

FCC TEST REPORT (15.407)

REPORT NO.: RF150729C24-1
MODEL NO.: P400 Plus
FCC ID: B32P400PLUS
RECEIVED: Jul. 29, 2015
TESTED: Aug. 11, 2015 ~ Aug. 15, 2015
ISSUED: Aug. 21, 2015

APPLICANT: Verifone, Inc.

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ISSUED BY: Bureau Veritas Consumer Products Services
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TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1. CERTIFICATION	5
2. SUMMARY OF TEST RESULTS	6
2.1 MEASUREMENT UNCERTAINTY	6
3. GENERAL INFORMATION	7
3.1 GENERAL DESCRIPTION OF EUT	7
3.2 DESCRIPTION OF TEST MODES	9
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	11
3.3 DESCRIPTION OF SUPPORT UNITS	14
3.3.1 CONFIGURATION OF SYSTEM UNDER TEST	14
3.4 DUTY CYCLE TEST SIGNAL	15
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	19
4. TEST TYPES AND RESULTS	20
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	20
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	20
4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS	20
4.1.3 TEST INSTRUMENTS	21
4.1.4 TEST PROCEDURES	22
4.1.5 DEVIATION FROM TEST STANDARD	22
4.1.6 TEST SETUP	23
4.1.7 EUT OPERATING CONDITIONS	23
4.1.8 TEST RESULTS	24
4.2 CONDUCTED EMISSION MEASUREMENT	61
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	61
4.2.2 TEST INSTRUMENTS	61
4.2.3 TEST PROCEDURES	62
4.2.4 DEVIATION FROM TEST STANDARD	62
4.2.5 TEST SETUP	63
4.2.6 EUT OPERATING CONDITIONS	63
4.2.7 TEST RESULTS	64
4.3 TRANSMIT POWER MEASUREMENT	66
4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT	66
4.3.2 TEST SETUP	66
4.3.3 TEST INSTRUMENTS	66
4.3.4 TEST PROCEDURE	67
4.3.5 DEVIATION FROM TEST STANDARD	67
4.3.6 EUT OPERATING CONDITIONS	67
4.3.7 TEST RESULTS	68
4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT	73
4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT	73
4.4.2 TEST SETUP	73
4.4.3 TEST INSTRUMENTS	73
4.4.4 TEST PROCEDURES	73
4.4.5 DEVIATION FROM TEST STANDARD	74
4.4.6 EUT OPERATING CONDITIONS	74
4.4.7 TEST RESULTS	75
4.5 FREQUENCY STABILITY	80
4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT	80
4.5.2 TEST SETUP	80
4.5.3 TEST INSTRUMENTS	80
4.5.4 TEST PROCEDURE	81
4.5.5 DEVIATION FROM TEST STANDARD	81



A D T

4.5.6	EUT OPERATING CONDITION.....	81
4.5.7	TEST RESULTS.....	82
4.6	6dB BANDWIDTH MEASUREMENT	83
4.6.1	LIMITS OF 6dB BANDWIDTH MEASUREMENT	83
4.6.2	TEST SETUP	83
4.6.3	TEST INSTRUMENTS	83
4.6.4	TEST PROCEDURE	83
4.6.5	DEVIATION FROM TEST STANDARD	83
4.6.6	EUT OPERATING CONDITIONS	83
4.6.7	TEST RESULTS.....	84
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	86
6.	INFORMATION ON THE TESTING LABORATORIES	87
7.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	88



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF150729C24-1	Original release	Aug. 21, 2015

1. CERTIFICATION

PRODUCT: Point of Sale Terminal

MODEL NO.: P400 Plus

BRAND: Verifone

APPLICANT: Verifone, Inc.

TESTED: Aug. 11, 2015 ~ Aug. 15, 2015

TEST SAMPLE: Identical Prototype

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

ANSI C63.10-2013

The above equipment (model: P400 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 : Gina Liu , **DATE** : Aug. 21, 2015

Gina Liu / Specialist

APPROVED BY : Kay Wu , **DATE** : Aug. 21, 2015

Kay Wu / Supervisor

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -7.96dB at 17.88967MHz.
15.407(b)(1/2/3) (b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.24dB at 31.94MHz.
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.	P400 Plus
POWER SUPPLY	9.0Vdc (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	20.09mW for 5180 ~ 5240MHz 25.47mW for 5260 ~ 5320MHz 19.77mW for 5500 ~ 5700MHz 23.39mW for 5745 ~ 5825MHz
ANTENNA TYPE	PIFA antenna with 1.43dBi gain (5180 ~ 5240MHz) PIFA antenna with 1.80dBi gain (5260 ~ 5320MHz) PIFA antenna with 1.77dBi gain (5500 ~ 5700MHz) PIFA antenna with 1.88dBi 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	A109-1090103U	I/P: 100-240Vac, 50/60Hz, 0.25A O/P: 9Vdc, 1A
Adapter 2	Verifone	2ACA009E UL	I/P: 100-240Vac, 50/60Hz, 0.5A O/P: 9Vdc, 1A
Dongle	Verifone	CBL282-044-01-B	1.0 meter with one core with shielding

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		

**A D T****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
-	802.11n (40MHz)	5500-5700	100 to 140	102	OFDM	BPSK	MCS0
-	802.11a	5745-5825	149 to 165	149	OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (40MHz)	5500-5700	100 to 140	102	OFDM	BPSK	MCS0

BANDEDGE MEASUREMENT:

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

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

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

ANTENNA PORT CONDUCTED MEASUREMENT:

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

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

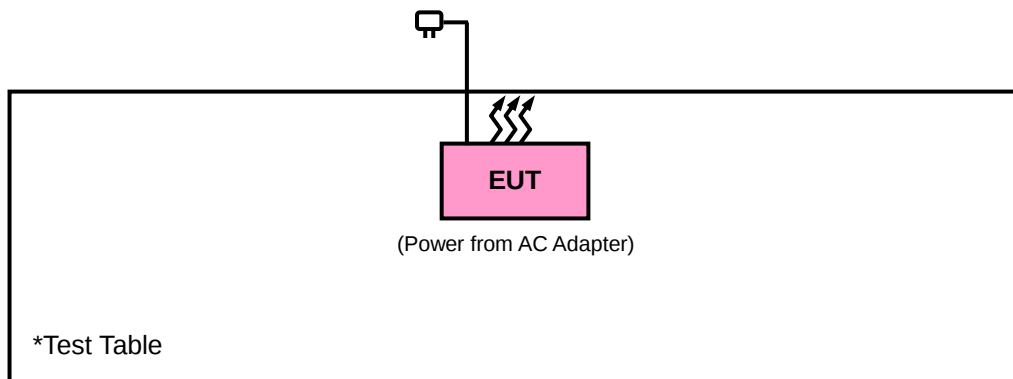
TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 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

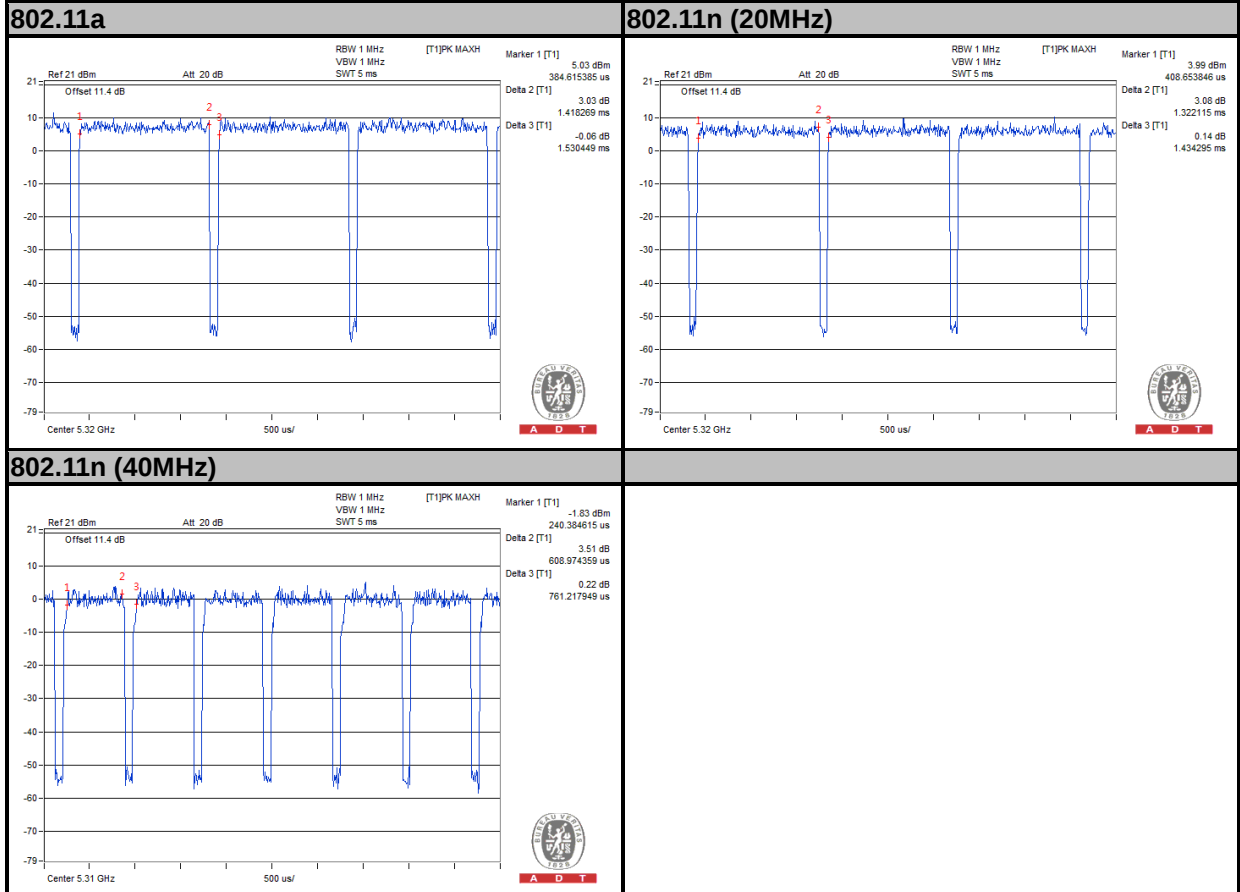
MODULATION TYPE: BPSK

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 = $1.322/1.434 = 0.922$, Duty factor = $10 * \log(1/0.922) = 0.35$

802.11n (40MHz): Duty cycle = $608.97/761.22 = 0.800$, Duty factor = $10 * \log(1/0.800) = 0.97$



MODULATION TYPE: QPSK

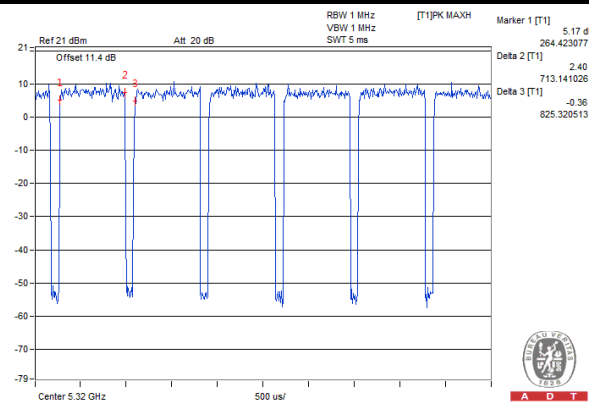
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $713.14/825.32 = 0.864$, Duty factor = $10 * \log(1/0.864) = 0.63$

