

FCC Test Report

Report No.: RF161108C06-3

FCC ID: TX2-RTL8822BE

Test Model: RTL8822BE

Received Date: Nov. 08, 2016

Test Date: Nov. 14, 2016 ~ Nov. 23, 2016

Issued Date: Dec. 14, 2016

Applicant: Realtek Semiconductor Corp.

Address: No. 2, Innivation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
(R.O.C)

Test Location (1): No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan
Hsien 333, Taiwan, R.O.C.

Test Location (2): No.215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan,
R.O.C



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Release Control Record

Issue No.	Description	Date Issued
RF161108C06-3	Original Release	Dec. 14, 2016

1 Certificate of Conformity

Product: 802.11a/b/g/n/ac/ RTL8822BE Combo module

Brand: REALTEK

Test Model: RTL8822BE

Sample Status: Production Unit

Applicant: Realtek Semiconductor Corp.

Test Date: Nov. 14, 2016 ~ Nov. 23, 2016

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

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

Prepared by : Vera Huang , **Date:** Dec. 14, 2016
Vera Huang / Specialist

Approved by : Stanley Wu , **Date:** Dec. 14, 2016
Stanley Wu / Assistant Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -14.81 dB at 0.16569 MHz.
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 -3.92 dB at 799.1 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	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: Only test item of conducted and radiated emissions were performed for this report. Other testing data is referring to SPORTON module report (Test Report No.: FR651715AB, Issue Date: Aug. 19, 2016).

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	802.11a/b/g/n/ac/ RTL8822BE Combo module
Brand	REALTEK
Test Model	RTL8822BE
Status of EUT	Production Unit
Power Supply Rating	20.0 Vdc (adapter) 15.2 Vdc (Li-ion battery)
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 MCS7 802.11ac: up to V9
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5700 MHz, 5745 ~ 5825 MHz
Number of Channel	5180 ~ 5240 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5500 ~ 5700 MHz: 11 for 802.11a, 802.11n (HT20) 5 for 802.11n (HT40) 2 for 802.11ac (VHT80) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80)
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

1. The EUT is installed in Tablet computer (Brand: Lenovo, Model: TP00078B).
2. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

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

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

3. The antenna information is listed as below.

Ant. Type	Manufacture	Parts Number	Antenna Gain			
			WLAN 2.4GHz	WLAN 5.15~5.35GHz	WLAN 5.47~5.725GHz	WLAN 5.725~5.85GHz
PIFA	HUA CHENG TECHNOLOGY Co., Ltd.	WLAN Main Antenna: DC33001WO00 WLAN Aux. Antenna: DC33001WO10	Main: -2.87 Aux.: -3.67	Main: -0.41 Aux.: -0.33	Main: -0.77 Aux.: -0.30	Main: -1.04 Aux.: -0.36
PIFA	Pulse electronics (Singapore) Pte Ltd Taiwan Branch	WLAN Main Antenna: DC330020100 WLAN Aux Antenna: DC330020110	Main: -3.29 Aux.: -3.31	Main: -0.65 Aux.: -3.14	Main: -1.4 Aux.: -1.99	Main: -1.52 Aux.: -1.74

4. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter	Lenovo	ADLX65NDC3A	I/P: 100-240 Vac, 50-60 Hz, 1.5 A O/P: 20 Vdc, 3.25 A
Battery	Lenovo	SB10K97590	15.28 Vdc, 3.34 Ah

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

3.2 Description of Test Modes

For 5180 ~ 5240 MHz

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
42	5210

For 5260 ~ 5320 MHz

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
58	5290

For 5500 ~ 5700 MHz

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
104	5520	128	5640
108	5540	132	5660
112	5560	136	5680
116	5580	140	5700
120	5600		

5 channels are provided for 802.11n (HT40):

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

2 channels are provided for 802.11ac (VHT80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
106	5530	122	5610

For 5745 ~ 5825 MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
155	5775

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To			Description
	RE \geq 1G	RE<1G	PLC	
-	√	√	√	-

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

PLC: Power Line Conducted Emission

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane** for 5500-5700MHz, and **Z-plane** for 5180-5240MHz, 5260-5320MHz, 5745-5825MHz.

Radiated Emission Test (Above 1 GHz):

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

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 44, 48	OFDM	BPSK	6.0
		802.11n (HT20)	36 to 48	36, 44, 48	OFDM	BPSK	MCS0
		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	MCS0
		802.11ac (VHT80)	42	42	OFDM	BPSK	V0
	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
		802.11n (HT20)	52 to 64	52, 60, 64	OFDM	BPSK	MCS0
		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	MCS0
		802.11ac (VHT80)	58	58	OFDM	BPSK	V0
	5500-5700	802.11a	100 to 140	100, 116, 140	OFDM	BPSK	6.0
		802.11n (HT20)	100 to 140	100, 116, 140	OFDM	BPSK	MCS0
		802.11n (HT40)	102 to 134	102, 110, 134	OFDM	BPSK	MCS0
		802.11ac (VHT80)	106 to 122	106, 122	OFDM	BPSK	V0
	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
		802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	MCS0
		802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	MCS0
		802.11ac (VHT80)	155	155	OFDM	BPSK	V0

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	36	OFDM	BPSK	6.0
-	5260-5320	802.11a	52 to 64	64	OFDM	BPSK	6.0
-	5500-5700	802.11n (HT40)	102 to 134	102	OFDM	BPSK	MCS0
-	5745-5825	802.11ac (VHT80)	155	155	OFDM	BPSK	MCS0

Power Line Conducted Emission Test:

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5500-5700	802.11n (HT40)	102 to 134	102	OFDM	BPSK	MCS0

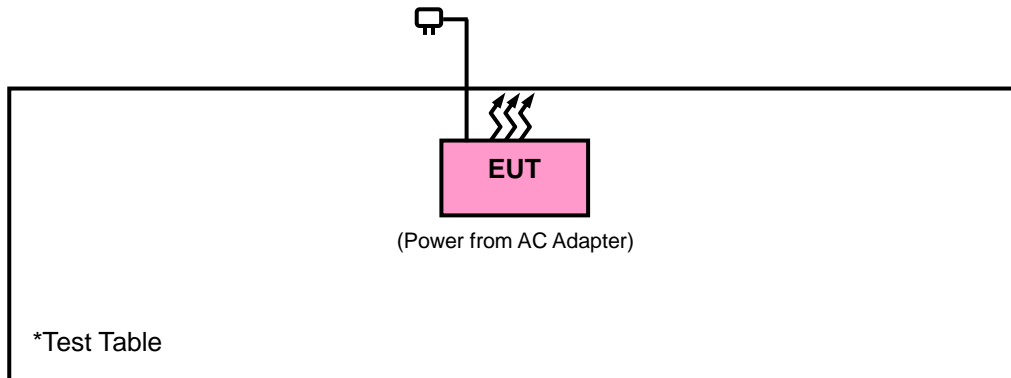
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE \geq 1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Toby Tian

3.3 Description of Support Units

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

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)

789033 D02 General UNII Test Procedures New Rules v01r03

644545 D01 Guidance for IEEE 802 11ac v01r02

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

Note:

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

4.1.2 Limits of Unwanted Emission Out of the Restricted Bands

Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v01r03		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	MY52260177	Jun. 21, 2016	Jun. 20, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2015	Dec. 16, 2016
HORN Antenna ETS-Lindgren	3117	00143293	Jan. 04, 2016	Jan. 03, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Jan. 04, 2016	Jan. 03, 2017
Fixed Attenuator Mini-Circuits	BW-N10W5+	NA	Jul. 08, 2016	Jul. 07, 2017
Bluetooth Tester	CBT	100980	Apr. 27, 2015	Apr. 26, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Preamplifier Agilent	310N	187226	Jun. 24, 2016	Jun. 23, 2017
Preamplifier Agilent	83017A	MY39501357	Jun. 24, 2016	Jun. 23, 2017
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(R FC-SMS-100-SM S-120+RFC-SMS -100-SMS-400)	Jun. 24, 2016	Jun. 23, 2017
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(R FC-SMS-100-SM S-24)	Jun. 24, 2016	Jun. 23, 2017
Software BV ADT	E3 8.130425b	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA

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

4.1.4 Test Procedures

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

Note:

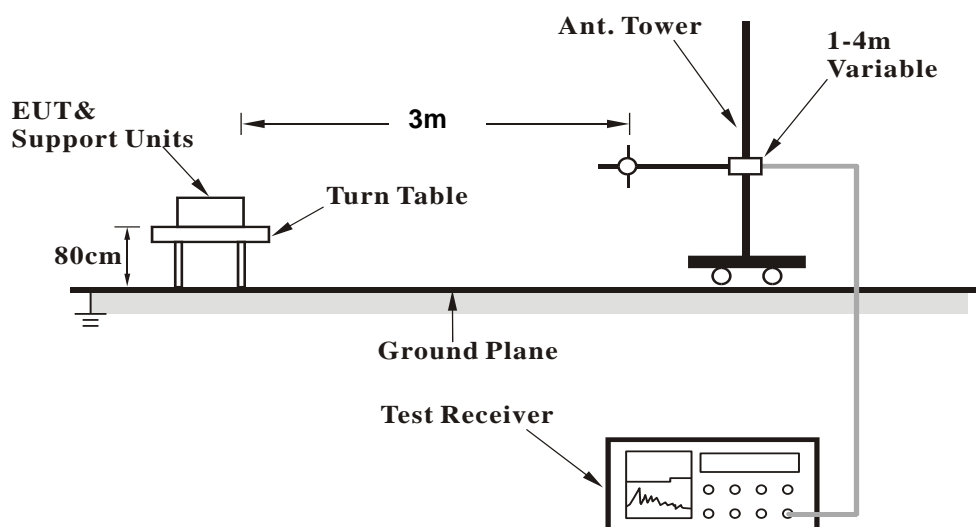
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz & 360 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency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

4.1.5 Deviation from Test Standard

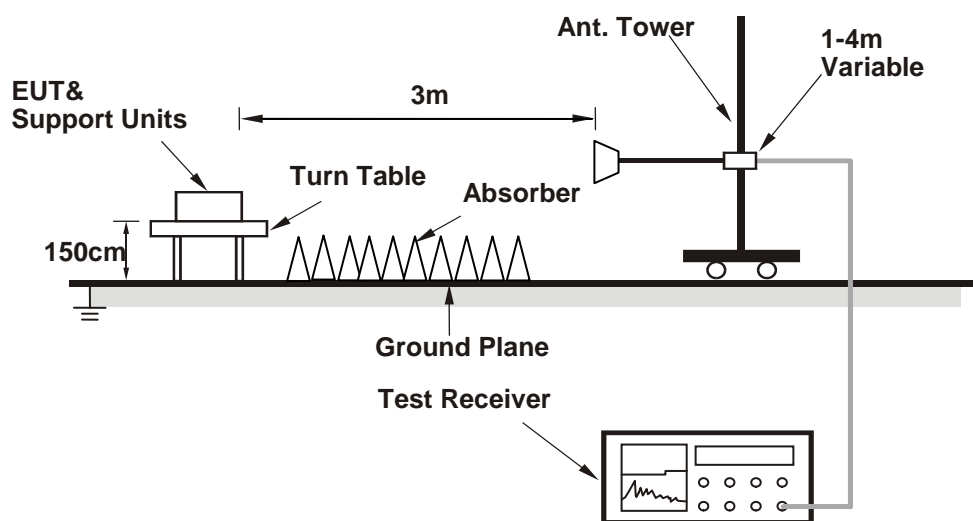
No deviation.

