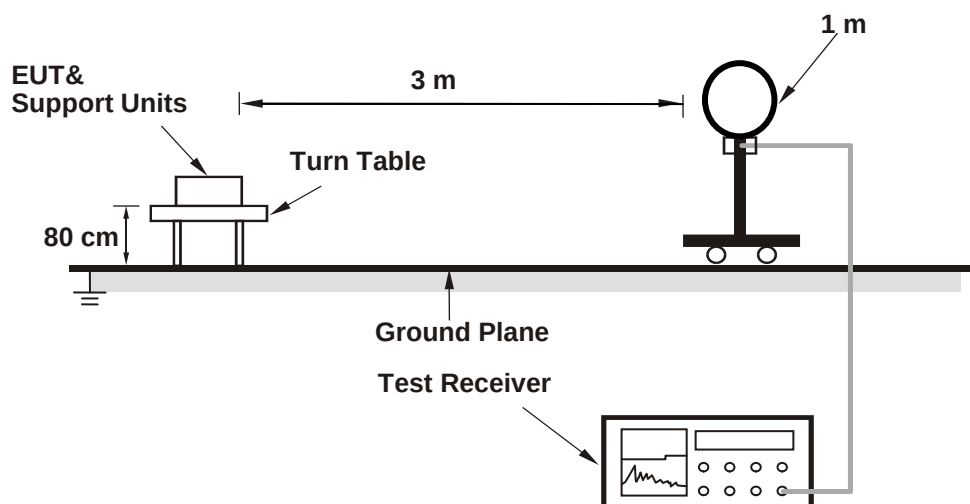
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.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

4.1.5 Deviation from Test Standard

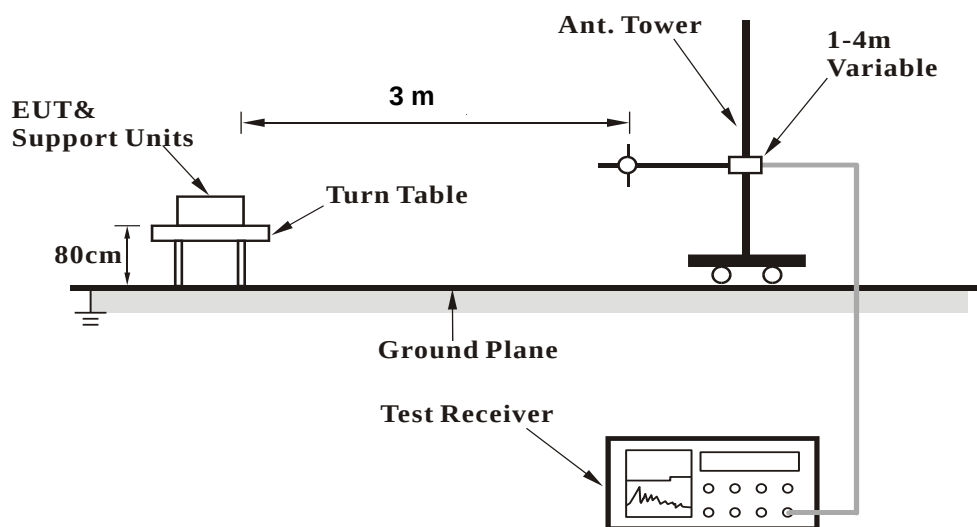
No deviation.

4.1.6 Test Setup

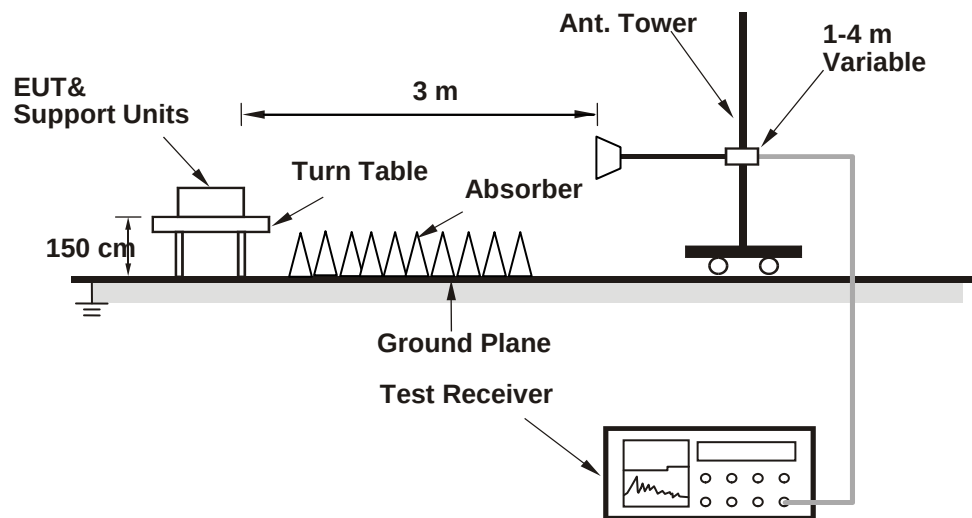
<Radiated Emission below 30 MHz>



<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	Charles Hsiao

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	52.11	43.86	54	-1.89	34.12	8.13	34	100	35	Average
5150	61.52	53.27	74	-12.48	34.12	8.13	34	100	35	Peak
5180	101.48	93.17			34.15	8.16	34	100	35	Average
5180	108.58	100.27			34.15	8.16	34	100	35	Peak
*10360	53.17	38.87	68.2	-15.03	37.12	12.3	35.12	112	240	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
5148.65	45.67	37.42	54	-8.33	34.12	8.13	34	200	127	Average
5148.65	53.82	45.57	74	-20.18	34.12	8.13	34	200	127	Peak
5180	94.59	86.28			34.15	8.16	34	200	127	Average
5180	101.13	92.82			34.15	8.16	34	200	127	Peak
*10360	54.11	39.81	68.2	-14.09	37.12	12.3	35.12	124	300	Peak

Remarks:

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

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

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
5140.85	52.96	44.7	54	-1.04	34.12	8.13	33.99	100	35	Average
5140.85	61.08	52.82	74	-12.92	34.12	8.13	33.99	100	35	Peak
5200	104.49	96.14			34.16	8.19	34	100	35	Average
5200	111.78	103.43			34.16	8.19	34	100	35	Peak
5449.77	45.92	37.1	54	-8.08	34.36	8.51	34.05	100	35	Average
5449.77	53.98	45.16	74	-20.02	34.36	8.51	34.05	100	35	Peak
*10400	53.06	38.72	68.2	-15.14	37.14	12.36	35.16	195	326	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	51.64	43.39	54	-2.36	34.12	8.13	34	200	127	Average
5150	56.73	48.48	74	-17.27	34.12	8.13	34	200	127	Peak
5200	97.58	89.23			34.16	8.19	34	200	127	Average
5200	104.16	95.81			34.16	8.19	34	200	127	Peak
5454.83	46.38	37.56	54	-7.62	34.36	8.51	34.05	200	127	Average
5454.83	52.98	44.16	74	-21.02	34.36	8.51	34.05	200	127	Peak
*10400	53.36	39.02	68.2	-14.84	37.14	12.36	35.16	114	324	Peak

Remarks:

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

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

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
5240	104.47	96.03			34.19	8.26	34.01	100	35	Average
5240	111.51	103.07			34.19	8.26	34.01	100	35	Peak
5426.34	45.29	36.52	54	-8.71	34.33	8.48	34.04	100	35	Average
5426.34	53.75	44.98	74	-20.25	34.33	8.48	34.04	100	35	Peak
*10480	53.12	38.61	68.2	-15.08	37.19	12.53	35.21	180	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
5240	97.65	89.21			34.19	8.26	34.01	200	127	Average
5240	104.63	96.19			34.19	8.26	34.01	200	127	Peak
5361.33	45.33	36.69	54	-8.67	34.29	8.38	34.03	200	127	Average
5361.33	53.53	44.89	74	-20.47	34.29	8.38	34.03	200	127	Peak
*10480	53.58	39.07	68.2	-14.62	37.19	12.53	35.21	119	346	Peak

Remarks:

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

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
5120.3	45.39	37.19	54	-8.61	34.09	8.1	33.99	100	40	Average
5120.3	54.56	46.36	74	-19.44	34.09	8.1	33.99	100	40	Peak
5260	104.52	96.06			34.21	8.26	34.01	100	40	Average
5260	111.45	102.99			34.21	8.26	34.01	100	40	Peak
*10520	53.9	39.31	68.2	-14.3	37.21	12.61	35.23	104	33	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
5116.4	44.81	36.61	54	-9.19	34.09	8.1	33.99	200	127	Average
5116.4	52.66	44.46	74	-21.34	34.09	8.1	33.99	200	127	Peak
5260	97.88	89.42			34.21	8.26	34.01	200	127	Average
5260	104.7	96.24			34.21	8.26	34.01	200	127	Peak
*10520	55.02	40.43	68.2	-13.18	37.21	12.61	35.23	124	222	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp 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	Charles Hsiao

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
5120.15	45.63	37.43	54	-8.37	34.09	8.1	33.99	100	40	Average
5120.15	53.8	45.6	74	-20.2	34.09	8.1	33.99	100	40	Peak
5300	104.14	95.6			34.24	8.32	34.02	100	40	Average
5300	111.15	102.61			34.24	8.32	34.02	100	40	Peak
5353.52	52.91	44.28	54	-1.09	34.28	8.38	34.03	100	40	Average
5353.52	61.36	52.73	74	-12.64	34.28	8.38	34.03	100	40	Peak
10600	43.67	28.99	54	-10.33	37.28	12.67	35.27	111	21	Average
10600	53.35	38.67	74	-20.65	37.28	12.67	35.27	111	21	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
5072	45.21	37.09	54	-8.79	34.07	8.03	33.98	200	127	Average
5072	53.27	45.15	74	-20.73	34.07	8.03	33.98	200	127	Peak
5300	97.62	89.08			34.24	8.32	34.02	200	127	Average
5300	104.44	95.9			34.24	8.32	34.02	200	127	Peak
5350.22	50.06	41.43	54	-3.94	34.28	8.38	34.03	200	127	Average
5350.22	58.23	49.6	74	-15.77	34.28	8.38	34.03	200	127	Peak
10600	45.11	30.43	54	-8.89	37.28	12.67	35.27	159	246	Average
10600	54.83	40.15	74	-19.17	37.28	12.67	35.27	159	246	Peak

