

Variant FCC Test Report

Report No.: RF140312C10E-1

FCC ID: P4Q-N435WIFI

Test Model: N435

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Test Date: Jan. 06, 2016 ~ Feb. 01, 2016

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A D T

Release Control Record

Issue No.	Description	Date Issued
RF140312C10E-1	Original Release	Feb. 16, 2016



A D T

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. 06, 2016 ~ Feb. 01, 2016

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

This report is issued as a supplementary to BV ADT report no.: RF140312C10-1. This report shall be used by combining with its original report.

Prepared by :

Rona Chen

Date:

Feb. 16, 2016

Rona Chen / Specialist

Approved by :

David Huang

Date:

Feb. 16, 2016

David Huang / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (SECTION 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -14.98dB at 0.19418MHz.
15.407(b)(1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -1.37dB at 5862MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	N/A	Refer to Note. (For U-NII-1 / U-NII-2A / U-NII-2C only)
		PASS	Meet the requirement of limit. (For U-NII-3 only)
15.407(a)(1/2/3)	Peak Power Spectral Density	N/A	Refer to Note. (For U-NII-1 / U-NII-2A / U-NII-2C only)
		PASS	Meet the requirement of limit. (For U-NII-3 only)
15.407(e)	6dB bandwidth	PASS	Meet the requirement of limit. (For U-NII-3 only)
15.407(g)	Frequency Stability	N/A	Refer to Note. (For U-NII-1 / U-NII-2A / U-NII-2C only)
15.203	Antenna Requirement	PASS	No antenna connector is used.

Note:

1. "N/A" means Not Applicable.
2. For U-NII-1, U-NII-2A, and U-NII-2C, only AC Power Conducted Emission and Radiated Emissions tests were performed for this addendum. Furthermore, updated limit of Power Spectral Density and Transmit Power for U-NII-1. Refer to original report for other 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	Expended Uncertainty (k=2) ($\pm$)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	2.0153 dB
	200MHz ~1000MHz	2.0224 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	1.0121 dB
	18GHz ~ 40GHz	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	5Vdc (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	35.81mW for 5745 ~ 5825MHz
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.: RF140312C10 and RF140312C10-1. The difference compared with original report are adding LCD Panel 2 and updating standards to the latest one. Therefore, 5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz were verified on AC Power Conducted Emission and Radiated Emissions tests and 5745 ~ 5825MHz was full-tested in this report. Furthermore, updated limit of Power Spectral Density and Transmit Power for 5180 ~ 5240MHz.
2. WLAN 2.4GHz cannot transmit simultaneously with WLAN 5GHz.

3. 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 (1D)	Opticon	MDL-2XXX : MSL-2XXX	--
BCR Scanner 4 (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	--
WLAN, BT Module	Jorjin	WG7833-B0 & WX7833-B0	--

4. The configurations of EUT are listed as below.

EUT CONFIGURE MODE	DESCRIPTION
A	Tablet w/ 2D Laser Honeywell Scanner + Adapter 1
B	Tablet w/ 2D LED Honeywell Scanner + Adapter 1
C	Tablet w/ 2D Code Scanner + Adapter 1
D	Tablet w/ 1D Opticon Scanner + Adapter 1
E	Tablet w/o Bar Code Scanner + Adapter 1
F	Tablet w/ 2D Laser Honeywell Scanner + Adapter 2
G	Tablet w/ 2D LED Honeywell Scanner + Adapter 2
H	Tablet w/ 2D Code Scanner + Adapter 2
I	Tablet w/ 1D Opticon Scanner + Adapter 2
J	Tablet w/o Bar Code Scanner + Adapter 2

* Only Mode A, the worst mode of original report, was verified and recorded in this report.

5. 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

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

Channel	Frequency	Channel	Frequency
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

3 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	134	5670 MHz
110	5550 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	
A	√	√	√	√	Tablet w/ 2D Laser Honeywell Scanner + Adapter 1

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 U-NII-1, U-NII-2A, and U-NII-2C and **X-plane** for U-NII-3.

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)
A	802.11n (HT40)	5180-5240	38 to 46	38	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)
A	802.11n (HT40)	5180-5240	38 to 46	38	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	159	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)
A	802.11n (HT40)	5745-5825	151 to 159	159	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)
A	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≥1G	25deg. C, 65%RH	120Vac, 60Hz	Charles Hsiao
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Charles Hsiao
PLC	25deg. C, 68%RH	120Vac, 60Hz	Toby Tian
APCM	21deg. C, 60%RH	3.7Vdc	Taylor Liu