4.1.6 Test Set Up

<Frequency Range below 1 GHz>



<Frequency Range above 1 GHz>



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

4.1.7 EUT Operating Conditions

- 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
5148.95	53.8	45.55	74	-20.2	34.12	8.13	34	196	165	Peak
5149.85	43.32	35.07	54	-10.68	34.12	8.13	34	196	165	Average
5180	96.45	88.14			34.15	8.16	34	196	165	Average
5180	103.65	95.34			34.15	8.16	34	196	165	Peak
*10360	47.49	33.19	54	-6.51	37.12	12.3	35.12	137	3	Average
*10360	56.44	42.14	74	-17.56	37.12	12.3	35.12	137	3	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
5145.05	55.38	47.13	74	-18.62	34.12	8.13	34	146	183	Peak
5148.35	42.88	34.63	54	-11.12	34.12	8.13	34	146	183	Average
5180	93.51	85.2			34.15	8.16	34	146	183	Average
5180	100.53	92.22			34.15	8.16	34	146	183	Peak
*10360	47.35	33.05	54	-6.65	37.12	12.3	35.12	155	288	Average
*10360	55.73	41.43	74	-18.27	37.12	12.3	35.12	155	288	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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5142.65	42.81	34.55	54	-11.19	34.12	8.13	33.99	196	165	Average
5149.85	54.23	45.98	74	-19.77	34.12	8.13	34	196	165	Peak
5220	95.76	87.37			34.17	8.22	34	196	165	Average
5220	102.49	94.1			34.17	8.22	34	196	165	Peak
5361.22	53.68	45.04	74	-20.32	34.29	8.38	34.03	196	165	Peak
5455.05	42.84	34.02	54	-11.16	34.36	8.51	34.05	196	165	Average
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5080.85	53.63	45.51	74	-20.37	34.07	8.03	33.98	146	183	Peak
5121.95	42.76	34.56	54	-11.24	34.09	8.1	33.99	146	183	Average
5220	92.65	84.26			34.17	8.22	34	146	183	Average
5220	99.3	90.91			34.17	8.22	34	146	183	Peak
5401.48	53.61	44.89	74	-20.39	34.32	8.44	34.04	146	183	Peak
5448.01	42.93	34.1	54	-11.07	34.36	8.51	34.04	146	183	Average

Remarks:

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

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	95.92	87.48			34.19	8.26	34.01	196	165	Average
5240	102.4	93.96			34.19	8.26	34.01	196	165	Peak
5389.93	53.54	44.86	74	-20.46	34.31	8.41	34.04	196	165	Peak
5448.89	42.82	33.99	54	-11.18	34.36	8.51	34.04	196	165	Average
*10480	47.28	32.77	54	-6.72	37.19	12.53	35.21	105	300	Average
*10480	55.94	41.43	74	-18.06	37.19	12.53	35.21	105	300	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	92.8	84.36			34.19	8.26	34.01	146	183	Average
5240	99.68	91.24			34.19	8.26	34.01	146	183	Peak
5399.94	53.29	44.57	74	-20.71	34.32	8.44	34.04	146	183	Peak
5445.04	42.87	34.05	54	-11.13	34.35	8.51	34.04	146	183	Average
*10480	47.41	32.9	54	-6.59	37.19	12.53	35.21	119	118	Average
*10480	55.46	40.95	74	-18.54	37.19	12.53	35.21	119	118	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

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
5132.15	53.34	45.12	74	-20.66	34.11	8.1	33.99	221	359	Peak
5140.4	42.75	34.49	54	-11.25	34.12	8.13	33.99	221	359	Average
5260	95.67	87.21			34.21	8.26	34.01	221	359	Average
5260	102.12	93.66			34.21	8.26	34.01	221	359	Peak
*10520	47.61	33.02	54	-6.39	37.21	12.61	35.23	113	245	Average
*10520	56.13	41.54	74	-17.87	37.21	12.61	35.23	113	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
5080.4	54.41	46.29	74	-19.59	34.07	8.03	33.98	152	180	Peak
5125.25	42.64	34.42	54	-11.36	34.11	8.1	33.99	152	180	Average
5260	91.27	82.81			34.21	8.26	34.01	152	180	Average
5260	98.66	90.2			34.21	8.26	34.01	152	180	Peak
*10520	47.78	33.19	54	-6.22	37.21	12.61	35.23	171	148	Average
*10520	56.52	41.93	74	-17.48	37.21	12.61	35.23	171	148	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

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
5058.65	53.26	45.16	74	-20.74	34.05	8.03	33.98	221	359	Peak
5126.3	42.71	34.49	54	-11.29	34.11	8.1	33.99	221	359	Average
5300	95.74	87.2			34.24	8.32	34.02	221	359	Average
5300	102.8	94.26			34.24	8.32	34.02	221	359	Peak
5350.66	53.37	44.74	74	-20.63	34.28	8.38	34.03	221	359	Peak
5392.46	43.08	34.4	54	-10.92	34.31	8.41	34.04	221	359	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
5107.4	53.37	45.17	74	-20.63	34.09	8.1	33.99	152	180	Peak
5125.25	42.67	34.45	54	-11.33	34.11	8.1	33.99	152	180	Average
5300	91.21	82.67			34.24	8.32	34.02	152	180	Average
5300	98.09	89.55			34.24	8.32	34.02	152	180	Peak
5442.4	54.29	45.5	74	-19.71	34.35	8.48	34.04	152	180	Peak
5444.27	42.94	34.15	54	-11.06	34.35	8.48	34.04	152	180	Average

Remarks:

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

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	95.71	87.13			34.25	8.35	34.02	221	359	Average
5320	102.06	93.48			34.25	8.35	34.02	221	359	Peak
5350.77	42.99	34.36	54	-11.01	34.28	8.38	34.03	221	359	Average
5457.8	53.66	44.84	74	-20.34	34.36	8.51	34.05	221	359	Peak
10640	47.85	33.12	54	-6.15	37.31	12.71	35.29	127	247	Average
10640	57.58	42.85	74	-16.42	37.31	12.71	35.29	127	247	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	91.07	82.49			34.25	8.35	34.02	152	180	Average
5320	98.79	90.21			34.25	8.35	34.02	152	180	Peak
5420.18	53.8	45.03	74	-20.2	34.33	8.48	34.04	152	180	Peak
5444.38	42.75	33.96	54	-11.25	34.35	8.48	34.04	152	180	Average
10640	47.83	33.1	54	-6.17	37.31	12.71	35.29	168	28	Average
10640	57.01	42.28	74	-16.99	37.31	12.71	35.29	168	28	Peak

Remarks:

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

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
5436.4	54.68	45.89	74	-19.32	34.35	8.48	34.04	126	171	Peak
5458.16	43.59	34.77	54	-10.41	34.36	8.51	34.05	126	171	Average
*5469.52	43.67	34.84	54	-10.33	34.37	8.51	34.05	126	171	Average
*5470.64	53.08	44.25	74	-20.92	34.37	8.51	34.05	126	171	Peak
5500	96.36	87.44			34.4	8.57	34.05	126	171	Average
5500	103.94	95.02			34.4	8.57	34.05	126	171	Peak
11000	48.3	33.22	54	-5.7	37.6	12.96	35.48	178	124	Average
11000	57.2	42.12	74	-16.8	37.6	12.96	35.48	178	124	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
5426.64	53.03	44.26	74	-20.97	34.33	8.48	34.04	163	32	Peak
5444.56	43.14	34.35	54	-10.86	34.35	8.48	34.04	163	32	Average
*5468.88	52.45	43.62	74	-21.55	34.37	8.51	34.05	163	32	Peak
*5470.16	43.18	34.35	54	-10.82	34.37	8.51	34.05	163	32	Average
5500	89.38	80.46			34.4	8.57	34.05	163	32	Average
5500	96.82	87.9			34.4	8.57	34.05	163	32	Peak
11000	48.22	33.14	54	-5.78	37.6	12.96	35.48	187	233	Average
11000	57.32	42.24	74	-16.68	37.6	12.96	35.48	187	233	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5434.32	53.69	44.9	74	-20.31	34.35	8.48	34.04	135	176	Peak
5447.76	43.01	34.18	54	-10.99	34.36	8.51	34.04	135	176	Average
*5468.08	42.94	34.11	54	-11.06	34.37	8.51	34.05	135	176	Average
*5470.48	52.83	44	74	-21.17	34.37	8.51	34.05	135	176	Peak
5580	97.65	88.66			34.47	8.6	34.08	135	176	Average
5580	104.67	95.68			34.47	8.6	34.08	135	176	Peak
*5726.04	43.2	34.04	54	-10.8	34.62	8.65	34.11	135	176	Average
*5726.04	52.62	43.46	74	-21.38	34.62	8.65	34.11	135	176	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5376.08	53.46	44.8	74	-20.54	34.29	8.41	34.04	163	32	Peak
5438	42.83	34.04	54	-11.17	34.35	8.48	34.04	163	32	Average
*5468.4	51.68	42.85	74	-22.32	34.37	8.51	34.05	163	32	Peak
*5469.2	42.78	33.95	54	-11.22	34.37	8.51	34.05	163	32	Average
5580	90.12	81.13			34.47	8.6	34.08	163	32	Average
5580	97.42	88.43			34.47	8.6	34.08	163	32	Peak
*5724.44	53.7	44.54	74	-20.3	34.62	8.65	34.11	163	32	Peak
*5726.04	43.13	33.97	54	-10.87	34.62	8.65	34.11	163	32	Average

Remarks:

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

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

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	97.33	88.2			34.59	8.64	34.1	135	176	Average
5700	104.73	95.6			34.59	8.64	34.1	135	176	Peak
*5725.24	43.76	34.6	54	-10.24	34.62	8.65	34.11	135	176	Average
*5725.72	53.62	44.46	74	-20.38	34.62	8.65	34.11	135	176	Peak
11400	47.88	32.78	54	-6.12	37.84	12.67	35.41	191	101	Average
11400	56.3	41.2	74	-17.7	37.84	12.67	35.41	191	101	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	90.24	81.11			34.59	8.64	34.1	189	32	Average
5700	97.72	88.59			34.59	8.64	34.1	189	32	Peak
*5724.76	43.46	34.3	54	-10.54	34.62	8.65	34.11	189	32	Average
*5725.08	52.76	43.6	74	-21.24	34.62	8.65	34.11	189	32	Peak
11400	47.96	32.86	54	-6.04	37.84	12.67	35.41	186	114	Average
11400	56.87	41.77	74	-17.13	37.84	12.67	35.41	186	114	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

