

FCC TEST REPORT (15.407)

REPORT NO.: RF121114C13-1
MODEL NO.: CG2101
FCC ID: NCMOCG2101
RECEIVED: Nov. 14, 2012
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ISSUED: Jan. 11, 2013

APPLICANT: Option nv

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121114C13-1	Original release	Jan. 11, 2013

1. CERTIFICATION

PRODUCT: CloudGate 802.11abgn Wireless LAN Card

MODEL: CG2101

BRAND: Option

APPLICANT: Option nv

TESTED: Dec. 13, 2012 ~ Jan. 07, 2013

TEST SAMPLE: PRODUCTION UNIT

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

ANSI C63.10-2009

The above equipment (model: CG2101) 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 :** Jan. 11, 2013
Jemma Yang / Specialist

APPROVED BY : Ken Liu , **DATE :** Jan. 11, 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 -10.24dB at 0.15000MHz.
15.407(b/1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.9dB at 5725.00MHz.
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 reverse polarity SMA 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	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	CloudGate 802.11abgn Wireless LAN Card
MODEL NO.	CG2101
SERIAL NUMBER	MF19C9M052
HW VERSION	1.0
POWER SUPPLY	3.0~3.6Vdc (from host equipment)
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 135.0Mbps
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	17.258 mW for 5180 ~ 5240MHz 17.498mW for 5260 ~ 5320MHz 14.256mW for 5500 ~ 5700MHz
ANTENNA TYPE	Dipole antenna with 3dBi gain
ANTENNA CONNECTOR	reverse polarity SMA
DATA CABLE	N/A
I/O PORTS	N/A
ACCESSORY DEVICES	N/A

NOTE:

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

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

2. 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 $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

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)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5

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)
-	802.11a	5180-5320	36 to 64	36	OFDM	BPSK	6.0
-	802.11a	5500-5700	100 to 140	100	OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

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

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

ANTENNA PORT CONDUCTED MEASUREMENT:

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

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

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Antony Lee
RE $<$ 1G	24deg. C, 68%RH	120Vac, 60Hz	Alan Wu
PLC	24deg. C, 56%RH	120Vac, 60Hz	Sun Lin
APCM	25deg. C, 65%RH	120Vac, 60Hz	Antony Lee

3.3 DUTY CYCLE OF TEST SIGNAL

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



3.4 DESCRIPTION OF SUPPORT UNITS

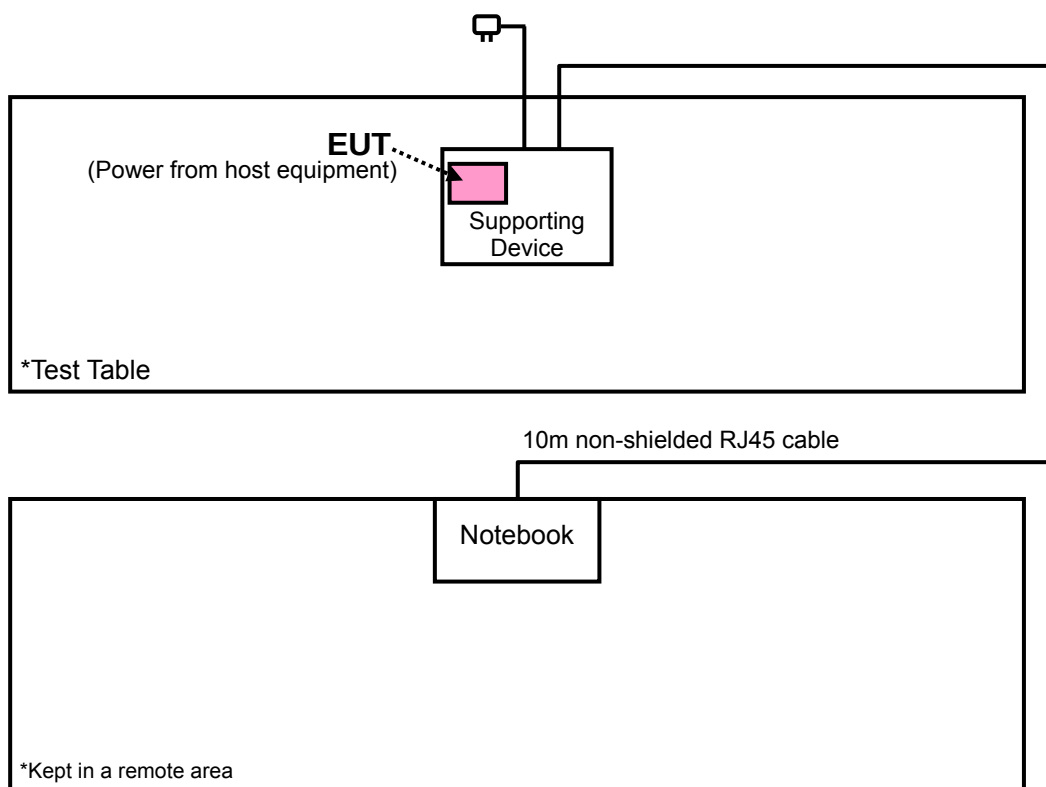
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Adapter	V-INFINITY	EPSA 120100UE	NA	NA
2	Supporting Device	NA	NA	NA	NA
3	Notebook	DELL	D531	CN-0XM006-48643-8 1U-2973	QDS-BRCM1020

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA
3	10m non-shielded RJ45 cable, w/o core.

NOTE: 1. All power cords of the above support units are non shielded (1.8m).
 2. Item 2 as a communication partner to transfer data.
 3. Item 1-2 was provided by the manufacturer.

4. 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 v02

ANSI C63.10-2009

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

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	ESIB7	100212	Aug. 06, 2012	Aug. 05, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Feb. 03, 2012	Feb. 02, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 06, 2012	Apr. 05, 2013
HORN Antenna SCHWARZBECK	9120D	209	Sep. 03, 2012	Sep. 02, 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	8447D	2944A10633	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8449B	3008A01964	Oct. 25, 2012	Oct. 24, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 28, 2012	Aug. 27, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6+309224/ 4	Aug. 28, 2012	Aug. 27, 2013
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100	TT93021703	NA	NA
Turn Table Controller ADT.	SC100	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 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

- 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 4.
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 IC7450F-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.

