



FCC TEST REPORT (15.407)

REPORT NO.: RF121016C15A

MODEL NO.: DIR-855L

FCC ID: KA2IR855LA1

RECEIVED: Oct. 16, 2012

TESTED: Nov. 23 ~ Dec. 14, 2012

ISSUED: Jan. 23, 2013

APPLICANT: D-Link Corporation

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ISSUED BY: Bureau Veritas Consumer Products Services
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A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121016C15A	Original release	Jan. 23, 2013



1. CERTIFICATION

PRODUCT: Wireless N900 Dual Band Gigabit Router / Cloud Router 3000

MODEL: DIR-855L

BRAND: D-Link

APPLICANT: D-Link Corporation

TESTED: Nov. 23 ~ Dec. 14, 2012

TEST SAMPLE: ENGINEERING SAMPLE

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

ANSI C63.10-2009

The above equipment (model: DIR-855L) 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 : Suntee Liu , DATE : Jan. 23, 2013
Suntee Liu / Specialist

APPROVED BY : Ken Liu , DATE : Jan. 23, 2013
Ken Liu / 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 -9.97dB at 0.15000MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.0dB at 5400.00MHz.
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	Antenna connector is UFL not a standard connector.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Wireless N900 Dual Band Gigabit Router / Cloud Router 3000
MODEL NO.	DIR-855L
POWER SUPPLY	12Vdc (Adapter)
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	5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	245.483mW for 5260 ~ 5320MHz 206.233mW for 5500 ~ 5700MHz
ANTENNA TYPE	PCB antenna with 0dBi gain
ANTENNA CONNECTOR	UFL
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter

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. The EUT provides three completed transmitters and three receivers.

MODULATION MODE	TX FUNCTION
802.11b	3TX
802.11g	3TX
802.11a	3TX
802.11n (20MHz)	3TX
802.11n (40MHz)	3TX

3. The EUT consumes power from the following adapters. **Adapter 1** was the worst for the final tests.

ADAPTER 1	
BRAND:	D-Link
MODEL:	CG2412-B
INPUT:	100-240Vac, 0.6A, 50-60Hz
OUTPUT:	12Vdc, 2A
POWER LINE:	1.5m non-shielded cable without core

ADAPTER 2	
BRAND:	D-Link
MODEL:	ADS0271-W120200
INPUT:	100-240Vac, 50-60Hz, 0.6A
OUTPUT:	12Vdc, 2A
POWER LINE:	1.1m non-shielded cable without core

4. The antennas can be controlled by software. The EUT had been pre-tested on the following antenna polarities, and only the worst cases are presented in the report.

	2.4GHz	5Hz
Antenna Polarity	V1, V2, V3	V1, V2, V3
	H1, V2, V3	H1, V2, V3
	V1, H2, V3	V1, H2, V3
	V1, V2, H3	V1, V2, H3
	H1, H2, V3	H1, H2, V3
	V1, H2, H3	V1, H2, H3
	H1, V2, H3	H1, V2, H3
	H1, H2, H3	H1, H2, H3
Worst Case	V1, V2, V3	V1, V2, V3

5. 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 1
B	-	-	√	-	Power from 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: "-" 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
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
A	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
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
A	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	802.11n (40MHz)	5260-5320	38 to 64	54	OFDM	BPSK	15.0
A	802.11n (40MHz)	5500-5700	102 to 134	110	OFDM	BPSK	15.0

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 (40MHz)	5260-5320	38 to 64	54	OFDM	BPSK	15.0
A, B	802.11n (40MHz)	5500-5700	102 to 134	110	OFDM	BPSK	15.0

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
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
A	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
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 68%RH	120Vac, 60Hz	Sun Lin
RE<1G	24deg. C, 69%RH	120Vac, 60Hz	Antony Lee
PLC	25deg. C, 63%RH	120Vac, 60Hz	Antony Lee
APCM	25deg. C, 60%RH	120Vac, 60Hz	Frank Liu

3.3 DUTY CYCLE OF TEST SIGNAL

Duty cycle of test signal is 100 %, duty factor is not required.



3.4 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.

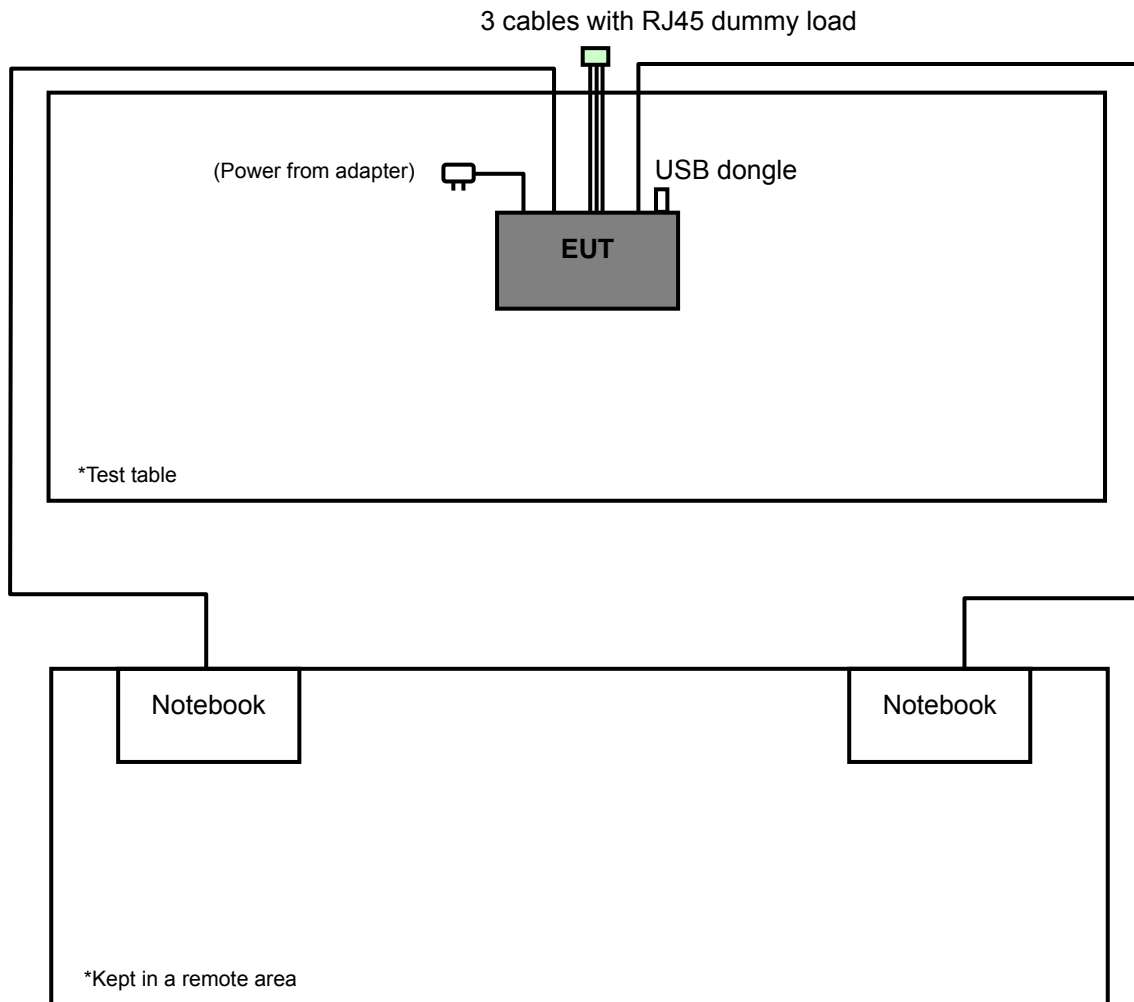
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	USB Dongle	Transcend	V85	538455 4481	NA
2	Dummy Load	NA	NA	NA	NA
3	Notebook	DELL	D531	CN-0XM006-48643-81U-2610	QDS-BRCM1020
4	Notebook	DELL	D531	CN-0XM006-48643-81U-2973	QDS-BRCM1020

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.8m RJ45 UTP cable x 3 with load connected to EUT
3	10m RJ45 UTP cable
4	10m RJ45 UTP cable

NOTE:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items 3-4 acted as communication partners to transfer data.

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 v01 r02

662911 D01 Multiple Transmitter Output v01 r02

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	
	FIELD STRENGTH AT 3m (dBµV/m)	
	PK	AV
	74	54
	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)
√	PK	PK
	-27	68.3

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

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



4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 19, 2012	Apr. 18, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 30, 2012	Jan. 29, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 03, 2012	Apr. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Sep. 12, 2012	Sep. 11, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 11, 2012	Jul. 10, 2013
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier Agilent	8449B	3008A01911	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8447D	2944A10638	Oct. 25, 2012	Oct. 24, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 28, 2012	Aug. 27, 2013
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 11, 2012	Aug. 10, 2013
Software	ADT_Radiated_ V7.6.15.9.2	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. 25, 2012	Oct. 24, 2013
High Speed Peak Power Meter	ML2495A	0842014	Apr. 28, 2012	Apr. 27, 2013
Power Sensor	MA2411B	0738404	Apr. 28, 2012	Apr. 27, 2013
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 13, 2012	Jun. 12, 2013

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. The test was performed in HwaYa Chamber 9.
 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 460141.
 6. The IC Site Registration No. is IC 7450F-4.

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.

