

FCC TEST REPORT (15.407)

REPORT NO.: RF150717C12-1
MODEL NO.: V200c Plus
FCC ID: B32V200CP
RECEIVED: Jul. 17, 2015
TESTED: Jul. 27, 2015 ~ Aug. 06, 2015
ISSUED: Aug. 12, 2015

APPLICANT: Verifone, Inc.

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ISSUED BY: Bureau Veritas Consumer Products Services
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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF150717C12-1	Original release	Aug. 12, 2015

1. CERTIFICATION

PRODUCT: Point of Sale Terminal

MODEL NO.: V200c Plus

BRAND: Verifone

APPLICANT: Verifone, Inc.

TESTED: Jul. 27, 2015 ~ Aug. 06, 2015

TEST SAMPLE: Identical Prototype

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

ANSI C63.10-2013

The above equipment (model: V200c Plus) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Evonne Liu , **DATE** : Aug. 12, 2015
Evonne Liu / Specialist

APPROVED BY : Kay Wu , **DATE** : Aug. 12, 2015
Kay Wu / Supervisor

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -22.06dB at 0.15800MHz.
15.407(b)(1/2/3) (b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.62dB 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.	V200c Plus
POWER SUPPLY	11.6Vdc (adapter)
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	14.69mW for 5180 ~ 5240MHz 14.76mW for 5260 ~ 5320MHz 15.14mW for 5500 ~ 5700MHz 13.18mW for 5745 ~ 5825MHz
ANTENNA TYPE	PIFA antenna with 2.41dBi gain (5180 ~ 5240MHz) PIFA antenna with 2.41dBi gain (5260 ~ 5320MHz) PIFA antenna with 2.96dBi gain (5500 ~ 5700MHz) PIFA antenna with 2.52dBi 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:

- The EUT contains following accessory devices.

ITEM	BRAND	MODEL	SPECIFICATION
Adapter 1	Verifone	A124-2116167U	I/P: 100-240Vac, 50/60Hz, 0.5A O/P: 11.6Vdc, 1.55A 1.8m Non-shielded cable w/o core
Adapter 2	Verifone	VF0102	I/P: 100-240Vac, 50/60Hz, 0.5A O/P: 11.6Vdc, 1.55A 1.8m Non-shielded cable w/o core

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

MODULATION MODE	TX FUNCTION
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		



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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 **Z-plane**.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

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

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

BANDEDGE MEASUREMENT:

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

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

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

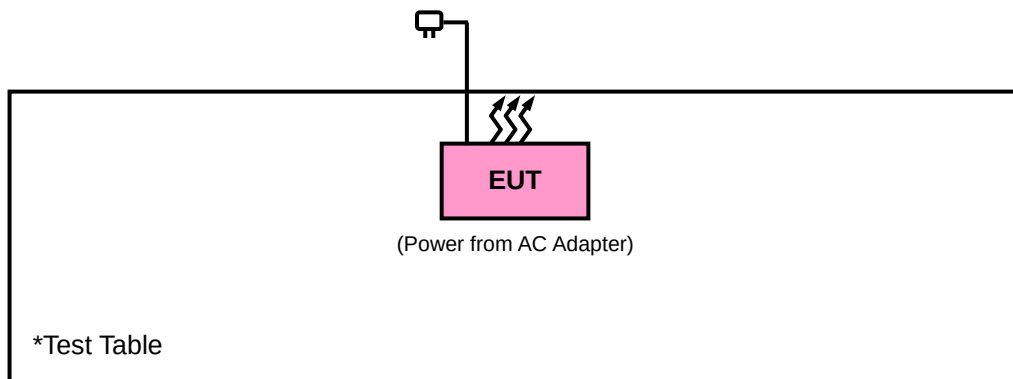
TEST CONDITION:

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	Gavin 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 = $1.418/1.530 = 0.926$, Duty factor = $10 * \log(1/0.926) = 0.33$

802.11n (20MHz): Duty cycle = $1.330/1.434 = 0.927$, Duty factor = $10 * \log(1/0.927) = 0.33$

802.11n (40MHz): Duty cycle = $0.616/0.761 = 0.810$, Duty factor = $10 * \log(1/0.810) = 0.91$



MODULATION TYPE: QPSK

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

802.11a: Duty cycle = $0.713/0.817 = 0.872$, Duty factor = $10 * \log(1/0.872) = 0.59$

802.11n (20MHz): Duty cycle = $0.681/0.785 = 0.867$, Duty factor = $10 * \log(1/0.867) = 0.62$

802.11n (40MHz): Duty cycle = $0.312/0.448 = 0.696$, Duty factor = $10 * \log(1/0.696) = 1.57$



MODULATION TYPE: 16QAM

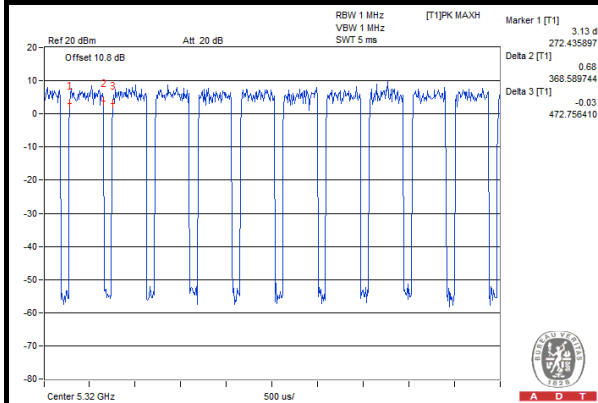
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $0.368/0.472 = 0.779$, Duty factor = $10 * \log(1/0.779) = 1.08$

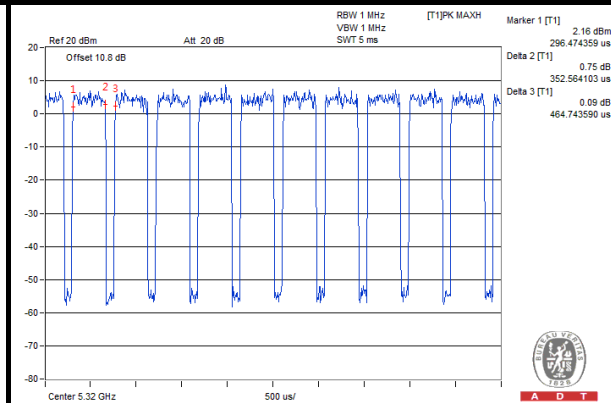
802.11n (20MHz): Duty cycle = $0.352/0.464 = 0.758$, Duty factor = $10 * \log(1/0.758) = 1.20$

802.11n (40MHz): Duty cycle = $0.158/0.294 = 0.538$, Duty factor = $10 * \log(1/0.538) = 2.69$

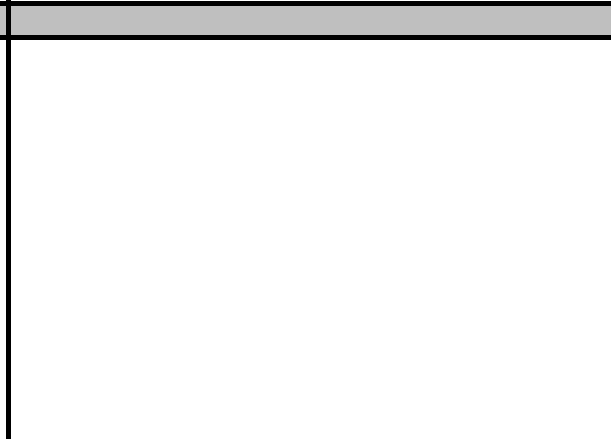
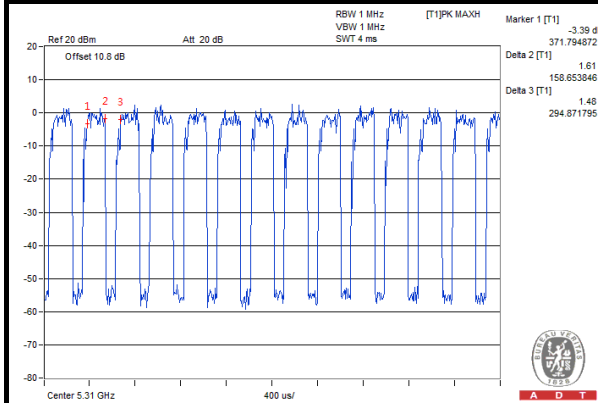
802.11a



802.11n (20MHz)



802.11n (40MHz)



MODULATION TYPE: 64QAM

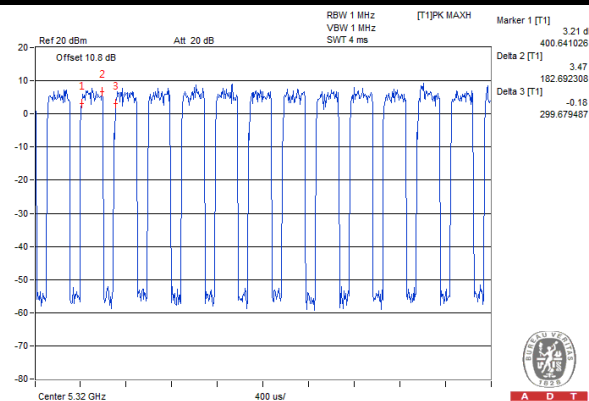
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $0.182/0.299 = 0.609$, Duty factor = $10 * \log(1/0.609) = 2.15$

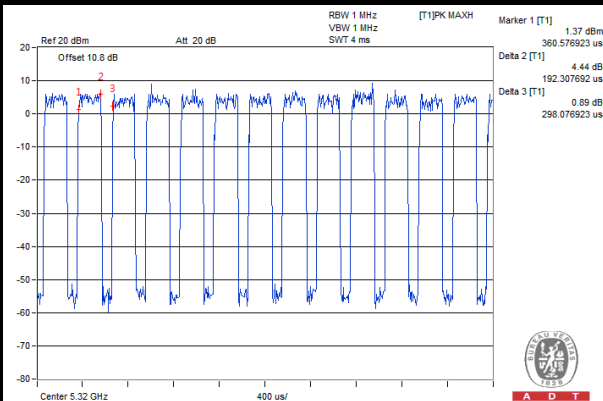
802.11n (20MHz): Duty cycle = $0.192/0.298 = 0.645$, Duty factor = $10 * \log(1/0.645) = 1.90$

