

FCC TEST REPORT (15.407)

REPORT NO.: RF130716C14-6
MODEL NO.: 0P4E100
FCC ID: NM80P4E100
RECEIVED: Jul. 16, 2013
TESTED: Jul. 19, 2013 ~ Jul. 30, 2013
ISSUED: Aug. 08, 2013

APPLICANT: HTC Corporation

ADDRESS: No. 23, Xinghua Rd., Taoyuan City, Taiwan

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

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

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

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130716C14-6	Original release	Aug. 08, 2013

1. CERTIFICATION

PRODUCT: Smartphone

MODEL NO.: 0P4E100

BRAND: HTC

APPLICANT: HTC Corporation

TESTED: Jul. 19, 2013 ~ Jul. 30, 2013

TEST SAMPLE: ENGINEERING SAMPLE

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

ANSI C63.10-2009

The above equipment (model: 0P4E100) 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. 08, 2013
Ivonne Wu / Senior Specialist

APPROVED BY : Sam Chen , **DATE** : Aug. 08, 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 -2.45dB at 0.50938MHz.
15.407(b)(1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.64dB at 47.28MHz.
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.	0P4E100
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	22.751mW for 5180 ~ 5240MHz 23.335mW for 5260 ~ 5320MHz 22.803mW 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 (20MHz)	5180-5240	36 to 48	48	OFDM	BPSK	MCS0
	5260-5320	52 to 64	64	OFDM	BPSK	MCS0
	5500-5700	102 to 134	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

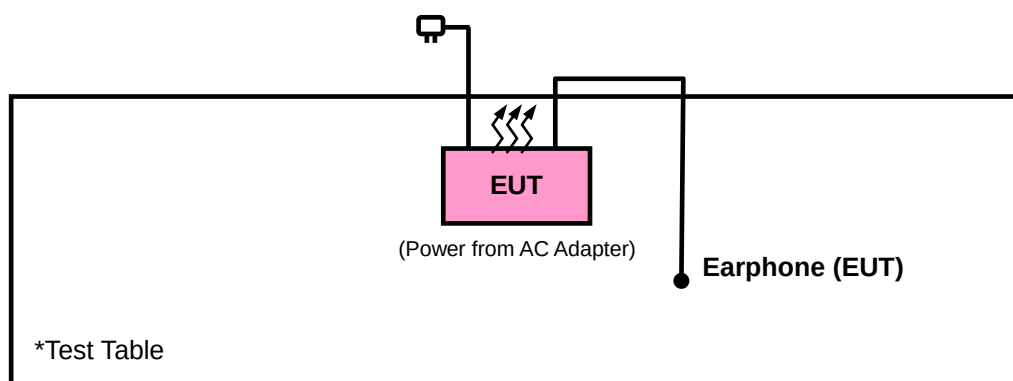
TEST CONDITION:

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

3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



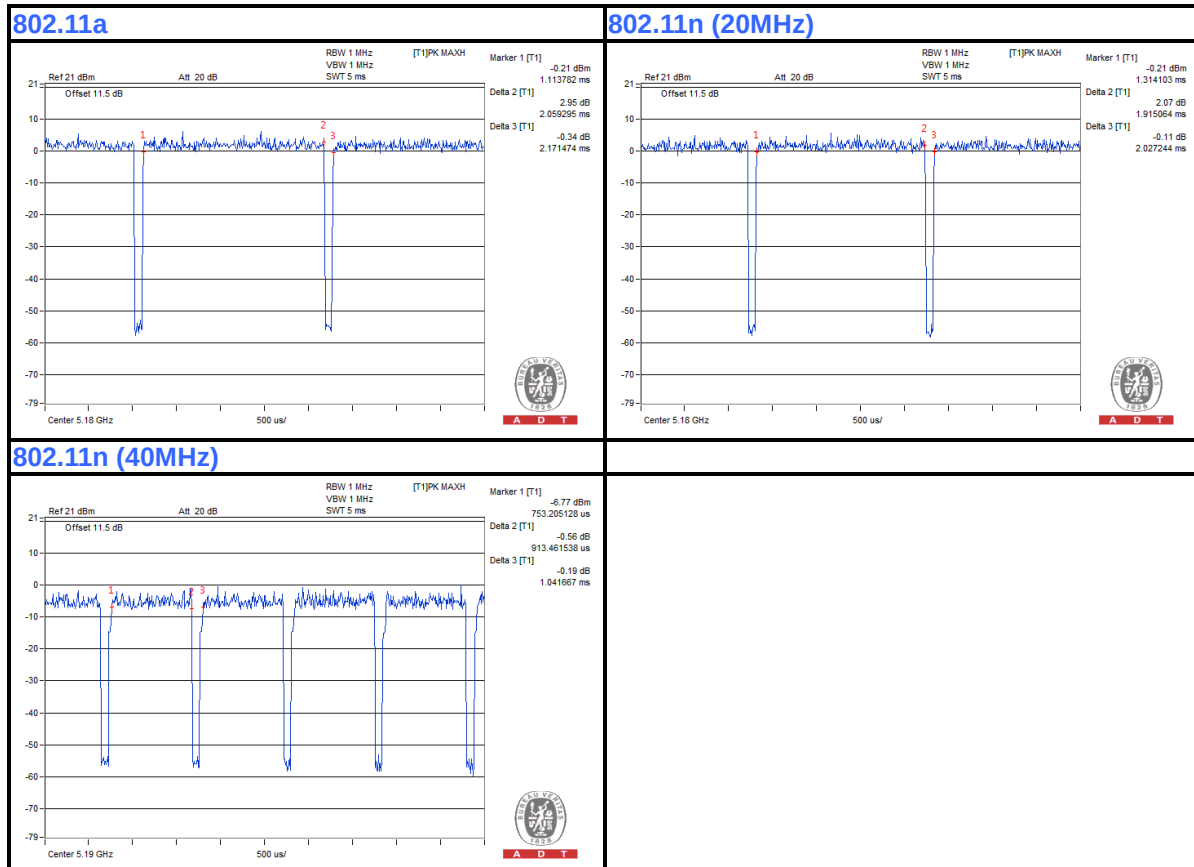
3.4 DUTY CYCLE OF TEST SIGNAL

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 = $1.915/2.027 = 0.945$, Duty factor = $10 * \log(1/0.945) = 0.25$

802.11n (40MHz): Duty cycle = $913.46/1041.67 = 0.877$, Duty factor = $10 * \log(1/0.877) = 0.57$



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.

