FCC TEST REPORT (15.407)

REPORT NO.:	RF150630C22-3
MODEL NO.:	P01MA
FCC ID:	MSQP01MA
RECEIVED:	Jun. 29, 2015
TESTED:	Jun. 29, 2015 ~ Jul. 09,2015
ISSUED:	Jul. 20, 2015

APPLICANT:	ASUSTek COMPUTER INC.
ADDRESS:	4F, No. 150, LI-TE Rd., PEITOU, TAIPEI 112, TAIWAN

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 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
RF150630C22-3	Original release	Jul. 20, 2015

1. CERTIFICATION

PRODUCT:	ASUS Tablet
MODEL NO.:	P01MA
BRAND:	ASUS
APPLICANT:	ASUSTek COMPUTER INC.
TESTED:	Jun. 29, 2015 ~ Jul. 09,2015
TEST SAMPLE:	Production Unit
STANDARDS:	**FCC Part 15, Subpart E (Section 15.407)**
	ANSI C63.10-2009

The above equipment (model: P01MA) 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 :** Jul. 20, 2015

Gina Liu / Specialist

APPROVED BY : Kay Wu , **DATE :** Jul. 20, 2015

Kay Wu / Supervisor

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 -7.87dB at 0.66563MHz.
15.407(b/1/2/3) (b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.03dB at 5714MHz.
15.407(a/1/2/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(e)	6dB bandwidth	PASS	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

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	ASUS Tablet
MODEL NO.	P01MA
POWER SUPPLY	5.2Vdc (adapter) 5.0Vdc (host equipment) 3.8Vdc (Li-ion battery)
MODULATION TYPE	256QAM, 64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7 802.11ac: up to V9
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz, 5745 ~ 5825MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 1 for 802.11ac (80MHz) 5500 ~ 5700MHz: 11 for 802.11a, 802.11n (20MHz) 2 for 802.11ac (80MHz) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (20MHz) 1 for 802.11ac (80MHz)
OUTPUT POWER	13.87mW for 5180 ~ 5240MHz 14.03mW for 5260 ~ 5320MHz 13.30mW for 5500 ~ 5700MHz 12.65mW for 5745 ~ 5825MHz
ANTENNA TYPE	PIFA antenna with -0.18dBi gain (5180 ~ 5240MHz) PIFA antenna with -0.30dBi gain (5260 ~ 5320MHz) PIFA antenna with 0.61dBi gain (5500 ~ 5700MHz) PIFA antenna with -0.20dBi gain (5745 ~ 5825MHz)
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 1	ASUS	PA-1070-07	I/P: 100-240Vac, 50/60Hz, 0.25A O/P: 5.2Vdc, 1.35A
Adapter 2	ASUS	AD2005320	I/P: 100-240Vac, 50/60Hz, 0.25A O/P: 5.2Vdc, 1.35A
Battery	ASUS	C11P1426	3.8Vdc, 15.2Wh
USB Cable 1	ASUS	CUDB01B-AJ001-DF	0.9m
USB Cable 2	ASUS	L67U2016-CS-R	0.9m
CPU 1	INTEL	Moorefield Z3560 935218	1.83GHz, 64bit 1064pin
CPU 2	INTEL	Moorefield Z3580 935210	2.3GHz, 64bit 1064pin
DDR 1	SAMSUNG	K3QF2F20EM-FGCE	2G LPDDR3 1600 256M*32*2 CS
DDR 2	ELPIDA	EDFA164A2PF-GD-F	2G LPDDR3 1600 128*32*4 FBGA-256
DDR 3	HYNIX	H9CKNNNBKTMRPR-NUH	2GB LPDDR3 256M*32*2 1.8V FBGA-256
DDR 4	HYNIX	H9CKNNNCPTMRPR-NUH	4GB LPDDR3 256M*32*4 1.8V FBGA-256
EMMC 1	HYNIX	H26M78103CCR	64 GB
EMMC 2	SAMSUNG	KLMBG4WEBD-B031	32 GB
EMMC 3	Kingston	32G-S100-WB	32 GB
EMMC 4	Kingston	16G-S100-A08	16 GB
EMMC 5	SAMSUNG	KLMAG2GEND-B031	16 GB
LCD Panel	Tianma	TL079QDXP01-00	7.85”
Camera 1	Chicony	CBAE82320003872LH	--
Camera 2	Chicony	CBFE55720003870LH	--
WLAN / BT Module	BROADCOM	BCM4339	
GPS Module	BROADCOM	BCM47531	
Main Board	ASUS	Z580CA_MB_JP	
Touch pen	ASUS AC Touch pen	PAD-22 Z STYLUS	
ZEN CLUTCH	ASUS	NA	

2. The EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11a	1TX
802.11n (20MHz)	1TX
802.11ac (80MHz)	1TX

3. There’re 2 configurations for the EUT listed as below.
   Sample A: Tablet + CPU 2 + DDR 4 + EMMC 1 + Camera 1 & 2
   Sample B: Tablet + CPU 1 + DDR 2 + EMMC 3 + Camera 1 & 2 + ZEN CLUTCH
4. 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

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
42	5210 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

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
58	5290MHz

WLAN 5500 ~ 5700MHz

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

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

2 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
106	5530MHz	122	5610MHz

FOR 5.0GHz (5745 ~ 5825MHz):

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
155	5775MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Sample A
B	√	√	√	-	Sample B

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

NOTE:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane for Band 1, 2 & Z-plane for Band 3, 4.**
2. "-" means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
	802.11ac (80MHz)		42	42	OFDM	BPSK	V0
B	802.11a		36 to 48	36	OFDM	BPSK	6.0
A	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
	802.11ac (80MHz)		58	58	OFDM	BPSK	V0
B	802.11n (20MHz)		52 to 64	64	OFDM	BPSK	MCS0
A	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
	802.11ac (80MHz)		106 to 122	106, 102	OFDM	BPSK	V0
B	802.11n (20MHz)		100 to 140	140	OFDM	BPSK	MCS0
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
	802.11ac (80MHz)		155	155	OFDM	BPSK	V0
B	802.11ac (80MHz)		155	155	OFDM	BPSK	V0

RADIATED EMISSION TEST (BELOW 1GHz):

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
	802.11n (20MHz)	5260-5320	52 to 64	64	OFDM	BPSK	MCS0
	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	MCS0
	802.11ac (80MHz)	5745-5825	155	155	OFDM	BPSK	V0

POWER LINE CONDUCTED EMISSION TEST:

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11ac (80MHz)	5745-5825	155	155	OFDM	BPSK	V0

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)
A	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
	802.11ac (80MHz)		42	42	OFDM	BPSK	V0
A	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
	802.11ac (80MHz)		58	58	OFDM	BPSK	V0
A	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
	802.11ac (80MHz)		106 to 122	106, 102	OFDM	BPSK	V0
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
	802.11ac (80MHz)		155	155	OFDM	BPSK	V0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
	802.11ac (80MHz)		42	42	OFDM	BPSK	V0
A	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
	802.11ac (80MHz)		58	58	OFDM	BPSK	V0
A	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
	802.11ac (80MHz)		106 to 122	106, 102	OFDM	BPSK	V0
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
	802.11ac (80MHz)		155	155	OFDM	BPSK	V0

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	Anson Lin
PLC	25deg. C, 65%RH	120Vac, 60Hz	Toby Tian
APCM	25deg. C, 65%RH	3.8Vdc	Luck Chen

3.3 DESCRIPTION OF SUPPORT UNITS

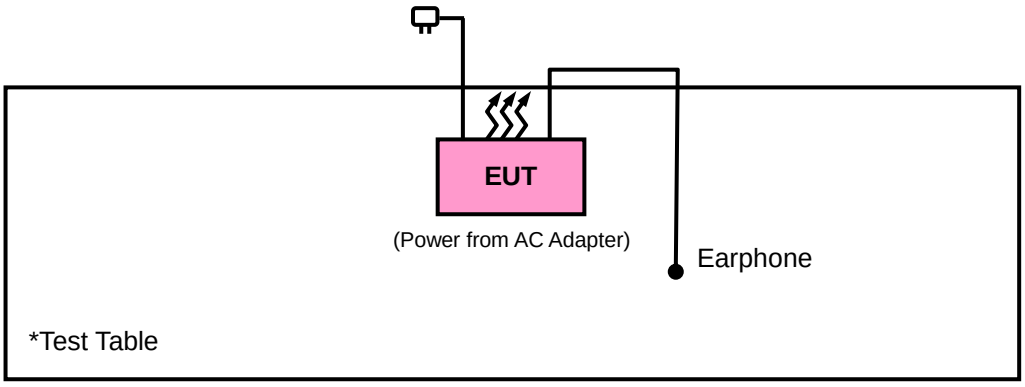
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Earphone	N/A	N/A	N/A	N/A

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

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

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



3.4 DUTY CYCLE TEST SIGNAL

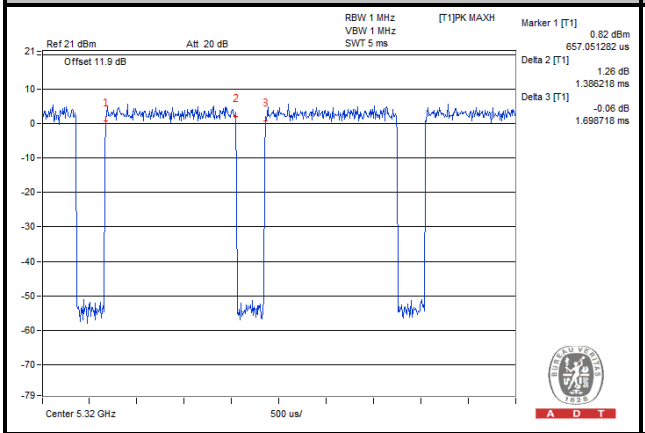
Modulation type: BPSK

802.11a: Duty cycle = 1.38/1.69 = 0.817, Duty factor = 10*log(1/0.817) = 0.88

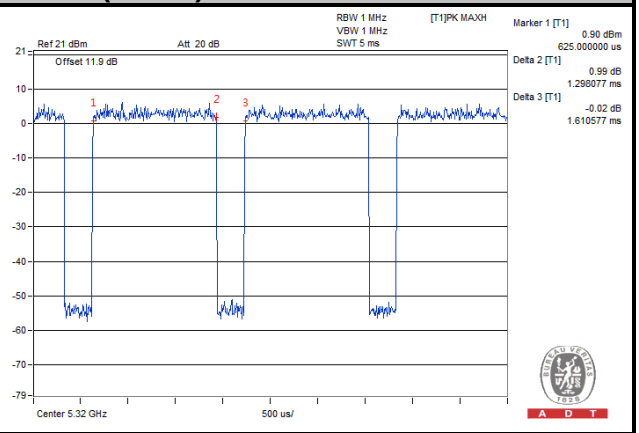
802.11n (20MHz): Duty cycle = 1.298/1.611 = 0.806, Duty factor = 10*log(1/0.806) = 0.94

802.11ac (80MHz): Duty cycle = 304.48/625.0 = 0.487, Duty factor = 10*log(1/0.487) = 3.12

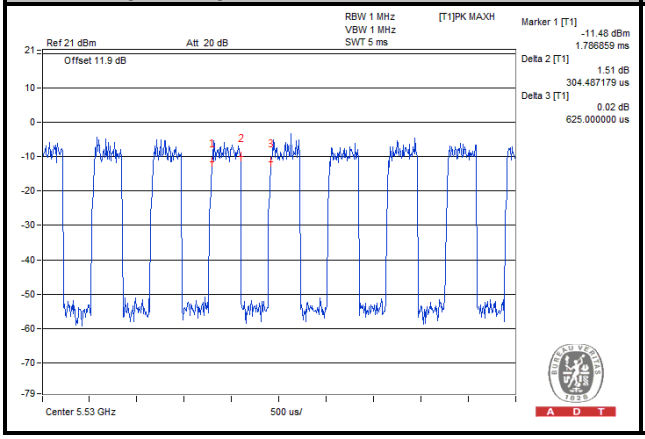
802.11a



802.11n (20MHz)



802.11ac (80MHz)

