



FCC TEST REPORT (15.407)

REPORT NO.: RF140303C07-3
MODEL NO.: 0P8B100
FCC ID: NM80P8B100
RECEIVED: Mar. 03, 2014
TESTED: Mar. 20, 2014 ~ Mar. 25, 2014
ISSUED: Apr. 15, 2014

APPLICANT: HTC Corporation

ADDRESS: 1F, 6-3 Baoqiang Road, Xindian District, New Taipei City, Taiwan 231

ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140303C07-3	Original release	Apr. 15, 2014



1. CERTIFICATION

PRODUCT: Smartphone
MODEL NO.: 0P8B100
BRAND: HTC
APPLICANT: HTC Corporation
TESTED: Mar. 20, 2014 ~ Mar. 25, 2014
TEST SAMPLE: PRODUCTION UNIT
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (model: 0P8B100) 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 : Ivonne Wu , **DATE :** Apr. 15, 2014
Ivonne Wu / Supervisor

APPROVED BY : Sam Chen , **DATE :** Apr. 15, 2014
Sam Chen / Senior Project Engineer

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -11.08dB at 13.55879MHz.
15.407(b/1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.01dB at 5725MHz.
15.407(a/1/2)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
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	Smartphone
MODEL NO.	0P8B100
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	42.85mW for 5180 ~ 5240MHz 43.25mW for 5260 ~ 5320MHz 44.16mW for 5500 ~ 5700MHz
ANTENNA TYPE	PIFA antenna with -7.1dBi gain (5180 ~ 5240MHz) PIFA antenna with -7.2dBi gain (5260 ~ 5320MHz) PIFA antenna with -6.9dBi gain (5500 ~ 5700MHz)
ANTENNA CONNECTOR	NA
DATA CABLE	Refer to Note as below
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to Note as below

NOTE:

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

3.2 DESCRIPTION OF TEST MODES

WLAN 5180 ~ 5240MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

WLAN 5500 ~ 5700MHz

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

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

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

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



3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

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

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane** for 5180-5240MHz and **Y-plane** for 5260-5320MHz & 5500-5700MHz .

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

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 (20MHz)	5180-5240	36 to 48	36	OFDM	BPSK	MCS0
	802.11n (40MHz)	5260-5320	54 to 62	62	OFDM	BPSK	MCS0
	802.11a	5500-5700	100 to 140	140	OFDM	BPSK	MCS0



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POWER LINE CONDUCTED EMISSION TEST:

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



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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

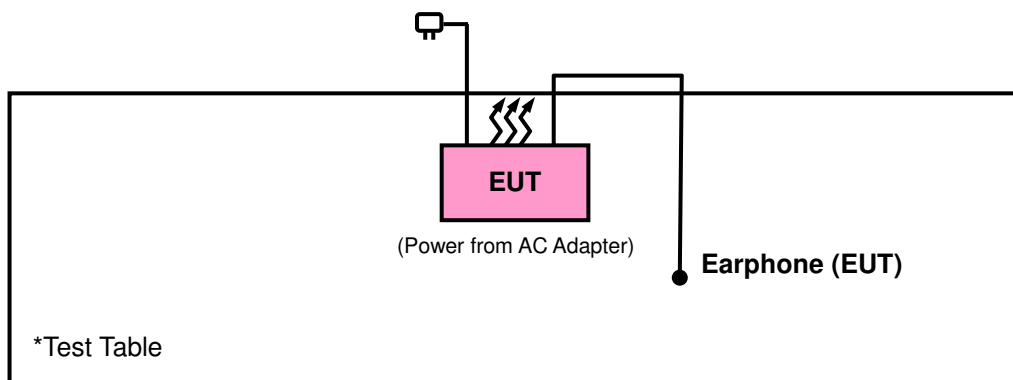
Test CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE \geq 1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
RE $<$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
PLC	25deg. C, 65%RH	120Vac, 60Hz	Peter Weng
APCM	25deg. C, 65%RH	120Vac, 60Hz	Howard Kao

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

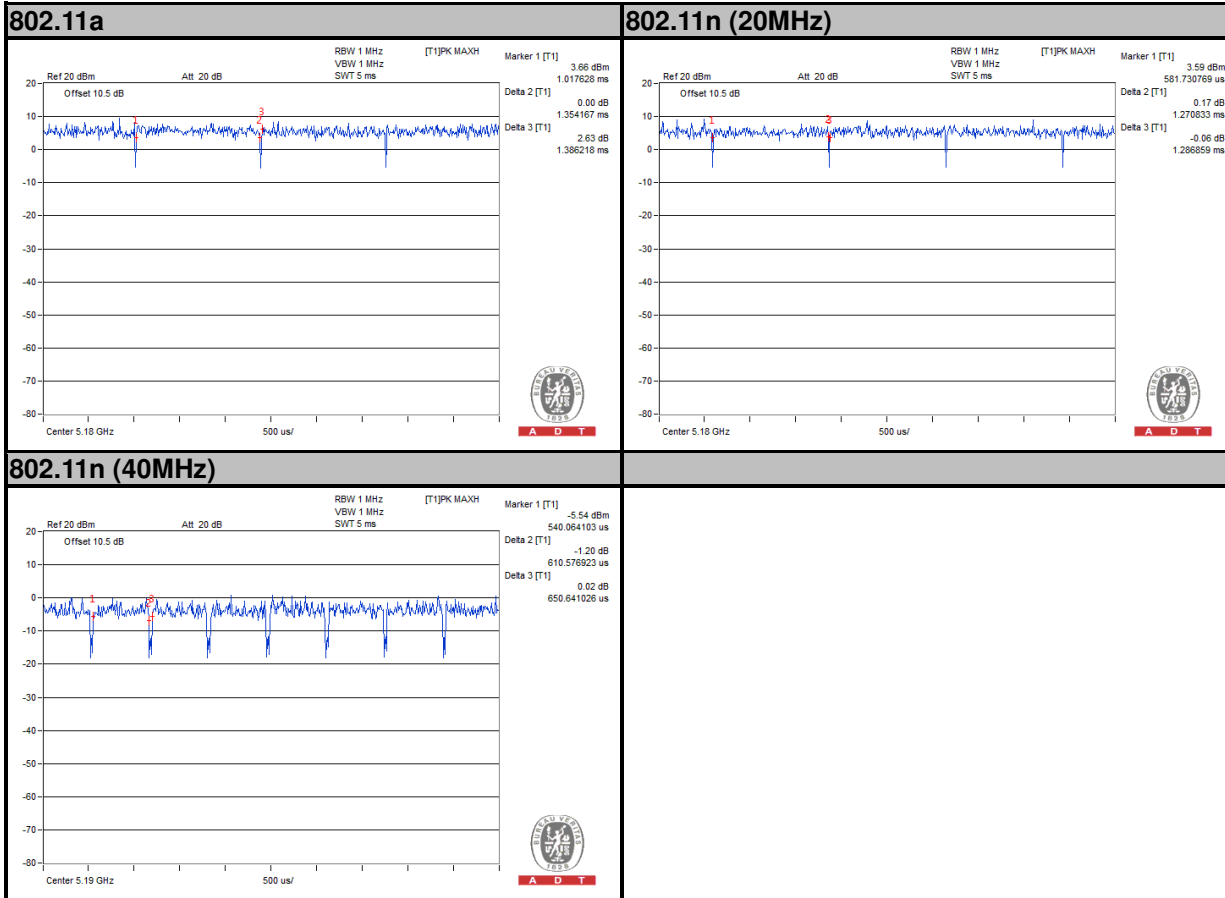
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 1.354/1.386 = 0.977, Duty factor = $10 \cdot \log(1/0.977) = 0.10$

802.11n (40MHz): Duty cycle = 610.58/650.64 = 0.938, Duty factor = $10 \cdot \log(1/0.938) = 0.28$

Duty cycle of test signal is > 98 %, duty factor is not required.

802.11n (20MHz): Duty cycle = 1.271/1.287 = 0.988





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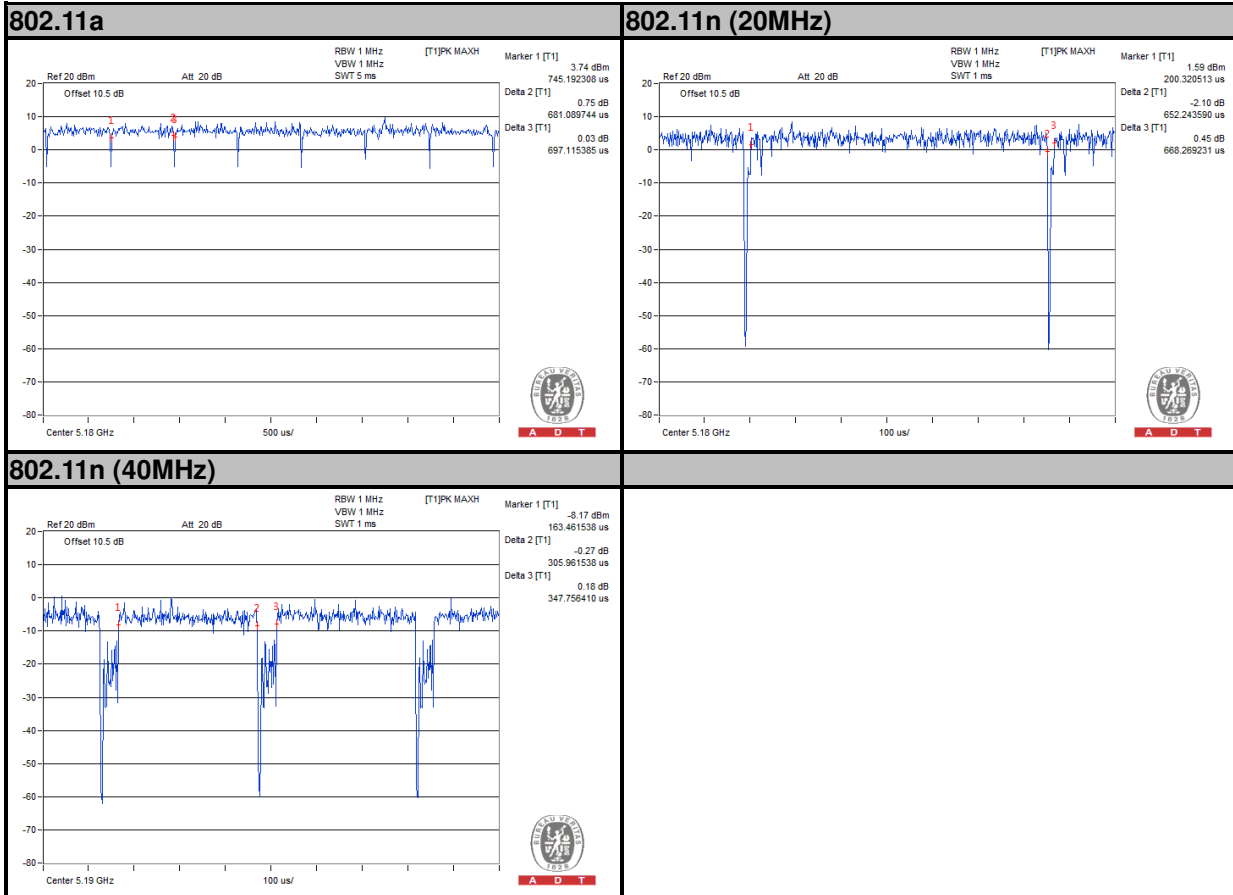
MODULATION TYPE: QPSK

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

802.11a: Duty cycle = $681.09/697.12 = 0.977$, Duty factor = $10 * \log(1/0.977) = 0.10$

802.11n (20MHz): Duty cycle = $652.24/668.27 = 0.976$, Duty factor = $10 * \log(1/0.976) = 0.11$

802.11n (40MHz): Duty cycle = $305.96/347.76 = 0.880$, Duty factor = $10 * \log(1/0.880) = 0.56$





