



FCC TEST REPORT (15.407)

REPORT NO.: RF120309C34A
MODEL NO.: ZoneFlex 7321
FCC ID: S9GZF7321
RECEIVED: Mar. 22, 2012
TESTED: Apr. 26 ~ Jun. 06, 2012
ISSUED: Jun. 13, 2012

APPLICANT: Ruckus Wireless, Inc.

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ISSUED BY: Bureau Veritas Consumer Products Services
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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120309C34A	Original release	Jun. 13, 2012



1. CERTIFICATION

PRODUCT: ZoneFlex 7321Access Point
MODEL NO.: ZoneFlex 7321
BRAND: Ruckus
APPLICANT: Ruckus Wireless, Inc.
TESTED: Apr. 26 ~ Jun. 06, 2012
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (model: ZoneFlex 7321) 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 : Andrea Hsia , DATE : Jun. 13, 2012
Andrea Hsia / Specialist

APPROVED BY : Gary Chang , DATE : Jun. 13, 2012
Gary Chang / Technical Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: RSS-210; RSS-Gen			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
RSS-Gen 7.2.4	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -3.70dB at 0.43906MHz.
RSS-Gen 4.6	Occupied Bandwidth Measurement	PASS	Meet the requirement of limit.
RSS-210 Annex 9.2	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 37.68, 5350.00 & 11160.00MHz.
RSS-210 Annex 9.2	Peak Transmit Power	PASS	Meet the requirement of limit
RSS-210 Annex 9.2	Peak Power Spectral Density	PASS	Meet the requirement of limit
-	Peak Power Excursion	PASS	Meet the requirement of limit
-	Frequency Stability	PASS	Meet the requirement of limit

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	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	ZoneFlex 7321Access Point
MODEL NO.	ZoneFlex 7321
POWER SUPPLY	12Vdc (adapter) 48Vdc (POE)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 450.0Mbps
OPERATING FREQUENCY	5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	113.8mW for 5260 ~ 5320MHz 146.6mW for 5500 ~ 5700MHz
ANTENNA TYPE	Omni antenna with 2dBi gain
ANTENNA CONNECTOR	internal UFL
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	NA

NOTE:

1. This report is prepared for FCC class II permissive change. The difference compared with the original report is adding frequency band from 5.26 to 5.32GHz and 5.50 to 5.70GHz by software.
2. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

MODULATION MODE	TX FUNCTION
802.11b	2TX
802.11g	2TX
802.11a	2TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

3. The EUT were powered by the following adapter & POE:

ADAPTER	
BRAND:	RUCKUS
MODEL:	HK-AD-120A100-US
INPUT:	100-240Vac, 0.4A, 50/60Hz
OUTPUT:	12Vdc, 1A
POWER LINE:	1.8m non-shielded cable without core

POE's ADAPTER	
BRAND:	RUCKUS
MODEL:	PA1024-4HU
INPUT:	100-240Vac, 0.6A, 50-60Hz
OUTPUT:	48Vdc, 0.42A, 2W Max
POWER LINE:	1.5m non-shielded cable without core

POE	
BRAND:	EnGenius
MODEL:	NPE-5818

* All as above are provided as support units only.

4. 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 5260 ~ 5320MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	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):

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

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE \geq 1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from Adapter
B	-	√	√	-	Power from POE

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: "-" 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	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0

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	802.11n (20MHz)	5260-5320	52 to 64	60	OFDM	BPSK	7.2
	802.11a	5500-5700	100 to 140	116	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	802.11n (20MHz)	5260-5320	52 to 64	60	OFDM	BPSK	7.2
	802.11a	5500-5700	100 to 140	116	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	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0

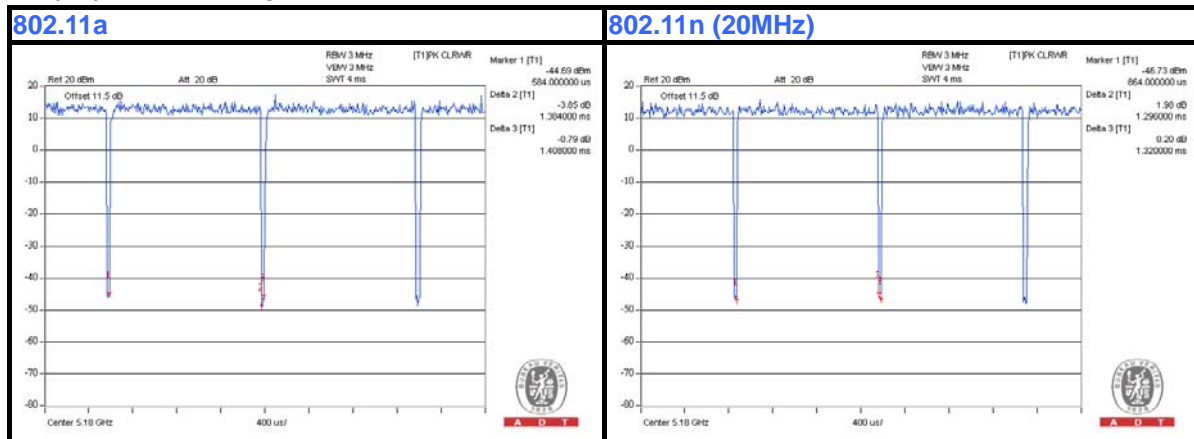
TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Haru Yang
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Haru Yang, Aska Huang
PLC	25deg. C, 65%RH	120Vac, 60Hz	Haru Yang, Aska Huang
APCM	25deg. C, 65%RH	120Vac, 60Hz	Haru Yang

3.3 DUTY CYCLE OF TEST SIGNAL

For 802.11a & 802.11n (20MHz):

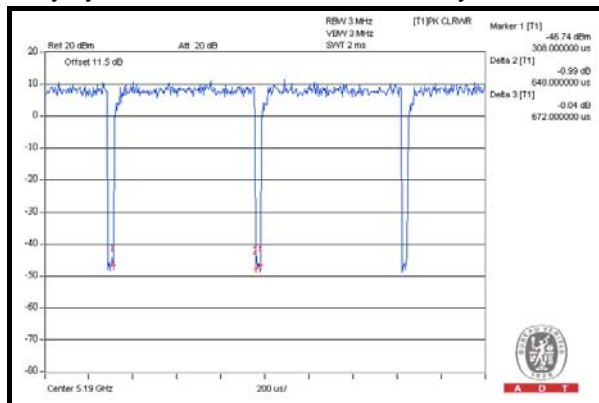
Duty cycle of test signal is > 98 %



802.11n (40MHz):

Duty cycle of test signal is < 98%, duty factor shall be considered.

Duty cycle = 0.648/0.672 = 0.964, Duty factor = 10 * log(1/0.964) = 0.16



3.3.1 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	E5420	33MKMQ1	NA
2	USB DONGLE	TRANSCEND	V85	538455 4488	NA

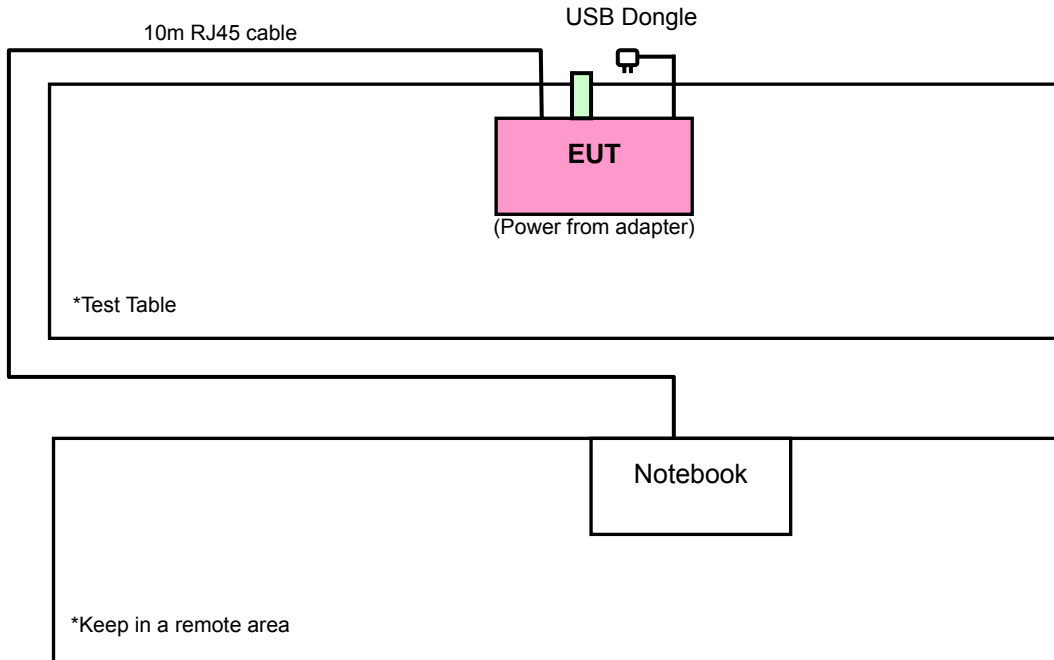
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1.	10m RJ45 cable.

