FCC Test Report

Report No.:	RF161004C26-3
FCC ID:	QYLAP6234Z
Test Model:	ZX70
Received Date:	Oct. 04, 2016
Test Date:	Oct. 08, 2016 ~ Oct. 19, 2016
Issued Date:	Nov. 04, 2016
Applicant:	Getac Technology Corporation.
Address:	5F., Building A, No. 209, Sec.1, Nangang Rd.,Nangang Dist., Taipei City 11568, Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)
Test Location (1):	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.
Test Location (2):	No.215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan, R.O.C

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Release Control Record

Issue No.	Description	Date Issued
RF161004C26-3	Original Release	Nov. 04, 2016

1 Certificate of Conformity

Product:	Tablet
Brand:	Getac
Test Model:	ZX70
Sample Status:	Identical Prototype
Applicant:	Getac Technology Corporation.
Test Date:	Oct. 08, 2016 ~ Oct. 19, 2016
Standards:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10:2013

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

Prepared by : Gina Liu , **Date:** Nov. 04, 2016

Gina Liu / Specialist

Approved by : Stanley Wu , **Date:** Nov. 04, 2016

Stanley Wu / Assistant Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	**Test Item**	**Result**	**Remarks**
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -14.35 dB at 0.28967 MHz.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -5.16 dB at 5713.8 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.

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**	**Expended 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	Tablet
Brand	Getac
Test Model	ZX70
Status of EUT	Identical Prototype
Power Supply Rating	12.0 Vdc (adapter) 3.8 Vdc (Li-ion battery)
Modulation Type	64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to MCS7
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) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 5500 ~ 5700 MHz: 11 for 802.11a, 802.11n (HT20) 5 for 802.11n (HT40) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
Output Power	5.60 mW for 5180 ~ 5240 MHz 3.94 mW for 5260 ~ 5320 MHz 4.89 mW for 5500 ~ 5700 MHz 5.65 mW for 5745 ~ 5825 MHz
Antenna Type	PIFA antenna with 3.91 dBi gain (5180 ~ 5240 MHz) PIFA antenna with 4.78 dBi gain (5260 ~ 5320 MHz) PIFA antenna with 3.98 dBi gain (5500 ~ 5700 MHz) PIFA antenna with 2.01 dBi 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 provides one completed transmitter and one receiver.

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

2. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter	APD	WA24Q12R	I/P: 100-240 Vac, 50/60 Hz, 0.7 A O/P: 12 Vdc, 2 A 1.75m shielded cable with 1 core
Battery	Getac	BP1S2P4240L	3.8 Vdc, 8480 mAh
LCD Panel	Truly	TDO-HD0698K61701	7”
Photo Camera	Chicony	CWFFF2520005340LH	2MPs HD Fix focus camera
Video Camera	Chicony	CYAF82520005340LH	8MPs auto focus camera
CPU	intel	Atom Z8350	592 PIN
Memorry	Samsung	K4E8E304EE-EGC	DDR3 2G (1G*2)
Storage	Samsung	KLMAG2GEND-B031	16G
GPS	U-blox	MAX-M8N	
BT/WLAN Module	AMPAK	AP6234	

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

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

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		

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥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 **Z-plane** for 5180-5700MHz **and X-plane** for 5745-5825MHz.
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
-	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
-	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
-	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

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	802.11n (HT40)	38 to 46	38	OFDM	BPSK	MCS0
-	5260-5320	802.11n (HT20)	52 to 64	64	OFDM	BPSK	MCS0
-	5500-5700	802.11a	100 to 140	140	OFDM	BPSK	6.0
-	5745-5825	802.11a	149 to 165	149	OFDM	BPSK	6.0

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)
-	5745-5825	802.11n (HT40)	151 to 159	151	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
-	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
-	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
-	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

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao, Karl Lee
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Karl Lee
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Toby Tian
APCM	25 deg. C, 65 % RH	3.8 Vdc	Luke Chen

3.3 Duty Cycle of Test Signal

MODULATION TYPE: BPSK

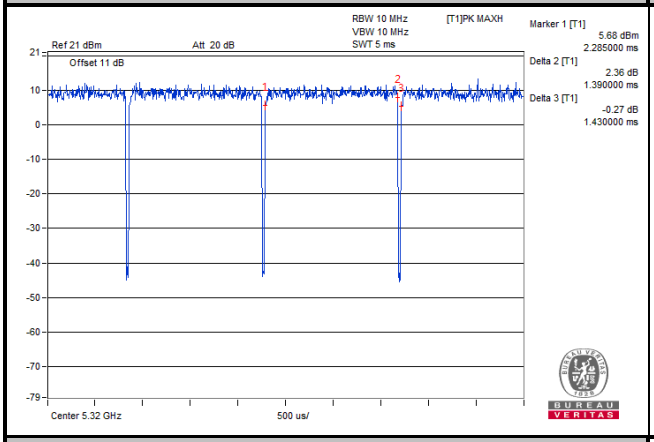
Duty cycle of test signal is < 98 %, duty factor is required.

802.11a: Duty cycle = 1.39/1.43 = 0.972, Duty factor = 10 * log(1/0.972) = 0.12

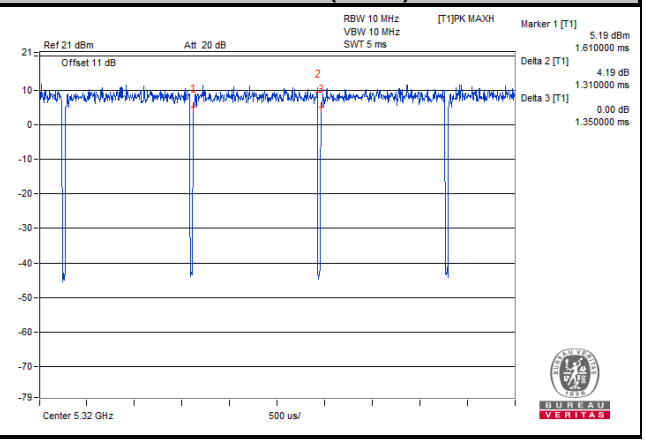
802.11n (HT20): Duty cycle = 1.31/1.35 = 0.970, Duty factor = 10 * log(1/0.970) = 0.13

802.11n (HT40): Duty cycle = 630/690 = 0.913, Duty factor = 10 * log(1/0.913) = 0.40

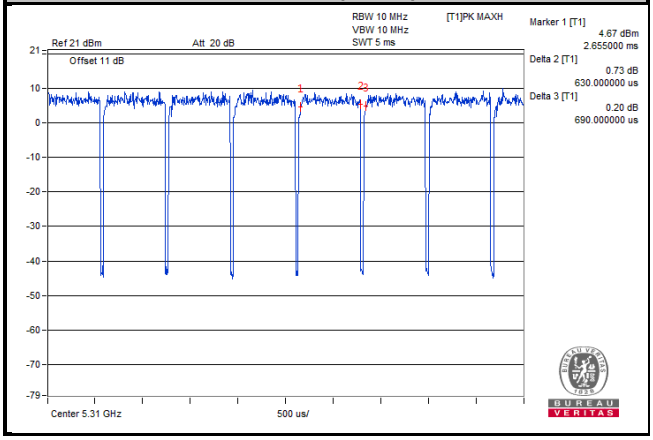
802.11a



802.11n (HT20)



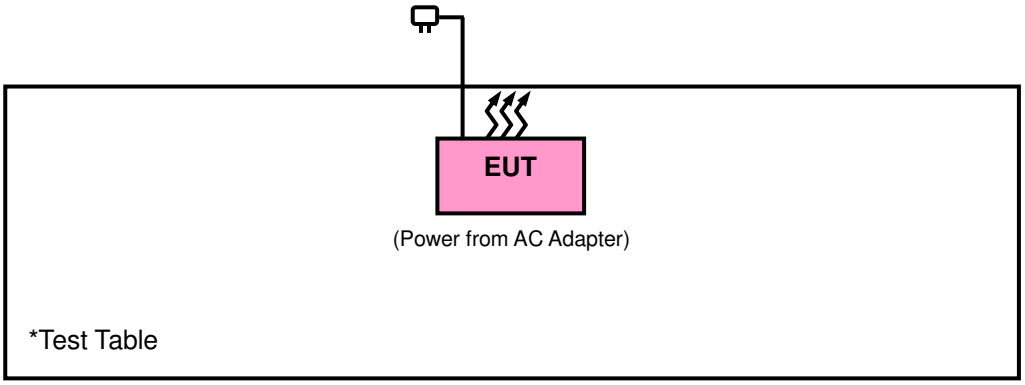
802.11n (HT40)



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
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)
Applicable To	**EIRP Limit**	**Equivalent Field Strength at 3 m**
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK: -27 (dBm/MHz) [*1] PK: -17 (dBm/MHz) [*2]	PK: 68.2 (dBμV/m) [*1] PK: 78.2 (dBμV/m) [*2]

NOTE: [*1] beyond 10 MHz of the band edge [*2] within 10 MHz of band edge

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

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

4.1.3 Test Instruments

Description & Manaufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY52260177	Jun. 21, 2016	Jun. 20, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2015	Dec. 16, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna ETS-Lindgren	3117	00143293	Jan. 04, 2016	Jan. 03, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Jan. 04, 2016	Jan. 03, 2017
Bluetooth Tester	CBT	100980	Apr. 27, 2015	Apr. 26, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Agilent Communications Tester-Wireless	8960 Series 10	MY53201073	Jul. 03, 2015	Jul. 02, 2017
Preamplifier Agilent	310N	187226	Jun. 24, 2016	Jun. 23, 2017
Preamplifier Agilent	83017A	MY39501357	Jun. 24, 2016	Jun. 23, 2017
Power Meter Anritsu	ML2495A	1232002	Sep. 08, 2016	Sep. 07, 2017
Power Sensor Anritsu	MA2411B	1207325	Sep. 08, 2016	Sep. 07, 2017
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-400)	Jun. 24, 2016	Jun. 23, 2017
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(RFC-SMS-100-SMS-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
Temperature & Humidity Chamber	GTH-120-40-CP-AR	MAA1306-019	Sep. 02, 2016	Sep. 01, 2017
DC Power Supply Topward	33010D	807748	Oct. 27, 2014	Oct. 26, 2016
Digital Multimeter Fluke	87-III	70360742	Jul. 01, 2016	Jun. 30, 2017
Fixed Attenuator Mini-Circuits	BW-N10W5+	N/A	Jul. 08, 2016	Jul. 07, 2017

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

4.1.4 Test Procedures

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

Note:

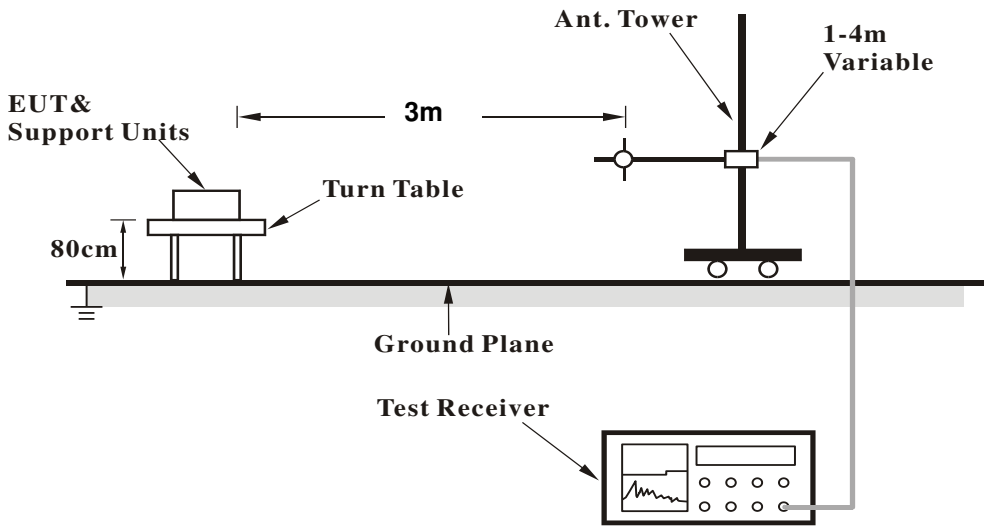
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz & 360 KHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency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

4.1.5 Deviation from Test Standard

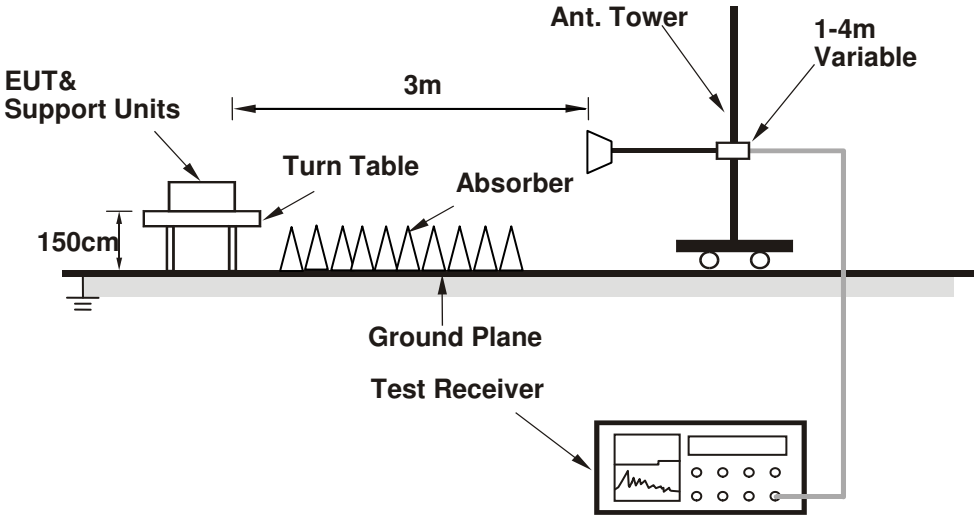
No deviation.

4.1.6 Test Set Up

<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

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

4.1.8 Test Results

Above 1 GHz Data：

802.11a

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5143.85	55.41	47.16	74	-18.59	34.12	8.13	34	101	229	Peak
5147.9	43.86	35.61	54	-10.14	34.12	8.13	34	101	229	Average
5180	93.3	84.99			34.15	8.16	34	101	229	Average
5180	100.22	91.91			34.15	8.16	34	101	229	Peak
10360	46.62	32.32	54	-7.38	37.12	12.3	35.12	127	84	Average
10360	55.27	40.97	74	-18.73	37.12	12.3	35.12	127	84	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5145.5	58.8	50.55	74	-15.2	34.12	8.13	34	103	246	Peak
5147	44.11	35.86	54	-9.89	34.12	8.13	34	103	246	Average
5180	93.65	85.34			34.15	8.16	34	103	246	Average
5180	101.85	93.54			34.15	8.16	34	103	246	Peak
10360	46.58	32.28	54	-7.42	37.12	12.3	35.12	128	157	Average
10360	56.12	41.82	74	-17.88	37.12	12.3	35.12	128	157	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5180 MHz: Fundamental Frequency
3. 10360 MHz: 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**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5094.05	53.02	44.86	74	-20.98	34.08	8.07	33.99	100	229	Peak
5143.25	42.54	34.28	54	-11.46	34.12	8.13	33.99	100	229	Average
5220	93.55	85.16			34.17	8.22	34	100	229	Average
5220	100.29	91.9			34.17	8.22	34	100	229	Peak
5406.87	54.05	45.33	74	-19.95	34.32	8.44	34.04	100	229	Peak
5459.12	42.77	33.95	54	-11.23	34.36	8.51	34.05	100	229	Average
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5018.75	54	45.99	74	-20	34.01	7.97	33.97	184	236	Peak
5147.3	42.57	34.32	54	-11.43	34.12	8.13	34	184	236	Average
5220	93.75	85.36			34.17	8.22	34	184	236	Average
5220	100.81	92.42			34.17	8.22	34	184	236	Peak
5407.09	53.13	44.41	74	-20.87	34.32	8.44	34.04	184	235	Peak
5441.19	42.57	33.78	54	-11.43	34.35	8.48	34.04	184	235	Average

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5240	93.83	85.39			34.19	8.26	34.01	100	230	Average
5240	101.16	92.72			34.19	8.26	34.01	100	230	Peak
5372.22	53.48	44.81	74	-20.52	34.29	8.41	34.03	100	230	Peak
5450.21	42.57	33.75	54	-11.43	34.36	8.51	34.05	100	230	Average
10480	46.91	32.4	54	-7.09	37.19	12.53	35.21	154	104	Average
10480	56.73	42.22	74	-17.27	37.19	12.53	35.21	154	104	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5240	93.46	85.02			34.19	8.26	34.01	200	235	Average
5240	100.96	92.52			34.19	8.26	34.01	200	235	Peak
5405.22	52.98	44.26	74	-21.02	34.32	8.44	34.04	200	235	Peak
5439.1	42.56	33.77	54	-11.44	34.35	8.48	34.04	200	235	Average
10480	46.5	31.99	54	-7.5	37.19	12.53	35.21	172	341	Average
10480	56.24	41.73	74	-17.76	37.19	12.53	35.21	172	341	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5240 MHz: Fundamental Frequency
3. 10480 MHz: 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)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5056.1	53.5	45.4	74	-20.5	34.05	8.03	33.98	113	230	Peak
5110.85	42.55	34.35	54	-11.45	34.09	8.1	33.99	113	230	Average
5260	93.47	85.01			34.21	8.26	34.01	113	230	Average
5260	100.89	92.43			34.21	8.26	34.01	113	230	Peak
10520	46.07	31.48	54	-7.93	37.21	12.61	35.23	104	154	Average
10520	57.72	43.13	74	-16.28	37.21	12.61	35.23	104	154	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5102.3	53.33	45.17	74	-20.67	34.08	8.07	33.99	135	229	Peak
5142.35	42.41	34.15	54	-11.59	34.12	8.13	33.99	135	229	Average
5260	94.27	85.81			34.21	8.26	34.01	135	229	Average
5260	101.22	92.76			34.21	8.26	34.01	135	229	Peak
10520	46.15	31.56	54	-7.85	37.21	12.61	35.23	137	334	Average
10520	56.39	41.8	74	-17.61	37.21	12.61	35.23	137	334	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5260 MHz: Fundamental Frequency
3. 10520 MHz: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5100.5	53.27	45.11	74	-20.73	34.08	8.07	33.99	113	230	Peak
5147.6	42.48	34.23	54	-11.52	34.12	8.13	34	113	230	Average
5300	93.71	85.17			34.24	8.32	34.02	113	230	Average
5300	100.8	92.26			34.24	8.32	34.02	113	230	Peak
5350.22	42.96	34.33	54	-11.04	34.28	8.38	34.03	113	230	Average
5449.88	53.39	44.57	74	-20.61	34.36	8.51	34.05	113	230	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5083.55	52.79	44.63	74	-21.21	34.07	8.07	33.98	135	229	Peak
5122.55	42.47	34.25	54	-11.53	34.11	8.1	33.99	135	229	Average
5300	94.31	85.77			34.24	8.32	34.02	135	229	Average
5300	101.09	92.55			34.24	8.32	34.02	135	229	Peak
5351.21	43.05	34.42	54	-10.95	34.28	8.38	34.03	135	229	Average
5359.57	54.52	45.89	74	-19.48	34.28	8.38	34.03	135	229	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5320	93.45	84.87			34.25	8.35	34.02	113	230	Average
5320	100.21	91.63			34.25	8.35	34.02	113	230	Peak
5351.1	54.78	46.15	74	-19.22	34.28	8.38	34.03	113	230	Peak
5352.09	43.42	34.79	54	-10.58	34.28	8.38	34.03	113	230	Average
10640	46.4	31.67	54	-7.6	37.31	12.71	35.29	143	264	Average
10640	56.66	41.93	74	-17.34	37.31	12.71	35.29	143	264	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5320	94.71	86.13			34.25	8.35	34.02	100	229	Average
5320	101.65	93.07			34.25	8.35	34.02	100	229	Peak
5350.22	43.9	35.27	54	-10.1	34.28	8.38	34.03	100	229	Average
5351.65	55.21	46.58	74	-18.79	34.28	8.38	34.03	100	229	Peak
10640	46.27	31.54	54	-7.73	37.31	12.71	35.29	110	310	Average
10640	56.71	41.98	74	-17.29	37.31	12.71	35.29	110	310	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5456.72	54.46	45.64	74	-19.54	34.36	8.51	34.05	297	216	Peak
5459.12	45.3	36.48	54	-8.7	34.36	8.51	34.05	297	216	Average
*5468.56	54.7	45.87	74	-19.3	34.37	8.51	34.05	297	216	Peak
*5470.48	45.12	36.29	54	-8.88	34.37	8.51	34.05	297	216	Average
5500	92.15	83.23			34.4	8.57	34.05	297	216	Average
5500	99.49	90.57			34.4	8.57	34.05	297	216	Peak
11000	47.03	31.95	54	-6.97	37.6	12.96	35.48	132	350	Average
11000	55.75	40.67	74	-18.25	37.6	12.96	35.48	132	350	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5456.4	54.81	45.99	74	-19.19	34.36	8.51	34.05	111	250	Peak
5459.12	44.84	36.02	54	-9.16	34.36	8.51	34.05	111	250	Average
*5470.32	45.57	36.74	54	-8.43	34.37	8.51	34.05	111	250	Average
*5470.8	56.69	47.83	74	-17.31	34.37	8.54	34.05	111	250	Peak
5500	91.33	82.41			34.4	8.57	34.05	111	250	Average
5500	98.37	89.45			34.4	8.57	34.05	111	250	Peak
11000	47.08	32	54	-6.92	37.6	12.96	35.48	140	345	Average
11000	55.97	40.89	74	-18.03	37.6	12.96	35.48	140	345	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5355.12	53.38	44.75	74	-20.62	34.28	8.38	34.03	297	216	Peak
5440.88	42.67	33.88	54	-11.33	34.35	8.48	34.04	297	216	Average
*5469.2	42.65	33.82	54	-11.35	34.37	8.51	34.05	297	216	Average
*5469.84	52.65	43.82	74	-21.35	34.37	8.51	34.05	297	216	Peak
5580	92.57	83.58			34.47	8.6	34.08	297	216	Average
5580	99.85	90.86			34.47	8.6	34.08	297	216	Peak
*5724.04	43.04	33.88	54	-10.96	34.62	8.65	34.11	297	216	Average
*5724.2	52.4	43.24	74	-21.6	34.62	8.65	34.11	297	216	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5415.76	53.17	44.44	74	-20.83	34.33	8.44	34.04	111	250	Peak
5450.8	42.5	33.68	54	-11.5	34.36	8.51	34.05	111	250	Average
*5468.4	42.52	33.69	54	-11.48	34.37	8.51	34.05	111	250	Average
*5469.04	52.75	43.92	74	-21.25	34.37	8.51	34.05	111	250	Peak
5580	91.75	82.76			34.47	8.6	34.08	111	250	Average
5580	98.43	89.44			34.47	8.6	34.08	111	250	Peak
*5724.04	52.94	43.78	74	-21.06	34.62	8.65	34.11	111	250	Peak
*5724.2	42.86	33.7	54	-11.14	34.62	8.65	34.11	111	250	Average

