

FCC TEST REPORT (15.407)

REPORT NO.: RF150513C14-1
MODEL NO.: e355
FCC ID: B32E355
RECEIVED: May 13, 2015
TESTED: May 10, 2015 ~ May 27, 2015
ISSUED: Jun. 18, 2015

APPLICANT: Verifone, Inc.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF150513C14-1	Original release	Jun. 18, 2015

1. CERTIFICATION

PRODUCT: Point of Sale Terminal

MODEL NO.: e355

BRAND: Verifone

APPLICANT: Verifone, Inc.

TESTED: May 10, 2015 ~ May 27, 2015

TEST SAMPLE: Identical Prototype

STANDARDS: FCC Part 15, Subpart E (Section 15.407)

ANSI C63.10-2013

The above equipment (model: e355) 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



Rona Chen / Specialist

, **DATE :** Jun. 18, 2015

APPROVED BY



Kay Wu / Supervisor

, **DATE :** Jun. 18, 2015

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 -15.73dB at 0.15000MHz.
15.407(b/1/2/3)(b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.09dB at 5725MHz.
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	Point of Sale Terminal
MODEL NO.	e355
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz, 5745 ~ 5825MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 11 for 802.11a, 802.11n (20MHz) 5 for 802.11n (40MHz) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
OUTPUT POWER	19.72mW for 5180 ~ 5240MHz 19.91mW for 5260 ~ 5320MHz 19.50mW for 5500 ~ 5700MHz 17.38mW for 5745 ~ 5825MHz
ANTENNA TYPE	PCB antenna with 2.97dBi gain (5180 ~ 5240MHz) PCB antenna with 2.90dBi gain (5260 ~ 5320MHz) PCB antenna with 2.73dBi gain (5500 ~ 5700MHz) PCB antenna with 2.57dBi 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	Verifone	MU12AF050200-A1	I/P: 100-240Vac, 50/60Hz, 400mA O/P: 5Vdc, 2A 1.8m Non-shielded cable with core
Battery	Verifone	BPK087-500	3.8Vdc, 1960mAh

2. Physically, the EUT provides 1 completed transmitter and 1 receiver.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX

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

3.2 DESCRIPTION OF TEST MODES

WLAN 5180 ~ 5240MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

WLAN 5500 ~ 5700MHz

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		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510MHz	126	5630MHz
110	5550MHz	134	5670MHz
118	5590MHz		

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		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane for Band 3 & Y-plane for Band 1, 2, 4.**

RADIATED EMISSION TEST (ABOVE 1GHz):

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

RADIATED EMISSION TEST (BELOW 1GHz):

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (40MHz)	5180-5240	38 to 46	46	OFDM	BPSK	MCS0
-	802.11n (40MHz)	5260-5320	54 to 62	62	OFDM	BPSK	MCS0
-	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	MCS0
-	802.11a	5745-5825	149 to 165	149	OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	MCS0

BANDEDGE MEASUREMENT:

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

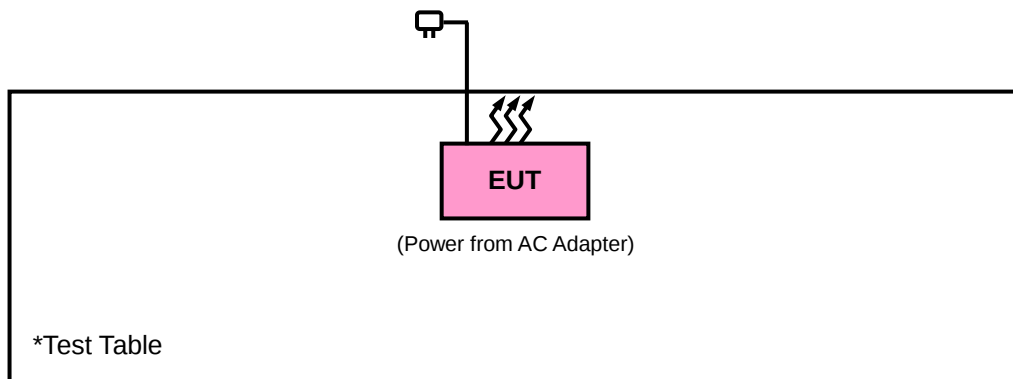
TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Gavin Wu
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
PLC	25deg. C, 65%RH	120Vac, 60Hz	Toby Tian
APCM	25deg. C, 65%RH	120Vac, 60Hz	Taylor Liu

3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



3.4 DUTY CYCLE TEST SIGNAL

MODULATION TYPE: BPSK

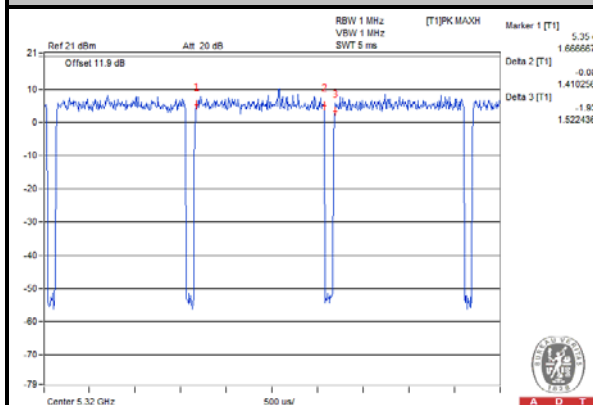
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $1.410/1.522 = 0.926$, Duty factor = $10 * \log(1/0.926) = 0.33$

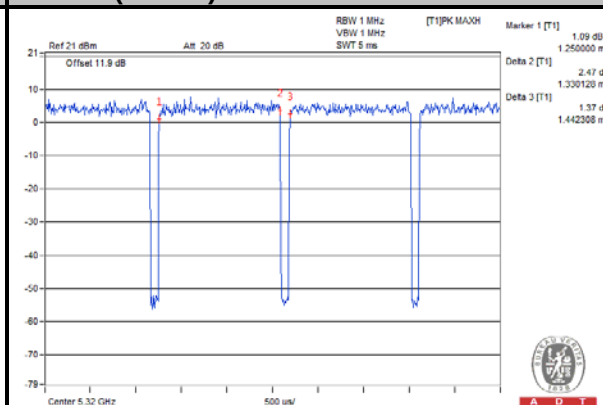
802.11n (20MHz): Duty cycle = $1.330/1.442 = 0.922$, Duty factor = $10 * \log(1/0.922) = 0.35$

802.11n (40MHz): Duty cycle = $0.938/1.066 = 0.880$, Duty factor = $10 * \log(1/0.880) = 0.56$

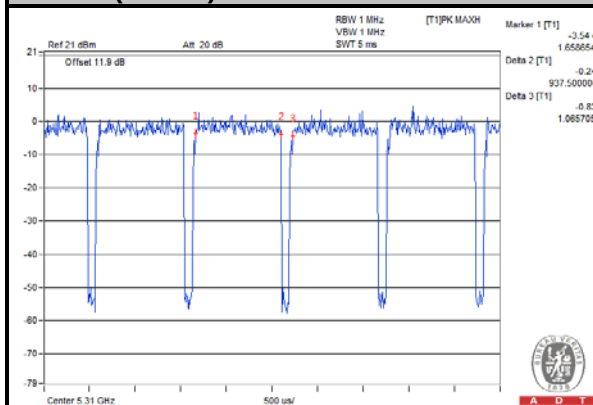
802.11a



802.11n (20MHz)



802.11n (40MHz)



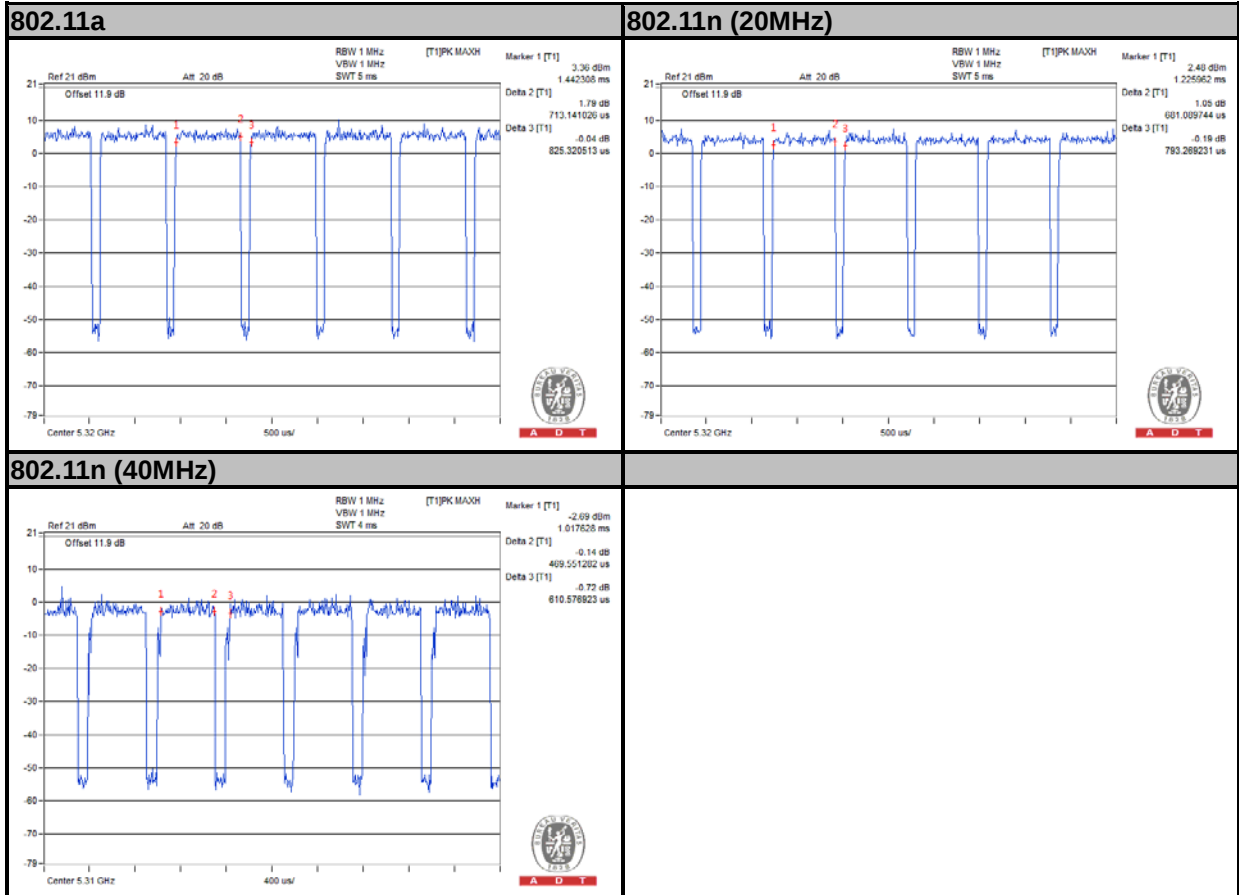
MODULATION TYPE: QPSK

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

802.11a: Duty cycle = $0.713/0.825 = 0.864$, Duty factor = $10 * \log(1/0.864) = 0.63$

802.11n (20MHz): Duty cycle = $0.681/0.793 = 0.859$, Duty factor = $10 * \log(1/0.859) = 0.66$

802.11n (40MHz): Duty cycle = $0.470/0.611 = 0.769$, Duty factor = $10 * \log(1/0.769) = 1.14$