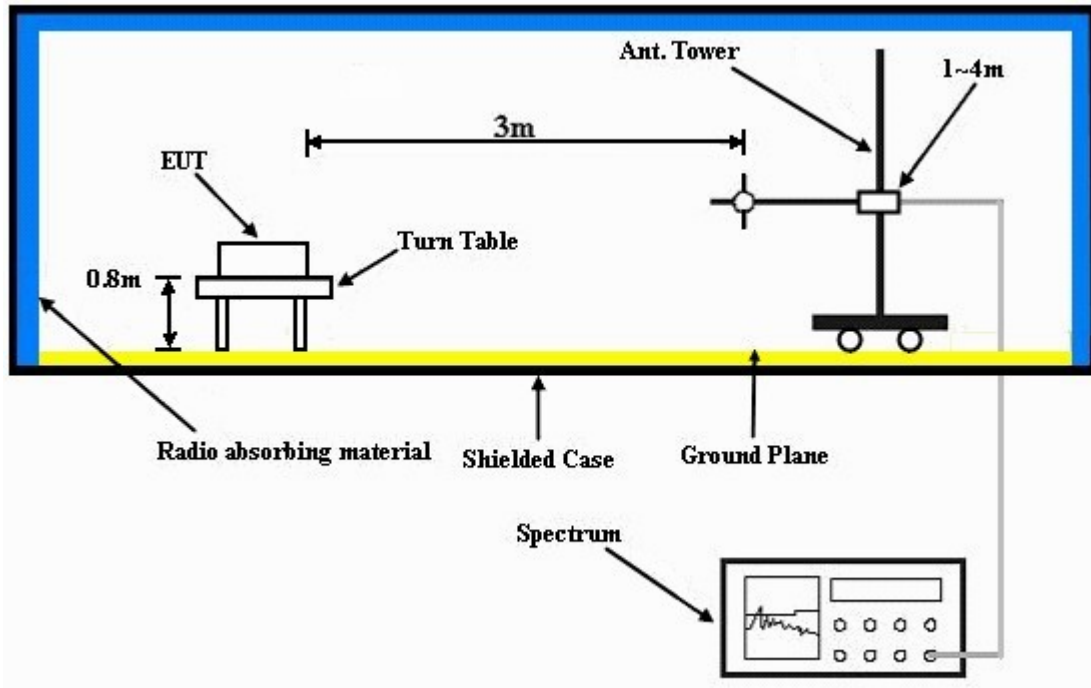
NOTE:

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 two notebooks to act as communication partner and placed them outside of testing area.
- c. The communication partners 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 partners sent data to EUT by command "PING".
- e. The necessary accessories enabled the system in full functions.



4.1.8 TEST RESULTS

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5260.00	108.2 PK			1.22 H	41	70.30	37.90
2	*5260.00	98.1 AV			1.22 H	41	60.20	37.90
3	5440.00	53.8 PK	74.0	-20.2	1.09 H	277	15.60	38.20
4	5440.00	41.3 AV	54.0	-12.7	1.09 H	277	3.10	38.20
5	#7013.00	58.8 PK	68.3	-9.5	1.22 H	295	16.10	42.70
6	#10520.00	52.9 PK	68.3	-15.4	1.36 H	285	3.80	49.10
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	*5260.00	117.8 PK			1.06 V	82	79.90	37.90
2	*5260.00	106.4 AV			1.06 V	82	68.50	37.90
3	5440.00	61.5 PK	74.0	-12.5	1.07 V	196	23.30	38.20
4	5440.00	50.6 AV	54.0	-3.4	1.07 V	196	12.40	38.20
5	#7013.00	59.9 PK	68.3	-8.4	1.06 V	186	17.20	42.70
6	#10520.00	56.3 PK	68.3	-12.0	1.09 V	115	7.20	49.10

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 of the restricted band.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5080.00	54.1 PK	74.0	-19.9	1.01 H	269	16.40	37.70
2	5080.00	42.0 AV	54.0	-12.0	1.01 H	269	4.30	37.70
3	*5300.00	108.3 PK			1.18 H	48	70.30	38.00
4	*5300.00	98.2 AV			1.18 H	48	60.20	38.00
5	#7067.00	51.0 PK	68.3	-17.3	1.28 H	322	8.10	42.90
6	10600.00	53.6 PK	74.0	-20.4	1.28 H	251	4.60	49.00
7	10600.00	43.2 AV	54.0	-10.8	1.28 H	251	-5.80	49.00
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	5080.00	59.2 PK	74.0	-14.8	1.28 V	194	21.50	37.70
2	5080.00	51.0 AV	54.0	-3.0	1.28 V	194	13.30	37.70
3	*5300.00	117.5 PK			1.00 V	207	79.50	38.00
4	*5300.00	105.8 AV			1.00 V	207	67.80	38.00
5	#7067.00	53.8 PK	68.3	-14.5	1.06 V	186	10.90	42.90
6	10600.00	54.8 PK	74.0	-19.2	1.08 V	118	5.80	49.00
7	10600.00	42.9 AV	54.0	-11.1	1.08 V	118	-6.10	49.00

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 of the restricted band.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5320.00	108.8 PK			1.21 H	42	70.80	38.00
2	*5320.00	98.8 AV			1.21 H	42	60.80	38.00
3	5350.00	54.8 PK	74.0	-19.2	1.17 H	51	16.70	38.10
4	5350.00	42.6 AV	54.0	-11.4	1.17 H	51	4.50	38.10
5	5400.00	51.8 PK	74.0	-22.2	1.22 H	69	13.70	38.10
6	5400.00	44.8 AV	54.0	-9.2	1.22 H	69	6.70	38.10
7	#7093.00	50.8 PK	68.3	-17.5	1.29 H	315	7.80	43.00
8	10640.00	54.2 PK	74.0	-19.8	1.36 H	247	5.00	49.20
9	10640.00	44.2 AV	54.0	-9.8	1.36 H	247	-5.00	49.20
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	*5320.00	117.7 PK			1.09 V	212	79.70	38.00
2	*5320.00	106.4 AV			1.09 V	212	68.40	38.00
3	5350.00	68.7 PK	74.0	-5.3	1.00 V	211	30.60	38.10
4	5350.00	50.8 AV	54.0	-3.2	1.00 V	211	12.70	38.10
5	5400.00	61.8 PK	74.0	-12.2	1.03 V	312	23.70	38.10
6	5400.00	50.4 AV	54.0	-3.6	1.03 V	312	12.30	38.10
7	#7093.00	60.6 PK	68.3	-7.7	1.05 V	185	17.60	43.00
8	10640.00	56.8 PK	74.0	-17.2	1.22 V	15	7.60	49.20
9	10640.00	47.4 AV	54.0	-6.6	1.22 V	15	-1.80	49.20

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 of the restricted band.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5360.00	55.4 PK	74.0	-18.6	1.04 H	258	17.30	38.10
2	5360.00	43.2 AV	54.0	-10.8	1.04 H	258	5.10	38.10
3	5460.00	58.9 PK	74.0	-15.1	1.27 H	45	20.60	38.30
4	5460.00	40.0 AV	54.0	-14.0	1.27 H	45	1.70	38.30
5	#5470.00	60.4 PK	68.3	-7.9	1.27 H	45	22.10	38.30
6	*5500.00	107.1 PK			1.27 H	37	68.80	38.30
7	*5500.00	97.2 AV			1.27 H	37	58.90	38.30
8	7333.00	44.1 PK	74.0	-29.9	1.28 H	304	0.50	43.60
9	7333.00	35.2 AV	54.0	-18.8	1.28 H	304	-8.40	43.60
10	11000.00	54.2 PK	74.0	-19.8	1.38 H	298	4.50	49.70
11	11000.00	41.8 AV	54.0	-12.2	1.38 H	298	-7.90	49.70
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	5360.00	61.2 PK	74.0	-12.8	1.00 V	195	23.10	38.10
2	5360.00	52.2 AV	54.0	-1.8	1.00 V	195	14.10	38.10
3	5460.00	65.7 PK	74.0	-8.3	1.03 V	90	27.40	38.30
4	5460.00	49.2 AV	54.0	-4.8	1.03 V	90	10.90	38.30
5	#5470.00	66.9 PK	68.3	-1.4	1.03 V	90	28.60	38.30
6	*5500.00	117.2 PK			1.13 V	110	78.90	38.30
7	*5500.00	107.1 AV			1.13 V	110	68.80	38.30
8	7333.00	51.6 PK	74.0	-22.4	1.02 V	185	8.00	43.60
9	7333.00	41.6 AV	54.0	-12.4	1.02 V	185	-2.00	43.60
10	11000.00	59.4 PK	74.0	-14.6	1.39 V	80	9.70	49.70
11	11000.00	47.2 AV	54.0	-6.8	1.39 V	80	-2.50	49.70

