

FCC TEST REPORT (15.407)

REPORT NO.: RF140801C01-1

MODEL NO.: DCS-935L, DCS-935LX

FCC ID: KA2CS935LA1

RECEIVED: Aug. 01, 2014

TESTED: Sep. 10 ~ Sep. 30, 2014

ISSUED: Sep. 30, 2014

APPLICANT: D-LINK CORPORATION

ADDRESS: 17595 Mt. Hermann, Fountain Valley, CA 92708,
U.S.A.

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

LAB ADDRESS: No. 47-2, 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	11
3.3 DUTY CYCLE OF TEST SIGNAL	13
3.4 DESCRIPTION OF SUPPORT UNITS	17
3.4.1 CONFIGURATION OF SYSTEM UNDER TEST	17
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	17
4. TEST TYPES AND RESULTS	18
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	18
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	18
4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS	18
4.1.3 TEST INSTRUMENTS	19
4.1.4 TEST PROCEDURES	20
4.1.5 DEVIATION FROM TEST STANDARD	20
4.1.6 TEST SETUP	21
4.1.7 EUT OPERATING CONDITION	21
4.1.8 TEST RESULTS	22
4.2 CONDUCTED EMISSION MEASUREMENT	52
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	52
4.2.2 TEST INSTRUMENTS	52
4.2.3 TEST PROCEDURES	53
4.2.4 DEVIATION FROM TEST STANDARD	53
4.2.5 TEST SETUP	53
4.2.6 EUT OPERATING CONDITIONS	53
4.2.7 TEST RESULTS	54
4.3 TRANSMIT POWER MEASUREMENT	58
4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT	58
4.3.2 TEST SETUP	58
4.3.3 TEST INSTRUMENTS	59
4.3.4 TEST PROCEDURE	59
4.3.5 DEVIATION FROM TEST STANDARD	60
4.3.6 EUT OPERATING CONDITIONS	60
4.3.7 TEST RESULTS	61
4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT	67



A D T

4.4.1	LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT	67
4.4.2	TEST SETUP	67
4.4.3	TEST INSTRUMENTS	67
4.4.4	TEST PROCEDURES	67
4.4.5	DEVIATION FROM TEST STANDARD	67
4.4.6	EUT OPERATING CONDITIONS	67
4.4.7	TEST RESULTS	68
4.5	PEAK POWER EXCURSION MEASUREMENT	70
4.5.1	LIMITS OF PEAK POWER EXCURSION MEASUREMENT	70
4.5.2	TEST SETUP	70
4.5.3	TEST INSTRUMENTS	70
4.5.4	TEST PROCEDURE	70
4.5.5	DEVIATION FROM TEST STANDARD	70
4.5.6	EUT OPERATING CONDITIONS	70
4.5.7	TEST RESULTS	71
4.6	FREQUENCY STABILITY	72
4.6.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT	72
4.6.2	TEST SETUP	72
4.6.3	TEST INSTRUMENTS	72
4.6.4	TEST PROCEDURE	73
4.6.5	DEVIATION FROM TEST STANDARD	73
4.6.6	EUT OPERATING CONDITION	73
4.6.7	TEST RESULTS	74
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION	75
6.	INFORMATION ON THE TESTING LABORATORIES	76
7.	APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	77



A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140801C01-1	Original release	Sep. 30, 2014

1. CERTIFICATION

PRODUCT: HD Wi-Fi Camera

MODEL: DCS-935L, DCS-935LX

BRAND: D-Link

APPLICANT: D-LINK CORPORATION

TESTED: Sep. 10 ~ Sep. 30, 2014

TEST SAMPLE: ENGINEERING SAMPLE

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

ANSI C63.10-2009

The above equipment (model: DCS-935L) 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 : Celine Chou , **DATE :** Sep. 30, 2014
Celine Chou / Specialist

APPROVED BY : Ken Liu , **DATE :** Sep. 30, 2014
Ken Liu / Senior 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 -13.74dB at 0.54453MHz.
15.407(b)(1/2/3) (b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 10360.00, 10600.00, 11000.00, 11160.00, 11480.00, 11460.00, 10540.00 and 10620.00MHz.
15.407(a)(1/2)	Max Average 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	3.63 dB
	200MHz ~1000MHz	3.64 dB
	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 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	HD Wi-Fi Camera
MODEL NO.	DCS-935L, DCS-935LX
POWER SUPPLY	5Vdc from adapter
MODULATION TYPE	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
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 135Mbps 802.11ac: up to 390Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz), 802.11ac (20MHz) 2 for 802.11n (40MHz), 802.11ac (40MHz) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz), 802.11ac (20MHz) 2 for 802.11n (40MHz), 802.11ac (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz), 802.11ac (20MHz) 3 for 802.11n (40MHz), 802.11ac (40MHz) 1 for 802.11ac (80MHz)
OUTPUT POWER	5180 ~ 5240MHz: 49.431mW 5260 ~ 5320MHz: 58.749mW 5500 ~ 5700MHz: 166.341mW
ANTENNA TYPE	PCB antenna with 2dBi gain
ANTENNA CONNECTOR	N/A
DATA CABLE	N/A
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter

NOTE:

1. All models are listed as below. The mainly difference between these models is FW.

BRAND	MODEL	DIFFERENCE
D-Link	DCS-935L (Main test model)	With FW: v1.00 b27
	DCS-935LX	With FW: v1.00 b18

1. The EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11a	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX
802.11ac (20MHz)	1TX
802.11ac (40MHz)	1TX
802.11ac (80MHz)	1TX

* The modulation and bandwidth are similar for 802.11n mode for 20MHz / 40MHz and 802.11ac mode for 20MHz / 40MHz, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

2. The EUT consumes power from the following adapters.

Adapter 1	
Brand	AMIGO
Model	AMS20-0501200FU2
Input Power	100-240Vac, 50/60Hz, 0.2A / 15VA
Output Power	5Vdc, 1.2A
Power Line	DC1.5m power cable without core attached on adapter

Adapter 2	
Brand	D-Link
Model	KSAS0050500120D5D
Input Power	100-240Vac, 50/60Hz, 0.18A
Output Power	5Vdc, 1.2A
Power Line	DC1.55m power cable without core attached on adapter

3. The above EUT information is declared by 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), 802.11ac (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), 802.11ac (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

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

CHANNEL	FREQUENCY
42	5210MHz

FOR 5260 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n (20MHz), 802.11ac (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), 802.11ac (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

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

CHANNEL	FREQUENCY
58	5290MHz

FOR 5500 ~ 5700MHz

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

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

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

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

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

CHANNEL	FREQUENCY
106	5530MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
A	√	√	√	√	Powered by adapter 1
B	-	√	√	-	Powered by adapter 2

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:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
2. "-" means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
A	802.11ac (80MHz)		42	42	OFDM	BPSK	29.3
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
A	802.11ac (80MHz)		58	58	OFDM	BPSK	29.3
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
A	802.11ac (80MHz)		106	106	OFDM	BPSK	29.3

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
	802.11a	5500-5700	100 to 140		OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B-	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
	802.11a	5500-5700	100 to 140		OFDM	BPSK	6.0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
A	802.11ac (80MHz)		42	42	OFDM	BPSK	29.3
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
A	802.11ac (80MHz)		58	58	OFDM	BPSK	29.3
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
A	802.11ac (80MHz)		106	106	OFDM	BPSK	29.3

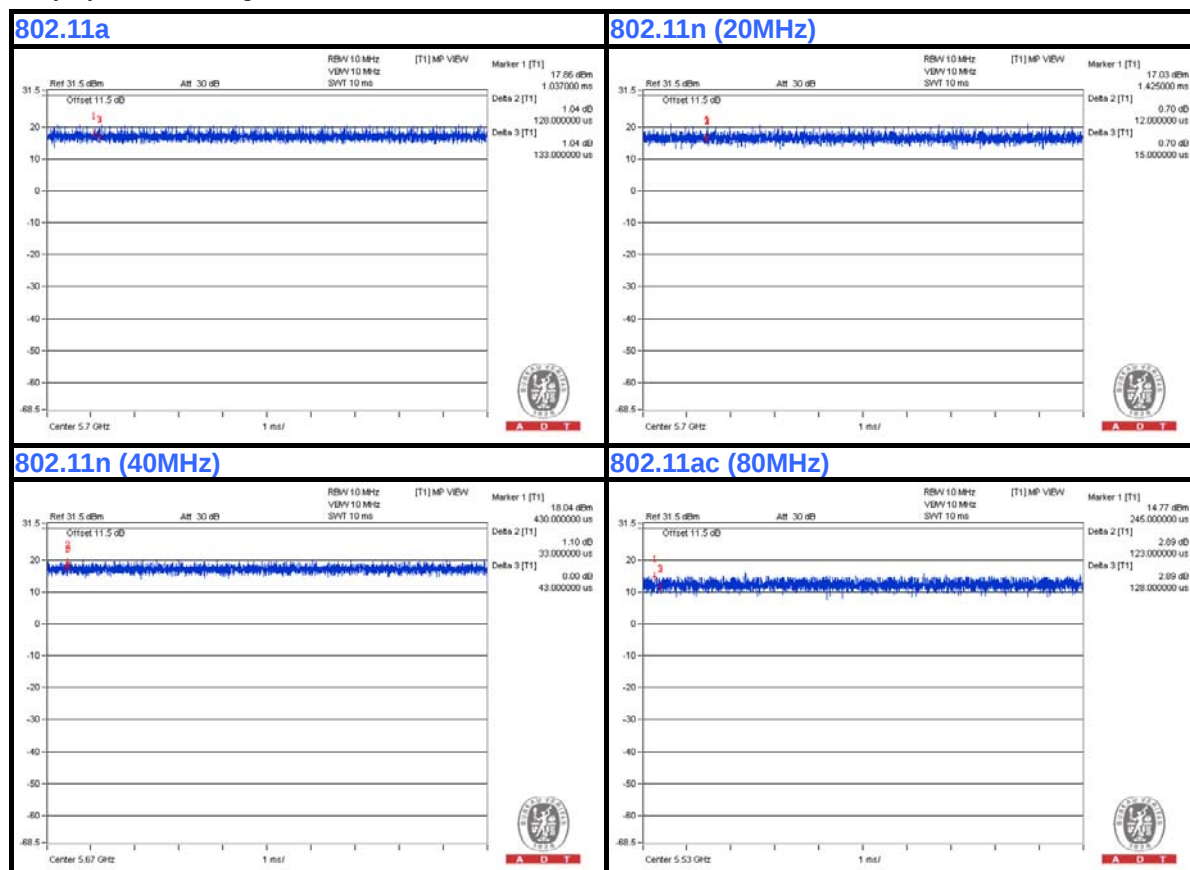
TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Ted Chang
RE $<$ 1G	25deg. C, 65%RH 25deg. C, 60%RH	120Vac, 60Hz	Ted Chang
PLC	24deg. C, 64%RH 25deg. C, 65%RH	120Vac, 60Hz	Match Tsui Ted Chang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Antony Lee

