

Partial FCC Test Report

Report No.: RF170109C43-3

FCC ID: GKR-CAX00WB

Test Model: QCNFA425

Received Date: Jan. 09, 2017

Test Date: Feb. 09, 2017 ~ Mar. 21, 2017

Issued Date: Mar. 22, 2017

Applicant: COMPAL ELECTRONICS, INC.

Address: No.581, Ruiguang Rd., Neihu District, Taipei City 11492, Taiwan, R.O.C.

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 Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan, R.O.C.

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



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 Summary of Test Results.....	5
2.1 Measurement Uncertainty.....	5
2.2 Modification Record	5
3 General Information	6
3.1 General Description of EUT	6
3.2 Description of Test Modes.....	8
3.2.1 Test Mode Applicability and Tested Channel Detail.....	10
3.3 Description of Support Units	12
3.3.1 Configuration of System under Test	12
3.4 General Description of Applied Standards.....	12
4 Test Types and Results	13
4.1 Radiated Emission and Bandedge Measurement	13
4.1.1 Limits of Radiated Emission and Bandedge Measurement	13
4.1.2 Limits of Unwanted Emission Out of the Restricted Bands	14
4.1.3 Test Instruments	15
4.1.4 Test Procedures.....	16
4.1.5 Deviation from Test Standard	16
4.1.6 Test Set Up	17
4.1.7 EUT Operating Conditions.....	18
4.1.8 Test Results	19
4.2 Conducted Emission Measurement.....	65
4.2.1 Limits of Conducted Emission Measurement	65
4.2.2 Test Instruments	65
4.2.3 Test Procedures.....	66
4.2.4 Deviation from Test Standard	66
4.2.5 Test Setup.....	66
4.2.6 EUT Operating Conditions.....	66
4.2.7 Test Results	67
4.3 Transmit Power Measurement.....	69
4.3.1 Limits of Transmit Power Measurement	69
4.3.2 Test Setup.....	69
4.3.3 Test Instruments	70
4.3.4 Test Procedure	70
4.3.5 Deviation from Test Standard	70
4.3.6 EUT Operating Conditions.....	70
4.3.7 Test Result	71
5 Pictures of Test Arrangements.....	73
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)	74
Appendix – Information on the Testing Laboratories	77

Release Control Record

Issue No.	Description	Date Issued
RF170109C43-3	Original Release	Mar. 22, 2017

1 Certificate of Conformity

Product: Single Stream 802.11a/b/g/n/ac + BT 4.1 M.2 1216 Type Card

Brand: Qualcomm Atheros

Test Model: QCNFA425

Sample Status: Identical Prototype

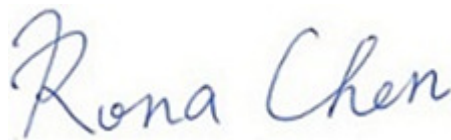
Applicant: COMPAL ELECTRONICS, INC.

Test Date: Feb. 09, 2017 ~ Mar. 21, 2017

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

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

Prepared by :



Date:

Mar. 22, 2017

Rona Chen / Specialist

Approved by :



Date:

Mar. 22, 2017

David Huang / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -8.21 dB at 0.19297 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 -1.00 dB at 5458.32 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	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: Test items for AC Power Conducted Emission, Radiated Emissions, and Conducted Power were performed for this report. For other test data, please refer to BV CPS Report No.: RF150401E01-1 and RF150401E01A-5 for module (Brand: Qualcomm Atheros, Model: QCNFA425).

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	Single Stream 802.11a/b/g/n/ac + BT 4.1 M.2 1216 Type Card
Brand	Qualcomm Atheros
Test Model	QCNFA425
Status of EUT	Identical Prototype
Power Supply Rating	5.0 Vdc (Host equipment)
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 ~ 5720 MHz, 5745 ~ 5825 MHz
Number of Channel	5180 ~ 5240 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5500 ~ 5720 MHz: 12 for 802.11a, 802.11n (HT20) 6 for 802.11n (HT40) 3 for 802.11ac (VHT80) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80)
Antenna Type	Refer to BV CPS Report No.: RF150401E01-1
Antenna Connector	Refer to BV CPS Report No.: RF150401E01-1
Accessory Device	N/A
Data Cable Supplied	N/A

Note:

- Physically, the EUT provides 1 completed transmitter and 1 receiver.

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

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

2. The EUT is authorized for use in specific End-product. Please refer to below for more details.

Product	Brand	Model	Antenna Type
Rugged Tablet	COMPAL	CAX00, CXXXXXX-CAX00-XXXXXX- XXXX (X:0~9,A~Z)	PIFA antenna with 2.56 dBi gain (5180 ~ 5240 MHz) 2.56 dBi gain (5260 ~ 5320 MHz) 2.40 dBi gain (5500 ~ 5720 MHz) 2.65 dBi gain (5745 ~ 5825 MHz)

3. The End-product contains following accessory devices.

Product	Brand	Model	Description
Adapter	DELTA	ADP-65JH HB	I/P: 100-240 Vac, 1.5 A O/P: 19 Vdc, 3.42 A 0.9 m power cable
Battery	Getac	CAX00	7.2 Vdc, 3950 mAh
BT/WLAN Module	Qualcomm Atheros	QCNFA425	Chip factory: AZWAVE, AW-CM251NF

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

3.2 Description of Test Modes

For 5180 ~ 5240 MHz

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
42	5210

For 5260 ~ 5320 MHz

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
58	5290

For 5500 ~ 5720 MHz

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
104	5520	128	5640
108	5540	132	5660
112	5560	136	5680
116	5580	140	5700
120	5600	144	5720

6 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
102	5510	126	5630
110	5550	134	5670
118	5590	142	5710

3 channels are provided for 802.11ac (VHT80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
106	5530	138	5690
122	5610		

For 5745 ~ 5825 MHz:

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
155	5775

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

RE<1G: Radiated Emission below 1 GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane** for U-NII-1 and U-NII-2C / **Z-plane** for U-NII-2A and U-NII-3.

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	MCS0
-	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	MCS0
-	5500-5720	802.11a	100 to 140	100, 116, 140, 144	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 140	100, 116, 140, 144	OFDM	BPSK	MCS0
-		802.11n (HT40)	102 to 134	102, 110, 134, 142	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	106 to 122	106, 122, 138	OFDM	BPSK	MCS0
-	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	MCS0

Radiated Emission Test (Below 1 GHz):

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

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11ac (VHT80)	42	42	OFDM	BPSK	MCS0
-	5260-5320	802.11ac (VHT80)	58	58	OFDM	BPSK	MCS0
-	5500-5720	802.11ac (VHT80)	106 to 122	106	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)
-	5500-5720	802.11ac (VHT80)	106 to 122	106	OFDM	BPSK	MCS0

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 44, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 44, 48	OFDM	BPSK	MCS0
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	42	42	OFDM	BPSK	MCS0
-	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	MCS0
-	5500-5720	802.11a	100 to 140	100, 116, 140, 144	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 140	100, 116, 140, 144	OFDM	BPSK	MCS0
-		802.11n (HT40)	102 to 134	102, 110, 134, 142	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	106 to 122	106, 122, 138	OFDM	BPSK	MCS0
-	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	MCS0

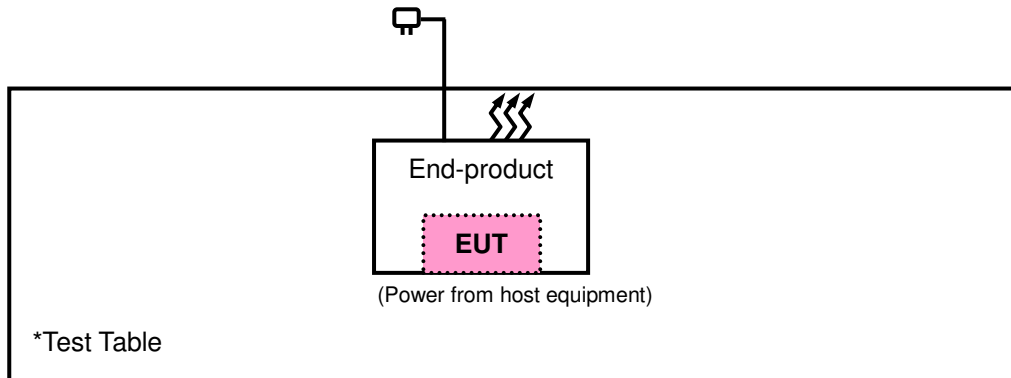
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Toby Tian
APCM	25 deg. C, 65 % RH	5.0 Vdc	Taylor Liu

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

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. 13, 2016	Dec. 12, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Dec. 16, 2016	Dec. 15, 2017
HORN Antenna ETS-Lindgren	3117	00143293	Dec. 29, 2016	Dec. 28, 2017
Bluetooth Tester	CBT	100980	Apr. 27, 2015	Apr. 26, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Agilent Communications Tester-Wireless	8960 Series 10	MY53201073	Jul. 03, 2015	Jul. 02, 2017
Preamplifier Agilent	310N	187226	Jun. 24, 2016	Jun. 23, 2017
Preamplifier Agilent	83017A	MY39501357	Jun. 24, 2016	Jun. 23, 2017
Power Meter Anritsu	ML2495A	1232002	Sep. 08, 2016	Sep. 07, 2017
Power Sensor Anritsu	MA2411B	1207325	Sep. 08, 2016	Sep. 07, 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
Fixed Attenuator Mini-Circuits	BW-N10W5+	NA	Jul. 08, 2016	Jul. 07, 2017

- 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:

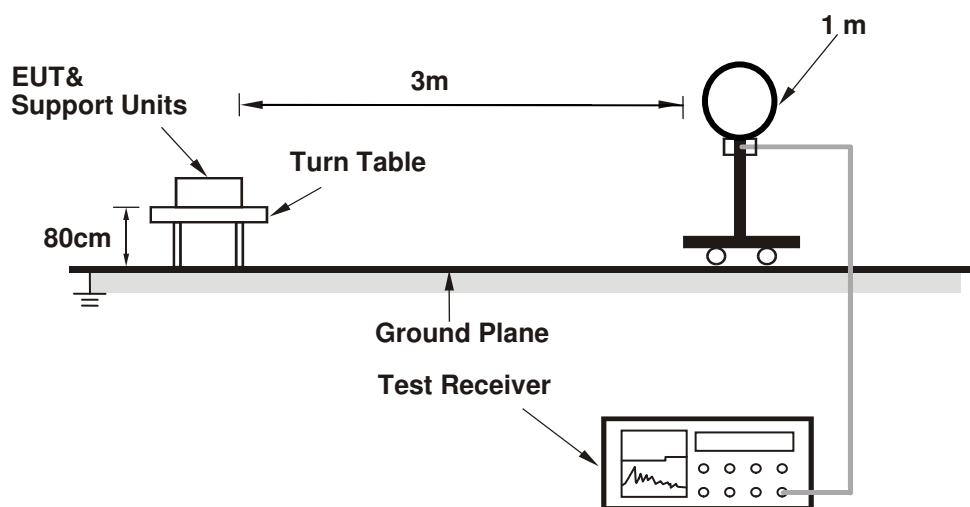
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz & 360 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency 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

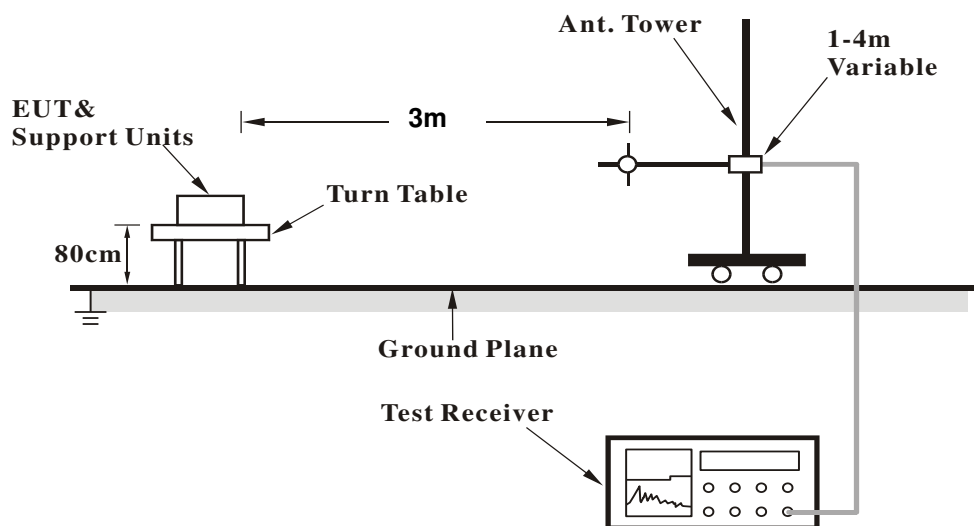
No deviation.