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5700	90.34	81.21			34.59	8.64	34.1	207	187	Average
5700	97.84	88.71			34.59	8.64	34.1	207	187	Peak
*5724.96	44.84	35.68	54	-9.16	34.62	8.65	34.11	207	187	Average
*5725.16	58.43	49.27	74	-15.57	34.62	8.65	34.11	207	187	Peak
11400	46.32	31.22	54	-7.68	37.84	12.67	35.41	128	229	Average
11400	57.84	42.74	74	-16.16	37.84	12.67	35.41	128	229	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5700	93.28	84.15			34.59	8.64	34.1	128	12	Average
5700	100.12	90.99			34.59	8.64	34.1	128	12	Peak
*5724.36	47.82	38.66	54	-6.18	34.62	8.65	34.11	177	360	Average
*5725.31	62.89	53.73	74	-11.11	34.62	8.65	34.11	128	12	Peak
11400	46.29	31.19	54	-7.71	37.84	12.67	35.41	175	241	Average
11400	57.07	41.97	74	-16.93	37.84	12.67	35.41	175	241	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5700 MHz: Fundamental Frequency
3. *: Out of Restricted Band

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**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5708	46.01	36.86	54	-7.99	34.61	8.65	34.11	292	202	Average
*5708	60.06	50.91	74	-13.94	34.61	8.65	34.11	292	202	Peak
*5724	68.01	58.85	78.2	-10.19	34.62	8.65	34.11	292	202	Peak
5745	91.31	82.12			34.64	8.66	34.11	292	202	Average
5745	98.91	89.72			34.64	8.66	34.11	292	202	Peak
*5856	57.26	47.94	78.2	-20.94	34.76	8.7	34.14	292	202	Peak
*5870	43.38	34.05	54	-10.62	34.76	8.71	34.14	292	202	Average
*5870	57.93	48.6	74	-16.07	34.76	8.71	34.14	292	202	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5708	46.93	37.78	54	-7.07	34.61	8.65	34.11	202	355	Average
*5708	59.39	50.24	74	-14.61	34.61	8.65	34.11	202	355	Peak
*5724	72.23	63.07	78.2	-5.97	34.62	8.65	34.11	202	355	Peak
5745	94.1	84.91			34.64	8.66	34.11	202	355	Average
5745	100.59	91.4			34.64	8.66	34.11	202	355	Peak
*5858	57.11	47.79	78.2	-21.09	34.76	8.7	34.14	202	355	Peak
*5866	43.32	33.99	54	-10.68	34.76	8.71	34.14	202	355	Average
*5866	58	48.67	74	-16	34.76	8.71	34.14	202	355	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5745 MHz: Fundamental Frequency
3. *: 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**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5708	43.45	34.3	54	-10.55	34.61	8.65	34.11	276	200	Average
*5708	57.64	48.49	74	-16.36	34.61	8.65	34.11	276	200	Peak
*5724	58.37	49.21	78.2	-19.83	34.62	8.65	34.11	276	200	Peak
5785	91.61	82.38			34.68	8.68	34.13	276	200	Average
5785	98.74	89.51			34.68	8.68	34.13	276	200	Peak
*5858	57.97	48.65	78.2	-20.23	34.76	8.7	34.14	276	200	Peak
*5870	43.99	34.66	54	-10.01	34.76	8.71	34.14	276	200	Average
*5870	57.72	48.39	74	-16.28	34.76	8.71	34.14	276	200	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5712	43.6	34.45	54	-10.4	34.61	8.65	34.11	190	355	Average
*5712	57.65	48.5	74	-16.35	34.61	8.65	34.11	190	355	Peak
*5722	58.21	49.05	78.2	-19.99	34.62	8.65	34.11	190	355	Peak
5785	93.8	84.57			34.68	8.68	34.13	190	355	Average
5785	103.2	93.97			34.68	8.68	34.13	190	355	Peak
*5860	59.5	50.18	78.2	-18.7	34.76	8.7	34.14	190	355	Peak
*5866	44.25	34.92	54	-9.75	34.76	8.71	34.14	190	355	Average
*5866	57.99	48.66	74	-16.01	34.76	8.71	34.14	190	355	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5785 MHz: Fundamental Frequency
3. *: 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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5706	43.3	34.15	54	-10.7	34.61	8.65	34.11	264	200	Average
*5706	58.96	49.81	74	-15.04	34.61	8.65	34.11	264	200	Peak
*5718	58.3	49.14	78.2	-19.9	34.62	8.65	34.11	264	200	Peak
5825	91.57	82.28			34.73	8.69	34.13	264	200	Average
5825	98.8	89.51			34.73	8.69	34.13	264	200	Peak
*5854	58.34	49.02	78.2	-19.86	34.76	8.7	34.14	264	200	Peak
*5870	44.14	34.81	54	-9.86	34.76	8.71	34.14	264	200	Average
*5870	58.25	48.92	74	-15.75	34.76	8.71	34.14	264	200	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5710	43.08	33.93	54	-10.92	34.61	8.65	34.11	214	355	Average
*5710	56.68	47.53	74	-17.32	34.61	8.65	34.11	214	355	Peak
*5722	56.59	47.43	78.2	-21.61	34.62	8.65	34.11	214	355	Peak
5825	93.81	84.52			34.73	8.69	34.13	214	355	Average
5825	100.73	91.44			34.73	8.69	34.13	214	355	Peak
*5852	58.07	48.77	78.2	-20.13	34.74	8.7	34.14	214	355	Peak
*5862	44.72	35.39	54	-9.28	34.76	8.71	34.14	214	355	Average
*5862	57.9	48.57	74	-16.1	34.76	8.71	34.14	214	355	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5825 MHz: Fundamental Frequency
3. *: Out of Restricted Band

802.11n (HT20)