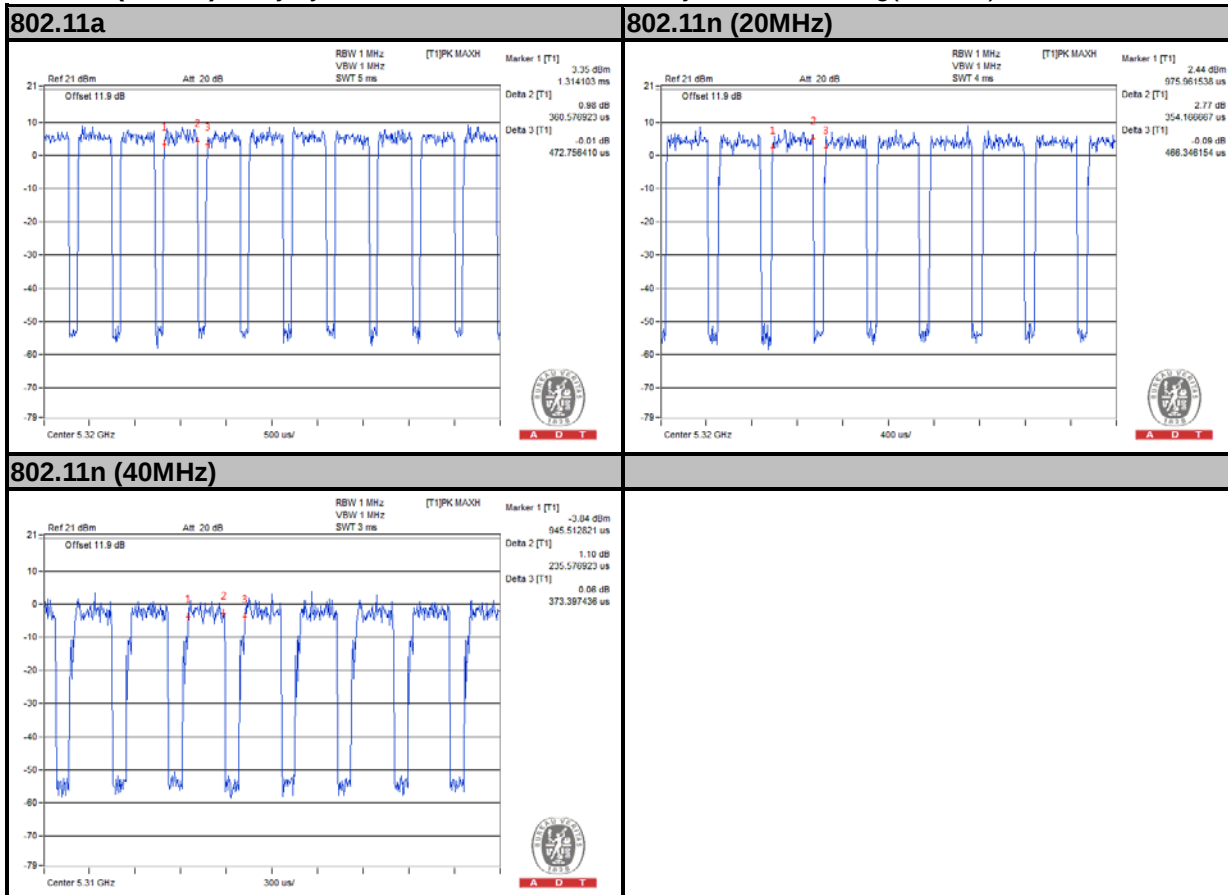
MODULATION TYPE: 16QAM

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

802.11a: Duty cycle = $0.361/0.473 = 0.763$, Duty factor = $10 * \log(1/0.763) = 1.18$

802.11n (20MHz): Duty cycle = $0.354/0.466 = 0.759$, Duty factor = $10 * \log(1/0.759) = 1.20$

802.11n (40MHz): Duty cycle = $0.236/0.373 = 0.631$, Duty factor = $10 * \log(1/0.631) = 2.00$



MODULATION TYPE: 64QAM

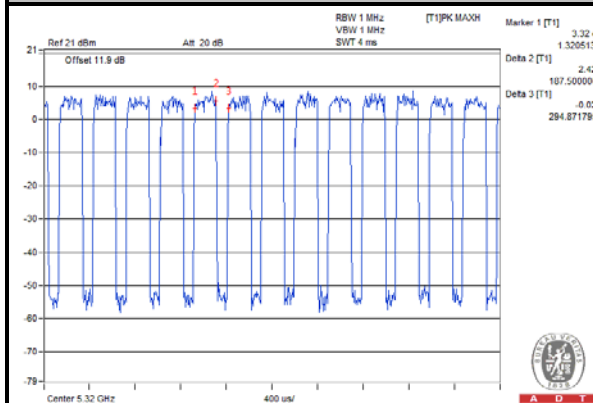
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $0.188/0.295 = 0.636$, Duty factor = $10 * \log(1/0.636) = 1.97$

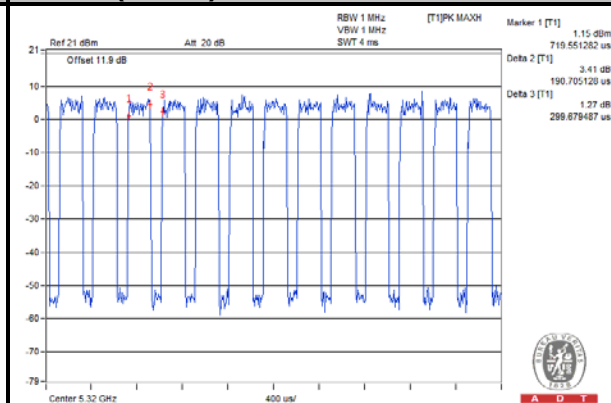
802.11n (20MHz): Duty cycle = $0.191/0.300 = 0.636$, Duty factor = $10 * \log(1/0.636) = 1.96$

802.11n (40MHz): Duty cycle = $0.120/0.255 = 0.472$, Duty factor = $10 * \log(1/0.472) = 3.26$

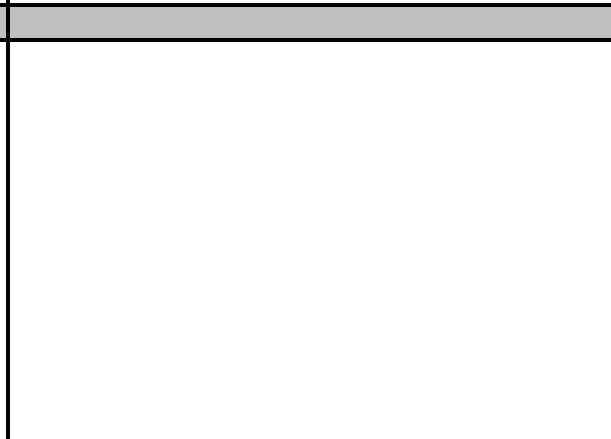
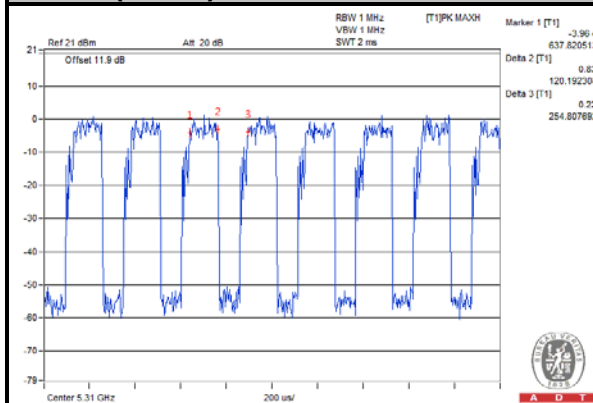
802.11a



802.11n (20MHz)



802.11n (40MHz)





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3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)

789033 D02 General UNII Test Procedures New Rules v01

ANSI C63.10-2013

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

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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:

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

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver Agilent	N9038A	MY51210203	Jan.21, 2015	Jan.21, 2016
Spectrum Analyzer Agilent	N9010A	MY52220314	Sep.03, 2014	Sep.02, 2015
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 Coaxial Cable Worken	8D-FB	Cable-Ch10-01	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. 18, 2013	Apr. 17, 2015
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:

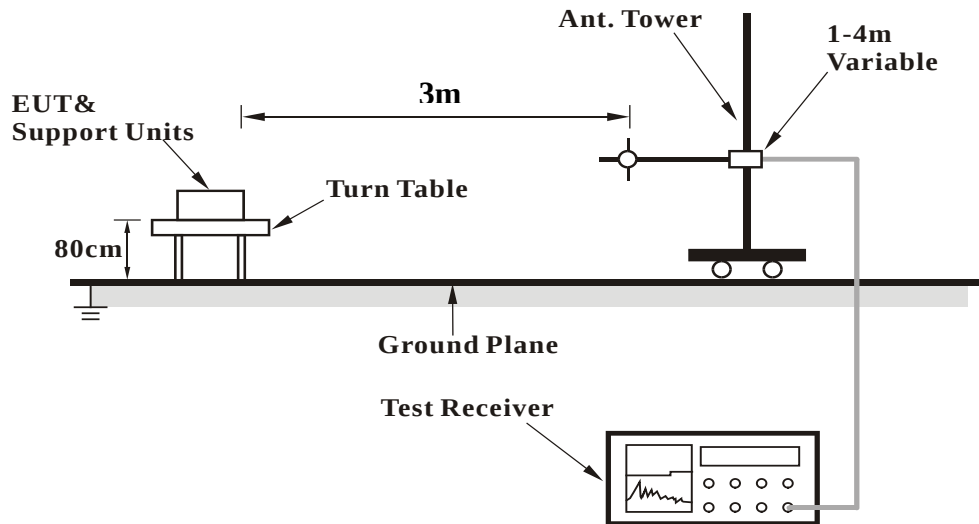
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

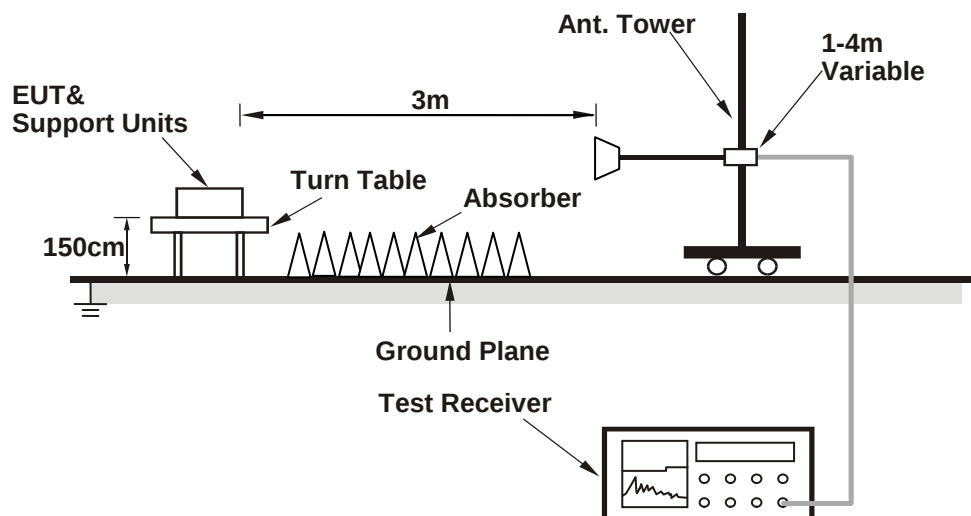
No deviation.