4.1.6 Test Set Up

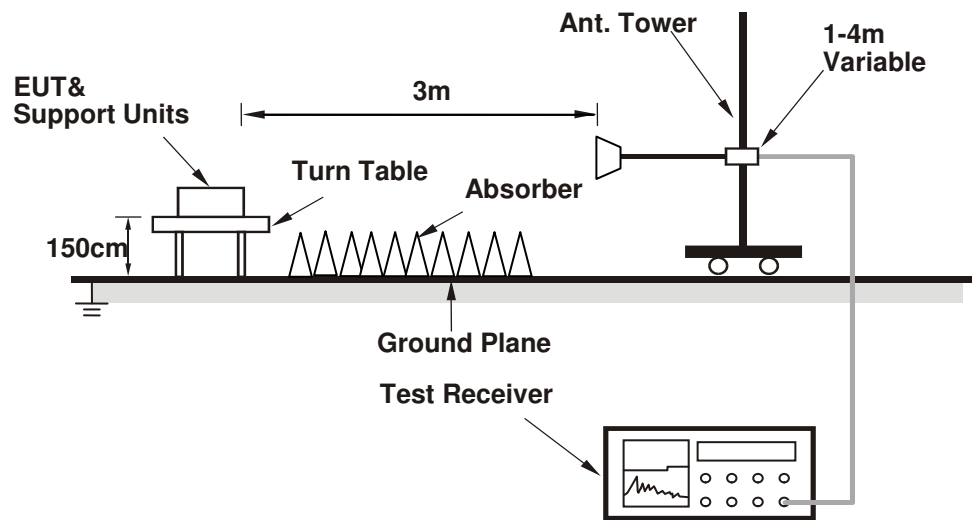
<Radiated emission below 30MHz>



<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
5143.4	55.96	47.7	74	-18.04	34.12	8.13	33.99	245	345	Peak
5149.1	43	34.75	54	-11	34.12	8.13	34	245	345	Average
5180	90.56	82.25			34.15	8.16	34	245	345	Average
5180	98.36	90.05			34.15	8.16	34	245	345	Peak
*10360	46.35	32.05	54	-7.65	37.12	12.3	35.12	164	257	Average
*10360	54.64	40.34	74	-19.36	37.12	12.3	35.12	164	257	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
5144.6	61.44	53.19	74	-12.56	34.12	8.13	34	101	217	Peak
5149.7	44.76	36.51	54	-9.24	34.12	8.13	34	101	217	Average
5180	93.66	85.35			34.15	8.16	34	101	217	Average
5180	100.82	92.51			34.15	8.16	34	101	217	Peak
*10360	46.29	31.99	54	-7.71	37.12	12.3	35.12	148	244	Average
*10360	55.34	41.04	74	-18.66	37.12	12.3	35.12	148	244	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
5093.75	52.64	44.48	74	-21.36	34.08	8.07	33.99	101	217	Peak
5136.05	42.32	34.07	54	-11.68	34.11	8.13	33.99	101	217	Average
5220	92.47	84.08			34.17	8.22	34	101	217	Average
5220	100.78	92.39			34.17	8.22	34	101	217	Peak
5417.1	54.34	45.61	74	-19.66	34.33	8.44	34.04	101	217	Peak
5442.95	42.43	33.64	54	-11.57	34.35	8.48	34.04	101	217	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
5128.25	42.27	34.05	54	-11.73	34.11	8.1	33.99	245	345	Average
5143.85	52.79	44.54	74	-21.21	34.12	8.13	34	245	345	Peak
5220	90.29	81.9			34.17	8.22	34	245	345	Average
5220	98.57	90.18			34.17	8.22	34	245	345	Peak
5442.51	53.15	44.36	74	-20.85	34.35	8.48	34.04	245	345	Peak
5456.04	42.55	33.73	54	-11.45	34.36	8.51	34.05	245	345	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	92.77	84.33			34.19	8.26	34.01	101	217	Average
5240	100.36	91.92			34.19	8.26	34.01	101	217	Peak
5449.77	53.23	44.41	74	-20.77	34.36	8.51	34.05	101	217	Peak
5451.53	42.51	33.69	54	-11.49	34.36	8.51	34.05	101	217	Average
*10480	46.68	32.17	54	-7.32	37.19	12.53	35.21	113	260	Average
*10480	56.11	41.6	74	-17.89	37.19	12.53	35.21	113	260	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	90.69	82.25			34.19	8.26	34.01	245	345	Average
5240	98.58	90.14			34.19	8.26	34.01	245	345	Peak
5380.8	53.67	44.99	74	-20.33	34.31	8.41	34.04	245	345	Peak
5448.78	42.55	33.72	54	-11.45	34.36	8.51	34.04	245	345	Average
*10480	46.76	32.25	54	-7.24	37.19	12.53	35.21	115	75	Average
*10480	56.68	42.17	74	-17.32	37.19	12.53	35.21	115	75	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
5091.35	42.41	34.24	54	-11.59	34.08	8.07	33.98	107	275	Average
5135.45	53.05	44.8	74	-20.95	34.11	8.13	33.99	107	275	Peak
5260	91.47	83.01			34.21	8.26	34.01	107	275	Average
5260	98.4	89.94			34.21	8.26	34.01	107	275	Peak
*10520	46.66	32.07	54	-7.34	37.21	12.61	35.23	114	213	Average
*10520	55.8	41.21	74	-18.2	37.21	12.61	35.23	114	213	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
5074.85	53.44	45.32	74	-20.56	34.07	8.03	33.98	104	358	Peak
5105.9	42.49	34.32	54	-11.51	34.09	8.07	33.99	104	358	Average
5260	93.47	85.01			34.21	8.26	34.01	104	358	Average
5260	100.45	91.99			34.21	8.26	34.01	104	358	Peak
*10520	46.93	32.34	54	-7.07	37.21	12.61	35.23	154	22	Average
*10520	56.26	41.67	74	-17.74	37.21	12.61	35.23	154	22	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
5058.35	52.95	44.85	74	-21.05	34.05	8.03	33.98	107	275	Peak
5142.5	42.39	34.13	54	-11.61	34.12	8.13	33.99	107	275	Average
5300	91.36	82.82			34.24	8.32	34.02	107	275	Average
5300	98.3	89.76			34.24	8.32	34.02	107	275	Peak
5352.53	42.63	34	54	-11.37	34.28	8.38	34.03	107	275	Average
5407.97	53.28	44.56	74	-20.72	34.32	8.44	34.04	107	275	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
5053.1	42.49	34.43	54	-11.51	34.04	8	33.98	104	358	Average
5123.3	53.26	45.04	74	-20.74	34.11	8.1	33.99	104	358	Peak
5300	93.36	84.82			34.24	8.32	34.02	104	358	Average
5300	100.82	92.28			34.24	8.32	34.02	104	358	Peak
5420.51	53.1	44.33	74	-20.9	34.33	8.48	34.04	104	358	Peak
5449.66	42.64	33.81	54	-11.36	34.36	8.51	34.04	104	358	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	91.25	82.67			34.25	8.35	34.02	107	275	Average
5320	98.02	89.44			34.25	8.35	34.02	107	275	Peak
5350.11	44.05	35.42	54	-9.95	34.28	8.38	34.03	107	275	Average
5359.46	56.29	47.66	74	-17.71	34.28	8.38	34.03	107	275	Peak
10640	46.98	32.25	54	-7.02	37.31	12.71	35.29	150	211	Average
10640	56.5	41.77	74	-17.5	37.31	12.71	35.29	150	211	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	93.75	85.17			34.25	8.35	34.02	104	358	Average
5320	100.04	91.46			34.25	8.35	34.02	104	358	Peak
5350.55	43.8	35.17	54	-10.2	34.28	8.38	34.03	104	358	Average
5351.32	53.09	44.46	74	-20.91	34.28	8.38	34.03	104	358	Peak
10640	47.12	32.39	54	-6.88	37.31	12.71	35.29	110	314	Average
10640	56.57	41.84	74	-17.43	37.31	12.71	35.29	110	314	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
5458.8	60.45	51.63	74	-13.55	34.36	8.51	34.05	100	274	Peak
5459.92	44.43	35.61	54	-9.57	34.36	8.51	34.05	100	274	Average
*5468.88	57.54	48.71	74	-16.46	34.37	8.51	34.05	100	274	Peak
*5470.64	46.78	37.95	54	-7.22	34.37	8.51	34.05	100	274	Average
5500	95.99	87.07			34.4	8.57	34.05	100	274	Average
5500	102.63	93.71			34.4	8.57	34.05	100	274	Peak
11000	47.84	32.76	54	-6.16	37.6	12.96	35.48	141	324	Average
11000	56.74	41.66	74	-17.26	37.6	12.96	35.48	141	324	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
5457.52	60.68	51.86	74	-13.32	34.36	8.51	34.05	197	274	Peak
5459.44	47.67	38.85	54	-6.33	34.36	8.51	34.05	197	274	Average
*5468.88	61.32	52.49	74	-12.68	34.37	8.51	34.05	197	274	Peak
*5470.64	52.29	43.46	54	-1.71	34.37	8.51	34.05	197	274	Average
5500	99.97	91.05			34.4	8.57	34.05	197	274	Average
5500	106.43	97.51			34.4	8.57	34.05	197	274	Peak
11000	47.94	32.86	54	-6.06	37.6	12.96	35.48	125	255	Average
11000	56.52	41.44	74	-17.48	37.6	12.96	35.48	125	255	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
5385.2	53.06	44.38	74	-20.94	34.31	8.41	34.04	100	274	Peak
5455.76	42.82	34	54	-11.18	34.36	8.51	34.05	100	274	Average
*5468.24	42.82	33.99	54	-11.18	34.37	8.51	34.05	100	274	Average
*5468.72	52.89	44.06	74	-21.11	34.37	8.51	34.05	100	274	Peak
5580	95.63	86.64			34.47	8.6	34.08	100	274	Average
5580	102.19	93.2			34.47	8.6	34.08	100	274	Peak
*5724.04	51.76	42.6	74	-22.24	34.62	8.65	34.11	100	274	Peak
*5724.52	43.02	33.86	54	-10.98	34.62	8.65	34.11	100	274	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
5409.68	53.08	44.36	74	-20.92	34.32	8.44	34.04	197	274	Peak
5449.36	42.66	33.83	54	-11.34	34.36	8.51	34.04	197	274	Average
*5468.72	52.53	43.7	74	-21.47	34.37	8.51	34.05	197	274	Peak
*5470.64	42.76	33.93	54	-11.24	34.37	8.51	34.05	197	274	Average
5580	99.36	90.37			34.47	8.6	34.08	197	274	Average
5580	106.35	97.36			34.47	8.6	34.08	197	274	Peak
*5724.6	53.17	44.01	74	-20.83	34.62	8.65	34.11	197	274	Peak
*5725.88	42.85	33.69	54	-11.15	34.62	8.65	34.11	197	274	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	94.3	85.17			34.59	8.64	34.1	103	274	Average
5700	101.32	92.19			34.59	8.64	34.1	103	274	Peak
*5723.96	46.21	37.05	54	-7.79	34.62	8.65	34.11	103	274	Average
*5725.72	58.29	49.13	74	-15.71	34.62	8.65	34.11	103	274	Peak
11400	47.47	32.37	54	-6.53	37.84	12.67	35.41	175	105	Average
11400	58.18	43.08	74	-15.82	37.84	12.67	35.41	175	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
5700	98.65	89.52			34.59	8.64	34.1	197	274	Average
5700	105.31	96.18			34.59	8.64	34.1	197	274	Peak
*5724.12	51.75	42.59	54	-2.25	34.62	8.65	34.11	197	274	Average
*5724.52	63.14	53.98	74	-10.86	34.62	8.65	34.11	197	274	Peak
11400	47.6	32.5	54	-6.4	37.84	12.67	35.41	124	7	Average
11400	57.38	42.28	74	-16.62	37.84	12.67	35.41	124	7	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 144	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5444	44.37	35.58	54	-9.63	34.35	8.48	34.04	197	284	Average
5444	58.82	50.03	74	-15.18	34.35	8.48	34.04	197	284	Peak
*5470	44.34	35.51	54	-9.66	34.37	8.51	34.05	197	284	Average
*5470	55.92	47.09	74	-18.08	34.37	8.51	34.05	197	284	Peak
5720	98.02	88.86			34.62	8.65	34.11	197	284	Average
5720	104.7	95.54			34.62	8.65	34.11	197	284	Peak
*5856	58.57	49.25	78.2	-19.63	34.76	8.7	34.14	197	284	Peak
*5864	45.61	36.28	54	-8.39	34.76	8.71	34.14	197	284	Average
*5864	58.74	49.41	74	-15.26	34.76	8.71	34.14	197	284	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5456	45.39	36.57	54	-8.61	34.36	8.51	34.05	164	5	Average
5456	59.61	50.79	74	-14.39	34.36	8.51	34.05	164	5	Peak
*5470	45.43	36.6	54	-8.57	34.37	8.51	34.05	164	5	Average
*5470	57.27	48.44	74	-16.73	34.37	8.51	34.05	164	5	Peak
5720	98.85	89.69			34.62	8.65	34.11	164	5	Average
5720	106.86	97.7			34.62	8.65	34.11	164	5	Peak
*5858	58.24	48.92	78.2	-19.96	34.76	8.7	34.14	164	5	Peak
*5862	45.99	36.66	54	-8.01	34.76	8.71	34.14	164	5	Average
*5862	58.72	49.39	74	-15.28	34.76	8.71	34.14	164	5	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	97.32	88.13			34.64	8.66	34.11	176	277	Average
5745	104.03	94.84			34.64	8.66	34.11	176	277	Peak
11490	47.57	32.45	54	-6.43	37.89	12.62	35.39	157	214	Average
11490	57.57	42.45	74	-16.43	37.89	12.62	35.39	157	214	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	98.3	89.11			34.64	8.66	34.11	165	0	Average
5745	105.52	96.33			34.64	8.66	34.11	165	0	Peak
11490	47.81	32.69	54	-6.19	37.89	12.62	35.39	157	118	Average
11490	57.37	42.25	74	-16.63	37.89	12.62	35.39	157	118	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5596.075	43.86	34.85	54	-10.14	34.49	8.6	34.08	176	277	Average
*5596.075	53.58	44.57	74	-20.42	34.49	8.6	34.08	176	277	Peak
5652.775	52.18	43.08	75.73	-23.55	34.56	8.63	34.09	176	277	Peak
5923.15	51.71	42.31	75.15	-23.44	34.83	8.73	34.16	176	277	Peak
*5982.475	44.32	34.86	54	-9.68	34.88	8.75	34.17	176	277	Average
*5982.475	53.58	44.12	74	-20.42	34.88	8.75	34.17	176	277	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
*5600.275	44.1	35.08	54	-9.9	34.5	8.6	34.08	165	0	Average
*5600.275	52.8	43.78	74	-21.2	34.5	8.6	34.08	165	0	Peak
5652.25	51.6	42.51	75.4	-23.8	34.56	8.62	34.09	165	0	Peak
5920	51.7	42.32	77.12	-25.42	34.81	8.73	34.16	165	0	Peak
*5972.5	44.51	35.06	54	-9.49	34.87	8.75	34.17	165	0	Average
*5972.5	53.19	43.74	74	-20.81	34.87	8.75	34.17	165	0	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)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	97.11	87.88			34.68	8.68	34.13	176	277	Average
5785	104.06	94.83			34.68	8.68	34.13	176	277	Peak
11570	47.78	32.47	54	-6.22	38	12.68	35.37	105	125	Average
11570	57.13	41.82	74	-16.87	38	12.68	35.37	105	125	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	98.22	88.99			34.68	8.68	34.13	165	360	Average
5785	105.01	95.78			34.68	8.68	34.13	165	360	Peak
11570	47.9	32.59	54	-6.1	38	12.68	35.37	197	205	Average
11570	56.65	41.34	74	-17.35	38	12.68	35.37	197	205	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5575.6	43.77	34.77	54	-10.23	34.47	8.6	34.07	176	277	Average
*5575.6	52.97	43.97	74	-21.03	34.47	8.6	34.07	176	277	Peak
5654.35	52.65	43.56	76.71	-24.06	34.56	8.63	34.1	176	277	Peak
5920	51.9	42.52	77.12	-25.22	34.81	8.73	34.16	176	277	Peak
*5929.975	44.31	34.91	54	-9.69	34.83	8.73	34.16	176	277	Average
*5929.975	53.55	44.15	74	-20.45	34.83	8.73	34.16	176	277	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
*5526.25	43.69	34.76	54	-10.31	34.42	8.58	34.07	165	360	Average
*5526.25	53.04	44.11	74	-20.96	34.42	8.58	34.07	165	360	Peak
5651.2	50.27	41.18	74.75	-24.48	34.56	8.62	34.09	165	360	Peak
5924.2	51.96	42.56	74.5	-22.54	34.83	8.73	34.16	165	360	Peak
*5956.225	44.39	34.94	54	-9.61	34.87	8.74	34.16	165	360	Average
*5956.225	53.87	44.42	74	-20.13	34.87	8.74	34.16	165	360	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)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	97.65	88.36			34.73	8.69	34.13	176	277	Average
5825	104.22	94.93			34.73	8.69	34.13	176	277	Peak
11650	47.61	32.08	54	-6.39	38.09	12.8	35.36	154	217	Average
11650	56.09	40.56	74	-17.91	38.09	12.8	35.36	154	217	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	98.11	88.82			34.73	8.69	34.13	162	353	Average
5825	105.19	95.9			34.73	8.69	34.13	162	353	Peak
11650	47.89	32.36	54	-6.11	38.09	12.8	35.36	111	321	Average
11650	57.18	41.65	74	-16.82	38.09	12.8	35.36	111	321	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5525.725	43.59	34.65	54	-10.41	34.42	8.58	34.06	176	277	Average
*5525.725	53.38	44.44	74	-20.62	34.42	8.58	34.06	176	277	Peak
5650.675	52.79	43.7	74.42	-21.63	34.56	8.62	34.09	176	277	Peak
5921.05	51.77	42.39	76.46	-24.69	34.81	8.73	34.16	176	277	Peak
*6006.1	44.42	34.93	54	-9.58	34.9	8.76	34.17	176	277	Average
*6006.1	53.34	43.85	74	-20.66	34.9	8.76	34.17	176	277	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5643.85	43.82	34.75	54	-10.18	34.54	8.62	34.09	162	353	Average
*5643.85	54.11	45.04	74	-19.89	34.54	8.62	34.09	162	353	Peak
5650.15	52.37	43.28	74.09	-21.72	34.56	8.62	34.09	162	353	Peak
5923.675	51.67	42.27	74.83	-23.16	34.83	8.73	34.16	162	353	Peak
*5989.3	44.43	34.97	54	-9.57	34.88	8.75	34.17	162	353	Average
*5989.3	52.97	43.51	74	-21.03	34.88	8.75	34.17	162	353	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
5141	59.62	51.36	74	-14.38	34.12	8.13	33.99	101	217	Peak
5149.85	45.68	37.43	54	-8.32	34.12	8.13	34	101	217	Average
5180	93.21	84.9			34.15	8.16	34	101	217	Average
5180	100.12	91.81			34.15	8.16	34	101	217	Peak
*10360	46.88	32.58	54	-7.12	37.12	12.3	35.12	137	352	Average
*10360	55.08	40.78	74	-18.92	37.12	12.3	35.12	137	352	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
5141.9	55.01	46.75	74	-18.99	34.12	8.13	33.99	245	345	Peak
5150	43.75	35.5	54	-10.25	34.12	8.13	34	245	345	Average
5180	90.23	81.92			34.15	8.16	34	245	345	Average
5180	97.27	88.96			34.15	8.16	34	245	345	Peak
*10360	46.52	32.22	54	-7.48	37.12	12.3	35.12	120	200	Average
*10360	55.02	40.72	74	-18.98	37.12	12.3	35.12	120	200	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
5137.7	53.51	45.26	74	-20.49	34.11	8.13	33.99	101	217	Peak
5149.4	42.58	34.33	54	-11.42	34.12	8.13	34	101	217	Average
5220	92.33	83.94			34.17	8.22	34	101	217	Average
5220	100.91	92.52			34.17	8.22	34	101	217	Peak
5420.4	53.1	44.33	74	-20.9	34.33	8.48	34.04	101	217	Peak
5442.95	42.56	33.77	54	-11.44	34.35	8.48	34.04	101	217	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
5054.45	53.35	45.29	74	-20.65	34.04	8	33.98	245	345	Peak
5141.6	42.35	34.09	54	-11.65	34.12	8.13	33.99	245	345	Average
5220	90.28	81.89			34.17	8.22	34	245	345	Average
5220	98.39	90			34.17	8.22	34	245	345	Peak
5445.81	42.6	33.77	54	-11.4	34.36	8.51	34.04	245	345	Average
5447.9	53.53	44.7	74	-20.47	34.36	8.51	34.04	245	345	Peak

