



FCC TEST REPORT (15.407)

REPORT NO.: RF130716C13-4
MODEL NO.: 0P4E240
FCC ID: NM80P4E240
RECEIVED: Jul. 16, 2013
TESTED: Jul. 26, 2013 ~ Aug. 05, 2013
ISSUED: Aug. 13, 2013

APPLICANT: HTC Corporation

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ISSUED BY: Bureau Veritas Consumer Products Services
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TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei
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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130716C13-4	Original release	Aug. 13, 2013



1. CERTIFICATION

PRODUCT: Smartphone
MODEL NO.: 0P4E240
BRAND: HTC
APPLICANT: HTC Corporation
TESTED: Jul. 26, 2013 ~ Aug. 05, 2013
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (model: 0P4E240) 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** : Aug. 13, 2013
Ivonne Wu / Senior Specialist

APPROVED BY : Sam Chen , **DATE** : Aug. 13, 2013
Sam Chen / Assistant Manager

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 -2.87dB at 0.51328MHz.
15.407(b/1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.79dB at 34.32MHz.
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.	0P4E240
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	19.498mW for 5180 ~ 5240MHz 19.634mW for 5260 ~ 5320MHz 19.543mW for 5500 ~ 5700MHz
ANTENNA TYPE	PIFA antenna with -4dBi gain
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

FOR 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

FOR 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 **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.

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.

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
802.11a	5260-5320	52 to 64	60	OFDM	BPSK	6.0
802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	MCS0

POWER LINE CONDUCTED EMISSION TEST:

TEST CONDITION
BT Link + WLAN (5G) Link + Earphone + USB Cable + Adapter + NFC Link

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.

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

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

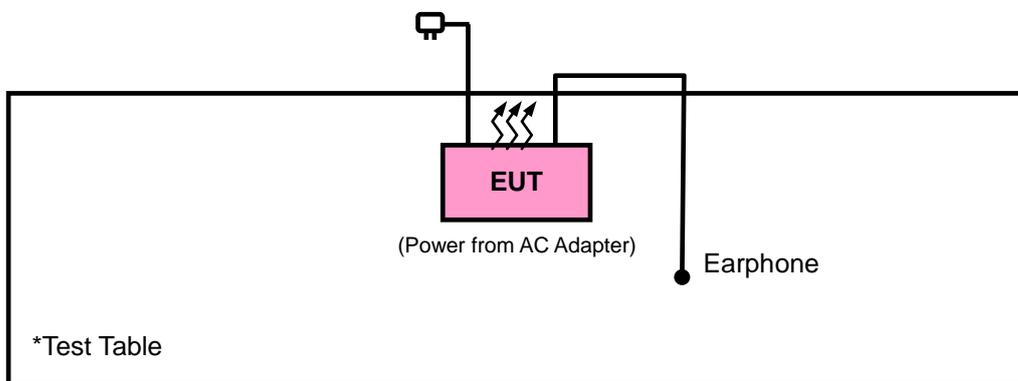
TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Anson Lin
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Anson Lin
PLC	25deg. C, 65%RH	120Vac, 60Hz	Johnson Liao
APCM	25deg. C, 65%RH	120Vac, 60Hz	Demon Lin

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



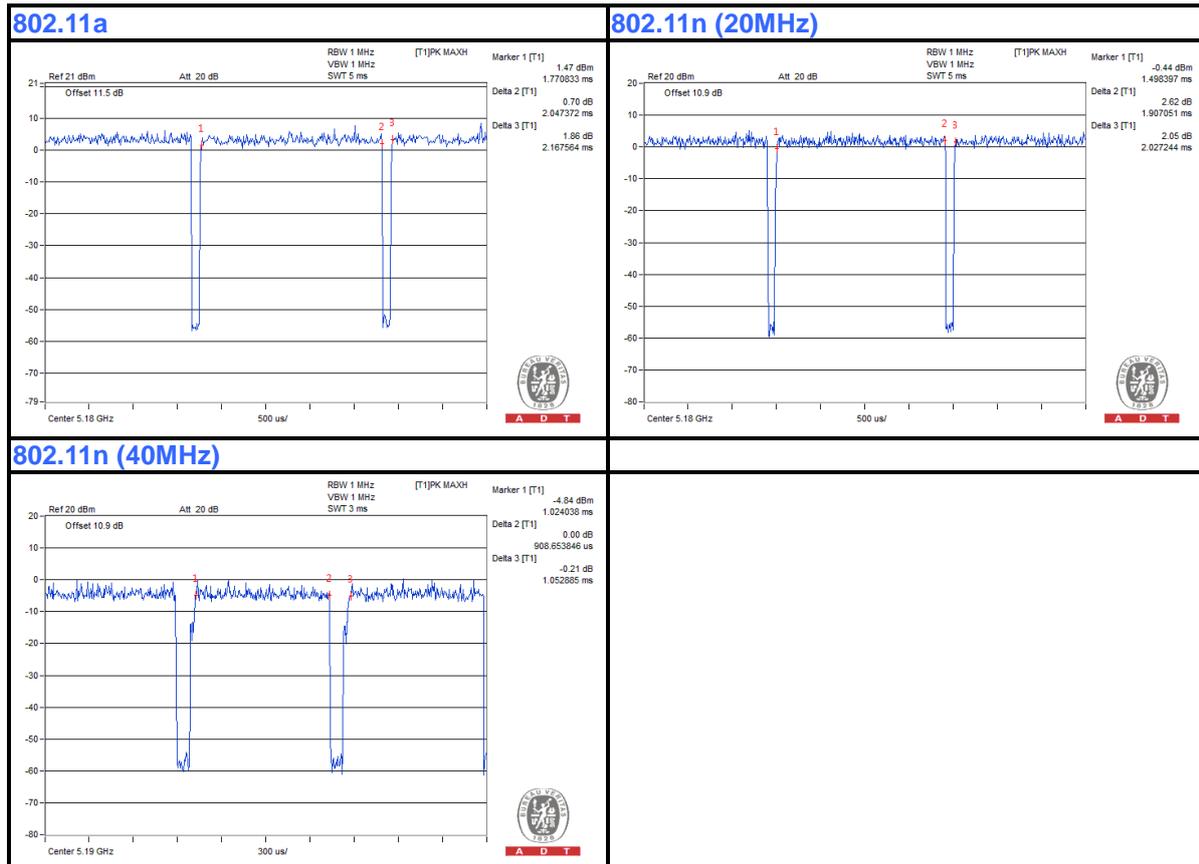
3.4 DUTY CYCLE OF TEST SIGNAL

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

802.11a: Duty cycle = $2.047/2.168 = 0.944$, Duty factor = $10 * \log(1/0.944) = 0.25$

802.11n (20MHz): Duty cycle = $1.907/2.027 = 0.940$, Duty factor = $10 * \log(1/0.940) = 0.27$

802.11n (40MHz): Duty cycle = $908.65/1052.89 = 0.863$, Duty factor = $10 * \log(1/0.863) = 0.64$



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)

ANSI C63.10-2009

KDB 789033 D01 General UNII Test Procedures v01r03

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:

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



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. 17, 2012	Dec. 16, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Mar. 25, 2013	Mar. 24, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 07, 2013	Jan. 06, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 25, 2012	Dec. 24, 2013
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 184045	980116	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2012	Dec. 27, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable Worken	RG-213	NA	Dec. 29, 2012	Dec. 28, 2013
Software	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. 10, 2012	Aug. 09, 2013
Power Sensor	MA2411B	1207325	Aug. 15, 2012	Aug. 14, 2013

- 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 meter 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.