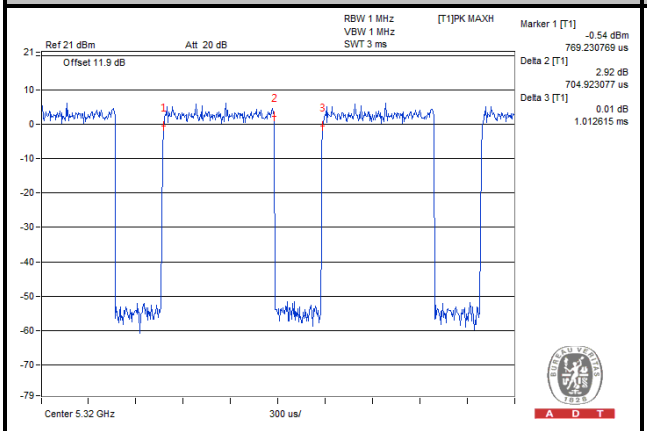
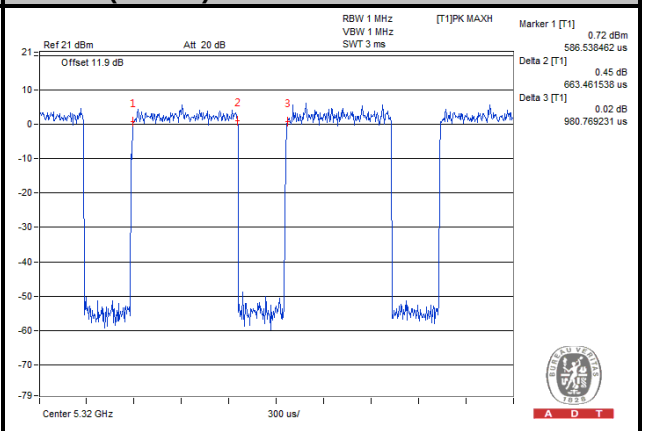
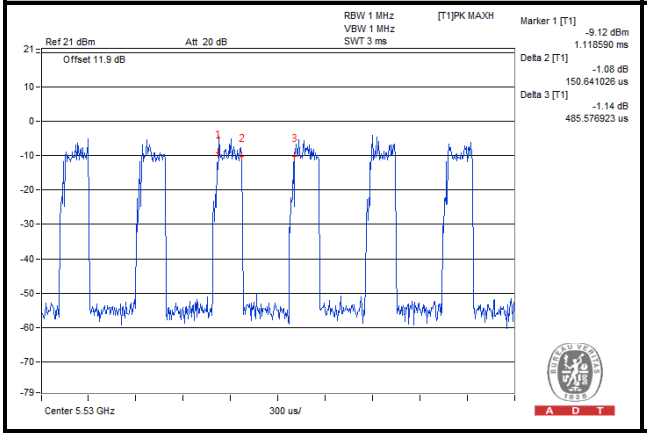


Modulation type: QPSK

802.11a: Duty cycle = 0.705/1.012 = 0.697, Duty factor = 10*log(1/0.697) = 1.57

802.11n (20MHz): Duty cycle = 663.46/980.76 = 0.676, Duty factor = 10*log(1/0.676) = 1.70

802.11ac (80MHz): Duty cycle = 150.64/485.57 = 0.310, Duty factor = 10*log(1/0.310) = 5.08

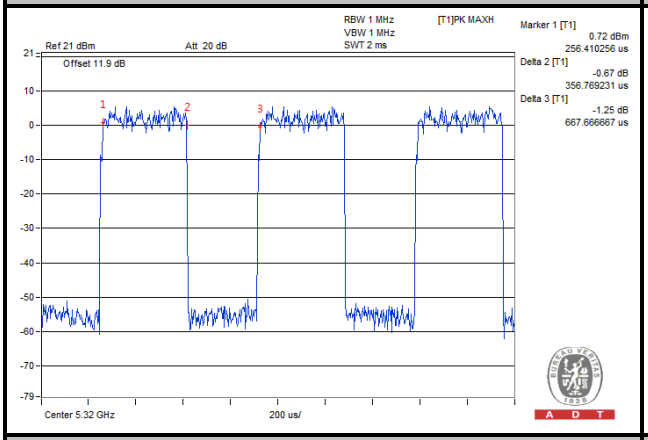
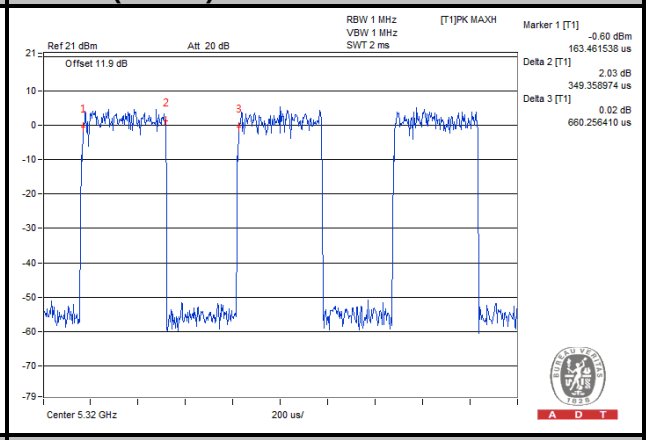
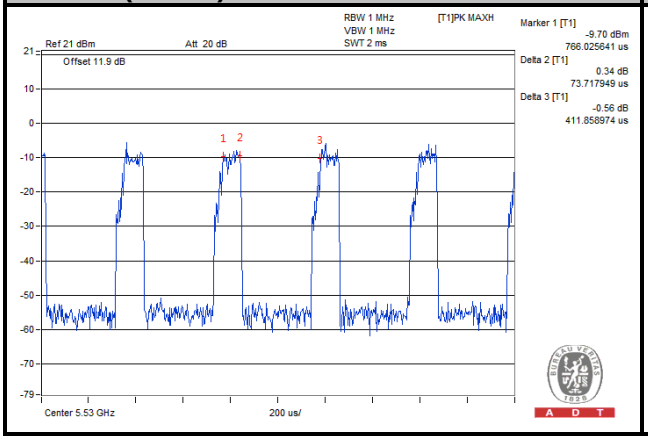
802.11a	802.11n (20MHz)
	
802.11ac (80MHz)	
	

Modulation type: 16QAM

802.11a: Duty cycle = 356.76/667.66 = 0.534, Duty factor = 10*log(1/0.534) = 2.72

802.11n (20MHz): Duty cycle = 349.35/660.25 = 0.529, Duty factor = 10*log(1/0.529) = 2.76

802.11ac (80MHz): Duty cycle = 73.71/411.85 = 0.179, Duty factor = 10*log(1/0.179) = 7.47

802.11a	802.11n (20MHz)
	
802.11ac (80MHz)	
	

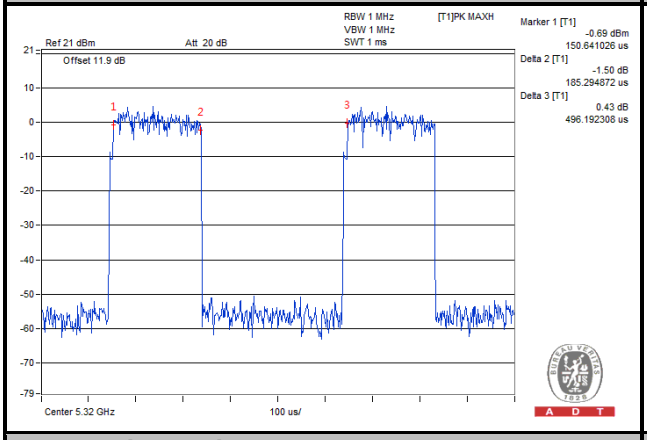
Modulation type: 64QAM

802.11a: Duty cycle = 185.29/496.19 = 0.373, Duty factor = 10*log(1/0.373) = 4.28

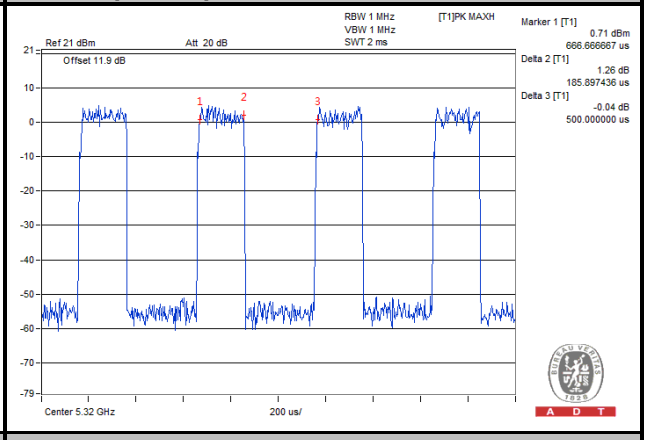
802.11n (20MHz): Duty cycle = 185.89/500 = 0.372, Duty factor = 10*log(1/0.372) = 4.30

802.11ac (80MHz): Duty cycle = 41.66/378.2 = 0.110, Duty factor = 10*log(1/0.110) = 9.58

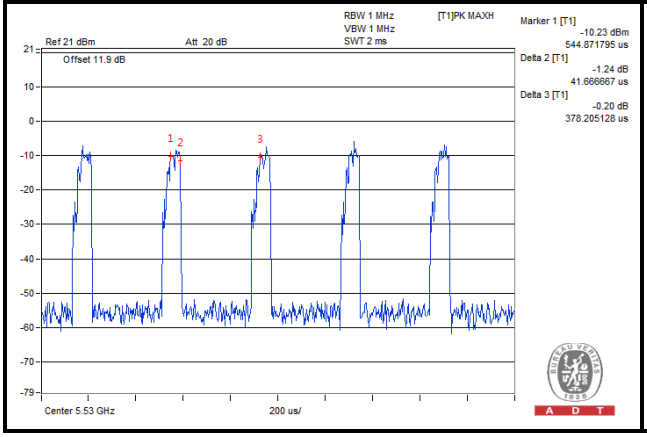
802.11a



802.11n (20MHz)



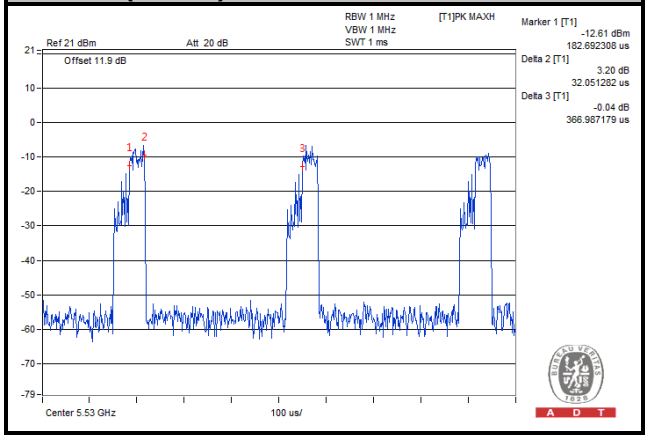
802.11ac (80MHz)



Modulation type: 256QAM

802.11ac (80MHz): Duty cycle = 32.05/366.98 = 0.087, Duty factor = 10*log(1/0.087) = 10.59

802.11ac (80MHz)



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
644545 D01 Guidance for IEEE 802 11ac v01r02
ANSI C63.10-2009

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

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

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.21, 2015	Jan.21, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 10, 2014	Dec. 09, 2015
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Feb. 04, 2015	Feb. 04, 2016
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Feb. 09, 2015	Feb. 09, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Feb. 04, 2015	Feb. 04, 2016
Loop Antenna	EM-6879	269	Aug.13, 2014	Aug.12, 2015
Preamplifier EMCI	EMC 012645	980115	Dec. 12, 2014	Dec. 11, 2015
Preamplifier EMCI	EMC 184045	980116	Jan. 09, 2015	Jan. 08, 2016
Preamplifier EMCI	EMC 330H	980112	Dec. 27, 2014	Dec. 26, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 18, 2014	Oct. 17, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 18, 2014	Oct. 17, 2015
RF signal cable Worken	RG-213	NA	Nov. 07, 2014	Nov. 06, 2015
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
Bluetooth Tester	CBT	100980	Apr. 27, 2015	Apr. 26, 2016
Power Meter	ML2495A	1232002	Sep. 17, 2014	Sep. 16, 2015
Power Sensor	MA2411B	1207325	Sep. 17, 2014	Sep. 16, 2015

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 (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The 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:

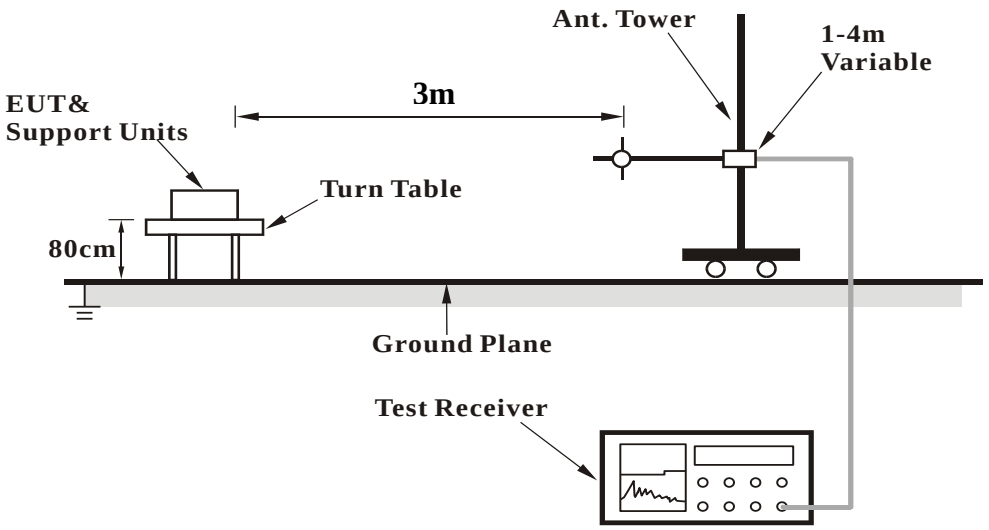
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

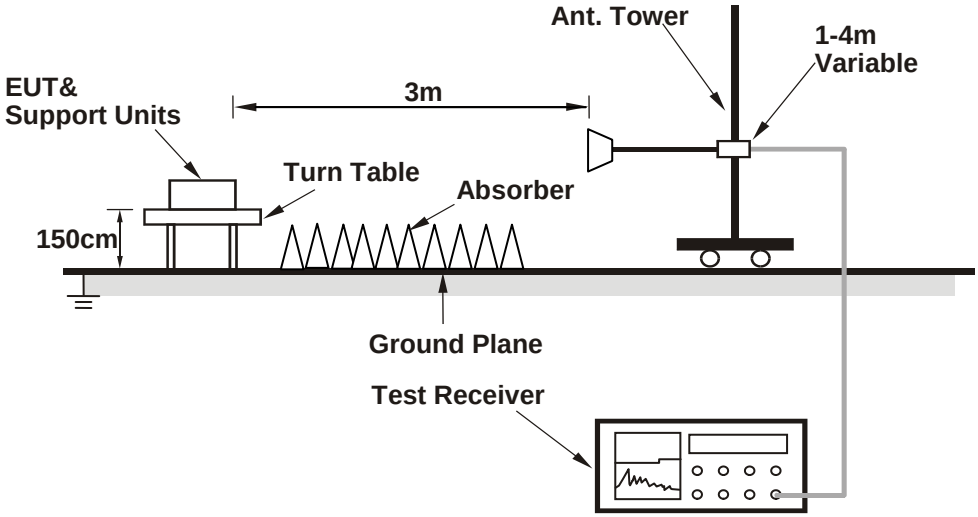
No deviation.