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	92.75	84.31			34.19	8.26	34.01	101	217	Average
5240	100.14	91.7			34.19	8.26	34.01	101	217	Peak
5450.43	53.25	44.43	74	-20.75	34.36	8.51	34.05	101	217	Peak
5455.49	42.57	33.75	54	-11.43	34.36	8.51	34.05	101	217	Average
*10480	47.06	32.55	54	-6.94	37.19	12.53	35.21	119	315	Average
*10480	55.5	40.99	74	-18.5	37.19	12.53	35.21	119	315	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	90.63	82.19			34.19	8.26	34.01	245	345	Average
5240	98.97	90.53			34.19	8.26	34.01	245	345	Peak
5444.93	42.67	33.85	54	-11.33	34.35	8.51	34.04	245	345	Average
5455.82	53.63	44.81	74	-20.37	34.36	8.51	34.05	245	345	Peak
*10480	46.65	32.14	54	-7.35	37.19	12.53	35.21	105	310	Average
*10480	55.75	41.24	74	-18.25	37.19	12.53	35.21	105	310	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
5108.75	53.02	44.82	74	-20.98	34.09	8.1	33.99	107	275	Peak
5119.1	42.43	34.23	54	-11.57	34.09	8.1	33.99	107	275	Average
5260	90.43	81.97			34.21	8.26	34.01	107	275	Average
5260	97.71	89.25			34.21	8.26	34.01	107	275	Peak
*10520	47.04	32.45	54	-6.96	37.21	12.61	35.23	105	247	Average
*10520	55.8	41.21	74	-18.2	37.21	12.61	35.23	105	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
5070.05	53.23	45.13	74	-20.77	34.05	8.03	33.98	104	358	Peak
5126.15	42.39	34.17	54	-11.61	34.11	8.1	33.99	104	358	Average
5260	92.77	84.31			34.21	8.26	34.01	104	358	Average
5260	99.66	91.2			34.21	8.26	34.01	104	358	Peak
*10520	47.19	32.6	54	-6.81	37.21	12.61	35.23	152	321	Average
*10520	56.26	41.67	74	-17.74	37.21	12.61	35.23	152	321	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
5134.55	42.41	34.16	54	-11.59	34.11	8.13	33.99	107	275	Average
5149.1	52.92	44.67	74	-21.08	34.12	8.13	34	107	275	Peak
5300	90.68	82.14			34.24	8.32	34.02	107	275	Average
5300	97.57	89.03			34.24	8.32	34.02	107	275	Peak
5352.2	43.04	34.41	54	-10.96	34.28	8.38	34.03	107	275	Average
5378.6	53.46	44.78	74	-20.54	34.31	8.41	34.04	107	275	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
5048.6	52.84	44.78	74	-21.16	34.04	8	33.98	104	358	Peak
5129.75	42.32	34.1	54	-11.68	34.11	8.1	33.99	104	358	Average
5300	92.85	84.31			34.24	8.32	34.02	104	358	Average
5300	99.53	90.99			34.24	8.32	34.02	104	358	Peak
5350.55	42.67	34.04	54	-11.33	34.28	8.38	34.03	104	358	Average
5354.51	53.96	45.33	74	-20.04	34.28	8.38	34.03	104	358	Peak