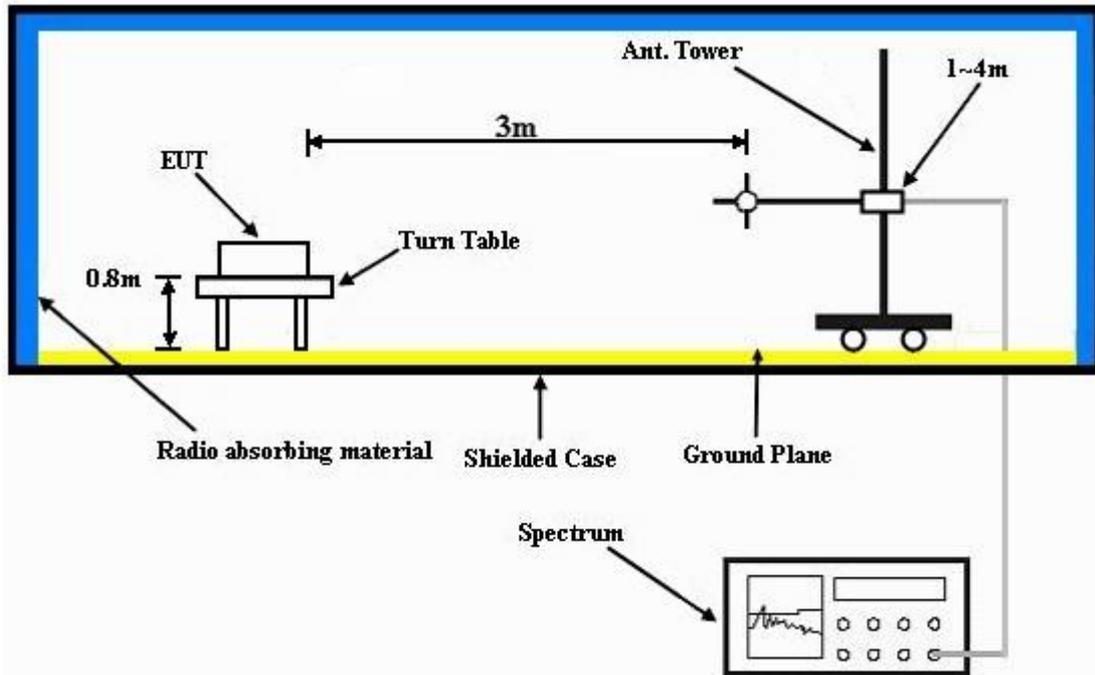
NOTE:

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



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

4.1.7 EUT OPERATING CONDITION

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



4.1.8 TEST RESULTS

ABOVE 1GHz DATA: 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5136	39.74	40.45	54	-14.26	31.31	5.28	37.3	122	234	Average
5136	53.91	54.62	74	-20.09	31.31	5.28	37.3	122	234	Peak
5180	90.11	90.79			31.35	5.31	37.34	122	234	Average
5180	99.08	99.76			31.35	5.31	37.34	122	234	Peak
5396	41.01	41.26	54	-12.99	31.52	5.41	37.18	122	234	Average
5396	53.63	53.88	74	-20.37	31.52	5.41	37.18	122	234	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	40.84	41.55	54	-13.16	31.32	5.29	37.32	112	81	Average
5148	54.63	55.34	74	-19.37	31.32	5.29	37.32	112	81	Peak
5180	91.74	92.42			31.35	5.31	37.34	112	81	Average
5180	101.47	102.15			31.35	5.31	37.34	112	81	Peak
5396	42.39	42.64	54	-11.61	31.52	5.41	37.18	112	81	Average
5396	54.24	54.49	74	-19.76	31.52	5.41	37.18	112	81	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5180MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5140	38	38.69	54	-16	31.32	5.29	37.3	122	236	Average
5140	54.43	55.12	74	-19.57	31.32	5.29	37.3	122	236	Peak
5220	90.98	91.64			31.37	5.33	37.36	122	236	Average
5220	100.14	100.8			31.37	5.33	37.36	122	236	Peak
5430	38.7	38.86	54	-15.3	31.55	5.42	37.13	122	236	Average
5430	54.36	54.52	74	-19.64	31.55	5.42	37.13	122	236	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	38.39	39.1	54	-15.61	31.31	5.28	37.3	122	130	Average
5128	53.6	54.31	74	-20.4	31.31	5.28	37.3	122	130	Peak
5220	92.95	93.61			31.37	5.33	37.36	122	130	Average
5220	101.56	102.22			31.37	5.33	37.36	122	130	Peak
5402	40.35	40.6	54	-13.65	31.52	5.41	37.18	122	130	Average
5402	54.31	54.56	74	-19.69	31.52	5.41	37.18	122	130	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5220MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5138	37.97	38.67	54	-16.03	31.31	5.29	37.3	109	235	Average
5138	53.79	54.49	74	-20.21	31.31	5.29	37.3	109	235	Peak
5240	92.68	93.27			31.39	5.34	37.32	109	235	Average
5240	101.92	102.51			31.39	5.34	37.32	109	235	Peak
5454	39.41	39.49	54	-14.59	31.56	5.44	37.08	109	235	Average
5454	54.28	54.36	74	-19.72	31.56	5.44	37.08	109	235	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	38.2	38.91	54	-15.8	31.31	5.28	37.3	115	178	Average
5128	53.83	54.54	74	-20.17	31.31	5.28	37.3	115	178	Peak
5240	95.67	96.26			31.39	5.34	37.32	115	178	Average
5240	104.41	105			31.39	5.34	37.32	115	178	Peak
5374	40.63	40.92	54	-13.37	31.49	5.4	37.18	115	178	Average
5374	54.46	54.75	74	-19.54	31.49	5.4	37.18	115	178	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5240MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5130	37.78	38.49	54	-16.22	31.31	5.28	37.3	108	236	Average
5130	53.52	54.23	74	-20.48	31.31	5.28	37.3	108	236	Peak
5260	92.18	92.7			31.41	5.34	37.27	108	236	Average
5260	101.27	101.79			31.41	5.34	37.27	108	236	Peak
5354	38.7	39.01	54	-15.3	31.48	5.39	37.18	108	236	Average
5354	53.68	53.99	74	-20.32	31.48	5.39	37.18	108	236	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
5130	37.77	38.48	54	-16.23	31.31	5.28	37.3	103	160	Average
5130	54.39	55.1	74	-19.61	31.31	5.28	37.3	103	160	Peak
5260	94.58	95.1			31.41	5.34	37.27	103	160	Average
5260	103.54	104.06			31.41	5.34	37.27	103	160	Peak