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).
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 of the restricted band.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5400.00	54.6 PK	74.0	-19.4	1.08 H	262	16.50	38.10
2	5400.00	42.8 AV	54.0	-11.2	1.08 H	262	4.70	38.10
3	*5580.00	107.1 PK			1.24 H	52	68.70	38.40
4	*5580.00	97.0 AV			1.24 H	52	58.60	38.40
5	7440.00	44.5 PK	74.0	-29.5	1.24 H	296	0.60	43.90
6	7440.00	35.6 AV	54.0	-18.4	1.24 H	296	-8.30	43.90
7	11160.00	54.6 PK	74.0	-19.4	1.25 H	304	5.10	49.50
8	11160.00	42.2 AV	54.0	-11.8	1.25 H	304	-7.30	49.50
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	5400.00	62.8 PK	74.0	-11.2	1.07 V	195	24.70	38.10
2	5400.00	52.8 AV	54.0	-1.2	1.07 V	195	14.70	38.10
3	*5580.00	117.5 PK			1.12 V	88	79.10	38.40
4	*5580.00	107.2 AV			1.12 V	88	68.80	38.40
5	7440.00	50.6 PK	74.0	-23.4	1.07 V	193	6.70	43.90
6	7440.00	39.4 AV	54.0	-14.6	1.07 V	193	-4.50	43.90
7	11160.00	58.2 PK	74.0	-15.8	1.44 V	73	8.70	49.50
8	11160.00	45.5 AV	54.0	-8.5	1.44 V	73	-4.00	49.50

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).
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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5360.00	55.2 PK	74.0	-18.8	1.08 H	262	17.10	38.10
2	5360.00	42.8 AV	54.0	-11.2	1.08 H	262	4.70	38.10
3	*5700.00	104.8 PK			1.29 H	52	66.10	38.70
4	*5700.00	94.6 AV			1.29 H	52	55.90	38.70
5	#5725.00	60.1 PK	68.3	-8.2	1.25 H	47	21.40	38.70
6	7600.00	43.8 PK	74.0	-30.2	1.34 H	299	-0.40	44.20
7	7600.00	35.4 AV	54.0	-18.6	1.34 H	299	-8.80	44.20
8	11400.00	52.8 PK	74.0	-21.2	1.45 H	304	3.40	49.40
9	11400.00	40.1 AV	54.0	-13.9	1.45 H	304	-9.30	49.40
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	5360.00	60.6 PK	74.0	-13.4	1.00 V	198	22.50	38.10
2	5360.00	51.4 AV	54.0	-2.6	1.00 V	198	13.30	38.10
3	*5700.00	114.6 PK			1.07 V	90	75.90	38.70
4	*5700.00	103.6 AV			1.07 V	90	64.90	38.70
5	#5725.00	67.3 PK	68.3	-1.0	1.08 V	112	28.60	38.70
6	7600.00	59.2 PK	74.0	-14.8	1.06 V	160	15.00	44.20
7	7600.00	40.4 AV	54.0	-13.6	1.06 V	160	-3.80	44.20
8	11400.00	64.3 PK	74.0	-9.7	1.34 V	82	14.90	49.40
9	11400.00	50.4 AV	54.0	-3.6	1.34 V	82	1.00	49.40

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 of the restricted band.



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802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5000.00	53.8 PK	74.0	-20.2	1.12 H	264	16.30	37.50
2	5000.00	42.8 AV	54.0	-11.2	1.12 H	264	5.30	37.50
3	*5260.00	108.3 PK			1.28 H	57	70.40	37.90
4	*5260.00	98.2 AV			1.28 H	57	60.30	37.90
5	#7013.00	59.0 PK	68.3	-9.3	1.14 H	305	16.30	42.70
6	#10520.00	55.2 PK	68.3	-13.1	1.28 H	257	6.10	49.10

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	5000.00	61.1 PK	74.0	-12.9	1.05 V	198	23.60	37.50
2	5000.00	50.0 AV	54.0	-4.0	1.05 V	198	12.50	37.50
3	*5260.00	117.8 PK			1.04 V	89	79.90	37.90
4	*5260.00	106.6 AV			1.04 V	89	68.70	37.90
5	#7013.00	61.1 PK	68.3	-7.2	1.14 V	169	18.40	42.70
6	#10520.00	57.8 PK	68.3	-10.5	1.12 V	121	8.70	49.10

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 of the restricted band.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5080.00	54.2 PK	74.0	-19.8	1.08 H	264	16.50	37.70
2	5080.00	42.0 AV	54.0	-12.0	1.08 H	264	4.30	37.70
3	*5300.00	107.6 PK			1.17 H	169	69.60	38.00
4	*5300.00	97.5 AV			1.17 H	169	59.50	38.00
5	#7067.00	51.2 PK	68.3	-17.1	1.29 H	341	8.30	42.90
6	10600.00	54.2 PK	74.0	-19.8	1.24 H	289	5.20	49.00
7	10600.00	44.8 AV	54.0	-9.2	1.24 H	289	-4.20	49.00
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	5080.00	58.1 PK	74.0	-15.9	1.12 V	194	20.40	37.70
2	5080.00	50.2 AV	54.0	-3.8	1.12 V	194	12.50	37.70
3	*5300.00	116.4 PK			1.21 V	143	78.40	38.00
4	*5300.00	105.5 AV			1.21 V	143	67.50	38.00
5	#7067.00	58.7 PK	68.3	-9.6	1.32 V	188	15.80	42.90
6	10600.00	55.4 PK	74.0	-18.6	1.04 V	123	6.40	49.00
7	10600.00	43.2 AV	54.0	-10.8	1.04 V	123	-5.80	49.00

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 of the restricted band.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5320.00	108.1 PK			1.24 H	52	70.10	38.00
2	*5320.00	98.0 AV			1.24 H	52	60.00	38.00
3	5350.00	54.2 PK	74.0	-19.8	1.28 H	45	16.10	38.10
4	5350.00	42.4 AV	54.0	-11.6	1.28 H	45	4.30	38.10
5	5400.00	51.3 PK	74.0	-22.7	1.32 H	51	13.20	38.10
6	5400.00	43.8 AV	54.0	-10.2	1.32 H	51	5.70	38.10
7	#7093.00	50.8 PK	68.3	-17.5	1.35 H	322	7.80	43.00
8	10640.00	54.8 PK	74.0	-19.2	1.28 H	252	5.60	49.20
9	10640.00	44.8 AV	54.0	-9.2	1.28 H	252	-4.40	49.20
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	*5320.00	117.1 PK			1.06 V	73	79.10	38.00
2	*5320.00	105.8 AV			1.06 V	73	67.80	38.00
3	5350.00	69.2 PK	74.0	-4.8	1.18 V	229	31.10	38.10
4	5350.00	50.5 AV	54.0	-3.5	1.18 V	229	12.40	38.10
5	5400.00	61.0 PK	74.0	-13.0	1.08 V	122	22.90	38.10
6	5400.00	50.8 AV	54.0	-3.2	1.08 V	122	12.70	38.10
7	#7093.00	60.4 PK	68.3	-7.9	1.05 V	189	17.40	43.00
8	10640.00	56.4 PK	74.0	-17.6	1.24 V	12	7.20	49.20
9	10640.00	47.2 AV	54.0	-6.8	1.24 V	12	-2.00	49.20

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 of the restricted band.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5360.00	55.4 PK	74.0	-18.6	1.08 H	264	17.30	38.10
2	5360.00	43.2 AV	54.0	-10.8	1.08 H	264	5.10	38.10
3	5460.00	57.8 PK	74.0	-16.2	1.22 H	85	19.50	38.30
4	5460.00	40.1 AV	54.0	-13.9	1.22 H	85	1.80	38.30
5	#5470.00	60.4 PK	68.3	-7.9	1.22 H	85	22.10	38.30
6	*5500.00	106.7 PK			1.21 H	56	68.40	38.30
7	*5500.00	96.6 AV			1.21 H	56	58.30	38.30
8	7333.00	44.4 PK	74.0	-29.6	1.29 H	285	0.80	43.60
9	7333.00	35.6 AV	54.0	-18.4	1.29 H	285	-8.00	43.60
10	11000.00	54.5 PK	74.0	-19.5	1.29 H	304	4.80	49.70
11	11000.00	41.6 AV	54.0	-12.4	1.29 H	304	-8.10	49.70
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	5360.00	61.1 PK	74.0	-12.9	1.12 V	193	23.00	38.10
2	5360.00	52.0 AV	54.0	-2.0	1.12 V	193	13.90	38.10
3	5460.00	66.1 PK	74.0	-7.9	1.13 V	98	27.80	38.30
4	5460.00	48.4 AV	54.0	-5.6	1.13 V	98	10.10	38.30
5	#5470.00	66.4 PK	68.3	-1.9	1.13 V	98	28.10	38.30
6	*5500.00	116.8 PK			1.03 V	115	78.50	38.30
7	*5500.00	106.0 AV			1.03 V	115	67.70	38.30
8	7333.00	51.1 PK	74.0	-22.9	1.12 V	184	7.50	43.60
9	7333.00	41.8 AV	54.0	-12.2	1.12 V	184	-1.80	43.60
10	11000.00	59.9 PK	74.0	-14.1	1.36 V	78	10.20	49.70
11	11000.00	47.4 AV	54.0	-6.6	1.36 V	78	-2.30	49.70

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).
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 of the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5360.00	54.1 PK	74.0	-19.9	1.12 H	251	16.00	38.10
2	5360.00	42.8 AV	54.0	-11.2	1.12 H	251	4.70	38.10
3	*5580.00	106.4 PK			1.24 H	64	68.00	38.40
4	*5580.00	96.5 AV			1.24 H	64	58.10	38.40
5	7440.00	44.2 PK	74.0	-29.8	1.22 H	305	0.30	43.90
6	7440.00	35.1 AV	54.0	-18.9	1.22 H	305	-8.80	43.90
7	11160.00	54.1 PK	74.0	-19.9	1.27 H	298	4.60	49.50
8	11160.00	42.1 AV	54.0	-11.9	1.27 H	298	-7.40	49.50
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	5360.00	61.7 PK	74.0	-12.3	1.00 V	196	23.60	38.10
2	5360.00	52.3 AV	54.0	-1.7	1.00 V	196	14.20	38.10
3	*5580.00	117.3 PK			1.00 V	89	78.90	38.40
4	*5580.00	106.1 AV			1.00 V	89	67.70	38.40
5	7440.00	49.8 PK	74.0	-24.2	1.08 V	207	5.90	43.90
6	7440.00	38.5 AV	54.0	-15.5	1.08 V	207	-5.40	43.90
7	11160.00	62.1 PK	74.0	-11.9	1.27 V	82	12.60	49.50
8	11160.00	49.0 AV	54.0	-5.0	1.27 V	82	-0.50	49.50