802.11n (40MHz): Duty cycle = $0.078/0.214 = 0.365$, Duty factor = $10 * \log(1/0.365) = 4.37$

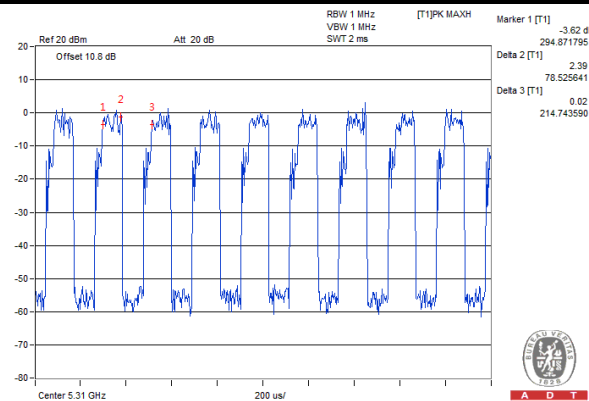
802.11a



802.11n (20MHz)



802.11n (40MHz)



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)

789033 D02 General UNII Test Procedures New Rules v01

ANSI C63.10-2013

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	Feb. 10, 2015	Feb. 09, 2016
Power Meter	ML2495A	1232002	Sep. 17, 2014	Sep. 16, 2015
Power Sensor	MA2411B	1207325	Sep. 17, 2014	Sep. 16, 2015

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in HwaYa Chamber 10.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The FCC Site Registration No. is 690701.
6. The IC Site Registration No. is IC 7450F-10.

4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

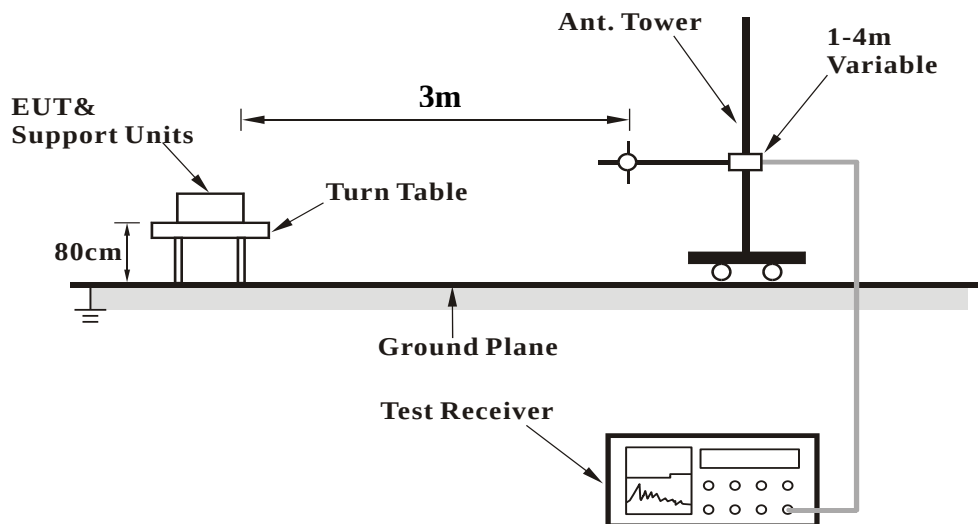
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

4.1.5 DEVIATION FROM TEST STANDARD

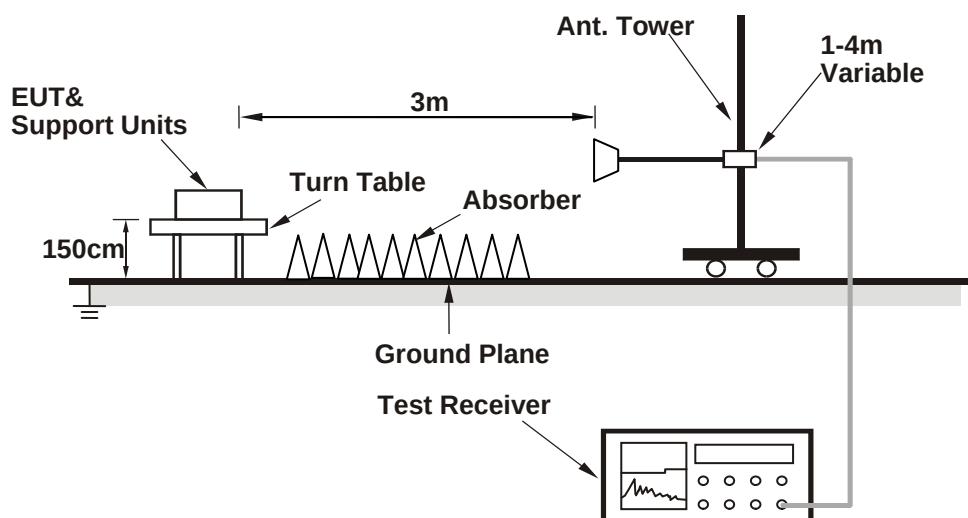
No deviation.

4.1.6 TEST SETUP

<Frequency Range 30MHz ~ 1GHz>



<Frequency Range above 1GHz>



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

4.1.7 EUT OPERATING CONDITIONS

- 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
5146	43.47	43.27	54	-10.53	31.32	6.2	37.32	198	137	Average
5146	62.03	61.83	74	-11.97	31.32	6.2	37.32	198	137	Peak
5180	96	95.77			31.35	6.22	37.34	198	137	Average
5180	105.29	105.06			31.35	6.22	37.34	198	137	Peak
5460	38.87	38.05	54	-15.13	31.56	6.34	37.08	198	137	Average
5460	60.66	59.84	74	-13.34	31.56	6.34	37.08	198	137	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	40.81	40.61	54	-13.19	31.32	6.2	37.32	109	297	Average
5150	61.77	61.57	74	-12.23	31.32	6.2	37.32	109	297	Peak
5180	92.48	92.25			31.35	6.22	37.34	109	297	Average
5180	101.76	101.53			31.35	6.22	37.34	109	297	Peak
5452	38.44	37.62	54	-15.56	31.56	6.34	37.08	109	297	Average
5452	60.81	59.99	74	-13.19	31.56	6.34	37.08	109	297	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
5112	39.49	39.29	54	-14.51	31.29	6.19	37.28	118	134	Average
5112	60.53	60.33	74	-13.47	31.29	6.19	37.28	118	134	Peak
5220	95.87	95.62			31.37	6.24	37.36	118	134	Average
5220	105.61	105.36			31.37	6.24	37.36	118	134	Peak
5370	38.76	38.14	54	-15.24	31.49	6.31	37.18	118	134	Average
5370	59.78	59.16	74	-14.22	31.49	6.31	37.18	118	134	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5028	38.04	37.9	54	-15.96	31.23	6.15	37.24	102	299	Average
5028	59.84	59.7	74	-14.16	31.23	6.15	37.24	102	299	Peak
5220	92.48	92.23			31.37	6.24	37.36	102	299	Average
5220	101.93	101.68			31.37	6.24	37.36	102	299	Peak
5366	38.32	37.7	54	-15.68	31.49	6.31	37.18	102	299	Average
5366	60.18	59.56	74	-13.82	31.49	6.31	37.18	102	299	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
5046	38.8	38.66	54	-15.2	31.24	6.15	37.25	137	133	Average
5046	59.95	59.81	74	-14.05	31.24	6.15	37.25	137	133	Peak
5240	96.98	96.66			31.39	6.25	37.32	137	133	Average
5240	106.72	106.4			31.39	6.25	37.32	137	133	Peak
5422	39.31	38.64	54	-14.69	31.53	6.32	37.18	137	133	Average
5422	60.34	59.67	74	-13.66	31.53	6.32	37.18	137	133	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
5100	38.02	37.83	54	-15.98	31.28	6.19	37.28	130	299	Average
5100	59.67	59.48	74	-14.33	31.28	6.19	37.28	130	299	Peak
5240	92.04	91.72			31.39	6.25	37.32	130	299	Average
5240	100.82	100.5			31.39	6.25	37.32	130	299	Peak
5400	38.34	37.68	54	-15.66	31.52	6.32	37.18	130	299	Average
5400	59.74	59.08	74	-14.26	31.52	6.32	37.18	130	299	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
5120	38.43	38.25	54	-15.57	31.29	6.19	37.3	145	102	Average
5120	59.25	59.07	74	-14.75	31.29	6.19	37.3	145	102	Peak
5260	96.26	95.87			31.41	6.25	37.27	145	102	Average
5260	105.4	105.01			31.41	6.25	37.27	145	102	Peak
5374	39.82	39.2	54	-14.18	31.49	6.31	37.18	145	102	Average
5374	59.96	59.34	74	-14.04	31.49	6.31	37.18	145	102	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5142	38.08	37.86	54	-15.92	31.32	6.2	37.3	100	108	Average
5142	59.92	59.7	74	-14.08	31.32	6.2	37.3	100	108	Peak
5260	91.79	91.4			31.41	6.25	37.27	100	108	Average
5260	101.13	100.74			31.41	6.25	37.27	100	108	Peak
5450	38.52	37.7	54	-15.48	31.56	6.34	37.08	100	108	Average
5450	60.35	59.53	74	-13.65	31.56	6.34	37.08	100	108	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
5146	38.17	37.97	54	-15.83	31.32	6.2	37.32	126	101	Average
5146	61.04	60.84	74	-12.96	31.32	6.2	37.32	126	101	Peak
5300	96.86	96.34			31.44	6.27	37.19	126	101	Average
5300	106.07	105.55			31.44	6.27	37.19	126	101	Peak
5356	43.08	42.49	54	-10.92	31.48	6.29	37.18	126	101	Average
5356	61.26	60.67	74	-12.74	31.48	6.29	37.18	126	101	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	38.03	37.83	54	-15.97	31.29	6.19	37.28	202	96	Average
5110	59.87	59.67	74	-14.13	31.29	6.19	37.28	202	96	Peak
5300	92.41	91.89			31.44	6.27	37.19	202	96	Average
5300	101.7	101.18			31.44	6.27	37.19	202	96	Peak
5384	39.68	39.04	54	-14.32	31.51	6.31	37.18	202	96	Average
5384	60.58	59.94	74	-13.42	31.51	6.31	37.18	202	96	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
5038	38.04	37.89	54	-15.96	31.24	6.15	37.24	128	99	Average
5038	60	59.85	74	-14	31.24	6.15	37.24	128	99	Peak
5320	96.51	95.96			31.45	6.29	37.19	128	99	Average
5320	105.3	104.75			31.45	6.29	37.19	128	99	Peak
5350	44.95	44.36	54	-9.05	31.48	6.29	37.18	128	99	Average
5350	67.83	67.24	74	-6.17	31.48	6.29	37.18	128	99	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
5096	37.82	37.63	54	-16.18	31.28	6.19	37.28	100	97	Average
5096	60.23	60.04	74	-13.77	31.28	6.19	37.28	100	97	Peak
5320	92.36	91.81			31.45	6.29	37.19	100	97	Average
5320	101.96	101.41			31.45	6.29	37.19	100	97	Peak
5362	41.67	41.05	54	-12.33	31.49	6.31	37.18	100	97	Average
5362	60.88	60.26	74	-13.12	31.49	6.31	37.18	100	97	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
5448	45.15	44.38	54	-8.85	31.56	6.34	37.13	198	144	Average
5448	62.53	61.76	74	-11.47	31.56	6.34	37.13	198	144	Peak
5470	61.6	60.77	68.2	-6.6	31.57	6.34	37.08	198	144	Peak
5500	97.25	96.32			31.6	6.36	37.03	198	144	Average
5500	106.41	105.48			31.6	6.36	37.03	198	144	Peak
5725	59.76	58.48	68.2	-8.44	31.96	6.75	37.43	198	144	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
5454	40.62	39.8	54	-13.38	31.56	6.34	37.08	201	95	Average
5454	60.25	59.43	74	-13.75	31.56	6.34	37.08	201	95	Peak
5470	59.69	58.86	68.2	-8.51	31.57	6.34	37.08	201	95	Peak
5500	93.18	92.25			31.6	6.36	37.03	201	95	Average
5500	103.4	102.47			31.6	6.36	37.03	201	95	Peak
5725	59.56	58.28	68.2	-8.64	31.96	6.75	37.43	201	95	Peak