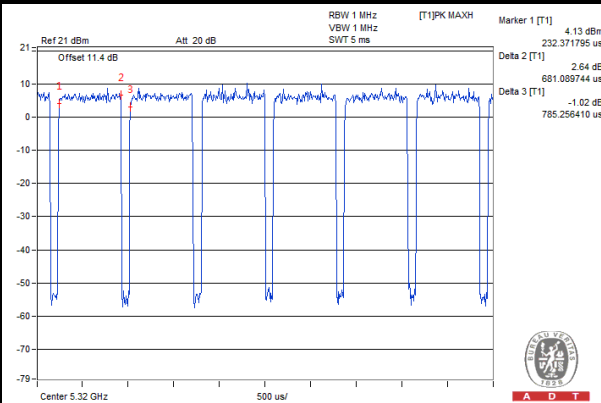
802.11n (20MHz): Duty cycle = $681.09/785.26 = 0.867$, Duty factor = $10 * \log(1/0.867) = 0.62$

802.11n (40MHz): Duty cycle = $312.50/456.73 = 0.684$, Duty factor = $10 * \log(1/0.684) = 1.65$

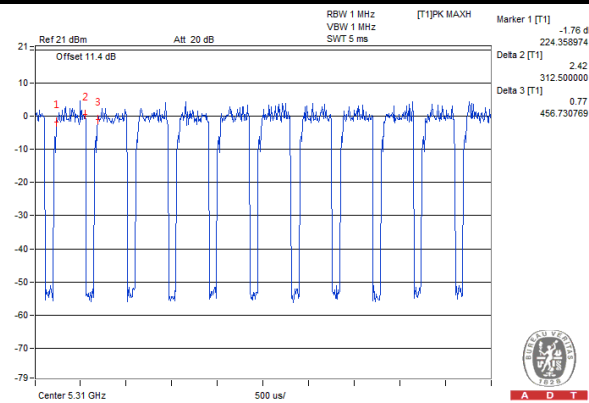
802.11a



802.11n (20MHz)



802.11n (40MHz)



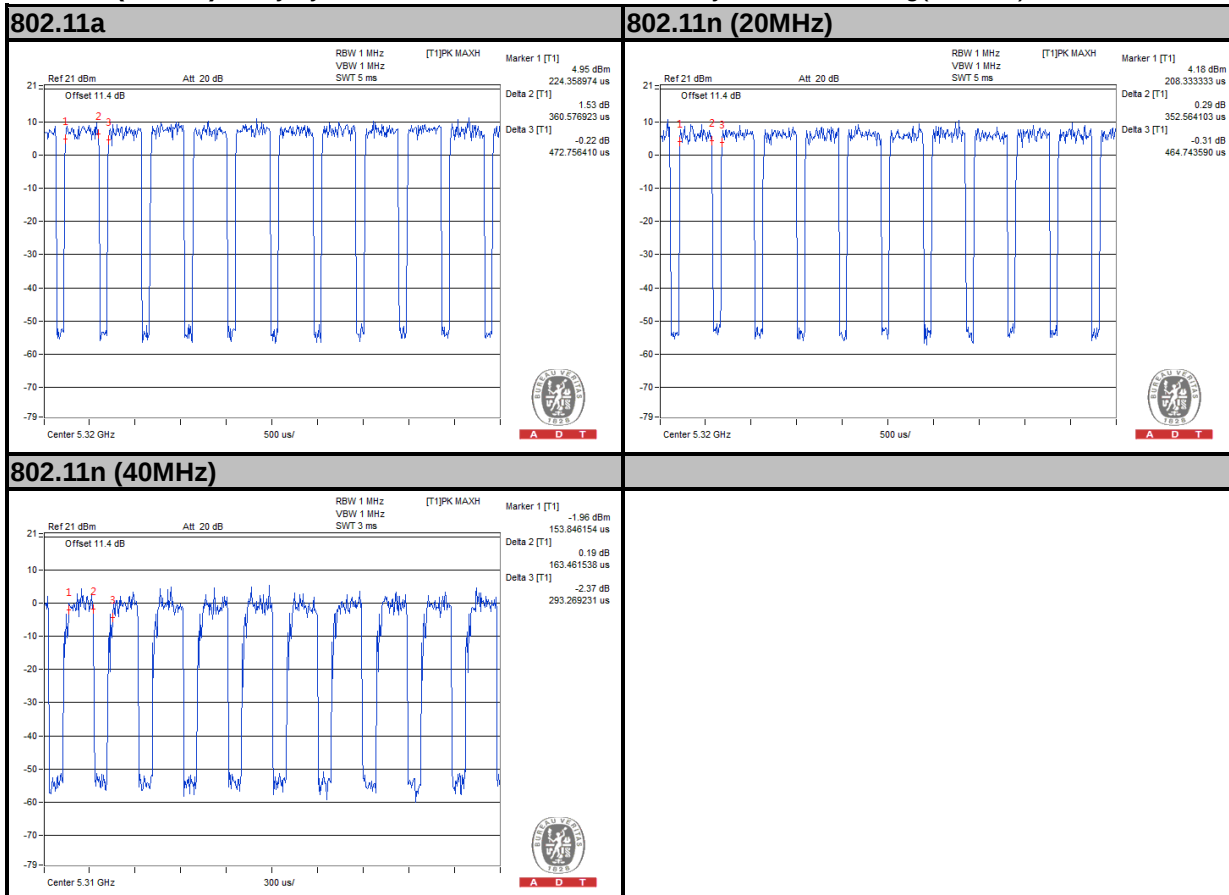
MODULATION TYPE: 16QAM

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

802.11a: Duty cycle = $360.58/472.76 = 0.763$, Duty factor = $10 * \log(1/0.763) = 1.18$

802.11n (20MHz): Duty cycle = $352.56/464.74 = 0.759$, Duty factor = $10 * \log(1/0.759) = 1.20$

802.11n (40MHz): Duty cycle = $163.46/293.27 = 0.557$, Duty factor = $10 * \log(1/0.557) = 2.54$



MODULATION TYPE: 64QAM

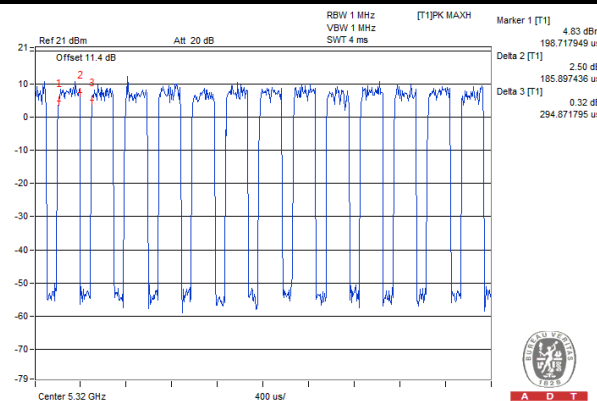
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $185.90/294.87 = 0.630$, Duty factor = $10 * \log(1/0.630) = 2.00$

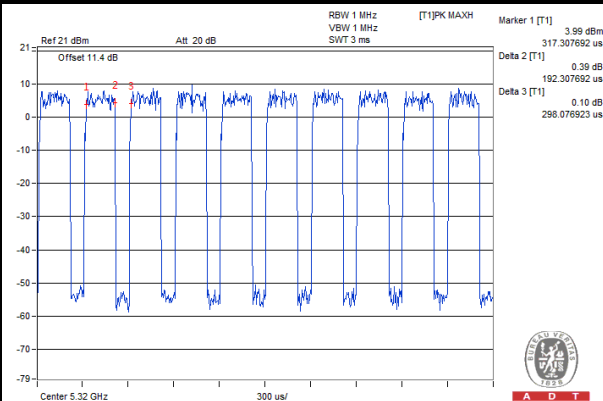
802.11n (20MHz): Duty cycle = $192.31/298.08 = 0.645$, Duty factor = $10 * \log(1/0.645) = 1.90$

802.11n (40MHz): Duty cycle = $83.33/214.74 = 0.388$, Duty factor = $10 * \log(1/0.388) = 4.11$

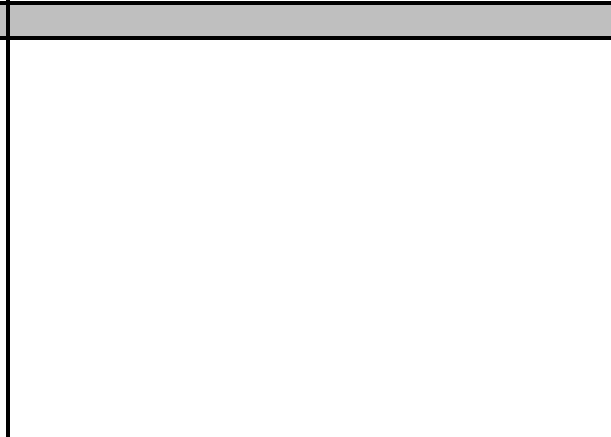
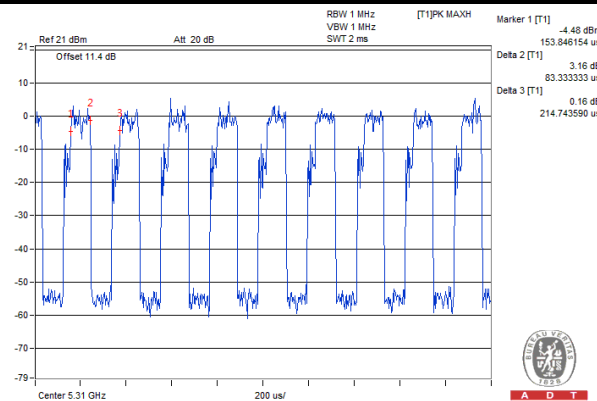
802.11a



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
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:

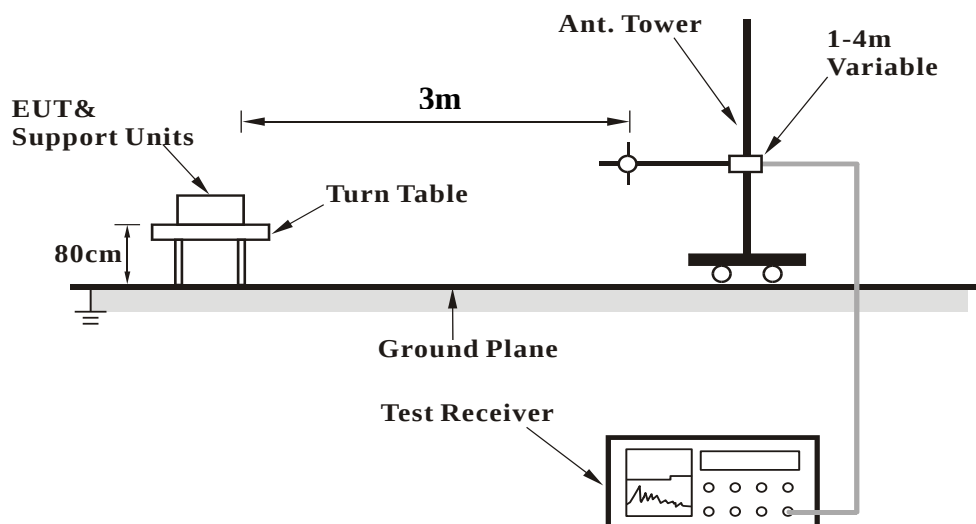
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