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

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

4.1.8 TEST RESULTS

ABOVE 1GHz 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	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5138	42.58	42.37	54	-11.42	31.31	6.2	37.3	207	10	Average
5138	60.87	60.66	74	-13.13	31.31	6.2	37.3	207	10	Peak
5180	94.06	93.83			31.35	6.22	37.34	207	10	Average
5180	103.27	103.04			31.35	6.22	37.34	207	10	Peak
5410	38.92	38.26	54	-15.08	31.52	6.32	37.18	207	10	Average
5410	60.01	59.35	74	-13.99	31.52	6.32	37.18	207	10	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	45.19	44.99	54	-8.81	31.32	6.2	37.32	104	113	Average
5144	62.61	62.41	74	-11.39	31.32	6.2	37.32	104	113	Peak
5180	96.81	96.58			31.35	6.22	37.34	104	113	Average
5180	105.57	105.34			31.35	6.22	37.34	104	113	Peak
5354	38.62	38.03	54	-15.38	31.48	6.29	37.18	104	113	Average
5354	59.51	58.92	74	-14.49	31.48	6.29	37.18	104	113	Peak

REMARKS:

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

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

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
5016	38.39	38.26	54	-15.61	31.21	6.15	37.23	209	15	Average
5016	59.97	59.84	74	-14.03	31.21	6.15	37.23	209	15	Peak
5220	93.89	93.64			31.37	6.24	37.36	209	15	Average
5220	103.14	102.89			31.37	6.24	37.36	209	15	Peak
5420	38.92	38.25	54	-15.08	31.53	6.32	37.18	209	15	Average
5420	59.93	59.26	74	-14.07	31.53	6.32	37.18	209	15	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
5104	39.36	39.17	54	-14.64	31.28	6.19	37.28	103	104	Average
5104	59.93	59.74	74	-14.07	31.28	6.19	37.28	103	104	Peak
5220	96.5	96.25			31.37	6.24	37.36	103	104	Average
5220	105.4	105.15			31.37	6.24	37.36	103	104	Peak
5364	38.54	37.92	54	-15.46	31.49	6.31	37.18	103	104	Average
5364	60.75	60.13	74	-13.25	31.49	6.31	37.18	103	104	Peak

REMARKS:

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

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	38.22	38.02	54	-15.78	31.32	6.2	37.32	217	14	Average
5148	59.35	59.15	74	-14.65	31.32	6.2	37.32	217	14	Peak
5240	94.09	93.77			31.39	6.25	37.32	217	14	Average
5240	103.08	102.76			31.39	6.25	37.32	217	14	Peak
5410	39.19	38.53	54	-14.81	31.52	6.32	37.18	217	14	Average
5410	60.26	59.6	74	-13.74	31.52	6.32	37.18	217	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
5012	38.17	38.06	54	-15.83	31.21	6.13	37.23	102	104	Average
5012	59.43	59.32	74	-14.57	31.21	6.13	37.23	102	104	Peak
5240	96.98	96.66			31.39	6.25	37.32	102	104	Average
5240	105.5	105.18			31.39	6.25	37.32	102	104	Peak
5380	39.08	38.44	54	-14.92	31.51	6.31	37.18	102	104	Average
5380	60.59	59.95	74	-13.41	31.51	6.31	37.18	102	104	Peak

REMARKS:

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

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
5076	38.02	37.85	54	-15.98	31.27	6.17	37.27	183	39	Average
5076	60.01	59.84	74	-13.99	31.27	6.17	37.27	183	39	Peak
5260	93.62	93.23			31.41	6.25	37.27	183	39	Average
5260	102.58	102.19			31.41	6.25	37.27	183	39	Peak
5450	39.19	38.37	54	-14.81	31.56	6.34	37.08	183	39	Average
5450	60.89	60.07	74	-13.11	31.56	6.34	37.08	183	39	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	38.2	38.06	54	-15.8	31.23	6.15	37.24	116	102	Average
5022	60.02	59.88	74	-13.98	31.23	6.15	37.24	116	102	Peak
5260	95.89	95.5			31.41	6.25	37.27	116	102	Average
5260	104.89	104.5			31.41	6.25	37.27	116	102	Peak
5376	39.12	38.5	54	-14.88	31.49	6.31	37.18	116	102	Average
5376	61.35	60.73	74	-12.65	31.49	6.31	37.18	116	102	Peak

REMARKS:

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

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	38.11	37.89	54	-15.89	31.32	6.2	37.3	189	41	Average
5142	59.68	59.46	74	-14.32	31.32	6.2	37.3	189	41	Peak
5300	93.78	93.26			31.44	6.27	37.19	189	41	Average
5300	102.76	102.24			31.44	6.27	37.19	189	41	Peak
5364	41.69	41.07	54	-12.31	31.49	6.31	37.18	189	41	Average
5364	59.99	59.37	74	-14.01	31.49	6.31	37.18	189	41	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
5090	38.21	38.01	54	-15.79	31.28	6.19	37.27	108	90	Average
5090	60.25	60.05	74	-13.75	31.28	6.19	37.27	108	90	Peak
5300	95.76	95.24			31.44	6.27	37.19	108	90	Average
5300	104.66	104.14			31.44	6.27	37.19	108	90	Peak
5440	42.79	42.03	54	-11.21	31.55	6.34	37.13	108	90	Average
5440	61.11	60.35	74	-12.89	31.55	6.34	37.13	108	90	Peak

REMARKS:

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

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
5040	38	37.85	54	-16	31.24	6.15	37.24	185	40	Average
5040	60.22	60.07	74	-13.78	31.24	6.15	37.24	185	40	Peak
5320	94.01	93.46			31.45	6.29	37.19	185	40	Average
5320	102.63	102.08			31.45	6.29	37.19	185	40	Peak
5358	44.5	43.89	54	-9.5	31.48	6.31	37.18	185	40	Average
5358	62.14	61.53	74	-11.86	31.48	6.31	37.18	185	40	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	37.98	37.84	54	-16.02	31.23	6.15	37.24	108	95	Average
5022	59.91	59.77	74	-14.09	31.23	6.15	37.24	108	95	Peak
5320	95.52	94.97			31.45	6.29	37.19	108	95	Average
5320	104.48	103.93			31.45	6.29	37.19	108	95	Peak
5374	45.07	44.45	54	-8.93	31.49	6.31	37.18	108	95	Average
5374	61.32	60.7	74	-12.68	31.49	6.31	37.18	108	95	Peak

REMARKS:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5456	43.13	42.31	54	-10.87	31.56	6.34	37.08	172	354	Average
5456	61.05	60.23	74	-12.95	31.56	6.34	37.08	172	354	Peak
5470	64.5	63.67	68.2	-3.7	31.57	6.34	37.08	172	354	Peak
5500	94.25	93.32			31.6	6.36	37.03	172	354	Average
5500	104.34	103.41			31.6	6.36	37.03	172	354	Peak
5725	60.08	58.8	68.2	-8.12	31.96	6.75	37.43	172	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
5356	43.47	42.88	54	-10.53	31.48	6.29	37.18	186	359	Average
5356	60.96	60.37	74	-13.04	31.48	6.29	37.18	186	359	Peak
5470	62.09	61.26	68.2	-6.11	31.57	6.34	37.08	186	359	Peak
5500	93.55	92.62			31.6	6.36	37.03	186	359	Average
5500	102.8	101.87			31.6	6.36	37.03	186	359	Peak
5725	60.41	59.13	68.2	-7.79	31.96	6.75	37.43	186	359	Peak

REMARKS:

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

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

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
5438	38.57	37.81	54	-15.43	31.55	6.34	37.13	153	350	Average
5438	61.19	60.43	74	-12.81	31.55	6.34	37.13	153	350	Peak
5470	58.05	57.22	68.2	-10.15	31.57	6.34	37.08	153	350	Peak
5580	96.04	95			31.71	6.49	37.16	153	350	Average
5580	105.31	104.27			31.71	6.49	37.16	153	350	Peak
5725	60.39	59.11	68.2	-7.81	31.96	6.75	37.43	153	350	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	38.63	37.81	54	-15.37	31.56	6.34	37.08	175	358	Average
5460	59.69	58.87	74	-14.31	31.56	6.34	37.08	175	358	Peak
5470	58.07	57.24	68.2	-10.13	31.57	6.34	37.08	175	358	Peak
5580	95.19	94.15			31.71	6.49	37.16	175	358	Average
5580	104.12	103.08			31.71	6.49	37.16	175	358	Peak
5725	60.07	58.79	68.2	-8.13	31.96	6.75	37.43	175	358	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5580MHz: Fundamental frequency.
- 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	Gavin Wu

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	38.39	37.77	54	-15.61	31.49	6.31	37.18	202	357	Average
5364	60.52	59.9	74	-13.48	31.49	6.31	37.18	202	357	Peak
5470	58.03	57.2	68.2	-10.17	31.57	6.34	37.08	202	357	Peak
5700	95.62	94.43			31.9	6.69	37.4	202	357	Average
5700	105.01	103.82			31.9	6.69	37.4	202	357	Peak
5725	65.73	64.45	68.2	-2.47	31.96	6.75	37.43	202	357	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
5414	38.34	37.67	54	-15.66	31.53	6.32	37.18	204	9	Average
5414	60.29	59.62	74	-13.71	31.53	6.32	37.18	204	9	Peak
5470	59.4	58.57	68.2	-8.8	31.57	6.34	37.08	204	9	Peak
5700	94.82	93.63			31.9	6.69	37.4	204	9	Average
5700	104.56	103.37			31.9	6.69	37.4	204	9	Peak
5725	64.91	63.63	68.2	-3.29	31.96	6.75	37.43	204	9	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5700MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

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

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	59.51	58.32	68.2	-8.69	31.93	6.69	37.43	102	114	Peak
5725	63.68	62.4	78.2	-14.52	31.96	6.75	37.43	102	114	Peak
5745	91.2	89.93			31.99	6.75	37.47	102	114	Average
5745	100.61	99.34			31.99	6.75	37.47	102	114	Peak
5850	59.54	58.02	78.2	-18.66	32.15	6.88	37.51	102	114	Peak
5861	59.67	58.04	68.2	-8.53	32.18	6.95	37.5	102	114	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	65.04	63.85	68.2	-3.16	31.93	6.69	37.43	100	90	Peak
5725	74.03	72.75	78.2	-4.17	31.96	6.75	37.43	100	90	Peak
5745	97.77	96.5			31.99	6.75	37.47	100	90	Average
5745	107.12	105.85			31.99	6.75	37.47	100	90	Peak
5850	61.66	60.14	78.2	-16.54	32.15	6.88	37.51	100	90	Peak
5861	60.01	58.38	68.2	-8.19	32.18	6.95	37.5	100	90	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5745MHz: Fundamental frequency.
- 5714, 5725MHz, 5850 & 5861MHz: Out of restricted band



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

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	60.31	59.12	68.2	-7.89	31.93	6.69	37.43	102	113	Peak
5725	60.47	59.19	78.2	-17.73	31.96	6.75	37.43	102	113	Peak
5785	91.43	90.11			32.04	6.82	37.54	102	113	Average
5785	100.63	99.31			32.04	6.82	37.54	102	113	Peak
5850	60.41	58.89	78.2	-17.79	32.15	6.88	37.51	102	113	Peak
5861	60.27	58.64	68.2	-7.93	32.18	6.95	37.5	102	113	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	60.44	59.25	68.2	-7.76	31.93	6.69	37.43	112	88	Peak
5725	60.66	59.38	78.2	-17.54	31.96	6.75	37.43	112	88	Peak
5785	98.01	96.69			32.04	6.82	37.54	112	88	Average
5785	107.22	105.9			32.04	6.82	37.54	112	88	Peak
5850	60.83	59.31	78.2	-17.37	32.15	6.88	37.51	112	88	Peak
5861	60.35	58.72	68.2	-7.85	32.18	6.95	37.5	112	88	Peak