3.3 Duty Cycle of Test Signal

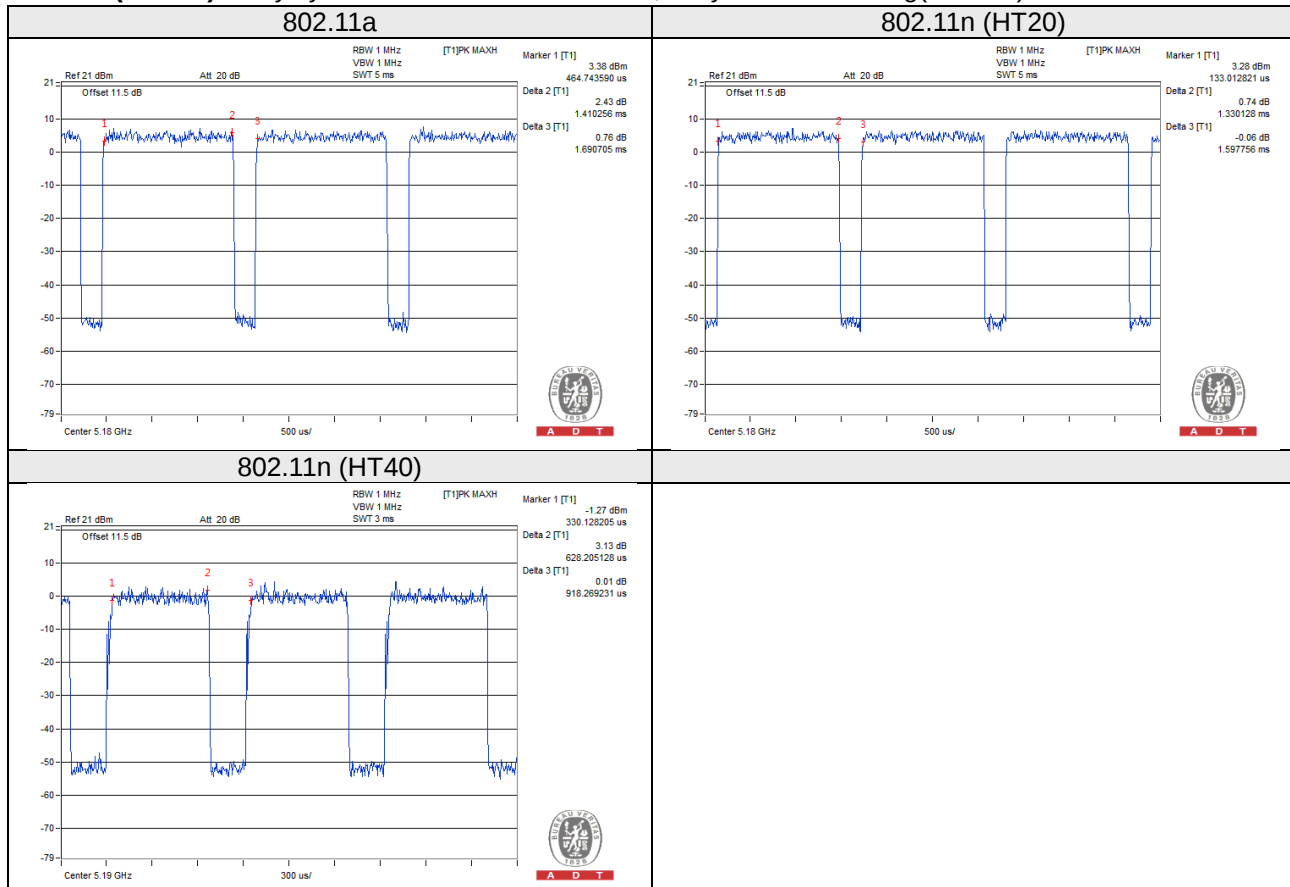
MODULATION TYPE: BPSK

If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $1.410/1.691 = 0.834$, Duty factor = $10 * \log(1/0.834) = 0.79$

802.11n (20MHz): Duty cycle = $1.330/1.598 = 0.832$, Duty factor = $10 * \log(1/0.832) = 0.80$

802.11n (40MHz): Duty cycle = $628.20/918.27 = 0.684$, Duty factor = $10 * \log(1/0.684) = 1.65$



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
A.	Earphone	N/A	N/A	N/A	N/A

Note:

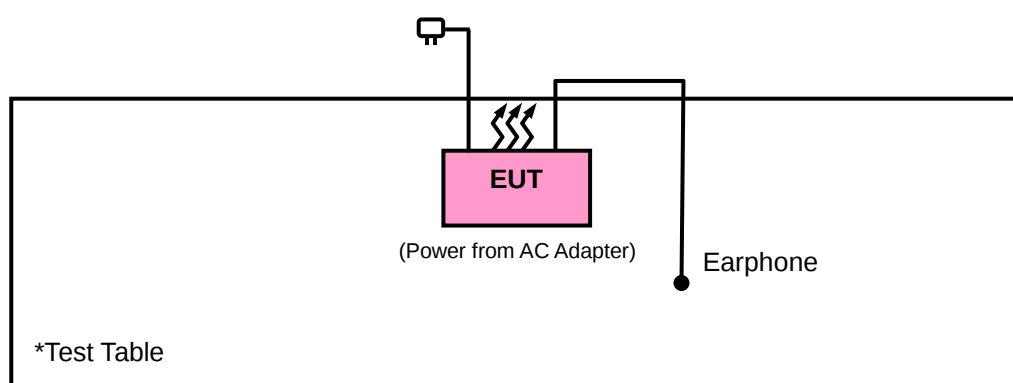
1. All power cords of the above support units are non-shielded (1.8m).

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 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:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 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
Spectrum Analyzer 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. 04, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Feb. 04, 2015	Feb. 04, 2016
HORN Antenna ETS-Lindgren	3117	00143293	Jan. 05, 2016	Jan. 04, 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. 06, 2015	Jul. 05, 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:

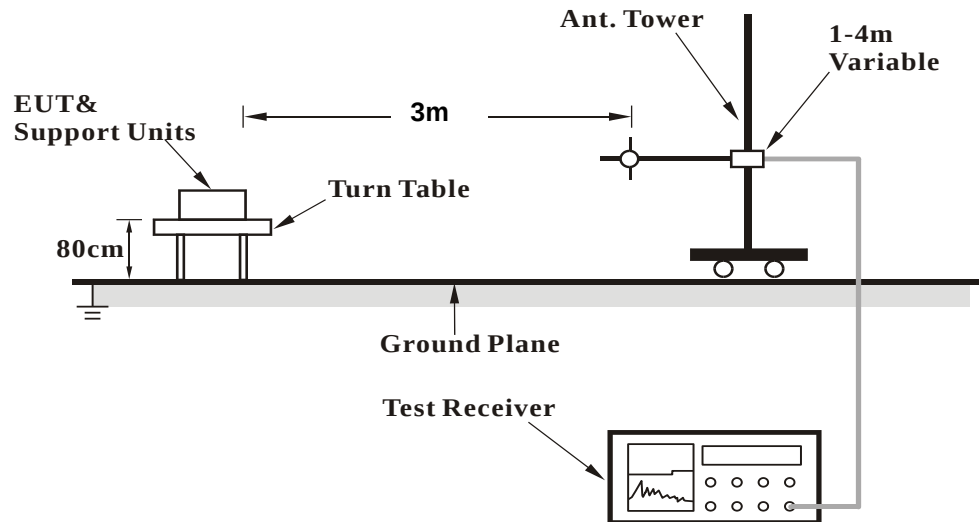
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