NOTE:

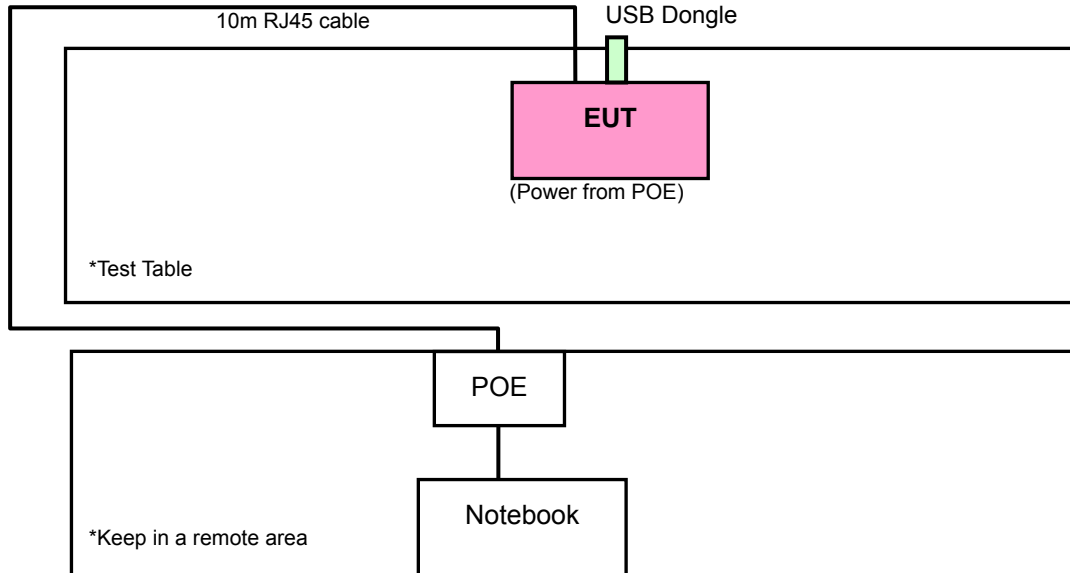
1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 acted as communication partner to transfer data.

3.3.2 CONFIGURATION OF SYSTEM UNDER TEST

TEST MODE A



TEST MODE B



3.4 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 v01r01

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

EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
PK	PK
-27	68.3

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

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

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	Aug. 02, 2011	Aug. 01, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Jul. 21, 2011	Jul. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	9120D	209	Aug. 25, 2011	Aug. 24, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 20, 2011	Jul. 19, 2012
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier Agilent	8447D	2944A10633	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8449B	3008A01964	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 30, 2011	
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6+309224/4	Aug. 30, 2011	Aug. 29, 2012
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100	TT93021703	NA	NA
Turn Table Controller ADT.	SC100	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 29, 2011	Oct. 28, 2012
High Speed Peak Power Meter	ML2495A	0824011	Aug. 04, 2011	Aug. 03, 2012
Power Sensor	MA2411B	0738171	Aug. 04, 2011	Aug. 03, 2012
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 15, 2011	Jun. 14, 2012

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in HwaYa Chamber 3.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The FCC Site Registration No. is 988962.
6. The IC Site Registration No. is IC 7450F-3.

4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

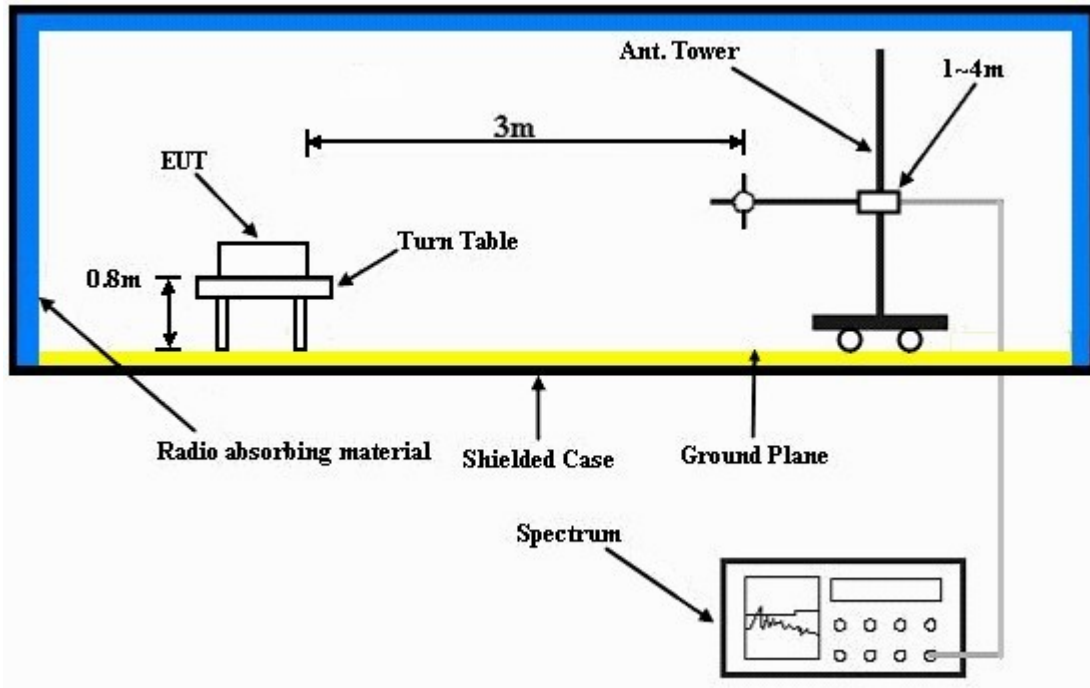
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1kHz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITION

- a. Placed the EUT on the testing table.
- b. Prepared notebook system outside of testing area to act as a communication partners.
- c. The communication partner connected with EUT via a RJ45 cable and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- d. The communication partner sent data to EUT by command "PING".



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4.1.8 TEST RESULTS

ABOVE 1GHZ DATA: 802.11a

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

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	325	18.10	37.80
2	5150.00	42.5 AV	54.0	-11.5	1.00 H	325	4.70	37.80
3	*5260.00	106.4 PK			1.00 H	325	68.40	38.00
4	*5260.00	94.6 AV			1.00 H	325	56.60	38.00
5	#10520.00	63.9 PK	68.3	-4.4	1.48 H	86	14.30	49.60

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	56.7 PK	74.0	-17.3	1.00 V	344	18.90	37.80
2	5150.00	43.4 AV	54.0	-10.6	1.00 V	344	5.60	37.80
3	*5260.00	112.9 PK			1.00 V	344	74.90	38.00
4	*5260.00	100.8 AV			1.00 V	344	62.80	38.00
5	#10520.00	67.2 PK	68.3	-1.1	1.59 V	40	17.60	49.60

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).
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.



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

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	107.1 PK			1.00 H	18	69.10	38.00
2	*5300.00	95.3 AV			1.00 H	18	57.30	38.00
3	5350.00	55.0 PK	74.0	-19.0	1.00 H	18	16.90	38.10
4	5350.00	43.6 AV	54.0	-10.4	1.00 H	18	5.50	38.10
5	5385.00	57.9 PK	74.0	-16.1	1.24 H	221	19.80	38.10
6	5385.00	45.7 AV	54.0	-8.3	1.24 H	221	7.60	38.10
7	10600.00	62.9 PK	74.0	-11.1	1.46 H	86	13.30	49.60
8	10600.00	50.2 AV	54.0	-3.8	1.46 H	86	0.60	49.60
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	114.8 PK			1.00 V	11	76.80	38.00
2	*5300.00	102.2 AV			1.00 V	11	64.20	38.00
3	5350.00	60.6 PK	74.0	-13.4	1.00 V	11	22.50	38.10
4	5350.00	45.5 AV	54.0	-8.5	1.00 V	11	7.40	38.10
5	5385.00	62.2 PK	74.0	-11.8	1.00 V	354	24.10	38.10
6	5385.00	51.7 AV	54.0	-2.3	1.00 V	354	13.60	38.10
7	10600.00	67.6 PK	74.0	-6.4	1.62 V	51	18.00	49.60
8	10600.00	52.6 AV	54.0	-1.4	1.62 V	51	3.00	49.60

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * “: Fundamental frequency.



A D T

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

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	108.4 PK			1.04 H	319	70.30	38.10
2	*5320.00	96.2 AV			1.04 H	319	58.10	38.10
3	5350.00	62.7 PK	74.0	-11.3	1.04 H	331	24.60	38.10
4	5350.00	48.6 AV	54.0	-5.4	1.04 H	331	10.50	38.10
5	5400.00	57.7 PK	74.0	-16.3	1.12 H	222	19.60	38.10
6	5400.00	45.6 AV	54.0	-8.4	1.12 H	222	7.50	38.10
7	10640.00	61.3 PK	74.0	-12.7	1.45 H	88	11.70	49.60
8	10640.00	49.5 AV	54.0	-4.5	1.45 H	88	-0.10	49.60
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	*5320.00	115.2 PK			1.36 V	12	77.10	38.10
2	*5320.00	103.2 AV			1.36 V	12	65.10	38.10
3	5350.00	72.5 PK	74.0	-1.5	1.10 V	13	34.40	38.10
4	5350.00	53.0 AV	54.0	-1.0	1.10 V	13	14.90	38.10
5	5400.00	61.5 PK	74.0	-12.5	1.08 V	10	23.40	38.10
6	5400.00	50.8 AV	54.0	-3.2	1.08 V	10	12.70	38.10
7	10640.00	65.6 PK	74.0	-8.4	1.60 V	51	16.00	49.60
8	10640.00	52.5 AV	54.0	-1.5	1.60 V	51	2.90	49.60

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * “: Fundamental frequency.



