



FCC TEST REPORT (15.407)

REPORT NO.: RF121105E01-1

MODEL NO.: WES610N V2

FCC ID: Q87-WES610NV2

RECEIVED: Nov. 05, 2012

TESTED: Nov. 13 ~ Dec. 07, 2012

ISSUED: Dec. 13, 2012

APPLICANT: Cisco Consumer Products LLC

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TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1. CERTIFICATION	5
2. SUMMARY OF TEST RESULTS	6
2.1 MEASUREMENT UNCERTAINTY	6
3. GENERAL INFORMATION	7
3.1 GENERAL DESCRIPTION OF EUT	7
3.2 DESCRIPTION OF TEST MODES	9
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	10
3.3 DUTY CYCLE OF TEST SIGNAL	12
3.4 DESCRIPTION OF SUPPORT UNITS	13
3.4.1 CONFIGURATION OF SYSTEM UNDER TEST	14
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	15
4. TEST TYPES AND RESULTS	16
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	16
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	16
4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS	16
4.1.3 TEST INSTRUMENTS	17
4.1.4 TEST PROCEDURES	18
4.1.5 DEVIATION FROM TEST STANDARD	18
4.1.6 TEST SETUP	19
4.1.7 EUT OPERATING CONDITION	19
4.1.8 TEST RESULTS	20
4.2 CONDUCTED EMISSION MEASUREMENT	45
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	45
4.2.2 TEST INSTRUMENTS	45
4.2.3 TEST PROCEDURES	46
4.2.4 DEVIATION FROM TEST STANDARD	46
4.2.5 TEST SETUP	46
4.2.6 EUT OPERATING CONDITIONS	46
4.2.7 TEST RESULTS	47
4.3 PEAK TRANSMIT POWER MEASUREMENT	55
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT	55
4.3.2 TEST SETUP	55
4.3.3 TEST INSTRUMENTS	56
4.3.4 TEST PROCEDURE	56
4.3.5 DEVIATION FROM TEST STANDARD	57
4.3.6 EUT OPERATING CONDITIONS	57
4.3.7 TEST RESULTS	58
4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT	61
4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT	61
4.4.2 TEST SETUP	61
4.4.3 TEST INSTRUMENTS	61
4.4.4 TEST PROCEDURES	62
4.4.5 DEVIATION FROM TEST STANDARD	62
4.4.6 EUT OPERATING CONDITIONS	62
4.4.7 TEST RESULTS	63



4.5	PEAK POWER EXCURSION MEASUREMENT	65
4.5.1	LIMITS OF PEAK POWER EXCURSION MEASUREMENT	65
4.5.2	TEST SETUP	65
4.5.3	TEST INSTRUMENTS	65
4.5.4	TEST PROCEDURE	65
4.5.5	DEVIATION FROM TEST STANDARD	65
4.5.6	EUT OPERATING CONDITIONS	65
4.5.7	TEST RESULTS	66
4.6	FREQUENCY STABILITY	72
4.6.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT	72
4.6.2	TEST SETUP	72
4.6.3	TEST INSTRUMENTS	72
4.6.4	TEST PROCEDURE	73
4.6.5	DEVIATION FROM TEST STANDARD	73
4.6.6	EUT OPERATING CONDITION	73
4.6.7	TEST RESULTS	74
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION	75
6.	INFORMATION ON THE TESTING LABORATORIES	76
7.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	77



A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121105E01-1	Original release	Dec. 13, 2012



1. CERTIFICATION

PRODUCT: 4-Port Dual-Band N Entertainment Bridge

MODEL: WES610N V2

BRAND: Cisco

APPLICANT: Cisco Consumer Products LLC

TESTED: Nov. 13 ~ Dec. 07, 2012

TEST SAMPLE: ENGINEERING SAMPLE

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

ANSI C63.10-2009

The above equipment (model: WES610N V2) 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 : Jemma Yang , **DATE** : Dec. 13, 2012
Jemma Yang / Specialist

APPROVED BY : Ken Liu , **DATE** : Dec. 13, 2012
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 -5.2dB at 11340.00MHz.
15.407(b/1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -13.95dB at 0.36094MHz.
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 I-PEX 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	4-Port Dual-Band N Entertainment Bridge
MODEL NO.	WES610N V2
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 300.0Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	31.337mW for 5180 ~ 5240MHz 32.445mW for 5260 ~ 5320MHz 34.470mW for 5500 ~ 5700MHz
ANTENNA TYPE	Refer to NOTE for more details
ANTENNA CONNECTOR	Refer to NOTE for more details
DATA CABLE	N/A
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter

NOTE:

1. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and three receivers.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

2. The EUT with follow antennas gain are listed as table below.

Antenna Item	Antenna Type	Connector	Gain(dBi)	
			2.4GHz	5GHz
1	PIFA	I-PEX	3.5	5.0
2			3.5	4.5
3			2.0	3.2

3. The EUT consumes power from the following adapters:

Adapter 1	
Brand	HON-KWANG
Model	HK-T112-A120
Input Power	100-240Vac, 50/60Hz, 0.35A
Output Power	12.0Vdc, 0-1.0A
Power Line	1.9m non-shielded cable w/o core

Adapter 2	
Brand	SOLYTECH
Model	CAD1212
Part No	CAD1212C
Input Power	100-240Vac, 50/60Hz, 0.5A
Output Power	12.0Vdc, 1.0A
Power Line	1.5m non-shielded cable w/o core

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 5180 ~ 5240MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	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≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Adapter: CAD1212C
B	-	-	√	-	Adapter: HK-T112-A120

Where **RE≥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	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0
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 (20MHz)	5180-5320	36 to 64	52	OFDM	BPSK	7.2
A	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	7.2

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	802.11n (20MHz)	5180-5320	36 to 64	52	OFDM	BPSK	7.2
B	802.11n (20MHz)	5180-5320	36 to 64	52	OFDM	BPSK	7.2
A	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	7.2
B	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	7.2

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0
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	Antony Lee
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Match Tsui
PLC	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
	26deg. C, 67%RH	120Vac, 60Hz	Cedric Wu
APCM	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui

3.3 DUTY CYCLE OF TEST SIGNAL

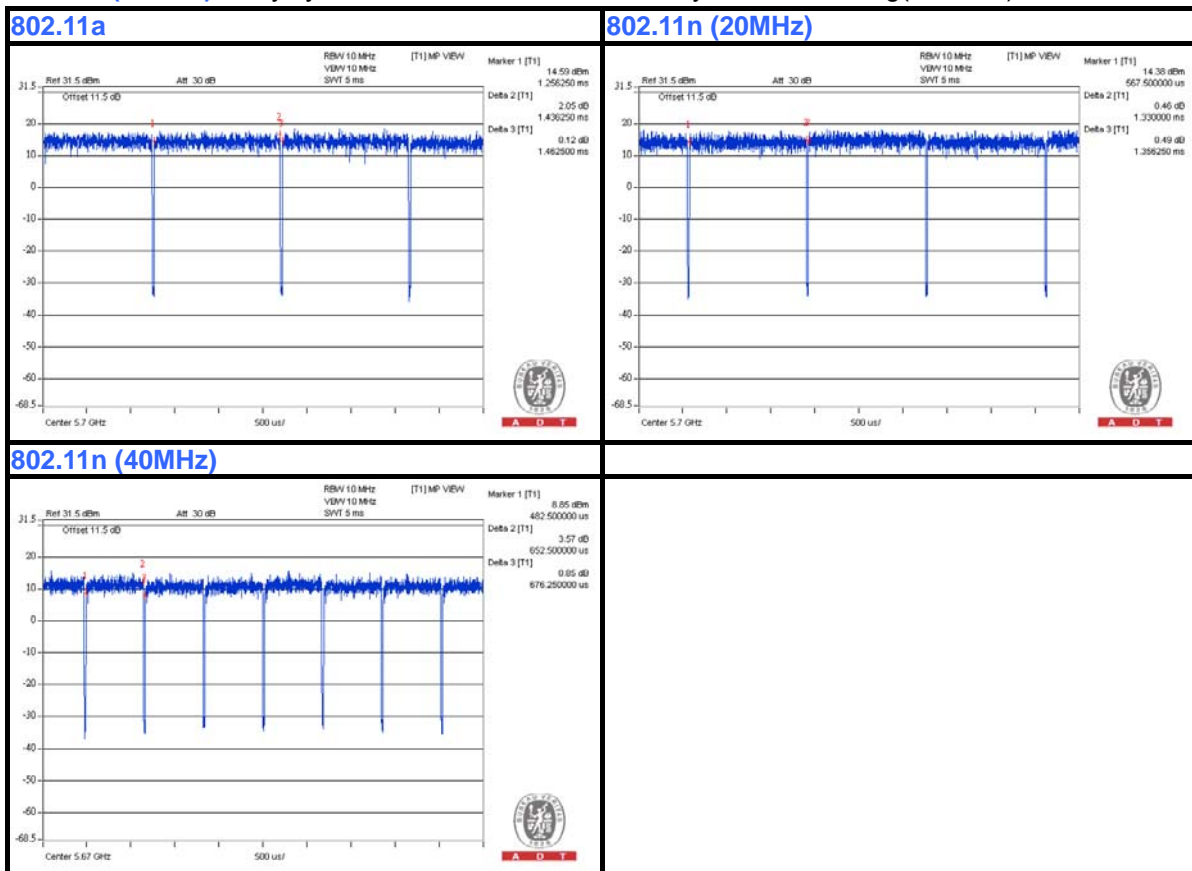
Duty cycle of test signal is > 98 %, duty factor is not required.

802.11a: Duty cycle = $1.43625/1.4625 = 0.982$

802.11n (20MHz): Duty cycle = $1.33/1.35625 = 0.98$

If duty cycle is < 98%, duty factor shall be considered.

802.11n (40MHz): Duty cycle = $652.5/676.25 = 0.965$, Duty factor = $10 * \log(1/0.965) = 0.16$



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.