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).
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, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5080.00	55.6 PK	74.0	-18.4	1.12 H	271	17.90	37.70
2	5080.00	43.2 AV	54.0	-10.8	1.12 H	271	5.50	37.70
3	*5700.00	104.4 PK			1.25 H	58	65.70	38.70
4	*5700.00	94.2 AV			1.25 H	58	55.50	38.70
5	#5725.00	60.5 PK	68.3	-7.8	1.34 H	62	21.80	38.70
6	7600.00	44.8 PK	74.0	-29.2	1.39 H	305	0.60	44.20
7	7600.00	44.2 AV	54.0	-9.8	1.39 H	305	0.00	44.20
8	11400.00	52.4 PK	74.0	-21.6	1.22 H	296	3.00	49.40
9	11400.00	39.8 AV	54.0	-14.2	1.22 H	296	-9.60	49.40
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	5080.00	60.1 PK	74.0	-13.9	1.15 V	198	22.40	37.70
2	5080.00	51.5 AV	54.0	-2.5	1.15 V	198	13.80	37.70
3	*5700.00	114.5 PK			1.03 V	214	75.80	38.70
4	*5700.00	104.1 AV			1.03 V	214	65.40	38.70
5	#5725.00	66.7 PK	68.3	-1.6	1.01 V	198	28.00	38.70
6	7600.00	58.9 PK	74.0	-15.1	1.08 V	167	14.70	44.20
7	7600.00	40.1 AV	54.0	-13.9	1.08 V	167	-4.10	44.20
8	11400.00	64.8 PK	74.0	-9.2	1.35 V	85	15.40	49.40
9	11400.00	50.8 AV	54.0	-3.2	1.35 V	85	1.40	49.40

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 of the restricted band.

802.11n (40MHz)

EUT TEST CONDITION		MEBSUREMENT DETBIL	
CHBNNEL	Channel 54	FREQUENCY RBNGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTBL CONDITIONS	25deg. C, 68%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	5000.00	54.8 PK	74.0	-19.2	1.26 H	252	17.30	37.50
2	5000.00	42.2 AV	54.0	-11.8	1.26 H	252	4.70	37.50
3	*5270.00	97.5 PK			1.15 H	57	59.50	38.00
4	*5270.00	87.2 AV			1.15 H	57	49.20	38.00
5	#7026.00	56.2 PK	68.3	-12.1	1.08 H	287	13.50	42.70
6	#10540.00	54.1 PK	68.3	-14.2	1.38 H	296	5.00	49.10
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	5000.00	60.0 PK	74.0	-14.0	1.17 V	199	22.50	37.50
2	5000.00	52.2 AV	54.0	-1.8	1.17 V	199	14.70	37.50
3	*5270.00	107.2 PK			1.02 V	89	69.20	38.00
4	*5270.00	96.5 AV			1.02 V	89	58.50	38.00
5	#7026.00	58.3 PK	68.3	-10.0	1.18 V	2	15.60	42.70
6	#10540.00	55.1 PK	68.3	-13.2	1.22 V	304	6.00	49.10

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 of the restricted band.



A D T

EUT TEST CONDITION		MEBSUREMENT DETBIL	
CHBNNEL	Channel 62	FREQUENCY RBNGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTBL CONDITIONS	25deg. C, 68%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	5000.00	54.2 PK	74.0	-19.8	1.08 H	295	16.70	37.50
2	5000.00	41.1 AV	54.0	-12.9	1.08 H	295	3.60	37.50
3	*5310.00	101.1 PK			1.24 H	68	63.10	38.00
4	*5310.00	91.2 AV			1.24 H	68	53.20	38.00
5	5350.00	64.1 PK	74.0	-9.9	1.18 H	67	26.00	38.10
6	5350.00	42.6 AV	54.0	-11.4	1.18 H	67	4.50	38.10
7	#7080.00	52.4 PK	68.3	-15.9	1.12 H	298	9.50	42.90
8	10620.00	53.2 PK	74.0	-20.8	1.28 H	301	4.10	49.10
9	10620.00	44.1 AV	54.0	-9.9	1.28 H	301	-5.00	49.10
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	5000.00	63.6 PK	74.0	-10.4	1.02 V	198	26.10	37.50
2	5000.00	51.6 AV	54.0	-2.4	1.02 V	198	14.10	37.50
3	*5310.00	111.5 PK			1.12 V	225	73.50	38.00
4	*5310.00	100.1 AV			1.12 V	225	62.10	38.00
5	5350.00	72.9 PK	74.0	-1.1	1.04 V	83	34.80	38.10
6	5350.00	52.4 AV	54.0	-1.6	1.04 V	83	14.30	38.10
7	#7080.00	55.8 PK	68.3	-12.5	1.12 V	4	12.90	42.90
8	10620.00	54.1 PK	74.0	-19.9	1.28 V	247	5.00	49.10
9	10620.00	42.8 AV	54.0	-11.2	1.28 V	247	-6.30	49.10

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 of the restricted band.



A D T

EUT TEST CONDITION		MEBSUREMENT DETBIL	
CHBNNEL	Channel 102	FREQUENCY RBNGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTBL CONDITIONS	25deg. C, 68%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	5360.00	54.2 PK	74.0	-19.8	1.28 H	267	16.10	38.10
2	5360.00	41.6 AV	54.0	-12.4	1.28 H	267	3.50	38.10
3	5460.00	52.4 PK	74.0	-21.6	1.14 H	68	14.10	38.30
4	5460.00	41.1 AV	54.0	-12.9	1.14 H	68	2.80	38.30
5	#5470.00	62.5 PK	68.3	-5.8	1.14 H	68	24.20	38.30
6	*5510.00	96.6 PK			1.18 H	68	58.20	38.40
7	*5510.00	86.4 AV			1.18 H	68	48.00	38.40
8	11020.00	52.5 PK	74.0	-21.5	1.41 H	258	2.90	49.60
9	11020.00	42.2 AV	54.0	-11.8	1.41 H	258	-7.40	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	5360.00	54.8 PK	74.0	-19.2	1.09 V	156	16.70	38.10
2	5360.00	47.9 AV	54.0	-6.1	1.09 V	156	9.80	38.10
3	5460.00	59.7 PK	74.0	-14.3	1.12 V	100	21.40	38.30
4	5460.00	46.5 AV	54.0	-7.5	1.12 V	100	8.20	38.30
5	#5470.00	67.3 PK	68.3	-1.0	1.12 V	100	29.00	38.30
6	*5510.00	108.7 PK			1.01 V	114	70.30	38.40
7	*5510.00	98.5 AV			1.01 V	114	60.10	38.40
8	11020.00	54.5 PK	74.0	-19.5	1.24 V	291	4.90	49.60
9	11020.00	44.5 AV	54.0	-9.5	1.24 V	291	-5.10	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.
6. " # ": The radiated frequency is out of the restricted band.



A D T

EUT TEST CONDITION		MEBSUREMENT DETBIL	
CHBNNEL	Channel 110	FREQUENCY RBNGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTBL CONDITIONS	25deg. C, 68%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	5400.00	55.8 PK	74.0	-18.2	1.34 H	289	17.70	38.10
2	5400.00	42.6 AV	54.0	-11.4	1.34 H	289	4.50	38.10
3	*5550.00	93.5 PK			1.26 H	85	55.10	38.40
4	*5550.00	83.6 AV			1.26 H	85	45.20	38.40
5	11100.00	52.8 PK	74.0	-21.2	1.32 H	268	3.30	49.50
6	11100.00	42.2 AV	54.0	-11.8	1.32 H	268	-7.30	49.50
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	5400.00	61.4 PK	74.0	-12.6	1.08 V	201	23.30	38.10
2	5400.00	52.8 AV	54.0	-1.2	1.08 V	201	14.70	38.10
3	*5550.00	113.8 PK			1.11 V	115	75.40	38.40
4	*5550.00	103.8 AV			1.11 V	115	65.40	38.40
5	11100.00	54.2 PK	74.0	-19.8	1.22 V	308	4.70	49.50
6	11100.00	44.1 AV	54.0	-9.9	1.22 V	308	-5.40	49.50

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).
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		MEBSUREMENT DETBIL	
CHBNNEL	Channel 134	FREQUENCY RBNGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTBL CONDITIONS	25deg. C, 68%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	5440.00	54.7 PK	74.0	-19.3	1.29 H	289	16.50	38.20
2	5440.00	41.8 AV	54.0	-12.2	1.29 H	289	3.60	38.20
3	*5670.00	92.4 PK			1.25 H	75	53.80	38.60
4	*5670.00	82.2 AV			1.25 H	75	43.60	38.60
5	#5725.00	58.8 PK	68.3	-9.5	1.28 H	70	20.10	38.70
6	11340.00	51.8 PK	74.0	-22.2	1.52 H	302	2.30	49.50
7	11340.00	42.8 AV	54.0	-11.2	1.52 H	302	-6.70	49.50
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	5440.00	61.9 PK	74.0	-12.1	1.17 V	201	23.70	38.20
2	5440.00	53.0 AV	54.0	-1.0	1.17 V	201	14.80	38.20
3	*5670.00	112.7 PK			1.07 V	97	74.10	38.60
4	*5670.00	101.8 AV			1.07 V	97	63.20	38.60
5	#5725.00	66.5 PK	68.3	-1.8	1.06 V	98	27.80	38.70
6	11340.00	54.9 PK	74.0	-19.1	1.22 V	306	5.40	49.50
7	11340.00	44.7 AV	54.0	-9.3	1.22 V	306	-4.80	49.50

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).
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 of the restricted band.