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	90.48	81.9			34.25	8.35	34.02	107	275	Average
5320	97.77	89.19			34.25	8.35	34.02	107	275	Peak
5351.76	44.18	35.55	54	-9.82	34.28	8.38	34.03	107	275	Average
5364.19	57.25	48.61	74	-16.75	34.29	8.38	34.03	107	275	Peak
10640	46.82	32.09	54	-7.18	37.31	12.71	35.29	150	245	Average
10640	56.5	41.77	74	-17.5	37.31	12.71	35.29	150	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
5320	92.88	84.3			34.25	8.35	34.02	104	358	Average
5320	99.58	91			34.25	8.35	34.02	104	358	Peak
5350.11	43.49	34.86	54	-10.51	34.28	8.38	34.03	104	358	Average
5354.51	54.27	45.64	74	-19.73	34.28	8.38	34.03	104	358	Peak
10640	47.26	32.53	54	-6.74	37.31	12.71	35.29	184	186	Average
10640	56.57	41.84	74	-17.43	37.31	12.71	35.29	184	186	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
5458.48	59.34	50.52	74	-14.66	34.36	8.51	34.05	100	274	Peak
5460	43.9	35.08	54	-10.1	34.36	8.51	34.05	100	274	Average
*5469.68	45.79	36.96	54	-8.21	34.37	8.51	34.05	100	274	Average
*5470.8	63.73	54.87	74	-10.27	34.37	8.54	34.05	100	274	Peak
5500	94.75	85.83			34.4	8.57	34.05	100	274	Average
5500	101.82	92.9			34.4	8.57	34.05	100	274	Peak
11000	47.47	32.39	54	-6.53	37.6	12.96	35.48	154	247	Average
11000	56.74	41.66	74	-17.26	37.6	12.96	35.48	154	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
5456.24	63.06	54.24	74	-10.94	34.36	8.51	34.05	197	274	Peak
5459.92	46.95	38.13	54	-7.05	34.36	8.51	34.05	197	274	Average
*5469.2	69.35	60.52	74	-4.65	34.37	8.51	34.05	197	274	Peak
*5470.48	50.9	42.07	54	-3.1	34.37	8.51	34.05	197	274	Average
5500	98.44	89.52			34.4	8.57	34.05	197	274	Average
5500	105.46	96.54			34.4	8.57	34.05	197	274	Peak
11000	47.55	32.47	54	-6.45	37.6	12.96	35.48	108	110	Average
11000	56.52	41.44	74	-17.48	37.6	12.96	35.48	108	110	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
5395.92	52.68	43.96	74	-21.32	34.32	8.44	34.04	100	274	Peak
5420.56	42.61	33.84	54	-11.39	34.33	8.48	34.04	100	274	Average
*5468.08	42.65	33.82	54	-11.35	34.37	8.51	34.05	100	274	Average
*5469.2	52.78	43.95	74	-21.22	34.37	8.51	34.05	100	274	Peak
5580	94.46	85.47			34.47	8.6	34.08	100	274	Average
5580	101.63	92.64			34.47	8.6	34.08	100	274	Peak
*5723.96	52.12	42.96	74	-21.88	34.62	8.65	34.11	100	274	Peak
*5725.32	42.86	33.7	54	-11.14	34.62	8.65	34.11	100	274	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
5370.64	53.45	44.78	74	-20.55	34.29	8.41	34.03	197	274	Peak
5447.44	42.7	33.87	54	-11.3	34.36	8.51	34.04	197	274	Average
*5468.08	52.65	43.82	74	-21.35	34.37	8.51	34.05	197	274	Peak
*5468.24	42.75	33.92	54	-11.25	34.37	8.51	34.05	197	274	Average
5580	98.66	89.67			34.47	8.6	34.08	197	274	Average
5580	105.75	96.76			34.47	8.6	34.08	197	274	Peak
*5724.28	52.94	43.78	74	-21.06	34.62	8.65	34.11	197	274	Peak
*5725.4	42.98	33.82	54	-11.02	34.62	8.65	34.11	197	274	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	93.4	84.27			34.59	8.64	34.1	103	274	Average
5700	100.66	91.53			34.59	8.64	34.1	103	274	Peak
5724.04	45.19	36.03	54	-8.81	34.62	8.65	34.11	103	274	Average
5724.12	56.25	47.09	74	-17.75	34.62	8.65	34.11	103	274	Peak
11400	47.11	32.01	54	-6.89	37.84	12.67	35.41	105	243	Average
11400	58.18	43.08	74	-15.82	37.84	12.67	35.41	105	243	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	97.88	88.75			34.59	8.64	34.1	197	274	Average
5700	104.37	95.24			34.59	8.64	34.1	197	274	Peak
5724.04	48.37	39.21	54	-5.63	34.62	8.65	34.11	197	274	Average
5724.44	63.27	54.11	74	-10.73	34.62	8.65	34.11	197	274	Peak
11400	47.47	32.37	54	-6.53	37.84	12.67	35.41	184	359	Average
11400	57.38	42.28	74	-16.62	37.84	12.67	35.41	184	359	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 144	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5436	46.04	37.25	54	-7.96	34.35	8.48	34.04	197	284	Average
5436	58.53	49.74	74	-15.47	34.35	8.48	34.04	197	284	Peak
*5470	44.55	35.72	54	-9.45	34.37	8.51	34.05	197	284	Average
*5470	57.2	48.37	74	-16.8	34.37	8.51	34.05	197	284	Peak
5720	97.39	88.23			34.62	8.65	34.11	197	284	Average
5720	103.7	94.54			34.62	8.65	34.11	197	284	Peak
*5852	58.75	49.45	78.2	-19.45	34.74	8.7	34.14	197	284	Peak
*5866	45.32	35.99	54	-8.68	34.76	8.71	34.14	197	284	Average
*5866	57.86	48.53	74	-16.14	34.76	8.71	34.14	197	284	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
5428	45.36	36.59	54	-8.64	34.33	8.48	34.04	163	6	Average
5428	58.6	49.83	74	-15.4	34.33	8.48	34.04	163	6	Peak
*5470	45.22	36.39	54	-8.78	34.37	8.51	34.05	163	6	Average
*5470	56.53	47.7	74	-17.47	34.37	8.51	34.05	163	6	Peak
5720	98.13	88.97			34.62	8.65	34.11	163	6	Average
5720	105.96	96.8			34.62	8.65	34.11	163	6	Peak
*5858	58.95	49.63	78.2	-19.25	34.76	8.7	34.14	163	6	Peak
*5870	45.07	35.74	54	-8.93	34.76	8.71	34.14	163	6	Average
*5870	58.36	49.03	74	-15.64	34.76	8.71	34.14	163	6	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	96.33	87.14			34.64	8.66	34.11	176	277	Average
5745	103.27	94.08			34.64	8.66	34.11	176	277	Peak
11490	47.27	32.15	54	-6.73	37.89	12.62	35.39	170	114	Average
11490	57.57	42.45	74	-16.43	37.89	12.62	35.39	170	114	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	97.88	88.69			34.64	8.66	34.11	165	0	Average
5745	104.08	94.89			34.64	8.66	34.11	165	0	Peak
11490	47.92	32.8	54	-6.08	37.89	12.62	35.39	125	57	Average
11490	57.37	42.25	74	-16.63	37.89	12.62	35.39	125	57	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5649	43.93	34.86	54	-10.07	34.54	8.62	34.09	176	277	Average
*5649	53.4	44.33	74	-20.6	34.54	8.62	34.09	176	277	Peak
5650.15	53.59	44.5	74.09	-20.5	34.56	8.62	34.09	176	277	Peak
5921.575	52.44	43.04	76.14	-23.7	34.83	8.73	34.16	176	277	Peak
*5939.95	44.29	34.86	54	-9.71	34.85	8.74	34.16	176	277	Average
*5939.95	53.45	44.02	74	-20.55	34.85	8.74	34.16	176	277	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
*5546.2	43.93	34.99	54	-10.07	34.43	8.58	34.07	165	0	Average
*5546.2	53.25	44.31	74	-20.75	34.43	8.58	34.07	165	0	Peak
5651.725	51.43	42.34	75.08	-23.65	34.56	8.62	34.09	165	0	Peak
5922.1	52.6	43.2	75.81	-23.21	34.83	8.73	34.16	165	0	Peak
*5957.8	44.6	35.15	54	-9.4	34.87	8.74	34.16	165	0	Average
*5957.8	53.5	44.05	74	-20.5	34.87	8.74	34.16	165	0	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)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	96.66	87.43			34.68	8.68	34.13	176	277	Average
5785	103.18	93.95			34.68	8.68	34.13	176	277	Peak
11570	47.35	32.04	54	-6.65	38	12.68	35.37	141	311	Average
11570	57.13	41.82	74	-16.87	38	12.68	35.37	141	311	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	97.56	88.33			34.68	8.68	34.13	162	360	Average
5785	104.23	95			34.68	8.68	34.13	162	360	Peak
11570	47.77	32.46	54	-6.23	38	12.68	35.37	151	165	Average
11570	56.65	41.34	74	-17.35	38	12.68	35.37	151	165	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5612.875	43.97	34.94	54	-10.03	34.5	8.61	34.08	176	277	Average
*5612.875	53.07	44.04	74	-20.93	34.5	8.61	34.08	176	277	Peak
5650.675	52.29	43.2	74.42	-22.13	34.56	8.62	34.09	176	277	Peak
5923.675	49.96	40.56	74.83	-24.87	34.83	8.73	34.16	176	277	Peak
*5974.075	44.33	34.87	54	-9.67	34.88	8.75	34.17	176	277	Average
*5974.075	53.76	44.3	74	-20.24	34.88	8.75	34.17	176	277	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
*5560.375	43.83	34.86	54	-10.17	34.45	8.59	34.07	162	360	Average
*5560.375	54.38	45.41	74	-19.62	34.45	8.59	34.07	162	360	Peak
5652.775	51.62	42.52	75.73	-24.11	34.56	8.63	34.09	162	360	Peak
5921.05	53	43.62	76.46	-23.46	34.81	8.73	34.16	162	360	Peak
*5982.475	44.45	34.99	54	-9.55	34.88	8.75	34.17	162	360	Average
*5982.475	53.85	44.39	74	-20.15	34.88	8.75	34.17	162	360	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)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	96.65	87.36			34.73	8.69	34.13	176	277	Average
5825	103.48	94.19			34.73	8.69	34.13	176	277	Peak
11650	48.08	32.55	54	-5.92	38.09	12.8	35.36	113	155	Average
11650	56.09	40.56	74	-17.91	38.09	12.8	35.36	113	155	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	97.82	88.53			34.73	8.69	34.13	162	353	Average
5825	104.32	95.03			34.73	8.69	34.13	162	353	Peak
11650	48.22	32.69	54	-5.78	38.09	12.8	35.36	126	95	Average
11650	57.18	41.65	74	-16.82	38.09	12.8	35.36	126	95	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5641.225	43.98	34.91	54	-10.02	34.54	8.62	34.09	176	277	Average
*5641.225	54.28	45.21	74	-19.72	34.54	8.62	34.09	176	277	Peak
5652.25	51.33	42.24	75.4	-24.07	34.56	8.62	34.09	176	277	Peak
5923.675	50.2	40.8	74.83	-24.63	34.83	8.73	34.16	176	277	Peak
*5951.5	44.46	35.03	54	-9.54	34.85	8.74	34.16	176	277	Average
*5951.5	53.97	44.54	74	-20.03	34.85	8.74	34.16	176	277	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
*5540.425	43.63	34.69	54	-10.37	34.43	8.58	34.07	162	353	Average
*5540.425	53.46	44.52	74	-20.54	34.43	8.58	34.07	162	353	Peak
5650.675	52.01	42.92	74.42	-22.41	34.56	8.62	34.09	162	353	Peak
5922.625	51.82	42.42	75.48	-23.66	34.83	8.73	34.16	162	353	Peak
*5978.8	44.26	34.8	54	-9.74	34.88	8.75	34.17	162	353	Average
*5978.8	53.47	44.01	74	-20.53	34.88	8.75	34.17	162	353	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
5142.95	61.94	53.68	74	-12.06	34.12	8.13	33.99	101	217	Peak
5147.3	44.44	36.19	54	-9.56	34.12	8.13	34	101	217	Average
5190	90.55	82.21			34.15	8.19	34	101	217	Average
5190	97.15	88.81			34.15	8.19	34	101	217	Peak
5439.76	53.28	44.49	74	-20.72	34.35	8.48	34.04	101	217	Peak
5444.27	43.25	34.46	54	-10.75	34.35	8.48	34.04	101	217	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
5147.15	43.21	34.96	54	-10.79	34.12	8.13	34	243	345	Average
5148.05	56.89	48.64	74	-17.11	34.12	8.13	34	243	345	Peak
5190	88.44	80.1			34.15	8.19	34	243	345	Average
5190	95.13	86.79			34.15	8.19	34	243	345	Peak
5400.93	53.74	45.02	74	-20.26	34.32	8.44	34.04	243	345	Peak
5450.1	43.01	34.19	54	-10.99	34.36	8.51	34.05	243	345	Average