REMARKS:

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



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

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	58.82	57.63	68.2	-9.38	31.93	6.69	37.43	100	110	Peak
5725	60.25	58.97	78.2	-17.95	31.96	6.75	37.43	100	110	Peak
5825	91.66	90.19			32.12	6.88	37.53	100	110	Average
5825	100.87	99.4			32.12	6.88	37.53	100	110	Peak
5850	62.95	61.43	78.2	-15.25	32.15	6.88	37.51	100	110	Peak
5861	59.91	58.28	68.2	-8.29	32.18	6.95	37.5	100	110	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	58.56	57.37	68.2	-9.64	31.93	6.69	37.43	125	96	Peak
5725	59.08	57.8	78.2	-19.12	31.96	6.75	37.43	125	96	Peak
5825	97.95	96.48			32.12	6.88	37.53	125	96	Average
5825	107.21	105.74			32.12	6.88	37.53	125	96	Peak
5850	66.89	65.37	78.2	-11.31	32.15	6.88	37.51	125	96	Peak
5861	62.96	61.33	68.2	-5.24	32.18	6.95	37.5	125	96	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5825MHz: Fundamental frequency.
- 5714, 5725MHz, 5850 & 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	Gavin Wu

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
5098	41.75	41.56	54	-12.25	31.28	6.19	37.28	211	12	Average
5098	60.26	60.07	74	-13.74	31.28	6.19	37.28	211	12	Peak
5180	92.16	91.93			31.35	6.22	37.34	211	12	Average
5180	101.42	101.19			31.35	6.22	37.34	211	12	Peak
5438	38.76	38	54	-15.24	31.55	6.34	37.13	211	12	Average
5438	60.71	59.95	74	-13.29	31.55	6.34	37.13	211	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
5146	43.85	43.65	54	-10.15	31.32	6.2	37.32	103	116	Average
5146	60.13	59.93	74	-13.87	31.32	6.2	37.32	103	116	Peak
5180	94.74	94.51			31.35	6.22	37.34	103	116	Average
5180	103.69	103.46			31.35	6.22	37.34	103	116	Peak
5368	38.62	38	54	-15.38	31.49	6.31	37.18	103	116	Average
5368	60.01	59.39	74	-13.99	31.49	6.31	37.18	103	116	Peak

REMARKS:

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

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

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	38.31	38.19	54	-15.69	31.21	6.15	37.24	208	15	Average
5020	59.97	59.85	74	-14.03	31.21	6.15	37.24	208	15	Peak
5220	92.73	92.48			31.37	6.24	37.36	208	15	Average
5220	101.8	101.55			31.37	6.24	37.36	208	15	Peak
5444	38.97	38.21	54	-15.03	31.55	6.34	37.13	208	15	Average
5444	60.39	59.63	74	-13.61	31.55	6.34	37.13	208	15	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
5090	38.76	38.56	54	-15.24	31.28	6.19	37.27	103	106	Average
5090	59.47	59.27	74	-14.53	31.28	6.19	37.27	103	106	Peak
5220	95.31	95.06			31.37	6.24	37.36	103	106	Average
5220	104.22	103.97			31.37	6.24	37.36	103	106	Peak
5454	38.72	37.9	54	-15.28	31.56	6.34	37.08	103	106	Average
5454	60.43	59.61	74	-13.57	31.56	6.34	37.08	103	106	Peak

REMARKS:

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

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
5064	38.15	37.98	54	-15.85	31.25	6.17	37.25	213	14	Average
5064	60.72	60.55	74	-13.28	31.25	6.17	37.25	213	14	Peak
5240	92.72	92.4			31.39	6.25	37.32	213	14	Average
5240	101.78	101.46			31.39	6.25	37.32	213	14	Peak
5442	39.07	38.31	54	-14.93	31.55	6.34	37.13	213	14	Average
5442	60.14	59.38	74	-13.86	31.55	6.34	37.13	213	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
5056	38.4	38.23	54	-15.6	31.25	6.17	37.25	102	102	Average
5056	60.41	60.24	74	-13.59	31.25	6.17	37.25	102	102	Peak
5240	95.34	95.02			31.39	6.25	37.32	102	102	Average
5240	104.3	103.98			31.39	6.25	37.32	102	102	Peak
5424	39.13	38.46	54	-14.87	31.53	6.32	37.18	102	102	Average
5424	60.77	60.1	74	-13.23	31.53	6.32	37.18	102	102	Peak

REMARKS:

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

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
5016	38.01	37.88	54	-15.99	31.21	6.15	37.23	194	38	Average
5016	59.85	59.72	74	-14.15	31.21	6.15	37.23	194	38	Peak
5260	92.7	92.31			31.41	6.25	37.27	194	38	Average
5260	101.68	101.29			31.41	6.25	37.27	194	38	Peak
5430	38.81	38.07	54	-15.19	31.55	6.32	37.13	194	38	Average
5430	60.92	60.18	74	-13.08	31.55	6.32	37.13	194	38	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5094	38.2	38.01	54	-15.8	31.28	6.19	37.28	108	94	Average
5094	60.01	59.82	74	-13.99	31.28	6.19	37.28	108	94	Peak
5260	94.48	94.09			31.41	6.25	37.27	108	94	Average
5260	103.52	103.13			31.41	6.25	37.27	108	94	Peak
5362	38.82	38.2	54	-15.18	31.49	6.31	37.18	108	94	Average
5362	61.09	60.47	74	-12.91	31.49	6.31	37.18	108	94	Peak

REMARKS:

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

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
5088	38.18	37.99	54	-15.82	31.27	6.19	37.27	189	42	Average
5088	60.63	60.44	74	-13.37	31.27	6.19	37.27	189	42	Peak
5300	93.1	92.58			31.44	6.27	37.19	189	42	Average
5300	102.19	101.67			31.44	6.27	37.19	189	42	Peak
5360	41.16	40.55	54	-12.84	31.48	6.31	37.18	189	42	Average
5360	60.15	59.54	74	-13.85	31.48	6.31	37.18	189	42	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
5074	38.17	38	54	-15.83	31.27	6.17	37.27	108	103	Average
5074	59.97	59.8	74	-14.03	31.27	6.17	37.27	108	103	Peak
5300	94.76	94.24			31.44	6.27	37.19	108	103	Average
5300	103.82	103.3			31.44	6.27	37.19	108	103	Peak
5360	42.05	41.44	54	-11.95	31.48	6.31	37.18	108	103	Average
5360	60.9	60.29	74	-13.1	31.48	6.31	37.18	108	103	Peak

REMARKS:

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

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
5074	37.94	37.77	54	-16.06	31.27	6.17	37.27	137	78	Average
5074	60.71	60.54	74	-13.29	31.27	6.17	37.27	137	78	Peak
5320	91.99	91.44			31.45	6.29	37.19	137	78	Average
5320	101.17	100.62			31.45	6.29	37.19	137	78	Peak
5358	40.96	40.35	54	-13.04	31.48	6.31	37.18	137	78	Average
5358	61.51	60.9	74	-12.49	31.48	6.31	37.18	137	78	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
5076	38.08	37.91	54	-15.92	31.27	6.17	37.27	115	98	
5076	60.87	60.7	74	-13.13	31.27	6.17	37.27	115	98	
5320	94.21	93.66			31.45	6.29	37.19	115	98	
5320	103.42	102.87			31.45	6.29	37.19	115	98	
5350	43.4	42.81	54	-10.6	31.48	6.29	37.18	115	98	
5350	63.42	62.83	74	-10.58	31.48	6.29	37.18	115	98	

REMARKS:

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

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
5442	42.37	41.61	54	-11.63	31.55	6.34	37.13	181	347	Average
5442	61.11	60.35	74	-12.89	31.55	6.34	37.13	181	347	Peak
5470	61.19	60.36	68.2	-7.01	31.57	6.34	37.08	181	347	Peak
5500	94.15	93.22			31.6	6.36	37.03	181	347	Average
5500	103.99	103.06			31.6	6.36	37.03	181	347	Peak
5725	61.06	59.78	68.2	-7.14	31.96	6.75	37.43	181	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
5444	42	41.24	54	-12	31.55	6.34	37.13	176	358	Average
5444	61	60.24	74	-13	31.55	6.34	37.13	176	358	Peak
5470	59.58	58.75	68.2	-8.62	31.57	6.34	37.08	176	358	Peak
5500	93.3	92.37			31.6	6.36	37.03	176	358	Average
5500	102.69	101.76			31.6	6.36	37.03	176	358	Peak
5725	60.68	59.4	68.2	-7.52	31.96	6.75	37.43	176	358	Peak

REMARKS:

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

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

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
5400	38.38	37.72	54	-15.62	31.52	6.32	37.18	152	347	Average
5400	60.43	59.77	74	-13.57	31.52	6.32	37.18	152	347	Peak
5470	58.84	58.01	68.2	-9.36	31.57	6.34	37.08	152	347	Peak
5580	94.79	93.75			31.71	6.49	37.16	152	347	Average
5580	104.31	103.27			31.71	6.49	37.16	152	347	Peak
5725	59.52	58.24	68.2	-8.68	31.96	6.75	37.43	152	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
5374	38.64	38.02	54	-15.36	31.49	6.31	37.18	182	358	Average
5374	60.81	60.19	74	-13.19	31.49	6.31	37.18	182	358	Peak
5470	58.73	57.9	68.2	-9.47	31.57	6.34	37.08	182	358	Peak
5580	93.64	92.6			31.71	6.49	37.16	182	358	Average
5580	103.12	102.08			31.71	6.49	37.16	182	358	Peak
5725	60.07	58.79	68.2	-8.13	31.96	6.75	37.43	182	358	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5580MHz: Fundamental frequency.
- 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	Gavin Wu

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	38.18	37.51	54	-15.82	31.53	6.32	37.18	200	351	Average
5422	60.1	59.43	74	-13.9	31.53	6.32	37.18	200	351	Peak
5470	58.6	57.77	68.2	-9.6	31.57	6.34	37.08	200	351	Peak
5700	94.65	93.46			31.9	6.69	37.4	200	351	Average
5700	104.24	103.05			31.9	6.69	37.4	200	351	Peak
5725	66.11	64.83	68.2	-2.09	31.96	6.75	37.43	200	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
5428	38.35	37.63	54	-15.65	31.53	6.32	37.13	178	358	Average
5428	60.22	59.5	74	-13.78	31.53	6.32	37.13	178	358	Peak
5470	58.98	58.15	68.2	-9.22	31.57	6.34	37.08	178	358	Peak
5700	94.03	92.84			31.9	6.69	37.4	178	358	Average
5700	103.49	102.3			31.9	6.69	37.4	178	358	Peak
5725	64.35	63.07	68.2	-3.85	31.96	6.75	37.43	178	358	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5700MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