Remarks:

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

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

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
5320	102.25	93.67			34.25	8.35	34.02	100	40	Average
5320	109.48	100.9			34.25	8.35	34.02	100	40	Peak
5350.55	52.84	44.21	54	-1.16	34.28	8.38	34.03	100	40	Average
5350.55	61.24	52.61	74	-12.76	34.28	8.38	34.03	100	40	Peak
10640	45.27	30.54	54	-8.73	37.31	12.71	35.29	154	65	Average
10640	54.26	39.53	74	-19.74	37.31	12.71	35.29	154	65	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
5320	95.65	87.07			34.25	8.35	34.02	200	127	Average
5320	102.8	94.22			34.25	8.35	34.02	200	127	Peak
5351.98	49.53	40.9	54	-4.47	34.28	8.38	34.03	200	127	Average
5351.98	57.64	49.01	74	-16.36	34.28	8.38	34.03	200	127	Peak
10640	44.37	29.64	54	-9.63	37.31	12.71	35.29	131	285	Average
10640	53.53	38.8	74	-20.47	37.31	12.71	35.29	131	285	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp 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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5429.84	45.63	36.84	54	-8.37	34.35	8.48	34.04	100	62	Average
5429.84	53.89	45.1	74	-20.11	34.35	8.48	34.04	100	62	Peak
*5469.84	59.35	50.52	68.2	-8.85	34.37	8.51	34.05	100	62	Peak
5500	100.36	91.44			34.4	8.57	34.05	100	62	Average
5500	107.83	98.91			34.4	8.57	34.05	100	62	Peak
11000	48.61	33.53	54	-5.39	37.6	12.96	35.48	105	285	Average
11000	55.81	40.73	74	-18.19	37.6	12.96	35.48	105	285	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
5364.4	44.21	35.57	54	-9.79	34.29	8.38	34.03	200	127	Average
5364.4	53.5	44.86	74	-20.5	34.29	8.38	34.03	200	127	Peak
*5469.68	54.31	45.48	68.2	-13.89	34.37	8.51	34.05	200	127	Peak
5500	93.65	84.73			34.4	8.57	34.05	200	127	Average
5500	100.86	91.94			34.4	8.57	34.05	200	127	Peak
11000	46.61	31.53	54	-7.39	37.6	12.96	35.48	157	214	Average
11000	54.18	39.1	74	-19.82	37.6	12.96	35.48	157	214	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp 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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5444.72	43.3	34.51	54	-10.7	34.35	8.48	34.04	100	62	Average
5444.72	54.48	45.69	74	-19.52	34.35	8.48	34.04	100	62	Peak
*5470.16	52.38	43.55	68.2	-15.82	34.37	8.51	34.05	100	62	Peak
5580	104.47	95.48			34.47	8.6	34.08	100	62	Average
5580	111.43	102.44			34.47	8.6	34.08	100	62	Peak
*5725.24	53.52	44.36	68.2	-14.68	34.62	8.65	34.11	100	62	Peak
11160	47.3	32.22	54	-6.7	37.7	12.83	35.45	159	25	Average
11160	55.69	40.61	74	-18.31	37.7	12.83	35.45	159	25	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
5448.72	43.04	34.21	54	-10.96	34.36	8.51	34.04	200	127	Average
5448.72	53.27	44.44	74	-20.73	34.36	8.51	34.04	200	127	Peak
*5468.88	51.29	42.46	68.2	-16.91	34.37	8.51	34.05	200	127	Peak
5580	97.66	88.67			34.47	8.6	34.08	200	127	Average
5580	104.83	95.84			34.47	8.6	34.08	200	127	Peak
*5724.76	52.99	43.83	68.2	-15.21	34.62	8.65	34.11	200	127	Peak
11160	46.21	31.13	54	-7.79	37.7	12.83	35.45	159	3	Average
11160	54.7	39.62	74	-19.3	37.7	12.83	35.45	159	3	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: 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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5700	101.47	92.34			34.59	8.64	34.1	100	62	Average
5700	108.17	99.04			34.59	8.64	34.1	100	62	Peak
*5723.96	61.11	51.95	68.2	-7.09	34.62	8.65	34.11	100	62	Peak
11400	46.63	31.53	54	-7.37	37.84	12.67	35.41	197	5	Average
11400	54.93	39.83	74	-19.07	37.84	12.67	35.41	197	5	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
5700	94.25	85.12			34.59	8.64	34.1	200	127	Average
5700	101.73	92.6			34.59	8.64	34.1	200	127	Peak
*5723.96	55.97	46.81	68.2	-12.23	34.62	8.65	34.11	200	127	Peak
11400	47.23	32.13	54	-6.77	37.84	12.67	35.41	173	28	Average
11400	54.51	39.41	74	-19.49	37.84	12.67	35.41	173	28	Peak

Remarks:

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

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
5455.28	44.39	35.57	54	-9.61	34.36	8.51	34.05	100	60	Average
5455.28	53.2	44.38	74	-20.8	34.36	8.51	34.05	100	60	Peak
*5468.56	51.96	43.13	68.2	-16.24	34.37	8.51	34.05	100	60	Peak
5720	103.33	94.17			34.62	8.65	34.11	100	60	Average
5720	110.35	101.19			34.62	8.65	34.11	100	60	Peak
11440	47.64	32.53	54	-6.36	37.86	12.65	35.4	171	246	Average
11440	54.95	39.84	74	-19.05	37.86	12.65	35.4	171	246	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
5360.08	44.2	35.57	54	-9.8	34.28	8.38	34.03	200	127	Average
5360.08	52.71	44.08	74	-21.29	34.28	8.38	34.03	200	127	Peak
*5469.52	51.84	43.01	68.2	-16.36	34.37	8.51	34.05	200	127	Peak
5720	96.65	87.49			34.62	8.65	34.11	200	127	Average
5720	103.48	94.32			34.62	8.65	34.11	200	127	Peak
11440	47.37	32.26	54	-6.63	37.86	12.65	35.4	118	79	Average
11440	54.42	39.31	74	-19.58	37.86	12.65	35.4	118	79	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
- 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	Charles Hsiao

<Spurious Emission>

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
5745	103.66	94.47			34.64	8.66	34.11	100	60	Average
5745	110.8	101.61			34.64	8.66	34.11	100	60	Peak
11490	46.37	31.25	54	-7.63	37.89	12.62	35.39	105	345	Average
11490	54.86	39.74	74	-19.14	37.89	12.62	35.39	105	345	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
5745	96.65	87.46			34.64	8.66	34.11	200	127	Average
5745	103.09	93.9			34.64	8.66	34.11	200	127	Peak
11490	47.64	32.52	54	-6.36	37.89	12.62	35.39	157	118	Average
11490	55.78	40.66	74	-18.22	37.89	12.62	35.39	157	118	Peak

<Out of Band Emission (OOBE)>

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
*5650.15	57.06	47.97	68.31	-11.25	34.56	8.62	34.09	100	60	Peak
5656.975	57.37	48.28	73.36	-15.99	34.56	8.63	34.1	100	60	Peak
5923.675	53.88	44.48	69.18	-15.3	34.83	8.73	34.16	100	60	Peak
*5979.325	53.78	44.32	68.2	-14.42	34.88	8.75	34.17	100	60	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
*5522.05	53.22	44.29	68.2	-14.98	34.42	8.57	34.06	200	127	Peak
5654.35	53.44	44.35	71.42	-17.98	34.56	8.63	34.1	200	127	Peak
5922.625	51.75	42.35	69.96	-18.21	34.83	8.73	34.16	200	127	Peak
*6000.85	53.38	43.89	68.2	-14.82	34.9	8.76	34.17	200	127	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
- 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	Charles Hsiao

<Spurious Emission>

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
5785	103.65	94.42			34.68	8.68	34.13	100	60	Average
5785	110.79	101.56			34.68	8.68	34.13	100	60	Peak
11570	47.83	32.52	54	-6.17	38	12.68	35.37	154	199	Average
11570	55.08	39.77	74	-18.92	38	12.68	35.37	154	199	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
5785	96.88	87.65			34.68	8.68	34.13	200	127	Average
5785	103.6	94.37			34.68	8.68	34.13	200	127	Peak
11570	46.72	31.41	54	-7.28	38	12.68	35.37	154	85	Average
11570	54.39	39.08	74	-19.61	38	12.68	35.37	154	85	Peak

<Out of Band Emission (OOBE)>

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
*5601.325	53.45	44.42	68.2	-14.75	34.5	8.61	34.08	100	60	Peak
5653.3	53.29	44.19	70.64	-17.35	34.56	8.63	34.09	100	60	Peak
5921.05	51.66	42.28	71.12	-19.46	34.81	8.73	34.16	100	60	Peak
*6006.625	53.04	43.53	68.2	-15.16	34.92	8.76	34.17	100	60	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
*5626	53.69	44.64	68.2	-14.51	34.52	8.61	34.08	200	127	Peak
5653.3	52.5	43.4	70.64	-18.14	34.56	8.63	34.09	200	127	Peak
5922.625	51.51	42.11	69.96	-18.45	34.83	8.73	34.16	200	127	Peak
*6010.3	54.07	44.56	68.2	-14.13	34.92	8.76	34.17	200	127	Peak

Remarks:

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

<Spurious Emission>

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
5825	102.22	92.93			34.73	8.69	34.13	100	60	Average
5825	109.4	100.11			34.73	8.69	34.13	100	60	Peak
11650	47.66	32.13	54	-6.34	38.09	12.8	35.36	154	285	Average
11650	55.88	40.35	74	-18.12	38.09	12.8	35.36	154	285	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
5825	95.66	86.37			34.73	8.69	34.13	200	127	Average
5825	102.62	93.33			34.73	8.69	34.13	200	127	Peak
11650	47.66	32.13	54	-6.34	38.09	12.8	35.36	134	311	Average
11650	54.66	39.13	74	-19.34	38.09	12.8	35.36	134	311	Peak