REMARKS:

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 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
5420	38.75	38.08	54	-15.25	31.53	6.32	37.18	196	139	Average
5420	59.99	59.32	74	-14.01	31.53	6.32	37.18	196	139	Peak
5470	58.84	58.01	68.2	-9.36	31.57	6.34	37.08	196	139	Peak
5580	97.43	96.39			31.71	6.49	37.16	196	139	Average
5580	106.64	105.6			31.71	6.49	37.16	196	139	Peak
5725	59.47	58.19	68.2	-8.73	31.96	6.75	37.43	196	139	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5430	38.31	37.57	54	-15.69	31.55	6.32	37.13	102	86	Average
5430	60.57	59.83	74	-13.43	31.55	6.32	37.13	102	86	Peak
5470	59.59	58.76	68.2	-8.61	31.57	6.34	37.08	102	86	Peak
5580	91.75	90.71			31.71	6.49	37.16	102	86	Average
5580	101.24	100.2			31.71	6.49	37.16	102	86	Peak
5725	59.41	58.13	68.2	-8.79	31.96	6.75	37.43	102	86	Peak

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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
5392	38.33	37.69	54	-15.67	31.51	6.31	37.18	215	137	Average
5392	59.94	59.3	74	-14.06	31.51	6.31	37.18	215	137	Peak
5470	59.2	58.37	68.2	-9	31.57	6.34	37.08	215	137	Peak
5700	97.38	96.19			31.9	6.69	37.4	215	137	Average
5700	106.74	105.55			31.9	6.69	37.4	215	137	Peak
5725	66.58	65.3	68.2	-1.62	31.96	6.75	37.43	215	137	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
5372	38.22	37.6	54	-15.78	31.49	6.31	37.18	113	300	Average
5372	61.31	60.69	74	-12.69	31.49	6.31	37.18	113	300	Peak
5470	58.01	57.18	68.2	-10.19	31.57	6.34	37.08	113	300	Peak
5700	103.09	101.9			31.9	6.69	37.4	113	300	Peak
5700	93.88	92.69			31.9	6.69	37.4	113	300	Peak
5725	64.64	63.36	68.2	-3.56	31.96	6.75	37.43	113	300	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	66.25	65.06	68.2	-1.95	31.93	6.69	37.43	206	116	Peak
5725	76.18	74.9	78.2	-2.02	31.96	6.75	37.43	206	116	Peak
5745	99.05	97.78			31.99	6.75	37.47	206	116	Average
5745	108.49	107.22			31.99	6.75	37.47	206	116	Peak
5850	60.99	59.47	78.2	-17.21	32.15	6.88	37.51	206	116	Peak
5861	61.21	59.58	68.2	-6.99	32.18	6.95	37.5	206	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	60.4	59.21	68.2	-7.8	31.93	6.69	37.43	132	298	Peak
5725	62.95	61.67	78.2	-15.25	31.96	6.75	37.43	132	298	Peak
5745	92.77	91.5			31.99	6.75	37.47	132	298	Average
5745	102.54	101.27			31.99	6.75	37.47	132	298	Peak
5850	60.06	58.54	78.2	-18.14	32.15	6.88	37.51	132	298	Peak
5861	60.16	58.53	68.2	-8.04	32.18	6.95	37.5	132	298	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	60.65	59.46	68.2	-7.55	31.93	6.69	37.43	212	104	Peak
5725	60.69	59.41	78.2	-17.51	31.96	6.75	37.43	212	104	Peak
5785	98.98	97.66			32.04	6.82	37.54	212	104	Average
5785	108.47	107.15			32.04	6.82	37.54	212	104	Peak
5850	61.34	59.82	78.2	-16.86	32.15	6.88	37.51	212	104	Peak
5861	60.08	58.45	68.2	-8.12	32.18	6.95	37.5	212	104	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	60.32	59.13	68.2	-7.88	31.93	6.69	37.43	104	300	Peak
5725	59.64	58.36	78.2	-18.56	31.96	6.75	37.43	104	300	Peak
5785	92.55	91.23			32.04	6.82	37.54	104	300	Average
5785	102.34	101.02			32.04	6.82	37.54	104	300	Peak
5850	59.06	57.54	78.2	-19.14	32.15	6.88	37.51	104	300	Peak
5861	59.08	57.45	68.2	-9.12	32.18	6.95	37.5	104	300	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	59.62	58.43	68.2	-8.58	31.93	6.69	37.43	211	119	Peak
5725	60.29	59.01	78.2	-17.91	31.96	6.75	37.43	211	119	Peak
5825	99.16	97.69			32.12	6.88	37.53	211	119	Average
5825	108.42	106.95			32.12	6.88	37.53	211	119	Peak
5850	68.04	66.52	78.2	-10.16	32.15	6.88	37.51	211	119	Peak
5861	62.96	61.33	68.2	-5.24	32.18	6.95	37.5	211	119	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	57.81	68.2	-9.2	31.93	6.69	37.43	138	311	Peak
5725	60.75	59.47	78.2	-17.45	31.96	6.75	37.43	138	311	Peak
5825	92.89	91.42			32.12	6.88	37.53	138	311	Average
5825	102.31	100.84			32.12	6.88	37.53	138	311	Peak
5850	60.43	58.91	78.2	-17.77	32.15	6.88	37.51	138	311	Peak
5861	61.89	60.26	68.2	-6.31	32.18	6.95	37.5	138	311	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
5150	42.62	42.42	54	-11.38	31.32	6.2	37.32	207	130	Average
5150	61.41	61.21	74	-12.59	31.32	6.2	37.32	207	130	Peak
5180	95.67	95.44			31.35	6.22	37.34	207	130	Average
5180	105.39	105.16			31.35	6.22	37.34	207	130	Peak
5454	38.62	37.8	54	-15.38	31.56	6.34	37.08	207	130	Average
5454	60.6	59.78	74	-13.4	31.56	6.34	37.08	207	130	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	40.9	40.7	54	-13.1	31.32	6.2	37.32	110	80	Average
5146	62.07	61.87	74	-11.93	31.32	6.2	37.32	110	80	Peak
5180	91.84	91.61			31.35	6.22	37.34	110	80	Average
5180	100.86	100.63			31.35	6.22	37.34	110	80	Peak
5442	38.32	37.56	54	-15.68	31.55	6.34	37.13	110	80	Average
5442	59.98	59.22	74	-14.02	31.55	6.34	37.13	110	80	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
5136	39.26	39.05	54	-14.74	31.31	6.2	37.3	113	133	Average
5136	59.97	59.76	74	-14.03	31.31	6.2	37.3	113	133	Peak
5220	95.46	95.21			31.37	6.24	37.36	113	133	Average
5220	105.23	104.98			31.37	6.24	37.36	113	133	Peak
5438	38.72	37.96	54	-15.28	31.55	6.34	37.13	113	133	Average
5438	60.06	59.3	74	-13.94	31.55	6.34	37.13	113	133	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
5134	38.37	38.16	54	-15.63	31.31	6.2	37.3	108	99	Average
5134	60.36	60.15	74	-13.64	31.31	6.2	37.3	108	99	Peak
5220	92.26	92.01			31.37	6.24	37.36	108	99	Average
5220	101.24	100.99			31.37	6.24	37.36	108	99	Peak
5442	38.41	37.65	54	-15.59	31.55	6.34	37.13	108	99	Average
5442	59.95	59.19	74	-14.05	31.55	6.34	37.13	108	99	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
5110	38.8	38.6	54	-15.2	31.29	6.19	37.28	128	136	Average
5110	60.24	60.04	74	-13.76	31.29	6.19	37.28	128	136	Peak
5240	95.38	95.06			31.39	6.25	37.32	128	136	Average
5240	105.6	105.28			31.39	6.25	37.32	128	136	Peak
5366	39	38.38	54	-15	31.49	6.31	37.18	128	136	Average
5366	60.03	59.41	74	-13.97	31.49	6.31	37.18	128	136	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5062	38.06	37.89	54	-15.94	31.25	6.17	37.25	124	116	Average
5062	59.74	59.57	74	-14.26	31.25	6.17	37.25	124	116	Peak
5240	91.74	91.42			31.39	6.25	37.32	124	116	Average
5240	101.08	100.76			31.39	6.25	37.32	124	116	Peak
5428	38.39	37.67	54	-15.61	31.53	6.32	37.13	124	116	Average
5428	59.81	59.09	74	-14.19	31.53	6.32	37.13	124	116	Peak

