



FCC TEST REPORT (15.407)

REPORT NO.: RF130502C16-6
MODEL NO.: PN07310
FCC ID: NM8PN07310
RECEIVED: May 02, 2013
TESTED: May 29, 2013 ~ May 30, 2013
ISSUED: Jun. 06, 2013

APPLICANT: HTC Corporation

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ISSUED BY: Bureau Veritas Consumer Products Services
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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130502C16-6	Original release	Jun. 06, 2013



1. CERTIFICATION

PRODUCT: Smartphone
MODEL NO.: PN07310
BRAND: HTC
APPLICANT: HTC Corporation
TESTED: May 29, 2013 ~ May 30, 2013
TEST SAMPLE: Production Unit
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (model: PN07310) 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** : Jun. 06, 2013
Ivonne Wu / Senior Specialist

APPROVED BY : Sam Chen , **DATE** : Jun. 06, 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 -1.33dB at 13.55859MHz.
15.407(b/1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.99dB at 5470MHz.
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.	PN07310
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
MODULATION TYPE	256QAM, 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 802.11ac: up to V9
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) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz) 1 for 802.11ac (80MHz)
OUTPUT POWER	38.371mW for 5180 ~ 5240MHz 41.879mW for 5260 ~ 5320MHz 45.082mW for 5500 ~ 5700MHz
ANTENNA TYPE	PIFA antenna with -2.56dBi gain (5180 ~ 5240MHz) PIFA antenna with -2.07dBi gain (5260 ~ 5320MHz) PIFA antenna with -2dBi 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

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

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
42	5210MHz

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

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
58	5290MHz

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		

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
106	5530MHz

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
802.11ac (80MHz)		42	42	OFDM	BPSK	V0
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
802.11ac (80MHz)		58	58	OFDM	BPSK	V0
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
802.11ac (80MHz)		106	106	OFDM	BPSK	V0

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)
802.11a	5500-5700	100 to 140	140	OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

- 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	5500-5700	100 to 140	140	OFDM	BPSK	6.0

BANDEDGE MEASUREMENT:

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

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
802.11ac (80MHz)		42	42	OFDM	BPSK	V0
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
802.11ac (80MHz)		58	58	OFDM	BPSK	V0
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
802.11ac (80MHz)		106	106	OFDM	BPSK	V0

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
802.11ac (80MHz)		42	42	OFDM	BPSK	V0
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
802.11ac (80MHz)		58	58	OFDM	BPSK	V0
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
802.11ac (80MHz)		106	106	OFDM	BPSK	V0

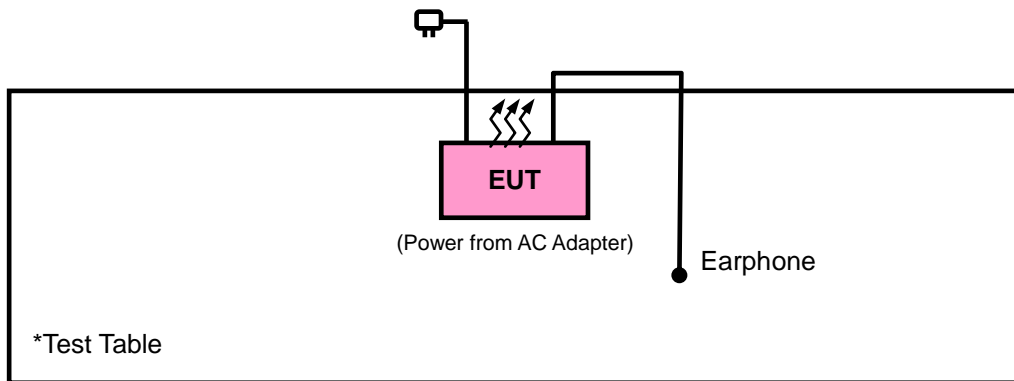
TEST CONDITION:

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

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

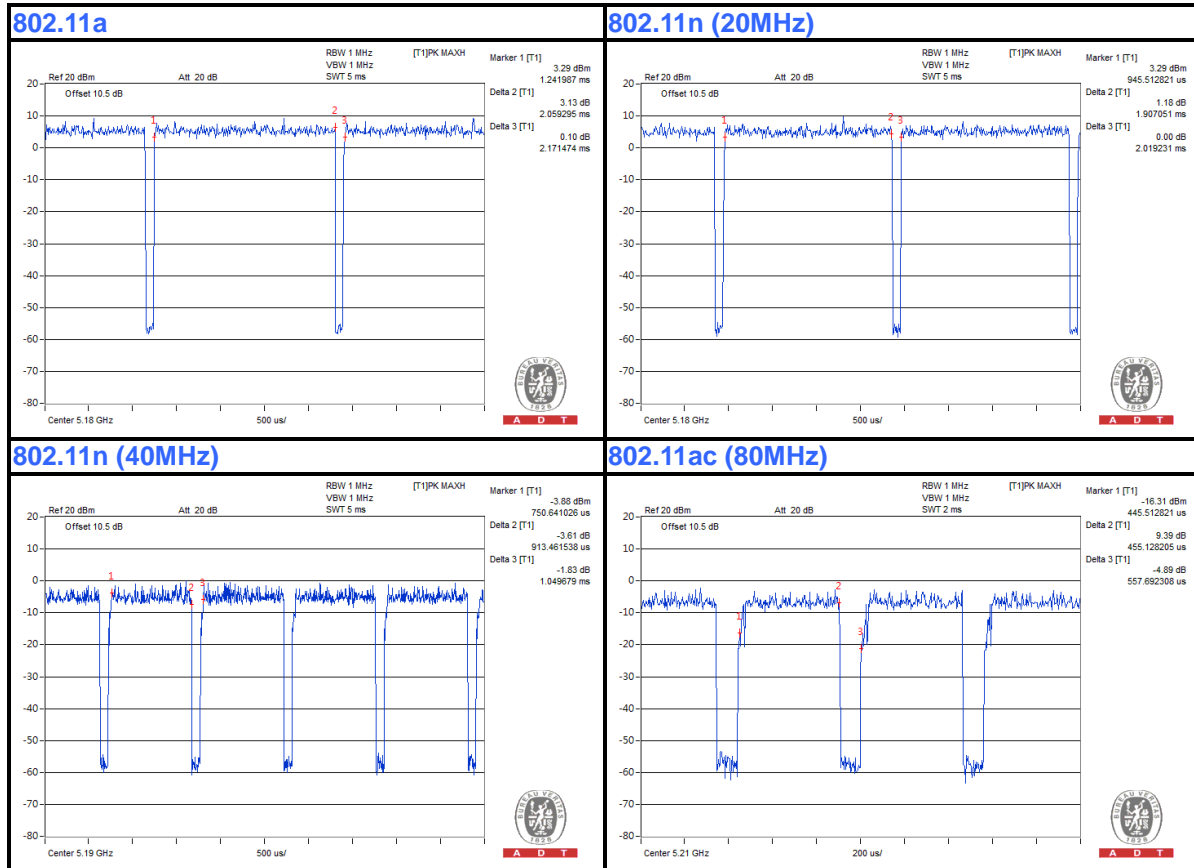
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 2.059/2.171 = 0.948, Duty factor = $10 * \log(1/0.948) = 0.23$

802.11n (20MHz): Duty cycle = 1.907/2.019 = 0.945, Duty factor = $10 * \log(1/0.945) = 0.25$

802.11n (40MHz): Duty cycle = 913.46/1049.68 = 0.870, Duty factor = $10 * \log(1/0.870) = 0.60$

802.11ac (80MHz): Duty cycle = 455.13/557.69 = 0.816, Duty factor = $10 * \log(1/0.816) = 0.88$



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 v01r02

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. 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 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. 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.

