

FCC Test Report

Report No.: RF170220C13-4

FCC ID: NM82PZC100

Test Model: 2PZC100

Received Date: Feb. 20, 2017

Test Date: Mar. 17, 2017 ~ Mar. 29, 2017

Issued Date: Apr. 19, 2017

Applicant: HTC Corporation

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

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Release Control Record

Issue No.	Description	Date Issued
RF170220C13-4	Original Release	Apr. 19, 2017

1 Certificate of Conformity

Product: Smartphone

Brand: HTC

Test Model: 2PZC100

Sample Status: Production Unit

Applicant: HTC Corporation

Test Date: Mar. 17, 2017 ~ Mar. 29, 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 :

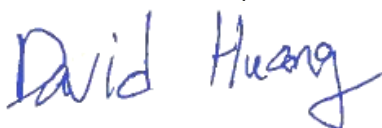


Date:

Apr. 19, 2017

Ivonne Wu / Supervisor

Approved by :



Date:

Apr. 19, 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 -18.59 dB at 1.78829 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 -1.85 dB at 5350.55 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

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

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	Smartphone
Brand	HTC
Test Model	2PZC100
Status of EUT	Production Unit
Power Supply Rating	5.0 Vdc or 9 Vdc or 12 Vdc (adapter) 5.0 Vdc (adapter) 3.85 Vdc (Li-ion battery)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to MCS15 802.11ac: up to V9
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5700 MHz, 5745 ~ 5825 MHz
Number of Channel	5180 ~ 5240 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5500 ~ 5700 MHz: 11 for 802.11a, 802.11n (HT20) 5 for 802.11n (HT40) 2 for 802.11ac (VHT80) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80)
Output Power	42.462 mW for 5180 ~ 5240 MHz 42.047 mW for 5260 ~ 5320 MHz 42.336 mW for 5500 ~ 5700 MHz 41.344 mW for 5745 ~ 5825 MHz
Antenna Type	PIFA antenna with 0.5 dBi (Main) / -0.5 dBi (Aux.) gain (5180 ~ 5240 MHz) PIFA antenna with -2 dBi (Main) / -1.5 dBi (Aux.) gain (5260 ~ 5320 MHz) PIFA antenna with -2 dBi (Main) / -1.5 dBi (Aux.) gain (5500 ~ 5700 MHz) PIFA antenna with -1.5 dBi (Main) / -2.5 dBi (Aux.) gain (5745 ~ 5825 MHz)
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

1. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

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

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

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

3.2 Description of Test Modes

For 5180 ~ 5240 MHz

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
42	5210

For 5260 ~ 5320 MHz

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
58	5290

For 5500 ~ 5700 MHz

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

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

5 channels are provided for 802.11n (HT40):

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

2 channels are provided for 802.11ac (VHT80):

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

For 5745 ~ 5825 MHz:

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
155	5775

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE $\geq$ 1G	RE<1G	PLC	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 **Y-plane** for 5180-5240MHz & 5260-5320MHz & 5500-5700MHz (1TX) and 5745-5825MHz (2TX), **Z-plane** for 5745-5825MHz (1TX) and 5260-5320MHz & 5500-5700MHz (2TX), and **X-plane** for 5180-5240MHz (2TX).

2. "-" means no effect.

Radiated Emission Test (Above 1 GHz):

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

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 44, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 44, 48	OFDM	BPSK	MCS0
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	42	42	OFDM	BPSK	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
-	5500-5700	802.11a	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 140	100, 116, 140	OFDM	BPSK	MCS0
-		802.11n (HT40)	102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	106 to 122	106, 122	OFDM	BPSK	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
-	5500-5700	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)
-	5260-5320	802.11ac (VHT80)	58	58	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
-	5500-5700	802.11a	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 140	100, 116, 140	OFDM	BPSK	MCS0
-		802.11n (HT40)	102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-		802.11ac (VHT80)	106 to 122	106, 122	OFDM	BPSK	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	Getaz Yang
APCM	25 deg. C, 65 % RH	3.85 Vdc	Wayne Lin

3.3 Duty Cycle of Test Signal

MODULATION TYPE: BPSK

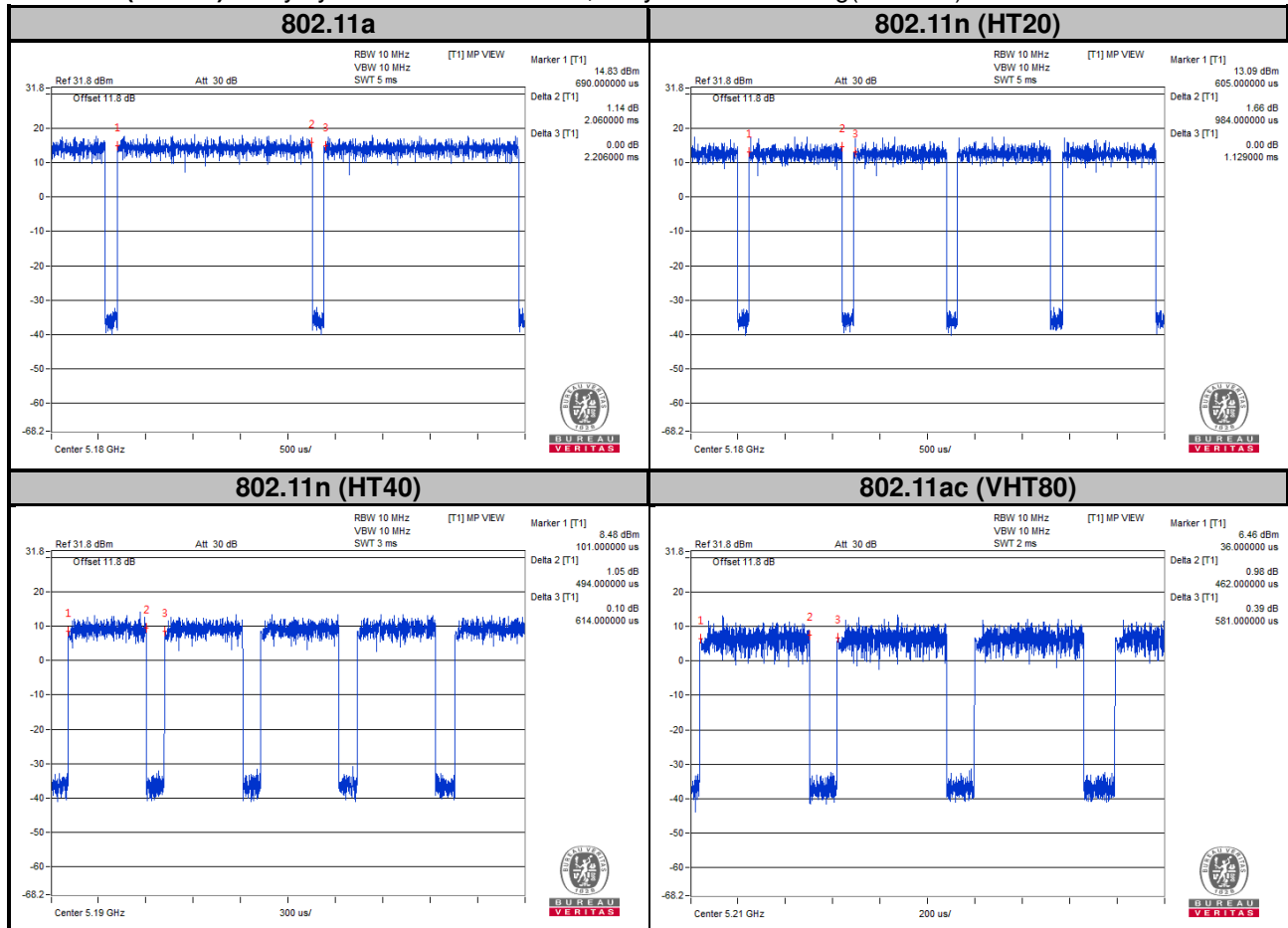
Duty cycle of test signal is < 98 %, duty factor is required.

802.11a: Duty cycle = $2.060/2.206 = 0.934$, Duty factor = $10 * \log(1/0.934) = 0.30$

802.11n (HT20): Duty cycle = $0.984/1.129 = 0.872$, Duty factor = $10 * \log(1/0.872) = 0.60$

802.11n (HT40): Duty cycle = $494/614 = 0.804$, Duty factor = $10 * \log(1/0.804) = 0.95$

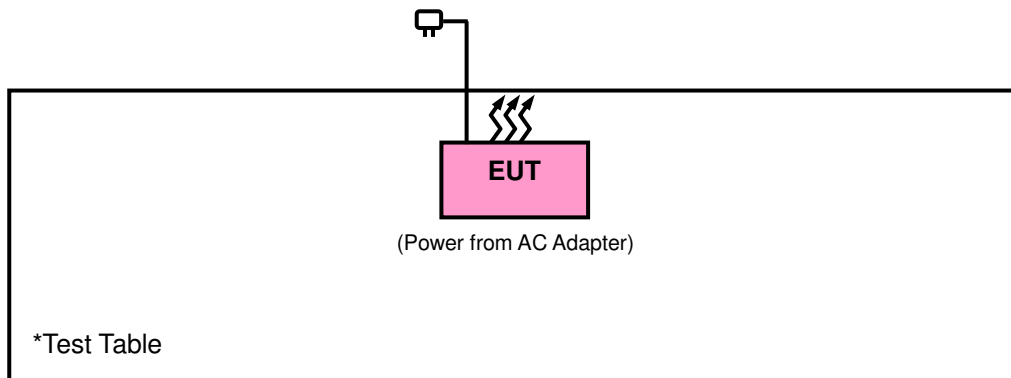
802.11ac (VHT80): Duty cycle = $462/581 = 0.795$, Duty factor = $10 * \log(1/0.795) = 1.00$



3.4 Description of Support Units

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

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)

789033 D02 General UNII Test Procedures New Rules v01r03

644545 D01 Guidance for IEEE 802.11ac v01r02

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

Note:

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

4.1.2 Limits of Unwanted Emission Out of the Restricted Bands

Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v01r03		Field Strength at 3 m	
		PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4}	PK: 68.2 (dBμV/m) ^{*1} PK:105.2 (dBμV/m) ^{*2} PK: 110.8 (dBμV/m) ^{*3} PK:122.2 (dBμV/m) ^{*4}
	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	

^{*1} beyond 75 MHz or more above of the band edge.

^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note:

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

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

4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY52260177	Jun. 21, 2016	Jun. 20, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 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
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 14, 2016	Dec. 13, 2017
Fixed Attenuator Mini-Circuits	BW-N10W5+	NA	Jul. 08, 2016	Jul. 07, 2017
Bluetooth Tester	CBT	100980	Apr. 27, 2015	Apr. 26, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Preamplifier Agilent	310N	187226	Jun. 24, 2016	Jun. 23, 2017
Preamplifier Agilent	83017A	MY39501357	Jun. 24, 2016	Jun. 23, 2017
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

- 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:

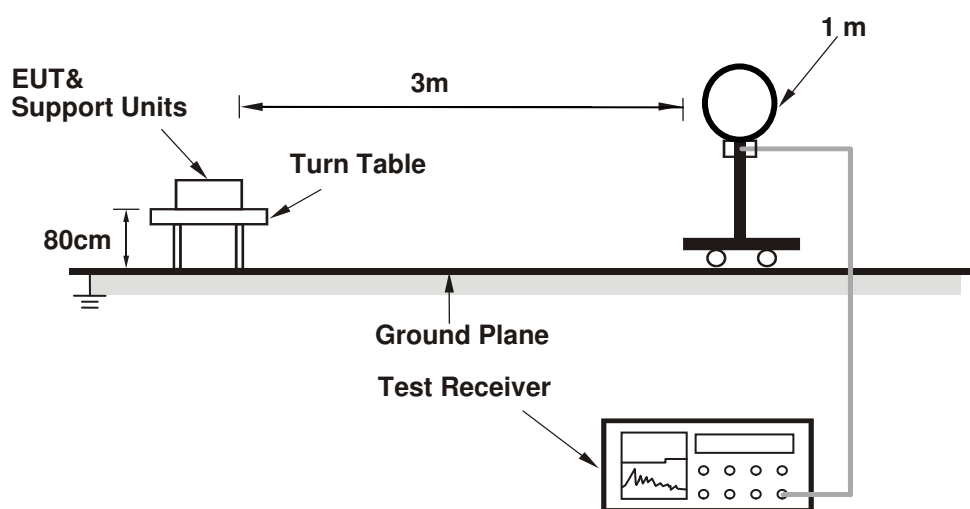
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz & 360 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency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

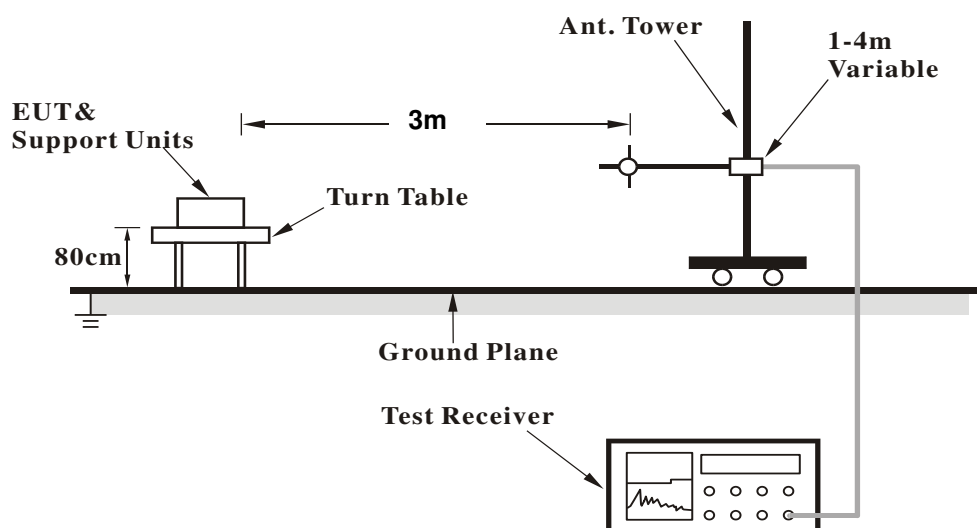
No deviation.