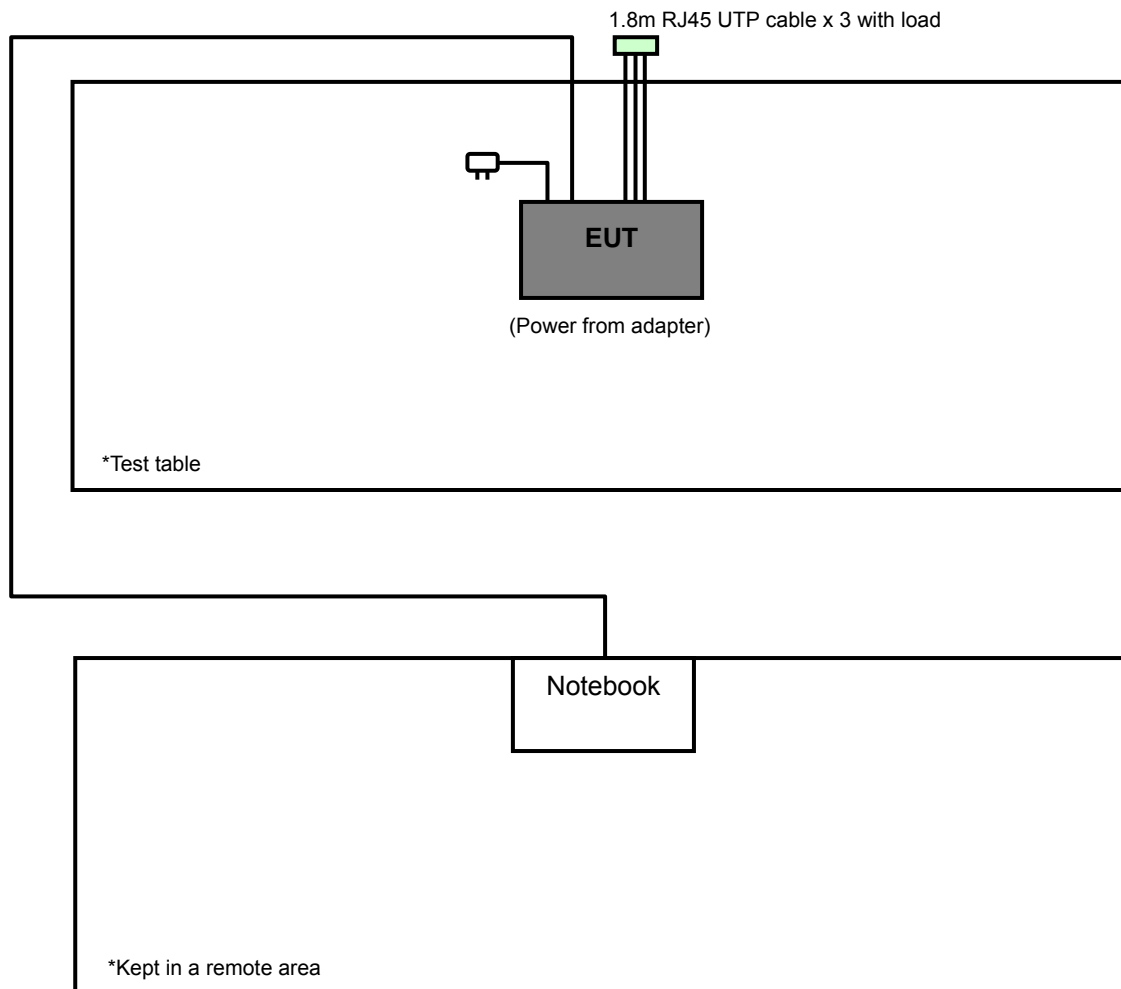
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	E5420	33MLMQ1	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

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.

3.4.1 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
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	0824011	Jul. 30, 2012	Jul. 29, 2013
Power Sensor	MA2411B	0738171	Jul. 30, 2012	Jul. 29, 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.

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.

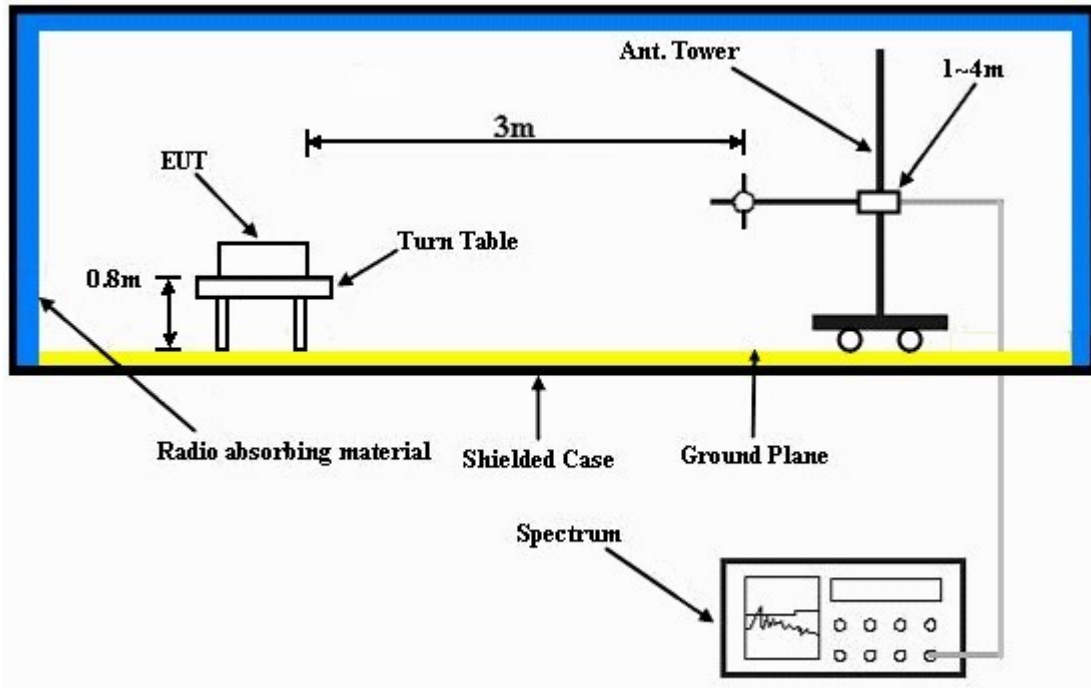
NOTE:

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 notebook to act as communication partner and placed it outside of testing area.
- 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".

4.1.8 TEST RESULTS

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5150.00	50.1 PK	74.0	-23.9	1.20 H	249	12.30	37.80
2	5150.00	39.7 AV	54.0	-14.3	1.20 H	249	1.90	37.80
3	*5180.00	100.5 PK			1.20 H	249	62.70	37.80
4	*5180.00	89.9 AV			1.20 H	249	52.10	37.80
5	#10360.00	57.3 PK	74.0	-16.7	1.00 H	265	8.50	48.80
6	#10360.00	44.4 AV	54.0	-9.6	1.00 H	265	-4.40	48.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.2 PK	74.0	-25.8	1.07 V	180	10.40	37.80
2	5150.00	38.7 AV	54.0	-15.3	1.07 V	180	0.90	37.80
3	*5180.00	99.0 PK			1.07 V	180	61.20	37.80
4	*5180.00	88.9 AV			1.07 V	180	51.10	37.80
5	#10360.00	57.4 PK	74.0	-16.6	1.00 V	63	8.60	48.80
6	#10360.00	44.3 AV	54.0	-9.7	1.00 V	63	-4.50	48.80

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5200.00	99.7 PK			1.08 H	246	61.80	37.90
2	*5200.00	89.4 AV			1.08 H	246	51.50	37.90
3	#10400.00	57.5 PK	74.0	-16.5	1.00 H	271	8.70	48.80
4	#10400.00	44.6 AV	54.0	-9.4	1.00 H	271	-4.20	48.80
5	15600.00	58.5 PK	74.0	-15.5	1.00 H	152	10.10	48.40
6	15600.00	45.2 AV	54.0	-8.8	1.00 H	152	-3.20	48.40
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	*5200.00	98.8 PK			1.05 V	204	60.90	37.90
2	*5200.00	87.7 AV			1.05 V	204	49.80	37.90
3	#10400.00	57.6 PK	74.0	-16.4	1.00 V	123	8.80	48.80
4	#10400.00	44.3 AV	54.0	-9.7	1.00 V	123	-4.50	48.80
5	15600.00	60.2 PK	74.0	-13.8	1.00 V	18	11.80	48.40
6	15600.00	46.8 AV	54.0	-7.2	1.00 V	18	-1.60	48.40

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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5240.00	99.8 PK			1.11 H	217	61.90	37.90
2	*5240.00	88.6 AV			1.11 H	217	50.70	37.90
3	#10480.00	58.2 PK	74.0	-15.8	1.00 H	355	9.20	49.00
4	#10480.00	44.5 AV	54.0	-9.5	1.00 H	355	-4.50	49.00
5	15720.00	57.8 PK	74.0	-16.2	1.00 H	79	9.60	48.20
6	15720.00	44.1 AV	54.0	-9.9	1.00 H	79	-4.10	48.20
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	*5240.00	98.6 PK			1.25 V	127	60.70	37.90
2	*5240.00	88.4 AV			1.25 V	127	50.50	37.90
3	#10480.00	58.2 PK	74.0	-15.8	1.00 V	55	9.20	49.00
4	#10480.00	44.5 AV	54.0	-9.5	1.00 V	55	-4.50	49.00
5	15720.00	57.0 PK	74.0	-17.0	1.00 V	258	8.80	48.20
6	15720.00	44.2 AV	54.0	-9.8	1.00 V	258	-4.00	48.20

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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5260.00	99.5 PK			1.00 H	228	61.60	37.90
2	*5260.00	88.8 AV			1.00 H	228	50.90	37.90
3	#10520.00	58.5 PK	74.0	-15.5	1.00 H	360	9.40	49.10
4	#10520.00	44.7 AV	54.0	-9.3	1.00 H	360	-4.40	49.10
5	15780.00	58.3 PK	74.0	-15.7	1.00 H	82	10.30	48.00
6	15780.00	44.5 AV	54.0	-9.5	1.00 H	82	-3.50	48.00
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	*5260.00	98.0 PK			1.23 V	127	60.10	37.90
2	*5260.00	87.7 AV			1.23 V	127	49.80	37.90
3	#10520.00	58.3 PK	74.0	-15.7	1.00 V	76	9.20	49.10
4	#10520.00	44.9 AV	54.0	-9.1	1.00 V	76	-4.20	49.10
5	15780.00	57.5 PK	74.0	-16.5	1.00 V	302	9.50	48.00
6	15780.00	44.5 AV	54.0	-9.5	1.00 V	302	-3.50	48.00

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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5300.00	98.2 PK			1.00 H	216	60.20	38.00
2	*5300.00	88.9 AV			1.00 H	216	50.90	38.00
3	10600.00	59.3 PK	74.0	-14.7	1.00 H	258	10.30	49.00
4	10600.00	45.6 AV	54.0	-8.4	1.00 H	258	-3.40	49.00
5	15900.00	58.1 PK	74.0	-15.9	1.00 H	76	10.50	47.60
6	15900.00	44.7 AV	54.0	-9.3	1.00 H	76	-2.90	47.60
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	96.8 PK			1.11 V	9	58.80	38.00
2	*5300.00	86.6 AV			1.11 V	9	48.60	38.00
3	10600.00	57.4 PK	74.0	-16.6	1.00 V	38	8.40	49.00
4	10600.00	44.6 AV	54.0	-9.4	1.00 V	38	-4.40	49.00
5	15900.00	58.3 PK	74.0	-15.7	1.00 V	310	10.70	47.60
6	15900.00	45.6 AV	54.0	-8.4	1.00 V	310	-2.00	47.60

