

FCC Test Report

Report No.: RF160511C17-4

FCC ID: MSQP027

Test Model: P027

Received Date: May 11, 2016

Test Date: May 19, 2016 ~ May 24, 2016

Issued Date: Jun. 13, 2016

Applicant: ASUSTek COMPUTER INC.

Address: 4F, No. 150, LI-TE Rd., PEITOU, TAIPEI 112, TAIWAN

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

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

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

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



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

Table of Contents

Release Control Record	4
1 Certificate of Conformity	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Modification Record	6
3 General Information	7
3.1 General Description of EUT	7
3.2 Description of Test Modes	9
3.2.1 Test Mode Applicability and Tested Channel Detail	11
3.3 Duty Cycle of Test Signal	13
3.4 Description of Support Units	17
3.4.1 Configuration of System under Test	17
3.5 General Description of Applied Standards	18
4 Test Types and Results	19
4.1 Radiated Emission and Bandedge Measurement	19
4.1.1 Limits of Radiated Emission and Bandedge Measurement	19
4.1.2 Limits of Unwanted Emission Out of The Restricted Bands	19
4.1.3 Test Instruments	20
4.1.4 Test Procedures	21
4.1.5 Deviation from Test Standard	21
4.1.6 Test Set Up	22
4.1.7 EUT Operating Conditions	22
4.1.8 Test Results	23
4.2 Conducted Emission Measurement	65
4.2.1 Limits of Conducted Emission Measurement	65
4.2.2 Test Instruments	65
4.2.3 Test Procedures	66
4.2.4 Deviation from Test Standard	66
4.2.5 Test Setup	66
4.2.6 EUT Operating Conditions	66
4.2.7 Test Results	67
4.3 Transmit Power Measurement	69
4.3.1 Limits of Transmit Power Measurement	69
4.3.2 Test Setup	69
4.3.3 Test Instruments	70
4.3.4 Test Procedure	70
4.3.5 Deviation from Test Standard	70
4.3.6 EUT Operating Conditions	70
4.3.7 Test Result	71
4.4 Peak Power Spectral Density Measurement	76
4.4.1 Limits of Peak Power Spectral Density Measurement	76
4.4.2 Test Setup	76
4.4.3 Test Instruments	76
4.4.4 Test Procedures	77
4.4.5 Deviation from Test Standard	77
4.4.6 EUT Operating Conditions	77
4.4.7 Test Results	78
4.5 Frequency Stability	83
4.5.1 Limit of Frequency Stability Measurement	83
4.5.2 Test Setup	83
4.5.3 Test Instruments	83
4.5.4 Test Procedure	83
4.5.5 Deviation from Test Standard	83

4.5.6 EUT Operating Condition	83
4.5.7 Test Results	84
4.6 6dB Bandwidth Measurement.....	85
4.6.1 Limits of 6dB Bandwidth Measurement.....	85
4.6.2 Test Setup.....	85
4.6.3 Test Instruments	85
4.6.4 Test Procedure	85
4.6.5 Deviation from Test Standard	85
4.6.6 EUT Operating Condition	85
4.6.7 Test Results	86
5 Pictures of Test Arrangements.....	88
Appendix – Information on the Testing Laboratories	89

Release Control Record

Issue No.	Description	Date Issued
RF160511C17-4	Original Release	Jun. 13, 2016

1 Certificate of Conformity

Product: ASUS Tablet

Brand: ASUS

Test Model: P027

Sample Status: Identical Prototype

Applicant: ASUSTek COMPUTER INC.

Test Date: May 19, 2016 ~ May 24, 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 :



Date:

Jun. 13, 2016

Ivonne Wu / Supervisor

Approved by :



Date:

Jun. 13, 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 -19.48 dB at 1.33400 MHz.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -7.42 dB at 5470 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	Expanded Uncertainty (k=2) (\pm)
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	ASUS Tablet
Brand	ASUS
Test Model	P027
Status of EUT	Identical Prototype
Power Supply Rating	5.0 Vdc (adapter or host equipment) 3.8 Vdc (Li-ion battery)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to MCS7 802.11ac: up to V9
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5700 MHz, 5745 ~ 5825 MHz
Number of Channel	5180 ~ 5240 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5500 ~ 5700 MHz: 11 for 802.11a, 802.11n (HT20) 5 for 802.11n (HT40) 2 for 802.11ac (VHT80) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80)
Output Power	8.61 mW for 5180 ~ 5240 MHz 7.89 mW for 5260 ~ 5320 MHz 7.91 mW for 5500 ~ 5700 MHz 7.35 mW for 5745 ~ 5825 MHz
Antenna Type	PIFA antenna with -2.63 dBi gain (5180 ~ 5240 MHz) PIFA antenna with -1.25 dBi gain (5260 ~ 5320 MHz) PIFA antenna with -0.06 dBi gain (5500 ~ 5700 MHz) PIFA antenna with -0.87 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 contains following accessory devices.

Product	Brand	Model	Description
Adapter 1 (Variable Plug)	ASUS	AD2037M20	I/P: 100-240Vac, 0.3A O/P: 5.0Vdc, 2A
Adapter 2 (US Plug)	ASUS	AD2037320	I/P: 100-240Vac, 0.3A O/P: 5.0Vdc, 2A
Adapter 3 (US Plug)	ASUS	W12-010N3A	I/P: 100-240Vac, 0.3A O/P: 5.0Vdc, 2A
Battery	SIMPLO TECHNOLOGY CO LTD	C12P1601	3.8Vdc, 22Wh or 5900mAh or 5790mAh
USB Cable 1	ASAP	LA05US014-1N	0.9m shielded cable without core
USB Cable 2	FOXCONN	CUDU01B-AJ004-DF	0.9m shielded cable without core
USB Cable 3	ASAP	LA05US025-AN	0.9m shielded cable without core
USB Cable 4	FOXCONN	CUDU01B-AJ009-DF	0.9m shielded cable without core
USB Cable 5	HONGLIN	130-27217	0.9m shielded cable without core
Touch pen	ASUS	PAD-22 Z STYLUS	214 kHz
LCD Panel	TIANMA	TM097QDSP01-00	9.7"
Front Camera	CHICONY	CBFE55720003870LH	5M
Rear Camera	CHICONY	CJAF83020003871LH	8M
CPU	MTK	C.S MT8176V	825 Pin, 2.1GHz / 1MB
LPDDR 1	Hynix	H9CCNBNBJTMLAR-NUM	4G
LPDDR 2	MICRON	MT52L512M32D2PF-107WT: B	4G
eMMC 1	Samsung	KLMDG8JENB-B041	128GB
eMMC 2	Sandisk	SDINADF4-128G-L	128GB
eMMC 3	Toshiba	THGBMHG9C4LBAIR	64G
eMMC 4	Hynix	H26M78208CMR	64G
Main Board	ASUS	Z500M	--
BT/WLAN Module	MTK	MT6630QP	--

* LPDDR2 and eMMC 1 were chosen as a representative for final test.

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

3.2 Description of Test Modes

FOR 5180 ~ 5240 MHz

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
42	5210

FOR 5260 ~ 5320 MHz

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
58	5290

FOR 5500 ~ 5700 MHz

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

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

5 channels are provided for 802.11n (HT40):

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

2 channels are provided for 802.11ac (VHT80):

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

FOR 5745 ~ 5825 MHz:

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

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

2 channels are provided for 802.11n (HT40):

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

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
155	5775

3.2.1 Test Mode Applicability and Tested Channel Detail

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

Where **RE \geq 1G**: Radiated Emission above 1 GHz **RE $<$ 1G**: Radiated Emission below 1 GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

NOTE:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
2. "-" means no effect.

Radiated Emission Test (Above 1 GHz):

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

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

Radiated Emission Test (Below 1 GHz):

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

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11ac (VHT80)	42	42	OFDM	BPSK	V0
-	5260-5320	802.11ac (VHT80)	58	58	OFDM	BPSK	V0
-	5500-5700	802.11n (HT40)	102 to 134	102	OFDM	BPSK	MCS0
-	5745-5825	802.11n (HT40)	151 to 159	151	OFDM	BPSK	MCS0

Power Line Conducted Emission Test:

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

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

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

Antenna Port Conducted Measurement:

This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

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

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

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

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE \geq 1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao
RE $<$ 1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Toby Tian
APCM	25 deg. C, 65 % RH	3.8 Vdc	Taylor Liu

3.3 Duty Cycle of Test Signal

MODULATION TYPE: BPSK

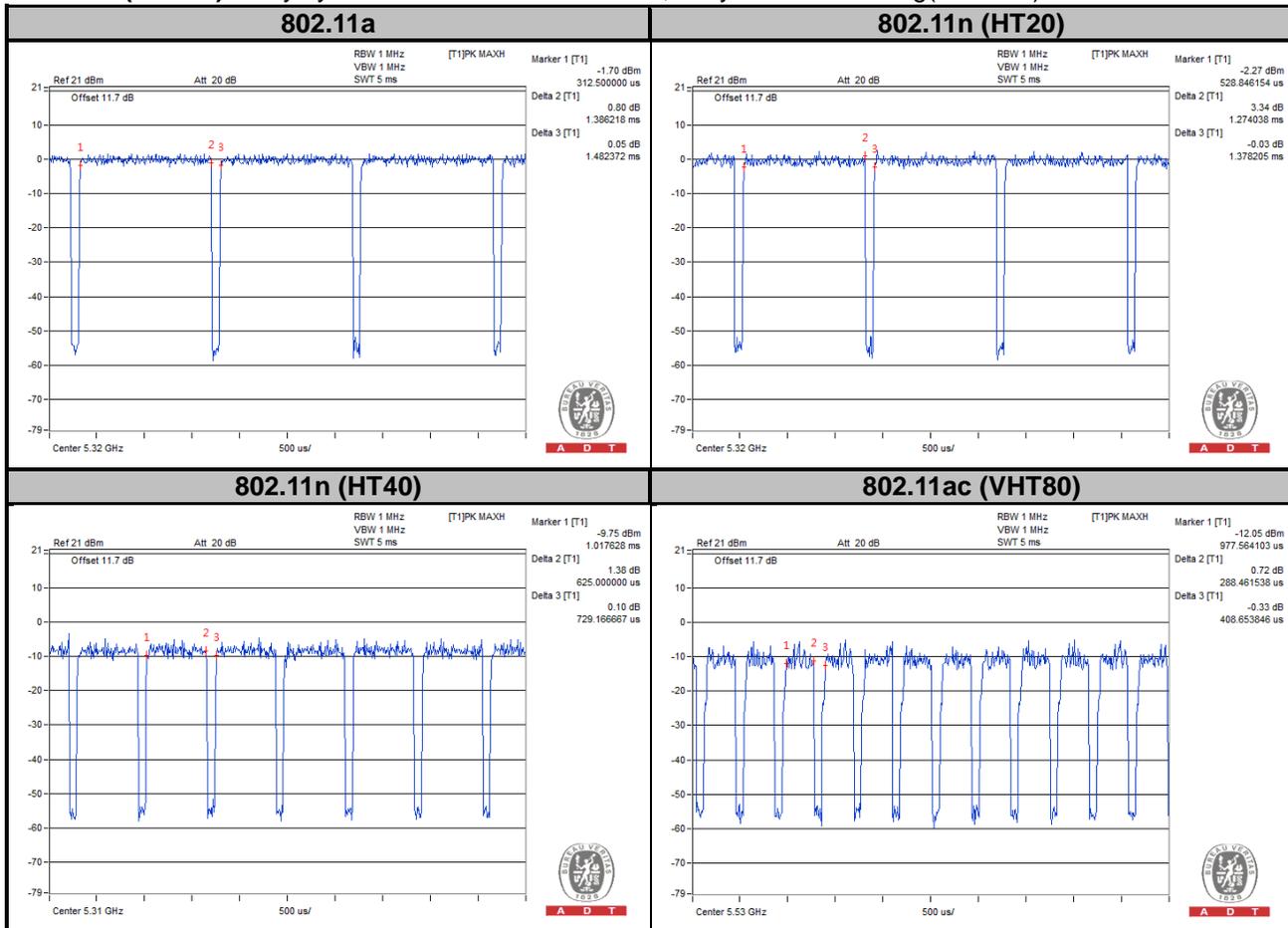
Duty cycle of test signal is < 98 %, duty factor is required.