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
5141.3	56.56	48.3	74	-17.44	34.12	8.13	33.99	101	217	Peak
5149.7	42.95	34.7	54	-11.05	34.12	8.13	34	101	217	Average
5230	90.52	82.12			34.19	8.22	34.01	101	217	Average
5230	97.54	89.14			34.19	8.22	34.01	101	217	Peak
5440.75	53.05	44.26	74	-20.95	34.35	8.48	34.04	101	217	Peak
5452.85	43.07	34.25	54	-10.93	34.36	8.51	34.05	101	217	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
5074.55	53.69	45.57	74	-20.31	34.07	8.03	33.98	243	345	Peak
5104.4	42.95	34.79	54	-11.05	34.08	8.07	33.99	243	345	Average
5230	88.77	80.37			34.19	8.22	34.01	243	345	Average
5230	95.49	87.09			34.19	8.22	34.01	243	345	Peak
5379.04	53.12	44.44	74	-20.88	34.31	8.41	34.04	243	345	Peak
5444.93	43.02	34.2	54	-10.98	34.35	8.51	34.04	243	345	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
5033.9	53.09	45.03	74	-20.91	34.03	8	33.97	107	275	Peak
5114.15	42.69	34.49	54	-11.31	34.09	8.1	33.99	107	275	Average
5270	88.25	79.76			34.21	8.29	34.01	107	275	Average
5270	95.86	87.37			34.21	8.29	34.01	107	275	Peak
5354.18	43.12	34.49	54	-10.88	34.28	8.38	34.03	107	275	Average
5363.97	53.57	44.93	74	-20.43	34.29	8.38	34.03	107	275	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
5041.55	52.76	44.69	74	-21.24	34.04	8	33.97	104	358	Peak
5080.7	42.73	34.61	54	-11.27	34.07	8.03	33.98	104	358	Average
5270	90.55	82.06			34.21	8.29	34.01	104	358	Average
5270	97.65	89.16			34.21	8.29	34.01	104	358	Peak
5354.84	53.6	44.97	74	-20.4	34.28	8.38	34.03	104	358	Peak
5436.68	42.95	34.16	54	-11.05	34.35	8.48	34.04	104	358	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
5112.35	42.82	34.62	54	-11.18	34.09	8.1	33.99	107	275	Average
5139.8	52.76	44.5	74	-21.24	34.12	8.13	33.99	107	275	Peak
5310	88.93	80.38			34.25	8.32	34.02	107	275	Average
5310	95.38	86.83			34.25	8.32	34.02	107	275	Peak
5350.11	60.57	51.94	74	-13.43	34.28	8.38	34.03	107	275	Peak
5350.55	45.55	36.92	54	-8.45	34.28	8.38	34.03	107	275	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
5100.8	53.6	45.44	74	-20.4	34.08	8.07	33.99	104	358	Peak
5120.3	42.68	34.48	54	-11.32	34.09	8.1	33.99	104	358	Average
5310	90.63	82.08			34.25	8.32	34.02	104	358	Average
5310	97.79	89.24			34.25	8.32	34.02	104	358	Peak
5350.55	45.27	36.64	54	-8.73	34.28	8.38	34.03	104	358	Average
5350.55	57.44	48.81	74	-16.56	34.28	8.38	34.03	104	358	Peak

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)	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
5457.52	59.17	50.35	74	-14.83	34.36	8.51	34.05	100	274	Peak
5459.6	44.72	35.9	54	-9.28	34.36	8.51	34.05	100	274	Average
*5469.68	60.18	51.35	74	-13.82	34.37	8.51	34.05	100	274	Peak
*5469.84	47.35	38.52	54	-6.65	34.37	8.51	34.05	100	274	Average
5510	90.32	81.41			34.4	8.57	34.06	100	274	Average
5510	97.66	88.75			34.4	8.57	34.06	100	274	Peak
*5725.08	43.33	34.17	54	-10.67	34.62	8.65	34.11	100	274	Average
*5725.4	51.78	42.62	74	-22.22	34.62	8.65	34.11	100	274	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5445.36	61.78	52.96	74	-12.22	34.35	8.51	34.04	197	274	Peak
5459.28	48.13	39.31	54	-5.87	34.36	8.51	34.05	197	274	Average
*5470	52.69	43.86	54	-1.31	34.37	8.51	34.05	197	274	Average
*5471.44	64.23	55.37	74	-9.77	34.37	8.54	34.05	197	274	Peak
5510	94.11	85.2			34.4	8.57	34.06	197	274	Average
5510	101.16	92.25			34.4	8.57	34.06	197	274	Peak
*5724.92	43.28	34.12	54	-10.72	34.62	8.65	34.11	197	274	Average
*5725.8	52.25	43.09	74	-21.75	34.62	8.65	34.11	197	274	Peak

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)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5456.56	43.5	34.68	54	-10.5	34.36	8.51	34.05	100	274	Average
5458	54.14	45.32	74	-19.86	34.36	8.51	34.05	100	274	Peak
*5470	43.7	34.87	54	-10.3	34.37	8.51	34.05	100	274	Average
*5470.8	55.61	46.75	74	-18.39	34.37	8.54	34.05	100	274	Peak
5550	92.55	83.58			34.45	8.59	34.07	100	274	Average
5550	99.3	90.33			34.45	8.59	34.07	100	274	Peak
*5724.76	43.21	34.05	54	-10.79	34.62	8.65	34.11	100	274	Average
*5725.48	52.41	43.25	74	-21.59	34.62	8.65	34.11	100	274	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5453.36	59.15	50.33	74	-14.85	34.36	8.51	34.05	197	274	Peak
5459.28	44.22	35.4	54	-9.78	34.36	8.51	34.05	197	274	Average
*5470.16	56.1	47.27	74	-17.9	34.37	8.51	34.05	197	274	Peak
*5470.96	45.32	36.46	54	-8.68	34.37	8.54	34.05	197	274	Average
5550	96.66	87.69			34.45	8.59	34.07	197	274	Average
5550	103.63	94.66			34.45	8.59	34.07	197	274	Peak
*5724.84	51.94	42.78	74	-22.06	34.62	8.65	34.11	197	274	Peak
*5725.64	43.27	34.11	54	-10.73	34.62	8.65	34.11	197	274	Average

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
5407.6	52.89	44.17	74	-21.11	34.32	8.44	34.04	100	274	Peak
5444.08	43.02	34.23	54	-10.98	34.35	8.48	34.04	100	274	Average
*5470.64	51.73	42.9	74	-22.27	34.37	8.51	34.05	100	274	Peak
*5470.8	42.97	34.11	54	-11.03	34.37	8.54	34.05	100	274	Average
5670	90.58	81.48			34.57	8.63	34.1	100	274	Average
5670	97.85	88.75			34.57	8.63	34.1	100	274	Peak
*5724.28	43.99	34.83	54	-10.01	34.62	8.65	34.11	100	274	Average
*5724.52	52.46	43.3	74	-21.54	34.62	8.65	34.11	100	274	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5434	43.11	34.32	54	-10.89	34.35	8.48	34.04	197	274	Average
5442.8	54.2	45.41	74	-19.8	34.35	8.48	34.04	197	274	Peak
*5470.16	43.08	34.25	54	-10.92	34.37	8.51	34.05	197	274	Average
*5470.8	51.98	43.12	74	-22.02	34.37	8.54	34.05	197	274	Peak
5670	94.55	85.45			34.57	8.63	34.1	197	274	Average
5670	101.17	92.07			34.57	8.63	34.1	197	274	Peak
*5724.12	45.96	36.8	54	-8.04	34.62	8.65	34.11	197	274	Average
*5724.2	56.99	47.83	74	-17.01	34.62	8.65	34.11	197	274	Peak

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5458	44.45	35.63	54	-9.55	34.36	8.51	34.05	206	284	Average
5458	59.31	50.49	74	-14.69	34.36	8.51	34.05	206	284	Peak
*5470	45.07	36.24	54	-8.93	34.37	8.51	34.05	206	284	Average
*5470	57.22	48.39	74	-16.78	34.37	8.51	34.05	206	284	Peak
5710	94.67	85.52			34.61	8.65	34.11	206	284	Average
5710	101.22	92.07			34.61	8.65	34.11	206	284	Peak
*5858	57.63	48.31	78.2	-20.57	34.76	8.7	34.14	206	284	Peak
*5870	45	35.67	54	-9	34.76	8.71	34.14	206	284	Average
*5870	58.69	49.36	74	-15.31	34.76	8.71	34.14	206	284	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5364	44.15	35.51	54	-9.85	34.29	8.38	34.03	164	1	Average
5364	60.23	51.59	74	-13.77	34.29	8.38	34.03	164	1	Peak
*5470	44.45	35.62	54	-9.55	34.37	8.51	34.05	164	1	Average
*5470	56.3	47.47	74	-17.7	34.37	8.51	34.05	164	1	Peak
5710	96.4	87.25			34.61	8.65	34.11	164	1	Average
5710	103.53	94.38			34.61	8.65	34.11	164	1	Peak
*5856	58.02	48.7	78.2	-20.18	34.76	8.7	34.14	164	1	Peak
*5862	45.14	35.81	54	-8.86	34.76	8.71	34.14	164	1	Average
*5862	58.37	49.04	74	-15.63	34.76	8.71	34.14	164	1	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5755	92.51	83.3			34.66	8.66	34.11	176	277	Average
5755	99.21	90			34.66	8.66	34.11	176	277	Peak
11510	47.88	32.77	54	-6.12	37.9	12.6	35.39	163	155	Average
11510	57.02	41.91	74	-16.98	37.9	12.6	35.39	163	155	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5755	94.55	85.34			34.66	8.66	34.11	165	0	Average
5755	101.38	92.17			34.66	8.66	34.11	165	0	Peak
11510	48.11	33	54	-5.89	37.9	12.6	35.39	124	111	Average
11510	57.13	42.02	74	-16.87	37.9	12.6	35.39	124	111	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5637.55	44.64	35.57	54	-9.36	34.54	8.62	34.09	176	277	Average
*5637.55	53.95	44.88	74	-20.05	34.54	8.62	34.09	176	277	Peak
5650.675	52.02	42.93	74.42	-22.4	34.56	8.62	34.09	176	277	Peak
5922.625	51.71	42.31	75.48	-23.77	34.83	8.73	34.16	176	277	Peak
*5947.825	45.14	35.71	54	-8.86	34.85	8.74	34.16	176	277	Average
*5947.825	53.31	43.88	74	-20.69	34.85	8.74	34.16	176	277	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
*5598.175	45.09	36.08	54	-8.91	34.49	8.6	34.08	165	0	Average
*5598.175	53.84	44.83	74	-20.16	34.49	8.6	34.08	165	0	Peak
5655.925	52.03	42.94	77.7	-25.67	34.56	8.63	34.1	165	0	Peak
5921.05	51.75	42.37	76.46	-24.71	34.81	8.73	34.16	165	0	Peak
*5944.15	45.46	36.03	54	-8.54	34.85	8.74	34.16	165	0	Average
*5944.15	53.37	43.94	74	-20.63	34.85	8.74	34.16	165	0	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)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5795	92.44	83.2			34.69	8.68	34.13	176	277	Average
5795	99.07	89.83			34.69	8.68	34.13	176	277	Peak
11590	48.36	32.99	54	-5.64	38.02	12.72	35.37	120	208	Average
11590	57.02	41.65	74	-16.98	38.02	12.72	35.37	120	208	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5795	93.35	84.11			34.69	8.68	34.13	162	0	Average
5795	100.15	90.91			34.69	8.68	34.13	162	0	Peak
11590	48.48	33.11	54	-5.52	38.02	12.72	35.37	131	196	Average
11590	56.83	41.46	74	-17.17	38.02	12.72	35.37	131	196	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5637.025	44.56	35.49	54	-9.44	34.54	8.62	34.09	176	277	Average
*5637.025	53.31	44.24	74	-20.69	34.54	8.62	34.09	176	277	Peak
5650.675	53.04	43.95	74.42	-21.38	34.56	8.62	34.09	176	277	Peak
5924.2	51.58	42.18	74.5	-22.92	34.83	8.73	34.16	176	277	Peak
*5936.8	44.91	35.51	54	-9.09	34.83	8.73	34.16	176	277	Average
*5936.8	52.99	43.59	74	-21.01	34.83	8.73	34.16	176	277	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
*5539.375	44.69	35.75	54	-9.31	34.43	8.58	34.07	162	0	Average
*5539.375	52.95	44.01	74	-21.05	34.43	8.58	34.07	162	0	Peak
5654.875	52.82	43.73	77.04	-24.22	34.56	8.63	34.1	162	0	Peak
5918.425	54	44.62	78.1	-24.1	34.81	8.73	34.16	162	0	Peak
*5964.1	45.49	36.05	54	-8.51	34.87	8.74	34.17	162	0	Average
*5964.1	53.92	44.48	74	-20.08	34.87	8.74	34.17	162	0	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
5133.8	62.02	53.77	74	-11.98	34.11	8.13	33.99	101	217	Peak
5140.4	52.73	44.47	54	-1.27	34.12	8.13	33.99	101	217	Average
5210	90.44	82.08			34.17	8.19	34	101	217	Average
5210	97.11	88.75			34.17	8.19	34	101	217	Peak
5409.73	53.36	44.64	74	-20.64	34.32	8.44	34.04	101	217	Peak
5458.68	43.31	34.49	54	-10.69	34.36	8.51	34.05	101	217	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
5138.75	56.97	48.72	74	-17.03	34.11	8.13	33.99	240	345	Peak
5139.05	48.62	40.37	54	-5.38	34.11	8.13	33.99	240	345	Average
5210	88.96	80.6			34.17	8.19	34	240	345	Average
5210	95.48	87.12			34.17	8.19	34	240	345	Peak
5436.46	52.97	44.18	74	-21.03	34.35	8.48	34.04	240	345	Peak
5447.24	43.46	34.63	54	-10.54	34.36	8.51	34.04	240	345	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
5056.1	43.08	34.98	54	-10.92	34.05	8.03	33.98	107	275	Average
5125.7	54.11	45.89	74	-19.89	34.11	8.1	33.99	107	275	Peak
5290	87.05	78.52			34.23	8.32	34.02	107	275	Average
5290	94.35	85.82			34.23	8.32	34.02	107	275	Peak
5350.11	47.95	39.32	54	-6.05	34.28	8.38	34.03	107	275	Average
5355.06	58.55	49.92	74	-15.45	34.28	8.38	34.03	107	275	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
5084.6	53.84	45.68	74	-20.16	34.07	8.07	33.98	110	358	Peak
5086.85	43.4	35.24	54	-10.6	34.07	8.07	33.98	110	358	Average
5290	89.39	80.86			34.23	8.32	34.02	110	358	Average
5290	96.17	87.64			34.23	8.32	34.02	110	358	Peak
5350.44	49.75	41.12	54	-4.25	34.28	8.38	34.03	110	358	Average
5351.98	59.4	50.77	74	-14.6	34.28	8.38	34.03	110	358	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
5458.8	59.27	50.45	74	-14.73	34.36	8.51	34.05	100	274	Peak
5458.96	49.35	40.53	54	-4.65	34.36	8.51	34.05	100	274	Average
*5468.88	48.86	40.03	54	-5.14	34.37	8.51	34.05	100	274	Average
*5470.64	57.47	48.64	74	-16.53	34.37	8.51	34.05	100	274	Peak
5530	88.73	79.8			34.42	8.58	34.07	100	274	Average
5530	95.88	86.95			34.42	8.58	34.07	100	274	Peak
*5725.4	52.52	43.36	74	-21.48	34.62	8.65	34.11	100	274	Peak
*5725.56	43.56	34.4	54	-10.44	34.62	8.65	34.11	100	274	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
5458.32	53	44.18	54	-1.00	34.36	8.51	34.05	197	274	Average
5460	63.32	54.5	74	-10.68	34.36	8.51	34.05	197	274	Peak
*5470.48	52.81	43.98	54	-1.19	34.37	8.51	34.05	197	274	Average
*5470.48	62.2	53.37	74	-11.8	34.37	8.51	34.05	197	274	Peak
5530	92.63	83.7			34.42	8.58	34.07	197	274	Average
5530	99.75	90.82			34.42	8.58	34.07	197	274	Peak
*5724.04	52.98	43.82	74	-21.02	34.62	8.65	34.11	197	274	Peak
*5724.6	43.83	34.67	54	-10.17	34.62	8.65	34.11	197	274	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
5379.12	52.87	44.19	74	-21.13	34.31	8.41	34.04	100	274	Peak
5456.08	43.72	34.9	54	-10.28	34.36	8.51	34.05	100	274	Average
*5468.08	53.03	44.2	74	-20.97	34.37	8.51	34.05	100	274	Peak
*5469.84	43.88	35.05	54	-10.12	34.37	8.51	34.05	100	274	Average
5610	88.85	79.82			34.5	8.61	34.08	100	274	Average
5610	95.55	86.52			34.5	8.61	34.08	100	274	Peak
*5724.04	44.02	34.86	54	-9.98	34.62	8.65	34.11	100	274	Average
*5724.68	52.84	43.68	74	-21.16	34.62	8.65	34.11	100	274	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5455.44	44.23	35.41	54	-9.77	34.36	8.51	34.05	197	274	Average
5460.08	55.44	46.62	74	-18.56	34.36	8.51	34.05	197	274	Peak
*5469.52	45.16	36.33	54	-8.84	34.37	8.51	34.05	197	274	Average
*5470	53.84	45.01	74	-20.16	34.37	8.51	34.05	197	274	Peak
5610	92.81	83.78			34.5	8.61	34.08	197	274	Average
5610	99.66	90.63			34.5	8.61	34.08	197	274	Peak
*5724.68	45.88	36.72	54	-8.12	34.62	8.65	34.11	197	274	Average
*5725.32	54.4	45.24	74	-19.6	34.62	8.65	34.11	197	274	Peak