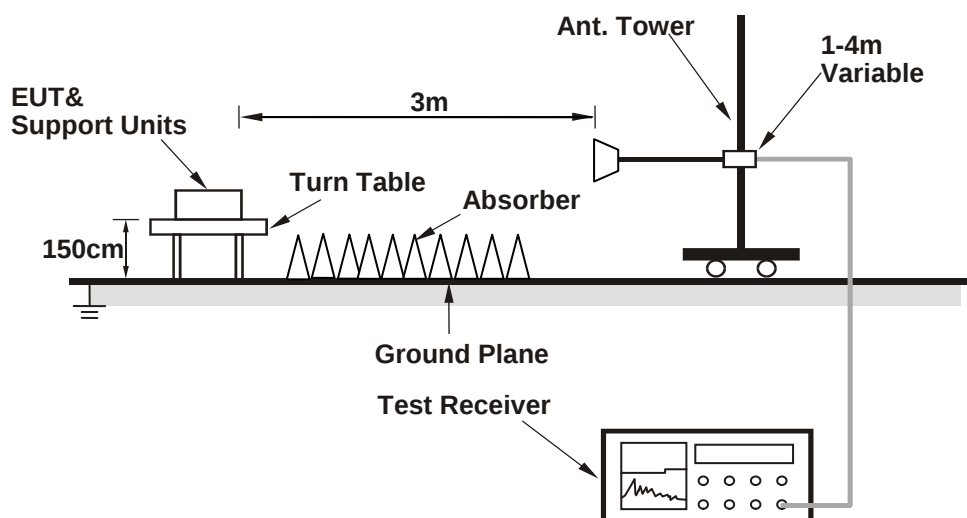
No deviation.