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5146.55	43.63	35.38	54	-10.37	34.12	8.13	34	101	229	Average
5147.75	54.49	46.24	74	-19.51	34.12	8.13	34	101	229	Peak
5180	92.7	84.39			34.15	8.16	34	101	229	Average
5180	99.23	90.92			34.15	8.16	34	101	229	Peak
10360	46.44	32.14	54	-7.56	37.12	12.3	35.12	155	178	Average
10360	55.18	40.88	74	-18.82	37.12	12.3	35.12	155	178	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5144.15	56.69	48.44	74	-17.31	34.12	8.13	34	103	246	Peak
5150	44.36	36.11	54	-9.64	34.12	8.13	34	103	246	Average
5180	92.74	84.43			34.15	8.16	34	103	246	Average
5180	99.13	90.82			34.15	8.16	34	103	246	Peak
10360	46.63	32.33	54	-7.37	37.12	12.3	35.12	118	141	Average
10360	54.79	40.49	74	-19.21	37.12	12.3	35.12	118	141	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5180 MHz: Fundamental Frequency
3. 10360 MHz: 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**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5059.85	52.89	44.79	74	-21.11	34.05	8.03	33.98	100	229	Peak
5147.45	42.72	34.47	54	-11.28	34.12	8.13	34	100	229	Average
5220	92.76	84.37			34.17	8.22	34	100	229	Average
5220	99.46	91.07			34.17	8.22	34	100	229	Peak
5363.64	52.99	44.35	74	-21.01	34.29	8.38	34.03	100	229	Peak
5419.08	42.72	33.95	54	-11.28	34.33	8.48	34.04	100	229	Average
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5101.25	53.52	45.36	74	-20.48	34.08	8.07	33.99	184	235	Peak
5149.4	42.61	34.36	54	-11.39	34.12	8.13	34	184	235	Average
5220	92.64	84.25			34.17	8.22	34	184	235	Average
5220	100.21	91.82			34.17	8.22	34	184	235	Peak
5450.65	42.51	33.69	54	-11.49	34.36	8.51	34.05	184	235	Average
5454.5	54.25	45.43	74	-19.75	34.36	8.51	34.05	184	235	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5240	93.03	84.59			34.19	8.26	34.01	100	230	Average
5240	100.78	92.34			34.19	8.26	34.01	100	230	Peak
5380.25	53.71	45.03	74	-20.29	34.31	8.41	34.04	100	230	Peak
5451.42	42.63	33.81	54	-11.37	34.36	8.51	34.05	100	230	Average
10480	46.76	32.25	54	-7.24	37.19	12.53	35.21	151	25	Average
10480	56.05	41.54	74	-17.95	37.19	12.53	35.21	151	25	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5240	92.69	84.25			34.19	8.26	34.01	200	235	Average
5240	100.62	92.18			34.19	8.26	34.01	200	235	Peak
5369.36	42.61	33.94	54	-11.39	34.29	8.41	34.03	200	235	Average
5450.21	53.69	44.87	74	-20.31	34.36	8.51	34.05	200	235	Peak
10480	46.62	32.11	54	-7.38	37.19	12.53	35.21	155	262	Average
10480	55.26	40.75	74	-18.74	37.19	12.53	35.21	155	262	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5240 MHz: Fundamental Frequency
3. 10480 MHz: 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)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5130.5	42.37	34.15	54	-11.63	34.11	8.1	33.99	113	230	Average
5147.45	52.81	44.56	74	-21.19	34.12	8.13	34	113	230	Peak
5260	92.12	83.66			34.21	8.26	34.01	113	230	Average
5260	99.14	90.68			34.21	8.26	34.01	113	230	Peak
10520	45.63	31.04	54	-8.37	37.21	12.61	35.23	114	322	Average
10520	57.49	42.9	74	-16.51	37.21	12.61	35.23	114	322	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5111.3	42.48	34.28	54	-11.52	34.09	8.1	33.99	135	229	Average
5120.15	52.98	44.78	74	-21.02	34.09	8.1	33.99	135	229	Peak
5260	93.25	84.79			34.21	8.26	34.01	135	229	Average
5260	100.76	92.3			34.21	8.26	34.01	135	229	Peak
10520	46	31.41	54	-8	37.21	12.61	35.23	155	277	Average
10520	55.1	40.51	74	-18.9	37.21	12.61	35.23	155	277	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5260 MHz: Fundamental Frequency
3. 10520 MHz: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5119.85	42.35	34.15	54	-11.65	34.09	8.1	33.99	113	230	Average
5141.6	53.64	45.38	74	-20.36	34.12	8.13	33.99	113	230	Peak
5300	92.86	84.32			34.24	8.32	34.02	113	230	Average
5300	99.2	90.66			34.24	8.32	34.02	113	230	Peak
5353.08	42.94	34.31	54	-11.06	34.28	8.38	34.03	113	230	Average
5372.44	53.6	44.93	74	-20.4	34.29	8.41	34.03	113	230	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5117.45	53.26	45.06	74	-20.74	34.09	8.1	33.99	135	229	Peak
5132	42.46	34.24	54	-11.54	34.11	8.1	33.99	135	229	Average
5300	93.61	85.07			34.24	8.32	34.02	135	229	Average
5300	100.49	91.95			34.24	8.32	34.02	135	229	Peak
5354.18	42.91	34.28	54	-11.09	34.28	8.38	34.03	135	229	Average
5419.19	53.3	44.53	74	-20.7	34.33	8.48	34.04	135	229	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5320	88.63	80.05			34.25	8.35	34.02	148	26	Average
5320	95.06	86.48			34.25	8.35	34.02	148	26	Peak
5382.76	54.03	45.35	74	-19.97	34.31	8.41	34.04	148	26	Peak
5403.74	42.89	34.17	54	-11.11	34.32	8.44	34.04	148	26	Average
10640	45.97	31.24	54	-8.03	37.31	12.71	35.29	124	63	Average
10640	56.57	41.84	74	-17.43	37.31	12.71	35.29	124	63	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5320	92.53	83.95			34.25	8.35	34.02	114	206	Average
5320	99.26	90.68			34.25	8.35	34.02	114	206	Peak
5352.17	43.71	35.08	54	-10.29	34.28	8.38	34.03	114	206	Average
5368.14	55.74	47.07	74	-18.26	34.29	8.41	34.03	114	206	Peak
10640	46.13	31.4	54	-7.87	37.31	12.71	35.29	109	264	Average
10640	57.29	42.56	74	-16.71	37.31	12.71	35.29	109	264	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5458.96	43.51	34.69	54	-10.49	34.36	8.51	34.05	297	216	Average
5459.44	54.35	45.53	74	-19.65	34.36	8.51	34.05	297	216	Peak
*5468.08	53.29	44.46	74	-20.71	34.37	8.51	34.05	297	216	Peak
*5468.24	43.51	34.68	54	-10.49	34.37	8.51	34.05	297	216	Average
5500	91.82	82.9			34.4	8.57	34.05	297	216	Average
5500	98.35	89.43			34.4	8.57	34.05	297	216	Peak
11000	46.78	31.7	54	-7.22	37.6	12.96	35.48	129	6	Average
11000	57.24	42.16	74	-16.76	37.6	12.96	35.48	129	6	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5448.88	53.71	44.88	74	-20.29	34.36	8.51	34.04	111	250	Peak
5458.96	43.44	34.62	54	-10.56	34.36	8.51	34.05	111	250	Average
*5468.4	43.54	34.71	54	-10.46	34.37	8.51	34.05	111	250	Average
*5469.36	56.24	47.41	74	-17.76	34.37	8.51	34.05	111	250	Peak
5500	90.76	81.84			34.4	8.57	34.05	111	250	Average
5500	97.91	88.99			34.4	8.57	34.05	111	250	Peak
11000	46.74	31.66	54	-7.26	37.6	12.96	35.48	132	10	Average
11000	57.21	42.13	74	-16.79	37.6	12.96	35.48	132	10	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5455.6	53.87	45.05	74	-20.13	34.36	8.51	34.05	297	216	Peak
5458.48	42.68	33.86	54	-11.32	34.36	8.51	34.05	297	216	Average
*5468.72	42.68	33.85	54	-11.32	34.37	8.51	34.05	297	216	Average
*5470.16	51.92	43.09	74	-22.08	34.37	8.51	34.05	297	216	Peak
5580	91.54	82.55			34.47	8.6	34.08	297	216	Average
5580	98.44	89.45			34.47	8.6	34.08	297	216	Peak
*5724.12	52.1	42.94	74	-21.9	34.62	8.65	34.11	297	216	Peak
*5725.32	42.91	33.75	54	-11.09	34.62	8.65	34.11	297	216	Average
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5434.48	53.26	44.47	74	-20.74	34.35	8.48	34.04	111	250	Peak
5456.72	42.63	33.81	54	-11.37	34.36	8.51	34.05	111	250	Average
*5468.56	51.66	42.83	74	-22.34	34.37	8.51	34.05	111	250	Peak
*5468.88	42.51	33.68	54	-11.49	34.37	8.51	34.05	111	250	Average
5580	90.43	81.44			34.47	8.6	34.08	111	250	Average
5580	97.16	88.17			34.47	8.6	34.08	111	250	Peak
*5725.4	52.2	43.04	74	-21.8	34.62	8.65	34.11	111	250	Peak
*5725.96	42.88	33.72	54	-11.12	34.62	8.65	34.11	111	250	Average

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5700	92.59	83.46			34.59	8.64	34.1	297	216	Average
5700	99.78	90.65			34.59	8.64	34.1	297	216	Peak
*5724.44	47.93	38.77	54	-6.07	34.62	8.65	34.11	297	216	Average
*5725.72	59.64	50.48	74	-14.36	34.62	8.65	34.11	297	216	Peak
11400	46.25	31.15	54	-7.75	37.84	12.67	35.41	100	355	Average
11400	56.54	41.44	74	-17.46	37.84	12.67	35.41	100	355	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5700	91.89	82.76			34.59	8.64	34.1	111	250	Average
5700	98.07	88.94			34.59	8.64	34.1	111	250	Peak
*5724.04	47.08	37.92	54	-6.92	34.62	8.65	34.11	111	250	Average
*5724.44	61.42	52.26	74	-12.58	34.62	8.65	34.11	111	250	Peak
11400	46.66	31.56	54	-7.34	37.84	12.67	35.41	103	304	Average
11400	56.7	41.6	74	-17.3	37.84	12.67	35.41	103	304	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5700 MHz: Fundamental Frequency
3. *: Out of Restricted Band

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**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5706	44.2	35.05	54	-9.8	34.61	8.65	34.11	292	202	Average
*5706	58.5	49.35	74	-15.5	34.61	8.65	34.11	292	202	Peak
*5724	67.07	57.91	78.2	-11.13	34.62	8.65	34.11	292	202	Peak
5745	90.42	81.23			34.64	8.66	34.11	292	202	Average
5745	98.61	89.42			34.64	8.66	34.11	292	202	Peak
*5854	57.57	48.25	78.2	-20.63	34.76	8.7	34.14	292	202	Peak
*5868	43.42	34.09	54	-10.58	34.76	8.71	34.14	292	202	Average
*5868	58.55	49.22	74	-15.45	34.76	8.71	34.14	292	202	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5714	45.24	36.09	54	-8.76	34.61	8.65	34.11	202	355	Average
*5714	60.26	51.11	74	-13.74	34.61	8.65	34.11	202	355	Peak
*5724	70.99	61.83	78.2	-7.21	34.62	8.65	34.11	202	355	Peak
5745	93.21	84.02			34.64	8.66	34.11	202	355	Average
5745	101.32	92.13			34.64	8.66	34.11	202	355	Peak
*5858	57.21	47.89	78.2	-20.99	34.76	8.7	34.14	202	355	Peak
*5864	43.75	34.42	54	-10.25	34.76	8.71	34.14	202	355	Average
*5864	57.92	48.59	74	-16.08	34.76	8.71	34.14	202	355	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5745 MHz: Fundamental Frequency
3. *: 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**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5706	43.35	34.2	54	-10.65	34.61	8.65	34.11	276	200	Average
*5706	58.11	48.96	74	-15.89	34.61	8.65	34.11	276	200	Peak
*5716	56.82	47.67	78.2	-21.38	34.61	8.65	34.11	276	200	Peak
5785	90.61	81.38			34.68	8.68	34.13	276	200	Average
5785	96.85	87.62			34.68	8.68	34.13	276	200	Peak
*5858	56.54	47.22	78.2	-21.66	34.76	8.7	34.14	276	200	Peak
*5862	43.9	34.57	54	-10.1	34.76	8.71	34.14	276	200	Average
*5862	58.05	48.72	74	-15.95	34.76	8.71	34.14	276	200	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5714	43.37	34.22	54	-10.63	34.61	8.65	34.11	190	355	Average
*5714	57.73	48.58	74	-16.27	34.61	8.65	34.11	190	355	Peak
*5716	57.65	48.5	78.2	-20.55	34.61	8.65	34.11	190	355	Peak
5785	92.87	83.64			34.68	8.68	34.13	190	355	Average
5785	99.58	90.35			34.68	8.68	34.13	190	355	Peak
*5854	57.86	48.54	78.2	-20.34	34.76	8.7	34.14	190	355	Peak
*5868	44.16	34.83	54	-9.84	34.76	8.71	34.14	190	355	Average
*5868	57.37	48.04	74	-16.63	34.76	8.71	34.14	190	355	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5785 MHz: Fundamental Frequency
3. *: 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**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5706	42.78	33.63	54	-11.22	34.61	8.65	34.11	264	200	Average
*5706	55.96	46.81	74	-18.04	34.61	8.65	34.11	264	200	Peak
*5716	56.8	47.65	78.2	-21.4	34.61	8.65	34.11	264	200	Peak
5825	90.65	81.36			34.73	8.69	34.13	264	200	Average
5825	97.33	88.04			34.73	8.69	34.13	264	200	Peak
*5854	57.4	48.08	78.2	-20.8	34.76	8.7	34.14	264	200	Peak
*5870	44.05	34.72	54	-9.95	34.76	8.71	34.14	264	200	Average
*5870	56.65	47.32	74	-17.35	34.76	8.71	34.14	264	200	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5708	43.21	34.06	54	-10.79	34.61	8.65	34.11	214	355	Average
*5708	58.53	49.38	74	-15.47	34.61	8.65	34.11	214	355	Peak
*5722	57.46	48.3	78.2	-20.74	34.62	8.65	34.11	214	355	Peak
5825	92.84	83.55			34.73	8.69	34.13	214	355	Average
5825	100.17	90.88			34.73	8.69	34.13	214	355	Peak
*5852	60.94	51.64	78.2	-17.26	34.74	8.7	34.14	214	355	Peak
*5868	43.28	33.95	54	-10.72	34.76	8.71	34.14	214	355	Average
*5868	58.28	48.95	74	-15.72	34.76	8.71	34.14	214	355	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5825 MHz: Fundamental Frequency
3. *: 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)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5106.37	54.71	46.54	74	-19.29	34.09	8.07	33.99	112	207	Peak
5147.26	46.13	37.88	54	-7.87	34.12	8.13	34	112	207	Average
5190	89.72	81.38			34.15	8.19	34	112	207	Average
5190	95.94	87.6			34.15	8.19	34	112	207	Peak
5398.41	42.96	34.24	54	-11.04	34.32	8.44	34.04	112	207	Average
5443.82	54.18	45.39	74	-19.82	34.35	8.48	34.04	112	207	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5139.45	55.1	46.85	74	-18.9	34.11	8.13	33.99	175	344	Peak
5143.28	46.47	38.21	54	-7.53	34.12	8.13	33.99	175	344	Average
5190	88.52	80.18			34.15	8.19	34	175	344	Average
5190	95.41	87.07			34.15	8.19	34	175	344	Peak
5382.87	42.86	34.18	54	-11.14	34.31	8.41	34.04	175	344	Average
5394.26	53.69	44.98	74	-20.31	34.31	8.44	34.04	175	344	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5125.7	53.44	45.22	74	-20.56	34.11	8.1	33.99	100	230	Peak
5145.35	43.61	35.36	54	-10.39	34.12	8.13	34	100	230	Average
5230	90.96	82.56			34.19	8.22	34.01	100	230	Average
5230	97.19	88.79			34.19	8.22	34.01	100	230	Peak
5396.86	53.16	44.44	74	-20.84	34.32	8.44	34.04	100	230	Peak
5446.03	43.84	35.01	54	-10.16	34.36	8.51	34.04	100	230	Average
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5033.45	53.35	45.29	74	-20.65	34.03	8	33.97	200	235	Peak
5144.6	43.8	35.55	54	-10.2	34.12	8.13	34	200	235	Average
5230	89.68	81.28			34.19	8.22	34.01	200	235	Average
5230	96.78	88.38			34.19	8.22	34.01	200	235	Peak
5374.31	53.88	45.22	74	-20.12	34.29	8.41	34.04	200	235	Peak
5426.89	43.73	34.96	54	-10.27	34.33	8.48	34.04	200	235	Average