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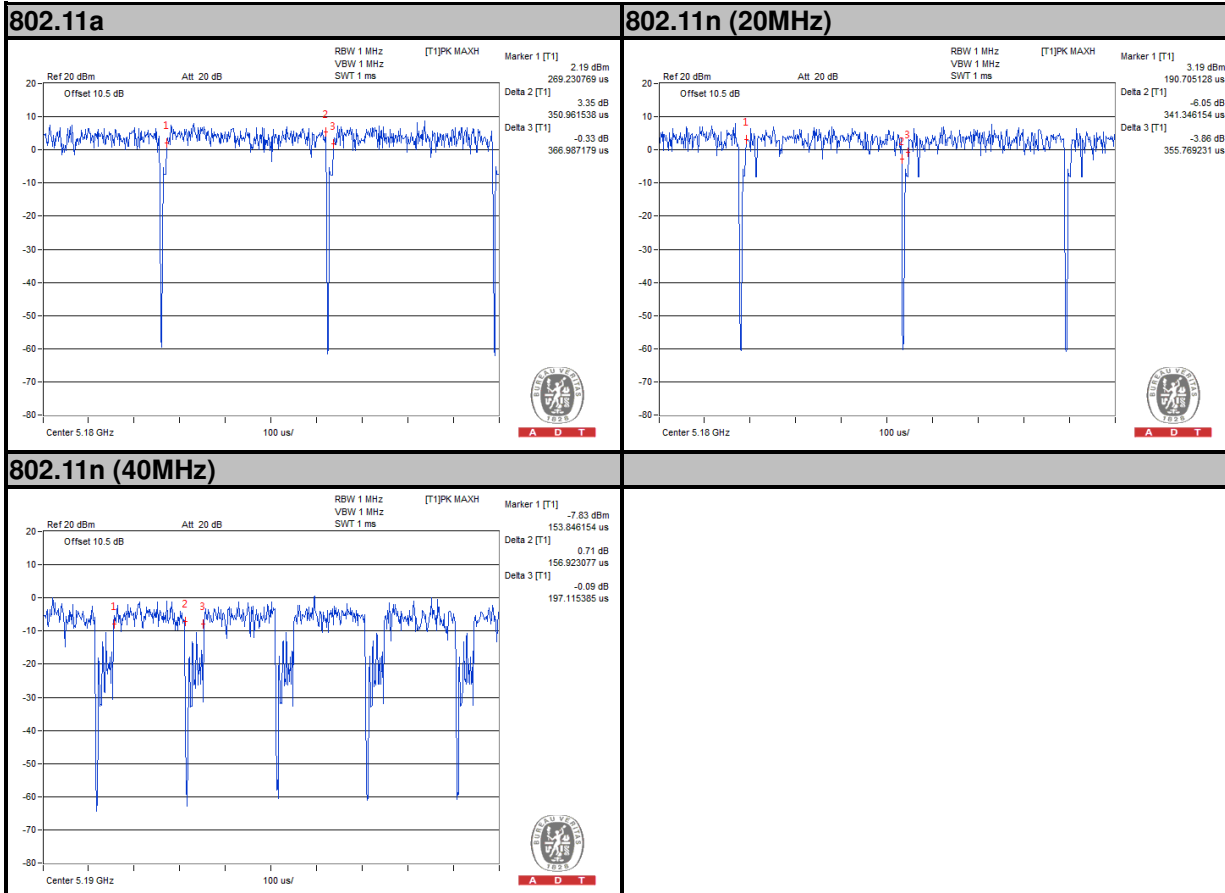
MODULATION TYPE: 16QAM

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

802.11a: Duty cycle = 350.96/366.99 = 0.956, Duty factor = $10 \cdot \log(1/0.956) = 0.19$

802.11n (20MHz): Duty cycle = 341.35/355.77 = 0.959, Duty factor = $10 \cdot \log(1/0.959) = 0.18$

802.11n (40MHz): Duty cycle = 156.92/197.12 = 0.796, Duty factor = $10 \cdot \log(1/0.796) = 0.99$





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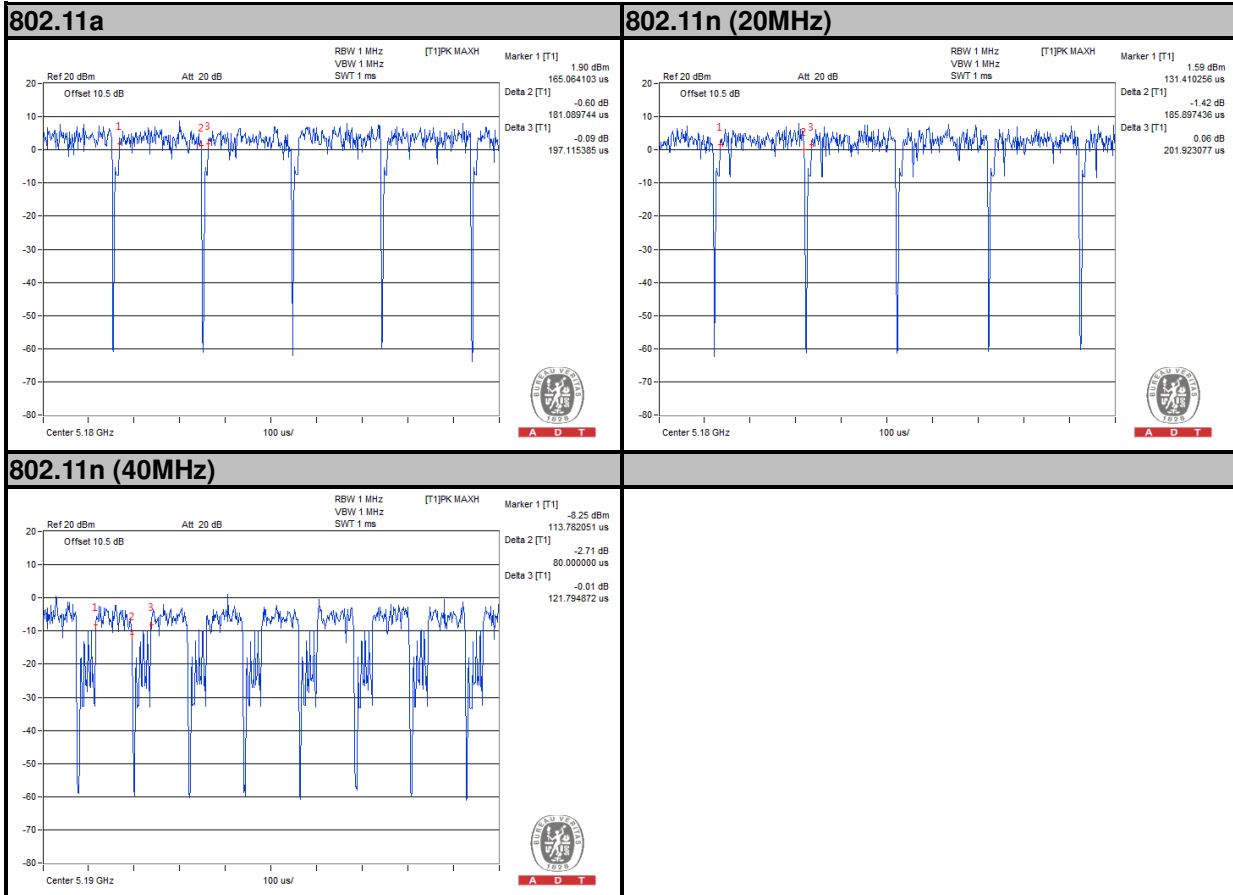
MODULATION TYPE: 64QAM

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

802.11a: Duty cycle = 181.09/197.12 = 0.919, Duty factor = $10 * \log(1/0.919) = 0.37$

802.11n (20MHz): Duty cycle = 185.90/201.92 = 0.921, Duty factor = $10 * \log(1/0.921) = 0.36$

802.11n (40MHz): Duty cycle = 80.00/121.79 = 0.657, Duty factor = $10 * \log(1/0.657) = 1.83$



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)

KDB 789033 D01 General UNII Test Procedures v01r03

ANSI C63.10-2009

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

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
	FIELD STRENGTH AT 3m (dBμV/m)	
	PK	AV
	74	54
	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
√	PK	PK
	-27	68.3

NOTE: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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



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4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 15, 2013	Apr. 14, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2013	Dec. 20, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Feb. 27, 2014	Feb. 26, 2015
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Feb. 19, 2014	Feb. 18, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 18, 2013	Dec. 17, 2014
Loop Antenna	HFH2-Z2	100070	Mar. 06, 2014	Mar. 05, 2016
Preamplifier EMCI	EMC 012645	980115	Dec. 26, 2013	Dec. 25, 2014
Preamplifier EMCI	EMC 184045	980116	Jan. 13, 2014	Jan. 12, 2015
Preamplifier EMCI	EMC 330H	980112	Dec. 27, 2013	Dec. 26, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 18, 2013	Oct. 17, 2014
RF signal cable Worken	RG-213	NA	Nov. 07, 2013	Nov. 06, 2014
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Power Meter	ML2495A	1232002	Aug. 23, 2013	Aug. 22, 2014
Power Sensor	MA2411B	1207325	Aug. 23, 2013	Aug. 22, 2014

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

4.1.4 TEST PROCEDURES

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

NOTE:

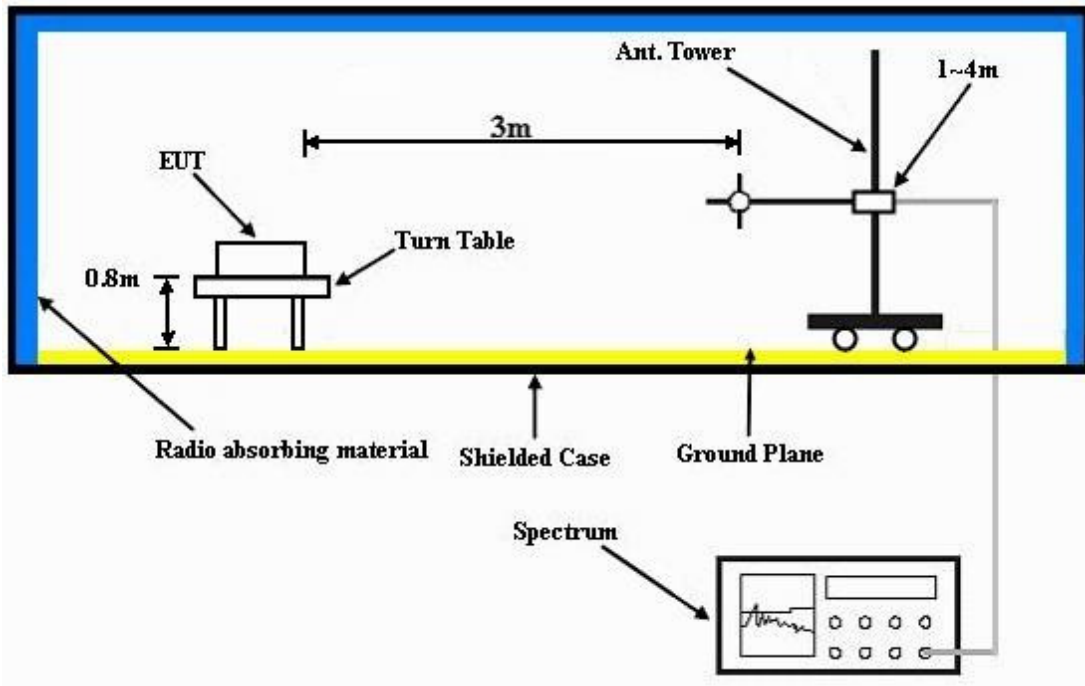
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

4.1.5 DEVIATION FROM TEST STANDARD

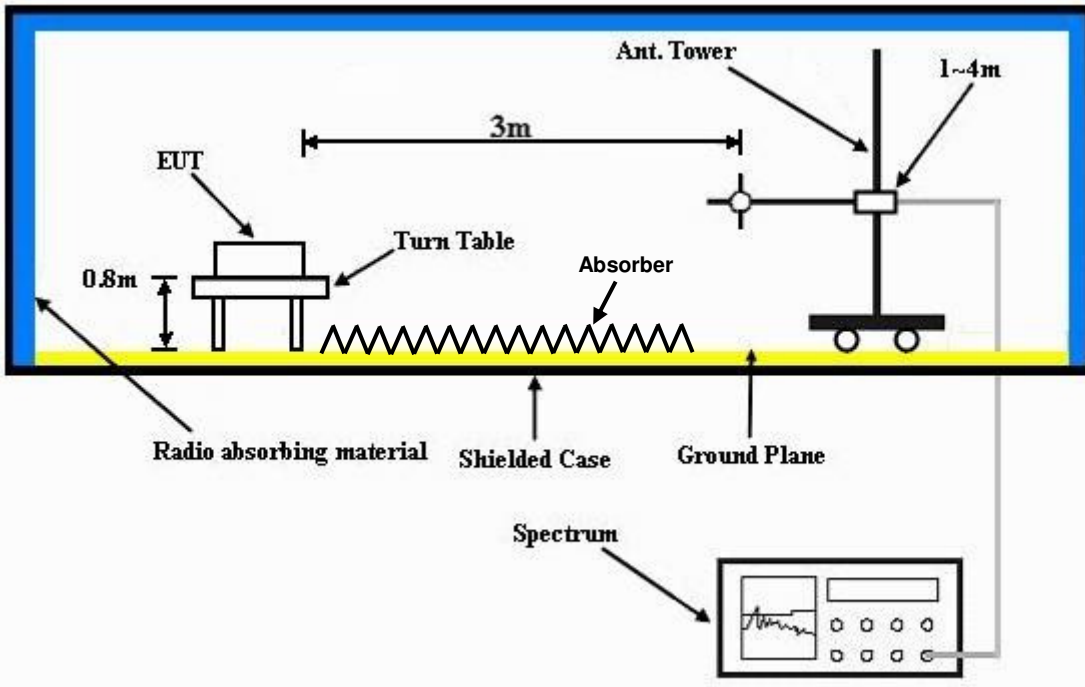
No deviation.