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)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	96.28	87.09			34.64	8.66	34.11	205	9	Average
5745	103.41	94.22			34.64	8.66	34.11	205	9	Peak
11490	47.97	32.85	54	-6.03	37.89	12.62	35.39	103	198	Average
11490	56.13	41.01	74	-17.87	37.89	12.62	35.39	103	198	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	92.63	83.44			34.64	8.66	34.11	182	5	Average
5745	99.55	90.36			34.64	8.66	34.11	182	5	Peak
11490	48.11	32.99	54	-5.89	37.89	12.62	35.39	147	187	Average
11490	56.78	41.66	74	-17.22	37.89	12.62	35.39	147	187	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5629.675	43.18	34.13	54	-10.82	34.52	8.62	34.09	205	9	Average
*5629.675	54.35	45.3	74	-19.65	34.52	8.62	34.09	205	9	Peak
5651.725	53.12	44.03	75.08	-21.96	34.56	8.62	34.09	205	9	Peak
5910.025	53.05	43.68	83.34	-30.29	34.81	8.72	34.16	205	9	Peak
*5974.075	43.7	34.24	54	-10.3	34.88	8.75	34.17	205	9	Average
*5974.075	54.71	45.25	74	-19.29	34.88	8.75	34.17	205	9	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5598.7	42.86	33.84	54	-11.14	34.5	8.6	34.08	182	5	Average
*5598.7	55.14	46.12	74	-18.86	34.5	8.6	34.08	182	5	Peak
5660.125	55.32	46.23	80.32	-25	34.56	8.63	34.1	182	5	Peak
5916.85	53.38	44	79.09	-25.71	34.81	8.73	34.16	182	5	Peak
*5973.55	43.59	34.13	54	-10.41	34.88	8.75	34.17	182	5	Average
*5973.55	54.67	45.21	74	-19.33	34.88	8.75	34.17	182	5	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	96.65	87.42			34.68	8.68	34.13	203	9	Average
5785	103.41	94.18			34.68	8.68	34.13	203	9	Peak
11570	48.08	32.77	54	-5.92	38	12.68	35.37	165	268	Average
11570	57.03	41.72	74	-16.97	38	12.68	35.37	165	268	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	93.13	83.9			34.68	8.68	34.13	173	5	Average
5785	99.95	90.72			34.68	8.68	34.13	173	5	Peak
11570	48.19	32.88	54	-5.81	38	12.68	35.37	136	355	Average
11570	56.25	40.94	74	-17.75	38	12.68	35.37	136	355	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5544.625	42.85	33.91	54	-11.15	34.43	8.58	34.07	203	9	Average
*5544.625	54.59	45.65	74	-19.41	34.43	8.58	34.07	203	9	Peak
5654.875	53.78	44.69	77.04	-23.26	34.56	8.63	34.1	203	9	Peak
5923.15	54.04	44.64	75.15	-21.11	34.83	8.73	34.16	203	9	Peak
*5983	43.73	34.27	54	-10.27	34.88	8.75	34.17	203	9	Average
*5983	55.27	45.81	74	-18.73	34.88	8.75	34.17	203	9	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5642.275	43.41	34.34	54	-10.59	34.54	8.62	34.09	173	5	Average
*5642.275	53.77	44.7	74	-20.23	34.54	8.62	34.09	173	5	Peak
5655.4	53.94	44.85	77.37	-23.43	34.56	8.63	34.1	173	5	Peak
5921.05	52.8	43.42	76.46	-23.66	34.81	8.73	34.16	173	5	Peak
*6012.925	43.78	34.28	54	-10.22	34.92	8.76	34.18	173	5	Average
*6012.925	55.6	46.1	74	-18.4	34.92	8.76	34.18	173	5	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	95.79	86.5			34.73	8.69	34.13	215	11	Average
5825	102.68	93.39			34.73	8.69	34.13	215	11	Peak
11650	48.16	32.63	54	-5.84	38.09	12.8	35.36	170	264	Average
11650	56.35	40.82	74	-17.65	38.09	12.8	35.36	170	264	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	93.12	83.83			34.73	8.69	34.13	165	10	Average
5825	100.24	90.95			34.73	8.69	34.13	165	10	Peak
11650	48.27	32.74	54	-5.73	38.09	12.8	35.36	192	140	Average
11650	56.34	40.81	74	-17.66	38.09	12.8	35.36	192	140	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5629.675	43.05	34	54	-10.95	34.52	8.62	34.09	215	11	Average
*5629.675	53.77	44.72	74	-20.23	34.52	8.62	34.09	215	11	Peak
5653.3	52.69	43.59	76.06	-23.37	34.56	8.63	34.09	215	11	Peak
5922.625	52.92	43.52	75.48	-22.56	34.83	8.73	34.16	215	11	Peak
*6019.225	43.52	34.01	54	-10.48	34.92	8.77	34.18	215	11	Average
*6019.225	54.39	44.88	74	-19.61	34.92	8.77	34.18	215	11	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5626	43.21	34.16	54	-10.79	34.52	8.61	34.08	165	10	Average
*5626	55.51	46.46	74	-18.49	34.52	8.61	34.08	165	10	Peak
5651.725	55.07	45.98	75.08	-20.01	34.56	8.62	34.09	165	10	Peak
5920.525	54.38	45	76.79	-22.41	34.81	8.73	34.16	165	10	Peak
*5969.35	43.75	34.3	54	-10.25	34.87	8.75	34.17	165	10	Average
*5969.35	55.96	46.51	74	-18.04	34.87	8.75	34.17	165	10	Peak

Remarks:

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

802.11n (HT20)

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

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
5100.95	53.34	45.18	74	-20.66	34.08	8.07	33.99	196	165	Peak
5147.6	43.12	34.87	54	-10.88	34.12	8.13	34	196	165	Average
5180	93.06	84.75			34.15	8.16	34	196	165	Average
5180	100.61	92.3			34.15	8.16	34	196	165	Peak
*10360	47.19	32.89	54	-6.81	37.12	12.3	35.12	112	305	Average
*10360	55.06	40.76	74	-18.94	37.12	12.3	35.12	112	305	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
5068.25	54.09	45.99	74	-19.91	34.05	8.03	33.98	146	183	Peak
5144.3	42.85	34.6	54	-11.15	34.12	8.13	34	146	183	Average
5180	90.99	82.68			34.15	8.16	34	146	183	Average
5180	97.12	88.81			34.15	8.16	34	146	183	Peak
*10360	47.04	32.74	54	-6.96	37.12	12.3	35.12	185	117	Average
*10360	55.17	40.87	74	-18.83	37.12	12.3	35.12	185	117	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

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

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
5147.6	53.44	45.19	74	-20.56	34.12	8.13	34	196	165	Peak
5149.55	42.73	34.48	54	-11.27	34.12	8.13	34	196	165	Average
5220	94.88	86.49			34.17	8.22	34	196	165	Average
5220	101.35	92.96			34.17	8.22	34	196	165	Peak
5440.09	42.92	34.13	54	-11.08	34.35	8.48	34.04	196	165	Average
5445.26	54.46	45.64	74	-19.54	34.35	8.51	34.04	196	165	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
5079.35	53.42	45.3	74	-20.58	34.07	8.03	33.98	146	183	Peak
5138.9	42.77	34.52	54	-11.23	34.11	8.13	33.99	146	183	Average
5220	91.68	83.29			34.17	8.22	34	146	183	Average
5220	98.72	90.33			34.17	8.22	34	146	183	Peak
5429.97	54.61	45.82	74	-19.39	34.35	8.48	34.04	146	183	Peak
5444.93	42.92	34.1	54	-11.08	34.35	8.51	34.04	146	183	Average

Remarks:

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

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	94.23	85.79			34.19	8.26	34.01	196	165	Average
5240	101.17	92.73			34.19	8.26	34.01	196	165	Peak
5410.06	54.84	46.12	74	-19.16	34.32	8.44	34.04	196	165	Peak
5459.45	42.81	33.99	54	-11.19	34.36	8.51	34.05	196	165	Average
*10480	47.16	32.65	54	-6.84	37.19	12.53	35.21	157	216	Average
*10480	58.48	43.97	74	-15.52	37.19	12.53	35.21	157	216	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	91.61	83.17			34.19	8.26	34.01	146	183	Average
5240	98.46	90.02			34.19	8.26	34.01	146	183	Peak
5445.04	53.57	44.75	74	-20.43	34.35	8.51	34.04	146	183	Peak
5455.05	42.75	33.93	54	-11.25	34.36	8.51	34.05	146	183	Average
*10480	47.26	32.75	54	-6.74	37.19	12.53	35.21	113	202	Average
*10480	55.81	41.3	74	-18.19	37.19	12.53	35.21	113	202	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

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
5079.8	53.51	45.39	74	-20.49	34.07	8.03	33.98	221	359	Peak
5129.15	42.69	34.47	54	-11.31	34.11	8.1	33.99	221	359	Average
5260	94.83	86.37			34.21	8.26	34.01	221	359	Average
5260	101.63	93.17			34.21	8.26	34.01	221	359	Peak
*10520	46.77	32.18	54	-7.23	37.21	12.61	35.23	100	104	Average
*10520	56.31	41.72	74	-17.69	37.21	12.61	35.23	100	104	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
5046.5	53.78	45.72	74	-20.22	34.04	8	33.98	152	180	Peak
5126.3	42.61	34.39	54	-11.39	34.11	8.1	33.99	152	180	Average
5260	90.79	82.33			34.21	8.26	34.01	152	180	Average
5260	97.29	88.83			34.21	8.26	34.01	152	180	Peak
*10520	46.88	32.29	54	-7.12	37.21	12.61	35.23	177	249	Average
*10520	56.39	41.8	74	-17.61	37.21	12.61	35.23	177	249	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

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)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5040.8	53.45	45.38	74	-20.55	34.04	8	33.97	221	359	Peak
5129.3	42.72	34.5	54	-11.28	34.11	8.1	33.99	221	359	Average
5300	94.3	85.76			34.24	8.32	34.02	221	359	Average
5300	101.55	93.01			34.24	8.32	34.02	221	359	Peak
5442.18	42.93	34.14	54	-11.07	34.35	8.48	34.04	221	359	Average
5444.82	53.7	44.88	74	-20.3	34.35	8.51	34.04	221	359	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5111.3	53.33	45.13	74	-20.67	34.09	8.1	33.99	152	180	Peak
5138.75	42.55	34.3	54	-11.45	34.11	8.13	33.99	152	180	Average
5300	90.84	82.3			34.24	8.32	34.02	152	180	Average
5300	97.05	88.51			34.24	8.32	34.02	152	180	Peak
5440.53	53.28	44.49	74	-20.72	34.35	8.48	34.04	152	180	Peak
5459.12	42.95	34.13	54	-11.05	34.36	8.51	34.05	152	180	Average