5352	40.19	40.5	54	-13.81	31.48	5.39	37.18	103	160	Average
5352	54.66	54.97	74	-19.34	31.48	5.39	37.18	103	160	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5260MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5012	37.17	37.97	54	-16.83	31.21	5.22	37.23	110	11	Average
5012	53.24	54.04	74	-20.76	31.21	5.22	37.23	110	11	Peak
5300	91.51	91.89			31.44	5.37	37.19	110	11	Average
5300	100.41	100.79			31.44	5.37	37.19	110	11	Peak
5350	39.99	40.3	54	-14.01	31.48	5.39	37.18	110	11	Average
5350	54.52	54.83	74	-19.48	31.48	5.39	37.18	110	11	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	37.66	38.41	54	-16.34	31.25	5.25	37.25	103	180	Average
5058	53.42	54.17	74	-20.58	31.25	5.25	37.25	103	180	Peak
5300	95.8	96.18			31.44	5.37	37.19	103	180	Average
5300	104.94	105.32			31.44	5.37	37.19	103	180	Peak
5366	43.03	43.32	54	-10.97	31.49	5.4	37.18	103	180	Average
5366	55.52	55.81	74	-18.48	31.49	5.4	37.18	103	180	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5300MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5132	37.49	38.2	54	-16.51	31.31	5.28	37.3	100	336	Average
5132	53.07	53.78	74	-20.93	31.31	5.28	37.3	100	336	Peak
5320	91.79	92.15			31.45	5.38	37.19	100	336	Average
5320	100.65	101.01			31.45	5.38	37.19	100	336	Peak
5352	41.32	41.63	54	-12.68	31.48	5.39	37.18	100	336	Average
5352	54.69	55	74	-19.31	31.48	5.39	37.18	100	336	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
5016	37.24	38.02	54	-16.76	31.21	5.24	37.23	114	184	Average
5016	53.11	53.89	74	-20.89	31.21	5.24	37.23	114	184	Peak
5320	95.25	95.61			31.45	5.38	37.19	114	184	Average
5320	104.28	104.64			31.45	5.38	37.19	114	184	Peak
5358	44.63	44.94	54	-9.37	31.48	5.39	37.18	114	184	Average
5358	56.73	57.04	74	-17.27	31.48	5.39	37.18	114	184	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5320MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5450	41.39	41.47	54	-12.61	31.56	5.44	37.08	111	93	Average
5450	55	55.08	74	-19	31.56	5.44	37.08	111	93	Peak
5470	53.68	53.74	68.3	-14.62	31.57	5.45	37.08	111	93	Peak
5500	92.54	92.51			31.6	5.46	37.03	111	93	Average
5500	101.24	101.21			31.6	5.46	37.03	111	93	Peak
5725	52.25	52.13	68.3	-16.05	31.96	5.59	37.43	111	93	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	45.72	45.8	54	-8.28	31.56	5.44	37.08	100	183	Average
5460	57.79	57.87	74	-16.21	31.56	5.44	37.08	100	183	Peak
5470	57.13	57.19	68.3	-11.17	31.57	5.45	37.08	100	183	Peak
5500	95.9	95.87			31.6	5.46	37.03	100	183	Average
5500	104.58	104.55			31.6	5.46	37.03	100	183	Peak
5725	52.73	52.61	68.3	-15.57	31.96	5.59	37.43	100	183	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5500MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5454	38.28	38.36	54	-15.72	31.56	5.44	37.08	110	99	Average
5454	53.52	53.6	74	-20.48	31.56	5.44	37.08	110	99	Peak
5470	52.21	52.27	68.3	-16.09	31.57	5.45	37.08	110	99	Peak
5580	93.13	93.08			31.71	5.5	37.16	110	99	Average
5580	102.04	101.99			31.71	5.5	37.16	110	99	Peak
5725	51.75	51.63	68.3	-16.55	31.96	5.59	37.43	110	99	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5392	38.98	39.24	54	-15.02	31.51	5.41	37.18	108	192	Average
5392	54.19	54.45	74	-19.81	31.51	5.41	37.18	108	192	Peak
5470	53.62	53.68	68.3	-14.68	31.57	5.45	37.08	108	192	Peak
5580	95.21	95.16			31.71	5.5	37.16	108	192	Average
5580	105.16	105.11			31.71	5.5	37.16	108	192	Peak
5725	52.07	51.95	68.3	-16.23	31.96	5.59	37.43	108	192	Peak