4.1.6 TEST SETUP

Frequency Range 30MHz ~ 1GHz



Frequency Range above 1GHz



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



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4.1.7 EUT OPERATING CONDITIONS

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



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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	Kay 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	49.6	41.35	54	-4.4	34.12	8.13	34	141	159	Average
5150	64.41	56.16	74	-9.59	34.12	8.13	34	141	159	Peak
5180	99.28	90.97			34.15	8.16	34	141	159	Average
5180	106.38	98.07			34.15	8.16	34	141	159	Peak
5428	45.37	36.6	54	-8.63	34.33	8.48	34.04	141	159	Average
5428	59.19	50.42	74	-14.81	34.33	8.48	34.04	141	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
5148	46.81	38.56	54	-7.19	34.12	8.13	34	187	354	Average
5148	60.24	51.99	74	-13.76	34.12	8.13	34	187	354	Peak
5180	95.87	87.56			34.15	8.16	34	187	354	Average
5180	103.48	95.17			34.15	8.16	34	187	354	Peak
5458	46.39	37.57	54	-7.61	34.36	8.51	34.05	187	354	Average
5458	59.03	50.21	74	-14.97	34.36	8.51	34.05	187	354	Peak

REMARKS:

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



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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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5090	44.67	36.5	54	-9.33	34.08	8.07	33.98	154	178	Average
5090	58.14	49.97	74	-15.86	34.08	8.07	33.98	154	178	Peak
5220	97.96	89.57			34.17	8.22	34	154	178	Average
5220	105.9	97.51			34.17	8.22	34	154	178	Peak
5374	46.27	37.61	54	-7.73	34.29	8.41	34.04	154	178	Average
5374	59.35	50.69	74	-14.65	34.29	8.41	34.04	154	178	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5090	44.67	36.5	54	-9.33	34.08	8.07	33.98	144	357	Average
5090	59.12	50.95	74	-14.88	34.08	8.07	33.98	144	357	Peak
5220	95.38	86.99			34.17	8.22	34	144	357	Average
5220	103.46	95.07			34.17	8.22	34	144	357	Peak
5442	46.35	37.56	54	-7.65	34.35	8.48	34.04	144	357	Average
5442	59.57	50.78	74	-14.43	34.35	8.48	34.04	144	357	Peak

REMARKS:

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



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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	Kay 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	45.61	37.55	54	-8.39	34.04	8	33.98	139	156	Average
5048	59.41	51.35	74	-14.59	34.04	8	33.98	139	156	Peak
5240	98.43	89.99			34.19	8.26	34.01	139	156	Average
5240	106.06	97.62			34.19	8.26	34.01	139	156	Peak
5434	45.39	36.6	54	-8.61	34.35	8.48	34.04	139	156	Average
5434	59.54	50.75	74	-14.46	34.35	8.48	34.04	139	156	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	44.63	36.51	54	-9.37	34.07	8.03	33.98	184	322	Average
5074	58.49	50.37	74	-15.51	34.07	8.03	33.98	184	322	Peak
5240	96.71	88.27			34.19	8.26	34.01	184	322	Average
5240	103.72	95.28			34.19	8.26	34.01	184	322	Peak
5390	45.23	36.55	54	-8.77	34.31	8.41	34.04	184	322	Average
5390	58.9	50.22	74	-15.1	34.31	8.41	34.04	184	322	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5046	44.57	36.51	54	-9.43	34.04	8	33.98	122	311	Average
5046	58.83	50.77	74	-15.17	34.04	8	33.98	122	311	Peak
5260	96.59	88.13			34.21	8.26	34.01	122	311	Average
5260	104.09	95.63			34.21	8.26	34.01	122	311	Peak
5430	44.06	35.27	54	-9.94	34.35	8.48	34.04	122	311	Average
5430	59.04	50.25	74	-14.96	34.35	8.48	34.04	122	311	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5010	43.51	35.5	54	-10.49	34.01	7.97	33.97	139	277	Average
5010	59.2	51.19	74	-14.8	34.01	7.97	33.97	139	277	Peak
5260	101.06	92.6			34.21	8.26	34.01	139	277	Average
5260	108.63	100.17			34.21	8.26	34.01	139	277	Peak
5440	44.35	35.56	54	-9.65	34.35	8.48	34.04	139	277	Average
5440	59.56	50.77	74	-14.44	34.35	8.48	34.04	139	277	Peak

REMARKS:

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



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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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5136	43.76	35.51	54	-10.24	34.11	8.13	33.99	133	311	Average
5136	59.28	51.03	74	-14.72	34.11	8.13	33.99	133	311	Peak
5300	97.13	88.59			34.24	8.32	34.02	133	311	Average
5300	105.06	96.52			34.24	8.32	34.02	133	311	Peak
5350	44.79	36.16	54	-9.21	34.28	8.38	34.03	133	311	Average
5350	57.29	48.66	74	-16.71	34.28	8.38	34.03	133	311	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5078	43.63	35.51	54	-10.37	34.07	8.03	33.98	138	276	Average
5078	58.51	50.39	74	-15.49	34.07	8.03	33.98	138	276	Peak
5300	100.43	91.89			34.24	8.32	34.02	138	276	Average
5300	108.73	100.19			34.24	8.32	34.02	138	276	Peak
5424	45.33	36.56	54	-8.67	34.33	8.48	34.04	138	276	Average
5424	59.61	50.84	74	-14.39	34.33	8.48	34.04	138	276	Peak

REMARKS:

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



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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	Kay 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
5104	43.67	35.51	54	-10.33	34.08	8.07	33.99	131	310	Average
5104	58.94	50.78	74	-15.06	34.08	8.07	33.99	131	310	Peak
5320	96.13	87.55			34.25	8.35	34.02	131	310	Average
5320	104.82	96.24			34.25	8.35	34.02	131	310	Peak
5350	46.79	38.16	54	-7.21	34.28	8.38	34.03	131	310	Average
5350	60.38	51.75	74	-13.62	34.28	8.38	34.03	131	310	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5076	43.34	35.22	54	-10.66	34.07	8.03	33.98	137	277	Average
5076	60.92	52.8	74	-13.08	34.07	8.03	33.98	137	277	Peak
5320	100.56	91.98			34.25	8.35	34.02	137	277	Average
5320	107.73	99.15			34.25	8.35	34.02	137	277	Peak
5350	49.35	40.72	54	-4.65	34.28	8.38	34.03	137	277	Average
5350	63.95	55.32	74	-10.05	34.28	8.38	34.03	137	277	Peak

REMARKS:

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



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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	Kay 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	45.43	36.61	54	-8.57	34.36	8.51	34.05	132	115	Average
5456	59.04	50.22	74	-14.96	34.36	8.51	34.05	132	115	Peak
5470	61.03	52.2	68.3	-7.27	34.37	8.51	34.05	132	115	Peak
5500	97.5	88.58			34.4	8.57	34.05	132	115	Average
5500	104.6	95.68			34.4	8.57	34.05	132	115	Peak
5725	58.07	48.91	68.3	-10.23	34.62	8.65	34.11	132	115	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5402	48.45	39.73	54	-5.55	34.32	8.44	34.04	100	271	Average
5402	59.7	50.98	74	-14.3	34.32	8.44	34.04	100	271	Peak
5470	63.76	54.93	68.3	-4.54	34.37	8.51	34.05	100	271	Peak
5500	99.93	91.01			34.4	8.57	34.05	100	271	Average
5500	108.28	99.36			34.4	8.57	34.05	100	271	Peak
5725	56.8	47.64	68.3	-11.5	34.62	8.65	34.11	100	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



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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	Kay 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	44.35	35.56	54	-9.65	34.35	8.48	34.04	160	360	Average
5440	58.91	50.12	74	-15.09	34.35	8.48	34.04	160	360	Peak
5470	57.75	48.92	68.3	-10.55	34.37	8.51	34.05	160	360	Peak
5580	94.3	85.31			34.47	8.6	34.08	160	360	Average
5580	102.84	93.85			34.47	8.6	34.08	160	360	Peak
5725	59.64	50.48	68.3	-8.66	34.62	8.65	34.11	160	360	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5430	45.32	36.53	54	-8.68	34.35	8.48	34.04	102	93	Average
5430	59.16	50.37	74	-14.84	34.35	8.48	34.04	102	93	Peak
5470	57.89	49.06	68.3	-10.41	34.37	8.51	34.05	102	93	Peak
5580	99.62	90.63			34.47	8.6	34.08	102	93	Average
5580	107.81	98.82			34.47	8.6	34.08	102	93	Peak
5725	57.42	48.26	68.3	-10.88	34.62	8.65	34.11	102	93	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	Kay 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
5350	45.19	36.39	54	-8.81	-500	8.8	-500	152	295	Average
5350	59.3	50.5	74	-14.7	-500	8.8	-500	152	295	Peak
5470	57.99	49.16	68.3	-10.31	34.37	8.51	34.05	152	295	Peak
5700	92.8	83.67			34.59	8.64	34.1	152	295	Average
5700	101.29	92.16			34.59	8.64	34.1	152	295	Peak
5725	65.08	55.92	68.3	-3.22	34.62	8.65	34.11	152	295	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5454	44.43	35.61	54	-9.57	34.36	8.51	34.05	100	92	Average
5454	59.43	50.61	74	-14.57	34.36	8.51	34.05	100	92	Peak
5470	57.49	48.66	68.3	-10.81	34.37	8.51	34.05	100	92	Peak
5700	97.09	87.96			34.59	8.64	34.1	100	92	Average
5700	105.52	96.39			34.59	8.64	34.1	100	92	Peak
5725	67.29	58.13	68.3	-1.01	34.62	8.65	34.11	100	92	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



A D T

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	Kay 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	50.11	41.86	54	-3.89	34.12	8.13	34	169	86	Average
5150	65.4	57.15	74	-8.6	34.12	8.13	34	169	86	Peak
5180	99.9	91.59			34.15	8.16	34	169	86	Average
5180	106.47	98.16			34.15	8.16	34	169	86	Peak
5414	45.3	36.57	54	-8.7	34.33	8.44	34.04	169	86	Average
5414	60.81	52.08	74	-13.19	34.33	8.44	34.04	169	86	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	49.96	41.71	54	-4.04	34.12	8.13	34	101	359	Average
5150	63.05	54.8	74	-10.95	34.12	8.13	34	101	359	Peak
5180	97.17	88.86			34.15	8.16	34	101	359	Average
5180	104.71	96.4			34.15	8.16	34	101	359	Peak
5446	45.39	36.56	54	-8.61	34.36	8.51	34.04	101	359	Average
5446	58.83	50	74	-15.17	34.36	8.51	34.04	101	359	Peak

REMARKS:

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



A D T

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5088	44.34	36.18	54	-9.66	34.07	8.07	33.98	152	86	Average
5088	59.06	50.9	74	-14.94	34.07	8.07	33.98	152	86	Peak
5220	98.52	90.13			34.17	8.22	34	152	86	Average
5220	106.23	97.84			34.17	8.22	34	152	86	Peak
5454	46.39	37.57	54	-7.61	34.36	8.51	34.05	152	86	Average
5454	59.86	51.04	74	-14.14	34.36	8.51	34.05	152	86	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
5092	45.35	37.18	54	-8.65	34.08	8.07	33.98	100	358	Average
5092	58.1	49.93	74	-15.9	34.08	8.07	33.98	100	358	Peak
5220	96.92	88.53			34.17	8.22	34	100	358	Average
5220	103.87	95.48			34.17	8.22	34	100	358	Peak
5442	45.35	36.56	54	-8.65	34.35	8.48	34.04	100	358	Average
5442	59.04	50.25	74	-14.96	34.35	8.48	34.04	100	358	Peak

REMARKS:

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



A D T

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	Kay 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
5132	44.73	36.51	54	-9.27	34.11	8.1	33.99	150	86	Average
5132	59.87	51.65	74	-14.13	34.11	8.1	33.99	150	86	Peak
5240	98.01	89.57			34.19	8.26	34.01	150	86	Average
5240	106.86	98.42			34.19	8.26	34.01	150	86	Peak
5410	45.97	37.25	54	-8.03	34.32	8.44	34.04	150	86	Average
5410	59.56	50.84	74	-14.44	34.32	8.44	34.04	150	86	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5038	44.57	36.5	54	-9.43	34.04	8	33.97	101	360	Average
5038	59.58	51.51	74	-14.42	34.04	8	33.97	101	360	Peak
5240	97.3	88.86			34.19	8.26	34.01	101	360	Average
5240	104	95.56			34.19	8.26	34.01	101	360	Peak
5364	46.2	37.56	54	-7.8	34.29	8.38	34.03	101	360	Average
5364	58.89	50.25	74	-15.11	34.29	8.38	34.03	101	360	Peak

