FCC TEST REPORT (15.407)

REPORT NO.:	RF140620C11-4
MODEL NO.:	NX-74751
FCC ID:	A4R-NX74751
RECEIVED:	Jun. 20, 2014
TESTED:	Jun. 16, 2014 ~ Jul. 07, 22
ISSUED:	Aug. 06, 2014

APPLICANT:	Google Inc
ADDRESS:	1600 Amphitheatre Parkway Mountain View California, United States
ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140620C11-4	Original release	Aug. 06, 2014

1. CERTIFICATION

PRODUCT:	7” Tablet
MODEL NO.:	NX-74751
BRAND:	Google
APPLICANT:	Google Inc
TESTED:	Jun. 16, 2014 ~ Jul. 07, 22
TEST SAMPLE:	Identical Prototype
STANDARDS:	**FCC Part 15, Subpart E (Section 15.407)**
	ANSI C63.10-2009

The above equipment (model: NX-74751) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample’s EMC characteristics under the conditions specified in this report.

PREPARED BY : Gina Liu , **DATE :** Aug. 06, 2014

Gina Liu / Specialist

APPROVED BY : Sam chen , **DATE :** Aug. 06, 2014

Sam Chen / Senior Project Engineer

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -7.77dB at 0.52891MHz.
15.407(b/1/2/3) (b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -4.33dB at 264.09MHz.
15.407(a/1/2/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	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.

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	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	7” Tablet
MODEL NO.	NX-74751
POWER SUPPLY	5.0Vdc (adapter or host equipment) 7.6Vdc (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 ~ 5805MHz
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 ~ 5805MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
OUTPUT POWER	13.90mW for 5180 ~ 5240MHz 12.19mW for 5260 ~ 5320MHz 12.05mW for 5500 ~ 5700MHz 103.51mW for 5745 ~ 5805MHz
ANTENNA TYPE	Chip antenna with 0.8dBi gain (5180 ~ 5240MHz) Chip antenna with 1.9dBi gain (5260 ~ 5320MHz) Chip antenna with 1.3dBi gain (5500 ~ 5700MHz) Chip antenna with 1.9dBi gain (5745 ~ 5805MHz)
ANTENNA CONNECTOR	NA
DATA CABLE	Refer to Note as below
I/O PORTS	Refer to user’s manual
ACCESSORY DEVICES	Refer to Note as below

NOTE:

1. The EUT contains following accessory devices.

ITEM	BRAND	MODEL	SPECIFICATION
Adapter	KuanTech	KSA29B0500200D5	I/P: 100-240Vac, 50/60Hz, 500mA O/P: 5Vdc, 2000mA
Battery	LG	ARPB025-A001	7.6Vdc, 2480mAh
USB Cable	LUXSHARE-ICT	L4QU2014-CS-R	--
WWAN Module	NVIDIA	NB106-N	2G/3G/LTE

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

3.2 DESCRIPTION OF TEST MODES

WLAN 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

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 (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

WLAN 5500 ~ 5700MHz

8 channels are provided for 802.11a, 802.11n (20MHz):

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510MHz	134	5670MHz
110	5550MHz		

FOR 5.0GHz (5745 ~ 5805MHz):

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	157	5785MHz
153	5765MHz	161	5805MHz

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

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≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥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 **Z-plane.**

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)
-	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-	802.11a	5745-5805	149 to 161	149, 157, 161	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 161	149, 157, 161	OFDM	BPSK	MCS0
	802.11n (40MHz)		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)
-	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0

BANDEDGE MEASUREMENT:

☒ 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	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-	802.11a	5745-5805	149 to 161	149, 157, 161	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 161	149, 157, 161	OFDM	BPSK	MCS0
	802.11n (40MHz)		151 to 159	151, 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)
-	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-	802.11a	5745-5805	149 to 161	149, 157, 161	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 161	149, 157, 161	OFDM	BPSK	MCS0
	802.11n (40MHz)		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	Anson Lin
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Harry Hsueh
PLC	25deg. C, 65%RH	120Vac, 60Hz	Gavin Wu
APCM	25deg. C, 65%RH	120Vac, 60Hz	David Huang

3.3 DESCRIPTION OF SUPPORT UNITS

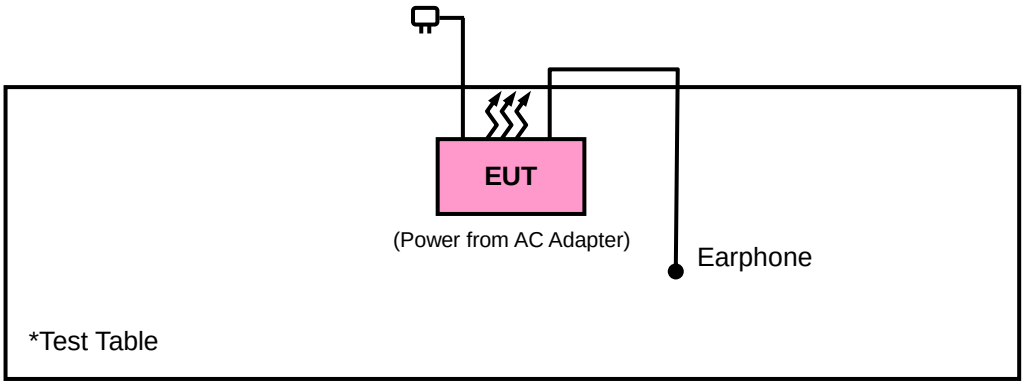
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Bluetooth Tester	R&S	CBT	100870	N/A
2	AC Adapter	V-Infinity	EMSA120300	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A
2	N/A

NOTE: 1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 as a communication partner to transfer data.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



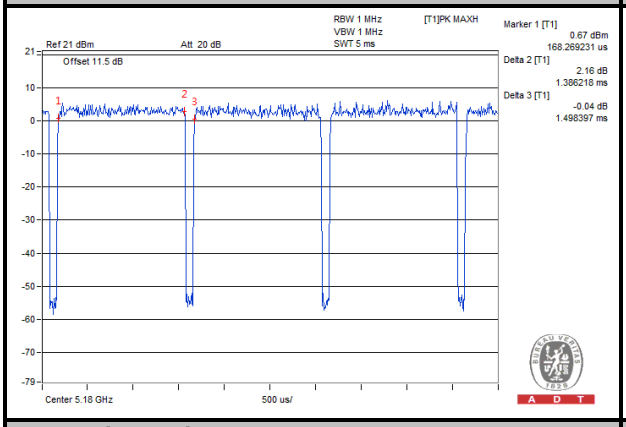
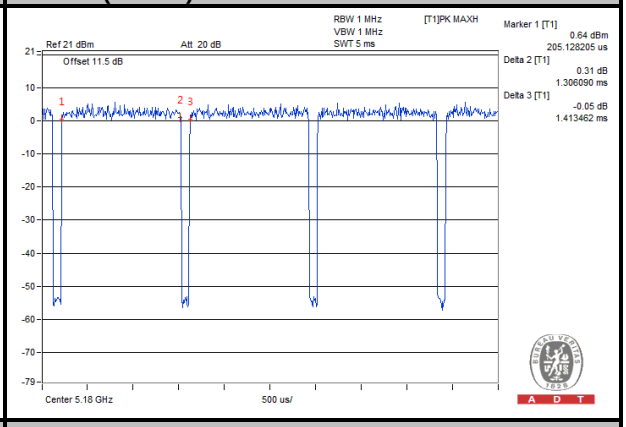
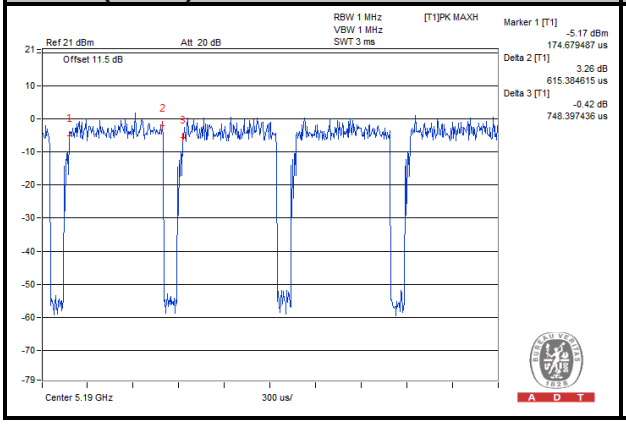
3.4 DUTY CYCLE TEST SIGNAL

MODULATION TYPE: BPSK

802.11a: Duty cycle = 1.386/1.498 = 0.925, Duty factor = 10 * log(1/0.925) = 0.34

802.11n (20MHz): Duty cycle = 1.306/1.413 = 0.924, Duty factor = 10 * log(1/0.924) = 0.34

802.11n (40MHz): Duty cycle = 615.38/748.39 = 0.822, Duty factor = 10 * log(1/0.822) = 0.85

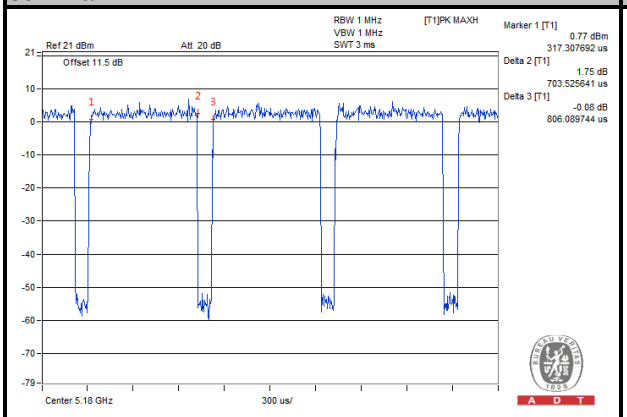
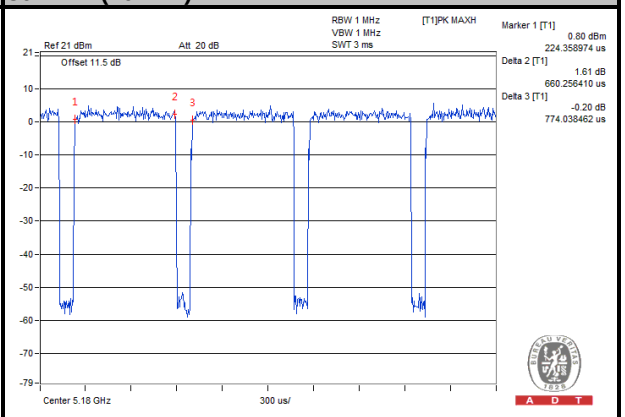
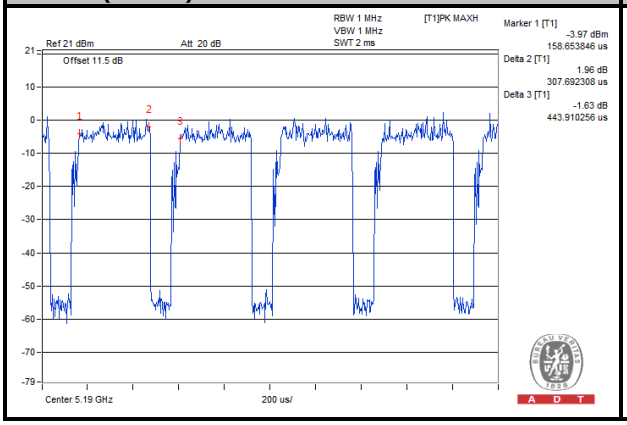
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

MODULATION TYPE: QPSK

802.11a: Duty cycle = 703.52/806.08 = 0.873, Duty factor = 10 * log(1/0.873) = 0.59

802.11n (20MHz): Duty cycle = 660.25/774.03 = 0.853, Duty factor = 10 * log(1/0.853) = 0.69

802.11n (40MHz): Duty cycle = 307.69/443.91 = 0.693, Duty factor = 10 * log(1/0.693) = 1.59

