

Variant FCC Test Report

Report No.: RF140312C09F-4

FCC ID: P4Q-N435

Test Model: N435

Received Date: Dec. 22, 2015

Test Date: Jan. 07, 2016 ~ Feb. 01, 2016

Issued Date: Feb. 16, 2016

Applicant: MiTAC International Corp.

Address: Building B, No. 209, Sec. 1, Nan Gang Rd., Nan Gang Dist., Taipei 11568, Taiwan, R.O.C.

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

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

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

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



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 Description of Support Units	13
3.3.1 Configuration of System under Test	13
3.4 General Description of Applied Standards.....	13
4 Test Types and Results	14
4.1 Radiated Emission and Bandedge Measurement	14
4.1.1 Limits of Radiated Emission and Bandedge Measurement	14
4.1.2 Limits of Unwanted Emission Out of The Restricted Bands.....	14
4.1.3 Test Instruments	15
4.1.4 Test Procedures.....	16
4.1.5 Deviation from Test Standard	16
4.1.6 Test Set Up	17
4.1.7 EUT Operating Conditions.....	17
4.1.8 Test Results	18
4.2 Conducted Emission Measurement.....	33
4.2.1 Limits of Conducted Emission Measurement	33
4.2.2 Test Instruments	33
4.2.3 Test Procedures.....	34
4.2.4 Deviation from Test Standard	34
4.2.5 Test Setup.....	34
4.2.6 EUT Operating Conditions.....	34
4.2.7 Test Results	35
4.3 Transmit Power Measurement.....	37
4.3.1 Limits of Transmit Power Measurement	37
4.3.2 Test Setup.....	37
4.3.3 Test Instruments	37
4.3.4 Test Procedure	37
4.3.5 Deviation from Test Standard	37
4.3.6 EUT Operating Conditions.....	37
4.3.7 Test Result	38
4.4 Peak Power Spectral Density Measurement	40
4.4.1 Limits of Peak Power Spectral Density Measurement	40
4.4.2 Test Setup.....	40
4.4.3 Test Instruments	40
4.4.4 Test Procedures.....	40
4.4.5 Deviation from Test Standard	40
4.4.6 EUT Operating Conditions.....	40
4.4.7 Test Results	41
4.5 6dB Bandwidth Measurement.....	45
4.5.1 Limits of 6dB Bandwidth Measurement.....	45
4.5.2 Test Setup.....	45
4.5.3 Test Instruments	45
4.5.4 Test Procedure	45
4.5.5 Deviation from Test Standard	45
4.5.6 EUT Operating Condition	45



4.5.7 Test Results	46
5 Pictures of Test Arrangements.....	48
Appendix – Information on the Testing Laboratories	49



A D T

Release Control Record

Issue No.	Description	Date Issued
RF140312C09F-4	Original Release	Feb. 16, 2016

1 Certificate of Conformity

Product: Tablet PC

Brand: Mio ; Mitac ; Code ; Janam ; Stryker

Test Model: N435

Sample Status: Production Unit

Applicant: MiTAC International Corp.

Test Date: Jan. 07, 2016 ~ Feb. 01, 2016

Standards: 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10:2009

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 : Evonne Liu , **Date:** Feb. 16, 2016
Evonne Liu / Specialist

Approved by : Stanley Wu , **Date:** Feb. 16, 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 -16.79dB at 0.44999MHz.
15.407(b)(1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.48dB at 5868MHz.
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)	6dB 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.

Note: Only conducted / radiated Emission, and WLAN 5745~5825 MHz test were performed for this addendum. Furthermore, updated limit of Power Spectral Density and Transmit Power for 5180~5240MHz. Refer to original report for other test data.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.44 dB
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	2.0153 dB
	200 MHz ~1000 MHz	2.0224 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	1.0121 dB
	18 GHz ~ 40 GHz	1.1508 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Tablet PC
Brand	Mio ; Mitac ; Code ; Janam ; Stryker
Test Model	N435
Status of EUT	Production Unit
Power Supply Rating	5.0Vdc (adapter) 3.7Vdc (Li-ion battery)
Modulation Type	64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7
Operating Frequency	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz, 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
Output Power	35.81 mW
Antenna Type	PCB antenna with 2.3dBi gain (5180 ~ 5240MHz) PCB antenna with 2.9dBi gain (5260 ~ 5320MHz) PCB antenna with 3.8dBi gain (5500 ~ 5700MHz) PCB antenna with 3.5dBi gain (5745 ~ 5825MHz)
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

1. This report is issued as a supplementary report to BV ADT report no.: RF140312C09-3/140312C09-4. The differences compared with original report are adding LCD Panel 2. Therefore, only conducted / radiated Emission and WLAN 5745~5825 GHz DATA had been retest. Furthermore, updated limit of Power Spectral Density and Transmit Power for 5180 ~ 5240MHz.

2. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter 1	TPT	MII050200	I/P: 100-240Vac, 50-60Hz, 0.3A O/P: 5Vdc, 2A
Adapter 2	SINPRO	MPU16A-102	I/P: 100-240Vac, 47-63Hz, 0.33-0.18A O/P: 5Vdc, 2.6A
Battery	Tian Yu	SJS3060	3.7Vdc, 3060mAh
BCR Scanner 1 (2D LED)	Honeywell	N5600, N56X3, N56X0, N5603	--
BCR Scanner 2 (2D)	Code	CR8012	--
BCR Scanner 3 (2D Laser)	Honeywell	N5603, N56X3	--
LCD Panel 1	TIANME	TM059YDH01	5.88 inch
LCD Panel 2	SHANGHAI TIANMA MICRO-ELECTRONICS	TM057JDHP04	5.7 inch
Front Camera	LITE-ON	10P2SA511	--
Rear Camera	LITE-ON	10P2SF130	--
WWAN Module	Ublox	LISA-U200	--
WLAN, BT Module	Jorjin	WG7833-B0 & WX7833-B0	--

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

2 channels are provided for 802.11n (40MHz):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

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

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

5 channels are provided for 802.11n (HT40):

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

FOR 5745 ~ 5825MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

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 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE:

- The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane** for 5180-5700 MHz and **X-plane** for 5745-5825 MHz.