REMARKS:

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



A D T

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	Kay 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
5134	43.76	35.51	54	-10.24	34.11	8.13	33.99	120	311	Average
5134	58.09	49.84	74	-15.91	34.11	8.13	33.99	120	311	Peak
5260	96.72	88.26			34.21	8.26	34.01	120	311	Average
5260	104.69	96.23			34.21	8.26	34.01	120	311	Peak
5422	44.91	36.14	54	-9.09	34.33	8.48	34.04	120	311	Average
5422	58.45	49.68	74	-15.55	34.33	8.48	34.04	120	311	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
5070	43.61	35.51	54	-10.39	34.05	8.03	33.98	136	285	Average
5070	58.57	50.47	74	-15.43	34.05	8.03	33.98	136	285	Peak
5260	100.32	91.86			34.21	8.26	34.01	136	285	Average
5260	107.65	99.19			34.21	8.26	34.01	136	285	Peak
5350	44.76	36.13	54	-9.24	34.28	8.38	34.03	136	285	Average
5350	59.03	50.4	74	-14.97	34.28	8.38	34.03	136	285	Peak

REMARKS:

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



A D T

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5020	43.55	35.54	54	-10.45	34.01	7.97	33.97	132	311	Average
5020	58.47	50.46	74	-15.53	34.01	7.97	33.97	132	311	Peak
5300	97.13	88.59			34.24	8.32	34.02	132	311	Average
5300	104.9	96.36			34.24	8.32	34.02	132	311	Peak
5432	44.37	35.58	54	-9.63	34.35	8.48	34.04	132	311	Average
5432	59.61	50.82	74	-14.39	34.35	8.48	34.04	132	311	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
5072	42.1	33.98	54	-11.9	34.07	8.03	33.98	138	278	Average
5072	58.88	50.76	74	-15.12	34.07	8.03	33.98	138	278	Peak
5300	100.13	91.59			34.24	8.32	34.02	138	278	Average
5300	107.67	99.13			34.24	8.32	34.02	138	278	Peak
5422	44.91	36.14	54	-9.09	34.33	8.48	34.04	138	278	Average
5422	59.36	50.59	74	-14.64	34.33	8.48	34.04	138	278	Peak

REMARKS:

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



A D T

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	Kay 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	43.77	35.52	54	-10.23	34.12	8.13	34	131	311	Average
5150	58.91	50.66	74	-15.09	34.12	8.13	34	131	311	Peak
5320	96.84	88.26			34.25	8.35	34.02	131	311	Average
5320	104	95.42			34.25	8.35	34.02	131	311	Peak
5350	48.19	39.56	54	-5.81	34.28	8.38	34.03	131	311	Average
5350	63.19	54.56	74	-10.81	34.28	8.38	34.03	131	311	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5034	43.56	35.5	54	-10.44	34.03	8	33.97	138	277	Average
5034	59.94	51.88	74	-14.06	34.03	8	33.97	138	277	Peak
5320	100.84	92.26			34.25	8.35	34.02	138	277	Average
5320	107.75	99.17			34.25	8.35	34.02	138	277	Peak
5350	49.23	40.6	54	-4.77	34.28	8.38	34.03	138	277	Average
5350	64.45	55.82	74	-9.55	34.28	8.38	34.03	138	277	Peak

REMARKS:

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



A D T

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	Kay 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
5446	45.37	36.54	54	-8.63	34.36	8.51	34.04	150	243	Average
5446	59.49	50.66	74	-14.51	34.36	8.51	34.04	150	243	Peak
5470	61.47	52.64	68.3	-6.83	34.37	8.51	34.05	150	243	Peak
5500	95.54	86.62			34.4	8.57	34.05	150	243	Average
5500	103.13	94.21			34.4	8.57	34.05	150	243	Peak
5725	57.17	48.01	68.3	-11.13	34.62	8.65	34.11	150	243	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	47.44	38.62	54	-6.56	34.36	8.51	34.05	115	92	Average
5460	63.88	55.06	74	-10.12	34.36	8.51	34.05	115	92	Peak
5470	65.7	56.87	68.3	-2.6	34.37	8.51	34.05	115	92	Peak
5500	99.94	91.02			34.4	8.57	34.05	115	92	Average
5500	107.08	98.16			34.4	8.57	34.05	115	92	Peak
5725	58.69	49.53	68.3	-9.61	34.62	8.65	34.11	115	92	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5438	44.03	35.24	54	-9.97	34.35	8.48	34.04	146	205	Average
5438	58.57	49.78	74	-15.43	34.35	8.48	34.04	146	205	Peak
5470	57.63	48.8	68.3	-10.67	34.37	8.51	34.05	146	205	Peak
5580	95.59	86.6			34.47	8.6	34.08	146	205	Average
5580	102.41	93.42			34.47	8.6	34.08	146	205	Peak
5725	57.97	48.81	68.3	-10.33	34.62	8.65	34.11	146	205	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5432	44.92	36.13	54	-9.08	34.35	8.48	34.04	102	92	Average
5432	59.4	50.61	74	-14.6	34.35	8.48	34.04	102	92	Peak
5470	56.67	47.84	68.3	-11.63	34.37	8.51	34.05	102	92	Peak
5580	99.3	90.31			34.47	8.6	34.08	102	92	Average
5580	107.56	98.57			34.47	8.6	34.08	102	92	Peak
5725	57.37	48.21	68.3	-10.93	34.62	8.65	34.11	102	92	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



A D T

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	Kay 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
5388	43.92	35.24	54	-10.08	34.31	8.41	34.04	141	243	Average
5388	58.69	50.01	74	-15.31	34.31	8.41	34.04	141	243	Peak
5470	59.92	51.09	68.3	-8.38	34.37	8.51	34.05	141	243	Peak
5700	92.8	83.67			34.59	8.64	34.1	141	243	Average
5700	100.02	90.89			34.59	8.64	34.1	141	243	Peak
5725	61.09	51.93	68.3	-7.21	34.62	8.65	34.11	141	243	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	44.33	35.56	54	-9.67	34.33	8.48	34.04	100	92	Average
5428	59.25	50.48	74	-14.75	34.33	8.48	34.04	100	92	Peak
5470	58.01	49.18	68.3	-10.29	34.37	8.51	34.05	100	92	Peak
5700	96.89	87.76			34.59	8.64	34.1	100	92	Average
5700	104.7	95.57			34.59	8.64	34.1	100	92	Peak
5725	66.63	57.47	68.3	-1.67	34.62	8.65	34.11	100	92	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



A D T

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	Kay 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	48.82	40.57	54	-5.18	34.12	8.13	34	154	169	Average
5150	66.29	58.04	74	-7.71	34.12	8.13	34	154	169	Peak
5190	92.79	84.45			34.15	8.19	34	154	169	Average
5190	99.79	91.45			34.15	8.19	34	154	169	Peak
5386	45.24	36.56	54	-8.76	34.31	8.41	34.04	154	169	Average
5386	58.48	49.8	74	-15.52	34.31	8.41	34.04	154	169	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	46.77	38.52	54	-7.23	34.12	8.13	34	190	358	Average
5150	61.56	53.31	74	-12.44	34.12	8.13	34	190	358	Peak
5190	90.23	81.89			34.15	8.19	34	190	358	Average
5190	97.51	89.17			34.15	8.19	34	190	358	Peak
5380	45.25	36.57	54	-8.75	34.31	8.41	34.04	190	358	Average
5380	58.73	50.05	74	-15.27	34.31	8.41	34.04	190	358	Peak

REMARKS:

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



A D T

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	Kay 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
5128	44.73	36.51	54	-9.27	34.11	8.1	33.99	142	171	Average
5128	58.46	50.24	74	-15.54	34.11	8.1	33.99	142	171	Peak
5230	93.5	85.1			34.19	8.22	34.01	142	171	Average
5230	100.13	91.73			34.19	8.22	34.01	142	171	Peak
5460	45.38	36.56	54	-8.62	34.36	8.51	34.05	142	171	Average
5460	58.27	49.45	74	-15.73	34.36	8.51	34.05	142	171	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
5116	44.75	36.55	54	-9.25	34.09	8.1	33.99	200	357	Average
5116	60.12	51.92	74	-13.88	34.09	8.1	33.99	200	357	Peak
5230	90.94	82.54			34.19	8.22	34.01	200	357	Average
5230	98.01	89.61			34.19	8.22	34.01	200	357	Peak
5392	45.24	36.56	54	-8.76	34.31	8.41	34.04	200	357	Average
5392	59.2	50.52	74	-14.8	34.31	8.41	34.04	200	357	Peak

REMARKS:

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



A D T

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	Kay 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
5014	43.55	35.54	54	-10.45	34.01	7.97	33.97	135	311	Average
5014	59.46	51.45	74	-14.54	34.01	7.97	33.97	135	311	Peak
5270	92.86	84.37			34.21	8.29	34.01	135	311	Average
5270	100.61	92.12			34.21	8.29	34.01	135	311	Peak
5434	45.04	36.25	54	-8.96	34.35	8.48	34.04	135	311	Average
5434	58.7	49.91	74	-15.3	34.35	8.48	34.04	135	311	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	43.61	35.51	54	-10.39	34.05	8.03	33.98	139	277	Average
5058	58.94	50.84	74	-15.06	34.05	8.03	33.98	139	277	Peak
5270	95.96	87.47			34.21	8.29	34.01	139	277	Average
5270	102.74	94.25			34.21	8.29	34.01	139	277	Peak
5430	45.35	36.56	54	-8.65	34.35	8.48	34.04	139	277	Average
5430	59.54	50.75	74	-14.46	34.35	8.48	34.04	139	277	Peak

REMARKS:

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



A D T

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	Kay 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
5034	43.56	35.5	54	-10.44	34.03	8	33.97	131	310	Average
5034	57.83	49.77	74	-16.17	34.03	8	33.97	131	310	Peak
5310	92.7	84.15			34.25	8.32	34.02	131	310	Average
5310	99.46	90.91			34.25	8.32	34.02	131	310	Peak
5350	48.19	39.56	54	-5.81	34.28	8.38	34.03	131	310	Average
5350	65.56	56.93	74	-8.44	34.28	8.38	34.03	131	310	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
5116	44.71	36.51	54	-9.29	34.09	8.1	33.99	138	277	Average
5116	59.33	51.13	74	-14.67	34.09	8.1	33.99	138	277	Peak
5310	95.26	86.71			34.25	8.32	34.02	138	277	Average
5310	102.59	94.04			34.25	8.32	34.02	138	277	Peak
5350	50.56	41.93	54	-3.44	34.28	8.38	34.03	138	277	Average
5350	68.32	59.69	74	-5.68	34.28	8.38	34.03	138	277	Peak

REMARKS:

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



A D T

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	Kay 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
5430	44.35	35.56	54	-9.65	34.35	8.48	34.04	151	257	Average
5430	60.05	51.26	74	-13.95	34.35	8.48	34.04	151	257	Peak
5470	62.44	53.61	68.3	-5.86	34.37	8.51	34.05	151	257	Peak
5510	90.54	81.63			34.4	8.57	34.06	151	257	Average
5510	98.07	89.16			34.4	8.57	34.06	151	257	Peak
5725	57.62	48.46	68.3	-10.68	34.62	8.65	34.11	151	257	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	46.44	37.62	54	-7.56	34.36	8.51	34.05	102	93	Average
5460	61.02	52.2	74	-12.98	34.36	8.51	34.05	102	93	Peak
5470	66.94	58.11	68.3	-1.36	34.37	8.51	34.05	102	93	Peak
5510	95.09	86.18			34.4	8.57	34.06	102	93	Average
5510	103.26	94.35			34.4	8.57	34.06	102	93	Peak
5725	57.39	48.23	68.3	-10.91	34.62	8.65	34.11	102	93	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



A D T

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	Kay 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
5452	46.12	37.3	54	-7.88	34.36	8.51	34.05	148	205	Average
5452	58.87	50.05	74	-15.13	34.36	8.51	34.05	148	205	Peak
5470	57.45	48.62	68.3	-10.85	34.37	8.51	34.05	148	205	Peak
5550	89.73	80.76			34.45	8.59	34.07	148	205	Average
5550	97.63	88.66			34.45	8.59	34.07	148	205	Peak
5725	57.1	47.94	68.3	-11.2	34.62	8.65	34.11	148	205	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
5386	44.25	35.57	54	-9.75	34.31	8.41	34.04	101	92	Average
5386	59.16	50.48	74	-14.84	34.31	8.41	34.04	101	92	Peak
5470	56.71	47.88	68.3	-11.59	34.37	8.51	34.05	101	92	Peak
5550	94.4	85.43			34.45	8.59	34.07	101	92	Average
5550	102.78	93.81			34.45	8.59	34.07	101	92	Peak
5725	57.82	48.66	68.3	-10.48	34.62	8.65	34.11	101	92	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