A D T

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

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	57.7 PK	74.0	-16.3	1.00 H	318	19.40	38.30
2	5460.00	43.9 AV	54.0	-10.1	1.00 H	318	5.60	38.30
3	#5470.00	58.7 PK	68.3	-9.6	1.00 H	318	20.40	38.30
4	*5500.00	103.0 PK			1.00 H	318	64.60	38.40
5	*5500.00	90.7 AV			1.00 H	318	52.30	38.40
6	11000.00	59.4 PK	74.0	-14.6	1.39 H	76	9.10	50.30
7	11000.00	45.9 AV	54.0	-8.1	1.39 H	76	-4.40	50.30
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	58.1 PK	74.0	-15.9	1.05 V	18	19.80	38.30
2	5460.00	45.6 AV	54.0	-8.4	1.05 V	18	7.30	38.30
3	#5470.00	67.2 PK	68.3	-1.1	1.07 V	19	28.90	38.30
4	*5500.00	109.8 PK			1.19 V	9	71.40	38.40
5	*5500.00	97.8 AV			1.19 V	9	59.40	38.40
6	11000.00	61.9 PK	74.0	-12.1	1.86 V	267	11.60	50.30
7	11000.00	48.4 AV	54.0	-5.6	1.86 V	267	-1.90	50.30

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).
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.



A D T

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

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	58.2 PK	74.0	-15.8	1.00 H	298	19.90	38.30
2	5460.00	44.9 AV	54.0	-9.1	1.00 H	298	6.60	38.30
3	*5580.00	107.6 PK			1.00 H	298	69.20	38.40
4	*5580.00	95.6 AV			1.00 H	298	57.20	38.40
5	11160.00	64.1 PK	74.0	-9.9	1.47 H	90	14.00	50.10
6	11160.00	50.5 AV	54.0	-3.5	1.47 H	90	0.40	50.10
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	61.2 PK	74.0	-12.8	1.10 V	25	22.90	38.30
2	5460.00	48.7 AV	54.0	-5.3	1.10 V	25	10.40	38.30
3	*5580.00	114.6 PK			1.10 V	25	76.20	38.40
4	*5580.00	102.9 AV			1.10 V	25	64.50	38.40
5	11160.00	69.1 PK	74.0	-4.9	1.85 V	265	19.00	50.10
6	11160.00	53.0 AV	54.0	-1.0	1.85 V	265	2.90	50.10

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * ”: Fundamental frequency.



A D T

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

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	100.9 PK			1.00 H	338	62.20	38.70
2	*5700.00	88.8 AV			1.00 H	338	50.10	38.70
3	#5725.00	60.7 PK	68.3	-7.6	1.00 H	338	21.90	38.80
4	11400.00	65.1 PK	74.0	-8.9	1.49 H	93	15.00	50.10
5	11400.00	51.2 AV	54.0	-2.8	1.49 H	93	1.10	50.10
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	*5700.00	107.3 PK			1.15 V	1	68.60	38.70
2	*5700.00	95.4 AV			1.15 V	1	56.70	38.70
3	#5725.00	67.0 PK	68.3	-1.3	1.13 V	2	28.20	38.80
4	11400.00	66.2 PK	74.0	-7.8	2.16 V	169	16.10	50.10
5	11400.00	51.4 AV	54.0	-2.6	2.16 V	169	1.30	50.10

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).
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.



A D T

802.11n (20MHz)

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

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	54.0 PK	74.0	-20.0	1.00 H	318	16.20	37.80
2	5150.00	43.0 AV	54.0	-11.0	1.00 H	318	5.20	37.80
3	*5260.00	106.1 PK			1.00 H	318	68.10	38.00
4	*5260.00	94.5 AV			1.00 H	318	56.50	38.00
5	#10520.00	62.5 PK	68.3	-5.8	1.45 H	89	12.90	49.60
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	56.0 PK	74.0	-18.0	1.00 V	11	18.20	37.80
2	5150.00	43.2 AV	54.0	-10.8	1.00 V	11	5.40	37.80
3	*5260.00	113.0 PK			1.00 V	11	75.00	38.00
4	*5260.00	100.5 AV			1.00 V	11	62.50	38.00
5	#10520.00	67.1 PK	68.3	-1.2	1.52 V	45	17.50	49.60

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).
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.



A D T

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

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	107.6 PK			1.04 H	20	69.60	38.00
2	*5300.00	95.3 AV			1.04 H	20	57.30	38.00
3	5350.00	56.0 PK	74.0	-18.0	1.04 H	20	17.90	38.10
4	5350.00	43.4 AV	54.0	-10.6	1.04 H	20	5.30	38.10
5	5384.00	58.6 PK	74.0	-15.4	1.16 H	12	20.50	38.10
6	5384.00	45.7 AV	54.0	-8.3	1.16 H	12	7.60	38.10
7	10600.00	63.6 PK	74.0	-10.4	1.46 H	87	14.00	49.60
8	10600.00	49.3 AV	54.0	-4.7	1.46 H	87	-0.30	49.60
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	115.3 PK			1.00 V	12	77.30	38.00
2	*5300.00	102.7 AV			1.00 V	12	64.70	38.00
3	5350.00	57.9 PK	74.0	-16.1	1.00 V	12	19.80	38.10
4	5350.00	44.9 AV	54.0	-9.1	1.00 V	12	6.80	38.10
5	5384.00	61.9 PK	74.0	-12.1	1.23 V	14	23.80	38.10
6	5384.00	50.4 AV	54.0	-3.6	1.23 V	14	12.30	38.10
7	10600.00	67.4 PK	74.0	-6.6	1.56 V	51	17.80	49.60
8	10600.00	51.9 AV	54.0	-2.1	1.56 V	51	2.30	49.60

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * “: Fundamental frequency.



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

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	107.5 PK			1.06 H	319	69.40	38.10
2	*5320.00	95.7 AV			1.06 H	319	57.60	38.10
3	5350.00	51.0 PK	74.0	-23.0	1.06 H	319	12.90	38.10
4	5350.00	46.1 AV	54.0	-7.9	1.06 H	319	8.00	38.10
5	5392.00	57.6 PK	74.0	-16.4	1.17 H	315	19.50	38.10
6	5392.00	46.2 AV	54.0	-7.8	1.17 H	315	8.10	38.10
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	*5320.00	115.0 PK			1.12 V	9	76.90	38.10
2	*5320.00	102.9 AV			1.12 V	9	64.80	38.10
3	5350.00	71.3 PK	74.0	-2.7	1.12 V	9	33.20	38.10
4	5350.00	52.6 AV	54.0	-1.4	1.12 V	9	14.50	38.10
5	5392.00	60.7 PK	74.0	-13.3	1.23 V	12	22.60	38.10
6	5392.00	49.2 AV	54.0	-4.8	1.23 V	12	11.10	38.10
7	10640.00	67.4 PK	74.0	-6.6	1.55 V	53	17.80	49.60
8	10640.00	50.7 AV	54.0	-3.3	1.55 V	53	1.10	49.60

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * “: Fundamental frequency.



A D T

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

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	56.5 PK	74.0	-17.5	1.01 H	329	18.20	38.30
2	5460.00	44.1 AV	54.0	-9.9	1.01 H	329	5.80	38.30
3	*5500.00	102.1 PK			1.01 H	329	63.70	38.40
4	*5500.00	90.1 AV			1.01 H	329	51.70	38.40
5	11000.00	58.1 PK	74.0	-15.9	1.50 H	80	7.80	50.30
6	11000.00	45.9 AV	54.0	-8.1	1.50 H	80	-4.40	50.30
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	58.9 PK	74.0	-15.1	1.07 V	8	20.60	38.30
2	5460.00	46.3 AV	54.0	-7.7	1.07 V	8	8.00	38.30
3	#5470.00	66.9 PK	68.3	-1.4	1.06 V	19	28.60	38.30
4	*5500.00	109.3 PK			1.07 V	8	70.90	38.40
5	*5500.00	97.2 AV			1.07 V	8	58.80	38.40
6	11000.00	60.4 PK	74.0	-13.6	1.84 V	101	10.10	50.30
7	11000.00	47.7 AV	54.0	-6.3	1.84 V	101	-2.60	50.30

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).
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.



A D T

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

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	56.4 PK	74.0	-17.6	1.00 H	322	18.10	38.30
2	5460.00	43.9 AV	54.0	-10.1	1.00 H	322	5.60	38.30
3	*5580.00	106.6 PK			1.00 H	322	68.20	38.40
4	*5580.00	94.8 AV			1.00 H	322	56.40	38.40
5	11160.00	64.5 PK	74.0	-9.5	1.36 H	121	14.40	50.10
6	11160.00	51.5 AV	54.0	-2.5	1.36 H	121	1.40	50.10

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	58.3 PK	74.0	-15.7	1.14 V	349	20.00	38.30
2	5460.00	44.8 AV	54.0	-9.2	1.14 V	349	6.50	38.30
3	*5580.00	114.4 PK			1.14 V	349	76.00	38.40
4	*5580.00	101.6 AV			1.14 V	349	63.20	38.40
5	11160.00	66.2 PK	74.0	-7.8	1.95 V	243	16.10	50.10
6	11160.00	52.9 AV	54.0	-1.1	1.95 V	243	2.80	50.10

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * ”: Fundamental frequency.