REMARKS:

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



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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
5126	38.45	38.24	54	-15.55	31.31	6.2	37.3	198	103	Average
5126	60.58	60.37	74	-13.42	31.31	6.2	37.3	198	103	Peak
5260	95.94	95.55			31.41	6.25	37.27	198	103	Average
5260	105.34	104.95			31.41	6.25	37.27	198	103	Peak
5368	39.32	38.7	54	-14.68	31.49	6.31	37.18	198	103	Average
5368	60.42	59.8	74	-13.58	31.49	6.31	37.18	198	103	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5136	37.99	37.78	54	-16.01	31.31	6.2	37.3	100	108	Average
5136	60.32	60.11	74	-13.68	31.31	6.2	37.3	100	108	Peak
5260	90.6	90.21			31.41	6.25	37.27	100	108	Average
5260	100.18	99.79			31.41	6.25	37.27	100	108	Peak
5430	38.31	37.57	54	-15.69	31.55	6.32	37.13	100	108	Average
5430	60.16	59.42	74	-13.84	31.55	6.32	37.13	100	108	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
5078	38	37.83	54	-16	31.27	6.17	37.27	193	102	Average
5078	61	60.83	74	-13	31.27	6.17	37.27	193	102	Peak
5300	96.06	95.54			31.44	6.27	37.19	193	102	Average
5300	105.15	104.63			31.44	6.27	37.19	193	102	Peak
5368	42.04	41.42	54	-11.96	31.49	6.31	37.18	193	102	Average
5368	61.06	60.44	74	-12.94	31.49	6.31	37.18	193	102	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
5042	37.94	37.8	54	-16.06	31.24	6.15	37.25	185	99	Average
5042	60.1	59.96	74	-13.9	31.24	6.15	37.25	185	99	Peak
5300	91.07	90.55			31.44	6.27	37.19	185	99	Average
5300	101.47	100.95			31.44	6.27	37.19	185	99	Peak
5370	39.3	38.68	54	-14.7	31.49	6.31	37.18	185	99	Average
5370	60.34	59.72	74	-13.66	31.49	6.31	37.18	185	99	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
5096	37.94	37.75	54	-16.06	31.28	6.19	37.28	191	103	Average
5096	59.44	59.25	74	-14.56	31.28	6.19	37.28	191	103	Peak
5320	96.18	95.63			31.45	6.29	37.19	191	103	Average
5320	105.2	104.65			31.45	6.29	37.19	191	103	Peak
5352	43.63	43.04	54	-10.37	31.48	6.29	37.18	191	103	Average
5352	62.07	61.48	74	-11.93	31.48	6.29	37.18	191	103	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5038	37.92	37.77	54	-16.08	31.24	6.15	37.24	202	94	Average
5038	59.9	59.75	74	-14.1	31.24	6.15	37.24	202	94	Peak
5320	91.58	91.03			31.45	6.29	37.19	202	94	Average
5320	100.58	100.03			31.45	6.29	37.19	202	94	Peak
5350	40.35	39.76	54	-13.65	31.48	6.29	37.18	202	94	Average
5350	61.86	61.27	74	-12.14	31.48	6.29	37.18	202	94	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
5404	43.48	42.82	54	-10.52	31.52	6.32	37.18	202	143	Average
5404	61.08	60.42	74	-12.92	31.52	6.32	37.18	202	143	Peak
5470	62.74	61.91	68.2	-5.46	31.57	6.34	37.08	202	143	Peak
5500	96.29	95.36			31.6	6.36	37.03	202	143	Average
5500	106.8	105.87			31.6	6.36	37.03	202	143	Peak
5725	60.49	59.21	68.2	-7.71	31.96	6.75	37.43	202	143	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
5398	39.83	39.17	54	-14.17	31.52	6.32	37.18	103	96	Average
5398	60.87	60.21	74	-13.13	31.52	6.32	37.18	103	96	Peak
5470	59.44	58.61	68.2	-8.76	31.57	6.34	37.08	103	96	Peak
5500	92.32	91.39			31.6	6.36	37.03	103	96	Average
5500	102.96	102.03			31.6	6.36	37.03	103	96	Peak
5725	59.75	58.47	68.2	-8.45	31.96	6.75	37.43	103	96	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
5408	38.73	38.07	54	-15.27	31.52	6.32	37.18	192	105	Average
5408	61.07	60.41	74	-12.93	31.52	6.32	37.18	192	105	Peak
5470	59.79	58.96	68.2	-8.41	31.57	6.34	37.08	192	105	Peak
5580	96.48	95.44			31.71	6.49	37.16	192	105	Average
5580	106.92	105.88			31.71	6.49	37.16	192	105	Peak
5725	59.32	58.04	68.2	-8.88	31.96	6.75	37.43	192	105	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	38.44	37.62	54	-15.56	31.56	6.34	37.08	102	100	Average
5460	60.78	59.96	74	-13.22	31.56	6.34	37.08	102	100	Peak
5470	58.77	57.94	68.2	-9.43	31.57	6.34	37.08	102	100	Peak
5580	93.89	92.85			31.71	6.49	37.16	102	100	Average
5580	103.59	102.55			31.71	6.49	37.16	102	100	Peak
5725	60.26	58.98	68.2	-7.94	31.96	6.75	37.43	102	100	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
5358	38.31	37.7	54	-15.69	31.48	6.31	37.18	194	132	Average
5358	60.48	59.87	74	-13.52	31.48	6.31	37.18	194	132	Peak
5470	58.68	57.85	68.2	-9.52	31.57	6.34	37.08	194	132	Peak
5700	97.03	95.84			31.9	6.69	37.4	194	132	Average
5700	106.2	105.01			31.9	6.69	37.4	194	132	Peak
5725	64.64	63.36	68.2	-3.56	31.96	6.75	37.43	194	132	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
5448	38.48	37.71	54	-15.52	31.56	6.34	37.13	113	300	Average
5448	60.69	59.92	74	-13.31	31.56	6.34	37.13	113	300	Peak
5470	59.24	58.41	68.2	-8.96	31.57	6.34	37.08	113	300	Peak
5700	92.87	91.68			31.9	6.69	37.4	113	300	Average
5700	102.56	101.37			31.9	6.69	37.4	113	300	Peak
5725	62.04	60.76	68.2	-6.16	31.96	6.75	37.43	113	300	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	61.8	60.61	68.2	-6.4	31.93	6.69	37.43	207	124	Peak
5725	71.5	70.22	78.2	-6.7	31.96	6.75	37.43	207	124	Peak
5745	98.56	97.29			31.99	6.75	37.47	207	124	Average
5745	107.88	106.61			31.99	6.75	37.47	207	124	Peak
5850	61.48	59.96	78.2	-16.72	32.15	6.88	37.51	207	124	Peak
5861	60.38	58.75	68.2	-7.82	32.18	6.95	37.5	207	124	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	60.36	59.17	68.2	-7.84	31.93	6.69	37.43	112	305	Peak
5725	65.69	64.41	78.2	-12.51	31.96	6.75	37.43	112	305	Peak
5745	92.31	91.04			31.99	6.75	37.47	112	305	Average
5745	102.02	100.75			31.99	6.75	37.47	112	305	Peak
5850	60.68	59.16	78.2	-17.52	32.15	6.88	37.51	112	305	Peak
5861	60.39	58.76	68.2	-7.81	32.18	6.95	37.5	112	305	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	60.64	59.45	68.2	-7.56	31.93	6.69	37.43	213	127	Peak
5725	62.89	61.61	78.2	-15.31	31.96	6.75	37.43	213	127	Peak
5785	98.31	96.99			32.04	6.82	37.54	213	127	Average
5785	107.63	106.31			32.04	6.82	37.54	213	127	Peak
5850	60.65	59.13	78.2	-17.55	32.15	6.88	37.51	213	127	Peak
5861	61.24	59.61	68.2	-6.96	32.18	6.95	37.5	213	127	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	60.2	59.01	68.2	-8	31.93	6.69	37.43	104	281	Peak
5725	60.38	59.1	78.2	-17.82	31.96	6.75	37.43	104	281	Peak
5785	91.9	90.58			32.04	6.82	37.54	104	281	Average
5785	101.73	100.41			32.04	6.82	37.54	104	281	Peak
5850	59.61	58.09	78.2	-18.59	32.15	6.88	37.51	104	281	Peak
5861	60.8	59.17	68.2	-7.4	32.18	6.95	37.5	104	281	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	60.86	59.67	68.2	-7.34	31.93	6.69	37.43	211	115	Peak
5725	60.43	59.15	78.2	-17.77	31.96	6.75	37.43	211	115	Peak
5825	98.31	96.84			32.12	6.88	37.53	211	115	Average
5825	107.73	106.26			32.12	6.88	37.53	211	115	Peak
5850	66.74	65.22	78.2	-11.46	32.15	6.88	37.51	211	115	Peak
5861	63.51	61.88	68.2	-4.69	32.18	6.95	37.5	211	115	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	60.49	59.3	68.2	-7.71	31.93	6.69	37.43	110	291	Peak
5725	59.08	57.8	78.2	-19.12	31.96	6.75	37.43	110	291	Peak
5825	92.03	90.56			32.12	6.88	37.53	110	291	Average
5825	101.61	100.14			32.12	6.88	37.53	110	291	Peak
5850	63.64	62.12	78.2	-14.56	32.15	6.88	37.51	110	291	Peak
5861	60.5	58.87	68.2	-7.7	32.18	6.95	37.5	110	291	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
5140	47.98	47.76	54	-6.02	31.32	6.2	37.3	106	135	Average
5140	64.72	64.5	74	-9.28	31.32	6.2	37.3	106	135	Peak
5190	92.41	92.18			31.35	6.22	37.34	106	135	Average
5190	102.25	102.02			31.35	6.22	37.34	106	135	Peak
5444	39.2	38.44	54	-14.8	31.55	6.34	37.13	106	135	Average
5444	60.89	60.13	74	-13.11	31.55	6.34	37.13	106	135	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	43.99	43.79	54	-10.01	31.32	6.2	37.32	102	297	Average
5150	60.62	60.42	74	-13.38	31.32	6.2	37.32	102	297	Peak
5190	89.85	89.62			31.35	6.22	37.34	102	297	Average
5190	98.49	98.26			31.35	6.22	37.34	102	297	Peak
5388	38.61	37.97	54	-15.39	31.51	6.31	37.18	102	297	Average
5388	59.99	59.35	74	-14.01	31.51	6.31	37.18	102	297	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