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5372	44.29	35.62	54	-9.71	34.29	8.41	34.03	199	283	Average
5372	58.4	49.73	74	-15.6	34.29	8.41	34.03	199	283	Peak
5470	44.55	35.72	54	-9.45	34.37	8.51	34.05	199	283	Average
5470	57.35	48.52	74	-16.65	34.37	8.51	34.05	199	283	Peak
5690	90.75	81.62			34.59	8.64	34.1	199	283	Average
5690	99.16	90.03			34.59	8.64	34.1	199	283	Peak
5856	58.45	49.13	78.2	-19.75	34.76	8.7	34.14	199	283	Peak
5870	45.03	35.7	54	-8.97	34.76	8.71	34.14	199	283	Average
5870	58.77	49.44	74	-15.23	34.76	8.71	34.14	199	283	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
5378	44.24	35.56	54	-9.76	34.31	8.41	34.04	165	0	Average
5378	58.93	50.25	74	-15.07	34.31	8.41	34.04	165	0	Peak
5470	44.37	35.54	54	-9.63	34.37	8.51	34.05	165	0	Average
5470	57.19	48.36	74	-16.81	34.37	8.51	34.05	165	0	Peak
5690	91.79	82.66			34.59	8.64	34.1	165	0	Average
5690	100.87	91.74			34.59	8.64	34.1	165	0	Peak
5856	58.15	48.83	78.2	-20.05	34.76	8.7	34.14	165	0	Peak
5864	45.81	36.48	54	-8.19	34.76	8.71	34.14	165	0	Average
5864	59.94	50.61	74	-14.06	34.76	8.71	34.14	165	0	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5775	92.56	83.33			34.68	8.67	34.12	176	277	Average
5775	99.79	90.56			34.68	8.67	34.12	176	277	Peak
11550	48.85	33.58	54	-5.15	37.97	12.68	35.38	141	244	Average
11550	56.72	41.45	74	-17.28	37.97	12.68	35.38	141	244	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5775	93.05	83.82			34.68	8.67	34.12	172	360	Average
5775	100.6	91.37			34.68	8.67	34.12	172	360	Peak
11550	48.96	33.69	54	-5.04	37.97	12.68	35.38	109	341	Average
11550	57.19	41.92	74	-16.81	37.97	12.68	35.38	109	341	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5650.15	45.53	36.44			34.56	8.62	34.09	176	277	Average
*5650.15	54.75	45.66	74.09	-19.34	34.56	8.62	34.09	176	277	Peak
5659.075	56.56	47.47	79.66	-23.1	34.56	8.63	34.1	176	277	Peak
5921.05	51.7	42.32	76.46	-24.76	34.81	8.73	34.16	176	277	Peak
*6021.85	46.09	36.58	54	-7.91	34.92	8.77	34.18	176	277	Average
*6021.85	53.12	43.61	74	-20.88	34.92	8.77	34.18	176	277	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
*5620.75	45.68	36.63	54	-8.32	34.52	8.61	34.08	172	360	Average
*5620.75	54.48	45.43	74	-19.52	34.52	8.61	34.08	172	360	Peak
5654.35	54.62	45.53	76.71	-22.09	34.56	8.63	34.1	172	360	Peak
5921.575	51.45	42.05	76.14	-24.69	34.83	8.73	34.16	172	360	Peak
*5947.3	45.93	36.5	54	-8.07	34.85	8.74	34.16	172	360	Average
*5947.3	54.23	44.8	74	-19.77	34.85	8.74	34.16	172	360	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:

802.11ac (VHT80)

EUT Test Condition		Measurement Detail	
Channel	Channel 42	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	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
88.32	21.38	43.25	43.5	-22.12	8.83	1.11	31.81	178	132	Peak
194.97	14.28	34.33	43.5	-29.22	10.62	1.61	32.28	162	155	Peak
237.36	18.79	36.67	46	-27.21	12.42	1.85	32.15	196	134	Peak
484.1	19.1	29.72	46	-26.9	18.93	2.56	32.11	174	124	Peak
727.7	22.97	28.53	46	-23.03	23.4	3.16	32.12	186	134	Peak
871.9	25.2	28.62	46	-20.8	24.8	3.44	31.66	195	243	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
88.05	16.14	38.04	43.5	-27.36	8.8	1.11	31.81	196	175	Peak
173.91	7.8	28.28	43.5	-35.7	10.15	1.61	32.24	146	132	Peak
216.3	9.17	28.21	46	-36.83	11.54	1.65	32.23	185	127	Peak
473.6	17.52	28.27	46	-28.48	18.81	2.56	32.12	168	342	Peak
648.6	21.51	28.57	46	-24.49	22.1	2.99	32.15	114	125	Peak
748.7	22.89	28.61	46	-23.11	23.2	3.22	32.14	186	132	Peak

Remarks:

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

Margin value = Emission level – Limit value

802.11ac (VHT80)

EUT Test Condition		Measurement Detail	
Channel	Channel 58	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) 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
101.28	20.76	42.08	43.5	-22.74	9.66	1.28	32.26	167	145	Peak
143.67	16.22	37.5	43.5	-27.28	9.61	1.38	32.27	195	138	Peak
224.13	15.91	34.61	46	-30.09	11.85	1.65	32.2	124	187	Peak
427.4	16.26	28.28	46	-29.74	17.75	2.41	32.18	167	118	Peak
605.9	20.46	28.39	46	-25.54	21.39	2.87	32.19	143	128	Peak
794.2	24.03	28.6	46	-21.97	24.23	3.27	32.07	168	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
73.2	20.55	43.46	40	-19.45	8.2	1.11	32.22	136	174	Peak
154.74	9.16	29.46	43.5	-34.34	10.45	1.52	32.27	125	134	Peak
214.14	9.61	28.75	43.5	-33.89	11.45	1.65	32.24	196	138	Peak
407.8	15.79	27.64	46	-30.21	17.95	2.41	32.21	142	174	Peak
569.5	18.78	28.01	46	-27.22	20.15	2.82	32.2	168	123	Peak
820.1	23.67	28.58	46	-22.33	23.72	3.32	31.95	108	125	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 106	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

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
118.83	20.29	42.47	43.5	-23.21	8.79	1.28	32.25	152	117	Peak
198.75	15.03	34.87	43.5	-28.47	10.84	1.61	32.29	168	265	Peak
257.88	25.86	42.77	46	-20.14	13.25	1.94	32.1	124	229	Peak
475	18.38	29.04	46	-27.62	18.9	2.56	32.12	131	164	Peak
673.8	22.68	28.35	46	-23.32	23.4	3.05	32.12	185	120	Peak
835.5	24.21	29.05	46	-21.79	23.65	3.38	31.87	196	342	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
86.16	14.49	36.58	40	-25.51	8.71	1.11	31.91	153	274	Peak
138.54	8.13	29.74	43.5	-35.37	9.28	1.38	32.27	199	264	Peak
239.52	15.71	33.46	46	-30.29	12.54	1.85	32.14	137	121	Peak
484.8	18.51	29.05	46	-27.49	18.94	2.63	32.11	123	108	Peak
689.2	22.25	28.07	46	-23.75	23.23	3.05	32.1	196	206	Peak
903.4	25.64	28.33	46	-20.36	25.24	3.53	31.46	152	134	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
88.59	20.16	42.03	43.5	-23.34	8.83	1.11	31.81	158	212	Peak
155.55	12.61	32.85	43.5	-30.89	10.51	1.52	32.27	164	113	Peak
241.95	21.39	39.02	46	-24.61	12.65	1.85	32.13	129	172	Peak
447.7	17.18	28.87	46	-28.82	17.97	2.49	32.15	158	241	Peak
609.4	21.74	29.53	46	-24.26	21.53	2.87	32.19	196	342	Peak
764.1	23.6	29.15	46	-22.4	23.35	3.22	32.12	121	117	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
71.85	18.04	40.99	40	-21.96	8.16	1.11	32.22	125	134	Peak
129.63	14.28	35.96	43.5	-29.22	9.17	1.38	32.23	164	283	Peak
262.74	22.12	38.92	46	-23.88	13.37	1.94	32.11	159	146	Peak
415.5	16.53	28.47	46	-29.47	17.85	2.41	32.2	131	125	Peak
678	23.31	29.01	46	-22.69	23.36	3.05	32.11	196	120	Peak
848.1	23.93	28.55	46	-22.07	23.75	3.44	31.81	168	134	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	ESCS 30	100288	Aug. 18, 2016	Aug. 17, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Dec. 22, 2016	Dec. 21, 2017
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 17, 2017	Jan. 16, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 26, 2016	Jul. 25, 2017
Software ADT	BV ADT_Conc_ 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 2.
 3. The VCCI Site Registration No. is C-2047.