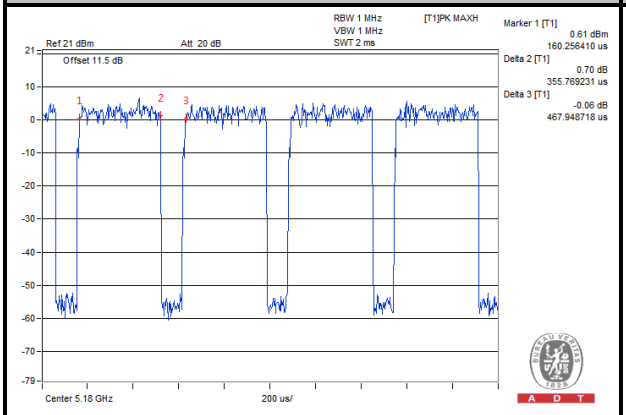
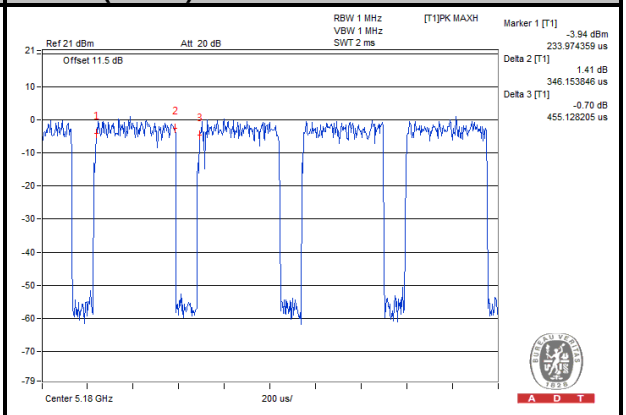
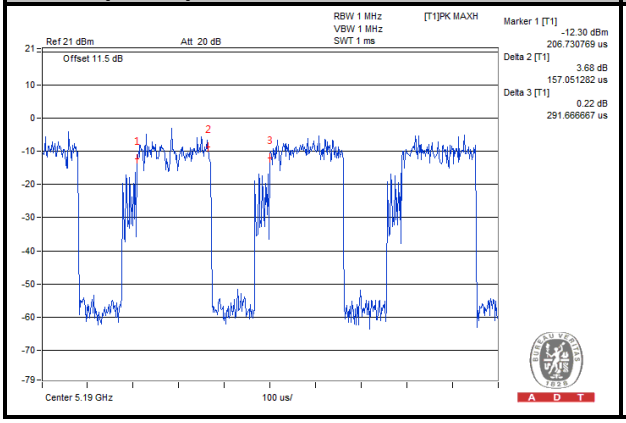
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

MODULATION TYPE: 16QAM

802.11a: Duty cycle = 335.76/467.94 = 0.760, Duty factor = 10 * log(1/0.760) = 1.19

802.11n (20MHz): Duty cycle = 346.15/455.12 = 0.761, Duty factor = 10 * log(1/0.761) = 1.19

802.11n (40MHz): Duty cycle = 157.05/291.66 = 0.538, Duty factor = 10 * log(1/0.538) = 2.69

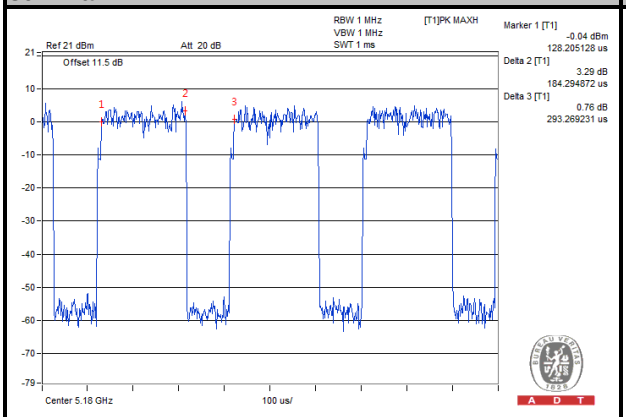
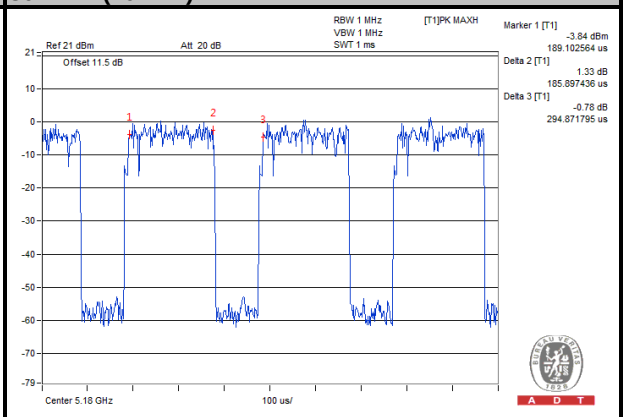
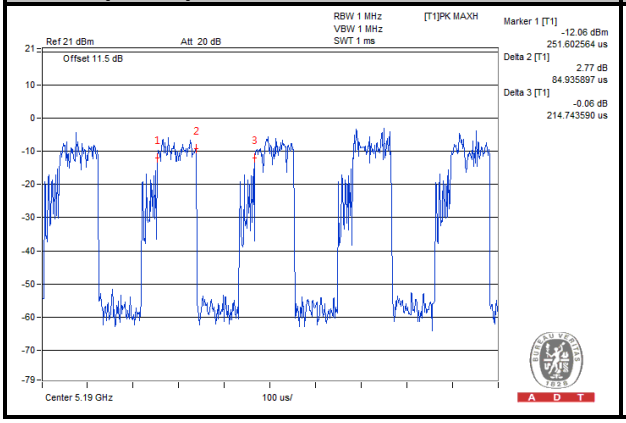
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

MODULATION TYPE: 64QAM

802.11a: Duty cycle = 184.30/293.2 = 0.629, Duty factor = 10 * log(1/0.629) = 2.01

802.11n (20MHz): Duty cycle = 185.89/294.87 = 0.630, Duty factor = 10 * log(1/0.630) = 2.00

802.11n (40MHz): Duty cycle = 84.93/214.74 = 0.396, Duty factor = 10 * log(1/0.396) = 4.03

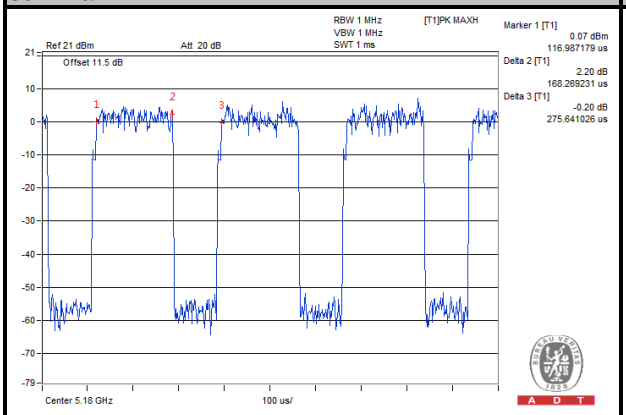
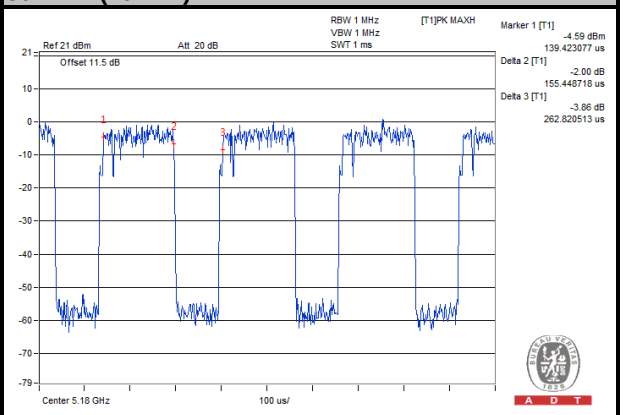
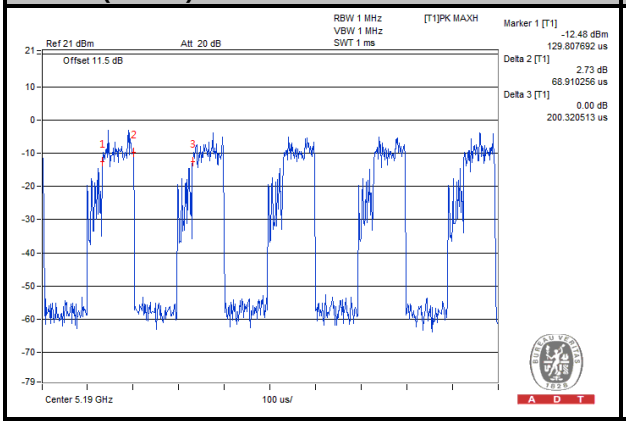
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

MODULATION TYPE: 256QAM

802.11a: Duty cycle = 168.26/275.64 = 0.61, Duty factor = 10 * log(1/0.61) = 2.14

802.11n (20MHz): Duty cycle = 155.44/262.82 = 0.591, Duty factor = 10 * log(1/0.591) = 2.28

802.11n (40MHz): Duty cycle = 68.91/200.32 = 0.344, Duty factor = 10 * log(1/0.344) = 4.63

802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

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 is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It 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:

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 (dBμV/m)	AV: 54 (dBμV/m)
APPLICABLE TO	**EIRP LIMIT**	**EQUIVALENT FIELD STRENGTH AT 3m**
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK: -27 (dBm/MHz) *1 PK: -17 (dBm/MHz) *2	PK: 68.2 (dBμV/m) *1 PK: 78.2 (dBμV/m) *2

NOTE: *1 beyond 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:

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/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	N9038A	MY51210203	Jan. 17, 2014	Jan. 16, 2015
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2013	Dec. 20, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Feb. 27. 2014	Feb. 26, 2015
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Feb. 19, 2014	Feb. 18, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 18, 2013	Dec. 17, 2014
Loop Antenna	HFH2-Z2	100070	Mar. 06, 2014	Mar. 05, 2016
Preamplifier EMCI	EMC 012645	980115	Dec. 26, 2013	Dec. 25, 2014
Preamplifier EMCI	EMC 184045	980116	Jan. 13, 2014	Jan. 12, 2015
Preamplifier EMCI	EMC 330H	980112	Dec. 27, 2013	Dec. 26, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 18, 2013	Oct. 17, 2014
RF signal cable Worken	RG-213	NA	Nov. 07, 2013	Nov. 06, 2014
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
Power Meter	ML2495A	1232002	Aug. 23, 2013	Aug. 22, 2014
Power Sensor	MA2411B	1207325	Aug. 23, 2013	Aug. 22, 2014

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 calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in HwaYa Chamber 10.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The FCC Site Registration No. is 690701.
6. The IC Site Registration No. is IC 7450F-10.