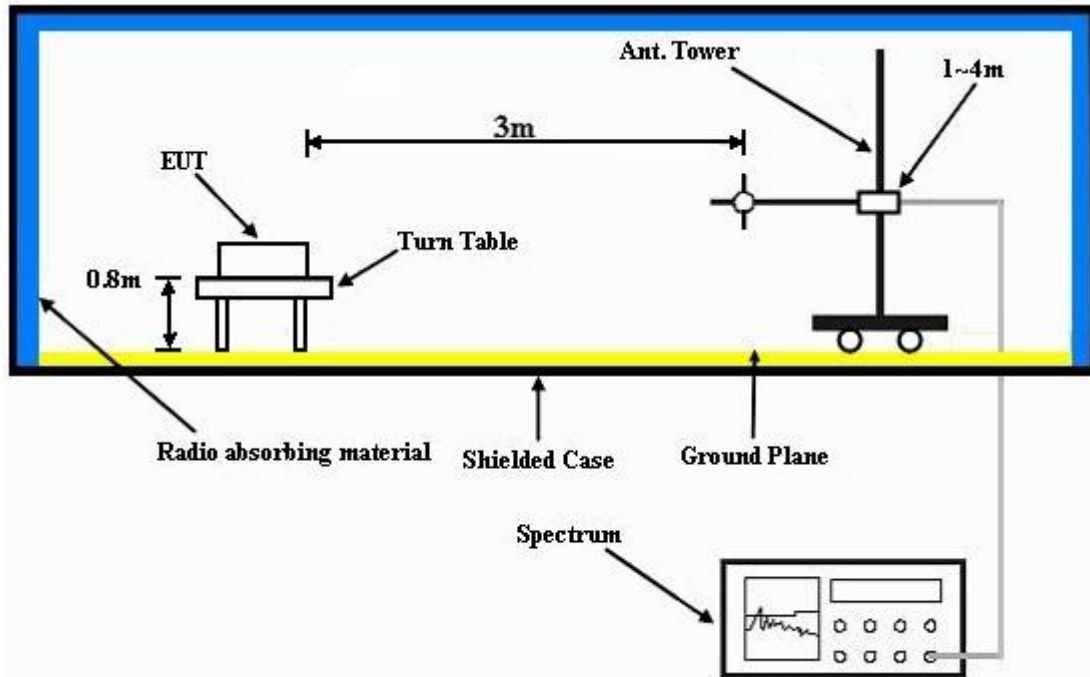
NOTE:

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

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

4.1.8 TEST RESULTS

ABOVE 1GHz 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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5034	42.95	34.51	54	-11.05	34.41	8	33.97	110	87	Average
5034	56.6	48.16	74	-17.4	34.41	8	33.97	110	87	Peak
5180	86.74	78.11			34.47	8.16	34	110	87	Average
5180	93.99	85.36			34.47	8.16	34	110	87	Peak
5458	43.36	34.4	54	-10.64	34.5	8.51	34.05	110	87	Average
5458	57.87	48.91	74	-16.13	34.5	8.51	34.05	110	87	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5140	43.94	35.35	54	-10.06	34.45	8.13	33.99	100	184	Average
5140	56.91	48.32	74	-17.09	34.45	8.13	33.99	100	184	Peak
5180	91.2	82.57			34.47	8.16	34	100	184	Average
5180	98.36	89.73			34.47	8.16	34	100	184	Peak
5440	43.36	34.42	54	-10.64	34.5	8.48	34.04	100	184	Average
5440	57.35	48.41	74	-16.65	34.5	8.48	34.04	100	184	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5094	43	34.48	54	-11	34.44	8.07	33.99	111	90	Average
5094	57.19	48.67	74	-16.81	34.44	8.07	33.99	111	90	Peak
5220	88.05	79.34			34.49	8.22	34	111	90	Average
5220	94.86	86.15			34.49	8.22	34	111	90	Peak
5460	43.21	34.25	54	-10.79	34.5	8.51	34.05	111	90	Average
5460	58.57	49.61	74	-15.43	34.5	8.51	34.05	111	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
5050	42.83	34.39	54	-11.17	34.42	8	33.98	111	184	Average
5050	58.04	49.6	74	-15.96	34.42	8	33.98	111	184	Peak
5220	92.49	83.78			34.49	8.22	34	111	184	Average
5220	99.03	90.32			34.49	8.22	34	111	184	Peak
5452	43.21	34.25	54	-10.79	34.5	8.51	34.05	111	184	Average
5452	57.63	48.67	74	-16.37	34.5	8.51	34.05	111	184	Peak

REMARKS:

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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5114	42.82	34.26	54	-11.18	34.45	8.1	33.99	120	89	Average
5114	56.86	48.3	74	-17.14	34.45	8.1	33.99	120	89	Peak
5240	89.15	80.41			34.49	8.26	34.01	120	89	Average
5240	95.43	86.69			34.49	8.26	34.01	120	89	Peak
5436	43.07	34.13	54	-10.93	34.5	8.48	34.04	120	89	Average
5436	57.21	48.27	74	-16.79	34.5	8.48	34.04	120	89	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5072	42.97	34.49	54	-11.03	34.43	8.03	33.98	100	184	Average
5072	56.77	48.29	74	-17.23	34.43	8.03	33.98	100	184	Peak
5240	92.93	84.19			34.49	8.26	34.01	100	184	Average
5240	99.94	91.2			34.49	8.26	34.01	100	184	Peak
5440	43	34.06	54	-11	34.5	8.48	34.04	100	184	Average
5440	57.68	48.74	74	-16.32	34.5	8.48	34.04	100	184	Peak

REMARKS:

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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5084	43.02	34.5	54	-10.98	34.43	8.07	33.98	110	88	Average
5084	56.14	47.62	74	-17.86	34.43	8.07	33.98	110	88	Peak
5260	90.45	81.7			34.5	8.26	34.01	110	88	Average
5260	97.42	88.67			34.5	8.26	34.01	110	88	Peak
5428	43.21	34.27	54	-10.79	34.5	8.48	34.04	110	88	Average
5428	57.13	48.19	74	-16.87	34.5	8.48	34.04	110	88	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5046	42.86	34.42	54	-11.14	34.42	8	33.98	112	188	Average
5046	58.05	49.61	74	-15.95	34.42	8	33.98	112	188	Peak
5260	93.42	84.67			34.5	8.26	34.01	112	188	Average
5260	99.7	90.95			34.5	8.26	34.01	112	188	Peak
5436	43.15	34.21	54	-10.85	34.5	8.48	34.04	112	188	Average
5436	57.31	48.37	74	-16.69	34.5	8.48	34.04	112	188	Peak

REMARKS:

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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5038	42.85	34.4	54	-11.15	34.42	8	33.97	109	89	Average
5038	56.8	48.35	74	-17.2	34.42	8	33.97	109	89	Peak
5300	90.44	81.64			34.5	8.32	34.02	109	89	Average
5300	97.56	88.76			34.5	8.32	34.02	109	89	Peak
5354	43.37	34.52	54	-10.63	34.5	8.38	34.03	109	89	Average
5354	57.21	48.36	74	-16.79	34.5	8.38	34.03	109	89	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	42.88	34.36	54	-11.12	34.43	8.07	33.98	100	193	Average
5088	56.18	47.66	74	-17.82	34.43	8.07	33.98	100	193	Peak
5300	91.93	83.13			34.5	8.32	34.02	100	193	Average
5300	99.08	90.28			34.5	8.32	34.02	100	193	Peak
5444	43.29	34.35	54	-10.71	34.5	8.48	34.04	100	193	Average
5444	56.48	47.54	74	-17.52	34.5	8.48	34.04	100	193	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5114	42.86	34.3	54	-11.14	34.45	8.1	33.99	100	194	Average
5114	56.72	48.16	74	-17.28	34.45	8.1	33.99	100	194	Peak
5320	91.07	82.24			34.5	8.35	34.02	100	194	Average
5320	98.84	90.01			34.5	8.35	34.02	100	194	Peak
5372	43.69	34.81	54	-10.31	34.5	8.41	34.03	100	194	Average
5372	57.3	48.42	74	-16.7	34.5	8.41	34.03	100	194	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	42.88	34.32	54	-11.12	34.45	8.1	33.99	114	100	Average
5122	56.17	47.61	74	-17.83	34.45	8.1	33.99	114	100	Peak
5320	93.04	84.21			34.5	8.35	34.02	114	100	Average
5320	100.28	91.45			34.5	8.35	34.02	114	100	Peak
5442	44.87	35.93	54	-9.13	34.5	8.48	34.04	114	100	Average
5442	57.83	48.89	74	-16.17	34.5	8.48	34.04	114	100	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	46.23	37.27	54	-7.77	34.5	8.51	34.05	112	76	Average
5460	57.1	48.14	74	-16.9	34.5	8.51	34.05	112	76	Peak
5470	57.34	48.38	68.3	-10.96	34.5	8.51	34.05	112	76	Peak
5500	95.69	86.67			34.5	8.57	34.05	112	76	Average
5500	102.58	93.56			34.5	8.57	34.05	112	76	Peak
5725	55.14	45.93	68.3	-13.16	34.67	8.65	34.11	112	76	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	44.8	35.84	54	-9.2	34.5	8.51	34.05	111	136	Average
5460	55.9	46.94	74	-18.1	34.5	8.51	34.05	111	136	Peak
5470	56.08	47.12	68.3	-12.22	34.5	8.51	34.05	111	136	Peak
5500	93.54	84.52			34.5	8.57	34.05	111	136	Average
5500	100.85	91.83			34.5	8.57	34.05	111	136	Peak
5725	56.81	47.6	68.3	-11.49	34.67	8.65	34.11	111	136	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.73	34.77	54	-10.27	34.5	8.51	34.05	111	76	Average
5460	54.91	45.95	74	-19.09	34.5	8.51	34.05	111	76	Peak
5470	55.74	46.78	68.3	-12.56	34.5	8.51	34.05	111	76	Peak
5580	95.43	86.34			34.57	8.6	34.08	111	76	Average
5580	102.66	93.57			34.57	8.6	34.08	111	76	Peak
5725	54.41	45.2	68.3	-13.89	34.67	8.65	34.11	111	76	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	43.68	34.72	54	-10.32	34.5	8.51	34.05	103	154	Average
5460	58.21	49.25	74	-15.79	34.5	8.51	34.05	103	154	Peak
5470	55.91	46.95	68.3	-12.39	34.5	8.51	34.05	103	154	Peak
5580	94.74	85.65			34.57	8.6	34.08	103	154	Average
5580	102.02	92.93			34.57	8.6	34.08	103	154	Peak
5725	57.81	48.6	68.3	-10.49	34.67	8.65	34.11	103	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



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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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.73	34.77	54	-10.27	34.5	8.51	34.05	111	84	Average
5460	55.54	46.58	74	-18.46	34.5	8.51	34.05	111	84	Peak
5470	57.2	48.24	68.3	-11.1	34.5	8.51	34.05	111	84	Peak
5700	95.57	86.37			34.66	8.64	34.1	111	84	Average
5700	100.17	90.97			34.66	8.64	34.1	111	84	Peak
5725	56.58	47.37	68.3	-11.72	34.67	8.65	34.11	111	84	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	43.15	34.19	54	-10.85	34.5	8.51	34.05	101	165	Average
5460	56.35	47.39	74	-17.65	34.5	8.51	34.05	101	165	Peak
5470	56.98	48.02	68.3	-11.32	34.5	8.51	34.05	101	165	Peak
5700	95.32	86.12			34.66	8.64	34.1	101	165	Average
5700	103.07	93.87			34.66	8.64	34.1	101	165	Peak
5725	57.57	48.36	68.3	-10.73	34.67	8.65	34.11	101	165	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5024	42.93	34.52	54	-11.07	34.41	7.97	33.97	111	88	Average
5024	57.17	48.76	74	-16.83	34.41	7.97	33.97	111	88	Peak
5180	87.29	78.66			34.47	8.16	34	111	88	Average
5180	93.5	84.87			34.47	8.16	34	111	88	Peak
5388	43.11	34.24	54	-10.89	34.5	8.41	34.04	111	88	Average
5388	57.38	48.51	74	-16.62	34.5	8.41	34.04	111	88	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
5094	43.7	35.18	54	-10.3	34.44	8.07	33.99	101	183	Average
5094	57.19	48.67	74	-16.81	34.44	8.07	33.99	101	183	Peak
5180	91.94	83.31			34.47	8.16	34	101	183	Average
5180	98.11	89.48			34.47	8.16	34	101	183	Peak
5410	43.08	34.18	54	-10.92	34.5	8.44	34.04	101	183	Average
5410	57.77	48.87	74	-16.23	34.5	8.44	34.04	101	183	Peak

REMARKS:

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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5144	42.95	34.36	54	-11.05	34.46	8.13	34	110	88	Average
5144	56.73	48.14	74	-17.27	34.46	8.13	34	110	88	Peak
5220	88.32	79.61			34.49	8.22	34	110	88	Average
5220	95.08	86.37			34.49	8.22	34	110	88	Peak
5432	43.46	34.52	54	-10.54	34.5	8.48	34.04	110	88	Average
5432	56.99	48.05	74	-17.01	34.5	8.48	34.04	110	88	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	42.75	34.27	54	-11.25	34.43	8.03	33.98	111	190	Average
5074	56.68	48.2	74	-17.32	34.43	8.03	33.98	111	190	Peak
5220	92.33	83.62			34.49	8.22	34	111	190	Average
5220	98.62	89.91			34.49	8.22	34	111	190	Peak
5368	43.6	34.72	54	-10.4	34.5	8.41	34.03	111	190	Average
5368	56.69	47.81	74	-17.31	34.5	8.41	34.03	111	190	Peak