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

Mode A

ABOVE 1GHz WORST-CASE DATA

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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
5148	47.49	47.29	54	-6.51	31.32	6.2	37.32	147	334	Average
5148	60.9	60.7	74	-13.1	31.32	6.2	37.32	147	334	Peak
5180	92.73	92.5			31.35	6.22	37.34	147	334	Average
5180	102.77	102.54			31.35	6.22	37.34	147	334	Peak
5388	41.17	40.53	54	-12.83	31.51	6.31	37.18	147	334	Average
5388	61.2	60.56	74	-12.8	31.51	6.31	37.18	147	334	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	48.37	48.17	54	-5.63	31.32	6.2	37.32	194	219	Average
5150	61.17	60.97	74	-12.83	31.32	6.2	37.32	194	219	Peak
5180	95.6	95.37			31.35	6.22	37.34	194	219	Average
5180	105.48	105.25			31.35	6.22	37.34	194	219	Peak
5452	40.32	39.5	54	-13.68	31.56	6.34	37.08	194	219	Average
5452	60.13	59.31	74	-13.87	31.56	6.34	37.08	194	219	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	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
5092	40.18	39.98	54	-13.82	31.28	6.19	37.27	185	334	Average
5092	59.75	59.55	74	-14.25	31.28	6.19	37.27	185	334	Peak
5220	92.32	92.07			31.37	6.24	37.36	185	334	Average
5220	102.11	101.86			31.37	6.24	37.36	185	334	Peak
5354	40.94	40.35	54	-13.06	31.48	6.29	37.18	185	334	Average
5354	60.56	59.97	74	-13.44	31.48	6.29	37.18	185	334	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
5022	38.24	38.1	54	-15.76	31.23	6.15	37.24	174	218	Average
5022	59.35	59.21	74	-14.65	31.23	6.15	37.24	174	218	Peak
5220	96.24	95.99			31.37	6.24	37.36	174	218	Average
5220	105.93	105.68			31.37	6.24	37.36	174	218	Peak
5352	40.29	39.7	54	-13.71	31.48	6.29	37.18	174	218	Average
5352	61.45	60.86	74	-12.55	31.48	6.29	37.18	174	218	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	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
5006	38.2	38.09	54	-15.8	31.21	6.13	37.23	146	334	Average
5006	60.3	60.19	74	-13.7	31.21	6.13	37.23	146	334	Peak
5240	93.06	92.74			31.39	6.25	37.32	146	334	Average
5240	102.58	102.26			31.39	6.25	37.32	146	334	Peak
5430	38.64	37.9	54	-15.36	31.55	6.32	37.13	146	334	Average
5430	60.64	59.9	74	-13.36	31.55	6.32	37.13	146	334	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
5020	38.25	38.13	54	-15.75	31.21	6.15	37.24	200	217	Average
5020	59.6	59.48	74	-14.4	31.21	6.15	37.24	200	217	Peak
5240	95.7	95.38			31.39	6.25	37.32	200	217	Average
5240	105.22	104.9			31.39	6.25	37.32	200	217	Peak
5352	39.44	38.85	54	-14.56	31.48	6.29	37.18	200	217	Average
5352	59.96	59.37	74	-14.04	31.48	6.29	37.18	200	217	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	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	38.15	37.95	54	-15.85	31.31	6.19	37.3	138	354	Average
5124	59.87	59.67	74	-14.13	31.31	6.19	37.3	138	354	Peak
5260	92.46	92.07			31.41	6.25	37.27	138	354	Average
5260	102.04	101.65	74	28.04	31.41	6.25	37.27	138	354	Peak
5374	38.55	37.93	54	-15.45	31.49	6.31	37.18	138	354	Average
5374	59.96	59.34	74	-14.04	31.49	6.31	37.18	138	354	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
5008	38.07	37.96	54	-15.93	31.21	6.13	37.23	177	146	Average
5008	60.09	59.98	74	-13.91	31.21	6.13	37.23	177	146	Peak
5260	96.29	95.9			31.41	6.25	37.27	177	146	Average
5260	105.82	105.43			31.41	6.25	37.27	177	146	Peak
5368	38.88	38.26	54	-15.12	31.49	6.31	37.18	177	146	Average
5368	60.74	60.12	74	-13.26	31.49	6.31	37.18	177	146	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	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
5030	38.02	37.88	54	-15.98	31.23	6.15	37.24	157	333	Average
5030	61.39	61.25	74	-12.61	31.23	6.15	37.24	157	333	Peak
5300	92.09	91.57			31.44	6.27	37.19	157	333	Average
5300	101.37	100.85			31.44	6.27	37.19	157	333	Peak
5368	38.77	38.15	54	-15.23	31.49	6.31	37.18	157	333	Average
5368	61.07	60.45	74	-12.93	31.49	6.31	37.18	157	333	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
5024	38.17	38.03	54	-15.83	31.23	6.15	37.24	175	153	Average
5024	59.75	59.61	74	-14.25	31.23	6.15	37.24	175	153	Peak
5300	95.6	95.08			31.44	6.27	37.19	175	153	Average
5300	105.01	104.49			31.44	6.27	37.19	175	153	Peak
5456	40.57	39.75	54	-13.43	31.56	6.34	37.08	175	153	Average
5456	61.23	60.41	74	-12.77	31.56	6.34	37.08	175	153	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	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	38.27	38.07	54	-15.73	31.31	6.19	37.3	148	351	Average
5124	59.46	59.26	74	-14.54	31.31	6.19	37.3	148	351	Peak
5320	92.57	92.02			31.45	6.29	37.19	148	351	Average
5320	101.87	101.32			31.45	6.29	37.19	148	351	Peak
5350	41.85	41.26	54	-12.15	31.48	6.29	37.18	148	351	Average
5350	63.58	62.99	74	-10.42	31.48	6.29	37.18	148	351	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
5010	38.03	37.92	54	-15.97	31.21	6.13	37.23	176	174	Average
5010	59.96	59.85	74	-14.04	31.21	6.13	37.23	176	174	Peak
5320	96.33	95.78			31.45	6.29	37.19	176	174	Average
5320	105.54	104.99			31.45	6.29	37.19	176	174	Peak
5350	43.57	42.98	54	-10.43	31.48	6.29	37.18	176	174	Average
5350	63.67	63.08	74	-10.33	31.48	6.29	37.18	176	174	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	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
5422	39.46	38.79	54	-14.54	31.53	6.32	37.18	188	150	Average
5422	60.23	59.56	74	-13.77	31.53	6.32	37.18	188	150	Peak
5470	60.85	60.02	68.2	-7.35	31.57	6.34	37.08	188	150	Peak
5500	95.88	94.95			31.6	6.36	37.03	188	150	Average
5500	105.51	104.58			31.6	6.36	37.03	188	150	Peak
5725	60.8	59.52	68.2	-7.4	31.96	6.75	37.43	188	150	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
5416	39.03	38.36	54	-14.97	31.53	6.32	37.18	198	40	Average
5416	59.99	59.32	74	-14.01	31.53	6.32	37.18	198	40	Peak
5470	59.84	59.01	68.2	-8.36	31.57	6.34	37.08	198	40	Peak
5500	93.54	92.61			31.6	6.36	37.03	198	40	Average
5500	103.31	102.38			31.6	6.36	37.03	198	40	Peak
5725	59.29	58.01	68.2	-8.91	31.96	6.75	37.43	198	40	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	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
5408	38.29	37.63	54	-14.54	31.52	6.32	37.18	185	195	Average
5408	59.56	58.9	74	-13.77	31.52	6.32	37.18	185	195	Peak
5470	59.11	58.28	68.2	-9.09	31.57	6.34	37.08	185	195	Peak
5580	95.74	94.7			31.71	6.49	37.16	185	195	Average
5580	105.44	104.4			31.71	6.49	37.16	185	195	Peak
5725	59.8	58.52	68.2	-8.4	31.96	6.75	37.43	185	195	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
5350	38.18	37.59	54	-14.97	31.48	6.29	37.18	195	36	Average
5350	60.51	59.92	74	-14.01	31.48	6.29	37.18	195	36	Peak
5470	59.25	58.42	68.2	-8.95	31.57	6.34	37.08	195	36	Peak
5580	93.17	92.13			31.71	6.49	37.16	195	36	Average
5580	102.97	101.93			31.71	6.49	37.16	195	36	Peak
5725	59.19	57.91	68.2	-9.01	31.96	6.75	37.43	195	36	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	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
5434	38.34	37.6	54	-14.54	31.55	6.32	37.13	183	174	Average
5434	59.63	58.89	74	-13.77	31.55	6.32	37.13	183	174	Peak
5470	59.13	58.3	68.2	-9.07	31.57	6.34	37.08	183	174	Peak
5700	95.91	94.72			31.9	6.69	37.4	183	174	Average
5700	105.65	104.46			31.9	6.69	37.4	183	174	Peak
5725	63.13	61.85	68.2	-5.07	31.96	6.75	37.43	183	174	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
5382	38.12	37.48	54	-14.97	31.51	6.31	37.18	205	314	Average
5382	60.16	59.52	74	-14.01	31.51	6.31	37.18	205	314	Peak
5470	57.5	56.67	68.2	-10.7	31.57	6.34	37.08	205	314	Peak
5700	93.59	92.4			31.9	6.69	37.4	205	314	Average
5700	103.2	102.01			31.9	6.69	37.4	205	314	Peak
5725	61.52	60.24	68.2	-6.68	31.96	6.75	37.43	205	314	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	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
5714	61.31	60.12	68.2	-6.89	31.93	6.69	37.43	183	309	Peak
5725	67.33	66.05	78.2	-10.87	31.96	6.75	37.43	183	309	Peak
5745	95.86	94.59			31.99	6.75	37.47	183	309	Average
5745	105.16	103.89			31.99	6.75	37.47	183	309	Peak
5850	59.35	57.83	78.2	-18.85	32.15	6.88	37.51	183	309	Peak
5861	60.08	58.45	68.2	-8.12	32.18	6.95	37.5	183	309	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	61.2	60.01	68.2	-7	31.93	6.69	37.43	201	65	Peak
5725	65.3	64.02	78.2	-12.9	31.96	6.75	37.43	201	65	Peak
5745	92.43	91.16			31.99	6.75	37.47	201	65	Average
5745	101.99	100.72			31.99	6.75	37.47	201	65	Peak
5850	59.22	57.7	78.2	-18.98	32.15	6.88	37.51	201	65	Peak
5861	59.03	57.4	68.2	-9.17	32.18	6.95	37.5	201	65	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5745MHz: Fundamental frequency.
3. 5714MHz, 5725MHz, 5850MHz & 5861MHz: 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	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
5714	61.05	59.86	68.2	-7.15	31.93	6.69	37.43	185	321	Peak
5725	60.42	59.14	78.2	-17.78	31.96	6.75	37.43	185	321	Peak
5785	96.55	95.23			32.04	6.82	37.54	185	321	Average
5785	105.8	104.48			32.04	6.82	37.54	185	321	Peak
5850	61.94	60.42	78.2	-16.26	32.15	6.88	37.51	185	321	Peak
5861	60.94	59.31	68.2	-7.26	32.18	6.95	37.5	185	321	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	59.89	58.7	68.2	-8.31	31.93	6.69	37.43	210	78	Peak
5725	58.84	57.56	78.2	-19.36	31.96	6.75	37.43	210	78	Peak
5785	93.4	92.08			32.04	6.82	37.54	210	78	Average
5785	102.63	101.31			32.04	6.82	37.54	210	78	Peak
5850	59.1	57.58	78.2	-19.1	32.15	6.88	37.51	210	78	Peak
5861	58.51	56.88	68.2	-9.69	32.18	6.95	37.5	210	78	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5785MHz: Fundamental frequency.
3. 5714MHz, 5725MHz, 5850MHz & 5861MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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
5714	59.04	57.85	68.2	-9.16	31.93	6.69	37.43	175	316	Peak
5725	59.53	58.25	78.2	-18.67	31.96	6.75	37.43	175	316	Peak
5825	96.12	94.65			32.12	6.88	37.53	175	316	Average
5825	105.17	103.7			32.12	6.88	37.53	175	316	Peak
5850	68.58	67.06	78.2	-9.62	32.15	6.88	37.51	175	316	Peak
5861	59.54	57.91	68.2	-8.66	32.18	6.95	37.5	175	316	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	59.72	58.53	68.2	-8.48	31.93	6.69	37.43	212	75	Peak
5725	59.74	58.46	78.2	-18.46	31.96	6.75	37.43	212	75	Peak
5825	93.49	92.02			32.12	6.88	37.53	212	75	Average
5825	102.55	101.08			32.12	6.88	37.53	212	75	Peak
5850	63.77	62.25	78.2	-14.43	32.15	6.88	37.51	212	75	Peak
5861	59.9	58.27	68.2	-8.3	32.18	6.95	37.5	212	75	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5825MHz: Fundamental frequency.
3. 5714MHz, 5725MHz, 5850MHz & 5861MHz: Out of restricted band