A D T

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

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	99.4 PK			1.00 H	336	60.70	38.70
2	*5700.00	87.9 AV			1.00 H	336	49.20	38.70
3	#5725.00	60.6 PK	68.3	-7.7	1.00 H	336	21.80	38.80
4	11400.00	65.3 PK	74.0	-8.7	1.64 H	90	15.20	50.10
5	11400.00	50.9 AV	54.0	-3.1	1.64 H	90	0.80	50.10
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	*5700.00	106.4 PK			1.03 V	358	67.70	38.70
2	*5700.00	94.4 AV			1.03 V	358	55.70	38.70
3	#5725.00	67.1 PK	68.3	-1.2	1.24 V	357	28.30	38.80
4	11400.00	65.8 PK	74.0	-8.2	2.18 V	169	15.70	50.10
5	11400.00	50.9 AV	54.0	-3.1	2.18 V	169	0.80	50.10

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).
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 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin

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	*5270.00	105.2 PK			1.07 H	139	67.20	38.00
2	*5270.00	96.3 AV			1.07 H	139	58.30	38.00
3	5350.00	50.1 PK	74.0	-23.9	1.05 H	141	12.00	38.10
4	5350.00	44.1 AV	54.0	-9.9	1.05 H	141	6.00	38.10
5	#10540.00	58.1 PK	68.3	-10.2	1.08 H	336	8.50	49.60

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	*5270.00	112.9 PK			1.26 V	12	74.90	38.00
2	*5270.00	103.6 AV			1.26 V	12	65.60	38.00
3	5350.00	67.0 PK	74.0	-7.0	1.00 V	20	28.90	38.10
4	5350.00	49.9 AV	54.0	-4.1	1.00 V	20	11.80	38.10
5	#10540.00	64.9 PK	68.3	-3.4	1.48 V	50	15.30	49.60

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).
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.



A D T

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

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	99.5 PK			1.03 H	320	61.50	38.00
2	*5310.00	90.7 AV			1.03 H	320	52.70	38.00
3	5350.00	64.9 PK	74.0	-9.1	1.03 H	320	26.80	38.10
4	5350.00	45.8 AV	54.0	-8.2	1.03 H	320	7.70	38.10
5	10620.00	58.3 PK	74.0	-15.7	1.09 H	312	8.70	49.60
6	10620.00	46.5 AV	54.0	-7.5	1.09 H	312	-3.10	49.60
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	106.2 PK			1.10 V	7	68.20	38.00
2	*5310.00	96.6 AV			1.10 V	7	58.60	38.00
3	5350.00	72.6 PK	74.0	-1.4	1.10 V	12	34.50	38.10
4	5350.00	52.3 AV	54.0	-1.7	1.10 V	12	14.20	38.10
5	10620.00	59.5 PK	74.0	-14.5	1.50 V	44	9.90	49.60
6	10620.00	47.2 AV	54.0	-6.8	1.50 V	44	-2.40	49.60

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * ”: Fundamental frequency.



A D T

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

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	1.00 H	316	18.80	38.30
2	5460.00	44.6 AV	54.0	-9.4	1.00 H	316	6.30	38.30
3	#5470.00	60.1 PK	68.3	-8.2	1.00 H	316	21.80	38.30
4	*5510.00	93.4 PK			1.00 H	316	55.00	38.40
5	*5510.00	84.0 AV			1.00 H	316	45.60	38.40
6	11020.00	60.2 PK	74.0	-13.8	1.54 H	86	10.00	50.20
7	11020.00	48.7 AV	54.0	-5.3	1.54 H	86	-1.50	50.20

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	5460.00	58.6 PK	74.0	-15.4	1.07 V	1	20.30	38.30
2	5460.00	44.6 AV	54.0	-9.4	1.07 V	1	6.30	38.30
3	#5470.00	67.1 PK	68.3	-1.2	1.07 V	1	28.80	38.30
4	*5510.00	101.7 PK			1.07 V	14	63.30	38.40
5	*5510.00	92.1 AV			1.07 V	14	53.70	38.40
6	11020.00	60.2 PK	74.0	-13.8	1.79 V	244	10.00	50.20
7	11020.00	48.1 AV	54.0	-5.9	1.79 V	244	-2.10	50.20

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).
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.



A D T

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

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	59.1 PK	74.0	-14.9	1.00 H	317	20.80	38.30
2	5460.00	45.6 AV	54.0	-8.4	1.00 H	317	7.30	38.30
3	#5470.00	59.3 PK	68.3	-9.0	1.00 H	317	21.00	38.30
4	*5550.00	101.9 PK			1.00 H	317	63.50	38.40
5	*5550.00	92.7 AV			1.00 H	317	54.30	38.40
6	11100.00	58.8 PK	74.0	-15.2	1.58 H	75	8.80	50.00
7	11100.00	48.1 AV	54.0	-5.9	1.58 H	75	-1.90	50.00
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	64.5 PK	74.0	-9.5	1.07 V	359	26.20	38.30
2	5460.00	49.4 AV	54.0	-4.6	1.07 V	359	11.10	38.30
3	#5470.00	67.2 PK	68.3	-1.1	1.07 V	359	28.90	38.30
4	*5550.00	110.4 PK			1.05 V	11	72.00	38.40
5	*5550.00	100.6 AV			1.05 V	11	62.20	38.40
6	11100.00	63.0 PK	74.0	-11.0	2.03 V	268	13.00	50.00
7	11100.00	50.9 AV	54.0	-3.1	2.03 V	268	0.90	50.00

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).
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.



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

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	99.2 PK			1.00 H	330	60.60	38.60
2	*5670.00	90.2 AV			1.00 H	330	51.60	38.60
3	#5725.00	61.8 PK	68.3	-6.5	1.00 H	330	23.00	38.80
4	11340.00	64.8 PK	74.0	-9.2	1.51 H	93	14.60	50.20
5	11340.00	52.3 AV	54.0	-1.7	1.51 H	93	2.10	50.20

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	*5670.00	105.9 PK			1.14 V	13	67.30	38.60
2	*5670.00	96.4 AV			1.14 V	13	57.80	38.60
3	#5725.00	67.1 PK	68.3	-1.2	1.15 V	14	28.30	38.80
4	11340.00	65.6 PK	74.0	-8.4	2.00 V	165	15.40	50.20
5	11340.00	52.7 AV	54.0	-1.3	2.00 V	165	2.50	50.20

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).
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 :

802.11n (20MHz)

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

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	39.62	25.7 QP	40.0	-14.3	2.00 H	140	12.10	13.60
2	162.11	31.9 QP	43.5	-11.6	1.25 H	74	17.90	14.00
3	193.22	30.3 QP	43.5	-13.2	1.00 H	249	18.80	11.50
4	235.99	37.3 QP	46.0	-8.7	1.25 H	90	24.80	12.50
5	694.85	29.9 QP	46.0	-16.1	1.00 H	295	7.00	22.90
6	943.72	38.5 QP	46.0	-7.5	1.50 H	321	11.30	27.20
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	39.62	37.6 QP	40.0	-2.4	1.00 V	100	24.00	13.60
2	62.95	34.1 QP	40.0	-5.9	1.24 V	322	21.00	13.10
3	156.28	28.3 QP	43.5	-15.2	1.00 V	129	14.20	14.10
4	234.05	35.4 QP	46.0	-10.6	1.99 V	146	23.00	12.40
5	694.85	29.7 QP	46.0	-16.3	1.99 V	334	6.80	22.90
6	943.72	34.2 QP	46.0	-11.8	1.50 V	18	7.00	27.20

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TEST MODE	B
TESTED BY	Aska Huang		

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	41.57	28.4 QP	40.0	-11.6	1.99 H	124	14.60	13.80
2	162.11	31.3 QP	43.5	-12.2	1.24 H	66	17.30	14.00
3	235.99	37.1 QP	46.0	-8.9	1.24 H	105	24.60	12.50
4	500.42	26.8 QP	46.0	-19.2	1.99 H	175	6.80	20.00
5	698.74	31.1 QP	46.0	-14.9	1.99 H	67	8.10	23.00
6	943.72	38.0 QP	46.0	-8.0	1.50 H	311	10.80	27.20
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	39.62	38.5 QP	40.0	-1.5	1.00 V	316	24.90	13.60
2	62.95	34.4 QP	40.0	-5.6	1.24 V	330	21.30	13.10
3	235.99	34.6 QP	46.0	-11.4	2.00 V	140	22.10	12.50
4	500.42	26.7 QP	46.0	-19.3	1.24 V	275	6.70	20.00
5	700.68	31.1 QP	46.0	-14.9	1.50 V	147	8.10	23.00
6	943.72	33.8 QP	46.0	-12.2	1.50 V	14	6.60	27.20

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



A D T

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TEST MODE	A
TESTED BY	Aska Huang		