A D T

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	Kay 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
5444	44.08	35.29	54	-9.92	34.35	8.48	34.04	143	246	Average
5444	60.45	51.66	74	-13.55	34.35	8.48	34.04	143	246	Peak
5470	58.35	49.52	68.3	-9.95	34.37	8.51	34.05	143	246	Peak
5670	89.77	80.67			34.57	8.63	34.1	143	246	Average
5670	97.17	88.07			34.57	8.63	34.1	143	246	Peak
5725	60.22	51.06	68.3	-8.08	34.62	8.65	34.11	143	246	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
5446	44.12	35.29	54	-9.88	34.36	8.51	34.04	100	93	Average
5446	60.06	51.23	74	-13.94	34.36	8.51	34.04	100	93	Peak
5470	57.48	48.65	68.3	-10.82	34.37	8.51	34.05	100	93	Peak
5670	95.3	86.2			34.57	8.63	34.1	100	93	Average
5670	102.74	93.64			34.57	8.63	34.1	100	93	Peak
5725	63.96	54.8	68.3	-4.34	34.62	8.65	34.11	100	93	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



A D T

BELOW 1GHz WORST-CASE DATA:

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay 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
57	28.26	52.5	40	-11.74	7.09	0.9	32.23	166	125	Peak
90.21	26.06	47.72	43.5	-17.44	8.94	1.11	31.71	157	154	Peak
130.71	27.15	48.79	43.5	-16.35	9.21	1.38	32.23	132	200	Peak
463.8	19.09	30.12	46	-26.91	18.54	2.56	32.13	102	157	Peak
599.6	25.86	34.08	46	-20.14	21.1	2.87	32.19	115	112	Peak
722.1	24.74	30.33	46	-21.26	23.36	3.16	32.11	135	202	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.27	35.07	49.05	40	-4.93	17.55	0.74	32.27	102	112	Peak
47.55	31.84	54.59	40	-8.16	8.57	0.9	32.22	166	235	Peak
88.86	22	43.8	43.5	-21.5	8.85	1.11	31.76	188	200	Peak
452.6	18.96	30.52	46	-27.04	18.09	2.49	32.14	165	203	Peak
599.6	30.75	38.97	46	-15.25	21.1	2.87	32.19	175	124	Peak
681.5	24.46	30.21	46	-21.54	23.31	3.05	32.11	158	102	Peak

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

Margin value = Emission level – Limit value



A D T

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	Kay 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
57.27	30.59	54.86	40	-9.41	7.06	0.9	32.23	156	201	Peak
88.86	27.47	49.27	43.5	-16.03	8.85	1.11	31.76	166	220	Peak
123.15	27.27	49.26	43.5	-16.23	8.87	1.38	32.24	103	215	Peak
423.2	19.59	31.67	46	-26.41	17.7	2.41	32.19	159	201	Peak
599.6	25.8	34.02	46	-20.2	21.1	2.87	32.19	115	215	Peak
787.2	29.11	33.87	46	-16.89	24.05	3.27	32.08	132	156	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30	35.92	49.65	40	-4.08	17.8	0.74	32.27	165	201	Peak
54.57	33.21	57.21	40	-6.79	7.33	0.9	32.23	133	202	Peak
86.43	23.68	45.75	40	-16.32	8.73	1.11	31.91	166	225	Peak
468.7	19.32	30.26	46	-26.68	18.63	2.56	32.13	165	203	Peak
599.6	28.69	36.91	46	-17.31	21.1	2.87	32.19	100	166	Peak
736.8	25.55	31.22	46	-20.45	23.3	3.16	32.13	157	124	Peak

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



A D T

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay 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
57	28.27	52.51	40	-11.73	7.09	0.9	32.23	166	210	Peak
87.24	26.07	48.06	40	-13.93	8.76	1.11	31.86	156	201	Peak
176.88	28.31	48.69	43.5	-15.19	10.25	1.61	32.24	155	145	Peak
476.4	19.67	30.33	46	-26.33	18.9	2.56	32.12	165	201	Peak
599.6	26.14	34.36	46	-19.86	21.1	2.87	32.19	166	157	Peak
787.2	28.97	33.73	46	-17.03	24.05	3.27	32.08	132	201	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.27	36.26	50.24	40	-3.74	17.55	0.74	32.27	166	157	Peak
48.9	32.65	55.83	40	-7.35	8.14	0.9	32.22	157	124	Peak
81.84	21.72	44.27	40	-18.28	8.5	1.11	32.16	102	135	Peak
477.1	20.04	30.69	46	-25.96	18.91	2.56	32.12	132	201	Peak
599.6	28.9	37.12	46	-17.1	21.1	2.87	32.19	166	253	Peak
716.5	24.84	30.57	46	-21.16	23.27	3.11	32.11	157	215	Peak

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

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

NOTE:

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 17, 2013	Nov. 16, 2014
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 23, 2013	Dec. 22, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 08, 2013	Jul. 07, 2014
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

4.2.3 TEST PROCEDURES

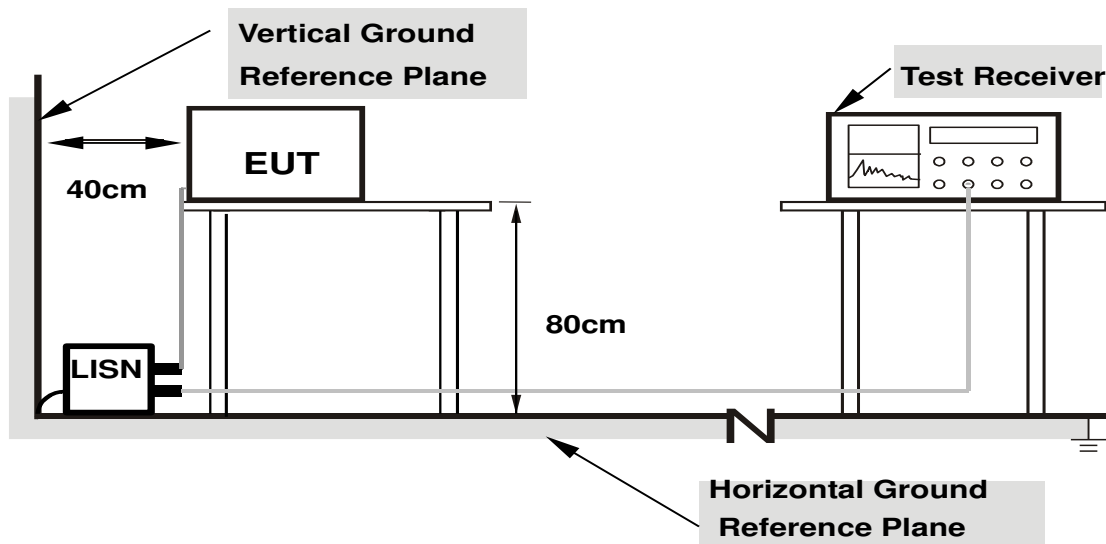
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

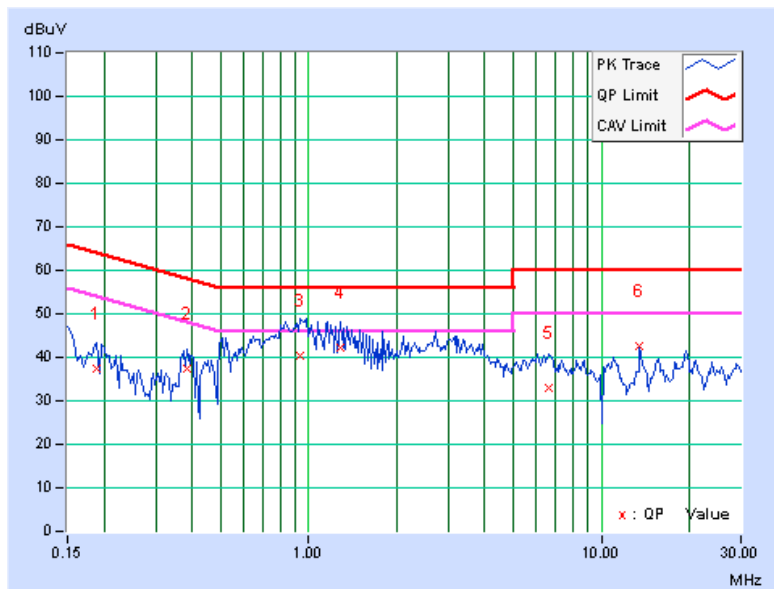
CONDUCTED WORST-CASE DATA :

PHASE	Line 1	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18906	0.28	37.22	23.37	37.50	23.65	64.08
2	0.38438	0.30	36.98	24.93	37.28	25.23	58.18	48.18	-20.91	-22.96
3	0.93516	0.34	39.90	29.83	40.24	30.17	56.00	46.00	-15.76	-15.83
4	1.27734	0.35	41.72	31.70	42.07	32.05	56.00	46.00	-13.93	-13.95
5	6.62500	0.46	32.58	23.02	33.04	23.48	60.00	50.00	-26.96	-26.52
6	13.55879	0.52	42.08	38.40	42.60	38.92	60.00	50.00	-17.40	-11.08

REMARKS:

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

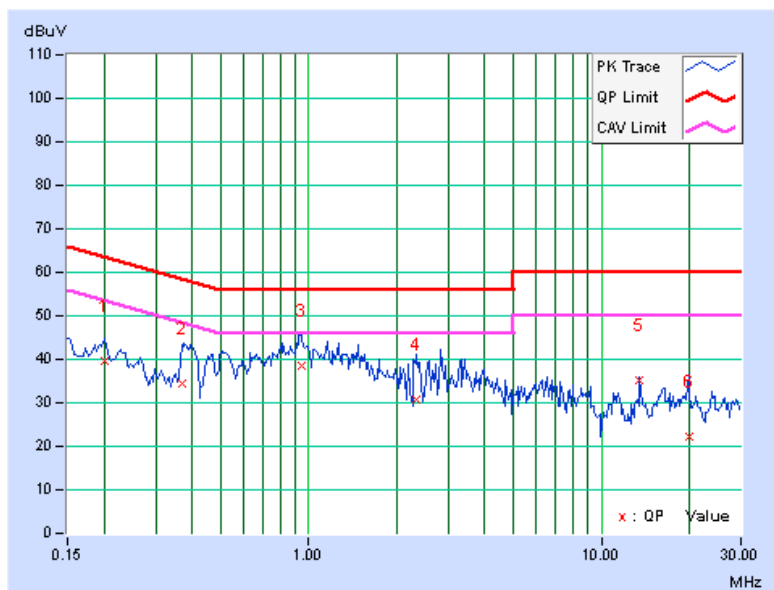


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.20078	0.28	39.41	24.82	39.69	25.10	63.58
2	0.36875	0.30	34.26	19.11	34.56	19.41	58.53	48.53	-23.97	-29.12
3	0.94297	0.34	38.00	26.34	38.34	26.68	56.00	46.00	-17.66	-19.32
4	2.32813	0.38	30.36	20.93	30.74	21.31	56.00	46.00	-25.26	-24.69
5	13.55859	0.55	34.74	33.36	35.29	33.91	60.00	50.00	-24.71	-16.09
6	19.87891	0.64	21.70	13.42	22.34	14.06	60.00	50.00	-37.66	-35.94

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 PEAK TRANSMIT POWER MEASUREMENT

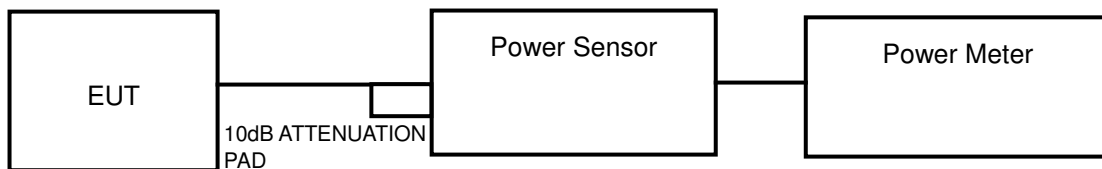
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

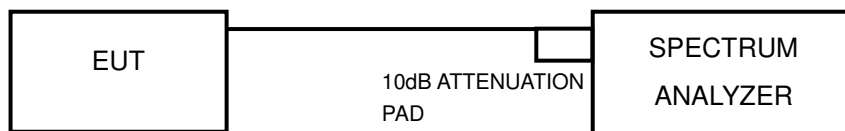
NOTE: Where B is the 26dB emission bandwidth in MHz.

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.