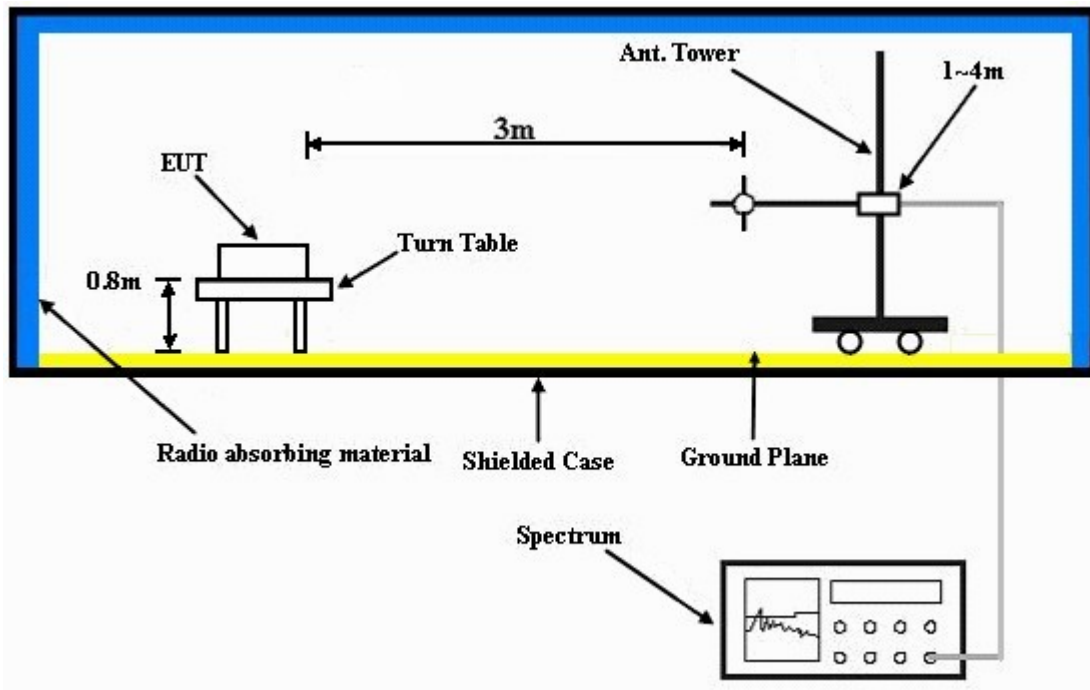
NOTE:

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

- The EUT installed into supporting device and placed the on the testing table.
- Prepared notebook to act as communication partner and placed it outside of testing area.
- The communication partner connected with EUT and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.

4.1.8 TEST RESULTS

ABOVE 1GHz DATA: 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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	52.0 PK	74.0	-22.0	1.00 H	316	12.40	39.60
2	5150.00	37.4 AV	54.0	-16.6	1.00 H	316	-2.20	39.60
3	*5180.00	102.8 PK			1.00 H	316	63.20	39.60
4	*5180.00	92.6 AV			1.00 H	316	53.00	39.60
5	#6906.00	57.8 PK	68.3	-10.5	1.02 H	107	15.60	42.20
6	#10360.00	55.6 PK	68.3	-12.7	1.02 H	165	8.80	46.80
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	52.0 PK	74.0	-22.0	1.00 V	294	12.40	39.60
2	5150.00	38.7 AV	54.0	-15.3	1.00 V	294	-0.90	39.60
3	*5180.00	106.3 PK			1.00 V	294	66.70	39.60
4	*5180.00	96.5 AV			1.00 V	294	56.90	39.60
5	#6906.00	61.4 PK	68.3	-6.9	1.00 V	356	19.20	42.20
6	#10360.00	54.9 PK	68.3	-13.4	1.00 V	26	8.10	46.80

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, 65%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	1000.00	54.4 PK	74.0	-19.6	1.00 H	303	27.70	26.70
2	1000.00	47.4 AV	54.0	-6.6	1.00 H	303	20.70	26.70
3	*5200.00	103.6 PK			1.02 H	315	63.90	39.70
4	*5200.00	93.3 AV			1.02 H	315	53.60	39.70
5	#6933.00	54.9 PK	68.3	-13.4	1.00 H	138	12.60	42.30
6	#10400.00	56.8 PK	68.3	-11.5	1.00 H	153	10.00	46.80
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	1000.00	56.7 PK	74.0	-17.3	1.00 V	117	30.00	26.70
2	1000.00	51.2 AV	54.0	-2.8	1.00 V	117	24.50	26.70
3	*5200.00	109.7 PK			1.65 V	134	70.00	39.70
4	*5200.00	99.3 AV			1.65 V	134	59.60	39.70
5	#6933.00	59.2 PK	68.3	-9.1	1.00 V	2	16.90	42.30
6	#10400.00	54.5 PK	68.3	-13.8	1.00 V	159	7.70	46.80

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 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%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	103.5 PK			1.01 H	318	63.80	39.70
2	*5240.00	93.6 AV			1.01 H	318	53.90	39.70
3	#6986.00	55.6 PK	68.3	-12.7	1.00 H	145	13.20	42.40
4	#10480.00	57.3 PK	68.3	-11.0	1.00 H	155	10.40	46.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	109.8 PK			1.64 V	149	70.10	39.70
2	*5240.00	99.1 AV			1.64 V	149	59.40	39.70
3	#6986.00	60.4 PK	68.3	-7.9	1.00 V	5	18.00	42.40
4	#10480.00	56.3 PK	68.3	-12.0	1.00 V	185	9.40	46.90

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%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	103.2 PK			1.02 H	325	63.40	39.80
2	*5260.00	93.4 AV			1.02 H	325	53.60	39.80
3	#7013.00	56.2 PK	68.3	-12.1	1.15 H	360	13.70	42.50
4	#10520.00	58.3 PK	68.3	-10.0	1.00 H	157	11.40	46.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	109.3 PK			1.59 V	148	69.50	39.80
2	*5260.00	98.2 AV			1.59 V	148	58.40	39.80
3	#7013.00	61.3 PK	68.3	-7.0	1.00 V	9	18.80	42.50
4	#10520.00	58.3 PK	68.3	-10.0	1.00 V	199	11.40	46.90

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%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	103.2 PK			1.03 H	339	63.40	39.80
2	*5300.00	93.1 AV			1.03 H	339	53.30	39.80
3	#7066.00	57.3 PK	68.3	-11.0	1.15 H	352	14.60	42.70
4	10600.00	59.4 PK	74.0	-14.6	1.00 H	60	12.50	46.90
5	10600.00	46.7 AV	54.0	-7.3	1.00 H	60	-0.20	46.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1000.00	56.0 PK	74.0	-18.0	1.00 V	118	29.30	26.70
2	1000.00	51.1 AV	54.0	-2.9	1.00 V	118	24.40	26.70
3	*5300.00	108.4 PK			1.59 V	149	68.60	39.80
4	*5300.00	97.8 AV			1.59 V	149	58.00	39.80
5	#7066.00	62.4 PK	68.3	-5.9	1.00 V	25	19.70	42.70
6	10600.00	59.4 PK	74.0	-14.6	1.00 V	202	12.50	46.90
7	10600.00	47.3 AV	54.0	-6.7	1.00 V	202	0.40	46.90