BELOW 1GHz WORST-CASE DATA : 802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 69%RH	TESTED BY	Antony Lee

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	111.48	34.2 QP	43.5	-9.3	1.50 H	102	23.50	10.70
2	183.26	34.4 QP	43.5	-9.1	1.25 H	98	22.00	12.40
3	375.32	33.4 QP	46.0	-12.6	1.00 H	135	16.50	16.90
4	499.48	33.6 QP	46.0	-12.4	1.50 H	333	13.50	20.10
5	625.58	39.9 QP	46.0	-6.1	1.00 H	45	17.40	22.50
6	875.84	35.7 QP	46.0	-10.3	1.50 H	19	9.50	26.20

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	49.40	35.9 QP	40.0	-4.1	1.00 V	264	22.50	13.40
2	113.42	37.9 QP	43.5	-5.6	1.00 V	198	27.00	10.90
3	181.32	33.1 QP	43.5	-10.4	1.00 V	236	20.60	12.50
4	499.48	34.5 QP	46.0	-11.5	1.00 V	102	14.40	20.10
5	625.58	40.5 QP	46.0	-5.5	1.00 V	99	18.00	22.50
6	875.84	37.5 QP	46.0	-8.5	1.00 V	83	11.30	26.20

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 110	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 69%RH	TESTED BY	Antony Lee

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	111.48	34.1 QP	43.5	-9.4	1.50 H	116	23.40	10.70
2	183.26	34.4 QP	43.5	-9.1	1.25 H	105	22.00	12.40
3	375.32	33.5 QP	46.0	-12.5	1.00 H	130	16.60	16.90
4	499.48	33.6 QP	46.0	-12.4	1.50 H	341	13.50	20.10
5	625.58	38.7 QP	46.0	-7.3	1.25 H	41	16.20	22.50
6	875.84	35.5 QP	46.0	-10.5	1.00 H	32	9.30	26.20
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	49.40	35.8 QP	40.0	-4.2	1.00 V	335	22.40	13.40
2	113.42	38.2 QP	43.5	-5.3	1.00 V	127	27.30	10.90
3	179.38	32.0 QP	43.5	-11.5	1.00 V	240	19.30	12.70
4	499.48	35.1 QP	46.0	-10.9	1.00 V	110	15.00	20.10
5	625.58	41.4 QP	46.0	-4.6	1.00 V	90	18.90	22.50
6	875.84	38.4 QP	46.0	-7.6	1.00 V	80	12.20	26.20

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	100288	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 29, 2011	Dec. 28, 2012
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 30, 2011	Dec. 29, 2012
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 06, 2012	Jul. 05, 2013
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

4.2.3 TEST PROCEDURES

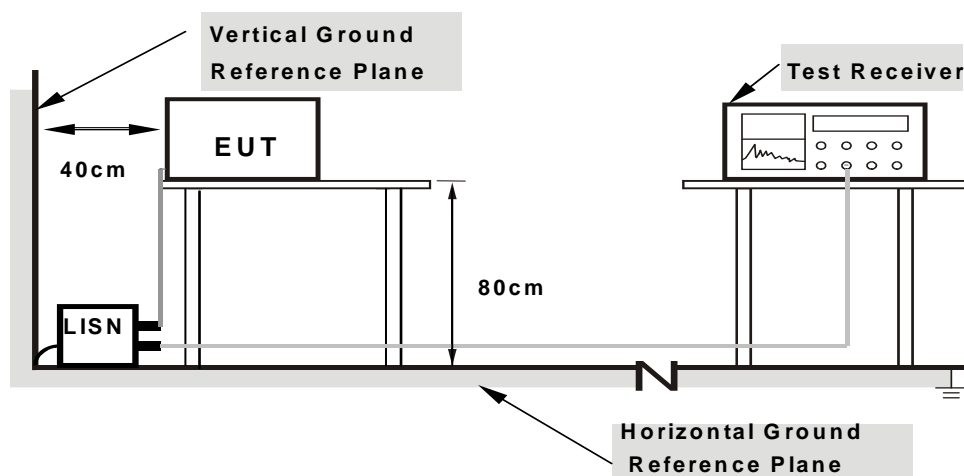
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

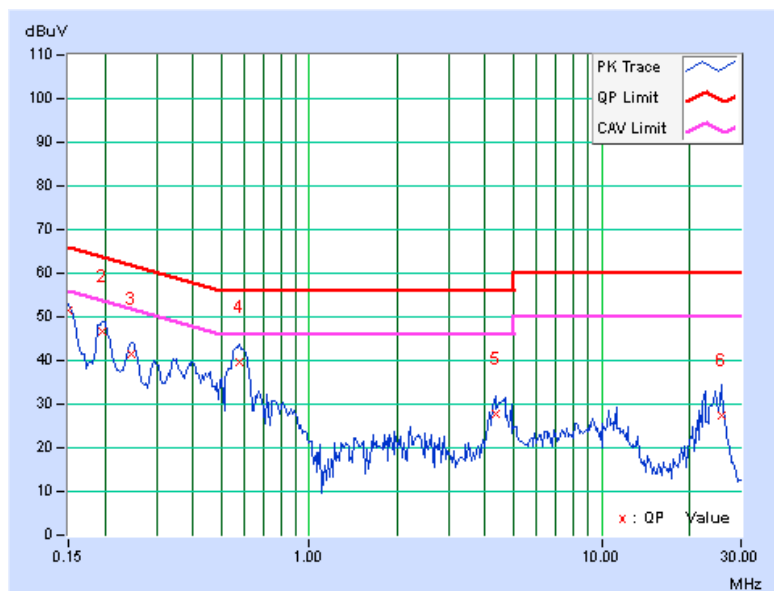
CONDUCTED WORST-CASE DATA : 802.11n (40MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 54	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	0.15000	0.15	51.24	45.88	51.39	46.03	66.00	56.00	-14.61	-9.97
2	0.19687	0.15	46.51	42.59	46.66	42.74	63.74	53.74	-17.08	-11.00
3	0.24766	0.15	41.32	37.83	41.47	37.98	61.84	51.84	-20.36	-13.85
4	0.57578	0.18	39.62	34.06	39.80	34.24	56.00	46.00	-16.20	-11.76
5	4.33594	0.35	27.45	16.58	27.80	16.93	56.00	46.00	-28.20	-29.07
6	25.78516	0.57	26.78	20.80	27.35	21.37	60.00	50.00	-32.65	-28.63

REMARKS:

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





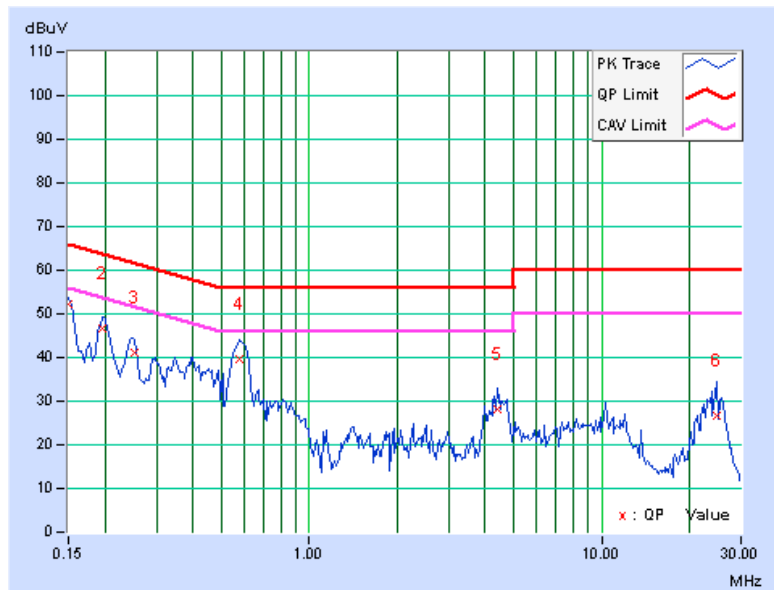
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PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 54	TEST MODE	A

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	0.15000	0.13	52.03	45.90	52.16	46.03	66.00	56.00	-13.84	-9.97
2	0.19687	0.14	46.63	42.61	46.77	42.75	63.74	53.74	-16.97	-10.99
3	0.25156	0.15	40.89	36.47	41.04	36.62	61.71	51.71	-20.67	-15.09
4	0.57969	0.17	39.40	33.94	39.57	34.11	56.00	46.00	-16.43	-11.89
5	4.41406	0.36	27.77	16.89	28.13	17.25	56.00	46.00	-27.87	-28.75
6	24.81641	0.64	25.86	18.61	26.50	19.25	60.00	50.00	-33.50	-30.75

REMARKS:

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





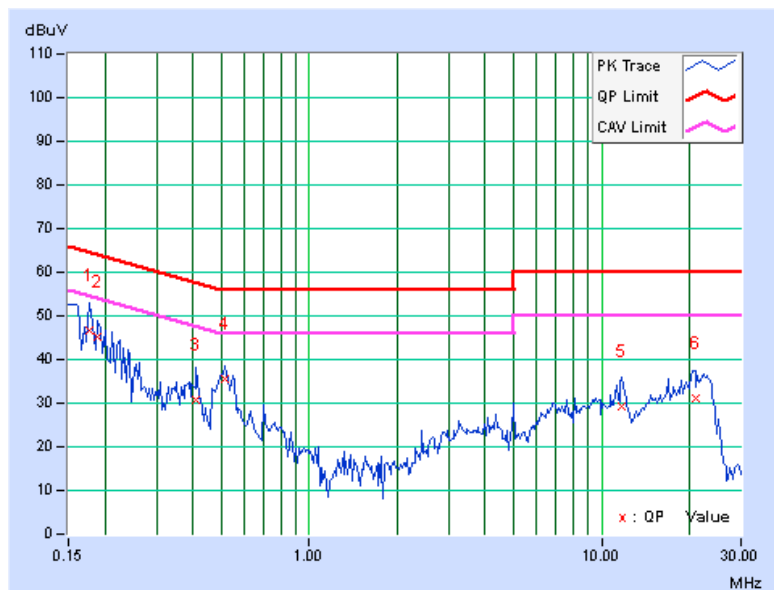
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PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 54	TEST MODE	B

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	0.17734	0.15	46.64	33.31	46.79	33.46	64.61	54.61	-17.82	-21.15
2	0.18906	0.15	45.11	31.96	45.26	32.11	64.08	54.08	-18.82	-21.97
3	0.41172	0.17	30.45	22.71	30.62	22.88	57.61	47.61	-26.99	-24.73
4	0.51328	0.17	35.24	29.72	35.41	29.89	56.00	46.00	-20.59	-16.11
5	11.77344	0.47	28.84	21.80	29.31	22.27	60.00	50.00	-30.69	-27.73
6	20.91797	0.62	30.67	25.58	31.29	26.20	60.00	50.00	-28.71	-23.80

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.





A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 54	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	0.13	49.38	35.59	49.51	35.72	65.58	55.58	-16.07	-19.86
2	0.18125	0.14	46.66	33.27	46.80	33.41	64.43	54.43	-17.63	-21.02
3	0.21250	0.14	43.29	31.20	43.43	31.34	63.11	53.11	-19.68	-21.77
4	0.51328	0.17	35.28	29.68	35.45	29.85	56.00	46.00	-20.55	-16.15
5	10.85156	0.50	27.67	20.01	28.17	20.51	60.00	50.00	-31.83	-29.49
6	23.08594	0.67	32.88	28.40	33.55	29.07	60.00	50.00	-26.45	-20.93

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.





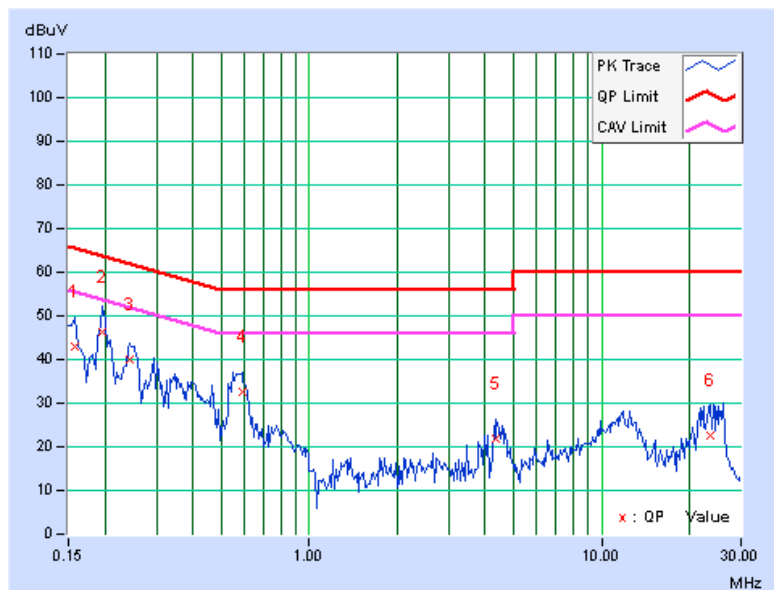
A D T

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 110	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	0.15781	0.15	42.86	32.85	43.01	33.00	65.58	55.58	-22.57	-22.58
2	0.19687	0.15	46.27	39.35	46.42	39.50	63.74	53.74	-17.32	-14.24
3	0.24375	0.15	39.74	31.74	39.89	31.89	61.97	51.97	-22.07	-20.07
4	0.59141	0.18	32.51	26.63	32.69	26.81	56.00	46.00	-23.31	-19.19
5	4.37109	0.35	21.64	11.05	21.99	11.40	56.00	46.00	-34.01	-34.60
6	23.50391	0.59	21.88	14.51	22.47	15.10	60.00	50.00	-37.53	-34.90

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.



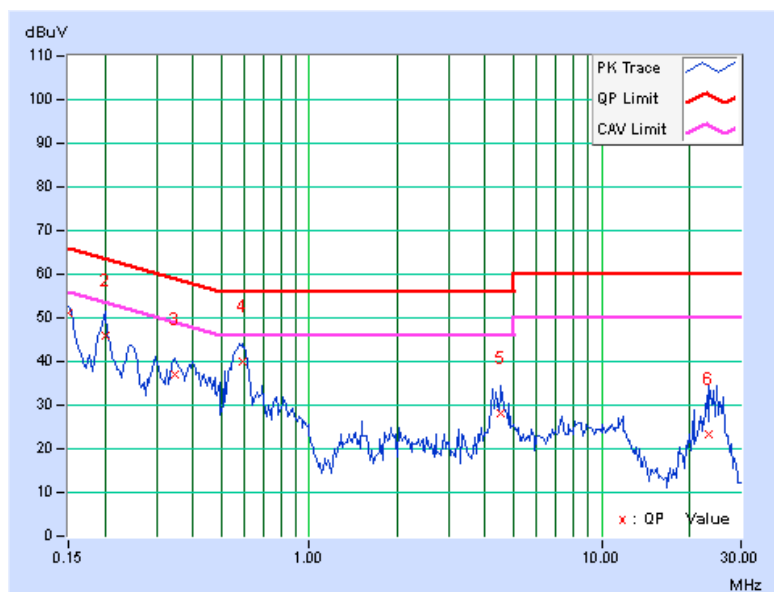


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 110	TEST MODE	A

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.13	51.08	45.86	51.21	45.99	66.00	56.00	-14.79	-10.01
2	0.20078	0.14	45.83	41.80	45.97	41.94	63.58	53.58	-17.61	-11.64
3	0.34531	0.15	36.79	27.15	36.94	27.30	59.07	49.07	-22.13	-21.77
4	0.59531	0.17	39.73	33.89	39.90	34.06	56.00	46.00	-16.10	-11.94
5	4.53906	0.36	27.86	17.44	28.22	17.80	56.00	46.00	-27.78	-28.20
6	23.35156	0.66	22.52	14.80	23.18	15.46	60.00	50.00	-36.82	-34.54

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





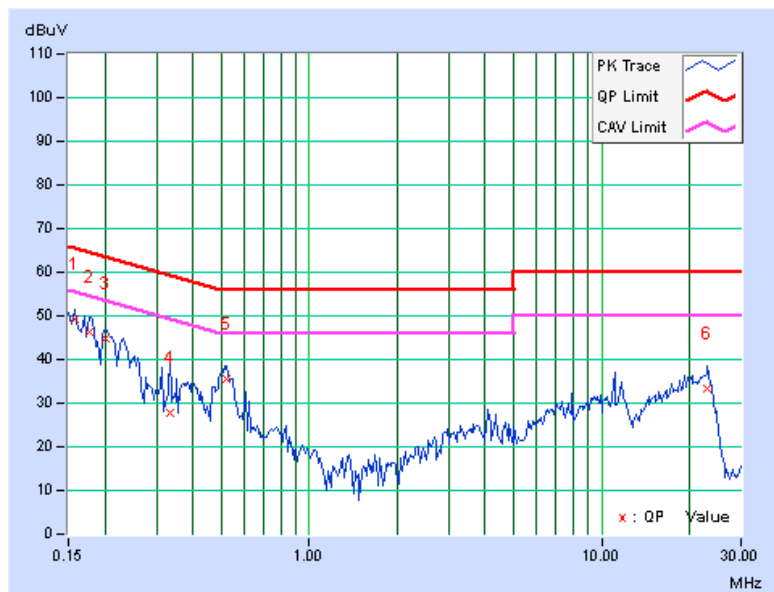
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PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 110	TEST MODE	B

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	0.15	48.98	38.14	49.13	38.29	65.58	55.58	-16.45	-17.29
2	0.17734	0.15	45.99	33.15	46.14	33.30	64.61	54.61	-18.47	-21.31
3	0.20078	0.15	44.63	31.38	44.78	31.53	63.58	53.58	-18.80	-22.05
4	0.33359	0.16	27.56	14.44	27.72	14.60	59.36	49.36	-31.64	-34.76
5	0.52109	0.17	35.29	28.78	35.46	28.95	56.00	46.00	-20.54	-17.05
6	23.11328	0.60	32.82	28.24	33.42	28.84	60.00	50.00	-26.58	-21.16

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.