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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
5146	38.88	38.68	54	-15.12	31.32	6.2	37.32	127	12	Average
5146	60.59	60.39	74	-13.41	31.32	6.2	37.32	127	12	Peak
5180	92.94	92.71			31.35	6.22	37.34	127	12	Average
5180	102.48	102.25			31.35	6.22	37.34	127	12	Peak
5412	38.9	38.23	54	-15.1	31.53	6.32	37.18	127	12	Average
5412	59.83	59.16	74	-14.17	31.53	6.32	37.18	127	12	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
5144	40.07	39.87	54	-13.93	31.32	6.2	37.32	184	230	Average
5144	60.43	60.23	74	-13.57	31.32	6.2	37.32	184	230	Peak
5180	95.68	95.45			31.35	6.22	37.34	184	230	Average
5180	105.33	105.1			31.35	6.22	37.34	184	230	Peak
5458	40.12	39.3	54	-13.88	31.56	6.34	37.08	184	230	Average
5458	60.26	59.44	74	-13.74	31.56	6.34	37.08	184	230	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	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
5116	38.37	38.17	54	-15.63	31.29	6.19	37.28	127	13	Average
5116	60.39	60.19	74	-13.61	31.29	6.19	37.28	127	13	Peak
5220	92.55	92.3			31.37	6.24	37.36	127	13	Average
5220	102.64	102.39			31.37	6.24	37.36	127	13	Peak
5428	39.13	38.41	54	-14.87	31.53	6.32	37.13	127	13	Average
5428	60.22	59.5	74	-13.78	31.53	6.32	37.13	127	13	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	38.31	38.17	54	-15.69	31.23	6.15	37.24	192	213	Average
5032	60.36	60.22	74	-13.64	31.23	6.15	37.24	192	213	Peak
5220	95.32	95.07			31.37	6.24	37.36	192	213	Average
5220	105.84	105.59			31.37	6.24	37.36	192	213	Peak
5350	40.01	39.42	54	-13.99	31.48	6.29	37.18	192	213	Average
5350	60.61	60.02	74	-13.39	31.48	6.29	37.18	192	213	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	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	38.28	38.08	54	-15.72	31.32	6.2	37.32	163	6	Average
5150	60.4	60.2	74	-13.6	31.32	6.2	37.32	163	6	Peak
5240	93.19	92.87			31.39	6.25	37.32	163	6	Average
5240	102.56	102.24			31.39	6.25	37.32	163	6	Peak
5450	38.69	37.87	54	-15.31	31.56	6.34	37.08	163	6	Average
5450	60.47	59.65	74	-13.53	31.56	6.34	37.08	163	6	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
5078	38.27	38.1	54	-15.73	31.27	6.17	37.27	200	219	Average
5078	60.73	60.56	74	-13.27	31.27	6.17	37.27	200	219	Peak
5240	95.76	95.44			31.39	6.25	37.32	200	219	Average
5240	105.17	104.85			31.39	6.25	37.32	200	219	Peak
5410	38.89	38.23	54	-15.11	31.52	6.32	37.18	200	219	Average
5410	61.15	60.49	74	-12.85	31.52	6.32	37.18	200	219	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	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
5020	38.08	37.96	54	-15.92	31.21	6.15	37.24	114	346	Average
5020	59.78	59.66	74	-14.22	31.21	6.15	37.24	114	346	Peak
5260	92.68	92.29			31.41	6.25	37.27	114	346	Average
5260	102.33	101.94			31.41	6.25	37.27	114	346	Peak
5422	38.38	37.71	54	-15.62	31.53	6.32	37.18	114	346	Average
5422	59.73	59.06	74	-14.27	31.53	6.32	37.18	114	346	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
5058	38.25	38.08	54	-15.75	31.25	6.17	37.25	176	143	Average
5058	60.44	60.27	74	-13.56	31.25	6.17	37.25	176	143	Peak
5260	96.74	96.35			31.41	6.25	37.27	176	143	Average
5260	105.84	105.45			31.41	6.25	37.27	176	143	Peak
5430	38.53	37.79	54	-15.47	31.55	6.32	37.13	176	143	Average
5430	60.06	59.32	74	-13.94	31.55	6.32	37.13	176	143	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	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
5036	37.92	37.78	54	-16.08	31.23	6.15	37.24	105	337	Average
5036	59.89	59.75	74	-14.11	31.23	6.15	37.24	105	337	Peak
5300	92.56	92.04			31.44	6.27	37.19	105	337	Average
5300	102.03	101.51			31.44	6.27	37.19	105	337	Peak
5424	38.63	37.96	54	-15.37	31.53	6.32	37.18	105	337	Average
5424	60.46	59.79	74	-13.54	31.53	6.32	37.18	105	337	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
5028	37.99	37.85	54	-16.01	31.23	6.15	37.24	176	164	Average
5028	59.38	59.24	74	-14.62	31.23	6.15	37.24	176	164	Peak
5300	96.11	95.59			31.44	6.27	37.19	176	164	Average
5300	105.4	104.88			31.44	6.27	37.19	176	164	Peak
5394	39.64	39	54	-14.36	31.51	6.31	37.18	176	164	Average
5394	60.77	60.13	74	-13.23	31.51	6.31	37.18	176	164	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	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
5060	38.02	37.85	54	-15.98	31.25	6.17	37.25	194	355	Average
5060	59.66	59.49	74	-14.34	31.25	6.17	37.25	194	355	Peak
5320	92.73	92.18			31.45	6.29	37.19	194	355	Average
5320	102.3	101.75			31.45	6.29	37.19	194	355	Peak
5350	42.46	41.87	54	-11.54	31.48	6.29	37.18	194	355	Average
5350	64.1	63.51	74	-9.9	31.48	6.29	37.18	194	355	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
5136	38.18	37.97	54	-15.82	31.31	6.2	37.3	152	148	Average
5136	59.94	59.73	74	-14.06	31.31	6.2	37.3	152	148	Peak
5320	96.16	95.61			31.45	6.29	37.19	152	148	Average
5320	105.52	104.97			31.45	6.29	37.19	152	148	Peak
5350	44.46	43.87	54	-9.54	31.48	6.29	37.18	152	148	Average
5350	66.98	66.39	74	-7.02	31.48	6.29	37.18	152	148	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	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
5432	39.69	38.95	54	-14.54	31.55	6.32	37.13	202	149	Average
5432	61.22	60.48	74	-13.77	31.55	6.32	37.13	202	149	Peak
5470	60.61	59.78	68.2	-7.59	31.57	6.34	37.08	202	149	Peak
5500	96.09	95.16			31.6	6.36	37.03	202	149	Average
5500	105.9	104.97			31.6	6.36	37.03	202	149	Peak
5725	59.35	58.07	68.2	-8.85	31.96	6.75	37.43	202	149	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
5368	39.4	38.78	54	-14.97	31.49	6.31	37.18	197	24	Average
5368	60.53	59.91	74	-14.01	31.49	6.31	37.18	197	24	Peak
5470	59.42	58.59	68.2	-8.78	31.57	6.34	37.08	197	24	Peak
5500	93.68	92.75			31.6	6.36	37.03	197	24	Average
5500	103.26	102.33			31.6	6.36	37.03	197	24	Peak
5725	59.63	58.35	68.2	-8.57	31.96	6.75	37.43	197	24	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	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
5448	38.34	37.57	54	-14.54	31.56	6.34	37.13	190	174	Average
5448	59.69	58.92	74	-13.77	31.56	6.34	37.13	190	174	Peak
5470	58.65	57.82	68.2	-9.55	31.57	6.34	37.08	190	174	Peak
5580	95.82	94.78			31.71	6.49	37.16	190	174	Average
5580	105.33	104.29			31.71	6.49	37.16	190	174	Peak
5725	60.25	58.97	68.2	-7.95	31.96	6.75	37.43	190	174	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
5434	38.39	37.65	54	-14.97	31.55	6.32	37.13	194	39	Average
5434	59.52	58.78	74	-14.01	31.55	6.32	37.13	194	39	Peak
5470	57.84	57.01	68.2	-10.36	31.57	6.34	37.08	194	39	Peak
5580	92.83	91.79			31.71	6.49	37.16	194	39	Average
5580	102.38	101.34			31.71	6.49	37.16	194	39	Peak
5725	58.8	57.52	68.2	-9.4	31.96	6.75	37.43	194	39	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	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
5354	38.17	37.58	54	-14.54	31.48	6.29	37.18	179	151	Average
5354	60.17	59.58	74	-13.77	31.48	6.29	37.18	179	151	Peak
5470	58.16	57.33	68.2	-10.04	31.57	6.34	37.08	179	151	Peak
5700	95.66	94.47			31.9	6.69	37.4	179	151	Average
5700	105.36	104.17			31.9	6.69	37.4	179	151	Peak
5725	64.47	63.19	68.2	-3.73	31.96	6.75	37.43	179	151	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
5442	38.29	37.53	54	-14.97	31.55	6.34	37.13	176	32	Average
5442	60.5	59.74	74	-14.01	31.55	6.34	37.13	176	32	Peak
5470	58.57	57.74	68.2	-9.63	31.57	6.34	37.08	176	32	Peak
5700	92.84	91.65			31.9	6.69	37.4	176	32	Average
5700	102.55	101.36			31.9	6.69	37.4	176	32	Peak
5725	64.03	62.75	68.2	-4.17	31.96	6.75	37.43	176	32	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	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
5714	63.03	61.84	68.2	-5.17	31.93	6.69	37.43	179	315	Peak
5725	75.04	73.76	78.2	-3.16	31.96	6.75	37.43	179	315	Peak
5745	95.92	94.65			31.99	6.75	37.47	179	315	Average
5745	105.46	104.19			31.99	6.75	37.47	179	315	Peak
5850	59.74	58.22	78.2	-18.46	32.15	6.88	37.51	179	315	Peak
5861	59.08	57.45	68.2	-9.12	32.18	6.95	37.5	179	315	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	60.36	59.17	68.2	-7.84	31.93	6.69	37.43	202	61	Peak
5725	65.12	63.84	78.2	-13.08	31.96	6.75	37.43	202	61	Peak
5745	92.23	90.96			31.99	6.75	37.47	202	61	Average
5745	101.9	100.63			31.99	6.75	37.47	202	61	Peak
5850	59.29	57.77	78.2	-18.91	32.15	6.88	37.51	202	61	Peak
5861	59.43	57.8	68.2	-8.77	32.18	6.95	37.5	202	61	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5745MHz: Fundamental frequency.
3. 5714MHz, 5725MHz, 5850MHz & 5861MHz: 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	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
5714	60.66	59.47	68.2	-7.54	31.93	6.69	37.43	178	313	Peak
5725	60.13	58.85	78.2	-18.07	31.96	6.75	37.43	178	313	Peak
5785	96.46	95.14			32.04	6.82	37.54	178	313	Average
5785	105.85	104.53			32.04	6.82	37.54	178	313	Peak
5850	59.21	57.69	78.2	-18.99	32.15	6.88	37.51	178	313	Peak
5861	60.89	59.26	68.2	-7.31	32.18	6.95	37.5	178	313	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	59.04	57.85	68.2	-9.16	31.93	6.69	37.43	202	81	Peak
5725	60.44	59.16	78.2	-17.76	31.96	6.75	37.43	202	81	Peak
5785	93.18	91.86			32.04	6.82	37.54	202	81	Average
5785	102.19	100.87			32.04	6.82	37.54	202	81	Peak
5850	60.27	58.75	78.2	-17.93	32.15	6.88	37.51	202	81	Peak
5861	59.04	57.41	68.2	-9.16	32.18	6.95	37.5	202	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. 5714MHz, 5725MHz, 5850MHz & 5861MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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
5714	61.02	59.83	68.2	-7.18	31.93	6.69	37.43	179	320	Peak
5725	59.42	58.14	78.2	-18.78	31.96	6.75	37.43	179	320	Peak
5825	95.98	94.51			32.12	6.88	37.53	179	320	Average
5825	105.38	103.91			32.12	6.88	37.53	179	320	Peak
5850	65.75	64.23	78.2	-12.45	32.15	6.88	37.51	179	320	Peak
5861	60.59	58.96	68.2	-7.61	32.18	6.95	37.5	179	320	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	60.07	58.88	68.2	-8.13	31.93	6.69	37.43	210	76	Peak
5725	59.17	57.89	78.2	-19.03	31.96	6.75	37.43	210	76	Peak
5825	93.48	92.01			32.12	6.88	37.53	210	76	Average
5825	102.71	101.24			32.12	6.88	37.53	210	76	Peak
5850	61.32	59.8	78.2	-16.88	32.15	6.88	37.51	210	76	Peak
5861	60.92	59.29	68.2	-7.28	32.18	6.95	37.5	210	76	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5825MHz: Fundamental frequency.
3. 5714MHz, 5725MHz, 5850MHz & 5861MHz: Out of restricted band