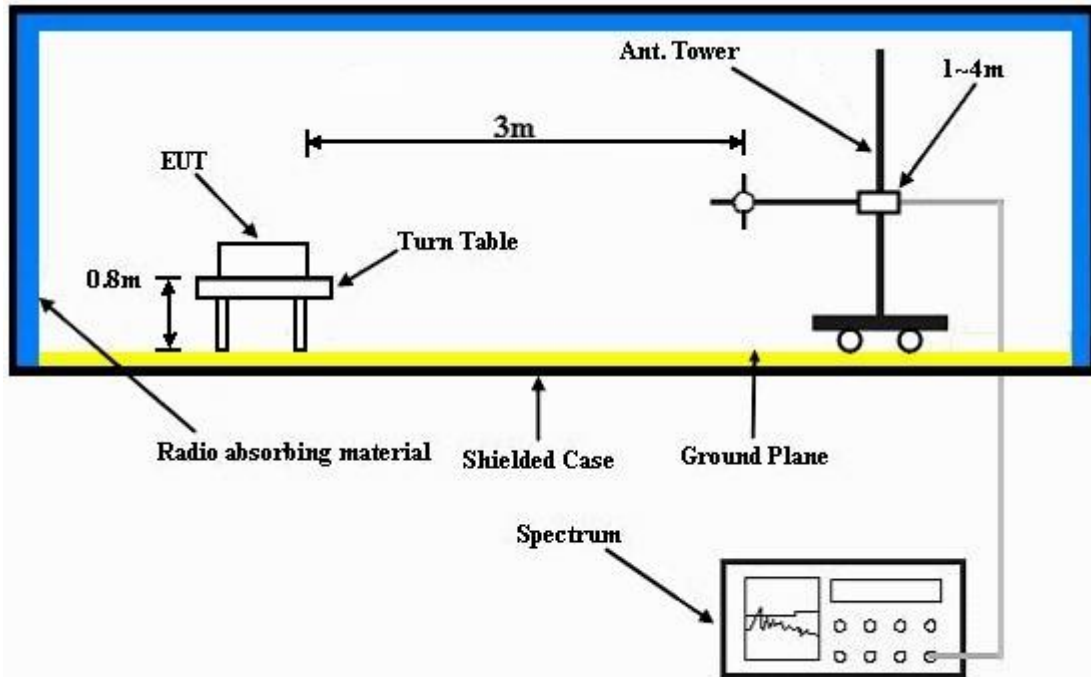
NOTE:

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 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.



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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	Johnson Liao

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	40.25	38.9	54	-13.75	31.28	7.35	37.28	100	43	Average
5104	56.57	55.22	74	-17.43	31.28	7.35	37.28	100	43	Peak
5180	85.51	84.18			31.35	7.32	37.34	100	43	Average
5180	95.42	94.09			31.35	7.32	37.34	100	43	Peak
5444	39.8	37.91	54	-14.2	31.55	7.47	37.13	100	43	Average
5444	56.04	54.15	74	-17.96	31.55	7.47	37.13	100	43	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	41.13	39.82	54	-12.87	31.28	7.3	37.27	100	360	Average
5092	56.12	54.81	74	-17.88	31.28	7.3	37.27	100	360	Peak
5180	90.46	89.13			31.35	7.32	37.34	100	360	Average
5180	100.32	98.99			31.35	7.32	37.34	100	360	Peak
5420	40.84	39.09	54	-13.16	31.53	7.4	37.18	100	360	Average
5420	55.37	53.62	74	-18.63	31.53	7.4	37.18	100	360	Peak

REMARKS:

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



A D T

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	Johnson Liao

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	40.14	38.81	54	-13.86	31.29	7.34	37.3	100	18	Average
5120	55.48	54.15	74	-18.52	31.29	7.34	37.3	100	18	Peak
5220	85.31	83.98			31.37	7.32	37.36	100	18	Average
5220	94.6	93.27			31.37	7.32	37.36	100	18	Peak
5446	39.92	38.02	54	-14.08	31.56	7.47	37.13	100	18	Average
5446	55.56	53.66	74	-18.44	31.56	7.47	37.13	100	18	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5088	41.06	39.76	54	-12.94	31.27	7.3	37.27	100	360	Average
5088	55.95	54.65	74	-18.05	31.27	7.3	37.27	100	360	Peak
5220	91.04	89.71			31.37	7.32	37.36	100	360	Average
5220	100.46	99.13			31.37	7.32	37.36	100	360	Peak
5460	40.21	38.2	54	-13.79	31.56	7.53	37.08	100	360	Average
5460	55.72	53.71	74	-18.28	31.56	7.53	37.08	100	360	Peak

REMARKS:

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



A D T

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	Johnson Liao

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	39.41	38.25	54	-14.59	31.21	7.19	37.24	100	42	Average
5020	51.37	50.21	74	-22.63	31.21	7.19	37.24	100	42	Peak
5240	85.94	84.53			31.39	7.34	37.32	100	42	Average
5240	95.14	93.73			31.39	7.34	37.32	100	42	Peak
5424	40.01	38.26	54	-13.99	31.53	7.4	37.18	100	42	Average
5424	51.26	49.51	74	-22.74	31.53	7.4	37.18	100	42	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5038	39.43	38.24	54	-14.57	31.24	7.19	37.24	100	360	Average
5038	55.24	54.05	74	-18.76	31.24	7.19	37.24	100	360	Peak
5240	90.8	89.39			31.39	7.34	37.32	100	360	Average
5240	100.9	99.49			31.39	7.34	37.32	100	360	Peak
5404	40.53	38.79	54	-13.47	31.52	7.4	37.18	100	360	Average
5404	56.28	54.54	74	-17.72	31.52	7.4	37.18	100	360	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	Johnson Liao

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
5114	39.71	38.35	54	-14.29	31.29	7.35	37.28	105	41	Average
5114	55.73	54.37	74	-18.27	31.29	7.35	37.28	105	41	Peak
5260	87.03	85.53			31.41	7.36	37.27	105	41	Average
5260	96.59	95.09			31.41	7.36	37.27	105	41	Peak
5416	40.5	38.75	54	-13.5	31.53	7.4	37.18	105	41	Average
5416	55.47	53.72	74	-18.53	31.53	7.4	37.18	105	41	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5078	39.71	38.41	54	-14.29	31.27	7.3	37.27	100	346	Average
5078	55.87	54.57	74	-18.13	31.27	7.3	37.27	100	346	Peak
5260	92.36	90.86			31.41	7.36	37.27	100	346	Average
5260	101.89	100.39			31.41	7.36	37.27	100	346	Peak
5430	40.7	38.81	54	-13.3	31.55	7.47	37.13	100	346	Average
5430	57.4	55.51	74	-16.6	31.55	7.47	37.13	100	346	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	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5144	39.73	38.4	54	-14.27	31.32	7.33	37.32	100	156	Average
5144	55.82	54.49	74	-18.18	31.32	7.33	37.32	100	156	Peak
5300	87.46	85.81			31.44	7.4	37.19	100	156	Average
5300	97.77	96.12			31.44	7.4	37.19	100	156	Peak
5380	43.03	41.3	54	-10.97	31.51	7.4	37.18	100	156	Average
5380	55.56	53.83	74	-18.44	31.51	7.4	37.18	100	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
5006	39.37	38.25	54	-14.63	31.21	7.14	37.23	100	360	Average
5006	55.88	54.76	74	-18.12	31.21	7.14	37.23	100	360	Peak
5300	91.8	90.15			31.44	7.4	37.19	100	360	Average
5300	101.17	99.52			31.44	7.4	37.19	100	360	Peak
5388	44.45	42.72	54	-9.55	31.51	7.4	37.18	100	360	Average
5388	55.96	54.23	74	-18.04	31.51	7.4	37.18	100	360	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	Johnson Liao