802.11a: Duty cycle = 1.386/1.482 = 0.935, Duty factor = $10 * \log(1/0.935) = 0.29$

802.11n (HT20): Duty cycle = 1.274/1.378 = 0.925, Duty factor = $10 * \log(1/0.925) = 0.34$

802.11n (HT40): Duty cycle = 625.00/729.17 = 0.857, Duty factor = $10 * \log(1/0.857) = 0.67$

802.11ac (VHT80): Duty cycle = 288.46/408.65 = 0.706, Duty factor = $10 * \log(1/0.706) = 1.51$



MODULATION TYPE: QPSK

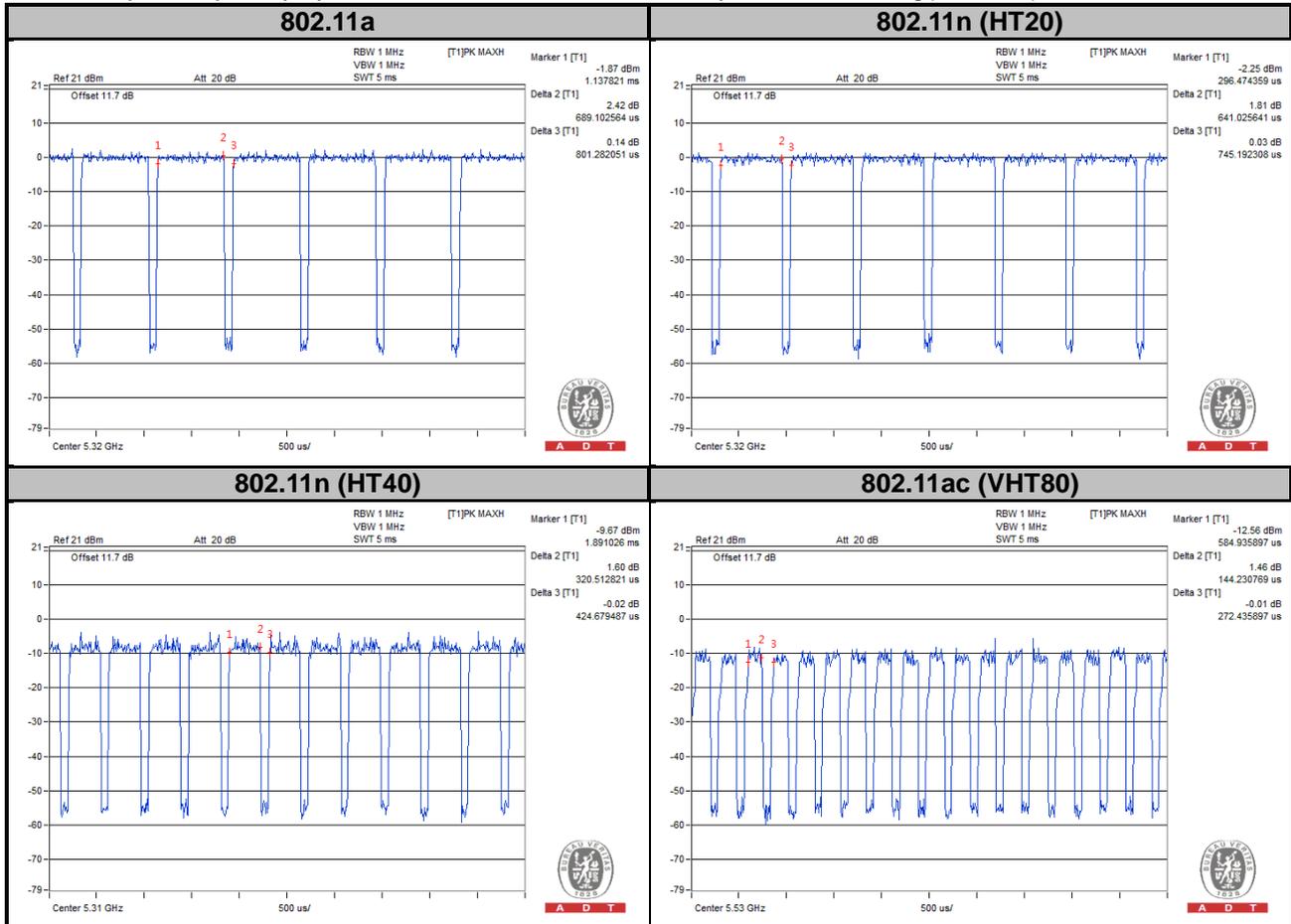
Duty cycle of test signal is < 98 %, duty factor is required.

802.11a: Duty cycle = $689.10/801.28 = 0.860$, Duty factor = $10 * \log(1/0.860) = 0.66$

802.11n (HT20): Duty cycle = $641.03/745.19 = 0.860$, Duty factor = $10 * \log(1/0.860) = 0.65$

802.11n (HT40): Duty cycle = $320.51/424.68 = 0.755$, Duty factor = $10 * \log(1/0.755) = 1.22$

802.11ac (VHT80): Duty cycle = $144.23/272.44 = 0.529$, Duty factor = $10 * \log(1/0.529) = 2.76$



MODULATION TYPE: 16QAM

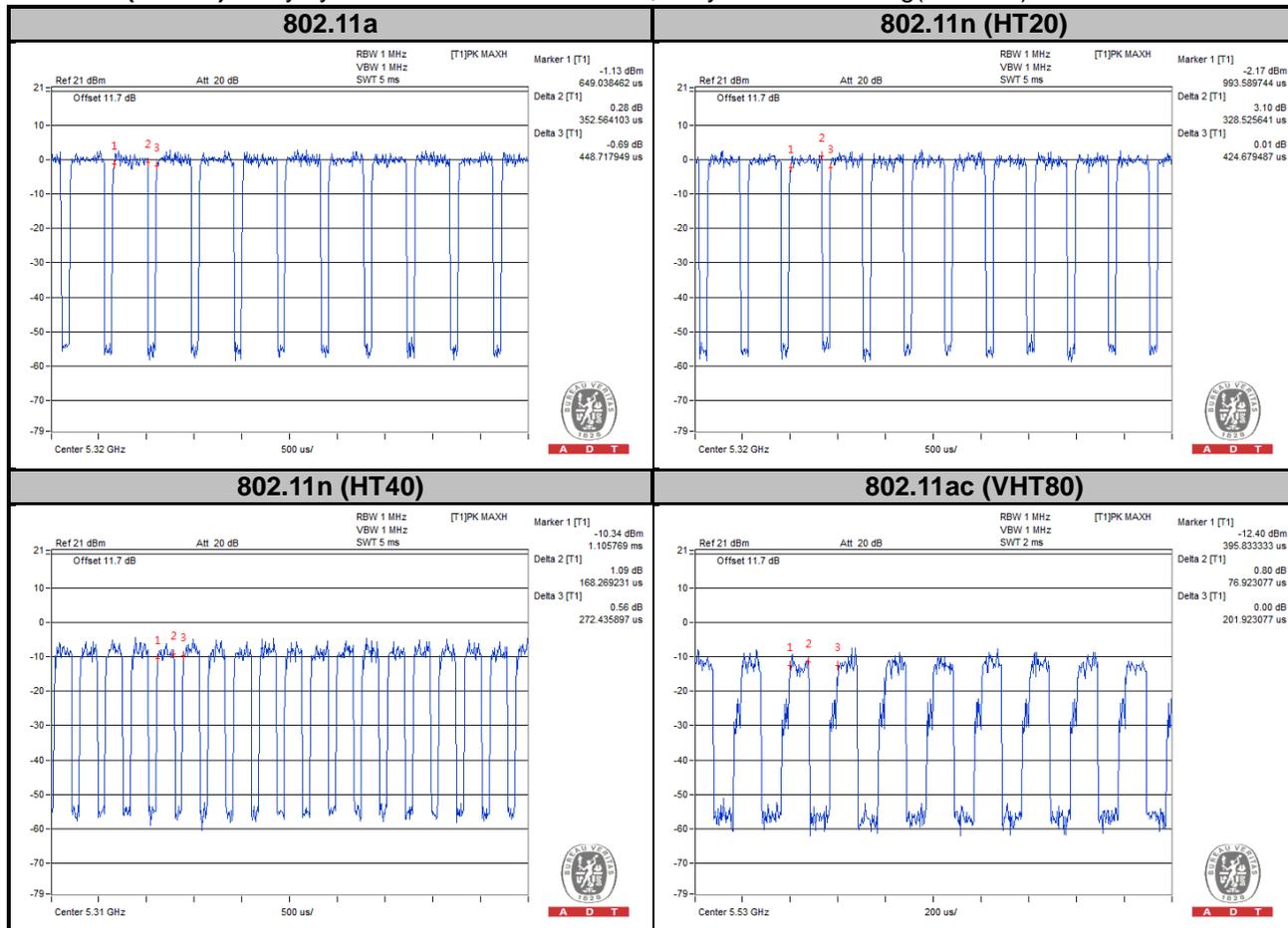
Duty cycle of test signal is < 98 %, duty factor is required.

802.11a: Duty cycle = $352.56/448.72 = 0.786$, Duty factor = $10 * \log(1/0.786) = 1.05$

802.11n (HT20): Duty cycle = $328.53/424.68 = 0.774$, Duty factor = $10 * \log(1/0.774) = 1.11$

802.11n (HT40): Duty cycle = $168.27/272.44 = 0.618$, Duty factor = $10 * \log(1/0.618) = 2.09$

802.11ac (VHT80): Duty cycle = $76.92/201.92 = 0.381$, Duty factor = $10 * \log(1/0.381) = 4.19$



MODULATION TYPE: 64QAM

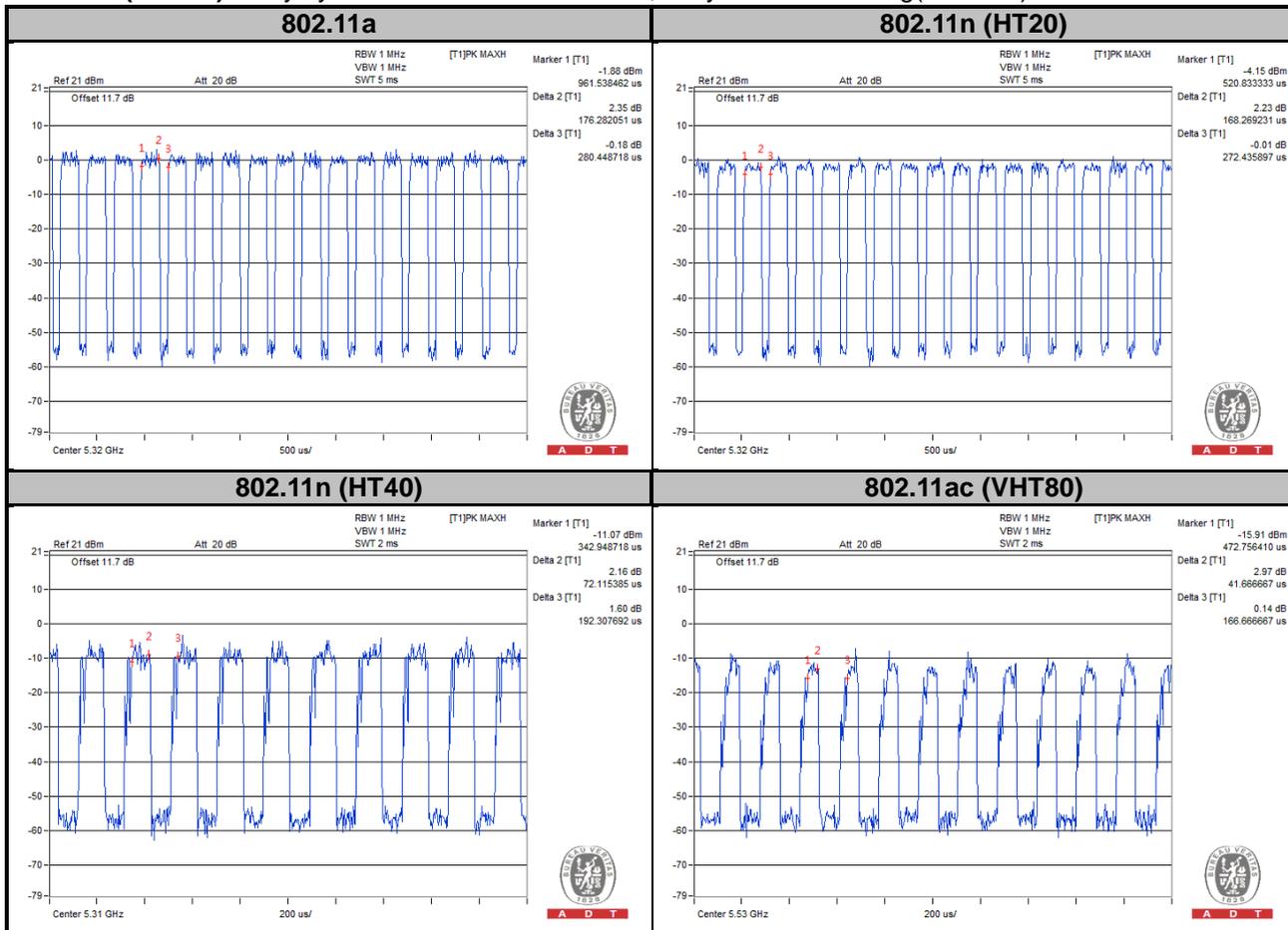
Duty cycle of test signal is < 98 %, duty factor is required.

802.11a: Duty cycle = $176.28/280.45 = 0.629$, Duty factor = $10 * \log(1/0.629) = 2.02$

802.11n (HT20): Duty cycle = $168.27/272.44 = 0.618$, Duty factor = $10 * \log(1/0.618) = 2.09$

802.11n (HT40): Duty cycle = $72.12/192.31 = 0.375$, Duty factor = $10 * \log(1/0.375) = 4.26$

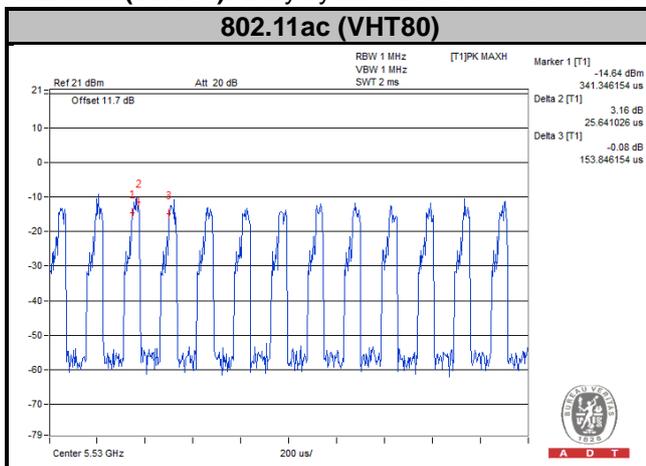
802.11ac (VHT80): Duty cycle = $41.67/166.67 = 0.250$, Duty factor = $10 * \log(1/0.250) = 6.02$



MODULATION TYPE: 256QAM

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

802.11ac (VHT80): Duty cycle = $25.64/153.85 = 0.167$, Duty factor = $10 * \log(1/0.167) = 7.78$