<Out of Band Emission (OOBE)>

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
*5647.525	53.79	44.72	68.2	-14.41	34.54	8.62	34.09	100	60	Peak
5653.825	52.27	43.18	71.03	-18.76	34.56	8.63	34.1	100	60	Peak
5922.625	50.51	41.11	69.96	-19.45	34.83	8.73	34.16	100	60	Peak
*5991.925	53.37	43.88	68.2	-14.83	34.9	8.76	34.17	100	60	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
*5597.65	52.96	43.95	68.2	-15.24	34.49	8.6	34.08	200	127	Peak
5651.725	51.42	42.33	69.48	-18.06	34.56	8.62	34.09	200	127	Peak
5919.475	51.81	42.43	72.29	-20.48	34.81	8.73	34.16	200	127	Peak
*5992.975	53.12	43.63	68.2	-15.08	34.9	8.76	34.17	200	127	Peak

Remarks:

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

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
5129	46.57	38.35	54	-7.43	34.11	8.1	33.99	125	38	Average
5129	54.61	46.39	74	-19.39	34.11	8.1	33.99	125	38	Peak
5180	100.61	92.3			34.15	8.16	34	125	38	Average
5180	107.56	99.25			34.15	8.16	34	125	38	Peak
*10360	52.73	38.43	68.2	-15.47	37.12	12.3	35.12	112	120	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
5133.65	45.45	37.2	54	-8.55	34.11	8.13	33.99	244	141	Average
5133.65	53.69	45.44	74	-20.31	34.11	8.13	33.99	244	141	Peak
5180	94.53	86.22			34.15	8.16	34	244	141	Average
5180	102.12	93.81			34.15	8.16	34	244	141	Peak
*10360	52.86	38.56	68.2	-15.34	37.12	12.3	35.12	182	300	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp 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	Charles Hsiao

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
5115.8	45.74	37.54	54	-8.26	34.09	8.1	33.99	125	38	Average
5115.8	53.86	45.66	74	-20.14	34.09	8.1	33.99	125	38	Peak
5200	102.87	94.52			34.16	8.19	34	125	38	Average
5200	109.82	101.47			34.16	8.19	34	125	38	Peak
5452.08	46.03	37.21	54	-7.97	34.36	8.51	34.05	125	38	Average
5452.08	54.11	45.29	74	-19.89	34.36	8.51	34.05	125	38	Peak
*10400	53.56	39.22	68.2	-14.64	37.14	12.36	35.16	124	108	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
5095.7	45.54	37.38	54	-8.46	34.08	8.07	33.99	244	141	Average
5095.7	53.76	45.6	74	-20.24	34.08	8.07	33.99	244	141	Peak
5200	97.53	89.18			34.16	8.19	34	244	141	Average
5200	104.48	96.13			34.16	8.19	34	244	141	Peak
5428.98	45.29	36.5	54	-8.71	34.35	8.48	34.04	244	141	Average
5428.98	53.62	44.83	74	-20.38	34.35	8.48	34.04	244	141	Peak
*10400	53.65	39.31	68.2	-14.55	37.14	12.36	35.16	124	229	Peak

Remarks:

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

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

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
5240	103.06	94.62			34.19	8.26	34.01	125	38	Average
5240	110.05	101.61			34.19	8.26	34.01	125	38	Peak
5374.31	46.08	37.42	54	-7.92	34.29	8.41	34.04	125	38	Average
5374.31	54.18	45.52	74	-19.82	34.29	8.41	34.04	125	38	Peak
*10480	54.01	39.5	68.2	-14.19	37.19	12.53	35.21	119	211	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
5240	96.69	88.25			34.19	8.26	34.01	244	141	Average
5240	104.16	95.72			34.19	8.26	34.01	244	141	Peak
5410.28	45.75	37.03	54	-8.25	34.32	8.44	34.04	244	141	Average
5410.28	54.09	45.37	74	-19.91	34.32	8.44	34.04	244	141	Peak
*10480	53.75	39.24	68.2	-14.45	37.19	12.53	35.21	185	19	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp 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	Charles Hsiao

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
5050.1	45.72	37.66	54	-8.28	34.04	8	33.98	117	40	Average
5050.1	53.9	45.84	74	-20.1	34.04	8	33.98	117	40	Peak
5260	102.65	94.19			34.21	8.26	34.01	117	40	Average
5260	109.43	100.97			34.21	8.26	34.01	117	40	Peak
*10520	55.67	41.08	68.2	-12.53	37.21	12.61	35.23	155	179	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
5111	45.53	37.33	54	-8.47	34.09	8.1	33.99	239	141	Average
5111	53.67	45.47	74	-20.33	34.09	8.1	33.99	239	141	Peak
5260	96.82	88.36			34.21	8.26	34.01	239	141	Average
5260	104.41	95.95			34.21	8.26	34.01	239	141	Peak
*10520	53.57	38.98	68.2	-14.63	37.21	12.61	35.23	162	247	Peak

Remarks:

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

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

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	46.26	38.01	54	-7.74	34.11	8.13	33.99	117	40	Average
5138	54.49	46.24	74	-19.51	34.11	8.13	33.99	117	40	Peak
5300	102.44	93.9			34.24	8.32	34.02	117	40	Average
5300	109.67	101.13			34.24	8.32	34.02	117	40	Peak
5402.8	45.54	36.82	54	-8.46	34.32	8.44	34.04	117	40	Average
5402.8	53.83	45.11	74	-20.17	34.32	8.44	34.04	117	40	Peak
10600	44.51	29.83	54	-9.49	37.28	12.67	35.27	157	185	Average
10600	54.32	39.64	74	-19.68	37.28	12.67	35.27	157	185	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
5136.95	45.07	36.82	54	-8.93	34.11	8.13	33.99	239	141	Average
5136.95	53.1	44.85	74	-20.9	34.11	8.13	33.99	239	141	Peak
5300	97.12	88.58			34.24	8.32	34.02	239	141	Average
5300	104.68	96.14			34.24	8.32	34.02	239	141	Peak
5394.77	45.4	36.68	54	-8.6	34.32	8.44	34.04	239	141	Average
5394.77	53.44	44.72	74	-20.56	34.32	8.44	34.04	239	141	Peak
10600	45.23	30.55	54	-8.77	37.28	12.67	35.27	104	213	Average
10600	54.07	39.39	74	-19.93	37.28	12.67	35.27	104	213	Peak

Remarks:

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

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

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
5320	99.56	90.98			34.25	8.35	34.02	117	40	Average
5320	106.76	98.18			34.25	8.35	34.02	117	40	Peak
5363.42	45.78	37.14	54	-8.22	34.29	8.38	34.03	117	40	Average
5363.42	53.87	45.23	74	-20.13	34.29	8.38	34.03	117	40	Peak
10640	45.27	30.54	54	-8.73	37.31	12.71	35.29	101	360	Average
10640	54.4	39.67	74	-19.6	37.31	12.71	35.29	101	360	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
5320	94.2	85.62			34.25	8.35	34.02	239	141	Average
5320	101.77	93.19			34.25	8.35	34.02	239	141	Peak
5359.13	45.09	36.46	54	-8.91	34.28	8.38	34.03	239	141	Average
5359.13	54.17	45.54	74	-19.83	34.28	8.38	34.03	239	141	Peak
10640	45.21	30.48	54	-8.79	37.31	12.71	35.29	112	304	Average
10640	53.37	38.64	74	-20.63	37.31	12.71	35.29	112	304	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp 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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5429.04	45.3	36.51	54	-8.7	34.35	8.48	34.04	152	38	Average
5429.04	54.41	45.62	74	-19.59	34.35	8.48	34.04	152	38	Peak
*5468.88	55.36	46.53	68.2	-12.84	34.37	8.51	34.05	152	38	Peak
5500	102.49	93.57			34.4	8.57	34.05	152	38	Average
5500	109.51	100.59			34.4	8.57	34.05	152	38	Peak
11000	47.2	32.12	54	-6.8	37.6	12.96	35.48	104	21	Average
11000	55.69	40.61	74	-18.31	37.6	12.96	35.48	104	21	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
5354.96	45.15	36.52	54	-8.85	34.28	8.38	34.03	236	141	Average
5354.96	54.58	45.95	74	-19.42	34.28	8.38	34.03	236	141	Peak
*5469.36	52.14	43.31	68.2	-16.06	34.37	8.51	34.05	236	141	Peak
5500	95.69	86.77			34.4	8.57	34.05	236	141	Average
5500	102.56	93.64			34.4	8.57	34.05	236	141	Peak
11000	45.2	30.12	54	-8.8	37.6	12.96	35.48	181	359	Average
11000	53.96	38.88	74	-20.04	37.6	12.96	35.48	181	359	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp 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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5447.12	44.35	35.52	54	-9.65	34.36	8.51	34.04	155	40	Average
5447.12	53.59	44.76	74	-20.41	34.36	8.51	34.04	155	40	Peak
*5469.52	53.06	44.23	68.2	-15.14	34.37	8.51	34.05	155	40	Peak
5580	105.46	96.47			34.47	8.6	34.08	155	40	Average
5580	112.38	103.39			34.47	8.6	34.08	155	40	Peak
*5724.36	53.07	43.91	68.2	-15.13	34.62	8.65	34.11	155	40	Peak
11160	47.34	32.26	54	-6.66	37.7	12.83	35.45	190	222	Average
11160	55.61	40.53	74	-18.39	37.7	12.83	35.45	190	222	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
5446.16	44.07	35.24	54	-9.93	34.36	8.51	34.04	236	141	Average
5446.16	53.75	44.92	74	-20.25	34.36	8.51	34.04	236	141	Peak
*5468.4	52.68	43.85	68.2	-15.52	34.37	8.51	34.05	236	141	Peak
5580	97.7	88.71			34.47	8.6	34.08	236	141	Average
5580	105.26	96.27			34.47	8.6	34.08	236	141	Peak
*5724.04	53.07	43.91	68.2	-15.13	34.62	8.65	34.11	236	141	Peak
11160	46.34	31.26	54	-7.66	37.7	12.83	35.45	185	245	Average
11160	54.69	39.61	74	-19.31	37.7	12.83	35.45	185	245	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: 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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5700	105.62	96.49			34.59	8.64	34.1	140	40	Average
5700	112.69	103.56			34.59	8.64	34.1	140	40	Peak
*5724.84	67.18	58.02	68.2	-1.02	34.62	8.65	34.11	134	49	Peak
11400	47.32	32.22	54	-6.68	37.84	12.67	35.41	124	326	Average
11400	55.78	40.68	74	-18.22	37.84	12.67	35.41	124	326	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
5700	98.06	88.93			34.59	8.64	34.1	236	141	Average
5700	105.48	96.35			34.59	8.64	34.1	236	141	Peak
*5725.16	59.91	50.75	68.2	-8.29	34.62	8.65	34.11	238	140	Peak
11400	47.23	32.13	54	-6.77	37.84	12.67	35.41	156	295	Average
11400	56.07	40.97	74	-17.93	37.84	12.67	35.41	156	295	Peak