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4.3.7 TEST RESULTS

POWER OUTPUT

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	42.17	16.25	17	PASS
44	5220	41.50	16.18	17	PASS
48	5240	41.88	16.22	17	PASS
52	5260	42.66	16.30	24	PASS
60	5300	41.98	16.23	24	PASS
64	5320	42.95	16.33	24	PASS
100	5500	42.17	16.25	24	PASS
116	5580	41.40	16.17	24	PASS
140	5700	28.05	14.48	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	42.27	16.26	17	PASS
44	5220	42.56	16.29	17	PASS
48	5240	42.85	16.32	17	PASS
52	5260	42.46	16.28	24	PASS
60	5300	42.56	16.29	24	PASS
64	5320	43.25	16.36	24	PASS
100	5500	44.16	16.45	24	PASS
116	5580	41.78	16.21	24	PASS
140	5700	29.44	14.69	24	PASS



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802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	21.43	13.31	17	PASS
46	5230	20.99	13.22	17	PASS
54	5270	21.23	13.27	24	PASS
62	5310	21.53	13.33	24	PASS
102	5510	20.75	13.17	24	PASS
110	5550	20.56	13.13	24	PASS
134	5670	20.70	13.16	24	PASS



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26dB BANDWIDTH

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	22.28	PASS
44	5220	23.28	PASS
48	5240	23.65	PASS
52	5260	22.92	PASS
60	5300	23.55	PASS
64	5320	23.54	PASS
100	5500	23.63	PASS
116	5580	23.12	PASS
140	5700	23.64	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	24.10	PASS
44	5220	23.89	PASS
48	5240	23.27	PASS
52	5260	23.43	PASS
60	5300	23.19	PASS
64	5320	24.61	PASS
100	5500	24.67	PASS
116	5580	24.98	PASS
140	5700	24.49	PASS

802.11n (40MHz)

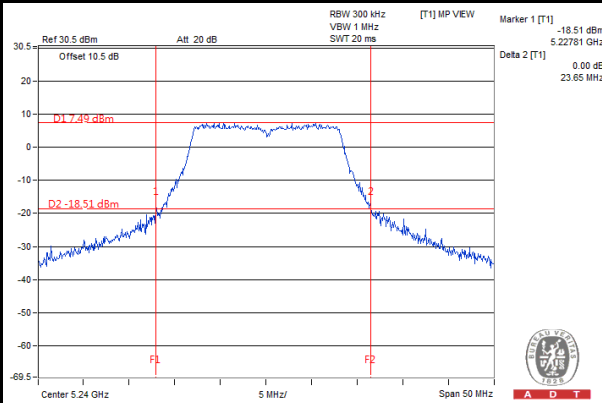
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	46.51	PASS
46	5230	47.10	PASS
54	5270	46.76	PASS
62	5310	47.64	PASS
102	5510	45.83	PASS
110	5550	45.62	PASS
134	5670	47.61	PASS



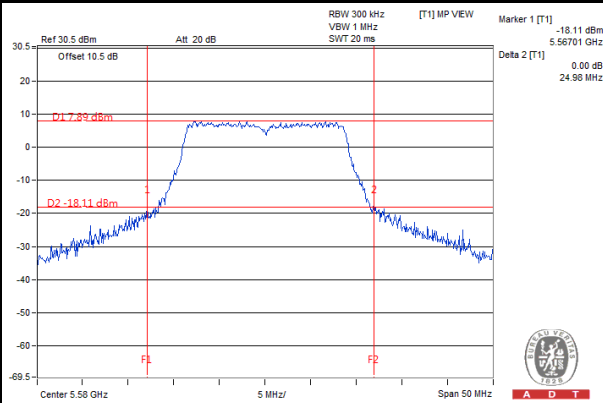
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SPECTRUM PLOT OF WORST VALUE

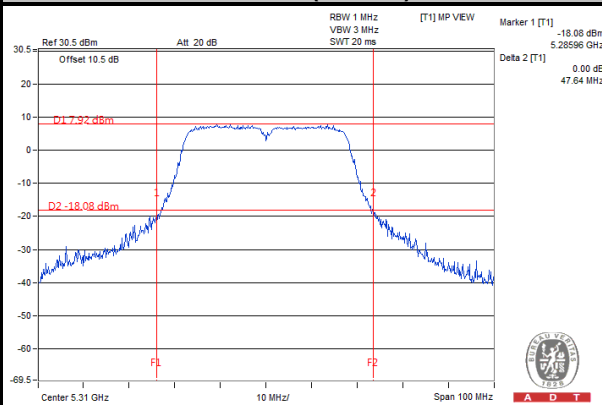
802.11a



802.11n (20MHz)



802.11n (40MHz)

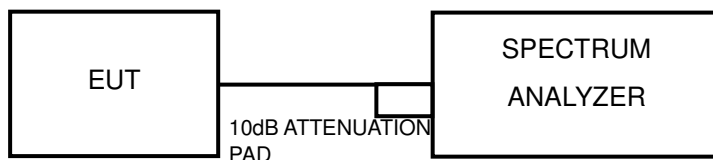


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	4dBm
5.250 ~ 5.350GHz	11dBm
5.470 ~ 5.725GHz	11dBm

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

<802.11a, 802.11n (40MHz)>

Using method SA-2 alternative

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- 3) Sweep time = 4second.
- 4) Perform a single sweep.
- 5) Record the max value and add 10 log (1/duty cycle)

<802.11n (20MHz)>

Using method SA-1

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

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.



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4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.76	0.10	3.86	4	PASS
44	5220	3.83	0.10	3.93	4	PASS
48	5240	3.88	0.10	3.98	4	PASS
52	5260	4.19	0.10	4.29	11	PASS
60	5300	4.31	0.10	4.41	11	PASS
64	5320	4.58	0.10	4.68	11	PASS
100	5500	5.12	0.10	5.22	11	PASS
116	5580	4.67	0.10	4.77	11	PASS
140	5700	4.15	0.10	4.25	11	PASS

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

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.52	4	PASS
44	5220	3.65	4	PASS
48	5240	3.78	4	PASS
52	5260	3.93	11	PASS
60	5300	4.14	11	PASS
64	5320	4.27	11	PASS
100	5500	4.86	11	PASS
116	5580	4.62	11	PASS
140	5700	4.07	11	PASS

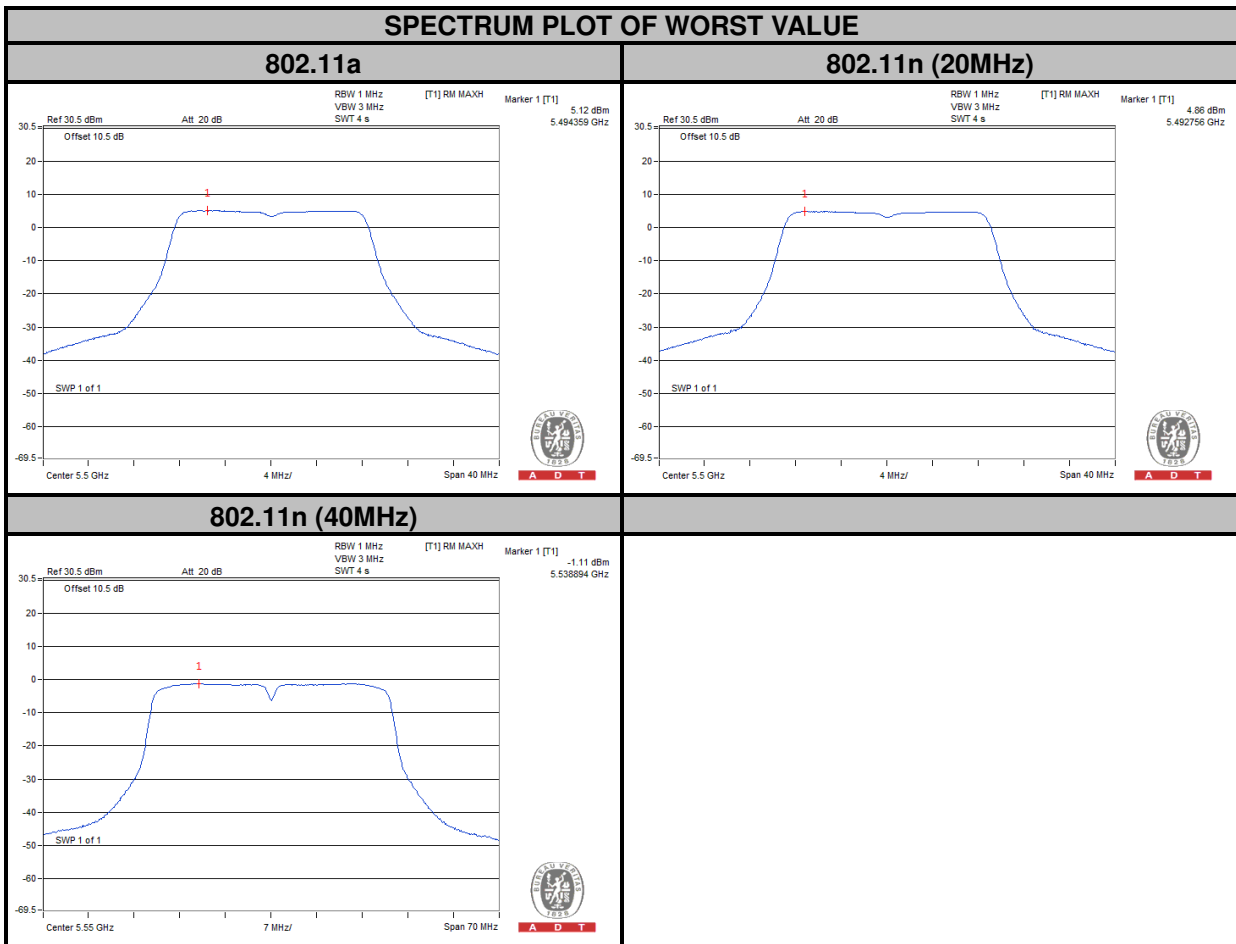


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802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-2.17	0.28	-1.89	4	PASS
46	5230	-2.10	0.28	-1.82	4	PASS
54	5270	-1.78	0.28	-1.50	11	PASS
62	5310	-1.56	0.28	-1.28	11	PASS
102	5510	-1.12	0.28	-0.84	11	PASS
110	5550	-1.11	0.28	-0.83	11	PASS
134	5670	-1.55	0.28	-1.27	11	PASS

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

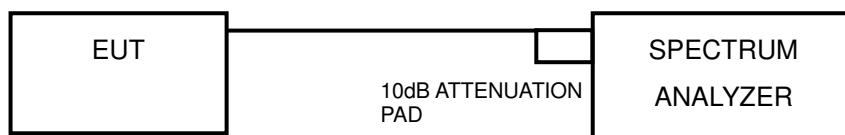


4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

Shall not exceed 13 dB.

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

- Set the RBW = 1 kHz, VBW \geq 3 MHz, Detector = peak.
- Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
- Use the peak search function to find the peak of the spectrum.
- Measure the PPSD.
- Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.
Find the worst channel and modulation mode as above test procedure, and follow KDB 789033 D01 General UNII Test Procedures v01r03 and repeat step 1 to 5 for final testing of each modulation mode on a single channel (all modulation types) in a single operating band to compliance with the peak excursion requirement.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6.

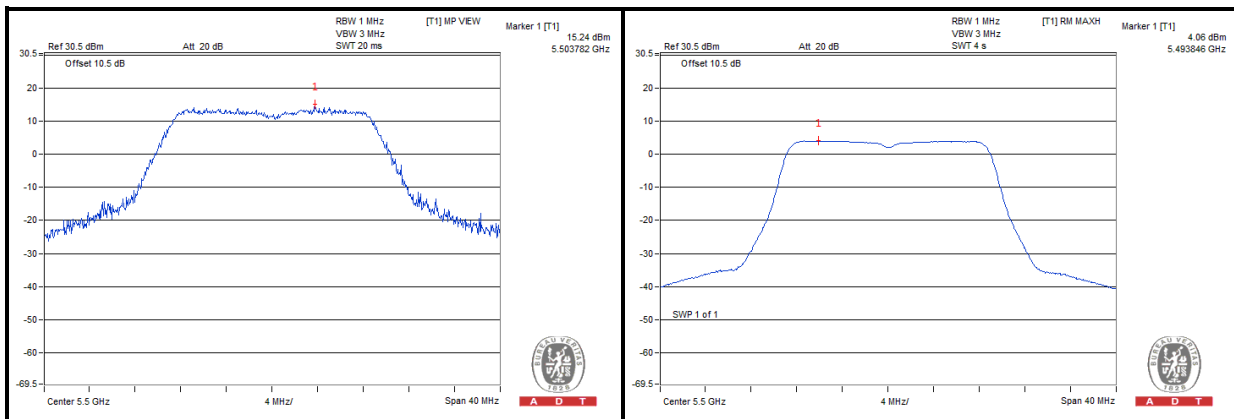


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4.5.7 TEST RESULTS

MODULATION MODE	MODULATION TYPE	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
802.11a	BPSK	5320	14.15	4.58	4.68	9.47	13	PASS
	QPSK		14.39	4.46	4.56	9.83	13	PASS
	16QAM		14.01	3.64	3.83	10.18	13	PASS
	64QAM		14.41	3.49	3.86	10.55	13	PASS
802.11n (20MHz)	BPSK	5500	14.69	4.86	4.86	9.83	13	PASS
	QPSK		15.22	4.96	5.07	10.15	13	PASS
	16QAM		15.24	4.06	4.24	11.00	13	PASS
	64QAM		14.32	4.01	4.37	9.95	13	PASS
802.11n (40MHz)	BPSK	5310	8.80	-1.56	-1.28	10.08	13	PASS
	QPSK		9.99	-1.51	-0.95	10.94	13	PASS
	16QAM		8.46	-1.51	-0.52	8.98	13	PASS
	64QAM		8.82	-1.52	0.31	8.51	13	PASS