4.1.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. 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 antenna is a broadband antenna, and its height 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

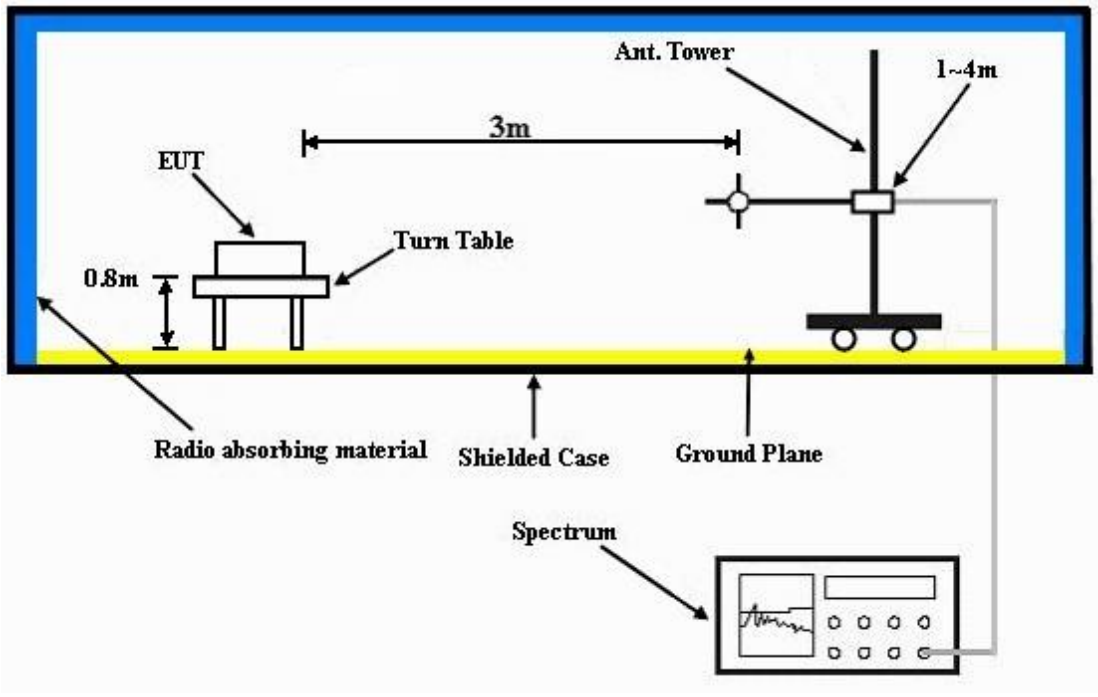
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

4.1.5 DEVIATION FROM TEST STANDARD

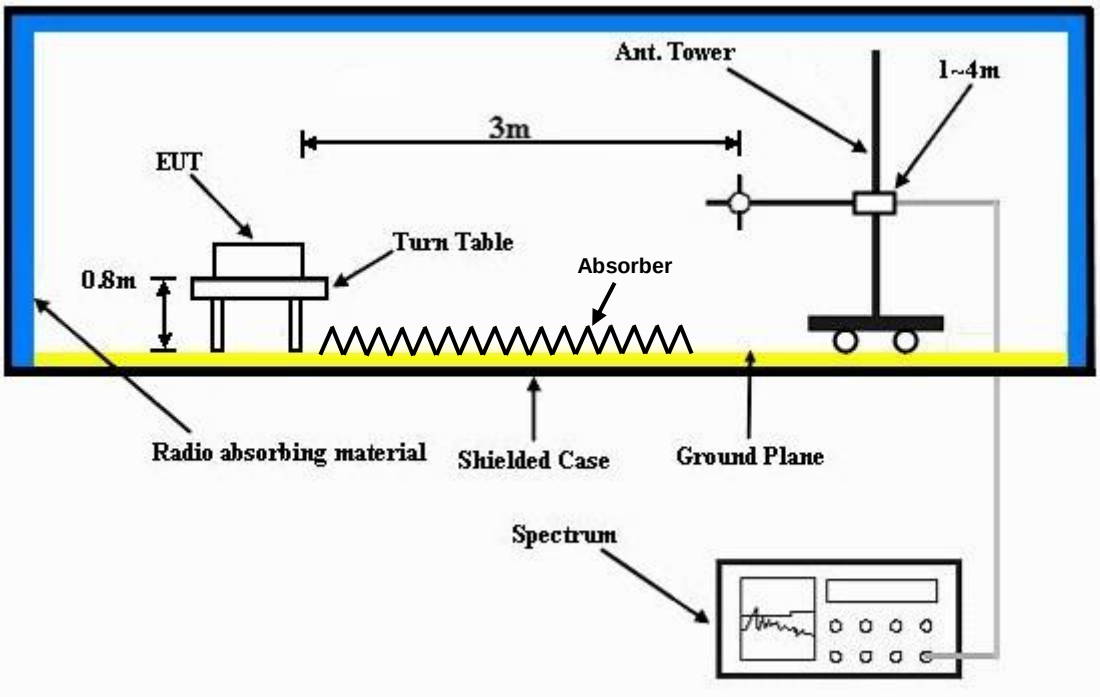
No deviation.

4.1.6 TEST SETUP

Frequency Range 30MHz ~ 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

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

4.1.8 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA

802.11a

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

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	44.76	36.13	54	-9.24	34.12	8.51	34	100	299	Average
5150	62.14	53.51	74	-11.86	34.12	8.51	34	100	299	Peak
5180	94.54	85.84			34.15	8.55	34	100	299	Average
5180	104.56	95.86			34.15	8.55	34	100	299	Peak
5364	38.7	29.64	54	-15.3	34.29	8.8	34.03	100	299	Average
5364	60.37	51.31	74	-13.63	34.29	8.8	34.03	100	299	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
5034	40.41	31.98	54	-13.59	34.03	8.37	33.97	103	62	Average
5034	59.35	50.92	74	-14.65	34.03	8.37	33.97	103	62	Peak
5180	89.49	80.79			34.15	8.55	34	103	62	Average
5180	98.79	90.09			34.15	8.55	34	103	62	Peak
5392	38.55	29.45	54	-15.45	34.31	8.83	34.04	103	62	Average
5392	59.18	50.08	74	-14.82	34.31	8.83	34.04	103	62	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5180MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 44	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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
5142	39.9	31.26	54	-14.1	34.12	8.51	33.99	100	297	Average
5142	58.8	50.16	74	-15.2	34.12	8.51	33.99	100	297	Peak
5220	93.91	85.12			34.17	8.62	34	100	297	Average
5220	102.63	93.84			34.17	8.62	34	100	297	Peak
5370	39.01	29.92	54	-14.99	34.29	8.83	34.03	100	297	Average
5370	59.01	49.92	74	-14.99	34.29	8.83	34.03	100	297	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
5094	38.34	29.81	54	-15.66	34.08	8.44	33.99	182	131	Average
5094	59.8	51.27	74	-14.2	34.08	8.44	33.99	182	131	Peak
5220	89.28	80.49			34.17	8.62	34	182	131	Average
5220	98.03	89.24			34.17	8.62	34	182	131	Peak
5404	38.43	29.28	54	-15.57	34.32	8.87	34.04	182	131	Average
5404	59.57	50.42	74	-14.43	34.32	8.87	34.04	182	131	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5220MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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
5124	39.54	30.94	54	-14.46	34.11	8.48	33.99	100	300	Average
5124	59.91	51.31	74	-14.09	34.11	8.48	33.99	100	300	Peak
5240	93.89	85.05			34.19	8.66	34.01	100	300	Average
5240	102.36	93.52			34.19	8.66	34.01	100	300	Peak
5358	39.83	30.78	54	-14.17	34.28	8.8	34.03	100	300	Average
5358	59.64	50.59	74	-14.36	34.28	8.8	34.03	100	300	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
5142	38.27	29.63	54	-15.73	34.12	8.51	33.99	135	131	Average
5142	58.8	50.16	74	-15.2	34.12	8.51	33.99	135	131	Peak
5240	89	80.16			34.19	8.66	34.01	135	131	Average
5240	98.31	89.47			34.19	8.66	34.01	135	131	Peak
5382	39.06	29.96	54	-14.94	34.31	8.83	34.04	135	131	Average
5382	58.55	49.45	74	-15.45	34.31	8.83	34.04	135	131	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5240MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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	37.58	28.95	54	-16.42	34.12	8.51	34	100	300	Average
5150	56.37	47.74	74	-17.63	34.12	8.51	34	100	300	Peak
5260	93.8	84.94			34.21	8.66	34.01	100	300	Average
5260	104.02	95.16			34.21	8.66	34.01	100	300	Peak
5350	37.9	28.85	54	-16.1	34.28	8.8	34.03	100	300	Average
5350	57.37	48.32	74	-16.63	34.28	8.8	34.03	100	300	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	37.59	28.96	54	-16.41	34.12	8.51	34	115	186	Average
5150	55.79	47.16	74	-18.21	34.12	8.51	34	115	186	Peak
5260	90.25	81.39			34.21	8.66	34.01	115	186	Average
5260	99.83	90.97			34.21	8.66	34.01	115	186	Peak
5350	37.88	28.83	54	-16.12	34.28	8.8	34.03	115	186	Average
5350	56.94	47.89	74	-17.06	34.28	8.8	34.03	115	186	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5260MHz: Fundamental frequency.

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

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	37.64	29.01	54	-16.36	34.12	8.51	34	100	300	Average
5150	56.44	47.81	74	-17.56	34.12	8.51	34	100	300	Peak
5300	93.81	84.86			34.24	8.73	34.02	100	300	Average
5300	103.19	94.24			34.24	8.73	34.02	100	300	Peak
5350	40.49	31.44	54	-13.51	34.28	8.8	34.03	100	300	Average
5350	60.26	51.21	74	-13.74	34.28	8.8	34.03	100	300	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	37.57	28.94	54	-16.43	34.12	8.51	34	101	186	Average
5150	55.73	47.1	74	-18.27	34.12	8.51	34	101	186	Peak
5300	90.92	81.97			34.24	8.73	34.02	101	186	Average
5300	99.91	90.96			34.24	8.73	34.02	101	186	Peak
5350	37.97	28.92	54	-16.03	34.28	8.8	34.03	101	186	Average
5350	58.18	49.13	74	-15.82	34.28	8.8	34.03	101	186	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5300MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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	37.57	28.94	54	-16.43	34.12	8.51	34	100	300	Average
5150	56.29	47.66	74	-17.71	34.12	8.51	34	100	300	Peak
5320	94.78	85.79			34.25	8.76	34.02	100	300	Average
5320	104.3	95.31			34.25	8.76	34.02	100	300	Peak
5350	42.65	33.6	54	-11.35	34.28	8.8	34.03	100	300	Average
5350	58.36	49.31	74	-15.64	34.28	8.8	34.03	100	300	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	37.64	29.01	54	-16.36	34.12	8.51	34	113	188	Average
5150	55.75	47.12	74	-18.25	34.12	8.51	34	113	188	Peak
5320	90.84	81.85			34.25	8.76	34.02	113	188	Average
5320	100.56	91.57			34.25	8.76	34.02	113	188	Peak
5350	39.56	30.51	54	-14.44	34.28	8.8	34.03	113	188	Average
5350	57.77	48.72	74	-16.23	34.28	8.8	34.03	113	188	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5320MHz: Fundamental frequency.

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

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
5456	44.67	35.42	54	-9.33	34.36	8.94	34.05	100	292	Average
5456	63.76	54.51	74	-10.24	34.36	8.94	34.05	100	292	Peak
5470	60.39	51.13	68.3	-7.91	34.37	8.94	34.05	100	292	Peak
5500	95.47	86.11			34.4	9.01	34.05	100	292	Average
5500	104.98	95.62			34.4	9.01	34.05	100	292	Peak
5725	57.69	48.21	68.3	-10.61	34.62	8.97	34.11	100	292	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
5452	41.5	32.25	54	-12.5	34.36	8.94	34.05	178	266	Average
5452	58.89	49.64	74	-15.11	34.36	8.94	34.05	178	266	Peak
5470	59.22	49.96	68.3	-9.08	34.37	8.94	34.05	178	266	Peak
5500	90.85	81.49			34.4	9.01	34.05	178	266	Average
5500	99.69	90.33			34.4	9.01	34.05	178	266	Peak
5725	58.49	49.01	68.3	-9.81	34.62	8.97	34.11	178	266	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5500MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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
5450	38.7	29.45	54	-15.3	34.36	8.94	34.05	100	295	Average
5450	58.23	48.98	74	-15.77	34.36	8.94	34.05	100	295	Peak
5470	57.38	48.12	68.3	-10.92	34.37	8.94	34.05	100	295	Peak
5580	94.53	85.15			34.47	8.99	34.08	100	295	Average
5580	103.56	94.18			34.47	8.99	34.08	100	295	Peak
5725	58.16	48.68	68.3	-10.14	34.62	8.97	34.11	100	295	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
5440	38.52	29.31	54	-15.48	34.35	8.9	34.04	130	270	Average
5440	58.75	49.54	74	-15.25	34.35	8.9	34.04	130	270	Peak
5470	57.62	48.36	68.3	-10.68	34.37	8.94	34.05	130	270	Peak
5580	90.97	81.59			34.47	8.99	34.08	130	270	Average
5580	99.43	90.05			34.47	8.99	34.08	130	270	Peak
5725	57.1	47.62	68.3	-11.2	34.62	8.97	34.11	130	270	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5580MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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
5460	38.91	29.66	54	-15.09	34.36	8.94	34.05	146	296	Average
5460	57.6	48.35	74	-16.4	34.36	8.94	34.05	146	296	Peak
5470	57.27	48.01	68.3	-11.03	34.37	8.94	34.05	146	296	Peak
5700	93.49	84.03			34.59	8.97	34.1	146	296	Average
5700	102.86	93.4			34.59	8.97	34.1	146	296	Peak
5725	60.37	50.89	68.3	-7.93	34.62	8.97	34.11	146	296	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	38.43	29.18	54	-15.57	34.36	8.94	34.05	110	268	Average
5460	56.94	47.69	74	-17.06	34.36	8.94	34.05	110	268	Peak
5470	56.46	47.2	68.3	-11.84	34.37	8.94	34.05	110	268	Peak
5700	90.21	80.75			34.59	8.97	34.1	110	268	Average
5700	99.76	90.3			34.59	8.97	34.1	110	268	Peak
5725	58.44	48.96	68.3	-9.86	34.62	8.97	34.11	110	268	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5700MHz: Fundamental frequency.
3. 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	Harry Hsueh