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

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	61.23	60.04	68.2	-6.97	31.93	6.69	37.43	102	116	Peak
5725	62.96	61.68	78.2	-15.24	31.96	6.75	37.43	102	116	Peak
5745	89.62	88.35			31.99	6.75	37.47	102	116	Average
5745	98.97	97.7			31.99	6.75	37.47	102	116	Peak
5850	60.3	58.78	78.2	-17.9	32.15	6.88	37.51	102	116	Peak
5861	59.63	58	68.2	-8.57	32.18	6.95	37.5	102	116	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	63.33	62.14	68.2	-4.87	31.93	6.69	37.43	126	97	Peak
5725	71.09	69.81	78.2	-7.11	31.96	6.75	37.43	126	97	Peak
5745	95.81	94.54			31.99	6.75	37.47	126	97	Average
5745	105.1	103.83			31.99	6.75	37.47	126	97	Peak
5850	60.4	58.88	78.2	-17.8	32.15	6.88	37.51	126	97	Peak
5861	60.45	58.82	68.2	-7.75	32.18	6.95	37.5	126	97	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5745MHz: Fundamental frequency.
- 5714, 5725MHz, 5850 & 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	Gavin Wu

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	59.37	58.18	68.2	-8.83	31.93	6.69	37.43	102	111	Peak
5725	59.43	58.15	78.2	-18.77	31.96	6.75	37.43	102	111	Peak
5785	89.52	88.2			32.04	6.82	37.54	102	111	Average
5785	98.73	97.41			32.04	6.82	37.54	102	111	Peak
5850	59.81	58.29	78.2	-18.39	32.15	6.88	37.51	102	111	Peak
5861	60.09	58.46	68.2	-8.11	32.18	6.95	37.5	102	111	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	59.4	58.21	68.2	-8.8	31.93	6.69	37.43	119	95	Peak
5725	58.77	57.49	78.2	-19.43	31.96	6.75	37.43	119	95	Peak
5785	95.95	94.63			32.04	6.82	37.54	119	95	Average
5785	105.07	103.75			32.04	6.82	37.54	119	95	Peak
5850	60.59	59.07	78.2	-17.61	32.15	6.88	37.51	119	95	Peak
5861	60.05	58.42	68.2	-8.15	32.18	6.95	37.5	119	95	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5785MHz: Fundamental frequency.
- 5714, 5725MHz, 5850 & 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	Gavin Wu

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	59.18	57.99	68.2	-9.02	31.93	6.69	37.43	101	109	Peak
5725	59.79	58.51	78.2	-18.41	31.96	6.75	37.43	101	109	Peak
5825	89.89	88.42			32.12	6.88	37.53	101	109	Average
5825	99.01	97.54			32.12	6.88	37.53	101	109	Peak
5850	59.65	58.13	78.2	-18.55	32.15	6.88	37.51	101	109	Peak
5861	59.43	57.8	68.2	-8.77	32.18	6.95	37.5	101	109	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	59.73	58.54	68.2	-8.47	31.93	6.69	37.43	132	94	Peak
5725	59.1	57.82	78.2	-19.1	31.96	6.75	37.43	132	94	Peak
5825	96.2	94.73			32.12	6.88	37.53	132	94	Average
5825	105.2	103.73			32.12	6.88	37.53	132	94	Peak
5850	67.66	66.14	78.2	-10.54	32.15	6.88	37.51	132	94	Peak
5861	61.91	60.28	68.2	-6.29	32.18	6.95	37.5	132	94	Peak

REMARKS:

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

802.11n (40MHz)

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

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	46.81	46.61	54	-7.19	31.32	6.2	37.32	216	9	Average
5146	60.67	60.47	74	-13.33	31.32	6.2	37.32	216	9	Peak
5190	90.39	90.16			31.35	6.22	37.34	216	9	Average
5190	99.57	99.34			31.35	6.22	37.34	216	9	Peak
5428	39.28	38.56	54	-14.72	31.53	6.32	37.13	216	9	Average
5428	60.75	60.03	74	-13.25	31.53	6.32	37.13	216	9	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	49.9	49.7	54	-4.1	31.32	6.2	37.32	104	103	Average
5150	64.74	64.54	74	-9.26	31.32	6.2	37.32	104	103	Peak
5190	93.05	92.82			31.35	6.22	37.34	104	103	Average
5190	102.03	101.8			31.35	6.22	37.34	104	103	Peak
5426	39.09	38.37	54	-14.91	31.53	6.32	37.13	104	103	Average
5426	60.33	59.61	74	-13.67	31.53	6.32	37.13	104	103	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5142	39.6	39.38	54	-14.4	31.32	6.2	37.3	216	10	Average
5142	59.44	59.22	74	-14.56	31.32	6.2	37.3	216	10	Peak
5230	90.47	90.16			31.39	6.24	37.32	216	10	Average
5230	99.5	99.19			31.39	6.24	37.32	216	10	Peak
5444	39.42	38.66	54	-14.58	31.55	6.34	37.13	216	10	Average
5444	60.55	59.79	74	-13.45	31.55	6.34	37.13	216	10	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
5126	39.95	39.74	54	-14.05	31.31	6.2	37.3	103	103	Average
5126	60.33	60.12	74	-13.67	31.31	6.2	37.3	103	103	Peak
5230	93.49	93.18			31.39	6.24	37.32	103	103	Average
5230	102.02	101.71			31.39	6.24	37.32	103	103	Peak
5456	39.45	38.63	54	-14.55	31.56	6.34	37.08	103	103	Average
5456	59.95	59.13	74	-14.05	31.56	6.34	37.08	103	103	Peak

REMARKS:

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

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

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
5070	38.57	38.42	54	-15.43	31.25	6.17	37.27	149	169	Average
5070	60.53	60.38	74	-13.47	31.25	6.17	37.27	149	169	Peak
5270	89.98	89.59			31.41	6.25	37.27	149	169	Average
5270	99.53	99.14			31.41	6.25	37.27	149	169	Peak
5398	40.11	39.45	54	-13.89	31.52	6.32	37.18	149	169	Average
5398	60.95	60.29	74	-13.05	31.52	6.32	37.18	149	169	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5018	38.59	38.47	54	-15.41	31.21	6.15	37.24	102	107	Average
5018	60.63	60.51	74	-13.37	31.21	6.15	37.24	102	107	Peak
5270	92.69	92.3			31.41	6.25	37.27	102	107	Average
5270	101.59	101.2			31.41	6.25	37.27	102	107	Peak
5350	40.75	40.16	54	-13.25	31.48	6.29	37.18	102	107	Average
5350	60.87	60.28	74	-13.13	31.48	6.29	37.18	102	107	Peak

REMARKS:

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

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

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
5076	38.39	38.22	54	-15.61	31.27	6.17	37.27	162	169	Average
5076	60.73	60.56	74	-13.27	31.27	6.17	37.27	162	169	Peak
5310	89.33	88.8			31.45	6.27	37.19	162	169	Average
5310	98.48	97.95			31.45	6.27	37.19	162	169	Peak
5350	43.8	43.21	54	-10.2	31.48	6.29	37.18	162	169	Average
5350	65.97	65.38	74	-8.03	31.48	6.29	37.18	162	169	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5110	38.59	38.39	54	-15.41	31.29	6.19	37.28	131	98	Average
5110	60.11	59.91	74	-13.89	31.29	6.19	37.28	131	98	Peak
5310	92.05	91.52			31.45	6.27	37.19	131	98	Average
5310	101.33	100.8			31.45	6.27	37.19	131	98	Peak
5350	45.21	44.62	54	-8.79	31.48	6.29	37.18	131	98	Average
5350	67.14	66.55	74	-6.86	31.48	6.29	37.18	131	98	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.29	41.47	54	-11.71	31.56	6.34	37.08	156	350	Average
5460	60.33	59.51	74	-13.67	31.56	6.34	37.08	156	350	Peak
5470	63.35	62.52	68.2	-4.85	31.57	6.34	37.08	156	350	Peak
5510	92.05	91.15			31.6	6.36	37.06	156	350	Average
5510	101.29	100.39			31.6	6.36	37.06	156	350	Peak
5725	59.71	58.43	68.2	-8.49	31.96	6.75	37.43	156	350	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.35	41.53	54	-11.65	31.56	6.34	37.08	176	1	Average
5460	61.95	61.13	74	-12.05	31.56	6.34	37.08	176	1	Peak
5470	63.93	63.1	68.2	-4.27	31.57	6.34	37.08	176	1	Peak
5510	90.94	90.04			31.6	6.36	37.06	176	1	Average
5510	100.31	99.41			31.6	6.36	37.06	176	1	Peak
5725	60.89	59.61	68.2	-7.31	31.96	6.75	37.43	176	1	Peak

REMARKS:

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

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

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	40.54	39.8	54	-13.46	31.55	6.32	37.13	156	348	Average
5432	60.35	59.61	74	-13.65	31.55	6.32	37.13	156	348	Peak
5470	61.46	60.63	68.2	-6.74	31.57	6.34	37.08	156	348	Peak
5550	92.3	91.29			31.68	6.42	37.09	156	348	Average
5550	101.32	100.31			31.68	6.42	37.09	156	348	Peak
5725	59.44	58.16	68.2	-8.76	31.96	6.75	37.43	156	348	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
5450	40.85	40.03	54	-13.15	31.56	6.34	37.08	192	358	Average
5450	60.18	59.36	74	-13.82	31.56	6.34	37.08	192	358	Peak
5470	59.08	58.25	68.2	-9.12	31.57	6.34	37.08	192	358	Peak
5550	91.58	90.57			31.68	6.42	37.09	192	358	Average
5550	100.75	99.74			31.68	6.42	37.09	192	358	Peak
5725	58.8	57.52	68.2	-9.4	31.96	6.75	37.43	192	358	Peak

REMARKS:

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

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

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
5356	38.77	38.18	54	-15.23	31.48	6.29	37.18	180	350	Average
5356	61.15	60.56	74	-12.85	31.48	6.29	37.18	180	350	Peak
5470	59.52	58.69	68.2	-8.68	31.57	6.34	37.08	180	350	Peak
5670	92.73	91.57			31.88	6.62	37.34	180	350	Average
5670	101.43	100.27			31.88	6.62	37.34	180	350	Peak
5725	60.57	59.29	68.2	-7.63	31.96	6.75	37.43	180	350	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
5420	38.86	38.19	54	-15.14	31.53	6.32	37.18	194	0	Average
5420	60.18	59.51	74	-13.82	31.53	6.32	37.18	194	0	Peak
5470	58.19	57.36	68.2	-10.01	31.57	6.34	37.08	194	0	Peak
5670	91.28	90.12			31.88	6.62	37.34	194	0	Average
5670	100.6	99.44			31.88	6.62	37.34	194	0	Peak
5725	60.23	58.95	68.2	-7.97	31.96	6.75	37.43	194	0	Peak

REMARKS:

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

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

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	60.36	59.17	68.2	-7.84	31.93	6.69	37.43	103	111	Peak
5725	63.43	62.15	78.2	-14.77	31.96	6.75	37.43	103	111	Peak
5755	87.85	86.56			32.01	6.75	37.47	103	111	Average
5755	96.8	95.51			32.01	6.75	37.47	103	111	Peak
5850	59.36	57.84	78.2	-18.84	32.15	6.88	37.51	103	111	Peak
5861	59.28	57.65	68.2	-8.92	32.18	6.95	37.5	103	111	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	61.4	60.21	68.2	-6.8	31.93	6.69	37.43	127	95	Peak
5725	64.76	63.48	78.2	-13.44	31.96	6.75	37.43	127	95	Peak
5755	94.01	92.72			32.01	6.75	37.47	127	95	Average
5755	103.06	101.77			32.01	6.75	37.47	127	95	Peak
5850	58.73	57.21	78.2	-19.47	32.15	6.88	37.51	127	95	Peak
5861	59.36	57.73	68.2	-8.84	32.18	6.95	37.5	127	95	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5755MHz: Fundamental frequency.
- 5714, 5725MHz, 5850 & 5861MHz: Out of restricted band