802.11ac (80MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 42	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	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	42.32	42.1	54	-11.68	31.32	6.2	37.3	218	7	Average
5142	60.78	60.56	74	-13.22	31.32	6.2	37.3	218	7	Peak
5210	88.38	88.13			31.37	6.24	37.36	218	7	Average
5210	97.73	97.48			31.37	6.24	37.36	218	7	Peak
5428	39.03	38.31	54	-14.97	31.53	6.32	37.13	218	7	Average
5428	59.84	59.12	74	-14.16	31.53	6.32	37.13	218	7	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
5008	43.92	43.81	54	-10.08	31.21	6.13	37.23	175	221	Average
5008	59.29	59.18	74	-14.71	31.21	6.13	37.23	175	221	Peak
5210	90.44	90.19			31.37	6.24	37.36	175	221	Average
5210	100.3	100.05			31.37	6.24	37.36	175	221	Peak
5384	39.1	38.46	54	-14.9	31.51	6.31	37.18	175	221	Average
5384	59.98	59.34	74	-14.02	31.51	6.31	37.18	175	221	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5210MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 58	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	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
5026	38.64	38.5	54	-15.36	31.23	6.15	37.24	157	347	Average
5026	59.8	59.66	74	-14.2	31.23	6.15	37.24	157	347	Peak
5290	87.89	87.42			31.43	6.27	37.23	157	347	Average
5290	97.06	96.59			31.43	6.27	37.23	157	347	Peak
5350	39.25	38.66	54	-14.75	31.48	6.29	37.18	157	347	Average
5350	61.43	60.84	74	-12.57	31.48	6.29	37.18	157	347	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
5148	38.77	38.57	54	-15.23	31.32	6.2	37.32	168	148	Average
5148	60.08	59.88	74	-13.92	31.32	6.2	37.32	168	148	Peak
5290	90.84	90.37			31.43	6.27	37.23	168	148	Average
5290	100.86	100.39			31.43	6.27	37.23	168	148	Peak
5350	41.08	40.49	54	-12.92	31.48	6.29	37.18	168	148	Average
5350	61.57	60.98	74	-12.43	31.48	6.29	37.18	168	148	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5290MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 106	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	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
5444	40.19	39.43	54	-14.54	31.55	6.34	37.13	197	170	Average
5444	60.9	60.14	74	-13.77	31.55	6.34	37.13	197	170	Peak
5470	59.99	59.16	68.2	-8.21	31.57	6.34	37.08	197	170	Peak
5530	90.46	89.5			31.63	6.42	37.09	197	170	Average
5530	100.72	99.76			31.63	6.42	37.09	197	170	Peak
5725	59.09	57.81	68.2	-9.11	31.96	6.75	37.43	197	170	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
5432	40.3	39.56	54	-14.97	31.55	6.32	37.13	182	37	Average
5432	60.24	59.5	74	-14.01	31.55	6.32	37.13	182	37	Peak
5470	58.38	57.55	68.2	-9.82	31.57	6.34	37.08	182	37	Peak
5530	88.68	87.72			31.63	6.42	37.09	182	37	Average
5530	98.47	97.51			31.63	6.42	37.09	182	37	Peak
5725	59.91	58.63	68.2	-8.29	31.96	6.75	37.43	182	37	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5530MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 122	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	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
5440	39.13	38.37	54	-14.54	31.55	6.34	37.13	200	314	Average
5440	60.85	60.09	74	-13.77	31.55	6.34	37.13	200	314	Peak
5470	60.53	59.7	68.2	-7.67	31.57	6.34	37.08	200	314	Peak
5610	90.42	89.31			31.77	6.56	37.22	200	314	Average
5610	100.82	99.71			31.77	6.56	37.22	200	314	Peak
5725	61.11	59.83	68.2	-7.09	31.96	6.75	37.43	200	314	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
5430	38.99	38.25	54	-14.97	31.55	6.32	37.13	161	40	Average
5430	59.87	59.13	74	-14.01	31.55	6.32	37.13	161	40	Peak
5470	58.91	58.08	68.2	-9.29	31.57	6.34	37.08	161	40	Peak
5610	88.39	87.28			31.77	6.56	37.22	161	40	Average
5610	98.2	97.09			31.77	6.56	37.22	161	40	Peak
5725	59.45	58.17	68.2	-8.75	31.96	6.75	37.43	161	40	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5530MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 155	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	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
5714	65.17	63.98	68.2	-3.03	31.93	6.69	37.43	175	314	Peak
5725	66.11	64.83	78.2	-12.09	31.96	6.75	37.43	175	314	Peak
5775	90.65	89.29			32.04	6.82	37.5	175	314	Average
5775	100.28	98.92			32.04	6.82	37.5	175	314	Peak
5850	60.75	59.23	78.2	-17.45	32.15	6.88	37.51	175	314	Peak
5861	60.71	59.08	68.2	-7.49	32.18	6.95	37.5	175	314	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	62.42	61.23	68.2	-5.78	31.93	6.69	37.43	239	68	Peak
5725	64.53	63.25	78.2	-13.67	31.96	6.75	37.43	239	68	Peak
5775	87.14	85.78			32.04	6.82	37.5	239	68	Average
5775	97.36	96			32.04	6.82	37.5	239	68	Peak
5850	59.11	57.59	78.2	-19.09	32.15	6.88	37.51	239	68	Peak
5861	59.49	57.86	68.2	-8.71	32.18	6.95	37.5	239	68	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5775MHz: Fundamental frequency.
3. 5714MHz, 5725MHz, 5850MHz & 5861MHz: Out of restricted band

BELOW 1GHz WORST-CASE DATA:

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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
53.49	22.97	40.91	40	-17.03	12.66	0.73	31.33	133	211	Peak
102.63	26.14	47.66	43.5	-17.36	9.34	1.06	31.92	102	267	Peak
173.91	28.91	48.14	43.5	-14.59	11.38	1.16	31.77	131	138	Peak
310.5	21.12	38.21	46	-24.88	13.2	1.66	31.95	140	35	Peak
383.3	19.1	34.28	46	-26.9	14.94	1.86	31.98	128	72	Peak
591.9	22.32	32.83	46	-23.68	19.41	2.24	32.16	121	214	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
31.89	31.27	49.49	40	-8.73	12.3	0.59	31.11	120	105	Peak
41.61	32.56	49.39	40	-7.44	13.56	0.66	31.05	111	313	Peak
54.3	30.14	48.17	40	-9.86	12.56	0.74	31.33	109	276	Peak
348.3	18.13	34.11	46	-27.87	14.1	1.76	31.84	119	103	Peak
478.5	19.77	32.69	46	-26.23	16.89	2.05	31.86	103	201	Peak
563.2	22.54	33.64	46	-23.46	18.77	2.2	32.07	132	340	Peak

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

Margin value = Emission level – Limit value

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
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
68.88	21.8	41.83	40	-18.2	10.89	0.85	31.77	125	279	Peak
101.82	26.24	47.87	43.5	-17.26	9.25	1.06	31.94	108	27	Peak
173.91	29.16	48.39	43.5	-14.34	11.38	1.16	31.77	105	202	Peak
311.2	20.54	37.59	46	-25.46	13.22	1.67	31.94	124	239	Peak
474.3	20.27	33.29	46	-25.73	16.81	2.04	31.87	110	178	Peak
615	23.37	33.41	46	-22.63	19.79	2.29	32.12	132	198	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
31.62	31.16	49.38	40	-8.84	12.3	0.59	31.11	113	138	Peak
41.07	32.6	49.42	40	-7.4	13.55	0.65	31.02	126	255	Peak
54.3	30.19	48.22	40	-9.81	12.56	0.74	31.33	124	89	Peak
364.4	18.68	34.33	46	-27.32	14.49	1.81	31.95	110	278	Peak
526.1	20.94	32.53	46	-25.06	17.91	2.14	31.64	116	218	Peak
626.2	23.84	33.75	46	-22.16	19.93	2.31	32.15	112	179	Peak

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

Margin value = Emission level – Limit value

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
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
103.44	25.98	47.39	43.5	-17.52	9.43	1.07	31.91	112	303	Peak
182.01	27.39	47.38	43.5	-16.11	10.6	1.22	31.81	128	138	Peak
204.96	26.17	46.99	43.5	-17.33	9.56	1.31	31.69	137	157	Peak
307	20.72	37.86	46	-25.28	13.13	1.65	31.92	129	14	Peak
412	20.48	34.97	46	-25.52	15.58	1.93	32	137	337	Peak
553.4	21.62	32.88	46	-24.38	18.55	2.18	31.99	112	223	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
31.62	30.72	48.94	40	-9.28	12.3	0.59	31.11	126	253	Peak
41.34	31.4	48.24	40	-8.6	13.56	0.65	31.05	138	351	Peak
55.92	28.81	47.04	40	-11.19	12.35	0.76	31.34	111	193	Peak
310.5	18.03	35.12	46	-27.97	13.2	1.66	31.95	121	30	Peak
419.7	18.94	33.32	46	-27.06	15.73	1.94	32.05	110	243	Peak
526.1	20.95	32.54	46	-25.05	17.91	2.14	31.64	123	194	Peak

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

Margin value = Emission level – Limit value

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
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
103.17	26.32	47.83	43.5	-17.18	9.34	1.07	31.92	125	326	Peak
181.74	27.53	47.46	43.5	-15.97	10.67	1.22	31.82	128	251	Peak
204.69	25.99	46.81	43.5	-17.51	9.56	1.31	31.69	111	183	Peak
312.6	22.69	39.72	46	-23.31	13.24	1.67	31.94	131	85	Peak
409.9	20.52	35.04	46	-25.48	15.54	1.93	31.99	135	340	Peak
519.1	21.38	33.08	46	-24.62	17.75	2.12	31.57	110	351	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
31.62	30.52	48.74	40	-9.48	12.3	0.59	31.11	137	58	Peak
40.53	31.68	48.5	40	-8.32	13.55	0.65	31.02	106	276	Peak
56.46	28.8	47.03	40	-11.2	12.35	0.76	31.34	101	95	Peak
302.1	17.91	35.13	46	-28.09	13.01	1.64	31.87	118	153	Peak
412.7	18.53	33.01	46	-27.47	15.6	1.93	32.01	121	61	Peak
513.5	22.22	34.06	46	-23.78	17.62	2.12	31.58	138	270	Peak

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

Margin value = Emission level – Limit value

Mode B

ABOVE 1GHz WORST-CASE DATA

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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
5080	45.86	45.69	54	-8.14	31.27	6.17	37.27	182	14	Average
5080	60.09	59.92	74	-13.91	31.27	6.17	37.27	182	14	Peak
5180	91.59	91.36			31.35	6.22	37.34	182	14	Average
5180	101.13	100.9			31.35	6.22	37.34	182	14	Peak
5452	39.27	38.45	54	-14.73	31.56	6.34	37.08	182	14	Average
5452	59.76	58.94	74	-14.24	31.56	6.34	37.08	182	14	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
5144	46.5	46.3	54	-7.5	31.32	6.2	37.32	212	219	Average
5144	60.29	60.09	74	-13.71	31.32	6.2	37.32	212	219	Peak
5180	95.16	94.93			31.35	6.22	37.34	212	219	Average
5180	104.77	104.54			31.35	6.22	37.34	212	219	Peak
5352	40.91	40.32	54	-13.09	31.48	6.29	37.18	212	219	Average
5352	60.17	59.58	74	-13.83	31.48	6.29	37.18	212	219	Peak

REMARKS:

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

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	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
5148	38.27	38.07	54	-15.73	31.32	6.2	37.32	139	339	Average
5148	59.48	59.28	74	-14.52	31.32	6.2	37.32	139	339	Peak
5320	91.49	90.94			31.45	6.29	37.19	139	339	Average
5320	101.82	101.27			31.45	6.29	37.19	139	339	Peak
5418	39.27	38.6	54	-14.73	31.53	6.32	37.18	139	339	Average
5418	60.31	59.64	74	-13.69	31.53	6.32	37.18	139	339	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
5062	38.16	37.99	54	-15.84	31.25	6.17	37.25	191	183	Average
5062	60.14	59.97	74	-13.86	31.25	6.17	37.25	191	183	Peak
5320	95.05	94.5			31.45	6.29	37.19	191	183	Average
5320	104.47	103.92			31.45	6.29	37.19	191	183	Peak
5358	40.71	40.1	54	-13.29	31.48	6.31	37.18	191	183	Average
5358	64.78	64.17	74	-9.22	31.48	6.31	37.18	191	183	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 140	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	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
5364	38.55	37.93	54	-15.45	31.49	6.31	37.18	194	172	Average
5364	61.14	60.52	74	-12.86	31.49	6.31	37.18	194	172	Peak
5470	60	59.17	68.2	-8.2	31.57	6.34	37.08	194	172	Peak
5700	95.12	93.93			31.9	6.69	37.4	194	172	Average
5700	104.6	103.41			31.9	6.69	37.4	194	172	Peak
5725	64.15	62.87	68.2	-4.05	31.96	6.75	37.43	194	172	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
5456	38.53	37.71	54	-15.47	31.56	6.34	37.08	203	317	Average
5456	60.94	60.12	74	-13.06	31.56	6.34	37.08	203	317	Peak
5470	59.02	58.19	68.2	-9.18	31.57	6.34	37.08	203	317	Peak
5700	91.44	90.25			31.9	6.69	37.4	203	317	Average
5700	101.8	100.61			31.9	6.69	37.4	203	317	Peak
5725	61.45	60.17	68.2	-6.75	31.96	6.75	37.43	203	317	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

802.11ac (80MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 155	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	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
5714	63.29	62.1	68.2	-4.91	31.93	6.69	37.43	162	175	Peak
5725	64.85	63.57	78.2	-13.35	31.96	6.75	37.43	162	175	Peak
5775	88.55	87.19			32.04	6.82	37.5	162	175	Average
5775	99.12	97.76			32.04	6.82	37.5	162	175	Peak
5850	60.39	58.87	78.2	-17.81	32.15	6.88	37.51	162	175	Peak
5861	59.07	57.44	68.2	-9.13	32.18	6.95	37.5	162	175	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	62.62	61.43	68.2	-5.58	31.93	6.69	37.43	177	11	Peak
5725	61.65	60.37	78.2	-16.55	31.96	6.75	37.43	177	11	Peak
5775	86.02	84.66			32.04	6.82	37.5	177	11	Average
5775	95.91	94.55			32.04	6.82	37.5	177	11	Peak
5850	40.54	39.02	78.2	-37.66	32.15	6.88	37.51	177	11	Average
5861	59.98	58.35	68.2	-8.22	32.18	6.95	37.5	177	11	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5775MHz: Fundamental frequency.
3. 5714MHz, 5725MHz, 5850MHz & 5861MHz: Out of restricted band

BELOW 1GHz WORST-CASE DATA:

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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
106.95	21.56	42.64	43.5	-21.94	9.71	1.09	31.88	111	335	Peak
157.71	25.91	43.88	43.5	-17.59	12.73	1.13	31.83	137	23	Peak
183.9	26.41	46.49	43.5	-17.09	10.46	1.23	31.77	131	344	Peak
523.3	19.62	31.25	46	-26.38	17.86	2.13	31.62	100	73	Peak
613.6	21.28	31.34	46	-24.72	19.77	2.29	32.12	102	143	Peak
691.3	22.65	31.33	46	-23.35	20.71	2.44	31.83	112	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
32.7	29.64	47.67	40	-10.36	12.47	0.59	31.09	137	29	Peak
41.34	32.42	49.26	40	-7.58	13.56	0.65	31.05	112	104	Peak
53.22	29.51	47.45	40	-10.49	12.66	0.73	31.33	102	274	Peak
645.1	21.6	31.16	46	-24.4	20.15	2.35	32.06	105	155	Peak
712.3	22.37	30.64	46	-23.63	20.98	2.47	31.72	104	312	Peak
813.1	24.93	31.41	46	-21.07	22.39	2.63	31.5	137	287	Peak

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

Margin value = Emission level – Limit value

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
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
101.82	26.24	47.87	43.5	-17.26	9.25	1.06	31.94	120	78	Peak
142.59	19.84	37.87	43.5	-23.66	12.44	1.16	31.63	134	22	Peak
175.26	27.88	47.32	43.5	-15.62	11.19	1.16	31.79	139	275	Peak
576.5	20.05	30.87	46	-25.95	19.06	2.22	32.1	128	249	Peak
695.5	25.34	33.94	46	-20.66	20.76	2.45	31.81	131	149	Peak
769	24.21	31.17	46	-21.79	21.79	2.56	31.31	102	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
42.15	30.77	47.61	40	-9.23	13.58	0.66	31.08	121	8	Peak
55.11	29.63	47.76	40	-10.37	12.45	0.75	31.33	129	353	Peak
66.99	27.64	47.35	40	-12.36	11.12	0.85	31.68	129	304	Peak
657.7	23.03	32.32	46	-22.97	20.3	2.37	31.96	135	297	Peak
710.2	23.76	32.07	46	-22.24	20.96	2.47	31.74	138	361	Peak
777.4	25.24	32.14	46	-20.76	21.92	2.58	31.4	103	281	Peak

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

Margin value = Emission level – Limit value

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
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
108.3	22.87	43.72	43.5	-20.63	9.9	1.1	31.85	131	63	Peak
150.69	21.15	38.93	43.5	-22.35	12.71	1.12	31.61	101	192	Peak
184.98	25.85	45.99	43.5	-17.65	10.39	1.23	31.76	129	236	Peak
608.7	21.33	31.43	46	-24.67	19.72	2.28	32.1	136	321	Peak
693.4	22.41	31.05	46	-23.59	20.74	2.44	31.82	109	138	Peak
758.5	24.18	31.41	46	-21.82	21.64	2.55	31.42	136	257	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
40.26	30.34	47.16	40	-9.66	13.55	0.65	31.02	125	144	Peak
55.11	28.46	46.59	40	-11.54	12.45	0.75	31.33	126	214	Peak
68.61	27.93	47.96	40	-12.07	10.89	0.85	31.77	102	26	Peak
624.8	21.26	31.22	46	-24.74	19.9	2.3	32.16	111	69	Peak
741	25.31	32.86	46	-20.69	21.39	2.52	31.46	135	204	Peak
789.3	25.22	31.94	46	-20.78	22.08	2.6	31.4	127	154	Peak

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

Margin value = Emission level – Limit value

802.11ac (80MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 155	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
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
101.01	24.42	46.17	43.5	-19.08	9.15	1.05	31.95	125	82	Peak
183.36	26.45	46.48	43.5	-17.05	10.53	1.23	31.79	105	237	Peak
197.67	25.39	46.36	43.5	-18.11	9.5	1.28	31.75	104	245	Peak
667.5	22.32	31.36	46	-23.68	20.42	2.39	31.85	105	207	Peak
715.1	23.53	31.72	46	-22.47	21.03	2.48	31.7	107	29	Peak
756.4	24.18	31.43	46	-21.82	21.61	2.54	31.4	120	214	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
32.43	29.78	47.81	40	-10.22	12.47	0.59	31.09	108	41	Peak
57	28.24	46.57	40	-11.76	12.25	0.77	31.35	104	42	Peak
66.18	26.36	45.91	40	-13.64	11.24	0.85	31.64	137	49	Peak
641.6	21.33	30.95	46	-24.67	20.12	2.34	32.08	121	2	Peak
734.7	23.34	31.08	46	-22.66	21.3	2.51	31.55	103	28	Peak
783	24.53	31.38	46	-21.47	21.98	2.59	31.42	105	39	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	Apr. 27, 2015	Apr. 26, 2016
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 26, 2014	Dec. 25, 2015
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 30, 2014	Dec. 29, 2015
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.

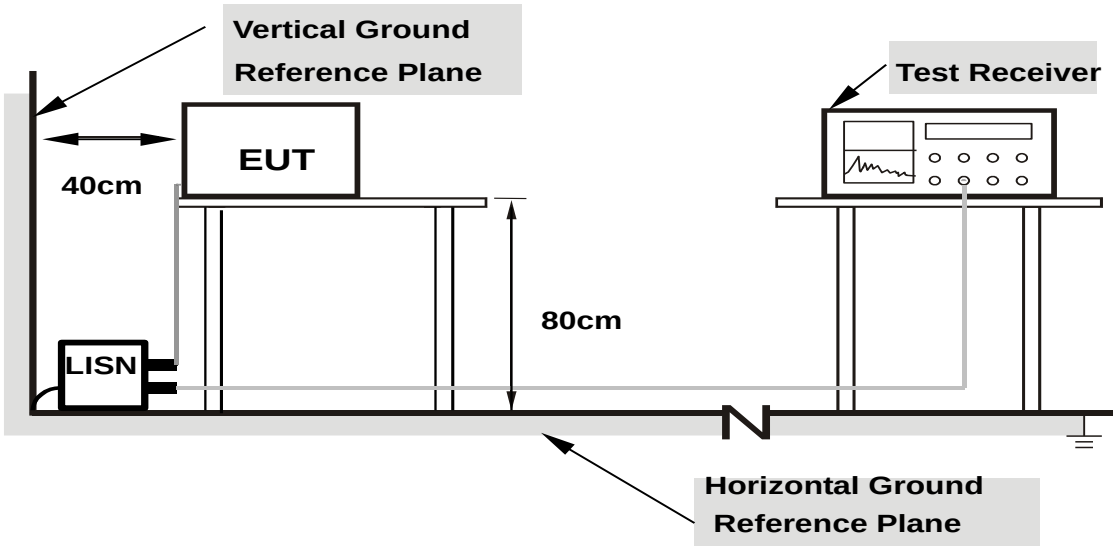
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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：

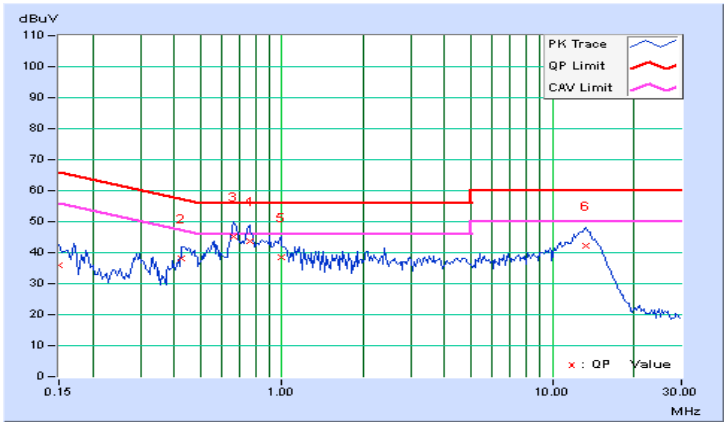
Mode A

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	0.15000	0.16	35.83	21.56	35.99	21.72	66.00	56.00	-30.01	-34.28
2	0.42344	0.18	37.93	30.27	38.11	30.45	57.38	47.38	-19.27	-16.93
3	0.66563	0.20	45.00	35.84	45.20	36.04	56.00	46.00	-10.80	-9.96
4	0.75938	0.21	43.66	35.83	43.87	36.04	56.00	46.00	-12.13	-9.96
5	0.99766	0.23	38.13	28.86	38.36	29.09	56.00	46.00	-17.64	-16.91
6	13.34375	0.50	41.69	32.69	42.19	33.19	60.00	50.00	-17.81	-16.81

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

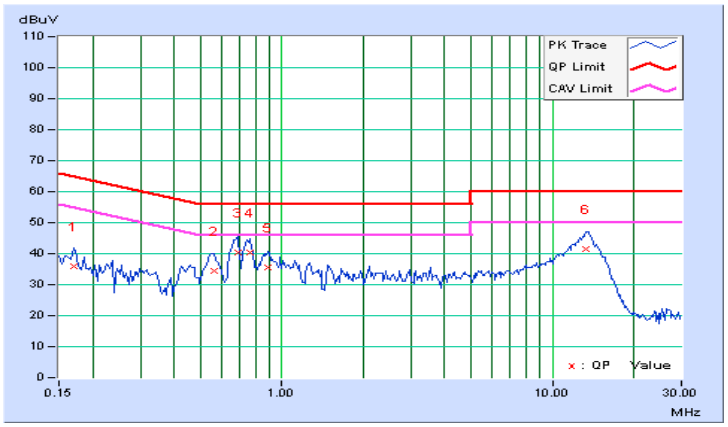


PHASE	Line 2	6dB BANDWIDTH	9kHz

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	0.16953	0.18	35.68	19.81	35.86	19.99	64.98	54.98	-29.13	-35.00
2	0.56406	0.21	34.15	26.27	34.36	26.48	56.00	46.00	-21.64	-19.52
3	0.68516	0.22	40.28	32.45	40.50	32.67	56.00	46.00	-15.50	-13.33
4	0.75938	0.22	40.20	32.45	40.42	32.67	56.00	46.00	-15.58	-13.33
5	0.89219	0.23	35.36	27.08	35.59	27.31	56.00	46.00	-20.41	-18.69
6	13.33594	0.61	40.82	31.38	41.43	31.99	60.00	50.00	-18.57	-18.01