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	39.45	38.14	54	-14.55	31.28	7.3	37.27	100	126	Average
5090	55.98	54.67	74	-18.02	31.28	7.3	37.27	100	126	Peak
5320	87.69	86.03			31.45	7.4	37.19	100	126	Average
5320	97.19	95.53			31.45	7.4	37.19	100	126	Peak
5400	42.62	40.88	54	-11.38	31.52	7.4	37.18	100	126	Average
5400	56.05	54.31	74	-17.95	31.52	7.4	37.18	100	126	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5044	39.35	38.11	54	-14.65	31.24	7.25	37.25	100	345	Average
5044	56.07	54.83	74	-17.93	31.24	7.25	37.25	100	345	Peak
5320	91.69	90.03			31.45	7.4	37.19	100	345	Average
5320	101.31	99.65			31.45	7.4	37.19	100	345	Peak
5408	45.11	43.37	54	-8.89	31.52	7.4	37.18	100	345	Average
5408	57.56	55.82	74	-16.44	31.52	7.4	37.18	100	345	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	Johnson Liao

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	41.52	39.51	54	-12.48	31.56	7.53	37.08	100	16	Average
5460	55.97	53.96	74	-18.03	31.56	7.53	37.08	100	16	Peak
5470	54.19	52.17	68.3	-14.11	31.57	7.53	37.08	100	16	Peak
5500	89.02	86.86			31.6	7.59	37.03	100	16	Average
5500	98.71	96.55			31.6	7.59	37.03	100	16	Peak
5725	55.47	53.23	68.3	-12.83	31.96	7.71	37.43	100	16	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
5400	40.33	38.59	54	-13.67	31.52	7.4	37.18	100	156	Average
5400	56.2	54.46	74	-17.8	31.52	7.4	37.18	100	156	Peak
5470	56.86	54.84	68.3	-11.44	31.57	7.53	37.08	100	156	Peak
5500	88.8	86.64			31.6	7.59	37.03	100	156	Average
5500	98.53	96.37			31.6	7.59	37.03	100	156	Peak
5725	53.74	51.5	68.3	-14.56	31.96	7.71	37.43	100	156	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	Johnson Liao

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
5458	40.26	38.25	54	-13.74	31.56	7.53	37.08	100	15	Average
5458	56.45	54.44	74	-17.55	31.56	7.53	37.08	100	15	Peak
5470	54.11	52.09	68.3	-14.19	31.57	7.53	37.08	100	15	Peak
5580	89.06	86.94			31.71	7.57	37.16	100	15	Average
5580	98.8	96.68			31.71	7.57	37.16	100	15	Peak
5725	55.04	52.8	68.3	-13.26	31.96	7.71	37.43	100	15	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5414	39.9	38.15	54	-14.1	31.53	7.4	37.18	100	154	Average
5414	55.47	53.72	74	-18.53	31.53	7.4	37.18	100	154	Peak
5470	54.17	52.15	68.3	-14.13	31.57	7.53	37.08	100	154	Peak
5580	87.84	85.72			31.71	7.57	37.16	100	154	Average
5580	97.56	95.44			31.71	7.57	37.16	100	154	Peak
5725	54.45	52.21	68.3	-13.85	31.96	7.71	37.43	100	154	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	Johnson Liao

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
5424	40.03	38.28	54	-13.97	31.53	7.4	37.18	100	16	Average
5424	55.55	53.8	74	-18.45	31.53	7.4	37.18	100	16	Peak
5470	53.57	51.55	68.3	-14.73	31.57	7.53	37.08	100	16	Peak
5700	87.94	85.75			31.9	7.69	37.4	100	16	Average
5700	97.95	95.76			31.9	7.69	37.4	100	16	Peak
5725	55.93	53.69	68.3	-12.37	31.96	7.71	37.43	100	16	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5448	39.88	37.98	54	-14.12	31.56	7.47	37.13	108	140	Average
5448	55.23	53.33	74	-18.77	31.56	7.47	37.13	108	140	Peak
5470	54.51	52.49	68.3	-13.79	31.57	7.53	37.08	108	140	Peak
5700	86.55	84.36			31.9	7.69	37.4	108	140	Average
5700	96.17	93.98			31.9	7.69	37.4	108	140	Peak
5725	54.56	52.32	68.3	-13.74	31.96	7.71	37.43	108	140	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	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	40.35	39.02	54	-13.65	31.32	7.33	37.32	100	13	Average
5148	57.07	55.74	74	-16.93	31.32	7.33	37.32	100	13	Peak
5180	86.74	85.41			31.35	7.32	37.34	100	13	Average
5180	96.37	95.04			31.35	7.32	37.34	100	13	Peak
5392	39.75	38.02	54	-14.25	31.51	7.4	37.18	100	13	Average
5392	56.17	54.44	74	-17.83	31.51	7.4	37.18	100	13	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
5108	40.42	39.06	54	-13.58	31.29	7.35	37.28	100	349	Average
5108	55.58	54.22	74	-18.42	31.29	7.35	37.28	100	349	Peak
5180	90.47	89.14			31.35	7.32	37.34	100	349	Average
5180	100.24	98.91			31.35	7.32	37.34	100	349	Peak
5376	40.52	38.81	54	-13.48	31.49	7.4	37.18	100	349	Average
5376	56.12	54.41	74	-17.88	31.49	7.4	37.18	100	349	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	Johnson Liao

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	40.1	38.75	54	-13.9	31.31	7.34	37.3	103	159	Average
5136	55.88	54.53	74	-18.12	31.31	7.34	37.3	103	159	Peak
5220	87.25	85.92			31.37	7.32	37.36	103	159	Average
5220	98.39	97.06			31.37	7.32	37.36	103	159	Peak
5434	40.26	38.37	54	-13.74	31.55	7.47	37.13	103	159	Average
5434	56.76	54.87	74	-17.24	31.55	7.47	37.13	103	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
5118	41.06	39.7	54	-12.94	31.29	7.35	37.28	100	347	Average
5118	55.39	54.03	74	-18.61	31.29	7.35	37.28	100	347	Peak
5220	91.39	90.06			31.37	7.32	37.36	100	347	Average
5220	101.54	100.21			31.37	7.32	37.36	100	347	Peak
5436	40.53	38.64	54	-13.47	31.55	7.47	37.13	100	347	Average
5436	55.82	53.93	74	-18.18	31.55	7.47	37.13	100	347	Peak

REMARKS:

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



A D T

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	Johnson Liao

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
5102	39.59	38.24	54	-14.41	31.28	7.35	37.28	102	164	Average
5102	55.73	54.38	74	-18.27	31.28	7.35	37.28	102	164	Peak
5240	87.1	85.69			31.39	7.34	37.32	102	164	Average
5240	96.54	95.13			31.39	7.34	37.32	102	164	Peak
5460	40.4	38.39	54	-13.6	31.56	7.53	37.08	102	164	Average
5460	55.81	53.8	74	-18.19	31.56	7.53	37.08	102	164	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5088	39.61	38.31	54	-14.39	31.27	7.3	37.27	100	346	Average
5088	55.69	54.39	74	-18.31	31.27	7.3	37.27	100	346	Peak
5240	91.75	90.34			31.39	7.34	37.32	100	346	Average
5240	101.25	99.84			31.39	7.34	37.32	100	346	Peak
5444	40.81	38.92	54	-13.19	31.55	7.47	37.13	100	346	Average
5444	57.09	55.2	74	-16.91	31.55	7.47	37.13	100	346	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	Johnson Liao

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
5056	39.38	38.13	54	-14.62	31.25	7.25	37.25	103	163	Average
5056	55.52	54.27	74	-18.48	31.25	7.25	37.25	103	163	Peak
5260	86.95	85.45			31.41	7.36	37.27	103	163	Average
5260	96.25	94.75			31.41	7.36	37.27	103	163	Peak
5350	40.2	38.5	54	-13.8	31.48	7.4	37.18	103	163	Average
5350	56.42	54.72	74	-17.58	31.48	7.4	37.18	103	163	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	39.6	38.3	54	-14.4	31.27	7.3	37.27	100	345	Average
5074	55.15	53.85	74	-18.85	31.27	7.3	37.27	100	345	Peak
5260	92.48	90.98			31.41	7.36	37.27	100	345	Average
5260	101.91	100.41			31.41	7.36	37.27	100	345	Peak
5350	40.46	38.76	54	-13.54	31.48	7.4	37.18	100	345	Average
5350	56.11	54.41	74	-17.89	31.48	7.4	37.18	100	345	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	Johnson Liao