Remarks:

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

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

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
5451.92	44.39	35.57	54	-9.61	34.36	8.51	34.05	137	39	Average
5451.92	53.58	44.76	74	-20.42	34.36	8.51	34.05	137	39	Peak
*5468.08	52.93	44.1	68.2	-15.27	34.37	8.51	34.05	137	39	Peak
5720	105.85	96.69			34.62	8.65	34.11	137	39	Average
5720	113.77	104.61			34.62	8.65	34.11	137	39	Peak
11440	47.71	32.6	54	-6.29	37.86	12.65	35.4	105	274	Average
11440	54.69	39.58	74	-19.31	37.86	12.65	35.4	105	274	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
5379.28	44.64	35.96	54	-9.36	34.31	8.41	34.04	236	141	Average
5379.28	54.04	45.36	74	-19.96	34.31	8.41	34.04	236	141	Peak
*5468.4	53.49	44.66	68.2	-14.71	34.37	8.51	34.05	236	141	Peak
5720	98.58	89.42			34.62	8.65	34.11	236	141	Average
5720	106.36	97.2			34.62	8.65	34.11	236	141	Peak
11440	47.77	32.66	54	-6.23	37.86	12.65	35.4	128	192	Average
11440	56.02	40.91	74	-17.98	37.86	12.65	35.4	128	192	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
- 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	Charles Hsiao

<Spurious Emission>

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
5745	102.58	93.39			34.64	8.66	34.11	121	71	Average
5745	109.38	100.19			34.64	8.66	34.11	121	71	Peak
11490	47.24	32.12	54	-6.76	37.89	12.62	35.39	185	55	Average
11490	55.17	40.05	74	-18.83	37.89	12.62	35.39	185	55	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
5745	95.58	86.39			34.64	8.66	34.11	200	143	Average
5745	102.54	93.35			34.64	8.66	34.11	200	143	Peak
11490	47.26	32.14	54	-6.74	37.89	12.62	35.39	164	316	Average
11490	55.72	40.6	74	-18.28	37.89	12.62	35.39	164	316	Peak

<Out of Band Emission (OOBE)>

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
*5631.25	53.98	44.93	68.2	-14.22	34.52	8.62	34.09	121	71	Peak
5653.3	51.96	42.86	70.64	-18.68	34.56	8.63	34.09	121	71	Peak
5919.475	53.04	43.66	72.29	-19.25	34.81	8.73	34.16	121	71	Peak
*6011.35	53.54	44.04	68.2	-14.66	34.92	8.76	34.18	121	71	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
*5614.45	53.01	43.98	68.2	-15.19	34.5	8.61	34.08	200	143	Peak
5654.875	50.81	41.72	71.81	-21	34.56	8.63	34.1	200	143	Peak
5921.575	51.94	42.54	70.73	-18.79	34.83	8.73	34.16	200	143	Peak
*5932.075	54.31	44.91	68.2	-13.89	34.83	8.73	34.16	200	143	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
- 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	Charles Hsiao

<Spurious Emission>

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
5785	101.49	92.26			34.68	8.68	34.13	121	71	Average
5785	108.95	99.72			34.68	8.68	34.13	121	71	Peak
11570	46.83	31.52	54	-7.17	38	12.68	35.37	174	149	Average
11570	54.76	39.45	74	-19.24	38	12.68	35.37	174	149	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
5785	94.65	85.42			34.68	8.68	34.13	200	143	Average
5785	101.05	91.82			34.68	8.68	34.13	200	143	Peak
11570	47.82	32.51	54	-6.18	38	12.68	35.37	135	266	Average
11570	55.4	40.09	74	-18.6	38	12.68	35.37	135	266	Peak

<Out of Band Emission (OOBE)>

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
*5644.9	53.55	44.48	68.2	-14.65	34.54	8.62	34.09	121	71	Peak
5658.025	52.81	43.72	74.14	-21.33	34.56	8.63	34.1	121	71	Peak
5921.575	51.74	42.34	70.73	-18.99	34.83	8.73	34.16	121	71	Peak
*5965.675	53.02	43.57	68.2	-15.18	34.87	8.75	34.17	121	71	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
*5643.325	53.33	44.26	68.2	-14.87	34.54	8.62	34.09	200	143	Peak
5658.025	52.98	43.89	74.14	-21.16	34.56	8.63	34.1	200	143	Peak
5922.1	47.96	38.56	70.35	-22.39	34.83	8.73	34.16	200	143	Peak
*5950.45	52.86	43.43	68.2	-15.34	34.85	8.74	34.16	200	143	Peak

Remarks:

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

<Spurious Emission>

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
5825	101.44	92.15			34.73	8.69	34.13	121	71	Average
5825	108.51	99.22			34.73	8.69	34.13	121	71	Peak
11650	46.06	30.53	54	-7.94	38.09	12.8	35.36	185	177	Average
11650	54.28	38.75	74	-19.72	38.09	12.8	35.36	185	177	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
5825	94.77	85.48			34.73	8.69	34.13	200	143	Average
5825	101.58	92.29			34.73	8.69	34.13	200	143	Peak
11650	47.66	32.13	54	-6.34	38.09	12.8	35.36	134	340	Average
11650	54.8	39.27	74	-19.2	38.09	12.8	35.36	134	340	Peak

<Out of Band Emission (OOBE)>

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
*5602.9	54.11	45.08	68.2	-14.09	34.5	8.61	34.08	121	71	Peak
5657.5	52.31	43.22	73.75	-21.44	34.56	8.63	34.1	121	71	Peak
5920	52.22	42.84	71.9	-19.68	34.81	8.73	34.16	121	71	Peak
*5939.425	53.81	44.38	68.2	-14.39	34.85	8.74	34.16	121	71	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
*5581.375	53.51	44.52	68.2	-14.69	34.47	8.6	34.08	200	143	Peak
5652.25	51.29	42.2	69.86	-18.57	34.56	8.62	34.09	200	143	Peak
5922.625	51.17	41.77	69.96	-18.79	34.83	8.73	34.16	200	143	Peak
*5957.275	53.3	43.85	68.2	-14.9	34.87	8.74	34.16	200	143	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5825 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The 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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5148.65	46.33	38.08	54	-7.67	34.12	8.13	34	117	38	Average
5148.65	55.04	46.79	74	-18.96	34.12	8.13	34	117	38	Peak
5190	96.69	88.35			34.15	8.19	34	115	38	Average
5190	105.01	96.67			34.15	8.19	34	115	38	Peak
5400.16	45.6	36.88	54	-8.4	34.32	8.44	34.04	117	38	Average
5400.16	53.75	45.03	74	-20.25	34.32	8.44	34.04	117	38	Peak
*10380	53.07	38.72	68.2	-15.13	37.13	12.36	35.14	114	185	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
5110.4	45.83	37.63	54	-8.17	34.09	8.1	33.99	244	141	Average
5110.4	54.07	45.87	74	-19.93	34.09	8.1	33.99	244	141	Peak
5190	91.26	82.92			34.15	8.19	34	244	141	Average
5190	98.84	90.5			34.15	8.19	34	244	141	Peak
5458.24	45.41	36.59	54	-8.59	34.36	8.51	34.05	244	141	Average
5458.24	53.52	44.7	74	-20.48	34.36	8.51	34.05	244	141	Peak
*10380	52.99	38.64	68.2	-15.21	37.13	12.36	35.14	113	300	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp 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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5097.65	45.36	37.2	54	-8.64	34.08	8.07	33.99	115	38	Average
5097.65	54.49	46.33	74	-19.51	34.08	8.07	33.99	115	38	Peak
5230	99.79	91.39			34.19	8.22	34.01	115	38	Average
5230	107.94	99.54			34.19	8.22	34.01	115	38	Peak
5359.13	45.27	36.64	54	-8.73	34.28	8.38	34.03	115	38	Average
5359.13	54.36	45.73	74	-19.64	34.28	8.38	34.03	115	38	Peak
*10460	54.4	39.89	68.2	-13.8	37.17	12.53	35.19	187	136	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
5112.2	45.82	37.62	54	-8.18	34.09	8.1	33.99	244	141	Average
5112.2	54.2	46	74	-19.8	34.09	8.1	33.99	244	141	Peak
5230	94.85	86.45			34.19	8.22	34.01	244	141	Average
5230	102.04	93.64			34.19	8.22	34.01	244	141	Peak
5459.67	45.37	36.55	54	-8.63	34.36	8.51	34.05	244	141	Average
5459.67	54.33	45.51	74	-19.67	34.36	8.51	34.05	244	141	Peak
*10460	52.32	37.81	68.2	-15.88	37.17	12.53	35.19	118	202	Peak