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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, 65%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	103.2 PK			1.00 H	312	63.30	39.90
2	*5320.00	92.7 AV			1.00 H	312	52.80	39.90
3	5350.00	55.9 PK	74.0	-18.1	1.00 H	360	16.00	39.90
4	5350.00	38.4 AV	54.0	-15.6	1.00 H	360	-1.50	39.90
5	10640.00	60.5 PK	74.0	-13.5	1.00 H	55	13.50	47.00
6	10640.00	48.3 AV	54.0	-5.7	1.00 H	55	1.30	47.00
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	*5320.00	109.0 PK			1.58 V	135	69.10	39.90
2	*5320.00	98.7 AV			1.58 V	135	58.80	39.90
3	5350.00	62.0 PK	74.0	-12.0	1.58 V	135	22.10	39.90
4	5350.00	41.9 AV	54.0	-12.1	1.58 V	135	2.00	39.90
5	10640.00	59.5 PK	74.0	-14.5	1.00 V	211	12.50	47.00
6	10640.00	47.5 AV	54.0	-6.5	1.00 V	211	0.50	47.00

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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	53.2 PK	74.0	-20.8	1.00 H	303	13.10	40.10
2	5460.00	38.3 AV	54.0	-15.7	1.00 H	303	-1.80	40.10
3	#5470.00	57.1 PK	68.3	-11.2	1.00 H	303	17.00	40.10
4	*5500.00	103.9 PK			1.00 H	303	63.80	40.10
5	*5500.00	93.5 AV			1.00 H	303	53.40	40.10
6	11000.00	58.0 PK	74.0	-16.0	1.00 H	159	10.60	47.40
7	11000.00	46.4 AV	54.0	-7.6	1.00 H	159	-1.00	47.40
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	1000.00	54.1 PK	74.0	-19.9	1.00 V	118	27.40	26.70
2	1000.00	50.2 AV	54.0	-3.8	1.00 V	118	23.50	26.70
3	5460.00	55.4 PK	74.0	-18.6	1.84 V	220	15.30	40.10
4	5460.00	40.0 AV	54.0	-14.0	1.84 V	220	-0.10	40.10
5	#5470.00	61.2 PK	68.3	-7.1	1.84 V	220	21.10	40.10
6	*5500.00	108.4 PK			1.84 V	220	68.30	40.10
7	*5500.00	98.3 AV			1.84 V	220	58.20	40.10
8	7333.00	54.4 PK	74.0	-19.6	1.00 V	347	11.00	43.40
9	7333.00	45.6 AV	54.0	-8.4	1.00 V	347	2.20	43.40
10	11000.00	60.1 PK	74.0	-13.9	1.00 V	15	12.70	47.40
11	11000.00	46.5 AV	54.0	-7.5	1.00 V	15	-0.90	47.40

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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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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	1000.00	56.6 PK	74.0	-17.4	1.00 H	142	29.90	26.70
2	1000.00	50.5 AV	54.0	-3.5	1.00 H	142	23.80	26.70
3	*5580.00	104.4 PK			1.00 H	313	64.20	40.20
4	*5580.00	94.6 AV			1.00 H	313	54.40	40.20
5	11160.00	59.6 PK	74.0	-14.4	1.00 H	15	11.80	47.80
6	11160.00	46.2 AV	54.0	-7.8	1.00 H	15	-1.60	47.80
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	1000.00	56.1 PK	74.0	-17.9	1.00 V	119	29.40	26.70
2	1000.00	51.1 AV	54.0	-2.9	1.00 V	119	24.40	26.70
3	*5580.00	108.9 PK			1.00 V	177	68.70	40.20
4	*5580.00	98.9 AV			1.00 V	177	58.70	40.20
5	11160.00	63.8 PK	74.0	-10.2	1.11 V	352	16.00	47.80
6	11160.00	50.5 AV	54.0	-3.5	1.11 V	352	2.70	47.80

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, 65%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	103.5 PK			1.00 H	313	63.10	40.40
2	*5700.00	93.3 AV			1.00 H	313	52.90	40.40
3	#5725.00	62.4 PK	68.3	-5.9	1.00 H	313	22.00	40.40
4	11400.00	60.5 PK	74.0	-13.5	1.00 H	26	12.50	48.00
5	11400.00	47.2 AV	54.0	-6.8	1.00 H	26	-0.80	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	*5700.00	108.5 PK			1.00 V	180	68.10	40.40
2	*5700.00	98.4 AV			1.00 V	180	58.00	40.40
3	#5725.00	65.9 PK	68.3	-2.4	1.00 V	180	25.50	40.40
4	11400.00	58.5 PK	74.0	-15.5	1.00 V	166	10.50	48.00
5	11400.00	46.7 AV	54.0	-7.3	1.00 V	166	-1.30	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.

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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	55.0 PK	74.0	-19.0	1.00 H	135	15.40	39.60
2	5150.00	36.5 AV	54.0	-17.5	1.00 H	135	-3.10	39.60
3	*5180.00	101.4 PK			1.00 H	135	61.80	39.60
4	*5180.00	91.8 AV			1.00 H	135	52.20	39.60
5	#10360.00	56.9 PK	68.3	-11.4	1.01 H	171	10.10	46.80
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	1000.00	53.3 PK	74.0	-20.7	1.00 V	118	26.60	26.70
2	1000.00	49.9 AV	54.0	-4.1	1.00 V	118	23.20	26.70
3	5150.00	57.8 PK	74.0	-16.2	1.64 V	129	18.20	39.60
4	5150.00	38.3 AV	54.0	-15.7	1.64 V	129	-1.30	39.60
5	*5180.00	108.1 PK			1.64 V	129	68.50	39.60
6	*5180.00	97.7 AV			1.64 V	129	58.10	39.60
7	#6906.00	60.1 PK	68.3	-8.2	1.00 V	356	17.90	42.20
8	#10360.00	56.8 PK	68.3	-11.5	1.00 V	158	10.00	46.80

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, 65%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	103.5 PK			1.01 H	330	63.80	39.70
2	*5200.00	92.4 AV			1.01 H	330	52.70	39.70
3	#6933.00	55.3 PK	68.3	-13.0	1.00 H	143	13.00	42.30
4	#10400.00	57.4 PK	68.3	-10.9	1.00 H	154	10.60	46.80
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	*5200.00	108.7 PK			1.63 V	138	69.00	39.70
2	*5200.00	97.6 AV			1.63 V	138	57.90	39.70
3	#6933.00	59.1 PK	68.3	-9.2	1.00 V	352	16.80	42.30
4	#10400.00	56.6 PK	68.3	-11.7	1.00 V	166	9.80	46.80

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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	103.5 PK			1.02 H	331	63.80	39.70
2	*5240.00	92.4 AV			1.02 H	331	52.70	39.70
3	#6986.00	54.3 PK	68.3	-14.0	1.00 H	159	11.90	42.40
4	#10480.00	58.3 PK	68.3	-10.0	1.00 H	147	11.40	46.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	109.3 PK			1.62 V	131	69.60	39.70
2	*5240.00	98.4 AV			1.62 V	131	58.70	39.70
3	#6986.00	61.2 PK	68.3	-7.1	1.00 V	12	18.80	42.40
4	#10480.00	56.5 PK	68.3	-11.8	1.00 V	187	9.60	46.90