3.3 DUTY CYCLE OF TEST SIGNAL

MODULATION TYPE: BPSK

Duty cycle of test signal is 100 %

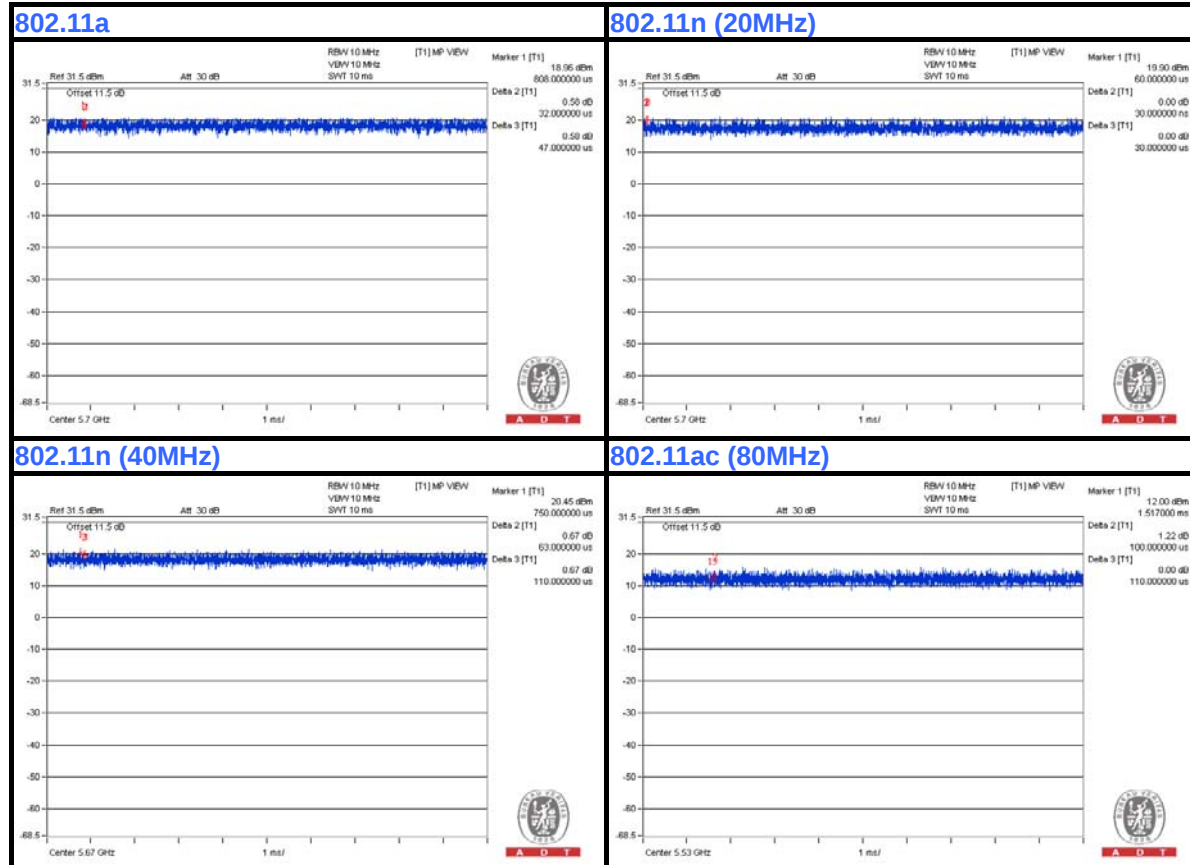




A D T

MODULATION TYPE: QPSK

Duty cycle of test signal is 100 %

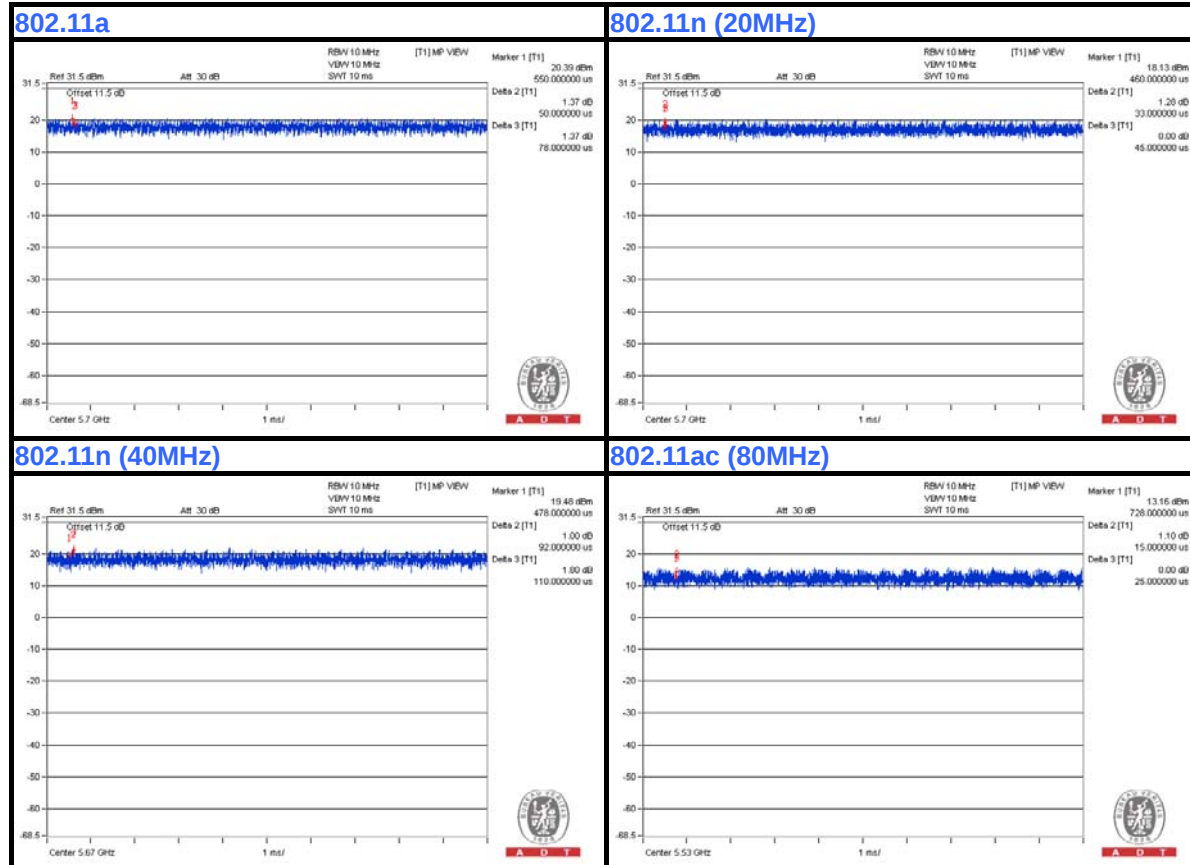




A D T

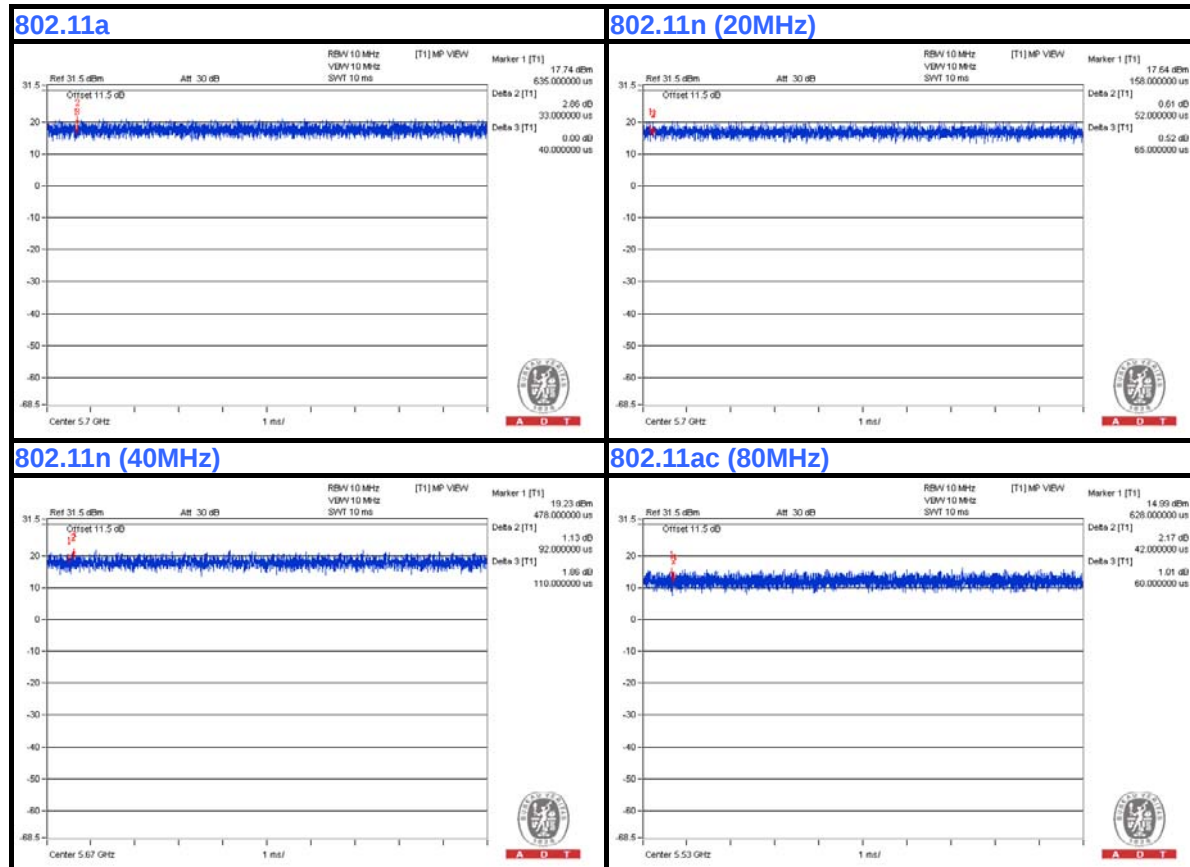
MODULATION TYPE: 16QAM

Duty cycle of test signal is 100 %



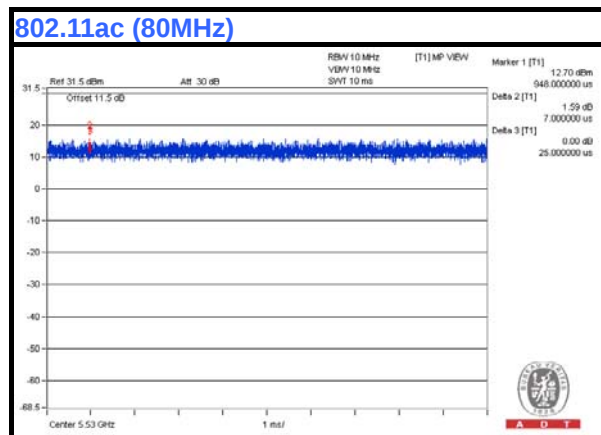
MODULATION TYPE: 64QAM

Duty cycle of test signal is 100 %



MODULATION TYPE: 256QAM

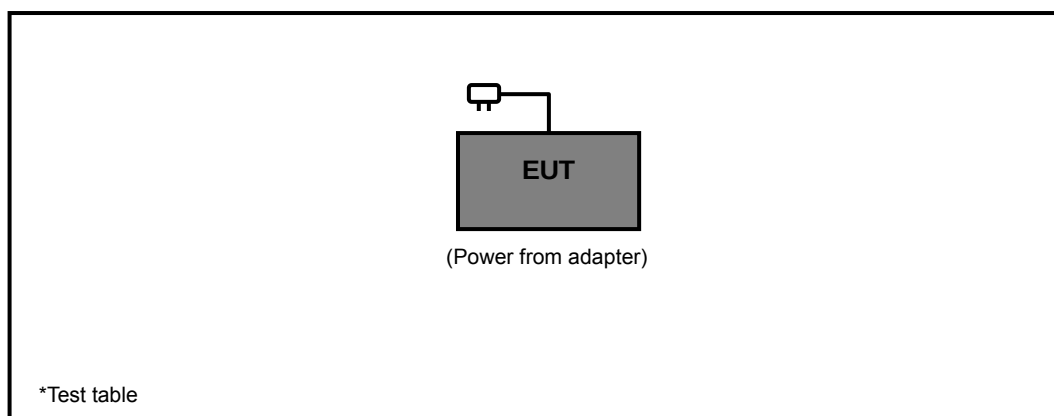
Duty cycle of test signal is 100 %



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit.