Remarks:

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

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

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
5097.8	45.81	37.65	54	-8.19	34.08	8.07	33.99	119	40	Average
5097.8	53.97	45.81	74	-20.03	34.08	8.07	33.99	119	40	Peak
5270	99.92	91.43			34.21	8.29	34.01	119	40	Average
5270	107.79	99.3			34.21	8.29	34.01	119	40	Peak
5350.33	45.11	36.48	54	-8.89	34.28	8.38	34.03	119	40	Average
5350.33	54.28	45.65	74	-19.72	34.28	8.38	34.03	119	40	Peak
10540	44.17	29.55	54	-9.83	37.23	12.63	35.24	164	19	Average
10540	53.84	39.22	74	-20.16	37.23	12.63	35.24	164	19	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
5147.75	45.32	37.07	54	-8.68	34.12	8.13	34	239	141	Average
5147.75	53.38	45.13	74	-20.62	34.12	8.13	34	239	141	Peak
5270	94.19	85.7			34.21	8.29	34.01	239	141	Average
5270	102.58	94.09			34.21	8.29	34.01	239	141	Peak
5455.38	46.05	37.23	54	-7.95	34.36	8.51	34.05	239	141	Average
5455.38	54.2	45.38	74	-19.8	34.36	8.51	34.05	239	141	Peak
10540	43.93	29.31	54	-10.07	37.23	12.63	35.24	175	228	Average
10540	53.68	39.06	74	-20.32	37.23	12.63	35.24	175	228	Peak

Remarks:

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

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

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
5096.3	46.12	37.96	54	-7.88	34.08	8.07	33.99	119	40	Average
5096.3	54.2	46.04	74	-19.8	34.08	8.07	33.99	119	40	Peak
5310	96.44	87.89			34.25	8.32	34.02	119	40	Average
5310	104.39	95.84			34.25	8.32	34.02	119	40	Peak
5417.32	46.67	37.94	54	-7.33	34.33	8.44	34.04	119	40	Average
5417.32	54.99	46.26	74	-19.01	34.33	8.44	34.04	119	40	Peak
10620	43.37	28.66	54	-10.63	37.3	12.69	35.28	174	177	Average
10620	53.25	38.54	74	-20.75	37.3	12.69	35.28	174	177	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
5128.55	46.31	38.09	54	-7.69	34.11	8.1	33.99	239	141	Average
5128.55	54.4	46.18	74	-19.6	34.11	8.1	33.99	239	141	Peak
5310	90.98	82.43			34.25	8.32	34.02	239	141	Average
5310	98.4	89.85			34.25	8.32	34.02	239	141	Peak
5438.22	46.22	37.43	54	-7.78	34.35	8.48	34.04	239	141	Average
5438.22	55.01	46.22	74	-18.99	34.35	8.48	34.04	239	141	Peak
10620	42.85	28.14	54	-11.15	37.3	12.69	35.28	125	196	Average
10620	52.77	38.06	74	-21.23	37.3	12.69	35.28	125	196	Peak

Remarks:

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

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

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
5441.84	45.3	36.51	54	-8.7	34.35	8.48	34.04	167	38	Average
5441.84	53.97	45.18	74	-20.03	34.35	8.48	34.04	167	38	Peak
*5470.16	53.4	44.57	68.2	-14.8	34.37	8.51	34.05	167	38	Peak
5510	97.11	88.2			34.4	8.57	34.06	167	38	Average
5510	104.4	95.49			34.4	8.57	34.06	167	38	Peak
*5725.56	52.78	43.62	68.2	-15.42	34.62	8.65	34.11	167	38	Peak
11020	46.6	31.53	54	-7.4	37.61	12.94	35.48	190	85	Average
11020	54.88	39.81	74	-19.12	37.61	12.94	35.48	190	85	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
5443.44	43.99	35.2	54	-10.01	34.35	8.48	34.04	236	141	Average
5443.44	53.57	44.78	74	-20.43	34.35	8.48	34.04	236	141	Peak
*5470.96	53.05	44.19	68.2	-15.15	34.37	8.54	34.05	236	141	Peak
5510	89.78	80.87			34.4	8.57	34.06	236	141	Average
5510	97.46	88.55			34.4	8.57	34.06	236	141	Peak
*5724.12	52.75	43.59	68.2	-15.45	34.62	8.65	34.11	236	141	Peak
11020	47.29	32.22	54	-6.71	37.61	12.94	35.48	164	346	Average
11020	54.98	39.91	74	-19.02	37.61	12.94	35.48	164	346	Peak

Remarks:

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

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

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
5449.36	44.35	35.52	54	-9.65	34.36	8.51	34.04	155	40	Average
5449.36	54.5	45.67	74	-19.5	34.36	8.51	34.04	155	40	Peak
*5468.56	54.7	45.87	68.2	-13.5	34.37	8.51	34.05	155	40	Peak
5550	100.38	91.41			34.45	8.59	34.07	155	40	Average
5550	108.37	99.4			34.45	8.59	34.07	155	40	Peak
*5724.12	53.38	44.22	68.2	-14.82	34.62	8.65	34.11	155	40	Peak
11100	46.61	31.52	54	-7.39	37.66	12.89	35.46	104	249	Average
11100	54.81	39.72	74	-19.19	37.66	12.89	35.46	104	249	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
5447.44	44.35	35.52	54	-9.65	34.36	8.51	34.04	236	141	Average
5447.44	53.29	44.46	74	-20.71	34.36	8.51	34.04	236	141	Peak
*5470	52.86	44.03	68.2	-15.34	34.37	8.51	34.05	236	141	Peak
5550	93.73	84.76			34.45	8.59	34.07	236	141	Average
5550	101.48	92.51			34.45	8.59	34.07	236	141	Peak
*5724.92	53.11	43.95	68.2	-15.09	34.62	8.65	34.11	236	141	Peak
11100	47.34	32.25	54	-6.66	37.66	12.89	35.46	166	248	Average
11100	54.45	39.36	74	-19.55	37.66	12.89	35.46	166	248	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. *: 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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5431.92	44.44	35.65	54	-9.56	34.35	8.48	34.04	140	40	Average
5431.92	54.01	45.22	74	-19.99	34.35	8.48	34.04	140	40	Peak
*5468.56	54.65	45.82	68.2	-13.55	34.37	8.51	34.05	140	40	Peak
5670	100.38	91.28			34.57	8.63	34.1	140	40	Average
5670	108.03	98.93			34.57	8.63	34.1	140	40	Peak
*5725.88	54.38	45.22	68.2	-13.82	34.62	8.65	34.11	140	40	Peak
11340	47.61	32.52	54	-6.39	37.8	12.71	35.42	195	326	Average
11340	55.22	40.13	74	-18.78	37.8	12.71	35.42	195	326	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
5458	45.34	36.52	54	-8.66	34.36	8.51	34.05	236	141	Average
5458	53.85	45.03	74	-20.15	34.36	8.51	34.05	236	141	Peak
*5468.88	52.66	43.83	68.2	-15.54	34.37	8.51	34.05	236	141	Peak
5670	93.28	84.18			34.57	8.63	34.1	236	141	Average
5670	101.55	92.45			34.57	8.63	34.1	236	141	Peak
*5724.04	53.56	44.4	68.2	-14.64	34.62	8.65	34.11	236	141	Peak
11340	47.65	32.56	54	-6.35	37.8	12.71	35.42	110	240	Average
11340	55.22	40.13	74	-18.78	37.8	12.71	35.42	110	240	Peak

Remarks:

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

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

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
5441.04	45.35	36.56	54	-8.65	34.35	8.48	34.04	137	39	Average
5441.04	54.46	45.67	74	-19.54	34.35	8.48	34.04	137	39	Peak
*5469.36	53.79	44.96	68.2	-14.41	34.37	8.51	34.05	137	39	Peak
5710	102.09	92.94			34.61	8.65	34.11	137	39	Average
5710	109.67	100.52			34.61	8.65	34.11	137	39	Peak
11420	47.67	32.57	54	-6.33	37.85	12.65	35.4	157	117	Average
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
5449.2	44.67	35.84	54	-9.33	34.36	8.51	34.04	236	141	Average
5449.2	53.69	44.86	74	-20.31	34.36	8.51	34.04	236	141	Peak
*5468.88	52.49	43.66	68.2	-15.71	34.37	8.51	34.05	236	141	Peak
5710	95.08	85.93			34.61	8.65	34.11	236	141	Average
5710	103.27	94.12			34.61	8.65	34.11	236	141	Peak
11420	47.7	32.6	54	-6.3	37.85	12.65	35.4	124	85	Average

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5710 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	Charles Hsiao

<Spurious Emission>

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
5755	98.59	89.38			34.66	8.66	34.11	121	71	Average
5755	105.47	96.26			34.66	8.66	34.11	121	71	Peak
11510	47.38	32.27	54	-6.62	37.9	12.6	35.39	105	248	Average
11510	54.51	39.4	74	-19.49	37.9	12.6	35.39	105	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
5755	91.47	82.26			34.66	8.66	34.11	200	143	Average
5755	98.59	89.38			34.66	8.66	34.11	200	143	Peak
11510	47.24	32.13	54	-6.76	37.9	12.6	35.39	195	347	Average
11510	55.66	40.55	74	-18.34	37.9	12.6	35.39	195	347	Peak

<Out of Band Emission (OOBE)>

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
*5567.2	54.11	45.12	68.2	-14.09	34.47	8.59	34.07	121	71	Peak
5655.4	52.86	43.77	72.2	-19.34	34.56	8.63	34.1	121	71	Peak
5921.05	52.68	43.3	71.12	-18.44	34.81	8.73	34.16	121	71	Peak
*5973.55	52.89	43.43	68.2	-15.31	34.88	8.75	34.17	121	71	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
*5561.95	53.05	44.08	68.2	-15.15	34.45	8.59	34.07	200	143	Peak
5660.65	51.58	42.49	76.08	-24.5	34.56	8.63	34.1	200	143	Peak
5921.575	51.96	42.56	70.73	-18.77	34.83	8.73	34.16	200	143	Peak
*6012.4	53.13	43.63	68.2	-15.07	34.92	8.76	34.18	200	143	Peak