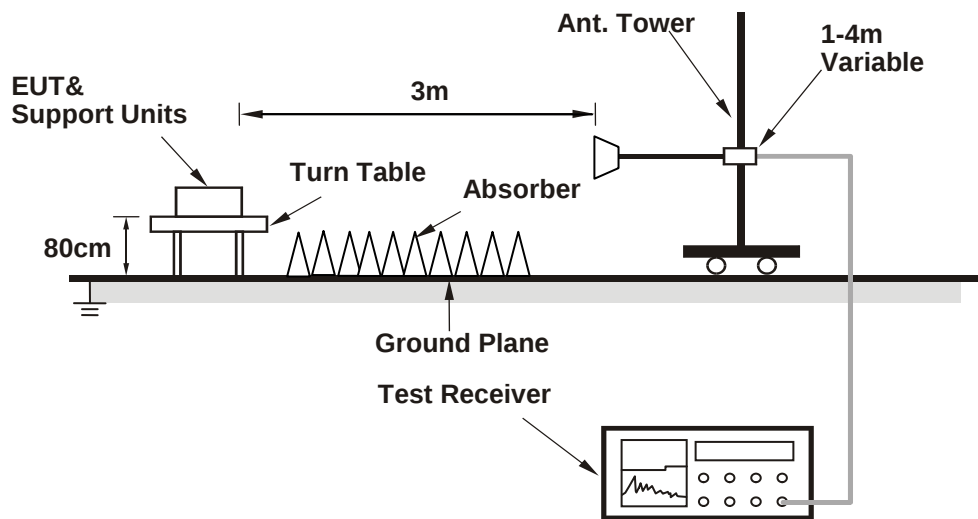
No deviation.

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	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
5428	42.87	34.1	54	-11.13	34.33	8.48	34.04	149	196	Average
5428	57.16	48.39	74	-16.84	34.33	8.48	34.04	149	196	Peak
5470	58.67	49.84	68.2	-9.53	34.37	8.51	34.05	149	196	Peak
5500	99.46	90.54			34.4	8.57	34.05	149	196	Average
5500	106.41	97.49			34.4	8.57	34.05	149	196	Peak
5725	55.97	46.81	68.2	-12.23	34.62	8.65	34.11	149	196	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	43.67	34.85	54	-10.33	34.36	8.51	34.05	89	264	Average
5460	57.21	48.39	74	-16.79	34.36	8.51	34.05	89	264	Peak
5470	65.89	57.06	68.2	-2.31	34.37	8.51	34.05	89	264	Peak
5500	103.29	94.37			34.4	8.57	34.05	89	264	Average
5500	109.58	100.66			34.4	8.57	34.05	89	264	Peak
5725	54.96	45.8	68.2	-13.24	34.62	8.65	34.11	89	264	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



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	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
*5714	63.22	54.07	68.2	-4.98	34.61	8.65	34.11	216	179	Peak
*5725	76.7	67.54	78.2	-1.5	34.62	8.65	34.11	216	179	Peak
5745	99.34	90.15			34.64	8.66	34.11	216	179	Average
5745	106.31	97.12			34.64	8.66	34.11	216	179	Peak
*5853	56.28	46.98	78.2	-21.92	34.74	8.7	34.14	216	179	Peak
*5864	56.36	47.03	68.2	-11.84	34.76	8.71	34.14	216	179	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	61.86	52.71	68.2	-6.34	34.61	8.65	34.11	106	128	Peak
*5723	71.69	62.53	78.2	-6.51	34.62	8.65	34.11	106	128	Peak
5745	98.37	89.18			34.64	8.66	34.11	106	128	Average
5745	105.29	96.1			34.64	8.66	34.11	106	128	Peak
*5856	55.67	46.35	78.2	-22.53	34.76	8.7	34.14	106	128	Peak
*5864	55.69	46.36	68.2	-12.51	34.76	8.71	34.14	106	128	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



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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	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
*5706	58.14	48.99	74	-15.86	34.61	8.65	34.11	216	159	Peak
*5719	58.01	48.85	74	-15.99	34.62	8.65	34.11	216	159	Peak
5785	101.49	92.26			34.68	8.68	34.13	216	159	Average
5785	108.67	99.44			34.68	8.68	34.13	216	159	Peak
*5851	58.31	49.01	74	-15.69	34.74	8.7	34.14	216	159	Peak
*5868	57.69	48.36	74	-16.31	34.76	8.71	34.14	216	159	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
*5703	57.34	48.19	74	-16.66	34.61	8.64	34.1	117	139	Peak
*5719	56.41	47.25	74	-17.59	34.62	8.65	34.11	117	139	Peak
5785	100.29	91.06			34.68	8.68	34.13	117	139	Average
5785	107.66	98.43			34.68	8.68	34.13	117	139	Peak
*5853	57.19	47.89	74	-16.81	34.74	8.7	34.14	117	139	Peak
*5864	56.49	47.16	74	-17.51	34.76	8.71	34.14	117	139	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	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
*5706	58.04	48.89	68.2	-10.16	34.61	8.65	34.11	228	139	Peak
*5719	57.64	48.48	78.2	-20.56	34.62	8.65	34.11	228	139	Peak
5825	101.36	92.07			34.73	8.69	34.13	228	139	Average
5825	107.97	98.68			34.73	8.69	34.13	228	139	Peak
*5850	73.12	63.82	78.2	-5.08	34.74	8.7	34.14	228	139	Peak
*5863	66.47	57.14	68.2	-1.73	34.76	8.71	34.14	228	139	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
*5708	57.51	48.36	68.2	-10.69	34.61	8.65	34.11	106	164	Peak
*5717	56.87	47.72	78.2	-21.33	34.61	8.65	34.11	106	164	Peak
5825	100.39	91.1			34.73	8.69	34.13	106	164	Average
5825	107.15	97.86			34.73	8.69	34.13	106	164	Peak
*5852	71.27	61.97	78.2	-6.93	34.74	8.7	34.14	106	164	Peak
*5861	63.84	54.51	68.2	-4.36	34.76	8.71	34.14	106	164	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 149	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
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
*5714	63.84	54.69	68.2	-4.36	34.61	8.65	34.11	216	179	Peak
*5725	76.24	67.08	78.2	-1.96	34.62	8.65	34.11	216	179	Peak
5745	99.24	90.05			34.64	8.66	34.11	216	179	Average
5745	106.76	97.57			34.64	8.66	34.11	216	179	Peak
*5859	57.59	48.27	78.2	-20.61	34.76	8.7	34.14	216	179	Peak
*5862	56.21	46.88	68.2	-11.99	34.76	8.71	34.14	216	179	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	60.41	51.26	68.2	-7.79	34.61	8.65	34.11	106	128	Peak
*5725	73.84	64.68	78.2	-4.36	34.62	8.65	34.11	106	128	Peak
5745	97.68	88.49			34.64	8.66	34.11	106	128	Average
5745	105.12	95.93			34.64	8.66	34.11	106	128	Peak
*5854	57.22	47.9	78.2	-20.98	34.76	8.7	34.14	106	128	Peak
*5869	56.87	47.54	68.2	-11.33	34.76	8.71	34.14	106	128	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