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



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)

789033 D01 General UNII Test Procedures Old Rules v01r04

ANSI C63.10-2009

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

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
789033 D01 General UNII Test Procedures Old Rules v01r04	FIELD STRENGTH AT 3m	
	PK: 74 (dBuV/m)	AV: 54 (dBuV/m)
APPLICABLE TO	EIRP LIMIT	EQUIVALENT FIELD STRENGTH AT 3m
15.407 RSS-210 Annex 9	PK: -27 (dBm/MHz)	PK: 68.2 (dBuV/m)

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

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

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 29, 2013	Nov. 28, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Feb. 11, 2014	Feb. 10, 2015
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Feb. 25, 2014	Feb. 24, 2015
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Sep. 12, 2013 Sep. 12, 2014	Sep. 11, 2014 Sep. 11, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 17, 2014	Feb. 16, 2015
Preamplifier Agilent	8449B	3008A01911	Aug. 22, 2014	Aug. 21, 2015
Preamplifier Agilent	8447D	2944A10638	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	248780/4 309222/4 274092/4	Aug. 26, 2014	Aug. 25, 2015
RF signal cable Worken	5D-FB	Cable-HYCH9-01	Aug. 11, 2014	Aug. 10, 2015
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2013	Oct. 17, 2014
High Speed Peak Power Meter	ML2495A	0824011	Jul. 26, 2014	Jul. 25, 2015
Power Sensor	MA2411B	0738171	Jul. 26, 2014	Jul. 25, 2015
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 9, 2014	Jun. 08, 2015

- 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 Chamber 9.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 215374.
5. The IC Site Registration No. is IC 7450F-9.

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:

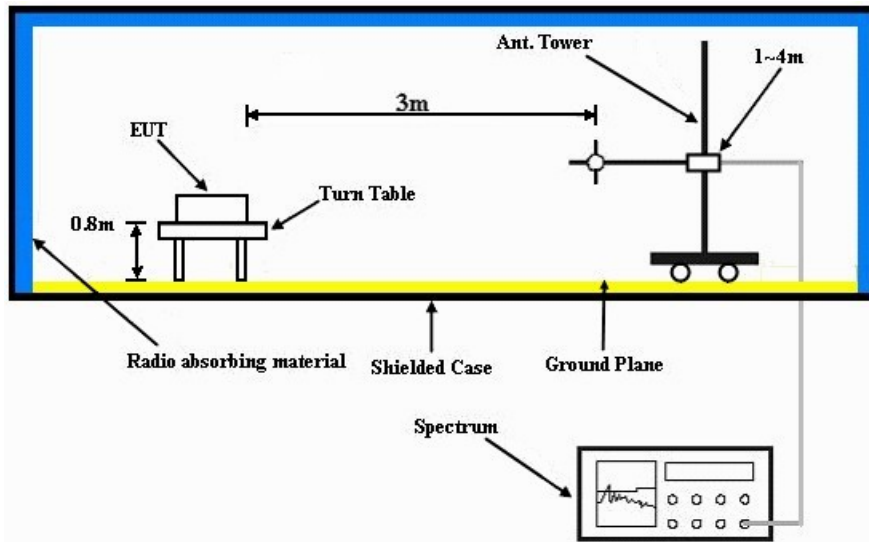
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

4.1.5 DEVIATION FROM TEST STANDARD

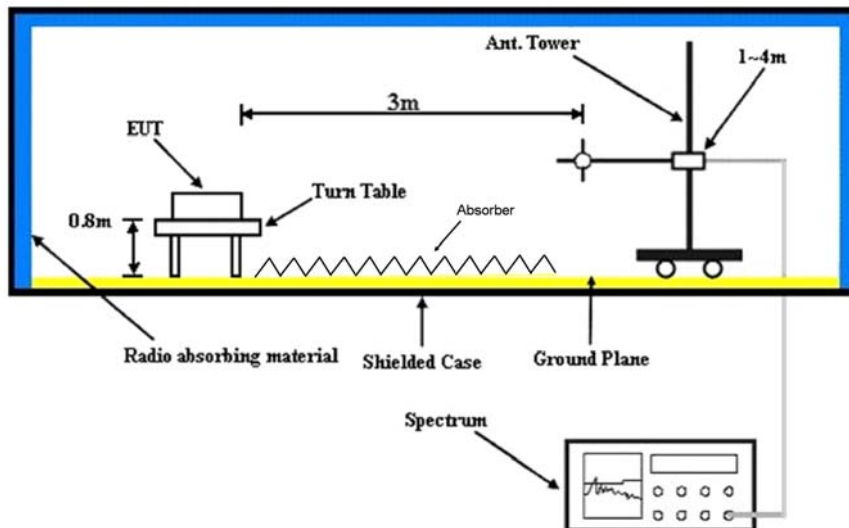
No deviation.

4.1.6 TEST SETUP

Frequency range 30MHz~1GHz



Frequency range above 1GHz



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

4.1.7 EUT OPERATING CONDITION

Set 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	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.9 PK	74.0	-18.1	1.00 H	221	53.90	2.00
2	5150.00	43.5 AV	54.0	-10.5	1.00 H	221	41.50	2.00
3	*5180.00	98.4 PK			1.00 H	221	58.40	40.00
4	*5180.00	88.4 AV			1.00 H	221	48.40	40.00
5	#10360.00	66.6 PK	74.0	-7.4	1.29 H	251	52.00	14.60
6	#10360.00	52.8 AV	54.0	-1.2	1.29 H	251	38.20	14.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.6 PK	74.0	-17.4	1.00 V	177	54.60	2.00
2	5150.00	44.5 AV	54.0	-9.5	1.00 V	177	42.50	2.00
3	*5180.00	103.0 PK			1.00 V	177	63.00	40.00
4	*5180.00	93.2 AV			1.00 V	177	53.20	40.00
5	#10360.00	67.2 PK	74.0	-6.8	1.11 V	163	52.60	14.60
6	#10360.00	53.0 AV	54.0	-1.0	1.11 V	163	38.40	14.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	101.5 PK			1.23 H	164	61.40	40.10
2	*5200.00	91.5 AV			1.23 H	164	51.40	40.10
3	#10400.00	64.8 PK	68.2	-3.4	1.28 H	2	50.10	14.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	106.8 PK			1.00 V	74	66.70	40.10
2	*5200.00	96.9 AV			1.00 V	74	56.80	40.10
3	#10400.00	67.1 PK	68.2	-1.1	1.23 V	118	52.40	14.70

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “ # ”: The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	100.9 PK			1.07 H	163	60.80	40.10
2	*5240.00	90.9 AV			1.07 H	163	50.80	40.10
3	5350.00	56.2 PK	74.0	-17.8	1.01 H	53	54.20	2.00
4	5350.00	43.2 AV	54.0	-10.8	1.01 H	53	41.20	2.00
5	#10480.00	66.6 PK	74.0	-7.4	1.17 H	324	51.00	15.60
6	#10480.00	52.6 AV	54.0	-1.4	1.17 H	324	37.00	15.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	101.8 PK			1.02 V	212	61.70	40.10
2	*5240.00	91.5 AV			1.02 V	212	51.40	40.10
3	5350.00	56.2 PK	74.0	-17.8	1.54 V	84	54.20	2.00
4	5350.00	44.2 AV	54.0	-9.8	1.54 V	84	42.20	2.00
5	#10480.00	63.7 PK	74.0	-10.3	1.03 V	164	48.10	15.60
6	#10480.00	50.4 AV	54.0	-3.6	1.03 V	164	34.80	15.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	94.1 PK			1.00 H	219	54.00	40.10
2	*5260.00	84.3 AV			1.00 H	219	44.20	40.10
3	5350.00	56.2 PK	74.0	-17.8	1.51 H	21	54.20	2.00
4	5350.00	43.5 AV	54.0	-10.5	1.51 H	21	41.50	2.00
5	#10520.00	66.7 PK	68.2	-1.5	1.26 H	70	50.80	15.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	101.2 PK			1.11 V	85	61.10	40.10
2	*5260.00	91.3 AV			1.11 V	85	51.20	40.10
3	5350.00	57.3 PK	74.0	-16.7	1.11 V	85	55.30	2.00
4	5350.00	44.5 AV	54.0	-9.5	1.11 V	85	42.50	2.00
5	#10520.00	62.8 PK	74.0	-11.2	1.54 V	87	46.90	15.90
6	#10520.00	50.4 AV	54.0	-3.6	1.54 V	87	34.50	15.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	98.4 PK			1.00 H	222	58.30	40.10
2	*5300.00	89.1 AV			1.00 H	222	49.00	40.10
3	10600.00	67.1 PK	74.0	-6.9	1.27 H	207	50.50	16.60
4	10600.00	53.0 AV	54.0	-1.0	1.27 H	207	36.40	16.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	106.5 PK			1.00 V	77	66.40	40.10
2	*5300.00	96.1 AV			1.00 V	77	56.00	40.10
3	10600.00	66.8 PK	74.0	-7.2	1.00 V	173	50.20	16.60
4	10600.00	52.7 AV	54.0	-1.3	1.00 V	173	36.10	16.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	95.7 PK			1.00 H	226	55.50	40.20
2	*5320.00	85.4 AV			1.00 H	226	45.20	40.20
3	5350.00	57.3 PK	74.0	-16.7	1.00 H	226	55.30	2.00
4	5350.00	44.2 AV	54.0	-9.8	1.00 H	226	42.20	2.00
5	10640.00	64.4 PK	74.0	-9.6	1.28 H	206	47.60	16.80
6	10640.00	51.7 AV	54.0	-2.3	1.28 H	206	34.90	16.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	103.5 PK			1.00 V	85	63.30	40.20
2	*5320.00	103.8 AV			1.00 V	85	63.60	40.20
3	5350.00	57.8 PK	74.0	-16.2	1.00 V	85	55.80	2.00
4	5350.00	44.8 AV	54.0	-9.2	1.00 V	85	42.80	2.00
5	10640.00	66.4 PK	74.0	-7.6	1.00 V	172	49.60	16.80
6	10640.00	52.7 AV	54.0	-1.3	1.00 V	172	35.90	16.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.1 PK	74.0	-16.9	1.06 H	228	55.00	2.10
2	5460.00	44.3 AV	54.0	-9.7	1.06 H	228	42.20	2.10
3	#5470.00	61.9 PK	74.0	-12.1	1.06 H	228	59.70	2.20
4	#5470.00	45.3 AV	54.0	-8.7	1.06 H	228	43.10	2.20
5	*5500.00	101.3 PK			1.06 H	228	61.00	40.30
6	*5500.00	91.4 AV			1.06 H	228	51.10	40.30
7	11000.00	66.4 PK	74.0	-7.6	1.00 H	358	48.10	18.30
8	11000.00	53.0 AV	54.0	-1.0	1.00 H	358	34.70	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.6 PK	74.0	-14.4	1.00 V	194	57.50	2.10
2	5460.00	45.5 AV	54.0	-8.5	1.00 V	194	43.40	2.10
3	#5470.00	68.2 PK	74.0	-5.8	1.00 V	194	66.00	2.20
4	#5470.00	49.1 AV	54.0	-4.9	1.00 V	194	46.90	2.20
5	*5500.00	110.7 PK			1.00 V	194	70.40	40.30
6	*5500.00	100.6 AV			1.00 V	194	60.30	40.30
7	11000.00	66.7 PK	74.0	-7.3	1.00 V	173	48.40	18.30
8	11000.00	53.0 AV	54.0	-1.0	1.00 V	173	34.70	18.30