Radiated Emission Test (Above 1GHz):

- ☒ 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	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (HT20)	5180-5240	36 to 48	36	OFDM	BPSK	MCS0
-	802.11n (HT40)	5260-5320	54 to 62	62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100	OFDM	BPSK	6.0
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
-	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	MCS0

Radiated Emission Test (Below 1GHz):

- ☒ 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	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (HT20)	5180-5240	36 to 48	36	OFDM	BPSK	MCS0
-	802.11n (HT40)	5260-5320	54 to 62	62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100	OFDM	BPSK	6.0
-	802.11n (HT40)	5745-5825	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	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (HT40)	5745-5825	151 to 159	151	OFDM	BPSK	MCS0

Antenna Port Conducted Measurement:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
-	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	MCS0

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Karl Lee
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Charles Hsiao
PLC	25deg. C, 68%RH	120Vac, 60Hz	Toby Tian
APCM	21deg. C, 60%RH	3.8Vdc	Taylor Liu

3.3 Description of Support Units

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

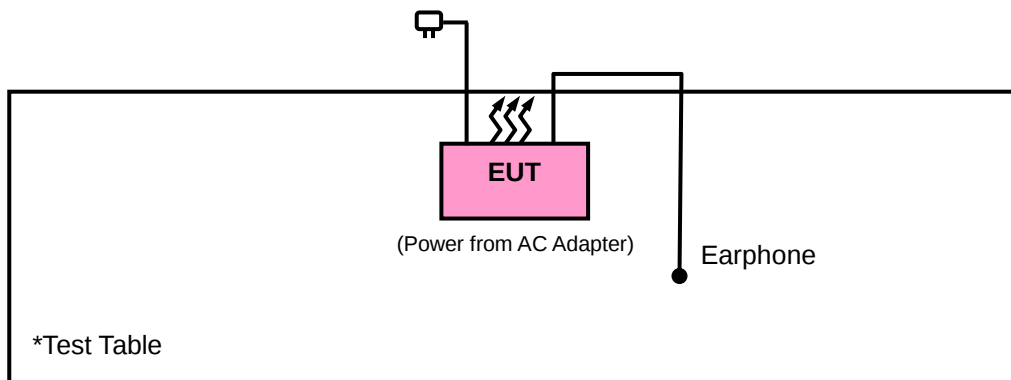
No.	Product	Brand	Model No.	Serial No.	FCC ID
A.	Earphone	N/A	N/A	N/A	N/A

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

Note:

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

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)

789033 D02 General UNII Test Procedures New Rules v01

ANSI C63.10-2009

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 20dB 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 1000MHz, 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 20dB 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 v01	FIELD STRENGTH AT 3m	
	PK:74 (dBuV/m)	AV:54 (dBuV/m)
APPLICABLE TO	EIRP LIMIT	EQUIVALENT FIELD STRENGTH AT 3m
15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBuV/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(dBuV/m) ^{*1} PK:78.2 (dBuV/m) ^{*2}

NOTE: ^{*1} beyond 10MHz 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:

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

4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY52260177	May 19, 2015	May 18, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2015	Dec. 16, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Feb. 04, 2015	Feb. 03, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Jan. 08, 2016	Jan. 07, 2017
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Feb. 09, 2015	Feb. 08, 2016
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 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 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 detect 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:

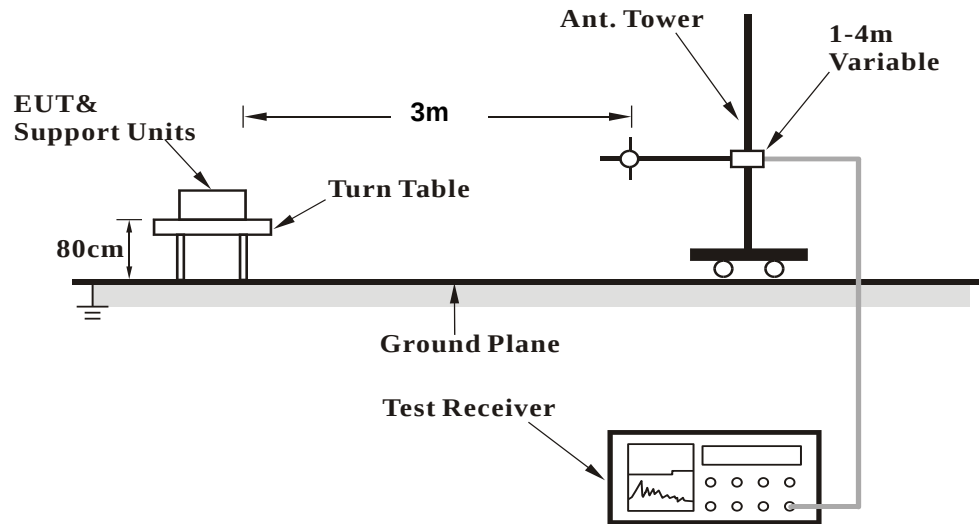
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.5 Deviation from Test Standard

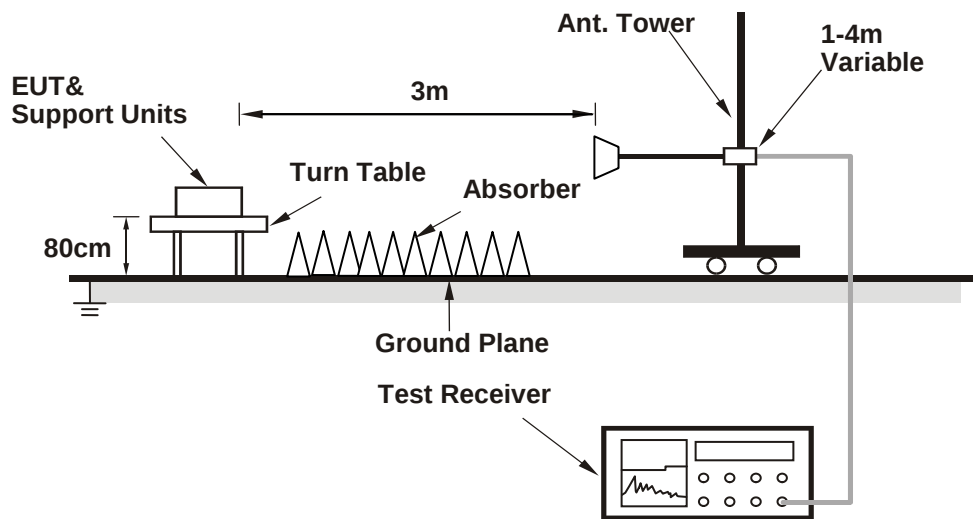
No deviation.