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	53.23	27.5 QP	40.0	-12.5	1.99 H	57	13.70	13.80
2	154.33	29.4 QP	43.5	-14.1	1.24 H	231	15.30	14.10
3	237.94	37.1 QP	46.0	-8.9	1.24 H	99	24.60	12.50
4	500.42	25.1 QP	46.0	-20.9	1.50 H	174	5.10	20.00
5	700.68	34.1 QP	46.0	-11.9	1.24 H	119	11.10	23.00
6	943.72	41.1 QP	46.0	-4.9	1.50 H	319	13.90	27.20

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	55.18	38.9 QP	40.0	-1.1	1.00 V	333	25.20	13.70
2	237.94	35.2 QP	46.0	-10.8	2.00 V	159	22.70	12.50
3	307.93	29.3 QP	46.0	-16.7	1.49 V	31	14.10	15.20
4	426.53	26.3 QP	46.0	-19.7	1.24 V	168	8.10	18.20
5	700.68	30.3 QP	46.0	-15.7	1.49 V	240	7.30	23.00
6	943.72	36.1 QP	46.0	-9.9	2.00 V	19	8.90	27.20

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TEST MODE	B
TESTED BY	Aska Huang		

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	55.18	26.8 QP	40.0	-13.2	2.00 H	227	13.10	13.70
2	152.39	29.8 QP	43.5	-13.7	1.50 H	221	15.70	14.10
3	235.99	37.1 QP	46.0	-8.9	1.24 H	112	24.60	12.50
4	500.42	25.8 QP	46.0	-20.2	2.00 H	170	5.80	20.00
5	700.68	31.9 QP	46.0	-14.1	1.00 H	296	8.90	23.00
6	941.77	40.3 QP	46.0	-5.7	1.50 H	317	13.10	27.20
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	53.23	38.5 QP	40.0	-1.5	1.00 V	333	24.70	13.80
2	152.39	27.4 QP	43.5	-16.1	1.00 V	234	13.30	14.10
3	235.99	34.0 QP	46.0	-12.0	1.99 V	152	21.50	12.50
4	500.42	25.1 QP	46.0	-20.9	1.00 V	118	5.10	20.00
5	700.68	34.0 QP	46.0	-12.0	1.24 V	283	11.00	23.00
6	941.77	35.2 QP	46.0	-10.8	1.50 V	18	8.00	27.20

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).
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	100289	Nov. 19, 2011	Nov. 18, 2012
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 22, 2011	Dec. 21, 2012
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Dec. 30, 2011	Dec. 29, 2012
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Jul. 07, 2011	Jul. 06, 2012
V-LISN SCHWARZBECK	NNBL 8226-2	8226-142	Jun. 30, 2011	Jun. 29, 2012
LISN ROHDE & SCHWARZ	ENV216	100072	Jun. 10, 2011	Jun. 09, 2012
Software ADT	ADT_Cond_ V7.3.7	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

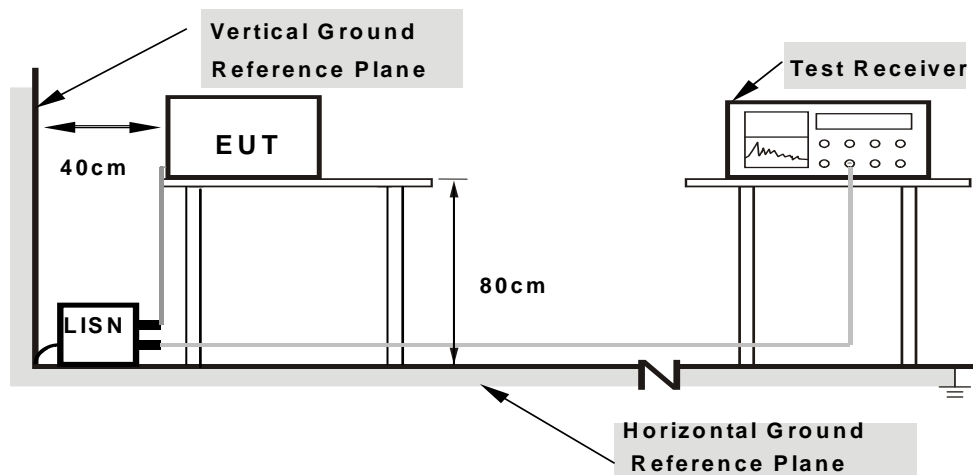
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm 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

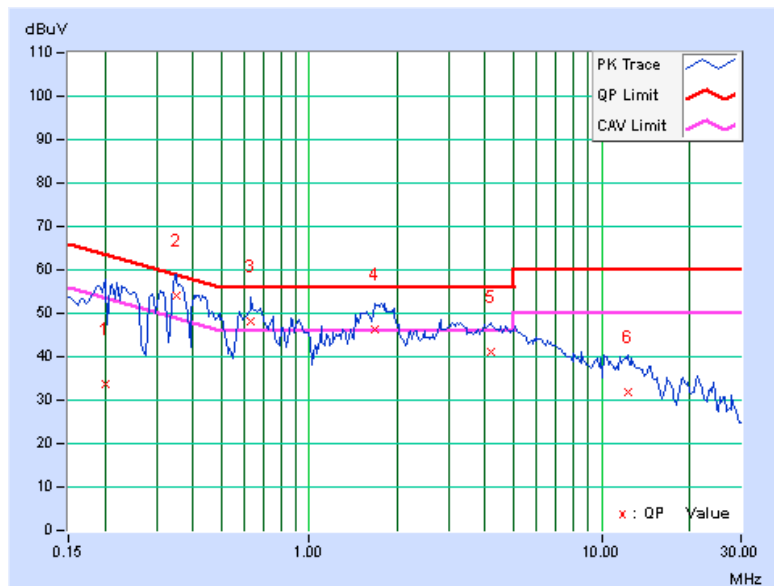
CONDUCTED WORST-CASE DATA :

802.11n (20MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 60	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	0.20078	0.17	33.56	23.09	33.73	23.26	63.58	53.58	-29.85	-30.32
2	0.34922	0.19	54.04	34.11	54.23	34.30	58.98	48.98	-4.75	-14.68
3	0.63438	0.21	48.12	37.39	48.33	37.60	56.00	46.00	-7.67	-8.40
4	1.67969	0.28	46.03	30.88	46.31	31.16	56.00	46.00	-9.69	-14.84
5	4.20703	0.39	40.79	27.75	41.18	28.14	56.00	46.00	-14.82	-17.86
6	12.32813	0.54	31.28	20.87	31.82	21.41	60.00	50.00	-28.18	-28.59

- 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.



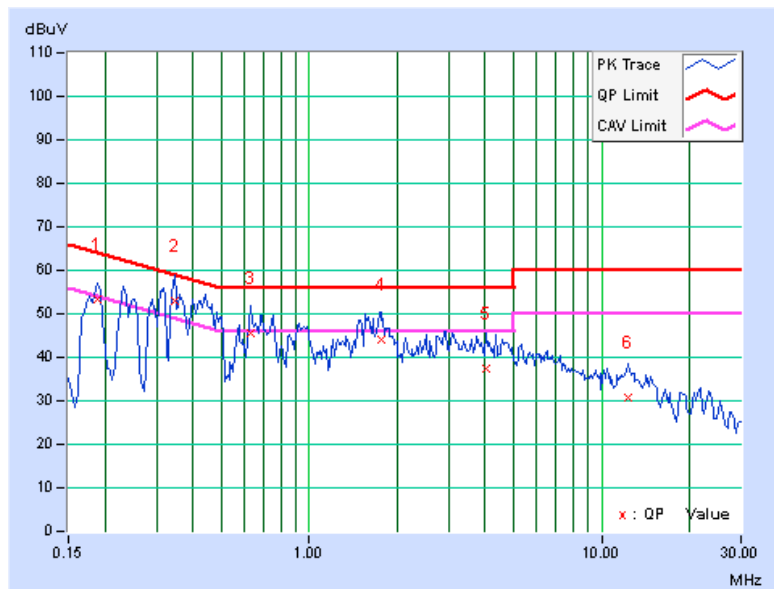


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 60	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	0.15	53.09	41.28	53.24	41.43	64.08	54.08	-10.83	-12.64
2	0.34531	0.17	52.84	33.17	53.01	33.34	59.07	49.07	-6.06	-15.73
3	0.62656	0.18	45.35	33.71	45.53	33.89	56.00	46.00	-10.47	-12.11
4	1.75781	0.25	43.81	29.82	44.06	30.07	56.00	46.00	-11.94	-15.93
5	4.03906	0.38	36.94	24.20	37.32	24.58	56.00	46.00	-18.68	-21.42
6	12.31641	0.63	30.00	19.55	30.63	20.18	60.00	50.00	-29.37	-29.82

- 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.