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

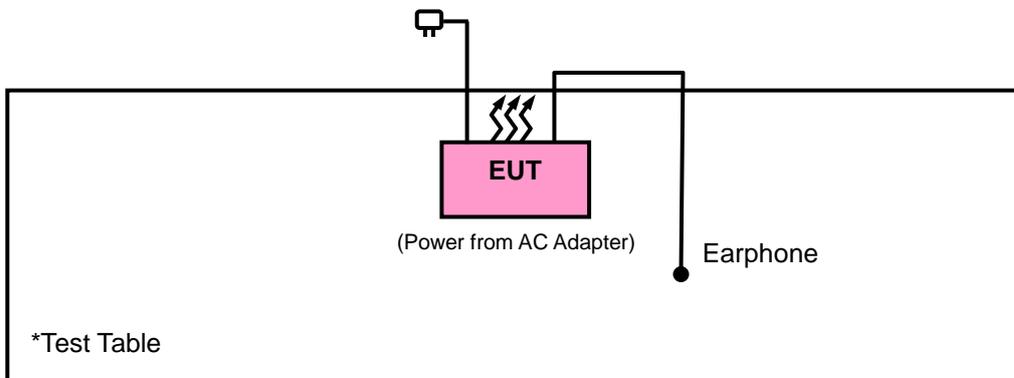
No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	Earphone	N/A	N/A	N/A	N/A

No.	Signal Cable Description Of The Above Support Units
1.	N/A

Note:

1. All power cords of the above support units are non-shielded (1.8m).

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 v01r02

644545 D01 Guidance for IEEE 802 11ac v01r02

ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

4.1.2 Limits of Unwanted Emission Out of the Restricted Bands

Applicable To	Limit	
789033 D02 General UNII Test Procedures New Rules v01r02	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:

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

4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Jan. 21, 2016	Jan. 20, 2017
Spectrum Analyzer Agilent	N9010A	MY52220314	Sep. 03, 2015	Sep. 02, 2016
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	Jul. 31, 2015	Jul. 30, 2016
Agilent Communications Tester-Wireless	8960 Series 10	MY53201073	Jul. 03, 2015	Jul. 02, 2017
Preamplifier Agilent	310N	187226	Jun. 29, 2015	Jun. 28, 2016
Preamplifier Agilent	83017A	MY39501357	Jun. 29, 2015	Jun. 28, 2016
Power Meter Anritsu	ML2495A	1232002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor Anritsu	MA2411B	1207325	Sep. 21, 2015	Sep. 20, 2016
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(R FC-SMS-100-SM S-120+RFC-SMS -100-SMS-400)	Jun. 27, 2015	Jun. 26, 2016
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(R FC-SMS-100-SM S-24)	Jun. 27, 2015	Jun. 26, 2016
Software BV ADT	E3 8.130425b	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA

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

4.1.4 Test Procedures

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

Note:

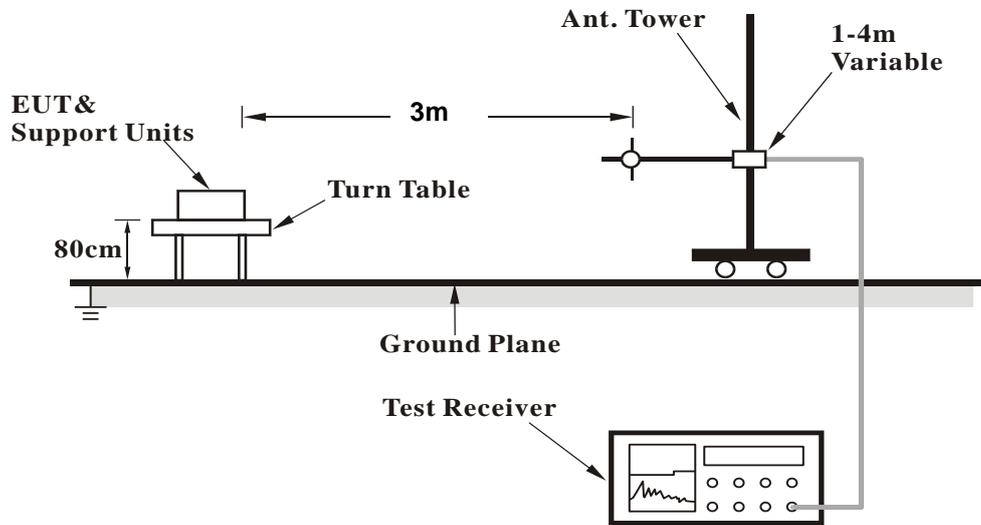
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for RMS Average (Duty cycle < 98 %) for Average detection (AV) at frequency above 1 GHz, then the measurement results was added to a correction factor ($10 \log(1/\text{duty cycle})$).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle \geq 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

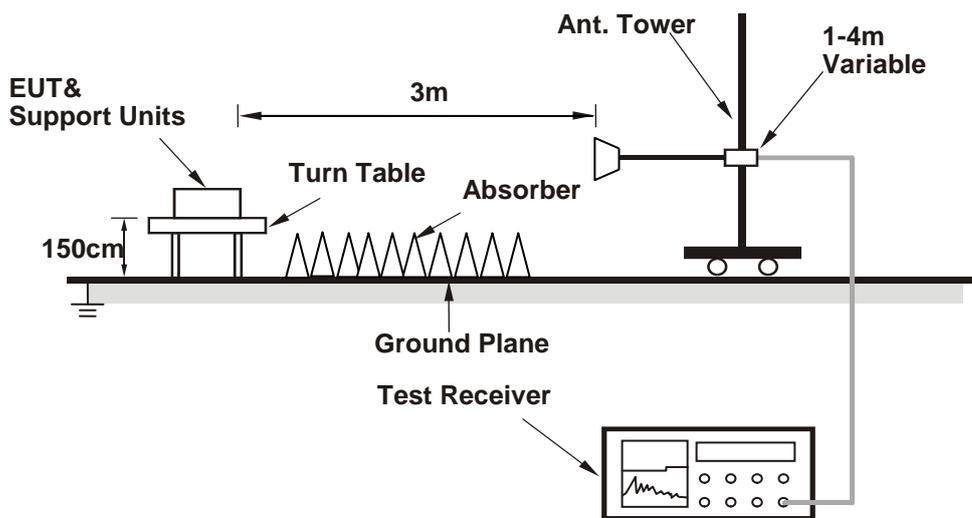
No deviation.

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	Charles Hsiao

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5038	44.23	36.16	54	-9.77	34.04	8	33.97	212	345	Average
5038	57.86	49.79	74	-16.14	34.04	8	33.97	212	345	Peak
5180	91.67	83.36			34.15	8.16	34	212	345	Average
5180	98.57	90.26			34.15	8.16	34	212	345	Peak
5418	44.28	35.55	54	-9.72	34.33	8.44	34.04	212	345	Average
5418	57.01	48.28	74	-16.99	34.33	8.44	34.04	212	345	Peak

Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5084	42.23	34.07	54	-11.77	34.07	8.07	33.98	143	329	Average
5084	56.64	48.48	74	-17.36	34.07	8.07	33.98	143	329	Peak
5180	88.61	80.3			34.15	8.16	34	143	329	Average
5180	95.08	86.77			34.15	8.16	34	143	329	Peak
5420	42.63	33.86	54	-11.37	34.33	8.48	34.04	143	329	Average
5420	57.52	48.75	74	-16.48	34.33	8.48	34.04	143	329	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
 Margin value = Emission level – Limit value
- 5180 MHz: Fundamental Frequency

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5090	42.25	34.08	54	-11.75	34.08	8.07	33.98	198	345	Average
5090	56.94	48.77	74	-17.06	34.08	8.07	33.98	198	345	Peak
5220	92.33	83.94			34.17	8.22	34	198	345	Average
5220	98.81	90.42			34.17	8.22	34	198	345	Peak
5446	42.59	33.76	54	-11.41	34.36	8.51	34.04	198	345	Average
5446	57.84	49.01	74	-16.16	34.36	8.51	34.04	198	345	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5106	42.1	33.93	54	-11.9	34.09	8.07	33.99	142	329	Average
5106	57.69	49.52	74	-16.31	34.09	8.07	33.99	142	329	Peak
5220	88.56	80.17			34.17	8.22	34	142	329	Average
5220	95.11	86.72			34.17	8.22	34	142	329	Peak
5380	42.39	33.71	54	-11.61	34.31	8.41	34.04	142	329	Average
5380	57.29	48.61	74	-16.71	34.31	8.41	34.04	142	329	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5078	42.13	34.01	54	-11.87	34.07	8.03	33.98	198	345	Average
5078	56.67	48.55	74	-17.33	34.07	8.03	33.98	198	345	Peak
5240	92.31	83.87			34.19	8.26	34.01	198	345	Average
5240	99.34	90.9			34.19	8.26	34.01	198	345	Peak
5434	42.52	33.73	54	-11.48	34.35	8.48	34.04	198	345	Average
5434	57.49	48.7	74	-16.51	34.35	8.48	34.04	198	345	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5080	42	33.88	54	-12	34.07	8.03	33.98	147	329	Average
5080	57.4	49.28	74	-16.6	34.07	8.03	33.98	147	329	Peak
5240	89.84	81.4			34.19	8.26	34.01	147	329	Average
5240	96.48	88.04			34.19	8.26	34.01	147	329	Peak
5386	42.31	33.63	54	-11.69	34.31	8.41	34.04	147	329	Average
5386	57.9	49.22	74	-16.1	34.31	8.41	34.04	147	329	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5240 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5076	42.14	34.02	54	-11.86	34.07	8.03	33.98	172	336	Average
5076	57.76	49.64	74	-16.24	34.07	8.03	33.98	172	336	Peak
5260	92.98	84.52			34.21	8.26	34.01	172	336	Average
5260	99.46	91			34.21	8.26	34.01	172	336	Peak
5416	42.67	33.94	54	-11.33	34.33	8.44	34.04	172	336	Average
5416	57.63	48.9	74	-16.37	34.33	8.44	34.04	172	336	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5140	42.2	33.94	54	-11.8	34.12	8.13	33.99	178	34	Average
5140	56.64	48.38	74	-17.36	34.12	8.13	33.99	178	34	Peak
5260	92.08	83.62			34.21	8.26	34.01	178	34	Average
5260	98.36	89.9			34.21	8.26	34.01	178	34	Peak
5380	42.48	33.8	54	-11.52	34.31	8.41	34.04	178	34	Average
5380	57.26	48.58	74	-16.74	34.31	8.41	34.04	178	34	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5260 MHz: Fundamental Frequency