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5145.95	42.49	34.24	54	-11.51	34.12	8.13	34	113	230	Average
5146.25	54.13	45.88	74	-19.87	34.12	8.13	34	113	230	Peak
5270	89.86	81.37			34.21	8.29	34.01	113	230	Average
5270	96.92	88.43			34.21	8.29	34.01	113	230	Peak
5350.11	43.28	34.65	54	-10.72	34.28	8.38	34.03	113	230	Average
5352.09	53.67	45.04	74	-20.33	34.28	8.38	34.03	113	230	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5078.45	42.42	34.3	54	-11.58	34.07	8.03	33.98	135	229	Average
5121.35	54.37	46.17	74	-19.63	34.09	8.1	33.99	135	229	Peak
5270	90.2	81.71			34.21	8.29	34.01	135	229	Average
5270	97.57	89.08			34.21	8.29	34.01	135	229	Peak
5365.29	43.1	34.46	54	-10.9	34.29	8.38	34.03	135	229	Average
5446.58	53.07	44.24	74	-20.93	34.36	8.51	34.04	135	229	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5094.05	53.09	44.93	74	-20.91	34.08	8.07	33.99	113	230	Peak
5132.75	42.37	34.15	54	-11.63	34.11	8.1	33.99	113	230	Average
5310	89.4	80.85			34.25	8.32	34.02	113	230	Average
5310	96.5	87.95			34.25	8.32	34.02	113	230	Peak
5350.22	43.73	35.1	54	-10.27	34.28	8.38	34.03	113	230	Average
5361.44	54.13	45.49	74	-19.87	34.29	8.38	34.03	113	230	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5055.65	53.66	45.56	74	-20.34	34.05	8.03	33.98	135	229	Peak
5132.45	42.43	34.21	54	-11.57	34.11	8.1	33.99	135	229	Average
5310	90.06	81.51			34.25	8.32	34.02	135	229	Average
5310	97.82	89.27			34.25	8.32	34.02	135	229	Peak
5350.44	43.76	35.13	54	-10.24	34.28	8.38	34.03	135	229	Average
5375.3	53.81	45.15	74	-20.19	34.29	8.41	34.04	135	229	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5445.04	45.02	36.2	54	-8.98	34.35	8.51	34.04	297	216	Average
5460	56.3	47.48	74	-17.7	34.36	8.51	34.05	297	216	Peak
*5470.16	45.82	36.99	54	-8.18	34.37	8.51	34.05	297	216	Average
*5470.96	55.51	46.65	74	-18.49	34.37	8.54	34.05	297	216	Peak
5510	88.33	79.42			34.4	8.57	34.06	297	216	Average
5510	95.23	86.32			34.4	8.57	34.06	297	216	Peak
*5724.2	52.27	43.11	74	-21.73	34.62	8.65	34.11	297	216	Peak
*5725.56	42.87	33.71	54	-11.13	34.62	8.65	34.11	297	216	Average
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5455.92	54.51	45.69	74	-19.49	34.36	8.51	34.05	111	250	Peak
5458	43.41	34.59	54	-10.59	34.36	8.51	34.05	111	250	Average
*5469.52	55.85	47.02	74	-18.15	34.37	8.51	34.05	111	250	Peak
*5470.96	44.04	35.18	54	-9.96	34.37	8.54	34.05	111	250	Average
5510	87.47	78.56			34.4	8.57	34.06	111	250	Average
5510	94.36	85.45			34.4	8.57	34.06	111	250	Peak
*5725.64	42.78	33.62	54	-11.22	34.62	8.65	34.11	111	250	Average
*5725.72	52.27	43.11	74	-21.73	34.62	8.65	34.11	111	250	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5510 MHz: Fundamental Frequency
3. *: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5451.28	42.97	34.15	54	-11.03	34.36	8.51	34.05	297	216	Average
5458.8	53.95	45.13	74	-20.05	34.36	8.51	34.05	297	216	Peak
*5469.2	43.17	34.34	54	-10.83	34.37	8.51	34.05	297	216	Average
*5470	53.42	44.59	74	-20.58	34.37	8.51	34.05	297	216	Peak
5550	88.99	80.02			34.45	8.59	34.07	297	216	Average
5550	95.78	86.81			34.45	8.59	34.07	297	216	Peak
*5723.96	43.22	34.06	54	-10.78	34.62	8.65	34.11	297	216	Average
*5723.96	52.69	43.53	74	-21.31	34.62	8.65	34.11	297	216	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5443.76	53.3	44.51	74	-20.7	34.35	8.48	34.04	111	250	Peak
5459.92	42.93	34.11	54	-11.07	34.36	8.51	34.05	111	250	Average
*5469.68	43.3	34.47	54	-10.7	34.37	8.51	34.05	111	250	Average
*5469.68	53.04	44.21	74	-20.96	34.37	8.51	34.05	111	250	Peak
5550	87.58	78.61			34.45	8.59	34.07	111	250	Average
5550	94.59	85.62			34.45	8.59	34.07	111	250	Peak
*5723.96	52.71	43.55	74	-21.29	34.62	8.65	34.11	111	250	Peak
*5725.48	42.96	33.8	54	-11.04	34.62	8.65	34.11	111	250	Average

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5550 MHz: Fundamental Frequency
3. 5470 MHz & 5725 MHz: 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)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5439.6	54.44	45.65	74	-19.56	34.35	8.48	34.04	297	216	Peak
5451.76	42.68	33.86	54	-11.32	34.36	8.51	34.05	297	216	Average
*5468.24	42.46	33.63	54	-11.54	34.37	8.51	34.05	297	216	Average
*5469.2	53.12	44.29	74	-20.88	34.37	8.51	34.05	297	216	Peak
5670	89.08	79.98			34.57	8.63	34.1	297	216	Average
5670	96.52	87.42			34.57	8.63	34.1	297	216	Peak
*5725.56	54.4	45.24	74	-19.6	34.62	8.65	34.11	297	216	Peak
*5725.88	43.64	34.48	54	-10.36	34.62	8.65	34.11	297	216	Average
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
5367.76	53.08	44.41	74	-20.92	34.29	8.41	34.03	111	250	Peak
5454	42.53	33.71	54	-11.47	34.36	8.51	34.05	111	250	Average
*5469.36	42.65	33.82	54	-11.35	34.37	8.51	34.05	111	250	Average
*5470.32	52.23	43.4	74	-21.77	34.37	8.51	34.05	111	250	Peak
5670	88.08	78.98			34.57	8.63	34.1	111	250	Average
5670	95.1	86			34.57	8.63	34.1	111	250	Peak
*5723.96	54.67	45.51	74	-19.33	34.62	8.65	34.11	111	250	Peak
*5724.04	43.92	34.76	54	-10.08	34.62	8.65	34.11	111	250	Average

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5670 MHz: Fundamental Frequency
3. *: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
***5713.8**	**48.84**	**39.69**	**54**	**-5.16**	**34.61**	**8.65**	**34.11**	**300**	**202**	**Average**
*5713.8	58.17	49.02	74	-15.83	34.61	8.65	34.11	300	202	Peak
*5724.44	64.96	55.8	78.2	-13.24	34.62	8.65	34.11	300	202	Peak
5755	89.77	80.56			34.66	8.66	34.11	300	202	Average
5755	96.65	87.44			34.66	8.66	34.11	300	202	Peak
*5854.96	54.68	45.36	78.2	-23.52	34.76	8.7	34.14	300	202	Peak
*5865.44	43.52	34.19	54	-10.48	34.76	8.71	34.14	300	202	Average
*5865.44	53.23	43.9	74	-20.77	34.76	8.71	34.14	300	202	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5713.96	48.22	39.07	54	-5.78	34.61	8.65	34.11	200	355	Average
*5713.96	58.17	49.02	74	-15.83	34.61	8.65	34.11	200	355	Peak
*5723.96	63.52	54.36	78.2	-14.68	34.62	8.65	34.11	200	355	Peak
5755	91.26	82.05			34.66	8.66	34.11	200	355	Average
5755	98.35	89.14			34.66	8.66	34.11	200	355	Peak
*5855.2	53.3	43.98	78.2	-24.9	34.76	8.7	34.14	200	355	Peak
*5864.08	43.53	34.2	54	-10.47	34.76	8.71	34.14	200	355	Average
*5864.08	52.84	43.51	74	-21.16	34.76	8.71	34.14	200	355	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5755 MHz: Fundamental Frequency
3. *: 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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5705	43.37	34.22	54	-10.63	34.61	8.65	34.11	300	202	Average
*5705	53.75	44.6	74	-20.25	34.61	8.65	34.11	300	202	Peak
*5722.12	52.94	43.78	78.2	-25.26	34.62	8.65	34.11	300	202	Peak
5795	89.7	80.46			34.69	8.68	34.13	300	202	Average
5795	96.46	87.22			34.69	8.68	34.13	300	202	Peak
*5853.12	54.06	44.76	78.2	-24.14	34.74	8.7	34.14	300	202	Peak
*5862.08	43.76	34.43	54	-10.24	34.76	8.71	34.14	300	202	Average
*5862.08	53.5	44.17	74	-20.5	34.76	8.71	34.14	300	202	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
*5713.64	43.34	34.19	54	-10.66	34.61	8.65	34.11	190	355	Average
*5713.64	53.71	44.56	74	-20.29	34.61	8.65	34.11	190	355	Peak
*5717.08	53.86	44.71	78.2	-24.34	34.61	8.65	34.11	190	355	Peak
5795	91.62	82.38			34.69	8.68	34.13	190	355	Average
5795	98	88.76			34.69	8.68	34.13	190	355	Peak
*5859.68	53.98	44.66	78.2	-24.22	34.76	8.7	34.14	190	355	Peak
*5869.68	43.87	34.54	54	-10.13	34.76	8.71	34.14	190	355	Average
*5869.68	54.04	44.71	74	-19.96	34.76	8.71	34.14	190	355	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5795 MHz: Fundamental Frequency
3. *: 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:

802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 38	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
97.77	24.86	46.23	43.5	-18.64	9.5	1.28	32.15	137	158	Peak
123.15	24.42	46.41	43.5	-19.08	8.87	1.38	32.24	164	287	Peak
193.89	8.1	28.19	43.5	-35.4	10.57	1.61	32.27	114	106	Peak
442.8	16.85	28.6	46	-29.15	17.92	2.49	32.16	114	134	Peak
694.1	22.64	28.48	46	-23.36	23.14	3.11	32.09	196	203	Peak
842.5	24.23	28.98	46	-21.77	23.7	3.38	31.83	145	127	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
54.03	22.83	46.77	40	-17.17	7.39	0.9	32.23	194	130	Peak
96.42	25.36	46.7	43.5	-18.14	9.42	1.28	32.04	186	142	Peak
150.42	13.5	34.09	43.5	-30	10.16	1.52	32.27	128	146	Peak
531.7	19.76	28.65	46	-26.24	20.57	2.7	32.16	114	125	Peak
682.9	23.31	29.1	46	-22.69	23.27	3.05	32.11	196	108	Peak
897.1	25.54	28.55	46	-20.46	25	3.49	31.5	143	117	Peak

Remarks:

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

802.11n (HT20)

EUT Test Condition		Measurement Detail	
Channel	Channel 64	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
51.87	20.86	44.6	40	-19.14	7.59	0.9	32.23	176	145	Peak
98.31	24.94	46.27	43.5	-18.56	9.54	1.28	32.15	193	106	Peak
120.45	25.08	47.32	43.5	-18.42	8.73	1.28	32.25	114	254	Peak
497.4	18.27	28.75	46	-27.73	18.99	2.63	32.1	194	115	Peak
663.3	22.6	28.99	46	-23.4	22.75	2.99	32.13	155	176	Peak
885.2	25.12	28.32	46	-20.88	24.88	3.49	31.57	103	269	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
39.72	25.33	45.4	40	-14.67	11.42	0.74	32.23	135	108	Peak
103.44	25.16	46.55	43.5	-18.34	9.59	1.28	32.26	145	112	Peak
146.91	14.71	35.61	43.5	-28.79	9.85	1.52	32.27	193	204	Peak
470.1	18.53	29.38	46	-27.47	18.72	2.56	32.13	136	142	Peak
601.7	20.44	28.66	46	-25.56	21.1	2.87	32.19	185	147	Peak
743.1	23.39	29.1	46	-22.61	23.27	3.16	32.14	164	129	Peak

Remarks:

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

802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 140	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
82.11	19.71	42.21	40	-20.29	8.5	1.11	32.11	182	126	Peak
98.58	24.25	45.6	43.5	-19.25	9.58	1.28	32.21	134	152	Peak
140.97	15.59	37.06	43.5	-27.91	9.42	1.38	32.27	182	225	Peak
453.3	17.39	28.95	46	-28.61	18.09	2.49	32.14	138	260	Peak
626.9	21.23	28.37	46	-24.77	22.1	2.93	32.17	133	108	Peak
823.6	22.96	28.01	46	-23.04	23.5	3.38	31.93	148	172	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
50.25	27.05	50.6	40	-12.95	7.77	0.9	32.22	165	110	Peak
104.52	26.2	47.62	43.5	-17.3	9.56	1.28	32.26	137	145	Peak
172.83	9.54	30.15	43.5	-33.96	10.11	1.52	32.24	192	251	Peak
441.4	16.38	28.16	46	-29.62	17.89	2.49	32.16	126	138	Peak
630.4	21.59	28.73	46	-24.41	22.1	2.93	32.17	192	207	Peak
790	23.27	28.02	46	-22.73	24.05	3.27	32.07	176	134	Peak

Remarks:

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

802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 149	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
97.5	25.64	47.01	43.5	-17.86	9.5	1.28	32.15	170	159	Peak
111.81	28.43	50.13	43.5	-15.07	9.27	1.28	32.25	111	1	Peak
131.25	21.5	43.13	43.5	-22	9.22	1.38	32.23	190	198	Peak
625.5	22.5	29.64	46	-23.5	22.1	2.93	32.17	150	205	Peak
713	23.86	29.58	46	-22.14	23.27	3.11	32.1	123	321	Peak
855.8	25.28	29.6	46	-20.72	24	3.44	31.76	101	88	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	**Emissino Level (dBuV/m)**	**Read Level (dBuV)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Factor (dB/m)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
45.66	33.61	55.68	40	-6.39	9.25	0.9	32.22	161	235	Peak
49.17	30.05	53.31	40	-9.95	8.06	0.9	32.22	180	300	Peak
118.56	23.35	45.53	43.5	-20.15	8.79	1.28	32.25	118	236	Peak
610.8	21.51	29.29	46	-24.49	21.53	2.87	32.18	164	11	Peak
763.4	24.39	29.94	46	-21.61	23.35	3.22	32.12	109	178	Peak
893.6	27.67	30.74	46	-18.33	24.96	3.49	31.52	133	315	Peak

Remarks:

1. 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. 16, 2015	Nov. 15, 2016
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 26, 2015	Dec. 25, 2016
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 26, 2016	Feb. 25, 2017
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

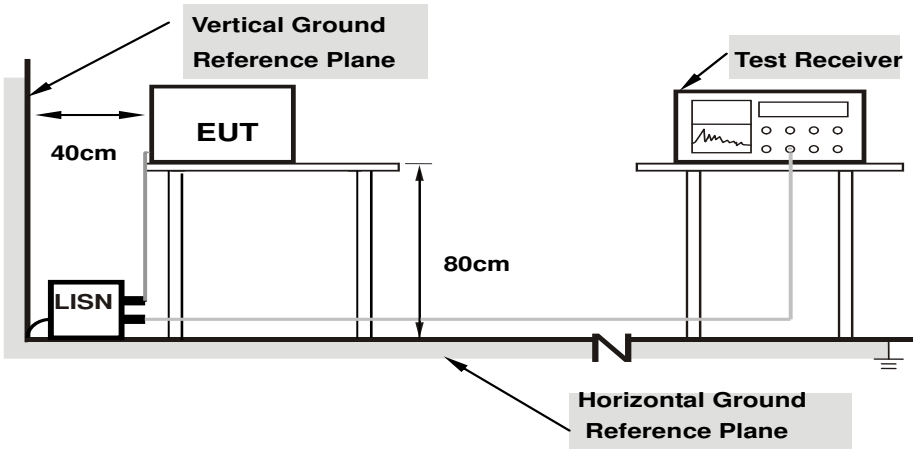
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

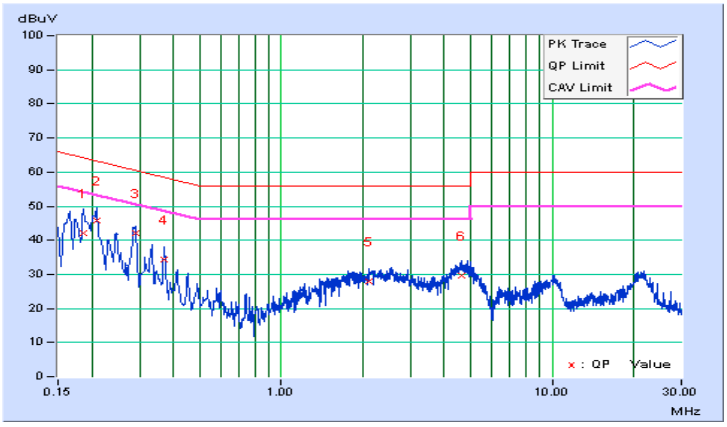
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Toby Tian	Test Date	2016/10/19

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	0.18519	10.03	32.00	22.50	42.03	32.53	64.25	54.25	-22.22	-21.72
2	0.20783	10.03	35.76	27.82	45.79	37.85	63.29	53.29	-17.50	-15.44
3	**0.28967**	**10.07**	**32.12**	**26.11**	**42.19**	**36.18**	**60.53**	**50.53**	**-18.34**	**-14.35**
4	0.36896	10.11	24.09	18.27	34.20	28.38	58.52	48.52	-24.32	-20.14
5	2.11673	10.28	17.50	11.20	27.78	21.48	56.00	46.00	-28.22	-24.52
6	4.60740	10.44	19.31	12.03	29.75	22.47	56.00	46.00	-26.25	-23.53

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

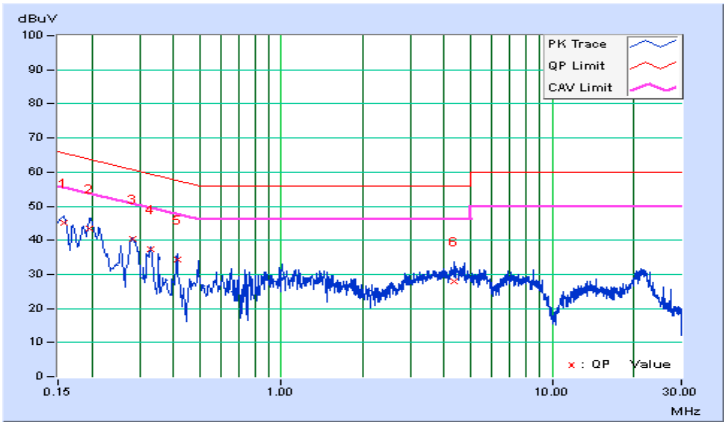


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Toby Tian	Test Date	2016/10/19

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	0.15719	10.03	35.01	24.87	45.04	34.90	65.61	55.61	-20.57	-20.71
2	0.19692	10.04	33.29	28.48	43.33	38.52	63.74	53.74	-20.41	-15.22
3	0.28288	10.08	30.43	24.29	40.51	34.37	60.73	50.73	-20.22	-16.36
4	0.32959	10.10	27.40	22.15	37.50	32.25	59.46	49.46	-21.96	-17.21
5	0.41197	10.13	24.11	17.40	34.24	27.53	57.61	47.61	-23.37	-20.08
6	4.35716	10.45	17.62	10.09	28.07	20.54	56.00	46.00	-27.93	-25.46

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 Measurment

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 ≦ 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 $N_{ANT} \leq 4$;

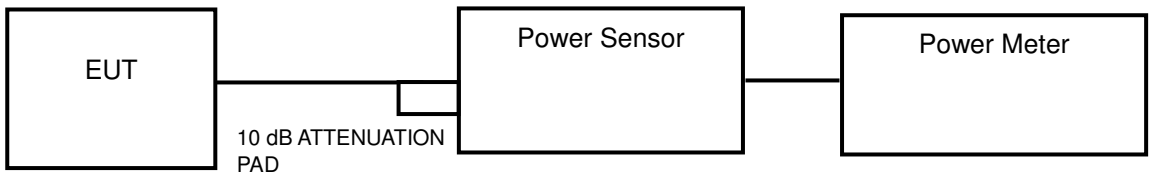
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

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

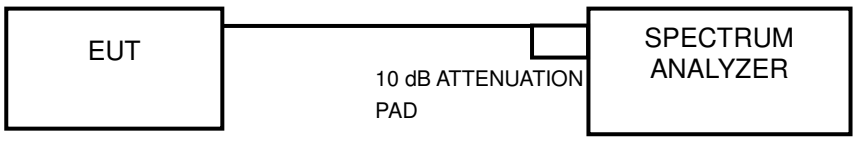
For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Test Setup

<Power Output Measurement>



<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.