Remarks:

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

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	94.84	86.26			34.25	8.35	34.02	221	354	Average
5320	101.67	93.09			34.25	8.35	34.02	221	354	Peak
5384.65	53.64	44.96	74	-20.36	34.31	8.41	34.04	221	354	Peak
5400.38	43	34.28	54	-11	34.32	8.44	34.04	221	354	Average
10640	47.2	32.47	54	-6.8	37.31	12.71	35.29	164	105	Average
10640	56.11	41.38	74	-17.89	37.31	12.71	35.29	164	105	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	90.52	81.94			34.25	8.35	34.02	152	180	Average
5320	97.02	88.44			34.25	8.35	34.02	152	180	Peak
5413.47	54.94	46.21	74	-19.06	34.33	8.44	34.04	152	180	Peak
5447.57	42.9	34.07	54	-11.1	34.36	8.51	34.04	152	180	Average
10640	47.15	32.42	54	-6.85	37.31	12.71	35.29	131	310	Average
10640	56.56	41.83	74	-17.44	37.31	12.71	35.29	131	310	Peak

Remarks:

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

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
5436.4	54.68	45.89	74	-19.32	34.35	8.48	34.04	126	171	Peak
5458.16	43.59	34.77	54	-10.41	34.36	8.51	34.05	126	171	Average
*5469.52	43.67	34.84	54	-10.33	34.37	8.51	34.05	126	171	Average
*5470.64	53.08	44.25	74	-20.92	34.37	8.51	34.05	126	171	Peak
5500	96.36	87.44			34.4	8.57	34.05	126	171	Average
5500	103.94	95.02			34.4	8.57	34.05	126	171	Peak
11000	48.3	33.22	54	-5.7	37.6	12.96	35.48	178	124	Average
11000	57.2	42.12	74	-16.8	37.6	12.96	35.48	178	124	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
5426.64	53.03	44.26	74	-20.97	34.33	8.48	34.04	163	32	Peak
5444.56	43.14	34.35	54	-10.86	34.35	8.48	34.04	163	32	Average
*5468.88	52.45	43.62	74	-21.55	34.37	8.51	34.05	163	32	Peak
*5470.16	43.18	34.35	54	-10.82	34.37	8.51	34.05	163	32	Average
5500	89.38	80.46			34.4	8.57	34.05	163	32	Average
5500	96.82	87.9			34.4	8.57	34.05	163	32	Peak
11000	48.22	33.14	54	-5.78	37.6	12.96	35.48	187	233	Average
11000	57.32	42.24	74	-16.68	37.6	12.96	35.48	187	233	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

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
5434.32	53.69	44.9	74	-20.31	34.35	8.48	34.04	135	176	Peak
5447.76	43.01	34.18	54	-10.99	34.36	8.51	34.04	135	176	Average
*5468.08	42.94	34.11	54	-11.06	34.37	8.51	34.05	135	176	Average
*5470.48	52.83	44	74	-21.17	34.37	8.51	34.05	135	176	Peak
5580	97.65	88.66			34.47	8.6	34.08	135	176	Average
5580	104.67	95.68			34.47	8.6	34.08	135	176	Peak
*5726.04	43.2	34.04	54	-10.8	34.62	8.65	34.11	135	176	Average
*5726.04	52.62	43.46	74	-21.38	34.62	8.65	34.11	135	176	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
5376.08	53.46	44.8	74	-20.54	34.29	8.41	34.04	163	32	Peak
5438	42.83	34.04	54	-11.17	34.35	8.48	34.04	163	32	Average
*5468.4	51.68	42.85	74	-22.32	34.37	8.51	34.05	163	32	Peak
*5469.2	42.78	33.95	54	-11.22	34.37	8.51	34.05	163	32	Average
5580	90.12	81.13			34.47	8.6	34.08	163	32	Average
5580	97.42	88.43			34.47	8.6	34.08	163	32	Peak
*5724.44	53.7	44.54	74	-20.3	34.62	8.65	34.11	163	32	Peak
*5726.04	43.13	33.97	54	-10.87	34.62	8.65	34.11	163	32	Average

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

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	97.33	88.2			34.59	8.64	34.1	135	176	Average
5700	104.73	95.6			34.59	8.64	34.1	135	176	Peak
*5725.24	43.76	34.6	54	-10.24	34.62	8.65	34.11	135	176	Average
*5725.72	53.62	44.46	74	-20.38	34.62	8.65	34.11	135	176	Peak
11400	47.88	32.78	54	-6.12	37.84	12.67	35.41	191	101	Average
11400	56.3	41.2	74	-17.7	37.84	12.67	35.41	191	101	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	90.24	81.11			34.59	8.64	34.1	189	32	Average
5700	97.72	88.59			34.59	8.64	34.1	189	32	Peak
*5724.76	43.46	34.3	54	-10.54	34.62	8.65	34.11	189	32	Average
*5725.08	52.76	43.6	74	-21.24	34.62	8.65	34.11	189	32	Peak
11400	47.96	32.86	54	-6.04	37.84	12.67	35.41	186	114	Average
11400	56.87	41.77	74	-17.13	37.84	12.67	35.41	186	114	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

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)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	95.71	86.52			34.64	8.66	34.11	205	9	Average
5745	102.77	93.58			34.64	8.66	34.11	205	9	Peak
11490	48.42	33.3	54	-5.58	37.89	12.62	35.39	187	213	Average
11490	56.62	41.5	74	-17.38	37.89	12.62	35.39	187	213	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	91.64	82.45			34.64	8.66	34.11	182	5	Average
5745	98.86	89.67			34.64	8.66	34.11	182	5	Peak
11490	48.23	33.11	54	-5.77	37.89	12.62	35.39	126	84	Average
11490	56.6	41.48	74	-17.4	37.89	12.62	35.39	126	84	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5580.325	43.04	34.05	54	-10.96	34.47	8.6	34.08	205	9	Average
*5580.325	53.44	44.45	74	-20.56	34.47	8.6	34.08	205	9	Peak
5654.35	52.59	43.5	76.71	-24.12	34.56	8.63	34.1	205	9	Peak
5918.425	53.1	43.72	78.1	-25	34.81	8.73	34.16	205	9	Peak
*5966.725	43.92	34.47	54	-10.08	34.87	8.75	34.17	205	9	Average
*5966.725	53.92	44.47	74	-20.08	34.87	8.75	34.17	205	9	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5563.525	42.55	33.58	54	-11.45	34.45	8.59	34.07	182	5	Average
*5563.525	54.73	45.76	74	-19.27	34.45	8.59	34.07	182	5	Peak
5653.3	53.09	43.99	76.06	-22.97	34.56	8.63	34.09	182	5	Peak
5921.575	52.82	43.42	76.14	-23.32	34.83	8.73	34.16	182	5	Peak
*6019.225	42.78	33.27	54	-11.22	34.92	8.77	34.18	182	5	Average
*6019.225	54.05	44.54	74	-19.95	34.92	8.77	34.18	182	5	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	94.57	85.34			34.68	8.68	34.13	203	9	Average
5785	100.91	91.68			34.68	8.68	34.13	203	9	Peak
11570	48.61	33.3	54	-5.39	38	12.68	35.37	122	137	Average
11570	56.68	41.37	74	-17.32	38	12.68	35.37	122	137	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	91.08	81.85			34.68	8.68	34.13	149	168	Average
5785	98.19	88.96			34.68	8.68	34.13	149	168	Peak
11570	48.39	33.08	54	-5.61	38	12.68	35.37	169	254	Average
11570	56.26	40.95	74	-17.74	38	12.68	35.37	169	254	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5641.75	43.23	34.16	54	-10.77	34.54	8.62	34.09	203	9	Average
*5641.75	54.47	45.4	74	-19.53	34.54	8.62	34.09	203	9	Peak
5653.3	53.5	44.4	76.06	-22.56	34.56	8.63	34.09	203	9	Peak
5922.1	53.32	43.92	75.81	-22.49	34.83	8.73	34.16	203	9	Peak
*5956.75	43.84	34.39	54	-10.16	34.87	8.74	34.16	203	9	Average
*5956.75	54.38	44.93	74	-19.62	34.87	8.74	34.16	203	9	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5611.3	43.07	34.04	54	-10.93	34.5	8.61	34.08	149	168	Average
*5611.3	54.35	45.32	74	-19.65	34.5	8.61	34.08	149	168	Peak
5656.975	52.81	43.72	78.35	-25.54	34.56	8.63	34.1	149	168	Peak
5919.475	52.45	43.07	77.45	-25	34.81	8.73	34.16	149	168	Peak
*6007.15	43.51	34	54	-10.49	34.92	8.76	34.17	149	168	Average
*6007.15	54.35	44.84	74	-19.65	34.92	8.76	34.17	149	168	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	93.93	84.64			34.73	8.69	34.13	235	11	Average
5825	101.14	91.85			34.73	8.69	34.13	235	11	Peak
11650	48.52	32.99	54	-5.48	38.09	12.8	35.36	139	182	Average
11650	57.48	41.95	74	-16.52	38.09	12.8	35.36	139	182	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	91.27	81.98			34.73	8.69	34.13	165	10	Average
5825	98.84	89.55			34.73	8.69	34.13	165	10	Peak
11650	48.59	33.06	54	-5.41	38.09	12.8	35.36	195	115	Average
11650	56.67	41.14	74	-17.33	38.09	12.8	35.36	195	115	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5577.7	42.97	33.98	54	-11.03	34.47	8.6	34.08	235	11	Average
*5577.7	54.84	45.85	74	-19.16	34.47	8.6	34.08	235	11	Peak
5652.25	52.82	43.73	75.4	-22.58	34.56	8.62	34.09	235	11	Peak
5921.05	54.31	44.93	76.46	-22.15	34.81	8.73	34.16	235	11	Peak
*5985.1	43.98	34.52	54	-10.02	34.88	8.75	34.17	235	11	Average
*5985.1	55.08	45.62	74	-18.92	34.88	8.75	34.17	235	11	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5627.05	43.29	34.23	54	-10.71	34.52	8.62	34.08	165	10	Average
*5627.05	55.16	46.1	74	-18.84	34.52	8.62	34.08	165	10	Peak
5654.35	53.18	44.09	76.71	-23.53	34.56	8.63	34.1	165	10	Peak
5920.525	53.57	44.19	76.79	-23.22	34.81	8.73	34.16	165	10	Peak
*5937.325	43.83	34.43	54	-10.17	34.83	8.73	34.16	165	10	Average
*5937.325	55.06	45.66	74	-18.94	34.83	8.73	34.16	165	10	Peak

Remarks:

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

802.11n (HT40)