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5026	41.93	33.9	54	-12.07	34.03	7.97	33.97	157	336	Average
5026	56.49	48.46	74	-17.51	34.03	7.97	33.97	157	336	Peak
5300	92.7	84.16			34.24	8.32	34.02	157	336	Average
5300	99.02	90.48			34.24	8.32	34.02	157	336	Peak
5454	42.98	34.16	54	-11.02	34.36	8.51	34.05	157	336	Average
5454	58.35	49.53	74	-15.65	34.36	8.51	34.05	157	336	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5082	42.04	33.88	54	-11.96	34.07	8.07	33.98	178	34	Average
5082	56.39	48.23	74	-17.61	34.07	8.07	33.98	178	34	Peak
5300	91.94	83.4			34.24	8.32	34.02	178	34	Average
5300	98.32	89.78			34.24	8.32	34.02	178	34	Peak
5416	42.58	33.85	54	-11.42	34.33	8.44	34.04	178	34	Average
5416	57.29	48.56	74	-16.71	34.33	8.44	34.04	178	34	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5138	42.32	34.07	54	-11.68	34.11	8.13	33.99	156	336	Average
5138	57.33	49.08	74	-16.67	34.11	8.13	33.99	156	336	Peak
5320	92.64	84.06			34.25	8.35	34.02	156	336	Average
5320	99.19	90.61			34.25	8.35	34.02	156	336	Peak
5402	42.84	34.12	54	-11.16	34.32	8.44	34.04	156	336	Average
5402	57.79	49.07	74	-16.21	34.32	8.44	34.04	156	336	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5062	42.02	33.92	54	-11.98	34.05	8.03	33.98	170	34	Average
5062	58.04	49.94	74	-15.96	34.05	8.03	33.98	170	34	Peak
5320	91.57	82.99			34.25	8.35	34.02	170	34	Average
5320	98.87	90.29			34.25	8.35	34.02	170	34	Peak
5452	42.74	33.92	54	-11.26	34.36	8.51	34.05	170	34	Average
5452	58	49.18	74	-16	34.36	8.51	34.05	170	34	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5450	42.62	33.8	54	-11.38	34.36	8.51	34.05	107	340	Average
5450	57.35	48.53	74	-16.65	34.36	8.51	34.05	107	340	Peak
5470	56.35	47.52	68.2	-11.85	34.37	8.51	34.05	107	340	Peak
5500	90.82	81.9			34.4	8.57	34.05	107	340	Average
5500	97.35	88.43			34.4	8.57	34.05	107	340	Peak
5725	55.21	46.05	68.2	-12.99	34.62	8.65	34.11	107	340	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5434	42.54	33.75	54	-11.46	34.35	8.48	34.04	105	41	Average
5434	56.52	47.73	74	-17.48	34.35	8.48	34.04	105	41	Peak
5470	56.07	47.24	68.2	-12.13	34.37	8.51	34.05	105	41	Peak
5500	89	80.08			34.4	8.57	34.05	105	41	Average
5500	96.68	87.76			34.4	8.57	34.05	105	41	Peak
5725	54.59	45.43	68.2	-13.61	34.62	8.65	34.11	105	41	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5500 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5374	42.35	33.69	54	-11.65	34.29	8.41	34.04	106	340	Average
5374	57.7	49.04	74	-16.3	34.29	8.41	34.04	106	340	Peak
5470	55.3	46.47	68.2	-12.9	34.37	8.51	34.05	106	340	Peak
5580	90.26	81.27			34.47	8.6	34.08	106	340	Average
5580	97.88	88.89			34.47	8.6	34.08	106	340	Peak
5725	54.55	45.39	68.2	-13.65	34.62	8.65	34.11	106	340	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5420	42.48	33.71	54	-11.52	34.33	8.48	34.04	103	41	Average
5420	56.58	47.81	74	-17.42	34.33	8.48	34.04	103	41	Peak
5470	55.68	46.85	68.2	-12.52	34.37	8.51	34.05	103	41	Peak
5580	89.22	80.23			34.47	8.6	34.08	103	41	Average
5580	96.37	87.38			34.47	8.6	34.08	103	41	Peak
5725	55.67	46.51	68.2	-12.53	34.62	8.65	34.11	103	41	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5580 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5448	42.47	33.64	54	-11.53	34.36	8.51	34.04	103	340	Average
5448	56.41	47.58	74	-17.59	34.36	8.51	34.04	103	340	Peak
5470	54.84	46.01	68.2	-13.36	34.37	8.51	34.05	103	340	Peak
5700	90.63	81.5			34.59	8.64	34.1	103	340	Average
5700	97.79	88.66			34.59	8.64	34.1	103	340	Peak
5725	57.34	48.18	68.2	-10.86	34.62	8.65	34.11	103	340	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5442	42.4	33.61	54	-11.6	34.35	8.48	34.04	101	41	Average
5442	57.33	48.54	74	-16.67	34.35	8.48	34.04	101	41	Peak
5470	55.37	46.54	68.2	-12.83	34.37	8.51	34.05	101	41	Peak
5700	89.98	80.85			34.59	8.64	34.1	101	41	Average
5700	96.78	87.65			34.59	8.64	34.1	101	41	Peak
5725	55.97	46.81	68.2	-12.23	34.62	8.65	34.11	101	41	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5700 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5706	55.41	46.26	68.2	-12.79	34.61	8.65	34.11	109	334	Peak
*5720	55.9	46.74	78.2	-22.3	34.62	8.65	34.11	109	334	Peak
5745	90.25	81.06			34.64	8.66	34.11	109	334	Average
5745	97.45	88.26			34.64	8.66	34.11	109	334	Peak
*5854	55.3	45.98	78.2	-22.9	34.76	8.7	34.14	109	334	Peak
*5868	56.58	47.25	68.2	-11.62	34.76	8.71	34.14	109	334	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5708	56.5	47.35	68.2	-11.7	34.61	8.65	34.11	100	39	Peak
*5718	56.49	47.33	78.2	-21.71	34.62	8.65	34.11	100	39	Peak
5745	89.44	80.25			34.64	8.66	34.11	100	39	Average
5745	96.14	86.95			34.64	8.66	34.11	100	39	Peak
*5852	56.01	46.71	78.2	-22.19	34.74	8.7	34.14	100	39	Peak
*5862	55.58	46.25	68.2	-12.62	34.76	8.71	34.14	100	39	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5708	56.68	47.53	68.2	-11.52	34.61	8.65	34.11	109	334	Peak
*5722	56.41	47.25	78.2	-21.79	34.62	8.65	34.11	109	334	Peak
5785	90.26	81.03			34.68	8.68	34.13	109	334	Average
5785	97.52	88.29			34.68	8.68	34.13	109	334	Peak
*5858	55.7	46.38	78.2	-22.5	34.76	8.7	34.14	109	334	Peak
*5862	56.12	46.79	68.2	-12.08	34.76	8.71	34.14	109	334	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	55.48	46.33	68.2	-12.72	34.61	8.65	34.11	100	39	Peak
*5716	55.52	46.37	78.2	-22.68	34.61	8.65	34.11	100	39	Peak
5785	89.21	79.98			34.68	8.68	34.13	100	39	Average
5785	96.43	87.2			34.68	8.68	34.13	100	39	Peak
*5860	55.66	46.34	78.2	-22.54	34.76	8.7	34.14	100	39	Peak
*5866	55.69	46.36	68.2	-12.51	34.76	8.71	34.14	100	39	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5712	56.16	47.01	68.2	-12.04	34.61	8.65	34.11	109	334	Peak
*5716	57.86	48.71	78.2	-20.34	34.61	8.65	34.11	109	334	Peak
5825	90.43	81.14			34.73	8.69	34.13	109	334	Average
5825	97.88	88.59			34.73	8.69	34.13	109	334	Peak
*5858	56.42	47.1	78.2	-21.78	34.76	8.7	34.14	109	334	Peak
*5862	57.14	47.81	68.2	-11.06	34.76	8.71	34.14	109	334	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5712	56.77	47.62	68.2	-11.43	34.61	8.65	34.11	100	39	Peak
*5720	56.26	47.1	78.2	-21.94	34.62	8.65	34.11	100	39	Peak
5825	89.92	80.63			34.73	8.69	34.13	100	39	Average
5825	96.18	86.89			34.73	8.69	34.13	100	39	Peak
*5858	56.94	47.62	78.2	-21.26	34.76	8.7	34.14	100	39	Peak
*5870	56.27	46.94	68.2	-11.93	34.76	8.71	34.14	100	39	Peak

Remarks:

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

802.11n (HT20)

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5046	42.28	34.22	54	-11.72	34.04	8	33.98	212	345	Average
5046	57.63	49.57	74	-16.37	34.04	8	33.98	212	345	Peak
5180	90.98	82.67			34.15	8.16	34	212	345	Average
5180	97.86	89.55			34.15	8.16	34	212	345	Peak
5444	42.52	33.73	54	-11.48	34.35	8.48	34.04	212	345	Average
5444	57.43	48.64	74	-16.57	34.35	8.48	34.04	212	345	Peak

Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5126	42.23	34.01	54	-11.77	34.11	8.1	33.99	143	329	Average
5126	56.9	48.68	74	-17.1	34.11	8.1	33.99	143	329	Peak
5180	87.79	79.48			34.15	8.16	34	143	329	Average
5180	94.57	86.26			34.15	8.16	34	143	329	Peak
5364	42.3	33.66	54	-11.7	34.29	8.38	34.03	143	329	Average
5364	57.25	48.61	74	-16.75	34.29	8.38	34.03	143	329	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5180 MHz: Fundamental Frequency

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5140	42.24	33.98	54	-11.76	34.12	8.13	33.99	198	345	Average
5140	56.54	48.28	74	-17.46	34.12	8.13	33.99	198	345	Peak
5220	91.77	83.38			34.17	8.22	34	198	345	Average
5220	98.8	90.41			34.17	8.22	34	198	345	Peak
5386	42.36	33.68	54	-11.64	34.31	8.41	34.04	198	345	Average
5386	57.63	48.95	74	-16.37	34.31	8.41	34.04	198	345	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5096	42	33.84	54	-12	34.08	8.07	33.99	142	329	Average
5096	56.44	48.28	74	-17.56	34.08	8.07	33.99	142	329	Peak
5220	88.87	80.48			34.17	8.22	34	142	329	Average
5220	95.9	87.51			34.17	8.22	34	142	329	Peak
5452	42.48	33.66	54	-11.52	34.36	8.51	34.05	142	329	Average
5452	58.51	49.69	74	-15.49	34.36	8.51	34.05	142	329	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5122	42.15	33.95	54	-11.85	34.09	8.1	33.99	198	345	Average
5122	55.76	47.56	74	-18.24	34.09	8.1	33.99	198	345	Peak
5240	91.7	83.26			34.19	8.26	34.01	198	345	Average
5240	98.41	89.97			34.19	8.26	34.01	198	345	Peak
5446	42.57	33.74	54	-11.43	34.36	8.51	34.04	198	345	Average
5446	56.9	48.07	74	-17.1	34.36	8.51	34.04	198	345	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5028	41.93	33.9	54	-12.07	34.03	7.97	33.97	147	329	Average
5028	57.08	49.05	74	-16.92	34.03	7.97	33.97	147	329	Peak
5240	88.13	79.69			34.19	8.26	34.01	147	329	Average
5240	95.79	87.35			34.19	8.26	34.01	147	329	Peak
5426	42.38	33.61	54	-11.62	34.33	8.48	34.04	147	329	Average
5426	56.49	47.72	74	-17.51	34.33	8.48	34.04	147	329	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5240 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5140	42.22	33.96	54	-11.78	34.12	8.13	33.99	172	336	Average
5140	56.23	47.97	74	-17.77	34.12	8.13	33.99	172	336	Peak
5260	92.4	83.94			34.21	8.26	34.01	172	336	Average
5260	99.11	90.65			34.21	8.26	34.01	172	336	Peak
5432	42.74	33.95	54	-11.26	34.35	8.48	34.04	172	336	Average
5432	57.21	48.42	74	-16.79	34.35	8.48	34.04	172	336	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5054	41.91	33.85	54	-12.09	34.04	8	33.98	178	34	Average
5054	55.75	47.69	74	-18.25	34.04	8	33.98	178	34	Peak
5260	91.5	83.04			34.21	8.26	34.01	178	34	Average
5260	98.22	89.76			34.21	8.26	34.01	178	34	Peak
5456	42.65	33.83	54	-11.35	34.36	8.51	34.05	178	34	Average
5456	57.26	48.44	74	-16.74	34.36	8.51	34.05	178	34	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5260 MHz: Fundamental Frequency

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5038	42.05	33.98	54	-11.95	34.04	8	33.97	157	336	Average
5038	57.59	49.52	74	-16.41	34.04	8	33.97	157	336	Peak
5300	92.12	83.58			34.24	8.32	34.02	157	336	Average
5300	99.14	90.6			34.24	8.32	34.02	157	336	Peak
5430	42.81	34.02	54	-11.19	34.35	8.48	34.04	157	336	Average
5430	57.27	48.48	74	-16.73	34.35	8.48	34.04	157	336	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5066	42.06	33.96	54	-11.94	34.05	8.03	33.98	178	34	Average
5066	57.07	48.97	74	-16.93	34.05	8.03	33.98	178	34	Peak
5300	91.41	82.87			34.24	8.32	34.02	178	34	Average
5300	98.14	89.6			34.24	8.32	34.02	178	34	Peak
5444	42.65	33.86	54	-11.35	34.35	8.48	34.04	178	34	Average
5444	57.17	48.38	74	-16.83	34.35	8.48	34.04	178	34	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5110	42.26	34.06	54	-11.74	34.09	8.1	33.99	156	336	Average
5110	56.39	48.19	74	-17.61	34.09	8.1	33.99	156	336	Peak
5320	92.94	84.36			34.25	8.35	34.02	156	336	Average
5320	99.69	91.11			34.25	8.35	34.02	156	336	Peak
5444	42.81	34.02	54	-11.19	34.35	8.48	34.04	156	336	Average
5444	57.37	48.58	74	-16.63	34.35	8.48	34.04	156	336	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5078	41.97	-0.13	54	-12.03	34.07	8.03	33.99	170	34	Average
5078	56.33	14.23	74	-17.67	34.07	8.03	33.99	170	34	Peak
5320	91.13	48.53			34.25	8.35	34.02	170	34	Average
5320	98.61	56.01			34.25	8.35	34.02	170	34	Peak
5446	42.86	-0.01	54	-11.14	34.36	8.51	34.04	170	34	Average
5446	58.15	15.28	74	-15.85	34.36	8.51	34.04	170	34	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5454	42.78	33.96	54	-11.22	34.36	8.51	34.05	107	340	Average
5454	57.54	48.72	74	-16.46	34.36	8.51	34.05	107	340	Peak
5470	56.98	48.15	68.2	-11.22	34.37	8.51	34.05	107	340	Peak
5500	90.14	81.22			34.4	8.57	34.05	107	340	Average
5500	97.21	88.29			34.4	8.57	34.05	107	340	Peak
5725	56.29	47.13	68.2	-11.91	34.62	8.65	34.11	107	340	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5432	42.51	33.72	54	-11.49	34.35	8.48	34.04	105	41	Average
5432	57.01	48.22	74	-16.99	34.35	8.48	34.04	105	41	Peak
5470	54.94	46.11	68.2	-13.26	34.37	8.51	34.05	105	41	Peak
5500	89.66	80.74			34.4	8.57	34.05	105	41	Average
5500	96.35	87.43			34.4	8.57	34.05	105	41	Peak
5725	55.44	46.28	68.2	-12.76	34.62	8.65	34.11	105	41	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5500 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	42.43	33.61	54	-11.57	34.36	8.51	34.05	105	340	Average
5460	57.94	49.12	74	-16.06	34.36	8.51	34.05	105	340	Peak
5470	56.44	47.61	68.2	-11.76	34.37	8.51	34.05	105	340	Peak
5580	90.08	81.09			34.47	8.6	34.08	105	340	Average
5580	97.21	88.22			34.47	8.6	34.08	105	340	Peak
5725	56.59	47.43	68.2	-11.61	34.62	8.65	34.11	105	340	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5454	42.49	33.67	54	-11.51	34.36	8.51	34.05	103	41	Average
5454	56.62	47.8	74	-17.38	34.36	8.51	34.05	103	41	Peak
5470	56.05	47.22	68.2	-12.15	34.37	8.51	34.05	103	41	Peak
5580	89.75	80.76			34.47	8.6	34.08	103	41	Average
5580	96.32	87.33			34.47	8.6	34.08	103	41	Peak
5725	55.99	46.83	68.2	-12.21	34.62	8.65	34.11	103	41	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5580 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5442	42.59	33.8	54	-11.41	34.35	8.48	34.04	103	340	Average
5442	57.25	48.46	74	-16.75	34.35	8.48	34.04	103	340	Peak
5470	55.67	46.84	68.2	-12.53	34.37	8.51	34.05	103	340	Peak
5700	90.92	81.79			34.59	8.64	34.1	103	340	Average
5700	97.38	88.25			34.59	8.64	34.1	103	340	Peak
5725	55.59	46.43	68.2	-12.61	34.62	8.65	34.11	103	340	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5452	42.58	33.76	54	-11.42	34.36	8.51	34.05	101	41	Average
5452	56.53	47.71	74	-17.47	34.36	8.51	34.05	101	41	Peak
5470	55.99	47.16	68.2	-12.21	34.37	8.51	34.05	101	41	Peak
5700	89.87	80.74			34.59	8.64	34.1	101	41	Average
5700	96.8	87.67			34.59	8.64	34.1	101	41	Peak
5725	56.77	47.61	68.2	-11.43	34.62	8.65	34.11	101	41	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5700 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5706	56.45	47.3	68.2	-11.75	34.61	8.65	34.11	109	334	Peak
*5724	58.61	49.45	78.2	-19.59	34.62	8.65	34.11	109	334	Peak
5745	90	80.81			34.64	8.66	34.11	109	334	Average
5745	97.91	88.72			34.64	8.66	34.11	109	334	Peak
*5854	56.6	47.28	78.2	-21.6	34.76	8.7	34.14	109	334	Peak
*5864	56.51	47.18	68.2	-11.69	34.76	8.71	34.14	109	334	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5706	56.15	47	68.2	-12.05	34.61	8.65	34.11	100	39	Peak
*5724	55.91	46.75	78.2	-22.29	34.62	8.65	34.11	100	39	Peak
5745	89.87	80.68			34.64	8.66	34.11	100	39	Average
5745	96.97	87.78			34.64	8.66	34.11	100	39	Peak
*5858	56.11	46.79	78.2	-22.09	34.76	8.7	34.14	100	39	Peak
*5862	55.72	46.39	68.2	-12.48	34.76	8.71	34.14	100	39	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	56.18	47.03	68.2	-12.02	34.61	8.65	34.11	102	334	Peak
*5722	56.28	47.12	78.2	-21.92	34.62	8.65	34.11	102	334	Peak
5785	90.36	81.13			34.68	8.68	34.13	102	334	Average
5785	97.37	88.14			34.68	8.68	34.13	102	334	Peak
*5858	57.03	47.71	78.2	-21.17	34.76	8.7	34.14	102	334	Peak
*5868	56.52	47.19	68.2	-11.68	34.76	8.71	34.14	102	334	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5706	56.65	47.5	68.2	-11.55	34.61	8.65	34.11	100	39	Peak
*5718	55.66	46.5	78.2	-22.54	34.62	8.65	34.11	100	39	Peak
5785	89.35	80.12			34.68	8.68	34.13	100	39	Average
5785	96.28	87.05			34.68	8.68	34.13	100	39	Peak
*5856	57.18	47.86	78.2	-21.02	34.76	8.7	34.14	100	39	Peak
*5866	55.59	46.26	68.2	-12.61	34.76	8.71	34.14	100	39	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5708	56.64	47.49	68.2	-11.56	34.61	8.65	34.11	107	334	Peak
*5722	56.66	47.5	78.2	-21.54	34.62	8.65	34.11	107	334	Peak
5825	90.11	80.82			34.73	8.69	34.13	107	334	Average
5825	97.32	88.03			34.73	8.69	34.13	107	334	Peak
*5854	56.27	46.95	78.2	-21.93	34.76	8.7	34.14	107	334	Peak
*5862	57.65	48.32	68.2	-10.55	34.76	8.71	34.14	107	334	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5706	56.07	46.92	68.2	-12.13	34.61	8.65	34.11	111	39	Peak
*5720	56.02	46.86	78.2	-22.18	34.62	8.65	34.11	111	39	Peak
5825	89.31	80.02			34.73	8.69	34.13	111	39	Average
5825	96.49	87.2			34.73	8.69	34.13	111	39	Peak
*5858	56.04	46.72	78.2	-22.16	34.76	8.7	34.14	111	39	Peak
*5864	55.72	46.39	68.2	-12.48	34.76	8.71	34.14	111	39	Peak