4.2.3 Test Procedures

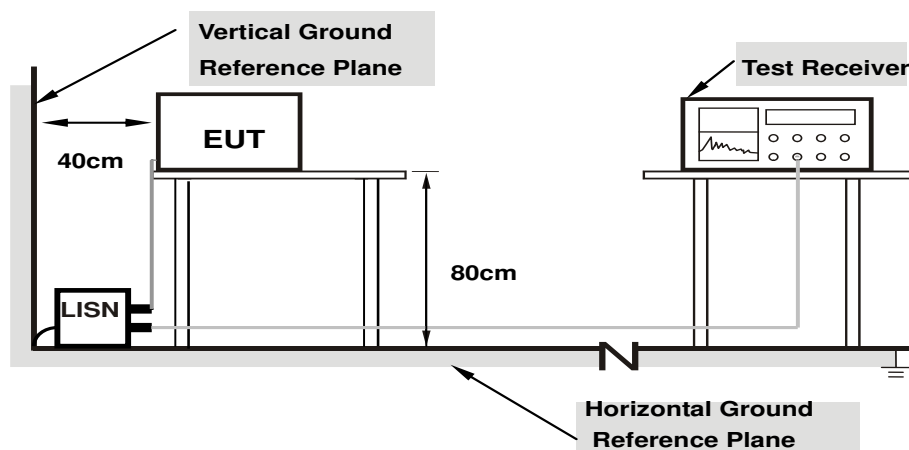
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

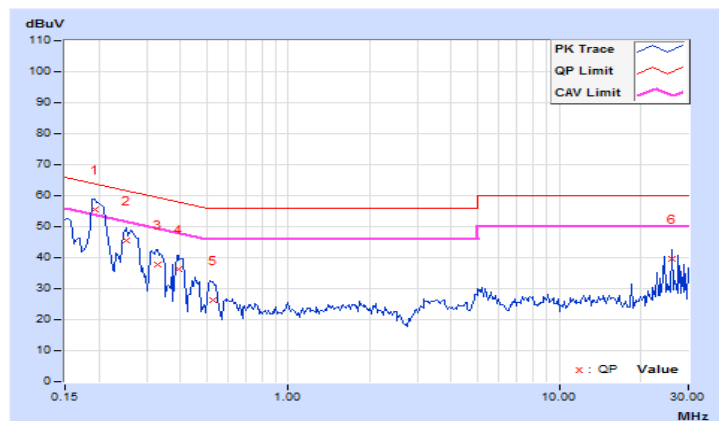
4.2.7 Test Results

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	2017/2/9

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	0.19297	9.94	45.76	28.50	55.70	38.44	63.91	53.91	-8.21	-15.47
2	0.25156	9.92	35.60	15.26	45.52	25.18	61.71	51.71	-16.19	-26.53
3	0.32969	9.91	27.84	9.65	37.75	19.56	59.46	49.46	-21.71	-29.90
4	0.39219	9.91	26.44	7.14	36.35	17.05	58.02	48.02	-21.67	-30.97
5	0.52891	9.93	16.38	0.12	26.31	10.05	56.00	46.00	-29.69	-35.95
6	25.99219	10.26	29.28	25.51	39.54	35.77	60.00	50.00	-20.46	-14.23

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

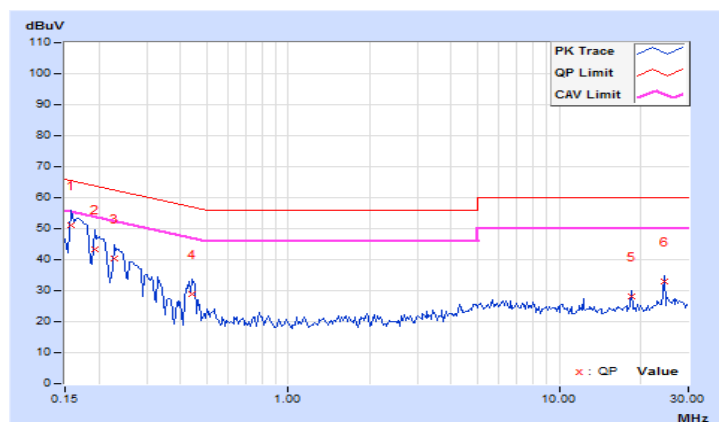


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2017/2/9

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	0.15781	9.87	41.24	25.47	51.11	35.34	65.58	55.58	-14.47	-20.24
2	0.19297	9.80	33.40	11.84	43.20	21.64	63.91	53.91	-20.71	-32.27
3	0.22812	9.81	30.51	11.80	40.32	21.61	62.52	52.52	-22.20	-30.91
4	0.43906	9.95	18.83	2.82	28.78	12.77	57.08	47.08	-28.30	-34.31
5	18.43359	10.45	17.85	18.09	28.30	28.54	60.00	50.00	-31.70	-21.46
6	24.57813	10.41	22.73	22.98	33.14	33.39	60.00	50.00	-26.86	-16.61

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

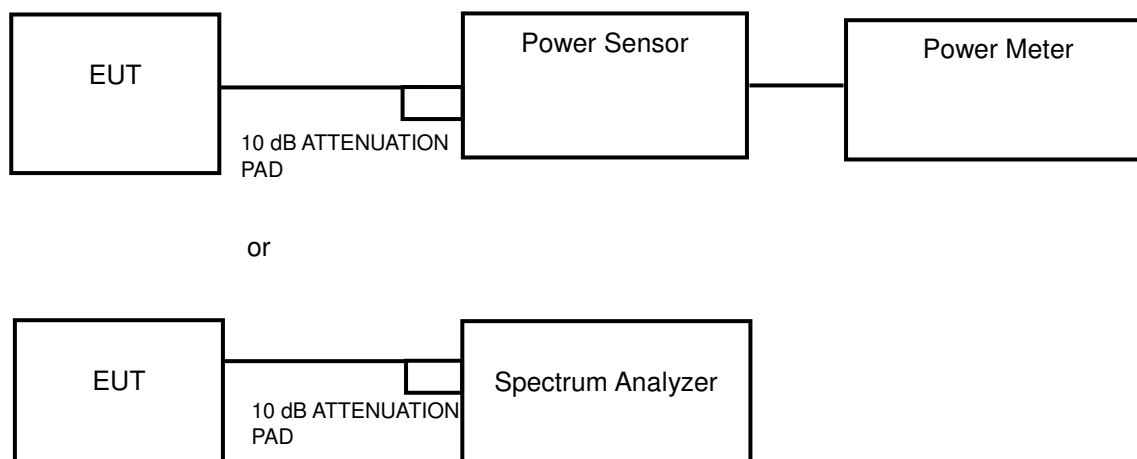
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20 MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

<Power Output Measurement>



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

Average Power Measurement

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

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

<802.11ac (VHT80)>

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	16.90	12.28	24	Pass
44	5220	16.22	12.10	24	Pass
48	5240	15.96	12.03	24	Pass
52	5260	16.48	12.17	24	Pass
60	5300	15.70	11.96	24	Pass
64	5320	16.98	12.30	24	Pass
100	5500	26.73	14.27	24	Pass
116	5580	26.98	14.31	24	Pass
140	5700	26.49	14.23	24	Pass
144	5720	19.28	12.85	24	Pass
149	5745	18.75	12.73	30	Pass
157	5785	19.14	12.82	30	Pass
165	5825	18.11	12.58	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	16.14	12.08	24	Pass
44	5220	15.96	12.03	24	Pass
48	5240	16.11	12.07	24	Pass
52	5260	16.03	12.05	24	Pass
60	5300	16.41	12.15	24	Pass
64	5320	16.67	12.22	24	Pass
100	5500	23.23	13.66	24	Pass
116	5580	25.00	13.98	24	Pass
140	5700	24.95	13.97	24	Pass
144	5720	17.10	12.33	24	Pass
149	5745	16.87	12.27	30	Pass
157	5785	17.66	12.47	30	Pass
165	5825	17.02	12.31	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	12.74	11.05	24	Pass
46	5230	13.49	11.30	24	Pass
54	5270	13.52	11.31	24	Pass
62	5310	13.34	11.25	24	Pass
102	5510	15.67	11.95	24	Pass
110	5550	22.18	13.46	24	Pass
134	5670	21.78	13.38	24	Pass
142	5710	13.68	11.36	24	Pass
151	5755	17.14	12.34	30	Pass
159	5795	16.03	12.05	30	Pass

802.11ac (VHT80)

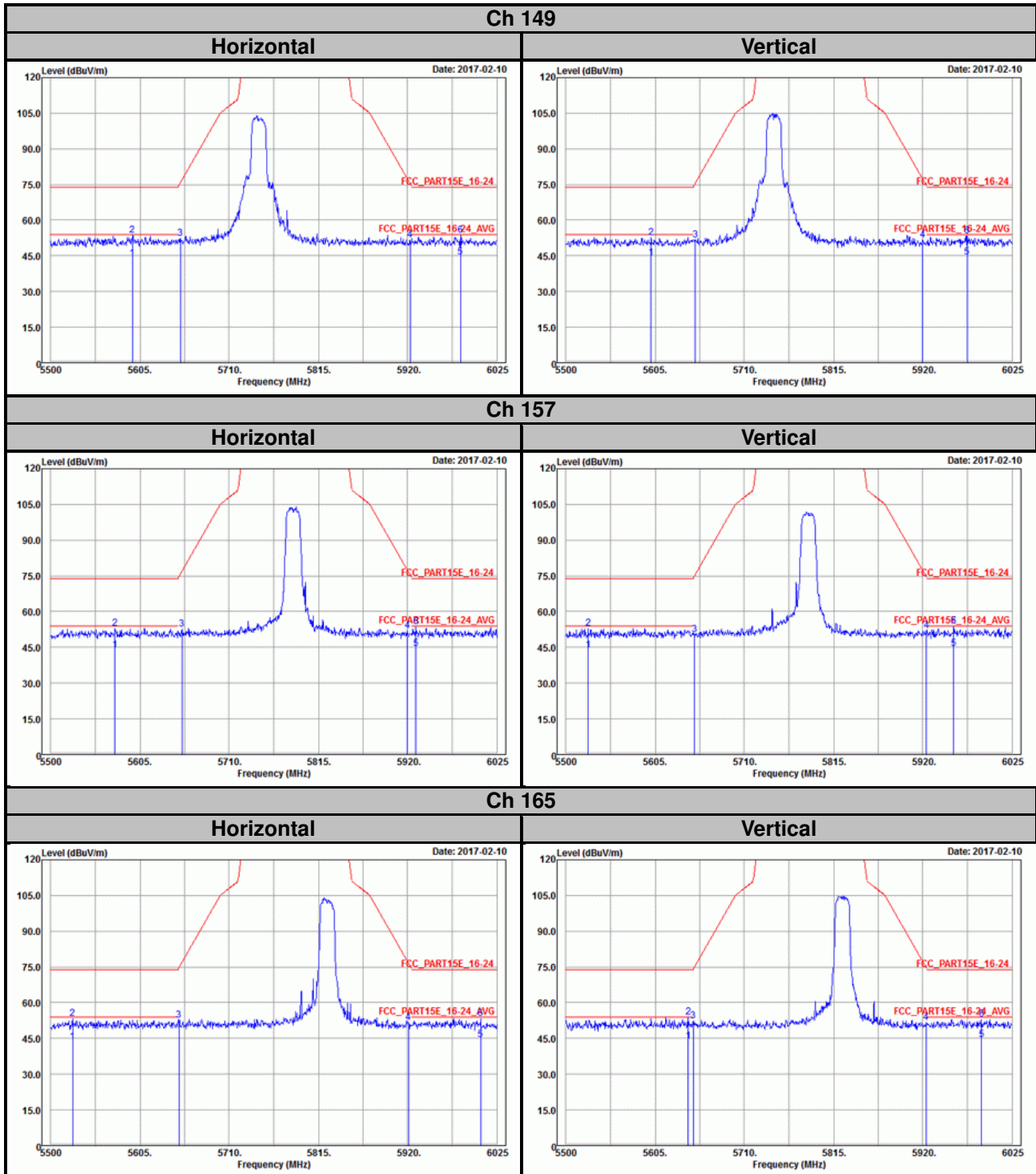
Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	12.85	11.09	24	Pass
58	5290	12.91	11.11	24	Pass
106	5530	16.14	12.08	24	Pass
122	5610	16.22	12.10	24	Pass
138	5690	13.40	11.27	24	Pass
155	5775	15.74	11.97	30	Pass