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

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
5149.85	55.82	47.57	74	-18.18	34.12	8.13	34	237	176	Peak
5150	47.16	38.91	54	-6.84	34.12	8.13	34	237	176	Average
5190	90.14	81.8			34.15	8.19	34	212	179	Average
5190	97.79	89.45			34.15	8.19	34	212	179	Peak
5378.16	53.45	44.77	74	-20.55	34.31	8.41	34.04	212	179	Peak
5453.4	42.91	34.09	54	-11.09	34.36	8.51	34.05	212	179	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
5149.55	54.88	46.63	74	-19.12	34.12	8.13	34	146	183	Peak
5150	43.97	35.72	54	-10.03	34.12	8.13	34	146	183	Average
5190	87.03	78.69			34.15	8.19	34	146	183	Average
5190	94.25	85.91			34.15	8.19	34	146	183	Peak
5438.33	42.85	34.06	54	-11.15	34.35	8.48	34.04	146	183	Average
5458.79	53.52	44.7	74	-20.48	34.36	8.51	34.05	146	183	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

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
5132.75	53.42	45.2	74	-20.58	34.11	8.1	33.99	196	165	Peak
5139.8	42.89	34.63	54	-11.11	34.12	8.13	33.99	196	165	Average
5230	91.29	82.89			34.19	8.22	34.01	196	165	Average
5230	98.78	90.38			34.19	8.22	34.01	196	165	Peak
5364.85	53.89	45.25	74	-20.11	34.29	8.38	34.03	196	165	Peak
5431.62	42.84	34.05	54	-11.16	34.35	8.48	34.04	196	165	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
5125.7	53.17	44.95	74	-20.83	34.11	8.1	33.99	146	183	Peak
5146.1	42.82	34.57	54	-11.18	34.12	8.13	34	146	183	Average
5230	89.8	81.4			34.19	8.22	34.01	146	183	Average
5230	96.45	88.05			34.19	8.22	34.01	146	183	Peak
5367.27	54.01	45.34	74	-19.99	34.29	8.41	34.03	146	183	Peak
5444.38	42.95	34.16	54	-11.05	34.35	8.48	34.04	146	183	Average

Remarks:

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

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
5061.95	53.91	45.81	74	-20.09	34.05	8.03	33.98	221	359	Peak
5143.85	42.81	34.56	54	-11.19	34.12	8.13	34	221	359	Average
5270	90.1	81.61			34.21	8.29	34.01	221	359	Average
5270	97.22	88.73			34.21	8.29	34.01	221	359	Peak
5449	53.6	44.77	74	-20.4	34.36	8.51	34.04	221	359	Peak
5458.35	42.92	34.1	54	-11.08	34.36	8.51	34.05	221	359	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
5125.85	53.17	44.95	74	-20.83	34.11	8.1	33.99	152	180	Peak
5139.35	42.69	34.44	54	-11.31	34.11	8.13	33.99	152	180	Average
5270	86.86	78.37			34.21	8.29	34.01	152	180	Average
5270	93.46	84.97			34.21	8.29	34.01	152	180	Peak
5443.17	53.15	44.36	74	-20.85	34.35	8.48	34.04	152	180	Peak
5449.33	42.94	34.11	54	-11.06	34.36	8.51	34.04	152	180	Average

Remarks:

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

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
5043.5	53.23	45.17	74	-20.77	34.04	8	33.98	221	359	Peak
5095.25	42.69	34.53	54	-11.31	34.08	8.07	33.99	221	359	Average
5310	89.78	81.23			34.25	8.32	34.02	221	359	Average
5310	96.39	87.84			34.25	8.32	34.02	221	359	Peak
5350.11	43.07	34.44	54	-10.93	34.28	8.38	34.03	221	359	Average
5449.77	54.45	45.63	74	-19.55	34.36	8.51	34.05	221	359	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
5104.4	42.64	34.48	54	-11.36	34.08	8.07	33.99	152	180	Average
5104.55	53.39	45.23	74	-20.61	34.08	8.07	33.99	152	180	Peak
5310	85.29	76.74			34.25	8.32	34.02	152	180	Average
5310	92.07	83.52			34.25	8.32	34.02	152	180	Peak
5437.34	53.29	44.5	74	-20.71	34.35	8.48	34.04	152	180	Peak
5447.46	42.97	34.14	54	-11.03	34.36	8.51	34.04	152	180	Average

Remarks:

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

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)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5454.16	54.13	45.31	74	-19.87	34.36	8.51	34.05	119	171	Peak
5460	45.23	36.41	54	-8.77	34.36	8.51	34.05	119	171	Average
5470.16	59.15	50.32	74	-14.85	34.37	8.51	34.05	119	171	Peak
5470.8	48.88	40.02	54	-5.12	34.37	8.54	34.05	119	171	Average
5510	93.25	84.34			34.4	8.57	34.06	126	171	Average
5510	100	91.09			34.4	8.57	34.06	126	171	Peak
5725.32	43.23	34.07	54	-10.77	34.62	8.65	34.11	126	171	Average
5725.64	52.82	43.66	74	-21.18	34.62	8.65	34.11	126	171	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5446.48	42.79	33.96	54	-11.21	34.36	8.51	34.04	163	32	Average
5451.92	53.24	44.42	74	-20.76	34.36	8.51	34.05	163	32	Peak
5469.52	52.71	43.88	74	-21.29	34.37	8.51	34.05	163	32	Peak
5470.48	43.23	34.4	54	-10.77	34.37	8.51	34.05	163	32	Average
5510	86.65	77.74			34.4	8.57	34.06	163	32	Average
5510	93.4	84.49			34.4	8.57	34.06	163	32	Peak
5724.68	52.64	43.48	74	-21.36	34.62	8.65	34.11	163	32	Peak
5725.16	43.04	33.88	54	-10.96	34.62	8.65	34.11	163	32	Average

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5410.8	54.08	45.36	74	-19.92	34.32	8.44	34.04	135	176	Peak
5454.48	43.18	34.36	54	-10.82	34.36	8.51	34.05	135	176	Average
*5468.24	43.09	34.26	54	-10.91	34.37	8.51	34.05	135	176	Average
*5468.56	52.63	43.8	74	-21.37	34.37	8.51	34.05	135	176	Peak
5550	94.22	85.25			34.45	8.59	34.07	135	176	Average
5550	101.04	92.07			34.45	8.59	34.07	135	176	Peak
*5724.92	43.43	34.27	54	-10.57	34.62	8.65	34.11	135	176	Average
*5724.92	53.24	44.08	74	-20.76	34.62	8.65	34.11	135	176	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5405.52	53.84	45.12	74	-20.16	34.32	8.44	34.04	163	32	Peak
5459.92	42.86	34.04	54	-11.14	34.36	8.51	34.05	163	32	Average
*5468.24	51.97	43.14	74	-22.03	34.37	8.51	34.05	163	32	Peak
*5468.72	42.78	33.95	54	-11.22	34.37	8.51	34.05	163	32	Average
5550	87.29	78.32			34.45	8.59	34.07	163	32	Average
5550	94.1	85.13			34.45	8.59	34.07	163	32	Peak
*5724.52	43.22	34.06	54	-10.78	34.62	8.65	34.11	163	32	Average
*5725.24	52.81	43.65	74	-21.19	34.62	8.65	34.11	163	32	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5550 MHz: Fundamental Frequency
- *: Out of Restricted Band

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

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
5355.44	53.2	44.57	74	-20.8	34.28	8.38	34.03	120	168	Peak
5446.8	43.08	34.25	54	-10.92	34.36	8.51	34.04	120	168	Average
*5468.08	42.86	34.03	54	-11.14	34.37	8.51	34.05	120	168	Average
*5469.84	53.19	44.36	74	-20.81	34.37	8.51	34.05	120	168	Peak
5670	94.89	85.79			34.57	8.63	34.1	120	168	Average
5670	101.88	92.78			34.57	8.63	34.1	120	168	Peak
*5725.32	53.11	43.95	74	-20.89	34.62	8.65	34.11	120	168	Peak
*5725.48	43.6	34.44	54	-10.4	34.62	8.65	34.11	120	168	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
5371.6	42.81	34.14	54	-11.19	34.29	8.41	34.03	104	12	Average
5372.4	53.78	45.11	74	-20.22	34.29	8.41	34.03	104	12	Peak
*5468.24	42.71	33.88	54	-11.29	34.37	8.51	34.05	104	12	Average
*5468.24	52.12	43.29	74	-21.88	34.37	8.51	34.05	104	12	Peak
5670	87.34	78.24			34.57	8.63	34.1	104	12	Average
5670	94.26	85.16			34.57	8.63	34.1	104	12	Peak
*5724.92	53.12	43.96	74	-20.88	34.62	8.65	34.11	104	12	Peak
*5725.72	43.27	34.11	54	-10.73	34.62	8.65	34.11	104	12	Average

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5755	91.86	48.54			34.66	8.66	0	214	11	Average
5755	99.15	55.83			34.66	8.66	0	214	11	Peak
11510	48.39	33.28	54	-5.61	37.9	12.6	35.39	137	169	Average
11510	57.03	41.92	74	-16.97	37.9	12.6	35.39	137	169	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5755	89.2	79.99			34.66	8.66	34.11	174	5	Average
5755	96.44	87.23			34.66	8.66	34.11	174	5	Peak
11510	48.26	33.15	54	-5.74	37.9	12.6	35.39	139	227	Average
11510	56.81	41.7	74	-17.19	37.9	12.6	35.39	139	227	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5637.55	43.55	34.48	54	-10.45	34.54	8.62	34.09	214	11	Average
*5637.55	54.6	45.53	74	-19.4	34.54	8.62	34.09	214	11	Peak
5653.825	53.61	44.52	76.39	-22.78	34.56	8.63	34.1	214	11	Peak
5918.425	53.25	43.87	78.1	-24.85	34.81	8.73	34.16	214	11	Peak
*5977.75	43.89	34.43	54	-10.11	34.88	8.75	34.17	214	11	Average
*5977.75	54.28	44.82	74	-19.72	34.88	8.75	34.17	214	11	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5621.8	43.54	34.49	54	-10.46	34.52	8.61	34.08	174	5	Average
*5621.8	53.84	44.79	74	-20.16	34.52	8.61	34.08	174	5	Peak
5660.125	52.6	43.51	80.32	-27.72	34.56	8.63	34.1	174	5	Peak
5921.575	53.69	44.29	76.14	-22.45	34.83	8.73	34.16	174	5	Peak
*5943.1	43.96	34.53	54	-10.04	34.85	8.74	34.16	174	5	Average
*5943.1	53.87	44.44	74	-20.13	34.85	8.74	34.16	174	5	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5795	91.64	82.4			34.69	8.68	34.13	207	12	Average
5795	98.48	89.24			34.69	8.68	34.13	207	12	Peak
11590	48.55	33.18	54	-5.45	38.02	12.72	35.37	129	183	Average
11590	57.63	42.26	74	-16.37	38.02	12.72	35.37	129	183	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5795	89.67	80.43			34.69	8.68	34.13	173	9	Average
5795	96.69	87.45			34.69	8.68	34.13	173	9	Peak
11590	48.63	33.26	54	-5.37	38.02	12.72	35.37	168	142	Average
11590	57.15	41.78	74	-16.85	38.02	12.72	35.37	168	142	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5629.675	43.28	34.23	54	-10.72	34.52	8.62	34.09	207	12	Average
*5629.675	54.33	45.28	74	-19.67	34.52	8.62	34.09	207	12	Peak
5653.3	52.94	43.84	76.06	-23.12	34.56	8.63	34.09	207	12	Peak
5922.625	55.17	45.77	75.48	-20.31	34.83	8.73	34.16	207	12	Peak
*5937.85	43.98	34.58	54	-10.02	34.83	8.73	34.16	207	12	Average
*5937.85	54.74	45.34	74	-19.26	34.83	8.73	34.16	207	12	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5561.425	42.84	33.87	54	-11.16	34.45	8.59	34.07	173	9	Average
*5561.425	53.68	44.71	74	-20.32	34.45	8.59	34.07	173	9	Peak
5652.25	52.66	43.57	75.4	-22.74	34.56	8.62	34.09	173	9	Peak
5918.95	53.42	44.04	77.78	-24.36	34.81	8.73	34.16	173	9	Peak
*5945.2	44.01	34.58	54	-9.99	34.85	8.74	34.16	173	9	Average
*5945.2	54.87	45.44	74	-19.13	34.85	8.74	34.16	173	9	Peak