4.1.6 Test Set Up

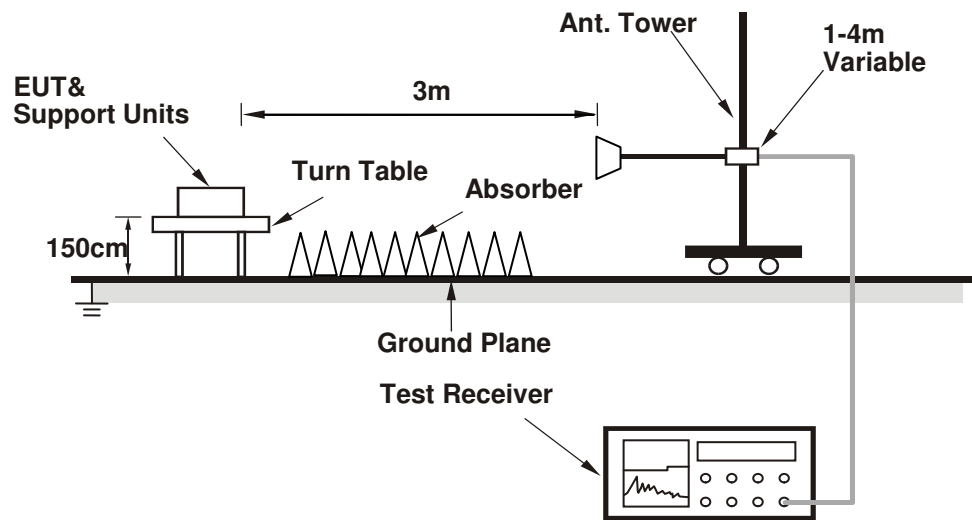
<Radiated emission below 30MHz>



<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 :

<1TX>

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
5081.45	53.39	45.23	74	-20.61	34.07	8.07	33.98	228	23	Peak
5141.3	42.45	34.19	54	-11.55	34.12	8.13	33.99	228	23	Average
5180	91.71	83.4			34.15	8.16	34	228	23	Average
5180	98.75	90.44			34.15	8.16	34	228	23	Peak
*10360	46.19	31.89	54	-7.81	37.12	12.3	35.12	154	225	Average
*10360	55.65	41.35	74	-18.35	37.12	12.3	35.12	154	225	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
5127.95	53.18	44.96	74	-20.82	34.11	8.1	33.99	115	124	Peak
5150	43.07	34.82	54	-10.93	34.12	8.13	34	115	124	Average
5180	95.31	87			34.15	8.16	34	115	124	Average
5180	102.29	93.98			34.15	8.16	34	115	124	Peak
*10360	46.3	32	54	-7.7	37.12	12.3	35.12	136	355	Average
*10360	55.3	41	74	-18.7	37.12	12.3	35.12	136	355	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
5103.5	42.22	34.06	54	-11.78	34.08	8.07	33.99	228	23	Average
5136.05	52.88	44.63	74	-21.12	34.11	8.13	33.99	228	23	Peak
5220	91.77	83.38			34.17	8.22	34	228	23	Average
5220	98.31	89.92			34.17	8.22	34	228	23	Peak
5421.83	42.45	33.68	54	-11.55	34.33	8.48	34.04	228	23	Average
5427.77	53.02	44.25	74	-20.98	34.33	8.48	34.04	228	23	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
5113.1	53.47	45.27	74	-20.53	34.09	8.1	33.99	115	124	Peak
5147.45	42.34	34.09	54	-11.66	34.12	8.13	34	115	124	Average
5220	95.41	87.02			34.17	8.22	34	115	124	Average
5220	102.48	94.09			34.17	8.22	34	115	124	Peak
5452.85	42.49	33.67	54	-11.51	34.36	8.51	34.05	115	124	Average
5459.89	55.49	46.67	74	-18.51	34.36	8.51	34.05	115	124	Peak

Remarks:

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

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

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	91.22	82.78			34.19	8.26	34.01	228	23	Average
5240	98.36	89.92			34.19	8.26	34.01	228	23	Peak
5371.01	52.92	44.25	74	-21.08	34.29	8.41	34.03	228	23	Peak
5451.31	42.43	33.61	54	-11.57	34.36	8.51	34.05	228	23	Average
*10480	45.54	31.03	54	-8.46	37.19	12.53	35.21	149	35	Average
*10480	55.09	40.58	74	-18.91	37.19	12.53	35.21	149	35	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	95.55	87.11			34.19	8.26	34.01	115	124	Average
5240	102.24	93.8			34.19	8.26	34.01	115	124	Peak
5446.36	42.48	33.65	54	-11.52	34.36	8.51	34.04	115	124	Average
5455.27	53.08	44.26	74	-20.92	34.36	8.51	34.05	115	124	Peak
*10480	45.51	31	54	-8.49	37.19	12.53	35.21	190	198	Average
*10480	55.69	41.18	74	-18.31	37.19	12.53	35.21	190	198	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
5069.6	53	44.9	74	-21	34.05	8.03	33.98	100	48	Peak
5100.65	42.27	34.11	54	-11.73	34.08	8.07	33.99	100	48	Average
5260	88.79	80.33			34.21	8.26	34.01	100	48	Average
5260	95.29	86.83			34.21	8.26	34.01	100	48	Peak
*10520	45.61	31.02	54	-8.39	37.21	12.61	35.23	101	134	Average
*10520	55.25	40.66	74	-18.75	37.21	12.61	35.23	101	134	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
5108	42.26	34.06	54	-11.74	34.09	8.1	33.99	114	153	Average
5123.75	54.06	45.84	74	-19.94	34.11	8.1	33.99	114	153	Peak
5260	94.49	86.03			34.21	8.26	34.01	114	153	Average
5260	101.77	93.31			34.21	8.26	34.01	114	153	Peak
*10520	45.49	30.9	54	-8.51	37.21	12.61	35.23	114	9	Average
*10520	55.11	40.52	74	-18.89	37.21	12.61	35.23	114	9	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
5054.3	53.15	45.09	74	-20.85	34.04	8	33.98	100	48	Peak
5056.1	42.26	34.16	54	-11.74	34.05	8.03	33.98	100	48	Average
5300	88.26	79.72			34.24	8.32	34.02	100	48	Average
5300	95.39	86.85			34.24	8.32	34.02	100	48	Peak
5374.2	42.55	33.89	54	-11.45	34.29	8.41	34.04	100	48	Average
5444.6	53.09	44.3	74	-20.91	34.35	8.48	34.04	100	48	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5050.7	53.56	45.5	74	-20.44	34.04	8	33.98	114	153	Peak
5139.65	42.39	34.13	54	-11.61	34.12	8.13	33.99	114	153	Average
5300	94.19	85.65			34.24	8.32	34.02	114	153	Average
5300	101	92.46			34.24	8.32	34.02	114	153	Peak
5356.16	42.5	33.87	54	-11.5	34.28	8.38	34.03	114	153	Average
5416.55	53.01	44.28	74	-20.99	34.33	8.44	34.04	114	153	Peak

Remarks:

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

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

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	88.69	80.11			34.25	8.35	34.02	100	48	Average
5320	95.29	86.71			34.25	8.35	34.02	100	48	Peak
5367.93	42.59	33.92	54	-11.41	34.29	8.41	34.03	100	48	Average
5423.59	53.39	44.62	74	-20.61	34.33	8.48	34.04	100	48	Peak
10640	46.72	31.99	54	-7.28	37.31	12.71	35.29	180	155	Average
10640	55.91	41.18	74	-18.09	37.31	12.71	35.29	180	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
5320	94.17	85.59			34.25	8.35	34.02	114	153	Average
5320	101.01	92.43			34.25	8.35	34.02	114	153	Peak
5350.55	42.59	33.96	54	-11.41	34.28	8.38	34.03	114	153	Average
5358.14	53.78	45.15	74	-20.22	34.28	8.38	34.03	114	153	Peak
10640	46.51	31.78	54	-7.49	37.31	12.71	35.29	115	216	Average
10640	57.95	43.22	74	-16.05	37.31	12.71	35.29	115	216	Peak

Remarks:

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

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

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
5368.4	52.87	44.2	74	-21.13	34.29	8.41	34.03	104	356	Peak
5457.68	42.55	33.73	54	-11.45	34.36	8.51	34.05	104	356	Average
*5468.72	51.91	43.08	74	-22.09	34.37	8.51	34.05	104	356	Peak
*5470	42.51	33.68	54	-11.49	34.37	8.51	34.05	104	356	Average
5500	91.03	82.11			34.4	8.57	34.05	104	356	Average
5500	98.08	89.16			34.4	8.57	34.05	104	356	Peak
11000	46.89	31.81	54	-7.11	37.6	12.96	35.48	136	214	Average
11000	55.15	40.07	74	-18.85	37.6	12.96	35.48	136	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
5440.08	52.93	44.14	74	-21.07	34.35	8.48	34.04	110	178	Peak
5457.84	42.62	33.8	54	-11.38	34.36	8.51	34.05	110	178	Average
*5470.32	43	34.17	54	-11	34.37	8.51	34.05	110	178	Average
*5470.32	52.24	43.41	74	-21.76	34.37	8.51	34.05	110	178	Peak
5500	93.92	85			34.4	8.57	34.05	110	178	Average
5500	100.88	91.96			34.4	8.57	34.05	110	178	Peak
11000	47.24	32.16	54	-6.76	37.6	12.96	35.48	174	114	Average
11000	55.87	40.79	74	-18.13	37.6	12.96	35.48	174	114	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
5455.44	52.83	44.01	74	-21.17	34.36	8.51	34.05	102	357	Peak
5458.16	42.48	33.66	54	-11.52	34.36	8.51	34.05	102	357	Average
*5468.88	42.19	33.36	54	-11.81	34.37	8.51	34.05	102	357	Average
*5470.48	51.82	42.99	74	-22.18	34.37	8.51	34.05	102	357	Peak
5580	90.89	81.9			34.47	8.6	34.08	102	357	Average
5580	98.16	89.17			34.47	8.6	34.08	102	357	Peak
*5724.68	42.5	33.34	54	-11.5	34.62	8.65	34.11	102	357	Average
*5725.24	52.26	43.1	74	-21.74	34.62	8.65	34.11	102	357	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
5450.64	52.8	43.98	74	-21.2	34.36	8.51	34.05	108	178	Peak
5458.8	42.34	33.52	54	-11.66	34.36	8.51	34.05	108	178	Average
*5469.84	52.62	43.79	74	-21.38	34.37	8.51	34.05	108	178	Peak
*5470	42.56	33.73	54	-11.44	34.37	8.51	34.05	108	178	Average
5580	94.62	85.63			34.47	8.6	34.08	108	178	Average
5580	101.9	92.91			34.47	8.6	34.08	108	178	Peak
*5724.52	42.64	33.48	54	-11.36	34.62	8.65	34.11	108	178	Average
*5725.24	54.13	44.97	74	-19.87	34.62	8.65	34.11	108	178	Peak

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	91.32	82.19			34.59	8.64	34.1	197	350	Average
5700	98.48	89.35			34.59	8.64	34.1	197	350	Peak
*5723.96	43.26	34.1	54	-10.74	34.62	8.65	34.11	197	350	Average
*5725.64	52.12	42.96	74	-21.88	34.62	8.65	34.11	197	350	Peak
11400	47.32	32.22	54	-6.68	37.84	12.67	35.41	149	161	Average
11400	56.91	41.81	74	-17.09	37.84	12.67	35.41	149	161	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5700	94.94	85.81			34.59	8.64	34.1	105	178	Average
5700	101.93	92.8			34.59	8.64	34.1	105	178	Peak
*5723.96	45.61	36.45	54	-8.39	34.62	8.65	34.11	105	178	Average
*5725.4	55.78	46.62	74	-18.22	34.62	8.65	34.11	105	178	Peak
11400	47.24	32.14	54	-6.76	37.84	12.67	35.41	154	109	Average
11400	56.6	41.5	74	-17.4	37.84	12.67	35.41	154	109	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read 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	94.49	85.3			34.64	8.66	34.11	169	186	Average
5745	101.63	92.44			34.64	8.66	34.11	169	186	Peak
11490	46.61	31.49	54	-7.39	37.89	12.62	35.39	113	285	Average
11490	57.11	41.99	74	-16.89	37.89	12.62	35.39	113	285	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	92.23	83.04			34.64	8.66	34.11	102	355	Average
5745	99.66	90.47			34.64	8.66	34.11	102	355	Peak
11490	46.78	31.66	54	-7.22	37.89	12.62	35.39	158	9	Average
11490	56.3	41.18	74	-17.7	37.89	12.62	35.39	158	9	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5647	43.91	34.84	54	-10.09	34.54	8.62	34.09	169	186	Average
*5647	52.78	43.71	74	-21.22	34.54	8.62	34.09	169	186	Peak
5654.35	52.39	43.3	76.71	-24.32	34.56	8.63	34.1	169	186	Peak
5922.625	53.47	44.07	75.48	-22.01	34.83	8.73	34.16	169	186	Peak
*5980.9	44.43	34.97	54	-9.57	34.88	8.75	34.17	169	186	Average
*5980.9	52.99	43.53	74	-21.01	34.88	8.75	34.17	169	186	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
*5635.975	43.85	34.78	54	-10.15	34.54	8.62	34.09	102	355	Average
*5635.975	53.66	44.59	74	-20.34	34.54	8.62	34.09	102	355	Peak
5653.825	52.59	43.5	76.39	-23.8	34.56	8.63	34.1	102	355	Peak
5922.1	51.67	42.27	75.81	-24.14	34.83	8.73	34.16	102	355	Peak
*5990.875	44.4	34.91	54	-9.6	34.9	8.76	34.17	102	355	Average
*5990.875	54.28	44.79	74	-19.72	34.9	8.76	34.17	102	355	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	94.53	85.3			34.68	8.68	34.13	169	186	Average
5785	101.54	92.31			34.68	8.68	34.13	169	186	Peak
11570	46.77	31.46	54	-7.23	38	12.68	35.37	113	169	Average
11570	57.02	41.71	74	-16.98	38	12.68	35.37	113	169	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	92.74	83.51			34.68	8.68	34.13	102	355	Average
5785	99.13	89.9			34.68	8.68	34.13	102	355	Peak
11570	46.66	31.35	54	-7.34	38	12.68	35.37	140	14	Average
11570	55.64	40.33	74	-18.36	38	12.68	35.37	140	14	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
*5585.05	43.74	34.73	54	-10.26	34.49	8.6	34.08	169	186	Average
*5585.05	52.49	43.48	74	-21.51	34.49	8.6	34.08	169	186	Peak
5650.675	51.63	42.54	74.42	-22.79	34.56	8.62	34.09	169	186	Peak
5922.625	50.86	41.46	75.48	-24.62	34.83	8.73	34.16	169	186	Peak
*5932.6	44.16	34.76	54	-9.84	34.83	8.73	34.16	169	186	Average
*5932.6	52.95	43.55	74	-21.05	34.83	8.73	34.16	169	186	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
*5623.375	43.98	34.93	54	-10.02	34.52	8.61	34.08	102	355	Average
*5623.375	53.34	44.29	74	-20.66	34.52	8.61	34.08	102	355	Peak
5651.2	52.42	43.33	74.75	-22.33	34.56	8.62	34.09	102	355	Peak
5921.05	52.03	42.65	76.46	-24.43	34.81	8.73	34.16	102	355	Peak
*5992.975	44.34	34.85	54	-9.66	34.9	8.76	34.17	102	355	Average
*5992.975	53.17	43.68	74	-20.83	34.9	8.76	34.17	102	355	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	94.76	85.47			34.73	8.69	34.13	169	186	Average
5825	101.04	91.75			34.73	8.69	34.13	169	186	Peak
11650	46.79	31.26	54	-7.21	38.09	12.8	35.36	159	165	Average
11650	57.13	41.6	74	-16.87	38.09	12.8	35.36	159	165	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	97.23	87.94			34.73	8.69	34.13	102	355	Average
5825	99.22	89.93			34.73	8.69	34.13	102	355	Peak
11650	47.27	31.74	54	-6.73	38.09	12.8	35.36	118	58	Average
11650	56.87	41.34	74	-17.13	38.09	12.8	35.36	118	58	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
*5530.975	43.78	34.84	54	-10.22	34.43	8.58	34.07	169	186	Average
*5530.975	52.45	43.51	74	-21.55	34.43	8.58	34.07	169	186	Peak
5653.3	53.49	44.39	76.06	-22.57	34.56	8.63	34.09	169	186	Peak
5924.725	51.76	42.36	74.17	-22.41	34.83	8.73	34.16	169	186	Peak
*5984.575	44.44	34.98	54	-9.56	34.88	8.75	34.17	169	186	Average
*5984.575	54.07	44.61	74	-19.93	34.88	8.75	34.17	169	186	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
*5608.15	43.66	34.63	54	-10.34	34.5	8.61	34.08	102	355	Average
*5608.15	53.43	44.4	74	-20.57	34.5	8.61	34.08	102	355	Peak
5651.725	50.23	41.14	75.08	-24.85	34.56	8.62	34.09	102	355	Peak
5920	50.58	41.2	77.12	-26.54	34.81	8.73	34.16	102	355	Peak
*5987.725	44.31	34.85	54	-9.69	34.88	8.75	34.17	102	355	Average
*5987.725	52.89	43.43	74	-21.11	34.88	8.75	34.17	102	355	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