REMARKS:

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5438	38.08	38.22	54	-15.92	31.55	5.44	37.13	109	105	Average
5438	53.56	53.7	74	-20.44	31.55	5.44	37.13	109	105	Peak
5470	51.61	51.67	68.3	-16.69	31.57	5.45	37.08	109	105	Peak
5700	93.01	92.94			31.9	5.57	37.4	109	105	Average
5700	102.21	102.14			31.9	5.57	37.4	109	105	Peak
5725	55.94	55.82	68.3	-12.36	31.96	5.59	37.43	109	105	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5376	38.34	38.63	54	-15.66	31.49	5.4	37.18	122	128	Average
5376	53.65	53.94	74	-20.35	31.49	5.4	37.18	122	128	Peak
5470	51.51	51.57	68.3	-16.79	31.57	5.45	37.08	122	128	Peak
5700	95.54	95.47			31.9	5.57	37.4	122	128	Average
5700	104.53	104.46			31.9	5.57	37.4	122	128	Peak
5725	58.78	58.66	68.3	-9.52	31.96	5.59	37.43	122	128	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5700MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5140	40.35	41.04	54	-13.65	31.32	5.29	37.3	121	236	Average
5140	53.29	53.98	74	-20.71	31.32	5.29	37.3	121	236	Peak
5180	90.92	91.6			31.35	5.31	37.34	121	236	Average
5180	99.66	100.34			31.35	5.31	37.34	121	236	Peak
5398	42.68	42.93	54	-11.32	31.52	5.41	37.18	121	236	Average
5398	54.07	54.32	74	-19.93	31.52	5.41	37.18	121	236	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5142	39.51	40.2	54	-14.49	31.32	5.29	37.3	121	118	Average
5142	53.75	54.44	74	-20.25	31.32	5.29	37.3	121	118	Peak
5180	95.32	96			31.35	5.31	37.34	121	118	Average
5180	104.04	104.72			31.35	5.31	37.34	121	118	Peak
5368	41.93	42.22	54	-12.07	31.49	5.4	37.18	121	118	Average
5368	53.1	53.39	74	-20.9	31.49	5.4	37.18	121	118	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5180MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5036	37.95	38.72	54	-16.05	31.23	5.24	37.24	119	235	Average
5036	53.46	54.23	74	-20.54	31.23	5.24	37.24	119	235	Peak
5220	91.93	92.59			31.37	5.33	37.36	119	235	Average
5220	101.89	102.55			31.37	5.33	37.36	119	235	Peak
5438	42.22	42.36	54	-11.78	31.55	5.44	37.13	119	235	Average
5438	54.51	54.65	74	-19.49	31.55	5.44	37.13	119	235	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	38.81	39.53	54	-15.19	31.28	5.27	37.27	103	170	Average
5092	53.51	54.23	74	-20.49	31.28	5.27	37.27	103	170	Peak
5220	94.77	95.43			31.37	5.33	37.36	103	170	Average
5220	103.89	104.55			31.37	5.33	37.36	103	170	Peak
5354	45.92	46.23	54	-8.08	31.48	5.39	37.18	103	170	Average
5354	55.3	55.61	74	-18.7	31.48	5.39	37.18	103	170	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5220MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5124	37.85	38.56	54	-16.15	31.31	5.28	37.3	121	235	Average
5124	52.99	53.7	74	-21.01	31.31	5.28	37.3	121	235	Peak
5240	91.48	92.07			31.39	5.34	37.32	121	235	Average
5240	100.59	101.18			31.39	5.34	37.32	121	235	Peak
5458	39.17	39.25	54	-14.83	31.56	5.44	37.08	121	235	Average
5458	53.5	53.58	74	-20.5	31.56	5.44	37.08	121	235	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
5098	38.46	39.19	54	-15.54	31.28	5.27	37.28	103	166	Average
5098	53.17	53.9	74	-20.83	31.28	5.27	37.28	103	166	Peak
5240	95.61	96.2			31.39	5.34	37.32	103	166	Average
5240	104.29	104.88			31.39	5.34	37.32	103	166	Peak
5398	41.65	41.9	54	-12.35	31.52	5.41	37.18	103	166	Average
5398	54.93	55.18	74	-19.07	31.52	5.41	37.18	103	166	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5240MHz: Fundamental frequency.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5024	37.45	38.22	54	-16.55	31.23	5.24	37.24	109	234	Average
5024	53.7	54.47	74	-20.3	31.23	5.24	37.24	109	234	Peak
5260	92.7	93.22			31.41	5.34	37.27	109	234	Average
5260	101.58	102.1			31.41	5.34	37.27	109	234	Peak
5460	38.89	38.97	54	-15.11	31.56	5.44	37.08	109	234	Average
5460	54.04	54.12	74	-19.96	31.56	5.44	37.08	109	234	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5082	38.07	38.81	54	-15.93	31.27	5.26	37.27	116	177	Average
5082	52.98	53.72	74	-21.02	31.27	5.26	37.27	116	177	Peak
5260	95.54	96.06			31.41	5.34	37.27	116	177	Average
5260	104.45	104.97			31.41	5.34	37.27	116	177	Peak
5364	40.66	40.95	54	-13.34	31.49	5.4	37.18	116	177	Average
5364	54.52	54.81	74	-19.48	31.49	5.4	37.18	116	177	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5260MHz: Fundamental frequency.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5028	37.66	38.43	54	-16.34	31.23	5.24	37.24	110	226	Average
5028	53.83	54.6	74	-20.17	31.23	5.24	37.24	110	226	Peak
5300	92.64	93.02			31.44	5.37	37.19	110	226	Average
5300	101.48	101.86			31.44	5.37	37.19	110	226	Peak
5354	40.11	40.42	54	-13.89	31.48	5.39	37.18	110	226	Average
5354	54.09	54.4	74	-19.91	31.48	5.39	37.18	110	226	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5096	37.95	38.68	54	-16.05	31.28	5.27	37.28	103	174	Average
5096	53.44	54.17	74	-20.56	31.28	5.27	37.28	103	174	Peak
5300	96.44	96.82			31.44	5.37	37.19	103	174	Average
5300	105.37	105.75			31.44	5.37	37.19	103	174	Peak
5348	43.87	44.18	54	-10.13	31.48	5.39	37.18	103	174	Average
5348	56	56.31	74	-18	31.48	5.39	37.18	103	174	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5300MHz: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5120	37.42	38.15	54	-16.58	31.29	5.28	37.3	100	213	Average
5120	53.49	54.22	74	-20.51	31.29	5.28	37.3	100	213	Peak
5320	90.22	90.58			31.45	5.38	37.19	100	213	Average
5320	99.44	99.8			31.45	5.38	37.19	100	213	Peak
5432	40.47	40.63	54	-13.53	31.55	5.42	37.13	100	213	Average
5432	54.41	54.57	74	-19.59	31.55	5.42	37.13	100	213	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	37.86	38.57	54	-16.14	31.32	5.29	37.32	102	153	Average
5150	54.16	54.87	74	-19.84	31.32	5.29	37.32	102	153	Peak
5320	95.99	96.35			31.45	5.38	37.19	102	153	Average
5320	104.93	105.29			31.45	5.38	37.19	102	153	Peak
5352	44.77	45.08	54	-9.23	31.48	5.39	37.18	102	153	Average
5352	57.37	57.68	74	-16.63	31.48	5.39	37.18	102	153	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5320MHz: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	41.64	41.72	54	-12.36	31.56	5.44	37.08	100	83	Average
5460	54.24	54.32	74	-19.76	31.56	5.44	37.08	100	83	Peak
5470	55.52	55.58	68.3	-12.78	31.57	5.45	37.08	100	83	Peak
5500	91.76	91.73			31.6	5.46	37.03	100	83	Average
5500	100.6	100.57			31.6	5.46	37.03	100	83	Peak
5725	53.02	52.9	68.3	-15.28	31.96	5.59	37.43	100	83	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	46.05	46.13	54	-7.95	31.56	5.44	37.08	100	175	Average
5460	56.89	56.97	74	-17.11	31.56	5.44	37.08	100	175	Peak
5470	57.08	57.14	68.3	-11.22	31.57	5.45	37.08	100	175	Peak
5500	96.79	96.76			31.6	5.46	37.03	100	175	Average
5500	104.99	104.96			31.6	5.46	37.03	100	175	Peak
5725	52.42	52.3	68.3	-15.88	31.96	5.59	37.43	100	175	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5500MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5358	38.45	38.76	54	-15.55	31.48	5.39	37.18	100	83	Average
5358	53.25	53.56	74	-20.75	31.48	5.39	37.18	100	83	Peak
5470	52.27	52.33	68.3	-16.03	31.57	5.45	37.08	100	83	Peak
5580	91.92	91.87			31.71	5.5	37.16	100	83	Average
5580	101.12	101.07			31.71	5.5	37.16	100	83	Peak
5725	53.7	53.58	68.3	-14.6	31.96	5.59	37.43	100	83	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5398	39.05	39.3	54	-14.95	31.52	5.41	37.18	108	161	Average
5398	54.32	54.57	74	-19.68	31.52	5.41	37.18	108	161	Peak
5470	53.13	53.19	68.3	-15.17	31.57	5.45	37.08	108	161	Peak
5580	95.34	95.29			31.71	5.5	37.16	108	161	Average
5580	104.41	104.36			31.71	5.5	37.16	108	161	Peak
5725	54.39	54.27	68.3	-13.91	31.96	5.59	37.43	108	161	Peak

REMARKS:

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5412	37.89	38.13	54	-16.11	31.53	5.41	37.18	100	19	Average
5412	53.69	53.93	74	-20.31	31.53	5.41	37.18	100	19	Peak
5470	51.34	51.4	68.3	-16.96	31.57	5.45	37.08	100	19	Peak
5700	92.21	92.14			31.9	5.57	37.4	100	19	Average
5700	101.49	101.42			31.9	5.57	37.4	100	19	Peak
5725	57.55	57.43	68.3	-10.75	31.96	5.59	37.43	100	19	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
5452	38.2	38.28	54	-15.8	31.56	5.44	37.08	105	177	Average
5452	53.55	53.63	74	-20.45	31.56	5.44	37.08	105	177	Peak
5470	51.99	52.05	68.3	-16.31	31.57	5.45	37.08	105	177	Peak
5700	96.32	96.25			31.9	5.57	37.4	105	177	Average
5700	105.41	105.34			31.9	5.57	37.4	105	177	Peak
5725	61.61	61.49	68.3	-6.69	31.96	5.59	37.43	105	177	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5700MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	44.11	44.82	54	-9.89	31.32	5.29	37.32	109	236	Average
5150	58.08	58.79	74	-15.92	31.32	5.29	37.32	109	236	Peak
5190	88.26	88.93			31.35	5.32	37.34	109	236	Average
5190	97.32	97.99			31.35	5.32	37.34	109	236	Peak
5408	38.46	38.71	54	-15.54	31.52	5.41	37.18	109	236	Average
5408	53.55	53.8	74	-20.45	31.52	5.41	37.18	109	236	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	46.49	47.2	54	-7.51	31.32	5.29	37.32	124	130	Average
5150	59.56	60.27	74	-14.44	31.32	5.29	37.32	124	130	Peak
5190	92.96	93.63			31.35	5.32	37.34	124	130	Average
5190	102.32	102.99			31.35	5.32	37.34	124	130	Peak
5354	38.92	39.23	54	-15.08	31.48	5.39	37.18	124	130	Average
5354	53.39	53.7	74	-20.61	31.48	5.39	37.18	124	130	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5190MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5122	38.06	38.79	54	-15.94	31.29	5.28	37.3	100	25	Average
5122	53.2	53.93	74	-20.8	31.29	5.28	37.3	100	25	Peak
5230	88.64	89.24			31.39	5.33	37.32	100	25	Average
5230	98.27	98.87			31.39	5.33	37.32	100	25	Peak
5358	38.51	38.82	54	-15.49	31.48	5.39	37.18	100	25	Average
5358	54.02	54.33	74	-19.98	31.48	5.39	37.18	100	25	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
5122	39.02	39.75	54	-14.98	31.29	5.28	37.3	104	182	Average
5122	53.59	54.32	74	-20.41	31.29	5.28	37.3	104	182	Peak
5230	93.71	94.31			31.39	5.33	37.32	104	182	Average
5230	102.42	103.02			31.39	5.33	37.32	104	182	Peak
5360	40.9	41.21	54	-13.1	31.48	5.39	37.18	104	182	Average
5360	55.34	55.65	74	-18.66	31.48	5.39	37.18	104	182	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5230MHz: Fundamental frequency.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5116	37.79	38.5	54	-16.21	31.29	5.28	37.28	108	224	Average
5116	53.47	54.18	74	-20.53	31.29	5.28	37.28	108	224	Peak
5270	88.02	88.53			31.41	5.35	37.27	108	224	Average
5270	97.05	97.56			31.41	5.35	37.27	108	224	Peak
5358	39.25	39.56	54	-14.75	31.48	5.39	37.18	108	224	Average
5358	54.05	54.36	74	-19.95	31.48	5.39	37.18	108	224	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5028	37.81	38.58	54	-16.19	31.23	5.24	37.24	103	182	Average
5028	53.83	54.6	74	-20.17	31.23	5.24	37.24	103	182	Peak
5270	92.85	93.36			31.41	5.35	37.27	103	182	Average
5270	102.53	103.04			31.41	5.35	37.27	103	182	Peak
5370	41.68	41.97	54	-12.32	31.49	5.4	37.18	103	182	Average
5370	55.72	56.01	74	-18.28	31.49	5.4	37.18	103	182	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5270MHz: Fundamental frequency.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5136	37.61	38.32	54	-16.39	31.31	5.28	37.3	107	24	Average
5136	53.43	54.14	74	-20.57	31.31	5.28	37.3	107	24	Peak
5310	89.18	89.55			31.45	5.37	37.19	107	24	Average
5310	98.08	98.45			31.45	5.37	37.19	107	24	Peak
5348	45.52	45.83	54	-8.48	31.48	5.39	37.18	107	24	Average
5348	59.89	60.2	74	-14.11	31.48	5.39	37.18	107	24	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
5026	37.98	38.75	54	-16.02	31.23	5.24	37.24	114	172	Average
5026	53.36	54.13	74	-20.64	31.23	5.24	37.24	114	172	Peak
5310	93.11	93.48			31.45	5.37	37.19	114	172	Average
5310	102.83	103.2			31.45	5.37	37.19	114	172	Peak
5348	51.3	51.61	54	-2.7	31.48	5.39	37.18	114	172	Average
5348	68.64	68.95	74	-5.36	31.48	5.39	37.18	114	172	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5310MHz: Fundamental frequency.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5428	42.95	43.13	54	-11.05	31.53	5.42	37.13	100	82	Average
5428	55.41	55.59	74	-18.59	31.53	5.42	37.13	100	82	Peak
5470	60.12	60.18	68.3	-8.18	31.57	5.45	37.08	100	82	Peak
5510	90.77	90.77			31.6	5.46	37.06	100	82	Average
5510	100	100			31.6	5.46	37.06	100	82	Peak
5725	53.37	53.25	68.3	-14.93	31.96	5.59	37.43	100	82	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	45.75	45.83	54	-8.25	31.56	5.44	37.08	100	192	Average
5460	58.79	58.87	74	-15.21	31.56	5.44	37.08	100	192	Peak
5470	64.56	64.62	68.3	-3.74	31.57	5.45	37.08	100	192	Peak
5510	92.23	92.23			31.6	5.46	37.06	100	192	Average
5510	101.75	101.75			31.6	5.46	37.06	100	192	Peak
5725	52.61	52.49	68.3	-15.69	31.96	5.59	37.43	100	192	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5510MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5416	39.4	39.63	54	-14.6	31.53	5.42	37.18	100	83	Average
5416	53.6	53.83	74	-20.4	31.53	5.42	37.18	100	83	Peak
5470	52.34	52.4	68.3	-15.96	31.57	5.45	37.08	100	83	Peak
5550	90.62	90.54			31.68	5.49	37.09	100	83	Average
5550	100.17	100.09			31.68	5.49	37.09	100	83	Peak
5725	52.29	52.17	68.3	-16.01	31.96	5.59	37.43	100	83	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	40.63	40.79	54	-13.37	31.55	5.42	37.13	110	183	Average
5430	54.12	54.28	74	-19.88	31.55	5.42	37.13	110	183	Peak
5470	53.01	53.07	68.3	-15.29	31.57	5.45	37.08	110	183	Peak
5550	93.44	93.36			31.68	5.49	37.09	110	183	Average
5550	103.04	102.96			31.68	5.49	37.09	110	183	Peak
5725	51.45	51.33	68.3	-16.85	31.96	5.59	37.43	110	183	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5550MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5438	38.85	38.99	54	-15.15	31.55	5.44	37.13	108	105	Average
5438	53.84	53.98	74	-20.16	31.55	5.44	37.13	108	105	Peak
5470	52.63	52.69	68.3	-15.67	31.57	5.45	37.08	108	105	Peak
5670	91.06	90.96			31.88	5.56	37.34	108	105	Average
5670	100.32	100.22			31.88	5.56	37.34	108	105	Peak
5725	55.57	55.45	68.3	-12.73	31.96	5.59	37.43	108	105	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5378	38.47	38.74	54	-15.53	31.51	5.4	37.18	111	120	Average
5378	54.45	54.72	74	-19.55	31.51	5.4	37.18	111	120	Peak
5470	52.29	52.35	68.3	-16.01	31.57	5.45	37.08	111	120	Peak
5670	92.8	92.7			31.88	5.56	37.34	111	120	Average
5670	101.51	101.41			31.88	5.56	37.34	111	120	Peak
5725	56.86	56.74	68.3	-11.44	31.96	5.59	37.43	111	120	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5670MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