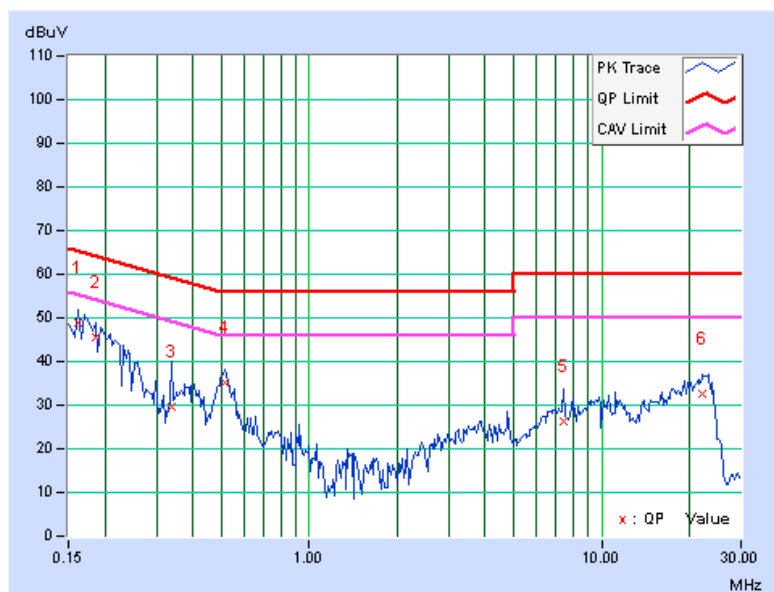


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 110	TEST MODE	B

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16172	0.13	48.71	34.84	48.84	34.97	65.38	55.38	-16.53	-20.40
2	0.18516	0.14	45.41	31.88	45.55	32.02	64.25	54.25	-18.70	-22.23
3	0.33750	0.15	29.47	14.52	29.62	14.67	59.26	49.26	-29.64	-34.59
4	0.51719	0.17	35.19	29.60	35.36	29.77	56.00	46.00	-20.64	-16.23
5	7.41016	0.42	25.71	19.24	26.13	19.66	60.00	50.00	-33.87	-30.34
6	22.14453	0.68	31.95	27.42	32.63	28.10	60.00	50.00	-27.37	-21.90

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



4.3 PEAK TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

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

Per KDB 662911 D01 Multiple Transmitter Output v01r02 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;

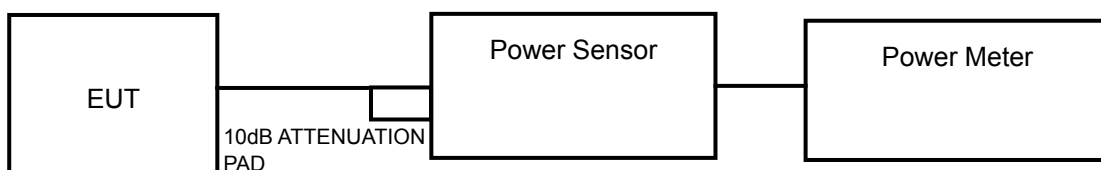
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;

Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

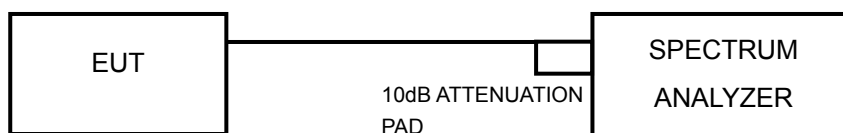
For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR OCCUPIED 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	CHAIN 2				
52	5260	16.92	17.42	16.63	150.438	21.77	24	PASS
60	5300	17.49	18.56	16.57	173.278	22.39	24	PASS
64	5320	17.92	18.74	16.82	184.845	22.67	24	PASS
100	5500	17.02	18.01	17.52	170.085	22.31	24	PASS
116	5580	16.73	18.05	17.01	161.158	22.07	24	PASS
140	5700	15.17	17.35	16.35	130.362	21.15	24	PASS

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	CHAIN 2				
52	5260	17.73	18.35	17.03	178.150	22.51	24	PASS
60	5300	17.48	18.29	16.74	170.635	22.32	24	PASS
64	5320	17.76	18.25	16.87	175.179	22.43	24	PASS
100	5500	17.01	17.65	16.83	156.639	21.95	24	PASS
116	5580	16.89	18.85	16.81	173.574	22.39	24	PASS
140	5700	15.21	17.08	16.21	126.022	21.00	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	CHAIN 2				
54	5270	18.81	19.31	19.25	245.483	23.90	24	PASS
62	5310	14.07	12.82	14.26	71.339	18.53	24	PASS
102	5510	11.82	12.02	12.07	47.233	16.74	24	PASS
110	5550	17.92	19.04	18.07	206.233	23.14	24	PASS
134	5670	16.82	18.28	18.09	179.799	22.55	24	PASS

**26dB BANDWIDTH:****802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
52	5260	22.21	22.75	22.81	PASS
60	5300	22.55	23.40	22.94	PASS
64	5320	22.64	22.86	22.39	PASS
100	5500	22.64	25.59	23.67	PASS
116	5580	22.25	26.55	22.99	PASS
140	5700	22.20	25.45	22.86	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
52	5260	23.72	23.70	23.90	PASS
60	5300	24.65	23.94	23.61	PASS
64	5320	23.50	23.88	24.21	PASS
100	5500	24.25	25.74	24.11	PASS
116	5580	23.94	25.91	23.83	PASS
140	5700	23.58	24.65	23.86	PASS

802.11n (40MHz)

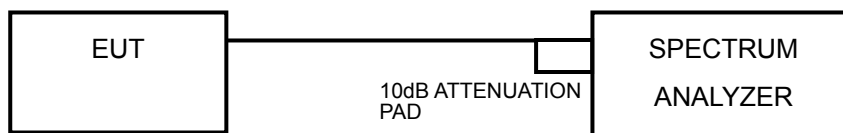
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
54	5270	68.83	82.70	79.49	PASS
62	5310	48.19	48.40	50.06	PASS
102	5510	48.30	48.64	49.23	PASS
110	5550	48.47	80.11	60.23	PASS
134	5670	50.90	75.24	49.35	PASS

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	4dBm
5.250 ~ 5.350GHz	11dBm
5.470 ~ 5.725GHz	11dBm

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

Using method SA-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

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
52	5260	6.08	5.73	4.95	10.38	11	PASS
60	5300	5.91	6.71	5.04	10.71	11	PASS
64	5320	6.06	6.12	4.89	10.50	11	PASS
100	5500	5.28	6.18	5.00	10.29	11	PASS
116	5580	5.72	6.93	4.92	10.71	11	PASS
140	5700	5.63	6.92	4.95	10.68	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.
- Directional gain = $0\text{dBi} + 10\log(3) = 4.77\text{dBi} < 6\text{dBi}$, so the limit no need to reduced.

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
52	5260	6.12	6.09	4.90	10.51	11	PASS
60	5300	5.85	6.26	4.43	10.35	11	PASS
64	5320	5.99	6.16	4.62	10.41	11	PASS
100	5500	5.10	6.28	4.66	10.17	11	PASS
116	5580	5.19	7.11	4.60	10.54	11	PASS
140	5700	5.96	6.61	4.50	10.55	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.
- Directional gain = $0\text{dBi} + 10\log(3) = 4.77\text{dBi} < 6\text{dBi}$, so the limit no need to reduced.



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802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
54	5270	5.48	5.92	5.04	10.27	11	PASS
62	5310	-0.24	-2.37	-1.13	3.61	11	PASS
102	5510	-2.61	-2.71	-2.68	2.10	11	PASS
110	5550	3.91	4.34	3.84	8.81	11	PASS
134	5670	4.15	4.83	4.01	9.12	11	PASS

NOTE:

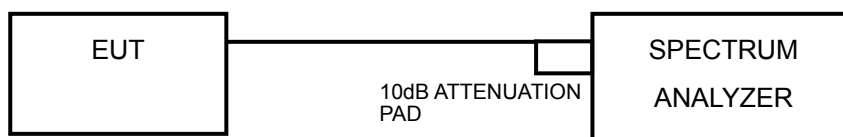
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $0\text{dBi} + 10\log(3) = 4.77\text{dBi} < 6\text{dBi}$, so the limit no need to reduced.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

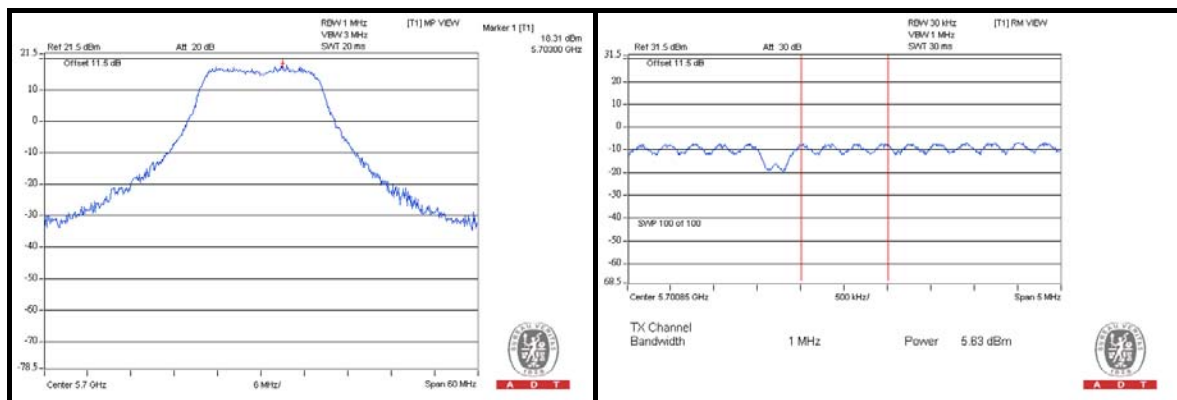
4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