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

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	60.63	59.44	68.2	-7.57	31.93	6.69	37.43	100	109	Peak
5725	61.43	60.15	78.2	-16.77	31.96	6.75	37.43	100	109	Peak
5795	87.94	86.59			32.07	6.82	37.54	100	109	Average
5795	96.97	95.62			32.07	6.82	37.54	100	109	Peak
5850	59.68	58.16	78.2	-18.52	32.15	6.88	37.51	100	109	Peak
5861	60.19	58.56	68.2	-8.01	32.18	6.95	37.5	100	109	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	60.9	59.71	68.2	-7.3	31.93	6.69	37.43	112	86	Peak
5725	59.99	58.71	78.2	-18.21	31.96	6.75	37.43	112	86	Peak
5795	94.1	92.75			32.07	6.82	37.54	112	86	Average
5795	103.11	101.76			32.07	6.82	37.54	112	86	Peak
5850	61.35	59.83	78.2	-16.85	32.15	6.88	37.51	112	86	Peak
5861	61.27	59.64	68.2	-6.93	32.18	6.95	37.5	112	86	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5795MHz: Fundamental frequency.
- 5714, 5725MHz, 5850 & 5861MHz: Out of restricted band

BELOW 1GHz WORST-CASE DATA:

Band I

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

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
40.67	24.21	41.03	40	-15.79	13.55	0.65	31.02	137	41	Peak
59.1	13.31	31.82	40	-26.69	12.04	0.8	31.35	100	116	Peak
139.61	17.18	35.32	43.5	-26.32	12.34	1.16	31.64	100	119	Peak
157.07	17.28	35.23	43.5	-26.22	12.72	1.13	31.8	100	105	Peak
315.18	20.16	37.09	46	-25.84	13.31	1.68	31.92	102	147	Peak
332.64	20.45	36.81	46	-25.55	13.73	1.72	31.81	102	234	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
33.88	26.1	43.95	40	-13.9	12.63	0.6	31.08	113	141	Peak
41.64	32.09	48.92	40	-7.91	13.56	0.66	31.05	100	70	QP
54.25	24.01	42.04	40	-15.99	12.56	0.74	31.33	105	74	Peak
436.43	25.6	39.57	46	-20.4	16.06	1.97	32	115	241	Peak
662.44	24.46	33.63	46	-21.54	20.36	2.38	31.91	119	210	Peak
740.04	25.41	32.99	46	-20.59	21.38	2.52	31.48	136	202	Peak

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

Margin value = Emission level – Limit value

Band II

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

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
43.58	22.46	39.31	40	-17.54	13.59	0.67	31.11	106	33	Peak
156.1	17.97	35.9	43.5	-25.53	12.72	1.12	31.77	128	357	Peak
303.54	20.77	37.98	46	-25.23	13.03	1.64	31.88	128	289	Peak
317.12	23.22	40.09	46	-22.78	13.36	1.68	31.91	112	95	Peak
514.03	21.1	32.92	46	-24.9	17.64	2.12	31.58	127	14	Peak
694.45	24.62	33.24	46	-21.38	20.75	2.45	31.82	108	20	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
34.85	22.7	40.37	40	-17.3	12.79	0.6	31.06	106	233	Peak
41.64	31.26	48.09	40	-8.74	13.56	0.66	31.05	100	49	QP
60.07	23.15	41.76	40	-16.85	11.94	0.81	31.36	110	266	Peak
138.64	19.73	37.97	43.5	-23.77	12.27	1.15	31.66	137	114	Peak
248.25	14.43	33.46	46	-31.57	11.4	1.48	31.91	137	152	Peak
390.84	18.94	33.98	46	-27.06	15.12	1.89	32.05	101	58	Peak

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

Margin value = Emission level – Limit value

Band III

802.11n (20MHz)

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	Gavin Wu

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
43.58	21.09	37.94	40	-18.91	13.59	0.67	31.11	111	192	Peak
149.31	17.16	34.96	43.5	-26.34	12.68	1.13	31.61	138	310	Peak
310.33	22.31	39.4	46	-23.69	13.2	1.66	31.95	107	316	Peak
325.85	22.83	39.4	46	-23.17	13.57	1.7	31.84	118	239	Peak
494.63	20.97	33.38	46	-25.03	17.21	2.08	31.7	137	322	Peak
568.35	23.69	34.69	46	-22.31	18.88	2.2	32.08	110	1	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
41.64	31.54	48.37	40	-8.46	13.56	0.66	31.05	100	105	QP
53.28	22.85	40.79	40	-17.15	12.66	0.73	31.33	100	39	Peak
137.67	19.86	38.19	43.5	-23.64	12.21	1.15	31.69	126	225	Peak
154.16	19.34	37.23	43.5	-24.16	12.72	1.11	31.72	125	55	Peak
375.32	19.1	34.45	46	-26.9	14.75	1.84	31.94	132	153	Peak
542.16	21.3	32.63	46	-24.7	18.28	2.16	31.77	135	241	Peak

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

Margin value = Emission level – Limit value

Band IV

802.11a

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	Gavin Wu

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
43.58	21.33	38.18	40	-18.67	13.59	0.67	31.11	105	16	Peak
137.67	17.45	35.78	43.5	-26.05	12.21	1.15	31.69	139	90	Peak
321	23.55	40.29	46	-22.45	13.45	1.69	31.88	108	60	Peak
493.66	20.72	33.16	46	-25.28	17.2	2.08	31.72	107	205	Peak
605.21	22.65	32.88	46	-23.35	19.67	2.27	32.17	109	92	Peak
703.18	24.97	33.44	46	-21.03	20.86	2.45	31.78	135	325	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
34.85	21.86	39.53	40	-18.14	12.79	0.6	31.06	140	356	Peak
41.64	31.36	48.19	40	-8.64	13.56	0.66	31.05	100	58	QP
60.07	23.12	41.73	40	-16.88	11.94	0.81	31.36	140	269	Peak
157.07	18.81	36.76	43.5	-24.69	12.72	1.13	31.8	116	69	Peak
360.77	17.51	33.28	46	-28.49	14.4	1.8	31.97	139	214	Peak
519.85	21.18	32.86	46	-24.82	17.77	2.12	31.57	102	71	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 (dB μ V)	
	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	ESCI	100613	Nov. 11, 2014	Nov. 10, 2015
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 26, 2014	Dec. 25, 2015
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 02, 2015	Mar. 01, 2016
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 21, 2014	Jul. 20, 2015
Software ADT	BV ADT_Conc_ V7.3.7.3	NA	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1.
 3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

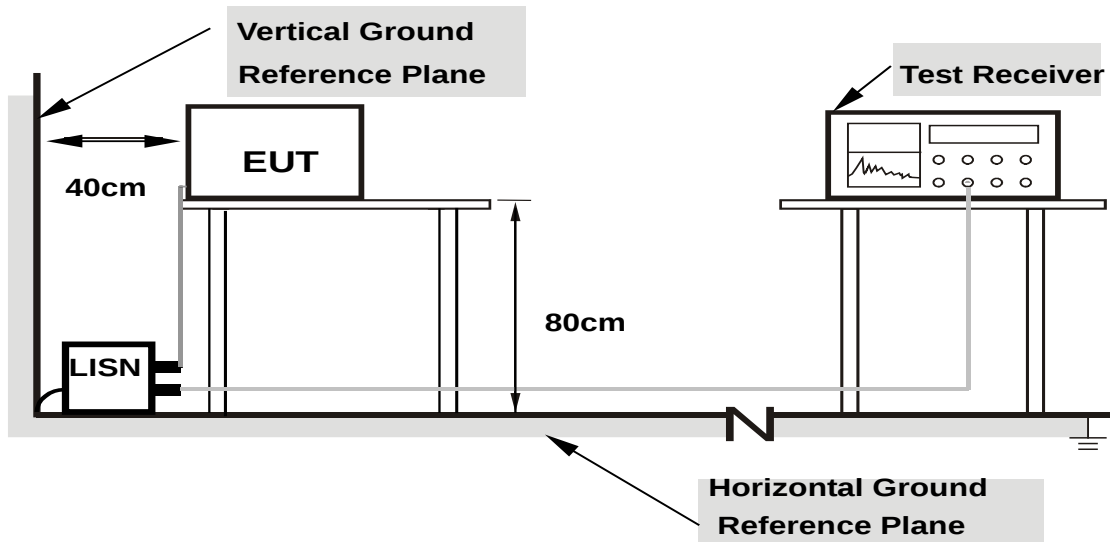
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

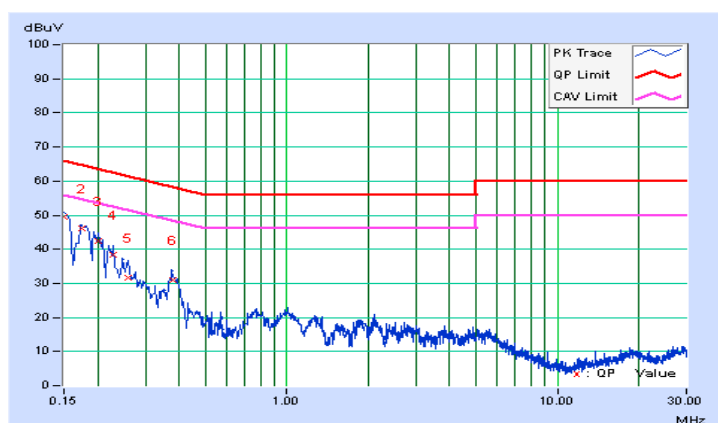
CONDUCTED WORST-CASE DATA :

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 9kHz Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2015/5/27

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.05	49.60	37.36	49.65	37.41	66.00	56.00	-16.35	-18.59
2	0.17374	0.05	45.94	34.57	45.99	34.62	64.78	54.78	-18.78	-20.15
3	0.20084	0.06	42.21	32.33	42.27	32.39	63.58	53.58	-21.31	-21.19
4	0.22791	0.06	38.20	27.07	38.26	27.13	62.53	52.53	-24.27	-25.40
5	0.25932	0.06	31.71	17.80	31.77	17.86	61.45	51.45	-29.68	-33.59
6	0.37700	0.06	30.81	25.47	30.87	25.53	58.35	48.35	-27.48	-22.82

Remarks:

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

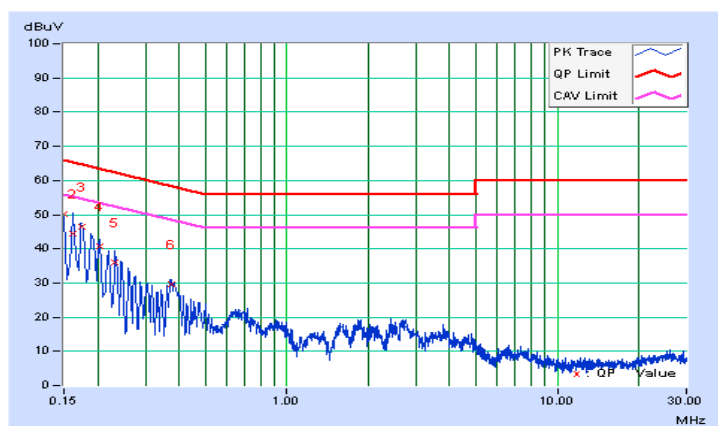


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 9kHz Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2015/5/27