<2TX>

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
5133.2	42.41	34.16	54	-11.59	34.11	8.13	33.99	100	40	Average
5135.3	53.27	45.02	74	-20.73	34.11	8.13	33.99	100	40	Peak
5180	91.44	83.13			34.15	8.16	34	100	40	Average
5180	98.19	89.88			34.15	8.16	34	100	40	Peak
*10360	46.59	32.29	54	-7.41	37.12	12.3	35.12	164	57	Average
*10360	55	40.7	74	-19	37.12	12.3	35.12	164	57	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5110.85	53	44.8	74	-21	34.09	8.1	33.99	100	262	Peak
5147.6	42.69	34.44	54	-11.31	34.12	8.13	34	100	262	Average
5180	94.51	86.2			34.15	8.16	34	100	262	Average
5180	101.41	93.1			34.15	8.16	34	100	262	Peak
*10360	46.86	32.56	54	-7.14	37.12	12.3	35.12	137	206	Average
*10360	55.64	41.34	74	-18.36	37.12	12.3	35.12	137	206	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
5107.1	53.43	45.26	74	-20.57	34.09	8.07	33.99	100	40	Peak
5147.45	42.34	34.09	54	-11.66	34.12	8.13	34	100	40	Average
5220	91.46	83.07			34.17	8.22	34	100	40	Average
5220	98.15	89.76			34.17	8.22	34	100	40	Peak
5417.76	54.79	46.06	74	-19.21	34.33	8.44	34.04	100	40	Peak
5432.83	42.55	33.76	54	-11.45	34.35	8.48	34.04	100	40	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
5047.7	52.67	44.61	74	-21.33	34.04	8	33.98	100	262	Peak
5148.05	42.44	34.19	54	-11.56	34.12	8.13	34	100	262	Average
5220	94.59	86.2			34.17	8.22	34	100	262	Average
5220	101.57	93.18			34.17	8.22	34	100	262	Peak
5401.92	53.22	44.5	74	-20.78	34.32	8.44	34.04	100	262	Peak
5452.63	42.59	33.77	54	-11.41	34.36	8.51	34.05	100	262	Average

Remarks:

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

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

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	91.26	82.82			34.19	8.26	34.01	100	40	Average
5240	98.13	89.69			34.19	8.26	34.01	100	40	Peak
5354.95	53.36	44.73	74	-20.64	34.28	8.38	34.03	100	40	Peak
5446.8	42.55	33.72	54	-11.45	34.36	8.51	34.04	100	40	Average
*10480	47.53	33.02	54	-6.47	37.19	12.53	35.21	192	227	Average
*10480	56.33	41.82	74	-17.67	37.19	12.53	35.21	192	227	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	94.44	86			34.19	8.26	34.01	100	262	Average
5240	101.96	93.52			34.19	8.26	34.01	100	262	Peak
5353.41	53.42	44.79	74	-20.58	34.28	8.38	34.03	100	262	Peak
5459.45	42.56	33.74	54	-11.44	34.36	8.51	34.05	100	262	Average
*10480	47.28	32.77	54	-6.72	37.19	12.53	35.21	174	129	Average
*10480	56.17	41.66	74	-17.83	37.19	12.53	35.21	174	129	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
5074.25	53.48	45.36	74	-20.52	34.07	8.03	33.98	187	237	Peak
5121.05	42.02	33.82	54	-11.98	34.09	8.1	33.99	187	237	Average
5260	97.08	88.62			34.21	8.26	34.01	187	237	Average
5260	103.81	95.35			34.21	8.26	34.01	187	237	Peak
*10520	45.46	30.87	54	-8.54	37.21	12.61	35.23	137	216	Average
*10520	54.55	39.96	74	-19.45	37.21	12.61	35.23	137	216	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5105.9	41.98	33.81	54	-12.02	34.09	8.07	33.99	218	140	Average
5123.3	52.59	44.37	74	-21.41	34.11	8.1	33.99	218	140	Peak
5260	94.44	85.98			34.21	8.26	34.01	218	140	Average
5260	101.84	93.38			34.21	8.26	34.01	218	140	Peak
*10520	45.69	31.1	54	-8.31	37.21	12.61	35.23	188	177	Average
*10520	54.9	40.31	74	-19.1	37.21	12.61	35.23	188	177	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
5054.75	52.38	44.31	74	-21.62	34.05	8	33.98	184	237	Peak
5112.05	42.4	34.2	54	-11.6	34.09	8.1	33.99	184	237	Average
5300	97.01	88.47			34.24	8.32	34.02	184	237	Average
5300	103.6	95.06			34.24	8.32	34.02	184	237	Peak
5354.51	43	34.37	54	-11	34.28	8.38	34.03	184	237	Average
5404.56	53.78	45.06	74	-20.22	34.32	8.44	34.04	184	237	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5110.85	53.22	45.02	74	-20.78	34.09	8.1	33.99	145	149	Peak
5113.25	41.98	33.78	54	-12.02	34.09	8.1	33.99	145	149	Average
5300	94.54	86			34.24	8.32	34.02	145	149	Average
5300	101.09	92.55			34.24	8.32	34.02	145	149	Peak
5358.36	42.52	33.89	54	-11.48	34.28	8.38	34.03	145	149	Average
5377.61	53.38	44.7	74	-20.62	34.31	8.41	34.04	145	149	Peak

Remarks:

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

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

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	97.07	88.49			34.25	8.35	34.02	182	237	Average
5320	103.37	94.79			34.25	8.35	34.02	182	237	Peak
5354.51	42.77	34.14	54	-11.23	34.28	8.38	34.03	182	237	Average
5428.98	53.69	44.9	74	-20.31	34.35	8.48	34.04	182	237	Peak
10640	46.13	31.4	54	-7.87	37.31	12.71	35.29	185	147	Average
10640	54.39	39.66	74	-19.61	37.31	12.71	35.29	185	147	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	95.37	86.79			34.25	8.35	34.02	145	149	Average
5320	103.26	94.68			34.25	8.35	34.02	145	149	Peak
5350.88	42.73	34.1	54	-11.27	34.28	8.38	34.03	145	149	Average
5373.76	53.43	44.77	74	-20.57	34.29	8.41	34.04	145	149	Peak
10640	45.76	31.03	54	-8.24	37.31	12.71	35.29	134	116	Average
10640	54.45	39.72	74	-19.55	37.31	12.71	35.29	134	116	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5445.36	52.88	44.06	74	-21.12	34.35	8.51	34.04	148	237	Peak
5459.28	42.6	33.78	54	-11.4	34.36	8.51	34.05	148	237	Average
*5470.48	42.58	33.75	54	-11.42	34.37	8.51	34.05	148	237	Average
*5470.48	52.75	43.92	74	-21.25	34.37	8.51	34.05	148	237	Peak
5500	96.64	87.72			34.4	8.57	34.05	148	237	Average
5500	103.94	95.02			34.4	8.57	34.05	148	237	Peak
*11000	46.48	31.4	54	-7.52	37.6	12.96	35.48	151	345	Average
*11000	57.03	41.95	74	-16.97	37.6	12.96	35.48	151	345	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5437.52	52.88	44.09	74	-21.12	34.35	8.48	34.04	126	158	Peak
5453.52	42.68	33.86	54	-11.32	34.36	8.51	34.05	126	158	Average
*5469.36	42.87	34.04	54	-11.13	34.37	8.51	34.05	126	158	Average
*5470	52.03	43.2	74	-21.97	34.37	8.51	34.05	126	158	Peak
5500	97.12	88.2			34.4	8.57	34.05	126	158	Average
5500	104.67	95.75			34.4	8.57	34.05	126	158	Peak
*11000	46.83	31.75	54	-7.17	37.6	12.96	35.48	112	132	Average
*11000	56.95	41.87	74	-17.05	37.6	12.96	35.48	112	132	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
5416.88	53.6	44.87	74	-20.4	34.33	8.44	34.04	148	237	Peak
5454.32	42.38	33.56	54	-11.62	34.36	8.51	34.05	148	237	Average
*5469.68	42.22	33.39	54	-11.78	34.37	8.51	34.05	148	237	Average
*5470.16	51.84	43.01	74	-22.16	34.37	8.51	34.05	148	237	Peak
5580	96.47	87.48			34.47	8.6	34.08	148	237	Average
5580	103.24	94.25			34.47	8.6	34.08	148	237	Peak
*5724.68	52.45	43.29	74	-21.55	34.62	8.65	34.11	148	237	Peak
*5725.72	42.53	33.37	54	-11.47	34.62	8.65	34.11	148	237	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
5367.12	52.57	43.9	74	-21.43	34.29	8.41	34.03	126	158	Peak
5456.88	42.4	33.58	54	-11.6	34.36	8.51	34.05	126	158	Average
*5469.2	52.61	43.78	74	-21.39	34.37	8.51	34.05	126	158	Peak
*5470.16	42.43	33.6	54	-11.57	34.37	8.51	34.05	126	158	Average
5580	97.77	88.78			34.47	8.6	34.08	126	158	Average
5580	104.65	95.66			34.47	8.6	34.08	126	158	Peak
*5724.28	42.72	33.56	54	-11.28	34.62	8.65	34.11	126	158	Average
*5724.92	53.49	44.33	74	-20.51	34.62	8.65	34.11	126	158	Peak

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	96.25	87.12			34.59	8.64	34.1	148	237	Average
5700	103.11	93.98			34.59	8.64	34.1	148	237	Peak
*5724.28	43.53	34.37	54	-10.47	34.62	8.65	34.11	148	237	Average
*5725.4	53.86	44.7	74	-20.14	34.62	8.65	34.11	148	237	Peak
11400	47.33	32.23	54	-6.67	37.84	12.67	35.41	159	158	Average
11400	55.97	40.87	74	-18.03	37.84	12.67	35.41	159	158	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	97.66	88.53			34.59	8.64	34.1	134	169	Average
5700	104.24	95.11			34.59	8.64	34.1	134	169	Peak
*5724.04	44.37	35.21	54	-9.63	34.62	8.65	34.11	134	169	Average
*5724.28	54.95	45.79	74	-19.05	34.62	8.65	34.11	134	169	Peak
11400	46.25	31.15	54	-7.75	37.84	12.67	35.41	157	229	Average
11400	56.24	41.14	74	-17.76	37.84	12.67	35.41	157	229	Peak

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	95.74	86.55			34.64	8.66	34.11	100	169	Average
5745	102.6	93.41			34.64	8.66	34.11	100	169	Peak
11490	46.89	31.77	54	-7.11	37.89	12.62	35.39	189	99	Average
11490	56.86	41.74	74	-17.14	37.89	12.62	35.39	189	99	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	96.47	87.28			34.64	8.66	34.11	111	181	Average
5745	103.4	94.21			34.64	8.66	34.11	111	181	Peak
11490	47.02	31.9	54	-6.98	37.89	12.62	35.39	109	108	Average
11490	57.61	42.49	74	-16.39	37.89	12.62	35.39	109	108	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
*5533.6	43.9	34.96	54	-10.1	34.43	8.58	34.07	100	169	Average
*5533.6	53	44.06	74	-21	34.43	8.58	34.07	100	169	Peak
5650.675	51.24	42.15	74.42	-23.18	34.56	8.62	34.09	100	169	Peak
5919.475	52.43	43.05	77.45	-25.02	34.81	8.73	34.16	100	169	Peak
*5936.275	44.56	35.16	54	-9.44	34.83	8.73	34.16	100	169	Average
*5936.275	53.1	43.7	74	-20.9	34.83	8.73	34.16	100	169	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5561.95	43.92	34.95	54	-10.08	34.45	8.59	34.07	111	181	Average
*5561.95	52.95	43.98	74	-21.05	34.45	8.59	34.07	111	181	Peak
5651.725	52.56	43.47	75.08	-22.52	34.56	8.62	34.09	111	181	Peak
5923.15	52.34	42.94	75.15	-22.81	34.83	8.73	34.16	111	181	Peak
*5953.6	44.48	35.05	54	-9.52	34.85	8.74	34.16	111	181	Average
*5953.6	54.16	44.73	74	-19.84	34.85	8.74	34.16	111	181	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	95.74	86.51			34.68	8.68	34.13	100	169	Average
5785	102.56	93.33			34.68	8.68	34.13	100	169	Peak
11570	47.35	32.04	54	-6.65	38	12.68	35.37	163	257	Average
11570	57.02	41.71	74	-16.98	38	12.68	35.37	163	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
5785	96.55	87.32			34.68	8.68	34.13	111	181	Average
5785	103.08	93.85			34.68	8.68	34.13	111	181	Peak
11570	47.19	31.88	54	-6.81	38	12.68	35.37	151	144	Average
11570	56.29	40.98	74	-17.71	38	12.68	35.37	151	144	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
*5537.8	43.78	34.84	54	-10.22	34.43	8.58	34.07	100	169	Average
*5537.8	53.18	44.24	74	-20.82	34.43	8.58	34.07	100	169	Peak
5656.975	54.98	45.89	78.35	-23.37	34.56	8.63	34.1	100	169	Peak
5923.15	52.03	42.63	75.15	-23.12	34.83	8.73	34.16	100	169	Peak
*5927.875	44.25	34.85	54	-9.75	34.83	8.73	34.16	100	169	Average
*5927.875	52.81	43.41	74	-21.19	34.83	8.73	34.16	100	169	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
*5622.325	43.89	34.84	54	-10.11	34.52	8.61	34.08	111	181	Average
*5622.325	52.85	43.8	74	-21.15	34.52	8.61	34.08	111	181	Peak
5651.725	51.97	42.88	75.08	-23.11	34.56	8.62	34.09	111	181	Peak
5913.7	53.28	43.9	81.05	-27.77	34.81	8.73	34.16	111	181	Peak
*5991.4	44.32	34.83	54	-9.68	34.9	8.76	34.17	111	181	Average
*5991.4	55.01	45.52	74	-18.99	34.9	8.76	34.17	111	181	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	95.22	85.93			34.73	8.69	34.13	100	169	Average
5825	102.05	92.76			34.73	8.69	34.13	100	169	Peak
11650	47.28	31.75	54	-6.72	38.09	12.8	35.36	110	147	Average
11650	56.51	40.98	74	-17.49	38.09	12.8	35.36	110	147	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	96.36	87.07			34.73	8.69	34.13	111	181	Average
5825	103.84	94.55			34.73	8.69	34.13	111	181	Peak
11650	47.76	32.23	54	-6.24	38.09	12.8	35.36	104	256	Average
11650	56.1	40.57	74	-17.9	38.09	12.8	35.36	104	256	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
*5648	43.92	34.85	54	-10.08	34.54	8.62	34.09	100	169	Average
*5648	53.52	44.45	74	-20.48	34.54	8.62	34.09	100	169	Peak
5655.4	50.85	41.76	77.37	-26.52	34.56	8.63	34.1	100	169	Peak
5921.575	50.95	41.55	76.14	-25.19	34.83	8.73	34.16	100	169	Peak
*5954.65	44.27	34.84	54	-9.73	34.85	8.74	34.16	100	169	Average
*5954.65	52.43	43	74	-21.57	34.85	8.74	34.16	100	169	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
*5611.3	43.99	34.96	54	-10.01	34.5	8.61	34.08	111	181	Average
*5611.3	53.12	44.09	74	-20.88	34.5	8.61	34.08	111	181	Peak
5655.4	53.01	43.92	77.37	-24.36	34.56	8.63	34.1	111	181	Peak
5923.675	52.54	43.14	74.83	-22.29	34.83	8.73	34.16	111	181	Peak
*6011.875	44.53	35.03	54	-9.47	34.92	8.76	34.18	111	181	Average
*6011.875	52.95	43.45	74	-21.05	34.92	8.76	34.18	111	181	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
5147.15	44.8	36.55	54	-9.2	34.12	8.13	34	100	40	Average
5149.85	55.24	46.99	74	-18.76	34.12	8.13	34	100	40	Peak
5190	90.5	82.16			34.15	8.19	34	100	40	Average
5190	97.05	88.71			34.15	8.19	34	100	40	Peak
5438.22	54	45.21	74	-20	34.35	8.48	34.04	100	40	Peak
5458.57	42.93	34.11	54	-11.07	34.36	8.51	34.05	100	40	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
5142.2	55.94	47.68	74	-18.06	34.12	8.13	33.99	100	241	Peak
5147.15	47.61	39.36	54	-6.39	34.12	8.13	34	100	241	Average
5190	93.55	85.21			34.15	8.19	34	100	262	Average
5190	100.11	91.77			34.15	8.19	34	100	262	Peak
5396.75	53.52	44.8	74	-20.48	34.32	8.44	34.04	100	262	Peak
5418.75	43	34.27	54	-11	34.33	8.44	34.04	100	262	Average