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " * ": Fundamental frequency.
- "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	101.9 PK			1.00 H	221	61.40	40.50
2	*5580.00	92.3 AV			1.00 H	221	51.80	40.50
3	11160.00	65.0 PK	74.0	-9.0	1.11 H	358	47.40	17.60
4	11160.00	51.9 AV	54.0	-2.1	1.11 H	358	34.30	17.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.6 PK			1.00 V	194	68.10	40.50
2	*5580.00	98.7 AV			1.00 V	194	58.20	40.50
3	11160.00	66.9 PK	74.0	-7.1	1.05 V	100	49.30	17.60
4	11160.00	53.0 AV	54.0	-1.0	1.05 V	100	35.40	17.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	98.1 PK			1.14 H	225	57.30	40.80
2	*5700.00	87.4 AV			1.14 H	225	46.60	40.80
3	#5725.00	56.7 PK	74.0	-17.3	1.14 H	225	54.10	2.60
4	#5725.00	43.7 AV	54.0	-10.3	1.14 H	225	41.10	2.60
5	11400.00	65.8 PK	74.0	-8.2	1.15 H	318	49.30	16.50
6	11400.00	52.7 AV	54.0	-1.3	1.15 H	318	36.20	16.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	102.4 PK			1.07 V	11	61.60	40.80
2	*5700.00	92.5 AV			1.07 V	11	51.70	40.80
3	#5725.00	57.8 PK	74.0	-16.2	1.07 V	11	55.20	2.60
4	#5725.00	45.1 AV	54.0	-8.9	1.07 V	11	42.50	2.60
5	11400.00	65.0 PK	74.0	-9.0	1.99 V	125	48.50	16.50
6	11400.00	51.4 AV	54.0	-2.6	1.99 V	125	34.90	16.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.1 PK	74.0	-17.9	1.31 H	238	54.10	2.00
2	5150.00	43.0 AV	54.0	-11.0	1.31 H	238	41.00	2.00
3	*5180.00	99.5 PK			1.31 H	238	59.50	40.00
4	*5180.00	89.5 AV			1.31 H	238	49.50	40.00
5	#10360.00	68.2 PK	74.0	-5.8	1.28 H	70	53.60	14.60
6	#10360.00	52.8 AV	54.0	-1.2	1.28 H	70	38.20	14.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.2 PK	74.0	-14.8	1.00 V	185	57.20	2.00
2	5150.00	43.8 AV	54.0	-10.2	1.00 V	185	41.80	2.00
3	*5180.00	104.8 PK			1.00 V	185	64.80	40.00
4	*5180.00	94.9 AV			1.00 V	185	54.90	40.00
5	#10360.00	66.8 PK	74.0	-7.2	1.10 V	164	52.20	14.60
6	#10360.00	52.2 AV	54.0	-1.8	1.10 V	164	37.60	14.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	95.8 PK			1.00 H	183	55.70	40.10
2	*5200.00	85.6 AV			1.00 H	183	45.50	40.10
3	#10400.00	66.2 PK	74.0	-7.8	1.26 H	231	51.50	14.70
4	#10400.00	52.8 AV	54.0	-1.2	1.26 H	231	38.10	14.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	104.4 PK			1.01 V	90	64.30	40.10
2	*5200.00	94.1 AV			1.01 V	90	54.00	40.10
3	#10400.00	66.4 PK	74.0	-7.6	1.16 V	159	51.70	14.70
4	#10400.00	52.2 AV	54.0	-1.8	1.16 V	159	37.50	14.70

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	94.2 PK			1.00 H	32	54.10	40.10
2	*5240.00	83.8 AV			1.00 H	32	43.70	40.10
3	5350.00	56.8 PK	74.0	-17.2	1.00 H	32	54.80	2.00
4	5350.00	44.2 AV	54.0	-9.8	1.00 H	32	42.20	2.00
5	#10480.00	63.8 PK	74.0	-10.2	1.21 H	356	48.20	15.60
6	#10480.00	50.2 AV	54.0	-3.8	1.21 H	356	34.60	15.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	102.5 PK			1.00 V	90	62.40	40.10
2	*5240.00	92.2 AV			1.00 V	90	52.10	40.10
3	5460.00	57.8 PK	74.0	-16.2	1.00 V	90	55.70	2.10
4	5460.00	45.1 AV	54.0	-8.9	1.00 V	90	43.00	2.10
5	#10480.00	66.9 PK	74.0	-7.1	1.25 V	91	51.30	15.60
6	#10480.00	53.0 AV	54.0	-1.0	1.25 V	91	37.40	15.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	96.0 PK			1.00 H	199	55.90	40.10
2	*5260.00	85.9 AV			1.00 H	199	45.80	40.10
3	5460.00	57.4 PK	74.0	-16.6	1.00 H	199	55.30	2.10
4	5460.00	44.4 AV	54.0	-9.6	1.00 H	199	42.30	2.10
5	#10520.00	66.2 PK	74.0	-7.8	1.25 H	355	50.30	15.90
6	#10520.00	52.1 AV	54.0	-1.9	1.25 H	355	36.20	15.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	102.8 PK			1.00 V	77	62.70	40.10
2	*5260.00	92.5 AV			1.00 V	77	52.40	40.10
3	5460.00	58.0 PK	74.0	-16.0	1.00 V	77	55.90	2.10
4	5460.00	45.0 AV	54.0	-9.0	1.00 V	77	42.90	2.10
5	#10520.00	66.3 PK	74.0	-7.7	1.56 V	69	50.40	15.90
6	#10520.00	52.7 AV	54.0	-1.3	1.56 V	69	36.80	15.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	93.7 PK			1.00 H	204	53.60	40.10
2	*5300.00	83.2 AV			1.00 H	204	43.10	40.10
3	10600.00	63.0 PK	74.0	-11.0	1.42 H	354	46.40	16.60
4	10600.00	49.7 AV	54.0	-4.3	1.42 H	354	33.10	16.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	102.0 PK			1.00 V	97	61.90	40.10
2	*5300.00	92.1 AV			1.00 V	97	52.00	40.10
3	10600.00	66.4 PK	74.0	-7.6	1.23 V	91	49.80	16.60
4	10600.00	52.6 AV	54.0	-1.4	1.23 V	91	36.00	16.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	96.8 PK			1.00 H	199	56.60	40.20
2	*5320.00	87.1 AV			1.00 H	199	46.90	40.20
3	5350.00	57.2 PK	74.0	-16.8	1.00 H	198	55.20	2.00
4	5350.00	43.9 AV	54.0	-10.1	1.00 H	198	41.90	2.00
5	10640.00	67.8 PK	74.0	-6.2	1.13 H	254	51.00	16.80
6	10640.00	52.8 AV	54.0	-1.2	1.13 H	254	36.00	16.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	104.3 PK			1.00 V	87	64.10	40.20
2	*5320.00	94.2 AV			1.00 V	87	54.00	40.20
3	5350.00	58.9 PK	74.0	-15.1	1.00 V	87	56.90	2.00
4	5350.00	44.4 AV	54.0	-9.6	1.00 V	87	42.40	2.00
5	10640.00	65.3 PK	74.0	-8.7	1.00 V	209	48.50	16.80
6	10640.00	52.2 AV	54.0	-1.8	1.00 V	209	35.40	16.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.6 PK	74.0	-15.4	1.29 H	232	56.50	2.10
2	5460.00	44.2 AV	54.0	-9.8	1.29 H	232	42.10	2.10
3	#5470.00	63.5 PK	74.0	-10.5	1.29 H	232	61.30	2.20
4	#5470.00	46.9 AV	54.0	-7.1	1.29 H	232	44.70	2.20
5	*5500.00	102.6 PK			1.29 H	232	62.30	40.30
6	*5500.00	92.4 AV			1.29 H	232	52.10	40.30
7	11000.00	67.6 PK	74.0	-6.4	1.11 H	345	49.30	18.30
8	11000.00	52.6 AV	54.0	-1.4	1.11 H	345	34.30	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.1 PK	74.0	-12.9	1.00 V	8	59.00	2.10
2	5460.00	46.1 AV	54.0	-7.9	1.00 V	8	44.00	2.10
3	#5470.00	69.9 PK	74.0	-4.1	1.00 V	8	67.70	2.20
4	#5470.00	52.0 AV	54.0	-2.0	1.00 V	8	49.80	2.20
5	*5500.00	110.3 PK			1.00 V	8	70.00	40.30
6	*5500.00	100.4 AV			1.00 V	8	60.10	40.30
7	11000.00	67.4 PK	74.0	-6.6	1.08 V	217	49.10	18.30
8	11000.00	52.8 AV	54.0	-1.2	1.08 V	217	34.50	18.30