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
5108	39.38	38.02	54	-14.62	31.29	7.35	37.28	100	120	Average
5108	55.79	54.43	74	-18.21	31.29	7.35	37.28	100	120	Peak
5300	88.29	86.64			31.44	7.4	37.19	100	120	Average
5300	98.4	96.75			31.44	7.4	37.19	100	120	Peak
5384	42.78	41.05	54	-11.22	31.51	7.4	37.18	100	120	Average
5384	55.86	54.13	74	-18.14	31.51	7.4	37.18	100	120	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
5108	39.54	38.18	54	-14.46	31.29	7.35	37.28	100	333	Average
5108	55.92	54.56	74	-18.08	31.29	7.35	37.28	100	333	Peak
5300	90.69	89.04			31.44	7.4	37.19	100	333	Average
5300	99.89	98.24			31.44	7.4	37.19	100	333	Peak
5372	44.33	42.62	54	-9.67	31.49	7.4	37.18	100	333	Average
5372	57.6	55.89	74	-16.4	31.49	7.4	37.18	100	333	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	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5016	39.18	38.06	54	-14.82	31.21	7.14	37.23	103	173	Average
5016	56.04	54.92	74	-17.96	31.21	7.14	37.23	103	173	Peak
5320	85.79	84.13			31.45	7.4	37.19	103	173	Average
5320	95.18	93.52			31.45	7.4	37.19	103	173	Peak
5400	41.97	40.23	54	-12.03	31.52	7.4	37.18	103	173	Average
5400	56.21	54.47	74	-17.79	31.52	7.4	37.18	103	173	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5062	39.37	38.12	54	-14.63	31.25	7.25	37.25	100	336	Average
5062	55.9	54.65	74	-18.1	31.25	7.25	37.25	100	336	Peak
5320	89.55	87.89			31.45	7.4	37.19	100	336	Average
5320	98.77	97.11			31.45	7.4	37.19	100	336	Peak
5358	44.07	42.37	54	-9.93	31.48	7.4	37.18	100	336	Average
5358	60.26	58.56	74	-13.74	31.48	7.4	37.18	100	336	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	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5414	41.18	39.43	54	-12.82	31.53	7.4	37.18	100	19	Average
5414	56.25	54.5	74	-17.75	31.53	7.4	37.18	100	19	Peak
5470	55.28	53.26	68.3	-13.02	31.57	7.53	37.08	100	19	Peak
5500	87.65	85.49			31.6	7.59	37.03	100	19	Average
5500	97.33	95.17			31.6	7.59	37.03	100	19	Peak
5725	55.26	53.02	68.3	-13.04	31.96	7.71	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
5410	40.43	38.69	54	-13.57	31.52	7.4	37.18	100	140	Average
5410	55.68	53.94	74	-18.32	31.52	7.4	37.18	100	140	Peak
5470	55.34	53.32	68.3	-12.96	31.57	7.53	37.08	100	140	Peak
5500	86.45	84.29			31.6	7.59	37.03	100	140	Average
5500	96.52	94.36			31.6	7.59	37.03	100	140	Peak
5725	54.91	52.67	68.3	-13.39	31.96	7.71	37.43	100	140	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	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5448	40.2	38.3	54	-13.8	31.56	7.47	37.13	105	40	Average
5448	56.09	54.19	74	-17.91	31.56	7.47	37.13	105	40	Peak
5470	56.07	54.05	68.3	-12.23	31.57	7.53	37.08	105	40	Peak
5580	87.48	85.36			31.71	7.57	37.16	105	40	Average
5580	97.32	95.2			31.71	7.57	37.16	105	40	Peak
5725	54.68	52.44	68.3	-13.62	31.96	7.71	37.43	105	40	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5424	39.76	38.01	54	-14.24	31.53	7.4	37.18	100	139	Average
5424	55.77	54.02	74	-18.23	31.53	7.4	37.18	100	139	Peak
5470	54.84	52.82	68.3	-13.46	31.57	7.53	37.08	100	139	Peak
5580	86.45	84.33			31.71	7.57	37.16	100	139	Average
5580	96.76	94.64			31.71	7.57	37.16	100	139	Peak
5725	55.27	53.03	68.3	-13.03	31.96	7.71	37.43	100	139	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	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5408	39.89	38.15	54	-14.11	31.52	7.4	37.18	102	40	Average
5408	56.74	55	74	-17.26	31.52	7.4	37.18	102	40	Peak
5470	53.71	51.69	68.3	-14.59	31.57	7.53	37.08	102	40	Peak
5700	87.72	85.53			31.9	7.69	37.4	102	40	Average
5700	97.4	95.21			31.9	7.69	37.4	102	40	Peak
5725	56.64	54.4	68.3	-11.66	31.96	7.71	37.43	102	40	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5364	39.66	37.95	54	-14.34	31.49	7.4	37.18	120	139	Average
5364	57.51	55.8	74	-16.49	31.49	7.4	37.18	120	139	Peak
5470	54	51.98	68.3	-14.3	31.57	7.53	37.08	120	139	Peak
5700	86.74	84.55			31.9	7.69	37.4	120	139	Average
5700	96.55	94.36			31.9	7.69	37.4	120	139	Peak
5725	57.27	55.03	68.3	-11.03	31.96	7.71	37.43	120	139	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	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5146	40.66	39.33	54	-13.34	31.32	7.33	37.32	100	343	Average
5146	55.84	54.51	74	-18.16	31.32	7.33	37.32	100	343	Peak
5190	80.78	79.45			31.35	7.32	37.34	100	343	Average
5190	89.8	88.47			31.35	7.32	37.34	100	343	Peak
5408	40.2	38.46	54	-13.8	31.52	7.4	37.18	100	343	Average
5408	56.05	54.31	74	-17.95	31.52	7.4	37.18	100	343	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	41.66	40.33	54	-12.34	31.32	7.33	37.32	100	346	Average
5150	55.5	54.17	74	-18.5	31.32	7.33	37.32	100	346	Peak
5190	85.14	83.81			31.35	7.32	37.34	100	346	Average
5190	94.13	92.8			31.35	7.32	37.34	100	346	Peak
5454	40.68	38.67	54	-13.32	31.56	7.53	37.08	100	346	Average
5454	55.46	53.45	74	-18.54	31.56	7.53	37.08	100	346	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	Johnson Liao

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	40.15	38.82	54	-13.85	31.29	7.34	37.3	105	342	Average
5122	55.56	54.23	74	-18.44	31.29	7.34	37.3	105	342	Peak
5230	81.26	79.85			31.39	7.34	37.32	105	342	Average
5230	90.48	89.07			31.39	7.34	37.32	105	342	Peak
5422	40.05	38.3	54	-13.95	31.53	7.4	37.18	105	342	Average
5422	55.79	54.04	74	-18.21	31.53	7.4	37.18	105	342	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5050	39.84	38.6	54	-14.16	31.24	7.25	37.25	100	345	Average
5050	55.62	54.38	74	-18.38	31.24	7.25	37.25	100	345	Peak
5230	85.68	84.27			31.39	7.34	37.32	100	345	Average
5230	94.76	93.35			31.39	7.34	37.32	100	345	Peak
5414	40.7	38.95	54	-13.3	31.53	7.4	37.18	100	345	Average
5414	56.84	55.09	74	-17.16	31.53	7.4	37.18	100	345	Peak

REMARKS:

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



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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	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5076	39.44	38.14	54	-14.56	31.27	7.3	37.27	123	38	Average
5076	55.69	54.39	74	-18.31	31.27	7.3	37.27	123	38	Peak
5270	80.47	78.97			31.41	7.36	37.27	123	38	Average
5270	90.62	89.12			31.41	7.36	37.27	123	38	Peak
5422	39.99	38.24	54	-14.01	31.53	7.4	37.18	123	38	Average
5422	55.39	53.64	74	-18.61	31.53	7.4	37.18	123	38	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5076	39.75	38.45	54	-14.25	31.27	7.3	37.27	100	345	Average
5076	55.34	54.04	74	-18.66	31.27	7.3	37.27	100	345	Peak
5270	86.08	84.58			31.41	7.36	37.27	100	345	Average
5270	94.95	93.45			31.41	7.36	37.27	100	345	Peak
5446	40.87	38.97	54	-13.13	31.56	7.47	37.13	100	345	Average
5446	56.14	54.24	74	-17.86	31.56	7.47	37.13	100	345	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	Johnson Liao

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	39.8	38.68	54	-14.2	31.21	7.14	37.23	100	90	Average
5012	56.16	55.04	74	-17.84	31.21	7.14	37.23	100	90	Peak
5310	83.07	81.41			31.45	7.4	37.19	100	90	Average
5310	92.66	91			31.45	7.4	37.19	100	90	Peak
5440	40.54	38.65	54	-13.46	31.55	7.47	37.13	100	90	Average
5440	55.81	53.92	74	-18.19	31.55	7.47	37.13	100	90	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	39.63	38.33	54	-14.37	31.27	7.3	37.27	100	347	Average
5078	55.47	54.17	74	-18.53	31.27	7.3	37.27	100	347	Peak
5310	85.05	83.39			31.45	7.4	37.19	100	347	Average
5310	94.68	93.02			31.45	7.4	37.19	100	347	Peak
5350	40.35	38.65	54	-13.65	31.48	7.4	37.18	100	347	Average
5350	57.13	55.43	74	-16.87	31.48	7.4	37.18	100	347	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	Johnson Liao

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
5458	40.69	38.68	54	-13.31	31.56	7.53	37.08	104	67	Average
5458	52.2	50.19	74	-21.8	31.56	7.53	37.08	104	67	Peak
5470	52.51	50.49	68.3	-15.79	31.57	7.53	37.08	104	67	Peak
5510	84.6	82.47			31.6	7.59	37.06	104	67	Average
5510	94.3	92.17			31.6	7.59	37.06	104	67	Peak
5725	51.11	48.87	68.3	-17.19	31.96	7.71	37.43	104	67	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5456	40.27	38.26	54	-13.73	31.56	7.53	37.08	100	168	Average
5456	51.29	49.28	74	-22.71	31.56	7.53	37.08	100	168	Peak
5470	50.32	48.3	68.3	-17.98	31.57	7.53	37.08	100	168	Peak
5510	80.76	78.63			31.6	7.59	37.06	100	168	Average
5510	90.31	88.18			31.6	7.59	37.06	100	168	Peak
5725	49.61	47.37	68.3	-18.69	31.96	7.71	37.43	100	168	Peak

REMARKS:

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



A D T

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	Johnson Liao

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
5458	40.25	38.24	54	-13.75	31.56	7.53	37.08	102	72	Average
5458	51.4	49.39	74	-22.6	31.56	7.53	37.08	102	72	Peak
5470	50.87	48.85	68.3	-17.43	31.57	7.53	37.08	102	72	Peak
5550	85.51	83.34			31.68	7.58	37.09	102	72	Average
5550	95.04	92.87			31.68	7.58	37.09	102	72	Peak
5725	50.33	48.09	68.3	-17.97	31.96	7.71	37.43	102	72	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
5352	39.91	38.21	54	-14.09	31.48	7.4	37.18	100	168	Average
5352	51.9	50.2	74	-22.1	31.48	7.4	37.18	100	168	Peak
5470	50.3	48.28	68.3	-18	31.57	7.53	37.08	100	168	Peak
5550	81.61	79.44			31.68	7.58	37.09	100	168	Average
5550	91.08	88.91			31.68	7.58	37.09	100	168	Peak
5725	50.99	48.75	68.3	-17.31	31.96	7.71	37.43	100	168	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	Johnson Liao

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	40.02	38.13	54	-13.98	31.55	7.47	37.13	103	82	Average
5440	56.76	54.87	74	-17.24	31.55	7.47	37.13	103	82	Peak
5470	54.7	52.68	68.3	-13.6	31.57	7.53	37.08	103	82	Peak
5670	83.4	81.2			31.88	7.66	37.34	103	82	Average
5670	93.08	90.88			31.88	7.66	37.34	103	82	Peak
5725	55.19	52.95	68.3	-13.11	31.96	7.71	37.43	103	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
5448	39.86	37.96	54	-14.14	31.56	7.47	37.13	100	4	Average
5448	56.02	54.12	74	-17.98	31.56	7.47	37.13	100	4	Peak
5470	55.11	53.09	68.3	-13.19	31.57	7.53	37.08	100	4	Peak
5670	82.73	80.53			31.88	7.66	37.34	100	4	Average
5670	92.28	90.08			31.88	7.66	37.34	100	4	Peak
5725	55.38	53.14	68.3	-12.92	31.96	7.71	37.43	100	4	Peak

REMARKS:

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

802.11ac (80MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 42	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5142	44.01	42.65	54	-9.99	31.32	7.34	37.3	100	348	Average
5142	57.16	55.8	74	-16.84	31.32	7.34	37.3	100	348	Peak
5210	82.27	80.94			31.37	7.32	37.36	100	348	Average
5210	92.1	90.77			31.37	7.32	37.36	100	348	Peak
5400	40.48	38.74	54	-13.52	31.52	7.4	37.18	100	348	Average
5400	55.76	54.02	74	-18.24	31.52	7.4	37.18	100	348	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	44.87	43.54	54	-9.13	31.32	7.33	37.32	100	350	Average
5148	61.87	60.54	74	-12.13	31.32	7.33	37.32	100	350	Peak
5210	83.87	82.54			31.37	7.32	37.36	100	350	Average
5210	94.68	93.35			31.37	7.32	37.36	100	350	Peak
5404	40.82	39.08	54	-13.18	31.52	7.4	37.18	100	350	Average
5404	56.78	55.04	74	-17.22	31.52	7.4	37.18	100	350	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5210MHz: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 58	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Johnson Liao

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
5106	40.2	38.84	54	-13.8	31.29	7.35	37.28	100	16	Average
5106	55.8	54.44	74	-18.2	31.29	7.35	37.28	100	16	Peak
5290	81.57	79.99			31.43	7.38	37.23	100	16	Average
5290	91.03	89.45			31.43	7.38	37.23	100	16	Peak
5442	40.97	39.08	54	-13.03	31.55	7.47	37.13	100	16	Average
5442	56.34	54.45	74	-17.66	31.55	7.47	37.13	100	16	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
5084	40.23	38.93	54	-13.77	31.27	7.3	37.27	100	337	Average
5084	56.35	55.05	74	-17.65	31.27	7.3	37.27	100	337	Peak
5290	83.92	82.34			31.43	7.38	37.23	100	337	Average
5290	93.86	92.28			31.43	7.38	37.23	100	337	Peak
5452	41.71	39.7	54	-12.29	31.56	7.53	37.08	100	337	Average
5452	55.8	53.79	74	-18.2	31.56	7.53	37.08	100	337	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5290MHz: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 106	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Johnson Liao