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		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5320.00	98.9 PK			1.00 H	33	60.90	38.00
2	*5320.00	88.6 AV			1.00 H	33	50.60	38.00
3	5350.00	52.4 PK	74.0	-21.6	1.15 H	291	14.30	38.10
4	5350.00	41.9 AV	54.0	-12.1	1.15 H	291	3.80	38.10
5	10640.00	59.1 PK	74.0	-14.9	1.00 H	35	9.90	49.20
6	10640.00	45.9 AV	54.0	-8.1	1.00 H	35	-3.30	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	98.1 PK			1.24 V	61	60.10	38.00
2	*5320.00	88.2 AV			1.24 V	61	50.20	38.00
3	5350.00	49.1 PK	74.0	-24.9	1.24 V	61	11.00	38.10
4	5350.00	39.0 AV	54.0	-15.0	1.24 V	61	0.90	38.10
5	10640.00	58.7 PK	74.0	-15.3	1.00 V	133	9.50	49.20
6	10640.00	45.9 AV	54.0	-8.1	1.00 V	133	-3.30	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	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5460.00	52.8 PK	74.0	-21.2	1.03 H	177	14.50	38.30
2	5460.00	40.5 AV	54.0	-13.5	1.03 H	177	2.20	38.30
3	#5470.00	47.4 PK	74.0	-26.6	1.03 H	177	9.10	38.30
4	#5470.00	37.8 AV	54.0	-16.2	1.03 H	177	-0.50	38.30
5	*5500.00	100.5 PK			1.03 H	177	62.20	38.30
6	*5500.00	90.7 AV			1.03 H	177	52.40	38.30
7	11000.00	57.9 PK	74.0	-16.1	1.00 H	231	8.20	49.70
8	11000.00	44.9 AV	54.0	-9.1	1.00 H	231	-4.80	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	5460.00	53.6 PK	74.0	-20.4	1.00 V	198	15.30	38.30
2	5460.00	44.0 AV	54.0	-10.0	1.00 V	198	5.70	38.30
3	#5470.00	53.1 PK	74.0	-20.9	1.00 V	198	14.80	38.30
4	#5470.00	37.9 AV	54.0	-16.1	1.00 V	198	-0.40	38.30
5	*5500.00	104.3 PK			1.00 V	198	66.00	38.30
6	*5500.00	93.9 AV			1.00 V	198	55.60	38.30
7	11000.00	58.3 PK	74.0	-15.7	1.00 V	253	8.60	49.70
8	11000.00	44.9 AV	54.0	-9.1	1.00 V	253	-4.80	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	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5580.00	102.1 PK			1.14 H	169	63.70	38.40
2	*5580.00	91.9 AV			1.14 H	169	53.50	38.40
3	11160.00	57.3 PK	74.0	-16.7	1.00 H	37	7.80	49.50
4	11160.00	44.5 AV	54.0	-9.5	1.00 H	37	-5.00	49.50
5	#16740.00	59.9 PK	74.0	-14.1	1.00 H	96	10.10	49.80
6	#16740.00	46.8 AV	54.0	-7.2	1.00 H	96	-3.00	49.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	104.8 PK			1.00 V	185	66.40	38.40
2	*5580.00	95.0 AV			1.00 V	185	56.60	38.40
3	11160.00	58.1 PK	74.0	-15.9	1.00 V	3	8.60	49.50
4	11160.00	44.4 AV	54.0	-9.6	1.00 V	3	-5.10	49.50
5	#16740.00	60.1 PK	74.0	-13.9	1.00 V	123	10.30	49.80
6	#16740.00	47.2 AV	54.0	-6.8	1.00 V	123	-2.60	49.80

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5700.00	102.1 PK			1.22 H	187	63.40	38.70
2	*5700.00	92.5 AV			1.22 H	187	53.80	38.70
3	#5725.00	52.4 PK	74.0	-21.6	1.22 H	187	13.70	38.70
4	#5725.00	41.9 AV	54.0	-12.1	1.22 H	187	3.20	38.70
5	11400.00	58.9 PK	74.0	-15.1	1.00 H	265	9.50	49.40
6	11400.00	44.7 AV	54.0	-9.3	1.00 H	265	-4.70	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	*5700.00	98.5 PK			1.46 V	319	59.80	38.70
2	*5700.00	88.1 AV			1.46 V	319	49.40	38.70
3	#5725.00	49.2 PK	74.0	-24.8	1.46 V	319	10.50	38.70
4	#5725.00	37.2 AV	54.0	-16.8	1.46 V	319	-1.50	38.70
5	11400.00	58.0 PK	74.0	-16.0	1.00 V	15	8.60	49.40
6	11400.00	44.9 AV	54.0	-9.1	1.00 V	15	-4.50	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 (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5150.00	49.5 PK	74.0	-24.5	1.00 H	51	11.70	37.80
2	5150.00	39.6 AV	54.0	-14.4	1.00 H	51	1.80	37.80
3	*5180.00	103.9 PK			1.00 H	51	66.10	37.80
4	*5180.00	93.5 AV			1.00 H	51	55.70	37.80
5	#10360.00	58.3 PK	74.0	-15.7	1.00 H	55	9.50	48.80
6	#10360.00	44.4 AV	54.0	-9.6	1.00 H	55	-4.40	48.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	50.1 PK	74.0	-23.9	1.09 V	172	12.30	37.80
2	5150.00	40.1 AV	54.0	-13.9	1.09 V	172	2.30	37.80
3	*5180.00	101.9 PK			1.09 V	172	64.10	37.80
4	*5180.00	91.7 AV			1.09 V	172	53.90	37.80
5	#10360.00	57.2 PK	74.0	-16.8	1.00 V	57	8.40	48.80
6	#10360.00	44.4 AV	54.0	-9.6	1.00 V	57	-4.40	48.80

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5200.00	104.1 PK			1.10 H	54	66.20	37.90
2	*5200.00	93.8 AV			1.10 H	54	55.90	37.90
3	#10400.00	57.3 PK	74.0	-16.7	1.00 H	283	8.50	48.80
4	#10400.00	44.9 AV	54.0	-9.1	1.00 H	283	-3.90	48.80
5	15600.00	58.6 PK	74.0	-15.4	1.00 H	153	10.20	48.40
6	15600.00	45.6 AV	54.0	-8.4	1.00 H	153	-2.80	48.40
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	*5200.00	100.4 PK			1.00 V	166	62.50	37.90
2	*5200.00	90.6 AV			1.00 V	166	52.70	37.90
3	#10400.00	58.2 PK	74.0	-15.8	1.00 V	134	9.40	48.80
4	#10400.00	45.3 AV	54.0	-8.7	1.00 V	134	-3.50	48.80
5	15600.00	60.5 PK	74.0	-13.5	1.00 V	20	12.10	48.40
6	15600.00	47.1 AV	54.0	-6.9	1.00 V	20	-1.30	48.40

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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5240.00	104.2 PK			1.00 H	34	66.30	37.90
2	*5240.00	93.6 AV			1.00 H	34	55.70	37.90
3	#10480.00	59.3 PK	74.0	-14.7	1.00 H	354	10.30	49.00
4	#10480.00	45.3 AV	54.0	-8.7	1.00 H	354	-3.70	49.00
5	15720.00	57.6 PK	74.0	-16.4	1.00 H	88	9.40	48.20
6	15720.00	43.8 AV	54.0	-10.2	1.00 H	88	-4.40	48.20
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	*5240.00	102.0 PK			1.07 V	162	64.10	37.90
2	*5240.00	91.6 AV			1.07 V	162	53.70	37.90
3	#10480.00	59.3 PK	74.0	-14.7	1.00 V	56	10.30	49.00
4	#10480.00	44.6 AV	54.0	-9.4	1.00 V	56	-4.40	49.00
5	15720.00	57.3 PK	74.0	-16.7	1.00 V	261	9.10	48.20
6	15720.00	44.5 AV	54.0	-9.5	1.00 V	261	-3.70	48.20

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 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5260.00	105.2 PK			1.00 H	35	67.30	37.90
2	*5260.00	95.0 AV			1.00 H	35	57.10	37.90
3	#10520.00	58.3 PK	74.0	-15.7	1.00 H	352	9.20	49.10
4	#10520.00	44.9 AV	54.0	-9.1	1.00 H	352	-4.20	49.10
5	15780.00	59.3 PK	74.0	-14.7	1.00 H	69	11.30	48.00
6	15780.00	45.2 AV	54.0	-8.8	1.00 H	69	-2.80	48.00
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	*5260.00	102.0 PK			1.26 V	193	64.10	37.90
2	*5260.00	91.9 AV			1.26 V	193	54.00	37.90
3	#10520.00	59.3 PK	74.0	-14.7	1.00 V	83	10.20	49.10
4	#10520.00	45.2 AV	54.0	-8.8	1.00 V	83	-3.90	49.10
5	15780.00	58.3 PK	74.0	-15.7	1.00 V	314	10.30	48.00
6	15780.00	45.6 AV	54.0	-8.4	1.00 V	314	-2.40	48.00

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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5300.00	104.8 PK			1.00 H	35	66.80	38.00
2	*5300.00	94.5 AV			1.00 H	35	56.50	38.00
3	10600.00	60.4 PK	74.0	-13.6	1.00 H	266	11.40	49.00
4	10600.00	45.7 AV	54.0	-8.3	1.00 H	266	-3.30	49.00
5	15900.00	58.6 PK	74.0	-15.4	1.00 H	147	11.00	47.60
6	15900.00	44.9 AV	54.0	-9.1	1.00 H	147	-2.70	47.60
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	101.4 PK			1.34 V	126	63.40	38.00
2	*5300.00	91.2 AV			1.34 V	126	53.20	38.00
3	10600.00	58.5 PK	74.0	-15.5	1.00 V	42	9.50	49.00
4	10600.00	45.2 AV	54.0	-8.8	1.00 V	42	-3.80	49.00
5	15900.00	58.6 PK	74.0	-15.4	1.00 V	320	11.00	47.60
6	15900.00	45.7 AV	54.0	-8.3	1.00 V	320	-1.90	47.60

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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5320.00	104.2 PK			1.00 H	36	66.20	38.00
2	*5320.00	94.2 AV			1.00 H	36	56.20	38.00
3	5350.00	50.3 PK	74.0	-23.7	1.00 H	36	12.20	38.10
4	5350.00	38.7 AV	54.0	-15.3	1.00 H	36	0.60	38.10
5	10640.00	60.2 PK	74.0	-13.8	1.00 H	29	11.00	49.20
6	10640.00	46.3 AV	54.0	-7.7	1.00 H	29	-2.90	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	101.3 PK			1.00 V	126	63.30	38.00
2	*5320.00	91.3 AV			1.00 V	126	53.30	38.00
3	5350.00	50.5 PK	74.0	-23.5	1.00 V	125	12.40	38.10
4	5350.00	40.3 AV	54.0	-13.7	1.00 V	125	2.20	38.10
5	10640.00	59.3 PK	74.0	-14.7	1.00 V	145	10.10	49.20
6	10640.00	46.2 AV	54.0	-7.8	1.00 V	145	-3.00	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	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5460.00	51.0 PK	74.0	-23.0	1.15 H	179	12.70	38.30
2	5460.00	41.0 AV	54.0	-13.0	1.15 H	179	2.70	38.30
3	#5470.00	49.1 PK	74.0	-24.9	1.15 H	179	10.80	38.30
4	#5470.00	37.4 AV	54.0	-16.6	1.15 H	179	-0.90	38.30
5	*5500.00	104.1 PK			1.15 H	179	65.80	38.30
6	*5500.00	93.9 AV			1.15 H	179	55.60	38.30
7	11000.00	58.2 PK	74.0	-15.8	1.00 H	240	8.50	49.70
8	11000.00	45.6 AV	54.0	-8.4	1.00 H	240	-4.10	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	5460.00	51.0 PK	74.0	-23.0	1.10 V	180	12.70	38.30
2	5460.00	41.9 AV	54.0	-12.1	1.10 V	180	3.60	38.30
3	#5470.00	50.6 PK	74.0	-23.4	1.10 V	180	12.30	38.30
4	#5470.00	39.2 AV	54.0	-14.8	1.10 V	180	0.90	38.30
5	*5500.00	106.1 PK			1.10 V	180	67.80	38.30
6	*5500.00	95.7 AV			1.10 V	180	57.40	38.30
7	11000.00	58.6 PK	74.0	-15.4	1.00 V	261	8.90	49.70
8	11000.00	45.3 AV	54.0	-8.7	1.00 V	261	-4.40	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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5580.00	104.5 PK			1.15 H	173	66.10	38.40
2	*5580.00	94.0 AV			1.15 H	173	55.60	38.40
3	11160.00	58.3 PK	74.0	-15.7	1.00 H	66	8.80	49.50
4	11160.00	45.7 AV	54.0	-8.3	1.00 H	66	-3.80	49.50
5	#16740.00	60.5 PK	74.0	-13.5	1.00 H	88	10.70	49.80
6	#16740.00	47.3 AV	54.0	-6.7	1.00 H	88	-2.50	49.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	106.9 PK			1.00 V	188	68.50	38.40
2	*5580.00	96.5 AV			1.00 V	188	58.10	38.40
3	11160.00	58.3 PK	74.0	-15.7	1.00 V	6	8.80	49.50
4	11160.00	45.2 AV	54.0	-8.8	1.00 V	6	-4.30	49.50
5	#16740.00	60.5 PK	74.0	-13.5	1.00 V	33	10.70	49.80
6	#16740.00	47.9 AV	54.0	-6.1	1.00 V	33	-1.90	49.80