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	106.0 PK			1.45 H	232	65.50	40.50
2	*5580.00	94.9 AV			1.45 H	232	54.40	40.50
3	11160.00	64.1 PK	74.0	-9.9	1.68 H	206	46.50	17.60
4	11160.00	50.8 AV	54.0	-3.2	1.68 H	206	33.20	17.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	114.3 PK			1.00 V	344	73.80	40.50
2	*5580.00	103.5 AV			1.00 V	344	63.00	40.50
3	11160.00	64.3 PK	74.0	-9.7	1.00 V	173	46.70	17.60
4	11160.00	50.9 AV	54.0	-3.1	1.00 V	173	33.30	17.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	96.4 PK			1.24 H	314	55.60	40.80
2	*5700.00	86.2 AV			1.24 H	314	45.40	40.80
3	#5725.00	58.7 PK	74.0	-15.3	1.24 H	314	56.10	2.60
4	#5725.00	43.8 AV	54.0	-10.2	1.24 H	314	41.20	2.60
5	11400.00	66.9 PK	74.0	-7.1	1.32 H	242	50.40	16.50
6	11400.00	52.6 AV	54.0	-1.4	1.32 H	242	36.10	16.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	104.8 PK			1.00 V	2	64.00	40.80
2	*5700.00	94.8 AV			1.00 V	2	54.00	40.80
3	#5725.00	65.4 PK	74.0	-8.6	1.00 V	2	62.80	2.60
4	#5725.00	47.9 AV	54.0	-6.1	1.00 V	2	45.30	2.60
5	11400.00	66.2 PK	74.0	-7.8	1.00 V	215	49.70	16.50
6	11400.00	52.5 AV	54.0	-1.5	1.00 V	215	36.00	16.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	61.4 PK	74.0	-12.6	1.00 H	184	59.40	2.00
2	5150.00	46.1 AV	54.0	-7.9	1.00 H	184	44.10	2.00
3	*5190.00	96.2 PK			1.00 H	184	56.20	40.00
4	*5190.00	86.3 AV			1.00 H	184	46.30	40.00
5	#10380.00	66.4 PK	74.0	-7.6	1.15 H	259	51.80	14.60
6	#10380.00	52.3 AV	54.0	-1.7	1.15 H	259	37.70	14.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.1 PK	74.0	-7.9	1.01 V	89	64.10	2.00
2	5150.00	51.4 AV	54.0	-2.6	1.01 V	89	49.40	2.00
3	*5190.00	104.4 PK			1.01 V	88	64.40	40.00
4	*5190.00	94.6 AV			1.01 V	88	54.60	40.00
5	#10380.00	65.9 PK	74.0	-8.1	1.34 V	160	51.30	14.60
6	#10380.00	52.9 AV	54.0	-1.1	1.34 V	160	38.30	14.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	97.1 PK			1.00 H	184	57.00	40.10
2	*5230.00	87.1 AV			1.00 H	184	47.00	40.10
3	5350.00	57.1 PK	74.0	-16.9	1.00 H	184	55.10	2.00
4	5350.00	45.0 AV	54.0	-9.0	1.00 H	184	43.00	2.00
5	#10460.00	66.7 PK	74.0	-7.3	1.28 H	73	51.40	15.30
6	#10460.00	53.0 AV	54.0	-1.0	1.28 H	73	37.70	15.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	106.6 PK			1.00 V	90	66.50	40.10
2	*5230.00	96.1 AV			1.00 V	90	56.00	40.10
3	5350.00	57.9 PK	74.0	-16.1	1.00 V	90	55.90	2.00
4	5350.00	45.7 AV	54.0	-8.3	1.00 V	90	43.70	2.00
5	#10460.00	66.3 PK	74.0	-7.7	1.27 V	159	51.00	15.30
6	#10460.00	52.9 AV	54.0	-1.1	1.27 V	159	37.60	15.30

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.2 PK	74.0	-14.8	1.08 H	166	57.20	2.00
2	5150.00	46.7 AV	54.0	-7.3	1.08 H	166	44.70	2.00
3	*5270.00	96.2 PK			1.06 H	167	56.10	40.10
4	*5270.00	85.6 AV			1.06 H	167	45.50	40.10
5	#10540.00	67.0 PK	74.0	-7.0	1.32 H	354	50.90	16.10
6	#10540.00	53.0 AV	54.0	-1.0	1.32 H	354	36.90	16.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.0 PK	74.0	-15.0	1.00 V	97	57.00	2.00
2	5150.00	46.6 AV	54.0	-7.4	1.00 V	97	44.60	2.00
3	*5270.00	102.4 PK			1.00 V	75	62.30	40.10
4	*5270.00	92.1 AV			1.00 V	75	52.00	40.10
5	#10540.00	65.6 PK	74.0	-8.4	1.33 V	168	49.50	16.10
6	#10540.00	52.5 AV	54.0	-1.5	1.33 V	168	36.40	16.10

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	98.2 PK			1.06 H	168	58.10	40.10
2	*5310.00	87.9 AV			1.06 H	168	47.80	40.10
3	5350.00	59.9 PK	74.0	-14.1	1.20 H	167	57.90	2.00
4	5350.00	45.1 AV	54.0	-8.9	1.20 H	167	43.10	2.00
5	10620.00	66.2 PK	74.0	-7.8	1.38 H	354	49.60	16.60
6	10620.00	53.0 AV	54.0	-1.0	1.38 H	354	36.40	16.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	104.6 PK			1.00 V	98	64.50	40.10
2	*5310.00	94.1 AV			1.00 V	98	54.00	40.10
3	5350.00	68.0 PK	74.0	-6.0	1.00 V	98	66.00	2.00
4	5350.00	49.1 AV	54.0	-4.9	1.00 V	98	47.10	2.00
5	10620.00	65.5 PK	74.0	-8.5	1.44 V	167	48.90	16.60
6	10620.00	51.7 AV	54.0	-2.3	1.44 V	167	35.10	16.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.8 PK	74.0	-16.2	1.44 H	244	55.70	2.10
2	5460.00	45.4 AV	54.0	-8.6	1.44 H	244	43.30	2.10
3	#5470.00	60.6 PK	74.0	-13.4	1.44 H	244	58.40	2.20
4	#5470.00	46.2 AV	54.0	-7.8	1.44 H	244	44.00	2.20
5	*5510.00	96.8 PK			1.47 H	241	56.50	40.30
6	*5510.00	87.0 AV			1.47 H	241	46.70	40.30
7	11020.00	64.5 PK	74.0	-9.5	1.07 H	256	46.40	18.10
8	11020.00	52.9 AV	54.0	-1.1	1.07 H	256	34.80	18.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.0 PK	74.0	-14.0	1.00 V	188	57.90	2.10
2	5460.00	46.0 AV	54.0	-8.0	1.00 V	188	43.90	2.10
3	#5470.00	64.2 PK	74.0	-9.8	1.00 V	188	62.00	2.20
4	#5470.00	47.6 AV	54.0	-6.4	1.00 V	188	45.40	2.20
5	*5510.00	103.2 PK			1.00 V	188	62.90	40.30
6	*5510.00	93.5 AV			1.00 V	188	53.20	40.30
7	11020.00	64.1 PK	74.0	-9.9	1.22 V	84	46.00	18.10
8	11020.00	51.1 AV	54.0	-2.9	1.22 V	84	33.00	18.10

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.7 PK	74.0	-14.3	1.47 H	243	57.60	2.10
2	5460.00	45.8 AV	54.0	-8.2	1.47 H	243	43.70	2.10
3	#5470.00	63.6 PK	74.0	-10.4	1.46 H	251	61.40	2.20
4	#5470.00	47.4 AV	54.0	-6.6	1.46 H	251	45.20	2.20
5	*5550.00	101.5 PK			1.46 H	251	61.10	40.40
6	*5550.00	91.9 AV			1.46 H	251	51.50	40.40
7	11100.00	64.6 PK	74.0	-9.4	1.18 H	348	46.80	17.80
8	11100.00	52.7 AV	54.0	-1.3	1.18 H	348	34.90	17.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	64.2 PK	74.0	-9.8	1.00 V	159	62.10	2.10
2	5460.00	49.8 AV	54.0	-4.2	1.00 V	159	47.70	2.10
3	#5470.00	69.4 PK	74.0	-4.6	1.02 V	168	67.20	2.20
4	#5470.00	52.7 AV	54.0	-1.3	1.02 V	168	50.50	2.20
5	*5550.00	108.8 PK			1.00 V	161	68.40	40.40
6	*5550.00	99.4 AV			1.00 V	161	59.00	40.40
7	11100.00	64.1 PK	74.0	-9.9	1.13 V	218	46.30	17.80
8	11100.00	51.0 AV	54.0	-3.0	1.13 V	218	33.20	17.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	98.4 PK			1.21 H	248	57.70	40.70
2	*5670.00	88.1 AV			1.21 H	248	47.40	40.70
3	#5725.00	57.4 PK	74.0	-16.6	1.21 H	248	54.80	2.60
4	#5725.00	44.4 AV	54.0	-9.6	1.21 H	248	41.80	2.60
5	11340.00	66.9 PK	74.0	-7.1	1.85 H	245	50.10	16.80
6	11340.00	52.8 AV	54.0	-1.2	1.85 H	245	36.00	16.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	104.4 PK			1.36 V	360	63.70	40.70
2	*5670.00	93.6 AV			1.36 V	360	52.90	40.70
3	#5725.00	61.8 PK	74.0	-12.2	1.36 V	360	59.20	2.60
4	#5725.00	47.6 AV	54.0	-6.4	1.36 V	360	45.00	2.60
5	11340.00	66.8 PK	74.0	-7.2	1.17 V	93	50.00	16.80
6	11340.00	52.9 AV	54.0	-1.1	1.17 V	93	36.10	16.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

802.11ac (80MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.7 PK	74.0	-16.3	1.00 H	180	55.70	2.00
2	5150.00	44.9 AV	54.0	-9.1	1.00 H	180	42.90	2.00
3	*5210.00	95.0 PK			1.00 H	180	54.90	40.10
4	*5210.00	84.4 AV			1.00 H	180	44.30	40.10
5	#10420.00	63.2 PK	74.0	-10.8	1.44 H	258	48.30	14.90
6	#10420.00	51.3 AV	54.0	-2.7	1.44 H	258	36.40	14.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.2 PK	74.0	-8.8	1.00 V	10	63.20	2.00
2	5150.00	50.2 AV	54.0	-3.8	1.00 V	10	48.20	2.00
3	*5210.00	99.2 PK			1.00 V	10	59.10	40.10
4	*5210.00	89.1 AV			1.00 V	10	49.00	40.10
5	#10420.00	62.9 PK	74.0	-11.1	1.27 V	30	48.00	14.90
6	#10420.00	50.6 AV	54.0	-3.4	1.27 V	30	35.70	14.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5290.00	94.4 PK			1.00 H	193	54.30	40.10
2	*5290.00	84.5 AV			1.00 H	193	44.40	40.10
3	5350.00	62.0 PK	74.0	-12.0	1.00 H	193	60.00	2.00
4	5350.00	46.1 AV	54.0	-7.9	1.00 H	193	44.10	2.00
5	#10580.00	62.7 PK	74.0	-11.3	1.33 H	212	46.40	16.30
6	#10580.00	50.8 AV	54.0	-3.2	1.33 H	212	34.50	16.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5290.00	101.7 PK			1.00 V	88	61.60	40.10
2	*5290.00	91.5 AV			1.00 V	88	51.40	40.10
3	5350.00	66.9 PK	74.0	-7.1	1.00 V	88	64.90	2.00
4	5350.00	49.8 AV	54.0	-4.2	1.00 V	88	47.80	2.00
5	#10580.00	63.8 PK	74.0	-10.2	1.12 V	169	47.50	16.30
6	#10580.00	51.0 AV	54.0	-3.0	1.12 V	169	34.70	16.30

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.6 PK	74.0	-14.4	1.00 H	236	57.50	2.10
2	5460.00	46.2 AV	54.0	-7.8	1.00 H	236	44.10	2.10
3	#5470.00	61.2 PK	74.0	-12.8	1.00 H	236	59.00	2.20
4	#5470.00	46.6 AV	54.0	-7.4	1.00 H	236	44.40	2.20
5	*5530.00	94.0 PK			1.00 H	236	53.60	40.40
6	*5530.00	84.0 AV			1.00 H	236	43.60	40.40
7	11060.00	63.8 PK	74.0	-10.2	1.04 H	250	45.80	18.00
8	11060.00	52.5 AV	54.0	-1.5	1.04 H	250	34.50	18.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	65.8 PK	74.0	-8.2	1.00 V	354	63.70	2.10
2	5460.00	50.8 AV	54.0	-3.2	1.00 V	354	48.70	2.10
3	#5470.00	68.2 PK	74.0	-5.8	1.00 V	354	66.00	2.20
4	#5470.00	51.8 AV	54.0	-2.2	1.00 V	354	49.60	2.20
5	*5530.00	104.5 PK			1.00 V	354	64.10	40.40
6	*5530.00	93.7 AV			1.00 V	354	53.30	40.40
7	11060.00	62.3 PK	74.0	-11.7	1.12 V	171	44.30	18.00
8	11060.00	49.6 AV	54.0	-4.4	1.12 V	171	31.60	18.00

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.