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	49.94	49.74	54	-4.06	31.32	6.2	37.32	205	138	Average
5146	65.41	65.21	74	-8.59	31.32	6.2	37.32	205	138	Peak
5180	98.81	98.58			31.35	6.22	37.34	205	138	Average
5180	107.9	107.67			31.35	6.22	37.34	205	138	Peak
5456	39.84	39.02	54	-14.16	31.56	6.34	37.08	205	138	Average
5456	59.9	59.08	74	-14.1	31.56	6.34	37.08	205	138	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	46.23	46.03	54	-7.77	31.32	6.2	37.32	103	342	Average
5150	63.77	63.57	74	-10.23	31.32	6.2	37.32	103	342	Peak
5180	94.98	94.75			31.35	6.22	37.34	103	342	Average
5180	104.04	103.81			31.35	6.22	37.34	103	342	Peak
5380	38.48	37.84	54	-15.52	31.51	6.31	37.18	103	342	Average
5380	60.89	60.25	74	-13.11	31.51	6.31	37.18	103	342	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
5052	39.92	39.76	54	-14.08	31.24	6.17	37.25	142	233	Average
5052	61.01	60.85	74	-12.99	31.24	6.17	37.25	142	233	Peak
5220	97.32	97.07			31.37	6.24	37.36	142	233	Average
5220	106.6	106.35			31.37	6.24	37.36	142	233	Peak
5354	39.19	38.6	54	-14.81	31.48	6.29	37.18	142	233	Average
5354	61.89	61.3	74	-12.11	31.48	6.29	37.18	142	233	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
5036	38.83	38.69	54	-15.17	31.23	6.15	37.24	102	353	Average
5036	60.18	60.04	74	-13.82	31.23	6.15	37.24	102	353	Peak
5220	94.25	94			31.37	6.24	37.36	102	353	Average
5220	103.51	103.26			31.37	6.24	37.36	102	353	Peak
5350	38.42	37.83	54	-15.58	31.48	6.29	37.18	102	353	Average
5350	61.22	60.63	74	-12.78	31.48	6.29	37.18	102	353	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
5008	38.92	38.81	54	-15.08	31.21	6.13	37.23	152	148	Average
5008	59.92	59.81	74	-14.08	31.21	6.13	37.23	152	148	Peak
5240	97.88	97.56			31.39	6.25	37.32	152	148	Average
5240	106.54	106.22			31.39	6.25	37.32	152	148	Peak
5358	39.72	39.11	54	-14.28	31.48	6.31	37.18	152	148	Average
5358	60.39	59.78	74	-13.61	31.48	6.31	37.18	152	148	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5074	38.53	38.36	54	-15.47	31.27	6.17	37.27	102	353	Average
5074	59.77	59.6	74	-14.23	31.27	6.17	37.27	102	353	Peak
5240	94.82	94.5			31.39	6.25	37.32	102	353	Average
5240	103.79	103.47			31.39	6.25	37.32	102	353	Peak
5442	38.86	38.1	54	-15.14	31.55	6.34	37.13	102	353	Average
5442	62.12	61.36	74	-11.88	31.55	6.34	37.13	102	353	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
5018	38.8	38.68	54	-15.2	31.21	6.15	37.24	152	135	Average
5018	60.29	60.17	74	-13.71	31.21	6.15	37.24	152	135	Peak
5260	98.86	98.47			31.41	6.25	37.27	152	135	Average
5260	107.64	107.25			31.41	6.25	37.27	152	135	Peak
5364	40.52	39.9	54	-13.48	31.49	6.31	37.18	152	135	Average
5364	60.38	59.76	74	-13.62	31.49	6.31	37.18	152	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
5136	38.43	38.22	54	-15.57	31.31	6.2	37.3	101	112	Average
5136	60.27	60.06	74	-13.73	31.31	6.2	37.3	101	112	Peak
5260	96.52	96.13			31.41	6.25	37.27	101	112	Average
5260	105.32	104.93			31.41	6.25	37.27	101	112	Peak
5412	39.07	38.4	54	-14.93	31.53	6.32	37.18	101	112	Average
5412	60.04	59.37	74	-13.96	31.53	6.32	37.18	101	112	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
5040	38.29	38.14	54	-15.71	31.24	6.15	37.24	144	136	Average
5040	60.66	60.51	74	-13.34	31.24	6.15	37.24	144	136	Peak
5300	98.88	98.36			31.44	6.27	37.19	144	136	Average
5300	107.84	107.32			31.44	6.27	37.19	144	136	Peak
5358	45.88	45.27	54	-8.12	31.48	6.31	37.18	144	136	Average
5358	61.96	61.35	74	-12.04	31.48	6.31	37.18	144	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
5050	38.18	38.04	54	-15.82	31.24	6.15	37.25	105	109	Average
5050	60.76	60.62	74	-13.24	31.24	6.15	37.25	105	109	Peak
5300	95.9	95.38			31.44	6.27	37.19	105	109	Average
5300	105.05	104.53			31.44	6.27	37.19	105	109	Peak
5352	43.66	43.07	54	-10.34	31.48	6.29	37.18	105	109	Average
5352	61.19	60.6	74	-12.81	31.48	6.29	37.18	105	109	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
5084	38.42	38.25	54	-15.58	31.27	6.17	37.27	152	136	Average
5084	60.1	59.93	74	-13.9	31.27	6.17	37.27	152	136	Peak
5320	99.63	99.08			31.45	6.29	37.19	152	136	Average
5320	107.52	106.97			31.45	6.29	37.19	152	136	Peak
5372	48.45	47.83	54	-5.55	31.49	6.31	37.18	152	136	Average
5372	63.78	63.16	74	-10.22	31.49	6.31	37.18	152	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
5128	38.28	38.07	54	-15.72	31.31	6.2	37.3	102	112	Average
5128	60.53	60.32	74	-13.47	31.31	6.2	37.3	102	112	Peak
5320	96.09	95.54			31.45	6.29	37.19	102	112	Average
5320	105.13	104.58			31.45	6.29	37.19	102	112	Peak
5350	43.05	42.46	54	-10.95	31.48	6.29	37.18	102	112	Average
5350	65.49	64.9	74	-8.51	31.48	6.29	37.18	102	112	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
5460	46.3	45.48	54	-7.7	31.56	6.34	37.08	168	40	Average
5460	62.5	61.68	74	-11.5	31.56	6.34	37.08	168	40	Peak
5470	63.96	63.13	68.2	-4.24	31.57	6.34	37.08	168	40	Peak
5500	96.97	96.04			31.6	6.36	37.03	168	40	Average
5500	106.11	105.18			31.6	6.36	37.03	168	40	Peak
5725	60.23	58.95	68.2	-7.97	31.96	6.75	37.43	168	40	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5418	43.79	43.12	54	-10.21	31.53	6.32	37.18	116	275	Average
5418	61.13	60.46	74	-12.87	31.53	6.32	37.18	116	275	Peak
5470	64.59	63.76	68.2	-3.61	31.57	6.34	37.08	116	275	Peak
5500	94.84	93.91			31.6	6.36	37.03	116	275	Average
5500	104.37	103.44			31.6	6.36	37.03	116	275	Peak
5725	59.49	58.21	68.2	-8.71	31.96	6.75	37.43	116	275	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
5358	39.03	38.42	54	-14.97	31.48	6.31	37.18	190	39	Average
5358	60.2	59.59	74	-13.8	31.48	6.31	37.18	190	39	Peak
5470	59.4	58.57	68.2	-8.8	31.57	6.34	37.08	190	39	Peak
5580	97.16	96.12			31.71	6.49	37.16	190	39	Average
5580	106.8	105.76			31.71	6.49	37.16	190	39	Peak
5725	60.06	58.78	68.2	-8.14	31.96	6.75	37.43	190	39	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	38.75	37.93	54	-15.25	31.56	6.34	37.08	108	297	Average
5460	60.53	59.71	74	-13.47	31.56	6.34	37.08	108	297	Peak
5470	58.69	57.86	68.2	-9.51	31.57	6.34	37.08	108	297	Peak
5580	95.22	94.18			31.71	6.49	37.16	108	297	Average
5580	104.67	103.63			31.71	6.49	37.16	108	297	Peak
5725	60.14	58.86	68.2	-8.06	31.96	6.75	37.43	108	297	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
5400	38.49	37.83	54	-15.51	31.52	6.32	37.18	146	39	Average
5400	60.37	59.71	74	-13.63	31.52	6.32	37.18	146	39	Peak
5470	59.13	58.3	68.2	-9.07	31.57	6.34	37.08	146	39	Peak
5700	97.35	96.16			31.9	6.69	37.4	146	39	Average
5700	106.79	105.6			31.9	6.69	37.4	146	39	Peak
5725	66.28	65	68.2	-1.92	31.96	6.75	37.43	146	39	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5418	38.62	37.95	54	-15.38	31.53	6.32	37.18	104	276	Average
5418	59.84	59.17	74	-14.16	31.53	6.32	37.18	104	276	Peak
5470	58.56	57.73	68.2	-9.64	31.57	6.34	37.08	104	276	Peak
5700	95.22	94.03			31.9	6.69	37.4	104	276	Average
5700	104.91	103.72			31.9	6.69	37.4	104	276	Peak
5725	65.11	63.83	68.2	-3.09	31.96	6.75	37.43	104	276	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	64.75	63.56	68.2	-3.45	31.93	6.69	37.43	170	138	Peak
5725	73.95	72.67	78.2	-4.25	31.96	6.75	37.43	170	138	Peak
5745	98.57	97.3			31.99	6.75	37.47	170	138	Average
5745	108.06	106.79			31.99	6.75	37.47	170	138	Peak
5850	61.34	59.82	78.2	-16.86	32.15	6.88	37.51	170	138	Peak
5861	61.29	59.66	68.2	-6.91	32.18	6.95	37.5	170	138	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	63.92	62.73	68.2	-4.28	31.93	6.69	37.43	104	111	Peak
5725	70.88	69.6	78.2	-7.32	31.96	6.75	37.43	104	111	Peak
5745	96.4	95.13			31.99	6.75	37.47	104	111	Average
5745	105.39	104.12			31.99	6.75	37.47	104	111	Peak
5850	59.92	58.4	78.2	-18.28	32.15	6.88	37.51	104	111	Peak
5861	59.36	57.73	68.2	-8.84	32.18	6.95	37.5	104	111	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	61.53	60.34	68.2	-6.67	31.93	6.69	37.43	129	159	Peak
5725	60.81	59.53	78.2	-17.39	31.96	6.75	37.43	129	159	Peak
5785	98.65	97.33			32.04	6.82	37.54	129	159	Average
5785	108.06	106.74			32.04	6.82	37.54	129	159	Peak
5850	60.54	59.02	78.2	-17.66	32.15	6.88	37.51	129	159	Peak
5861	61.18	59.55	68.2	-7.02	32.18	6.95	37.5	129	159	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	59.69	58.5	68.2	-8.51	31.93	6.69	37.43	104	116	Peak
5725	60.46	59.18	78.2	-17.74	31.96	6.75	37.43	104	116	Peak
5785	96.52	95.2			32.04	6.82	37.54	104	116	Average
5785	105.47	104.15			32.04	6.82	37.54	104	116	Peak
5850	60.34	58.82	78.2	-17.86	32.15	6.88	37.51	104	116	Peak
5861	60.34	58.71	68.2	-7.86	32.18	6.95	37.5	104	116	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	60.8	59.61	68.2	-7.4	31.93	6.69	37.43	196	146	Peak
5725	59.98	58.7	78.2	-18.22	31.96	6.75	37.43	196	146	Peak
5825	98.79	97.32			32.12	6.88	37.53	196	146	Average
5825	108.08	106.61			32.12	6.88	37.53	196	146	Peak
5850	70.7	69.18	78.2	-7.5	32.15	6.88	37.51	196	146	Peak
5861	61.78	60.15	68.2	-6.42	32.18	6.95	37.5	196	146	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	60.01	58.82	68.2	-8.19	31.93	6.69	37.43	103	105	Peak
5725	58.82	57.54	78.2	-19.38	31.96	6.75	37.43	103	105	Peak
5825	96.29	94.82			32.12	6.88	37.53	103	105	Average
5825	105.34	103.87			32.12	6.88	37.53	103	105	Peak
5850	68.01	66.49	78.2	-10.19	32.15	6.88	37.51	103	105	Peak
5861	61.42	59.79	68.2	-6.78	32.18	6.95	37.5	103	105	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
5144	45.14	44.94	54	-8.86	31.32	6.2	37.32	187	154	Average
5144	64.44	64.24	74	-9.56	31.32	6.2	37.32	187	154	Peak
5180	96.77	96.54			31.35	6.22	37.34	187	154	Average
5180	106.74	106.51			31.35	6.22	37.34	187	154	Peak
5408	39.27	38.61	54	-14.73	31.52	6.32	37.18	187	154	Average
5408	60.57	59.91	74	-13.43	31.52	6.32	37.18	187	154	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	43	42.8	54	-11	31.32	6.2	37.32	103	342	Average
5148	64.71	64.51	74	-9.29	31.32	6.2	37.32	103	342	Peak
5180	94	93.77			31.35	6.22	37.34	103	342	Average
5180	104.11	103.88			31.35	6.22	37.34	103	342	Peak
5436	38.59	37.85	54	-15.41	31.55	6.32	37.13	103	342	Average
5436	60.48	59.74	74	-13.52	31.55	6.32	37.13	103	342	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
5122	39.83	39.65	54	-14.17	31.29	6.19	37.3	121	145	Average
5122	59.41	59.23	74	-14.59	31.29	6.19	37.3	121	145	Peak
5220	96.42	96.17			31.37	6.24	37.36	121	145	Average
5220	106.71	106.46			31.37	6.24	37.36	121	145	Peak
5398	39.5	38.84	54	-14.5	31.52	6.32	37.18	121	145	Average
5398	60.27	59.61	74	-13.73	31.52	6.32	37.18	121	145	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
5060	38.5	38.33	54	-15.5	31.25	6.17	37.25	102	353	Average
5060	59.97	59.8	74	-14.03	31.25	6.17	37.25	102	353	Peak
5220	93.15	92.9			31.37	6.24	37.36	102	353	Average
5220	103.15	102.9			31.37	6.24	37.36	102	353	Peak
5350	38.49	37.9	54	-15.51	31.48	6.29	37.18	102	353	Average
5350	60.77	60.18	74	-13.23	31.48	6.29	37.18	102	353	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
5028	38.9	38.76	54	-15.1	31.23	6.15	37.24	126	140	Average
5028	59.78	59.64	74	-14.22	31.23	6.15	37.24	126	140	Peak
5240	97.58	97.26			31.39	6.25	37.32	126	140	Average
5240	106.62	106.3			31.39	6.25	37.32	126	140	Peak
5390	39.73	39.09	54	-14.27	31.51	6.31	37.18	126	140	Average
5390	61.09	60.45	74	-12.91	31.51	6.31	37.18	126	140	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
5046	38.27	38.13	54	-15.73	31.24	6.15	37.25	102	342	Average
5046	60.7	60.56	74	-13.3	31.24	6.15	37.25	102	342	Peak
5240	94.21	93.89			31.39	6.25	37.32	102	342	Average
5240	103.19	102.87			31.39	6.25	37.32	102	342	Peak
5434	38.58	37.84	54	-15.42	31.55	6.32	37.13	102	342	Average
5434	61.37	60.63	74	-12.63	31.55	6.32	37.13	102	342	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
5048	38.69	38.55	54	-15.31	31.24	6.15	37.25	147	136	Average
5048	60.26	60.12	74	-13.74	31.24	6.15	37.25	147	136	Peak
5260	97.8	97.41			31.41	6.25	37.27	147	136	Average
5260	106.88	106.49			31.41	6.25	37.27	147	136	Peak
5430	40.38	39.64	54	-13.62	31.55	6.32	37.13	147	136	Average
5430	60.21	59.47	74	-13.79	31.55	6.32	37.13	147	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
5124	38.34	38.14	54	-15.66	31.31	6.19	37.3	100	112	Average
5124	60.01	59.81	74	-13.99	31.31	6.19	37.3	100	112	Peak
5260	95.27	94.88			31.41	6.25	37.27	100	112	Average
5260	104.27	103.88			31.41	6.25	37.27	100	112	Peak
5392	38.74	38.1	54	-15.26	31.51	6.31	37.18	100	112	Average
5392	60.79	60.15	74	-13.21	31.51	6.31	37.18	100	112	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
5074	38.46	38.29	54	-15.54	31.27	6.17	37.27	142	135	Average
5074	60.67	60.5	74	-13.33	31.27	6.17	37.27	142	135	Peak
5300	97.98	97.46			31.44	6.27	37.19	142	135	Average
5300	106.66	106.14			31.44	6.27	37.19	142	135	Peak
5356	44.83	44.24	54	-9.17	31.48	6.29	37.18	142	135	Average
5356	60.96	60.37	74	-13.04	31.48	6.29	37.18	142	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
5058	38.16	37.99	54	-15.84	31.25	6.17	37.25	103	114	Average
5058	60.43	60.26	74	-13.57	31.25	6.17	37.25	103	114	Peak
5300	94.42	93.9			31.44	6.27	37.19	103	114	Average
5300	104.5	103.98			31.44	6.27	37.19	103	114	Peak
5368	41.85	41.23	54	-12.15	31.49	6.31	37.18	103	114	Average
5368	61.71	61.09	74	-12.29	31.49	6.31	37.18	103	114	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
5010	38.31	38.2	54	-15.69	31.21	6.13	37.23	140	134	Average
5010	60.2	60.09	74	-13.8	31.21	6.13	37.23	140	134	Peak
5320	97.66	97.11			31.45	6.29	37.19	140	134	Average
5320	106.84	106.29			31.45	6.29	37.19	140	134	Peak
5350	47.3	46.71	54	-6.7	31.48	6.29	37.18	140	134	Average
5350	66.92	66.33	74	-7.08	31.48	6.29	37.18	140	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
5020	38.06	37.94	54	-15.94	31.21	6.15	37.24	108	106	Average
5020	59.71	59.59	74	-14.29	31.21	6.15	37.24	108	106	Peak
5320	94.89	94.34			31.45	6.29	37.19	108	106	Average
5320	104.14	103.59			31.45	6.29	37.19	108	106	Peak
5350	44.34	43.75	54	-9.66	31.48	6.29	37.18	108	106	Average
5350	62.83	62.24	74	-11.17	31.48	6.29	37.18	108	106	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
5440	44.21	43.45	54	-9.79	31.55	6.34	37.13	136	41	Average
5440	61.78	61.02	74	-12.22	31.55	6.34	37.13	136	41	Peak
5470	63.05	62.22	68.2	-5.15	31.57	6.34	37.08	136	41	Peak
5500	95.18	94.25			31.6	6.36	37.03	136	41	Average
5500	105.01	104.08			31.6	6.36	37.03	136	41	Peak
5725	59.24	57.96	68.2	-8.96	31.96	6.75	37.43	136	41	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.92	42.1	54	-11.08	31.56	6.34	37.08	102	271	Average
5460	61.2	60.38	74	-12.8	31.56	6.34	37.08	102	271	Peak
5470	63.63	62.8	68.2	-4.57	31.57	6.34	37.08	102	271	Peak
5500	93.38	92.45			31.6	6.36	37.03	102	271	Average
5500	103.32	102.39			31.6	6.36	37.03	102	271	Peak
5725	59.7	58.42	68.2	-8.5	31.96	6.75	37.43	102	271	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
5362	38.54	37.92	54	-15.46	31.49	6.31	37.18	203	39	Average
5362	60.41	59.79	74	-13.59	31.49	6.31	37.18	203	39	Peak
5470	59.07	58.24	68.2	-9.13	31.57	6.34	37.08	203	39	Peak
5580	95.93	94.89			31.71	6.49	37.16	203	39	Average
5580	105.67	104.63			31.71	6.49	37.16	203	39	Peak
5725	58.73	57.45	68.2	-9.47	31.96	6.75	37.43	203	39	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5428	38.64	37.92	54	-15.36	31.53	6.32	37.13	101	293	Average
5428	60.96	60.24	74	-13.04	31.53	6.32	37.13	101	293	Peak
5470	57.33	56.5	68.2	-10.87	31.57	6.34	37.08	101	293	Peak
5580	93.99	92.95			31.71	6.49	37.16	101	293	Average
5580	103	101.96			31.71	6.49	37.16	101	293	Peak
5725	59.35	58.07	68.2	-8.85	31.96	6.75	37.43	101	293	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