5064	40.21	40.04	54	-13.79	31.25	6.17	37.25	105	134	Average
5064	60.59	60.42	74	-13.41	31.25	6.17	37.25	105	134	Peak
5230	93.28	92.97			31.39	6.24	37.32	105	134	Average
5230	102.24	101.93			31.39	6.24	37.32	105	134	Peak
5434	39.51	38.77	54	-14.49	31.55	6.32	37.13	105	134	Average
5434	60.4	59.66	74	-13.6	31.55	6.32	37.13	105	134	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
5082	38.75	38.58	54	-15.25	31.27	6.17	37.27	102	248	Average
5082	59.91	59.74	74	-14.09	31.27	6.17	37.27	102	248	Peak
5230	89.64	89.33			31.39	6.24	37.32	102	248	Average
5230	98.23	97.92			31.39	6.24	37.32	102	248	Peak
5372	38.65	38.03	54	-15.35	31.49	6.31	37.18	102	248	Average
5372	60.21	59.59	74	-13.79	31.49	6.31	37.18	102	248	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
5138	38.77	38.56	54	-15.23	31.31	6.2	37.3	161	102	Average
5138	60.63	60.42	74	-13.37	31.31	6.2	37.3	161	102	Peak
5270	93.85	93.46			31.41	6.25	37.27	161	102	Average
5270	102.67	102.28			31.41	6.25	37.27	161	102	Peak
5442	41.74	40.98	54	-12.26	31.55	6.34	37.13	161	102	Average
5442	61.2	60.44	74	-12.8	31.55	6.34	37.13	161	102	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
5044	38.29	38.15	54	-15.71	31.24	6.15	37.25	194	98	Average
5044	61.06	60.92	74	-12.94	31.24	6.15	37.25	194	98	Peak
5270	88.35	87.96			31.41	6.25	37.27	194	98	Average
5270	98.64	98.25			31.41	6.25	37.27	194	98	Peak
5424	39.21	38.54	54	-14.79	31.53	6.32	37.18	194	98	Average
5424	60.74	60.07	74	-13.26	31.53	6.32	37.18	194	98	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
5090	38.41	38.21	54	-15.59	31.28	6.19	37.27	159	101	Average
5090	60.38	60.18	74	-13.62	31.28	6.19	37.27	159	101	Peak
5310	93.95	93.42			31.45	6.27	37.19	159	101	Average
5310	103.66	103.13			31.45	6.27	37.19	159	101	Peak
5350	46.36	45.77	54	-7.64	31.48	6.29	37.18	159	101	Average
5350	67.82	67.23	74	-6.18	31.48	6.29	37.18	159	101	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
5140	38.59	38.37	54	-15.41	31.32	6.2	37.3	192	95	Average
5140	59.99	59.77	74	-14.01	31.32	6.2	37.3	192	95	Peak
5310	89.48	88.95			31.45	6.27	37.19	192	95	Average
5310	98.26	97.73			31.45	6.27	37.19	192	95	Peak
5360	41.88	41.27	54	-12.12	31.48	6.31	37.18	192	95	Average
5360	63.28	62.67	74	-10.72	31.48	6.31	37.18	192	95	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
5456	43.46	42.64	54	-10.54	31.56	6.34	37.08	190	134	Average
5456	64.23	63.41	74	-9.77	31.56	6.34	37.08	190	134	Peak
5470	62.34	61.51	68.2	-5.86	31.57	6.34	37.08	190	134	Peak
5510	94.17	93.27			31.6	6.36	37.06	190	134	Average
5510	103.26	102.36			31.6	6.36	37.06	190	134	Peak
5725	60.82	59.54	68.2	-7.38	31.96	6.75	37.43	190	134	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
5454	41.02	40.2	54	-12.98	31.56	6.34	37.08	132	359	Average
5454	60.57	59.75	74	-13.43	31.56	6.34	37.08	132	359	Peak
5470	61.55	60.72	68.2	-6.65	31.57	6.34	37.08	132	359	Peak
5510	89.11	88.21			31.6	6.36	37.06	132	359	Average
5510	97.9	97			31.6	6.36	37.06	132	359	Peak
5725	59.32	58.04	68.2	-8.88	31.96	6.75	37.43	132	359	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
5412	40.29	39.62	54	-13.71	31.53	6.32	37.18	127	135	Average
5412	59.4	58.73	74	-14.6	31.53	6.32	37.18	127	135	Peak
5470	59.34	58.51	68.2	-8.86	31.57	6.34	37.08	127	135	Peak
5550	93.96	92.95			31.68	6.42	37.09	127	135	Average
5550	103.13	102.12			31.68	6.42	37.09	127	135	Peak
5725	58.59	57.31	68.2	-9.61	31.96	6.75	37.43	127	135	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
5412	40.79	40.12	54	-13.21	31.53	6.32	37.18	101	100	Average
5412	61.71	61.04	74	-12.29	31.53	6.32	37.18	101	100	Peak
5470	59.13	58.3	68.2	-9.07	31.57	6.34	37.08	101	100	Peak
5550	90.56	89.55			31.68	6.42	37.09	101	100	Average
5550	100.97	99.96			31.68	6.42	37.09	101	100	Peak
5725	59.42	58.14	68.2	-8.78	31.96	6.75	37.43	101	100	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
5422	38.87	38.2	54	-15.13	31.53	6.32	37.18	134	111	Average
5422	60.73	60.06	74	-13.27	31.53	6.32	37.18	134	111	Peak
5470	58.25	57.42	68.2	-9.95	31.57	6.34	37.08	134	111	Peak
5670	93.57	92.41			31.88	6.62	37.34	134	111	Average
5670	103.07	101.91			31.88	6.62	37.34	134	111	Peak
5725	63.21	61.93	68.2	-4.99	31.96	6.75	37.43	134	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
5436	38.63	37.89	54	-15.37	31.55	6.32	37.13	100	100	Average
5436	60.18	59.44	74	-13.82	31.55	6.32	37.13	100	100	Peak
5470	58.41	57.58	68.2	-9.79	31.57	6.34	37.08	100	100	Peak
5670	90.88	89.72			31.88	6.62	37.34	100	100	Average
5670	100.24	99.08			31.88	6.62	37.34	100	100	Peak
5725	60.1	58.82	68.2	-8.1	31.96	6.75	37.43	100	100	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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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	66.23	65.04	68.2	-1.97	31.93	6.69	37.43	215	105	Peak
5725	72.15	70.87	78.2	-6.05	31.96	6.75	37.43	215	105	Peak
5755	95.5	94.21			32.01	6.75	37.47	215	105	Average
5755	104.55	103.26			32.01	6.75	37.47	215	105	Peak
5850	60.77	59.25	78.2	-17.43	32.15	6.88	37.51	215	105	Peak
5861	60.59	58.96	68.2	-7.61	32.18	6.95	37.5	215	105	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	61.54	60.35	68.2	-6.66	31.93	6.69	37.43	105	294	Peak
5725	65.45	64.17	78.2	-12.75	31.96	6.75	37.43	105	294	Peak
5755	88.82	87.53			32.01	6.75	37.47	105	294	Average
5755	98.39	97.1			32.01	6.75	37.47	105	294	Peak
5850	59.85	58.33	78.2	-18.35	32.15	6.88	37.51	105	294	Peak
5861	59.56	57.93	68.2	-8.64	32.18	6.95	37.5	105	294	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	60.56	59.37	68.2	-7.64	31.93	6.69	37.43	209	128	Peak
5725	60.3	59.02	78.2	-17.9	31.96	6.75	37.43	209	128	Peak
5795	95.38	94.03			32.07	6.82	37.54	209	128	Average
5795	104.53	103.18			32.07	6.82	37.54	209	128	Peak
5850	64	62.48	78.2	-14.2	32.15	6.88	37.51	209	128	Peak
5861	61.1	59.47	68.2	-7.1	32.18	6.95	37.5	209	128	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	60.49	59.3	68.2	-7.71	31.93	6.69	37.43	104	304	Peak
5725	61.48	60.2	78.2	-16.72	31.96	6.75	37.43	104	304	Peak
5795	89.09	87.74			32.07	6.82	37.54	104	304	Average
5795	98.85	97.5			32.07	6.82	37.54	104	304	Peak
5850	61.52	60	78.2	-16.68	32.15	6.88	37.51	104	304	Peak
5861	60.18	58.55	68.2	-8.02	32.18	6.95	37.5	104	304	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
284.14	37.82	55.51	46	-8.18	12.48	1.59	31.76	103	193	Peak
313.24	38.92	55.92	46	-7.08	13.26	1.67	31.93	138	342	Peak
350.1	36	51.93	46	-10	14.15	1.76	31.84	113	66	Peak
396.66	32.67	47.61	46	-13.33	15.26	1.9	32.1	119	69	Peak
607.15	29.67	39.84	46	-16.33	19.69	2.27	32.13	117	90	Peak
675.05	32.03	40.94	46	-13.97	20.51	2.41	31.83	140	93	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.97	31.96	50.35	40	-8.04	12.14	0.59	31.12	121	273	Peak
43.58	30.58	47.43	40	-9.42	13.59	0.67	31.11	139	288	Peak
55.22	25.02	43.15	40	-14.98	12.45	0.75	31.33	128	328	Peak
290.93	30.4	47.8	46	-15.6	12.68	1.61	31.69	135	164	Peak
458.74	28.77	42.26	46	-17.23	16.5	2	31.99	136	62	Peak
613.94	29.06	39.12	46	-16.94	19.77	2.29	32.12	102	297	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
288.02	33.37	50.87	46	-12.63	12.6	1.6	31.7	104	355	Peak
311.3	39.11	56.16	46	-6.89	13.22	1.67	31.94	125	172	Peak
319.06	39.01	55.83	46	-6.99	13.4	1.68	31.9	104	32	Peak
351.07	35.48	51.4	46	-10.52	14.17	1.76	31.85	102	32	Peak
671.17	29.73	38.67	46	-16.27	20.47	2.4	31.81	102	75	Peak
701.24	29.64	38.14	46	-16.36	20.83	2.45	31.78	118	144	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.97	32.59	50.98	40	-7.41	12.14	0.59	31.12	119	110	Peak
43.58	31.58	48.43	40	-8.42	13.59	0.67	31.11	105	215	Peak
61.04	24.91	43.68	40	-15.09	11.82	0.82	31.41	133	125	Peak
289.96	25.23	42.64	46	-20.77	12.65	1.61	31.67	102	122	Peak
448.07	22.68	36.39	46	-23.32	16.29	1.98	31.98	110	106	Peak
600.36	27.55	37.93	46	-18.45	19.61	2.26	32.25	130	253	Peak