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5700.00	102.9 PK			1.00 H	186	64.20	38.70
2	*5700.00	93.4 AV			1.00 H	186	54.70	38.70
3	#5725.00	52.2 PK	74.0	-21.8	1.00 H	186	13.50	38.70
4	#5725.00	40.2 AV	54.0	-13.8	1.00 H	186	1.50	38.70
5	11400.00	59.3 PK	74.0	-14.7	1.00 H	271	9.90	49.40
6	11400.00	44.9 AV	54.0	-9.1	1.00 H	271	-4.50	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	*5700.00	105.5 PK			1.05 V	175	66.80	38.70
2	*5700.00	95.1 AV			1.05 V	175	56.40	38.70
3	#5725.00	52.7 PK	74.0	-21.3	1.00 V	175	14.00	38.70
4	#5725.00	41.5 AV	54.0	-12.5	1.00 V	175	2.80	38.70
5	11400.00	58.3 PK	74.0	-15.7	1.00 V	26	8.90	49.40
6	11400.00	45.6 AV	54.0	-8.4	1.00 V	26	-3.80	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		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5150.00	62.2 PK	74.0	-11.8	1.17 H	276	24.40	37.80
2	5150.00	46.2 AV	54.0	-7.8	1.17 H	276	8.40	37.80
3	*5190.00	102.0 PK			1.17 H	276	64.20	37.80
4	*5190.00	92.0 AV			1.17 H	276	54.20	37.80
5	#10380.00	57.8 PK	74.0	-16.2	1.00 H	205	9.00	48.80
6	#10380.00	44.3 AV	54.0	-9.7	1.00 H	205	-4.50	48.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.8 PK	74.0	-16.2	1.07 V	174	20.00	37.80
2	5150.00	41.3 AV	54.0	-12.7	1.07 V	174	3.50	37.80
3	*5190.00	99.5 PK			1.07 V	174	61.70	37.80
4	*5190.00	89.3 AV			1.07 V	174	51.50	37.80
5	#10380.00	57.5 PK	74.0	-16.5	1.00 V	331	8.70	48.80
6	#10380.00	44.4 AV	54.0	-9.6	1.00 V	331	-4.40	48.80

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5230.00	100.9 PK			1.00 H	35	63.00	37.90
2	*5230.00	90.7 AV			1.00 H	35	52.80	37.90
3	#10460.00	57.7 PK	74.0	-16.3	1.00 H	33	8.70	49.00
4	#10460.00	44.5 AV	54.0	-9.5	1.00 H	33	-4.50	49.00
5	15690.00	58.7 PK	74.0	-15.3	1.00 H	305	10.50	48.20
6	15690.00	46.2 AV	54.0	-7.8	1.00 H	305	-2.00	48.20
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	*5230.00	97.5 PK			1.02 V	163	59.60	37.90
2	*5230.00	88.6 AV			1.02 V	163	50.70	37.90
3	#10460.00	57.1 PK	74.0	-16.9	1.00 V	259	8.10	49.00
4	#10460.00	44.5 AV	54.0	-9.5	1.00 V	259	-4.50	49.00
5	15690.00	49.1 PK	74.0	-24.9	1.00 V	230	0.90	48.20
6	15690.00	36.5 AV	54.0	-17.5	1.00 V	230	-11.70	48.20

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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5270.00	101.9 PK			1.00 H	35	63.90	38.00
2	*5270.00	91.7 AV			1.00 H	35	53.70	38.00
3	#10540.00	58.3 PK	74.0	-15.7	1.00 H	47	9.20	49.10
4	#10540.00	45.6 AV	54.0	-8.4	1.00 H	47	-3.50	49.10
5	15810.00	58.6 PK	74.0	-15.4	1.00 H	312	10.60	48.00
6	15810.00	46.5 AV	54.0	-7.5	1.00 H	312	-1.50	48.00
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	*5270.00	97.9 PK			1.00 V	125	59.90	38.00
2	*5270.00	87.8 AV			1.00 V	125	49.80	38.00
3	#10540.00	59.5 PK	74.0	-14.5	1.00 V	55	10.40	49.10
4	#10540.00	46.7 AV	54.0	-7.3	1.00 V	55	-2.40	49.10
5	15810.00	59.3 PK	74.0	-14.7	1.00 V	330	11.30	48.00
6	15810.00	47.9 AV	54.0	-6.1	1.00 V	330	-0.10	48.00

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5310.00	101.5 PK			1.00 H	35	63.50	38.00
2	*5310.00	91.1 AV			1.00 H	35	53.10	38.00
3	5350.00	58.9 PK	74.0	-15.1	1.00 H	35	20.80	38.10
4	5350.00	44.0 AV	54.0	-10.0	1.00 H	35	5.90	38.10
5	10620.00	58.3 PK	74.0	-15.7	1.00 H	217	9.20	49.10
6	10620.00	45.2 AV	54.0	-8.8	1.00 H	217	-3.90	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	*5310.00	97.9 PK			1.00 V	126	59.90	38.00
2	*5310.00	87.7 AV			1.00 V	126	49.70	38.00
3	5350.00	55.5 PK	74.0	-18.5	1.00 V	126	17.40	38.10
4	5350.00	41.7 AV	54.0	-12.3	1.00 V	126	3.60	38.10
5	10620.00	58.6 PK	74.0	-15.4	1.00 V	220	9.50	49.10
6	10620.00	45.5 AV	54.0	-8.5	1.00 V	220	-3.60	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		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5460.00	52.6 PK	74.0	-21.4	1.05 H	174	14.30	38.30
2	5460.00	39.5 AV	54.0	-14.5	1.05 H	174	1.20	38.30
3	#5470.00	56.9 PK	74.0	-17.1	1.05 H	174	18.60	38.30
4	#5470.00	40.9 AV	54.0	-13.1	1.05 H	174	2.60	38.30
5	*5510.00	101.5 PK			1.05 H	174	63.10	38.40
6	*5510.00	91.7 AV			1.05 H	174	53.30	38.40
7	11020.00	59.6 PK	74.0	-14.4	1.00 H	297	10.00	49.60
8	11020.00	46.7 AV	54.0	-7.3	1.00 H	297	-2.90	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	5460.00	53.3 PK	74.0	-20.7	1.00 V	186	15.00	38.30
2	5460.00	41.0 AV	54.0	-13.0	1.00 V	186	2.70	38.30
3	#5470.00	62.6 PK	74.0	-11.4	1.00 V	186	24.30	38.30
4	#5470.00	46.5 AV	54.0	-7.5	1.00 V	186	8.20	38.30
5	*5510.00	102.7 PK			1.00 V	186	64.30	38.40
6	*5510.00	92.5 AV			1.00 V	186	54.10	38.40
7	11020.00	60.5 PK	74.0	-13.5	1.00 V	305	10.90	49.60
8	11020.00	47.3 AV	54.0	-6.7	1.00 V	305	-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.
6. " # ": The radiated frequency is out of the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 110	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5550.00	101.7 PK			1.04 H	183	63.30	38.40
2	*5550.00	91.6 AV			1.04 H	183	53.20	38.40
3	11100.00	59.3 PK	74.0	-14.7	1.00 H	52	9.80	49.50
4	11100.00	46.8 AV	54.0	-7.2	1.00 H	52	-2.70	49.50
5	#16650.00	59.4 PK	74.0	-14.6	1.00 H	319	10.00	49.40
6	#16650.00	47.3 AV	54.0	-6.7	1.00 H	319	-2.10	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	*5550.00	103.5 PK			1.00 V	170	65.10	38.40
2	*5550.00	93.1 AV			1.00 V	170	54.70	38.40
3	11100.00	60.4 PK	74.0	-13.6	1.00 V	95	10.90	49.50
4	11100.00	47.2 AV	54.0	-6.8	1.00 V	95	-2.30	49.50
5	#16650.00	60.2 PK	74.0	-13.8	1.00 V	296	10.80	49.40
6	#16650.00	48.3 AV	54.0	-5.7	1.00 V	296	-1.10	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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5670.00	99.5 PK			1.00 H	184	60.90	38.60
2	*5670.00	90.3 AV			1.00 H	184	51.70	38.60
3	#5725.00	52.1 PK	74.0	-21.9	1.00 H	195	13.40	38.70
4	#5725.00	40.3 AV	54.0	-13.7	1.00 H	195	1.60	38.70
5	11340.00	60.9 PK	74.0	-13.1	1.00 H	98	11.40	49.50
6	11340.00	48.2 AV	54.0	-5.8	1.00 H	98	-1.30	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	*5670.00	101.4 PK			1.17 V	176	62.80	38.60
2	*5670.00	92.0 AV			1.17 V	176	53.40	38.60
3	#5725.00	52.9 PK	74.0	-21.1	1.00 V	33	14.20	38.70
4	#5725.00	41.8 AV	54.0	-12.2	1.00 V	33	3.10	38.70
5	11340.00	60.5 PK	74.0	-13.5	1.00 V	355	11.00	49.50
6	11340.00	48.8 AV	54.0	-5.2	1.00 V	355	-0.70	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.

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. 16, 2012	Nov. 15, 2013
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 29, 2011	Dec. 28, 2012
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 02, 2012	Jul. 01, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 07, 2012	Feb. 06, 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 1.
 3. The VCCI Site Registration No. is C-2040.