4.1.6 Test Set Up

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.1.7 EUT Operating Conditions

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

4.1.8 Test Results

ABOVE 1GHz DATA :

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Karl Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5436	44.03	35.24	54	-9.97	34.35	8.48	34.04	150	245	Average
5436	58.28	49.49	74	-15.72	34.35	8.48	34.04	150	245	Peak
5470	59.91	51.08	68.2	-8.29	34.37	8.51	34.05	150	245	Peak
5500	99.81	90.89			34.4	8.57	34.05	150	245	Average
5500	106.35	97.43			34.4	8.57	34.05	150	245	Peak
5725	56.23	47.07	68.2	-11.97	34.62	8.65	34.11	150	245	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	44.95	36.13	54	-9.05	34.36	8.51	34.05	105	280	Average
5460	58.32	49.5	74	-15.68	34.36	8.51	34.05	105	280	Peak
5470	67.07	58.24	68.2	-1.13	34.37	8.51	34.05	105	280	Peak
5500	103.43	94.51			34.4	8.57	34.05	105	280	Average
5500	109.71	100.79			34.4	8.57	34.05	105	280	Peak
5725	54.81	45.65	68.2	-13.39	34.62	8.65	34.11	105	280	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5500MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Karl Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	64.22	55.07	68.2	-3.98	34.61	8.65	34.11	213	236	Peak
*5724	76.79	67.63	78.2	-1.41	34.62	8.65	34.11	213	236	Peak
5745	99.5	90.31			34.64	8.66	34.11	213	236	Average
5745	106.26	97.07			34.64	8.66	34.11	213	236	Peak
*5854	56.69	47.37	78.2	-21.51	34.76	8.7	34.14	213	236	Peak
*5870	56.61	47.28	68.2	-11.59	34.76	8.71	34.14	213	236	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	63.26	54.11	68.2	-4.94	34.61	8.65	34.11	108	244	Peak
*5720	73.1	63.94	78.2	-5.1	34.62	8.65	34.11	108	244	Peak
5745	98.5	89.31			34.64	8.66	34.11	108	244	Average
5745	105.36	96.17			34.64	8.66	34.11	108	244	Peak
*5852	56.12	46.82	78.2	-22.08	34.74	8.7	34.14	108	244	Peak
*5868	55.85	46.52	68.2	-12.35	34.76	8.71	34.14	108	244	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5745MHz: Fundamental frequency.
- *: Out of restricted band



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Karl Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	58.38	49.23	68.2	-9.82	34.61	8.65	34.11	213	236	Peak
*5722	57.85	48.69	78.2	-20.35	34.62	8.65	34.11	213	236	Peak
5785	101.56	92.33			34.68	8.68	34.13	213	236	Average
5785	108.88	99.65			34.68	8.68	34.13	213	236	Peak
*5858	58.54	49.22	78.2	-19.66	34.76	8.7	34.14	213	236	Peak
*5862	57.82	48.49	68.2	-10.38	34.76	8.71	34.14	213	236	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	56.37	47.22	68.2	-11.83	34.61	8.65	34.11	108	244	Peak
*5722	56.43	47.27	78.2	-21.77	34.62	8.65	34.11	108	244	Peak
5785	100.36	91.13			34.68	8.68	34.13	108	244	Average
5785	107.64	98.41			34.68	8.68	34.13	108	244	Peak
*5858	56.25	46.93	78.2	-21.95	34.76	8.7	34.14	108	244	Peak
*5870	56.28	46.95	68.2	-11.92	34.76	8.71	34.14	108	244	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5785MHz: Fundamental frequency.
- *: Out of restricted band



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Karl Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	57.63	48.48	68.2	-10.57	34.61	8.65	34.11	213	236	Peak
*5722	57.18	48.02	78.2	-21.02	34.62	8.65	34.11	213	236	Peak
5825	101.28	91.99			34.73	8.69	34.13	213	236	Average
5825	108.04	98.75			34.73	8.69	34.13	213	236	Peak
*5852	74.62	65.32	78.2	-3.58	34.74	8.7	34.14	213	236	Peak
*5862	67.6	58.27	68.2	-0.6	34.76	8.71	34.14	213	236	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	57.08	47.93	68.2	-11.12	34.61	8.65	34.11	106	244	Peak
*5722	57.22	48.06	78.2	-20.98	34.62	8.65	34.11	106	244	Peak
5825	100.57	91.28			34.73	8.69	34.13	106	244	Average
5825	107.48	98.19			34.73	8.69	34.13	106	244	Peak
*5852	72.43	63.13	78.2	-5.77	34.74	8.7	34.14	106	244	Peak
*5862	64.9	55.57	68.2	-3.3	34.76	8.71	34.14	106	244	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5825MHz: Fundamental frequency.
- *: Out of restricted band

802.11n (HT20)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Karl Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	52.67	44.42	54	-1.33	34.12	8.13	34	107	103	Average
5148	65.61	57.36	74	-8.39	34.12	8.13	34	107	103	Peak
5180	101.13	92.82			34.15	8.16	34	107	103	Average
5180	108.34	100.03			34.15	8.16	34	107	103	Peak
5414	47.06	38.33	54	-6.94	34.33	8.44	34.04	107	103	Average
5414	58.94	50.21	74	-15.06	34.33	8.44	34.04	107	103	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.94	44.69	54	-1.06	34.12	8.13	34	100	302	Average
5150	68.15	59.9	74	-5.85	34.12	8.13	34	100	302	Peak
5180	102.12	93.81			34.15	8.16	34	100	302	Average
5180	109.57	101.26			34.15	8.16	34	100	302	Peak
5414	47.77	39.04	54	-6.23	34.33	8.44	34.04	100	302	Average
5414	59.02	50.29	74	-14.98	34.33	8.44	34.04	100	302	Peak