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
5704	59.47	50.32	68.3	-8.83	34.61	8.64	34.1	125	179	Peak
5720	63.25	54.09	78.3	-15.05	34.62	8.65	34.11	125	179	Peak
5745	94.83	85.64			34.64	8.66	34.11	125	179	Average
5745	103.25	94.06			34.64	8.66	34.11	125	179	Peak
5852	56.53	47.23	78.3	-21.77	34.74	8.7	34.14	125	179	Peak
5868	57.57	48.24	68.3	-10.73	34.76	8.71	34.14	125	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
5708	58.4	49.25	68.3	-9.9	34.61	8.65	34.11	148	76	Peak
5724	64.45	55.29	78.3	-13.85	34.62	8.65	34.11	148	76	Peak
5745	93.89	84.7			34.64	8.66	34.11	148	76	Average
5745	102.28	93.09			34.64	8.66	34.11	148	76	Peak
5860	57.36	48.04	78.3	-20.94	34.76	8.7	34.14	148	76	Peak
5862	57.05	47.72	68.3	-11.25	34.76	8.71	34.14	148	76	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5745MHz: Fundamental frequency.
3. 5720MHz & 5852MHz: 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	Harry Hsueh

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
5650	59.15	50.06	68.3	-9.15	34.56	8.62	34.09	125	180	Peak
5718	57.88	48.72	78.3	-20.42	34.62	8.65	34.11	125	180	Peak
5785	94.88	85.65			34.68	8.68	34.13	125	180	Average
5785	103.34	94.11			34.68	8.68	34.13	125	180	Peak
5858	57.7	48.38	78.3	-20.6	34.76	8.7	34.14	125	180	Peak
5866	57.8	48.47	68.3	-10.5	34.76	8.71	34.14	125	180	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
5652	57.95	48.86	68.3	-10.35	34.56	8.62	34.09	148	76	Peak
5724	58.07	48.91	78.3	-20.23	34.62	8.65	34.11	148	76	Peak
5785	94.52	85.29			34.68	8.68	34.13	148	76	Average
5785	102.81	93.58			34.68	8.68	34.13	148	76	Peak
5854	57.62	48.3	78.3	-20.68	34.76	8.7	34.14	148	76	Peak
5862	57.42	48.09	68.3	-10.88	34.76	8.71	34.14	148	76	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5785MHz: Fundamental frequency.
3. 5718MHz & 5858MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

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
5668	58.94	49.84	68.3	-9.36	34.57	8.63	34.1	136	180	Peak
5724	56.7	47.54	78.3	-21.6	34.62	8.65	34.11	136	180	Peak
5805	94.92	85.66			34.71	8.68	34.13	136	180	Average
5805	103.35	94.09			34.71	8.68	34.13	136	180	Peak
5852	58.12	48.82	78.3	-20.18	34.74	8.7	34.14	136	180	Peak
5866	57.24	47.91	68.3	-11.06	34.76	8.71	34.14	136	180	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
5670	56.91	47.81	68.3	-11.39	34.57	8.63	34.1	148	76	Peak
5724	56.08	46.92	78.3	-22.22	34.62	8.65	34.11	148	76	Peak
5805	94.64	85.38			34.71	8.68	34.13	148	76	Average
5805	102.55	93.29			34.71	8.68	34.13	148	76	Peak
5856	56.07	46.75	78.3	-22.23	34.76	8.7	34.14	148	76	Peak
5862	55.7	46.37	68.3	-12.6	34.76	8.71	34.14	148	76	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5805MHz: Fundamental frequency.
3. 5724MHz & 5852MHz: Out of restricted band

802.11n (20MHz)

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

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
5138	43.62	34.99	54	-10.38	34.11	8.51	33.99	100	298	Average
5138	62.7	54.07	74	-11.3	34.11	8.51	33.99	100	298	Peak
5180	94.13	85.43			34.15	8.55	34	100	298	Average
5180	104.01	95.31			34.15	8.55	34	100	298	Peak
5418	38.8	29.64	54	-15.2	34.33	8.87	34.04	100	298	Average
5418	59.35	50.19	74	-14.65	34.33	8.87	34.04	100	298	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
5032	40.05	31.62	54	-13.95	34.03	8.37	33.97	176	266	Average
5032	58.95	50.52	74	-15.05	34.03	8.37	33.97	176	266	Peak
5180	89.02	80.32			34.15	8.55	34	176	266	Average
5180	98.45	89.75			34.15	8.55	34	176	266	Peak
5382	38.63	29.53	54	-15.37	34.31	8.83	34.04	176	266	Average
5382	58.61	49.51	74	-15.39	34.31	8.83	34.04	176	266	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5180MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 44	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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	37.67	29.04	54	-16.33	34.12	8.51	34	100	301	Average
5150	57.48	48.85	74	-16.52	34.12	8.51	34	100	301	Peak
5220	93.94	85.15			34.17	8.62	34	100	301	Average
5220	103.95	95.16			34.17	8.62	34	100	301	Peak
5350	37.84	28.79	54	-16.16	34.28	8.8	34.03	100	301	Average
5350	58.14	49.09	74	-15.86	34.28	8.8	34.03	100	301	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	37.56	28.93	54	-16.44	34.12	8.51	34	119	268	Average
5150	57.44	48.81	74	-16.56	34.12	8.51	34	119	268	Peak
5220	89.37	80.58			34.17	8.62	34	119	268	Average
5220	99.07	90.28			34.17	8.62	34	119	268	Peak
5350	37.74	28.69	54	-16.26	34.28	8.8	34.03	119	268	Average
5350	57.66	48.61	74	-16.34	34.28	8.8	34.03	119	268	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5220MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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	38.71	30.08	54	-15.29	34.12	8.51	34	100	301	Average
5150	57.54	48.91	74	-16.46	34.12	8.51	34	100	301	Peak
5240	94.3	85.46			34.19	8.66	34.01	100	301	Average
5240	104.36	95.52			34.19	8.66	34.01	100	301	Peak
5350	39.52	30.47	54	-14.48	34.28	8.8	34.03	100	301	Average
5350	59.36	50.31	74	-14.64	34.28	8.8	34.03	100	301	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	37.64	29.01	54	-16.36	34.12	8.51	34	112	143	Average
5150	56.92	48.29	74	-17.08	34.12	8.51	34	112	143	Peak
5240	88.93	80.09			34.19	8.66	34.01	112	143	Average
5240	98.88	90.04			34.19	8.66	34.01	112	143	Peak
5350	37.99	28.94	54	-16.01	34.28	8.8	34.03	112	143	Average
5350	58.35	49.3	74	-15.65	34.28	8.8	34.03	112	143	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5240MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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	37.91	29.28	54	-16.09	34.12	8.51	34	100	300	Average
5150	56.52	47.89	74	-17.48	34.12	8.51	34	100	300	Peak
5260	93.88	85.02			34.21	8.66	34.01	100	300	Average
5260	103.73	94.87			34.21	8.66	34.01	100	300	Peak
5350	38.26	29.21	54	-15.74	34.28	8.8	34.03	100	300	Average
5350	57.16	48.11	74	-16.84	34.28	8.8	34.03	100	300	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	37.67	29.04	54	-16.33	34.12	8.51	34	115	186	Average
5150	57.24	48.61	74	-16.76	34.12	8.51	34	115	186	Peak
5260	91.06	82.2			34.21	8.66	34.01	115	186	Average
5260	99.67	90.81			34.21	8.66	34.01	115	186	Peak
5350	37.99	28.94	54	-16.01	34.28	8.8	34.03	115	186	Average
5350	58.02	48.97	74	-15.98	34.28	8.8	34.03	115	186	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5260MHz: Fundamental frequency.

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

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	37.75	29.12	54	-16.25	34.12	8.51	34	100	294	Average
5150	56.46	47.83	74	-17.54	34.12	8.51	34	100	294	Peak
5300	94.04	85.09			34.24	8.73	34.02	100	294	Average
5300	103.61	94.66			34.24	8.73	34.02	100	294	Peak
5350	40.07	31.02	54	-13.93	34.28	8.8	34.03	100	294	Average
5350	57.46	48.41	74	-16.54	34.28	8.8	34.03	100	294	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	37.62	28.99	54	-16.38	34.12	8.51	34	114	186	Average
5150	55.16	46.53	74	-18.84	34.12	8.51	34	114	186	Peak
5300	90.63	81.68			34.24	8.73	34.02	114	186	Average
5300	100.6	91.65			34.24	8.73	34.02	114	186	Peak
5350	38.45	29.4	54	-15.55	34.28	8.8	34.03	114	186	Average
5350	56.73	47.68	74	-17.27	34.28	8.8	34.03	114	186	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5300MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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	37.59	28.96	54	-16.41	34.12	8.51	34	100	294	Average
5150	56.63	48	74	-17.37	34.12	8.51	34	100	294	Peak
5320	93.94	84.95			34.25	8.76	34.02	100	294	Average
5320	103.55	94.56			34.25	8.76	34.02	100	294	Peak
5350	42.8	33.75	54	-11.2	34.28	8.8	34.03	100	294	Average
5350	62.28	53.23	74	-11.72	34.28	8.8	34.03	100	294	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	37.64	29.01	54	-16.36	34.12	8.51	34	102	186	Average
5150	56.24	47.61	74	-17.76	34.12	8.51	34	102	186	Peak
5320	90.84	81.85			34.25	8.76	34.02	102	186	Average
5320	100.07	91.08			34.25	8.76	34.02	102	186	Peak
5350	39.71	30.66	54	-14.29	34.28	8.8	34.03	102	186	Average
5350	56.82	47.77	74	-17.18	34.28	8.8	34.03	102	186	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5320MHz: Fundamental frequency.