4.2.3 TEST PROCEDURES

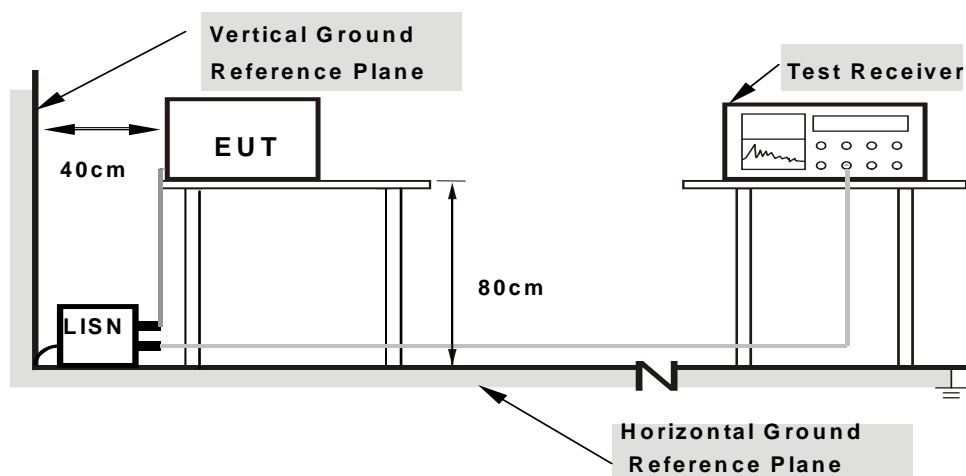
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

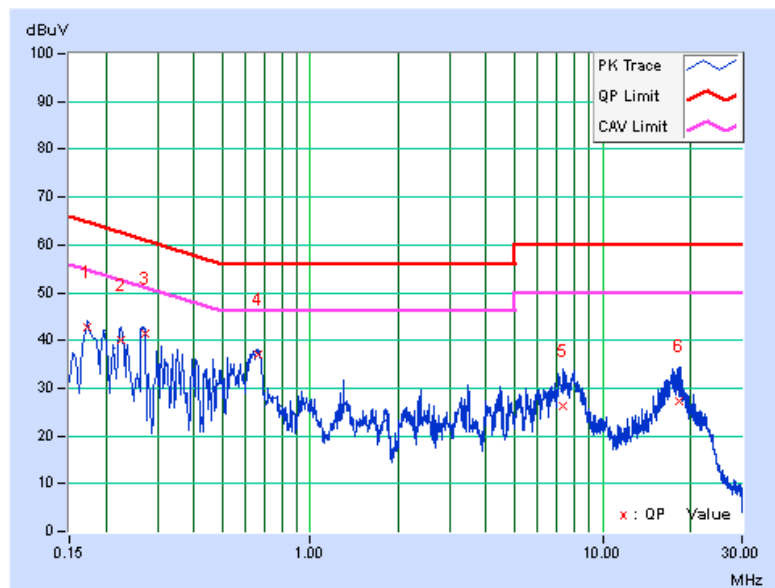
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 802.11n (20MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANEL	Channel 52		
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	0.17346	0.12	42.56	33.28	42.68	33.40	64.79	54.79	-22.11	-21.39
2	0.22434	0.13	40.03	29.37	40.16	29.50	62.66	52.66	-22.50	-23.16
3	0.27121	0.13	41.38	25.97	41.51	26.10	61.08	51.08	-19.57	-24.98
4	0.66605	0.16	36.72	28.16	36.88	28.32	56.00	46.00	-19.12	-17.68
5	7.36395	0.51	25.67	15.34	26.18	15.85	60.00	50.00	-33.82	-34.15
6	18.37842	1.08	26.36	17.65	27.44	18.73	60.00	50.00	-32.56	-31.27

- 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.



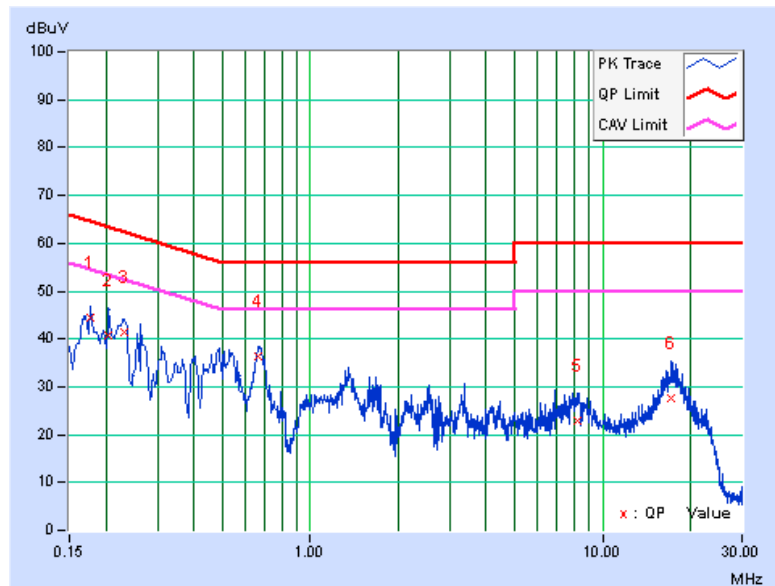


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANEL	Channel 52		
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	0.17737	0.13	44.36	31.52	44.49	31.65	64.61	54.61	-20.11	-22.95
2	0.20474	0.14	40.52	25.26	40.66	25.40	63.42	53.42	-22.76	-28.02
3	0.23211	0.14	41.36	25.13	41.50	25.27	62.37	52.37	-20.87	-27.10
4	0.66605	0.18	36.10	26.14	36.28	26.32	56.00	46.00	-19.72	-19.68
5	8.20851	0.52	22.41	13.04	22.93	13.56	60.00	50.00	-37.07	-36.44
6	17.18196	0.86	26.84	16.87	27.70	17.73	60.00	50.00	-32.30	-32.27

- 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.



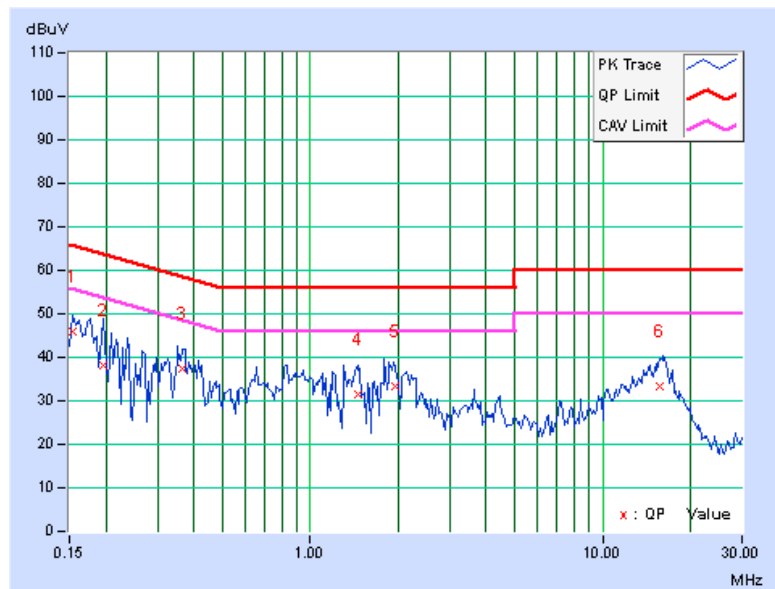


A D T

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANEL	Channel 52		
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	0.15391	0.16	45.81	29.89	45.97	30.05	65.79	55.79	-19.81	-25.73
2	0.19687	0.18	37.81	13.94	37.99	14.12	63.74	53.74	-25.75	-39.62
3	0.36484	0.18	37.21	27.39	37.39	27.57	58.62	48.62	-21.23	-21.05
4	1.46094	0.25	31.33	14.62	31.58	14.87	56.00	46.00	-24.42	-31.13
5	1.94141	0.29	32.95	19.29	33.24	19.58	56.00	46.00	-22.76	-26.42
6	15.62891	0.62	32.71	25.77	33.33	26.39	60.00	50.00	-26.67	-23.61

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

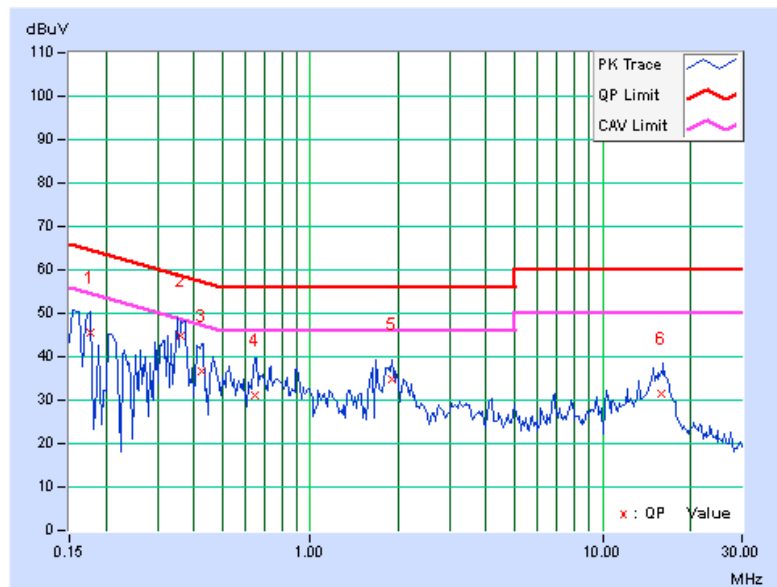




PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANEL	Channel 52		
TEST MODE	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.17734	0.15	45.32	24.47	45.47	24.62	64.61
2	0.36094	0.17	44.58	32.78	44.75	32.95	58.71	48.71	-13.95	-15.75
3	0.42344	0.18	36.48	25.22	36.66	25.40	57.38	47.38	-20.72	-21.98
4	0.64609	0.20	30.98	15.23	31.18	15.43	56.00	46.00	-24.82	-30.57
5	1.89844	0.29	34.45	22.95	34.74	23.24	56.00	46.00	-21.26	-22.76
6	15.79688	0.71	30.83	25.01	31.54	25.72	60.00	50.00	-28.46	-24.28

- 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.



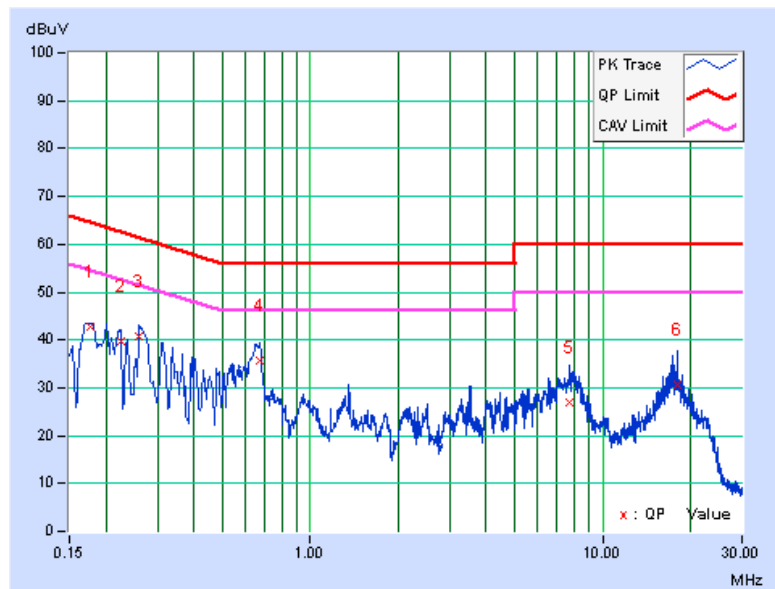


A D T

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANEL	Channel 140		
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	0.17605	0.12	42.48	32.91	42.60	33.03	64.67	54.67	-22.07	-21.64
2	0.22429	0.13	39.62	28.77	39.75	28.90	62.66	52.66	-22.91	-23.76
3	0.26001	0.13	40.52	23.90	40.65	24.03	61.43	51.43	-20.78	-27.40
4	0.67134	0.16	35.50	27.03	35.66	27.19	56.00	46.00	-20.34	-18.81
5	7.68848	0.52	26.25	15.49	26.77	16.01	60.00	50.00	-33.23	-33.99
6	18.10081	1.07	29.53	22.33	30.60	23.40	60.00	50.00	-29.40	-26.60

- 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.