4.5.7 TEST RESULTS

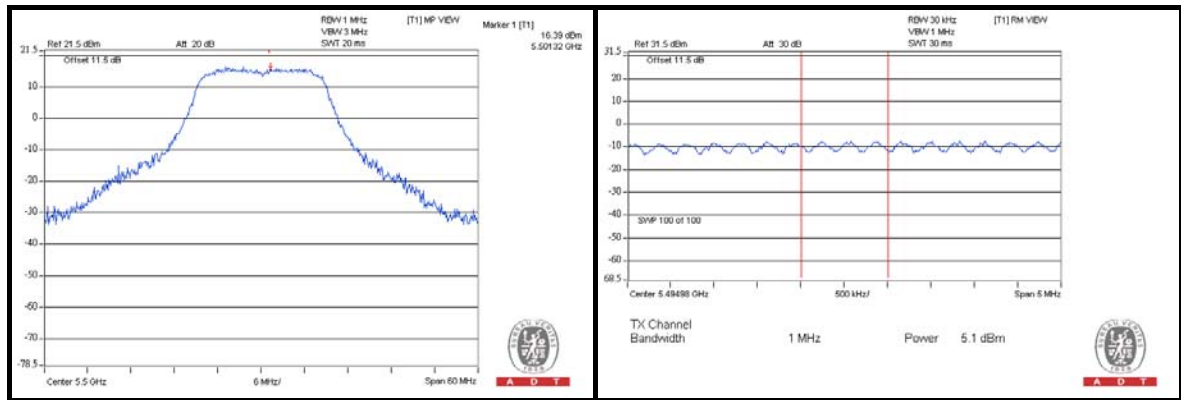
802.11a

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)			PPSD (dBm)			PEAK EXCURSION (dB)			LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2		
52	5260	17.89	17.61	14.98	6.08	5.73	4.95	11.81	11.88	10.03	13	PASS
60	5300	17.61	17.60	14.67	5.91	6.71	5.04	11.70	10.89	9.63	13	PASS
64	5320	17.00	17.79	15.23	6.06	6.12	4.89	10.94	11.67	10.34	13	PASS
100	5500	16.88	17.40	15.92	5.28	6.18	5.00	11.60	11.22	10.92	13	PASS
116	5580	17.55	18.11	16.68	5.72	6.93	4.92	11.83	11.18	11.76	13	PASS
140	5700	18.31	18.73	15.36	5.63	6.92	4.95	12.68	11.81	10.41	13	PASS



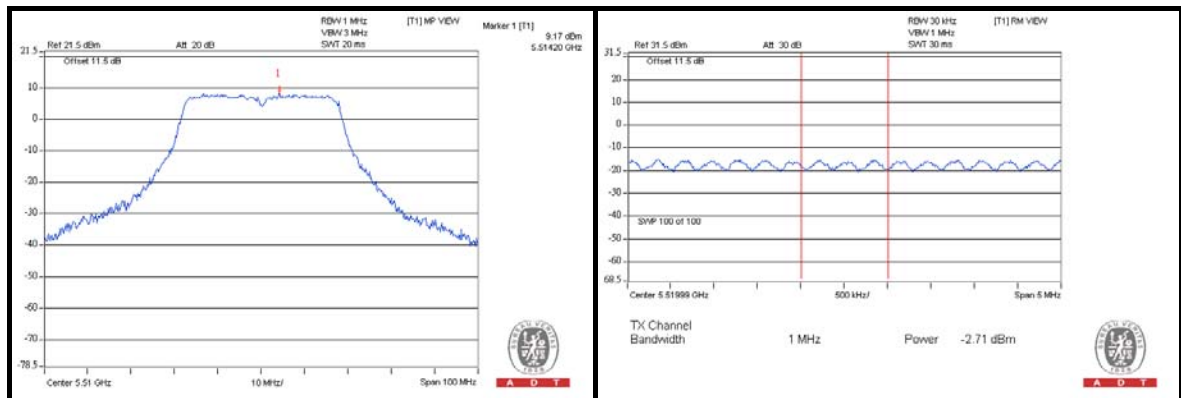
802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)			PPSD (dBm)			PEAK EXCURSION (dB)			LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2		
52	5260	17.26	17.53	15.06	6.12	6.09	4.90	11.14	11.44	10.16	13	PASS
60	5300	17.02	16.88	14.18	5.85	6.26	4.43	11.17	10.62	9.75	13	PASS
64	5320	16.97	16.90	14.74	5.99	6.16	4.62	10.98	10.74	10.12	13	PASS
100	5500	16.39	16.38	15.36	5.10	6.28	4.66	11.29	10.10	10.70	13	PASS
116	5580	16.33	17.02	14.85	5.19	7.11	4.60	11.14	9.91	10.25	13	PASS
140	5700	17.14	17.42	15.64	5.96	6.61	4.50	11.18	10.81	11.14	13	PASS



802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)			PPSD (dBm)			PEAK EXCURSION (dB)			LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2		
54	5270	16.46	16.96	15.25	5.48	5.92	5.04	10.98	11.04	10.21	13	PASS
62	5310	11.26	8.21	9.76	-0.24	-2.37	-1.13	11.50	10.58	10.89	13	PASS
102	5510	9.03	9.17	8.27	-2.61	-2.71	-2.68	11.64	11.88	10.95	13	PASS
110	5550	15.35	15.08	14.24	3.91	4.34	3.84	11.44	10.74	10.40	13	PASS
134	5670	15.50	15.71	14.45	4.15	4.83	4.01	11.35	10.88	10.44	13	PASS

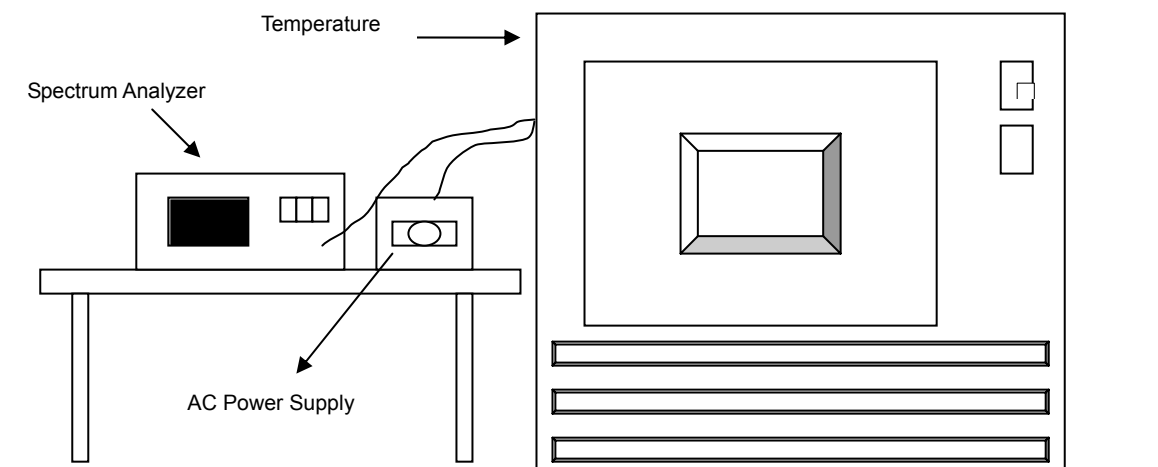


4.6 FREQUENCY STABILITY

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: 5500MHz									
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)
60	120	5499.999993	-0.001	5500.000022	0.004	5500.000006	0.001	5500.000009	0.002
50	120	5499.999991	-0.002	5499.999997	-0.001	5500.000007	0.001	5499.999990	-0.002
40	120	5500.000018	0.003	5500.000012	0.002	5500.000022	0.004	5499.999974	-0.005
30	120	5500.000024	0.004	5499.999974	-0.005	5499.999981	-0.003	5500.000012	0.002
20	120	5500.000030	0.005	5500.000003	0.001	5499.999993	-0.001	5500.000026	0.005
10	120	5500.000027	0.005	5499.999993	-0.001	5499.999972	-0.005	5499.999971	-0.005
0	120	5499.999987	-0.002	5500.000029	0.005	5500.000029	0.005	5499.999999	0.000
-10	120	5499.999973	-0.005	5500.000016	0.003	5499.999979	-0.004	5500.000019	0.003
-20	120	5499.999990	-0.002	5499.999996	-0.001	5500.000016	0.003	5499.999974	-0.005
-30	120	5499.999982	-0.003	5500.000028	0.005	5499.999986	-0.003	5500.000025	0.005

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5500MHz									
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	138	5500.000028	0.005	5499.999974	-0.005	5499.999988	-0.002	5500.000004	0.001
	120	5499.999984	-0.003	5500.000012	0.002	5500.000024	0.004	5499.999989	-0.002
	102	5500.000031	0.006	5499.999967	-0.006	5499.999969	-0.006	5499.999988	-0.002

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

7. APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---