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

Margin value = Emission level – Limit value

Band III

802.11a

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
290.93	36.75	54.15	46	-9.25	12.68	1.61	31.69	110	168	Peak
310.33	38.18	55.27	46	-7.82	13.2	1.66	31.95	117	108	Peak
352.04	35.6	51.52	46	-10.4	14.19	1.76	31.87	120	29	Peak
459.71	25.87	39.33	46	-20.13	16.52	2.01	31.99	120	103	Peak
650.8	27.49	36.92	46	-18.51	20.22	2.36	32.01	138	311	Peak
692.51	30.12	38.78	46	-15.88	20.73	2.44	31.83	112	254	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
31.94	31.18	49.4	40	-8.82	12.3	0.59	31.11	115	229	Peak
40.67	31.78	48.6	40	-8.22	13.55	0.65	31.02	122	63	Peak
280.26	26.54	44.41	46	-19.46	12.37	1.58	31.82	105	340	Peak
353.01	27.29	43.18	46	-18.71	14.22	1.77	31.88	120	39	Peak
463.59	27.83	41.16	46	-18.17	16.6	2.02	31.95	116	20	Peak
603.27	30.61	40.9	46	-15.39	19.65	2.26	32.2	106	312	Peak

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

Margin value = Emission level – Limit value



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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
288.99	35.57	53.01	46	-10.43	12.63	1.61	31.68	114	289	Peak
314.21	38.74	55.71	46	-7.26	13.29	1.67	31.93	137	165	Peak
352.04	35.79	51.71	46	-10.21	14.19	1.76	31.87	136	105	Peak
635.28	28.55	38.3	46	-17.45	20.03	2.33	32.11	136	84	Peak
671.17	31.47	40.41	46	-14.53	20.47	2.4	31.81	109	66	Peak
699.3	31.3	39.83	46	-14.7	20.81	2.45	31.79	136	93	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30	32.04	50.62	40	-7.96	11.98	0.58	31.14	109	108	Peak
42.61	34.88	51.72	40	-5.12	13.58	0.66	31.08	103	62	Peak
60.07	26.02	44.63	40	-13.98	11.94	0.81	31.36	111	117	Peak
293.84	29.52	46.87	46	-16.48	12.77	1.62	31.74	103	152	Peak
453.89	28.7	42.28	46	-17.3	16.41	1.99	31.98	104	167	Peak
604.24	32.76	43.01	46	-13.24	19.66	2.27	32.18	102	307	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. 24, 2015	Jul. 23, 2016
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.



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4.2.3 TEST PROCEDURES

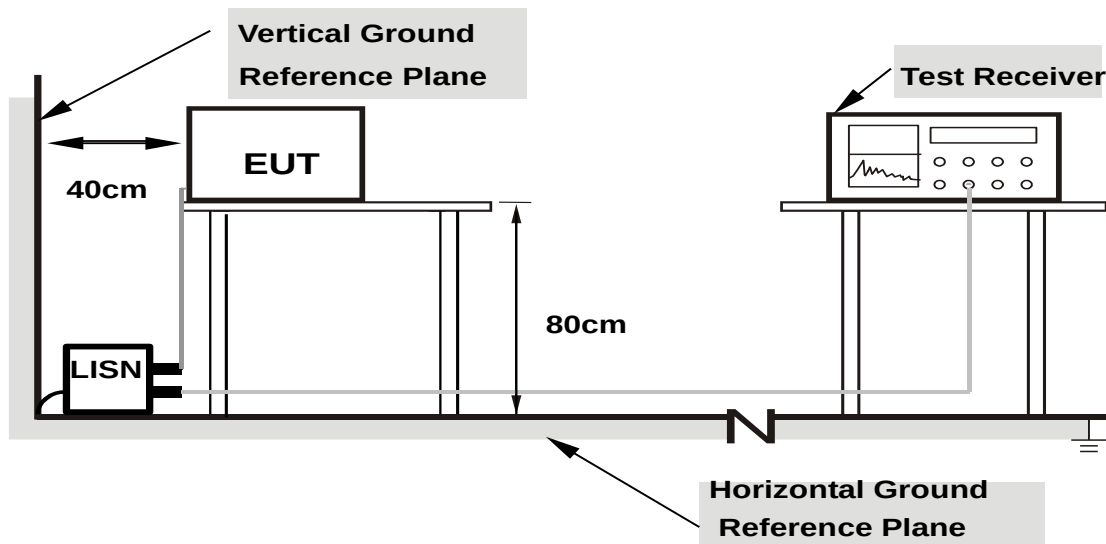
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

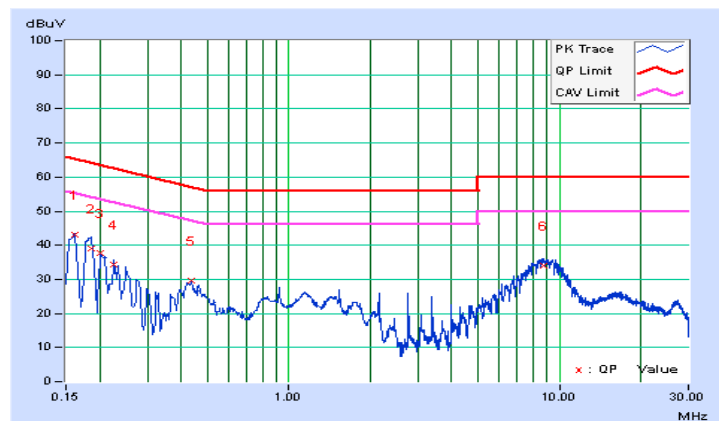
CONDUCTED WORST-CASE DATA :

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2015/7/27

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	0.16148	0.05	43.19	28.74	43.24	28.79	65.39	55.39	-22.15	-26.60
2	0.18568	0.06	38.91	24.98	38.97	25.04	64.23	54.23	-25.26	-29.19
3	0.20201	0.06	37.56	27.89	37.62	27.95	63.53	53.53	-25.91	-25.58
4	0.22600	0.06	34.45	25.63	34.51	25.69	62.60	52.60	-28.09	-26.91
5	0.43829	0.06	29.48	22.45	29.54	22.51	57.09	47.09	-27.55	-24.58
6	8.70600	0.39	33.45	27.31	33.84	27.70	60.00	50.00	-26.16	-22.30

Remarks:

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

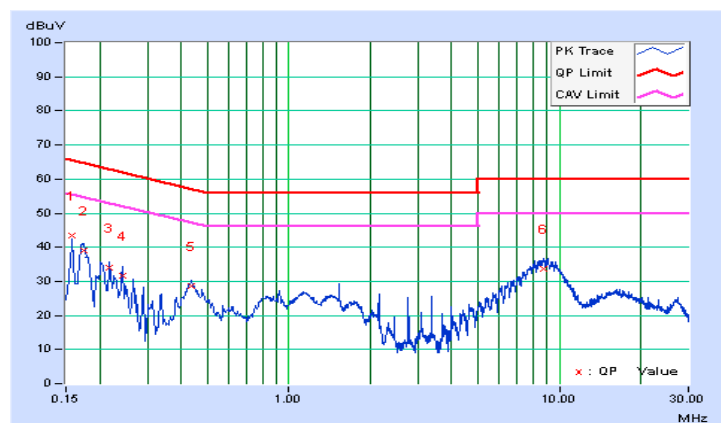


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2015/7/27

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	0.15800	0.05	43.46	31.18	43.51	31.23	65.57	55.57	-22.06	-24.34
2	0.17384	0.05	38.87	23.67	38.92	23.72	64.77	54.77	-25.85	-31.05
3	0.21805	0.05	33.83	19.94	33.88	19.99	62.89	52.89	-29.01	-32.90
4	0.24200	0.05	31.58	18.91	31.63	18.96	62.03	52.03	-30.40	-33.07
5	0.43714	0.06	28.62	21.80	28.68	21.86	57.12	47.12	-28.43	-25.25
6	8.69800	0.37	33.26	26.99	33.63	27.36	60.00	50.00	-26.37	-22.64

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

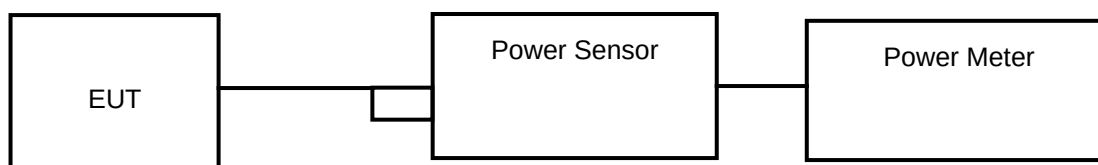
4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

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)

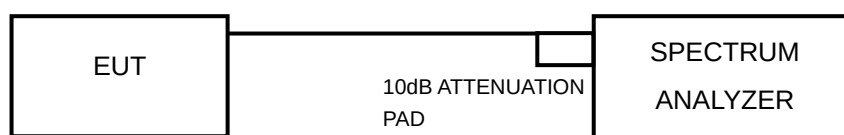
NOTE: Where B is the 26dB emission bandwidth in MHz.