BELOW 1GHz WORST-CASE DATA : 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	124.80	28.9 QP	43.5	-14.6	1.99 H	86	45.00	-16.10
2	180.80	30.9 QP	43.5	-12.6	1.24 H	305	46.30	-15.40
3	249.20	40.2 QP	46.0	-5.8	1.00 H	102	54.60	-14.40
4	499.50	31.4 QP	46.0	-14.6	1.99 H	132	40.10	-8.70
5	726.40	31.6 QP	46.0	-14.4	1.49 H	228	35.90	-4.30
6	1000.00	40.3 QP	54.0	-13.7	1.00 H	153	40.10	0.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	124.80	36.6 QP	43.5	-6.9	1.24 V	45	52.70	-16.10
2	249.20	37.5 QP	46.0	-8.5	1.00 V	312	51.90	-14.40
3	387.50	31.5 QP	46.0	-14.5	1.49 V	271	42.10	-10.60
4	499.50	36.0 QP	46.0	-10.0	1.00 V	271	44.70	-8.70
5	749.70	29.9 QP	46.0	-16.1	1.24 V	172	33.60	-3.70
6	1000.00	37.9 QP	54.0	-16.1	1.99 V	7	37.70	0.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH	TESTED BY	Ted Chang
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	124.82	25.7 QP	43.5	-17.8	1.49 H	134	41.80	-16.10
2	249.18	38.1 QP	46.0	-7.9	1.00 H	95	52.50	-14.40
3	385.98	32.4 QP	46.0	-13.6	1.24 H	6	43.10	-10.70
4	499.46	28.9 QP	46.0	-17.1	1.24 H	10	37.60	-8.70
5	749.73	32.6 QP	46.0	-13.4	1.00 H	135	36.30	-3.70
6	1000.00	41.2 QP	54.0	-12.8	1.99 H	158	41.00	0.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	36.22	33.9 QP	40.0	-6.1	1.24 V	99	49.20	-15.30
2	124.82	36.4 QP	43.5	-7.1	1.49 V	25	52.50	-16.10
3	249.18	35.1 QP	46.0	-10.9	1.00 V	41	49.50	-14.40
4	415.51	33.0 QP	46.0	-13.0	1.99 V	189	43.20	-10.20
5	499.46	32.7 QP	46.0	-13.3	1.24 V	258	41.40	-8.70

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. 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	Apr. 24, 2014	Apr. 23, 2015
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 23, 2013	Dec. 22, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 10, 2014	Jul. 09, 2015
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

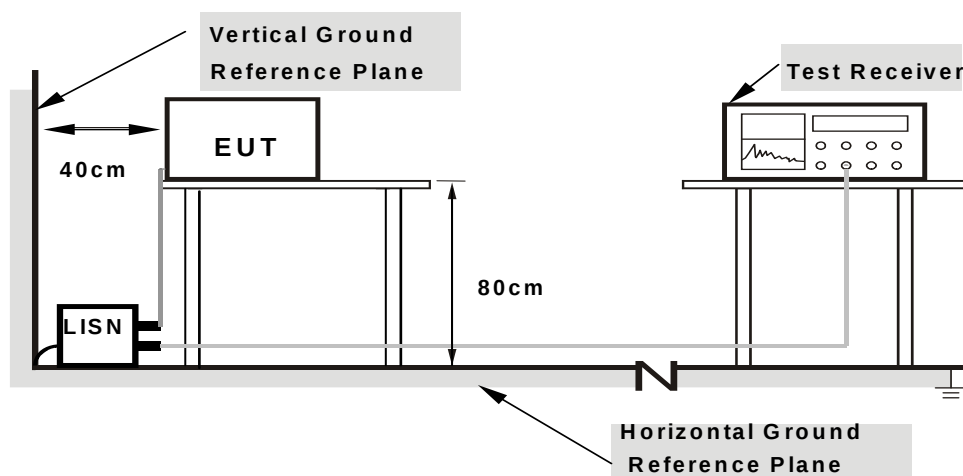
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

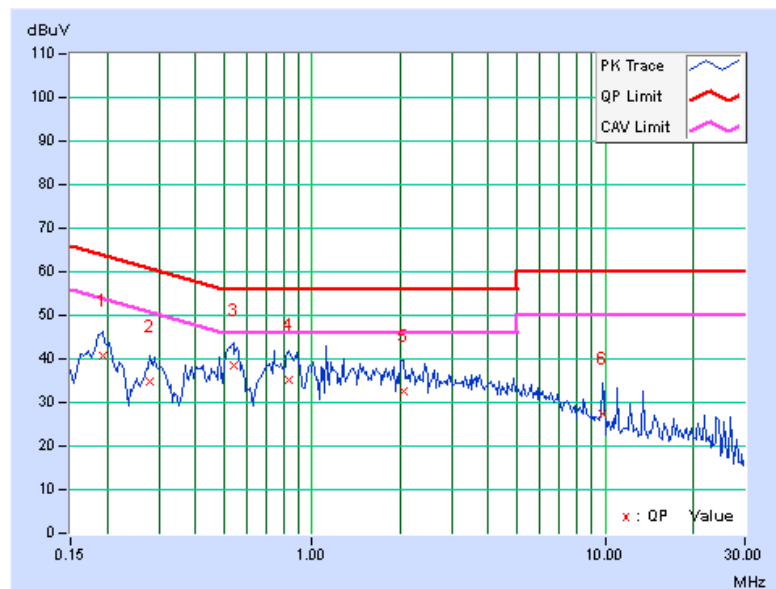
CONDUCTED WORST-CASE DATA : 802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19297	0.28	40.32	29.69	40.60	29.97	63.91	53.91	-23.31	-23.94
2	0.27891	0.29	34.70	21.97	34.99	22.26	60.85	50.85	-25.86	-28.59
3	0.54063	0.31	38.26	28.57	38.57	28.88	56.00	46.00	-17.43	-17.12
4	0.83750	0.33	35.04	21.08	35.37	21.41	56.00	46.00	-20.63	-24.59
5	2.05078	0.36	32.23	19.67	32.59	20.03	56.00	46.00	-23.41	-25.97
6	9.78516	0.50	27.02	14.51	27.52	15.01	60.00	50.00	-32.48	-34.99

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

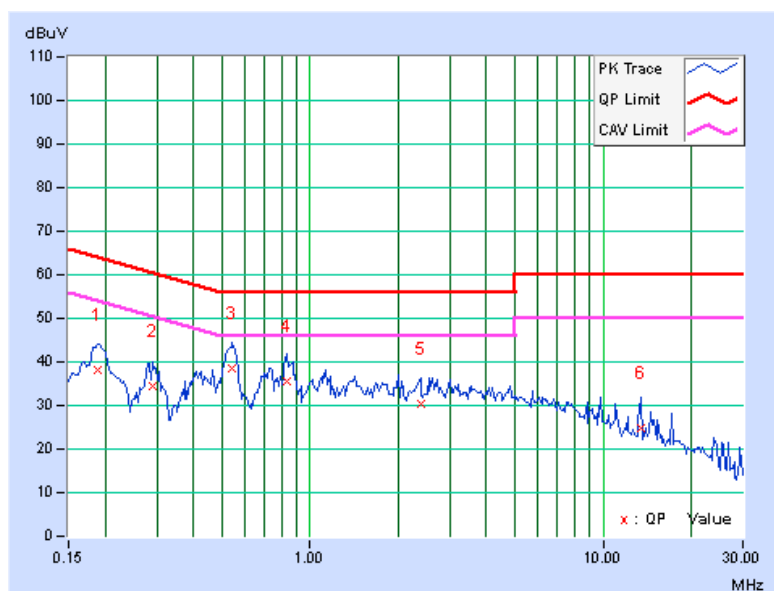


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18906	0.28	37.96	29.11	38.24	29.39	64.08	54.08	-25.84	-24.69
2	0.29063	0.29	34.24	22.84	34.53	23.13	60.51	50.51	-25.98	-27.38
3	0.54453	0.31	38.36	31.95	38.67	32.26	56.00	46.00	-17.33	-13.74
4	0.83359	0.33	35.16	25.28	35.49	25.61	56.00	46.00	-20.51	-20.39
5	2.37891	0.38	29.94	23.70	30.32	24.08	56.00	46.00	-25.68	-21.92
6	13.42578	0.55	24.18	15.96	24.73	16.51	60.00	50.00	-35.27	-33.49

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

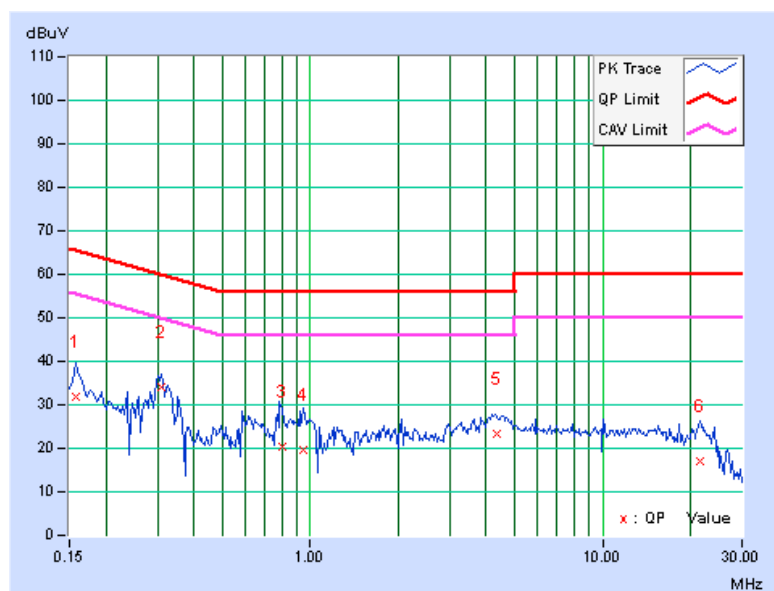


PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	0.22	31.51	19.25	31.73	19.47	65.58	55.58	-33.85	-36.11
2	0.31016	0.23	33.86	25.89	34.09	26.12	59.97	49.97	-25.88	-23.85
3	0.80234	0.27	20.04	8.59	20.31	8.86	56.00	46.00	-35.69	-37.14
4	0.94688	0.29	19.45	6.51	19.74	6.80	56.00	46.00	-36.26	-39.20
5	4.35938	0.44	22.99	15.99	23.43	16.43	56.00	46.00	-32.57	-29.57
6	21.62500	0.67	16.22	3.18	16.89	3.85	60.00	50.00	-43.11	-46.15