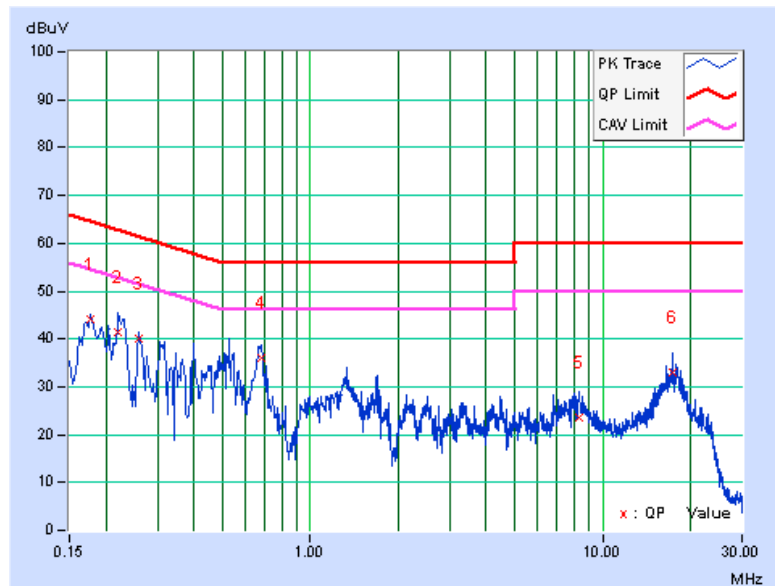


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANEL	Channel 140		
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	0.17744	0.13	44.12	30.84	44.25	30.97	64.60	54.60	-20.35	-23.63
2	0.22038	0.14	41.44	26.79	41.58	26.93	62.80	52.80	-21.22	-25.87
3	0.25932	0.14	39.76	21.54	39.90	21.68	61.45	51.45	-21.55	-29.77
4	0.67845	0.18	35.77	25.24	35.95	25.42	56.00	46.00	-20.05	-20.58
5	8.31799	0.52	22.92	13.00	23.44	13.52	60.00	50.00	-36.56	-36.48
6	17.46739	0.87	32.23	23.63	33.10	24.50	60.00	50.00	-26.90	-25.50

- 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.



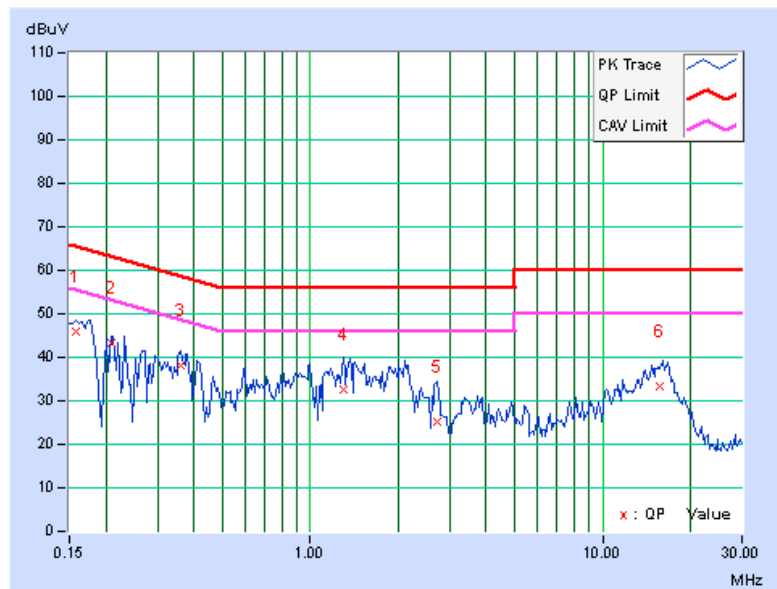


A D T

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANEL	Channel 140		
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	0.16	45.76	32.35	45.92	32.51	65.58	55.58	-19.66	-23.07
2	0.20859	0.18	43.00	29.64	43.18	29.82	63.26	53.26	-20.08	-23.44
3	0.36094	0.18	38.08	28.33	38.26	28.51	58.71	48.71	-20.45	-20.20
4	1.29688	0.24	32.43	15.29	32.67	15.53	56.00	46.00	-23.33	-30.47
5	2.70703	0.32	24.85	14.12	25.17	14.44	56.00	46.00	-30.83	-31.56
6	15.77344	0.62	32.78	26.12	33.40	26.74	60.00	50.00	-26.60	-23.26

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



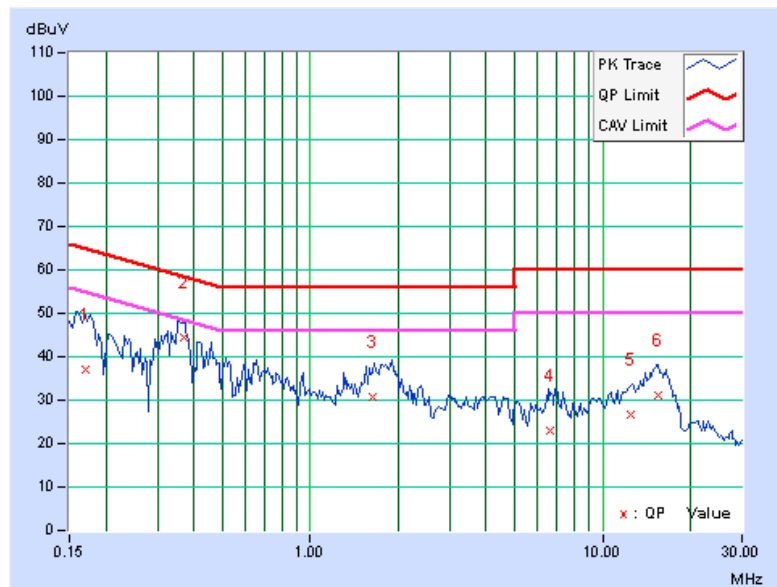


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANEL	Channel 140		
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	0.16953	0.14	37.08	17.64	37.22	17.78	64.98	54.98	-27.76	-37.20
2	0.36875	0.18	44.10	32.05	44.28	32.23	58.53	48.53	-14.25	-16.30
3	1.63672	0.27	30.31	15.68	30.58	15.95	56.00	46.00	-25.42	-30.05
4	6.65625	0.48	22.58	14.42	23.06	14.90	60.00	50.00	-36.94	-35.10
5	12.45703	0.63	26.08	19.37	26.71	20.00	60.00	50.00	-33.29	-30.00
6	15.57031	0.70	30.56	24.61	31.26	25.31	60.00	50.00	-28.74	-24.69

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



4.3 PEAK TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

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

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;

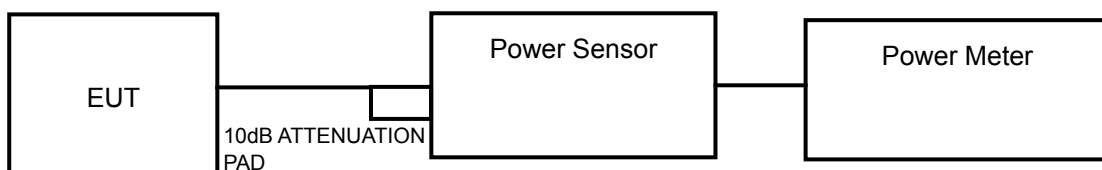
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;

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

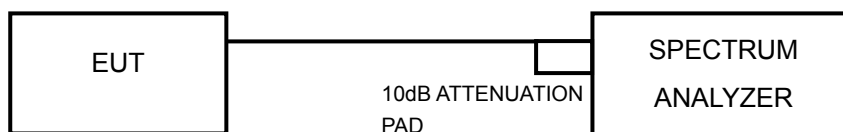
For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

802.11a & 802.11n (20MHz):

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.

802.11n (40MHz):

Duty cycle of test signal is < 98 %. Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

FOR 26dB BANDWIDTH

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	18.197	12.60	17	PASS
40	5200	16.982	12.30	17	PASS
48	5240	16.596	12.20	17	PASS
52	5260	17.378	12.40	17	PASS
60	5300	16.218	12.10	17	PASS
64	5320	16.596	12.20	17	PASS
100	5500	16.218	12.10	17	PASS
116	5580	15.849	12.00	17	PASS
140	5700	15.849	12.00	17	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				
36	5180	11.20	11.50	27.308	14.36	17	PASS
40	5200	11.10	11.60	27.336	14.37	17	PASS
48	5240	11.10	11.40	26.686	14.26	17	PASS
52	5260	12.00	12.20	32.445	15.11	17	PASS
60	5300	11.80	12.10	31.354	14.96	17	PASS
64	5320	11.90	12.20	32.084	15.06	17	PASS
100	5500	11.80	12.10	31.354	14.96	17	PASS
116	5580	11.90	12.20	32.084	15.06	17	PASS
140	5700	11.90	12.20	34.470	15.37	17	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				
38	5190	11.90	11.80	30.624	14.86	17	PASS
46	5230	11.90	12.00	31.337	14.96	17	PASS
54	5270	11.80	12.10	31.354	14.96	17	PASS
62	5310	12.00	12.00	31.698	15.01	17	PASS
102	5510	12.00	12.10	32.067	15.06	17	PASS
110	5550	11.90	11.90	30.976	14.91	17	PASS
134	5670	12.00	12.40	33.227	15.21	17	PASS

**26dB BANDWIDTH: 802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	22.53	PASS
40	5200	21.51	PASS
48	5240	22.51	PASS
52	5260	22.45	PASS
60	5300	22.54	PASS
64	5320	22.55	PASS
100	5500	23.85	PASS
116	5580	24.89	PASS
140	5700	22.99	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
36	5180	20.15	20.78	PASS
40	5200	20.13	20.28	PASS
48	5240	20.12	20.04	PASS
52	5260	20.14	20.07	PASS
60	5300	20.27	20.04	PASS
64	5320	20.16	20.00	PASS
100	5500	21.18	19.98	PASS
116	5580	21.01	20.15	PASS
140	5700	20.96	20.14	PASS

802.11n (40MHz)

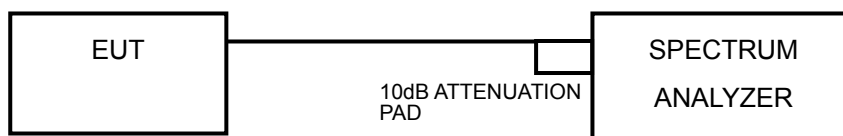
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
38	5190	40.92	41.08	PASS
46	5230	40.93	41.10	PASS
54	5270	40.96	40.98	PASS
62	5310	41.06	40.86	PASS
102	5510	40.94	41.15	PASS
110	5550	40.97	40.89	PASS
134	5670	53.49	40.86	PASS

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

802.11a & 802.11n (20MHz)

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

802.11n (40MHz)

Using method SA-2

- 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.
- 4) Trace average at least 100 traces in power averaging mode.
- 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

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	0.17	4	PASS
40	5200	0.20	4	PASS
48	5240	0.32	4	PASS
52	5260	0.35	11	PASS
60	5300	0.22	11	PASS
64	5320	0.06	11	PASS
100	5500	-0.52	11	PASS
116	5580	-0.74	11	PASS
140	5700	-0.59	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.

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1			
36	5180	-1.56	-1.85	1.31	1.99	PASS
40	5200	-1.50	-1.66	1.43	1.99	PASS
48	5240	-1.71	-1.81	1.25	1.99	PASS
52	5260	-0.73	-0.20	2.55	8.99	PASS
60	5300	-0.34	-0.41	2.64	8.99	PASS
64	5320	-0.59	-0.41	2.51	8.99	PASS
100	5500	-0.76	-0.39	2.44	8.99	PASS
116	5580	-0.55	-0.34	2.57	8.99	PASS
140	5700	-0.78	0.13	2.71	8.99	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. For 5180~5240MHz:

Directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi , so the power density limit shall be reduced to 4-(8.01-6) = 1.99dBm.

For 5260~5700MHz:

Directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi , so the power density limit shall be reduced to 11-(8.01-6) = 8.99dBm.

