

FCC TEST REPORT (15.407)

REPORT NO.: RF131014C20-2

MODEL NO.: M80T

(Refer to item 3.1 for more details)

FCC ID: MSQ-M80T

RECEIVED: Oct. 14, 2013

TESTED: Oct. 24, 2013 ~ Nov. 02, 2013

ISSUED: Nov. 18, 2013

APPLICANT: ASUSTek COMPUTER INC.

ADDRESS: 4F., No. 150, LI-TE Rd., PEITOU, TAIPEI 112, 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.

This report should not be used by the client to claim
product certification, approval, or endorsement by
TAF or any government agencies.



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1. CERTIFICATION	5
2. SUMMARY OF TEST RESULTS	6
2.1 MEASUREMENT uncertainty	6
3. GENERAL INFORMATION	7
3.1 GENERAL DESCRIPTION OF EUT	7
3.2 DESCRIPTION OF TEST MODES	9
3.2.1 Test Mode Applicability and tested channel detail	10
3.3 DESCRIPTION OF SUPPORT UNITS	13
3.3.1 CONFIGURATION OF SYSTEM UNDER TEST	13
3.4 Duty cycle of test signal	14
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	15
4. TEST TYPES AND RESULTS	16
4.1 Radiated Emission AND BANDEDGE Measurement	16
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	16
4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS	17
4.1.3 TEST INSTRUMENTS	18
4.1.4 TEST PROCEDURES	19
4.1.5 DEVIATION FROM TEST STANDARD	19
4.1.6 TEST SETUP	20
4.1.7 EUT OPERATING CONDITION	20
4.1.8 Test RESULTS	21
4.2 CONDUCTED EMISSION MEASUREMENT	47
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	47
4.2.2 TEST INSTRUMENTS	47
4.2.3 TEST PROCEDURES	48
4.2.4 DEVIATION FROM TEST STANDARD	48
4.2.5 TEST SETUP	48
4.2.6 EUT OPERATING CONDITIONS	48
4.2.7 TEST RESULTS	49
4.3 Peak transmit power MEASUREMENT	51
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT	51
4.3.2 TEST SETUP	51
4.3.3 TEST INSTRUMENTS	51
4.3.4 TEST PROCEDURE	52
4.3.5 DEVIATION FROM TEST STANDARD	52
4.3.6 EUT OPERATING CONDITIONS	52
4.3.7 TEST RESULTS	53
4.4 PEAK power spectral density measurement	55
4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT	55
4.4.2 TEST SETUP	55



A D T

4.4.3	TEST INSTRUMENTS	55
4.4.4	TEST PROCEDURES	55
4.4.5	DEVIATION FROM TEST STANDARD	56
4.4.6	EUT OPERATING CONDITIONS	56
4.4.7	TEST RESULTS	56
4.5	Peak power EXCURSION MEASUREMENT	58
4.5.1	LIMITS OF PEAK POWER EXCURSION MEASUREMENT	58
4.5.2	TEST SETUP	58
4.5.3	TEST INSTRUMENTS	58
4.5.4	TEST PROCEDURE	58
4.5.5	DEVIATION FROM TEST STANDARD	58
4.5.6	EUT OPERATING CONDITIONS	58
4.5.7	TEST RESULTS	59
4.6	FREQUENCY STABILITY	60
4.6.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT	60
4.6.2	TEST SETUP	60
4.6.3	TEST INSTRUMENTS	60
4.6.4	TEST PROCEDURE	61
4.6.5	DEVIATION FROM TEST STANDARD	61
4.6.6	EUT OPERATING CONDITION	61
4.6.7	TEST RESULTS	62
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION	63
6.	INFORMATION ON THE TESTING LABORATORIES	64
7.	APPENDIX A - Modifications recorders for engineering changes to the eut BY THE LAB	65



RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF131014C20-2	Original release	Nov. 18, 2013

1. CERTIFICATION

PRODUCT: ASUS Tablet

MODEL NO.: M80T (Refer to item 3.1 for more details)

BRAND: ASUS

APPLICANT: ASUSTek COMPUTER INC.

TESTED: Oct. 24, 2013 ~ Nov. 02, 2013

TEST SAMPLE: Production Unit

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

ANSI C63.10-2009

The above equipment (model: M80T) 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 : Vera Huang , **DATE** : Nov. 18, 2013

Vera Huang / Specialist

APPROVED BY : Sam chen , **DATE** : Nov. 18, 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 -12.37dB at 0.44297MHz.
15.407(b)(1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.33dB 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	ASUS Tablet
MODEL NO.	M80T (Refer to NOTE)
POWER SUPPLY	5Vdc (adapter or host equipment) 3.85Vdc (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	22.336mW for 5180 ~ 5240MHz 18.836mW for 5260 ~ 5320MHz 22.336mW for 5500 ~ 5700MHz
ANTENNA TYPE	PIFA antenna with -0.97dBi gain (5180 ~ 5240MHz) PIFA antenna with 1.72dBi gain (5260 ~ 5320MHz) PIFA antenna with 1.87dBi 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:

- The detail information of model names and the differences are as below.

System	MODEL NAME	Remark
Windows only	M80T / L80T / R80T	All the models are identically, the difference model severed as marketing strategy.
Android Only	M81T / L81T / R81T	
Dual OS	M82T / L82T / R82T	

- The EUT has following accessories.

ITEM	BRAND	MODEL	DESCRIPTION
AC Adapter 1	ASUS	W12-010N3A	I/P: 100-240Vac, 50-60Hz, 0.3A O/P: 5Vdc, 2A
AC Adapter 2	ASUS	AD897320	I/P: 100-240Vac, 50-60Hz, 0.3A O/P: 5Vdc, 2A
Li-ion Battery	ASUS	C11P1304	Rating: 3.85Vdc, 15.5Wh, 3910mAh
USB cable 1	ASUS	AA781000	0.9m cable
USB cable 2	ASUS	L65U2009-CS-B	0.9m cable
Micro SD card	Sandisk	SDSDQAB-008G-859	--
CPU	Intel	UTFCBGA1380	--
LCD Panel	INNOLUX	N080ICE-GB1(C2)	--
Video Camera 1 (Front)	LITEON	12P2SF181C	--
Video Camera 2 (Rear)	LITEON	12P2BA536	--
WLAN/BT Module	Broadcom	BCM43241S	--
eMMC 1 (SKU 1)	Sandisk	SDIN8DE4-32G-1002K	--
eMMC 2 (SKU 2)	Sandisk	SDIN8DE4-64G-1002K	--
eMMC 3 (SKU 3)	HYNIX	H26M64003DQR(32G)	--
eMMC 4 (SKU 4)	HYNIX	H26M78003BFR (64G)	--

- The EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX

- 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** for 5180-5240MHz, **X-plane** for 5260-5320MHz, and **Y-plane** for 5500-5700MHz.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

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)
802.11a	5260-5320	52 to 64	60	OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

The EUT was tested with the following mode.