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
5458	43.96	41.95	54	-10.04	31.56	7.53	37.08	100	24	Average
5458	64.03	62.02	74	-9.97	31.56	7.53	37.08	100	24	Peak
5470	64.31	62.29	68.3	-3.99	31.57	7.53	37.08	100	24	Peak
5530	81.36	79.24			31.63	7.58	37.09	100	24	Average
5530	93.25	91.13			31.63	7.58	37.09	100	24	Peak
5725	54.56	52.32	68.3	-13.74	31.96	7.71	37.43	100	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
5452	42.26	40.25	54	-11.74	31.56	7.53	37.08	100	88	Average
5452	56.51	54.5	74	-17.49	31.56	7.53	37.08	100	88	Peak
5470	56.97	54.95	68.3	-11.33	31.57	7.53	37.08	100	88	Peak
5530	77.75	75.63			31.63	7.58	37.09	100	88	Average
5530	87.98	85.86			31.63	7.58	37.09	100	88	Peak
5725	54.25	52.01	68.3	-14.05	31.96	7.71	37.43	100	88	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
2. 5530MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band



A D T

BELOW 1GHz WORST-CASE DATA : 802.11a

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

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
42.69	28.69	45.49	40	-11.31	13.58	0.7	31.08	103	221	Peak
138.81	32.43	50.53	43.5	-11.07	12.27	1.29	31.66	100	280	Peak
225.21	23.03	42.67	46	-22.97	10.42	1.72	31.78	108	272	Peak
352.5	21.87	37.32	46	-24.13	14.19	2.23	31.87	100	114	Peak
494.6	21.69	33.42	46	-24.31	17.21	2.76	31.7	104	265	Peak
778.1	27.59	33.43	46	-18.41	21.92	3.64	31.4	108	239	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
35.94	35.64	53.14	40	-4.36	12.94	0.61	31.05	122	256	QP
42.42	35.08	51.88	40	-4.92	13.58	0.7	31.08	117	58	QP
158.79	28.26	46	43.5	-15.24	12.73	1.38	31.85	120	203	Peak
405	20.32	34.47	46	-25.68	15.45	2.45	32.05	100	268	Peak
564.6	22.86	33.15	46	-23.14	18.79	2.99	32.07	115	287	Peak
707.4	26	33.39	46	-20	20.92	3.45	31.76	109	20	Peak

REMARKS:

1. 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	100311	Jul. 06, 2012	Jul. 05, 2013
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

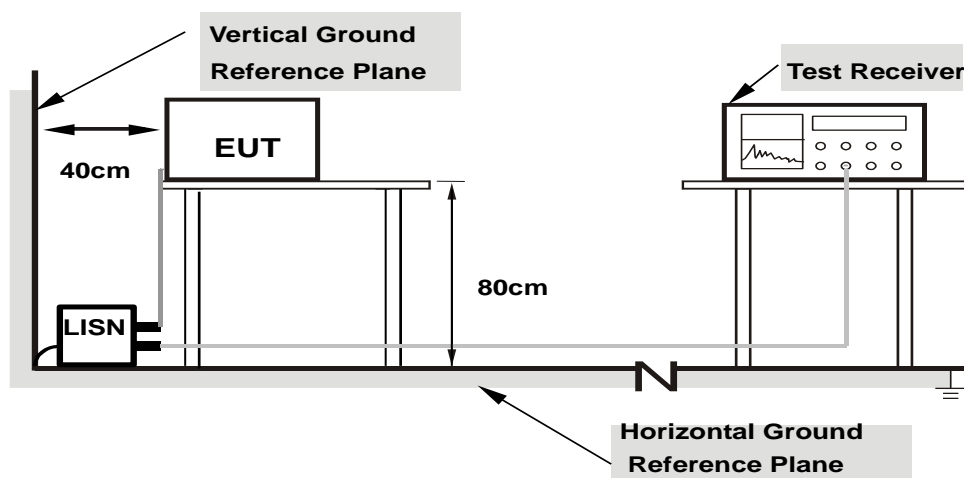
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 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:**
- Support units were connected to second LISN.
 - 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 :

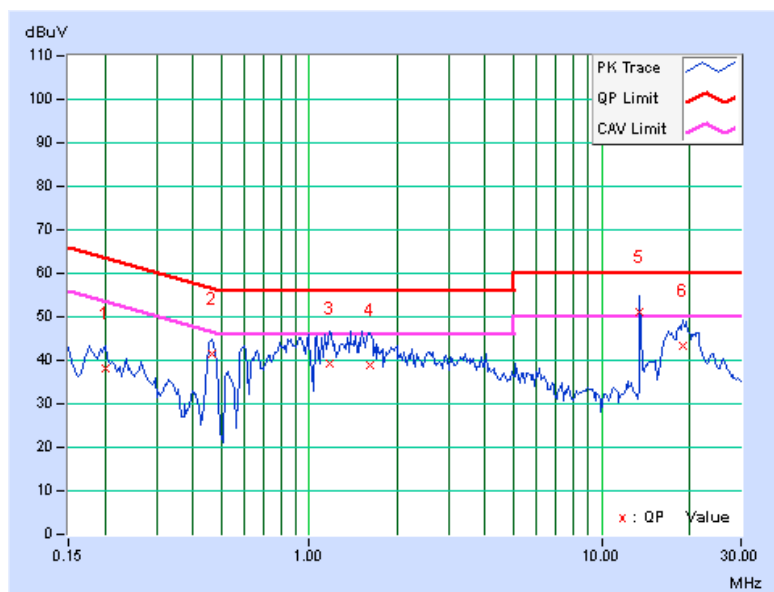
802.11a

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	0.20078	0.12	37.85	25.74	37.97	25.86	63.58
2	0.46641	0.16	41.41	32.37	41.57	32.53	56.58	46.58	-15.01	-14.05
3	1.16797	0.21	39.12	28.19	39.33	28.40	56.00	46.00	-16.67	-17.60
4	1.60938	0.22	38.60	30.97	38.82	31.19	56.00	46.00	-17.18	-14.81
5	13.55859	0.86	50.36	47.81	51.22	48.67	60.00	50.00	-8.78	-1.33
6	18.97656	1.18	42.01	25.96	43.19	27.14	60.00	50.00	-16.81	-22.86

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





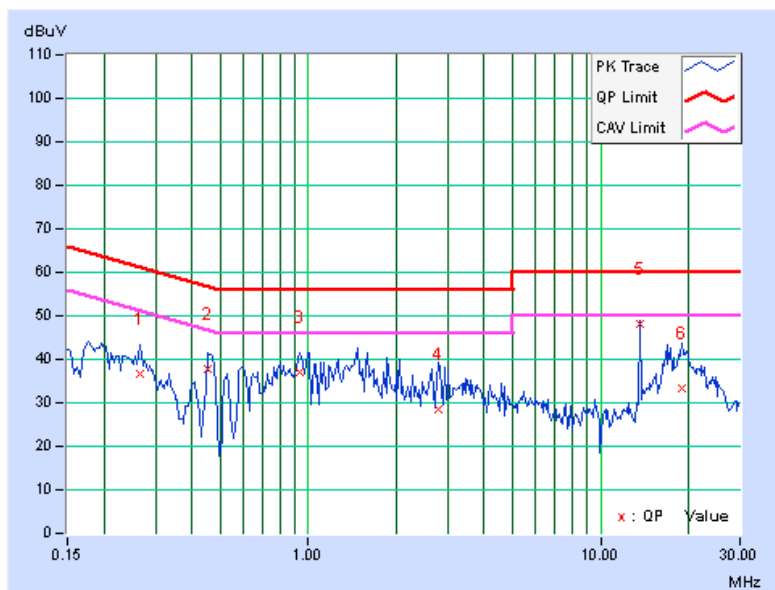
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PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.26719	0.18	36.54	21.13	36.72	21.31	61.20
2	0.45469	0.21	37.40	23.24	37.61	23.45	56.79	46.79	-19.18	-23.34
3	0.93125	0.25	36.91	27.82	37.16	28.07	56.00	46.00	-18.84	-17.93
4	2.77344	0.32	28.28	19.76	28.60	20.08	56.00	46.00	-27.40	-25.92
5	13.56250	0.71	47.29	45.43	48.00	46.14	60.00	50.00	-12.00	-3.86
6	18.95313	0.89	32.57	23.80	33.46	24.69	60.00	50.00	-26.54	-25.31