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	14.59	11.64	24	PASS
44	5220	14.69	11.67	24	PASS
48	5240	14.52	11.62	24	PASS
52	5260	14.62	11.65	23.83	PASS
60	5300	14.76	11.69	23.83	PASS
64	5320	14.42	11.59	23.85	PASS
100	5500	14.72	11.68	23.83	PASS
116	5580	15.14	11.80	23.84	PASS
140	5700	14.96	11.75	23.84	PASS
149	5745	13.18	11.2	30	PASS
157	5785	13.15	11.19	30	PASS
165	5825	12.47	10.96	30	PASS

NOTE:

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

1. $11\text{dBm} + 10\log(19.17) = 23.83\text{ dBm} < 24\text{dBm}$.
2. $11\text{dBm} + 10\log(19.18) = 23.83\text{ dBm} < 24\text{dBm}$.
3. $11\text{dBm} + 10\log(19.27) = 23.85\text{ dBm} < 24\text{dBm}$.
4. $11\text{dBm} + 10\log(19.18) = 23.83\text{ dBm} < 24\text{dBm}$.
5. $11\text{dBm} + 10\log(19.21) = 23.84\text{ dBm} < 24\text{dBm}$.
6. $11\text{dBm} + 10\log(19.24) = 23.84\text{ dBm} < 24\text{dBm}$.

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	11.53	10.62	24	PASS
44	5220	11.64	10.66	24	PASS
48	5240	11.51	10.61	24	PASS
52	5260	11.59	10.64	23.92	PASS
60	5300	11.67	10.67	23.93	PASS
64	5320	11.32	10.54	23.91	PASS
100	5500	11.51	10.61	23.90	PASS
116	5580	12.22	10.87	23.92	PASS
140	5700	12.16	10.85	23.92	PASS
149	5745	9.79	9.91	30	PASS
157	5785	9.95	9.98	30	PASS
165	5825	9.68	9.86	30	PASS

NOTE:

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

1. $11\text{dBm} + 10\log(19.61) = 23.92\text{ dBm} < 24\text{dBm}$.
2. $11\text{dBm} + 10\log(19.64) = 23.93\text{ dBm} < 24\text{dBm}$.
3. $11\text{dBm} + 10\log(19.53) = 23.91\text{ dBm} < 24\text{dBm}$.
4. $11\text{dBm} + 10\log(19.49) = 23.90\text{ dBm} < 24\text{dBm}$.
5. $11\text{dBm} + 10\log(19.58) = 23.92\text{ dBm} < 24\text{dBm}$.
6. $11\text{dBm} + 10\log(19.59) = 23.92\text{ dBm} < 24\text{dBm}$.



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802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	12.45	10.95	24	PASS
46	5230	12.19	10.86	24	PASS
54	5270	12.39	10.93	24	PASS
62	5310	12.53	10.98	24	PASS
102	5510	12.65	11.02	24	PASS
110	5550	13.06	11.16	24	PASS
134	5670	13.00	11.14	24	PASS
151	5755	10.57	10.24	30	PASS
159	5795	10.72	10.3	30	PASS

NOTE:

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

1. $11\text{dBm} + 10\log(40.94) = 27.12\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(47.10) = 27.73\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(41.30) = 27.16\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(40.94) = 27.12\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(40.94) = 27.12\text{ dBm} > 24\text{dBm}$.

26dB BANDWIDTH

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	19.17	PASS
60	5300	19.18	PASS
64	5320	19.27	PASS
100	5500	19.18	PASS
116	5580	19.21	PASS
140	5700	19.24	PASS

802.11n (20MHz)

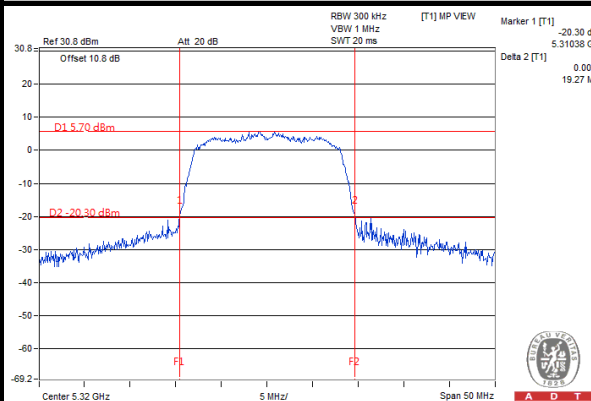
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	19.61	PASS
60	5300	19.64	PASS
64	5320	19.53	PASS
100	5500	19.49	PASS
116	5580	19.58	PASS
140	5700	19.59	PASS

802.11n (40MHz)

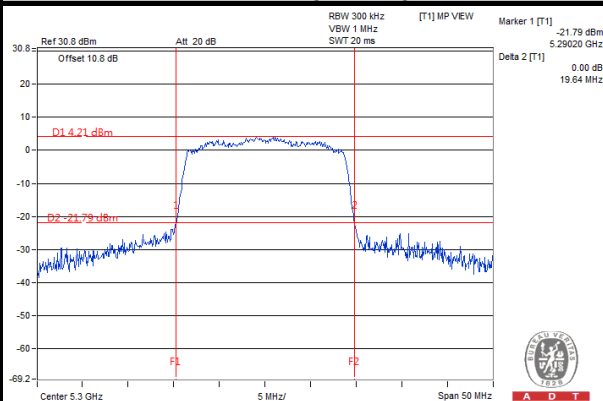
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
54	5270	40.94	PASS
62	5310	47.10	PASS
102	5510	41.30	PASS
110	5550	40.94	PASS
134	5670	40.94	PASS

SPECTRUM PLOT OF WORST VALUE

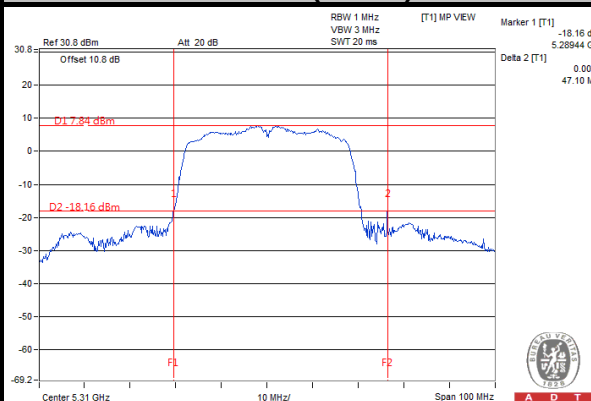
802.11a



802.11n (20MHz)



802.11n (40MHz)

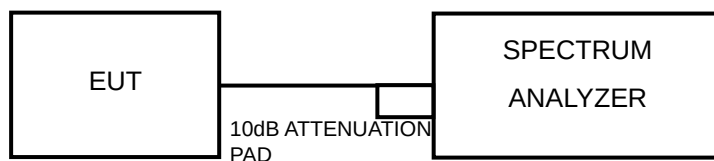


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

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	0.56	0.33	0.89	11	PASS
44	5220	0.87	0.33	1.20	11	PASS
48	5240	1.14	0.33	1.47	11	PASS
52	5260	1.48	0.33	1.81	11	PASS
60	5300	2.02	0.33	2.35	11	PASS
64	5320	2.26	0.33	2.59	11	PASS
100	5500	2.40	0.33	2.73	11	PASS
116	5580	2.28	0.33	2.61	11	PASS
140	5700	1.32	0.33	1.65	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	-0.66	0.33	-0.33	11	PASS
44	5220	-0.29	0.33	0.04	11	PASS
48	5240	-0.60	0.33	-0.27	11	PASS
52	5260	0.33	0.33	0.66	11	PASS
60	5300	0.83	0.33	1.16	11	PASS
64	5320	1.12	0.33	1.45	11	PASS
100	5500	1.42	0.33	1.75	11	PASS
116	5580	1.13	0.33	1.46	11	PASS
140	5700	0.17	0.33	0.50	11	PASS

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



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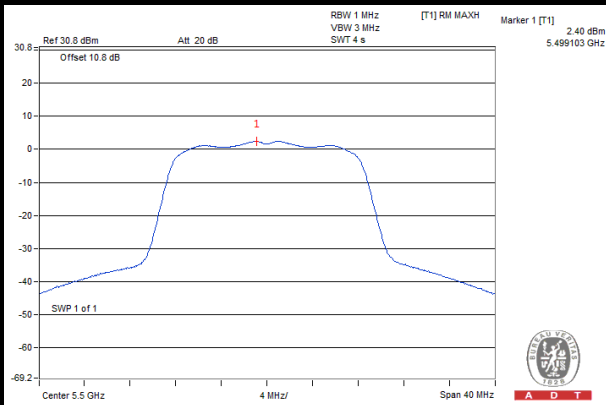
802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-2.99	0.91	-2.08	11	PASS
46	5230	-2.78	0.91	-1.87	11	PASS
54	5270	-2.23	0.91	-1.32	11	PASS
62	5310	-1.68	0.91	-0.77	11	PASS
102	5510	-1.28	0.91	-0.37	11	PASS
110	5550	-1.45	0.91	-0.54	11	PASS
134	5670	-2.37	0.91	-1.46	11	PASS

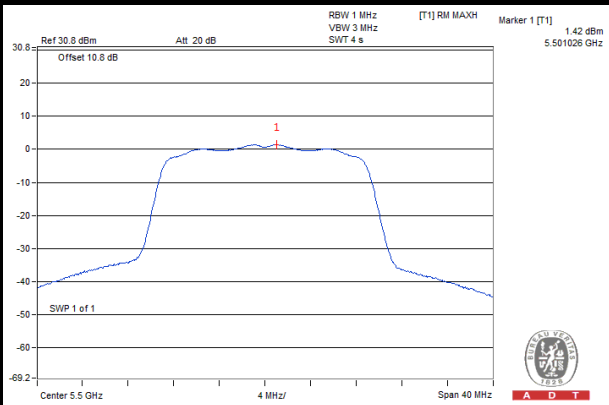
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