BELOW 1GHz WORST-CASE DATA :

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
97.5	32.44	54.43	43.5	-11.06	8.91	1.06	31.96	100	195	Peak
171.75	33.09	51.82	43.5	-10.41	11.57	1.45	31.75	100	48	Peak
224.94	33.74	53.38	46	-12.26	10.42	1.72	31.78	100	63	Peak
300.7	29.61	46.45	46	-16.39	12.96	2.05	31.85	100	132	Peak
716.5	26.33	33.48	46	-19.67	21.05	3.48	31.68	100	203	Peak
794.9	27.99	33.57	46	-18.01	22.16	3.68	31.42	100	229	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
34.32	36.21	54.07	40	-3.79	12.63	0.59	31.08	100	184	Peak
42.42	34.34	51.14	40	-5.66	13.58	0.7	31.08	100	129	Peak
165	31.69	49.83	43.5	-11.81	12.25	1.42	31.81	100	117	Peak
300	25.85	42.7	46	-20.15	12.94	2.05	31.84	100	112	Peak
469.4	24.12	36.63	46	-21.88	16.71	2.68	31.9	100	152	Peak
777.4	27.74	33.58	46	-18.26	21.92	3.64	31.4	100	163	Peak

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

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
98.31	32.6	54.59	43.5	-10.9	8.91	1.06	31.96	100	136	Peak
224.13	33.55	53.23	46	-12.45	10.38	1.71	31.77	100	225	Peak
289.74	32.54	49.55	46	-13.46	12.65	2.01	31.67	100	102	Peak
316.1	28.72	45.19	46	-17.28	13.33	2.11	31.91	100	147	Peak
427.4	22.29	35.89	46	-23.71	15.89	2.53	32.02	100	125	Peak
666.1	24.66	32.81	46	-21.34	20.41	3.3	31.86	100	151	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
34.59	36.17	53.85	40	-3.83	12.79	0.59	31.06	100	101	Peak
42.69	33.74	50.54	40	-6.26	13.58	0.7	31.08	100	102	Peak
165.27	31.32	49.46	43.5	-12.18	12.25	1.42	31.81	100	162	Peak
300	26.13	42.98	46	-19.87	12.94	2.05	31.84	100	167	Peak
354.6	24.05	39.44	46	-21.95	14.26	2.25	31.9	100	113	Peak
646.5	24.13	32.77	46	-21.87	20.17	3.23	32.04	100	105	Peak

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



A D T

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
96.96	31.47	53.55	43.5	-12.03	8.83	1.05	31.96	100	125	Peak
166.35	32.56	50.85	43.5	-10.94	12.05	1.43	31.77	100	36	Peak
227.64	33.03	52.59	46	-12.97	10.54	1.73	31.83	100	147	Peak
327.3	29.04	45.13	46	-16.96	13.59	2.15	31.83	100	239	Peak
480.6	23.03	35.2	46	-22.97	16.95	2.72	31.84	100	117	Peak
723.5	25.72	32.7	46	-20.28	21.15	3.5	31.63	100	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
34.32	36.09	53.95	40	-3.91	12.63	0.59	31.08	100	153	Peak
42.15	35.12	51.92	40	-4.88	13.58	0.7	31.08	150	263	Peak
164.46	31.38	49.52	43.5	-12.12	12.25	1.42	31.81	200	154	Peak
300	26.27	43.12	46	-19.73	12.94	2.05	31.84	100	133	Peak
521.9	23.34	34.26	46	-22.66	17.82	2.85	31.59	100	184	Peak
810.3	27.29	32.67	46	-18.71	22.35	3.72	31.45	100	112	Peak

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

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. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 02, 2013	Jul. 01, 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

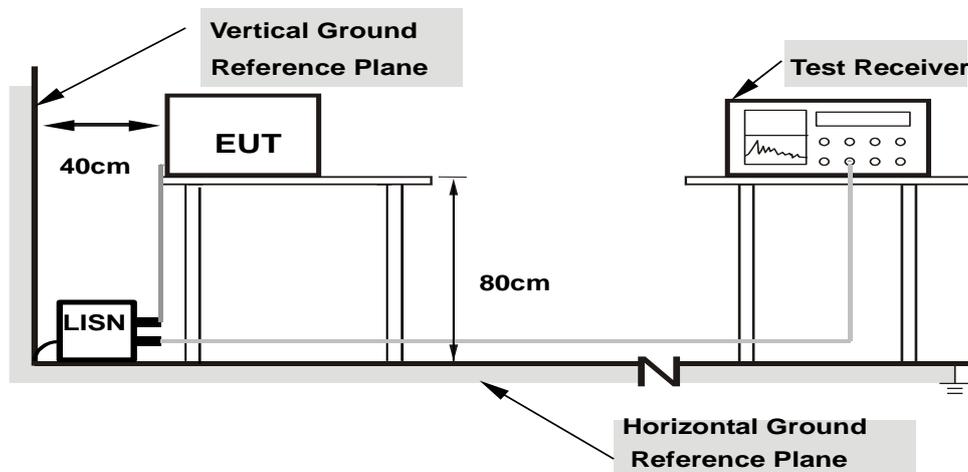
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

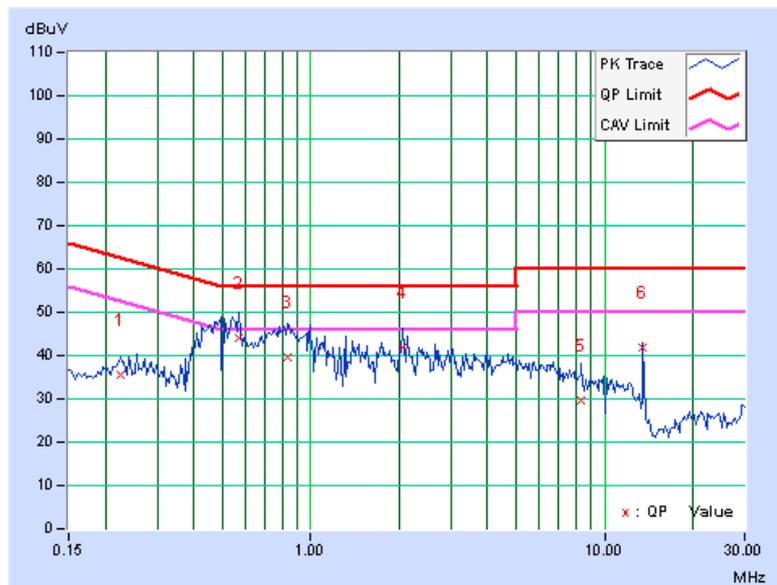
CONDUCTED WORST-CASE DATA :