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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	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
*5707	56.27	47.12	68.2	-11.93	34.61	8.65	34.11	216	159	Peak
*5721	57.64	48.48	78.2	-20.56	34.62	8.65	34.11	216	159	Peak
5785	101.23	92			34.68	8.68	34.13	216	159	Average
5785	108.41	99.18			34.68	8.68	34.13	216	159	Peak
*5853	56.14	46.84	78.2	-22.06	34.74	8.7	34.14	216	159	Peak
*5861	56.79	47.46	68.2	-11.41	34.76	8.71	34.14	216	159	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	56.31	47.16	68.2	-11.89	34.61	8.65	34.11	117	139	Peak
*5719	58.63	49.47	78.2	-19.57	34.62	8.65	34.11	117	139	Peak
5785	99.84	90.61			34.68	8.68	34.13	117	139	Average
5785	107.32	98.09			34.68	8.68	34.13	117	139	Peak
*5857	56.29	46.97	78.2	-21.91	34.76	8.7	34.14	117	139	Peak
*5863	57.13	47.8	68.2	-11.07	34.76	8.71	34.14	117	139	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



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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	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
*5706	57.26	48.11	68.2	-10.94	34.61	8.65	34.11	228	139	Peak
*5719	57.67	48.51	78.2	-20.53	34.62	8.65	34.11	228	139	Peak
5825	100.16	90.87			34.73	8.69	34.13	228	139	Average
5825	107.61	98.32			34.73	8.69	34.13	228	139	Peak
*5850	74.23	64.93	78.2	-3.97	34.74	8.7	34.14	228	139	Peak
*5863	65.28	55.95	68.2	-2.92	34.76	8.71	34.14	228	139	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
*5709	56.29	47.14	68.2	-11.91	34.61	8.65	34.11	106	164	Peak
*5723	57.41	48.25	78.2	-20.79	34.62	8.65	34.11	106	164	Peak
5825	99.39	90.1			34.73	8.69	34.13	106	164	Average
5825	106.59	97.3			34.73	8.69	34.13	106	164	Peak
*5851	71.46	62.16	78.2	-6.74	34.74	8.7	34.14	106	164	Peak
*5864	65.73	56.4	68.2	-2.47	34.76	8.71	34.14	106	164	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



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802.11n (HT40)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
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
5150	46.95	38.7	54	-7.05	34.12	8.13	34	184	213	Average
5150	64.38	56.13	74	-9.62	34.12	8.13	34	184	213	Peak
5190	92.36	84.02			34.15	8.19	34	184	213	Average
5190	99.36	91.02			34.15	8.19	34	184	213	Peak
5368	42.97	34.3	54	-11.03	34.29	8.41	34.03	184	213	Average
5368	57.41	48.74	74	-16.59	34.29	8.41	34.03	184	213	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
5149	49.42	41.17	54	-4.58	34.12	8.13	34	128	304	Average
5149	62.83	54.58	74	-11.17	34.12	8.13	34	128	304	Peak
5190	97.24	88.9			34.15	8.19	34	128	304	Average
5190	104.16	95.82			34.15	8.19	34	128	304	Peak
5384	43.17	34.49	54	-10.83	34.31	8.41	34.04	128	304	Average
5384	58.21	49.53	74	-15.79	34.31	8.41	34.04	128	304	Peak

REMARKS:

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



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	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
5146	42.84	34.59	54	-11.16	34.12	8.13	34	184	247	Average
5146	56.37	48.12	74	-17.63	34.12	8.13	34	184	247	Peak
5310	91.67	83.12			34.25	8.32	34.02	184	247	Average
5310	99.27	90.72			34.25	8.32	34.02	184	247	Peak
5350	45.61	36.98	54	-8.39	34.28	8.38	34.03	184	247	Average
5350	62.48	53.85	74	-11.52	34.28	8.38	34.03	184	247	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
5037	42.67	34.61	54	-11.33	34.03	8	33.97	169	312	Average
5037	56.47	48.41	74	-17.53	34.03	8	33.97	169	312	Peak
5310	95.91	87.36			34.25	8.32	34.02	169	312	Average
5310	102.69	94.14			34.25	8.32	34.02	169	312	Peak
5350	50.83	42.2	54	-3.17	34.28	8.38	34.03	169	312	Average
5350	67.42	58.79	74	-6.58	34.28	8.38	34.03	169	312	Peak

REMARKS:

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



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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	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
*5710	66.24	57.09	68.2	-1.96	34.61	8.65	34.11	247	129	Peak
*5725	71.86	62.7	78.2	-6.34	34.62	8.65	34.11	247	129	Peak
5755	91.94	82.73			34.66	8.66	34.11	247	129	Average
5755	100.47	91.26			34.66	8.66	34.11	247	129	Peak
*5851	57.36	48.06	78.2	-20.84	34.74	8.7	34.14	247	129	Peak
*5865	56.69	47.36	68.2	-11.51	34.76	8.71	34.14	247	129	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	62.31	53.16	68.2	-5.89	34.61	8.65	34.11	142	219	Peak
*5725	70.54	61.38	78.2	-7.66	34.62	8.65	34.11	142	219	Peak
5755	91.56	82.35			34.66	8.66	34.11	142	219	Average
5755	98.97	89.76			34.66	8.66	34.11	142	219	Peak
*5852	56.41	47.11	78.2	-21.79	34.74	8.7	34.14	142	219	Peak
*5864	57.03	47.7	68.2	-11.17	34.76	8.71	34.14	142	219	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	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
*5706	66.62	57.47	68.2	-1.58	34.61	8.65	34.11	239	152	Peak
*5723	68.46	59.3	78.2	-9.74	34.62	8.65	34.11	239	152	Peak
5795	96.84	87.6			34.69	8.68	34.13	239	152	Average
5795	105.21	95.97			34.69	8.68	34.13	239	152	Peak
*5851	72.22	62.92	78.2	-5.98	34.74	8.7	34.14	239	152	Peak
*5862	66.83	57.5	68.2	-1.37	34.76	8.71	34.14	239	152	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
*5705	64.39	55.24	68.2	-3.81	34.61	8.65	34.11	126	305	Peak
*5723	65.39	56.23	78.2	-12.81	34.62	8.65	34.11	126	305	Peak
5795	95.68	86.44			34.69	8.68	34.13	126	305	Average
5795	103.58	94.34			34.69	8.68	34.13	126	305	Peak
*5850	68.91	59.61	78.2	-9.29	34.74	8.7	34.14	126	305	Peak
*5863	63.85	54.52	68.2	-4.35	34.76	8.71	34.14	126	305	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 (HT40)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK)
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
100.2	14.43	35.71	43.5	-29.07	9.7	1.28	32.26	168	238	Peak
154.74	15.15	35.45	43.5	-28.35	10.45	1.52	32.27	160	127	Peak
263.01	21.85	38.65	46	-24.15	13.37	1.94	32.11	152	131	Peak
488.3	19.22	29.74	46	-26.78	18.96	2.63	32.11	174	132	Peak
626.2	22.06	29.2	46	-23.94	22.1	2.93	32.17	169	120	Peak
921.6	28.28	29.87	46	-17.72	26.2	3.53	31.32	168	231	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
67.53	11.5	35.04	40	-28.5	7.78	0.9	32.22	191	327	Peak
153.12	10.77	31.19	43.5	-32.73	10.33	1.52	32.27	164	158	Peak
292.44	17.38	33.63	46	-28.62	13.85	2.03	32.13	120	132	Peak
447.12	18.25	29.94	46	-27.75	17.97	2.49	32.15	179	249	Peak
600.05	21.12	29.34	46	-24.88	21.1	2.87	32.19	160	357	Peak
835	25.16	30	46	-20.84	23.65	3.38	31.87	126	21	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)
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
75.36	8.56	31.4	40	-31.44	8.27	1.11	32.22	139	132	Peak
140.16	9.03	30.56	43.5	-34.47	9.36	1.38	32.27	124	175	Peak
249.78	26.13	43.38	46	-19.87	13	1.85	32.1	169	212	Peak
473.6	19.47	30.22	46	-26.53	18.81	2.56	32.12	195	233	Peak
743.1	24.77	30.48	46	-21.23	23.27	3.16	32.14	125	176	Peak
989.5	28.85	29.61	54	-25.15	25.98	3.72	30.46	184	213	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
78.33	15.56	38.31	40	-24.44	8.35	1.11	32.21	148	132	Peak
145.83	9.5	30.6	43.5	-34	9.79	1.38	32.27	168	320	Peak
290.55	16.57	32.83	46	-29.43	13.84	2.03	32.13	176	121	Peak
446.3	18.3	30.01	46	-27.7	17.95	2.49	32.15	134	208	Peak
728.4	25.36	30.92	46	-20.64	23.4	3.16	32.12	167	145	Peak
936.3	28.42	29.81	46	-17.58	26.2	3.62	31.21	179	291	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)
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
47.28	7.73	30.4	40	-32.27	8.65	0.9	32.22	156	321	Peak
161.22	18.58	38.6	43.5	-24.92	10.73	1.52	32.27	138	231	Peak
244.38	27.54	45.04	46	-18.46	12.77	1.85	32.12	187	195	Peak
440	17.55	29.33	46	-28.45	17.89	2.49	32.16	155	120	Peak
661.9	23.15	29.54	46	-22.85	22.75	2.99	32.13	198	130	Peak
876.1	26.17	29.51	46	-19.83	24.8	3.49	31.63	178	213	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
61.32	13.15	37.49	40	-26.85	6.99	0.9	32.23	167	124	Peak
167.43	15.35	35.86	43.5	-28.15	10.22	1.52	32.25	195	208	Peak
294.33	17.16	33.4	46	-28.84	13.86	2.03	32.13	175	123	Peak
437.2	17.99	29.81	46	-28.01	17.86	2.49	32.17	194	121	Peak
720	23.93	29.57	46	-22.07	23.31	3.16	32.11	168	281	Peak
892.9	27.4	30.47	46	-18.6	24.96	3.49	31.52	178	129	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 159		FREQUENCY RANGE		30MHz ~ 1GHz	
INPUT POWER		120Vac, 60 Hz		DETECTOR FUNCTION		Peak (PK)	
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
91.02	19.42	41.1	43.5	-24.08	8.98	1.11	31.77	175	145	Peak
161.22	18.58	38.6	43.5	-24.92	10.73	1.52	32.27	136	320	Peak
244.38	27.54	45.04	46	-18.46	12.77	1.85	32.12	194	212	Peak
336.4	16.54	30.64	46	-29.46	15.8	2.19	32.09	145	244	Peak
671.7	24.08	29.75	46	-21.92	23.4	3.05	32.12	164	132	Peak
921.6	28.28	29.87	46	-17.72	26.2	3.53	31.32	191	262	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
48.09	19.98	42.9	40	-20.02	8.4	0.9	32.22	152	244	Peak
182.28	18.7	38.93	43.5	-24.8	10.4	1.61	32.24	194	320	Peak
251.13	17.81	34.93	46	-28.19	13.04	1.94	32.1	164	274	Peak
393.8	17.67	29.89	46	-28.33	17.65	2.34	32.21	194	137	Peak
563.2	21.02	30.2	46	-24.98	20.2	2.82	32.2	168	232	Peak
866.3	26.13	29.98	46	-19.87	24.4	3.44	31.69	159	174	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