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

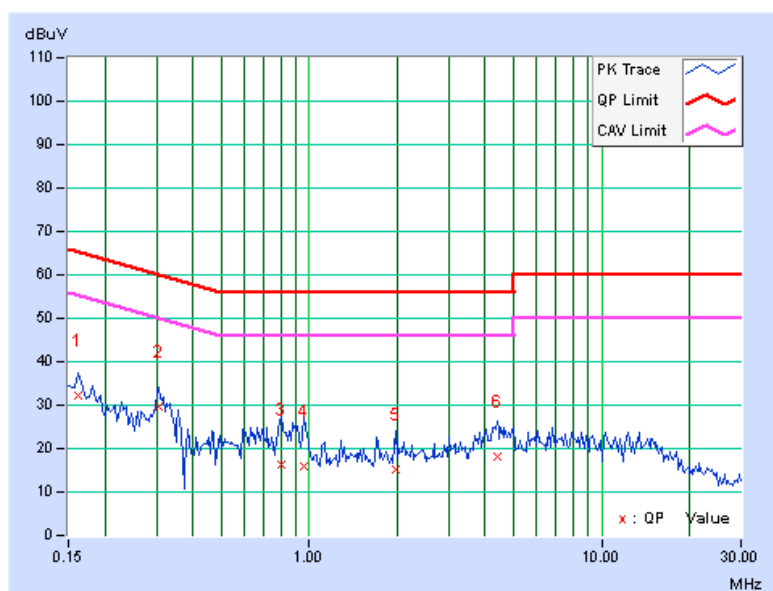


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16172	0.23	32.09	18.71	32.32	18.94	65.38	55.38	-33.06	-36.44
2	0.30625	0.27	29.26	25.69	29.53	25.96	60.07	50.07	-30.54	-24.11
3	0.79844	0.29	16.15	6.90	16.44	7.19	56.00	46.00	-39.56	-38.81
4	0.95859	0.29	15.76	4.08	16.05	4.37	56.00	46.00	-39.95	-41.63
5	1.98438	0.39	14.95	7.05	15.34	7.44	56.00	46.00	-40.66	-38.56
6	4.37891	0.50	17.74	10.70	18.24	11.20	56.00	46.00	-37.76	-34.80

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 TRANSMIT POWER MEASUREMENT

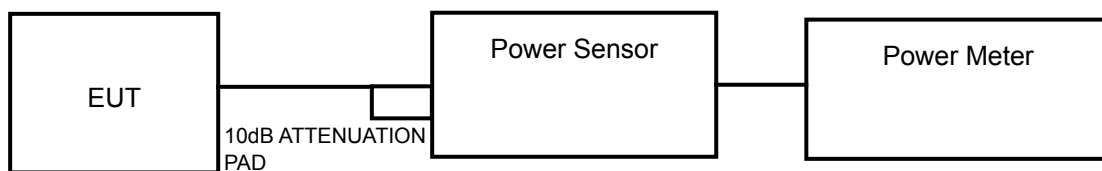
4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

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

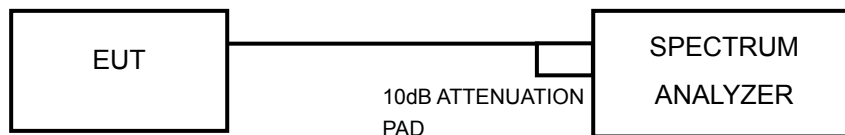
NOTE: Where B is the 26dB emission bandwidth in MHz.

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

For 802.11a, 802.11n (20MHz), 802.11n (40MHz)

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

For 802.11ac (80MHz)

- 1) Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- 2) Set sweep trigger to “free run”.
- 3) Set RBW = 1 MHz.
- 4) Set VBW $\geq$ 3 MHz
- 5) Number of points in sweep $\geq$ 2 Span / RBW.
- 6) Sweep time $\leq$ (number of points in sweep) * T
- 7) Detector = RMS.
- 8) Trace mode = max hold.
- 9) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

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

CHAN.	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
36	5180	40.644	16.09	17	PASS
40	5200	44.463	16.48	17	PASS
48	5240	23.768	13.76	17	PASS
52	5260	20.277	13.07	24	PASS
60	5300	58.749	17.69	24	PASS
64	5320	30.690	14.87	24	PASS
100	5500	83.176	19.20	24	PASS
116	5580	60.395	17.81	24	PASS
140	5700	31.989	15.05	24	PASS

NOTE:

1. $4\text{dBm} + 10\log (21.60) = 17.34 > 17\text{dBm}$
2. $4\text{dBm} + 10\log (21.49) = 17.32 > 17\text{dBm}$
3. $4\text{dBm} + 10\log (21.55) = 17.33 > 17\text{dBm}$
4. $11\text{dBm} + 10\log (21.73) = 24.37 > 24\text{dBm}$
5. $11\text{dBm} + 10\log (23.59) = 24.73 > 24\text{dBm}$
6. $11\text{dBm} + 10\log (21.67) = 24.36 > 24\text{dBm}$
7. $11\text{dBm} + 10\log (32.78) = 26.16 > 24\text{dBm}$
8. $11\text{dBm} + 10\log (28.07) = 25.48 > 24\text{dBm}$
9. $11\text{dBm} + 10\log (24.05) = 24.81 > 24\text{dBm}$

802.11n (20MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
36	5180	47.863	16.80	17	PASS
40	5200	26.730	14.27	17	PASS
48	5240	23.714	13.75	17	PASS
52	5260	25.527	14.07	24	PASS
60	5300	22.699	13.56	24	PASS
64	5320	28.576	14.56	24	PASS
100	5500	85.114	19.30	24	PASS
116	5580	166.341	22.21	24	PASS
140	5700	30.832	14.89	24	PASS

NOTE:

1. 4dBm + 10log (22.45) = 17.51 > 17dBm
2. 4dBm + 10log (22.22) = 17.47 > 17dBm
3. 4dBm + 10log (22.34) = 17.49 > 17dBm
4. 11dBm + 10log (22.23) = 24.47 > 24dBm
5. 11dBm + 10log (22.31) = 24.48 > 24dBm
6. 11dBm + 10log (22.44) = 24.51 > 24dBm
7. 11dBm + 10log (32.15) = 26.07 > 24dBm
8. 11dBm + 10log (47.56) = 27.77 > 24dBm
9. 11dBm + 10log (22.32) = 24.49 > 24dBm

802.11n (40MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
38	5190	46.881	16.71	17	PASS
46	5230	49.431	16.94	17	PASS
54	5270	38.637	15.87	24	PASS
62	5310	51.523	17.12	24	PASS
102	5510	53.827	17.31	24	PASS
110	5550	142.889	21.55	24	PASS
134	5670	74.131	18.70	24	PASS

NOTE:

1. $4\text{dBm} + 10\log (45.58) = 20.59 > 17\text{dBm}$
2. $4\text{dBm} + 10\log (45.71) = 20.60 > 17\text{dBm}$
3. $11\text{dBm} + 10\log (45.85) = 27.61 > 24\text{dBm}$
4. $11\text{dBm} + 10\log (45.71) = 27.60 > 24\text{dBm}$
5. $11\text{dBm} + 10\log (45.78) = 27.61 > 24\text{dBm}$
6. $11\text{dBm} + 10\log (97.34) = 30.88 > 24\text{dBm}$
7. $11\text{dBm} + 10\log (84.05) = 30.25 > 24\text{dBm}$

802.11ac (80MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
42	5210	42.855	16.32	17	PASS
58	5290	44.157	16.45	24	PASS
106	5530	43.652	16.40	24	PASS

NOTE:

1. $4\text{dBm} + 10\log (84.65) = 23.28 > 17\text{dBm}$
2. $11\text{dBm} + 10\log (84.66) = 30.28 > 24\text{dBm}$
3. $11\text{dBm} + 10\log (84.54) = 30.27 > 24\text{dBm}$

26dB BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	21.60	PASS
40	5200	21.49	PASS
48	5240	21.55	PASS
52	5260	21.73	PASS
60	5300	23.59	PASS
64	5320	21.67	PASS
100	5500	32.78	PASS
116	5580	28.07	PASS
140	5700	24.05	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	22.45	PASS
40	5200	22.22	PASS
48	5240	22.34	PASS
52	5260	22.23	PASS
60	5300	22.31	PASS
64	5320	22.44	PASS
100	5500	32.15	PASS
116	5580	47.56	PASS
140	5700	22.32	PASS

802.11n (40MHz)

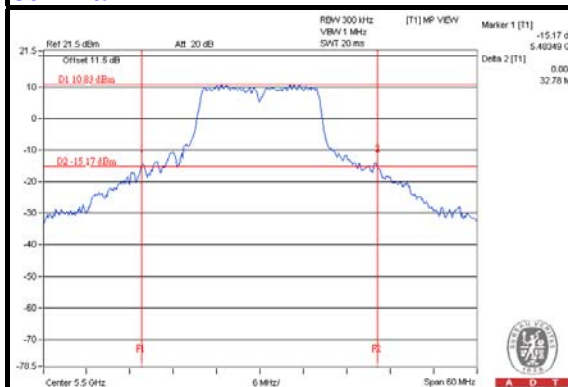
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	45.58	PASS
46	5230	45.71	PASS
54	5270	45.85	PASS
62	5310	45.71	PASS
102	5510	45.78	PASS
110	5550	97.34	PASS
134	5670	84.05	PASS

802.11ac (80MHz)

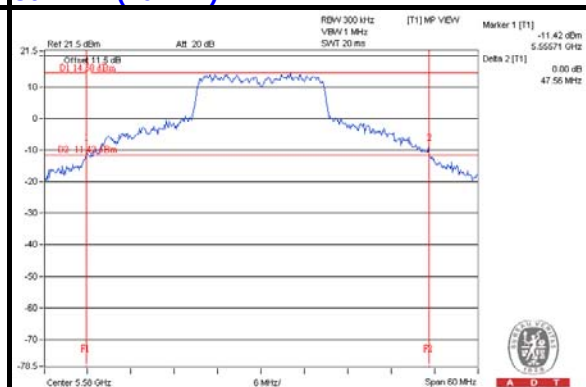
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
42	5210	84.65	PASS
58	5290	84.66	PASS
106	5530	84.54	PASS

SPECTRUM PLOT OF WORST VALUE

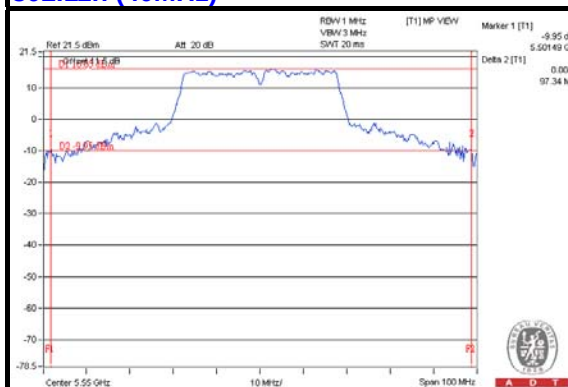
802.11a



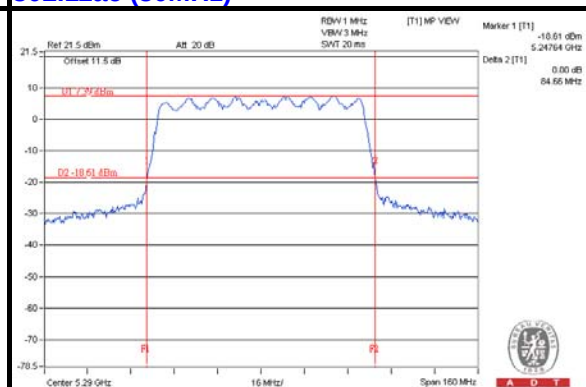
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)



EUT MAXIMUM CONDUCTED POWER

802.11a

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	58.749	17.69
5470~5725	83.176	19.20

NOTE: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11n (20MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	28.576	14.56
5470~5725	166.341	22.21

NOTE: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11n (40MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	51.523	17.12
5470~5725	142.889	21.55

NOTE: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11ac (80MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	44.157	16.45
5470~5725	43.652	16.40

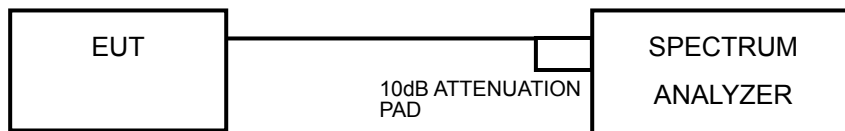
NOTE: Manufacturer provides Transmit Power Control description to meet this requirement.