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.05	50.22	38.28	50.27	38.33	66.00	56.00	-15.73	-17.67
2	0.16173	0.05	44.53	26.61	44.58	26.66	65.37	55.37	-20.79	-28.71
3	0.17374	0.05	46.25	35.15	46.30	35.20	64.78	54.78	-18.48	-19.58
4	0.20458	0.05	40.77	28.76	40.82	28.81	63.42	53.42	-22.60	-24.61
5	0.23211	0.05	35.94	22.56	35.99	22.61	62.37	52.37	-26.38	-29.76
6	0.37287	0.06	29.58	21.67	29.64	21.73	58.44	48.44	-28.80	-26.71

Remarks:

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



4.3 TRANSMIT POWER MEASUREMENT

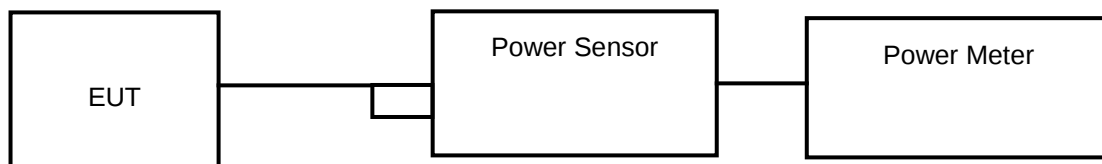
4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

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

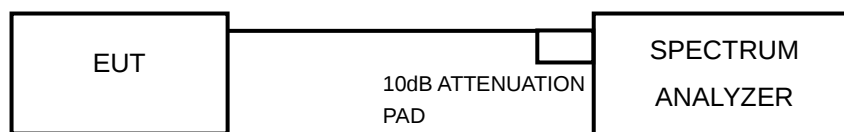
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

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

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

FOR 26dB BANDWIDTH

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.3.7 TEST RESULTS

POWER OUTPUT

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	19.10	12.81	24	PASS
44	5220	19.72	12.95	24	PASS
48	5240	19.63	12.93	24	PASS
52	5260	19.32	12.86	24	PASS
60	5300	19.91	12.99	24	PASS
64	5320	19.72	12.95	23.81	PASS
100	5500	18.88	12.76	23.85	PASS
116	5580	19.50	12.90	23.82	PASS
140	5700	19.28	12.85	23.84	PASS
149	5745	16.87	12.27	30	PASS
157	5785	17.38	12.40	30	PASS
165	5825	17.22	12.36	30	PASS

NOTE:

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

1. $11\text{dBm} + 10\log(21.22) = 24.27\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(19.97) = 24.00\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(19.11) = 23.81\text{ dBm} < 24\text{dBm}$.
4. $11\text{dBm} + 10\log(19.26) = 23.85\text{ dBm} < 24\text{dBm}$.
5. $11\text{dBm} + 10\log(19.16) = 23.82\text{ dBm} < 24\text{dBm}$.
6. $11\text{dBm} + 10\log(19.23) = 23.84\text{ dBm} < 24\text{dBm}$.

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	14.86	11.72	24	PASS
44	5220	16.11	12.07	24	PASS
48	5240	15.81	11.99	24	PASS
52	5260	15.03	11.77	23.92	PASS
60	5300	16.29	12.12	23.94	PASS
64	5320	16.18	12.09	23.92	PASS
100	5500	15.52	11.91	23.93	PASS
116	5580	15.85	12.00	23.89	PASS
140	5700	15.00	11.76	23.91	PASS
149	5745	13.27	11.23	30	PASS
157	5785	13.77	11.39	30	PASS
165	5825	13.49	11.30	30	PASS

NOTE:

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

1. $11\text{dBm} + 10\log(19.57) = 23.92\text{ dBm} < 24\text{dBm}$.
2. $11\text{dBm} + 10\log(19.66) = 23.94\text{ dBm} < 24\text{dBm}$.
3. $11\text{dBm} + 10\log(19.57) = 23.92\text{ dBm} < 24\text{dBm}$.
4. $11\text{dBm} + 10\log(19.63) = 23.93\text{ dBm} < 24\text{dBm}$.
5. $11\text{dBm} + 10\log(19.45) = 23.89\text{ dBm} < 24\text{dBm}$.
6. $11\text{dBm} + 10\log(19.53) = 23.91\text{ dBm} < 24\text{dBm}$.



A D T

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	16.83	12.26	24	PASS
46	5230	17.10	12.33	24	PASS
54	5270	17.18	12.35	24	PASS
62	5310	17.54	12.44	24	PASS
102	5510	16.18	12.09	24	PASS
110	5550	16.48	12.17	24	PASS
134	5670	16.26	12.11	24	PASS
151	5755	14.29	11.55	30	PASS
159	5795	14.79	11.70	30	PASS

NOTE:

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

1. $11\text{dBm} + 10\log(41.13) = 27.14\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(40.83) = 27.11\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(41.90) = 27.22\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(41.25) = 27.15\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(41.23) = 27.15\text{ dBm} > 24\text{dBm}$.

26dB BANDWIDTH

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	21.22	PASS
60	5300	19.97	PASS
64	5320	19.11	PASS
100	5500	19.26	PASS
116	5580	19.16	PASS
140	5700	19.23	PASS

802.11n (20MHz)

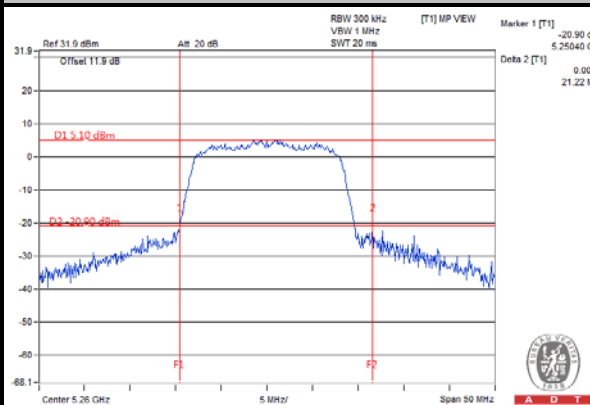
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	19.57	PASS
60	5300	19.66	PASS
64	5320	19.57	PASS
100	5500	19.63	PASS
116	5580	19.45	PASS
140	5700	19.53	PASS

802.11n (40MHz)

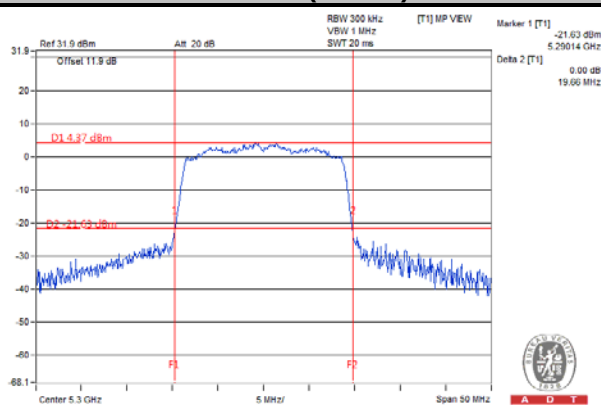
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
54	5270	41.13	PASS
62	5310	40.83	PASS
102	5510	41.90	PASS
110	5550	41.25	PASS
134	5670	41.23	PASS

SPECTRUM PLOT OF WORST VALUE

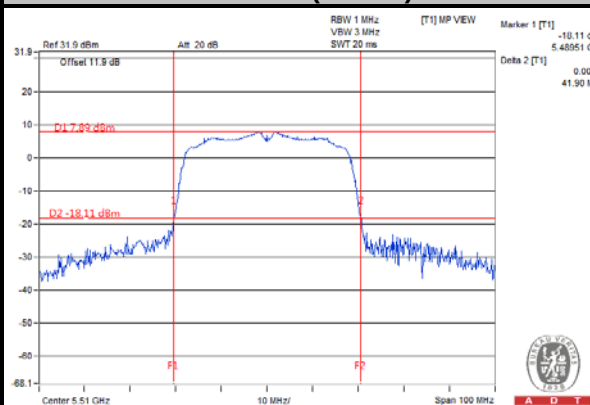
802.11a



802.11n (20MHz)



802.11n (40MHz)

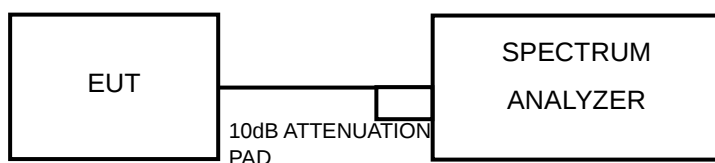


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11dBm/ MHz
U-NII-2A	√	---	11dBm/ MHz
U-NII-2C	√	---	11dBm/ MHz
U-NII-3	√	---	30dBm/ 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 $\geq$ 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 $\geq$ 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 $\geq$ 3 RBW, Detector = RMS
- 3) Sweep time = auto, trigger set to "free run".
- 4) Trace average at least 100 traces in power averaging mode.
- 5) Record the max value and add 10 log (1/duty cycle)

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.

4.4.7 TEST RESULTS

For U-NII-1, 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	1.31	0.33	1.64	11	PASS
44	5220	1.59	0.33	1.92	11	PASS
48	5240	1.63	0.33	1.96	11	PASS
52	5260	1.84	0.33	2.17	11	PASS
60	5300	2.15	0.33	2.48	11	PASS
64	5320	2.35	0.33	2.68	11	PASS
100	5500	2.48	0.33	2.81	11	PASS
116	5580	2.21	0.33	2.54	11	PASS
140	5700	1.71	0.33	2.04	11	PASS

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

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	0.80	0.35	1.15	11	PASS
44	5220	0.32	0.35	0.67	11	PASS
48	5240	0.37	0.35	0.72	11	PASS
52	5260	0.52	0.35	0.87	11	PASS
60	5300	0.92	0.35	1.27	11	PASS
64	5320	1.12	0.35	1.47	11	PASS
100	5500	1.29	0.35	1.64	11	PASS
116	5580	1.80	0.35	2.15	11	PASS
140	5700	0.50	0.35	0.85	11	PASS

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

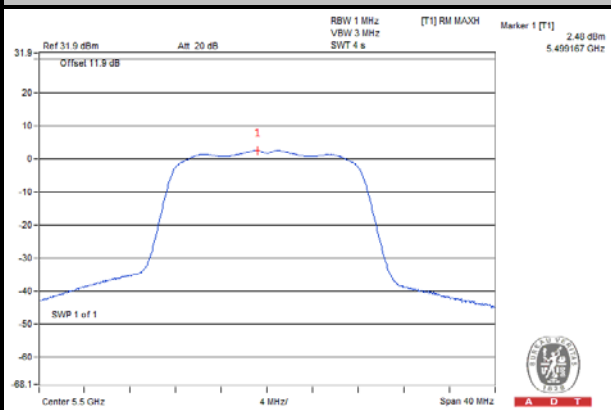
**A D T****802.11n (40MHz)**

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-2.47	0.56	-1.91	11	PASS
46	5230	-2.27	0.56	-1.71	11	PASS
54	5270	-1.97	0.56	-1.41	11	PASS
62	5310	-1.68	0.56	-1.12	11	PASS
102	5510	-1.31	0.56	-0.75	11	PASS
110	5550	-1.46	0.56	-0.90	11	PASS
134	5670	-2.00	0.56	-1.44	11	PASS