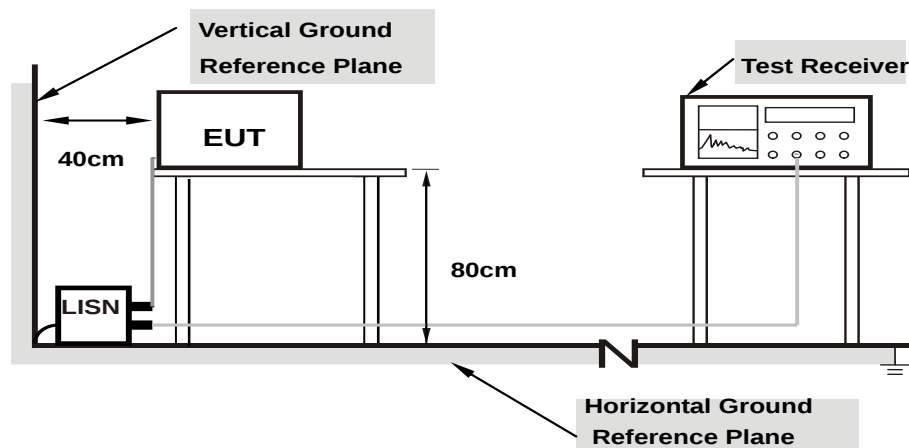
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

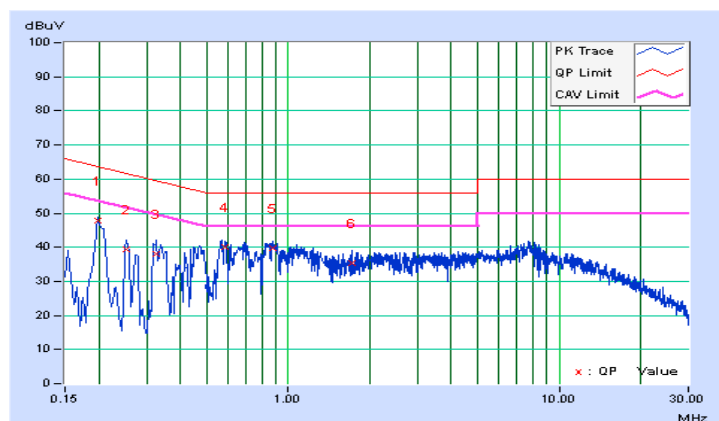
4.2.7 Test Results

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	0.19800	9.95	37.94	24.11	47.89	34.06	63.69	53.69	-15.81	-19.64
2	0.25338	9.97	29.32	12.81	39.29	22.78	61.65	51.65	-22.35	-28.86
3	0.32544	10.00	28.19	16.27	38.19	26.27	59.57	49.57	-21.38	-23.30
4	0.58563	10.05	30.03	14.83	40.08	24.88	56.00	46.00	-15.92	-21.12
5	0.87800	10.09	29.62	15.07	39.71	25.16	56.00	46.00	-16.29	-20.84
6	1.71400	10.16	25.30	10.99	35.46	21.15	56.00	46.00	-20.54	-24.85

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

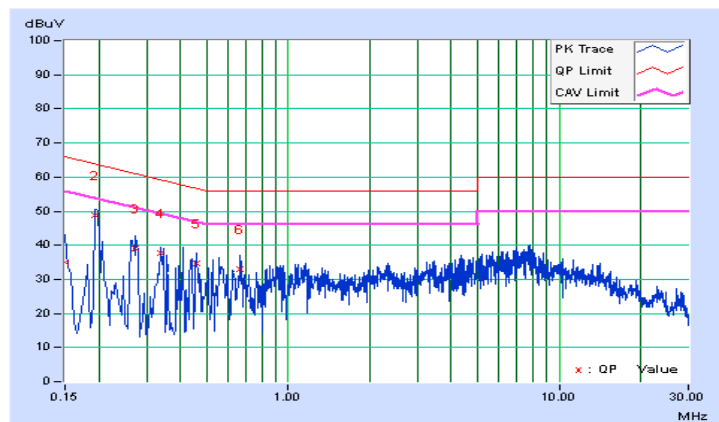


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2016/1/10

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	0.15000	9.92	25.04	20.65	34.96	30.57	66.00	56.00	-31.04	-25.43
2	0.19418	9.94	38.94	22.98	48.88	32.92	63.86	53.86	-14.98	-20.94
3	0.27400	9.97	29.08	12.01	39.05	21.98	61.00	51.00	-21.94	-29.01
4	0.33800	10.00	27.57	12.12	37.57	22.12	59.25	49.25	-21.68	-27.13
5	0.45800	10.04	24.59	14.23	34.63	24.27	56.73	46.73	-22.10	-22.46
6	0.66600	10.07	22.77	6.65	32.84	16.72	56.00	46.00	-23.16	-29.28