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



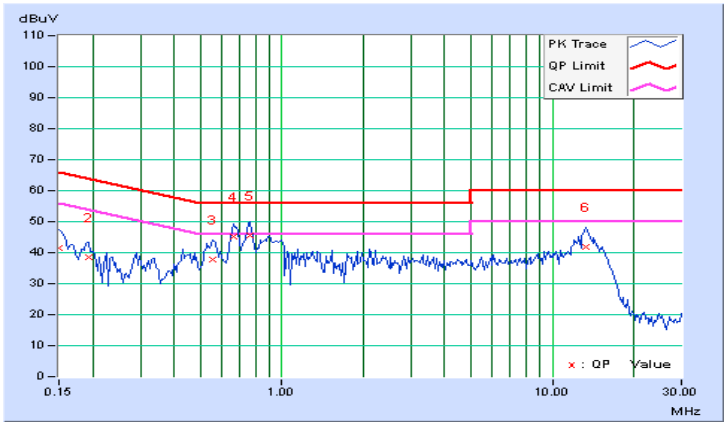
Mode B

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	0.15000	0.16	41.40	26.21	41.56	26.37	66.00	56.00	-24.44	-29.63
2	0.19297	0.17	38.28	24.43	38.45	24.60	63.91	53.91	-25.46	-29.31
3	0.55234	0.19	37.75	29.35	37.94	29.54	56.00	46.00	-18.06	-16.46
4	**0.66563**	**0.20**	**44.90**	**37.93**	**45.10**	**38.13**	**56.00**	**46.00**	**-10.90**	**-7.87**
5	0.75938	0.21	45.33	37.25	45.54	37.46	56.00	46.00	-10.46	-8.54
6	13.32813	0.50	41.36	31.50	41.86	32.00	60.00	50.00	-18.14	-18.00

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

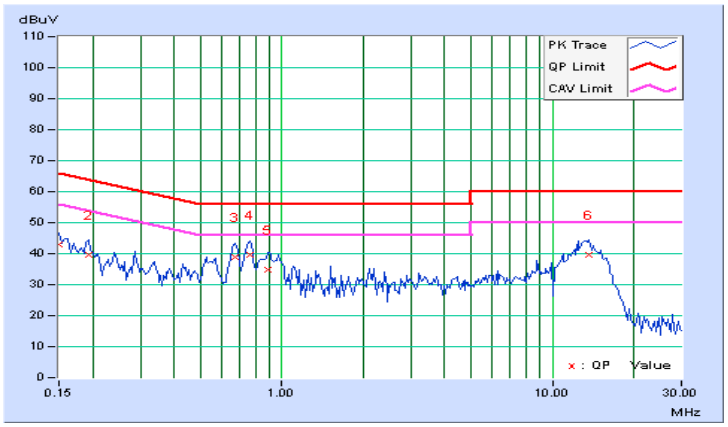


PHASE	Line 2	6dB BANDWIDTH	9kHz

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	0.17	42.62	26.21	42.79	26.38	66.00	56.00	-23.21	-29.62
2	0.19297	0.18	39.37	24.41	39.55	24.59	63.91	53.91	-24.36	-29.32
3	0.67344	0.22	38.65	31.57	38.87	31.79	56.00	46.00	-17.13	-14.21
4	0.75938	0.22	39.40	31.41	39.62	31.63	56.00	46.00	-16.38	-14.37
5	0.89219	0.23	34.42	26.21	34.65	26.44	56.00	46.00	-21.35	-19.56
6	13.56250	0.62	39.00	29.86	39.62	30.48	60.00	50.00	-20.38	-19.52

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

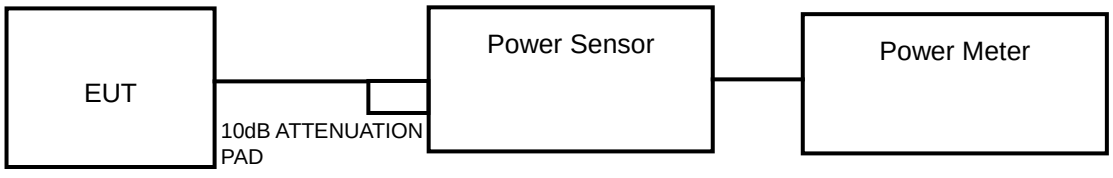
4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

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)

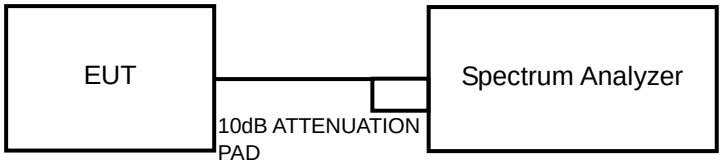
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

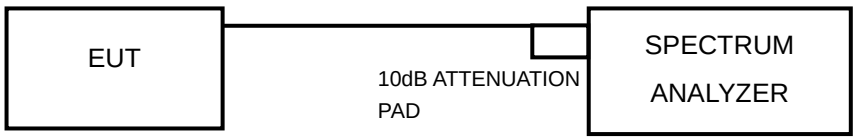
FOR POWER OUTPUT MEASUREMENT



or



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) >

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

<802.11ac (80MHz)>

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

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	13.55	11.32	24	PASS
44	5220	13.00	11.14	24	PASS
48	5240	13.24	11.22	24	PASS
52	5260	13.58	11.33	24	PASS
60	5300	13.68	11.36	24	PASS
64	5320	13.37	11.26	24	PASS
100	5500	12.65	11.02	24	PASS
116	5580	13.30	11.24	24	PASS
140	5700	12.47	10.96	24	PASS
149	5745	12.62	11.01	30	PASS
157	5785	12.65	11.02	30	PASS
165	5825	11.80	10.72	30	PASS

NOTE:

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

1. 11dBm + 10log(21.82) = 24.39 dBm > 24dBm.
2. 11dBm + 10log(21.79) = 24.38 dBm > 24dBm.
3. 11dBm + 10log(21.84) = 24.39 dBm > 24dBm.
4. 11dBm + 10log(21.77) = 24.38 dBm > 24dBm.
5. 11dBm + 10log(21.81) = 24.39 dBm > 24dBm.
6. 11dBm + 10log(21.86) = 24.40 dBm > 24dBm.

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	13.87	11.42	24	PASS
44	5220	13.65	11.35	24	PASS
48	5240	13.21	11.21	24	PASS
52	5260	13.90	11.43	24	PASS
60	5300	14.03	11.47	24	PASS
64	5320	13.49	11.30	24	PASS
100	5500	11.80	10.72	24	PASS
116	5580	12.16	10.85	24	PASS
140	5700	12.11	10.83	24	PASS
149	5745	12.13	10.84	30	PASS
157	5785	12.27	10.89	30	PASS
165	5825	11.48	10.60	30	PASS

NOTE:

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

1. 11dBm + 10log(22.58) = 24.54 dBm > 24dBm.
2. 11dBm + 10log(21.78) = 24.38 dBm > 24dBm.
3. 11dBm + 10log(26.77) = 25.28 dBm > 24dBm.
4. 11dBm + 10log(23.66) = 24.74 dBm > 24dBm.
5. 11dBm + 10log(22.24) = 24.47 dBm > 24dBm.
6. 11dBm + 10log(25.33) = 25.04 dBm > 24dBm.

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	8.81	9.45	24	PASS
58	5290	10.91	10.38	24	PASS
106	5530	10.52	10.22	24	PASS
122	5610	9.75	9.89	24	PASS
155	5775	8.67	9.38	30	PASS

NOTE:

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

1. 11dBm + 10log(86.59) = 30.37 dBm > 24dBm.
2. 11dBm + 10log(82.45) = 30.16 dBm > 24dBm.
3. 11dBm + 10log(82.52) = 30.17 dBm > 24dBm.

26dB BANDWIDTH

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	21.82	PASS
60	5300	21.79	PASS
64	5320	21.84	PASS
100	5500	21.77	PASS
116	5580	21.81	PASS
140	5700	21.86	PASS

802.11n (20MHz)

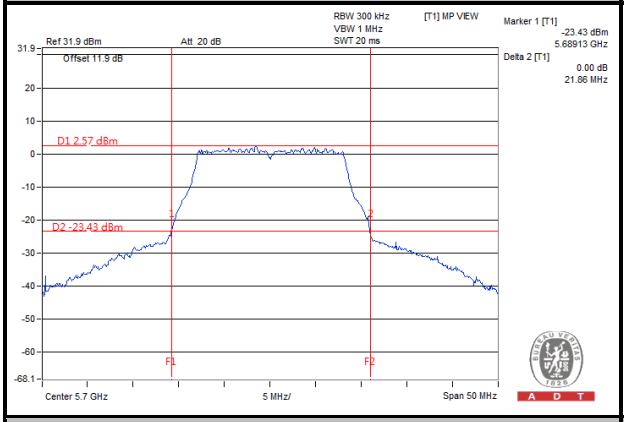
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	22.58	PASS
60	5300	21.78	PASS
64	5320	26.77	PASS
100	5500	23.66	PASS
116	5580	22.24	PASS
140	5700	25.33	PASS

802.11ac (80MHz)

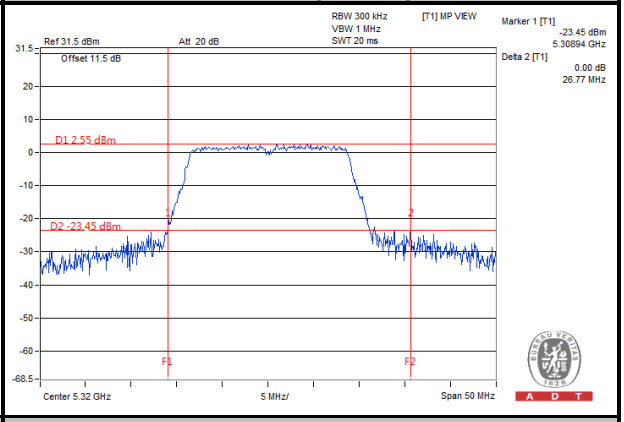
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
58	5290	86.59	PASS
106	5530	82.45	PASS
122	5610	82.52	PASS

SPECTRUM PLOT OF WORST VALUE

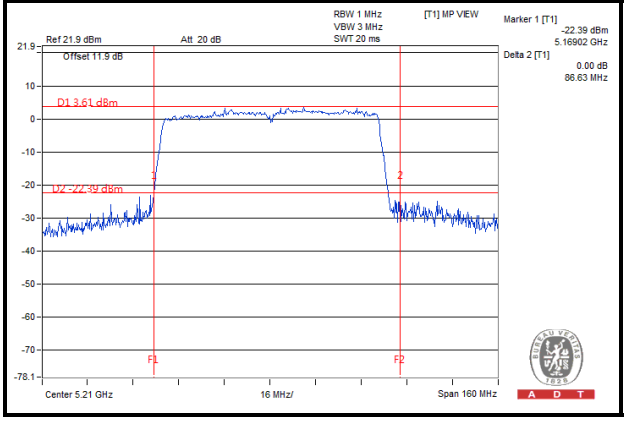
802.11a



802.11n (20MHz)



802.11ac (80MHz)

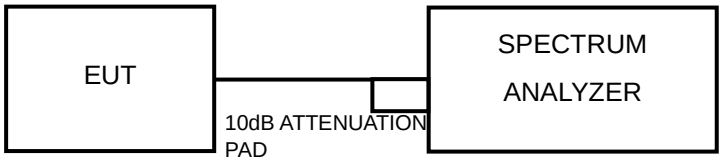


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

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

Using method SA-2

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 30 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Record the max value and add 10 log (1/duty cycle)

Using method SA-2 alternative

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 30 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = 4 second.
5) Perform a single sweep.

6) Record the max value and add 10 log (1/duty cycle)

For U-NII-3 band:

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 500 kHz, Set VBW ≥ 3 RBW, Detector = RMS
3) Sweep time = auto, trigger set to “free run”.
4) Trace average at least 100 traces in power averaging mode.
5) Record the max value and add 10 log (1/duty cycle)

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.