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%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	102.5 PK			1.01 H	360	62.70	39.80
2	*5260.00	92.4 AV			1.01 H	360	52.60	39.80
3	#7013.00	57.3 PK	68.3	-11.0	1.02 H	258	14.80	42.50
4	#10520.00	59.4 PK	68.3	-8.9	1.00 H	151	12.50	46.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	109.2 PK			1.55 V	151	69.40	39.80
2	*5260.00	98.3 AV			1.55 V	151	58.50	39.80
3	#7013.00	60.7 PK	68.3	-7.6	1.00 V	15	18.20	42.50
4	#10520.00	58.4 PK	68.3	-9.9	1.00 V	211	11.50	46.90

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%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	103.5 PK			1.02 H	341	63.70	39.80
2	*5300.00	92.4 AV			1.02 H	341	52.60	39.80
3	#7066.00	58.3 PK	68.3	-10.0	1.10 H	347	15.60	42.70
4	10600.00	60.5 PK	74.0	-13.5	1.00 H	158	13.60	46.90
5	10600.00	47.7 AV	54.0	-6.3	1.00 H	158	0.80	46.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	108.5 PK			1.60 V	132	68.70	39.80
2	*5300.00	98.1 AV			1.60 V	132	58.30	39.80
3	#7066.00	63.5 PK	68.3	-4.8	1.00 V	269	20.80	42.70
4	10600.00	60.8 PK	74.0	-13.2	1.00 V	214	13.90	46.90
5	10600.00	48.3 AV	54.0	-5.7	1.00 V	214	1.40	46.90

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%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	103.5 PK			1.00 H	320	63.60	39.90
2	*5320.00	92.0 AV			1.00 H	320	52.10	39.90
3	5350.00	56.3 PK	74.0	-17.7	1.00 H	354	16.40	39.90
4	5350.00	39.1 AV	54.0	-14.9	1.00 H	354	-0.80	39.90
5	10640.00	61.5 PK	74.0	-12.5	1.00 H	99	14.50	47.00
6	10640.00	49.7 AV	54.0	-4.3	1.00 H	99	2.70	47.00
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	1000.00	53.5 PK	74.0	-20.5	1.00 V	116	26.80	26.70
2	1000.00	49.8 AV	54.0	-4.2	1.00 V	116	23.10	26.70
3	*5320.00	108.1 PK			1.58 V	134	68.20	39.90
4	*5320.00	97.4 AV			1.58 V	134	57.50	39.90
5	5350.00	59.8 PK	74.0	-14.2	1.58 V	134	19.90	39.90
6	5350.00	40.1 AV	54.0	-13.9	1.58 V	134	0.20	39.90
7	10640.00	57.0 PK	74.0	-17.0	1.00 V	208	10.00	47.00
8	10640.00	44.7 AV	54.0	-9.3	1.00 V	208	-2.30	47.00

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.



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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, 65%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	53.3 PK	74.0	-20.7	1.00 H	304	13.20	40.10
2	5460.00	37.4 AV	54.0	-16.6	1.00 H	304	-2.70	40.10
3	#5470.00	53.9 PK	68.3	-14.4	1.00 H	304	13.80	40.10
4	*5500.00	101.8 PK			1.00 H	304	61.70	40.10
5	*5500.00	91.9 AV			1.00 H	304	51.80	40.10
6	7333.00	53.1 PK	74.0	-20.9	1.00 H	18	9.70	43.40
7	7333.00	41.0 AV	54.0	-13.0	1.00 H	18	-2.40	43.40
8	11000.00	57.3 PK	74.0	-16.7	1.00 H	166	9.90	47.40
9	11000.00	45.5 AV	54.0	-8.5	1.00 H	166	-1.90	47.40
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	5460.00	56.2 PK	74.0	-17.8	1.84 V	216	16.10	40.10
2	5460.00	38.4 AV	54.0	-15.6	1.84 V	216	-1.70	40.10
3	#5470.00	58.0 PK	68.3	-10.3	1.84 V	216	17.90	40.10
4	*5500.00	107.7 PK			1.84 V	216	67.60	40.10
5	*5500.00	97.7 AV			1.84 V	216	57.60	40.10
6	7333.00	56.6 PK	74.0	-17.4	2.10 V	158	13.20	43.40
7	7333.00	50.7 AV	54.0	-3.3	2.10 V	158	7.30	43.40
8	11000.00	58.0 PK	74.0	-16.0	1.00 V	21	10.60	47.40
9	11000.00	44.8 AV	54.0	-9.2	1.00 V	21	-2.60	47.40

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 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%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	103.5 PK			1.00 H	159	63.30	40.20
2	*5580.00	93.6 AV			1.00 H	159	53.40	40.20
3	7440.00	52.6 PK	74.0	-21.4	1.00 H	258	8.90	43.70
4	7440.00	41.4 AV	54.0	-12.6	1.00 H	258	-2.30	43.70
5	11160.00	58.3 PK	74.0	-15.7	1.00 H	247	10.50	47.80
6	11160.00	46.4 AV	54.0	-7.6	1.00 H	247	-1.40	47.80
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	108.8 PK			1.78 V	151	68.60	40.20
2	*5580.00	98.5 AV			1.78 V	151	58.30	40.20
3	7440.00	56.3 PK	74.0	-17.7	2.11 V	162	12.60	43.70
4	7440.00	50.9 AV	54.0	-3.1	2.11 V	162	7.20	43.70
5	11160.00	60.0 PK	74.0	-14.0	1.02 V	215	12.20	47.80
6	11160.00	48.6 AV	54.0	-5.4	1.02 V	215	0.80	47.80

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.



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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, 65%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	102.6 PK			1.00 H	321	62.20	40.40
2	*5700.00	92.4 AV			1.00 H	321	52.00	40.40
3	#5725.00	62.4 PK	68.3	-5.9	1.00 H	321	22.00	40.40
4	11400.00	61.2 PK	74.0	-12.8	1.00 H	33	13.20	48.00
5	11400.00	48.3 AV	54.0	-5.7	1.00 H	33	0.30	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	*5700.00	108.7 PK			1.44 V	134	68.30	40.40
2	*5700.00	98.3 AV			1.44 V	134	57.90	40.40
3	#5725.00	67.4 PK	68.3	-0.9	1.44 V	134	27.00	40.40
4	7600.00	56.3 PK	74.0	-17.7	2.08 V	179	12.30	44.00
5	7600.00	50.2 AV	54.0	-3.8	2.08 V	179	6.20	44.00
6	11400.00	59.3 PK	74.0	-14.7	1.00 V	147	11.30	48.00
7	11400.00	47.2 AV	54.0	-6.8	1.00 V	147	-0.80	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.