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 $N_{ANT} \leq 4$;

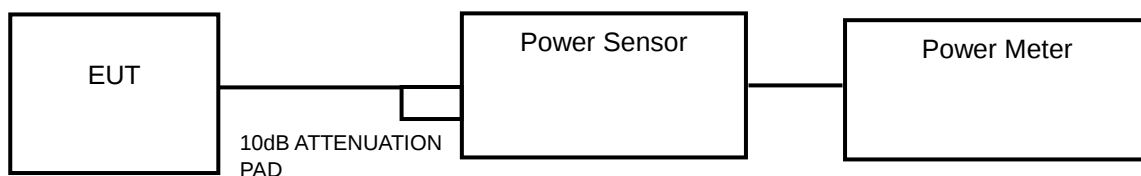
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

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

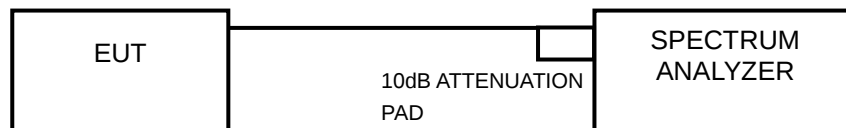
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR AVERAGE POWER MEASUREMENT

<802.11a, 802.11n (20MHz), 802.11n (40MHz)>

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.

FOR 26dB 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:

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)

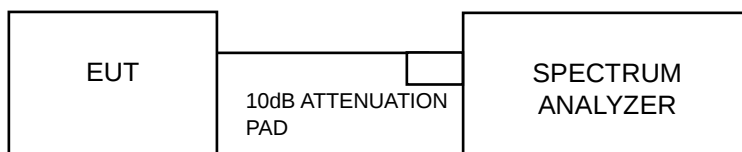
CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
151	5755	9.40	9.73	30	PASS
159	5795	31.33	14.96	30	PASS

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/ 500MHz

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 = 30 kHz, Set VBW ≥ 1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 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)

For U-NII-3 band:

- 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) 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)

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/500kHz)	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

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

802.11n (HT20)

Channel	Freq. (MHz)	PSD (dBm/500kHz)	Duty factor	PSD with Duty Factor (dBm)	Limit (dBm/500kHz)	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

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

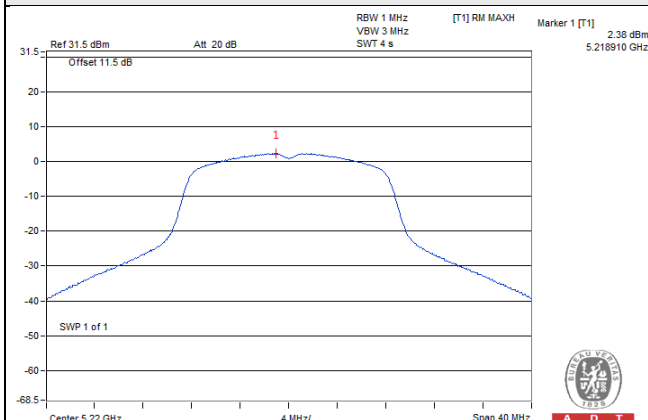
802.11n (HT40)

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

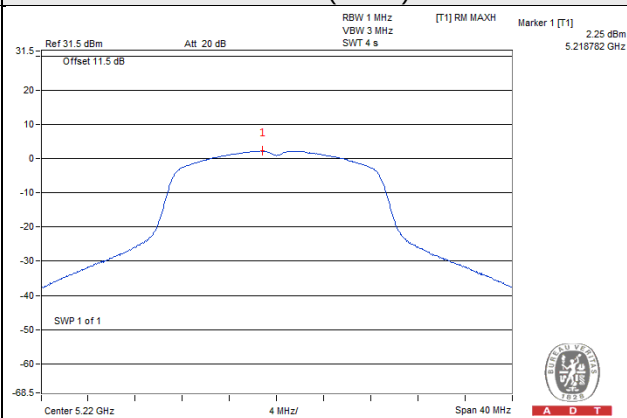
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

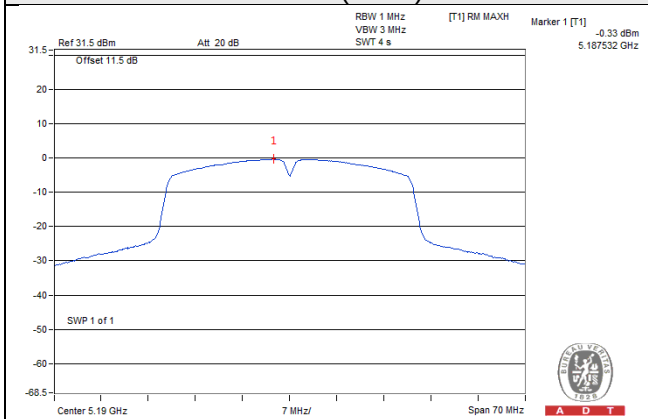
802.11a



802.11n (HT20)



802.11n (HT40)



For U-NII-3:

802.11a

Channel	Freq. (MHz)	PSD (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500kHz)	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

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

802.11n (HT20)

Channel	Freq. (MHz)	PSD (dBm/500kHz)	Duty factor	PSD with Duty Factor (dBm)	Limit (dBm/500kHz)	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

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

802.11n (HT40)