5 Pictures of Test Arrangements

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

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

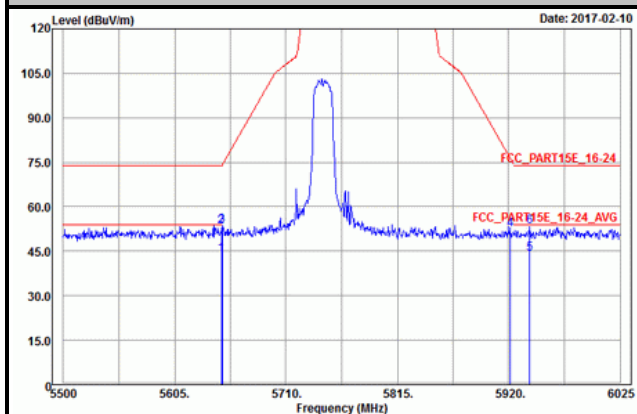
802.11a



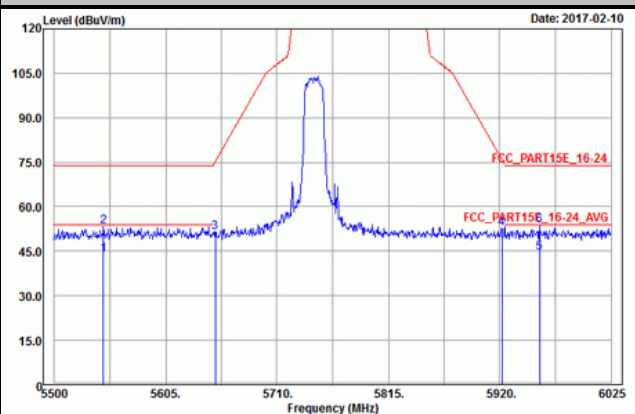
802.11n (HT20)

Ch 149

Horizontal

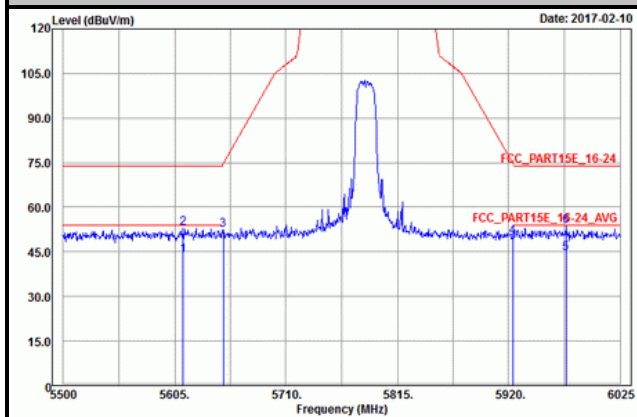


Vertical

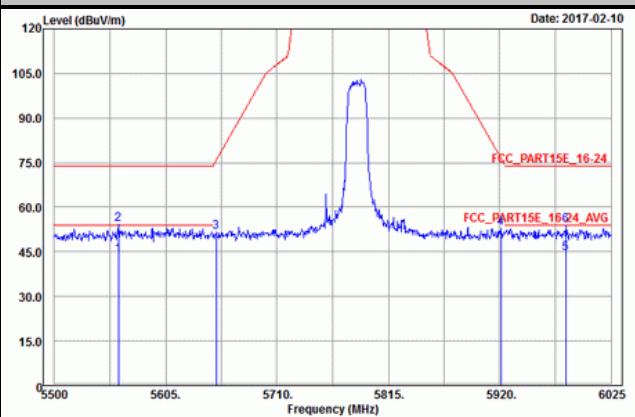


Ch 157

Horizontal

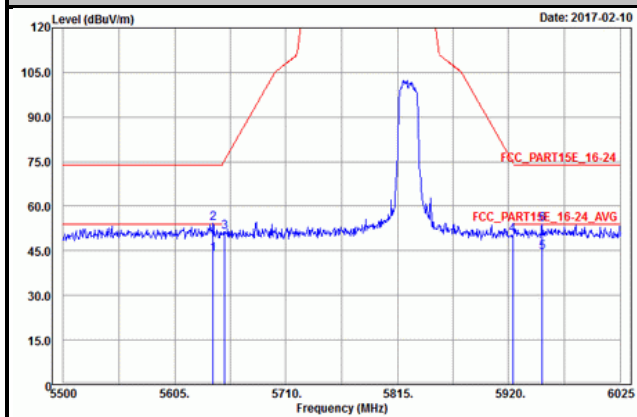


Vertical

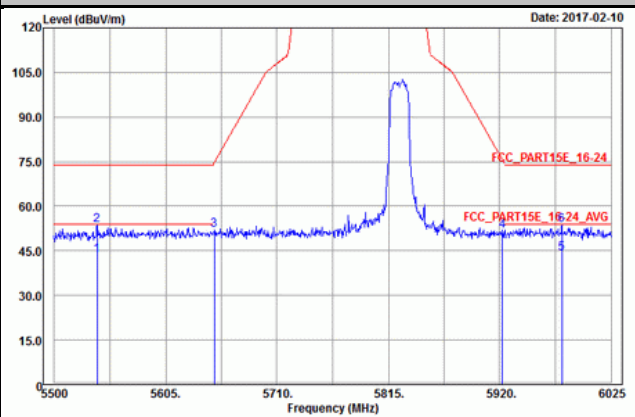


Ch 165

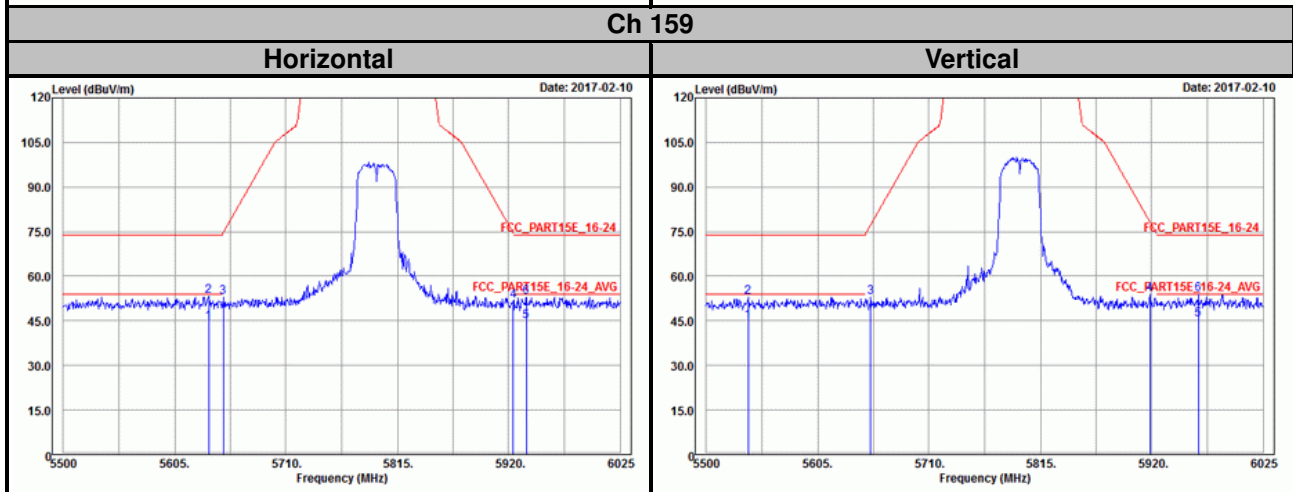
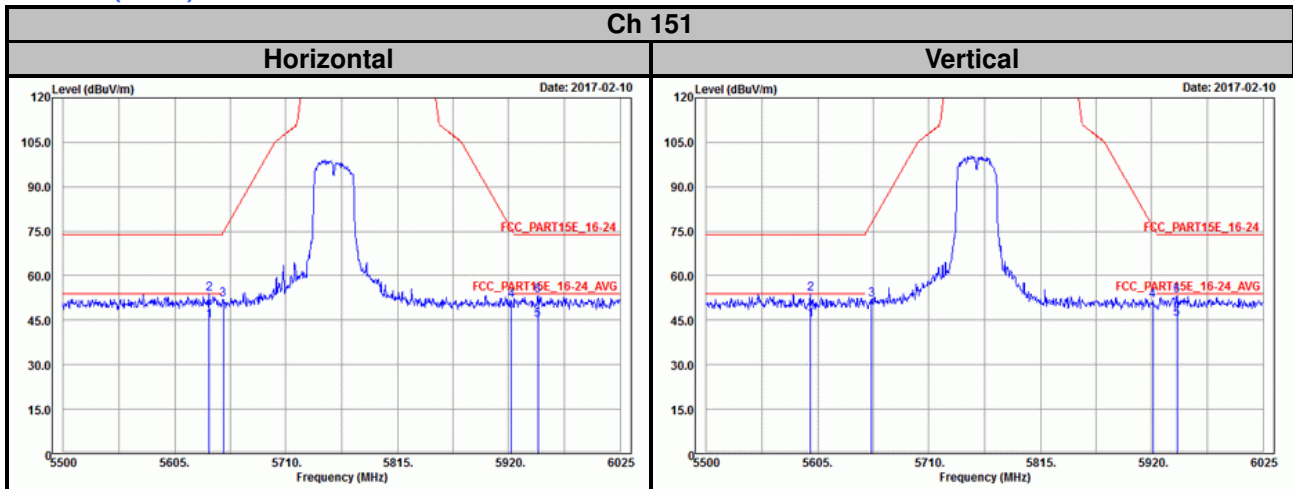
Horizontal



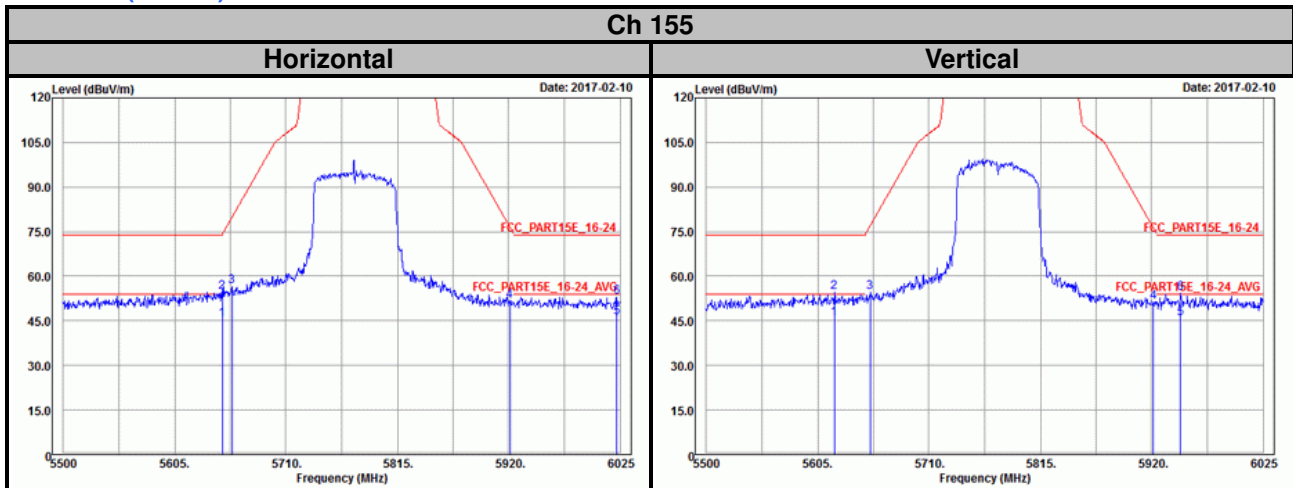
Vertical



802.11n (HT40)



802.11ac (VHT80)



Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are 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.

--- END ---