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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	56.5 PK	74.0	-17.5	1.00 H	316	16.90	39.60
2	5150.00	41.4 AV	54.0	-12.6	1.00 H	316	1.80	39.60
3	*5190.00	98.8 PK			1.00 H	316	59.20	39.60
4	*5190.00	88.4 AV			1.00 H	316	48.80	39.60
5	#10380.00	57.8 PK	68.3	-10.5	1.00 H	327	11.00	46.80
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	1000.00	50.0 PK	74.0	-24.0	1.35 V	18	23.30	26.70
2	1000.00	46.0 AV	54.0	-8.0	1.35 V	18	19.30	26.70
3	5150.00	64.5 PK	74.0	-9.5	1.00 V	296	24.90	39.60
4	5150.00	48.6 AV	54.0	-5.4	1.00 V	296	9.00	39.60
5	*5190.00	104.7 PK			1.00 V	296	65.10	39.60
6	*5190.00	94.0 AV			1.00 V	296	54.40	39.60
7	#6920.00	59.3 PK	68.3	-9.0	1.00 V	2	17.10	42.20
8	#10380.00	56.4 PK	68.3	-11.9	1.00 V	123	9.60	46.80

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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	99.6 PK			1.00 H	320	59.90	39.70
2	*5230.00	88.4 AV			1.00 H	320	48.70	39.70
3	#6973.00	54.0 PK	68.3	-14.3	1.00 H	151	11.60	42.40
4	#10460.00	59.5 PK	68.3	-8.8	1.00 H	122	12.60	46.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	103.0 PK			1.00 V	264	63.30	39.70
2	*5230.00	93.8 AV			1.00 V	264	54.10	39.70
3	#6973.00	62.3 PK	68.3	-6.0	1.00 V	23	19.90	42.40
4	#10460.00	57.3 PK	68.3	-11.0	1.00 V	255	10.40	46.90

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%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	100.2 PK			1.00 H	321	60.40	39.80
2	*5270.00	89.6 AV			1.00 H	321	49.80	39.80
3	#7026.00	58.3 PK	68.3	-10.0	1.00 H	264	15.80	42.50
4	#10540.00	60.3 PK	68.3	-8.0	1.00 H	139	13.40	46.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5270.00	103.2 PK			1.00 V	273	63.40	39.80
2	*5270.00	92.6 AV			1.00 V	273	52.80	39.80
3	#7026.00	61.5 PK	68.3	-6.8	1.00 V	210	19.00	42.50
4	#10540.00	58.3 PK	68.3	-10.0	1.00 V	204	11.40	46.90

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%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	100.1 PK			1.00 H	320	60.20	39.90
2	*5310.00	89.4 AV			1.00 H	320	49.50	39.90
3	5350.00	48.8 PK	74.0	-25.2	1.00 H	320	8.90	39.90
4	5350.00	35.4 AV	54.0	-18.6	1.00 H	320	-4.50	39.90
5	10620.00	60.8 PK	74.0	-13.2	1.00 H	113	13.80	47.00
6	10620.00	48.9 AV	54.0	-5.1	1.00 H	113	1.90	47.00
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	*5310.00	102.3 PK			1.00 V	351	62.40	39.90
2	*5310.00	91.7 AV			1.00 V	351	51.80	39.90
3	5350.00	59.1 PK	74.0	-14.9	1.00 V	351	19.20	39.90
4	5350.00	41.4 AV	54.0	-12.6	1.00 V	351	1.50	39.90
5	10620.00	57.3 PK	74.0	-16.7	1.00 V	189	10.30	47.00
6	10620.00	44.9 AV	54.0	-9.1	1.00 V	189	-2.10	47.00

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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	63.3 PK	74.0	-10.7	1.00 H	305	23.20	40.10
2	5460.00	44.4 AV	54.0	-9.6	1.00 H	305	4.30	40.10
3	#5470.00	66.9 PK	68.3	-1.4	1.00 H	305	26.80	40.10
4	*5510.00	100.8 PK			1.00 H	305	60.60	40.20
5	*5510.00	89.9 AV			1.00 H	305	49.70	40.20
6	11020.00	58.3 PK	74.0	-15.7	1.00 H	214	10.90	47.40
7	11020.00	45.6 AV	54.0	-8.4	1.00 H	214	-1.80	47.40
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	5460.00	66.3 PK	74.0	-7.7	1.00 V	118	26.20	40.10
2	5460.00	47.2 AV	54.0	-6.8	1.00 V	118	7.10	40.10
3	#5470.00	66.9 PK	68.3	-1.4	1.00 V	118	26.80	40.10
4	*5510.00	103.7 PK			1.00 V	118	63.50	40.20
5	*5510.00	93.5 AV			1.00 V	118	53.30	40.20
6	7346.00	56.8 PK	74.0	-17.2	1.00 V	171	13.30	43.50
7	7346.00	49.0 AV	54.0	-5.0	1.00 V	171	5.50	43.50
8	11020.00	57.4 PK	74.0	-16.6	1.00 V	26	10.00	47.40
9	11020.00	45.1 AV	54.0	-8.9	1.00 V	26	-2.30	47.40

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 110	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%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	99.6 PK			1.00 H	128	59.40	40.20
2	*5550.00	89.4 AV			1.00 H	128	49.20	40.20
3	7400.00	57.3 PK	74.0	-16.7	1.00 H	355	13.70	43.60
4	7400.00	49.5 AV	54.0	-4.5	1.00 H	355	5.90	43.60
5	11100.00	61.3 PK	74.0	-12.7	1.01 H	258	13.70	47.60
6	11100.00	49.3 AV	54.0	-4.7	1.01 H	258	1.70	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	*5550.00	103.1 PK			1.00 V	173	62.90	40.20
2	*5550.00	93.6 AV			1.00 V	173	53.40	40.20
3	7400.00	55.8 PK	74.0	-18.2	1.00 V	172	12.20	43.60
4	7400.00	49.4 AV	54.0	-4.6	1.00 V	172	5.80	43.60
5	11100.00	58.5 PK	74.0	-15.5	1.00 V	36	10.90	47.60
6	11100.00	44.9 AV	54.0	-9.1	1.00 V	36	-2.70	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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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	100.0 PK			1.02 H	18	59.70	40.30
2	*5670.00	89.0 AV			1.02 H	18	48.70	40.30
3	#5725.00	52.4 PK	68.3	-15.9	1.00 H	18	12.00	40.40
4	11340.00	62.5 PK	74.0	-11.5	1.00 H	55	14.60	47.90
5	11340.00	48.6 AV	54.0	-5.4	1.00 H	55	0.70	47.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	104.0 PK			1.00 V	174	63.70	40.30
2	*5670.00	93.8 AV			1.00 V	174	53.50	40.30
3	#5725.00	56.1 PK	68.3	-12.2	1.00 V	174	15.70	40.40
4	7560.00	55.5 PK	74.0	-18.5	1.00 V	80	11.50	44.00
5	7560.00	47.5 AV	54.0	-6.5	1.00 V	80	3.50	44.00
6	11340.00	60.8 PK	74.0	-13.2	1.00 V	155	12.90	47.90
7	11340.00	48.2 AV	54.0	-5.8	1.00 V	155	0.30	47.90