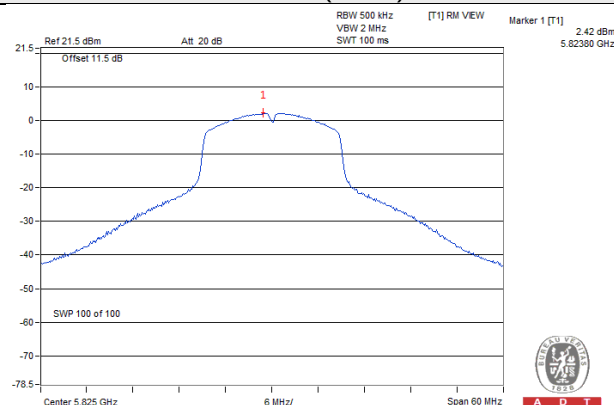
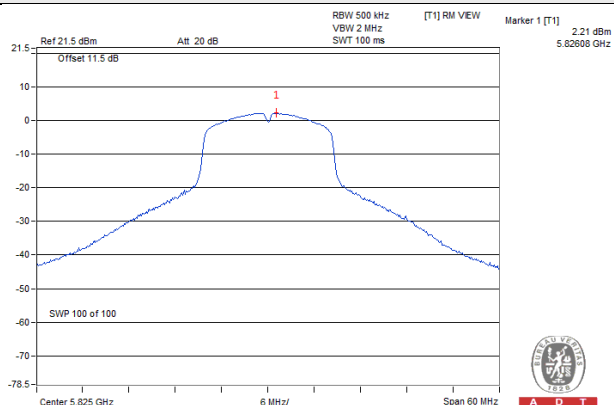
Channel	Freq. (MHz)	PSD (dBm/500kHz)	Duty factor	PSD with Duty Factor (dBm)	Limit (dBm/500kHz)	PASS /FAIL
151	5755	-7.78	1.65	-6.13	30	PASS
159	5795	-1.33	1.65	0.32	30	PASS

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

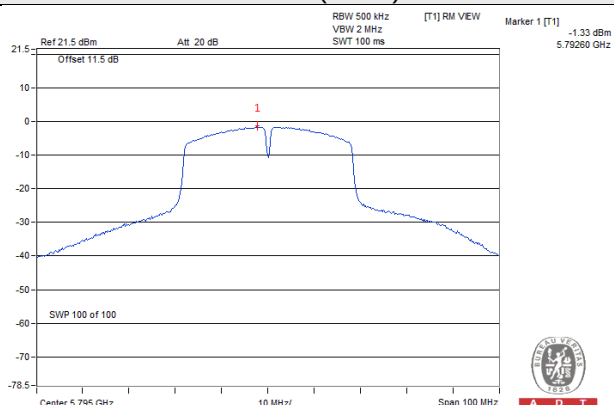
SPECTRUM PLOT OF WORST VALUE

802.11a

802.11n (HT20)



802.11n (HT40)

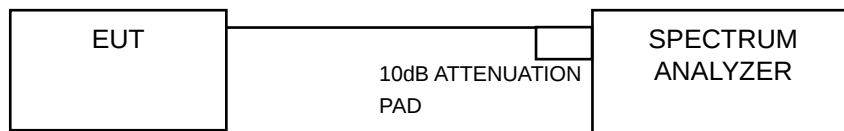


4.5 6dB Bandwidth Measurement

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)

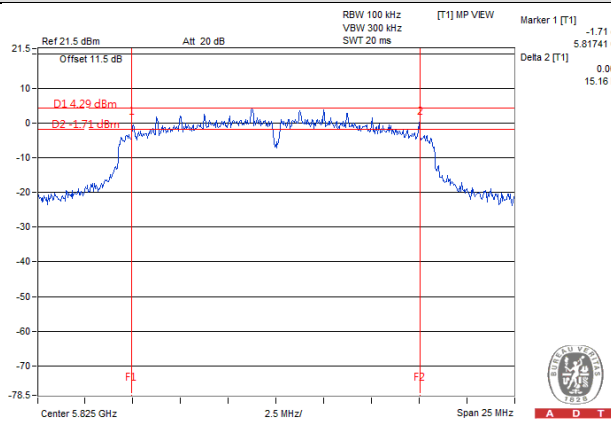
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	15.13	0.5	PASS
157	5785	15.15	0.5	PASS
165	5825	15.15	0.5	PASS

802.11n (HT40)

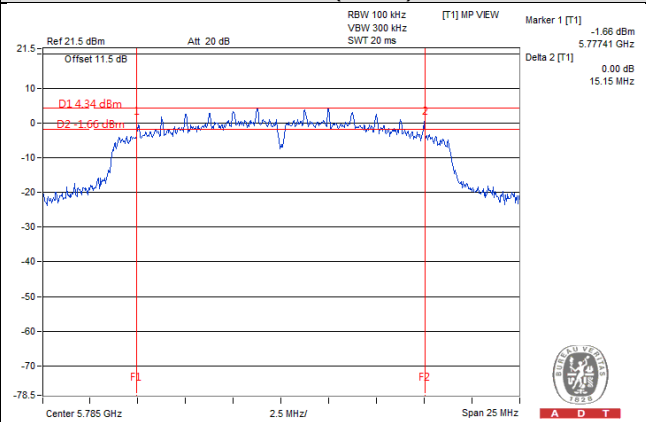
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	35.15	0.5	PASS
159	5795	35.12	0.5	PASS

SPECTRUM PLOT OF WORST VALUE

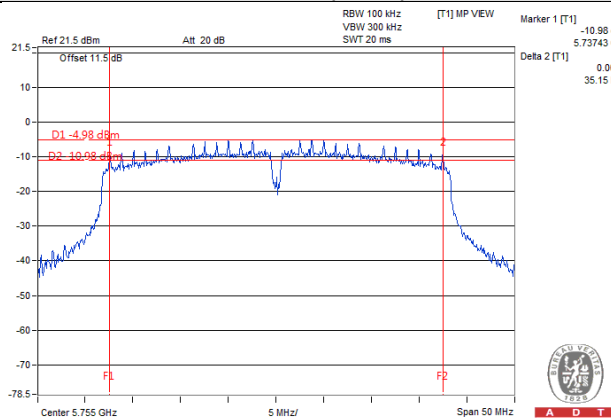
802.11a



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

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Fax: 886-2-26051924

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Web Site: www.bureauveritas-adt.com

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

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