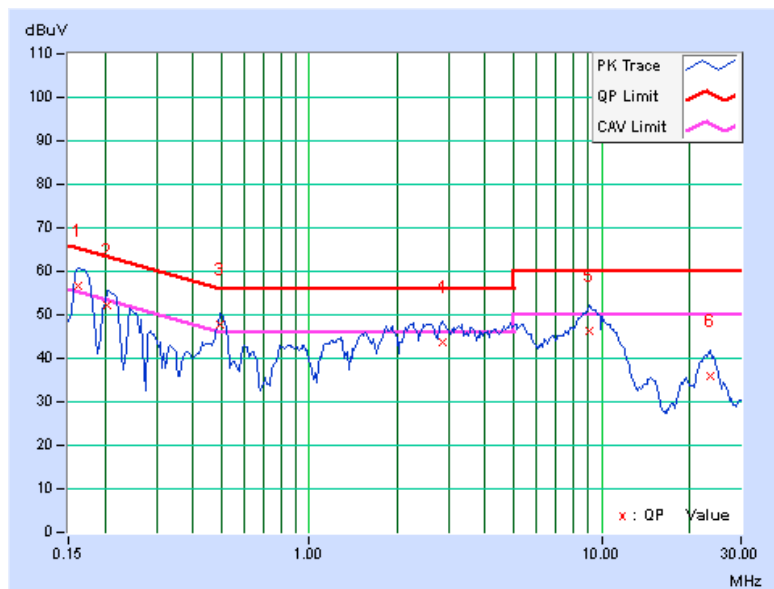


A D T

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 60	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	0.17	56.68	39.58	56.85	39.75	65.38	55.38	-8.53	-15.63
2	0.20469	0.17	52.21	37.96	52.38	38.13	63.42	53.42	-11.04	-15.29
3	0.49375	0.20	47.44	38.62	47.64	38.82	56.10	46.10	-8.46	-7.28
4	2.86328	0.34	43.42	37.99	43.76	38.33	56.00	46.00	-12.24	-7.67
5	9.14453	0.47	45.91	40.09	46.38	40.56	60.00	50.00	-13.62	-9.44
6	23.57422	0.70	35.26	30.12	35.96	30.82	60.00	50.00	-24.04	-19.18

- 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.



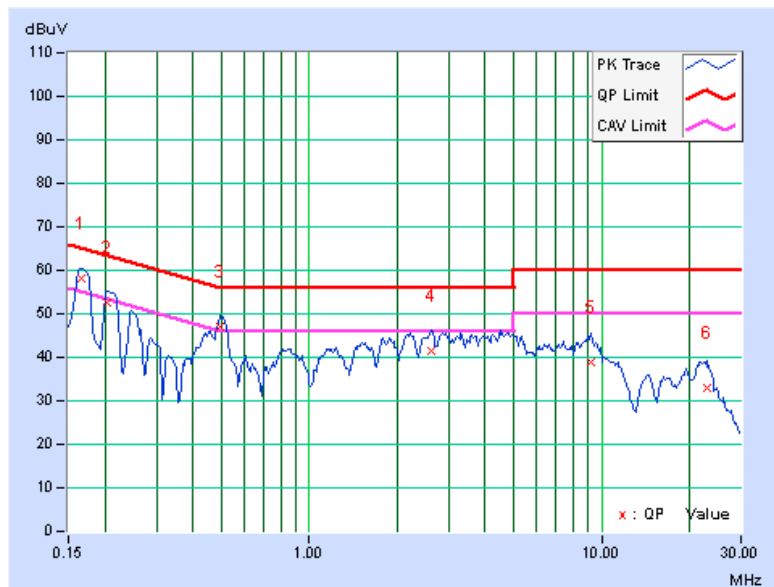


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 60	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	0.16562	0.16	58.04	45.93	58.20	46.09	65.18	55.18	-6.97	-9.08
2	0.20469	0.15	52.29	38.71	52.44	38.86	63.42	53.42	-10.98	-14.56
3	0.49375	0.18	46.93	38.72	47.11	38.90	56.10	46.10	-8.99	-7.20
4	2.60938	0.30	41.15	34.67	41.45	34.97	56.00	46.00	-14.55	-11.03
5	9.25000	0.55	38.40	31.38	38.95	31.93	60.00	50.00	-21.05	-18.07
6	23.02344	0.78	32.30	26.25	33.08	27.03	60.00	50.00	-26.92	-22.97

- 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.



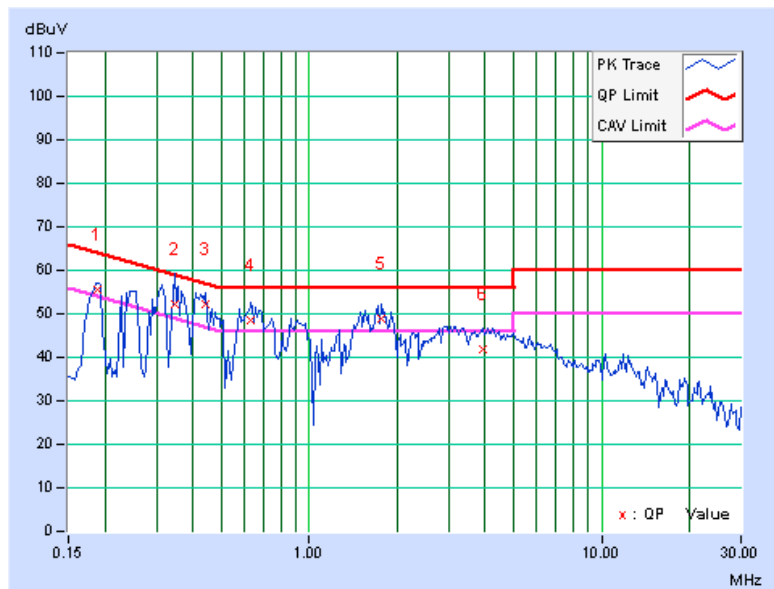


802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116	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	0.17	55.47	48.91	55.64	49.08	64.08	54.08	-8.44	-5.00
2	0.34531	0.19	52.13	27.18	52.32	27.37	59.07	49.07	-6.75	-21.70
3	0.43906	0.20	51.84	43.18	52.04	43.38	57.08	47.08	-5.04	-3.70
4	0.63438	0.21	48.42	36.59	48.63	36.80	56.00	46.00	-7.37	-9.20
5	1.77344	0.28	48.58	34.40	48.86	34.68	56.00	46.00	-7.14	-11.32
6	3.95313	0.39	41.61	28.61	42.00	29.00	56.00	46.00	-14.00	-17.00

- 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.



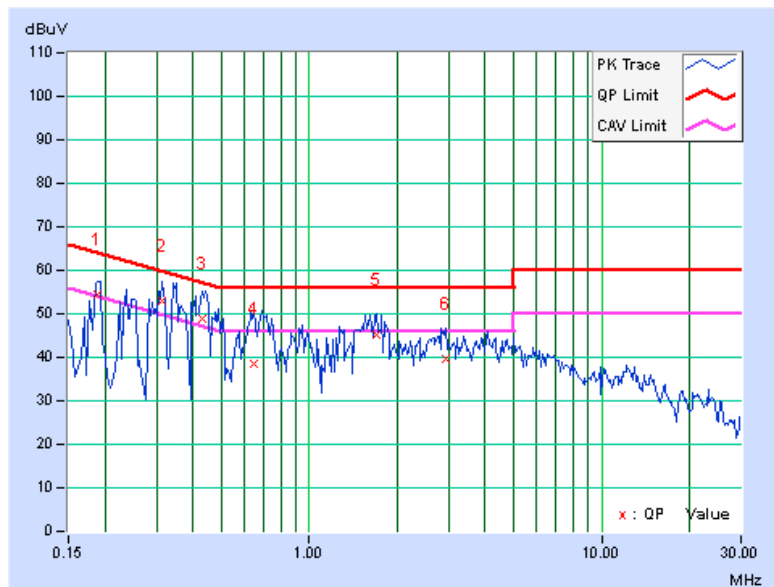


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116	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	0.15	54.22	43.27	54.37	43.42	64.08	54.08	-9.70	-10.65
2	0.31406	0.17	52.93	42.18	53.10	42.35	59.86	49.86	-6.77	-7.52
3	0.43125	0.18	48.61	33.80	48.79	33.98	57.23	47.23	-8.44	-13.25
4	0.65000	0.18	38.30	19.39	38.48	19.57	56.00	46.00	-17.52	-26.43
5	1.70313	0.25	44.86	28.71	45.11	28.96	56.00	46.00	-10.89	-17.04
6	2.94531	0.32	39.43	25.47	39.75	25.79	56.00	46.00	-16.25	-20.21

- 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.



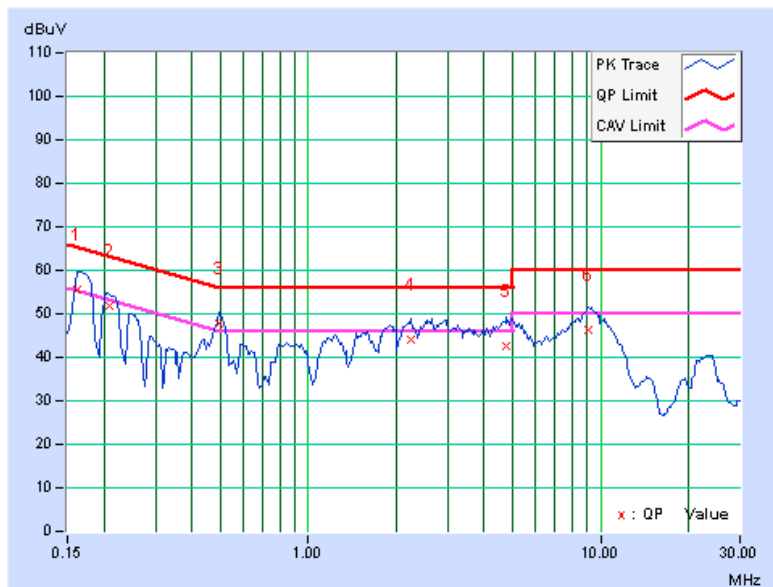


A D T

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116	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	0.17	55.41	38.07	55.58	38.24	65.38	55.38	-9.80	-17.14
2	0.20859	0.17	51.71	39.77	51.88	39.94	63.26	53.26	-11.38	-13.32
3	0.49375	0.20	47.56	38.22	47.76	38.42	56.10	46.10	-8.34	-7.68
4	2.25000	0.31	43.84	38.02	44.15	38.33	56.00	46.00	-11.85	-7.67
5	4.78125	0.40	42.32	34.60	42.72	35.00	56.00	46.00	-13.28	-11.00
6	9.08203	0.47	45.93	40.00	46.40	40.47	60.00	50.00	-13.60	-9.53

- 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.