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

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
5460	43.68	34.43	54	-10.32	34.36	8.94	34.05	100	290	Average
5460	62.62	53.37	74	-11.38	34.36	8.94	34.05	100	290	Peak
5470	62.39	53.13	68.3	-5.91	34.37	8.94	34.05	100	290	Peak
5500	93.61	84.25			34.4	9.01	34.05	100	290	Average
5500	101.96	92.6			34.4	9.01	34.05	100	290	Peak
5725	58.2	48.72	68.3	-10.1	34.62	8.97	34.11	100	290	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	40.44	31.19	54	-13.56	34.36	8.94	34.05	100	190	Average
5460	58.55	49.3	74	-15.45	34.36	8.94	34.05	100	190	Peak
5470	58.25	48.99	68.3	-10.05	34.37	8.94	34.05	100	190	Peak
5500	88.56	79.2			34.4	9.01	34.05	100	190	Average
5500	96.51	87.15			34.4	9.01	34.05	100	190	Peak
5725	58.76	49.28	68.3	-9.54	34.62	8.97	34.11	100	190	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5500MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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
5460	38.9	29.65	54	-15.1	34.36	8.94	34.05	101	298	Average
5460	57.38	48.13	74	-16.62	34.36	8.94	34.05	101	298	Peak
5470	57.38	48.12	68.3	-10.92	34.37	8.94	34.05	101	298	Peak
5580	94.83	85.45			34.47	8.99	34.08	101	298	Average
5580	103.11	93.73			34.47	8.99	34.08	101	298	Peak
5725	58.24	48.76	68.3	-10.06	34.62	8.97	34.11	101	298	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	38.81	29.56	54	-15.19	34.36	8.94	34.05	139	251	Average
5460	58.05	48.8	74	-15.95	34.36	8.94	34.05	139	251	Peak
5470	57.81	48.55	68.3	-10.49	34.37	8.94	34.05	139	151	Peak
5580	90.16	80.78			34.47	8.99	34.08	139	251	Average
5580	99.24	89.86			34.47	8.99	34.08	139	251	Peak
5725	58.42	48.94	68.3	-9.88	34.62	8.97	34.11	139	251	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5580MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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
5454	38.8	29.55	54	-15.2	34.36	8.94	34.05	141	286	Average
5454	58.27	49.02	74	-15.73	34.36	8.94	34.05	141	286	Peak
5470	56.36	47.1	68.3	-11.94	34.37	8.94	34.05	141	286	Peak
5700	93.67	84.21			34.59	8.97	34.1	141	286	Average
5700	103.53	94.07			34.59	8.97	34.1	141	286	Peak
5725	61.34	51.86	68.3	-6.96	34.62	8.97	34.11	141	286	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	38.96	29.71	54	-15.04	34.36	8.94	34.05	139	269	Average
5460	56.95	47.7	74	-17.05	34.36	8.94	34.05	139	269	Peak
5470	57.18	47.92	68.3	-11.12	34.37	8.94	34.05	139	269	Peak
5700	90.43	80.97			34.59	8.97	34.1	139	269	Average
5700	99.24	89.78			34.59	8.97	34.1	139	269	Peak
5725	60.9	51.42	68.3	-7.4	34.62	8.97	34.11	139	269	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5700MHz: Fundamental frequency.
3. 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	Harry Hsueh

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	63.33	54.18	68.3	-4.97	34.61	8.65	34.11	125	178	Peak
5720	64.87	55.71	78.3	-13.43	34.62	8.65	34.11	125	178	Peak
5745	95.83	86.64			34.64	8.66	34.11	125	178	Average
5745	102.22	93.03			34.64	8.66	34.11	125	178	Peak
5858	56.78	47.46	78.3	-21.52	34.76	8.7	34.14	125	178	Peak
5860	56.28	46.96	68.3	-12.02	34.76	8.7	34.14	125	178	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	60.88	51.73	68.3	-7.42	34.61	8.65	34.11	148	81	Peak
5720	65.6	56.44	78.3	-12.7	34.62	8.65	34.11	148	81	Peak
5745	94.43	85.24			34.64	8.66	34.11	148	81	Average
5745	102.07	92.88			34.64	8.66	34.11	148	81	Peak
5860	56.62	47.3	78.3	-21.68	34.76	8.7	34.14	148	81	Peak
5862	56.17	46.84	68.3	-12.13	34.76	8.71	34.14	148	81	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5745MHz: Fundamental frequency.
3. 5720MHz & 5858MHz: 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	Harry Hsueh

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	59.08	49.93	68.3	-9.22	34.61	8.65	34.11	140	179	Peak
5724	58.27	49.11	78.3	-20.03	34.62	8.65	34.11	140	179	Peak
5785	96.59	87.36			34.68	8.68	34.13	140	179	Average
5785	103.52	94.29			34.68	8.68	34.13	140	179	Peak
5856	57.87	48.55	78.3	-20.43	34.76	8.7	34.14	140	179	Peak
5864	57.61	48.28	68.3	-10.69	34.76	8.71	34.14	140	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
5682	58.38	49.27	68.3	-9.92	34.57	8.64	34.1	148	81	Peak
5720	57.67	48.51	78.3	-20.63	34.62	8.65	34.11	148	81	Peak
5785	95.48	86.25			34.68	8.68	34.13	148	81	Average
5785	102.58	93.35			34.68	8.68	34.13	148	81	Peak
5856	57.42	48.1	78.3	-20.88	34.76	8.7	34.14	148	81	Peak
5864	56.86	47.53	68.3	-11.44	34.76	8.71	34.14	148	81	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5785MHz: Fundamental frequency.
3. 5724MHz & 5785MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

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
5582	57.85	48.84	68.3	-10.45	34.49	8.6	34.08	141	181	Peak
5716	57.39	48.24	78.3	-20.91	34.61	8.65	34.11	141	181	Peak
5805	95.92	86.66			34.71	8.68	34.13	141	181	Average
5805	103.12	93.86			34.71	8.68	34.13	141	181	Peak
5856	56.92	47.6	78.3	-21.38	34.76	8.7	34.14	141	181	Peak
5868	57.55	48.22	68.3	-10.75	34.76	8.71	34.14	141	181	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
5518	57.63	48.7	68.3	-10.67	34.42	8.57	34.06	148	76	Peak
5718	57	47.84	78.3	-21.3	34.62	8.65	34.11	148	76	Peak
5805	95.49	86.23			34.71	8.68	34.13	148	76	Average
5805	102.47	93.21			34.71	8.68	34.13	148	76	Peak
5854	57.9	48.58	78.3	-20.4	34.76	8.7	34.14	148	76	Peak
5864	57.7	48.37	68.3	-10.6	34.76	8.71	34.14	148	76	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5805MHz: Fundamental frequency.
3. 5716MHz & 5856MHz: Out of restricted band

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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	48.53	39.9	54	-5.47	34.12	8.51	34	100	298	Average
5150	64.16	55.53	74	-9.84	34.12	8.51	34	100	298	Peak
5190	92.27	83.54			34.15	8.58	34	100	298	Average
5190	102.79	94.06			34.15	8.58	34	100	298	Peak
5350	39.23	30.18	54	-14.77	34.28	8.8	34.03	100	298	Average
5350	57.3	48.25	74	-16.7	34.28	8.8	34.03	100	298	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	38.3	29.67	54	-15.7	34.12	8.51	34	149	278	Average
5150	56.98	48.35	74	-17.02	34.12	8.51	34	149	278	Peak
5190	86.33	77.6			34.15	8.58	34	149	278	Average
5190	96.6	87.87			34.15	8.58	34	149	278	Peak
5350	37.85	28.8	54	-16.15	34.28	8.8	34.03	149	278	Average
5350	56.77	47.72	74	-17.23	34.28	8.8	34.03	149	278	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5190MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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	40.23	31.6	54	-13.77	34.12	8.51	34	100	298	Average
5150	57.54	48.91	74	-16.46	34.12	8.51	34	100	298	Peak
5230	92.05	83.25			34.19	8.62	34.01	100	298	Average
5230	102.49	93.69			34.19	8.62	34.01	100	298	Peak
5350	38.56	29.51	54	-15.44	34.28	8.8	34.03	100	298	Average
5350	57.57	48.52	74	-16.43	34.28	8.8	34.03	100	298	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	37.67	29.04	54	-16.33	34.12	8.51	34	149	279	Average
5150	56.13	47.5	74	-17.87	34.12	8.51	34	149	279	Peak
5230	87.79	78.99			34.19	8.62	34.01	149	279	Average
5230	97.7	88.9			34.19	8.62	34.01	149	279	Peak
5350	37.88	28.83	54	-16.12	34.28	8.8	34.03	149	279	Average
5350	58.18	49.13	74	-15.82	34.28	8.8	34.03	149	279	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5230MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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	37.84	29.21	54	-16.16	34.12	8.51	34	100	297	Average
5150	56.2	47.57	74	-17.8	34.12	8.51	34	100	297	Peak
5270	92.55	83.66			34.21	8.69	34.01	100	297	Average
5270	102.32	93.43			34.21	8.69	34.01	100	297	Peak
5350	39.56	30.51	54	-14.44	34.28	8.8	34.03	100	297	Average
5350	58.57	49.52	74	-15.43	34.28	8.8	34.03	100	297	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	37.67	29.04	54	-16.33	34.12	8.51	34	102	186	Average
5150	56.65	48.02	74	-17.35	34.12	8.51	34	102	186	Peak
5270	85.76	76.87			34.21	8.69	34.01	102	186	Average
5270	98.2	89.31			34.21	8.69	34.01	102	186	Peak
5350	39.21	30.16	54	-14.79	34.28	8.8	34.03	102	186	Average
5350	58.45	49.4	74	-15.55	34.28	8.8	34.03	102	186	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5270MHz: Fundamental frequency.

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

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	38.23	29.6	54	-15.77	34.12	8.51	34	100	298	Average
5150	56.26	47.63	74	-17.74	34.12	8.51	34	100	298	Peak
5310	88.81	79.85			34.25	8.73	34.02	100	298	Average
5310	101.15	92.19			34.25	8.73	34.02	100	298	Peak
5350	44.06	35.01	54	-9.94	34.28	8.8	34.03	100	298	Average
5350	61.31	52.26	74	-12.69	34.28	8.8	34.03	100	298	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	37.62	28.99	54	-16.38	34.12	8.51	34	102	186	Average
5150	56.86	48.23	74	-17.14	34.12	8.51	34	102	186	Peak
5310	85.87	76.91			34.25	8.73	34.02	102	186	Average
5310	97.58	88.62			34.25	8.73	34.02	102	186	Peak
5350	38.88	29.83	54	-15.12	34.28	8.8	34.03	102	186	Average
5350	57.38	48.33	74	-16.62	34.28	8.8	34.03	102	186	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5310MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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
5460	45.51	36.26	54	-8.49	34.36	8.94	34.05	100	292	Average
5460	61.36	52.11	74	-12.64	34.36	8.94	34.05	100	292	Peak
5470	62.78	53.52	68.3	-5.52	34.37	8.94	34.05	100	292	Peak
5510	92.99	83.64			34.4	9.01	34.06	100	292	Average
5510	101.25	91.9			34.4	9.01	34.06	100	292	Peak
5725	57.4	47.92	68.3	-10.9	34.62	8.97	34.11	100	292	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	42.23	32.98	54	-11.77	34.36	8.94	34.05	138	257	Average
5460	59.6	50.35	74	-14.4	34.36	8.94	34.05	138	257	Peak
5470	60.52	51.26	68.3	-7.78	34.37	8.94	34.05	138	257	Peak
5510	88.62	79.27			34.4	9.01	34.06	138	257	Average
5510	97.34	87.99			34.4	9.01	34.06	138	257	Peak
5725	58.76	49.28	68.3	-9.54	34.62	8.97	34.11	138	257	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5510MHz: Fundamental frequency.
3. 5470MHz % 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 110	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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
5456	42.51	33.26	54	-11.49	34.36	8.94	34.05	100	288	Average
5456	60.09	50.84	74	-13.91	34.36	8.94	34.05	100	288	Peak
5470	58.2	48.94	68.3	-10.1	34.37	8.94	34.05	100	288	Peak
5550	92.11	82.73			34.45	9	34.07	100	288	Average
5550	101.39	92.01			34.45	9	34.07	100	288	Peak
5725	58.65	49.17	68.3	-9.65	34.62	8.97	34.11	100	288	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	39.91	30.66	54	-14.09	34.36	8.94	34.05	157	248	Average
5460	56.77	47.52	74	-17.23	34.36	8.94	34.05	157	248	Peak
5470	56.91	47.65	68.3	-11.39	34.37	8.94	34.05	157	248	Peak
5550	88.37	78.99			34.45	9	34.07	157	248	Average
5550	97.67	88.29			34.45	9	34.07	157	248	Peak
5725	59.48	50	68.3	-8.82	34.62	8.97	34.11	157	248	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5550MHz: Fundamental frequency.
3. 5470MHz % 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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
5460	39.2	29.95	54	-14.8	34.36	8.94	34.05	102	279	Average
5460	57.58	48.33	74	-16.42	34.36	8.94	34.05	102	279	Peak
5470	57.53	48.27	68.3	-10.77	34.37	8.94	34.05	102	279	Peak
5670	90.91	81.46			34.57	8.98	34.1	102	279	Average
5670	101.34	91.89			34.57	8.98	34.1	102	279	Peak
5725	58.23	48.75	68.3	-10.07	34.62	8.97	34.11	102	279	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	39.03	29.78	54	-14.97	34.36	8.94	34.05	143	265	Average
5460	57.44	48.19	74	-16.56	34.36	8.94	34.05	143	265	Peak
5470	58.17	48.91	68.3	-10.13	34.37	8.94	34.05	143	265	Peak
5670	87.27	77.82			34.57	8.98	34.1	143	265	Average
5670	97.36	87.91			34.57	8.98	34.1	143	265	Peak
5725	57.81	48.33	68.3	-10.49	34.62	8.97	34.11	143	265	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5670MHz: Fundamental frequency.
3. 5470MHz % 5725MHz: Out of restricted band