Remarks:

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

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

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
5077.85	53.33	45.21	74	-20.67	34.07	8.03	33.98	100	40	Peak
5095.1	42.77	34.61	54	-11.23	34.08	8.07	33.99	100	40	Average
5230	90.95	82.55			34.19	8.22	34.01	100	40	Average
5230	97.26	88.86			34.19	8.22	34.01	100	40	Peak
5403.13	53.3	44.58	74	-20.7	34.32	8.44	34.04	100	40	Peak
5459.56	42.9	34.08	54	-11.1	34.36	8.51	34.05	100	40	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
5094.05	53.21	45.05	74	-20.79	34.08	8.07	33.99	100	262	Peak
5135.3	42.75	34.5	54	-11.25	34.11	8.13	33.99	100	262	Average
5230	93.55	85.15			34.19	8.22	34.01	100	262	Average
5230	100.11	91.71			34.19	8.22	34.01	100	262	Peak
5391.36	53.54	44.86	74	-20.46	34.31	8.41	34.04	100	262	Peak
5430.85	43.08	34.29	54	-10.92	34.35	8.48	34.04	100	262	Average

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5129.3	42.39	34.17	54	-11.61	34.11	8.1	33.99	184	237	Average
5145.2	53.13	44.88	74	-20.87	34.12	8.13	34	184	237	Peak
5270	95.26	86.77			34.21	8.29	34.01	184	237	Average
5270	102.03	93.54			34.21	8.29	34.01	184	237	Peak
5372.66	53.28	44.61	74	-20.72	34.29	8.41	34.03	184	237	Peak
5443.83	43.33	34.54	54	-10.67	34.35	8.48	34.04	184	237	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
5063.6	53.07	44.97	74	-20.93	34.05	8.03	33.98	145	150	Peak
5126.6	42.65	34.43	54	-11.35	34.11	8.1	33.99	145	150	Average
5270	93.77	85.28			34.21	8.29	34.01	145	150	Average
5270	100.69	92.2			34.21	8.29	34.01	145	150	Peak
5436.13	54.06	45.27	74	-19.94	34.35	8.48	34.04	145	150	Peak
5459.67	42.9	34.08	54	-11.1	34.36	8.51	34.05	145	150	Average

Remarks:

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

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

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
5054.3	42.43	34.37	54	-11.57	34.04	8	33.98	182	237	Average
5066.3	52.48	44.38	74	-21.52	34.05	8.03	33.98	182	237	Peak
5310	94.95	86.4			34.25	8.32	34.02	182	237	Average
5310	101.48	92.93			34.25	8.32	34.02	182	237	Peak
5350	46	37.37	54	-8	34.28	8.38	34.03	182	237	Average
5356.27	54.83	46.2	74	-19.17	34.28	8.38	34.03	182	237	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
5123.9	42.39	34.17	54	-11.61	34.11	8.1	33.99	122	154	Average
5125.55	53.21	44.99	74	-20.79	34.11	8.1	33.99	122	154	Peak
5310	93.32	84.77			34.25	8.32	34.02	145	149	Average
5310	100.08	91.53			34.25	8.32	34.02	145	149	Peak
5350.66	48.33	39.7	54	-5.67	34.28	8.38	34.03	122	154	Average
5350.99	56.97	48.34	74	-17.03	34.28	8.38	34.03	122	154	Peak

Remarks:

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

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

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
5459.6	52.8	43.98	74	-21.2	34.36	8.51	34.05	156	234	Peak
5460.08	43.97	35.15	54	-10.03	34.36	8.51	34.05	156	234	Average
*5468.88	50.14	41.31	54	-3.86	34.37	8.51	34.05	156	234	Average
*5470.96	59.65	50.79	74	-14.35	34.37	8.54	34.05	156	234	Peak
5510	94.49	85.58			34.4	8.57	34.06	168	237	Average
5510	101.26	92.35			34.4	8.57	34.06	168	237	Peak
*5724.44	52.1	42.94	74	-21.9	34.62	8.65	34.11	156	234	Peak
*5725.64	43.16	34	54	-10.84	34.62	8.65	34.11	156	234	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
5459.44	53.08	44.26	74	-20.92	34.36	8.51	34.05	126	157	Peak
5459.92	43.64	34.82	54	-10.36	34.36	8.51	34.05	126	157	Average
*5468.24	58.43	49.6	74	-15.57	34.37	8.51	34.05	126	157	Peak
*5470.96	49.82	40.96	54	-4.18	34.37	8.54	34.05	126	157	Average
5510	95.87	86.96			34.4	8.57	34.06	126	157	Average
5510	102.95	94.04			34.4	8.57	34.06	126	157	Peak
*5724.36	42.86	33.7	54	-11.14	34.62	8.65	34.11	126	157	Average
*5724.36	51.91	42.75	74	-22.09	34.62	8.65	34.11	126	157	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
5446.8	42.89	34.06	54	-11.11	34.36	8.51	34.04	148	237	Average
5455.44	53.56	44.74	74	-20.44	34.36	8.51	34.05	148	237	Peak
*5469.2	52.85	44.02	74	-21.15	34.37	8.51	34.05	148	237	Peak
*5470.64	43.08	34.25	54	-10.92	34.37	8.51	34.05	148	237	Average
5550	94.45	85.48			34.45	8.59	34.07	148	237	Average
5550	101.53	92.56			34.45	8.59	34.07	148	237	Peak
*5724.12	43.21	34.05	54	-10.79	34.62	8.65	34.11	148	237	Average
*5725.8	52.43	43.27	74	-21.57	34.62	8.65	34.11	148	237	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
5357.36	52.91	44.28	74	-21.09	34.28	8.38	34.03	126	157	Peak
5459.12	43.22	34.4	54	-10.78	34.36	8.51	34.05	126	157	Average
*5469.36	53.27	44.44	74	-20.73	34.37	8.51	34.05	126	157	Peak
*5470.64	42.84	34.01	54	-11.16	34.37	8.51	34.05	126	157	Average
5550	95.98	87.01			34.45	8.59	34.07	126	157	Average
5550	102.74	93.77			34.45	8.59	34.07	126	157	Peak
*5724.28	52.35	43.19	74	-21.65	34.62	8.65	34.11	126	157	Peak
*5724.68	43.07	33.91	54	-10.93	34.62	8.65	34.11	126	157	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
5431.92	53.24	44.45	74	-20.76	34.35	8.48	34.04	148	237	Peak
5458.48	42.92	34.1	54	-11.08	34.36	8.51	34.05	148	237	Average
*5469.84	42.88	34.05	54	-11.12	34.37	8.51	34.05	148	237	Average
*5470.8	52.6	43.74	74	-21.4	34.37	8.54	34.05	148	237	Peak
5670	94.14	85.04			34.57	8.63	34.1	148	237	Average
5670	101.55	92.45			34.57	8.63	34.1	148	237	Peak
*5724.04	43.53	34.37	54	-10.47	34.62	8.65	34.11	148	237	Average
*5725.16	52.99	43.83	74	-21.01	34.62	8.65	34.11	148	237	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
5367.76	42.92	34.25	54	-11.08	34.29	8.41	34.03	129	160	Average
5420.24	53.67	44.9	74	-20.33	34.33	8.48	34.04	129	160	Peak
*5468.72	52.19	43.36	74	-21.81	34.37	8.51	34.05	129	160	Peak
*5469.36	42.76	33.93	54	-11.24	34.37	8.51	34.05	129	160	Average
5670	95.41	86.31			34.57	8.63	34.1	129	160	Average
5670	102.01	92.91			34.57	8.63	34.1	129	160	Peak
*5725.8	44.09	34.93	54	-9.91	34.62	8.65	34.11	129	160	Average
*5725.96	53.13	43.97	74	-20.87	34.62	8.65	34.11	129	160	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 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	92.5	83.29			34.66	8.66	34.11	100	169	Average
5755	99.48	90.27			34.66	8.66	34.11	100	169	Peak
11510	46.97	31.86	54	-7.03	37.9	12.6	35.39	115	209	Average
11510	57.61	42.5	74	-16.39	37.9	12.6	35.39	115	209	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	93.33	84.12			34.66	8.66	34.11	111	181	Average
5755	100.96	91.75			34.66	8.66	34.11	111	181	Peak
11510	47.04	31.93	54	-6.96	37.9	12.6	35.39	135	335	Average
11510	56.76	41.65	74	-17.24	37.9	12.6	35.39	135	335	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
*5531.5	44.91	35.97	54	-9.09	34.43	8.58	34.07	100	169	Average
*5531.5	53.35	44.41	74	-20.65	34.43	8.58	34.07	100	169	Peak
5650.675	52.13	43.04	74.42	-22.29	34.56	8.62	34.09	100	169	Peak
5919.475	51.59	42.21	77.45	-25.86	34.81	8.73	34.16	100	169	Peak
*5966.2	45.39	35.94	54	-8.61	34.87	8.75	34.17	100	169	Average
*5966.2	52.78	43.33	74	-21.22	34.87	8.75	34.17	100	169	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
*5602.375	44.77	35.74	54	-9.23	34.5	8.61	34.08	111	181	Average
*5602.375	52.76	43.73	74	-21.24	34.5	8.61	34.08	111	181	Peak
5653.3	51.07	41.97	76.06	-24.99	34.56	8.63	34.09	111	181	Peak
5923.675	49.64	40.24	74.83	-25.19	34.83	8.73	34.16	111	181	Peak
*5935.225	45.21	35.81	54	-8.79	34.83	8.73	34.16	111	181	Average
*5935.225	53.07	43.67	74	-20.93	34.83	8.73	34.16	111	181	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	92.05	82.81			34.69	8.68	34.13	100	169	Average
5795	99.17	89.93			34.69	8.68	34.13	100	169	Peak
11590	47.62	32.25	54	-6.38	38.02	12.72	35.37	157	294	Average
11590	57.84	42.47	74	-16.16	38.02	12.72	35.37	157	294	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	93.33	84.09			34.69	8.68	34.13	111	181	Average
5795	100.18	90.94			34.69	8.68	34.13	111	181	Peak
11590	47.92	32.55	54	-6.08	38.02	12.72	35.37	108	205	Average
11590	56.79	41.42	74	-17.21	38.02	12.72	35.37	108	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
*5637.025	44.63	35.56	54	-9.37	34.54	8.62	34.09	100	169	Average
*5637.025	53.08	44.01	74	-20.92	34.54	8.62	34.09	100	169	Peak
5654.875	52.19	43.1	77.04	-24.85	34.56	8.63	34.1	100	169	Peak
5918.425	51.75	42.37	78.1	-26.35	34.81	8.73	34.16	100	169	Peak
*6023.425	45.38	35.87	54	-8.62	34.92	8.77	34.18	100	169	Average
*6023.425	52.81	43.3	74	-21.19	34.92	8.77	34.18	100	169	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
*5613.4	44.88	35.85	54	-9.12	34.5	8.61	34.08	111	181	Average
*5613.4	53.19	44.16	74	-20.81	34.5	8.61	34.08	111	181	Peak
5651.2	51.8	42.71	74.75	-22.95	34.56	8.62	34.09	111	181	Peak
5923.15	52.21	42.81	75.15	-22.94	34.83	8.73	34.16	111	181	Peak
*6012.925	45.37	35.87	54	-8.63	34.92	8.76	34.18	111	181	Average
*6012.925	54.69	45.19	74	-19.31	34.92	8.76	34.18	111	181	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
5148.65	55.83	47.58	74	-18.17	34.12	8.13	34	100	40	Peak
5149.7	46.26	38.01	54	-7.74	34.12	8.13	34	100	40	Average
5210	87.74	79.38			34.17	8.19	34	100	40	Average
5210	94.75	86.39			34.17	8.19	34	100	40	Peak
5440.09	53.57	44.78	74	-20.43	34.35	8.48	34.04	100	40	Peak
5447.24	43.22	34.39	54	-10.78	34.36	8.51	34.04	100	40	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
5147.75	59.57	51.32	74	-14.43	34.12	8.13	34	100	242	Peak
5149.85	52.1	43.85	54	-1.9	34.12	8.13	34	100	242	Average
5210	90.44	82.08			34.17	8.19	34	100	262	Average
5210	97.92	89.56			34.17	8.19	34	100	262	Peak
5408.08	43.33	34.61	54	-10.67	34.32	8.44	34.04	100	262	Average
5427.44	53.04	44.27	74	-20.96	34.33	8.48	34.04	100	262	Peak

Remarks:

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

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

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
5044.1	52.43	44.37	74	-21.57	34.04	8	33.98	180	244	Peak
5116.25	42.77	34.57	54	-11.23	34.09	8.1	33.99	180	244	Average
5290	91.42	82.89			34.23	8.32	34.02	184	237	Average
5290	98.1	89.57			34.23	8.32	34.02	184	237	Peak
5362.1	51.59	42.95	54	-2.41	34.29	8.38	34.03	180	244	Average
5362.65	61.19	52.55	74	-12.81	34.29	8.38	34.03	180	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
5043.65	42.62	34.56	54	-11.38	34.04	8	33.98	163	149	Average
5091.95	52.62	44.45	74	-21.38	34.08	8.07	33.98	163	149	Peak
5290	89.31	80.78			34.23	8.32	34.02	145	149	Average
5290	95.91	87.38			34.23	8.32	34.02	145	149	Peak
5350.55	52.15	43.52	54	-1.85	34.28	8.38	34.03	163	149	Average
5352.31	60.16	51.53	74	-13.84	34.28	8.38	34.03	163	149	Peak