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-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 kHz, Set VBW $\geq$ 1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value

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 (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.05	4	PASS
40	5200	2.80	4	PASS
48	5240	3.64	4	PASS
52	5260	0.36	11	PASS
60	5300	4.09	11	PASS
64	5320	2.19	11	PASS
100	5500	6.50	11	PASS
116	5580	5.15	11	PASS
140	5700	1.75	11	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.00	4	PASS
40	5200	0.30	4	PASS
48	5240	-0.29	4	PASS
52	5260	1.56	11	PASS
60	5300	0.48	11	PASS
64	5320	2.07	11	PASS
100	5500	6.17	11	PASS
116	5580	9.62	11	PASS
140	5700	1.38	11	PASS

802.11n (40MHz)

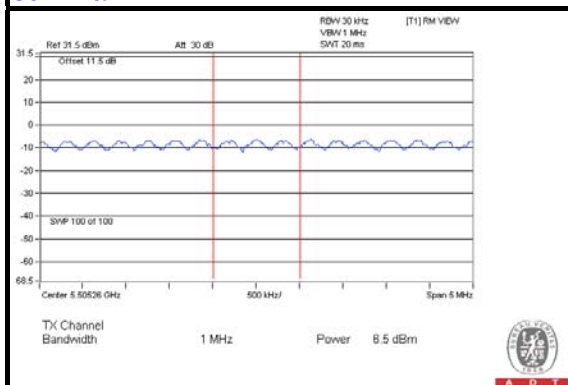
CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-0.31	4	PASS
46	5230	0.27	4	PASS
54	5270	-1.09	11	PASS
62	5310	0.35	11	PASS
102	5510	0.86	11	PASS
110	5550	5.44	11	PASS
134	5670	2.33	11	PASS

802.11ac (80MHz)

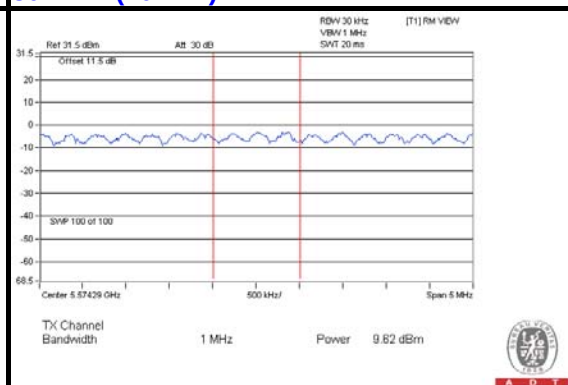
CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-2.49	4	PASS
58	5290	-2.48	11	PASS
106	5530	-1.74	11	PASS

SPECTRUM PLOT OF WORST VALUE

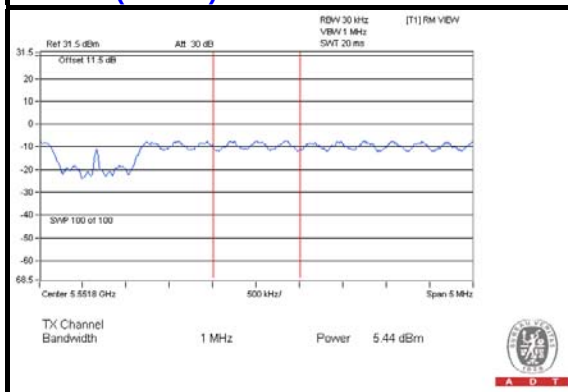
802.11a



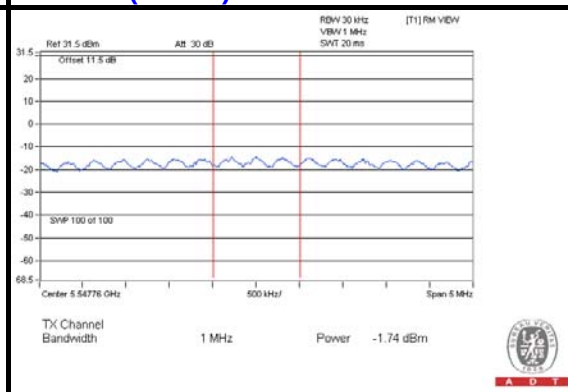
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)

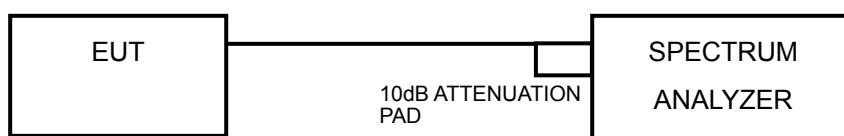


4.5 PEAK POWER EXCURSION MEASUREMENT

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 Old Rules v01r04 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

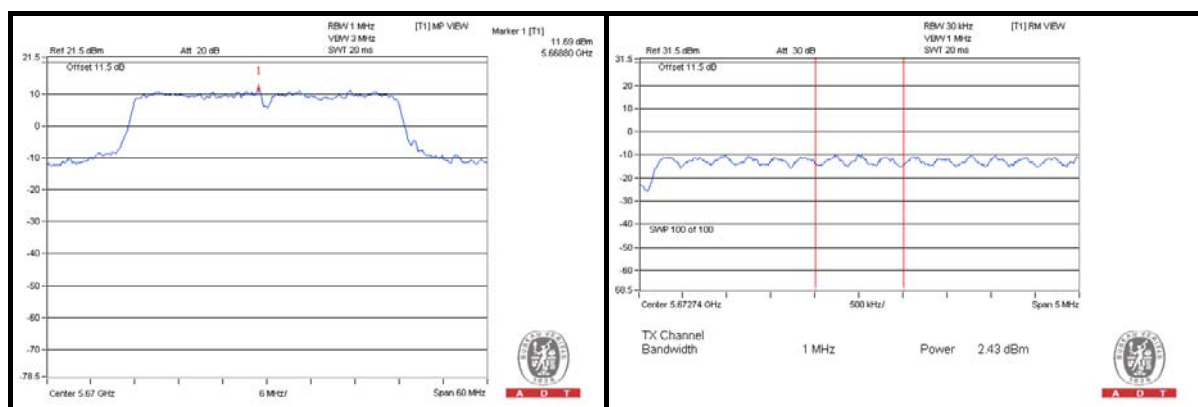
No deviation.

4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

4.5.7 TEST RESULTS

MODULATION MODE	MODULATION TYPE	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK ESCURSION (dB)	LIMIT (dB)	PASS / FAIL
802.11a	BPSK	5700	8.97	1.75	7.22	13	PASS
	QPSK		11.35	2.62	8.73	13	PASS
	16QAM		10.42	2.41	8.01	13	PASS
	64QAM		10.98	2.26	8.72	13	PASS
802.11n (20MHz)	BPSK	5700	8.74	1.38	7.36	13	PASS
	QPSK		9.62	1.84	7.78	13	PASS
	16QAM		10.37	1.65	8.72	13	PASS
	64QAM		11.00	1.83	9.17	13	PASS
802.11n (40MHz)	BPSK	5670	9.95	2.33	7.62	13	PASS
	QPSK		10.71	2.85	7.86	13	PASS
	16QAM		11.73	2.63	9.10	13	PASS
	64QAM		11.69	2.43	9.26	13	PASS
802.11ac (80MHz)	BPSK	5530	5.80	-1.74	7.54	13	PASS
	QPSK		5.97	-2.02	7.99	13	PASS
	16QAM		6.71	-2.04	8.75	13	PASS
	64QAM		5.74	-2.25	7.99	13	PASS
	256QAM		5.64	-2.42	8.06	13	PASS

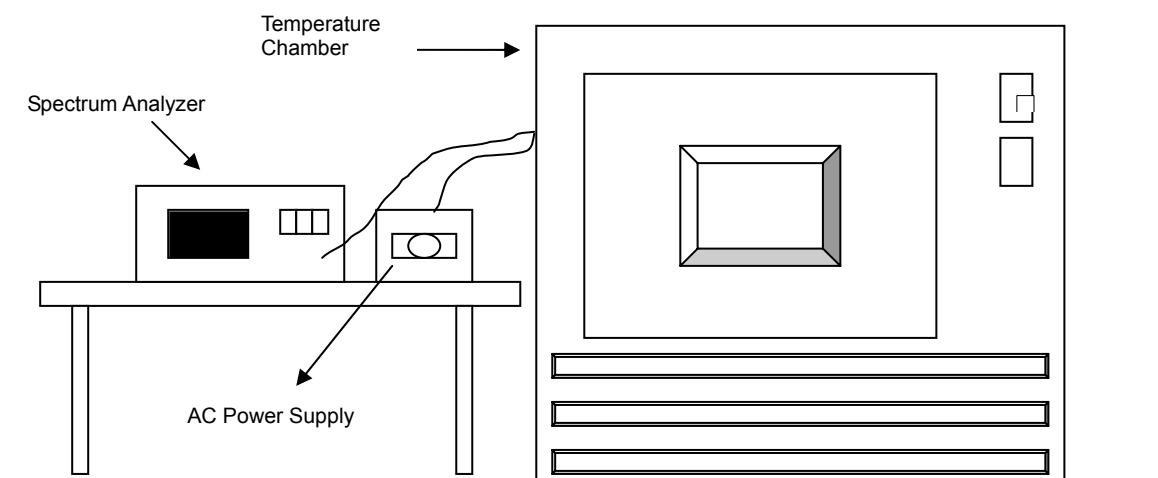


4.6 FREQUENCY STABILITY

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. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

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 (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
85	120	5320.0245	0.00046	5320.0247	0.00046	5320.0213	0.00040	5320.0239	0.00045
80	120	5320.0173	0.00033	5320.0170	0.00032	5320.0146	0.00027	5320.0171	0.00032
70	120	5320.0019	0.00004	5320.0012	0.00002	5320.0060	0.00011	5320.0016	0.00003
60	120	5320.0010	0.00002	5320.0057	0.00011	5320.0035	0.00007	5320.0042	0.00008
50	120	5320.0017	0.00003	5320.0032	0.00006	5320.0035	0.00007	5320.0036	0.00007
40	120	5319.9903	-0.00018	5319.9901	-0.00019	5319.9939	-0.00011	5319.9901	-0.00019
30	120	5320.0031	0.00006	5320.0018	0.00003	5319.9992	-0.00002	5320.0026	0.00005
20	120	5319.9754	-0.00046	5319.9768	-0.00044	5319.9757	-0.00046	5319.9792	-0.00039
10	120	5320.0027	0.00005	5320.0057	0.00011	5320.0066	0.00012	5320.0058	0.00011
0	120	5319.9844	-0.00029	5319.9833	-0.00031	5319.9817	-0.00034	5319.9858	-0.00027

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 (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5319.9754	-0.00046	5319.9770	-0.00043	5319.9750	-0.00047	5319.9799	-0.00038
	120	5319.9754	-0.00046	5319.9768	-0.00044	5319.9757	-0.00046	5319.9792	-0.00039
	102	5319.9762	-0.00045	5319.9763	-0.00045	5319.9755	-0.00046	5319.9789	-0.00040

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/Telecom Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety 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---