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 fromTest 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:

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	5.60	7.48	24	Pass
44	5220	4.44	6.47	24	Pass
48	5240	4.15	6.18	24	Pass
52	5260	3.94	5.95	23.84	Pass
60	5300	3.48	5.41	23.84	Pass
64	5320	3.38	5.29	23.85	Pass
100	5500	3.18	5.02	23.83	Pass
116	5580	3.64	5.61	23.82	Pass
140	5700	4.89	6.89	23.94	Pass
149	5745	5.61	7.49	30	Pass
157	5785	5.65	7.52	30	Pass
165	5825	5.57	7.46	30	Pass

Note:

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

1. 11 dBm + 10log (19.24) = 23.84dBm < 24 dBm.
2. 11 dBm + 10log (19.25) = 23.84dBm < 24 dBm.
3. 11 dBm + 10log (19.26) = 23.85dBm < 24 dBm.
4. 11 dBm + 10log (19.17) = 23.83dBm < 24 dBm.
5. 11 dBm + 10log (19.13) = 23.82dBm < 24 dBm.
6. 11 dBm + 10log (19.70) = 23.94dBm < 24 dBm.

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	4.94	6.94	24	Pass
44	5220	4.25	6.28	24	Pass
48	5240	3.91	5.92	24	Pass
52	5260	3.66	5.64	23.91	Pass
60	5300	3.21	5.07	23.93	Pass
64	5320	3.06	4.86	23.89	Pass
100	5500	2.56	4.08	23.90	Pass
116	5580	2.94	4.69	23.90	Pass
140	5700	3.97	5.99	23.92	Pass
149	5745	4.80	6.81	30	Pass
157	5785	5.02	7.01	30	Pass
165	5825	4.92	6.92	30	Pass

Note:

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

1. 11 dBm + 10log (19.56) = 23.91 dBm < 24 dBm.
2. 11 dBm + 10log (19.62) = 23.93 dBm < 24 dBm.
3. 11 dBm + 10log (19.44) = 23.89 dBm < 24 dBm.
4. 11 dBm + 10log (19.49) = 23.90 dBm < 24 dBm.
5. 11 dBm + 10log (19.49) = 23.90 dBm < 24 dBm.
6. 11 dBm + 10log (19.58) = 23.92 dBm < 24 dBm.

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	4.69	6.71	24	Pass
46	5230	4.04	6.06	24	Pass
54	5270	3.44	5.37	24	Pass
62	5310	3.13	4.96	24	Pass
102	5510	2.62	4.18	24	Pass
110	5550	2.81	4.49	24	Pass
134	5670	3.67	5.65	24	Pass
151	5755	4.86	6.87	30	Pass
159	5795	4.94	6.94	30	Pass

Note:

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

1. 11 dBm + 10log (41.19) = 27.15dBm > 24 dBm.
2. 11 dBm + 10log (40.98) = 27.13dBm > 24 dBm.
3. 11 dBm + 10log (41.00) = 27.13dBm > 24 dBm.
4. 11 dBm + 10log (40.98) = 27.13dBm > 24 dBm.
5. 11 dBm + 10log (41.10) = 27.14dBm > 24 dBm.

26 dB Bandwidth:

802.11a

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	19.28
44	5220	19.16
48	5240	19.20
52	5260	19.24
60	5300	19.25
64	5320	19.26
100	5500	19.17
116	5580	19.13
140	5700	19.70

802.11n (HT20)

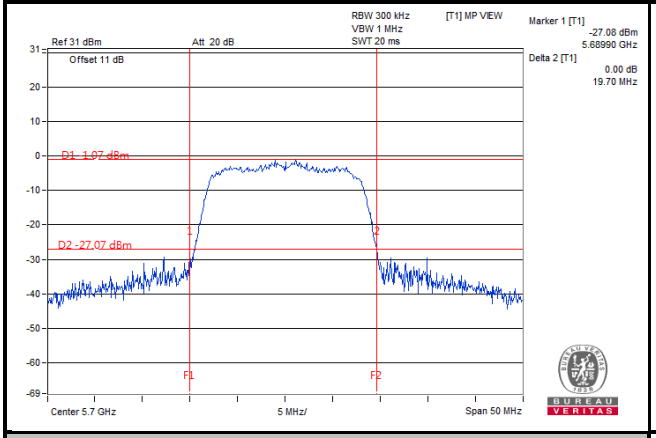
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	19.49
44	5220	19.49
48	5240	19.54
52	5260	19.56
60	5300	19.62
64	5320	19.44
100	5500	19.49
116	5580	19.49
140	5700	19.58

802.11n (HT40)

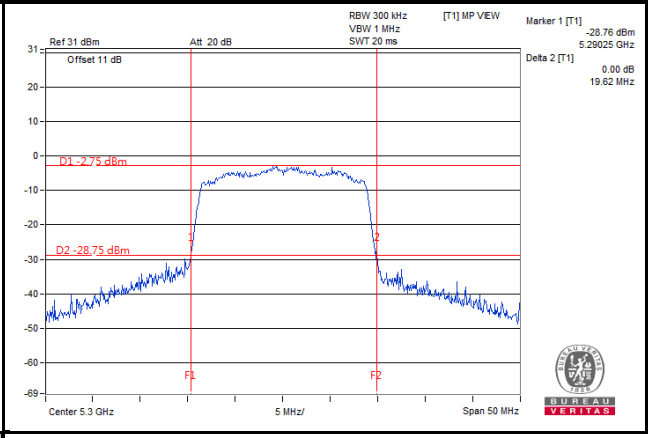
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
38	5190	40.98
46	5230	41.17
54	5270	41.19
62	5310	40.98
102	5510	41.00
110	5550	40.98
134	5670	41.10

Spectrum Plot of Worst Value

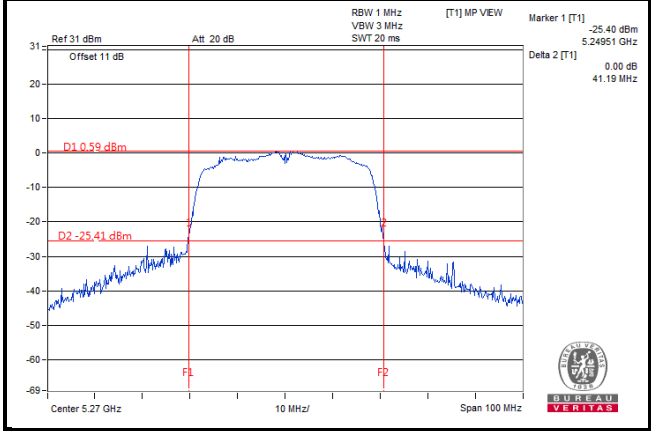
802.11a



802.11n (HT20)



802.11n (HT40)

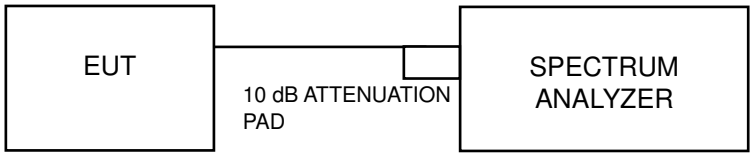


4.4 Peak Power Spectral Density Measurement

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-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 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

Using method SA-2

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 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 ≥ 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

802.11a

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
36	5180	-4.45	0.12	-4.33	11	Pass
44	5220	-5.06	0.12	-4.94	11	Pass
48	5240	-5.16	0.12	-5.04	11	Pass
52	5260	-5.30	0.12	-5.18	11	Pass
60	5300	-5.37	0.12	-5.25	11	Pass
64	5320	-5.44	0.12	-5.32	11	Pass
100	5500	-4.90	0.12	-4.78	11	Pass
116	5580	-5.16	0.12	-5.04	11	Pass
140	5700	-4.71	0.12	-4.59	11	Pass

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

802.11n (HT20)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
36	5180	-5.31	0.13	-5.18	11	Pass
44	5220	-5.84	0.13	-5.71	11	Pass
48	5240	-5.98	0.13	-5.85	11	Pass
52	5260	-6.08	0.13	-5.95	11	Pass
60	5300	-6.11	0.13	-5.98	11	Pass
64	5320	-6.31	0.13	-6.18	11	Pass
100	5500	-6.24	0.13	-6.11	11	Pass
116	5580	-6.28	0.13	-6.15	11	Pass
140	5700	-5.99	0.13	-5.86	11	Pass

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

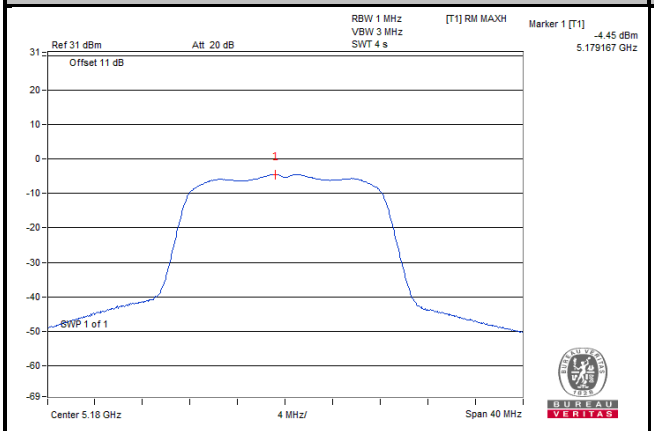
802.11n (HT40)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
38	5190	-7.29	0.40	-6.89	11	Pass
46	5230	-7.84	0.40	-7.44	11	Pass
54	5270	-7.96	0.40	-7.56	11	Pass
62	5310	-8.12	0.40	-7.72	11	Pass
102	5510	-8.12	0.40	-7.72	11	Pass
110	5550	-8.21	0.40	-7.81	11	Pass
134	5670	-7.94	0.40	-7.54	11	Pass

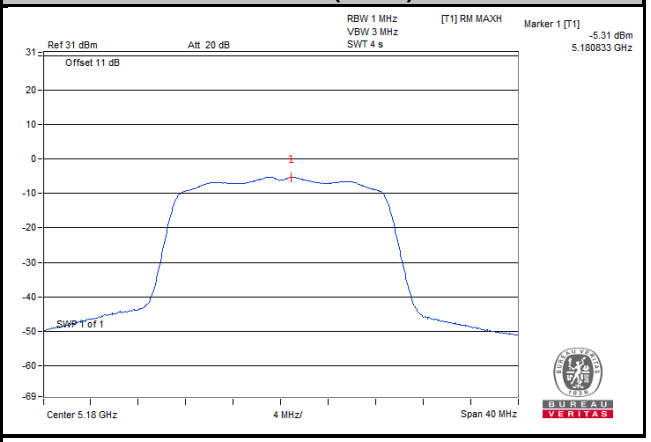
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

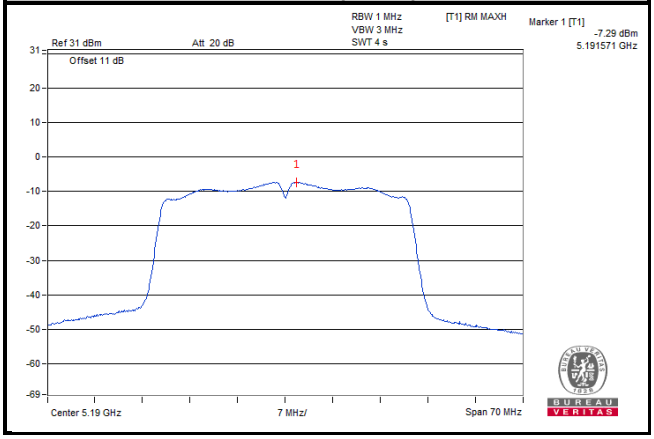
802.11a



802.11n (HT20)