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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: 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH	TESTED BY	Alan Wu

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	150.20	37.6 QP	43.5	-5.9	1.50 H	101	23.70	13.90
2	210.36	38.4 QP	43.5	-5.1	1.00 H	265	27.40	11.00
3	330.66	31.0 QP	46.0	-15.0	1.75 H	111	15.60	15.40
4	377.23	30.9 QP	46.0	-15.1	2.00 H	253	14.40	16.50
5	497.54	32.4 QP	46.0	-13.6	1.50 H	230	13.00	19.40
6	522.76	33.3 QP	46.0	-12.7	1.50 H	234	13.40	19.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	45.42	35.8 QP	40.0	-4.2	1.00 V	11	22.00	13.80
2	150.20	35.1 QP	43.5	-8.4	1.00 V	39	21.20	13.90
3	210.36	29.2 QP	43.5	-14.3	1.49 V	202	18.20	11.00
4	282.15	28.8 QP	46.0	-17.2	3.00 V	76	14.90	13.90
5	365.59	28.9 QP	46.0	-17.1	1.75 V	254	12.70	16.20
6	485.89	33.2 QP	46.0	-12.8	1.00 V	199	14.10	19.10

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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH	TESTED BY	Alan Wu

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	150.20	37.0 QP	43.5	-6.5	1.00 H	109	23.10	13.90
2	210.36	38.6 QP	43.5	-4.9	1.00 H	259	27.60	11.00
3	330.66	31.2 QP	46.0	-14.8	1.50 H	113	15.80	15.40
4	377.23	31.3 QP	46.0	-14.7	1.00 H	244	14.80	16.50
5	485.89	29.0 QP	46.0	-17.0	2.00 H	2	9.90	19.10
6	522.76	29.8 QP	46.0	-16.2	1.24 H	236	9.90	19.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	45.42	36.1 QP	40.0	-3.9	1.00 V	11	22.30	13.80
2	150.20	34.5 QP	43.5	-9.0	1.00 V	67	20.60	13.90
3	210.36	28.3 QP	43.5	-15.2	1.50 V	318	17.30	11.00
4	270.51	29.7 QP	46.0	-16.3	3.00 V	63	16.20	13.50
5	365.59	29.5 QP	46.0	-16.5	1.24 V	262	13.30	16.20
6	485.89	33.3 QP	46.0	-12.7	1.00 V	196	14.20	19.10

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.

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 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

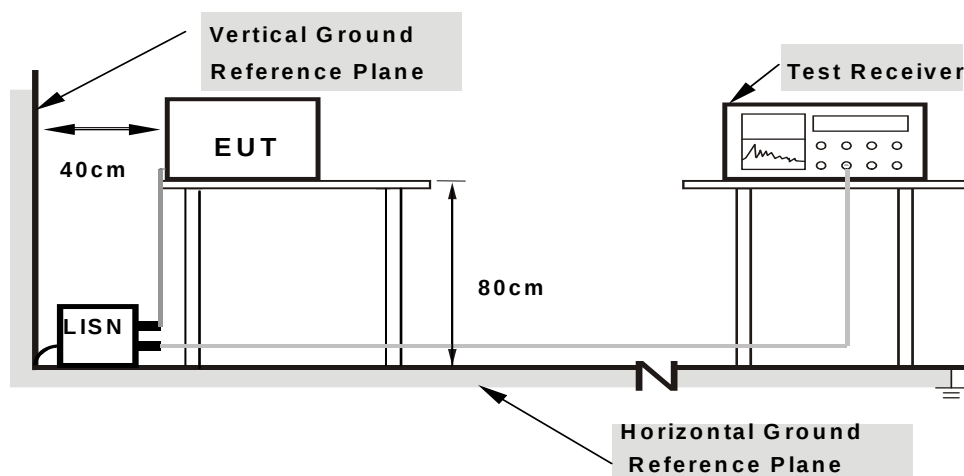
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

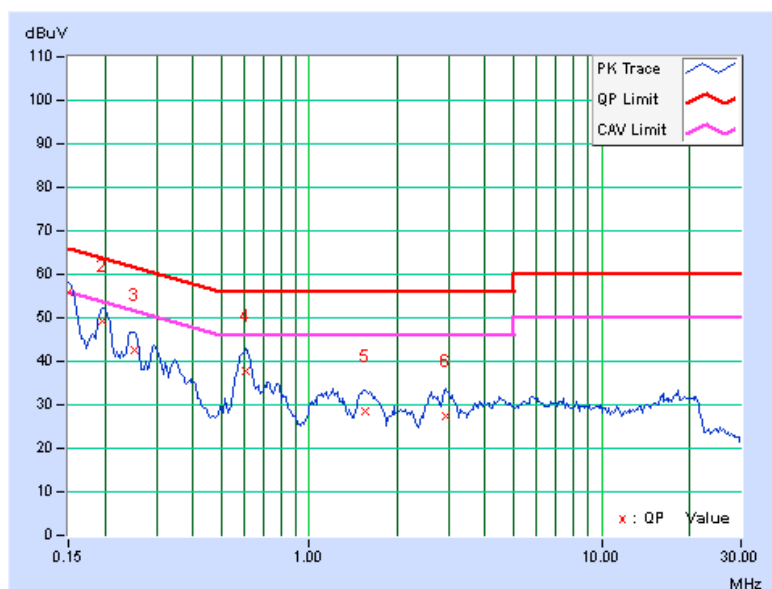
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 36		

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	0.16	55.60	44.13	55.76	44.29	66.00	56.00	-10.24	-11.71
2	0.19687	0.18	49.23	37.52	49.41	37.70	63.74	53.74	-14.33	-16.04
3	0.25156	0.18	42.49	31.01	42.67	31.19	61.71	51.71	-19.04	-20.52
4	0.60313	0.19	37.77	32.74	37.96	32.93	56.00	46.00	-18.04	-13.07
5	1.56250	0.26	28.39	22.77	28.65	23.03	56.00	46.00	-27.35	-22.97
6	2.92188	0.33	27.22	21.44	27.55	21.77	56.00	46.00	-28.45	-24.23