4.4.7 TEST RESULTS

For U-NII-1, U-NII-2A, U-NII-2C Band

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	-1.53	0.88	-0.65	11	PASS
44	5220	-1.24	0.88	-0.36	11	PASS
48	5240	-1.34	0.88	-0.46	11	PASS
52	5260	-0.89	0.88	-0.01	11	PASS
60	5300	-0.78	0.88	0.10	11	PASS
64	5320	-0.62	0.88	0.26	11	PASS
100	5500	-0.62	0.88	0.26	11	PASS
116	5580	-0.99	0.88	-0.11	11	PASS
140	5700	-1.61	0.88	-0.73	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	-2.32	0.94	-1.38	11	PASS
44	5220	-2.18	0.94	-1.24	11	PASS
48	5240	-2.10	0.94	-1.16	11	PASS
52	5260	-1.81	0.94	-0.87	11	PASS
60	5300	-1.47	0.94	-0.53	11	PASS
64	5320	-1.42	0.94	-0.48	11	PASS
100	5500	-3.10	0.94	-2.16	11	PASS
116	5580	-3.46	0.94	-2.52	11	PASS
140	5700	-4.02	0.94	-3.08	11	PASS

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

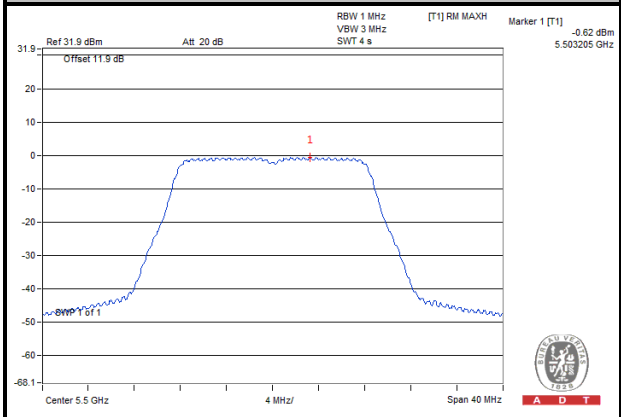
802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-9.55	3.12	-6.43	11	PASS
58	5290	-8.41	3.12	-5.29	11	PASS
106	5530	-8.97	3.12	-6.85	11	PASS
122	5610	-9.22	3.12	-6.10	11	PASS

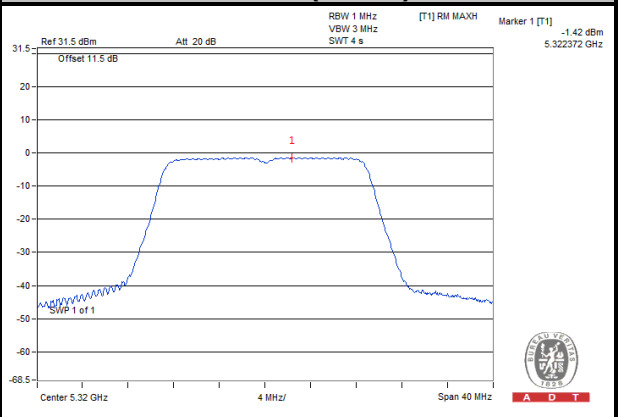
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

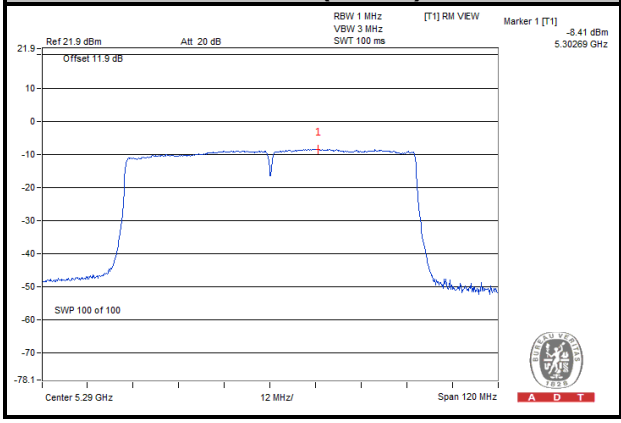
802.11a



802.11n (20MHz)



802.11ac (80MHz)



For U-NII-3 Band

802.11a

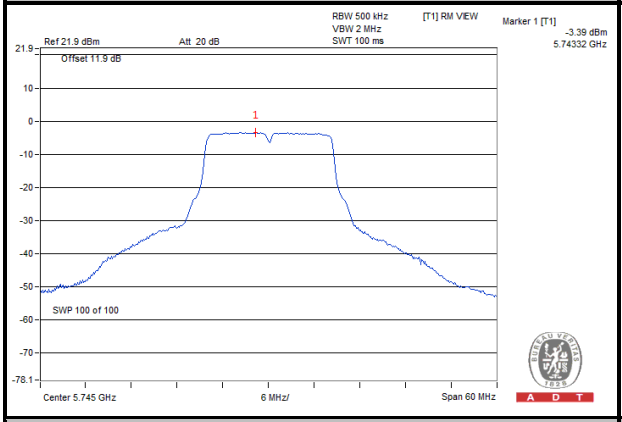
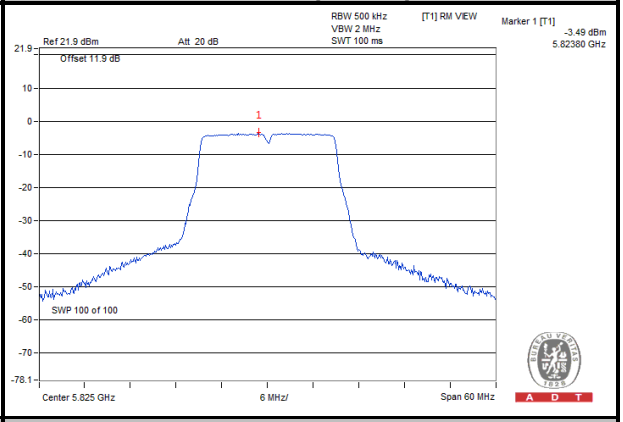
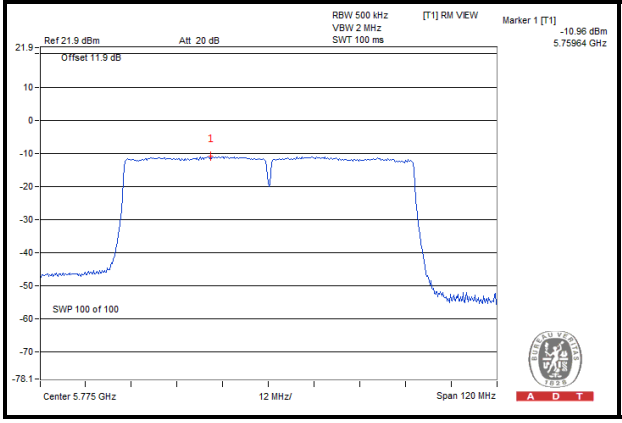
CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	LIMIT (dBm/500kHz)	PASS/FAIL
149	5745	-3.39	0.88	-2.51	30	PASS
157	5785	-3.82	0.88	-2.40	30	PASS
165	5825	-3.64	0.88	-2.76	30	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	LIMIT (dBm/500kHz)	PASS/FAIL
149	5745	-3.99	0.94	-3.05	30	PASS
157	5785	-4.15	0.94	-3.21	30	PASS
165	5825	-3.49	0.94	-2.55	30	PASS

802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	LIMIT (dBm/500kHz)	PASS/FAIL
155	5775	-10.96	3.12	-7.84	30	PASS

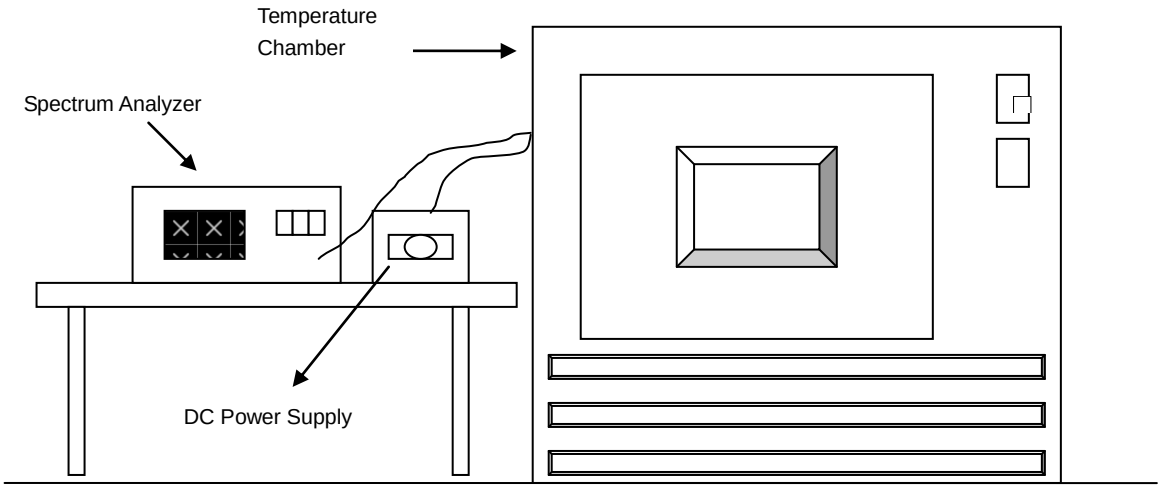
SPECTRUM PLOT OF WORST VALUE	
802.11a	**802.11n (20MHz)**
	
802.11ac (80MHz)	
	

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)
55	3.9	5320.015436	2.901	5320.015286	2.873	5320.015947	2.998	5320.015329	2.881
50	3.9	5320.015575	2.928	5320.015651	2.942	5320.015887	2.986	5320.016166	3.039
40	3.9	5320.016147	3.035	5320.016221	3.049	5320.016219	3.049	5320.016034	3.014
30	3.9	5320.016946	3.185	5320.017373	3.266	5320.017480	3.286	5320.017168	3.227
20	3.9	5320.018114	3.405	5320.018470	3.472	5320.017897	3.364	5320.018217	3.424
10	3.9	5320.019778	3.718	5320.020020	3.763	5320.020148	3.787	5320.019738	3.710
0	3.9	5320.018110	3.404	5320.018155	3.413	5320.018208	3.423	5320.018347	3.449
-10	3.9	5320.016628	3.125	5320.016353	3.074	5320.016866	3.170	5320.017016	3.199
-20	3.9	5320.016436	3.089	5320.016435	3.089	5320.016719	3.143	5320.016397	3.082
-30	3.9	5320.015346	2.885	5320.015243	2.865	5320.015564	2.926	5320.015599	2.932

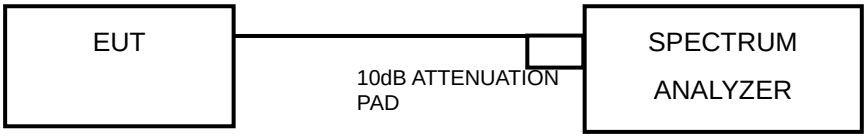
FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.6	5320.018066	3.396	5320.018165	3.415	5320.018196	3.420	5320.018027	3.389
	3.9	5320.018114	3.405	5320.018470	3.472	5320.017897	3.364	5320.018217	3.424
	4.40	5320.018863	3.546	5320.018764	3.527	5320.019164	3.602	5320.019467	3.659

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

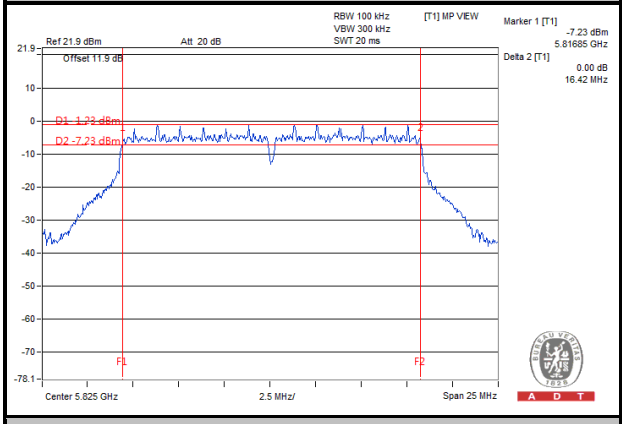
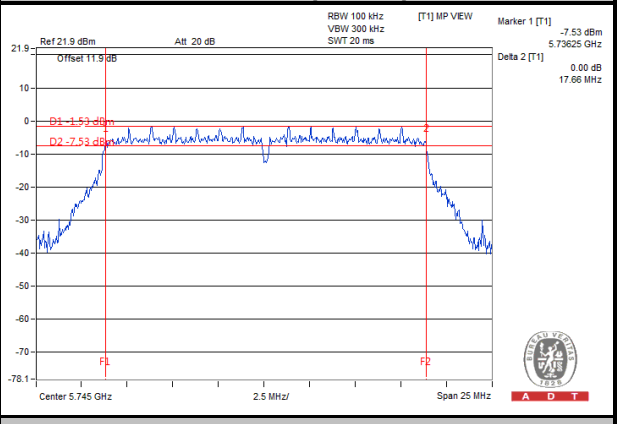
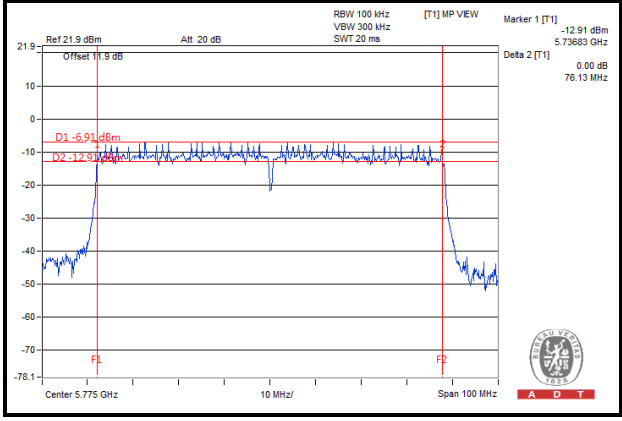
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.41	0.5	PASS
157	5785	16.41	0.5	PASS
165	5825	16.42	0.5	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	17.66	0.5	PASS
157	5785	17.64	0.5	PASS
165	5825	17.66	0.5	PASS

802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
155	5775	76.13	0.5	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11a	**802.11n (20MHz)**
	
802.11ac (80MHz)	
	

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/Telecom Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety 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---