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

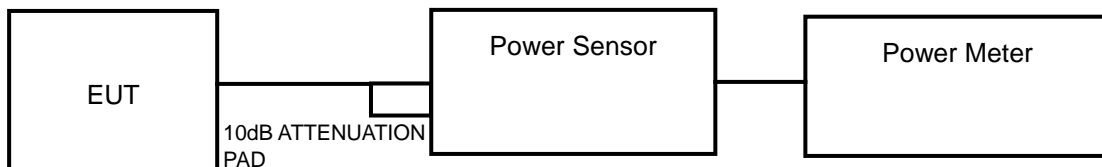
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

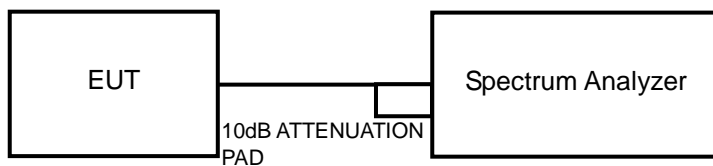
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

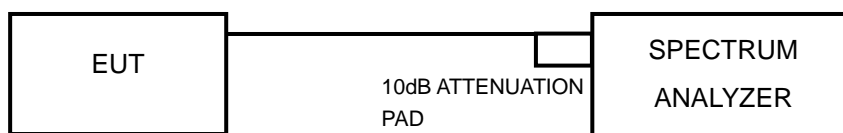
FOR POWER OUTPUT MEASUREMENT



or



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.

<802.11 ac (80MHz)>

Method SA-1 is used to perform output power measurement, trigger and gating function of spectrum analyzer 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	35.481	15.50	17	PASS
44	5220	37.068	15.69	17	PASS
48	5240	38.371	15.84	17	PASS
52	5260	40.087	16.03	24	PASS
60	5300	40.365	16.06	24	PASS
64	5320	41.879	16.22	24	PASS
100	5500	38.371	15.84	24	PASS
116	5580	39.811	16.00	24	PASS
140	5700	45.082	16.54	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	36.559	15.63	17	PASS
44	5220	37.497	15.74	17	PASS
48	5240	37.325	15.72	17	PASS
52	5260	39.264	15.94	24	PASS
60	5300	39.084	15.92	24	PASS
64	5320	41.783	16.21	24	PASS
100	5500	39.174	15.93	24	PASS
116	5580	41.210	16.15	24	PASS
140	5700	44.668	16.50	24	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	18.408	12.65	17	PASS
46	5230	18.408	12.65	17	PASS
54	5270	19.275	12.85	24	PASS
62	5310	21.330	13.29	24	PASS
102	5510	18.155	12.59	24	PASS
110	5550	18.836	12.75	24	PASS
134	5670	21.184	13.26	24	PASS



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802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	21.135	13.25	17	PASS
58	5290	21.184	13.26	24	PASS
106	5530	20.701	13.16	24	PASS

**26dB BANDWIDTH: 802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	20.91	PASS
44	5220	20.85	PASS
48	5240	21.05	PASS
52	5260	20.99	PASS
60	5300	20.85	PASS
64	5320	20.85	PASS
100	5500	20.95	PASS
116	5580	21.03	PASS
140	5700	20.86	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	22.34	PASS
44	5220	22.63	PASS
48	5240	22.79	PASS
52	5260	22.23	PASS
60	5300	22.65	PASS
64	5320	24.71	PASS
100	5500	22.92	PASS
116	5580	23.00	PASS
140	5700	24.71	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	41.38	PASS
46	5230	41.54	PASS
54	5270	41.51	PASS
62	5310	41.41	PASS
102	5510	41.42	PASS
110	5550	41.40	PASS
134	5670	41.50	PASS



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802.11ac (80MHz)

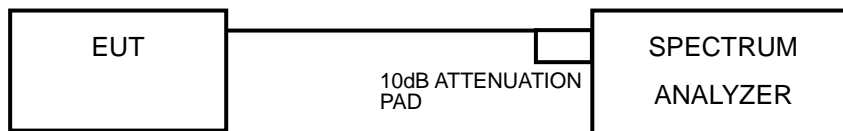
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
42	5210	82.30	PASS
58	5290	87.66	PASS
106	5530	82.80	PASS

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), 802.11ac (80MHz)>

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	2.52	0.23	2.75	4	PASS
44	5220	2.87	0.23	3.10	4	PASS
48	5240	3.03	0.23	3.26	4	PASS
52	5260	3.13	0.23	3.36	11	PASS
60	5300	3.62	0.23	3.85	11	PASS
64	5320	3.87	0.23	4.10	11	PASS
100	5500	3.80	0.23	4.03	11	PASS
116	5580	3.82	0.23	4.05	11	PASS
140	5700	3.94	0.23	4.17	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	1.90	0.25	2.15	4	PASS
44	5220	2.44	0.25	2.69	4	PASS
48	5240	2.70	0.25	2.95	4	PASS
52	5260	2.81	0.25	3.06	11	PASS
60	5300	3.36	0.25	3.61	11	PASS
64	5320	3.26	0.25	3.51	11	PASS
100	5500	3.51	0.25	3.76	11	PASS
116	5580	3.53	0.25	3.78	11	PASS
140	5700	3.60	0.25	3.85	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	-3.69	0.60	-3.09	4	PASS
46	5230	-3.53	0.60	-2.93	4	PASS
54	5270	-3.25	0.60	-2.65	11	PASS
62	5310	-2.66	0.60	-2.06	11	PASS
102	5510	-2.65	0.60	-2.05	11	PASS
110	5550	-2.38	0.60	-1.78	11	PASS
134	5670	-2.66	0.60	-2.06	11	PASS

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

802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-7.58	0.88	-6.70	4	PASS
58	5290	-7.41	0.88	-6.53	4	PASS
106	5530	-7.47	0.88	-6.59	11	PASS

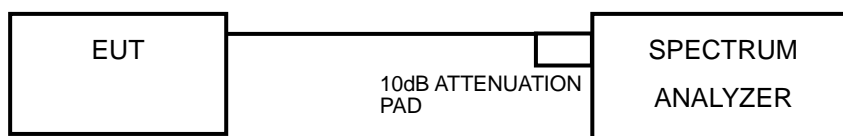
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

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.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

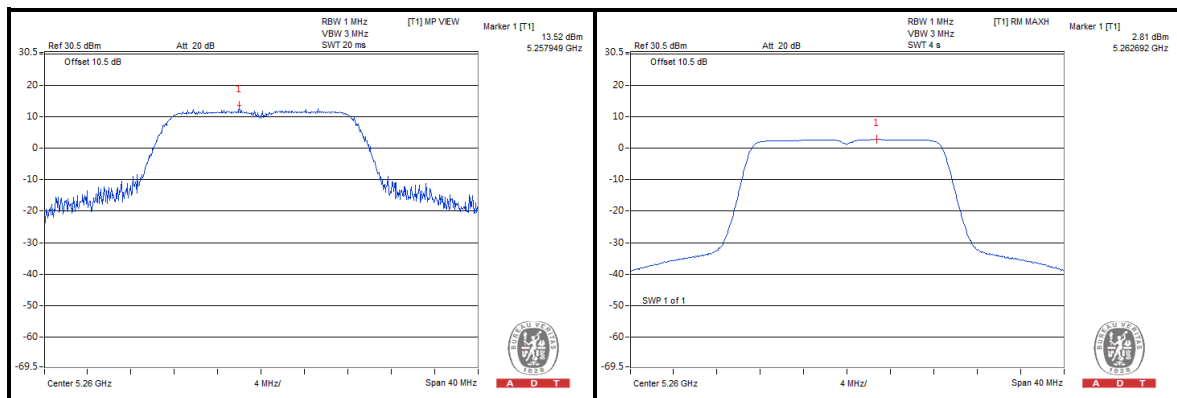
4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