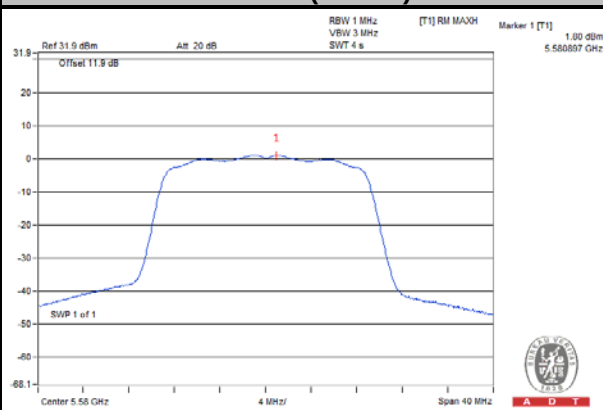
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

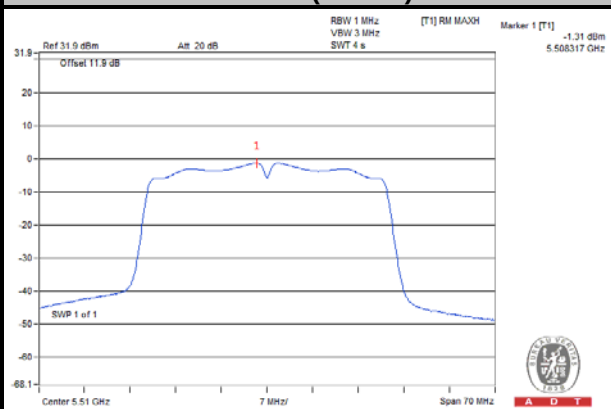
802.11a



802.11n (20MHz)



802.11n (40MHz)



For U-NII-3 Band

802.11a

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	LIMIT (dBm/500kHz)	PASS/FAIL
149	5745	-1.38	0.33	-1.05	30	PASS
157	5785	-1.39	0.33	-1.06	30	PASS
165	5825	-1.10	0.33	-0.77	30	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)	LIMIT (dBm/500kHz)	PASS/FAIL
149	5745	-3.13	0.35	-2.78	30	PASS
157	5785	-2.87	0.35	-2.52	30	PASS
165	5825	-2.44	0.35	-2.09	30	PASS

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

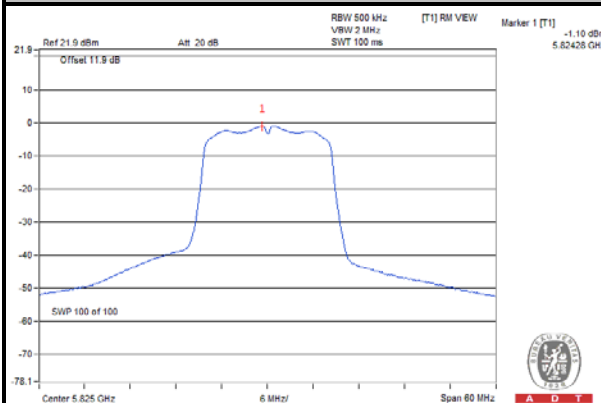
802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	LIMIT (dBm/500kHz)	PASS/FAIL
151	5755	-5.78	0.56	-5.22	30	PASS
159	5795	-5.17	0.56	-4.61	30	PASS

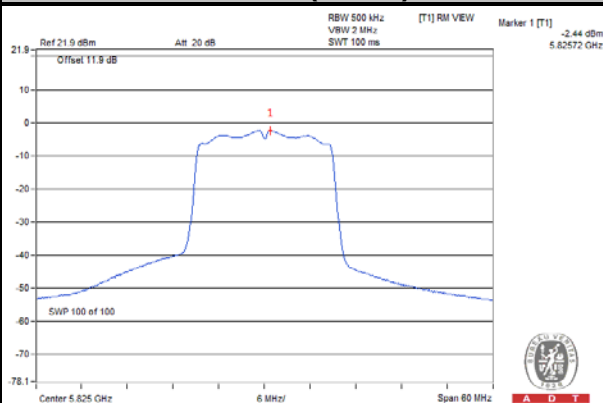
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

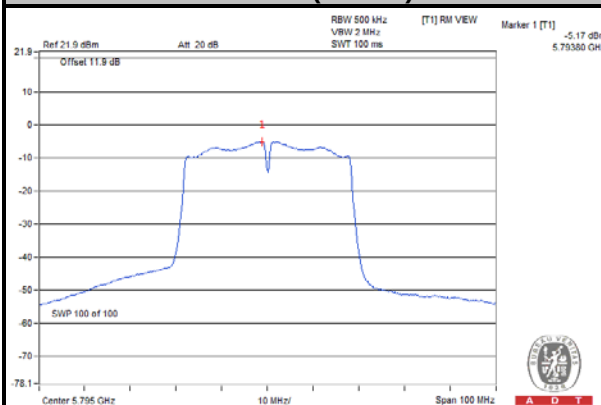
802.11a



802.11n (20MHz)



802.11n (40MHz)

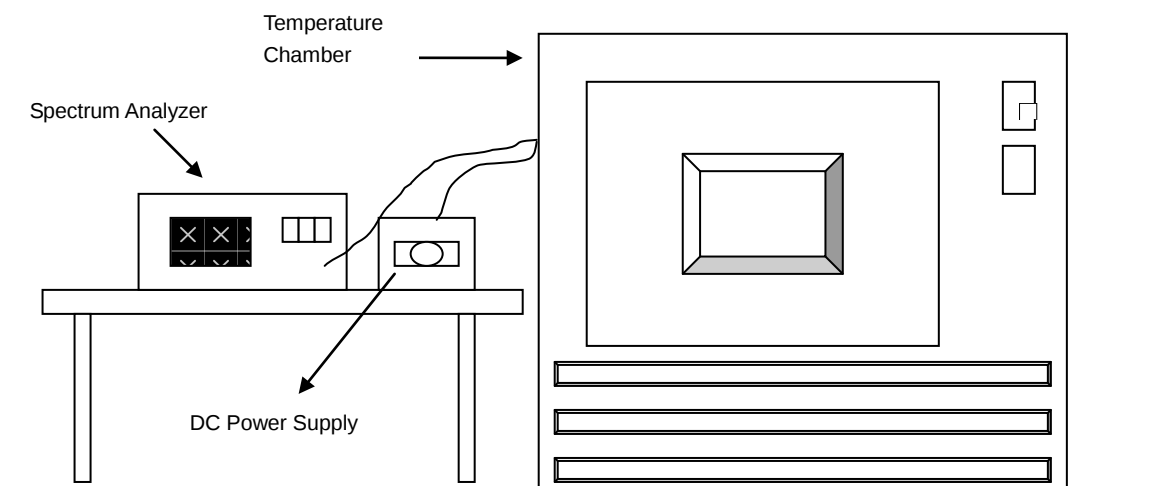


4.5 FREQUENCY STABILITY

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

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	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)
50	3.8	5320.061204	11.505	5320.060822	11.433	5320.061219	11.507	5320.061002	11.467
40	3.8	5320.060546	11.381	5320.060963	11.459	5320.060739	11.417	5320.060691	11.408
30	3.8	5320.061958	11.646	5320.062159	11.684	5320.062080	11.669	5320.061962	11.647
20	3.8	5320.063231	11.886	5320.062995	11.841	5320.063210	11.882	5320.062813	11.807
10	3.8	5320.065229	12.261	5320.064631	12.149	5320.064811	12.183	5320.064729	12.167
0	3.8	5320.063611	11.957	5320.063516	11.939	5320.063738	11.981	5320.063736	11.980
-10	3.8	5320.062144	11.681	5320.062081	11.669	5320.061684	11.595	5320.062232	11.698
-20	3.8	5320.060835	11.435	5320.061123	11.489	5320.061238	11.511	5320.060975	11.461
-30	3.8	5320.061107	11.486	5320.060982	11.463	5320.060851	11.438	5320.061173	11.499

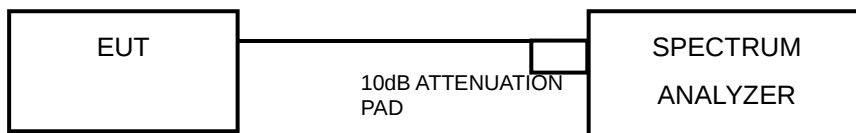
FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.3	5320.062547	11.757	5320.062896	11.823	5320.062656	11.777	5320.062605	11.768
	3.8	5320.063231	11.886	5320.062995	11.841	5320.063210	11.882	5320.062813	11.807
	4.20	5320.064910	12.201	5320.064851	12.190	5320.064846	12.189	5320.064537	12.131

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

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

4.6.5 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	15.14	0.5	PASS
157	5785	15.13	0.5	PASS
165	5825	15.16	0.5	PASS

802.11n (20MHz)

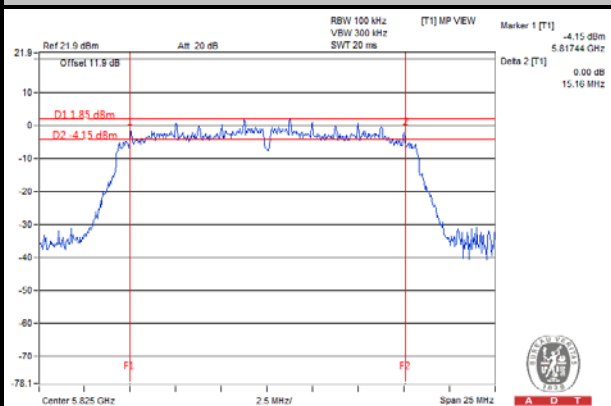
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	15.16	0.5	PASS
157	5785	15.16	0.5	PASS
165	5825	16.70	0.5	PASS

802.11n (40MHz)

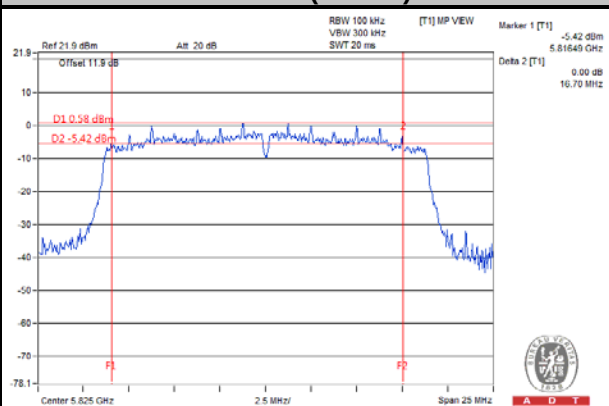
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	35.19	0.5	PASS
159	5795	35.13	0.5	PASS

SPECTRUM PLOT OF WORST VALUE

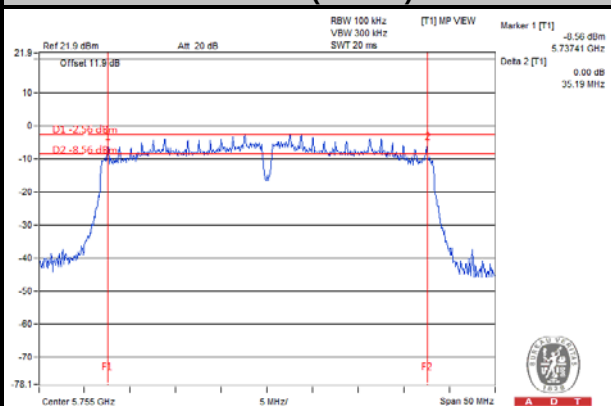
802.11a



802.11n (20MHz)



802.11n (40MHz)



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

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

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



A D T

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---