Remarks:

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

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

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
5444.88	48.27	39.45	54	-5.73	34.35	8.51	34.04	148	232	Average
5452.56	56.2	47.38	74	-17.8	34.36	8.51	34.05	148	232	Peak
*5468.4	50.8	41.97	54	-3.2	34.37	8.51	34.05	148	232	Average
*5470	57.29	48.46	74	-16.71	34.37	8.51	34.05	148	232	Peak
5530	91.26	82.33			34.42	8.58	34.07	148	237	Average
5530	98.08	89.15			34.42	8.58	34.07	148	237	Peak
*5724.68	52.96	43.8	74	-21.04	34.62	8.65	34.11	148	237	Peak
*5725.8	43.3	34.14	54	-10.7	34.62	8.65	34.11	148	237	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
5454	57.6	48.78	74	-16.4	34.36	8.51	34.05	176	160	Peak
5454.8	48.35	39.53	54	-5.65	34.36	8.51	34.05	176	160	Average
*5470.48	49.99	41.16	54	-4.01	34.37	8.51	34.05	176	160	Average
*5470.64	58.57	49.74	74	-15.43	34.37	8.51	34.05	176	160	Peak
5530	92.5	83.57			34.42	8.58	34.07	125	160	Average
5530	99.02	90.09			34.42	8.58	34.07	125	160	Peak
*5724.52	43.77	34.61	54	-10.23	34.62	8.65	34.11	125	160	Average
*5725.08	53.01	43.85	74	-20.99	34.62	8.65	34.11	125	160	Peak

Remarks:

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

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
5375.92	43.07	34.41	54	-10.93	34.29	8.41	34.04	148	237	Average
5394.48	53.29	44.58	74	-20.71	34.31	8.44	34.04	148	237	Peak
*5470.16	52.23	43.4	74	-21.77	34.37	8.51	34.05	148	237	Peak
*5470.48	42.91	34.08	54	-11.09	34.37	8.51	34.05	148	237	Average
5610	91.11	82.08			34.5	8.61	34.08	148	237	Average
5610	98.24	89.21			34.5	8.61	34.08	148	237	Peak
*5725.08	43.76	34.6	54	-10.24	34.62	8.65	34.11	148	237	Average
*5725.96	52.22	43.06	74	-21.78	34.62	8.65	34.11	148	237	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5443.92	52.9	44.11	74	-21.1	34.35	8.48	34.04	129	160	Peak
5444.4	43.09	34.3	54	-10.91	34.35	8.48	34.04	129	160	Average
*5468.88	52.76	43.93	74	-21.24	34.37	8.51	34.05	129	160	Peak
*5469.36	43.17	34.34	54	-10.83	34.37	8.51	34.05	129	160	Average
5610	93.25	84.22			34.5	8.61	34.08	129	160	Average
5610	100.18	91.15			34.5	8.61	34.08	129	160	Peak
*5724.04	52.37	43.21	74	-21.63	34.62	8.65	34.11	129	160	Peak
*5724.44	43.83	34.67	54	-10.17	34.62	8.65	34.11	129	160	Average

Remarks:

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

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

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5775	90.77	81.54			34.68	8.67	34.12	100	169	Average
5775	97.36	88.13			34.68	8.67	34.12	100	169	Peak
11550	48.32	33.05	54	-5.68	37.97	12.68	35.38	157	223	Average
11550	57.31	42.04	74	-16.69	37.97	12.68	35.38	157	223	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	91.47	82.24			34.68	8.67	34.12	111	181	Average
5775	98.7	89.47			34.68	8.67	34.12	111	181	Peak
11550	48.57	33.3	54	-5.43	37.97	12.68	35.38	178	35	Average
11550	55.94	40.67	74	-18.06	37.97	12.68	35.38	178	35	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
*5586.1	45.99	36.98	54	-8.01	34.49	8.6	34.08	100	169	Average
*5586.1	52.69	43.68	74	-21.31	34.49	8.6	34.08	100	169	Peak
5654.875	50.91	41.82	77.04	-26.13	34.56	8.63	34.1	100	169	Peak
5912.125	53.69	44.32	82.03	-28.34	34.81	8.72	34.16	100	169	Peak
*5976.7	46.37	36.91	54	-7.63	34.88	8.75	34.17	100	169	Average
*5976.7	52.91	43.45	74	-21.09	34.88	8.75	34.17	100	169	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
*5647.525	46.04	36.97	54	-7.96	34.54	8.62	34.09	111	181	Average
*5647.525	53.07	44	74	-20.93	34.54	8.62	34.09	111	181	Peak
5650.675	52.79	43.7	74.42	-21.63	34.56	8.62	34.09	111	181	Peak
5921.575	49.26	39.86	76.14	-26.88	34.83	8.73	34.16	111	181	Peak
*6006.1	46.45	36.96	54	-7.55	34.9	8.76	34.17	111	181	Average
*6006.1	52.93	43.44	74	-21.07	34.9	8.76	34.17	111	181	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
82.38	21.93	44.41	40	-18.07	8.52	1.11	32.11	196	285	Peak
167.97	24.24	44.82	43.5	-19.26	10.15	1.52	32.25	173	134	Peak
258.96	20.47	37.38	46	-25.53	13.25	1.94	32.1	108	154	Peak
397.3	18.18	30.11	46	-27.82	17.95	2.34	32.22	133	175	Peak
661.9	22.15	28.54	46	-23.85	22.75	2.99	32.13	164	137	Peak
827.1	23.72	28.7	46	-22.28	23.55	3.38	31.91	188	152	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	24.53	47.48	40	-15.47	8.16	1.11	32.22	127	164	Peak
189.3	14.03	34.27	43.5	-29.47	10.4	1.61	32.25	137	108	Peak
268.95	18.33	34.96	46	-27.67	13.54	1.94	32.11	168	243	Peak
379.8	16.34	29.49	46	-29.66	16.75	2.26	32.16	185	124	Peak
643.7	21.35	28.41	46	-24.65	22.1	2.99	32.15	154	237	Peak
836.9	24.57	29.4	46	-21.43	23.65	3.38	31.86	128	129	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
91.83	24.79	46.44	43.5	-18.71	9.06	1.11	31.82	163	182	Peak
177.15	23.38	43.72	43.5	-20.12	10.29	1.61	32.24	175	145	Peak
243.3	21.7	39.26	46	-24.3	12.71	1.85	32.12	192	134	Peak
413.4	16.62	28.53	46	-29.38	17.88	2.41	32.2	142	281	Peak
603.8	21.54	29.62	46	-24.46	21.24	2.87	32.19	134	218	Peak
797	23.61	27.93	46	-22.39	24.42	3.32	32.06	133	107	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
58.08	25.7	50.05	40	-14.3	6.98	0.9	32.23	135	118	Peak
183.63	15.84	36.07	43.5	-27.66	10.4	1.61	32.24	148	272	Peak
255.45	17.93	34.93	46	-28.07	13.16	1.94	32.1	129	164	Peak
504.4	19.96	30.05	46	-26.04	19.38	2.63	32.1	163	129	Peak
724.9	22.66	28.22	46	-23.34	23.4	3.16	32.12	137	326	Peak
876.8	24.41	27.71	46	-21.59	24.84	3.49	31.63	185	124	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
85.62	22.33	44.49	40	-17.67	8.69	1.11	31.96	137	146	Peak
174.45	22.5	42.95	43.5	-21	10.18	1.61	32.24	196	342	Peak
264.36	21.3	38.06	46	-24.7	13.41	1.94	32.11	142	138	Peak
454.7	17.01	28.48	46	-28.99	18.18	2.49	32.14	166	187	Peak
649.3	23.24	30.3	46	-22.76	22.1	2.99	32.15	106	237	Peak
820.8	23.05	27.96	46	-22.95	23.72	3.32	31.95	154	332	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
60.78	23.99	48.43	40	-16.01	6.89	0.9	32.23	164	187	Peak
131.52	12.08	33.72	43.5	-31.42	9.22	1.38	32.24	103	185	Peak
214.68	13.59	32.69	43.5	-29.91	11.49	1.65	32.24	147	195	Peak
380.5	16.21	29.36	46	-29.79	16.75	2.26	32.16	133	162	Peak
703.9	22.87	28.71	46	-23.13	23.14	3.11	32.09	197	142	Peak
829.2	23.46	28.43	46	-22.54	23.55	3.38	31.9	164	105	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
85.35	19.25	41.44	40	-20.75	8.66	1.11	31.96	157	134	Peak
162.84	18.77	38.93	43.5	-24.73	10.58	1.52	32.26	139	272	Peak
213.87	15.32	34.46	43.5	-28.18	11.45	1.65	32.24	127	164	Peak
467.3	18.04	28.98	46	-27.96	18.63	2.56	32.13	108	243	Peak
773.2	23.18	28.56	46	-22.82	23.45	3.27	32.1	174	115	Peak
882.4	25.36	28.58	46	-20.64	24.88	3.49	31.59	166	92	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
61.32	21.57	45.91	40	-18.43	6.99	0.9	32.23	134	110	Peak
94.53	12.19	33.81	43.5	-31.31	9.26	1.11	31.99	166	264	Peak
261.12	18.05	34.88	46	-27.95	13.33	1.94	32.1	137	281	Peak
403.6	16.28	28.13	46	-29.72	18.03	2.34	32.22	137	185	Peak
656.3	22.3	29.13	46	-23.7	22.32	2.99	32.14	128	124	Peak
820.1	23.28	28.19	46	-22.72	23.72	3.32	31.95	198	34	Peak

Remarks:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

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

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 21, 2016	Nov. 20, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 22, 2016	Dec. 21, 2017
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 10, 2017	Mar. 09, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 28, 2016	Jul. 27, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

4.2.3 Test Procedures

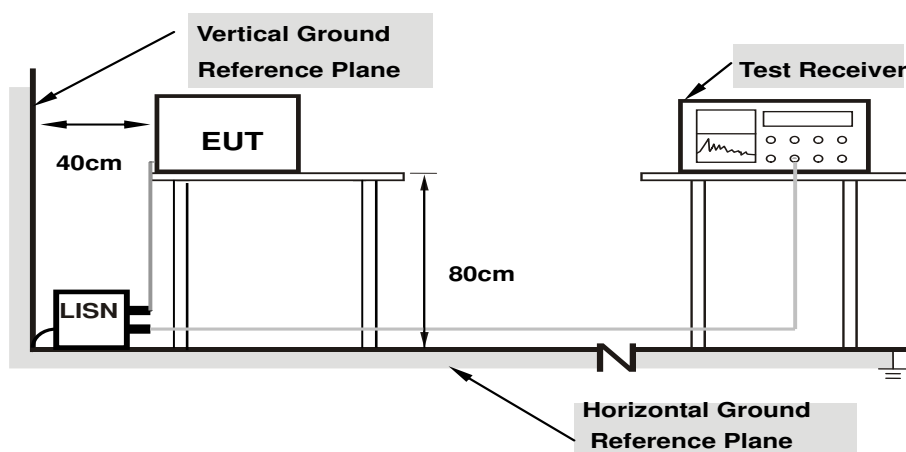
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

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

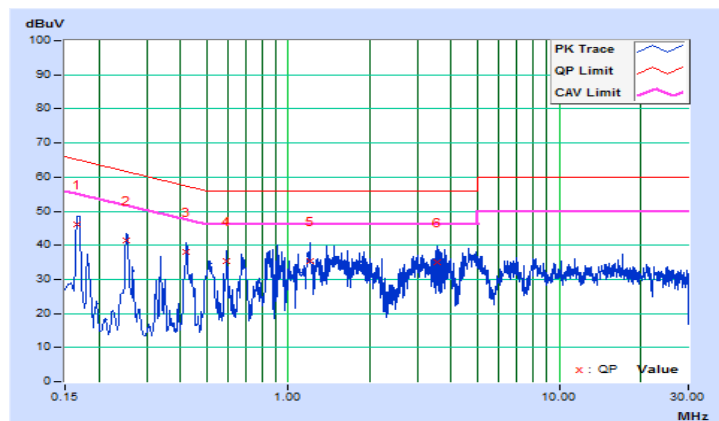
4.2.7 Test Results

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	Getaz Yang	Test Date	2017/3/29

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16569	10.35	35.90	22.72	46.25	33.07	65.17	55.17	-18.92	-22.10
2	0.25192	10.38	30.94	19.24	41.32	29.62	61.69	51.69	-20.37	-22.07
3	0.42000	10.40	27.53	15.27	37.93	25.67	57.45	47.45	-19.52	-21.78
4	0.59183	10.40	25.00	14.42	35.40	24.82	56.00	46.00	-20.60	-21.18
5	1.19788	10.41	24.89	15.09	35.30	25.50	56.00	46.00	-20.70	-20.50
6	3.54003	10.54	24.33	11.80	34.87	22.34	56.00	46.00	-21.13	-23.66

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

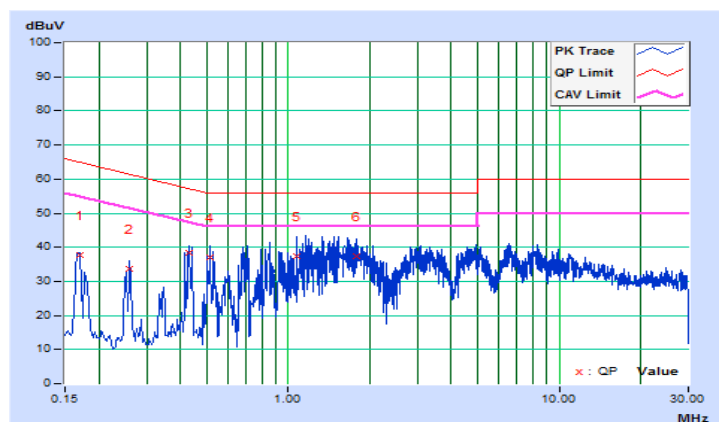


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Getaz Yang	Test Date	2017/3/29

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	0.16955	10.12	27.47	18.55	37.59	28.67	64.98	54.98	-27.39	-26.31
2	0.25948	10.15	23.53	14.12	33.68	24.27	61.45	51.45	-27.77	-27.18
3	0.43122	10.16	28.25	14.65	38.41	24.81	57.23	47.23	-18.82	-22.42
4	0.51363	10.16	26.84	15.95	37.00	26.11	56.00	46.00	-19.00	-19.89
5	1.07667	10.17	27.11	9.14	37.28	19.31	56.00	46.00	-18.72	-26.69
6	1.78829	10.22	27.19	16.44	37.41	26.66	56.00	46.00	-18.59	-19.34

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 $N_{ANT} \leq 4$;

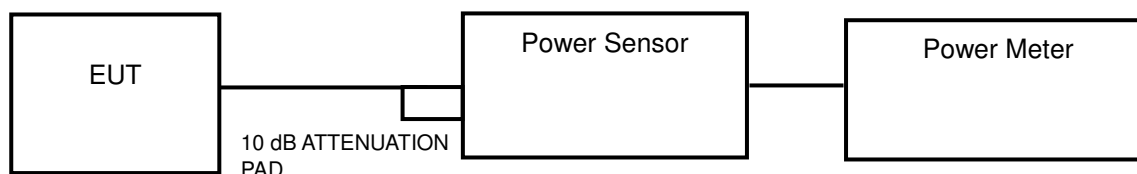
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

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

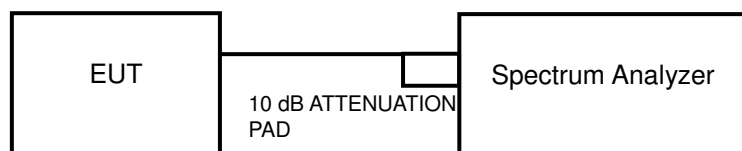
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

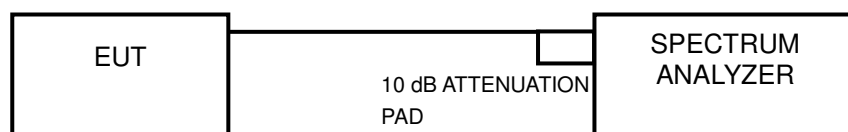
<Power Output Measurement>



or



<26 dB Bandwidth>



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

Average Power Measurement

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

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

<802.11ac (VHT80)>

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

26 dB Bandwidth

- 1) Set RBW = approximately 1 % of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

Power Output:

<1TX>

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	42.462	16.28	24	Pass
44	5220	41.783	16.21	24	Pass
48	5240	39.994	16.02	24	Pass
52	5260	40.365	16.06	24	Pass
60	5300	40.272	16.05	24	Pass
64	5320	40.179	16.04	24	Pass
100	5500	40.365	16.06	24	Pass
116	5580	40.458	16.07	24	Pass
140	5700	41.305	16.16	24	Pass
149	5745	40.179	16.04	30	Pass
157	5785	40.644	16.09	30	Pass
165	5825	40.458	16.07	30	Pass

Note:

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

1. $11 \text{ dBm} + 10\log(22.62) = 24.54 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(22.28) = 24.48 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(22.13) = 24.45 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(22.36) = 24.49 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(23.93) = 24.79 \text{ dBm} > 24 \text{ dBm}$.
6. $11 \text{ dBm} + 10\log(27.54) = 25.40 \text{ dBm} > 24 \text{ dBm}$.