Remarks:

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

802.11n (HT40)

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

Antenna Polarity & Test Distance: Horizontal at 3 m

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5092	43.81	35.64	54	-10.19	34.08	8.07	33.98	212	346	Average
5092	56.88	48.71	74	-17.12	34.08	8.07	33.98	212	346	Peak
5190	89.28	80.94			34.15	8.19	34	212	346	Average
5190	96.48	88.14			34.15	8.19	34	212	346	Peak
5448	42.91	34.08	54	-11.09	34.36	8.51	34.04	212	346	Average
5448	58.37	49.54	74	-15.63	34.36	8.51	34.04	212	346	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5068	42.93	34.83	54	-11.07	34.05	8.03	33.98	143	329	Average
5068	57.45	49.35	74	-16.55	34.05	8.03	33.98	143	329	Peak
5190	86.94	78.6			34.15	8.19	34	143	329	Average
5190	93.75	85.41			34.15	8.19	34	143	329	Peak
5434	42.89	34.1	54	-11.11	34.35	8.48	34.04	143	329	Average
5434	57.41	48.62	74	-16.59	34.35	8.48	34.04	143	329	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5128	43.3	35.08	54	-10.7	34.11	8.1	33.99	198	345	Average
5128	56.81	48.59	74	-17.19	34.11	8.1	33.99	198	345	Peak
5230	89.6	81.2			34.19	8.22	34.01	198	345	Average
5230	96.58	88.18			34.19	8.22	34.01	198	345	Peak
5460	43.46	34.64	54	-10.54	34.36	8.51	34.05	198	345	Average
5460	57.04	48.22	74	-16.96	34.36	8.51	34.05	198	345	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5088	42.65	34.49	54	-11.35	34.07	8.07	33.98	147	329	Average
5088	56.48	48.32	74	-17.52	34.07	8.07	33.98	147	329	Peak
5230	86.09	77.69			34.19	8.22	34.01	147	329	Average
5230	93.71	85.31			34.19	8.22	34.01	147	329	Peak
5436	43.12	34.33	54	-10.88	34.35	8.48	34.04	147	329	Average
5436	57.08	48.29	74	-16.92	34.35	8.48	34.04	147	329	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5060	42.63	34.53	54	-11.37	34.05	8.03	33.98	172	336	Average
5060	56.13	48.03	74	-17.87	34.05	8.03	33.98	172	336	Peak
5270	90.09	81.6			34.21	8.29	34.01	172	336	Average
5270	97.45	88.96			34.21	8.29	34.01	172	336	Peak
5410	43.09	34.37	54	-10.91	34.32	8.44	34.04	172	336	Average
5410	57.47	48.75	74	-16.53	34.32	8.44	34.04	172	336	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5106	42.64	34.47	54	-11.36	34.09	8.07	33.99	178	34	Average
5106	57.16	48.99	74	-16.84	34.09	8.07	33.99	178	34	Peak
5270	89.75	81.26			34.21	8.29	34.01	178	34	Average
5270	96.1	87.61			34.21	8.29	34.01	178	34	Peak
5446	43.13	34.3	54	-10.87	34.36	8.51	34.04	178	34	Average
5446	57.62	48.79	74	-16.38	34.36	8.51	34.04	178	34	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5096	42.47	34.31	54	-11.53	34.08	8.07	33.99	156	336	Average
5096	56.76	48.6	74	-17.24	34.08	8.07	33.99	156	336	Peak
5310	89.9	81.35			34.25	8.32	34.02	156	336	Average
5310	96.94	88.39			34.25	8.32	34.02	156	336	Peak
5446	43.78	34.95	54	-10.22	34.36	8.51	34.04	156	336	Average
5446	57.3	48.47	74	-16.7	34.36	8.51	34.04	156	336	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5146	42.63	34.38	54	-11.37	34.12	8.13	34	170	34	Average
5146	56.99	48.74	74	-17.01	34.12	8.13	34	170	34	Peak
5310	90.15	81.6			34.25	8.32	34.02	170	34	Average
5310	96.42	87.87			34.25	8.32	34.02	170	34	Peak
5420	43.34	34.57	54	-10.66	34.33	8.48	34.04	170	34	Average
5420	57.15	48.38	74	-16.85	34.33	8.48	34.04	170	34	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5460	43.32	34.5	54	-10.68	34.36	8.51	34.05	101	340	Average
5460	57.64	48.82	74	-16.36	34.36	8.51	34.05	101	340	Peak
5470	60.78	51.95	68.2	-7.42	34.37	8.51	34.05	101	340	Peak
5510	87.32	78.41			34.4	8.57	34.06	101	340	Average
5510	94.69	85.78			34.4	8.57	34.06	101	340	Peak
5725	54.99	45.83	68.2	-13.21	34.62	8.65	34.11	101	340	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5434	43.17	34.38	54	-10.83	34.35	8.48	34.04	105	41	Average
5434	56.79	48	74	-17.21	34.35	8.48	34.04	105	41	Peak
5470	60.39	51.56	68.2	-7.81	34.37	8.51	34.05	105	41	Peak
5510	86.11	77.2			34.4	8.57	34.06	105	41	Average
5510	93.02	84.11			34.4	8.57	34.06	105	41	Peak
5725	54.88	45.72	68.2	-13.32	34.62	8.65	34.11	105	41	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5510 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5446	43.19	34.36	54	-10.81	34.36	8.51	34.04	105	340	Average
5446	56.94	48.11	74	-17.06	34.36	8.51	34.04	105	340	Peak
5470	56.44	47.61	68.2	-11.76	34.37	8.51	34.05	105	340	Peak
5550	87.04	78.07			34.45	8.59	34.07	105	340	Average
5550	94.01	85.04			34.45	8.59	34.07	105	340	Peak
5725	57.02	47.86	68.2	-11.18	34.62	8.65	34.11	105	340	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5450	43.2	34.38	54	-10.8	34.36	8.51	34.05	105	41	Average
5450	56.58	47.76	74	-17.42	34.36	8.51	34.05	105	41	Peak
5470	55.49	46.66	68.2	-12.71	34.37	8.51	34.05	105	41	Peak
5550	86.72	77.75			34.45	8.59	34.07	105	41	Average
5550	93.68	84.71			34.45	8.59	34.07	105	41	Peak
5725	55.88	46.72	68.2	-12.32	34.62	8.65	34.11	105	41	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5550 MHz: Fundamental Frequency
- 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)	Emission Level (dBuV/m)	Read 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	43.15	34.32	54	-10.85	34.36	8.51	34.04	105	340	Average
5448	56.13	47.3	74	-17.87	34.36	8.51	34.04	105	340	Peak
5470	55.6	46.77	68.2	-12.6	34.37	8.51	34.05	105	340	Peak
5670	87.85	78.75			34.57	8.63	34.1	105	340	Average
5670	94.71	85.61			34.57	8.63	34.1	105	340	Peak
5725	55.13	45.97	68.2	-13.07	34.62	8.65	34.11	105	340	Peak

Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5458	43.12	34.3	54	-10.88	34.36	8.51	34.05	101	41	Average
5458	57.14	48.32	74	-16.86	34.36	8.51	34.05	101	41	Peak
5470	54.91	46.08	68.2	-13.29	34.37	8.51	34.05	101	41	Peak
5670	86.75	77.65			34.57	8.63	34.1	101	41	Average
5670	93.62	84.52			34.57	8.63	34.1	101	41	Peak
5725	55.25	46.09	68.2	-12.95	34.62	8.65	34.11	101	41	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5670 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: 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)	Emission Level (dBuV/m)	Read 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	57.97	48.82	68.2	-10.23	34.61	8.65	34.11	102	334	Peak
*5720	63.03	53.87	78.2	-15.17	34.62	8.65	34.11	102	334	Peak
5755	87.84	78.63			34.66	8.66	34.11	102	334	Average
5755	94.29	85.08			34.66	8.66	34.11	102	334	Peak
*5860	56.07	46.75	78.2	-22.13	34.76	8.7	34.14	102	334	Peak
*5864	56.16	46.83	68.2	-12.04	34.76	8.71	34.14	102	334	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5710	57.2	48.05	68.2	-11	34.61	8.65	34.11	100	39	Peak
*5722	62.97	53.81	78.2	-15.23	34.62	8.65	34.11	100	39	Peak
5755	86.32	77.11			34.66	8.66	34.11	100	39	Average
5755	93.1	83.89			34.66	8.66	34.11	100	39	Peak
*5860	57.08	47.76	78.2	-21.12	34.76	8.7	34.14	100	39	Peak
*5864	56.24	46.91	68.2	-11.96	34.76	8.71	34.14	100	39	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5714	56.74	47.59	68.2	-11.46	34.61	8.65	34.11	109	334	Peak
*5720	55.9	46.74	78.2	-22.3	34.62	8.65	34.11	109	334	Peak
5795	87.52	78.28			34.69	8.68	34.13	109	334	Average
5795	94.07	84.83			34.69	8.68	34.13	109	334	Peak
*5858	56.28	46.96	78.2	-21.92	34.76	8.7	34.14	109	334	Peak
*5870	56.91	47.58	68.2	-11.29	34.76	8.71	34.14	109	334	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
*5712	57.39	48.24	68.2	-10.81	34.61	8.65	34.11	100	39	Peak
*5724	56.9	47.74	78.2	-21.3	34.62	8.65	34.11	100	39	Peak
5795	86.49	77.25			34.69	8.68	34.13	100	39	Average
5795	93.13	83.89			34.69	8.68	34.13	100	39	Peak
*5854	56.31	46.99	78.2	-21.89	34.76	8.7	34.14	100	39	Peak
*5862	57.03	47.7	68.2	-11.17	34.76	8.71	34.14	100	39	Peak

Remarks:

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

802.11ac (VHT80)

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5118	45.05	36.85	54	-8.95	34.09	8.1	33.99	198	345	Average
5118	56.9	48.7	74	-17.1	34.09	8.1	33.99	198	345	Peak
5210	84.9	76.54			34.17	8.19	34	198	345	Average
5210	92.63	84.27			34.17	8.19	34	198	345	Peak
5450	43.58	34.76	54	-10.42	34.36	8.51	34.05	198	345	Average
5450	59.02	50.2	74	-14.98	34.36	8.51	34.05	198	345	Peak

Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5048	43.54	35.48	54	-10.46	34.04	8	33.98	142	329	Average
5048	56.74	48.68	74	-17.26	34.04	8	33.98	142	329	Peak
5210	82.44	74.08			34.17	8.19	34	142	329	Average
5210	89.41	81.05			34.17	8.19	34	142	329	Peak
5424	43.28	34.51	54	-10.72	34.33	8.48	34.04	142	329	Average
5424	56.99	48.22	74	-17.01	34.33	8.48	34.04	142	329	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5052	43.29	35.23	54	-10.71	34.04	8	33.98	160	336	Average
5052	57.21	49.15	74	-16.79	34.04	8	33.98	160	336	Peak
5290	86.1	77.57			34.23	8.32	34.02	160	336	Average
5290	93.93	85.4			34.23	8.32	34.02	160	336	Peak
5444	44.55	35.76	54	-9.45	34.35	8.48	34.04	160	336	Average
5444	57.29	48.5	74	-16.71	34.35	8.48	34.04	160	336	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5082	43.04	34.88	54	-10.96	34.07	8.07	33.98	178	34	Average
5082	56.41	48.25	74	-17.59	34.07	8.07	33.98	178	34	Peak
5290	85.36	76.83			34.23	8.32	34.02	178	34	Average
5290	92.88	84.35			34.23	8.32	34.02	178	34	Peak
5440	44.57	35.78	54	-9.43	34.35	8.48	34.04	178	34	Average
5440	57.33	48.54	74	-16.67	34.35	8.48	34.04	178	34	Peak

Remarks:

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

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5426	44.61	35.84	54	-9.39	34.33	8.48	34.04	100	340	Average
5426	57.72	48.95	74	-16.28	34.33	8.48	34.04	100	340	Peak
5470	59.81	50.98	68.2	-8.39	34.37	8.51	34.05	100	340	Peak
5530	84.1	75.17			34.42	8.58	34.07	100	340	Average
5530	91.89	82.96			34.42	8.58	34.07	100	340	Peak
5725	56.3	47.14	68.2	-11.9	34.62	8.65	34.11	100	340	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5442	43.3	34.51	54	-10.7	34.35	8.48	34.04	105	41	Average
5442	57.23	48.44	74	-16.77	34.35	8.48	34.04	105	41	Peak
5470	57.71	48.88	68.2	-10.49	34.37	8.51	34.05	105	41	Peak
5530	83.88	74.95			34.42	8.58	34.07	105	41	Average
5530	90.1	81.17			34.42	8.58	34.07	105	41	Peak
5725	55.59	46.43	68.2	-12.61	34.62	8.65	34.11	105	41	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5530 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 122	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5446	43.36	34.53	54	-10.64	34.36	8.51	34.04	105	340	Average
5446	56.76	47.93	74	-17.24	34.36	8.51	34.04	105	340	Peak
5470	54.92	46.09	68.2	-13.28	34.37	8.51	34.05	105	340	Peak
5610	84.23	75.2			34.5	8.61	34.08	105	340	Average
5610	91.34	82.31			34.5	8.61	34.08	105	340	Peak
5725	56.22	47.06	68.2	-11.98	34.62	8.65	34.11	105	340	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5458	43.37	34.55	54	-10.63	34.36	8.51	34.05	103	41	Average
5458	57.02	48.2	74	-16.98	34.36	8.51	34.05	103	41	Peak
5470	56	47.17	68.2	-12.2	34.37	8.51	34.05	103	41	Peak
5610	83.86	74.83			34.5	8.61	34.08	103	41	Average
5610	90.69	81.66			34.5	8.61	34.08	103	41	Peak
5725	55.37	46.21	68.2	-12.83	34.62	8.65	34.11	103	41	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5610 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

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

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5714	57.57	48.42	68.2	-10.63	34.61	8.65	34.11	109	334	Peak
5724	57.2	48.04	78.2	-21	34.62	8.65	34.11	109	334	Peak
5775	84.45	75.22			34.68	8.67	34.12	109	334	Average
5775	91.23	82			34.68	8.67	34.12	109	334	Peak
5856	57.19	47.87	78.2	-21.01	34.76	8.7	34.14	109	334	Peak
5868	56.37	47.04	68.2	-11.83	34.76	8.71	34.14	109	334	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5714	56.81	47.66	68.2	-11.39	34.61	8.65	34.11	100	39	Peak
5720	57.14	47.98	78.2	-21.06	34.62	8.65	34.11	100	39	Peak
5775	83.01	73.78			34.68	8.67	34.12	100	39	Average
5775	90.39	81.16			34.68	8.67	34.12	100	39	Peak
5856	56.7	47.38	78.2	-21.5	34.76	8.7	34.14	100	39	Peak
5866	54.58	45.25	68.2	-13.62	34.76	8.71	34.14	100	39	Peak

Remarks:

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

9 kHz ~ 30 MHz DATA:

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

30 MHz ~ 1 GHz WORST-CASE DATA:

802.11ac (VHT80)

EUT Test Condition		Measurement Detail	
Channel	Channel 42	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
88.32	26.83	48.7	43.5	-16.67	8.83	1.11	31.81	188	111	Peak
146.64	23.3	44.34	43.5	-20.2	9.85	1.38	32.27	132	30	Peak
180.66	21.53	41.76	43.5	-21.97	10.4	1.61	32.24	104	161	Peak
419.7	27.75	39.76	46	-18.25	17.77	2.41	32.19	195	357	Peak
605.9	21.16	29.09	46	-24.84	21.39	2.87	32.19	187	82	Peak
806.1	25.62	29.95	46	-20.38	24.38	3.32	32.03	124	333	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
30.27	29.5	43.48	40	-10.5	17.55	0.74	32.27	175	222	Peak
46.47	27.23	49.64	40	-12.77	8.91	0.9	32.22	127	120	Peak
84	27.07	49.36	40	-12.93	8.61	1.11	32.01	184	340	Peak
419.7	29.3	41.31	46	-16.7	17.77	2.41	32.19	192	269	Peak
675.2	23.65	29.36	46	-22.35	23.36	3.05	32.12	168	2	Peak
797.7	26.09	30.41	46	-19.91	24.42	3.32	32.06	124	144	Peak

Remarks:

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

802.11ac (VHT80)

EUT Test Condition		Measurement Detail	
Channel	Channel 58	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
88.32	27	48.87	43.5	-16.5	8.83	1.11	31.81	130	111	Peak
143.94	23.84	45.12	43.5	-19.66	9.61	1.38	32.27	143	194	Peak
186.33	22.38	42.62	43.5	-21.12	10.4	1.61	32.25	180	261	Peak
544.3	20.83	29.87	46	-25.17	20.39	2.76	32.19	120	170	Peak
741	24.05	29.76	46	-21.95	23.27	3.16	32.14	130	165	Peak
806.8	25.04	29.36	46	-20.96	24.38	3.32	32.02	134	288	Peak

Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
46.74	27.89	50.39	40	-12.11	8.82	0.9	32.22	199	249	Peak
85.35	27.58	49.77	40	-12.42	8.66	1.11	31.96	104	105	Peak
181.2	16.25	36.48	43.5	-27.25	10.4	1.61	32.24	181	162	Peak
419.7	29.36	41.37	46	-16.64	17.77	2.41	32.19	180	143	Peak
624.8	21.66	28.8	46	-24.34	22.1	2.93	32.17	174	145	Peak
800.5	25.25	29.39	46	-20.75	24.6	3.32	32.06	125	180	Peak

Remarks:

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

802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 102	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Antenna Polarity & Test Distance: Horizontal at 3 m

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
88.32	27.98	49.85	43.5	-15.52	8.83	1.11	31.81	132	1	Peak
144.48	23.58	44.8	43.5	-19.92	9.67	1.38	32.27	169	66	Peak
185.79	23.14	43.38	43.5	-20.36	10.4	1.61	32.25	180	180	Peak
538.7	20.72	29.66	46	-25.28	20.48	2.76	32.18	128	7	Peak
703.2	23.92	29.76	46	-22.08	23.14	3.11	32.09	170	70	Peak
851.6	25.27	29.81	46	-20.73	23.8	3.44	31.78	125	252	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
46.74	28.19	50.69	40	-11.81	8.82	0.9	32.22	146	347	Peak
85.08	28.41	50.6	40	-11.59	8.66	1.11	31.96	186	190	Peak
146.1	17.87	38.97	43.5	-25.63	9.79	1.38	32.27	180	70	Peak
419.7	29.33	41.34	46	-16.67	17.77	2.41	32.19	177	358	Peak
670.3	23.49	29.38	46	-22.51	23.18	3.05	32.12	120	70	Peak
783.7	25.15	30.1	46	-20.85	23.87	3.27	32.09	132	187	Peak

Remarks:

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

802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 151	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Charles Hsiao

Antenna Polarity & Test Distance: Horizontal at 3 m

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
88.32	28.24	50.11	43.5	-15.26	8.83	1.11	31.81	188	111	Peak
144.21	23.61	44.83	43.5	-19.89	9.67	1.38	32.27	136	271	Peak
186.33	23.19	43.43	43.5	-20.31	10.4	1.61	32.25	105	104	Peak
454.7	19.13	30.6	46	-26.87	18.18	2.49	32.14	145	191	Peak
704.6	23.98	29.82	46	-22.02	23.14	3.11	32.09	123	239	Peak
797.7	24.81	29.13	46	-21.19	24.42	3.32	32.06	124	241	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
30	29.8	43.53	40	-10.2	17.8	0.74	32.27	178	74	Peak
46.47	28.32	50.73	40	-11.68	8.91	0.9	32.22	189	97	Peak
85.35	28.39	50.58	40	-11.61	8.66	1.11	31.96	185	350	Peak
419.7	29.59	41.6	46	-16.41	17.77	2.41	32.19	147	285	Peak
589.1	21.6	30.32	46	-24.4	20.6	2.87	32.19	125	215	Peak
732.6	25.5	31.14	46	-20.5	23.33	3.16	32.13	123	333	Peak

Remarks:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

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

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 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. 24, 2015	Jul. 23, 2016
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

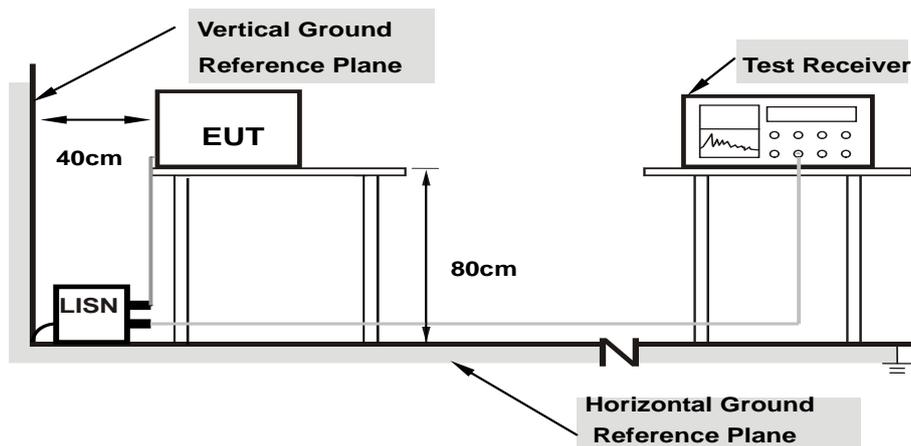
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

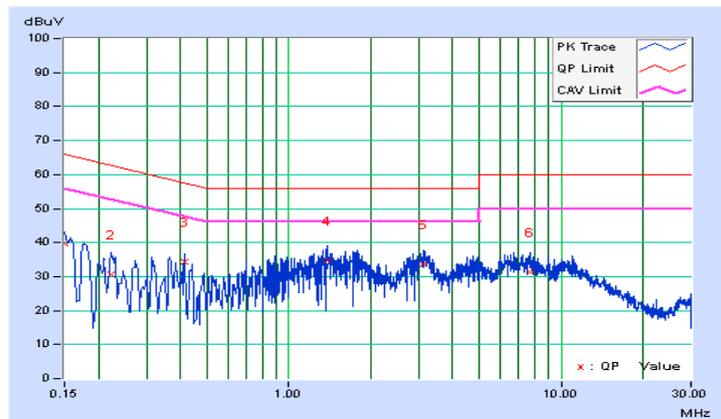
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2016/5/19

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	0.15000	10.01	29.60	19.38	39.61	29.39	66.00	56.00	-26.39	-26.61
2	0.22211	10.04	20.66	12.14	30.70	22.18	62.74	52.74	-32.04	-30.56
3	0.41400	10.12	24.24	12.78	34.36	22.90	57.57	47.57	-23.21	-24.67
4	1.38200	10.23	24.32	13.77	34.55	24.00	56.00	46.00	-21.45	-22.00
5	3.14200	10.35	23.39	11.88	33.74	22.23	56.00	46.00	-22.26	-23.77
6	7.66200	10.61	20.81	12.76	31.42	23.37	60.00	50.00	-28.58	-26.63

Remarks:

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

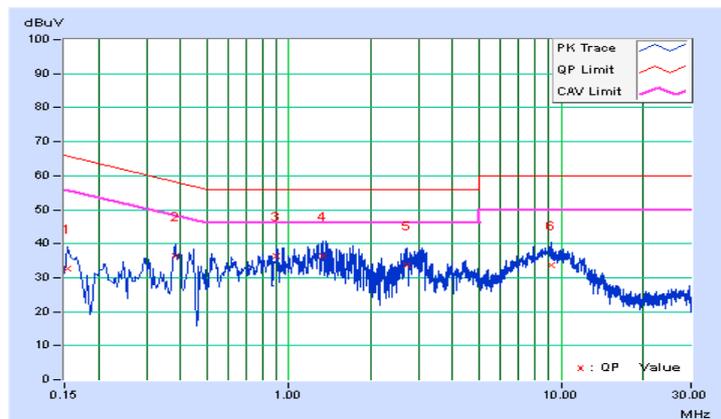


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2016/5/19

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	0.15400	10.03	22.76	13.17	32.79	23.20	65.78	55.78	-33.00	-32.59
2	0.38218	10.12	26.37	16.53	36.49	26.65	58.23	48.23	-21.74	-21.58
3	0.89800	10.20	26.17	13.92	36.37	24.12	56.00	46.00	-19.63	-21.88
4	1.33400	10.23	26.29	14.25	36.52	24.48	56.00	46.00	-19.48	-21.52
5	2.71800	10.33	23.22	12.15	33.55	22.48	56.00	46.00	-22.45	-23.52
6	9.19800	10.75	22.90	15.95	33.65	26.70	60.00	50.00	-26.35	-23.30