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	Harry Hsueh

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
5715	64.22	55.07	68.3	-4.08	34.61	8.65	34.11	128	196	Peak
5718	66.67	57.51	78.3	-11.63	34.62	8.65	34.11	128	196	Peak
5755	92.84	83.63			34.66	8.66	34.11	128	196	Average
5755	100.32	91.11			34.66	8.66	34.11	128	196	Peak
5858	57.11	47.79	78.3	-21.19	34.76	8.7	34.14	128	196	Peak
5866	57.44	48.11	68.3	-10.86	34.76	8.71	34.14	128	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
5715	67.17	58.02	68.3	-1.13	34.61	8.65	34.11	138	76	Peak
5718	67.43	58.27	78.3	-10.87	34.62	8.65	34.11	138	76	Peak
5755	92.84	83.63			34.66	8.66	34.11	138	76	Average
5755	99.55	90.34			34.66	8.66	34.11	138	76	Peak
5852	57.26	47.96	78.3	-21.04	34.74	8.7	34.14	138	76	Peak
5860	56.46	47.14	68.3	-11.84	34.76	8.7	34.14	138	76	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5755MHz: Fundamental frequency.
3. 5718MHz & 5858MHz: 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	Harry Hsueh

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
5670	59.42	50.32	68.3	-8.88	34.57	8.63	34.1	137	181	Peak
5720	57.72	48.56	78.3	-20.58	34.62	8.65	34.11	137	181	Peak
5795	93.9	84.66			34.69	8.68	34.13	137	181	Average
5795	100.69	91.45			34.69	8.68	34.13	137	181	Peak
5854	58.33	49.01	78.3	-19.97	34.76	8.7	34.14	137	181	Peak
5864	57.99	48.66	68.3	-10.31	34.76	8.71	34.14	137	181	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
5704	58.74	49.59	68.3	-9.56	34.61	8.64	34.1	138	76	Peak
5722	57.21	48.05	78.3	-21.09	34.62	8.65	34.11	138	76	Peak
5795	92.94	83.7			34.69	8.68	34.13	138	76	Average
5795	100.05	90.81			34.69	8.68	34.13	138	76	Peak
5854	57.23	47.91	78.3	-21.07	34.76	8.7	34.14	138	76	Peak
5868	57.86	48.53	68.3	-10.44	34.76	8.71	34.14	138	76	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5795MHz: Fundamental frequency.
3. 5720MHz & 5854MHz: Out of restricted band

BELOW 1GHz WORST-CASE DATA:

5180 ~ 5240MHz

802.11a

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

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
84	28.35	50.64	40	-11.65	8.61	1.11	32.01	118	138	Peak
168.24	36.57	57.14	43.5	-6.93	10.15	1.52	32.24	108	166	Peak
264.09	41.67	58.43	46	-4.33	13.41	1.94	32.11	102	134	Peak
335.7	36.62	50.81	46	-9.38	15.71	2.19	32.09	155	265	Peak
540.1	30.54	39.53	46	-15.46	20.43	2.76	32.18	107	115	Peak
660.5	29.4	36.02	46	-16.6	22.53	2.99	32.14	109	228	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
59.97	30.15	54.68	40	-9.85	6.8	0.9	32.23	162	182	Peak
95.88	30.32	51.7	43.5	-13.18	9.38	1.28	32.04	114	102	Peak
240.06	36.81	54.55	46	-9.19	12.54	1.85	32.13	115	169	Peak
407.8	32.83	44.68	46	-13.17	17.95	2.41	32.21	100	332	Peak
611.5	33.94	41.72	46	-12.06	21.53	2.87	32.18	105	296	Peak
840.4	29.41	34.18	46	-16.59	23.7	3.38	31.85	102	119	Peak

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

5260~5320MHz

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

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
84	28.12	50.41	40	-11.88	8.61	1.11	32.01	106	251	Peak
108.03	34.87	56.39	43.5	-8.63	9.45	1.28	32.25	111	187	Peak
288.12	41.24	57.53	46	-4.76	13.81	2.03	32.13	132	154	Peak
335.7	37.95	52.14	46	-8.05	15.71	2.19	32.09	108	102	Peak
527.5	30.97	39.76	46	-15.03	20.66	2.7	32.15	114	38	Peak
815.9	29.81	34.52	46	-16.19	23.94	3.32	31.97	138	19	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
59.97	30.1	54.63	40	-9.9	6.8	0.9	32.23	114	199	Peak
95.88	29.96	51.34	43.5	-13.54	9.38	1.28	32.04	105	226	Peak
240.06	36.54	54.28	46	-9.46	12.54	1.85	32.13	107	156	Peak
384	32.99	45.78	46	-13.01	17.05	2.34	32.18	100	335	Peak
611.5	33.88	41.66	46	-12.12	21.53	2.87	32.18	109	257	Peak
840.4	29.03	33.8	46	-16.97	23.7	3.38	31.85	138	10	Peak

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

5500~5700MHz

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Harry Hsueh

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
84	32.36	54.65	40	-7.64	8.61	1.11	32.01	100	249	Peak
108.03	39.29	60.81	43.5	-4.21	9.45	1.28	32.25	138	205	Peak
240.06	41.15	58.89	46	-4.85	12.54	1.85	32.13	174	288	Peak
311.9	41.57	56.99	46	-4.43	14.59	2.11	32.12	100	150	Peak
479.9	33.03	43.67	46	-12.97	18.92	2.56	32.12	100	296	Peak
636	32.33	39.46	46	-13.67	22.1	2.93	32.16	102	169	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
30.81	36.53	50.86	40	-3.47	17.19	0.74	32.26	158	299	Peak
108.03	39.1	60.62	43.5	-4.4	9.45	1.28	32.25	188	203	Peak
264.09	34.11	50.87	46	-11.89	13.41	1.94	32.11	148	299	Peak
311.9	32.45	47.87	46	-13.55	14.59	2.11	32.12	147	266	Peak
612.2	34.87	42.51	46	-11.13	21.67	2.87	32.18	151	201	Peak
636	34.09	41.22	46	-11.91	22.1	2.93	32.16	100	166	Peak

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

5745~5805MHz

802.11n (40MHz)

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	Harry Hsueh

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
95.88	37.33	58.71	43.5	-6.17	9.38	1.28	32.04	114	87	Peak
192	38.85	59.04	43.5	-4.65	10.46	1.61	32.26	169	130	Peak
264.09	40.94	57.7	46	-5.06	13.41	1.94	32.11	158	93	Peak
384	40.9	53.69	46	-5.1	17.05	2.34	32.18	146	97	Peak
636	35.51	42.64	46	-10.49	22.1	2.93	32.16	108	314	Peak
840.4	29.81	34.58	46	-16.19	23.7	3.38	31.85	119	338	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
95.88	33.15	54.53	43.5	-10.35	9.38	1.28	32.04	108	289	Peak
192	33.24	53.43	43.5	-10.26	10.46	1.61	32.26	166	123	Peak
240.06	33.82	51.56	46	-12.18	12.54	1.85	32.13	173	92	Peak
384	36.93	49.72	46	-9.07	17.05	2.34	32.18	169	318	Peak
636	35.65	42.78	46	-10.35	22.1	2.93	32.16	111	189	Peak
815.9	30.01	34.72	46	-15.99	23.94	3.32	31.97	100	245	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 OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	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.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 17, 2013	Nov. 16, 2014
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 23, 2013	Dec. 22, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 10, 2014	Jul. 09, 2015
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 2.
3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

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

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

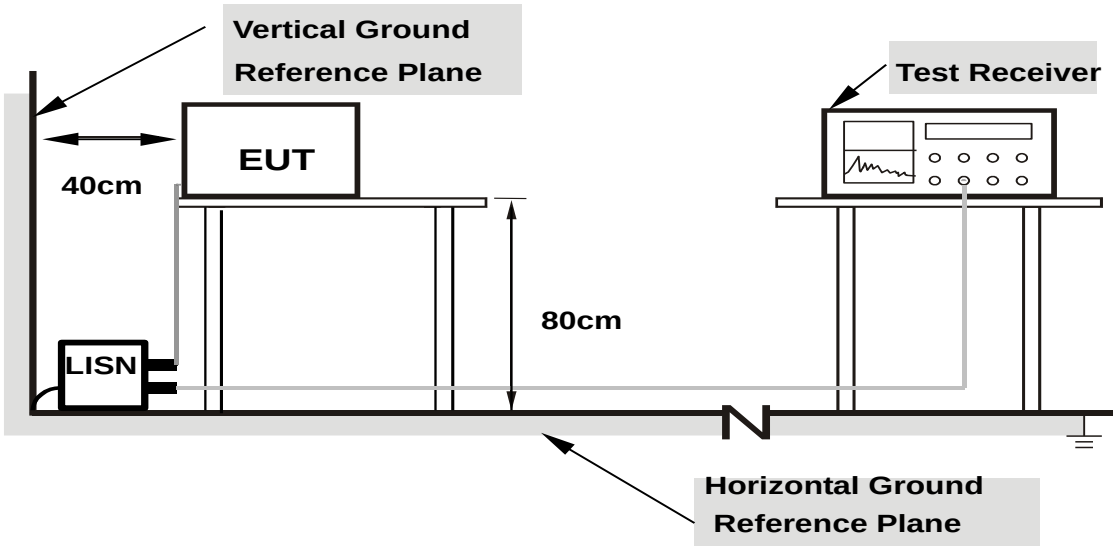
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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 section 4.1.6.

4.2.7 TEST RESULTS

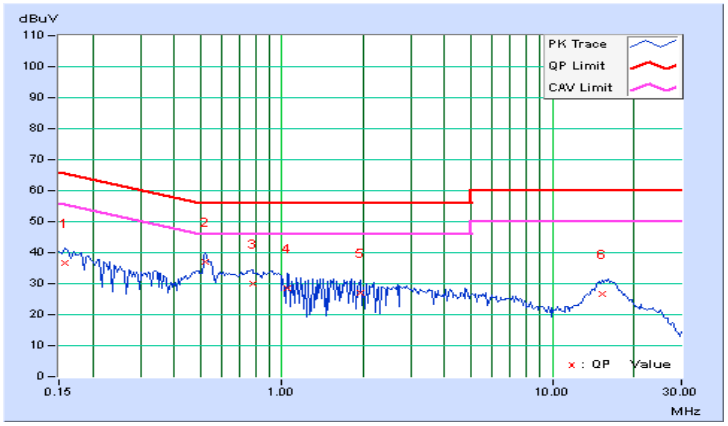
CONDUCTED WORST-CASE DATA：

PHASE	Line 1	6dB BANDWIDTH	9kHz

Phase Of Power : Line (L)										
No	Frequency	Correction Factor	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
	(MHz)	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	0.27	36.53	23.76	36.80	24.03	65.58	55.58	-28.78	-31.55
2	0.52109	0.31	36.78	26.17	37.09	26.48	56.00	46.00	-18.91	-19.52
3	0.77891	0.33	29.58	19.56	29.91	19.89	56.00	46.00	-26.09	-26.11
4	1.05078	0.34	28.26	15.83	28.60	16.17	56.00	46.00	-27.40	-29.83
5	1.94922	0.36	26.67	14.94	27.03	15.30	56.00	46.00	-28.97	-30.70
6	15.38281	0.53	26.07	18.86	26.60	19.39	60.00	50.00	-33.40	-30.61