TEST CONDITION
BT Link + WLAN (5G) Link + USB Cable + Adapter 2 + Earphone

BANDEGE MEASUREMENT:

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

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

ANTENNA PORT CONDUCTED MEASUREMENT:

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

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

TEST CONDITION:

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

3.3 DESCRIPTION OF SUPPORT UNITS

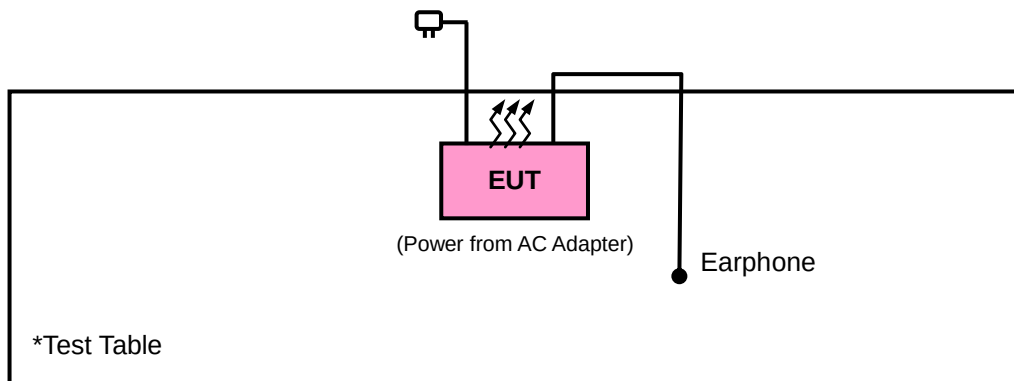
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	EARPHONE	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A

NOTE: All power cords of the above support units are non shielded (1.8m).

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 = $2.059/2.188 = 0.941$, Duty factor = $10 * \log(1/0.941) = 0.26$

802.11n (20MHz): Duty cycle = $1.899/2.027 = 0.937$, Duty factor = $10 * \log(1/0.937) = 0.28$

802.11n (40MHz): Duty cycle = $0.913/1.05 = 0.87$, Duty factor = $10 * \log(1/0.87) = 0.6$



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 v01 r03

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:

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

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. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 18, 2013	Oct. 17, 2014
RF signal cable Worken	RG-213	NA	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	1012010	Jul. 31, 2013	Jul. 30, 2014
Power Sensor	MA2411B	1315050	Jul. 31, 2013	Jul. 30, 2014

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

4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 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.

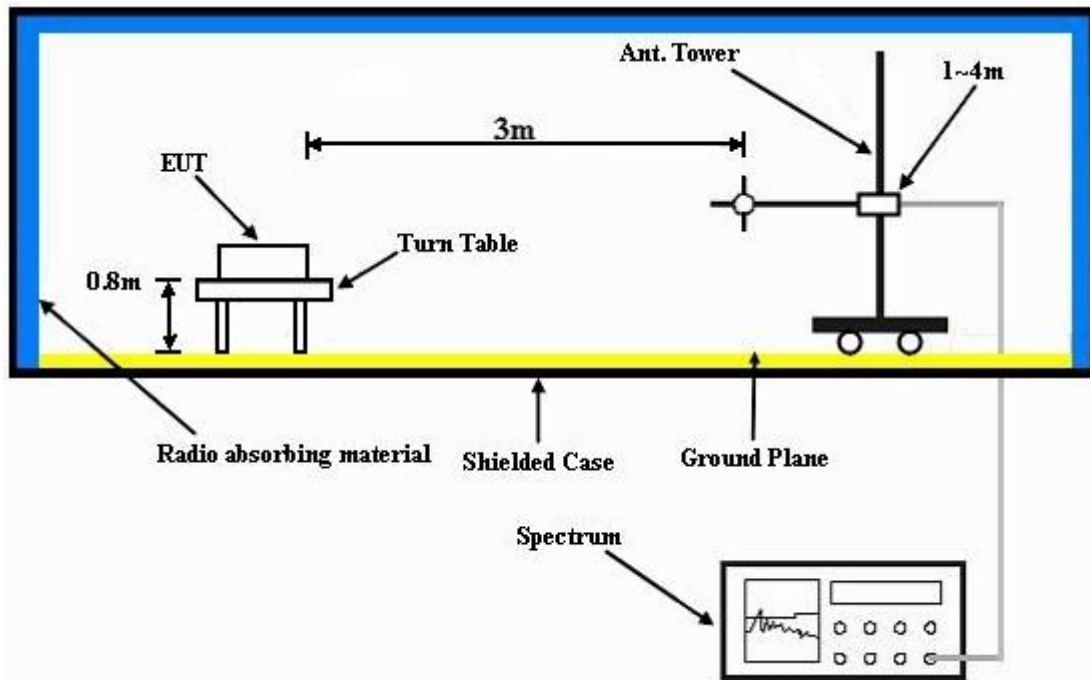
NOTE:

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

- 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	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5142	48.48	49.17	54	-5.52	31.32	5.29	37.3	100	55	Average
5142	63.85	64.54	74	-10.15	31.32	5.29	37.3	100	55	Peak
5180	97.82	98.5			31.35	5.31	37.34	100	55	Average
5180	106.54	107.22			31.35	5.31	37.34	100	55	Peak
5456	38.78	38.86	54	-15.22	31.56	5.44	37.08	100	55	Average
5456	56.71	56.79	74	-17.29	31.56	5.44	37.08	100	55	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	45.03	45.74	54	-8.97	31.32	5.29	37.32	123	332	Average
5150	60.52	61.23	74	-13.48	31.32	5.29	37.32	123	332	Peak
5180	95.53	96.21			31.35	5.31	37.34	123	332	Average
5180	104.45	105.13			31.35	5.31	37.34	123	332	Peak
5428	38.09	38.27	54	-15.91	31.53	5.42	37.13	123	332	Average
5428	55.93	56.11	74	-18.07	31.53	5.42	37.13	123	332	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5024	43.1	43.87	54	-10.9	31.23	5.24	37.24	125	56	Average
5024	57.32	58.09	74	-16.68	31.23	5.24	37.24	125	56	Peak
5220	96.96	97.62			31.37	5.33	37.36	125	56	Average
5220	105.57	106.23			31.37	5.33	37.36	125	56	Peak
5444	39.1	39.24	54	-14.9	31.55	5.44	37.13	125	56	Average
5444	55.9	56.04	74	-18.1	31.55	5.44	37.13	125	56	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	39.87	40.58	54	-14.13	31.32	5.29	37.32	112	337	Average
5148	56.38	57.09	74	-17.62	31.32	5.29	37.32	112	337	Peak
5220	95.99	96.65			31.37	5.33	37.36	112	337	Average
5220	104.59	105.25			31.37	5.33	37.36	112	337	Peak
5372	38.95	39.24	54	-15.05	31.49	5.4	37.18	112	337	Average
5372	56.04	56.33	74	-17.96	31.49	5.4	37.18	112	337	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5020	43.11	43.9	54	-10.89	31.21	5.24	37.24	100	55	Average
5020	57.03	57.82	74	-16.97	31.21	5.24	37.24	100	55	Peak
5240	97.37	97.96			31.39	5.34	37.32	100	55	Average
5240	105.66	106.25			31.39	5.34	37.32	100	55	Peak
5438	38.59	38.73	54	-15.41	31.55	5.44	37.13	100	55	Average
5438	55.63	55.77	74	-18.37	31.55	5.44	37.13	100	55	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
5104	38.53	39.26	54	-15.47	31.28	5.27	37.28	100	336	Average
5104	56.01	56.74	74	-17.99	31.28	5.27	37.28	100	336	Peak
5240	95.84	96.43			31.39	5.34	37.32	100	336	Average
5240	104.51	105.1			31.39	5.34	37.32	100	336	Peak
5436	39.3	39.46	54	-14.7	31.55	5.42	37.13	100	336	Average
5436	55.68	55.84	74	-18.32	31.55	5.42	37.13	100	336	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5038	38.04	38.79	54	-15.96	31.24	5.25	37.24	100	215	Average
5038	56.45	57.2	74	-17.55	31.24	5.25	37.24	100	215	Peak
5260	96.28	96.8			31.41	5.34	37.27	100	215	Average
5260	105.93	106.45			31.41	5.34	37.27	100	215	Peak
5356	40.23	40.54	54	-13.77	31.48	5.39	37.18	100	215	Average
5356	56.48	56.79	74	-17.52	31.48	5.39	37.18	100	215	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	38.99	39.72	54	-15.01	31.29	5.28	37.3	100	50	Average
5122	56.54	57.27	74	-17.46	31.29	5.28	37.3	100	50	Peak
5260	91.18	91.7			31.41	5.34	37.27	100	50	Average
5260	100.94	101.46			31.41	5.34	37.27	100	50	Peak
5438	37.95	38.09	54	-16.05	31.55	5.44	37.13	100	50	Average
5438	57.1	57.24	74	-16.9	31.55	5.44	37.13	100	50	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5248	42.81	43.34	54	-11.19	31.4	5.34	37.27	100	209	Average
5248	56.01	56.54	74	-17.99	31.4	5.34	37.27	100	209	Peak
5300	98.85	99.23			31.44	5.37	37.19	100	209	Average
5300	106.61	106.99			31.44	5.37	37.19	100	209	Peak
5350	44.15	44.46	54	-9.85	31.48	5.39	37.18	100	209	Average
5350	58.11	58.42	74	-15.89	31.48	5.39	37.18	100	209	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
5104	39.04	39.77	54	-14.96	31.28	5.27	37.28	100	8	Average
5104	56.84	57.57	74	-17.16	31.28	5.27	37.28	100	8	Peak
5300	91.03	91.41			31.44	5.37	37.19	100	8	Average
5300	100.56	100.94			31.44	5.37	37.19	100	8	Peak
5446	39.31	39.44	54	-14.69	31.56	5.44	37.13	100	8	Average
5446	56.02	56.15	74	-17.98	31.56	5.44	37.13	100	8	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	38.45	39.16	54	-15.55	31.32	5.29	37.32	100	214	Average
5150	55.67	56.38	74	-18.33	31.32	5.29	37.32	100	214	Peak
5320	97.59	97.95			31.45	5.38	37.19	100	214	Average
5320	106.29	106.65			31.45	5.38	37.19	100	214	Peak
5348	46.86	47.17	54	-7.14	31.48	5.39	37.18	100	214	Average
5348	60.73	61.04	74	-13.27	31.48	5.39	37.18	100	214	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5122	39.03	39.76	54	-14.97	31.29	5.28	37.3	137	120	Average
5122	56.17	56.9	74	-17.83	31.29	5.28	37.3	137	120	Peak
5320	91.73	92.09			31.45	5.38	37.19	137	120	Average
5320	100.62	100.98			31.45	5.38	37.19	137	120	Peak
5348	40.85	41.16	54	-13.15	31.48	5.39	37.18	137	120	Average
5348	56.9	57.21	74	-17.1	31.48	5.39	37.18	137	120	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5458	42.1	42.18	54	-11.9	31.56	5.44	37.08	100	19	Average
5458	57	57.08	74	-17	31.56	5.44	37.08	100	19	Peak
5470	57.06	57.12	68.3	-11.24	31.57	5.45	37.08	100	19	Peak
5500	93.17	93.14			31.6	5.46	37.03	100	19	Average
5500	102.09	102.06			31.6	5.46	37.03	100	19	Peak
5725	55.2	55.08	68.3	-13.1	31.96	5.59	37.43	100	19	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	47.68	47.76	54	-6.32	31.56	5.44	37.08	109	273	Average
5460	59.66	59.74	74	-14.34	31.56	5.44	37.08	109	273	Peak
5470	60.88	60.94	68.3	-7.42	31.57	5.45	37.08	109	273	Peak
5500	99.91	99.88			31.6	5.46	37.03	109	273	Average
5500	108.19	108.16			31.6	5.46	37.03	109	273	Peak
5725	55.97	55.85	68.3	-12.33	31.96	5.59	37.43	109	273	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5452	40.79	40.87	54	-13.21	31.56	5.44	37.08	100	18	Average
5452	56.57	56.65	74	-17.43	31.56	5.44	37.08	100	18	Peak
5470	54.59	54.65	68.3	-13.71	31.57	5.45	37.08	100	18	Peak
5580	93.53	93.48			31.71	5.5	37.16	100	18	Average
5580	102.9	102.85			31.71	5.5	37.16	100	18	Peak
5725	54.16	54.04	68.3	-14.14	31.96	5.59	37.43	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
5458	40.5	40.58	54	-13.5	31.56	5.44	37.08	133	230	Average
5458	55.8	55.88	74	-18.2	31.56	5.44	37.08	133	230	Peak
5470	54.79	54.85	68.3	-13.51	31.57	5.45	37.08	133	230	Peak
5580	98.98	98.93			31.71	5.5	37.16	133	230	Average
5580	107.91	107.86			31.71	5.5	37.16	133	230	Peak
5725	55.35	55.23	68.3	-12.95	31.96	5.59	37.43	133	230	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5378	37.99	38.26	54	-16.01	31.51	5.4	37.18	107	20	Average
5378	55.71	55.98	74	-18.29	31.51	5.4	37.18	107	20	Peak
5470	54.58	54.64	68.3	-13.72	31.57	5.45	37.08	107	20	Peak
5700	92.92	92.85			31.9	5.57	37.4	107	20	Average
5700	102.2	102.13			31.9	5.57	37.4	107	20	Peak
5725	56.78	56.66	68.3	-11.52	31.96	5.59	37.43	107	20	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
5362	37.83	38.13	54	-16.17	31.49	5.39	37.18	100	349	Average
5362	56.24	56.54	74	-17.76	31.49	5.39	37.18	100	349	Peak
5470	53.67	53.73	68.3	-14.63	31.57	5.45	37.08	100	349	Peak
5700	98.13	98.06			31.9	5.57	37.4	100	349	Average
5700	107.7	107.63			31.9	5.57	37.4	100	349	Peak
5725	59.38	59.26	68.3	-8.92	31.96	5.59	37.43	100	349	Peak

REMARKS:

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

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5142	49.39	50.08	54	-4.61	31.32	5.29	37.3	110	131	Average
5142	62.56	63.25	74	-11.44	31.32	5.29	37.3	110	131	Peak
5180	97.66	98.34			31.35	5.31	37.34	110	131	Average
5180	105.81	106.49			31.35	5.31	37.34	110	131	Peak
5428	40.91	41.09	54	-13.09	31.53	5.42	37.13	110	131	Average
5428	56.66	56.84	74	-17.34	31.53	5.42	37.13	110	131	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	45.85	46.56	54	-8.15	31.32	5.29	37.32	112	10	Average
5150	61.29	62	74	-12.71	31.32	5.29	37.32	112	10	Peak
5180	96.82	97.5			31.35	5.31	37.34	112	10	Average
5180	105.9	106.58			31.35	5.31	37.34	112	10	Peak
5432	40.93	41.09	54	-13.07	31.55	5.42	37.13	112	10	Average
5432	56.98	57.14	74	-17.02	31.55	5.42	37.13	112	10	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5140	42.46	43.15	54	-11.54	31.32	5.29	37.3	108	133	Average
5140	57.35	58.04	74	-16.65	31.32	5.29	37.3	108	133	Peak
5220	98.44	99.1			31.37	5.33	37.36	108	133	Average
5220	107.09	107.75			31.37	5.33	37.36	108	133	Peak
5366	40.06	40.35	54	-13.94	31.49	5.4	37.18	108	133	Average
5366	56.31	56.6	74	-17.69	31.49	5.4	37.18	108	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
5050	40.37	41.13	54	-13.63	31.24	5.25	37.25	102	8	Average
5050	56.24	57	74	-17.76	31.24	5.25	37.25	102	8	Peak
5220	97.46	98.12			31.37	5.33	37.36	102	8	Average
5220	106.24	106.9			31.37	5.33	37.36	102	8	Peak
5436	39.72	39.88	54	-14.28	31.55	5.42	37.13	102	8	Average
5436	57.2	57.36	74	-16.8	31.55	5.42	37.13	102	8	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5024	43.59	44.36	54	-10.41	31.23	5.24	37.24	130	134	Average
5024	57.98	58.75	74	-16.02	31.23	5.24	37.24	130	134	Peak
5240	97.69	98.28			31.39	5.34	37.32	130	134	Average
5240	105.83	106.42			31.39	5.34	37.32	130	134	Peak
5460	39.99	40.07	54	-14.01	31.56	5.44	37.08	130	134	Average
5460	56.23	56.31	74	-17.77	31.56	5.44	37.08	130	134	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5138	40.26	40.96	54	-13.74	31.31	5.29	37.3	104	9	Average
5138	56.85	57.55	74	-17.15	31.31	5.29	37.3	104	9	Peak
5240	96.09	96.68			31.39	5.34	37.32	104	9	Average
5240	105.09	105.68			31.39	5.34	37.32	104	9	Peak
5428	40.04	40.22	54	-13.96	31.53	5.42	37.13	104	9	Average
5428	56.26	56.44	74	-17.74	31.53	5.42	37.13	104	9	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5008	38.03	38.83	54	-15.97	31.21	5.22	37.23	100	216	Average
5008	55.63	56.43	74	-18.37	31.21	5.22	37.23	100	216	Peak
5260	97.47	97.99			31.41	5.34	37.27	100	216	Average
5260	106.07	106.59			31.41	5.34	37.27	100	216	Peak
5360	40.61	40.92	54	-13.39	31.48	5.39	37.18	100	216	Average
5360	56.6	56.91	74	-17.4	31.48	5.39	37.18	100	216	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5122	39.15	39.88	54	-14.85	31.29	5.28	37.3	100	50	Average
5122	55.81	56.54	74	-18.19	31.29	5.28	37.3	100	50	Peak
5260	92.55	93.07			31.41	5.34	37.27	100	50	Average
5260	101.65	102.17			31.41	5.34	37.27	100	50	Peak
5456	38.3	38.38	54	-15.7	31.56	5.44	37.08	100	50	Average
5456	56.1	56.18	74	-17.9	31.56	5.44	37.08	100	50	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5248	42.83	43.36	54	-11.17	31.4	5.34	37.27	100	217	Average
5248	56.38	56.91	74	-17.62	31.4	5.34	37.27	100	217	Peak
5300	98.73	99.11			31.44	5.37	37.19	100	217	Average
5300	106.93	107.31			31.44	5.37	37.19	100	217	Peak
5362	43.87	44.17	54	-10.13	31.49	5.39	37.18	100	217	Average
5362	57.58	57.88	74	-16.42	31.49	5.39	37.18	100	217	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
5100	40.33	41.06	54	-13.67	31.28	5.27	37.28	113	121	Average
5100	56.77	57.5	74	-17.23	31.28	5.27	37.28	113	121	Peak
5300	92.16	92.54			31.44	5.37	37.19	113	121	Average
5300	101.26	101.64			31.44	5.37	37.19	113	121	Peak
5432	39.11	39.27	54	-14.89	31.55	5.42	37.13	113	121	Average
5432	56.18	56.34	74	-17.82	31.55	5.42	37.13	113	121	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5168	40.33	41.01	54	-13.67	31.33	5.31	37.32	100	216	Average
5168	55.76	56.44	74	-18.24	31.33	5.31	37.32	100	216	Peak
5320	98.14	98.5			31.45	5.38	37.19	100	216	Average
5320	106.32	106.68			31.45	5.38	37.19	100	216	Peak
5348	46.6	46.91	54	-7.4	31.48	5.39	37.18	100	216	Average
5348	61.01	61.32	74	-12.99	31.48	5.39	37.18	100	216	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
5178	38.34	39.02	54	-15.66	31.35	5.31	37.34	100	8	Average
5178	55.48	56.16	74	-18.52	31.35	5.31	37.34	100	8	Peak
5320	91.29	91.65			31.45	5.38	37.19	100	8	Average
5320	99.74	100.1			31.45	5.38	37.19	100	8	Peak
5350	40.44	40.75	54	-13.56	31.48	5.39	37.18	100	8	Average
5350	57.16	57.47	74	-16.84	31.48	5.39	37.18	100	8	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.27	42.35	54	-11.73	31.56	5.44	37.08	100	19	Average
5460	57.03	57.11	74	-16.97	31.56	5.44	37.08	100	19	Peak
5470	57.51	57.57	68.3	-10.79	31.57	5.45	37.08	100	19	Peak
5500	93.51	93.48			31.6	5.46	37.03	100	19	Average
5500	102.65	102.62			31.6	5.46	37.03	100	19	Peak
5725	56.42	56.3	68.3	-11.88	31.96	5.59	37.43	100	19	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	47.17	47.25	54	-6.83	31.56	5.44	37.08	109	260	Average
5460	61.31	61.39	74	-12.69	31.56	5.44	37.08	109	260	Peak
5470	60.78	60.84	68.3	-7.52	31.57	5.45	37.08	109	260	Peak
5500	99.26	99.23			31.6	5.46	37.03	109	260	Average
5500	107.89	107.86			31.6	5.46	37.03	109	260	Peak
5725	54.01	53.89	68.3	-14.29	31.96	5.59	37.43	109	260	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5424	39.87	40.1	54	-14.13	31.53	5.42	37.18	100	20	Average
5424	55.88	56.11	74	-18.12	31.53	5.42	37.18	100	20	Peak
5470	54.9	54.96	68.3	-13.4	31.57	5.45	37.08	100	20	Peak
5580	90.95	90.9			31.71	5.5	37.16	100	20	Average
5580	100.02	99.97			31.71	5.5	37.16	100	20	Peak
5725	54.52	54.4	68.3	-13.78	31.96	5.59	37.43	100	20	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	40.37	40.45	54	-13.63	31.56	5.44	37.08	132	228	Average
5452	55.98	56.06	74	-18.02	31.56	5.44	37.08	132	228	Peak
5470	55.03	55.09	68.3	-13.27	31.57	5.45	37.08	132	228	Peak
5580	98.94	98.89			31.71	5.5	37.16	132	228	Average
5580	107.62	107.57			31.71	5.5	37.16	132	228	Peak
5725	54.25	54.13	68.3	-14.05	31.96	5.59	37.43	132	228	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5428	38.24	38.42	54	-15.76	31.53	5.42	37.13	130	96	Average
5428	56.14	56.32	74	-17.86	31.53	5.42	37.13	130	96	Peak
5470	55.4	55.46	68.3	-12.9	31.57	5.45	37.08	130	96	Peak
5700	91.88	91.81			31.9	5.57	37.4	130	96	Average
5700	101.04	100.97			31.9	5.57	37.4	130	96	Peak
5725	56.63	56.51	68.3	-11.67	31.96	5.59	37.43	130	96	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5430	38.23	38.39	54	-15.77	31.55	5.42	37.13	100	347	Average
5430	56.11	56.27	74	-17.89	31.55	5.42	37.13	100	347	Peak
5470	55.1	55.16	68.3	-13.2	31.57	5.45	37.08	100	347	Peak
5700	98.65	98.58			31.9	5.57	37.4	100	347	Average
5700	107.63	107.56			31.9	5.57	37.4	100	347	Peak
5725	64.59	64.47	68.3	-3.71	31.96	5.59	37.43	100	347	Peak