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

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

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

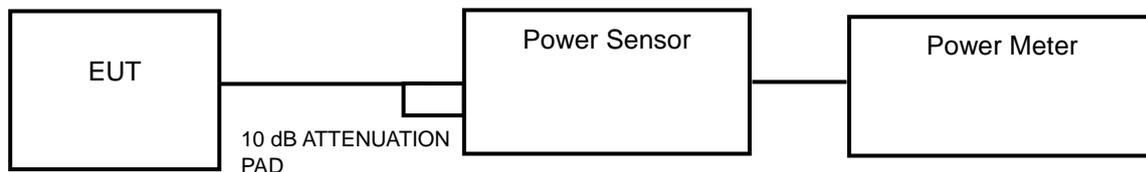
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

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

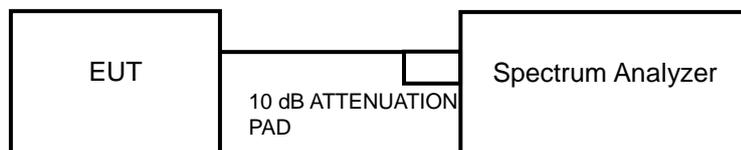
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

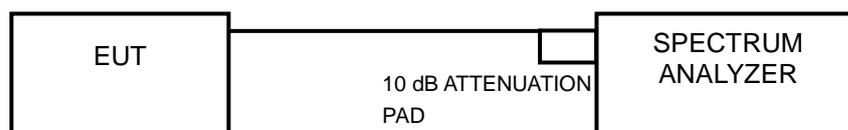
<Power Output Measurement>



or



<26 dB Bandwidth>



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

Average Power Measurement

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

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

<802.11ac (VHT80)>

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

26 dB Bandwidth

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

Power Output:

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	8.26	9.17	24	Pass
44	5220	8.34	9.21	24	Pass
48	5240	8.49	9.29	24	Pass
52	5260	7.80	8.92	24	Pass
60	5300	7.71	8.87	24	Pass
64	5320	7.89	8.97	24	Pass
100	5500	7.52	8.76	24	Pass
116	5580	7.45	8.72	24	Pass
140	5700	7.91	8.98	24	Pass
149	5745	7.35	8.66	30	Pass
157	5785	6.93	8.41	30	Pass
165	5825	6.56	8.17	30	Pass

Note:

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

1. $11 \text{ dBm} + 10\log(20.43) = 24.10 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(20.42) = 24.10 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(20.43) = 24.10 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(20.36) = 24.09 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(20.44) = 24.10 \text{ dBm} > 24 \text{ dBm}$.
6. $11 \text{ dBm} + 10\log(20.41) = 24.10 \text{ dBm} > 24 \text{ dBm}$.

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	8.00	9.03	24	Pass
44	5220	7.87	8.96	24	Pass
48	5240	8.18	9.13	24	Pass
52	5260	7.41	8.70	24	Pass
60	5300	7.36	8.67	24	Pass
64	5320	7.45	8.72	24	Pass
100	5500	7.05	8.48	24	Pass
116	5580	6.78	8.31	24	Pass
140	5700	7.11	8.52	24	Pass
149	5745	6.50	8.13	30	Pass
157	5785	6.25	7.96	30	Pass
165	5825	5.94	7.74	30	Pass

Note:

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

1. $11 \text{ dBm} + 10\log(20.42) = 24.10 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(20.54) = 24.13 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(20.53) = 24.12 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(20.44) = 24.10 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(20.42) = 24.10 \text{ dBm} > 24 \text{ dBm}$.
6. $11 \text{ dBm} + 10\log(21.01) = 24.22 \text{ dBm} > 24 \text{ dBm}$.

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	8.61	9.35	24	Pass
46	5230	8.41	9.25	24	Pass
54	5270	7.83	8.94	24	Pass
62	5310	7.73	8.88	24	Pass
102	5510	7.23	8.59	24	Pass
110	5550	7.03	8.47	24	Pass
134	5670	7.67	8.85	24	Pass
151	5755	6.93	8.41	30	Pass
159	5795	6.84	8.35	30	Pass

Note:

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

1. $11 \text{ dBm} + 10\log(41.77) = 27.21 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(42.18) = 27.25 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(41.93) = 27.23 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(41.71) = 27.20 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(41.85) = 27.22 \text{ dBm} > 24 \text{ dBm}$.

802.11ac (VHT80)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	4.84	6.85	24	Pass
58	5290	5.38	7.31	24	Pass
106	5530	5.66	7.53	24	Pass
122	5610	5.15	7.12	24	Pass
155	5775	5.02	7.01	30	Pass

Note:

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

1. $11 \text{ dBm} + 10\log(81.44) = 30.11 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(81.71) = 30.12 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(81.75) = 30.12 \text{ dBm} > 24 \text{ dBm}$.

26 dB Bandwidth:
802.11a

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	20.36
44	5220	20.39
48	5240	20.42
52	5260	20.43
60	5300	20.42
64	5320	20.43
100	5500	20.36
116	5580	20.44
140	5700	20.41

802.11n (HT20)

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	20.64
44	5220	20.49
48	5240	20.58
52	5260	20.42
60	5300	20.54
64	5320	20.53
100	5500	20.44
116	5580	20.42
140	5700	21.01

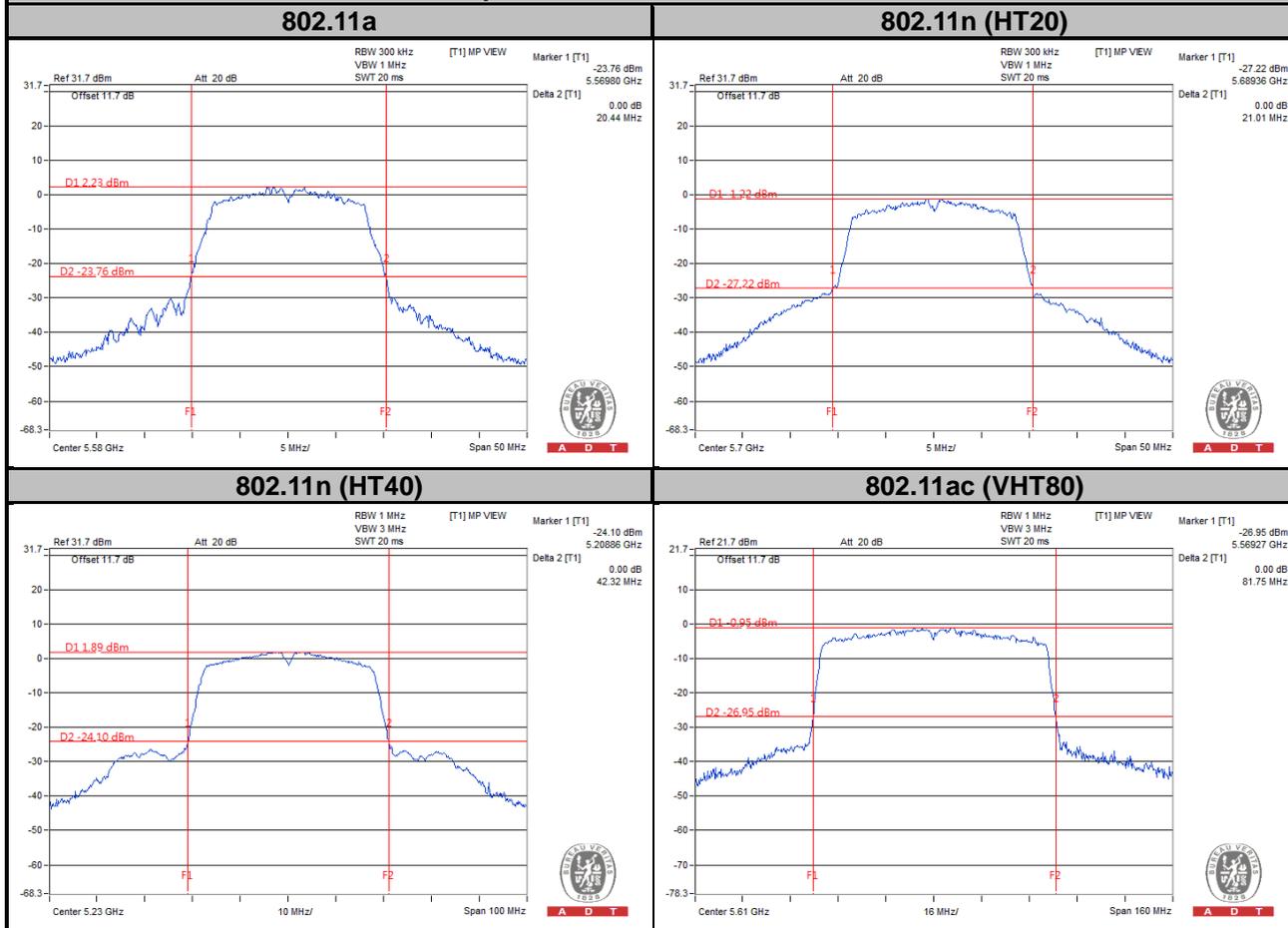
802.11n (HT40)

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
38	5190	41.48
46	5230	42.32
54	5270	41.77
62	5310	42.18
102	5510	41.93
110	5550	41.71
134	5670	41.85

802.11ac (VHT80)

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
42	5210	81.53
58	5290	81.44
106	5530	81.71
122	5610	81.75

Spectrum Plot of Worst Value

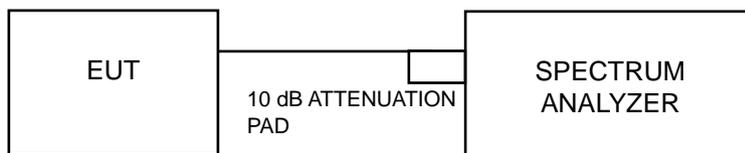


4.4 Peak Power Spectral Density Measurement

4.4.1 Limits of Peak Power Spectral Density Measurement

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.4.4 Test Procedures

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

Using method SA-2

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

※For U-NII-3:

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

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

4.4.7 Test Results

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	-2.39	0.29	-2.10	11	Pass
44	5220	-2.29	0.29	-2.00	11	Pass
48	5240	-2.06	0.29	-1.77	11	Pass
52	5260	-2.19	0.29	-1.90	11	Pass
60	5300	-1.68	0.29	-1.39	11	Pass
64	5320	-1.68	0.29	-1.39	11	Pass
100	5500	-0.83	0.29	-0.54	11	Pass
116	5580	-1.17	0.29	-0.88	11	Pass
140	5700	-1.87	0.29	-1.58	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	-4.65	0.34	-4.31	11	Pass
44	5220	-4.72	0.34	-4.38	11	Pass
48	5240	-4.71	0.34	-4.37	11	Pass
52	5260	-4.67	0.34	-4.33	11	Pass
60	5300	-4.08	0.34	-3.74	11	Pass
64	5320	-3.90	0.34	-3.56	11	Pass
100	5500	-2.95	0.34	-2.61	11	Pass
116	5580	-3.36	0.34	-3.02	11	Pass
140	5700	-4.42	0.34	-4.08	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	-7.80	0.67	-7.13	11	Pass
46	5230	-6.68	0.67	-6.01	11	Pass
54	5270	-5.85	0.67	-5.18	11	Pass
62	5310	-5.68	0.67	-5.01	11	Pass
102	5510	-4.37	0.67	-3.70	11	Pass
110	5550	-4.78	0.67	-4.11	11	Pass
134	5670	-5.24	0.67	-4.57	11	Pass

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

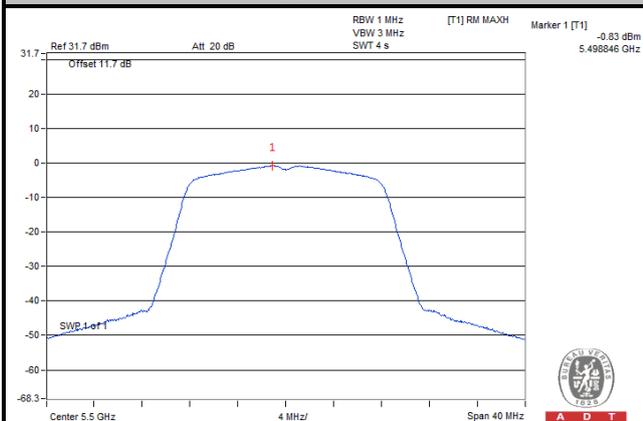
802.11ac (VHT80)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
42	5210	-12.29	1.51	-10.78	11	Pass
58	5290	-11.17	1.51	-9.66	11	Pass
106	5530	-10.69	1.51	-9.18	11	Pass
122	5610	-11.34	1.51	-9.83	11	Pass

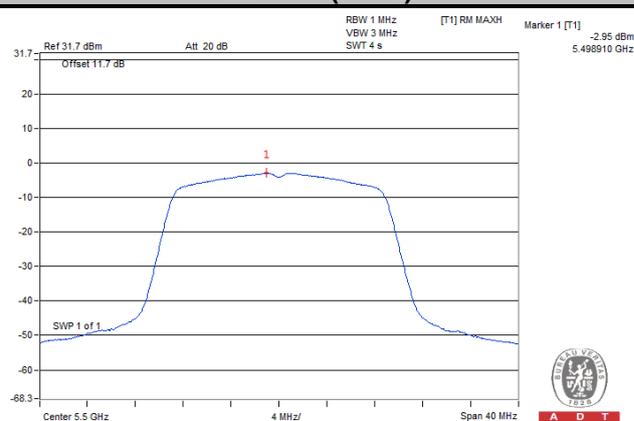
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