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	0.22422	0.17	35.35	28.75	35.52	28.92	62.66	52.66	-27.14	-23.74
2	0.56797	0.23	43.74	38.34	43.97	38.57	56.00	46.00	-12.03	-7.43
3	0.83750	0.25	39.43	30.79	39.68	31.04	56.00	46.00	-16.32	-14.96
4	2.04688	0.28	41.68	32.06	41.96	32.34	56.00	46.00	-14.04	-13.66
5	8.33594	0.41	29.31	21.75	29.72	22.16	60.00	50.00	-30.28	-27.84
6	13.55859	0.50	41.41	39.62	41.91	40.12	60.00	50.00	-18.09	-9.88

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



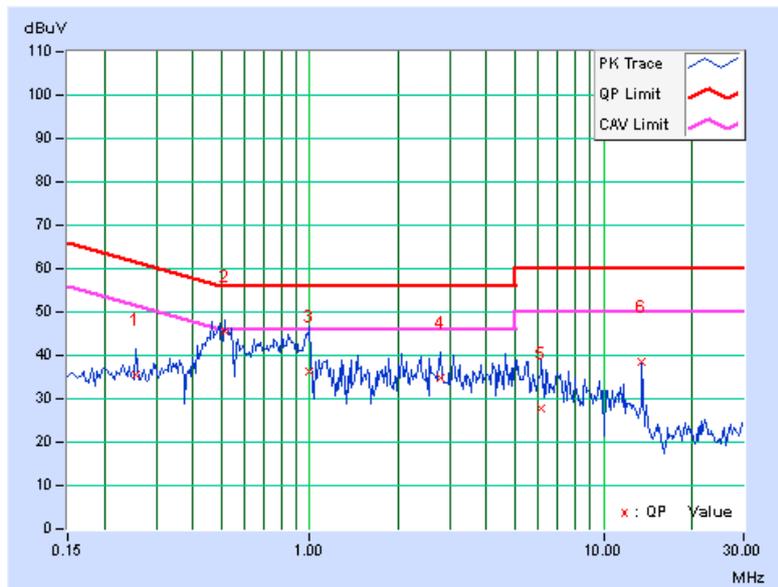


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.25547	0.20	35.45	24.87	35.65	25.07	61.58	51.58	-25.93	-26.51
2	0.51328	0.25	45.44	42.88	45.69	43.13	56.00	46.00	-10.31	-2.87
3	0.99375	0.23	36.00	22.93	36.23	23.16	56.00	46.00	-19.77	-22.84
4	2.77734	0.32	34.34	26.76	34.66	27.08	56.00	46.00	-21.34	-18.92
5	6.15625	0.42	27.30	19.49	27.72	19.91	60.00	50.00	-32.28	-30.09
6	13.55859	0.57	37.95	37.02	38.52	37.59	60.00	50.00	-21.48	-12.41

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

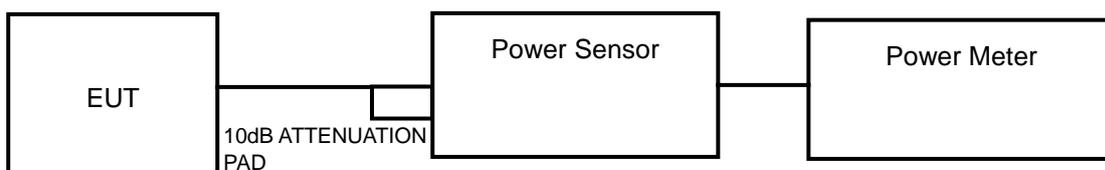
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

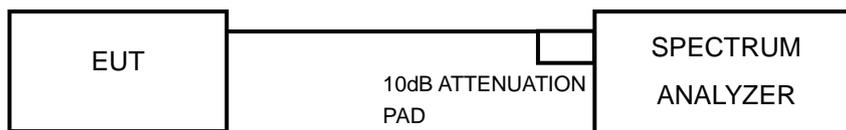
NOTE: Where B is the 26dB emission bandwidth in MHz.

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 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)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	18.408	12.65	17	PASS
44	5220	18.923	12.77	17	PASS
48	5240	19.187	12.83	17	PASS
52	5260	19.275	12.85	24	PASS
60	5300	19.634	12.93	24	PASS
64	5320	19.231	12.84	24	PASS
100	5500	18.923	12.77	24	PASS
116	5580	18.750	12.73	24	PASS
140	5700	18.967	12.78	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	18.836	12.75	17	PASS
44	5220	19.187	12.83	17	PASS
48	5240	19.275	12.85	17	PASS
52	5260	19.634	12.93	24	PASS
60	5300	19.143	12.82	24	PASS
64	5320	19.409	12.88	24	PASS
100	5500	18.578	12.69	24	PASS
116	5580	19.231	12.84	24	PASS
140	5700	19.543	12.91	24	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	19.498	12.90	17	PASS
46	5230	19.454	12.89	17	PASS
54	5270	19.143	12.82	24	PASS
62	5310	19.409	12.88	24	PASS
102	5510	19.275	12.85	24	PASS
110	5550	19.364	12.87	24	PASS
134	5670	19.320	12.86	24	PASS



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26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.82	PASS
44	5220	24.30	PASS
48	5240	23.67	PASS
52	5260	24.02	PASS
60	5300	23.43	PASS
64	5320	23.85	PASS
100	5500	23.61	PASS
116	5580	23.73	PASS
140	5700	23.79	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	24.25	PASS
44	5220	24.38	PASS
48	5240	24.00	PASS
52	5260	24.05	PASS
60	5300	24.60	PASS
64	5320	24.54	PASS
100	5500	23.91	PASS
116	5580	24.45	PASS
140	5700	24.52	PASS

802.11n (40MHz)

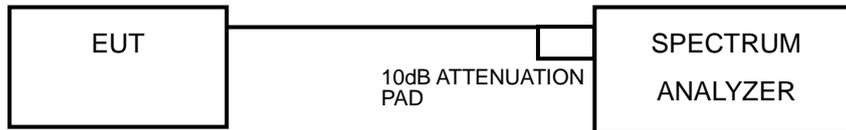
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	54.92	PASS
46	5230	54.60	PASS
54	5270	62.61	PASS
62	5310	58.75	PASS
102	5510	53.06	PASS
110	5550	53.05	PASS
134	5670	54.08	PASS

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 (20MHz), 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)

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

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	0.35	0.25	0.60	4	PASS
44	5220	0.46	0.25	0.71	4	PASS
48	5240	0.58	0.25	0.83	4	PASS
52	5260	0.67	0.25	0.92	11	PASS
60	5300	0.93	0.25	1.18	11	PASS
64	5320	1.16	0.25	1.41	11	PASS
100	5500	1.12	0.25	1.37	11	PASS
116	5580	1.14	0.25	1.39	11	PASS
140	5700	0.84	0.25	1.09	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	0.12	0.27	0.39	4	PASS
44	5220	0.23	0.27	0.50	4	PASS
48	5240	0.38	0.27	0.65	4	PASS
52	5260	0.57	0.27	0.84	11	PASS
60	5300	0.83	0.27	1.10	11	PASS
64	5320	1.00	0.27	1.27	11	PASS
100	5500	0.94	0.27	1.21	11	PASS
116	5580	0.93	0.27	1.20	11	PASS
140	5700	0.63	0.27	0.90	11	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)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-2.49	0.64	-1.85	4	PASS
46	5230	-2.31	0.64	-1.67	4	PASS
54	5270	-2.12	0.64	-1.48	11	PASS
62	5310	-1.83	0.64	-1.19	11	PASS
102	5510	-1.90	0.64	-1.26	11	PASS
110	5550	-1.92	0.64	-1.28	11	PASS
134	5670	-2.01	0.64	-1.37	11	PASS