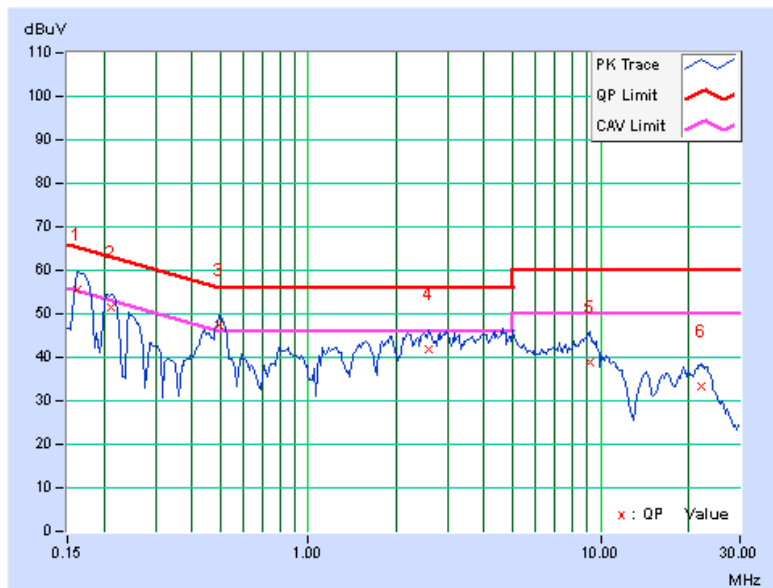


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116	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	0.17	55.47	38.90	55.64	39.07	65.38	55.38	-9.74	-16.31
2	0.21250	0.15	51.17	39.77	51.32	39.92	63.11	53.11	-11.79	-13.19
3	0.49375	0.18	47.11	37.93	47.29	38.11	56.10	46.10	-8.81	-7.99
4	2.58594	0.30	41.63	35.84	41.93	36.14	56.00	46.00	-14.07	-9.86
5	9.21484	0.55	38.30	31.36	38.85	31.91	60.00	50.00	-21.15	-18.09
6	22.20313	0.79	32.63	26.36	33.42	27.15	60.00	50.00	-26.58	-22.85

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



4.3 PEAK TRANSMIT POWER MEASUREMENT

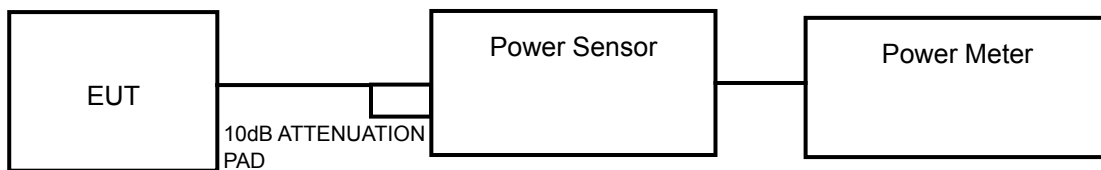
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

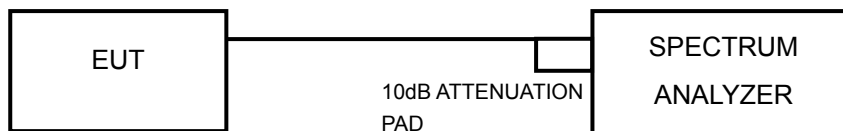
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

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

FOR 26dB BANDWIDTH

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
52	5260	16.03	15.25	73.6	18.7	24	PASS
60	5300	17.16	16.31	94.8	19.8	24	PASS
64	5320	17.04	16.71	97.5	19.9	24	PASS
100	5500	11.19	11.95	28.8	14.6	24	PASS
116	5580	18.62	18.68	146.6	21.7	24	PASS
140	5700	11.39	12.91	33.3	15.2	24	PASS

NOTE: Directional gain = 2dBi + 10log(2) = 5.01dBi < 6dBi , so the limit no need to reduced.

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
52	5260	16.01	15.22	73.2	18.6	24	PASS
60	5300	17.85	17.23	113.8	20.6	24	PASS
64	5320	17.12	16.69	98.2	19.9	24	PASS
100	5500	10.21	11.42	24.4	13.9	24	PASS
116	5580	18.52	18.37	139.8	21.5	24	PASS
140	5700	10.24	11.72	25.4	14.1	24	PASS

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
54	5270	17.85	17.21	113.6	20.6	24	PASS
62	5310	11.91	10.94	27.9	14.5	24	PASS
102	5510	5.22	5.91	7.2	8.6	24	PASS
110	5550	16.07	15.25	74.0	18.7	24	PASS
134	5670	11.82	13.34	36.8	15.7	24	PASS

**BANDWIDTH: 802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (dBm)		PASS / FAIL
		CHAIN 0	CHAIN 1	
52	5260	17.34	17.04	PASS
60	5300	17.40	17.04	PASS
64	5320	17.40	17.04	PASS
100	5500	17.40	17.04	PASS
116	5580	17.70	17.52	PASS
140	5700	17.34	17.04	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (dBm)		PASS / FAIL
		CHAIN 0	CHAIN 1	
52	5260	18.30	18.18	PASS
60	5300	18.42	18.30	PASS
64	5320	18.36	18.30	PASS
100	5500	18.42	18.18	PASS
116	5580	18.48	18.42	PASS
140	5700	18.36	18.24	PASS

802.11n (40MHz)

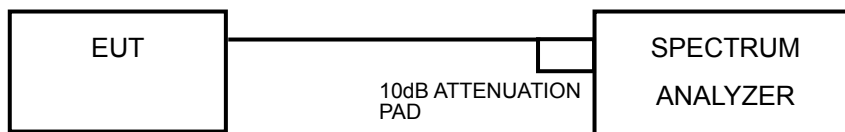
CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (dBm)		PASS / FAIL
		CHAIN 0	CHAIN 1	
54	5270	39.68	39.04	PASS
62	5310	38.72	38.08	PASS
102	5510	39.04	37.92	PASS
110	5550	39.52	38.88	PASS
134	5670	39.04	38.40	PASS

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
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

For 802.11a & 802.11n (20MHz)

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

For 802.11n (40MHz)

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- 3) Sweep time = 4 second.
- 4) Perform a single sweep.
- 5) Record the max value and add $10 \log (1/\text{duty cycle})$

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.



4.4.7 TEST RESULTS

802.11a

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1			
52	5260	5.27	4.82	7.907	11	PASS
60	5300	6.19	5.75	8.879	11	PASS
64	5320	6.43	6.11	9.220	11	PASS
100	5500	0.39	1.32	3.780	11	PASS
116	5580	7.70	7.37	10.473	11	PASS
140	5700	0.50	2.57	4.587	11	PASS

NOTE: Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1			
52	5260	5.28	4.06	7.605	11	PASS
60	5300	6.52	5.86	9.179	11	PASS
64	5320	6.20	5.77	8.964	11	PASS
100	5500	-0.48	0.05	2.689	11	PASS
116	5580	6.39	6.66	9.432	11	PASS
140	5700	-0.67	0.48	2.854	11	PASS

NOTE: Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.



802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1					
54	5270	3.86	2.95	6.407	0.16	6.567	11	PASS
62	5310	-2.07	-3.23	0.384	0.16	0.544	11	PASS
102	5510	-8.66	-8.29	-5.490	0.16	-5.330	11	PASS
110	5550	2.24	1.23	4.739	0.16	4.899	11	PASS
134	5670	-2.25	-0.82	1.186	0.16	1.346	11	PASS

NOTE:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Refer to section 3.3 for duty cycle spectrum plot.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

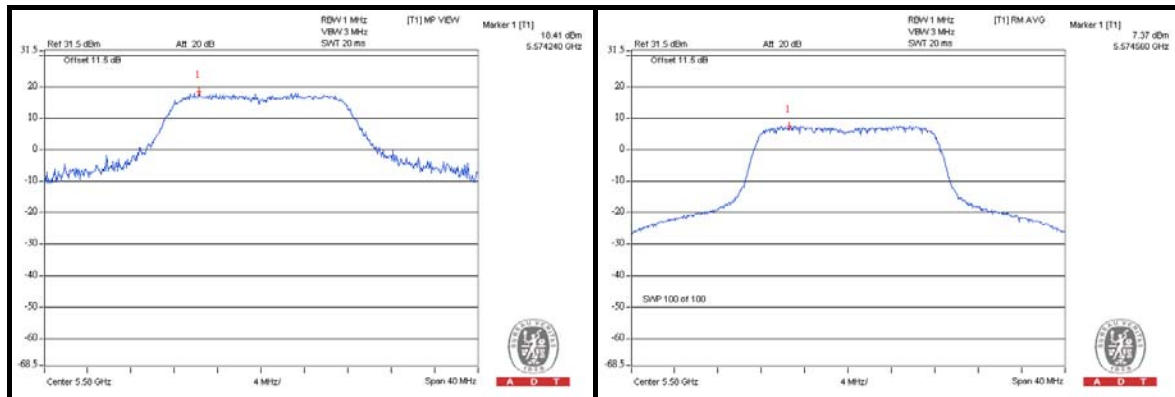
4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