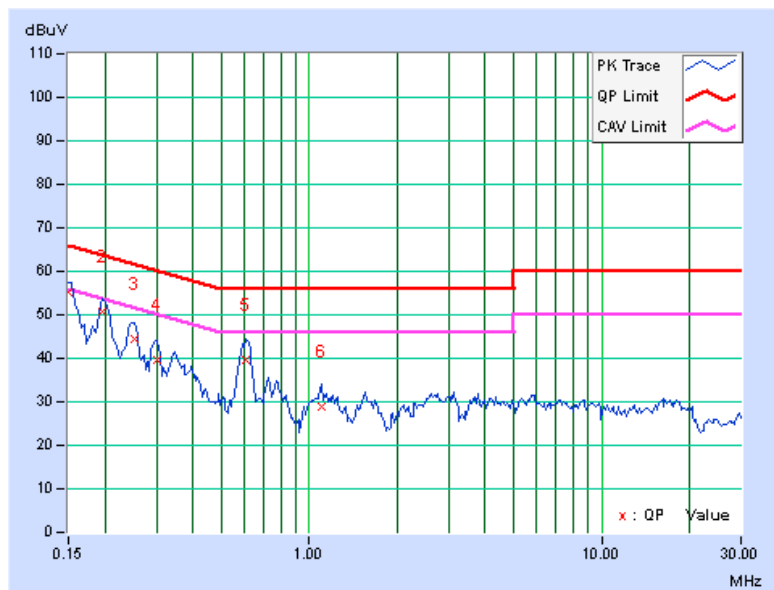
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. The emission levels of other frequencies were very low against the limit.
 3. Margin value = Emission level - Limit value
 4. Correction factor = Insertion loss + Cable loss
 5. Emission Level = Correction Factor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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 36		

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	0.14	55.18	44.96	55.32	45.10	66.00	56.00	-10.68	-10.90
2	0.19687	0.15	50.62	39.60	50.77	39.75	63.74	53.74	-12.97	-13.99
3	0.25156	0.16	44.14	34.12	44.30	34.28	61.71	51.71	-17.41	-17.43
4	0.30234	0.17	39.40	30.51	39.57	30.68	60.18	50.18	-20.61	-19.50
5	0.60703	0.19	39.42	34.59	39.61	34.78	56.00	46.00	-16.39	-11.22
6	1.10156	0.23	28.60	23.46	28.83	23.69	56.00	46.00	-27.17	-22.31

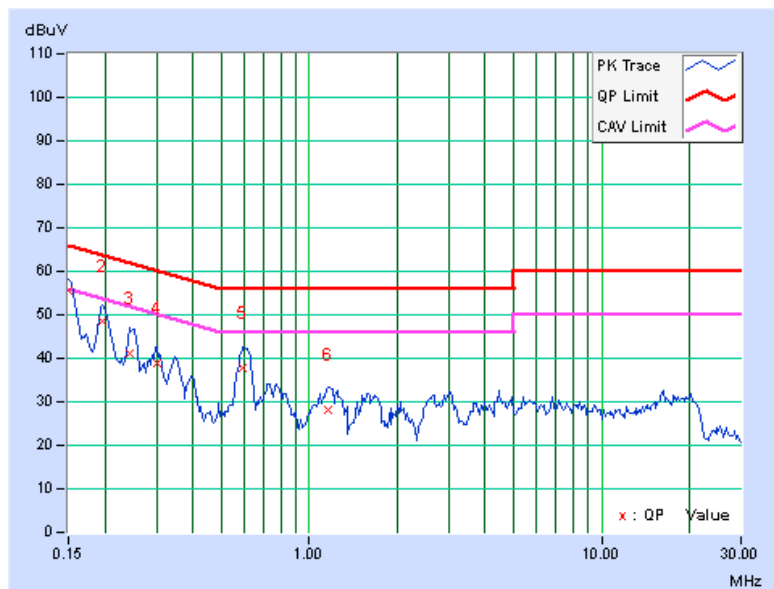
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 100		

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	55.56	44.19	55.71	44.34	66.00	56.00	-10.29	-11.66
2	0.19687	0.15	48.53	36.94	48.68	37.09	63.74	53.74	-15.06	-16.65
3	0.24375	0.15	41.12	28.69	41.27	28.84	61.97	51.97	-20.69	-23.12
4	0.30234	0.16	38.81	28.31	38.97	28.47	60.18	50.18	-21.21	-21.71
5	0.59531	0.18	37.42	32.49	37.60	32.67	56.00	46.00	-18.40	-13.33
6	1.16406	0.20	27.97	22.23	28.17	22.43	56.00	46.00	-27.83	-23.57

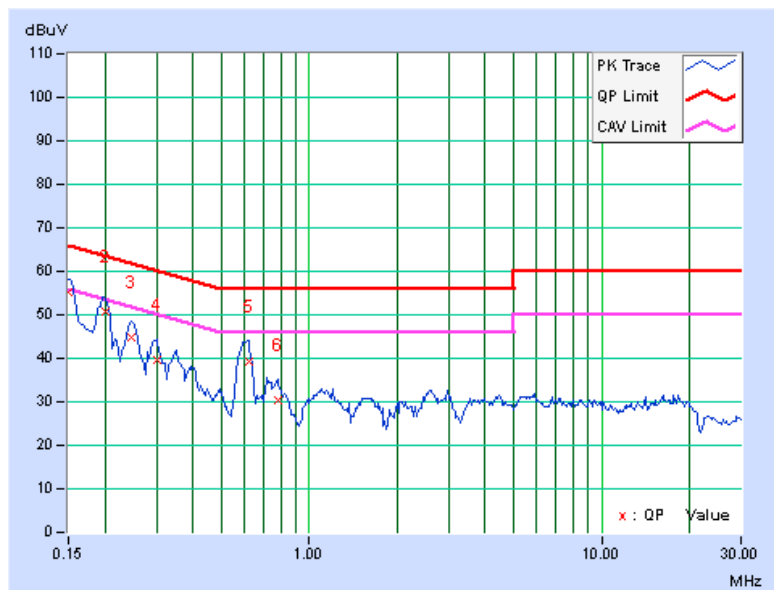
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. The emission levels of other frequencies were very low against the limit.
 3. Margin value = Emission level - Limit value
 4. Correction factor = Insertion loss + Cable loss
 5. Emission Level = Correction Factor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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 100		

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	0.14	55.22	45.00	55.36	45.14	66.00	56.00	-10.64	-10.86
2	0.20078	0.15	50.58	40.00	50.73	40.15	63.58	53.58	-12.85	-13.43
3	0.24766	0.16	44.70	34.91	44.86	35.07	61.84	51.84	-16.98	-16.77
4	0.30234	0.17	39.54	30.53	39.71	30.70	60.18	50.18	-20.47	-19.48
5	0.61875	0.19	38.99	34.43	39.18	34.62	56.00	46.00	-16.82	-11.38
6	0.78281	0.21	30.18	24.36	30.39	24.57	56.00	46.00	-25.61	-21.43

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



4.3 PEAK TRANSMIT POWER MEASUREMENT

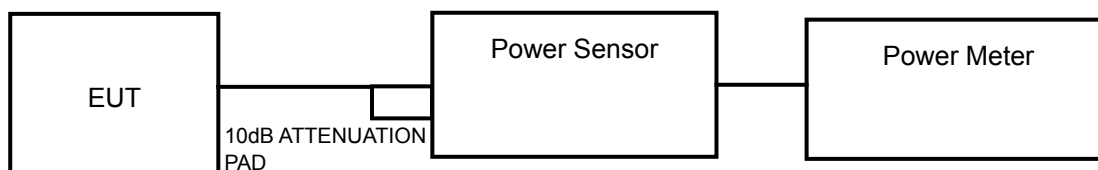
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