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

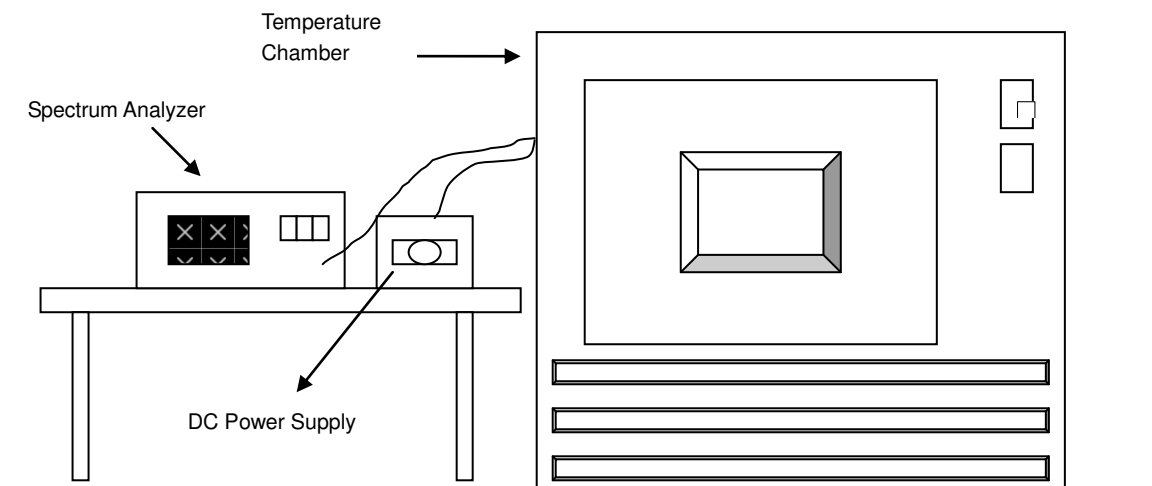


4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 TEST PROCEDURE

- a. 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.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

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



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4.6.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
60	3.8	5320.042194	7.931	5320.042281	7.948	5320.042545	7.997	5320.042406	7.971
50	3.8	5320.049213	9.251	5320.049590	9.321	5320.049349	9.276	5320.049512	9.307
40	3.8	5320.042460	7.981	5320.042825	8.050	5320.043022	8.087	5320.042844	8.053
30	3.8	5320.044061	8.282	5320.043849	8.242	5320.044128	8.295	5320.044023	8.275
20	3.8	5320.045185	8.493	5320.044940	8.447	5320.045043	8.467	5320.044873	8.435
10	3.8	5320.046683	8.775	5320.046299	8.703	5320.046605	8.760	5320.046586	8.757
0	3.8	5320.045033	8.465	5320.044923	8.444	5320.044952	8.450	5320.045322	8.519
-10	3.8	5320.043256	8.131	5320.043751	8.224	5320.043105	8.102	5320.043703	8.215
-20	3.8	5320.042890	8.062	5320.043123	8.106	5320.042889	8.062	5320.042915	8.067
-30	3.8	5320.042086	7.911	5320.041952	7.886	5320.041745	7.847	5320.041752	7.848

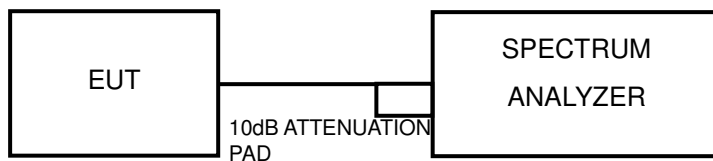
FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.6	5320.044609	8.385	5320.044939	8.447	5320.044822	8.425	5320.044826	8.426
	3.8	5320.045185	8.493	5320.044940	8.447	5320.045043	8.467	5320.044873	8.435
	4.35	5320.046534	8.747	5320.046577	8.755	5320.046025	8.651	5320.045931	8.634

4.7 20dBc BANDWIDTH MEASUREMENT

4.7.1 LIMITS OF 20dBc BANDWIDTH MEASUREMENT

20dBc point shall not overlap in 5150~5700MHz.

4.7.2 TEST SETUP



4.7.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.7.4 TEST PROCEDURES

789033 D01 General UNII Test Procedures v01r03

Emission bandwidth

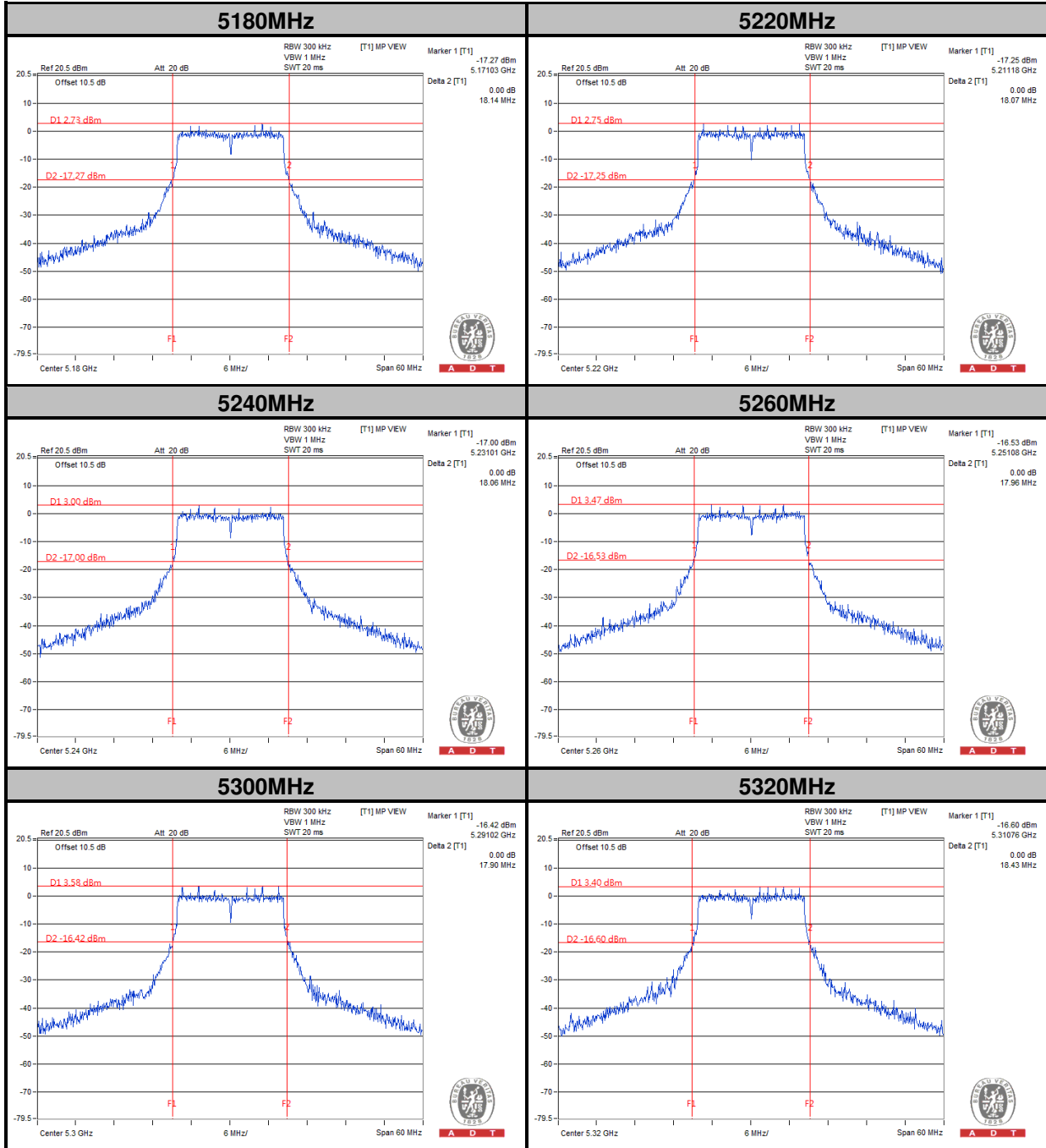
- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak
- 4) Trace mode = max hold.
- 5) Measurement the maximum width of the emission that is 20dB down from the peak of the emission. Compare this with RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.



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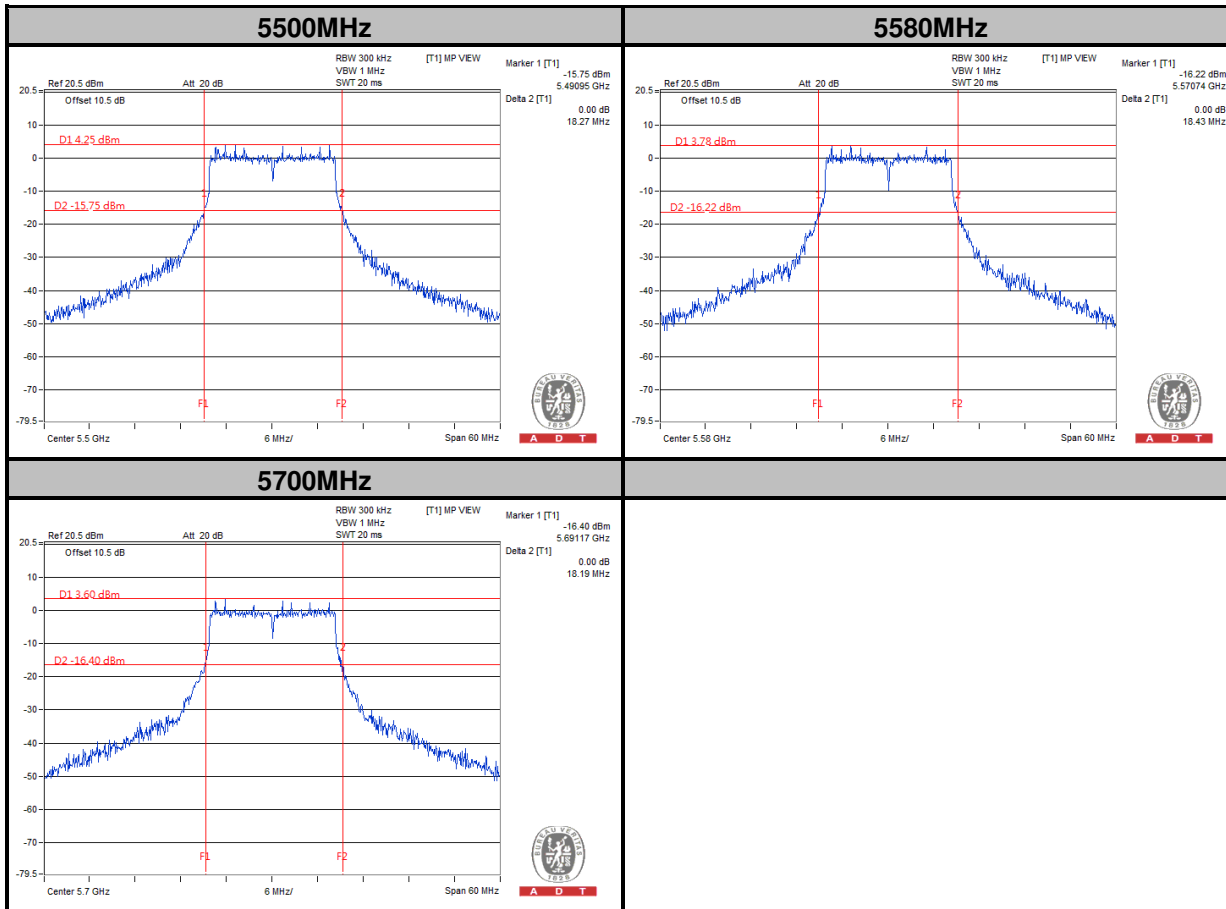
4.7.5 TEST RESULTS