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Karl Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	65.17	56.02	68.2	-3.03	34.61	8.65	34.11	213	236	Peak
*5724	77.35	68.19	78.2	-0.85	34.62	8.65	34.11	213	236	Peak
5745	99.6	90.41			34.64	8.66	34.11	213	236	Average
5745	106.32	97.13			34.64	8.66	34.11	213	236	Peak
*5856	57.04	47.72	78.2	-21.16	34.76	8.7	34.14	213	236	Peak
*5870	56.38	47.05	68.2	-11.82	34.76	8.71	34.14	213	236	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	61.61	52.46	68.2	-6.59	34.61	8.65	34.11	108	244	Peak
*5724	74.54	65.38	78.2	-3.66	34.62	8.65	34.11	108	244	Peak
5745	98	88.81			34.64	8.66	34.11	108	244	Average
5745	105.17	95.98			34.64	8.66	34.11	108	244	Peak
*5858	57.08	47.76	78.2	-21.12	34.76	8.7	34.14	108	244	Peak
*5870	56.68	47.35	68.2	-11.52	34.76	8.71	34.14	108	244	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5745MHz: Fundamental frequency.
- *: Out of restricted band



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Karl Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	56.56	47.41	68.2	-11.64	34.61	8.65	34.11	213	236	Peak
*5716	57.32	48.17	78.2	-20.88	34.61	8.65	34.11	213	236	Peak
5785	101.45	92.22			34.68	8.68	34.13	213	236	Average
5785	108.38	99.15			34.68	8.68	34.13	213	236	Peak
*5858	56.53	47.21	78.2	-21.67	34.76	8.7	34.14	213	236	Peak
*5868	56.89	47.56	68.2	-11.31	34.76	8.71	34.14	213	236	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	56.61	47.46	68.2	-11.59	34.61	8.65	34.11	114	244	Peak
*5720	58.29	49.13	78.2	-19.91	34.62	8.65	34.11	114	244	Peak
5785	100.06	90.83			34.68	8.68	34.13	114	244	Average
5785	107.03	97.8			34.68	8.68	34.13	114	244	Peak
*5860	56.3	46.98	78.2	-21.9	34.76	8.7	34.14	114	244	Peak
*5868	56.79	47.46	68.2	-11.41	34.76	8.71	34.14	114	244	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5785MHz: Fundamental frequency.
- *: Out of restricted band



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Karl Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	57.05	47.9	68.2	-11.15	34.61	8.65	34.11	213	236	Peak
*5720	57.97	48.81	78.2	-20.23	34.62	8.65	34.11	213	236	Peak
5825	100.32	91.03			34.73	8.69	34.13	213	236	Average
5825	107.72	98.43			34.73	8.69	34.13	213	236	Peak
*5854	75.94	66.62	78.2	-2.26	34.76	8.7	34.14	213	236	Peak
*5862	66.56	57.23	68.2	-1.64	34.76	8.71	34.14	213	236	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	56.65	47.5	68.2	-11.55	34.61	8.65	34.11	106	244	Peak
*5724	56.36	47.2	78.2	-21.84	34.62	8.65	34.11	106	244	Peak
5825	99.52	90.23			34.73	8.69	34.13	106	244	Average
5825	106.48	97.19			34.73	8.69	34.13	106	244	Peak
*5852	72.5	63.2	78.2	-5.7	34.74	8.7	34.14	106	244	Peak
*5866	66.66	57.33	68.2	-1.54	34.76	8.71	34.14	106	244	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5825MHz: Fundamental frequency.
- *: Out of restricted band



A D T

802.11n (HT40)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Karl Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	42.68	34.52	54	-11.32	34.08	8.07	33.99	143	254	Average
5096	56.68	48.52	74	-17.32	34.08	8.07	33.99	143	254	Peak
5310	91.76	83.21			34.25	8.32	34.02	143	254	Average
5310	99.47	90.92			34.25	8.32	34.02	143	254	Peak
5350	46.83	38.2	54	-7.17	34.28	8.38	34.03	143	254	Average
5350	63.43	54.8	74	-10.57	34.28	8.38	34.03	143	254	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	42.73	34.61	54	-11.27	34.07	8.03	33.98	164	282	Average
5080	56.76	48.64	74	-17.24	34.07	8.03	33.98	164	282	Peak
5310	96.06	87.51			34.25	8.32	34.02	164	282	Average
5310	103.79	95.24			34.25	8.32	34.02	164	282	Peak
5350	51.96	43.33	54	-2.04	34.28	8.38	34.03	164	282	Average
5350	66.75	58.12	74	-7.25	34.28	8.38	34.03	164	282	Peak

REMARKS:

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Karl Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	67.56	58.41	68.2	-0.64	34.61	8.65	34.11	213	236	Peak
*5722	73.13	63.97	78.2	-5.07	34.62	8.65	34.11	213	236	Peak
5755	92.32	83.11			34.66	8.66	34.11	213	236	Average
5755	100.59	91.38			34.66	8.66	34.11	213	236	Peak
*5854	57.11	47.79	78.2	-21.09	34.76	8.7	34.14	213	236	Peak
*5864	56.58	47.25	68.2	-11.62	34.76	8.71	34.14	213	236	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	63.88	54.73	68.2	-4.32	34.61	8.65	34.11	108	244	Peak
*5724	71.48	62.32	78.2	-6.72	34.62	8.65	34.11	108	244	Peak
5755	91.89	82.68			34.66	8.66	34.11	108	244	Average
5755	99.66	90.45			34.66	8.66	34.11	108	244	Peak
*5858	56.38	47.06	78.2	-21.82	34.76	8.7	34.14	108	244	Peak
*5866	56.49	47.16	68.2	-11.71	34.76	8.71	34.14	108	244	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5755MHz: Fundamental frequency.
- *: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Karl Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	67.53	58.38	68.2	-0.67	34.61	8.65	34.11	213	236	Peak
*5720	69.46	60.3	78.2	-8.74	34.62	8.65	34.11	213	236	Peak
5795	96.95	87.71			34.69	8.68	34.13	213	236	Average
5795	104.94	95.7			34.69	8.68	34.13	213	236	Peak
*5852	73.32	64.02	78.2	-4.88	34.74	8.7	34.14	213	236	Peak
*5868	67.72	58.39	68.2	-0.48	34.76	8.71	34.14	213	236	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ 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	65.41	56.26	68.2	-2.79	34.61	8.65	34.11	114	244	Peak
*5718	66.69	57.53	78.2	-11.51	34.62	8.65	34.11	114	244	Peak
5795	95.85	86.61			34.69	8.68	34.13	114	244	Average
5795	103.77	94.53			34.69	8.68	34.13	114	244	Peak
*5852	69.6	60.3	78.2	-8.6	34.74	8.7	34.14	114	244	Peak
*5864	65.14	55.81	68.2	-3.06	34.76	8.71	34.14	114	244	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5795MHz: Fundamental frequency.
- *: Out of restricted band



A D T

BELOW 1GHz WORST-CASE DATA:
802.11n (HT20)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Charles Hsiao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
132.33	28.16	49.8	43.5	-15.34	9.22	1.38	32.24	132	336	Peak
198.21	25.23	45.12	43.5	-18.27	10.79	1.61	32.29	125	225	Peak
254.37	35.48	52.52	46	-10.52	13.12	1.94	32.1	190	194	Peak
314.7	33.32	48.64	46	-12.68	14.68	2.11	32.11	131	144	Peak
540.1	24.62	33.61	46	-21.38	20.43	2.76	32.18	120	204	Peak
647.9	29.61	36.67	46	-16.39	22.1	2.99	32.15	129	336	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
54.3	23.7	47.67	40	-16.3	7.36	0.9	32.23	123	169	Peak
143.4	24.84	46.12	43.5	-18.66	9.61	1.38	32.27	124	224	Peak
220.08	29.85	48.7	46	-16.15	11.72	1.65	32.22	117	181	Peak
303.5	34.67	50.53	46	-11.33	14.16	2.11	32.13	130	306	Peak
503.7	30.25	40.34	46	-15.75	19.38	2.63	32.1	153	278	Peak
690.6	28.43	34.29	46	-17.57	23.19	3.05	32.1	190	69	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 62			FREQUENCY RANGE	30MHz ~ 1GHz		
INPUT POWER	120Vac, 60 Hz			DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH			TESTED BY	Charles Hsiao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
93.74	18.73	40.33	43.5	-24.77	9.22	1.11	31.93	140	254	Peak
169	19.8	40.45	43.5	-23.7	10.07	1.52	32.24	100	180	Peak
194	25.3	45.39	43.5	-18.2	10.57	1.61	32.27	105	16	Peak
480.7	19.22	29.85	46	-26.78	18.92	2.56	32.11	148	192	Peak
647.21	22.68	29.74	46	-23.32	22.1	2.99	32.15	199	150	Peak
799.8	24.96	29.1	46	-21.04	24.6	3.32	32.06	112	198	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
47.28	18.37	41.04	40	-21.63	8.65	0.9	32.22	184	141	Peak
212.52	20.17	39.37	43.5	-23.33	11.4	1.65	32.25	165	113	Peak
260.31	14.94	31.81	46	-31.06	13.29	1.94	32.1	160	149	Peak
323.8	14.25	29.13	46	-31.75	15.11	2.11	32.1	149	332	Peak
514.9	19.7	29	46	-26.3	20.13	2.7	32.13	145	154	Peak
701.8	22.9	28.74	46	-23.1	23.14	3.11	32.09	190	320	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value



802.11a

EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	30MHz ~ 1GHz	
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Charles Hsiao	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.81	14.02	28.35	40	-25.98	17.19	0.74	32.26	130	281	Peak
97.77	12.68	34.05	43.5	-30.82	9.5	1.28	32.15	127	34	Peak
243.3	23.96	41.52	46	-22.04	12.71	1.85	32.12	200	185	Peak
331.5	15.4	29.76	46	-30.6	15.54	2.19	32.09	154	6	Peak
579.3	19.75	28.9	46	-26.25	20.23	2.82	32.2	120	225	Peak
856.5	24.53	28.84	46	-21.47	24	3.44	31.75	190	248	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
32.16	17.82	33.13	40	-22.18	16.21	0.74	32.26	172	129	Peak
187.95	18.48	38.72	43.5	-25.02	10.4	1.61	32.25	184	144	Peak
226.56	17.43	35.81	46	-28.57	11.96	1.85	32.19	126	56	Peak
463.1	16.52	27.64	46	-29.48	18.45	2.56	32.13	165	22	Peak
525.4	20.94	29.69	46	-25.06	20.7	2.7	32.15	120	127	Peak
721.4	22.99	28.58	46	-23.01	23.36	3.16	32.11	172	114	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	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Charles Hsiao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
95.34	14.57	35.94	43.5	-28.93	9.34	1.28	31.99	195	334	Peak
178.23	15.74	36.04	43.5	-27.76	10.33	1.61	32.24	157	360	Peak
271.92	18.18	34.73	46	-27.82	13.62	1.94	32.11	137	194	Peak
379.1	14.72	28.02	46	-31.28	16.6	2.26	32.16	102	147	Peak
645.8	21.76	28.82	46	-24.24	22.1	2.99	32.15	129	221	Peak
942.6	27.92	29.26	46	-18.08	26.2	3.62	31.16	127	229	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
35.67	16.3	33.91	40	-23.7	13.88	0.74	32.23	136	223	Peak
210.36	17.21	36.51	43.5	-26.29	11.31	1.65	32.26	121	240	Peak
263.55	15.34	32.1	46	-30.66	13.41	1.94	32.11	190	355	Peak
390.3	15	27.35	46	-31	17.5	2.34	32.19	137	337	Peak
615	20.61	28.19	46	-25.39	21.67	2.93	32.18	190	225	Peak
883.1	24.73	27.95	46	-21.27	24.88	3.49	31.59	124	247	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 0.50MHz.