802.11n (HT40)



For U-NII-3 Band

802.11a

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
149	5745	-7.03	0.12	-6.91	30	Pass
157	5785	-6.53	0.12	-6.41	30	Pass
165	5825	-6.20	0.12	-6.08	30	Pass

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

802.11n (HT20)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
149	5745	-7.91	0.13	-7.78	30	Pass
157	5785	-7.48	0.13	-7.35	30	Pass
165	5825	-6.92	0.13	-6.79	30	Pass

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

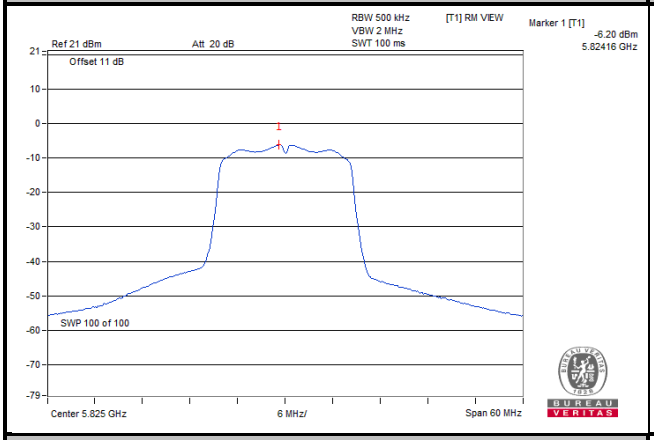
802.11n (HT40)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
151	5755	-10.42	0.40	-10.02	30	Pass
159	5795	-9.77	0.40	-9.37	30	Pass

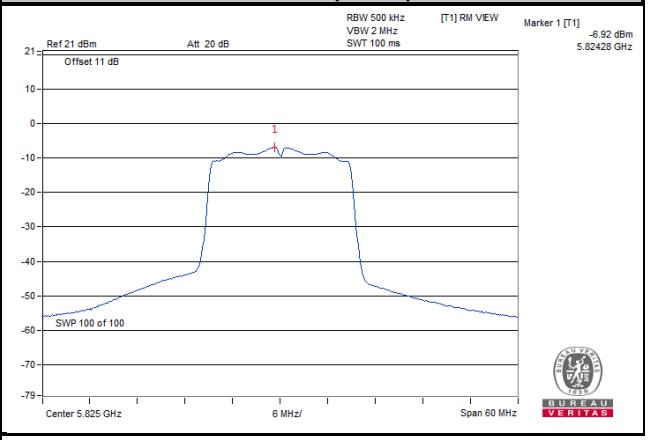
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

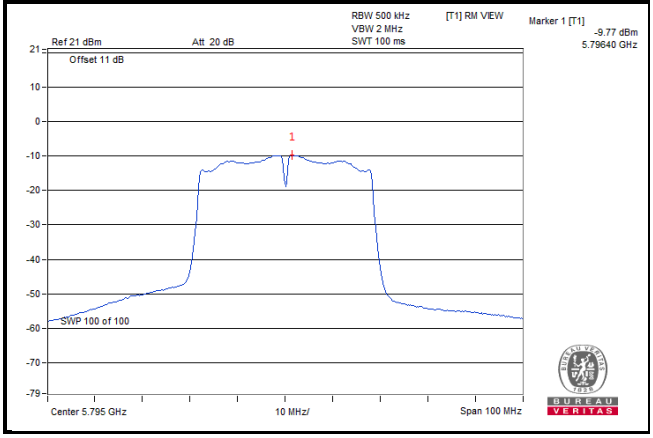
802.11a



802.11n (HT20)



802.11n (HT40)

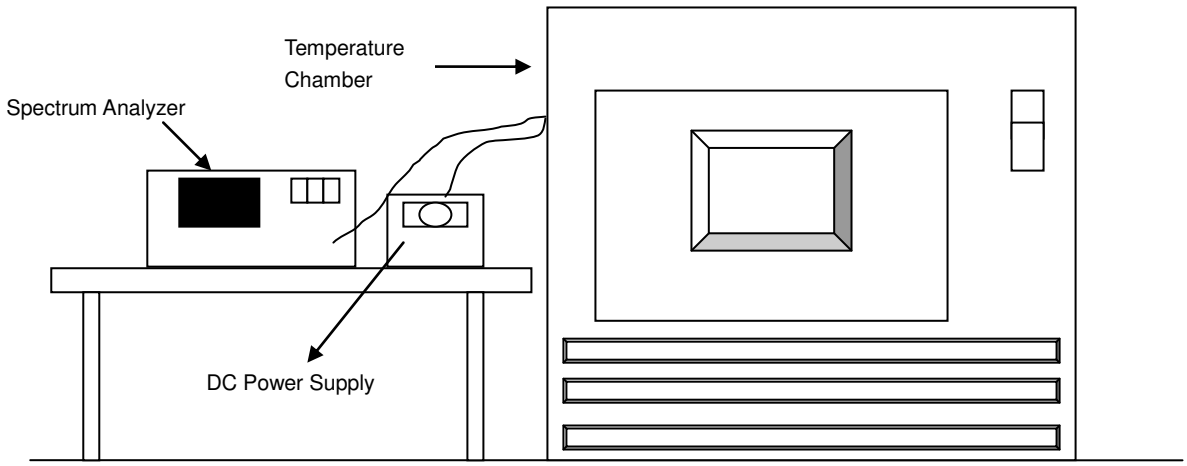


4.5 Frequency Stability

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

a. 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.
b. 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.
c. 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: 5320 MHz									
Temp. (℃)	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)
50	3.8	5320.028842	5.421	5320.028777	5.409	5320.028946	5.441	5320.029051	5.461
40	3.8	5320.028755	5.405	5320.028806	5.415	5320.028942	5.440	5320.029038	5.458
30	3.8	5320.030145	5.666	5320.030363	5.707	5320.030421	5.718	5320.029940	5.628
20	3.8	5320.031148	5.855	5320.031170	5.859	5320.030850	5.799	5320.031093	5.845
10	3.8	5320.032770	6.160	5320.032326	6.076	5320.032485	6.106	5320.032269	6.066
0	3.8	5320.031405	5.903	5320.031428	5.908	5320.030928	5.814	5320.031256	5.875
-10	3.8	5320.029445	5.535	5320.029440	5.534	5320.029308	5.509	5320.029273	5.502
-20	3.8	5320.029153	5.480	5320.028985	5.448	5320.029342	5.515	5320.029246	5.497
-30	3.8	5320.028253	5.311	5320.027893	5.243	5320.028216	5.304	5320.028480	5.353

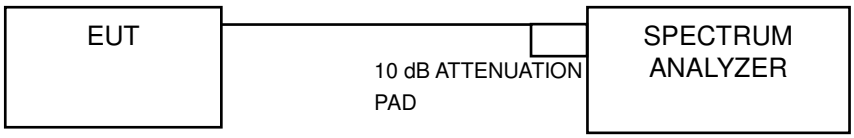
Frequency Stability Versus Temp.									
Operating Frequency: 5320 MHz									
Temp. (℃)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.23	5320.014553	2.736	5320.015118	2.842	5320.015004	2.820	5320.014944	2.809
	3.8	5320.031148	5.855	5320.031170	5.859	5320.030850	5.799	5320.031093	5.845
	4.37	5320.016443	3.091	5320.017066	3.208	5320.016563	3.113	5320.016554	3.112

4.6 6 dB Bandwidth Measurment

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

a. Set resolution bandwidth (RBW) = 100 kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. 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

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	15.31	0.5	Pass
157	5785	15.14	0.5	Pass
165	5825	15.15	0.5	Pass

802.11n (HT20)

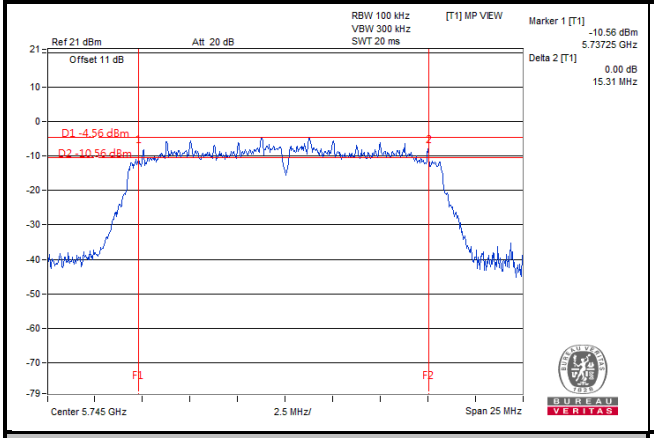
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	15.12	0.5	Pass
157	5785	15.11	0.5	Pass
165	5825	15.16	0.5	Pass

802.11n (HT40)

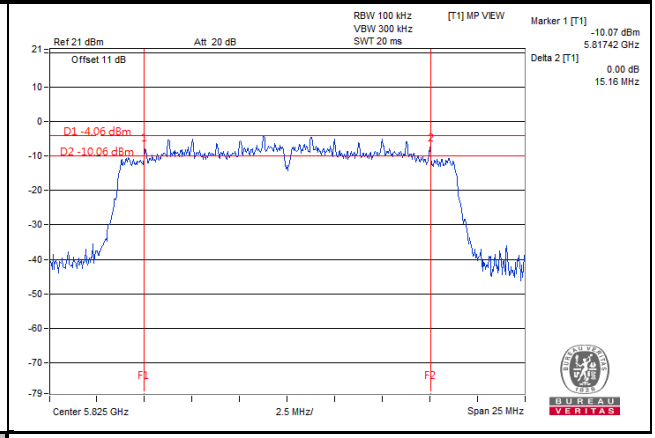
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.17	0.5	Pass
159	5795	35.17	0.5	Pass

Spectrum Plot of Worst Value

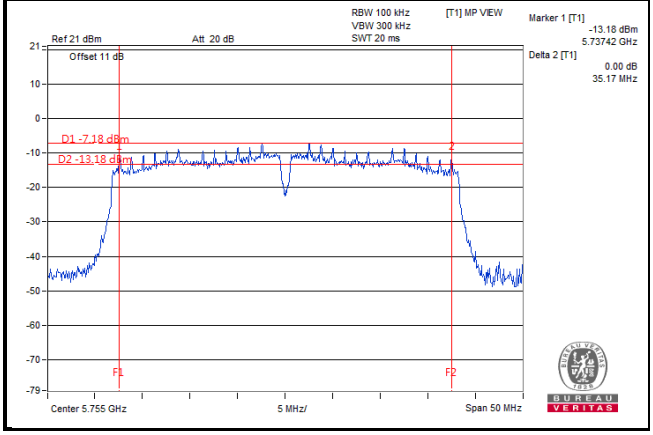
802.11a



802.11n (HT20)



802.11n (HT40)



5 Pictures of Test Arrangements

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

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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