4.5.7 TEST RESULTS

802.11a

TX chain	CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS /FAIL
0	52	5260	14.27	5.27	9.00	13	PASS
	60	5300	15.55	6.19	9.36	13	PASS
	64	5320	15.47	6.43	9.04	13	PASS
	100	5500	9.60	0.39	9.21	13	PASS
	116	5580	16.68	7.70	8.98	13	PASS
	140	5700	9.42	0.50	8.92	13	PASS
1	52	5260	15.17	4.82	10.35	13	PASS
	60	5300	16.42	5.75	10.67	13	PASS
	64	5320	16.52	6.11	10.41	13	PASS
	100	5500	11.80	1.32	10.48	13	PASS
	116	5580	18.41	7.37	11.04	13	PASS
	140	5700	12.89	2.57	10.32	13	PASS

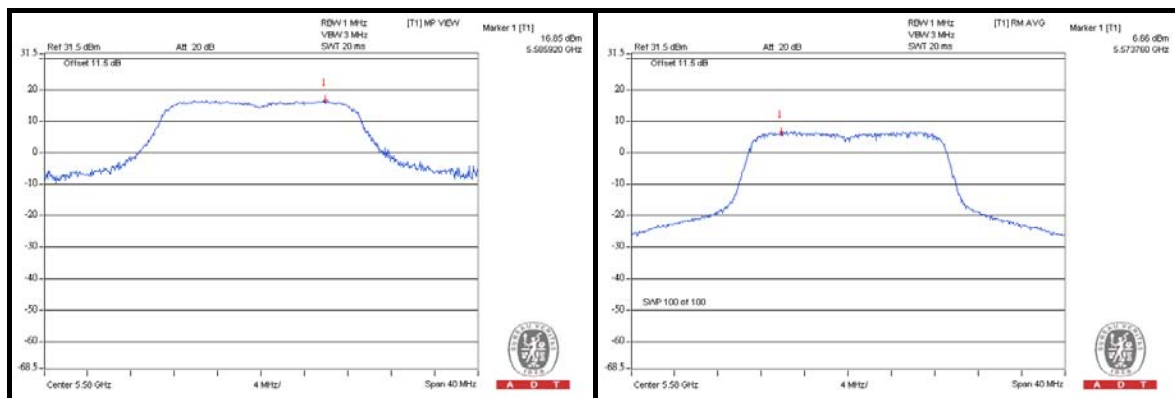




A D T

802.11n (20MHz)

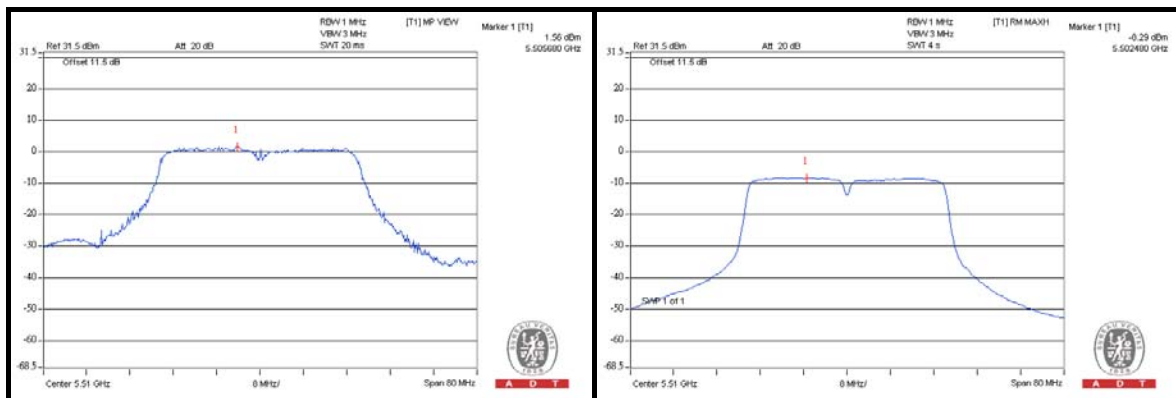
TX chain	CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS /FAIL
0	52	5260	14.48	5.28	9.20	13	PASS
	60	5300	16.43	6.52	9.91	13	PASS
	64	5320	15.70	6.20	9.50	13	PASS
	100	5500	8.92	-0.48	9.40	13	PASS
	116	5580	15.17	6.39	8.78	13	PASS
	140	5700	8.94	-0.67	9.61	13	PASS
1	52	5260	13.82	4.06	9.76	13	PASS
	60	5300	15.70	5.86	9.84	13	PASS
	64	5320	15.37	5.77	9.60	13	PASS
	100	5500	9.87	0.05	9.82	13	PASS
	116	5580	16.85	6.66	10.19	13	PASS
	140	5700	10.18	0.48	9.70	13	PASS



802.11n (40MHz)

TX chain	CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
0	54	5270	13.52	3.86	4.02	9.50	13	PASS
	62	5310	7.48	-2.07	-1.91	9.39	13	PASS
	102	5510	0.96	-8.66	-8.50	9.46	13	PASS
	110	5550	11.84	2.24	2.40	9.44	13	PASS
	134	5670	7.31	-2.25	-2.09	9.40	13	PASS
1	54	5270	12.78	2.95	3.11	9.67	13	PASS
	62	5310	6.58	-3.23	-3.07	9.65	13	PASS
	102	5510	1.56	-8.29	-8.13	9.69	13	PASS
	110	5550	10.92	1.23	1.39	9.53	13	PASS
	134	5670	8.94	-0.82	-0.66	9.60	13	PASS

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

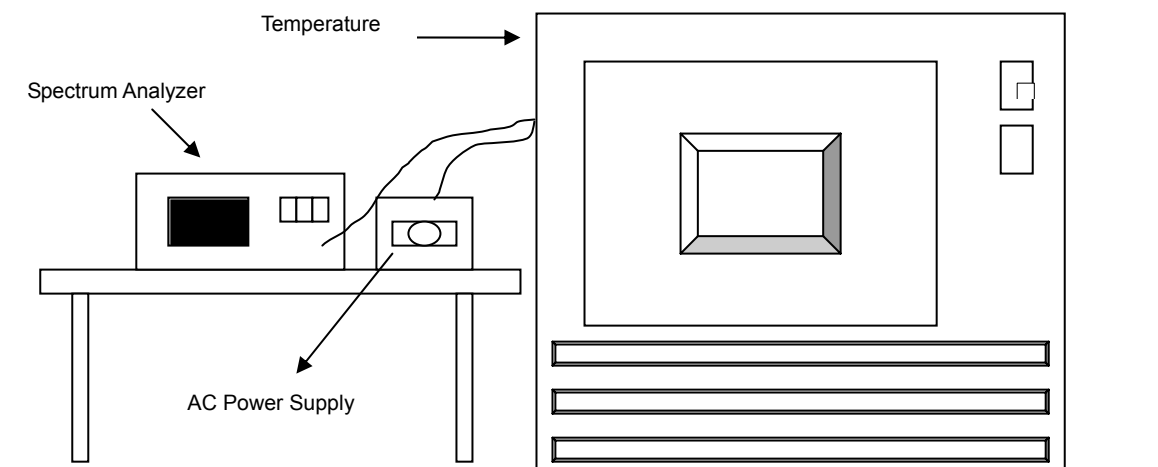


4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 TEST PROCEDURE

- a. 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 (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
55	110.0	5320.029194	5.488	5320.029055	5.461	5320.028693	5.393	5320.029451	5.536
50	110.0	5320.030536	5.740	5320.030621	5.756	5320.030708	5.772	5320.030302	5.696
40	110.0	5320.030905	5.809	5320.030591	5.750	5320.030174	5.672	5320.030861	5.801
30	110.0	5320.030610	5.754	5320.030360	5.707	5320.030722	5.775	5320.030205	5.678
20	110.0	5320.032457	6.101	5320.031998	6.015	5320.032143	6.042	5320.032486	6.106
10	110.0	5320.033874	6.367	5320.033684	6.332	5320.033834	6.360	5320.033781	6.350
0	110.0	5320.032246	6.061	5320.031999	6.015	5320.032312	6.074	5320.032214	6.055
-10	110.0	5320.030092	5.656	5320.030510	5.735	5320.030340	5.703	5320.030780	5.786
-20	110.0	5320.029744	5.591	5320.029548	5.554	5320.029330	5.513	5320.029489	5.543

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	93.5	5320.010294	1.935	5320.010687	2.009	5320.010395	1.954	5320.010795	2.029
	110.0	5320.012068	2.268	5320.011855	2.228	5320.011609	2.182	5320.011690	2.197
	126.5	5320.013577	2.552	5320.013458	2.530	5320.013404	2.520	5320.013239	2.489

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

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Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.adt.com.tw

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---