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, 2015	Feb. 25, 2016
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

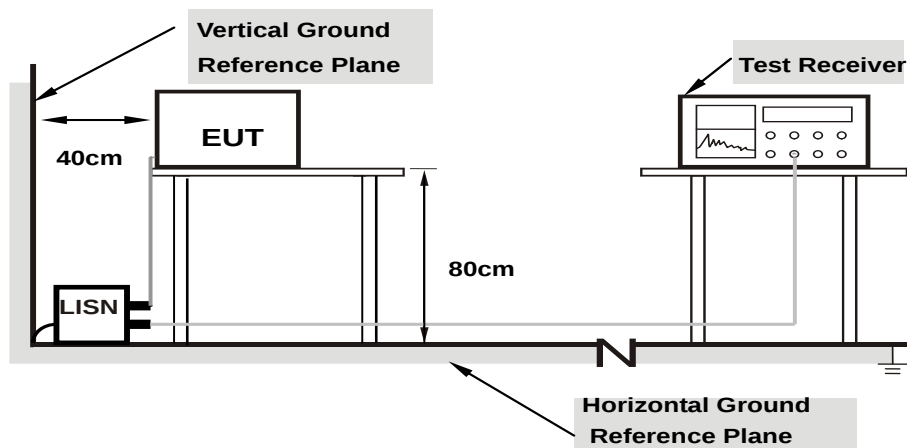
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) 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

Same as 4.1.6.

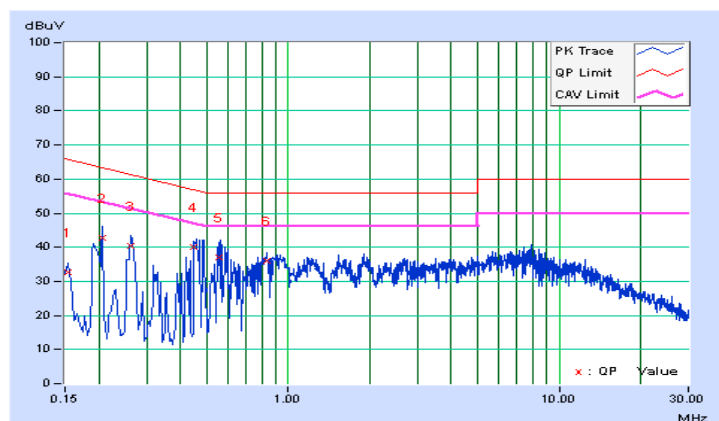
4.2.7 Test Results

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	2016/1/10

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	0.15400	9.93	22.62	22.35	32.55	32.28	65.78	55.78	-33.23	-23.50
2	0.20600	9.95	32.83	19.68	42.78	29.63	63.37	53.37	-20.58	-23.73
3	0.26221	9.97	30.60	18.86	40.57	28.83	61.36	51.36	-20.79	-22.53
4	0.44999	10.04	30.05	17.16	40.09	27.20	56.88	46.88	-16.79	-19.68
5	0.55265	10.05	26.93	12.53	36.98	22.58	56.00	46.00	-19.02	-23.42
6	0.83400	10.09	26.09	13.84	36.18	23.93	56.00	46.00	-19.82	-22.07

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

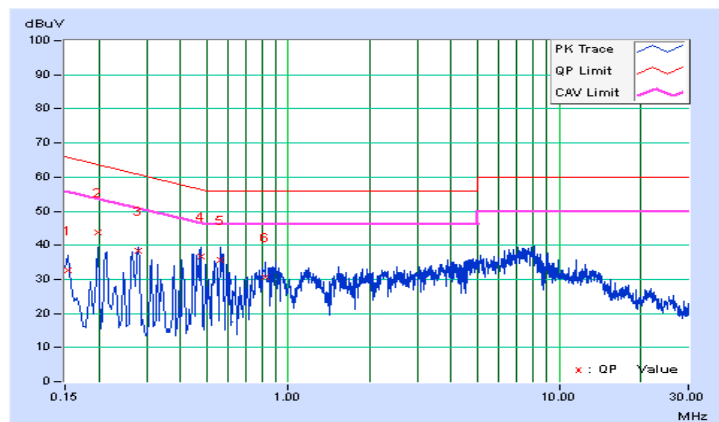


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2016/1/10

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	9.93	22.75	22.59	32.68	32.52	65.78	55.78	-33.11	-23.27
2	0.19800	9.94	33.72	17.40	43.66	27.34	63.69	53.69	-20.03	-26.35
3	0.27800	9.98	28.55	12.39	38.53	22.37	60.88	50.88	-22.35	-28.51
4	0.47800	10.04	26.57	12.57	36.61	22.61	56.37	46.37	-19.76	-23.76
5	0.56200	10.05	25.68	12.24	35.73	22.29	56.00	46.00	-20.27	-23.71
6	0.82200	10.09	20.65	7.93	30.74	18.02	56.00	46.00	-25.26	-27.98

Remarks:

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



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 $\leq$ 125mW(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	250mW (24 dBm)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (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,

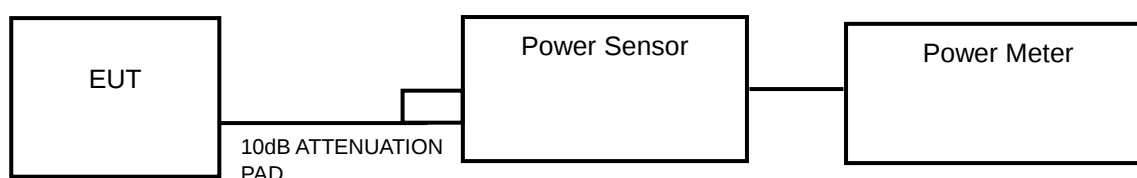
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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.