<2TX>

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	13.46	12.97	41.997	16.23	24	Pass
44	5220	12.99	13.03	39.998	16.02	24	Pass
48	5240	12.95	13.13	40.283	16.05	24	Pass
52	5260	12.99	13.07	40.184	16.04	24	Pass
60	5300	12.93	13.11	40.098	16.03	24	Pass
64	5320	12.85	13.28	40.557	16.08	24	Pass
100	5500	13.08	12.94	40.002	16.02	24	Pass
116	5580	13.14	12.95	40.331	16.06	24	Pass
140	5700	13.45	12.58	40.244	16.05	24	Pass
149	5745	13.71	12.45	41.076	16.14	30	Pass
157	5785	13.86	12.31	41.344	16.16	30	Pass
165	5825	13.59	12.45	40.435	16.07	30	Pass

Note:

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

Chain 0

1. $11 \text{ dBm} + 10\log(23.72) = 24.75 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(23.87) = 24.78 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(24.16) = 24.83 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(24.29) = 24.85 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(24.04) = 24.81 \text{ dBm} > 24 \text{ dBm}$.
6. $11 \text{ dBm} + 10\log(23.75) = 24.76 \text{ dBm} > 24 \text{ dBm}$.

Chain 1

1. $11 \text{ dBm} + 10\log(22.78) = 24.58 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(22.51) = 24.52 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(22.72) = 24.56 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(22.51) = 24.52 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(22.00) = 24.42 \text{ dBm} > 24 \text{ dBm}$.
6. $11 \text{ dBm} + 10\log(22.51) = 24.52 \text{ dBm} > 24 \text{ dBm}$.

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	12.82	13.41	41.071	16.14	24	Pass
46	5230	12.97	13.18	40.612	16.09	24	Pass
54	5270	13.09	13.36	42.047	16.24	24	Pass
62	5310	12.96	13.16	40.471	16.07	24	Pass
102	5510	13.38	13.13	42.336	16.27	24	Pass
110	5550	13.36	12.93	41.311	16.16	24	Pass
134	5670	13.37	12.64	40.092	16.03	24	Pass
151	5755	13.55	12.39	39.984	16.02	30	Pass
159	5795	13.72	12.23	40.261	16.05	30	Pass

Note:

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

Chain 0

1. $11 \text{ dBm} + 10\log(44.13) = 27.45 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(43.91) = 27.43 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(44.02) = 27.44 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(43.99) = 27.43 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(43.95) = 27.43 \text{ dBm} > 24 \text{ dBm}$.

Chain 1

1. $11 \text{ dBm} + 10\log(43.30) = 27.36 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(43.23) = 27.36 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(43.20) = 27.35 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(43.27) = 27.36 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(43.30) = 27.36 \text{ dBm} > 24 \text{ dBm}$.

802.11ac (VHT80)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	13.05	13.44	42.264	16.26	24	Pass
58	5290	13.04	13.39	41.965	16.23	24	Pass
106	5530	13.12	12.94	40.190	16.04	24	Pass
122	5610	13.19	12.41	38.263	15.83	24	Pass
155	5775	13.59	12.59	41.011	16.13	30	Pass

Note:

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

Chain 0

1. $11 \text{ dBm} + 10\log(86.64) = 30.38 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(86.32) = 30.36 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(86.08) = 30.35 \text{ dBm} > 24 \text{ dBm}$.

Chain 1

1. $11 \text{ dBm} + 10\log(85.40) = 30.31 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(85.20) = 30.30 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(85.09) = 30.30 \text{ dBm} > 24 \text{ dBm}$.

26 dB Bandwidth:

<1TX>

802.11a

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	23.63
44	5220	22.28
48	5240	22.90
52	5260	22.62
60	5300	22.28
64	5320	22.13
100	5500	22.36
116	5580	23.93
140	5700	27.54

<2TX>

802.11n (HT20)

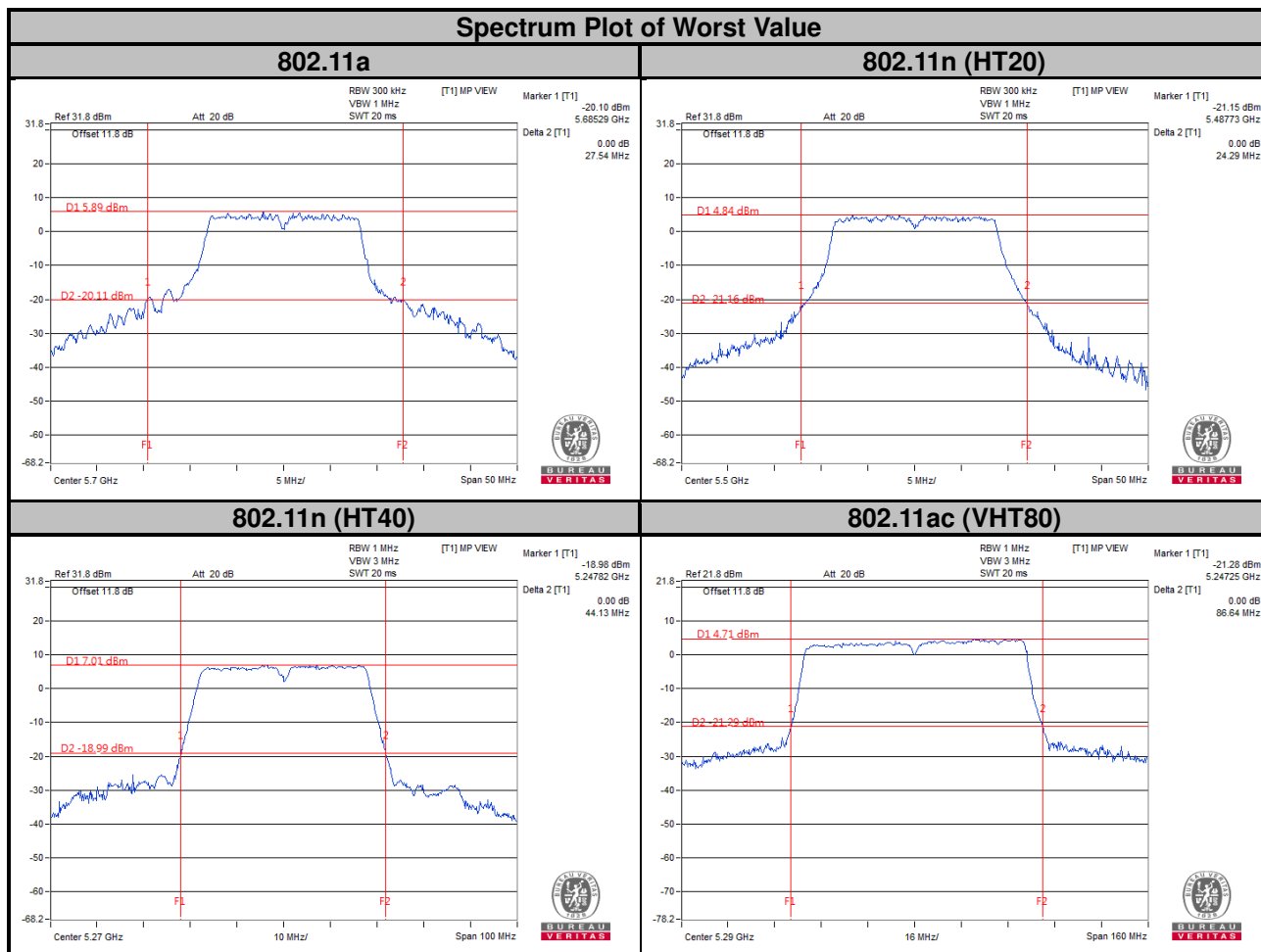
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	23.77	22.71
44	5220	23.60	22.75
48	5240	23.82	22.52
52	5260	23.72	22.78
60	5300	23.87	22.51
64	5320	24.16	22.72
100	5500	24.29	22.51
116	5580	24.04	22.00
140	5700	23.75	22.51

802.11n (HT40)

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	43.99	43.25
46	5230	44.00	43.24
54	5270	44.13	43.30
62	5310	43.91	43.23
102	5510	44.02	43.20
110	5550	43.99	43.27
134	5670	43.95	43.30

802.11ac (VHT80)

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	86.14	85.90
58	5290	86.64	85.40
106	5530	86.32	85.20
122	5610	86.08	85.09

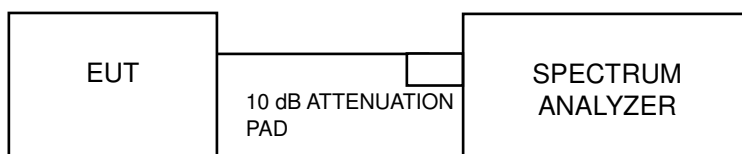


4.4 Peak Power Spectral Density Measurement

4.4.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17 dBm/MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11 dBm/MHz
U-NII-2A	√		11 dBm/MHz
U-NII-2C	√		11 dBm/MHz
U-NII-3	√		30 dBm/500 kHz

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.4.4 Test Procedures

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-2

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW $\geq$ 3 RBW, Detector = RMS
3. Sweep time = auto, trigger set to "free run".
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value and add 10 log (1/duty cycle)

※For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 500 kHz, Set VBW $\geq$ 3 RBW, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 500 kHz band segment within the fundamental EBW.
4. Sweep time = auto, trigger set to "free run".
5. Trace average at least 100 traces in power averaging mode.
6. Record the max value and add 10 log (1/duty cycle)

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

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

4.4.7 Test Results

<1TX>

802.11a

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
36	5180	1.04	0.30	1.34	11	Pass
44	5220	1.00	0.30	1.30	11	Pass
48	5240	1.07	0.30	1.37	11	Pass
52	5260	1.52	0.30	1.82	11	Pass
60	5300	1.56	0.30	1.86	11	Pass
64	5320	1.62	0.30	1.92	11	Pass
100	5500	1.77	0.30	2.07	11	Pass
116	5580	1.81	0.30	2.11	11	Pass
140	5700	1.54	0.30	1.84	11	Pass

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

<2TX>

802.11n (HT20)

Channel	Frequency (MHz)	PSD (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	-1.23	-0.30	0.60	2.87	11	Pass
44	5220	-0.83	-0.38	0.60	3.01	11	Pass
48	5240	-0.64	-0.23	0.60	3.17	11	Pass
52	5260	-1.03	0.02	0.60	3.13	11	Pass
60	5300	-0.59	-0.20	0.60	3.21	11	Pass
64	5320	-0.57	-0.09	0.60	3.28	11	Pass
100	5500	-1.07	-0.02	0.60	3.09	11	Pass
116	5580	-0.52	-0.18	0.60	3.26	11	Pass
140	5700	-0.88	-0.53	0.60	2.90	11	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. For U-NII-1 Band:

Directional gain = $10\log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}] = 3.02 \text{ dBi} < 6 \text{ dBi}$, so the limit doesn't need to be reduced.

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

Directional gain = $10\log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}] = 1.26 \text{ dBi} < 6 \text{ dBi}$, so the limit doesn't need to be reduced.