REMARKS:

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



A D T

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5146	51.54	52.25	54	-2.46	31.32	5.29	37.32	100	130	Average
5146	66.82	67.53	74	-7.18	31.32	5.29	37.32	100	130	Peak
5190	93.06	93.73			31.35	5.32	37.34	100	130	Average
5190	102.24	102.91			31.35	5.32	37.34	100	130	Peak
5434	39.16	39.32	54	-14.84	31.55	5.42	37.13	100	130	Average
5434	55.7	55.86	74	-18.3	31.55	5.42	37.13	100	130	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5146	47.66	48.37	54	-6.34	31.32	5.29	37.32	112	10	Average
5146	62.63	63.34	74	-11.37	31.32	5.29	37.32	112	10	Peak
5190	91.71	92.38			31.35	5.32	37.34	112	10	Average
5190	102.03	102.7			31.35	5.32	37.34	112	10	Peak
5460	39.86	39.94	54	-14.14	31.56	5.44	37.08	112	10	Average
5460	56.19	56.27	74	-17.81	31.56	5.44	37.08	112	10	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	44.62	45.33	54	-9.38	31.32	5.29	37.32	120	133	Average
5148	58.25	58.96	74	-15.75	31.32	5.29	37.32	120	133	Peak
5230	94.51	95.11			31.39	5.33	37.32	120	133	Average
5230	104.24	104.84			31.39	5.33	37.32	120	133	Peak
5356	39.4	39.71	54	-14.6	31.48	5.39	37.18	120	133	Average
5356	56.45	56.76	74	-17.55	31.48	5.39	37.18	120	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
5142	41.9	42.59	54	-12.1	31.32	5.29	37.3	111	9	Average
5142	56.27	56.96	74	-17.73	31.32	5.29	37.3	111	9	Peak
5230	93.61	94.21			31.39	5.33	37.32	111	9	Average
5230	102.42	103.02			31.39	5.33	37.32	111	9	Peak
5408	40.44	40.69	54	-13.56	31.52	5.41	37.18	111	9	Average
5408	55.76	56.01	74	-18.24	31.52	5.41	37.18	111	9	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5086	38.62	39.36	54	-15.38	31.27	5.26	37.27	100	216	Average
5086	56.16	56.9	74	-17.84	31.27	5.26	37.27	100	216	Peak
5270	94.83	95.34			31.41	5.35	37.27	100	216	Average
5270	103.95	104.46			31.41	5.35	37.27	100	216	Peak
5362	43.85	44.15	54	-10.15	31.49	5.39	37.18	100	216	Average
5362	57.84	58.14	74	-16.16	31.49	5.39	37.18	100	216	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	38.45	39.19	54	-15.55	31.27	5.26	37.27	110	357	Average
5084	56.22	56.96	74	-17.78	31.27	5.26	37.27	110	357	Peak
5270	88.51	89.02			31.41	5.35	37.27	110	357	Average
5270	97.45	97.96			31.41	5.35	37.27	110	357	Peak
5396	39.52	39.77	54	-14.48	31.52	5.41	37.18	110	357	Average
5396	55.98	56.23	74	-18.02	31.52	5.41	37.18	110	357	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5144	39.12	39.83	54	-14.88	31.32	5.29	37.32	100	216	Average
5144	54.94	55.65	74	-19.06	31.32	5.29	37.32	100	216	Peak
5310	94.29	94.66			31.45	5.37	37.19	100	216	Average
5310	103.34	103.71			31.45	5.37	37.19	100	216	Peak
5352	50.79	51.1	54	-3.21	31.48	5.39	37.18	100	216	Average
5352	68.33	68.64	74	-5.67	31.48	5.39	37.18	100	216	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
5132	39.24	39.95	54	-14.76	31.31	5.28	37.3	124	8	Average
5132	56.56	57.27	74	-17.44	31.31	5.28	37.3	124	8	Peak
5310	88.76	89.13			31.45	5.37	37.19	124	8	Average
5310	97.82	98.19			31.45	5.37	37.19	124	8	Peak
5348	43.62	43.93	54	-10.38	31.48	5.39	37.18	124	8	Average
5348	61.13	61.44	74	-12.87	31.48	5.39	37.18	124	8	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	44.85	44.93	54	-9.15	31.56	5.44	37.08	100	18	Average
5460	60.58	60.66	74	-13.42	31.56	5.44	37.08	100	18	Peak
5470	60.78	60.84	68.3	-7.52	31.57	5.45	37.08	100	18	Peak
5510	89.36	89.36			31.6	5.46	37.06	100	18	Average
5510	98.26	98.26			31.6	5.46	37.06	100	18	Peak
5725	55.06	54.94	68.3	-13.24	31.96	5.59	37.43	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
5460	50.5	50.58	54	-3.5	31.56	5.44	37.08	110	280	Average
5460	65.09	65.17	74	-8.91	31.56	5.44	37.08	110	280	Peak
5470	67.97	68.03	68.3	-0.33	31.57	5.45	37.08	110	280	Peak
5510	96.24	96.24			31.6	5.46	37.06	110	280	Average
5510	105.96	105.96			31.6	5.46	37.06	110	280	Peak
5725	54.22	54.1	68.3	-14.08	31.96	5.59	37.43	110	280	Peak