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:

For U-NII-1:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	24.55	13.90	24	PASS
44	5220	23.77	13.76	24	PASS
48	5240	22.28	13.48	24	PASS

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	23.82	13.77	24	PASS
44	5220	23.23	13.66	24	PASS
48	5240	22.23	13.47	24	PASS

802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	37.41	15.73	24	PASS
46	5230	36.98	15.68	24	PASS

For U-NII-3:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
149	5745	23.01	13.62	30	PASS
157	5785	35.81	15.54	30	PASS
165	5825	32.96	15.18	30	PASS

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
149	5745	22.96	13.61	30	PASS
157	5785	34.91	15.43	30	PASS
165	5825	32.58	15.13	30	PASS

802.11n (HT40)

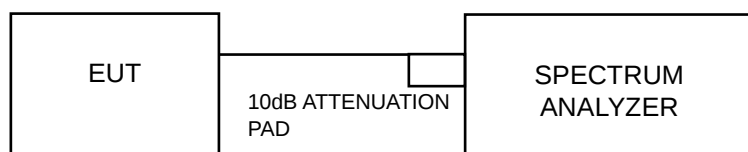
CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
151	5755	9.40	9.73	30	PASS
159	5795	31.33	14.96	30	PASS

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	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

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-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500 \text{ kHz}/300 \text{ kHz})$
5. Sweep time = auto, trigger set to "free run".
6. Trace average at least 100 traces in power averaging mode.
7. 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

Same as Item 4.3.6.

4.4.7 Test Results

For U-NII-1:

802.11a

Channel	Freq. (MHz)	PSD (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/MHz)	PASS /FAIL
36	5180	2.36	0.79	3.15	11	PASS
44	5220	2.38	0.79	3.17	11	PASS
48	5240	2.31	0.79	3.10	11	PASS

802.11n (HT20)

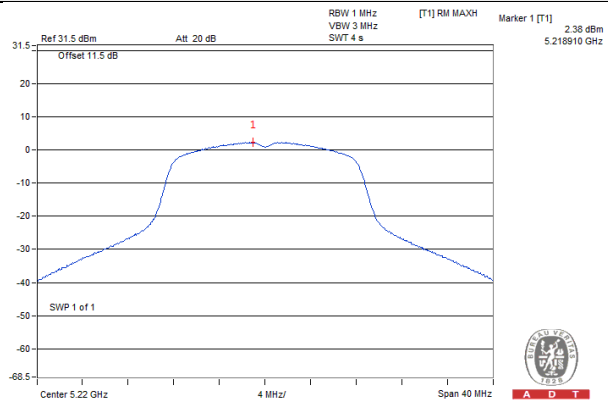
Channel	Freq. (MHz)	PSD (dBm/500kHz)	Duty factor	PSD with Duty Factor (dBm)	Limit (dBm/MHz)	PASS /FAIL
36	5180	2.24	0.80	3.04	11	PASS
44	5220	2.25	0.80	3.05	11	PASS
48	5240	2.17	0.80	2.97	11	PASS

802.11n (HT40)

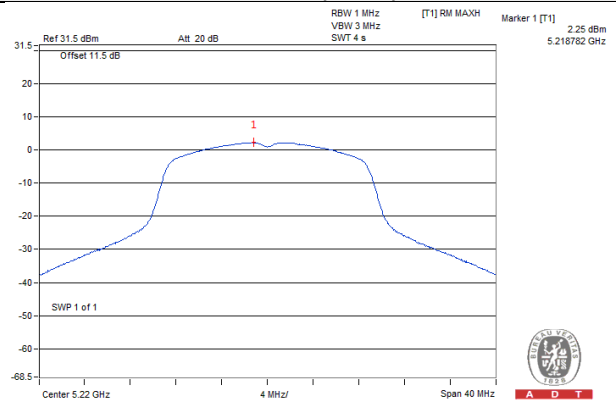
Channel	Freq. (MHz)	PSD (dBm/500kHz)	Duty factor	PSD with Duty Factor (dBm)	Limit (dBm/MHz)	PASS /FAIL
38	5190	-0.33	1.65	1.32	11	PASS
46	5230	-0.37	1.65	1.28	11	PASS

SPECTRUM PLOT OF WORST VALUE

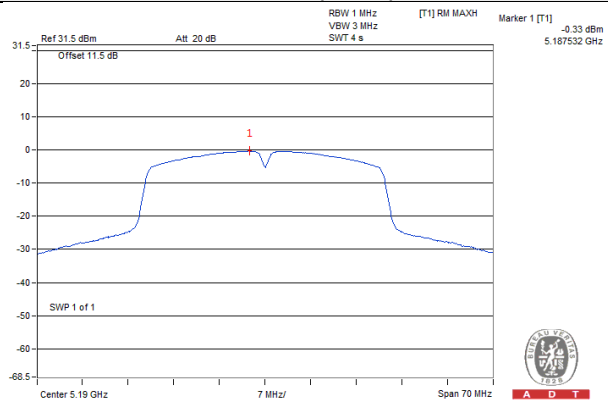
802.11a



802.11n (HT20)



802.11n (HT40)



For U-NII-3 Band

802.11a

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
149	5745	-0.34	0.79	0.45	30	Pass
157	5785	1.82	0.79	2.61	30	Pass
165	5825	2.21	0.79	3.00	30	Pass

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	-0.32	0.80	0.48	30	Pass
157	5785	1.90	0.80	2.70	30	Pass
165	5825	2.42	0.80	3.22	30	Pass