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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
5414	38.47	37.8	54	-15.53	31.53	6.32	37.18	123	39	Average
5414	60.58	59.91	74	-13.42	31.53	6.32	37.18	123	39	Peak
5470	58.44	57.61	68.2	-9.76	31.57	6.34	37.08	123	39	Peak
5700	96.02	94.83			31.9	6.69	37.4	123	39	Average
5700	105.35	104.16			31.9	6.69	37.4	123	39	Peak
5725	64.65	63.37	68.2	-3.55	31.96	6.75	37.43	123	39	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5392	38.46	37.82	54	-15.54	31.51	6.31	37.18	104	270	Average
5392	60.87	60.23	74	-13.13	31.51	6.31	37.18	104	270	Peak
5470	59.52	58.69	68.2	-8.68	31.57	6.34	37.08	104	270	Peak
5700	94.49	93.3			31.9	6.69	37.4	104	270	Average
5700	103.82	102.63			31.9	6.69	37.4	104	270	Peak
5725	64.57	63.29	68.2	-3.63	31.96	6.75	37.43	104	270	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	64.15	62.96	68.2	-4.05	31.93	6.69	37.43	158	148	Peak
5725	69.96	68.68	78.2	-8.24	31.96	6.75	37.43	158	148	Peak
5745	95.18	93.91			31.99	6.75	37.47	158	148	Average
5745	104.18	102.91			31.99	6.75	37.47	158	148	Peak
5850	60.4	58.88	78.2	-17.8	32.15	6.88	37.51	158	148	Peak
5861	61.37	59.74	68.2	-6.83	32.18	6.95	37.5	158	148	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	63.87	62.68	68.2	-4.33	31.93	6.69	37.43	104	105	Peak
5725	71.72	70.44	78.2	-6.48	31.96	6.75	37.43	104	105	Peak
5745	94.13	92.86			31.99	6.75	37.47	104	105	Average
5745	103.76	102.49			31.99	6.75	37.47	104	105	Peak
5850	60.19	58.67	78.2	-18.01	32.15	6.88	37.51	104	105	Peak
5861	62.12	60.49	68.2	-6.08	32.18	6.95	37.5	104	105	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	61.11	59.92	68.2	-7.09	31.93	6.69	37.43	136	147	Peak
5725	59.86	58.58	78.2	-18.34	31.96	6.75	37.43	136	147	Peak
5785	95.82	94.5			32.04	6.82	37.54	136	147	Average
5785	105.39	104.07			32.04	6.82	37.54	136	147	Peak
5850	60.54	59.02	78.2	-17.66	32.15	6.88	37.51	136	147	Peak
5861	60.21	58.58	68.2	-7.99	32.18	6.95	37.5	136	147	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	60.95	59.76	68.2	-7.25	31.93	6.69	37.43	102	106	Peak
5725	60.29	59.01	78.2	-17.91	31.96	6.75	37.43	102	106	Peak
5785	93.64	92.32			32.04	6.82	37.54	102	106	Average
5785	103.25	101.93			32.04	6.82	37.54	102	106	Peak
5850	60.83	59.31	78.2	-17.37	32.15	6.88	37.51	102	106	Peak
5861	60.49	58.86	68.2	-7.71	32.18	6.95	37.5	102	106	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	60.71	59.52	68.2	-7.49	31.93	6.69	37.43	140	148	Peak
5725	59.92	58.64	78.2	-18.28	31.96	6.75	37.43	140	148	Peak
5825	96.11	94.64			32.12	6.88	37.53	140	148	Average
5825	105.94	104.47			32.12	6.88	37.53	140	148	Peak
5850	68.13	66.61	78.2	-10.07	32.15	6.88	37.51	140	148	Peak
5861	61.97	60.34	68.2	-6.23	32.18	6.95	37.5	140	148	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	59.91	58.72	68.2	-8.29	31.93	6.69	37.43	103	106	Peak
5725	59.5	58.22	78.2	-18.7	31.96	6.75	37.43	103	106	Peak
5825	93.24	91.77			32.12	6.88	37.53	103	106	Average
5825	102.46	100.99			32.12	6.88	37.53	103	106	Peak
5850	62.53	61.01	78.2	-15.67	32.15	6.88	37.51	103	106	Peak
5861	61.18	59.55	68.2	-7.02	32.18	6.95	37.5	103	106	Peak

REMARKS:

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

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5146	50.89	50.69	54	-3.11	31.32	6.2	37.32	179	147	Average
5146	70.81	70.61	74	-3.19	31.32	6.2	37.32	179	147	Peak
5190	94.67	94.44			31.35	6.22	37.34	179	147	Average
5190	104.46	104.23			31.35	6.22	37.34	179	147	Peak
5414	39.95	39.28	54	-14.05	31.53	6.32	37.18	179	147	Average
5414	59.77	59.1	74	-14.23	31.53	6.32	37.18	179	147	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	49.04	48.84	54	-4.96	31.32	6.2	37.32	101	108	Average
5146	68.16	67.96	74	-5.84	31.32	6.2	37.32	101	108	Peak
5190	92.98	92.75			31.35	6.22	37.34	101	108	Average
5190	102.22	101.99			31.35	6.22	37.34	101	108	Peak
5350	38.98	38.39	54	-15.02	31.48	6.29	37.18	101	108	Average
5350	60.83	60.24	74	-13.17	31.48	6.29	37.18	101	108	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
5120	41.89	41.71	54	-12.11	31.29	6.19	37.3	136	166	Average
5120	60.17	59.99	74	-13.83	31.29	6.19	37.3	136	166	Peak
5230	95.38	95.07			31.39	6.24	37.32	136	166	Average
5230	105.07	104.76			31.39	6.24	37.32	136	166	Peak
5378	40.85	40.21	54	-13.15	31.51	6.31	37.18	136	166	Average
5378	60.72	60.08	74	-13.28	31.51	6.31	37.18	136	166	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
5088	40.37	40.18	54	-13.63	31.27	6.19	37.27	101	96	Average
5088	60.39	60.2	74	-13.61	31.27	6.19	37.27	101	96	Peak
5230	93.6	93.29			31.39	6.24	37.32	101	96	Average
5230	103.07	102.76			31.39	6.24	37.32	101	96	Peak
5396	39.34	38.69	54	-14.66	31.52	6.31	37.18	101	96	Average
5396	60.59	59.94	74	-13.41	31.52	6.31	37.18	101	96	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
5150	39.9	39.7	54	-14.1	31.32	6.2	37.32	142	138	Average
5150	61.06	60.86	74	-12.94	31.32	6.2	37.32	142	138	Peak
5270	95.94	95.55			31.41	6.25	37.27	142	138	Average
5270	104.8	104.41			31.41	6.25	37.27	142	138	Peak
5376	43.22	42.6	54	-10.78	31.49	6.31	37.18	142	138	Average
5376	60.59	59.97	74	-13.41	31.49	6.31	37.18	142	138	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	38.75	38.54	54	-15.25	31.31	6.2	37.3	104	107	Average
5134	60.69	60.48	74	-13.31	31.31	6.2	37.3	104	107	Peak
5270	93.04	92.65			31.41	6.25	37.27	104	107	Average
5270	102.23	101.84			31.41	6.25	37.27	104	107	Peak
5414	40.29	39.62	54	-13.71	31.53	6.32	37.18	104	107	Average
5414	60.87	60.2	74	-13.13	31.53	6.32	37.18	104	107	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5018	38.15	38.03	54	-15.85	31.21	6.15	37.24	141	134	Average
5018	60.55	60.43	74	-13.45	31.21	6.15	37.24	141	134	Peak
5310	95.82	95.29			31.45	6.27	37.19	141	134	Average
5310	104.98	104.45			31.45	6.27	37.19	141	134	Peak
5350	50.36	49.77	54	-3.64	31.48	6.29	37.18	141	134	Average
5350	71.22	70.63	74	-2.78	31.48	6.29	37.18	141	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
5058	38.54	38.37	54	-15.46	31.25	6.17	37.25	107	116	Average
5058	60.35	60.18	74	-13.65	31.25	6.17	37.25	107	116	Peak
5310	93.17	92.64			31.45	6.27	37.19	107	116	Average
5310	102.36	101.83			31.45	6.27	37.19	107	116	Peak
5350	47.14	46.55	54	-6.86	31.48	6.29	37.18	107	116	Average
5350	69.56	68.97	74	-4.44	31.48	6.29	37.18	107	116	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	45.05	44.23	54	-8.95	31.56	6.34	37.08	205	50	Average
5460	62.82	62	74	-11.18	31.56	6.34	37.08	205	50	Peak
5470	66.43	65.6	68.2	-1.77	31.57	6.34	37.08	205	50	Peak
5510	93.89	92.99			31.6	6.36	37.06	205	50	Average
5510	102.74	101.84			31.6	6.36	37.06	205	50	Peak
5725	59.2	57.92	68.2	-9	31.96	6.75	37.43	205	50	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5456	41.91	41.09	54	-12.09	31.56	6.34	37.08	116	271	Average
5456	60.66	59.84	74	-13.34	31.56	6.34	37.08	116	271	Peak
5470	61.62	60.79	68.2	-6.58	31.57	6.34	37.08	116	271	Peak
5510	91.82	90.92			31.6	6.36	37.06	116	271	Average
5510	100.79	99.89			31.6	6.36	37.06	116	271	Peak
5725	58.7	57.42	68.2	-9.5	31.96	6.75	37.43	116	271	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
5456	41.6	40.78	54	-12.4	31.56	6.34	37.08	153	40	Average
5456	61.59	60.77	74	-12.41	31.56	6.34	37.08	153	40	Peak
5470	60.91	60.08	68.2	-7.29	31.57	6.34	37.08	153	40	Peak
5550	94.26	93.25			31.68	6.42	37.09	153	40	Average
5550	103.03	102.02			31.68	6.42	37.09	153	40	Peak
5725	60.63	59.35	68.2	-7.57	31.96	6.75	37.43	153	40	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5450	40.26	39.44	54	-13.74	31.56	6.34	37.08	101	275	Average
5450	60.46	59.64	74	-13.54	31.56	6.34	37.08	101	275	Peak
5470	58.99	58.16	68.2	-9.21	31.57	6.34	37.08	101	275	Peak
5550	92.55	91.54			31.68	6.42	37.09	101	275	Average
5550	101.78	100.77			31.68	6.42	37.09	101	275	Peak
5725	59.04	57.76	68.2	-9.16	31.96	6.75	37.43	101	275	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
5454	39.21	38.39	54	-14.79	31.56	6.34	37.08	117	41	Average
5454	60.83	60.01	74	-13.17	31.56	6.34	37.08	117	41	Peak
5470	59.27	58.44	68.2	-8.93	31.57	6.34	37.08	117	41	Peak
5670	93.72	92.56			31.88	6.62	37.34	117	41	Average
5670	102.8	101.64			31.88	6.62	37.34	117	41	Peak
5725	61.02	59.74	68.2	-7.18	31.96	6.75	37.43	117	41	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5410	39.05	38.39	54	-14.95	31.52	6.32	37.18	100	295	Average
5410	60.44	59.78	74	-13.56	31.52	6.32	37.18	100	295	Peak
5470	58.89	58.06	68.2	-9.31	31.57	6.34	37.08	100	295	Peak
5670	92.71	91.55			31.88	6.62	37.34	100	295	Average
5670	101.47	100.31			31.88	6.62	37.34	100	295	Peak
5725	60.66	59.38	68.2	-7.54	31.96	6.75	37.43	100	295	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	62.57	61.38	68.2	-5.63	31.93	6.69	37.43	136	139	Peak
5725	66.39	65.11	78.2	-11.81	31.96	6.75	37.43	136	139	Peak
5755	93.51	92.22			32.01	6.75	37.47	136	139	Average
5755	101.97	100.68			32.01	6.75	37.47	136	139	Peak
5850	59.61	58.09	78.2	-18.59	32.15	6.88	37.51	136	139	Peak
5861	60.42	58.79	68.2	-7.78	32.18	6.95	37.5	136	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
5714	59.77	58.58	68.2	-8.43	31.93	6.69	37.43	104	113	Peak
5725	65.59	64.31	78.2	-12.61	31.96	6.75	37.43	104	113	Peak
5755	92.51	91.22			32.01	6.75	37.47	104	113	Average
5755	101.06	99.77			32.01	6.75	37.47	104	113	Peak
5850	59.67	58.15	78.2	-18.53	32.15	6.88	37.51	104	113	Peak
5861	60.69	59.06	68.2	-7.51	32.18	6.95	37.5	104	113	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	61.06	59.87	68.2	-7.14	31.93	6.69	37.43	141	148	Peak
5725	61.36	60.08	78.2	-16.84	31.96	6.75	37.43	141	148	Peak
5795	93.77	92.42			32.07	6.82	37.54	141	148	Average
5795	102.62	101.27			32.07	6.82	37.54	141	148	Peak
5850	61.56	60.04	78.2	-16.64	32.15	6.88	37.51	141	148	Peak
5861	62.68	61.05	68.2	-5.52	32.18	6.95	37.5	141	148	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	59.73	58.54	68.2	-8.47	31.93	6.69	37.43	103	113	Peak
5725	59.87	58.59	78.2	-18.33	31.96	6.75	37.43	103	113	Peak
5795	92.41	91.06			32.07	6.82	37.54	103	113	Average
5795	101.53	100.18			32.07	6.82	37.54	103	113	Peak
5850	59.86	58.34	78.2	-18.34	32.15	6.88	37.51	103	113	Peak
5861	60.46	58.83	68.2	-7.74	32.18	6.95	37.5	103	113	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
33.88	31.88	49.73	40	-8.12	12.63	0.6	31.08	130	76	Peak
39.7	30.02	46.83	40	-9.98	13.54	0.64	30.99	108	96	Peak
490.75	31.26	43.8	46	-14.74	17.14	2.08	31.76	105	56	Peak
513.06	32.71	44.55	46	-13.29	17.62	2.12	31.58	132	41	Peak
534.4	32.02	43.48	46	-13.98	18.1	2.15	31.71	114	277	Peak
578.05	29.4	40.19	46	-16.6	19.1	2.22	32.11	110	300	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
31.94	38.76	56.98	40	-1.24	12.3	0.59	31.11	100	165	QP
39.7	38.55	55.36	40	-1.45	13.54	0.64	30.99	100	55	QP
121.18	23.91	43.56	43.5	-19.59	11.09	1.16	31.9	128	123	Peak
492.69	36.69	49.16	46	-9.31	17.18	2.08	31.73	108	290	Peak
515	35.48	47.28	46	-10.52	17.66	2.12	31.58	138	304	Peak
535.37	38.53	49.96	46	-7.47	18.13	2.15	31.71	105	296	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
33.88	31.77	49.62	40	-8.23	12.63	0.6	31.08	116	164	Peak
39.7	29.41	46.22	40	-10.59	13.54	0.64	30.99	134	168	Peak
490.75	30.9	43.44	46	-15.1	17.14	2.08	31.76	102	6	Peak
513.06	32.35	44.19	46	-13.65	17.62	2.12	31.58	116	345	Peak
535.37	31.48	42.91	46	-14.52	18.13	2.15	31.71	140	303	Peak
558.65	26.37	37.57	46	-19.63	18.66	2.19	32.05	125	189	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	38.65	56.87	40	-1.35	12.3	0.59	31.11	100	179	QP
39.7	38.45	55.26	40	-1.55	13.54	0.64	30.99	100	69	QP
490.75	36.62	49.16	46	-9.38	17.14	2.08	31.76	127	213	Peak
513.06	40.16	52	46	-5.84	17.62	2.12	31.58	127	192	Peak
533.43	34.99	46.46	46	-11.01	18.08	2.15	31.7	114	30	Peak
556.71	37.1	48.33	46	-8.9	18.61	2.19	32.03	103	246	Peak