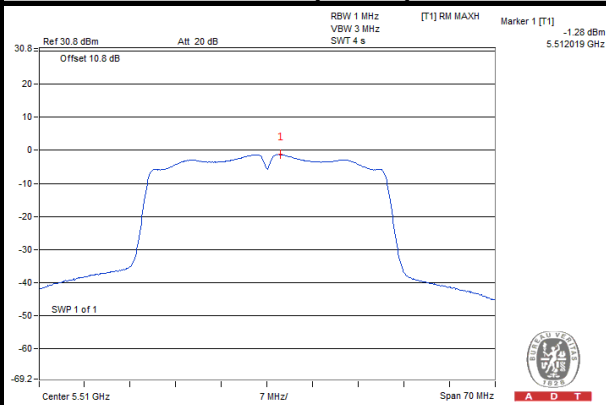
802.11a



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	-2.23	0.33	-1.90	30	PASS
157	5785	-2.21	0.33	-1.88	30	PASS
165	5825	-1.95	0.33	-1.62	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	-3.64	0.33	-3.31	30	PASS
157	5785	-3.79	0.33	-3.46	30	PASS
165	5825	-3.47	0.33	-3.14	30	PASS

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

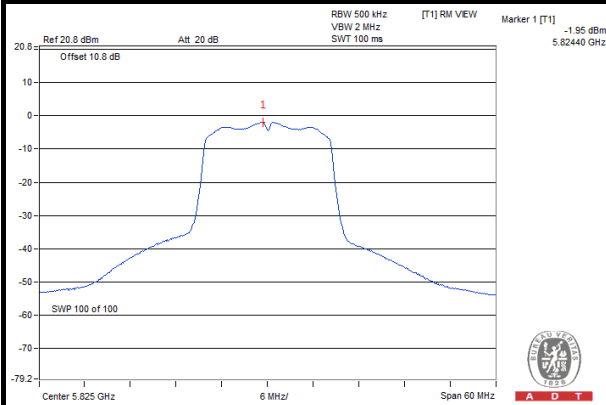
802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	LIMIT (dBm/500kHz)	PASS/FAIL
151	5755	-6.36	0.91	-5.45	30	PASS
159	5795	-6.50	0.91	-5.59	30	PASS

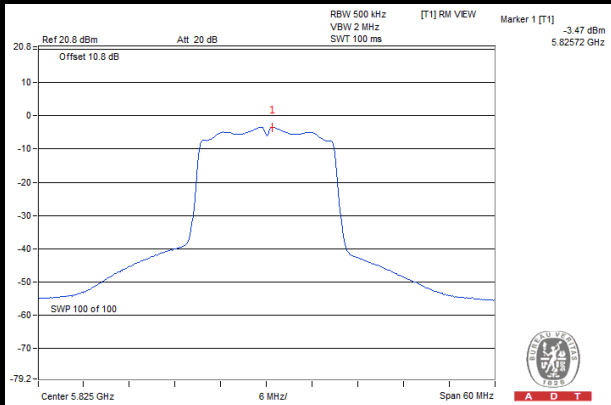
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

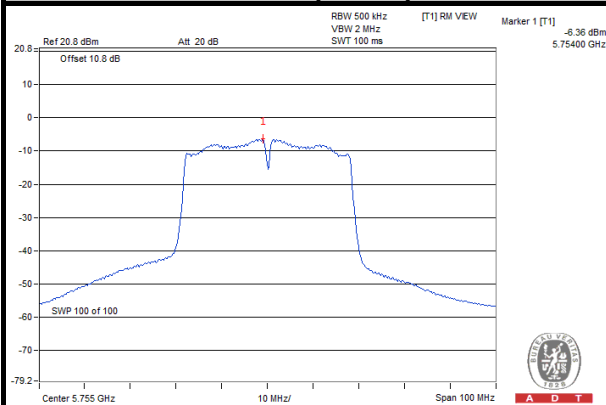
802.11a



802.11n (20MHz)



802.11n (40MHz)

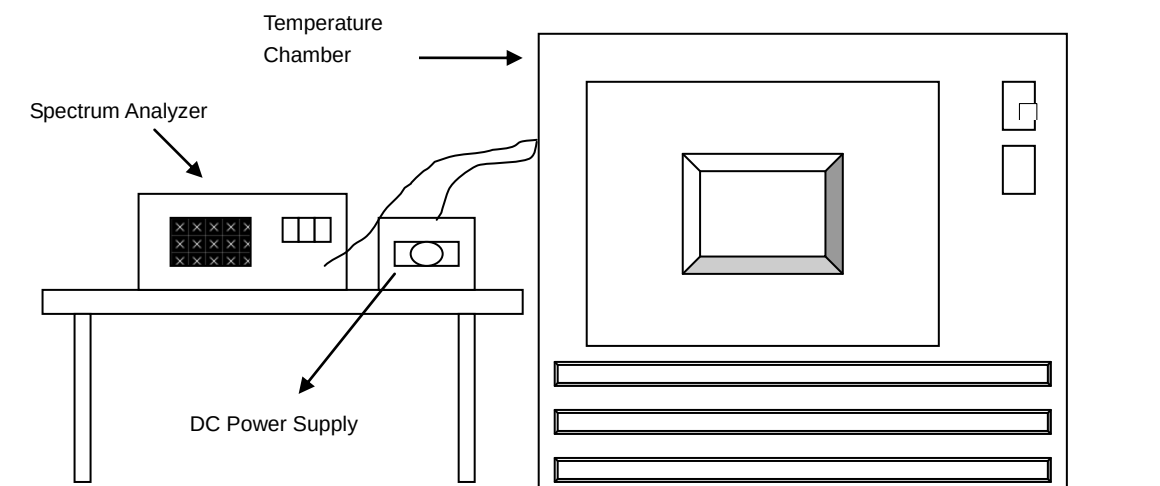


4.5 FREQUENCY STABILITY

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)
60	11.6	5320.036708	6.900	5320.036522	6.865	5320.036096	6.785	5320.036192	6.803
50	11.6	5320.036848	6.926	5320.036592	6.878	5320.036856	6.928	5320.036684	6.895
40	11.6	5320.037013	6.957	5320.037082	6.970	5320.037022	6.959	5320.036627	6.885
30	11.6	5320.038102	7.162	5320.038132	7.168	5320.038044	7.151	5320.038216	7.183
20	11.6	5320.037826	7.110	5320.038215	7.183	5320.038009	7.145	5320.037718	7.090
10	11.6	5320.040741	7.658	5320.040749	7.660	5320.040643	7.640	5320.040587	7.629
0	11.6	5320.039511	7.427	5320.039553	7.435	5320.039277	7.383	5320.039380	7.402
-10	11.6	5320.037609	7.069	5320.037815	7.108	5320.037324	7.016	5320.037475	7.044
-20	11.6	5320.036946	6.945	5320.037150	6.983	5320.037416	7.033	5320.037323	7.016
-30	11.6	5320.036019	6.770	5320.035921	6.752	5320.035793	6.728	5320.036248	6.814

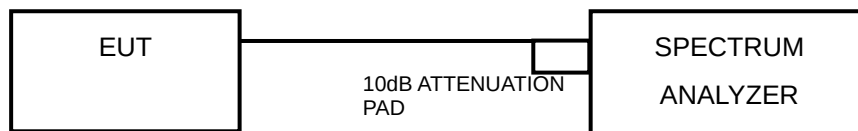
FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	9.86	5320.037569	7.062	5320.037923	7.128	5320.037599	7.067	5320.037371	7.025
	11.6	5320.037826	7.110	5320.038215	7.183	5320.038009	7.145	5320.037718	7.090
	13.34	5320.039762	7.474	5320.039310	7.389	5320.039140	7.357	5320.039217	7.372

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	15.15	0.5	PASS
157	5785	15.12	0.5	PASS
165	5825	15.13	0.5	PASS

802.11n (20MHz)

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

802.11n (40MHz)

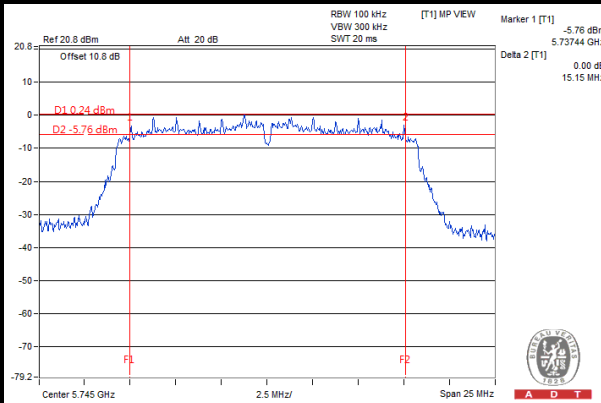
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	35.20	0.5	PASS
159	5795	35.20	0.5	PASS



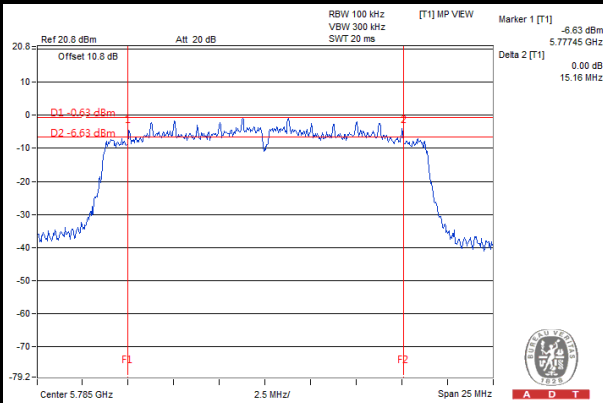
A D T

SPECTRUM PLOT OF WORST VALUE

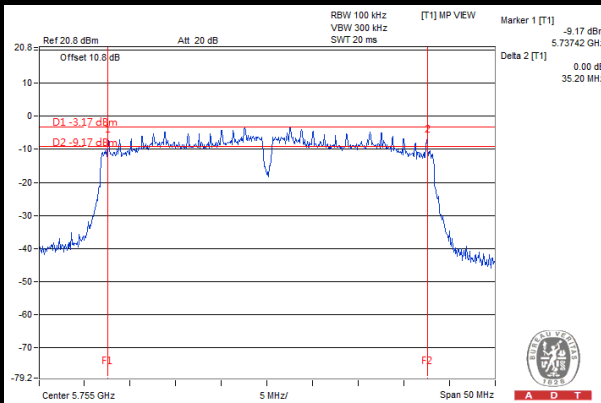
802.11a



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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Web Site: www.bureauveritas-adt.com

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



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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---