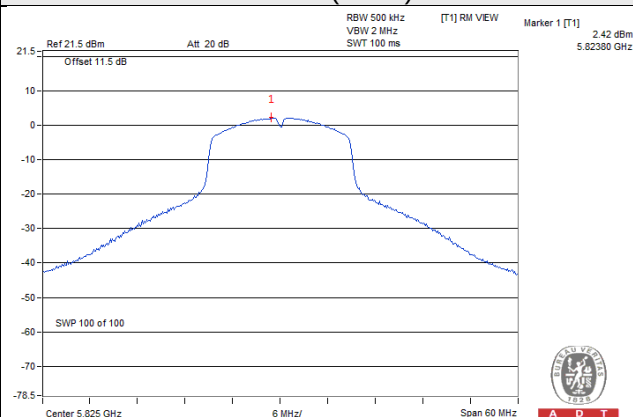
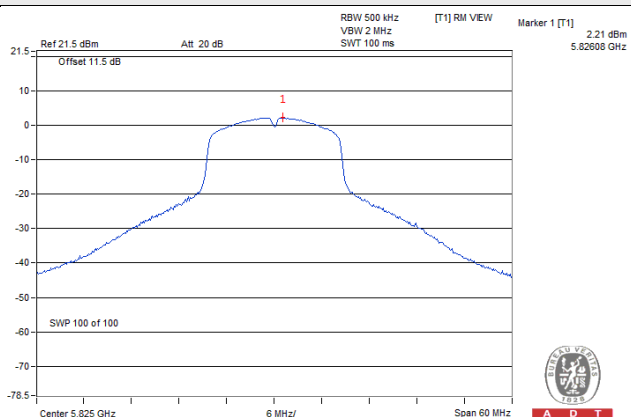
802.11n (HT40)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
151	5755	-7.78	1.65	-6.13	30	Pass
159	5795	-1.33	1.65	0.32	30	Pass

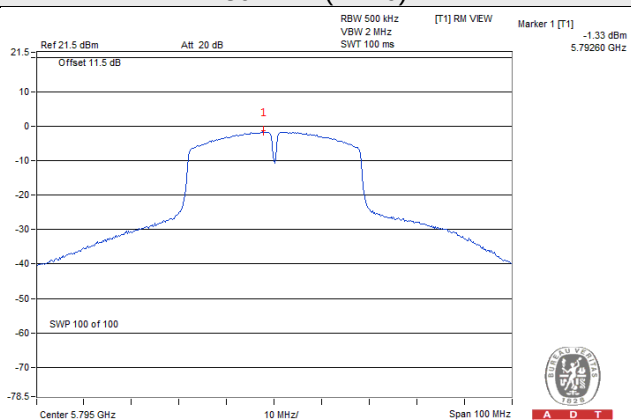
Spectrum Plot of Worst Value

802.11a

802.11n (HT20)



802.11n (HT40)

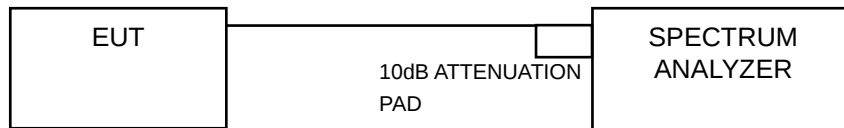


4.5 6dB Bandwidth Measurement

4.5.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

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

MEASUREMENT PROCEDURE REF

- Set resolution bandwidth (RBW) = 100kHz
- 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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 Test Results

802.11a

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	15.15	0.5	PASS
157	5785	15.14	0.5	PASS
165	5825	15.16	0.5	PASS

802.11n (HT20)

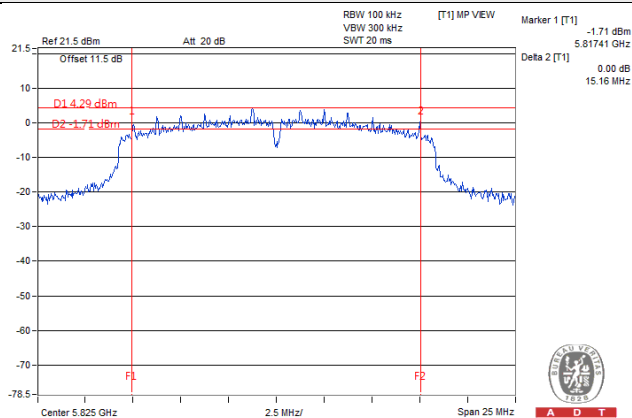
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	15.13	0.5	PASS
157	5785	15.15	0.5	PASS
165	5825	15.15	0.5	PASS

802.11n (HT40)

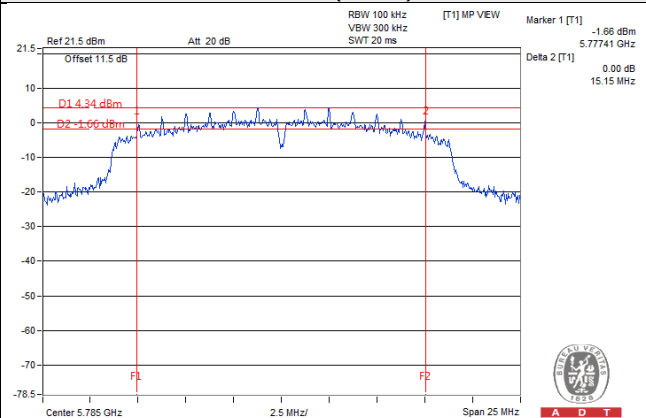
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	35.15	0.5	PASS
159	5795	35.12	0.5	PASS

SPECTRUM PLOT OF WORST VALUE

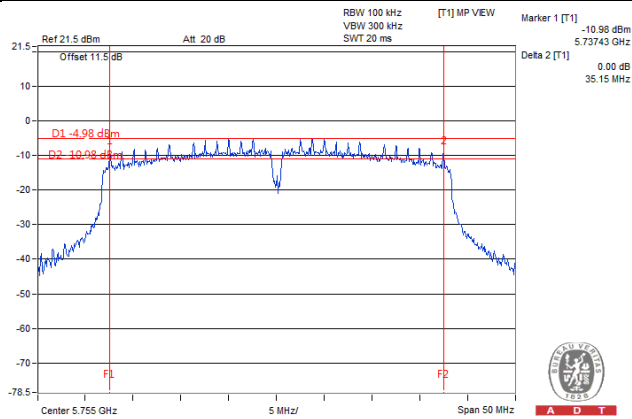
802.11a



802.11n (HT20)



802.11n (HT40)



5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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

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

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 ---