REMARKS:

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5458	40.4	40.48	54	-13.6	31.56	5.44	37.08	100	21	Average
5458	56.51	56.59	74	-17.49	31.56	5.44	37.08	100	21	Peak
5470	55.25	55.31	68.3	-13.05	31.57	5.45	37.08	100	21	Peak
5550	89.54	89.46			31.68	5.49	37.09	100	21	Average
5550	98.97	98.89			31.68	5.49	37.09	100	21	Peak
5725	54.98	54.86	68.3	-13.32	31.96	5.59	37.43	100	21	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
5442	44.85	44.99	54	-9.15	31.55	5.44	37.13	108	279	Average
5442	57.87	58.01	74	-16.13	31.55	5.44	37.13	108	279	Peak
5470	59.11	59.17	68.3	-9.19	31.57	5.45	37.08	108	279	Peak
5550	97.21	97.13			31.68	5.49	37.09	108	279	Average
5550	106.05	105.97			31.68	5.49	37.09	108	279	Peak
5725	55.58	55.46	68.3	-12.72	31.96	5.59	37.43	108	279	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin Value = Emission Level - Limit Value
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	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5442	39.42	39.56	54	-14.58	31.55	5.44	37.13	100	20	Average
5442	58.01	58.15	74	-15.99	31.55	5.44	37.13	100	20	Peak
5470	54.58	54.64	68.3	-13.72	31.57	5.45	37.08	100	20	Peak
5670	89.47	89.37			31.88	5.56	37.34	100	20	Average
5670	98.58	98.48			31.88	5.56	37.34	100	20	Peak
5725	54.47	54.35	68.3	-13.83	31.96	5.59	37.43	100	20	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	39.25	39.33	54	-14.75	31.56	5.44	37.08	100	347	Average
5456	56.32	56.4	74	-17.68	31.56	5.44	37.08	100	347	Peak
5470	55.62	55.68	68.3	-12.68	31.57	5.45	37.08	100	347	Peak
5670	95.14	95.04			31.88	5.56	37.34	100	347	Average
5670	104.34	104.24			31.88	5.56	37.34	100	347	Peak
5725	58.04	57.92	68.3	-10.26	31.96	5.59	37.43	100	347	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin Value = Emission Level - Limit Value
2. 5670MHz: 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 60	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	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
75.09	22.06	43.24	40	-17.94	9.57	0.93	31.68	100	129	Peak
167.16	19.45	37.74	43.5	-24.05	12.05	1.43	31.77	100	206	Peak
255.72	20.38	38.77	46	-25.62	11.65	1.85	31.89	100	165	Peak
454	19.95	32.89	46	-26.05	16.41	2.63	31.98	100	184	Peak
600.3	25.57	35.12	46	-20.43	19.61	3.09	32.25	100	152	Peak
916.7	28.08	32.5	46	-17.92	23.6	4	32.02	100	140	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
49.98	29.71	47.28	40	-10.29	12.97	0.77	31.31	100	179	Peak
75.09	35.42	56.6	40	-4.58	9.57	0.93	31.68	100	182	Peak
171.75	14.63	33.36	43.5	-28.87	11.57	1.45	31.75	100	253	Peak
400.1	21.72	36.06	46	-24.28	15.35	2.43	32.12	100	176	Peak
624.8	28.75	37.85	46	-17.25	19.9	3.16	32.16	100	289	Peak
914.6	28.76	33.2	46	-17.24	23.59	4	32.03	100	165	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin Value = Emission Level - Limit Value

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 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. 17, 2013	Jul. 16, 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

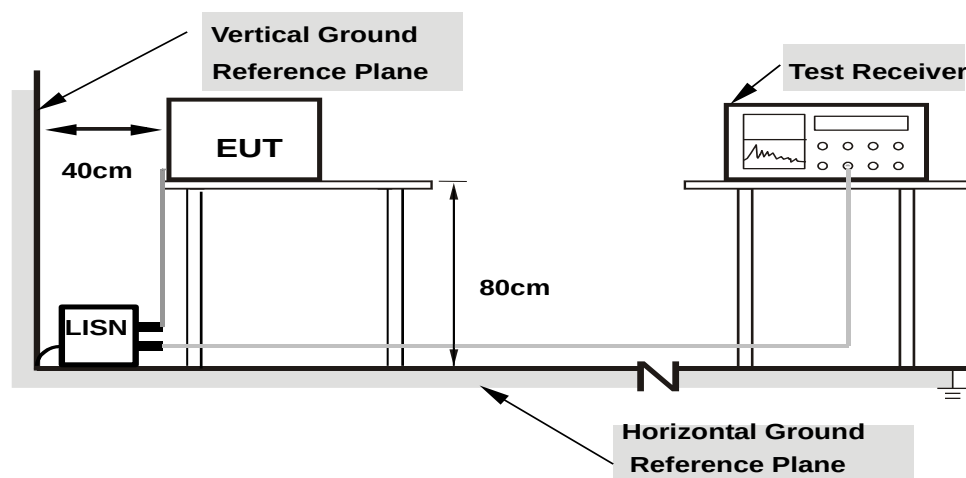
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

4.2.7 TEST RESULTS

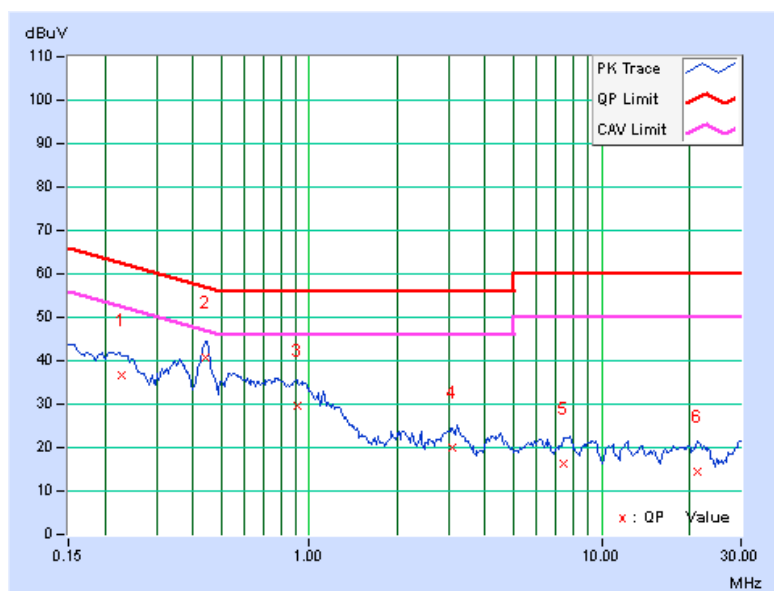
CONDUCTED WORST-CASE DATA :