Remarks:

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

802.11ac (VHT80)

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

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
5127.95	53.18	44.96	74	-20.82	34.11	8.1	33.99	196	165	Peak
5149.55	43.16	34.91	54	-10.84	34.12	8.13	34	196	165	Average
5210	85.62	77.26			34.17	8.19	34	196	165	Average
5210	92.37	84.01			34.17	8.19	34	196	165	Peak
5440.2	42.95	34.16	54	-11.05	34.35	8.48	34.04	196	165	Average
5457.69	54.09	45.27	74	-19.91	34.36	8.51	34.05	196	165	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
5148.5	43.75	35.5	54	-10.25	34.12	8.13	34	146	183	Average
5149.7	53.69	45.44	74	-20.31	34.12	8.13	34	146	183	Peak
5210	82.55	74.19			34.17	8.19	34	146	183	Average
5210	89.19	80.83			34.17	8.19	34	146	183	Peak
5430.85	53.56	44.77	74	-20.44	34.35	8.48	34.04	146	183	Peak
5446.91	42.79	33.96	54	-11.21	34.36	8.51	34.04	146	183	Average

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

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
5041.85	53.93	45.87	74	-20.07	34.04	8	33.98	221	359	Peak
5098.85	42.69	34.53	54	-11.31	34.08	8.07	33.99	221	359	Average
5290	84.75	76.22			34.23	8.32	34.02	221	359	Average
5290	91.47	82.94			34.23	8.32	34.02	221	359	Peak
5350.11	42.93	34.3	54	-11.07	34.28	8.38	34.03	221	359	Average
5400.49	54	45.28	74	-20	34.32	8.44	34.04	221	359	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
5125.7	42.7	34.48	54	-11.3	34.11	8.1	33.99	152	180	Average
5143.55	53.18	44.92	74	-20.82	34.12	8.13	33.99	152	180	Peak
5290	80.59	72.06			34.23	8.32	34.02	152	180	Average
5290	87.76	79.23			34.23	8.32	34.02	152	180	Peak
5451.75	42.81	33.99	54	-11.19	34.36	8.51	34.05	152	180	Average
5453.95	53.14	44.32	74	-20.86	34.36	8.51	34.05	152	180	Peak

Remarks:

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

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
5452.4	56.03	47.21	74	-17.97	34.36	8.51	34.05	112	162	Peak
5459.76	46.82	38	54	-7.18	34.36	8.51	34.05	112	162	Average
*5468.88	47.08	38.25	54	-6.92	34.37	8.51	34.05	112	162	Average
*5469.52	56.65	47.82	74	-17.35	34.37	8.51	34.05	112	162	Peak
5530	87.32	78.39			34.42	8.58	34.07	135	167	Average
5530	94.54	85.61			34.42	8.58	34.07	135	167	Peak
*5724.36	52.35	43.19	74	-21.65	34.62	8.65	34.11	135	167	Peak
*5725.4	43.24	34.08	54	-10.76	34.62	8.65	34.11	135	167	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
5413.68	53.88	45.15	74	-20.12	34.33	8.44	34.04	163	32	Peak
5458.96	43.29	34.47	54	-10.71	34.36	8.51	34.05	163	32	Average
*5468.08	43.55	34.72	54	-10.45	34.37	8.51	34.05	163	32	Average
*5468.72	53.24	44.41	74	-20.76	34.37	8.51	34.05	163	32	Peak
5530	80.1	71.17			34.42	8.58	34.07	163	32	Average
5530	87.28	78.35			34.42	8.58	34.07	163	32	Peak
*5724.6	52.49	43.33	74	-21.51	34.62	8.65	34.11	163	32	Peak
*5725.48	43.19	34.03	54	-10.81	34.62	8.65	34.11	163	32	Average

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

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
5445.84	53.31	44.48	74	-20.69	34.36	8.51	34.04	135	176	Peak
5453.52	43.1	34.28	54	-10.9	34.36	8.51	34.05	135	176	Average
*5468.08	52.1	43.27	74	-21.9	34.37	8.51	34.05	135	176	Peak
*5470.96	42.83	33.97	54	-11.17	34.37	8.54	34.05	135	176	Average
5610	91.47	82.44			34.5	8.61	34.08	135	176	Average
5610	98.25	89.22			34.5	8.61	34.08	135	176	Peak
*5724.2	53.67	44.51	74	-20.33	34.62	8.65	34.11	135	176	Peak
*5724.52	43.31	34.15	54	-10.69	34.62	8.65	34.11	135	176	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
5448.56	53.27	44.44	74	-20.73	34.36	8.51	34.04	104	12	Peak
5452.72	42.73	33.91	54	-11.27	34.36	8.51	34.05	104	12	Average
*5469.84	42.88	34.05	54	-11.12	34.37	8.51	34.05	104	12	Average
*5470.96	51.73	42.87	74	-22.27	34.37	8.54	34.05	104	12	Peak
5610	84.17	75.14			34.5	8.61	34.08	104	12	Average
5610	91.03	82			34.5	8.61	34.08	104	12	Peak
*5724.44	53.47	44.31	74	-20.53	34.62	8.65	34.11	104	12	Peak
*5724.92	43.13	33.97	54	-10.87	34.62	8.65	34.11	104	12	Average

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5775	90.33	81.1			34.68	8.67	34.12	216	14	Average
5775	97.82	88.59			34.68	8.67	34.12	216	14	Peak
11550	48.64	33.37	54	-5.36	37.97	12.68	35.38	197	64	Average
11550	56.07	40.8	74	-17.93	37.97	12.68	35.38	197	64	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5775	87.41	78.18			34.68	8.67	34.12	105	176	Average
5775	94.9	85.67			34.68	8.67	34.12	105	176	Peak
11550	48.25	32.98	54	-5.75	37.97	12.68	35.38	127	113	Average
11550	57.13	41.86	74	-16.87	37.97	12.68	35.38	127	113	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5544.625	42.94	34	54	-11.06	34.43	8.58	34.07	216	14	Average
*5544.625	53.64	44.7	74	-20.36	34.43	8.58	34.07	216	14	Peak
5653.3	54.19	45.09	76.06	-21.87	34.56	8.63	34.09	216	14	Peak
5920	54	44.62	77.12	-23.12	34.81	8.73	34.16	216	14	Peak
*5968.3	44.34	34.89	54	-9.66	34.87	8.75	34.17	216	14	Average
*5968.3	54.55	45.1	74	-19.45	34.87	8.75	34.17	216	14	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5609.2	43.56	34.53	54	-10.44	34.5	8.61	34.08	105	176	Average
*5609.2	55.18	46.15	74	-18.82	34.5	8.61	34.08	105	176	Peak
5656.975	53.58	44.49	78.35	-24.77	34.56	8.63	34.1	105	176	Peak
5918.425	53.28	43.9	78.1	-24.82	34.81	8.73	34.16	105	176	Peak
*6014.5	44.13	34.63	54	-9.87	34.92	8.76	34.18	105	176	Average
*6014.5	54.51	45.01	74	-19.49	34.92	8.76	34.18	105	176	Peak

Remarks:

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

9 kHz ~ 30 MHz DATA:

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

30 MHz ~ 1 GHz WORST-CASE DATA:

802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 36	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
126.93	23.1	44.93	43.5	-20.4	9.03	1.38	32.24	126	339	Peak
145.83	22.66	43.76	43.5	-20.84	9.79	1.38	32.27	145	283	Peak
264.9	22.84	39.56	46	-23.16	13.45	1.94	32.11	107	207	Peak
531.7	33.06	41.95	46	-12.94	20.57	2.7	32.16	154	17	Peak
796.3	41.11	45.43	46	-4.89	24.42	3.32	32.06	103	75	Peak
926.5	38.5	39.97	46	-7.5	26.2	3.62	31.29	126	355	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
31.08	27.53	42.11	40	-12.47	16.94	0.74	32.26	197	336	Peak
136.38	24.76	46.37	43.5	-18.74	9.27	1.38	32.26	124	258	Peak
193.35	19.26	39.35	43.5	-24.24	10.57	1.61	32.27	174	1	Peak
533.1	38.48	47.38	46	-7.52	20.57	2.7	32.17	160	150	Peak
761.3	34.82	40.38	46	-11.18	23.35	3.22	32.13	181	22	Peak
797.7	34.13	38.45	46	-11.87	24.42	3.32	32.06	178	341	Peak

Remarks:

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

802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 64	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
126.39	23.07	44.9	43.5	-20.43	9.03	1.38	32.24	126	39	Peak
168.24	21.24	41.81	43.5	-22.26	10.15	1.52	32.24	170	212	Peak
245.19	19.62	37.12	46	-26.38	12.77	1.85	32.12	165	55	Peak
533.1	34.87	43.77	46	-11.13	20.57	2.7	32.17	136	33	Peak
744.5	33.89	39.54	46	-12.11	23.27	3.22	32.14	135	198	Peak
798.4	41.02	45.34	46	-4.98	24.42	3.32	32.06	178	77	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
33.51	19.84	36.12	40	-20.16	15.22	0.74	32.24	194	187	Peak
130.44	25.26	46.91	43.5	-18.24	9.2	1.38	32.23	150	355	Peak
265.71	19.86	36.58	46	-26.14	13.45	1.94	32.11	134	33	Peak
531	39.59	48.44	46	-6.41	20.61	2.7	32.16	134	334	Peak
762	34.07	39.62	46	-11.93	23.35	3.22	32.12	120	123	Peak
800.5	34.53	38.67	46	-11.47	24.6	3.32	32.06	178	289	Peak