REMARKS:

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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5078	42.76	34.28	54	-11.24	34.43	8.03	33.98	109	90	Average
5078	56.48	48	74	-17.52	34.43	8.03	33.98	109	90	Peak
5240	89.23	80.49			34.49	8.26	34.01	109	90	Average
5240	96.4	87.66			34.49	8.26	34.01	109	90	Peak
5442	43.59	34.65	54	-10.41	34.5	8.48	34.04	109	90	Average
5442	57.46	48.52	74	-16.54	34.5	8.48	34.04	109	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
5086	42.87	34.35	54	-11.13	34.43	8.07	33.98	100	190	Average
5086	56.53	48.01	74	-17.47	34.43	8.07	33.98	100	190	Peak
5240	92.54	83.8			34.49	8.26	34.01	100	190	Average
5240	99.09	90.35			34.49	8.26	34.01	100	190	Peak
5382	43.31	34.44	54	-10.69	34.5	8.41	34.04	100	190	Average
5382	57.11	48.24	74	-16.89	34.5	8.41	34.04	100	190	Peak

REMARKS:

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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5044	42.83	34.39	54	-11.17	34.42	8	33.98	122	89	Average
5044	57.14	48.7	74	-16.86	34.42	8	33.98	122	89	Peak
5260	89.36	80.61			34.5	8.26	34.01	122	89	Average
5260	95.83	87.08			34.5	8.26	34.01	122	89	Peak
5446	43.37	34.4	54	-10.63	34.5	8.51	34.04	122	89	Average
5446	57.35	48.38	74	-16.65	34.5	8.51	34.04	122	89	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5060	42.88	34.4	54	-11.12	34.43	8.03	33.98	112	194	Average
5060	55.6	47.12	74	-18.4	34.43	8.03	33.98	112	194	Peak
5260	91.37	82.62			34.5	8.26	34.01	112	194	Average
5260	97.83	89.08			34.5	8.26	34.01	112	194	Peak
5372	43.07	34.19	54	-10.93	34.5	8.41	34.03	112	194	Average
5372	56.65	47.77	74	-17.35	34.5	8.41	34.03	112	194	Peak

REMARKS:

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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5056	42.88	34.4	54	-11.12	34.43	8.03	33.98	108	88	Average
5056	56.75	48.27	74	-17.25	34.43	8.03	33.98	108	88	Peak
5300	90.87	82.07			34.5	8.32	34.02	108	88	Average
5300	98.59	89.79			34.5	8.32	34.02	108	88	Peak
5442	43.47	34.53	54	-10.53	34.5	8.48	34.04	108	88	Average
5442	57.16	48.22	74	-16.84	34.5	8.48	34.04	108	88	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	42.9	34.37	54	-11.1	34.44	8.07	33.98	100	193	Average
5092	56.39	47.86	74	-17.61	34.44	8.07	33.98	100	193	Peak
5300	91.62	82.82			34.5	8.32	34.02	100	193	Average
5300	100.25	91.45			34.5	8.32	34.02	100	193	Peak
5430	43.31	34.37	54	-10.69	34.5	8.48	34.04	100	193	Average
5430	57.26	48.32	74	-16.74	34.5	8.48	34.04	100	193	Peak

REMARKS:

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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5132	43.06	34.5	54	-10.94	34.45	8.1	33.99	100	198	Average
5132	56.65	48.09	74	-17.35	34.45	8.1	33.99	100	198	Peak
5320	90.73	81.9			34.5	8.35	34.02	100	198	Average
5320	97.64	88.81			34.5	8.35	34.02	100	198	Peak
5440	43.86	34.92	54	-10.14	34.5	8.48	34.04	100	198	Average
5440	57.6	48.66	74	-16.4	34.5	8.48	34.04	100	198	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5110	43.13	34.57	54	-10.87	34.45	8.1	33.99	114	100	Average
5110	56.27	47.71	74	-17.73	34.45	8.1	33.99	114	100	Peak
5320	92.98	84.15			34.5	8.35	34.02	114	100	Average
5320	99.23	90.4			34.5	8.35	34.02	114	100	Peak
5450	45.02	36.06	54	-8.98	34.5	8.51	34.05	114	100	Average
5450	57.17	48.21	74	-16.83	34.5	8.51	34.05	114	100	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	45.83	36.87	54	-8.17	34.5	8.51	34.05	111	103	Average
5460	56.84	47.88	74	-17.16	34.5	8.51	34.05	111	103	Peak
5470	56.24	47.28	68.3	-12.06	34.5	8.51	34.05	111	103	Peak
5500	95.39	86.37			34.5	8.57	34.05	111	103	Average
5500	102.95	93.93			34.5	8.57	34.05	111	103	Peak
5725	54.83	45.62	68.3	-13.47	34.67	8.65	34.11	111	103	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	44.49	35.53	54	-9.51	34.5	8.51	34.05	110	134	Average
5460	57.05	48.09	74	-16.95	34.5	8.51	34.05	110	134	Peak
5470	56.34	47.38	68.3	-11.96	34.5	8.51	34.05	110	134	Peak
5500	92.39	83.37			34.5	8.57	34.05	110	134	Average
5500	99.37	90.35			34.5	8.57	34.05	110	134	Peak
5725	56.57	47.36	68.3	-11.73	34.67	8.65	34.11	110	134	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.76	34.8	54	-10.24	34.5	8.51	34.05	110	76	Average
5460	56.41	47.45	74	-17.59	34.5	8.51	34.05	110	76	Peak
5470	56.5	47.54	68.3	-11.8	34.5	8.51	34.05	110	76	Peak
5580	95.15	86.06			34.57	8.6	34.08	110	76	Average
5580	101.81	92.72			34.57	8.6	34.08	110	76	Peak
5725	56.07	46.86	68.3	-12.23	34.67	8.65	34.11	110	76	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	43.46	34.5	54	-10.54	34.5	8.51	34.05	102	154	Average
5460	56.36	47.4	74	-17.64	34.5	8.51	34.05	102	154	Peak
5470	56.25	47.29	68.3	-12.05	34.5	8.51	34.05	102	154	Peak
5580	95.26	86.17			34.57	8.6	34.08	102	154	Average
5580	101.76	92.67			34.57	8.6	34.08	102	154	Peak
5725	55.19	45.98	68.3	-13.11	34.67	8.65	34.11	102	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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.34	34.38	54	-10.66	34.5	8.51	34.05	100	87	Average
5460	56.42	47.46	74	-17.58	34.5	8.51	34.05	100	87	Peak
5470	55	46.04	68.3	-13.3	34.5	8.51	34.05	100	87	Peak
5700	92.42	83.22			34.66	8.64	34.1	100	87	Average
5700	99.91	90.71			34.66	8.64	34.1	100	87	Peak
5725	55.64	46.43	68.3	-12.66	34.67	8.65	34.11	100	87	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	43.26	34.3	54	-10.74	34.5	8.51	34.05	100	168	Average
5460	55.35	46.39	74	-18.65	34.5	8.51	34.05	100	168	Peak
5470	57.22	48.26	68.3	-11.08	34.5	8.51	34.05	100	168	Peak
5700	94.8	85.6			34.66	8.64	34.1	100	168	Average
5700	101.76	92.56			34.66	8.64	34.1	100	168	Peak
5725	58.85	49.64	68.3	-9.45	34.67	8.65	34.11	100	168	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5136	43.07	34.48	54	-10.93	34.45	8.13	33.99	110	86	Average
5136	56.89	48.3	74	-17.11	34.45	8.13	33.99	110	86	Peak
5190	83.66	75			34.47	8.19	34	110	86	Average
5190	90.27	81.61			34.47	8.19	34	110	86	Peak
5428	43.09	34.15	54	-10.91	34.5	8.48	34.04	110	86	Average
5428	56.73	47.79	74	-17.27	34.5	8.48	34.04	110	86	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5124	44.36	35.8	54	-9.64	34.45	8.1	33.99	100	184	Average
5124	57.19	48.63	74	-16.81	34.45	8.1	33.99	100	184	Peak
5190	88.06	79.4			34.47	8.19	34	100	184	Average
5190	94.71	86.05			34.47	8.19	34	100	184	Peak
5422	43.13	34.19	54	-10.87	34.5	8.48	34.04	100	184	Average
5422	58.18	49.24	74	-15.82	34.5	8.48	34.04	100	184	Peak