3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Channel	Frequency (MHz)	PSD (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	-2.79	-2.36	0.94	1.38	11	Pass
46	5230	-2.39	-2.19	0.94	1.66	11	Pass
54	5270	-2.48	-2.56	0.94	1.43	11	Pass
62	5310	-2.62	-2.74	0.94	1.27	11	Pass
102	5510	-2.14	-2.54	0.94	1.62	11	Pass
110	5550	-2.61	-2.12	0.94	1.59	11	Pass
134	5670	-2.56	-2.50	0.94	1.42	11	Pass

Note:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- For U-NII-1 Band:**
Directional gain = $10\log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}] = 3.02 \text{ dBi} < 6 \text{ dBi}$, so the limit doesn't need to be reduced.
- For U-NII-2A, U-NII-2C Band:**
Directional gain = $10\log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}] = 1.26 \text{ dBi} < 6 \text{ dBi}$, so the limit doesn't need to be reduced.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

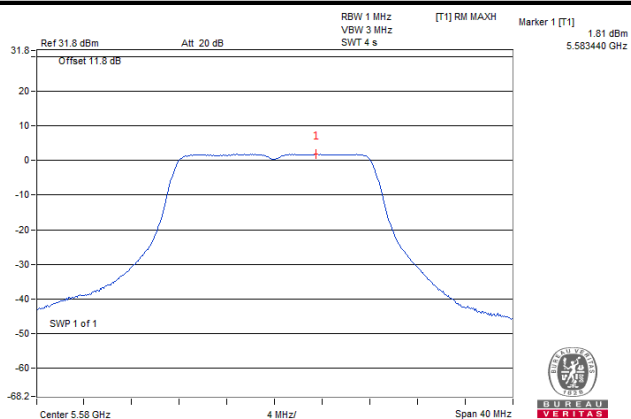
Channel	Frequency (MHz)	PSD (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-5.58	-5.43	1.00	-1.50	11	Pass
58	5290	-5.47	-5.56	1.00	-1.51	11	Pass
106	5530	-5.73	-5.51	1.00	-1.61	11	Pass
122	5610	-6.00	-5.97	1.00	-1.98	11	Pass

Note:

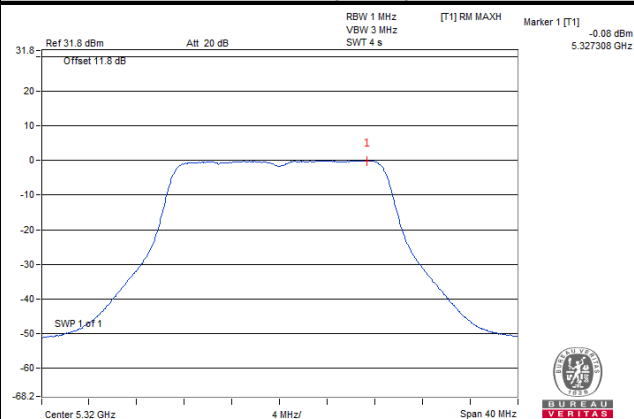
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- For U-NII-1 Band:**
Directional gain = $10\log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}] = 3.02 \text{ dBi} < 6 \text{ dBi}$, so the limit doesn't need to be reduced.
- For U-NII-2A, U-NII-2C Band:**
Directional gain = $10\log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}] = 1.26 \text{ dBi} < 6 \text{ dBi}$, so the limit doesn't need to be reduced.
- Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

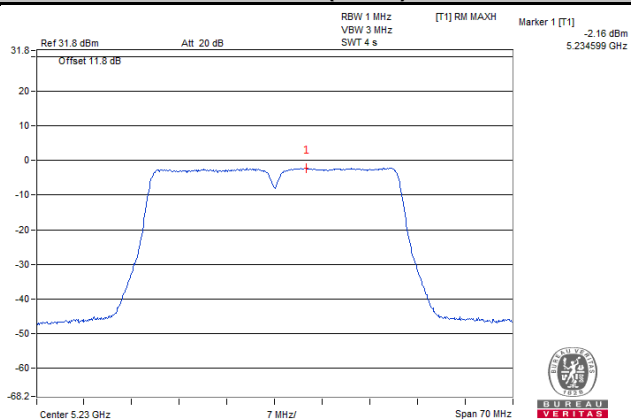
802.11a



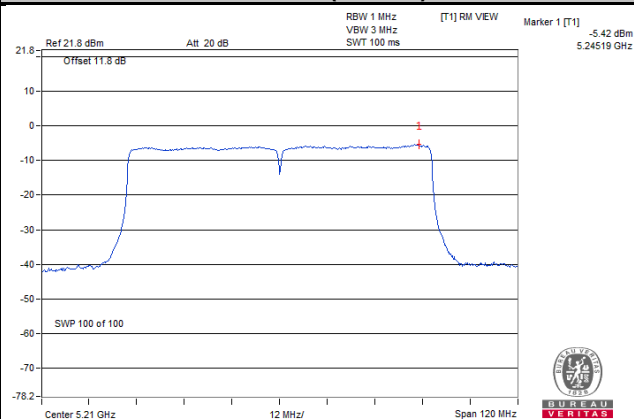
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



For U-NII-3 Band

<1TX>

802.11a

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/500 kHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
149	5745	-0.61	0.30	-0.31	30	Pass
157	5785	-0.07	0.30	0.23	30	Pass
165	5825	-0.74	0.30	-0.44	30	Pass

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

<2TX>

802.11n (HT20)

TX Chain	Channel	Frequency (MHz)	PSD (dBm/500 kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
0	149	5745	-2.76	3.01	0.60	0.85	30	Pass
	157	5785	-2.39	3.01	0.60	1.22	30	Pass
	165	5825	-1.93	3.01	0.60	1.68	30	Pass
1	149	5745	-3.79	3.01	0.60	-0.18	30	Pass
	157	5785	-3.69	3.01	0.60	-0.08	30	Pass
	165	5825	-3.38	3.01	0.60	0.23	30	Pass

Note:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 1.02 < 6 \text{ dBi}$, so the limit does not need to be reduced.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

TX Chain	Channel	Frequency (MHz)	PSD (dBm/500 kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
0	151	5755	-6.01	3.01	0.94	-2.06	30	Pass
	159	5795	-5.34	3.01	0.94	-1.39	30	Pass
1	151	5755	-7.16	3.01	0.94	-3.21	30	Pass
	159	5795	-6.61	3.01	0.94	-2.66	30	Pass

Note:

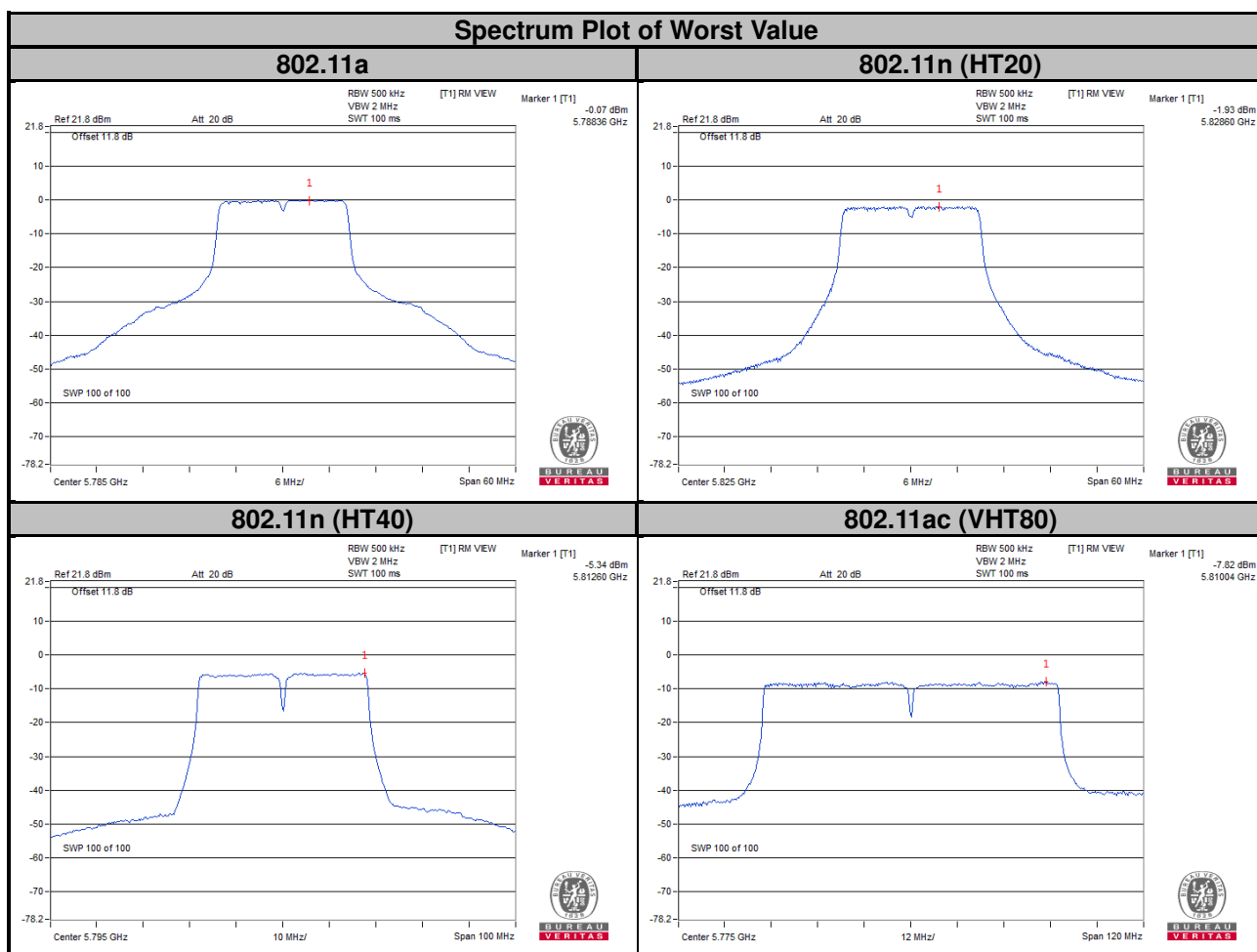
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 1.02 < 6 \text{ dBi}$, so the limit does not need to be reduced.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

TX Chain	Channel	Frequency (MHz)	PSD (dBm/500 kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
0	155	5775	-7.82	3.01	1.00	-3.81	30	Pass
1	155	5775	-8.96	3.01	1.00	-4.95	30	Pass

Note:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}] = 1.02 < 6 \text{ dBi}$, so the limit does not need to be reduced.
- Refer to section 3.3 for duty cycle spectrum plot.

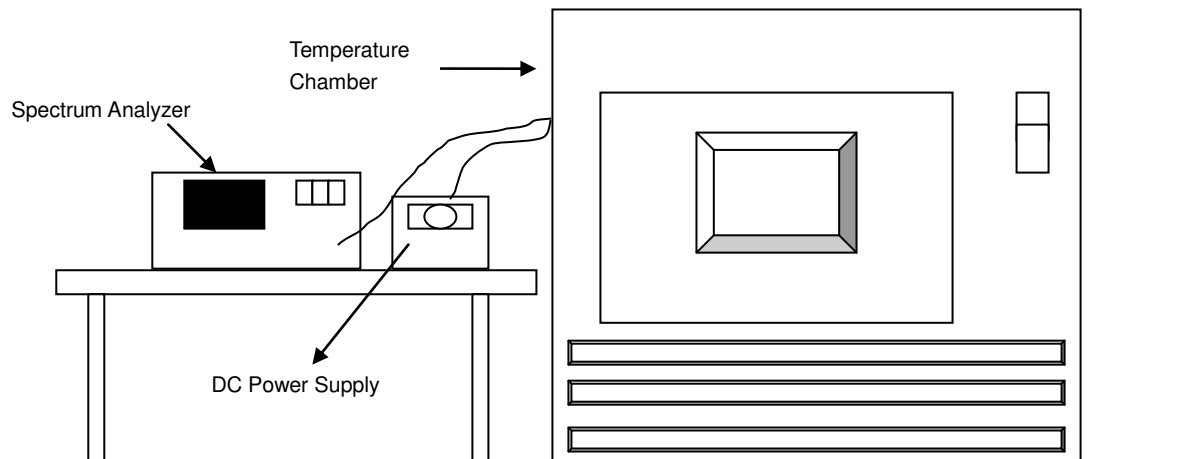


4.5 Frequency Stability

4.5.1 Limit of Frequency Stability Measurement

The frequency of the carrier signal shall be maintained within band of operation.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.5.4 Test Procedure

- To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
- The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.
- The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Set the EUT transmit at un-modulation mode to test frequency stability.

4.5.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
55	3.85	5180.0077	0.00015	5180.01	0.00019	5180.0107	0.00021	5180.0098	0.00019
50	3.85	5179.9963	-0.00007	5179.9983	-0.00003	5179.9946	-0.00010	5179.9988	-0.00002
40	3.85	5180.0004	0.00001	5179.9991	-0.00002	5180.0026	0.00005	5180	0.00000
30	3.85	5180.0173	0.00033	5180.0186	0.00036	5180.0176	0.00034	5180.0192	0.00037
20	3.85	5179.9875	-0.00024	5179.9879	-0.00023	5179.9867	-0.00026	5179.9831	-0.00033
10	3.85	5179.9871	-0.00025	5179.9838	-0.00031	5179.9876	-0.00024	5179.9839	-0.00031
0	3.85	5180.0209	0.00040	5180.0194	0.00037	5180.0201	0.00039	5180.0193	0.00037
-10	3.85	5180.0002	0.00000	5180.0029	0.00006	5180.0013	0.00003	5179.9993	-0.00001
-20	3.85	5180.0224	0.00043	5180.0226	0.00044	5180.0221	0.00043	5180.0221	0.00043
-30	3.85	5180.018	0.00035	5180.022	0.00042	5180.0188	0.00036	5180.0223	0.00043

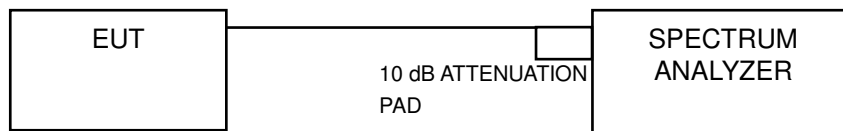
Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	4.4275	5179.9876	-0.00024	5179.9889	-0.00021	5179.9872	-0.00025	5179.9827	-0.00033
	3.85	5179.9875	-0.00024	5179.9879	-0.00023	5179.9867	-0.00026	5179.9831	-0.00033
	3.2725	5179.9865	-0.00026	5179.9872	-0.00025	5179.9859	-0.00027	5179.9838	-0.00031

4.6 6 dB Bandwidth Measurement

4.6.1 Limits of 6 dB Bandwidth Measurement

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

- Set resolution bandwidth (RBW) = 100 kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

<1TX>

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.39	0.5	Pass
157	5785	16.40	0.5	Pass
165	5825	16.39	0.5	Pass

<2TX>

802.11n (HT20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	17.61	17.64	0.5	Pass
157	5785	17.61	17.63	0.5	Pass
165	5825	17.64	17.65	0.5	Pass

802.11n (HT40)

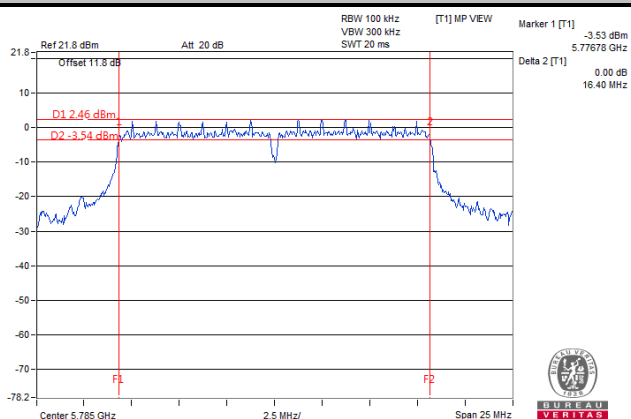
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	36.45	36.46	0.5	Pass
159	5795	36.41	36.46	0.5	Pass

802.11ac (VHT80)

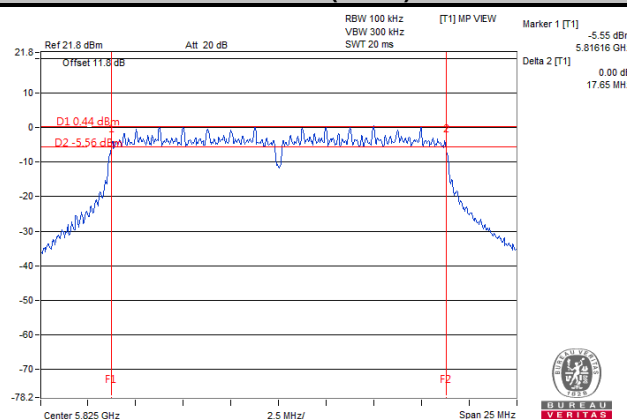
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	76.62	76.46	0.5	Pass