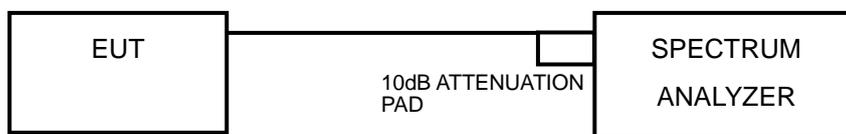
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION 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

- 1) Set RBW = 1 MHz, VBW \geq 3 MHz, Detector = peak.
- 2) Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
- 3) Use the peak search function to find the peak of the spectrum.
- 4) Measure the PPSD.
- 5) 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.

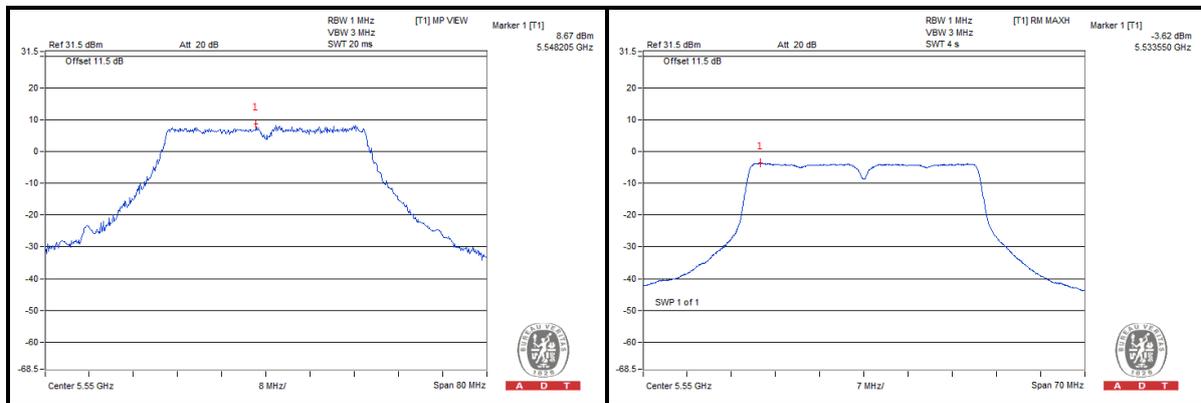
4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

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	5300	10.97	0.93	1.18	9.79	13	PASS
	QPSK		11.49	1.32	1.57	9.92	13	PASS
	16QAM		10.48	0.05	0.30	10.18	13	PASS
	64QAM		9.61	-2.16	-1.91	11.52	13	PASS
802.11n (20MHz)	BPSK	5500	10.68	0.94	1.21	9.47	13	PASS
	QPSK		11.90	1.26	1.53	10.37	13	PASS
	16QAM		10.43	-0.02	0.25	10.18	13	PASS
	64QAM		9.93	-0.54	-0.27	10.20	13	PASS
802.11n (40MHz)	BPSK	5550	8.43	-1.90	-1.26	9.69	13	PASS
	QPSK		9.11	-1.53	-0.89	10.00	13	PASS
	16QAM		8.54	-2.99	-2.35	10.89	13	PASS
	64QAM		8.67	-3.62	-2.98	11.65	13	PASS

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

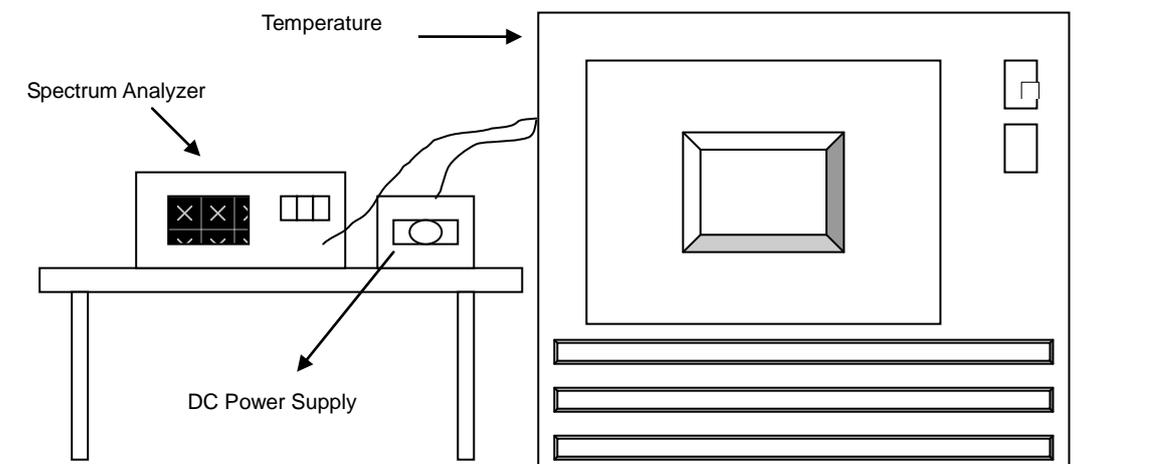


4.6 FREQUENCY STABILITY

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.

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	5320.039286	7.385	5320.039157	7.360	5320.039147	7.358	5320.038920	7.316
50	3.8	5320.039837	7.488	5320.043215	8.123	5320.043472	8.171	5320.043380	8.154
40	3.8	5320.039989	7.517	5320.039860	7.492	5320.040351	7.585	5320.040136	7.544
30	3.8	5320.040822	7.673	5320.040863	7.681	5320.040909	7.690	5320.041428	7.787
20	3.8	5320.041946	7.885	5320.042153	7.923	5320.042175	7.928	5320.041791	7.855
10	3.8	5320.043411	8.160	5320.043766	8.227	5320.043449	8.167	5320.043442	8.166
0	3.8	5320.042418	7.973	5320.041749	7.848	5320.042208	7.934	5320.042410	7.972
-10	3.8	5320.040775	7.664	5320.040899	7.688	5320.040476	7.608	5320.040474	7.608
-20	3.8	5320.040382	7.591	5320.040126	7.542	5320.040101	7.538	5320.040301	7.575
-30	3.8	5320.038755	7.285	5320.039106	7.351	5320.038814	7.296	5320.039469	7.419

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	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	3.4	5320.042025	7.899	5320.041881	7.872	5320.041266	7.757	5320.041824	7.862
	3.8	5320.041946	7.885	5320.042153	7.923	5320.042175	7.928	5320.041791	7.855
	4.34	5320.043695	8.213	5320.043007	8.084	5320.043183	8.117	5320.043261	8.132

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.

7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---