Remarks:

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

<Spurious Emission>

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
5795	100.56	91.32			34.69	8.68	34.13	121	71	Average
5795	107.46	98.22			34.69	8.68	34.13	121	71	Peak
11590	47.49	32.12	54	-6.51	38.02	12.72	35.37	142	344	Average
11590	55.46	40.09	74	-18.54	38.02	12.72	35.37	142	344	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
5795	93.62	84.38			34.69	8.68	34.13	200	143	Average
5795	100.6	91.36			34.69	8.68	34.13	200	143	Peak
11590	47.49	32.12	54	-6.51	38.02	12.72	35.37	185	205	Average
11590	54.52	39.15	74	-19.48	38.02	12.72	35.37	185	205	Peak

<Out of Band Emission (OOBE)>

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
*5616.025	53.68	44.63	68.2	-14.52	34.52	8.61	34.08	121	71	Peak
5654.35	51.72	42.63	71.42	-19.7	34.56	8.63	34.1	121	71	Peak
5918.425	52.53	43.15	73.07	-20.54	34.81	8.73	34.16	121	71	Peak
*5938.9	53.8	44.37	68.2	-14.4	34.85	8.74	34.16	121	71	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
*5629.15	53.96	44.91	68.2	-14.24	34.52	8.62	34.09	200	143	Peak
5660.125	53.05	43.96	75.69	-22.64	34.56	8.63	34.1	200	143	Peak
5916.85	52.77	43.39	74.23	-21.46	34.81	8.73	34.16	200	143	Peak
*6017.125	53.24	43.73	68.2	-14.96	34.92	8.77	34.18	200	143	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5795 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The 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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5148.5	45.34	37.09	54	-8.66	34.12	8.13	34	136	38	Average
5148.5	53.49	45.24	74	-20.51	34.12	8.13	34	136	38	Peak
5210	87.77	79.41			34.17	8.19	34	136	38	Average
5210	95.92	87.56			34.17	8.19	34	136	38	Peak
5419.74	45.61	36.84	54	-8.39	34.33	8.48	34.04	136	38	Average
5419.74	53.8	45.03	74	-20.2	34.33	8.48	34.04	136	38	Peak
*10420	54.25	39.84	68.2	-13.95	37.15	12.42	35.16	154	115	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
5097.5	45.71	37.55	54	-8.29	34.08	8.07	33.99	244	141	Average
5097.5	53.89	45.73	74	-20.11	34.08	8.07	33.99	244	141	Peak
5210	81.16	72.8			34.17	8.19	34	244	141	Average
5210	90.04	81.68			34.17	8.19	34	244	141	Peak
5438.99	45.09	36.3	54	-8.91	34.35	8.48	34.04	244	141	Average
5438.99	53.27	44.48	74	-20.73	34.35	8.48	34.04	244	141	Peak
*10420	53.11	38.7	68.2	-15.09	37.15	12.42	35.16	108	193	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp 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	Charles Hsiao

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
5113.4	45.44	37.24	54	-8.56	34.09	8.1	33.99	126	40	Average
5113.4	53.6	45.4	74	-20.4	34.09	8.1	33.99	126	40	Peak
5290	90.43	81.9			34.23	8.32	34.02	126	40	Average
5290	99.19	90.66			34.23	8.32	34.02	126	40	Peak
5363.53	46.17	37.53	54	-7.83	34.29	8.38	34.03	126	40	Average
5363.53	54.25	45.61	74	-19.75	34.29	8.38	34.03	126	40	Peak
*10580	53.48	38.83	68.2	-14.72	37.27	12.65	35.27	195	199	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
5112.2	44.06	35.86	54	-9.94	34.09	8.1	33.99	239	141	Average
5112.2	53.7	45.5	74	-20.3	34.09	8.1	33.99	239	141	Peak
5290	83.87	75.34			34.23	8.32	34.02	239	141	Average
5290	93.12	84.59			34.23	8.32	34.02	239	141	Peak
5394.99	44.3	35.58	54	-9.7	34.32	8.44	34.04	239	141	Average
5394.99	53.27	44.55	74	-20.73	34.32	8.44	34.04	239	141	Peak
*10580	53.72	39.07	68.2	-14.48	37.27	12.65	35.27	172	185	Peak

Remarks:

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

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

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
5452.72	44.34	35.52	54	-9.66	34.36	8.51	34.05	167	38	Average
5452.72	53.53	44.71	74	-20.47	34.36	8.51	34.05	167	38	Peak
*5468.24	54	45.17	68.2	-14.2	34.37	8.51	34.05	167	38	Peak
5530	91.15	82.22			34.42	8.58	34.07	167	38	Average
5530	99.57	90.64			34.42	8.58	34.07	167	38	Peak
*5724.2	52.61	43.45	68.2	-15.59	34.62	8.65	34.11	167	38	Peak
11060	45.6	30.52	54	-8.4	37.64	12.91	35.47	185	245	Average
11060	54.08	39	74	-19.92	37.64	12.91	35.47	185	245	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
5452.72	44.38	35.56	54	-9.62	34.36	8.51	34.05	236	141	Average
5452.72	53.62	44.8	74	-20.38	34.36	8.51	34.05	236	141	Peak
*5469.84	53.72	44.89	68.2	-14.48	34.37	8.51	34.05	236	141	Peak
5530	84.45	75.52			34.42	8.58	34.07	236	141	Average
5530	92.38	83.45			34.42	8.58	34.07	236	141	Peak
*5724.36	53.17	44.01	68.2	-15.03	34.62	8.65	34.11	236	141	Peak
11060	45.61	30.53	54	-8.39	37.64	12.91	35.47	164	296	Average
11060	53.68	38.6	74	-20.32	37.64	12.91	35.47	164	296	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp 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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5405.68	45.29	36.57	54	-8.71	34.32	8.44	34.04	155	40	Average
5405.68	53.89	45.17	74	-20.11	34.32	8.44	34.04	155	40	Peak
*5469.68	53.23	44.4	68.2	-14.97	34.37	8.51	34.05	155	40	Peak
5610	97.91	88.88			34.5	8.61	34.08	155	40	Average
5610	105.85	96.82			34.5	8.61	34.08	155	40	Peak
*5724.84	53.86	44.7	68.2	-14.34	34.62	8.65	34.11	155	40	Peak
11220	47.21	32.12	54	-6.79	37.73	12.8	35.44	185	314	Average
11220	55.02	39.93	74	-18.98	37.73	12.8	35.44	185	314	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
5445.2	44.33	35.51	54	-9.67	34.35	8.51	34.04	236	141	Average
5445.2	54.25	45.43	74	-19.75	34.35	8.51	34.04	236	141	Peak
*5468.72	52.86	44.03	68.2	-15.34	34.37	8.51	34.05	236	141	Peak
5610	90.91	81.88			34.5	8.61	34.08	236	141	Average
5610	98.42	89.39			34.5	8.61	34.08	236	141	Peak
*5724.92	52.74	43.58	68.2	-15.46	34.62	8.65	34.11	236	141	Peak
11220	47.3	32.21	54	-6.7	37.73	12.8	35.44	173	256	Average
11220	54.33	39.24	74	-19.67	37.73	12.8	35.44	173	256	Peak

Remarks:

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

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

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
5427.6	44.33	35.56	54	-9.67	34.33	8.48	34.04	137	39	Average
5427.6	53.39	44.62	74	-20.61	34.33	8.48	34.04	137	39	Peak
*5469.52	53.86	45.03	68.2	-14.34	34.37	8.51	34.05	137	39	Peak
5690	98.75	89.62			34.59	8.64	34.1	137	39	Average
5690	107.39	98.26			34.59	8.64	34.1	137	39	Peak
11380	47.64	32.53	54	-6.36	37.83	12.69	35.41	185	240	Average
11380	55.04	39.93	74	-18.96	37.83	12.69	35.41	185	240	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
5442.96	44.44	35.65	54	-9.56	34.35	8.48	34.04	236	141	Average
5442.96	53.59	44.8	74	-20.41	34.35	8.48	34.04	236	141	Peak
*5468.72	51.96	43.13	68.2	-16.24	34.37	8.51	34.05	236	141	Peak
5690	93.03	83.9			34.59	8.64	34.1	236	141	Average
5690	101.12	91.99			34.59	8.64	34.1	236	141	Peak
11380	47.37	32.26	54	-6.63	37.83	12.69	35.41	113	326	Average
11380	55.22	40.11	74	-18.78	37.83	12.69	35.41	113	326	Peak

Remarks:

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

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

<Spurious Emission>

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
5775	92.55	83.32			34.68	8.67	34.12	121	71	Average
5775	99.08	89.85			34.68	8.67	34.12	121	71	Peak
11550	47.53	32.26	54	-6.47	37.97	12.68	35.38	195	32	Average
11550	55.5	40.23	74	-18.5	37.97	12.68	35.38	195	32	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
5775	85.63	76.4			34.68	8.67	34.12	200	143	Average
5775	92.12	82.89			34.68	8.67	34.12	200	143	Peak
11550	47.42	32.15	54	-6.58	37.97	12.68	35.38	124	285	Average
11550	55.58	40.31	74	-18.42	37.97	12.68	35.38	124	285	Peak

<Out of Band Emission (OOBE)>

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
*5639.65	53.08	44.01	68.2	-15.12	34.54	8.62	34.09	121	71	Peak
5656.45	52.29	43.2	72.97	-20.68	34.56	8.63	34.1	121	71	Peak
5922.1	52.11	42.71	70.35	-18.24	34.83	8.73	34.16	121	71	Peak
*5932.6	53.5	44.1	68.2	-14.7	34.83	8.73	34.16	121	71	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
*5564.575	53.26	44.27	68.2	-14.94	34.47	8.59	34.07	200	143	Peak
5654.35	54.5	45.41	71.42	-16.92	34.56	8.63	34.1	200	143	Peak
5919.475	51.96	42.58	72.29	-20.33	34.81	8.73	34.16	200	143	Peak
*5975.125	53.32	43.86	68.2	-14.88	34.88	8.75	34.17	200	143	Peak