802.11n (20MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
36	5180	11.51	1.90	2.15	9.36	13	PASS
44	5220	12.06	2.44	2.69	9.37	13	PASS
48	5240	12.40	2.70	2.95	9.45	13	PASS
52	5260	13.52	2.81	3.06	10.46	13	PASS
60	5300	12.94	3.36	3.61	9.33	13	PASS
64	5320	13.22	3.26	3.51	9.71	13	PASS
100	5500	13.21	3.51	3.76	9.45	13	PASS
116	5580	13.10	3.53	3.78	9.32	13	PASS
140	5700	13.57	3.60	3.85	9.72	13	PASS

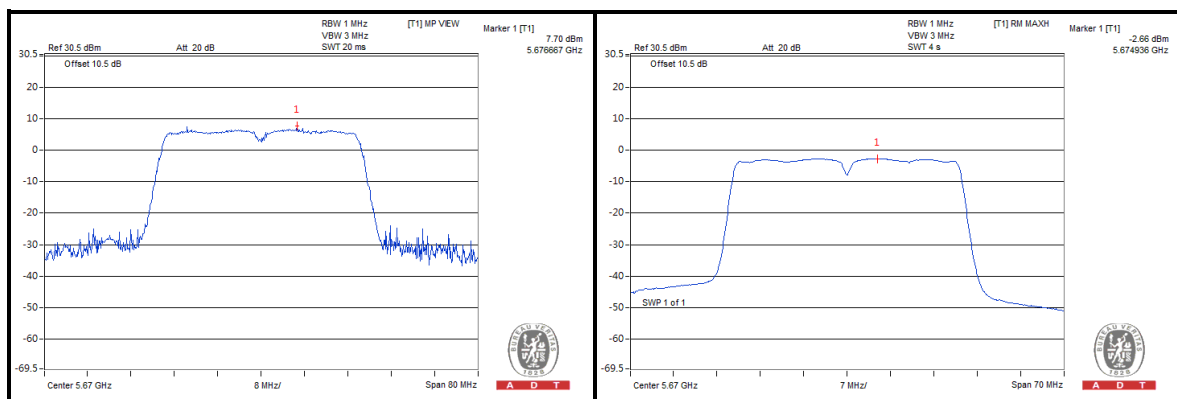
NOTE: Refer to section 3.3 for duty cycle spectrum plot.



802.11n (40MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
38	5190	5.88	-3.69	-3.09	8.97	13	PASS
46	5230	6.37	-3.53	-2.93	9.30	13	PASS
54	5270	6.50	-3.25	-2.65	9.15	13	PASS
62	5310	7.25	-2.66	-2.06	9.31	13	PASS
102	5510	7.12	-2.65	-2.05	9.17	13	PASS
110	5550	7.75	-2.38	-1.78	9.53	13	PASS
134	5670	7.70	-2.66	-2.06	9.76	13	PASS

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



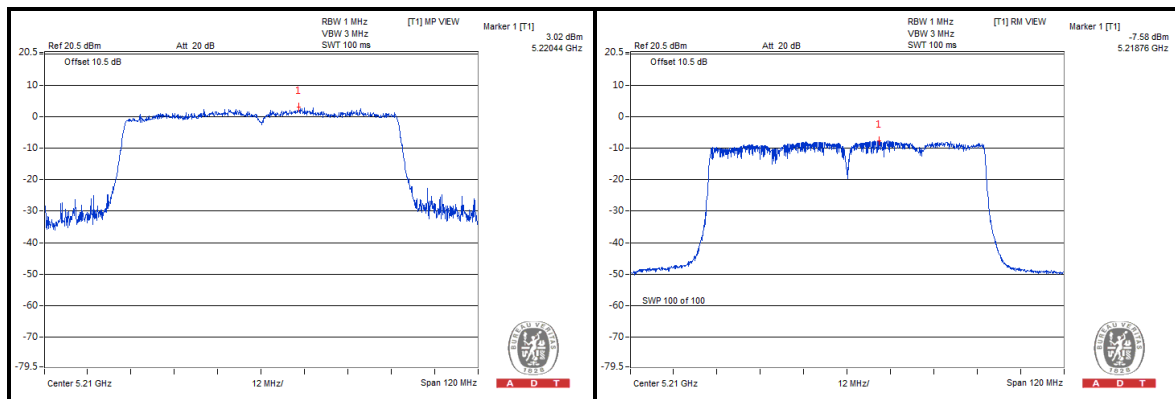


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802.11ac (80MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
42	5210	3.02	-7.58	-6.70	9.72	13	PASS
58	5290	2.70	-7.41	-6.53	9.23	13	PASS
106	5530	2.97	-7.47	-6.59	9.56	13	PASS

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

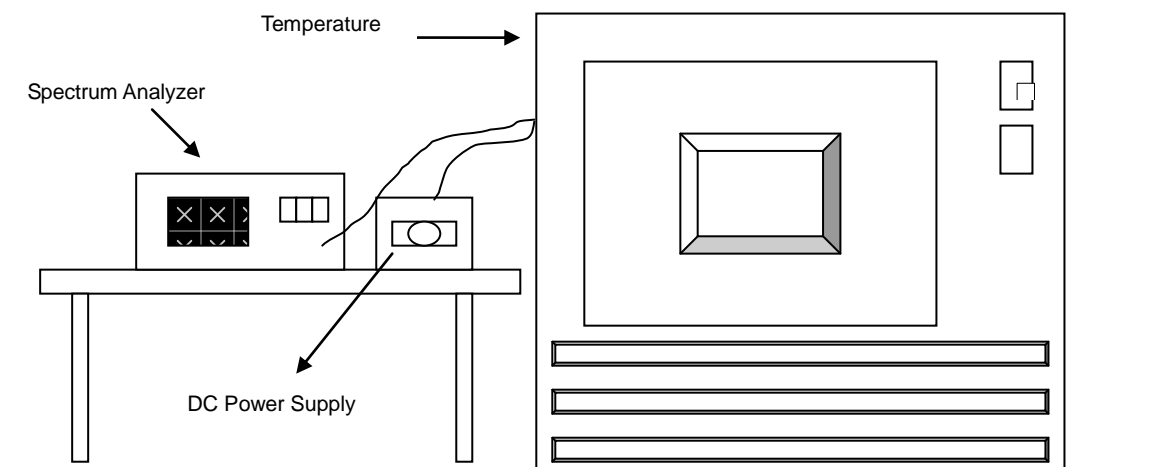


4.6 FREQUENCY STABILITY

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)
50	3.8	5320.041446	7.791	5320.041216	7.747	5320.041378	7.778	5320.041482	7.797
40	3.8	5320.041987	7.892	5320.041908	7.877	5320.041867	7.870	5320.041809	7.859
30	3.8	5320.043010	8.085	5320.043318	8.142	5320.043161	8.113	5320.042885	8.061
20	3.8	5320.044377	8.342	5320.044036	8.277	5320.043876	8.247	5320.044469	8.359
10	3.8	5320.045761	8.602	5320.045703	8.591	5320.045185	8.493	5320.045513	8.555
0	3.8	5320.043951	8.261	5320.044048	8.280	5320.043868	8.246	5320.044228	8.314
-10	3.8	5320.042484	7.986	5320.042621	8.011	5320.042810	8.047	5320.042658	8.018
-20	3.8	5320.042348	7.960	5320.041914	7.879	5320.041850	7.867	5320.041606	7.821
-30	3.8	5320.040534	7.619	5320.040786	7.667	5320.041377	7.778	5320.040775	7.664

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	3.6	5320.043622	8.200	5320.043796	8.232	5320.043444	8.166	5320.044068	8.283
	3.8	5320.044377	8.342	5320.044036	8.277	5320.043876	8.247	5320.044469	8.359
	4.35	5320.045393	8.533	5320.045681	8.587	5320.045211	8.498	5320.045156	8.488

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.

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---