REMARKS:

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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5110	43.03	34.47	54	-10.97	34.45	8.1	33.99	109	87	Average
5110	57.14	48.58	74	-16.86	34.45	8.1	33.99	109	87	Peak
5230	85.15	76.45			34.49	8.22	34.01	109	87	Average
5230	93.58	84.88			34.49	8.22	34.01	109	87	Peak
5410	43.07	34.17	54	-10.93	34.5	8.44	34.04	109	87	Average
5410	57.62	48.72	74	-16.38	34.5	8.44	34.04	109	87	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	42.95	34.47	54	-11.05	34.43	8.03	33.98	100	187	Average
5058	56.72	48.24	74	-17.28	34.43	8.03	33.98	100	187	Peak
5230	88.22	79.52			34.49	8.22	34.01	100	187	Average
5230	95.05	86.35			34.49	8.22	34.01	100	187	Peak
5456	43.3	34.34	54	-10.7	34.5	8.51	34.05	100	187	Average
5456	56.8	47.84	74	-17.2	34.5	8.51	34.05	100	187	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5092	42.94	34.41	54	-11.06	34.44	8.07	33.98	120	89	Average
5092	57.2	48.67	74	-16.8	34.44	8.07	33.98	120	89	Peak
5270	85.9	77.12			34.5	8.29	34.01	120	89	Average
5270	92.78	84			34.5	8.29	34.01	120	89	Peak
5438	43.22	34.28	54	-10.78	34.5	8.48	34.04	120	89	Average
5438	57.41	48.47	74	-16.59	34.5	8.48	34.04	120	89	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	42.95	34.36	54	-11.05	34.46	8.13	34	100	193	Average
5150	56.14	47.55	74	-17.86	34.46	8.13	34	100	193	Peak
5270	87.41	78.63			34.5	8.29	34.01	100	193	Average
5270	94.32	85.54			34.5	8.29	34.01	100	193	Peak
5366	43.13	34.28	54	-10.87	34.5	8.38	34.03	100	193	Average
5366	57.04	48.19	74	-16.96	34.5	8.38	34.03	100	193	Peak

REMARKS:

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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5054	42.75	34.3	54	-11.25	34.43	8	33.98	100	192	Average
5054	56.63	48.18	74	-17.37	34.43	8	33.98	100	192	Peak
5310	87.06	78.26			34.5	8.32	34.02	100	192	Average
5310	93.76	84.96			34.5	8.32	34.02	100	192	Peak
5368	44.05	35.17	54	-9.95	34.5	8.41	34.03	100	192	Average
5368	56.76	47.88	74	-17.24	34.5	8.41	34.03	100	192	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
5114	43	34.44	54	-11	34.45	8.1	33.99	116	101	Average
5114	56.34	47.78	74	-17.66	34.45	8.1	33.99	116	101	Peak
5310	88.54	79.74			34.5	8.32	34.02	116	101	Average
5310	95	86.2			34.5	8.32	34.02	116	101	Peak
5450	45.62	36.66	54	-8.38	34.5	8.51	34.05	116	101	Average
5450	57.28	48.32	74	-16.72	34.5	8.51	34.05	116	101	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	45.55	36.59	54	-8.45	34.5	8.51	34.05	111	74	Average
5460	57.1	48.14	74	-16.9	34.5	8.51	34.05	111	74	Peak
5470	60.52	51.56	68.3	-7.78	34.5	8.51	34.05	111	74	Peak
5510	91.17	82.15			34.51	8.57	34.06	111	74	Average
5510	98.98	89.96			34.51	8.57	34.06	111	74	Peak
5725	55.01	45.8	68.3	-13.29	34.67	8.65	34.11	111	74	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	44.13	35.17	54	-9.87	34.5	8.51	34.05	111	144	Average
5460	55.5	46.54	74	-18.5	34.5	8.51	34.05	111	144	Peak
5470	57.5	48.54	68.3	-10.8	34.5	8.51	34.05	111	144	Peak
5510	89.62	80.6			34.51	8.57	34.06	111	144	Average
5510	97.27	88.25			34.51	8.57	34.06	111	144	Peak
5725	56.11	46.9	68.3	-12.19	34.67	8.65	34.11	111	144	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.22	34.26	54	-10.78	34.5	8.51	34.05	112	100	Average
5460	57.95	48.99	74	-16.05	34.5	8.51	34.05	112	100	Peak
5470	56.26	47.3	68.3	-12.04	34.5	8.51	34.05	112	100	Peak
5550	90.69	81.63			34.54	8.59	34.07	112	100	Average
5550	98.31	89.25			34.54	8.59	34.07	112	100	Peak
5725	55.8	46.59	68.3	-12.5	34.67	8.65	34.11	112	100	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	43.4	34.44	54	-10.6	34.5	8.51	34.05	103	162	Average
5460	56.29	47.33	74	-17.71	34.5	8.51	34.05	103	162	Peak
5470	57.53	48.57	68.3	-10.77	34.5	8.51	34.05	103	162	Peak
5550	91.52	82.46			34.54	8.59	34.07	103	162	Average
5550	99.38	90.32			34.54	8.59	34.07	103	162	Peak
5725	55.49	46.28	68.3	-12.81	34.67	8.65	34.11	103	162	Peak