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

Margin value = Emission level – Limit value

Band III

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	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
33.88	32.42	50.27	40	-7.58	12.63	0.6	31.08	121	155	Peak
38.73	28.38	45.36	40	-11.62	13.39	0.63	31	109	237	Peak
491.72	30.79	43.29	46	-15.21	17.16	2.08	31.74	121	106	Peak
515	30.57	42.37	46	-15.43	17.66	2.12	31.58	139	158	Peak
536.34	31.75	43.16	46	-14.25	18.15	2.16	31.72	121	241	Peak
558.65	29.45	40.65	46	-16.55	18.66	2.19	32.05	113	174	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
31.94	38.61	56.83	40	-1.39	12.3	0.59	31.11	100	199	QP
39.7	38.53	55.34	40	-1.47	13.54	0.64	30.99	100	75	QP
492.69	36.3	48.77	46	-9.7	17.18	2.08	31.73	124	357	Peak
512.09	36.75	48.63	46	-9.25	17.6	2.11	31.59	125	117	Peak
536.34	38.41	49.82	46	-7.59	18.15	2.16	31.72	133	147	Peak
558.65	35	46.2	46	-11	18.66	2.19	32.05	137	324	Peak

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

Margin value = Emission level – Limit value



A D T

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
33.88	32.19	50.04	40	-7.81	12.63	0.6	31.08	108	304	Peak
41.64	27.42	44.25	40	-12.58	13.56	0.66	31.05	113	359	Peak
492.69	30.01	42.48	46	-15.99	17.18	2.08	31.73	108	134	Peak
513.06	32.41	44.25	46	-13.59	17.62	2.12	31.58	134	166	Peak
536.34	31.51	42.92	46	-14.49	18.15	2.16	31.72	125	350	Peak
579.99	27.9	38.65	46	-18.1	19.15	2.22	32.12	111	123	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	38.1	56.32	40	-1.9	12.3	0.59	31.11	100	192	QP
39.7	38.63	55.44	40	-1.37	13.54	0.64	30.99	100	66	QP
490.75	36.8	49.34	46	-9.2	17.14	2.08	31.76	101	215	Peak
512.09	36.99	48.87	46	-9.01	17.6	2.11	31.59	131	283	Peak
533.43	37.35	48.82	46	-8.65	18.08	2.15	31.7	126	62	Peak
556.71	37.37	48.6	46	-8.63	18.61	2.19	32.03	114	167	Peak

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

Margin value = Emission level – Limit value

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBµV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	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	Feb. 26, 2015	Feb. 25, 2016
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 24, 2015	Jul. 23, 2016
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1.
 3. The VCCI Site Registration No. is C-2040.

4.2.3 TEST PROCEDURES

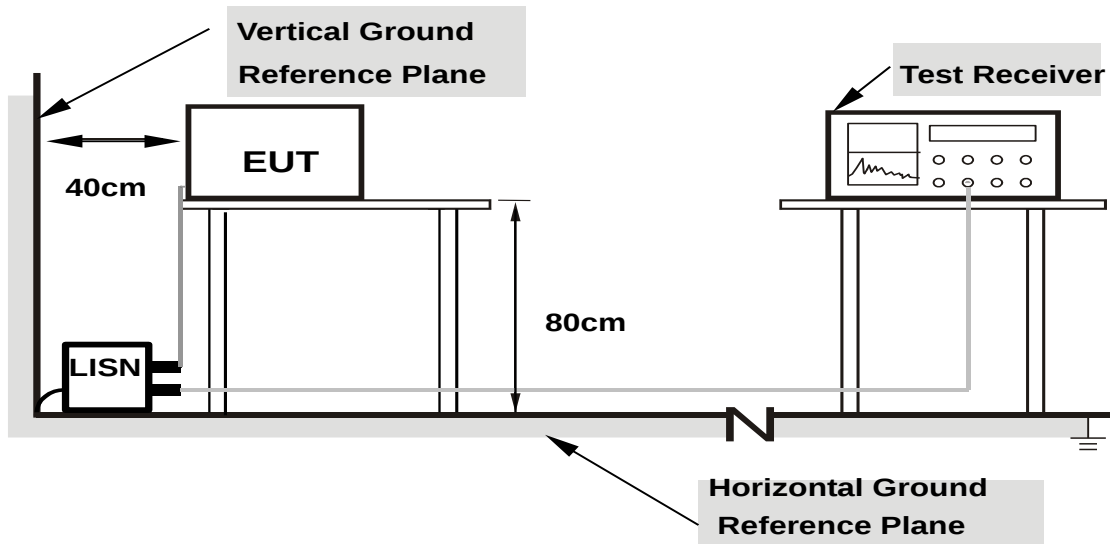
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

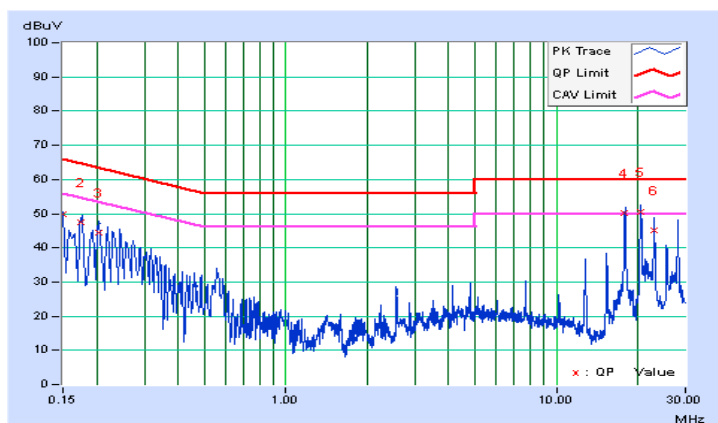
CONDUCTED WORST-CASE DATA :

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	2015/8/15

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.05	49.91	37.92	49.96	37.97	66.00	56.00	-16.04	-18.03
2	0.17512	0.06	47.52	35.29	47.58	35.35	64.71	54.71	-17.14	-19.37
3	0.20458	0.06	44.52	28.75	44.58	28.81	63.42	53.42	-18.84	-24.61
4	17.88967	0.81	49.40	41.23	50.21	42.04	60.00	50.00	-9.79	-7.96
5	20.44290	0.91	49.50	40.80	50.41	41.71	60.00	50.00	-9.59	-8.29
6	23.00395	0.98	44.27	35.99	45.25	36.97	60.00	50.00	-14.75	-13.03