Remarks:

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

802.11ac (VHT160)

EUT Test Condition		Measurement Detail	
Channel	Channel 50	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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5132.45	47.54	39.32	54	-6.46	34.11	8.1	33.99	106	37	Average
5132.45	55.73	47.51	74	-18.27	34.11	8.1	33.99	106	37	Peak
5250	89.37	80.92			34.2	8.26	34.01	115	38	Average
5250	96.89	88.44			34.2	8.26	34.01	115	38	Peak
5393.89	46.69	37.98	54	-7.31	34.31	8.44	34.04	106	37	Average
5393.89	55.89	47.18	74	-18.11	34.31	8.44	34.04	106	37	Peak
*10500	51.97	37.41	68.2	-16.23	37.2	12.59	35.23	157	7	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
5148.65	45.52	37.27	54	-8.48	34.12	8.13	34	244	141	Average
5148.65	53.63	45.38	74	-20.37	34.12	8.13	34	244	141	Peak
5250	83.96	75.51			34.2	8.26	34.01	244	141	Average
5250	91.57	83.12			34.2	8.26	34.01	244	141	Peak
5370.02	45.74	37.07	54	-8.26	34.29	8.41	34.03	244	141	Average
5370.02	53.87	45.2	74	-20.13	34.29	8.41	34.03	244	141	Peak
*10500	51.65	37.09	68.2	-16.55	37.2	12.59	35.23	193	0	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5250 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 114	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)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5389.84	44.34	35.66	54	-9.66	34.31	8.41	34.04	149	40	Average
5389.84	54.47	45.79	74	-19.53	34.31	8.41	34.04	149	40	Peak
*5470.64	56.23	47.4	68.2	-11.97	34.37	8.51	34.05	149	40	Peak
5570	90.57	81.58			34.47	8.59	34.07	155	40	Average
5570	98	89.01			34.47	8.59	34.07	155	40	Peak
*5724.36	54.61	45.45	68.2	-13.59	34.62	8.65	34.11	155	40	Peak
11140	47.2	32.12	54	-6.8	37.68	12.85	35.45	152	322	Average
11140	55.78	40.7	74	-18.22	37.68	12.85	35.45	152	322	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
5399.44	45.29	36.57	54	-8.71	34.32	8.44	34.04	236	141	Average
5399.44	53.74	45.02	74	-20.26	34.32	8.44	34.04	236	141	Peak
*5468.72	53.12	44.29	68.2	-15.08	34.37	8.51	34.05	236	141	Peak
5570	84.07	75.08			34.47	8.59	34.07	236	141	Average
5570	91.02	82.03			34.47	8.59	34.07	236	141	Peak
*5725.8	53.19	44.03	68.2	-15.01	34.62	8.65	34.11	236	141	Peak
11140	47.2	32.12	54	-6.8	37.68	12.85	35.45	124	240	Average
11140	56.07	40.99	74	-17.93	37.68	12.85	35.45	124	240	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5570 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

9 kHz ~ 30 MHz Data:

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

30 MHz ~ 1 GHz Worst-Case Data:

802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 40	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

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
46.47	23.67	40.53	40	-16.33	14.46	0.9	32.22	146	186	Peak
100.47	19.98	38.65	43.5	-23.52	12.31	1.28	32.26	199	142	Peak
212.79	23.37	42.77	43.5	-20.13	11.2	1.65	32.25	127	238	Peak
432.3	21.09	35.5	46	-24.91	15.35	2.41	32.17	161	173	Peak
666.1	19.76	30.19	46	-26.24	18.71	2.99	32.13	189	224	Peak
847.4	22.45	29.89	46	-23.55	20.99	3.38	31.81	143	178	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
47.55	20.64	37.45	40	-19.36	14.51	0.9	32.22	107	152	Peak
161.76	10.79	32.71	43.5	-32.71	8.82	1.52	32.26	196	237	Peak
246.81	11.52	29.53	46	-34.48	12.25	1.85	32.11	155	104	Peak
394.5	14.11	29.09	46	-31.89	14.89	2.34	32.21	123	149	Peak
577.2	18.48	30.27	46	-27.52	17.59	2.82	32.2	132	180	Peak
856.5	23.37	30.57	46	-22.63	21.11	3.44	31.75	161	124	Peak

Remarks:

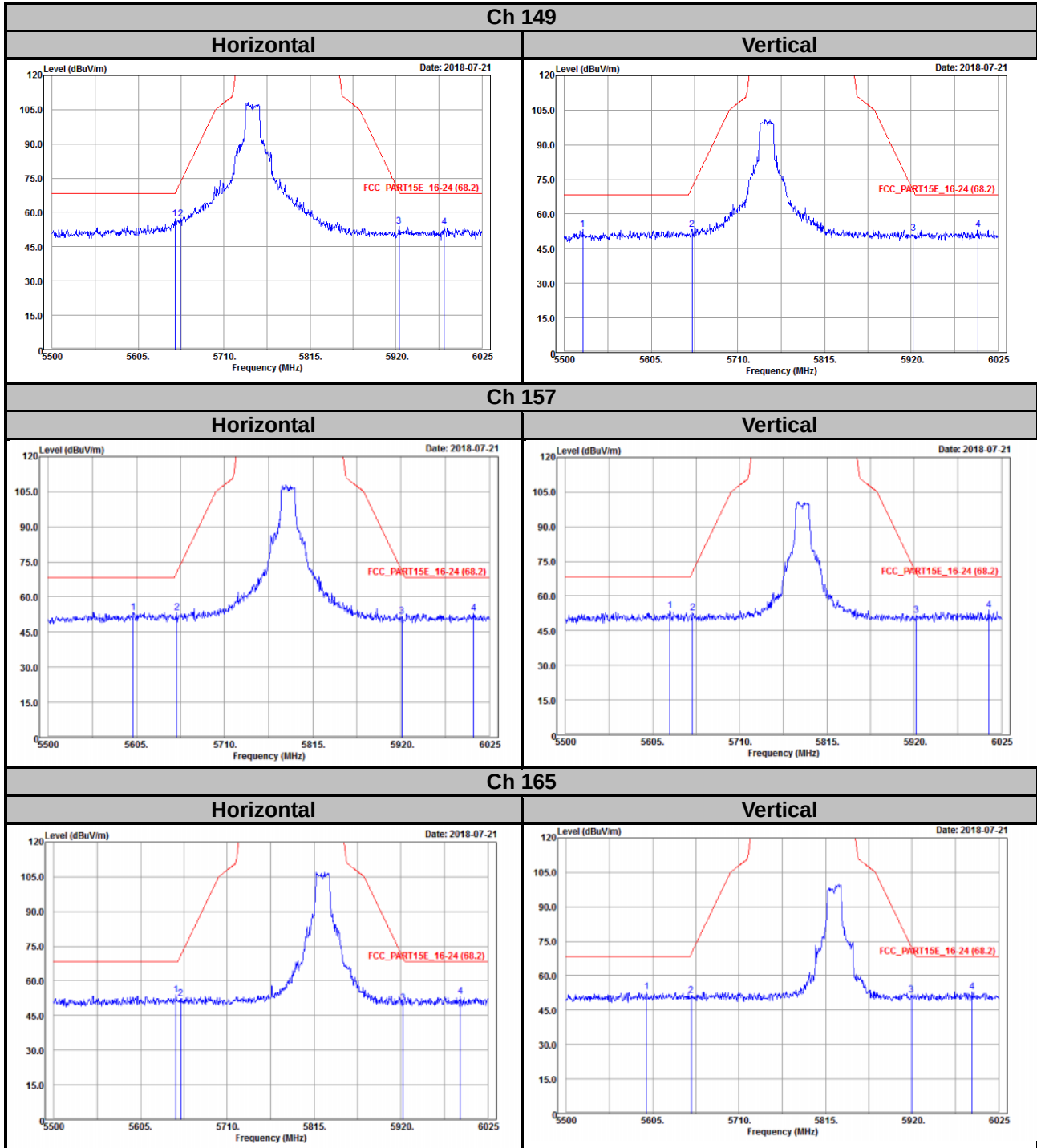
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- The emission levels of other frequencies were very low against the limit

5 Pictures of Test Arrangements

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

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

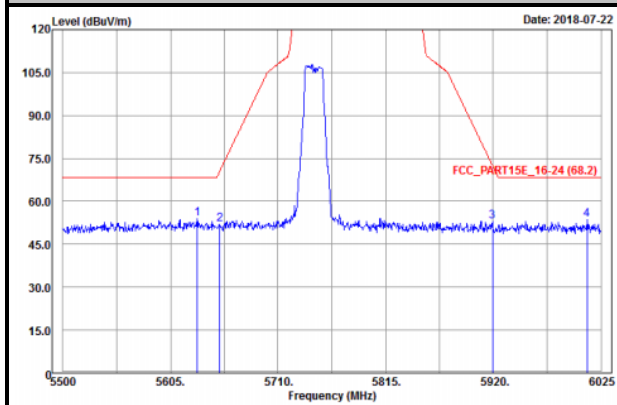
802.11a



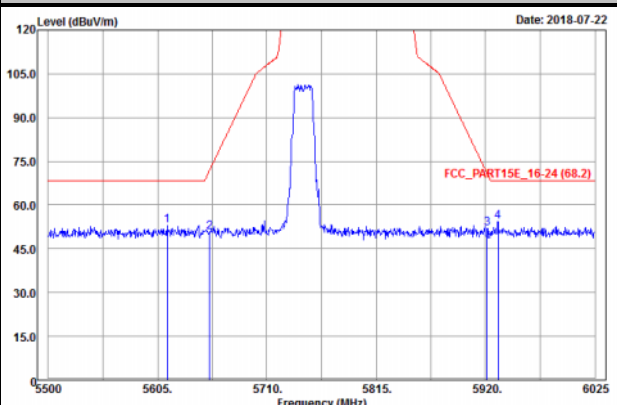
802.11n (HT20)