REMARKS:

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

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.19	34.23	54	-10.81	34.5	8.51	34.05	110	89	Average
5460	55.3	46.34	74	-18.7	34.5	8.51	34.05	110	89	Peak
5470	55.33	46.37	68.3	-12.97	34.5	8.51	34.05	110	89	Peak
5670	91.58	82.42			34.63	8.63	34.1	110	89	Average
5670	96.86	87.7			34.63	8.63	34.1	110	89	Peak
5725	54.9	45.69	68.3	-13.4	34.67	8.65	34.11	110	89	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	43.19	34.23	54	-10.81	34.5	8.51	34.05	101	168	Average
5460	55.98	47.02	74	-18.02	34.5	8.51	34.05	101	168	Peak
5470	55.2	46.24	68.3	-13.1	34.5	8.51	34.05	101	168	Peak
5670	91.58	82.42			34.63	8.63	34.1	101	168	Average
5670	99.01	89.85			34.63	8.63	34.1	101	168	Peak
5725	55.79	46.58	68.3	-12.51	34.67	8.65	34.11	101	168	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 (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.54	26.2	38.58	40	-13.8	19.14	0.74	32.26	100	24	Peak
60.51	28.93	50.58	40	-11.07	9.68	0.9	32.23	312	212	Peak
103.17	32.92	52.31	43.5	-10.58	11.59	1.28	32.26	114	224	Peak
394.5	18.4	29.94	46	-27.6	18.33	2.34	32.21	100	224	Peak
511.4	21.35	30.25	46	-24.65	20.52	2.7	32.12	100	285	Peak
687.1	24.81	31.09	46	-21.19	22.77	3.05	32.1	100	334	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30	34.38	46.31	40	-5.62	19.6	0.74	32.27	100	5	QP
47.28	36.36	56.6	40	-3.64	11.08	0.9	32.22	100	244	Peak
63.21	32.07	53.06	40	-7.93	10.34	0.9	32.23	100	331	Peak
384	18.34	30.01	46	-27.66	18.17	2.34	32.18	100	8	Peak
535.2	22.44	30.88	46	-23.56	21.03	2.7	32.17	100	144	Peak
765.5	25.97	31.64	46	-20.03	23.23	3.22	32.12	100	122	Peak

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30	26.9	38.83	40	-13.1	19.6	0.74	32.27	100	242	Peak
60.51	28.75	50.4	40	-11.25	9.68	0.9	32.23	123	312	Peak
102.63	32.96	52.3	43.5	-10.54	11.64	1.28	32.26	157	74	Peak
335	18.04	31.2	46	-27.96	16.74	2.19	32.09	100	312	Peak
515.6	21.71	30.31	46	-24.29	20.83	2.7	32.13	100	144	Peak
652.1	23.35	30.31	46	-22.65	22.2	2.99	32.15	100	44	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30	34.08	46.01	40	-5.92	19.6	0.74	32.27	100	1	QP
46.47	36.27	56.28	40	-3.73	11.31	0.9	32.22	122	121	Peak
92.1	27.37	45.64	43.5	-16.13	12.44	1.11	31.82	400	21	Peak
437.2	19.14	30.28	46	-26.86	18.54	2.49	32.17	100	221	Peak
527.5	22.38	30.6	46	-23.62	21.23	2.7	32.15	100	101	Peak
672.4	24.3	31.17	46	-21.7	22.2	3.05	32.12	100	334	Peak

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



A D T

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	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30	26.78	38.71	40	-13.22	19.6	0.74	32.27	211	100	Peak
58.35	29.03	50.66	40	-10.97	9.7	0.9	32.23	114	24	Peak
102.36	32.87	52.21	43.5	-10.63	11.64	1.28	32.26	123	312	Peak
385.4	18.48	30.15	46	-27.52	18.17	2.34	32.18	100	125	Peak
535.9	21.98	30.42	46	-24.02	21.03	2.7	32.17	100	147	Peak
624.1	23.06	30.5	46	-22.94	21.8	2.93	32.17	100	133	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30	35.47	47.4	40	-4.53	19.6	0.74	32.27	100	357	QP
47.01	36.28	56.44	40	-3.72	11.16	0.9	32.22	100	224	Peak
64.29	32.87	53.61	40	-7.13	10.59	0.9	32.23	100	243	Peak
374.9	18.54	30.43	46	-27.46	18	2.26	32.15	100	244	Peak
535.2	22.5	30.94	46	-23.5	21.03	2.7	32.17	100	47	Peak
645.1	23.17	30.23	46	-22.83	22.1	2.99	32.15	100	99	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

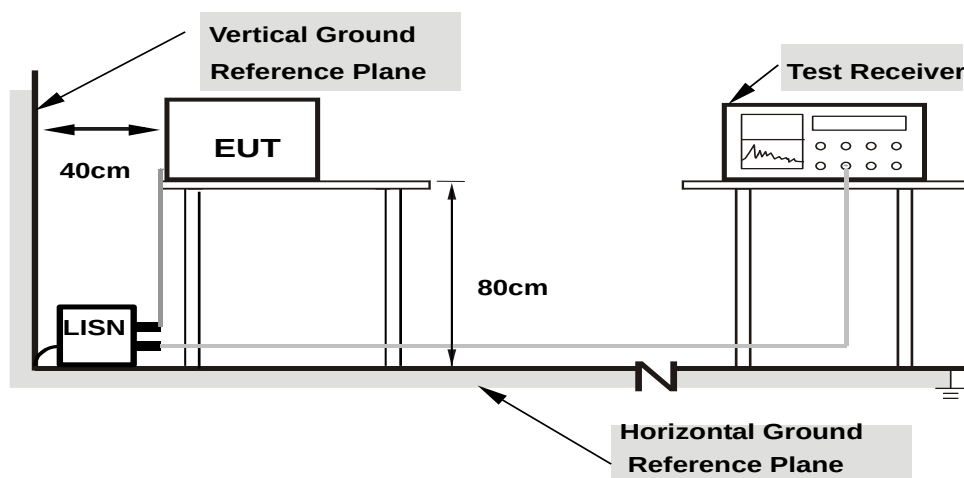
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