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					
38	5190	-3.71	-4.12	-0.90	0.16	-0.74	1.99	PASS
46	5230	-3.65	-4.12	-0.87	0.16	-0.71	1.99	PASS
54	5270	-3.80	-3.57	-0.67	0.16	-0.52	8.99	PASS
62	5310	-3.56	-3.93	-0.73	0.16	-0.58	8.99	PASS
102	5510	-3.29	-3.50	-0.38	0.16	-0.23	8.99	PASS
110	5550	-3.47	-3.75	-0.60	0.16	-0.44	8.99	PASS
134	5670	-3.82	-3.48	-0.64	0.16	-0.48	8.99	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. For 5190~5230MHz:

Directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $4-(8.01-6) = 1.99\text{dBm}$.

For 5270~5670MHz:

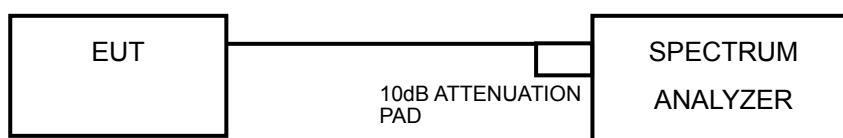
Directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(8.01-6) = 8.99\text{dBm}$.

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



A D T

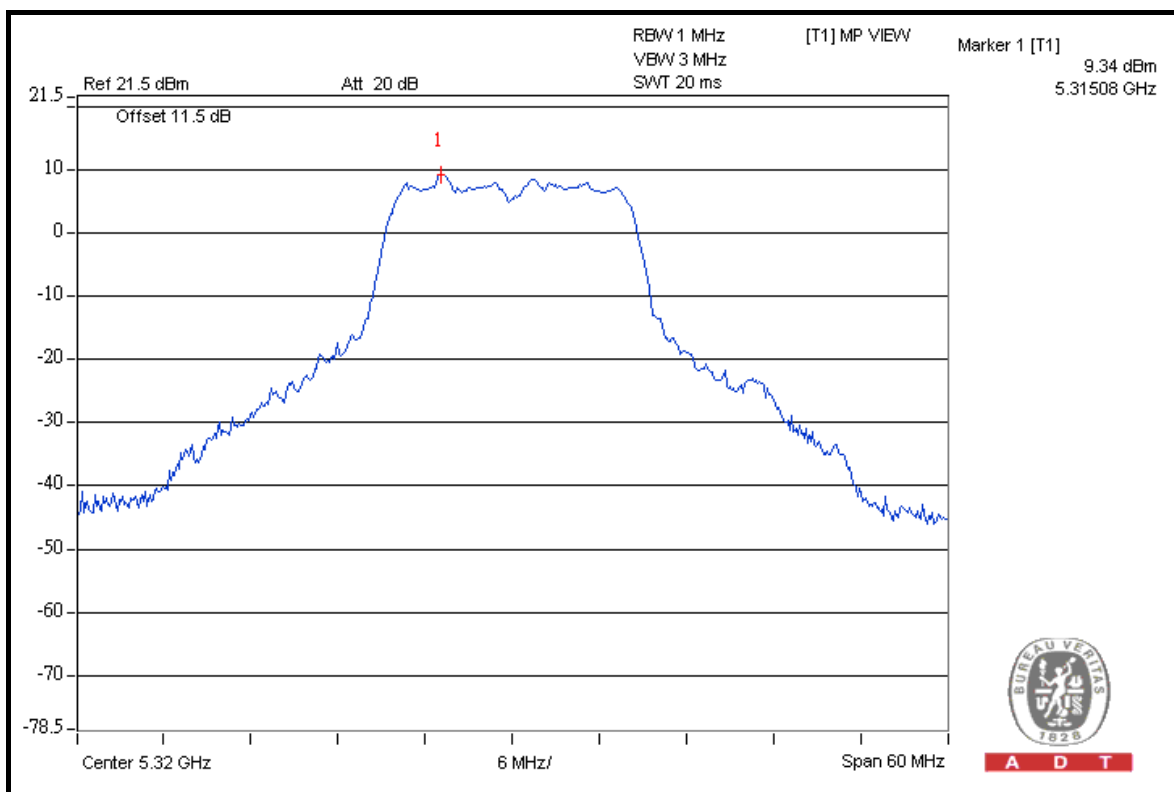
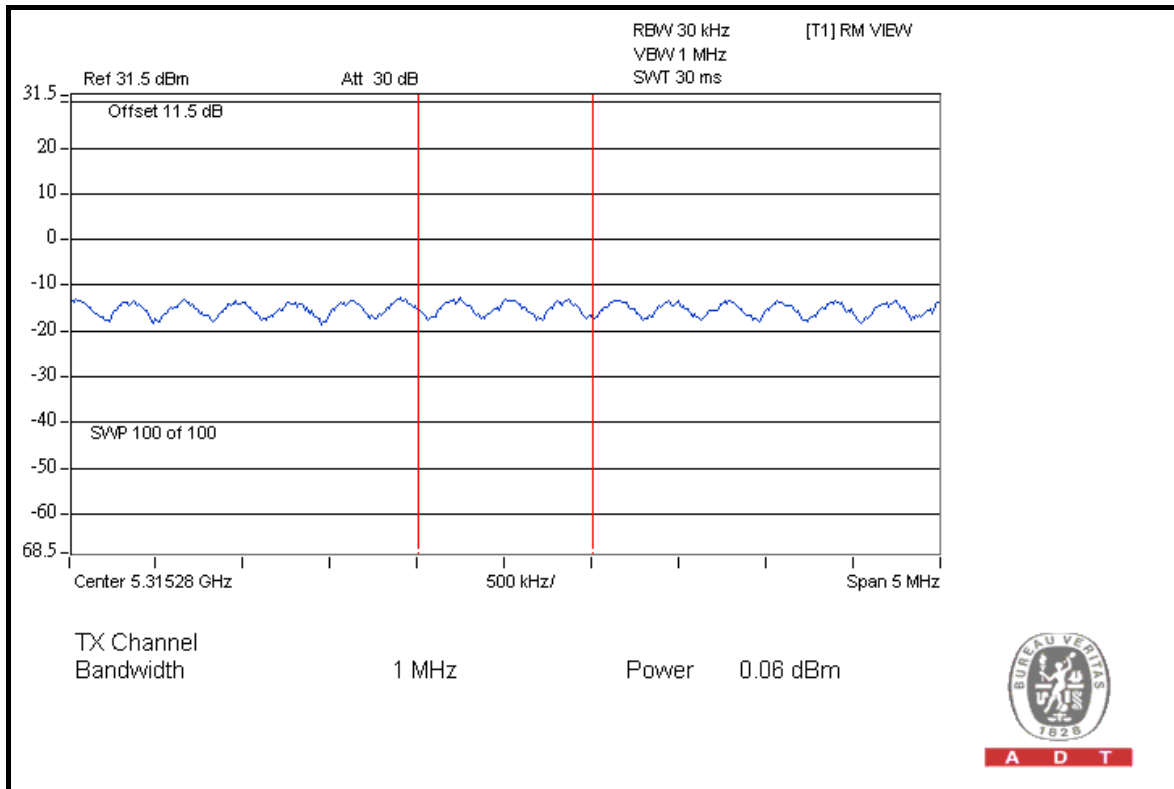
4.5.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	9.27	0.17	9.10	13	PASS
40	5200	9.26	0.20	9.06	13	PASS
48	5240	9.48	0.32	9.16	13	PASS
52	5260	9.42	0.35	9.07	13	PASS
60	5300	9.26	0.22	9.04	13	PASS
64	5320	9.34	0.06	9.28	13	PASS
100	5500	8.64	-0.52	9.16	13	PASS
116	5580	8.53	-0.74	9.27	13	PASS
140	5700	8.34	-0.59	8.93	13	PASS



A D T





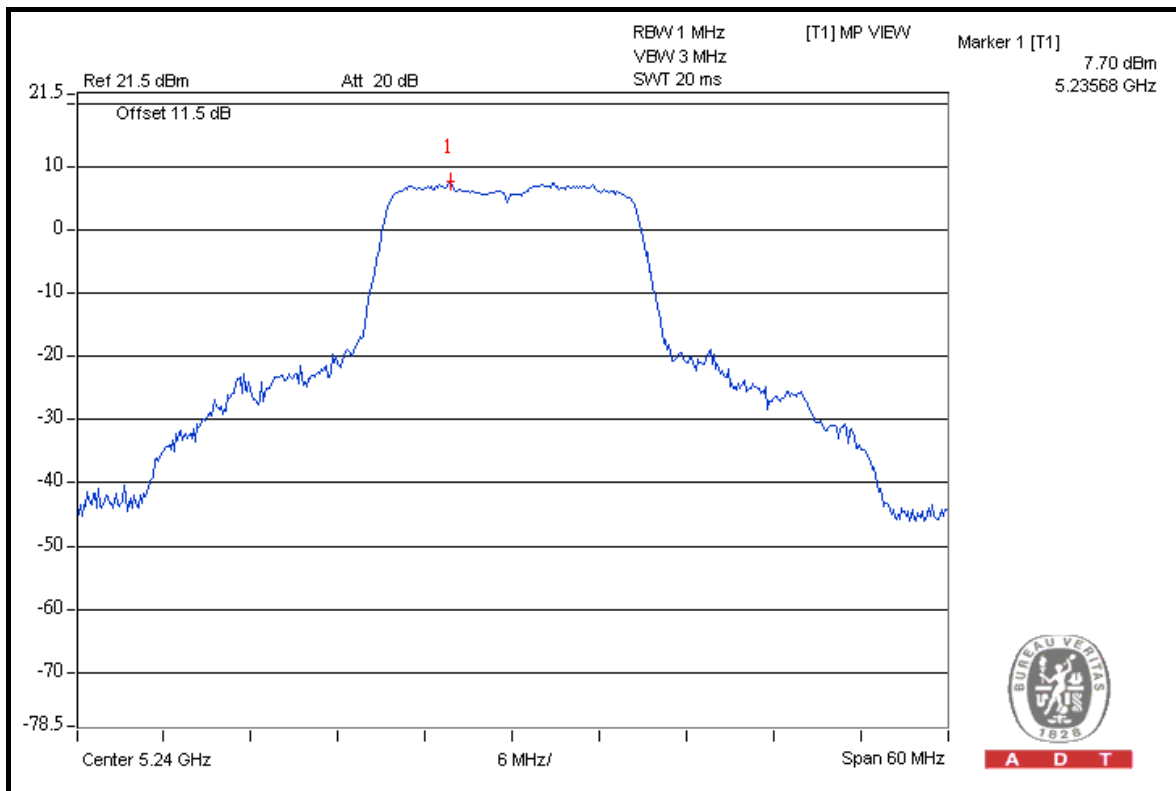
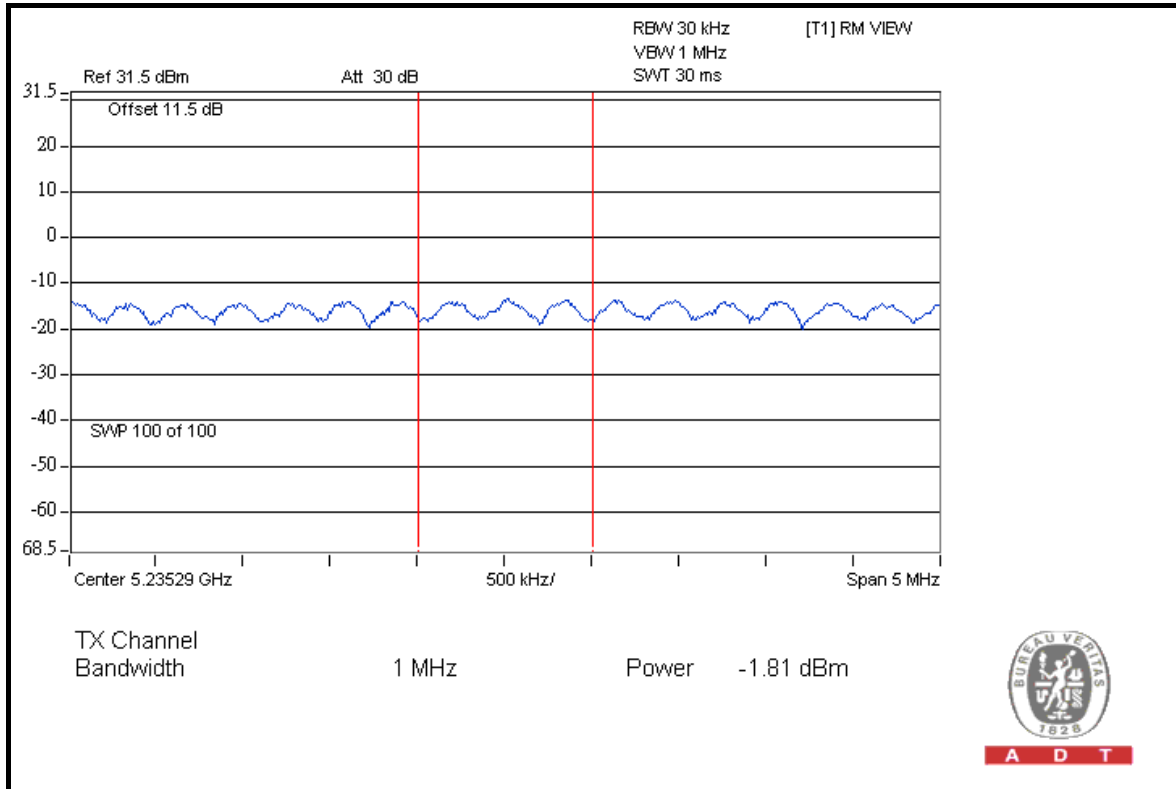
A D T