Remarks:

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

802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 102	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) 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
114.51	20.31	42.19	43.5	-23.19	9.09	1.28	32.25	114	164	Peak
168.24	21.54	42.11	43.5	-21.96	10.15	1.52	32.24	101	104	Peak
265.71	23.76	40.48	46	-22.24	13.45	1.94	32.11	180	88	Peak
531	35.2	44.05	46	-10.8	20.61	2.7	32.16	199	288	Peak
723.5	33.84	39.43	46	-12.16	23.36	3.16	32.11	140	311	Peak
797.7	41	45.32	46	-5	24.42	3.32	32.06	144	44	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
128.01	22.56	44.31	43.5	-20.94	9.1	1.38	32.23	128	1	Peak
165.27	21.93	42.31	43.5	-21.57	10.36	1.52	32.26	128	165	Peak
265.98	20.57	37.29	46	-25.43	13.45	1.94	32.11	150	20	Peak
464.5	28.46	39.49	46	-17.54	18.54	2.56	32.13	165	180	Peak
667.5	33.2	39.31	46	-12.8	22.97	3.05	32.13	133	32	Peak
799.1	36.58	40.72	46	-9.42	24.6	3.32	32.06	154	177	Peak

Remarks:

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

802.11ac (VHT80)

EUT Test Condition		Measurement Detail	
Channel	Channel 155	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
122.07	30.19	52.25	43.5	-13.31	8.8	1.38	32.24	185	34	Peak
164.19	24.01	44.31	43.5	-19.49	10.44	1.52	32.26	164	119	Peak
260.85	19.77	36.6	46	-26.23	13.33	1.94	32.1	135	328	Peak
507.9	23.8	33.71	46	-22.2	19.57	2.63	32.11	165	263	Peak
669.6	27.08	32.98	46	-18.92	23.18	3.05	32.13	127	270	Peak
799.1	42.08	46.22	46	-3.92	24.6	3.32	32.06	179	349	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
31.62	29.34	44.29	40	-10.66	16.57	0.74	32.26	150	222	Peak
168.24	20.03	40.6	43.5	-23.47	10.15	1.52	32.24	130	116	Peak
265.98	23.02	39.74	46	-22.98	13.45	1.94	32.11	194	8	Peak
530.3	37.13	45.98	46	-8.87	20.61	2.7	32.16	187	55	Peak
680.8	30.5	36.25	46	-15.5	23.31	3.05	32.11	154	7	Peak
799.1	36.94	41.08	46	-9.06	24.6	3.32	32.06	103	301	Peak

Remarks:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 24, 2016	Oct. 23, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 26, 2015	Dec. 25, 2016
LISN/AMN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 26, 2016	Feb. 25, 2017
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 28, 2016	Jul. 27, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- Note:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1.
 3. The VCCI Site Registration No. is C-2040.

4.2.3 Test Procedures

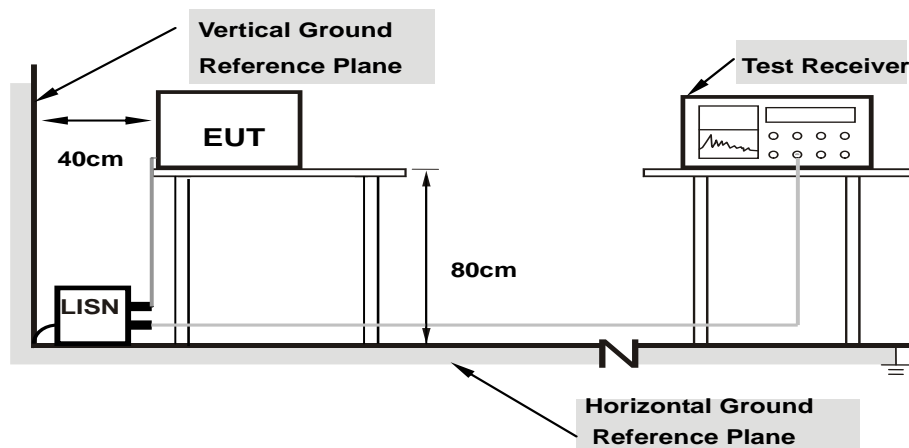
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

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

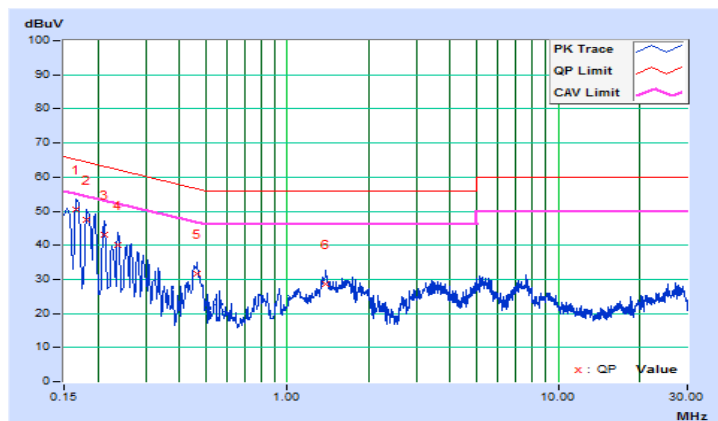
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2016/11/14

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16569	10.02	40.34	25.18	50.36	35.20	65.17	55.17	-14.81	-19.97
2	0.18128	10.02	37.58	21.90	47.60	31.92	64.43	54.43	-16.83	-22.51
3	0.21226	10.04	33.07	18.54	43.11	28.58	63.12	53.12	-20.01	-24.54
4	0.23602	10.05	30.03	16.44	40.08	26.49	62.24	52.24	-22.16	-25.75
5	0.46546	10.13	21.53	16.43	31.66	26.56	56.59	46.59	-24.93	-20.03
6	1.38557	10.23	18.38	13.74	28.61	23.97	56.00	46.00	-27.39	-22.03

Remarks:

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

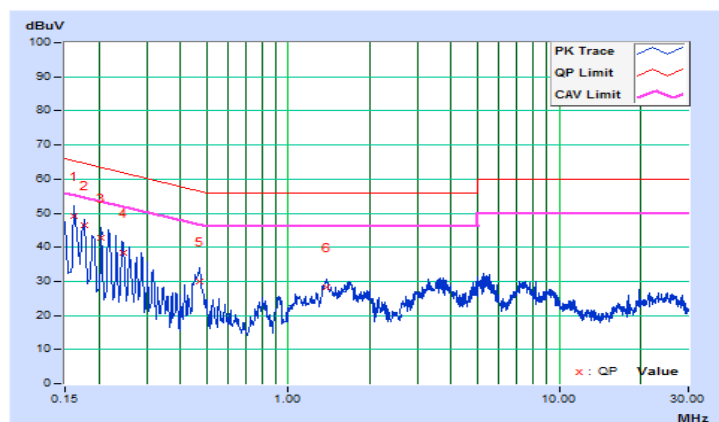


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2016/11/14

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16181	10.03	39.20	24.50	49.23	34.53	65.37	55.37	-16.14	-20.84
2	0.17737	10.03	36.58	20.79	46.61	30.82	64.61	54.61	-18.00	-23.79
3	0.20474	10.04	32.86	17.85	42.90	27.89	63.42	53.42	-20.52	-25.53
4	0.24775	10.06	28.27	14.92	38.33	24.98	61.83	51.83	-23.50	-26.85
5	0.47062	10.14	19.82	14.61	29.96	24.75	56.50	46.50	-26.54	-21.75
6	1.38923	10.24	17.97	12.78	28.21	23.02	56.00	46.00	-27.79	-22.98

Remarks:

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

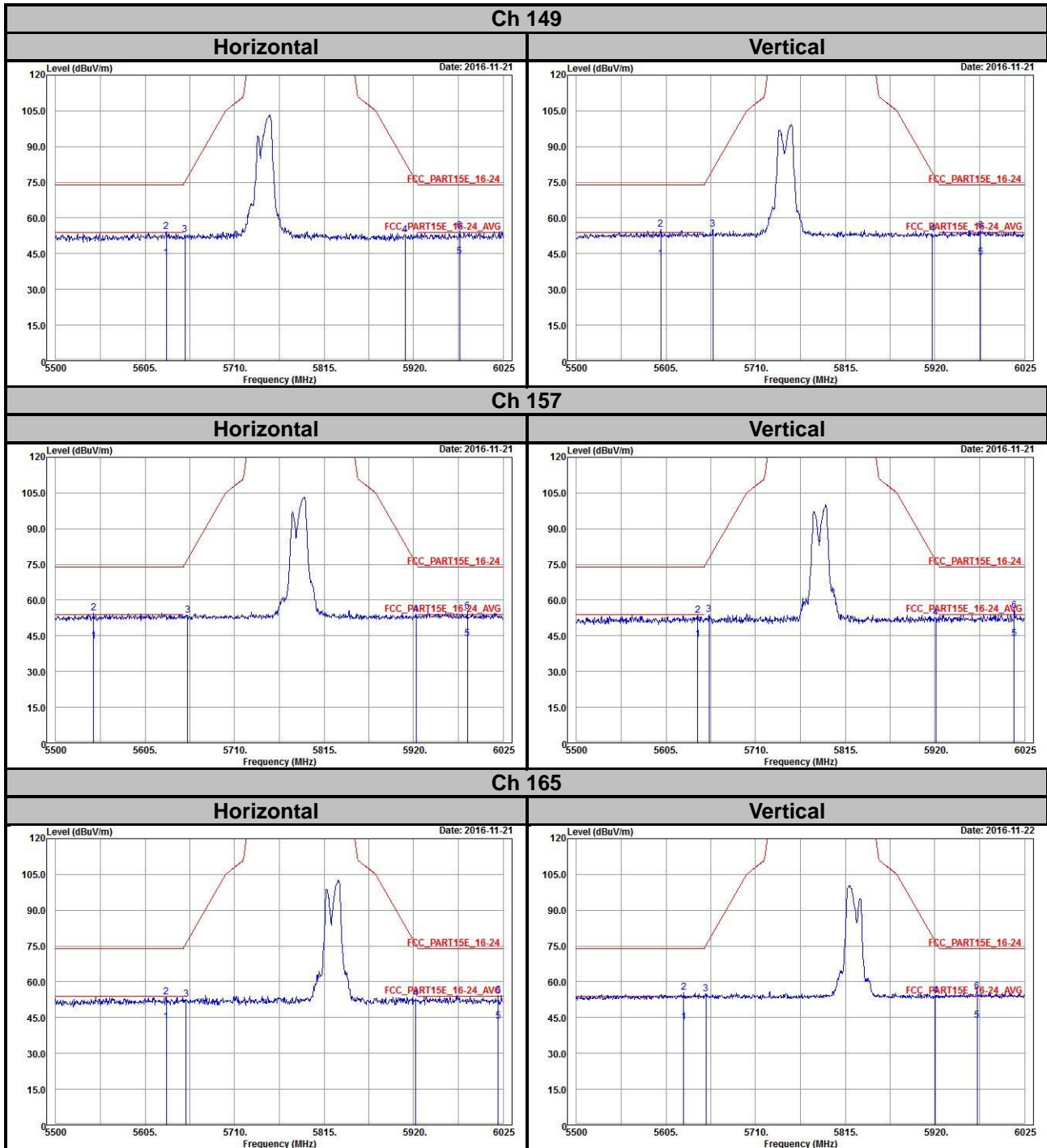


5 Pictures of Test Arrangements

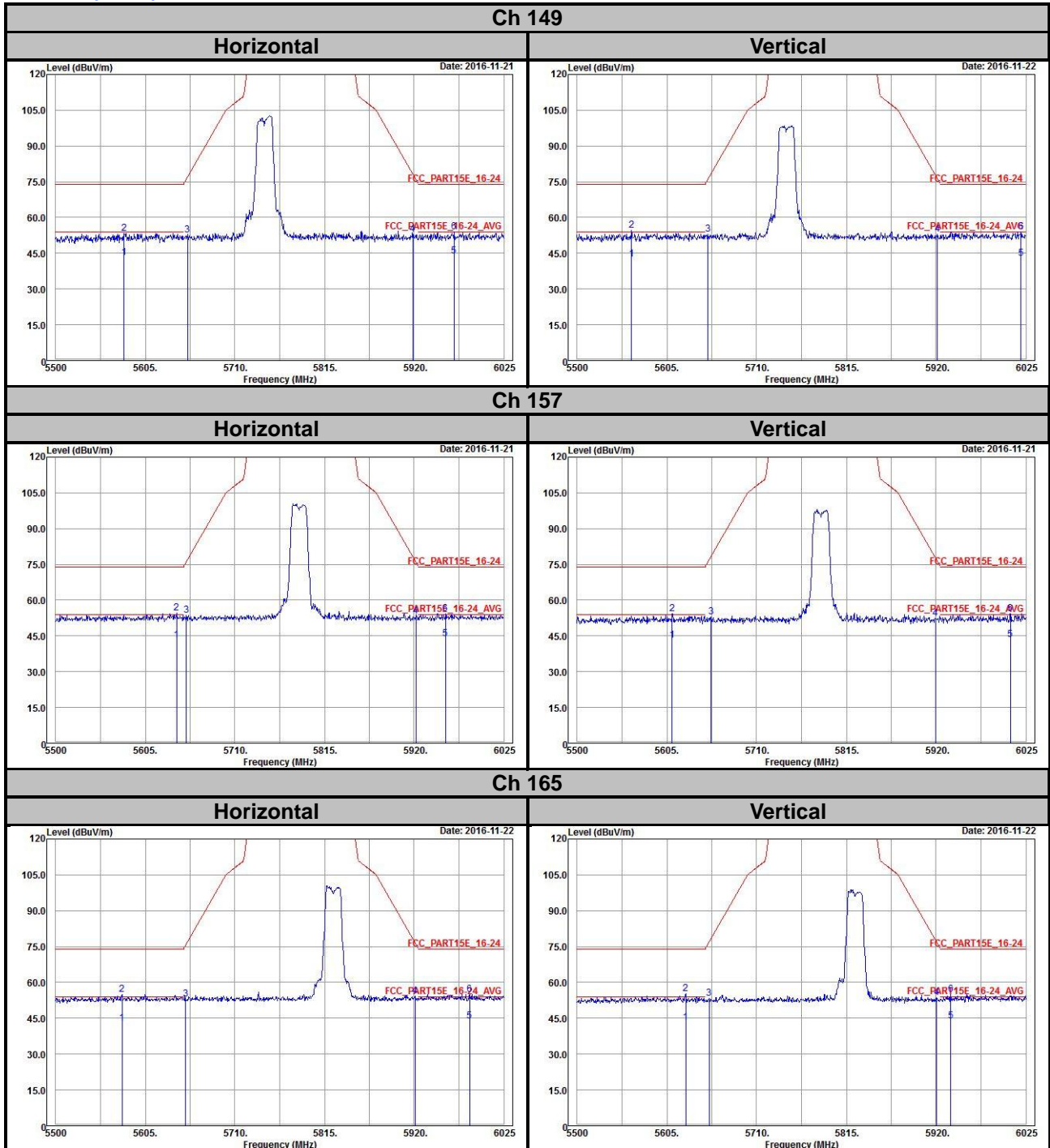
Please refer to the attached file (Test Setup Photo).

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

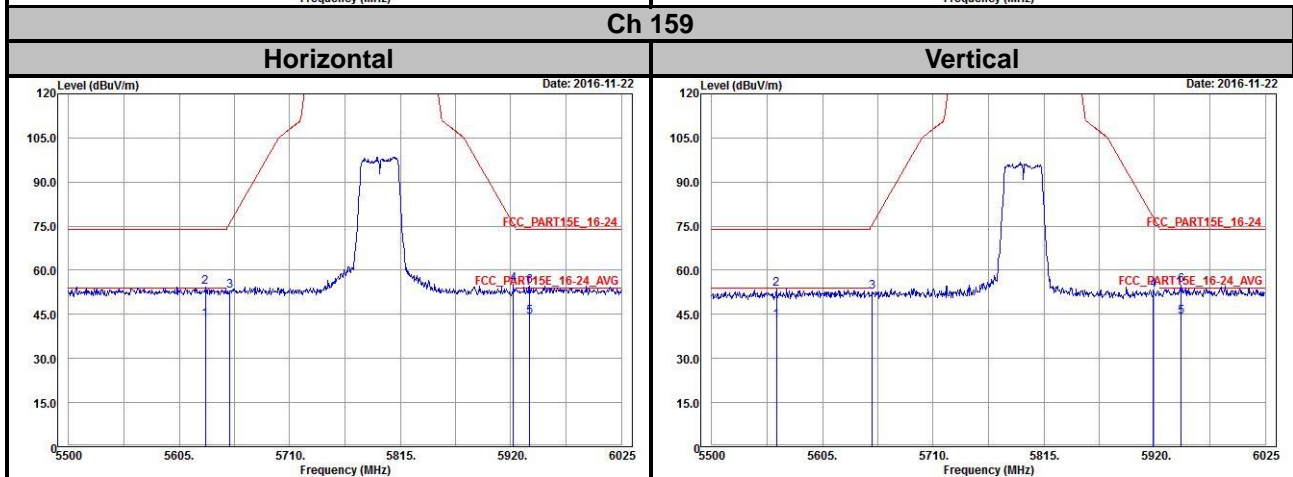
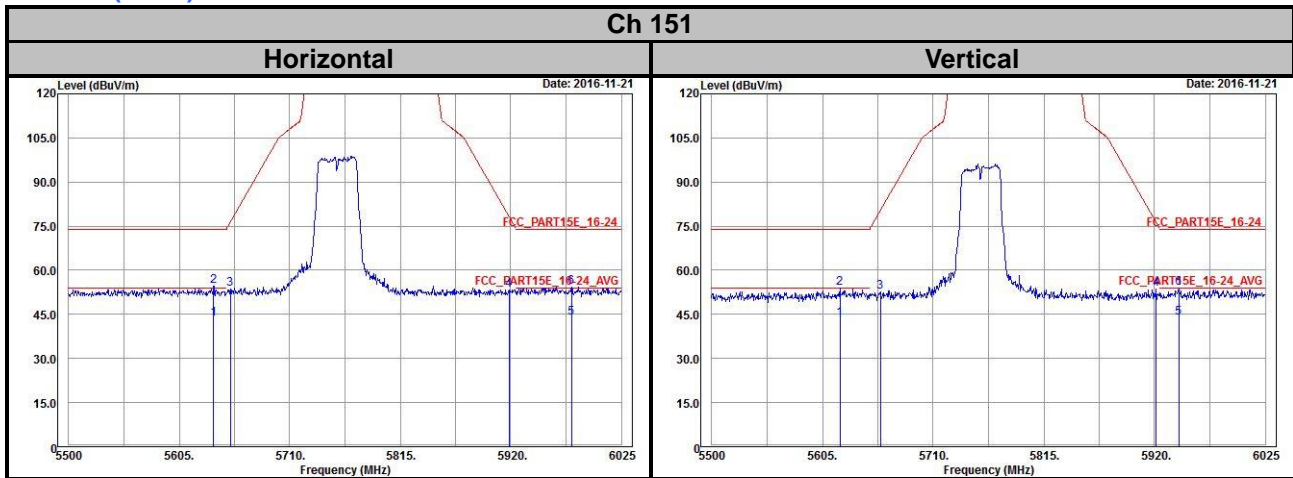
802.11a



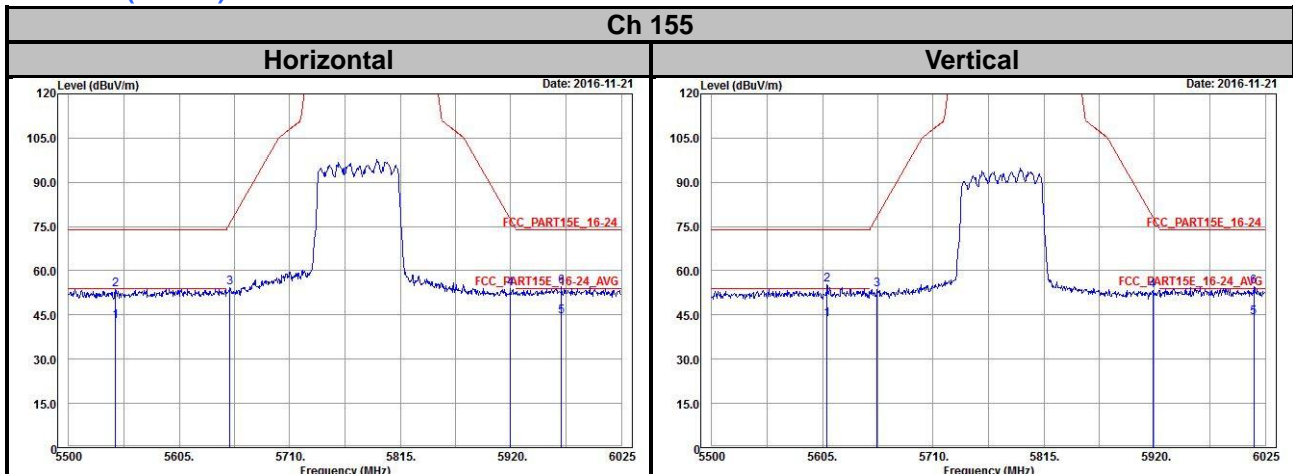
802.11n (HT20)



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 accredited and approved according to ISO/IEC 17025.

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

Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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