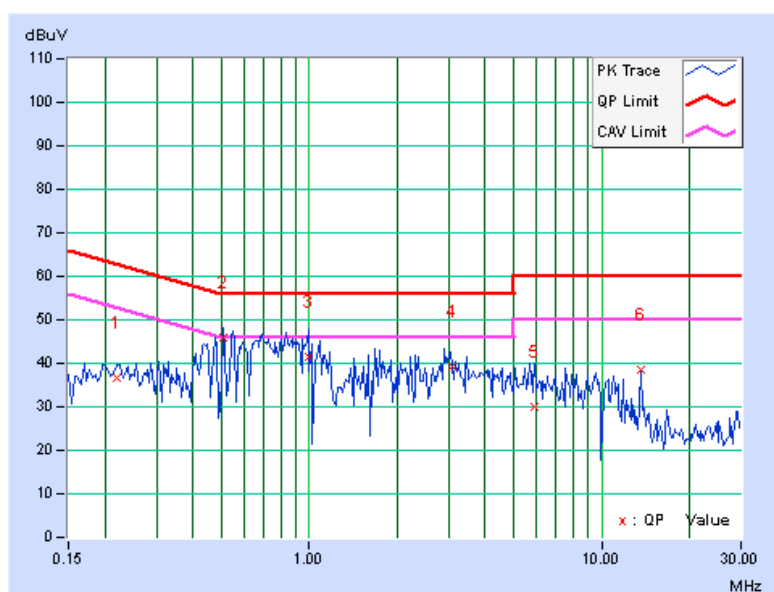
Same as 4.1.6.

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	0.22031	0.19	36.64	28.12	36.83	28.31	62.81	52.81	-25.98	-24.50
2	0.50938	0.25	45.56	43.30	45.81	43.55	56.00	46.00	-10.19	-2.45
3	0.98984	0.23	41.18	31.66	41.41	31.89	56.00	46.00	-14.59	-14.11
4	3.06641	0.34	38.92	31.46	39.26	31.80	56.00	46.00	-16.74	-14.20
5	5.90234	0.42	29.62	21.23	30.04	21.65	60.00	50.00	-29.96	-28.35
6	13.56250	0.57	38.07	37.20	38.64	37.77	60.00	50.00	-21.36	-12.23

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

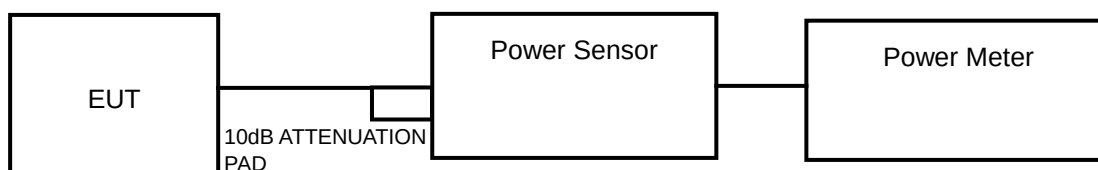
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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.

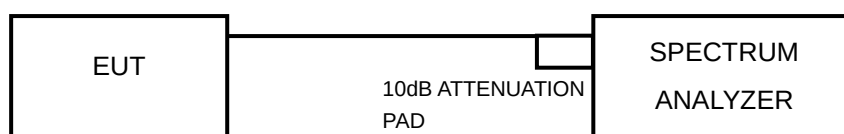
4.3.2 TEST SETUP

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.

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	21.184	13.26	17	PASS
44	5220	21.627	13.35	17	PASS
48	5240	21.878	13.40	17	PASS
52	5260	22.387	13.50	24	PASS
60	5300	22.751	13.57	24	PASS
64	5320	22.856	13.59	24	PASS
100	5500	22.131	13.45	24	PASS
116	5580	22.699	13.56	24	PASS
140	5700	22.387	13.50	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	21.184	13.26	17	PASS
44	5220	21.677	13.41	17	PASS
48	5240	22.751	13.57	17	PASS
52	5260	21.677	13.36	24	PASS
60	5300	22.751	13.57	24	PASS
64	5320	23.335	13.68	24	PASS
100	5500	22.233	13.47	24	PASS
116	5580	22.387	13.50	24	PASS
140	5700	22.803	13.58	24	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	20.230	13.06	17	PASS
46	5230	21.038	13.23	17	PASS
54	5270	21.528	13.33	24	PASS
62	5310	22.131	13.45	24	PASS
102	5510	20.606	13.14	24	PASS
110	5550	20.989	13.22	24	PASS
134	5670	21.727	13.22	24	PASS

26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.65	PASS
44	5220	23.61	PASS
48	5240	23.78	PASS
52	5260	23.49	PASS
60	5300	23.56	PASS
64	5320	23.37	PASS
100	5500	23.85	PASS
116	5580	23.78	PASS
140	5700	23.73	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	24.31	PASS
44	5220	24.28	PASS
48	5240	24.59	PASS
52	5260	24.07	PASS
60	5300	24.86	PASS
64	5320	24.24	PASS
100	5500	24.06	PASS
116	5580	23.74	PASS
140	5700	23.76	PASS

802.11n (40MHz)

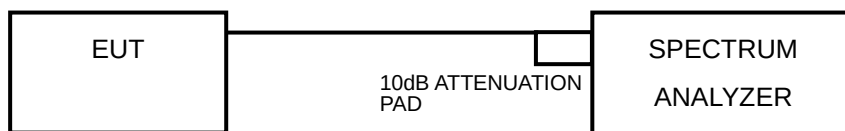
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	54.42	PASS
46	5230	52.75	PASS
54	5270	53.42	PASS
62	5310	53.88	PASS
102	5510	53.03	PASS
110	5550	52.12	PASS
134	5670	52.27	PASS

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	0.45	0.23	0.68	4	PASS
44	5220	0.71	0.23	0.94	4	PASS
48	5240	0.89	0.23	1.12	4	PASS
52	5260	1.00	0.23	1.23	11	PASS
60	5300	1.30	0.23	1.53	11	PASS
64	5320	1.46	0.23	1.69	11	PASS
100	5500	1.67	0.23	1.90	11	PASS
116	5580	1.79	0.23	2.02	11	PASS
140	5700	1.51	0.23	1.74	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	0.31	0.25	0.56	4	PASS
44	5220	0.51	0.25	0.76	4	PASS
48	5240	0.64	0.25	0.89	4	PASS
52	5260	0.89	0.25	1.14	11	PASS
60	5300	1.12	0.25	1.37	11	PASS
64	5320	1.34	0.25	1.59	11	PASS
100	5500	1.47	0.25	1.72	11	PASS
116	5580	1.58	0.25	1.83	11	PASS
140	5700	1.34	0.25	1.59	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	-2.70	0.57	-2.13	4	PASS
46	5230	-2.52	0.57	-1.95	4	PASS
54	5270	-2.18	0.57	-1.61	11	PASS
62	5310	-1.86	0.57	-1.29	11	PASS
102	5510	-1.98	0.57	-1.41	11	PASS
110	5550	-1.97	0.57	-1.40	11	PASS
134	5670	-1.98	0.57	-1.41	11	PASS

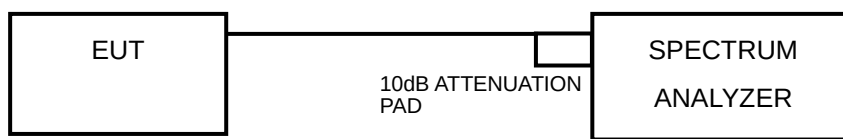
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

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.