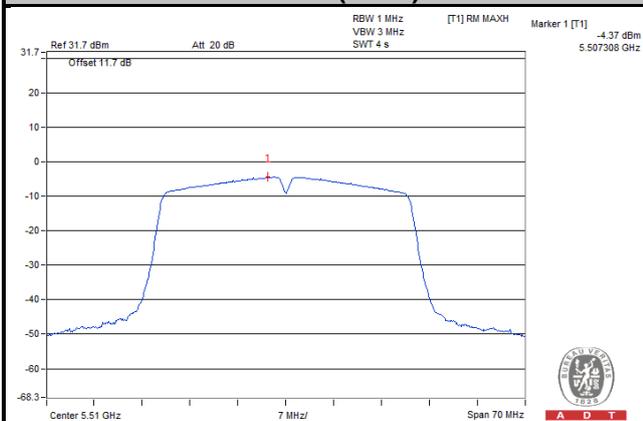
802.11a



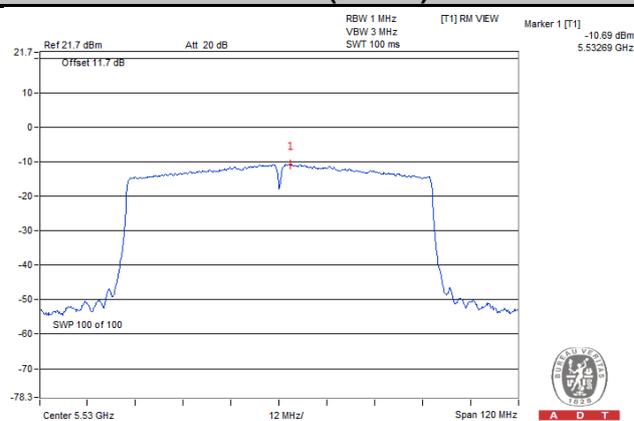
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



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	-5.97	0.29	-5.68	30	Pass
157	5785	-5.37	0.29	-5.08	30	Pass
165	5825	-5.17	0.29	-4.88	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	-6.21	0.34	-5.87	30	Pass
157	5785	-5.67	0.34	-5.33	30	Pass
165	5825	-5.61	0.34	-5.27	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	-9.26	0.67	-8.59	30	Pass
159	5795	-8.73	0.67	-8.06	30	Pass

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

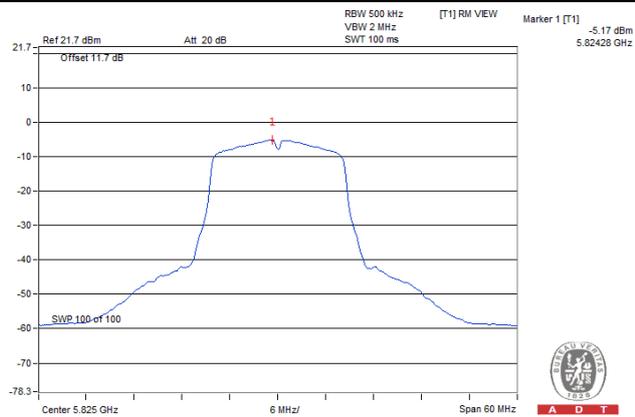
802.11ac (VHT80)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
155	5775	-13.59	1.51	-12.08	30	Pass

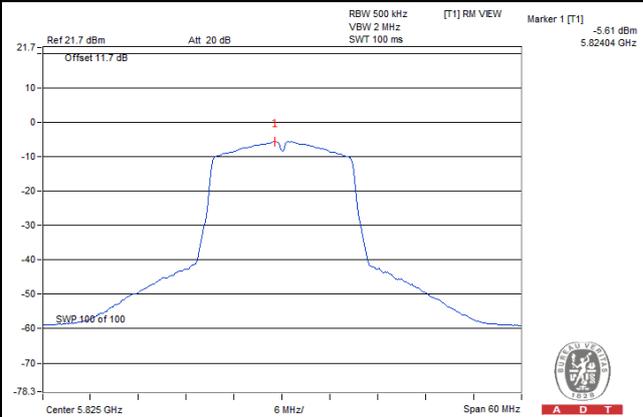
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

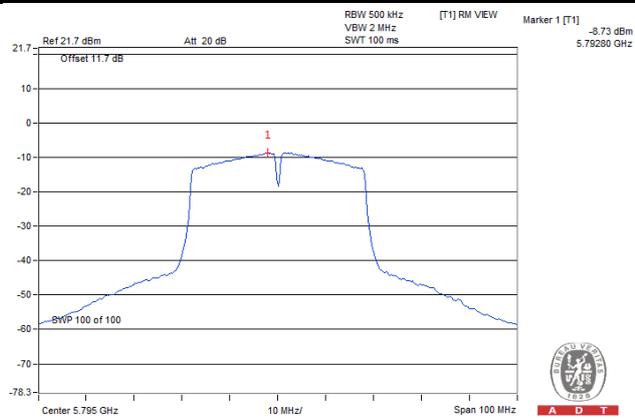
802.11a



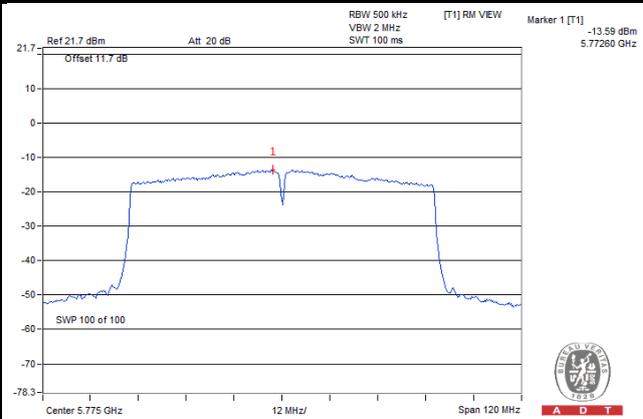
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

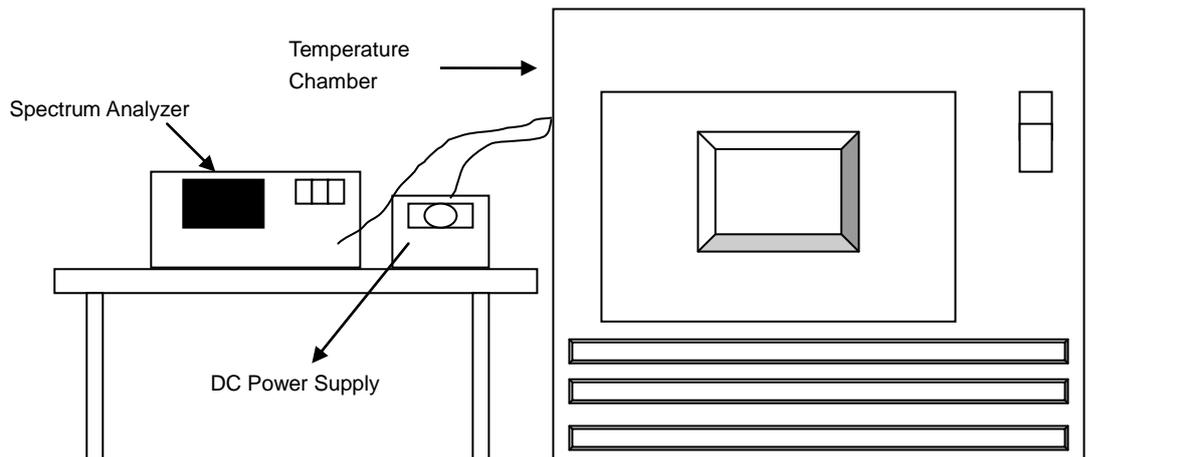


4.5 Frequency Stability

4.5.1 Limit of Frequency Stability Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.5.4 Test Procedure

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5320 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (ppm)						
50	3.8	5320.017699	3.32688	5320.017783	3.34267	5320.017419	3.27425	5320.017648	3.31729
40	3.8	5320.017837	3.35282	5320.017862	3.35752	5320.018027	3.38853	5320.017995	3.38252
30	3.8	5320.019077	3.58590	5320.019518	3.66880	5320.019539	3.67274	5320.019116	3.59323
20	3.8	5320.020240	3.80451	5320.020190	3.79511	5320.020249	3.80620	5320.020560	3.86466
10	3.8	5320.021564	4.05338	5320.021965	4.12876	5320.021774	4.09286	5320.021559	4.05244
0	3.8	5320.020334	3.82218	5320.020075	3.77350	5320.020438	3.84173	5320.020528	3.85865
-10	3.8	5320.018414	3.46128	5320.018517	3.48064	5320.018554	3.48759	5320.018561	3.48891
-20	3.8	5320.018341	3.44756	5320.018032	3.38947	5320.018088	3.40000	5320.018267	3.43365
-30	3.8	5320.017020	3.19925	5320.017370	3.26504	5320.017260	3.24436	5320.017411	3.27274

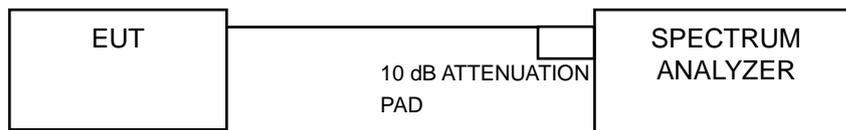
Frequency Stability Versus Temp.									
Operating Frequency: 5320 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (ppm)						
20	3.4	5320.018814	3.53647	5320.019164	3.60226	5320.019292	3.62632	5320.018918	3.55602
	3.8	5320.020240	3.80451	5320.020190	3.79511	5320.020249	3.80620	5320.020560	3.86466
	4.3	5320.020669	3.88515	5320.020432	3.84060	5320.020754	3.90113	5320.020794	3.90865

4.6 6 dB Bandwidth Measurement

4.6.1 Limits of 6 dB Bandwidth Measurement

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	15.14	0.5	Pass
157	5785	15.16	0.5	Pass
165	5825	15.16	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	15.15	0.5	Pass
157	5785	15.16	0.5	Pass
165	5825	15.15	0.5	Pass

802.11n (HT40)

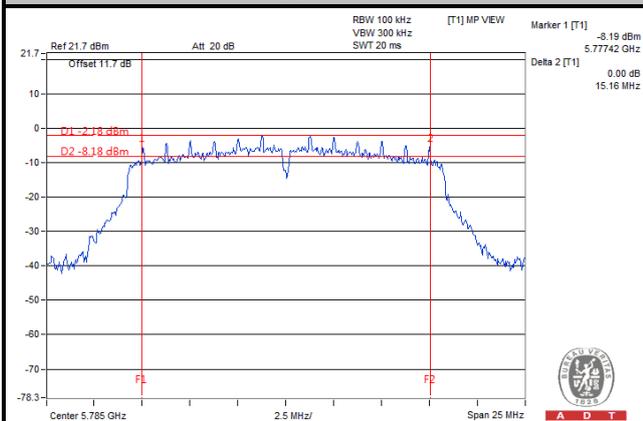
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.14	0.5	Pass
159	5795	35.19	0.5	Pass

802.11ac (VHT80)

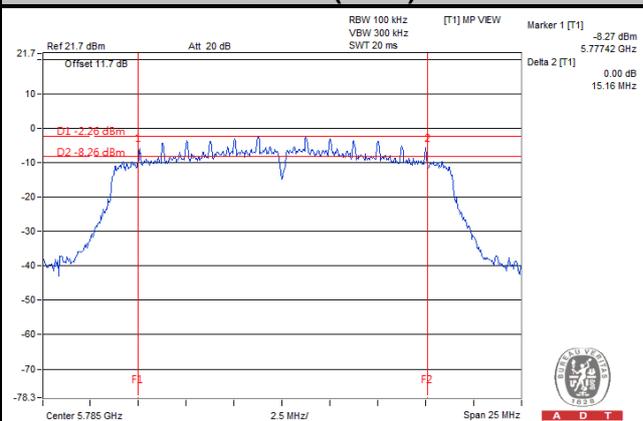
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
155	5775	75.36	0.5	Pass

Spectrum Plot of Worst Value

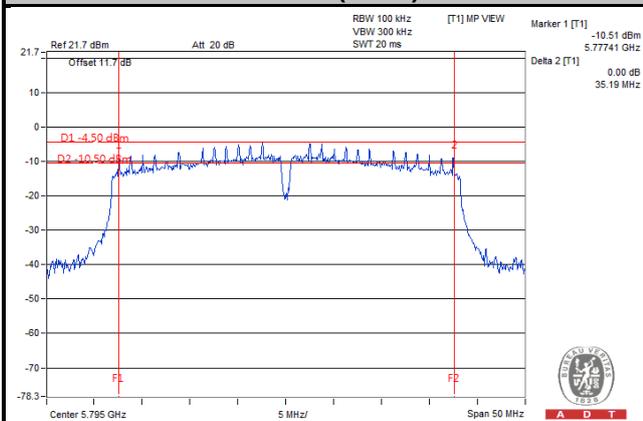
802.11a



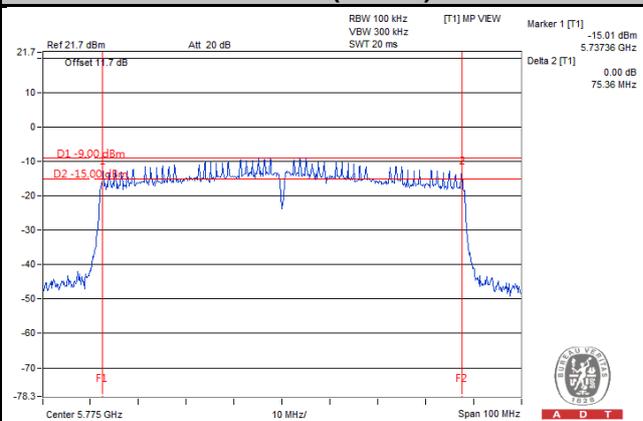
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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

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

Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

--- END ---