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		PPSD (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
36	5180	7.39	7.38	-1.56	-1.85	8.95	9.23	13	PASS
40	5200	7.42	7.32	-1.50	-1.66	8.92	8.98	13	PASS
48	5240	7.47	7.70	-1.71	-1.81	9.18	9.51	13	PASS
52	5260	7.56	8.30	-0.73	-0.20	8.29	8.50	13	PASS
60	5300	7.54	8.23	-0.34	-0.41	7.88	8.64	13	PASS
64	5320	7.57	8.07	-0.59	-0.41	8.16	8.48	13	PASS
100	5500	6.60	7.59	-0.76	-0.39	7.36	7.98	13	PASS
116	5580	7.66	7.93	-0.55	-0.34	8.21	8.27	13	PASS
140	5700	7.53	9.10	-0.78	0.13	8.31	8.97	13	PASS



A D T





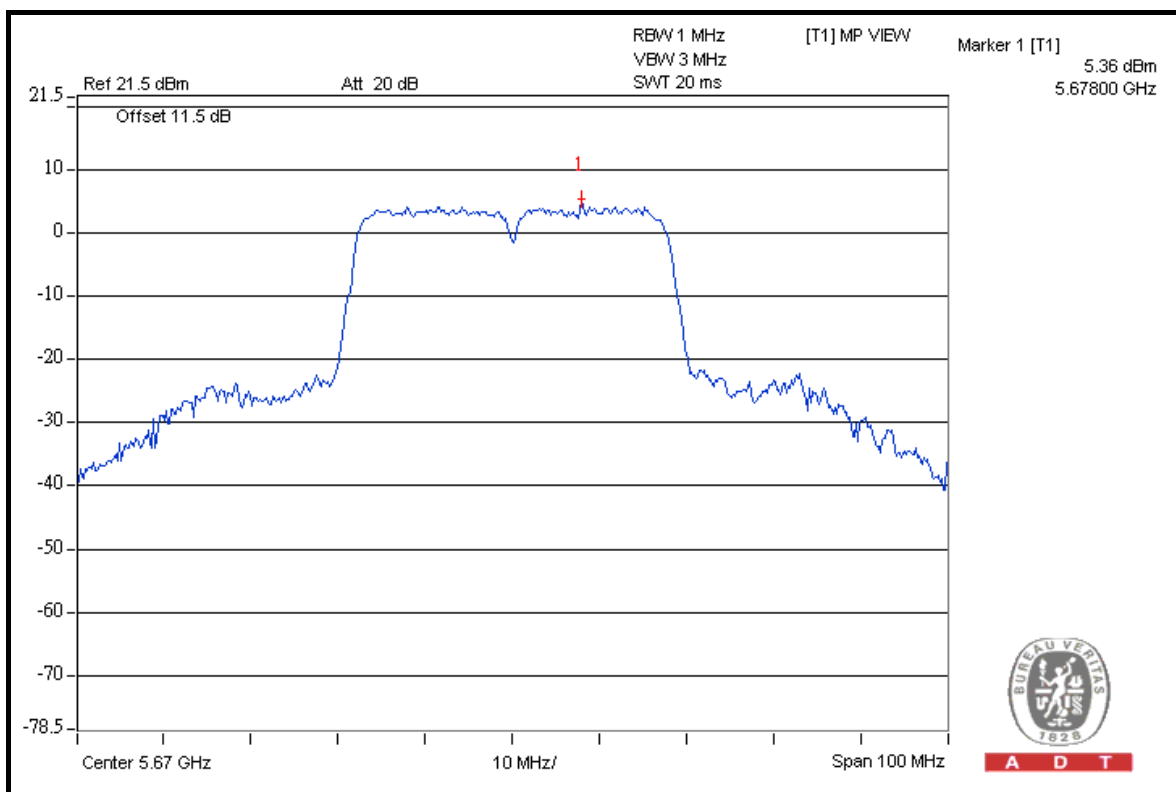
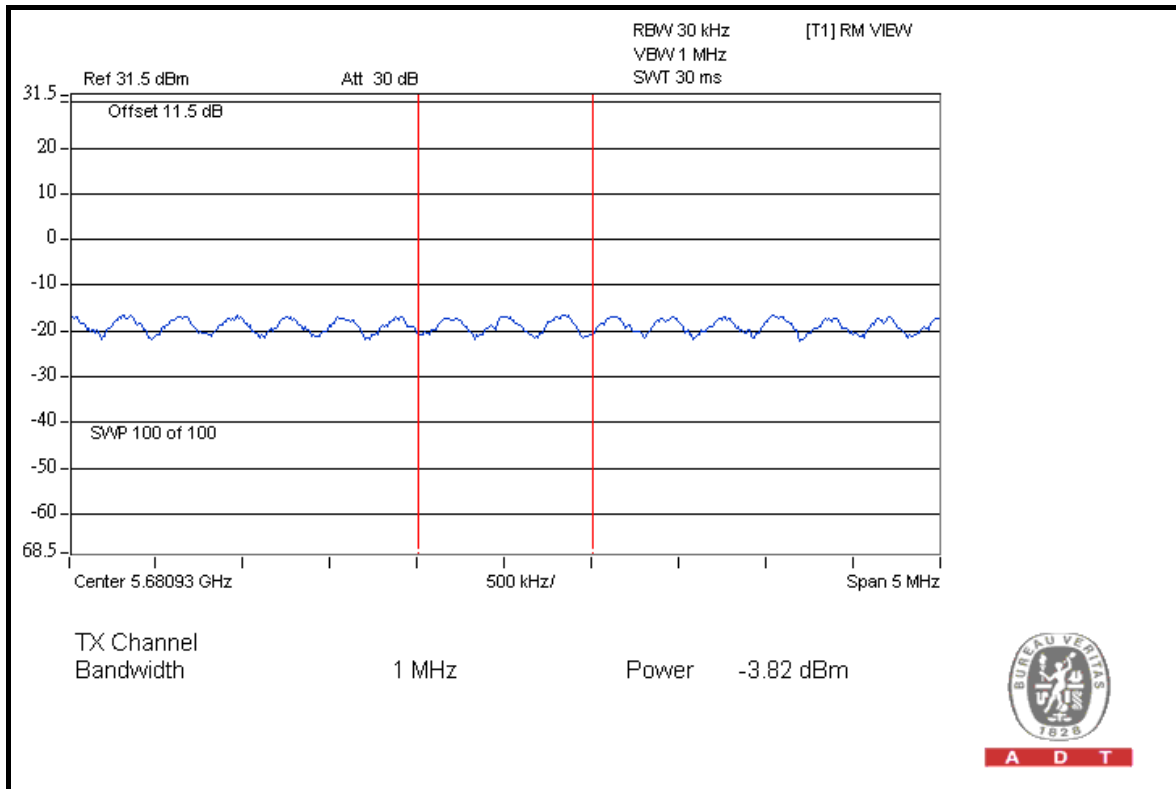
A D T

802.11n (40MHz)

CHAN	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		PPSD WITH OUT DUTY FACTOR (dBm)		PPSD WITH DUTY FACTOR (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
38	5190	4.26	4.09	-3.71	-4.12	-3.55	-3.96	7.81	8.05	13	PASS
46	5230	4.60	4.33	-3.65	-4.12	-3.49	-3.96	8.09	8.29	13	PASS
54	5270	4.12	4.90	-3.80	-3.57	-3.64	-3.41	7.76	8.31	13	PASS
62	5310	4.44	4.76	-3.56	-3.93	-3.4	-3.77	7.84	8.53	13	PASS
102	5510	4.51	4.60	-3.29	-3.50	-3.13	-3.34	7.64	7.94	13	PASS
110	5550	4.28	4.65	-3.47	-3.75	-3.31	-3.59	7.59	8.24	13	PASS
134	5670	5.36	4.90	-3.82	-3.48	-3.66	-3.32	9.02	8.22	13	PASS



A D T



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)
50	120	5320.0145	2.7256	5320.0064	1.2030	5320.0123	2.3120	5320.015	2.8195
40	120	5319.9997	-0.0564	5319.9978	-0.4135	5319.9961	-0.7331	5319.9976	-0.4511
30	120	5319.9846	-2.8947	5319.9927	-1.3722	5319.99	-1.8797	5319.9865	-2.5376
20	120	5319.9987	-0.2444	5319.9999	-0.0188	5319.9992	-0.1504	5320.0015	0.2820
10	120	5319.9924	-1.4286	5319.9939	-1.1466	5319.9864	-2.5564	5319.9844	-2.9323
0	120	5319.9736	-4.9624	5319.9768	-4.3609	5319.9736	-4.9624	5319.9737	-4.9436
-10	120	5319.975	-4.6992	5319.9823	-3.3271	5319.9744	-4.8120	5319.9795	-3.8534
-20	120	5319.9825	-3.2895	5319.9861	-2.6128	5319.9808	-3.6090	5319.9895	-1.9737

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	138	5319.9989	-0.2068	5319.9995	-0.0940	5319.9999	-0.0188	5320.0002	0.0376
	120	5319.9987	-0.2444	5319.9999	-0.0188	5319.9992	-0.1504	5320.0015	0.2820
	102	5319.9992	-0.1504	5319.9989	-0.2068	5319.9991	-0.1692	5320.0008	0.1504

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:

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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---