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

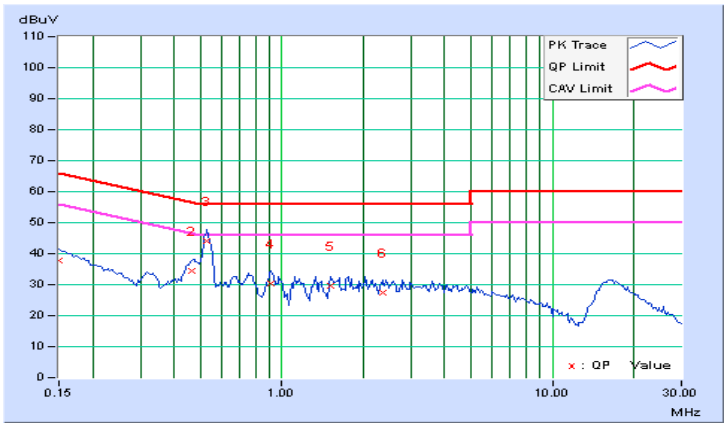


PHASE	Line 2	6dB BANDWIDTH	9kHz

Phase Of Power : Neutral (N)										
No	Frequency	Correction Factor	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
	(MHz)	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.26	37.69	27.09	37.95	27.35	66.00	56.00	-28.05	-28.65
2	0.46250	0.30	33.96	27.94	34.26	28.24	56.65	46.65	-22.38	-18.40
3	0.52891	0.31	43.70	37.92	44.01	38.23	56.00	46.00	-11.99	-7.77
4	0.91563	0.33	29.95	23.08	30.28	23.41	56.00	46.00	-25.72	-22.59
5	1.52344	0.36	29.33	21.05	29.69	21.41	56.00	46.00	-26.31	-24.59
6	2.35547	0.38	27.13	19.52	27.51	19.90	56.00	46.00	-28.49	-26.10

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

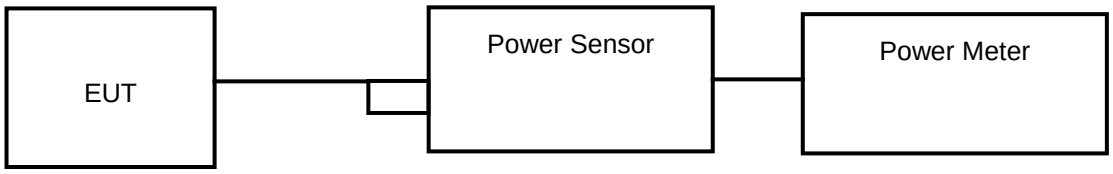
4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

OPERATION BAND	EUT CATEGORY		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 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)

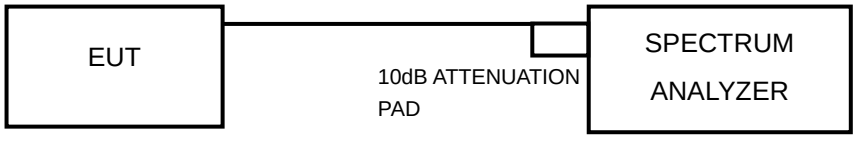
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 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 specific channel frequencies individually.

4.3.7 TEST RESULTS

POWER OUTPUT

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	13.90	11.43	24	PASS
44	5220	13.00	11.14	24	PASS
48	5240	12.62	11.01	24	PASS
52	5260	12.16	10.85	23.81	PASS
60	5300	11.19	10.49	23.77	PASS
64	5320	11.53	10.62	23.77	PASS
100	5500	11.89	10.75	23.82	PASS
116	5580	10.79	10.33	23.78	PASS
140	5700	10.45	10.19	23.77	PASS
149	5745	97.72	19.9	30	PASS
157	5785	98.17	19.92	30	PASS
161	5805	87.70	19.43	30	PASS

NOTE:

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

1. 11dBm + 10log(19.08) = 23.81 dBm > 24dBm.
2. 11dBm + 10log(18.93) = 23.77 dBm > 24dBm.
3. 11dBm + 10log(18.92) = 23.77 dBm > 24dBm.
4. 11dBm + 10log(19.13) = 23.82 dBm > 24dBm.
5. 11dBm + 10log(18.95) = 23.78 dBm > 24dBm.
6. 11dBm + 10log(18.91) = 23.77 dBm > 24dBm.

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	13.55	11.32	24	PASS
44	5220	12.85	11.09	24	PASS
48	5240	12.30	10.90	24	PASS
52	5260	11.67	10.67	23.88	PASS
60	5300	11.32	10.54	23.87	PASS
64	5320	10.89	10.37	23.88	PASS
100	5500	11.89	10.75	23.86	PASS
116	5580	10.45	10.19	23.87	PASS
140	5700	10.42	10.18	23.86	PASS
149	5745	90.57	19.57	30	PASS
157	5785	89.33	19.51	30	PASS
161	5805	87.30	19.41	30	PASS

NOTE:

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

1. 11dBm + 10log(19.41) = 23.88 dBm > 24dBm.
2. 11dBm + 10log(19.38) = 23.87 dBm > 24dBm.
3. 11dBm + 10log(19.40) = 23.88 dBm > 24dBm.
4. 11dBm + 10log(19.31) = 23.86 dBm > 24dBm.
5. 11dBm + 10log(19.38) = 23.87 dBm > 24dBm.
6. 11dBm + 10log(19.32) = 23.86 dBm > 24dBm.

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	13.77	11.39	24	PASS
46	5230	12.97	11.13	24	PASS
54	5270	12.19	10.86	24	PASS
62	5310	11.75	10.70	24	PASS
102	5510	12.05	10.81	24	PASS
110	5550	11.51	10.61	24	PASS
134	5670	10.59	10.25	24	PASS
151	5755	103.51	20.15	30	PASS
159	5795	100.69	20.03	30	PASS

NOTE:

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

1. 11dBm + 10log(40.68) = 27.09 dBm > 24dBm.
2. 11dBm + 10log(40.86) = 27.11 dBm > 24dBm.
3. 11dBm + 10log(40.61) = 27.09 dBm > 24dBm.
4. 11dBm + 10log(40.58) = 27.08 dBm > 24dBm.
5. 11dBm + 10log(40.77) = 27.10 dBm > 24dBm.

26dB BANDWIDTH

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	19.08	PASS
60	5300	18.93	PASS
64	5320	18.92	PASS
100	5500	19.13	PASS
116	5580	18.95	PASS
140	5700	18.91	PASS

802.11n (20MHz)

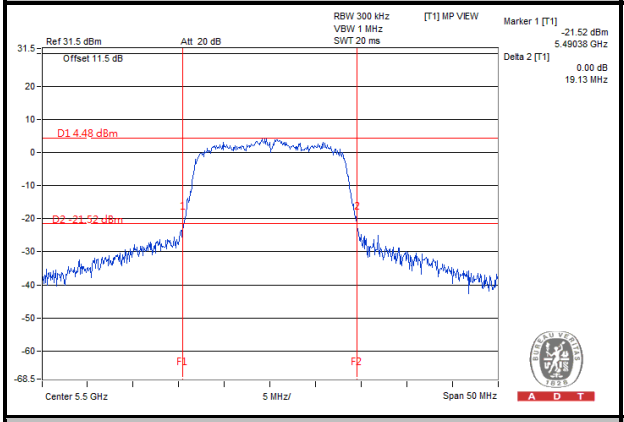
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	19.41	PASS
60	5300	19.38	PASS
64	5320	19.40	PASS
100	5500	19.31	PASS
116	5580	19.38	PASS
140	5700	19.32	PASS

802.11n (40MHz)

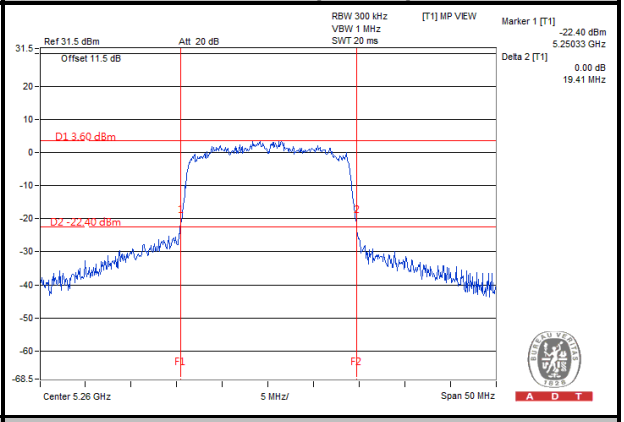
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
54	5270	40.68	PASS
62	5310	40.86	PASS
102	5510	40.61	PASS
110	5550	40.58	PASS
134	5670	40.77	PASS

SPECTRUM PLOT OF WORST VALUE

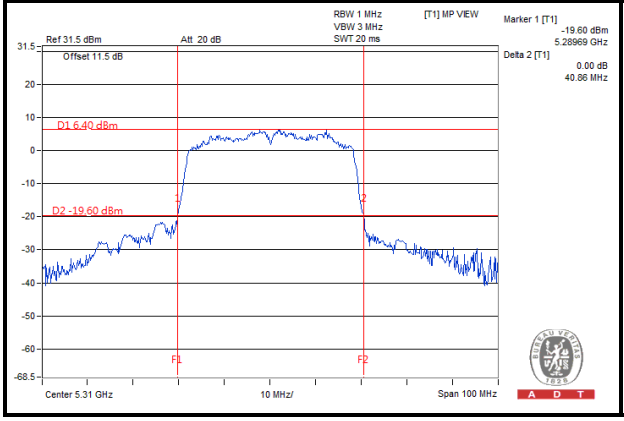
802.11a



802.11n (20MHz)



802.11n (40MHz)

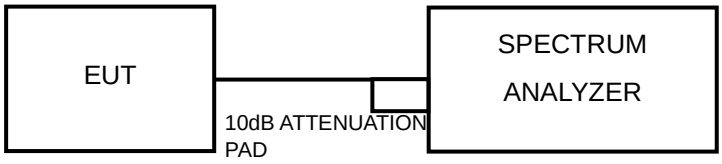


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

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/ MHz

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:

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

Using method SA-2 alternative

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Sweep time = 4second.
4) Perform a single sweep.
5) 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 ≥ 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

802.11a

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-2.03	2.14	0.11	11	PASS
44	5220	-2.09	2.14	0.05	11	PASS
48	5240	-2.01	2.14	0.13	11	PASS
52	5260	-1.96	2.14	0.18	11	PASS
60	5300	-2.10	2.14	0.04	11	PASS
64	5320	-2.05	2.14	0.09	11	PASS
100	5500	-1.43	2.14	0.71	11	PASS
116	5580	-2.17	2.14	-0.03	11	PASS
140	5700	-3.18	2.14	-1.04	11	PASS

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

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-2.49	2.28	-0.21	11	PASS
44	5220	-2.35	2.28	-0.07	11	PASS
48	5240	-2.35	2.28	-0.07	11	PASS
52	5260	-2.31	2.28	-0.03	11	PASS
60	5300	-2.42	2.28	-0.14	11	PASS
64	5320	-2.57	2.28	-0.29	11	PASS
100	5500	-1.85	2.28	0.43	11	PASS
116	5580	-2.51	2.28	-0.23	11	PASS
140	5700	-3.58	2.28	-1.30	11	PASS

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

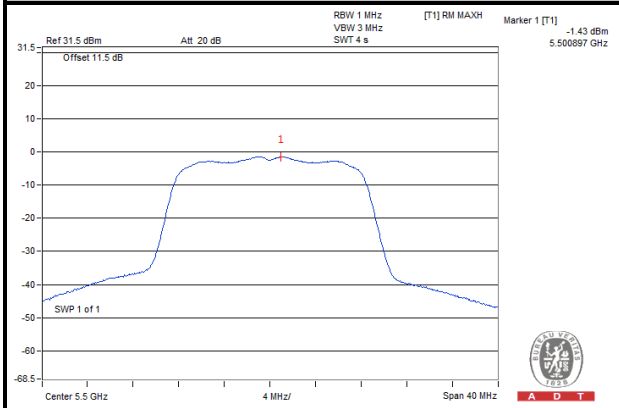
802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-5.63	4.63	-1.00	11	PASS
46	5230	-5.59	4.63	-0.96	11	PASS
54	5270	-5.56	4.63	-0.93	11	PASS
62	5310	-5.73	4.63	-1.10	11	PASS
102	5510	-5.14	4.63	-0.51	11	PASS
110	5550	-5.37	4.63	-0.74	11	PASS
134	5670	-6.61	4.63	-1.98	11	PASS