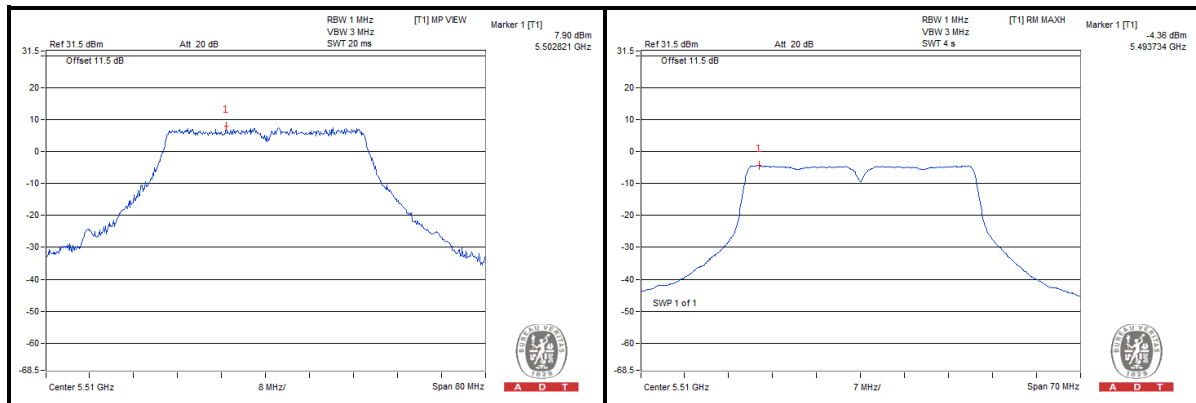
4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

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	5500	10.79	1.67	1.90	8.89	13	PASS
	QPSK		12.13	1.80	2.03	10.10	13	PASS
	16QAM		10.88	0.37	0.60	10.28	13	PASS
	64QAM		8.14	-3.21	-2.98	11.12	13	PASS
802.11n (20MHz)	BPSK	5320	11.26	1.34	1.59	9.67	13	PASS
	QPSK		12.10	1.39	1.64	10.46	13	PASS
	16QAM		11.06	0.40	0.65	10.41	13	PASS
	64QAM		9.76	-1.04	-0.79	10.55	13	PASS
802.11n (40MHz)	BPSK	5510	8.60	-1.98	-1.41	10.01	13	PASS
	QPSK		8.79	-2.23	-1.66	10.45	13	PASS
	16QAM		7.76	-3.68	-3.11	10.87	13	PASS
	64QAM		7.90	-4.36	-3.79	11.69	13	PASS

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

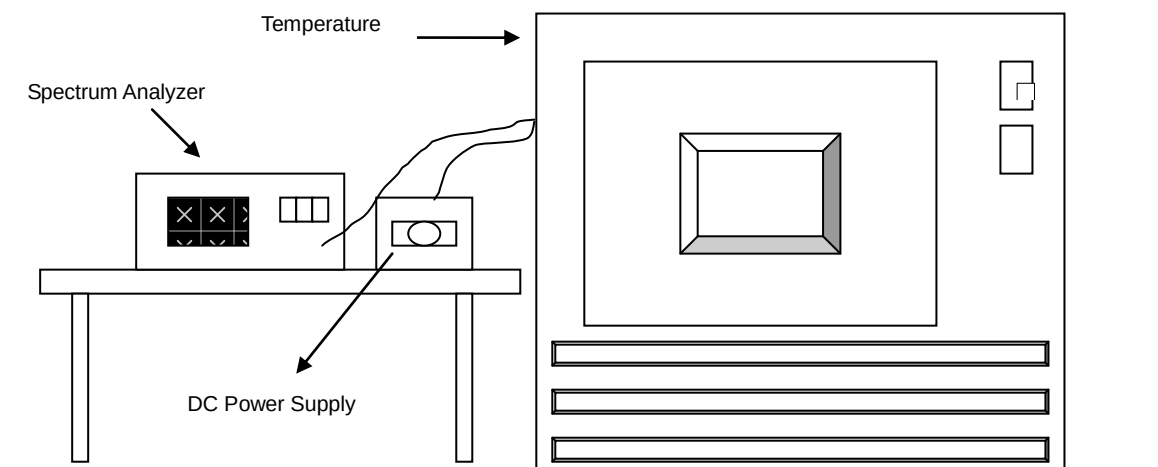


4.6 FREQUENCY STABILITY

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	5320.041017	7.710	5320.041524	7.805	5320.041093	7.724	5320.041456	7.792
40	3.8	5320.042271	7.946	5320.042077	7.909	5320.042342	7.959	5320.042287	7.949
30	3.8	5320.043030	8.088	5320.043422	8.162	5320.043040	8.090	5320.043370	8.152
20	3.8	5320.071720	13.481	5320.071836	13.503	5320.071699	13.477	5320.071904	13.516
10	3.8	5320.045505	8.554	5320.045510	8.555	5320.045775	8.604	5320.045651	8.581
0	3.8	5320.044001	8.271	5320.044119	8.293	5320.043938	8.259	5320.044016	8.274
-10	3.8	5320.042360	7.962	5320.042633	8.014	5320.042335	7.958	5320.042172	7.927
-20	3.8	5320.042076	7.909	5320.042197	7.932	5320.042220	7.936	5320.042364	7.963
-30	3.8	5320.040964	7.700	5320.040778	7.665	5320.041349	7.772	5320.040897	7.687

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	5320.072262	13.583	5320.072162	13.564	5320.072050	13.543	5320.072421	13.613
	3.8	5320.071720	13.481	5320.071836	13.503	5320.071699	13.477	5320.071904	13.516
	4.34	5320.073151	13.750	5320.073481	13.812	5320.073569	13.829	5320.073658	13.845

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---