Ch 149

Horizontal

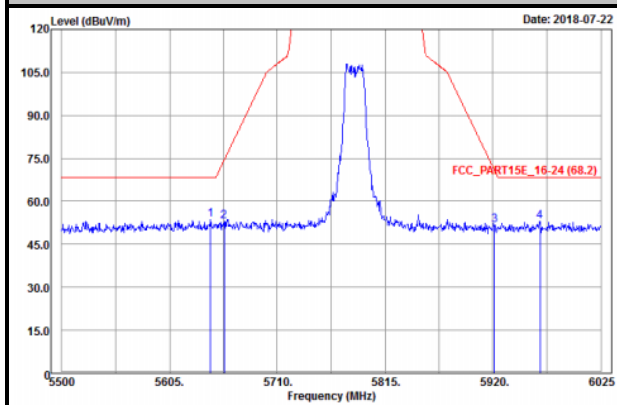


Vertical

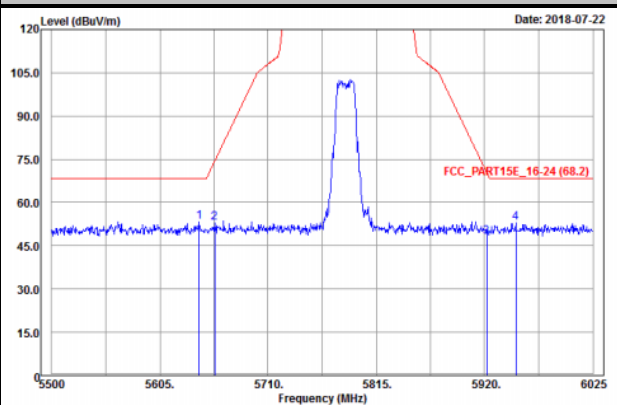


Ch 157

Horizontal

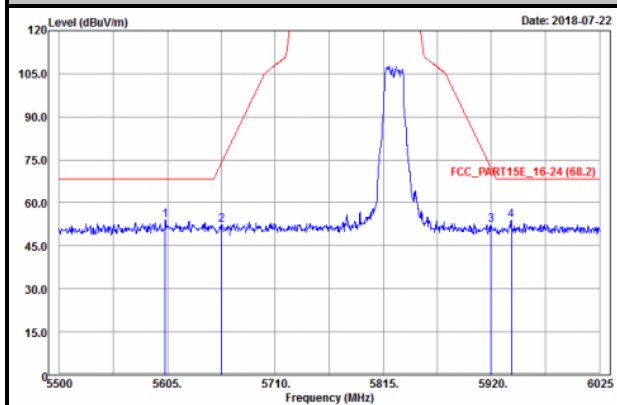


Vertical

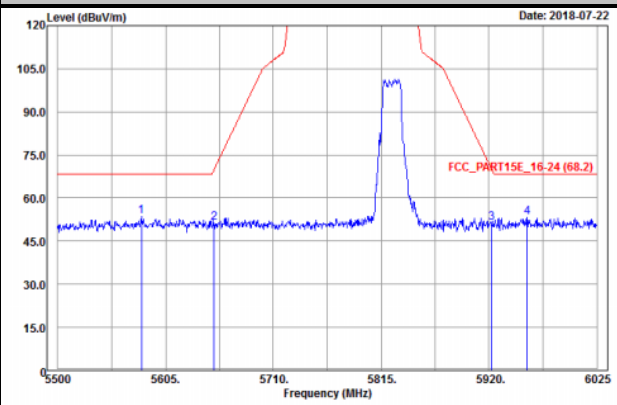


Ch 165

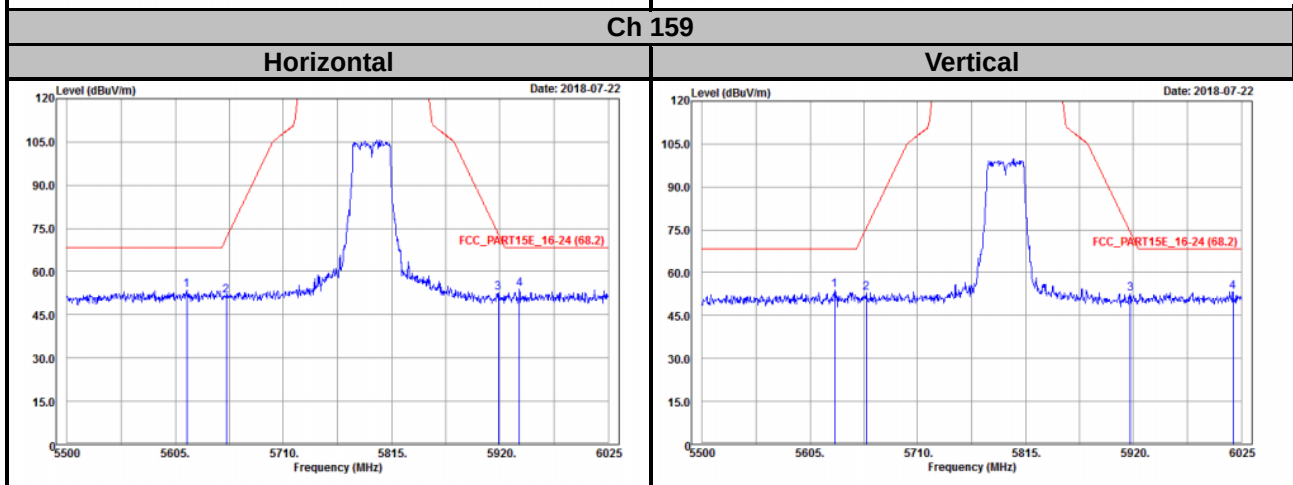
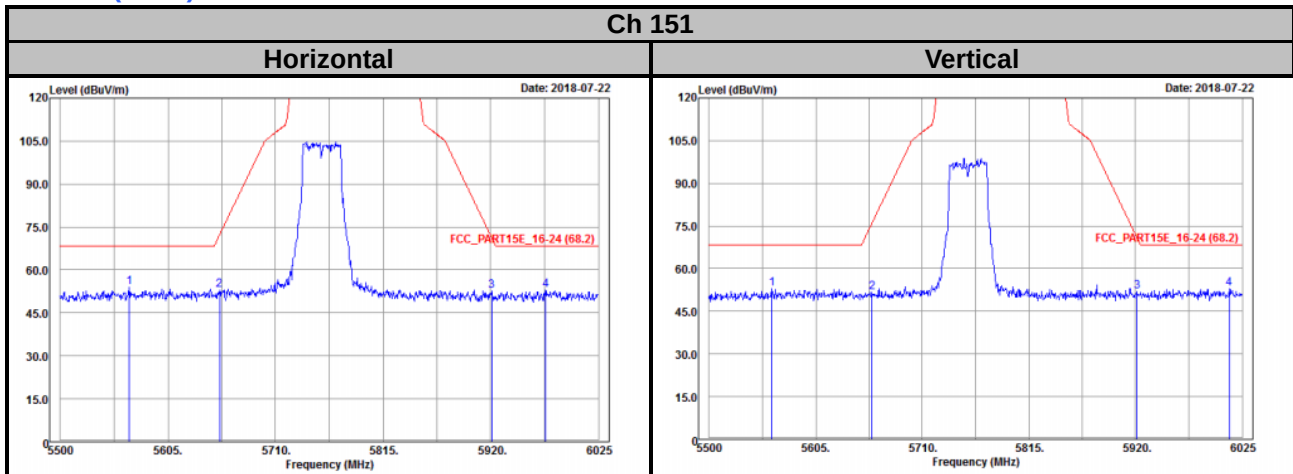
Horizontal



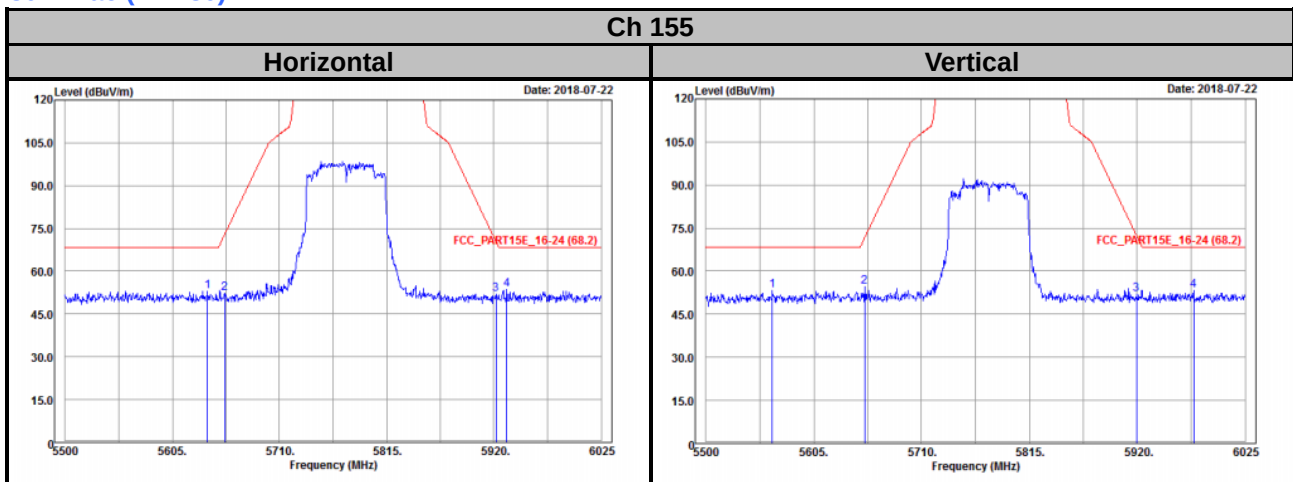
Vertical



802.11n (HT40)



802.11ac (VHT80)



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 FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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Web Site: www.bureauveritas-adt.com

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

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