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

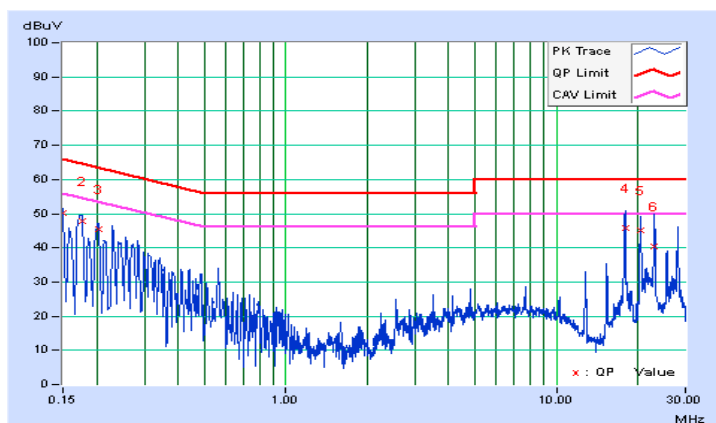


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2015/8/15

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.05	50.14	37.37	50.19	37.42	66.00	56.00	-15.81	-18.58
2	0.17737	0.05	47.63	32.99	47.68	33.04	64.61	54.61	-16.93	-21.57
3	0.20243	0.05	45.27	30.57	45.32	30.62	63.51	53.51	-18.19	-22.89
4	17.95614	0.67	45.18	33.03	45.85	33.70	60.00	50.00	-14.15	-16.30
5	20.51719	0.74	44.27	32.42	45.01	33.16	60.00	50.00	-14.99	-16.84
6	23.07433	0.77	39.50	28.32	40.27	29.09	60.00	50.00	-19.73	-20.91

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

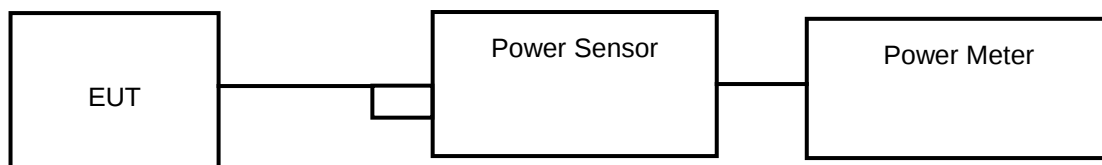
4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

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)

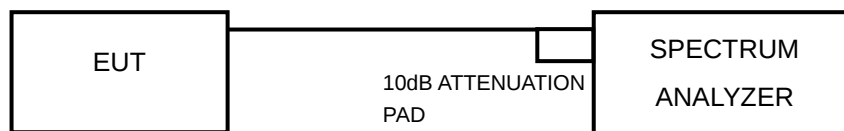
NOTE: Where B is the 26dB emission bandwidth in MHz.

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	16.94	12.29	24	PASS
44	5220	18.97	12.78	24	PASS
48	5240	20.09	13.03	24	PASS
52	5260	21.43	13.31	24	PASS
60	5300	25.47	14.06	24	PASS
64	5320	25.18	14.01	24	PASS
100	5500	17.74	12.49	23.82	PASS
116	5580	17.86	12.52	23.93	PASS
140	5700	19.77	12.96	24	PASS
149	5745	18.03	12.56	30	PASS
157	5785	18.11	12.58	30	PASS
165	5825	17.66	12.47	30	PASS

NOTE:

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

1. $11\text{dBm} + 10\log(20.61) = 24.14\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(20.88) = 24.20\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(22.90) = 24.60\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(19.14) = 23.82\text{ dBm} < 24\text{dBm}$.
5. $11\text{dBm} + 10\log(19.62) = 23.93\text{ dBm} < 24\text{dBm}$.
6. $11\text{dBm} + 10\log(20.78) = 24.18\text{ dBm} > 24\text{dBm}$.

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	13.46	11.29	24	PASS
44	5220	15.21	11.82	24	PASS
48	5240	14.00	11.46	24	PASS
52	5260	16.00	12.04	23.93	PASS
60	5300	19.91	12.99	23.93	PASS
64	5320	21.04	13.23	23.89	PASS
100	5500	14.19	11.52	23.91	PASS
116	5580	14.39	11.58	23.90	PASS
140	5700	16.14	12.08	23.92	PASS
149	5745	21.68	13.36	30	PASS
157	5785	22.44	13.51	30	PASS
165	5825	22.08	13.44	30	PASS

NOTE:

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

1. $11\text{dBm} + 10\log(19.62) = 23.93\text{ dBm} < 24\text{dBm}$.
2. $11\text{dBm} + 10\log(19.62) = 23.93\text{ dBm} < 24\text{dBm}$.
3. $11\text{dBm} + 10\log(19.45) = 23.89\text{ dBm} < 24\text{dBm}$.
4. $11\text{dBm} + 10\log(19.53) = 23.91\text{ dBm} < 24\text{dBm}$.
5. $11\text{dBm} + 10\log(19.52) = 23.90\text{ dBm} < 24\text{dBm}$.
6. $11\text{dBm} + 10\log(19.58) = 23.92\text{ dBm} < 24\text{dBm}$.



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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	15.00	11.76	24	PASS
46	5230	16.63	12.21	24	PASS
54	5270	19.63	12.93	24	PASS
62	5310	21.33	13.29	24	PASS
102	5510	14.96	11.75	24	PASS
110	5550	14.76	11.69	24	PASS
134	5670	16.75	12.24	24	PASS
151	5755	22.75	13.57	30	PASS
159	5795	23.39	13.69	30	PASS

NOTE:

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

1. $11\text{dBm} + 10\log(43.27) = 27.36\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(44.47) = 27.48\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(41.27) = 27.16\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(43.73) = 27.41\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(44.09) = 27.44\text{ dBm} > 24\text{dBm}$.



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26dB BANDWIDTH**802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	20.61	PASS
60	5300	20.88	PASS
64	5320	22.90	PASS
100	5500	19.14	PASS
116	5580	19.62	PASS
140	5700	20.78	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	19.62	PASS
60	5300	19.62	PASS
64	5320	19.45	PASS
100	5500	19.53	PASS
116	5580	19.52	PASS
140	5700	19.58	PASS

802.11n (40MHz)

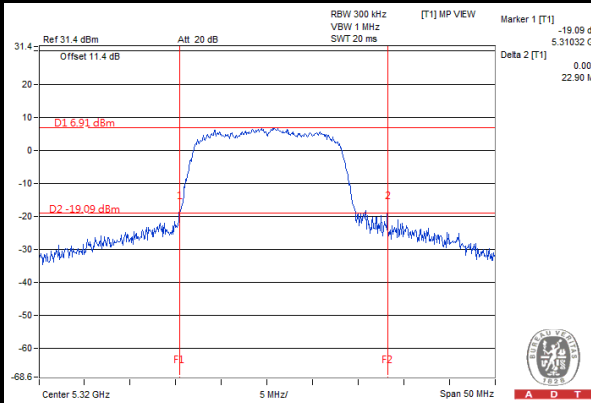
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
54	5270	43.27	PASS
62	5310	44.47	PASS
102	5510	41.27	PASS
110	5550	43.73	PASS
134	5670	44.09	PASS



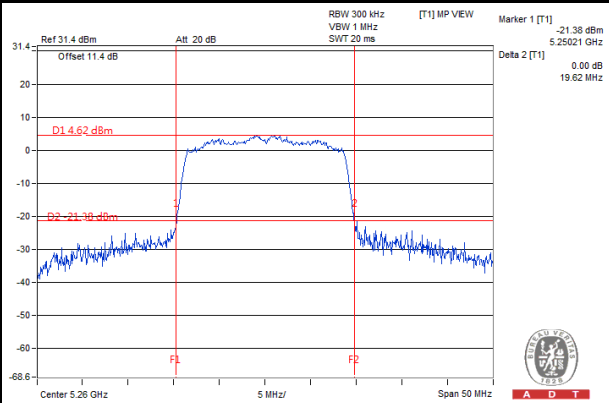
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SPECTRUM PLOT OF WORST VALUE

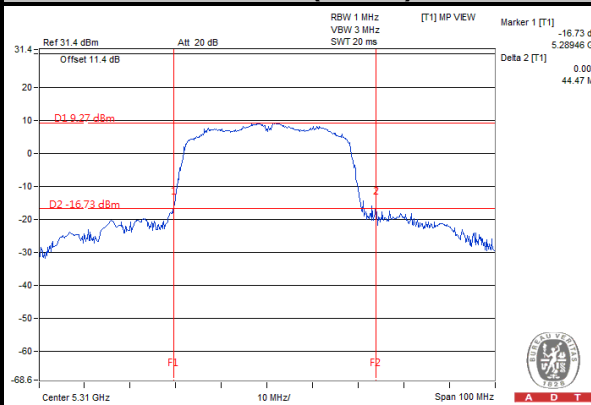
802.11a



802.11n (20MHz)



802.11n (40MHz)

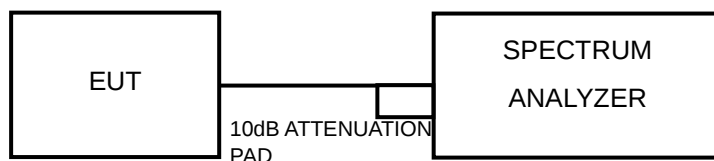


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

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	0.74	0.33	1.07	11	PASS
44	5220	1.37	0.33	1.70	11	PASS
48	5240	1.78	0.33	2.11	11	PASS
52	5260	2.34	0.33	2.67	11	PASS
60	5300	3.27	0.33	3.60	11	PASS
64	5320	3.75	0.33	4.08	11	PASS
100	5500	2.37	0.33	2.70	11	PASS
116	5580	2.03	0.33	2.36	11	PASS
140	5700	1.83	0.33	2.16	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	-0.46	0.35	-0.11	11	PASS
44	5220	0.12	0.35	0.47	11	PASS
48	5240	0.75	0.35	1.10	11	PASS
52	5260	1.35	0.35	1.70	11	PASS
60	5300	2.26	0.35	2.61	11	PASS
64	5320	2.56	0.35	2.91	11	PASS
100	5500	1.18	0.35	1.53	11	PASS
116	5580	0.82	0.35	1.17	11	PASS
140	5700	0.61	0.35	0.96	11	PASS

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



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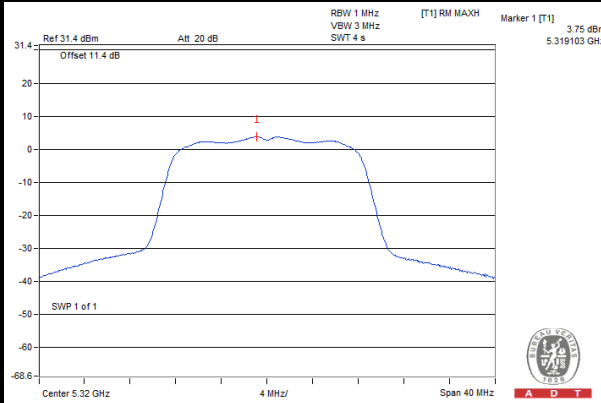
802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-2.95	0.97	-1.98	11	PASS
46	5230	-2.19	0.97	-1.22	11	PASS
54	5270	-1.24	0.97	-0.27	11	PASS
62	5310	-0.25	0.97	0.72	11	PASS
102	5510	-1.50	0.97	-0.53	11	PASS
110	5550	-1.68	0.97	-0.71	11	PASS
134	5670	-1.80	0.97	-0.83	11	PASS