802.11a





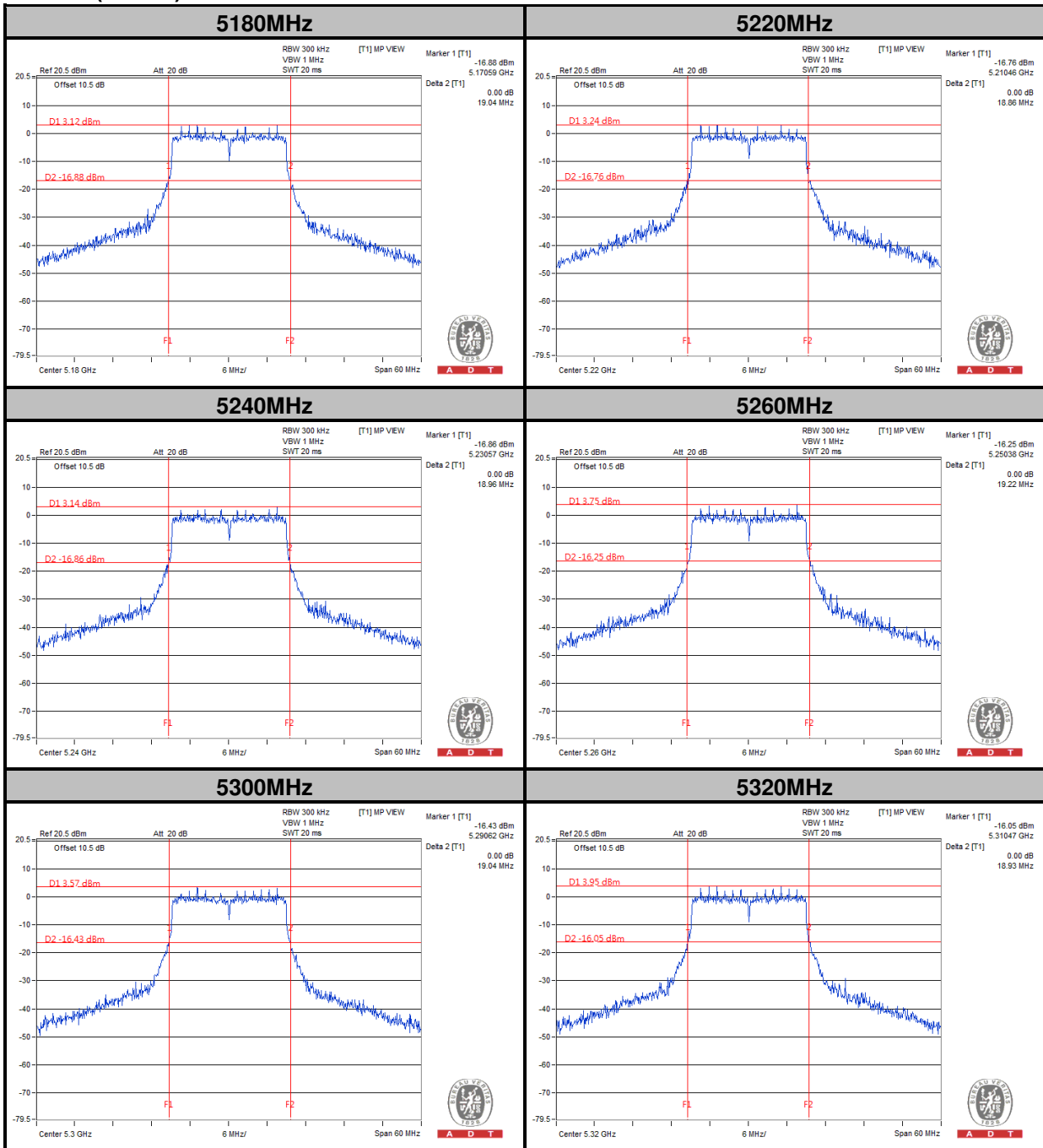
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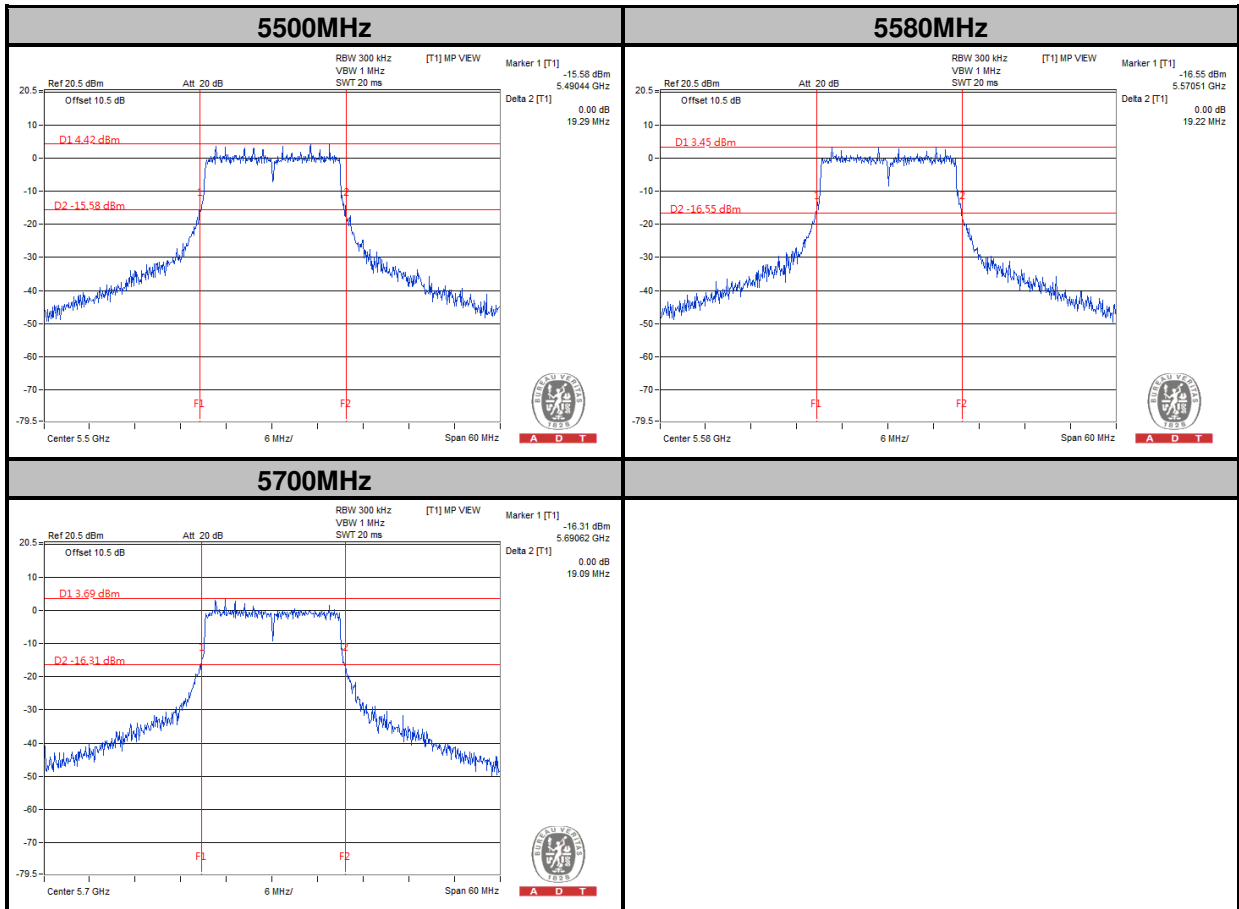
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802.11n (20MHz)





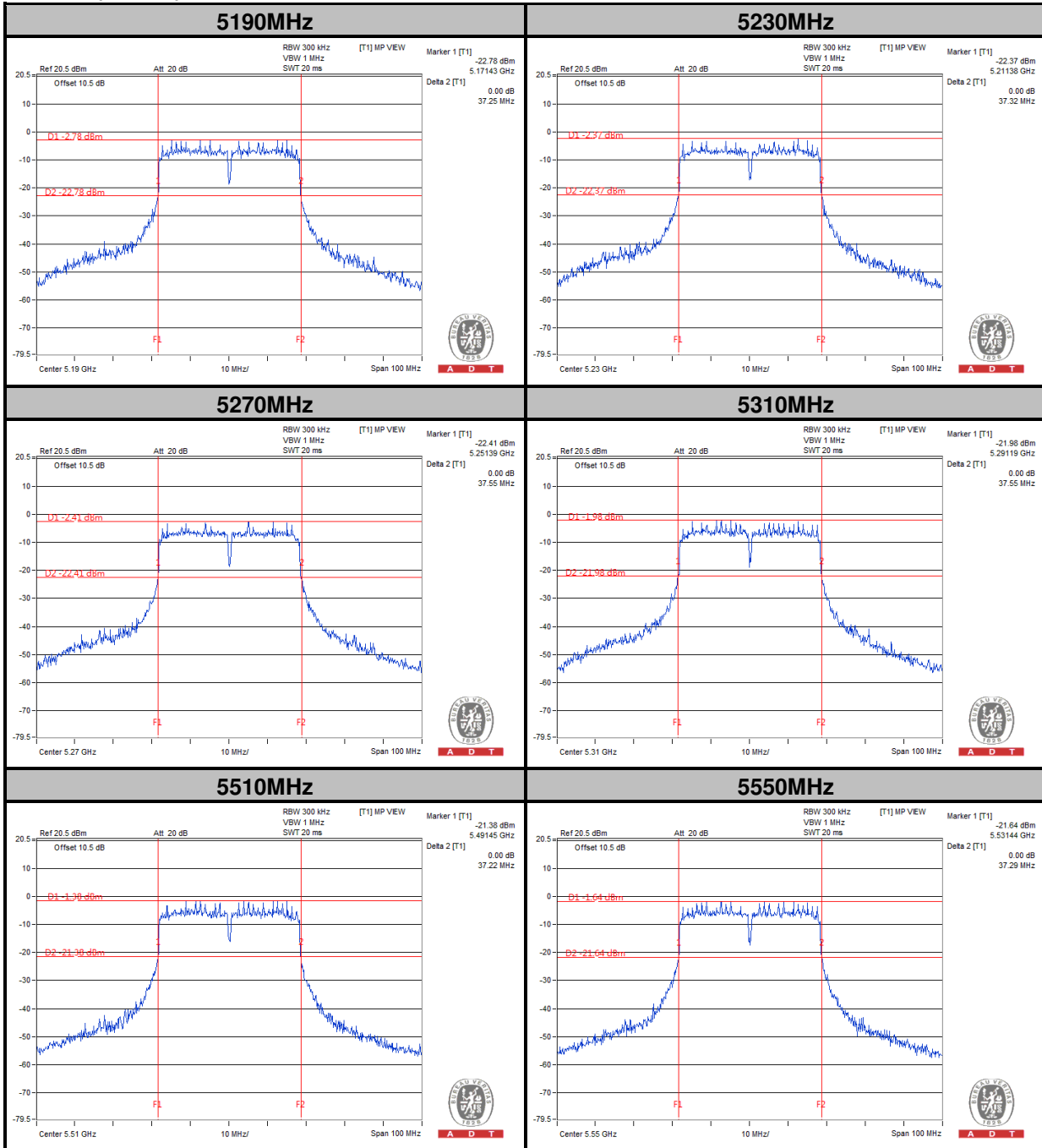
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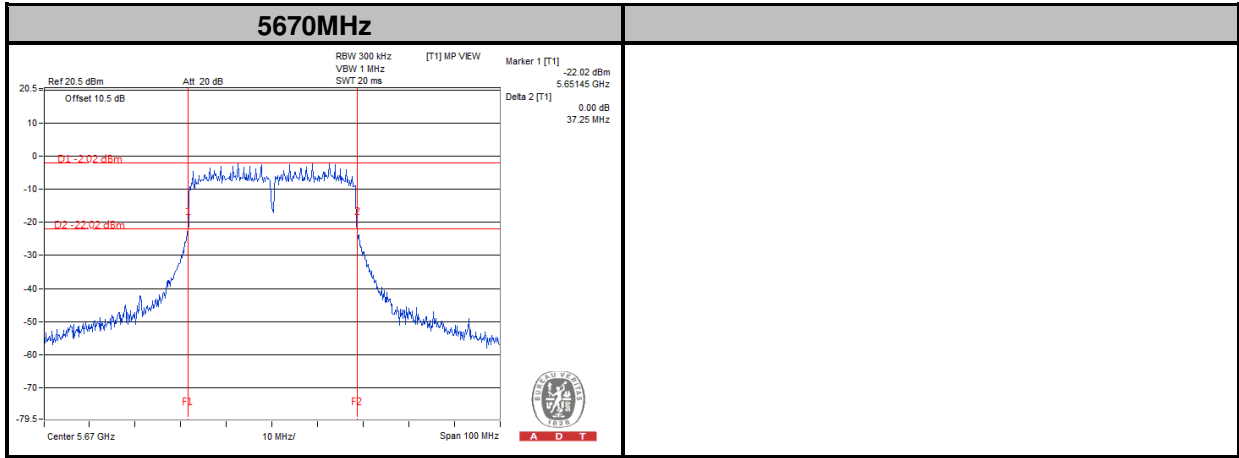
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802.11n (40MHz)





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5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



6. INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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



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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---