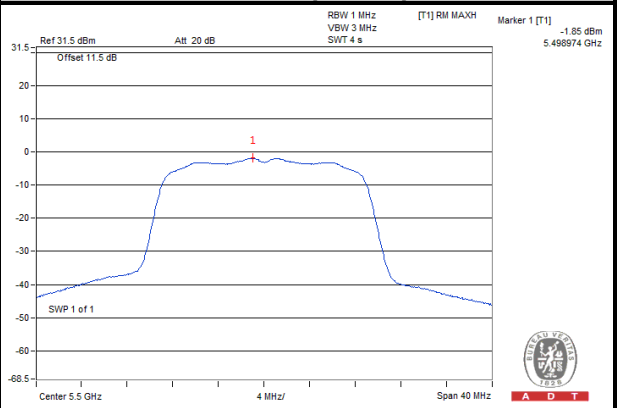
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

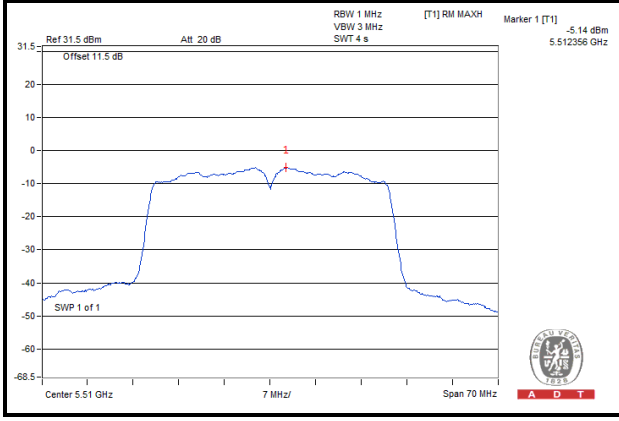
802.11a



802.11n (20MHz)



802.11n (40MHz)



For U-NII-3 Band

802.11a

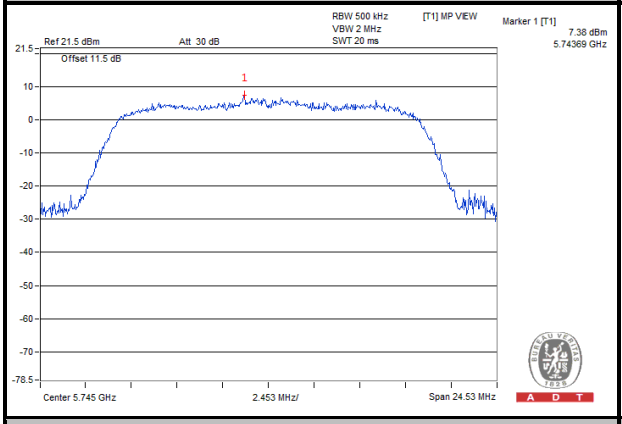
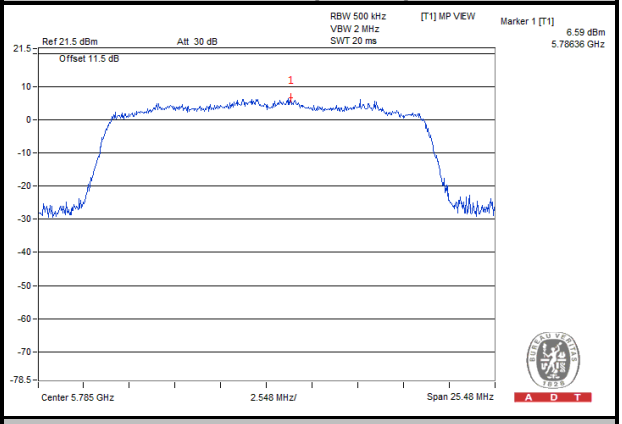
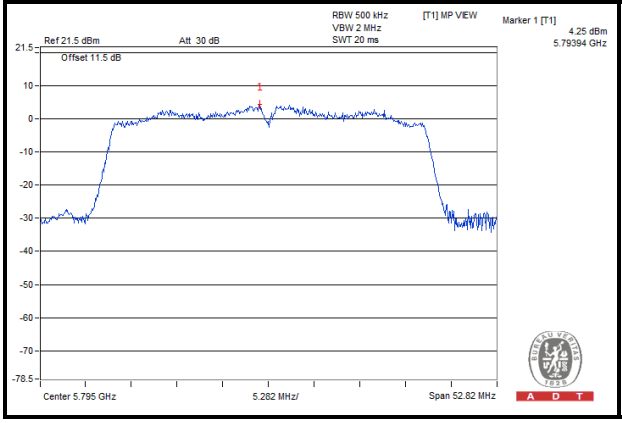
CHANNEL	FREQUENCY (MHz)	PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS / FAIL
149	5745	7.38	30	PASS
157	5785	6.87	30	PASS
161	5805	6.90	30	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS / FAIL
149	5745	6.29	30	PASS
157	5785	6.59	30	PASS
161	5805	5.54	30	PASS

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS / FAIL
151	5755	3.74	30	PASS
159	5795	4.25	30	PASS

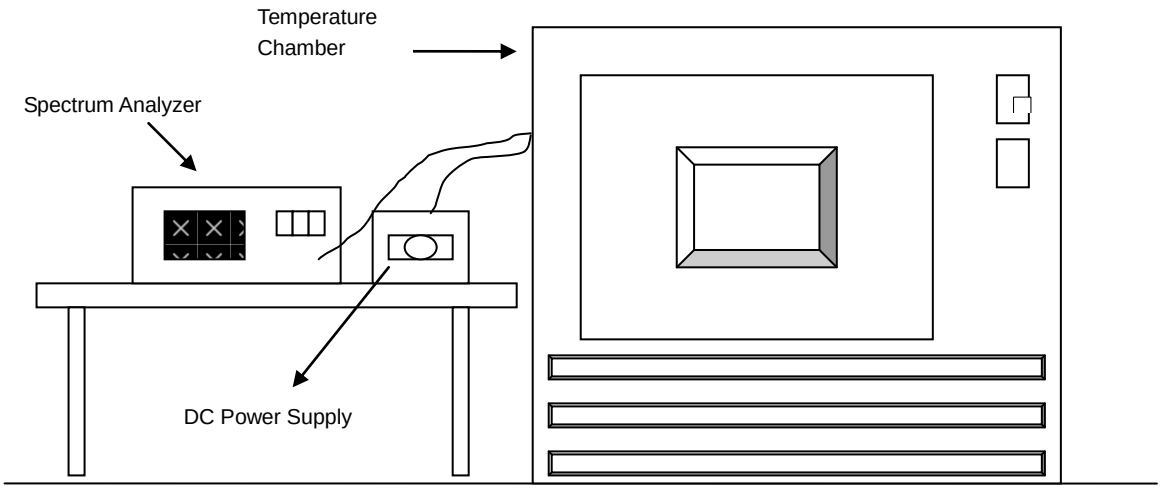
SPECTRUM PLOT OF WORST VALUE	
802.11a	**802.11n (20MHz)**
	
802.11n (40MHz)	
	

4.5 FREQUENCY STABILITY

4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

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

4.5.7 TEST RESULTS

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
60	7.6	5320.039948	7.509	5320.040009	7.520	5320.040000	7.519	5320.040422	7.598
50	7.6	5320.040829	7.675	5320.040827	7.674	5320.040930	7.694	5320.041071	7.720
40	7.6	5320.041154	7.736	5320.040920	7.692	5320.040969	7.701	5320.041099	7.725
30	7.6	5320.041894	7.875	5320.041924	7.880	5320.042242	7.940	5320.042415	7.973
20	7.6	5320.043361	8.151	5320.043419	8.161	5320.043026	8.088	5320.042811	8.047
10	7.6	5320.044337	8.334	5320.044707	8.404	5320.044515	8.367	5320.044805	8.422
0	7.6	5320.042750	8.036	5320.042923	8.068	5320.043257	8.131	5320.043094	8.100
-10	7.6	5320.041502	7.801	5320.041258	7.755	5320.041368	7.776	5320.041773	7.852
-20	7.6	5320.040843	7.677	5320.041218	7.748	5320.040768	7.663	5320.041261	7.756
-30	7.6	5320.039703	7.463	5320.039509	7.427	5320.040179	7.552	5320.039802	7.482

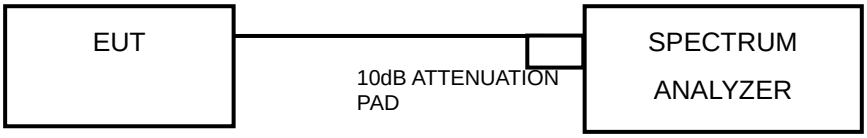
FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	7.0	5320.042942	8.072	5320.042616	8.011	5320.042419	7.973	5320.042641	8.015
	7.6	5320.042990	8.081	5320.042947	8.073	5320.043421	8.162	5320.043115	8.104
	8.70	5320.044517	8.368	5320.044222	8.312	5320.044617	8.387	5320.044057	8.281

4.6 6dB BANDWIDTH MEASUREMENT

4.6.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 TEST PROCEDURE

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

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITIONS

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

4.6.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.36	0.5	PASS
157	5785	16.29	0.5	PASS
161	5805	15.68	0.5	PASS

802.11n (20MHz)

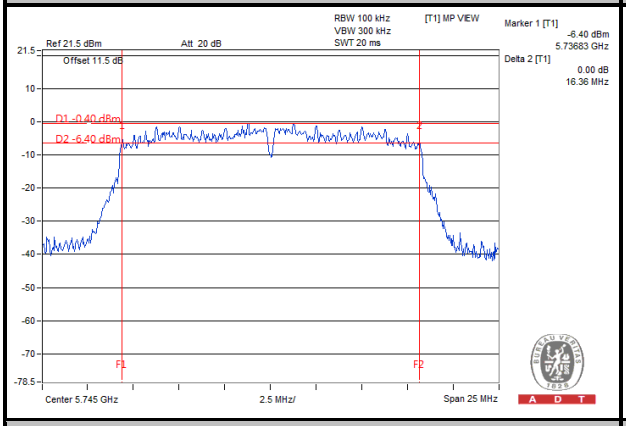
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	17.24	0.5	PASS
157	5785	16.99	0.5	PASS
161	5805	17.22	0.5	PASS

802.11n (40MHz)

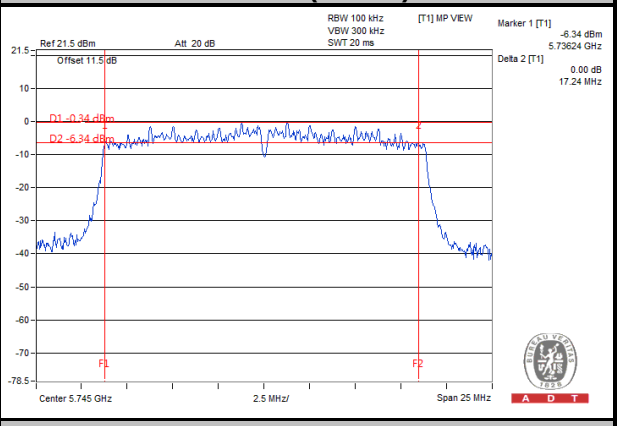
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	35.20	0.5	PASS
159	5795	35.22	0.5	PASS

SPECTRUM PLOT OF WORST VALUE

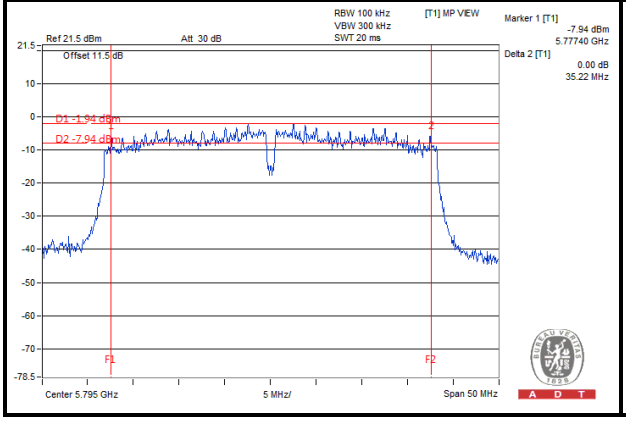
802.11a



802.11n (20MHz)



802.11n (40MHz)



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. 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 Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:
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.

7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---