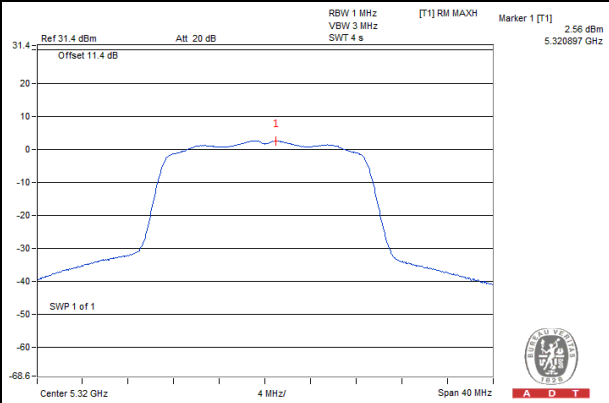
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

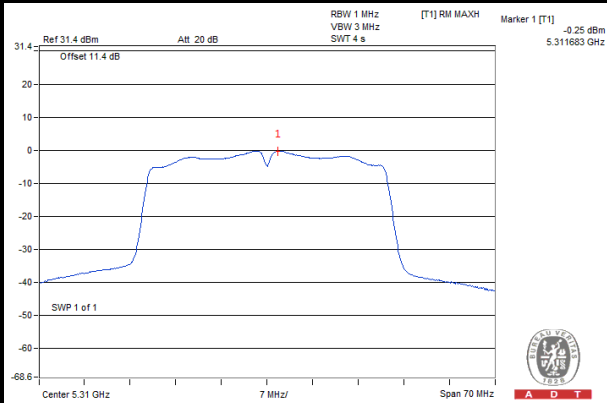
802.11a



802.11n (20MHz)



802.11n (40MHz)



For U-NII-3 Band

802.11a

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	LIMIT (dBm/500kHz)	PASS/FAIL
149	5745	-1.54	0.33	-1.21	30	PASS
157	5785	-1.32	0.33	-0.99	30	PASS
165	5825	-0.94	0.33	-0.61	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	-2.28	0.35	-1.93	30	PASS
157	5785	-2.29	0.35	-1.94	30	PASS
165	5825	-1.79	0.35	-1.44	30	PASS

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

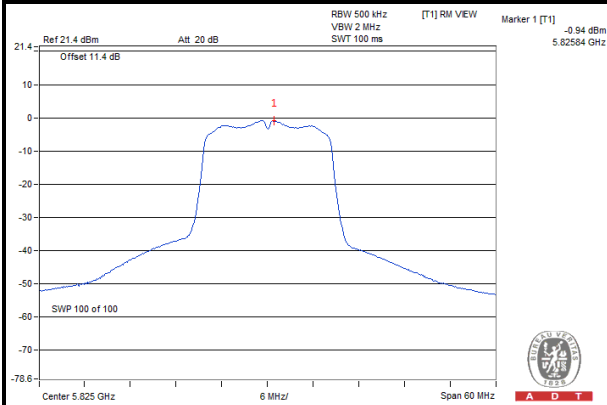
802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	LIMIT (dBm/500kHz)	PASS/FAIL
151	5755	-5.50	0.97	-4.53	30	PASS
159	5795	-5.16	0.97	-4.19	30	PASS

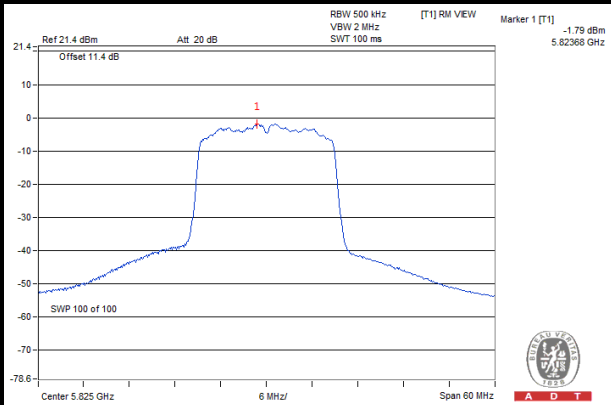
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

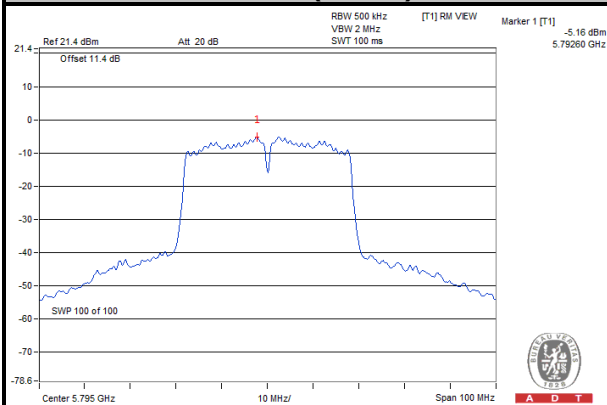
802.11a



802.11n (20MHz)



802.11n (40MHz)

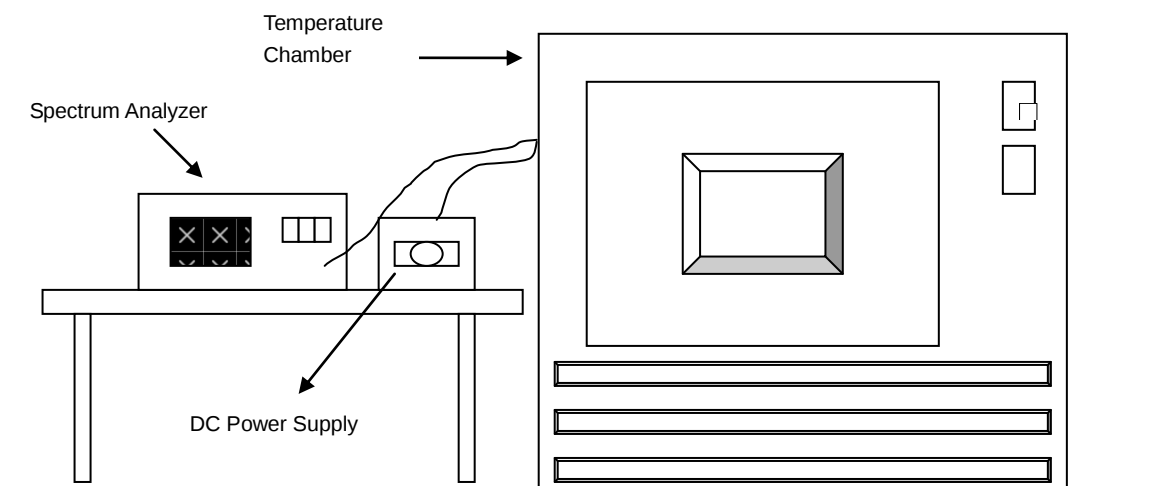


4.5 FREQUENCY STABILITY

4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

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

4.5.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
50	9.0	5320.037959	7.135	5320.037906	7.125	5320.037868	7.118	5320.037753	7.096
40	9.0	5320.038011	7.145	5320.038029	7.148	5320.037720	7.090	5320.038117	7.165
30	9.0	5320.039140	7.357	5320.038995	7.330	5320.039087	7.347	5320.039215	7.371
20	9.0	5320.038368	7.212	5320.037856	7.116	5320.038001	7.143	5320.037985	7.140
10	9.0	5320.041736	7.845	5320.041699	7.838	5320.041501	7.801	5320.041441	7.790
0	9.0	5320.040377	7.590	5320.040196	7.556	5320.040470	7.607	5320.040310	7.577
-10	9.0	5320.038231	7.186	5320.038621	7.260	5320.038674	7.270	5320.038538	7.244
-20	9.0	5320.037805	7.106	5320.038027	7.148	5320.038020	7.147	5320.038049	7.152
-30	9.0	5320.037118	6.977	5320.036905	6.937	5320.037447	7.039	5320.036646	6.888

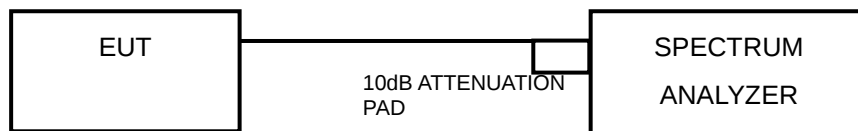
FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	5.0	5320.037952	7.134	5320.037599	7.067	5320.037397	7.030	5320.037833	7.111
	9.0	5320.038368	7.212	5320.037856	7.116	5320.038001	7.143	5320.037985	7.140
	12.00	5320.039307	7.389	5320.039097	7.349	5320.039285	7.384	5320.039408	7.408

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	15.12	0.5	PASS
157	5785	15.16	0.5	PASS
165	5825	15.14	0.5	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	17.56	0.5	PASS
157	5785	16.38	0.5	PASS
165	5825	16.94	0.5	PASS

802.11n (40MHz)

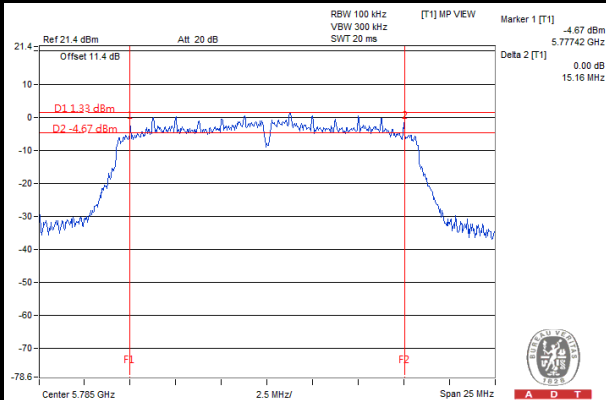
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	35.17	0.5	PASS
159	5795	35.22	0.5	PASS



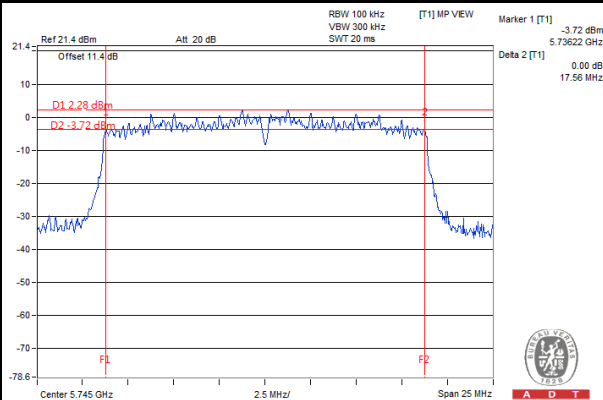
A D T

SPECTRUM PLOT OF WORST VALUE

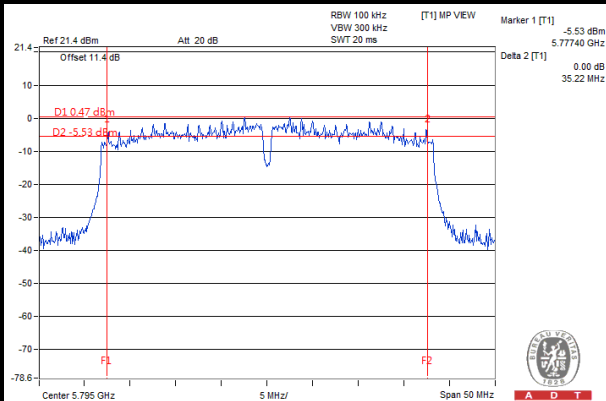
802.11a



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---