PHASE	Line 1	6dB BANDWIDTH	9kHz
-------	--------	---------------	------

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	0.22812	0.18	36.42	25.72	36.60	25.90	62.52	52.52	-25.92	-26.62
2	0.44297	0.21	40.49	34.42	40.70	34.63	57.01	47.01	-16.30	-12.37
3	0.90781	0.26	29.42	18.38	29.68	18.64	56.00	46.00	-26.32	-27.36
4	3.07422	0.33	19.66	13.59	19.99	13.92	56.00	46.00	-36.01	-32.08
5	7.39453	0.40	15.94	10.29	16.34	10.69	60.00	50.00	-43.66	-39.31
6	21.28516	0.63	13.88	7.11	14.51	7.74	60.00	50.00	-45.49	-42.26

REMARKS:

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

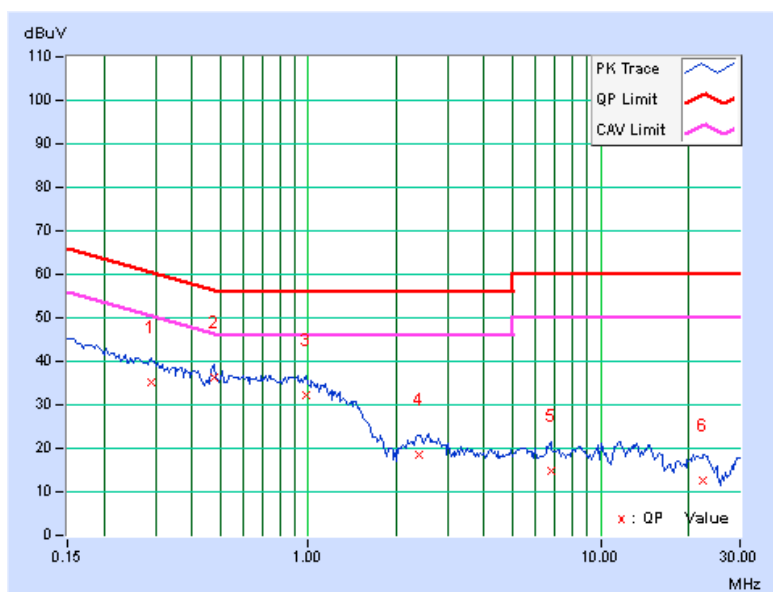


PHASE	Line 2	6dB BANDWIDTH	9kHz
-------	--------	---------------	------

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.29063	0.21	34.81	23.07	35.02	23.28	60.51	50.51	-25.48	-27.22
2	0.47422	0.25	35.94	28.36	36.19	28.61	56.44	46.44	-20.25	-17.83
3	0.98203	0.23	32.03	21.46	32.26	21.69	56.00	46.00	-23.74	-24.31
4	2.39063	0.30	18.40	10.55	18.70	10.85	56.00	46.00	-37.30	-35.15
5	6.76563	0.43	14.32	8.18	14.75	8.61	60.00	50.00	-45.25	-41.39
6	22.25781	0.71	11.90	5.44	12.61	6.15	60.00	50.00	-47.39	-43.85

REMARKS:

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



4.3 PEAK TRANSMIT POWER MEASUREMENT

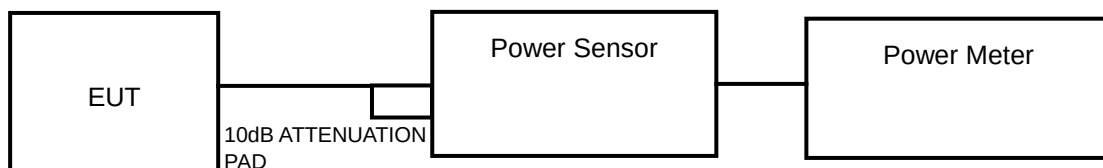
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

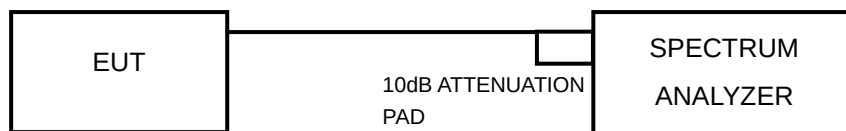
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

FOR 26dB BANDWIDTH

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	21.528	13.33	17	PASS
44	5220	22.131	13.45	17	PASS
48	5240	21.878	13.40	17	PASS
52	5260	17.100	12.33	24	PASS
60	5300	18.836	12.75	24	PASS
64	5320	18.750	12.73	24	PASS
100	5500	22.233	13.47	24	PASS
116	5580	21.627	13.35	24	PASS
140	5700	22.336	13.49	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	21.086	13.24	17	PASS
44	5220	22.233	13.47	17	PASS
48	5240	22.336	13.49	17	PASS
52	5260	16.520	12.18	24	PASS
60	5300	18.408	12.65	24	PASS
64	5320	18.493	12.67	24	PASS
100	5500	21.627	13.35	24	PASS
116	5580	21.577	13.34	24	PASS
140	5700	21.429	13.31	24	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	20.045	13.02	17	PASS
46	5230	20.749	13.17	17	PASS
54	5270	15.136	11.80	24	PASS
62	5310	15.668	11.95	24	PASS
102	5510	20.045	13.02	24	PASS
110	5550	20.184	13.05	24	PASS
134	5670	20.606	13.14	24	PASS

26dB BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	19.93	PASS
44	5220	19.98	PASS
48	5240	19.79	PASS
52	5260	19.97	PASS
60	5300	19.93	PASS
64	5320	19.85	PASS
100	5500	19.91	PASS
116	5580	19.97	PASS
140	5700	19.89	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	20.63	PASS
44	5220	20.39	PASS
48	5240	20.52	PASS
52	5260	20.72	PASS
60	5300	20.49	PASS
64	5320	20.49	PASS
100	5500	20.56	PASS
116	5580	20.68	PASS
140	5700	20.47	PASS

802.11n (40MHz)

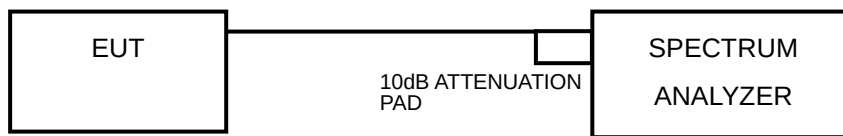
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	47.55	PASS
46	5230	45.98	PASS
54	5270	46.15	PASS
62	5310	45.90	PASS
102	5510	46.87	PASS
110	5550	45.30	PASS
134	5670	45.47	PASS

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

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	2.22	0.26	2.48	4	PASS
44	5220	2.38	0.26	2.64	4	PASS
48	5240	2.49	0.26	2.75	4	PASS
52	5260	0.63	0.26	0.89	11	PASS
60	5300	2.84	0.26	3.10	11	PASS
64	5320	0.96	0.26	1.22	11	PASS
100	5500	2.43	0.26	2.69	11	PASS
116	5580	2.31	0.26	2.57	11	PASS
140	5700	1.82	0.26	2.08	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	1.96	0.28	2.24	4	PASS
44	5220	2.11	0.28	2.39	4	PASS
48	5240	2.07	0.28	2.35	4	PASS
52	5260	2.29	0.28	2.57	11	PASS
60	5300	2.38	0.28	2.66	11	PASS
64	5320	2.50	0.28	2.78	11	PASS
100	5500	1.95	0.28	2.23	11	PASS
116	5580	1.94	0.28	2.22	11	PASS
140	5700	1.47	0.28	1.75	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	-1.87	0.6	-1.27	4	PASS
46	5230	-1.86	0.6	-1.26	4	PASS
54	5270	-1.57	0.6	-0.97	11	PASS
62	5310	-1.20	0.6	-0.60	11	PASS
102	5510	-1.84	0.6	-1.24	11	PASS
110	5550	-1.75	0.6	-1.15	11	PASS
134	5670	-2.12	0.6	-1.52	11	PASS