Spectrum Plot of Worst Value

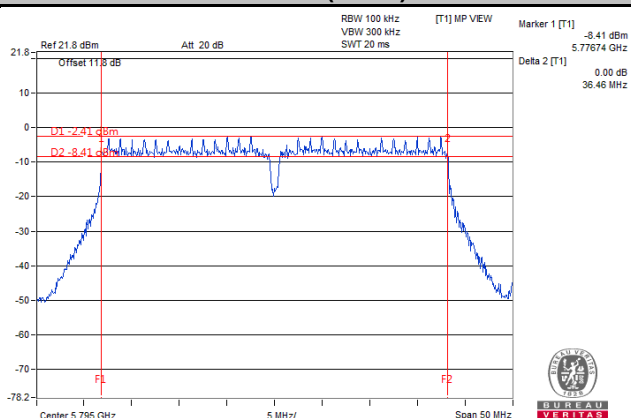
802.11a



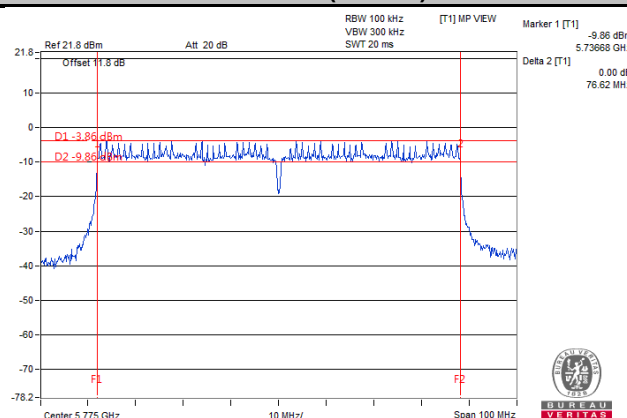
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

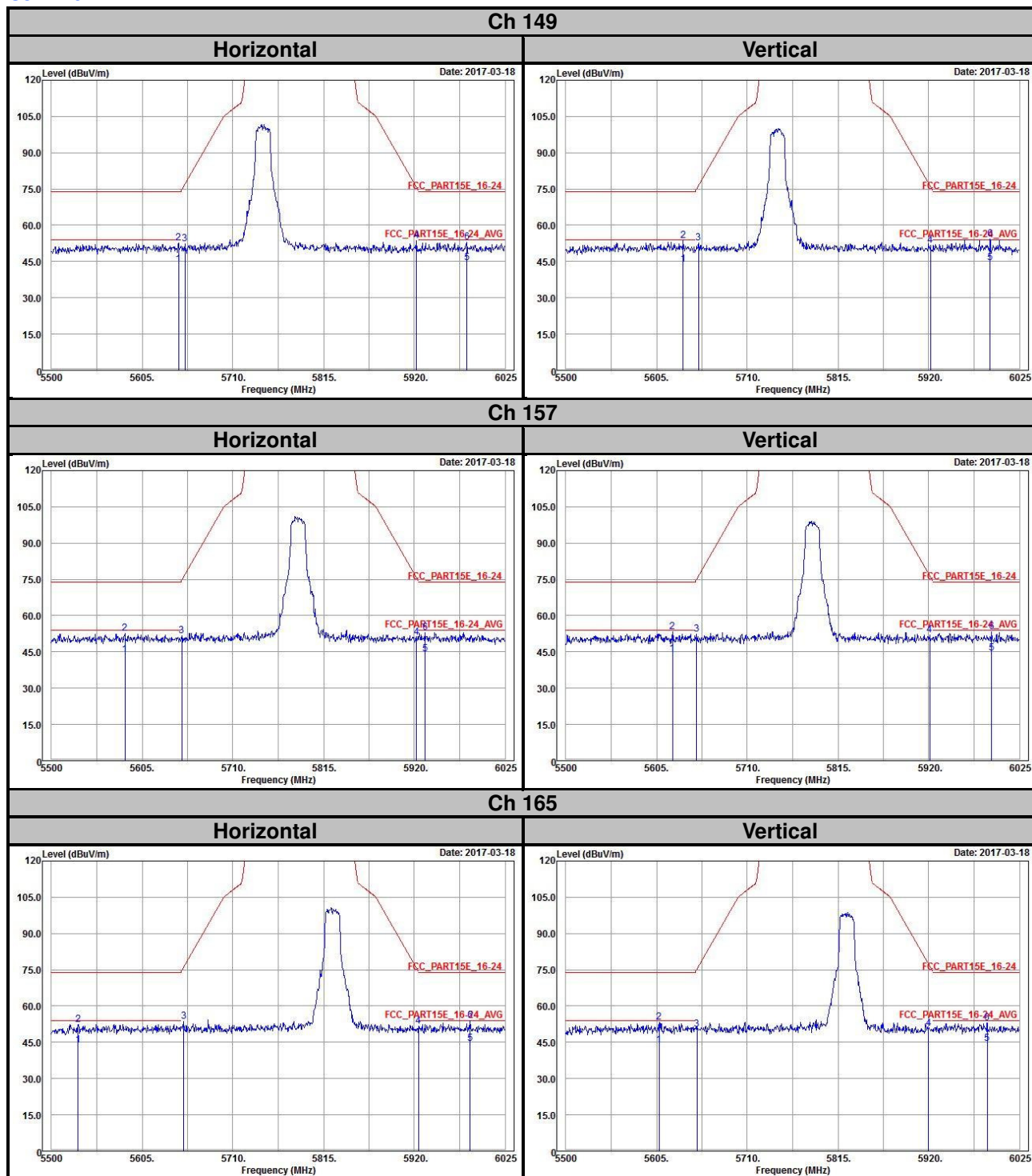


5 Pictures of Test Arrangements

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

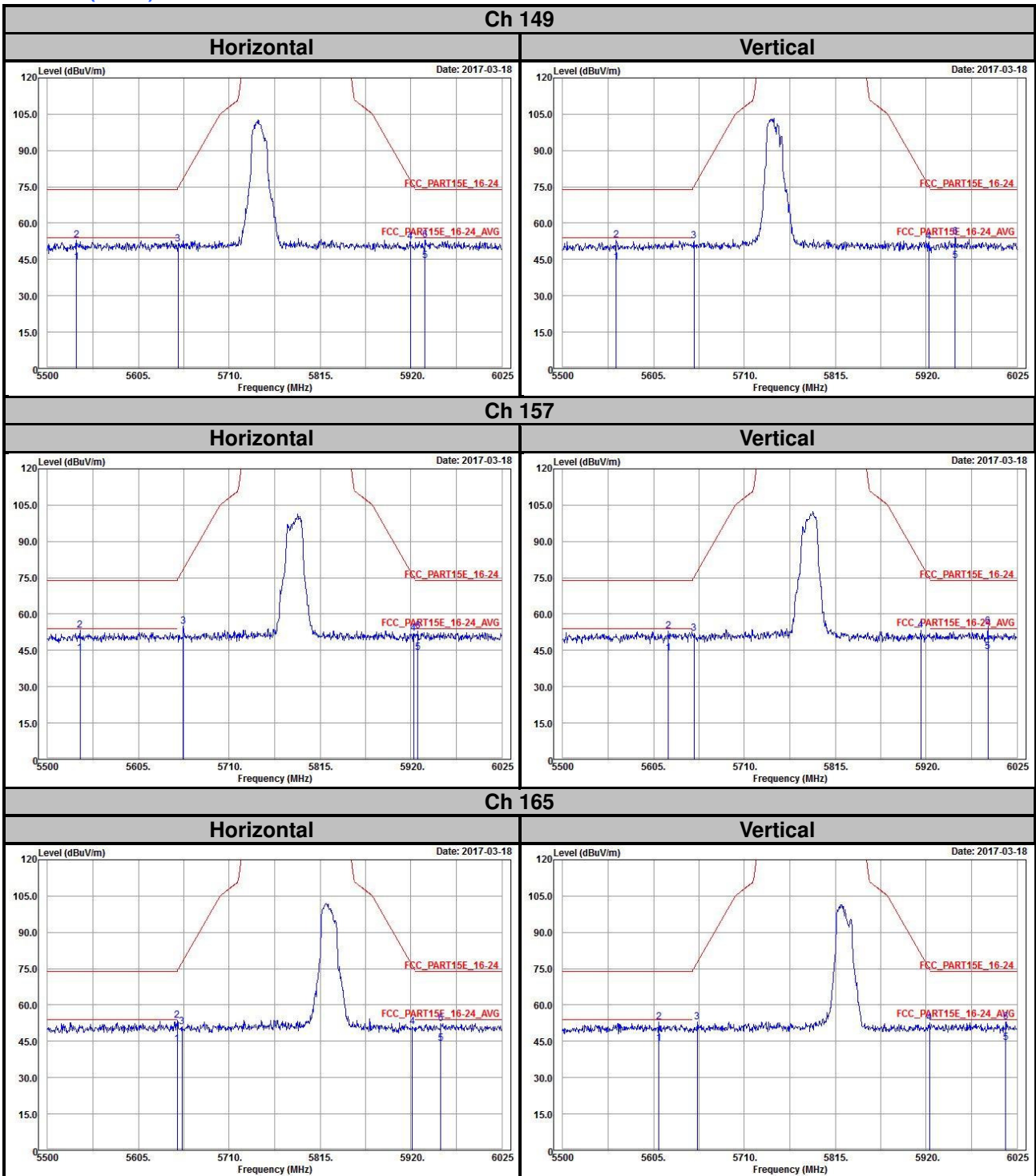
Annex A- Radiated Out of Band Emisison (OOBE) Measurement (For U-NII-3 band)

<1TX>
802.11a

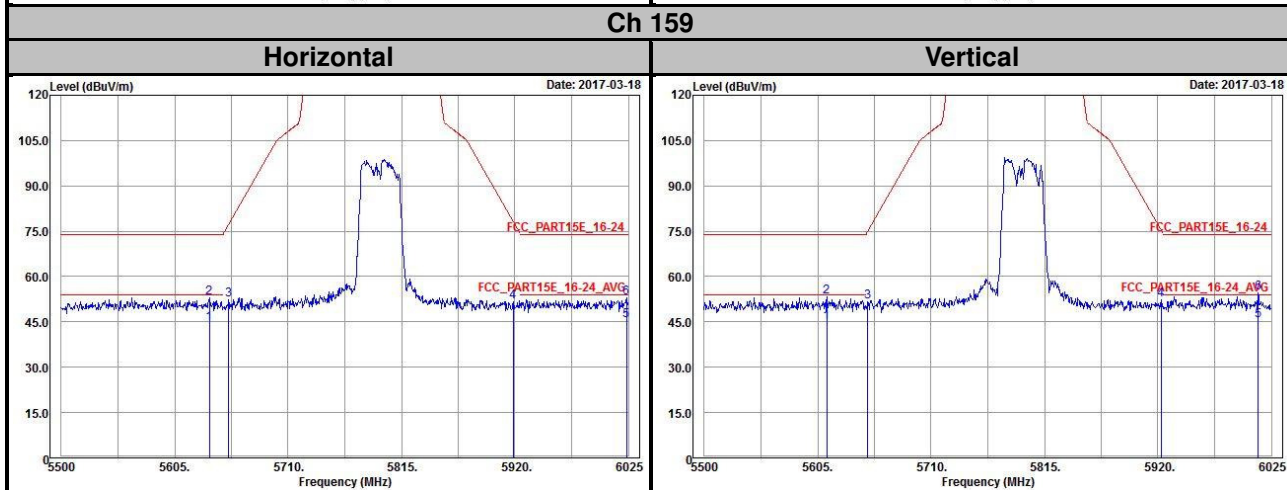
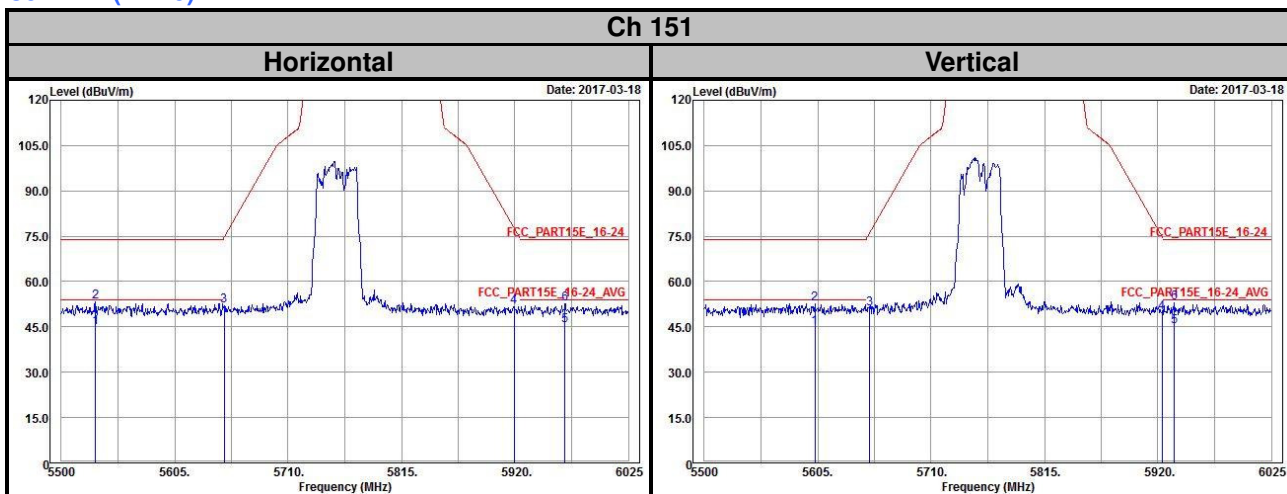


<2TX>

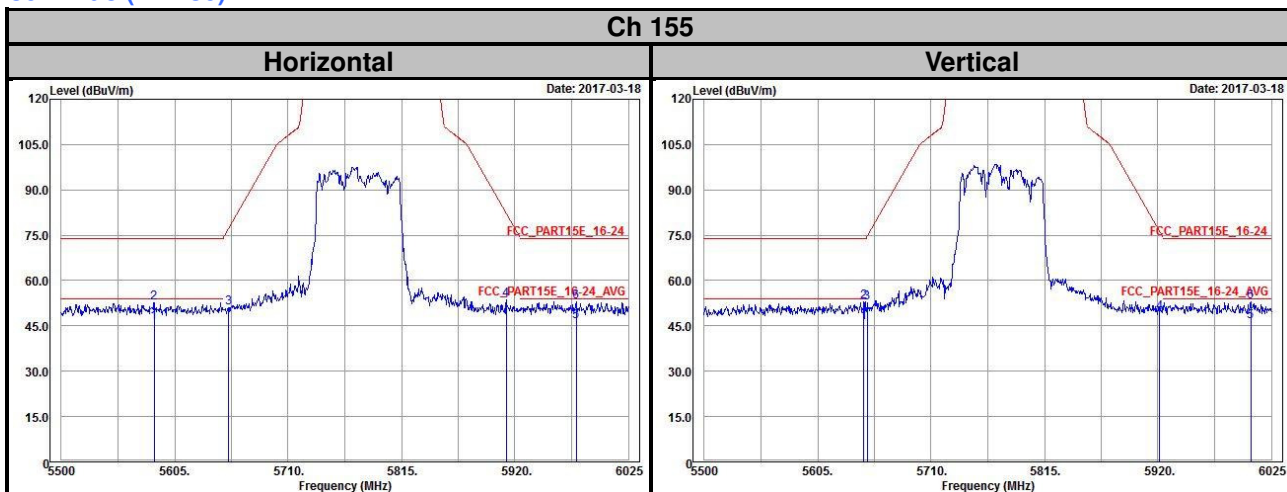
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



Appendix – Information on the Testing Laboratories

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

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

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Web Site: www.bureauveritas-adt.com

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

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