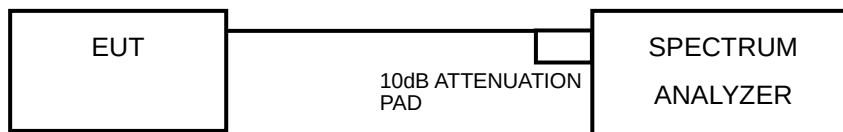
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

Find the worst channel and modulation mode as above test procedure, and follow KDB 789033 D01 General UNII Test Procedures v01r03 and repeat step 1 to 5 for final testing of each modulation mode on a single channel (all modulation types) in a single operating band to compliance with the peak excursion requirement.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

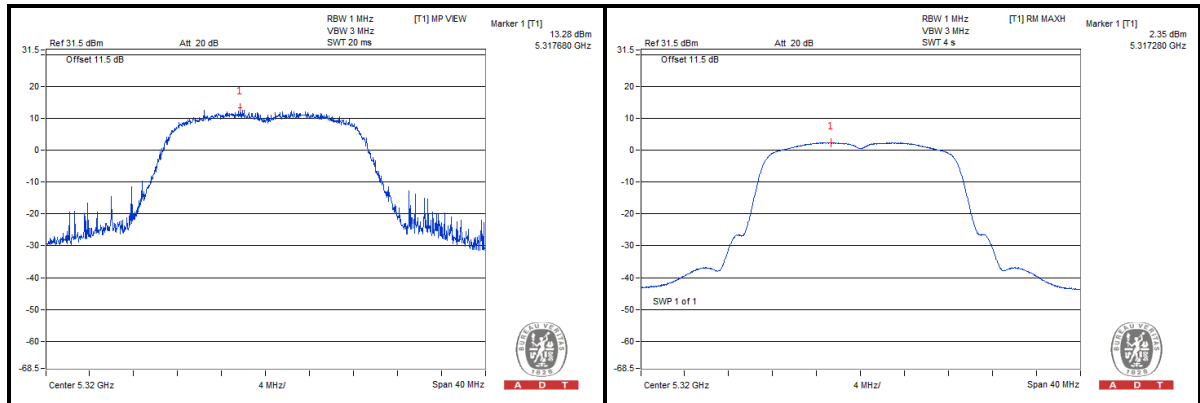
4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

4.5.7 TEST RESULTS

MODULATION MODE	MODULATION TYPE	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS /FAIL
802.11a	BPSK	5300	11.78	2.84	3.10	8.68	13	PASS
	QPSK		13.62	2.73	3.30	10.32	13	PASS
	16QAM		12.62	2.46	3.27	9.35	13	PASS
	64QAM		13.21	1.89	3.40	9.81	13	PASS
802.11n (20MHz)	BPSK	5320	12.51	2.50	3.01	9.50	13	PASS
	QPSK		13.28	2.35	2.63	10.65	13	PASS
	16QAM		12.65	2.03	2.88	9.77	13	PASS
	64QAM		12.45	1.67	3.06	9.39	13	PASS
802.11n (40MHz)	BPSK	5310	9.66	-1.20	-0.60	10.26	13	PASS
	QPSK		9.16	-1.54	-0.74	9.90	13	PASS
	16QAM		9.43	-2.12	-0.73	10.16	13	PASS
	64QAM		9.14	-2.76	-0.58	9.72	13	PASS

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

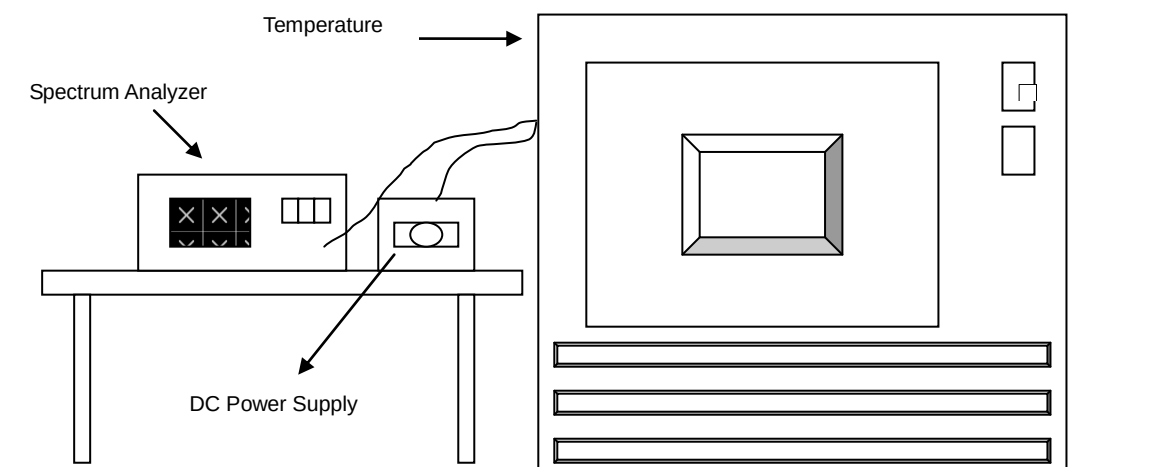


4.6 FREQUENCY STABILITY

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	5320.015668	2.945	5320.014984	2.817	5320.015269	2.870	5320.015686	2.948
40	3.8	5320.015942	2.997	5320.016148	3.035	5320.015838	2.977	5320.016123	3.031
30	3.8	5320.017040	3.203	5320.016966	3.189	5320.017373	3.266	5320.016882	3.173
20	3.8	5320.017996	3.383	5320.018438	3.466	5320.017696	3.326	5320.017879	3.361
10	3.8	5320.019775	3.717	5320.019734	3.709	5320.019472	3.660	5320.019464	3.659
0	3.8	5320.017988	3.381	5320.018315	3.443	5320.018421	3.463	5320.018035	3.390
-10	3.8	5320.016561	3.113	5320.016389	3.081	5320.016746	3.148	5320.016848	3.167
-20	3.8	5320.016246	3.054	5320.016155	3.037	5320.016297	3.063	5320.016289	3.062
-30	3.8	5320.014927	2.806	5320.015406	2.896	5320.014821	2.786	5320.015248	2.866

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	5320.017508	3.291	5320.018083	3.399	5320.017712	3.329	5320.017987	3.381
	3.8	5320.017996	3.383	5320.018438	3.466	5320.017696	3.326	5320.017879	3.361
	4.2	5320.019421	3.651	5320.019274	3.623	5320.019137	3.597	5320.019125	3.595

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---