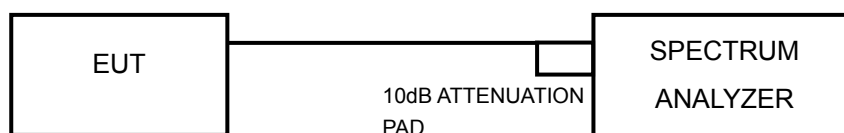
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

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

FOR 26dB BANDWIDTH

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	17.258	12.37	17	PASS
40	5200	15.241	11.83	17	PASS
48	5240	16.788	12.25	17	PASS
52	5260	16.520	12.18	24	PASS
60	5300	17.498	12.43	24	PASS
64	5320	17.219	12.36	24	PASS
100	5500	14.256	11.54	24	PASS
116	5580	12.618	11.01	24	PASS
140	5700	11.298	10.53	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	16.032	12.05	17	PASS
40	5200	15.066	11.78	17	PASS
48	5240	14.997	11.76	17	PASS
52	5260	14.723	11.68	24	PASS
60	5300	15.740	11.97	24	PASS
64	5320	14.997	11.76	24	PASS
100	5500	11.298	10.53	24	PASS
116	5580	10.116	10.05	24	PASS
140	5700	8.831	9.46	24	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	14.894	11.73	17	PASS
46	5230	15.066	11.78	17	PASS
54	5270	14.655	11.66	24	PASS
62	5310	15.488	11.90	24	PASS
102	5510	11.561	10.63	24	PASS
110	5550	11.092	10.45	24	PASS
134	5670	9.772	9.90	24	PASS

26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	20.16	PASS
40	5200	20.13	PASS
48	5240	20.15	PASS
52	5260	20.12	PASS
60	5300	20.16	PASS
64	5320	20.75	PASS
100	5500	34.69	PASS
116	5580	35.74	PASS
140	5700	34.73	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	20.53	PASS
40	5200	20.57	PASS
48	5240	20.56	PASS
52	5260	20.50	PASS
60	5300	20.65	PASS
64	5320	20.60	PASS
100	5500	22.71	PASS
116	5580	33.90	PASS
140	5700	33.28	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	42.00	PASS
46	5230	42.08	PASS
54	5270	42.08	PASS
62	5310	42.22	PASS
102	5510	68.63	PASS
110	5550	68.63	PASS
134	5670	72.46	PASS

EUT MAXIMUM CONDUCTED POWER

802.11a

FREQUENCY BAND (MHz)	MAX. POWER		MIN. POWER	
	OUTPUT POWER(dBm)	OUTPUT POWER(mW)	OUTPUT POWER(dBm)	OUTPUT POWER(mW)
5250~5350	12.43	17.498	6.43	4.395
5470~5725	11.54	14.256	5.54	3.581

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

802.11n (20MHz)

FREQUENCY BAND (MHz)	MAX. POWER		MIN. POWER	
	OUTPUT POWER(dBm)	OUTPUT POWER(mW)	OUTPUT POWER(dBm)	OUTPUT POWER(mW)
5250~5350	11.97	15.740	5.97	3.954
5470~5725	10.53	11.298	4.53	2.838

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

802.11n (40MHz)

FREQUENCY BAND (MHz)	MAX. POWER		MIN. POWER	
	OUTPUT POWER(dBm)	OUTPUT POWER(mW)	OUTPUT POWER(dBm)	OUTPUT POWER(mW)
5250~5350	11.90	15.488	5.9	3.890
5470~5725	10.63	11.561	4.63	2.904

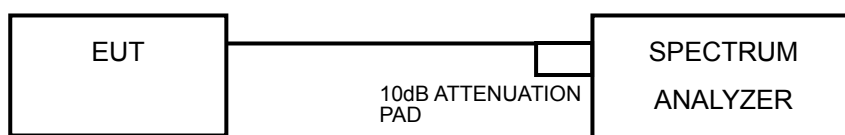
NOTE: Manufacturer provides Transmit Power Control description to meet this requirement.

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

Using method SA-1

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

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.32	4	PASS
40	5200	3.00	4	PASS
48	5240	3.02	4	PASS
52	5260	3.20	11	PASS
60	5300	3.26	11	PASS
64	5320	3.04	11	PASS
100	5500	3.16	11	PASS
116	5580	3.27	11	PASS
140	5700	3.11	11	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	1.69	4	PASS
40	5200	1.99	4	PASS
48	5240	1.66	4	PASS
52	5260	2.07	11	PASS
60	5300	2.17	11	PASS
64	5320	1.20	11	PASS
100	5500	0.85	11	PASS
116	5580	1.49	11	PASS
140	5700	1.97	11	PASS



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802.11n (40MHz)

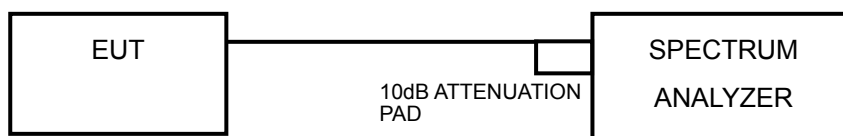
CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	42.00	4	PASS
46	5230	42.08	4	PASS
54	5270	42.08	11	PASS
62	5310	42.22	11	PASS
102	5510	68.63	11	PASS
110	5550	68.63	11	PASS
134	5670	72.46	11	PASS

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.

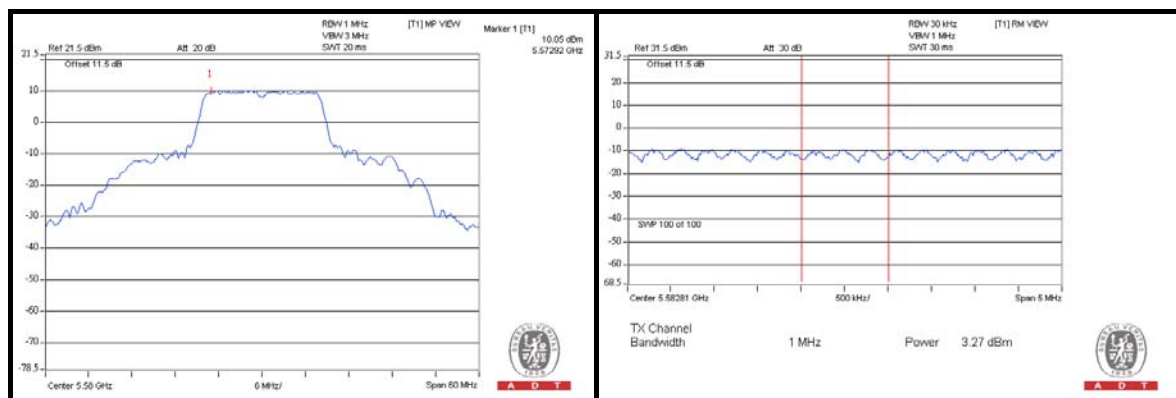
4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

4.5.7 TEST RESULTS

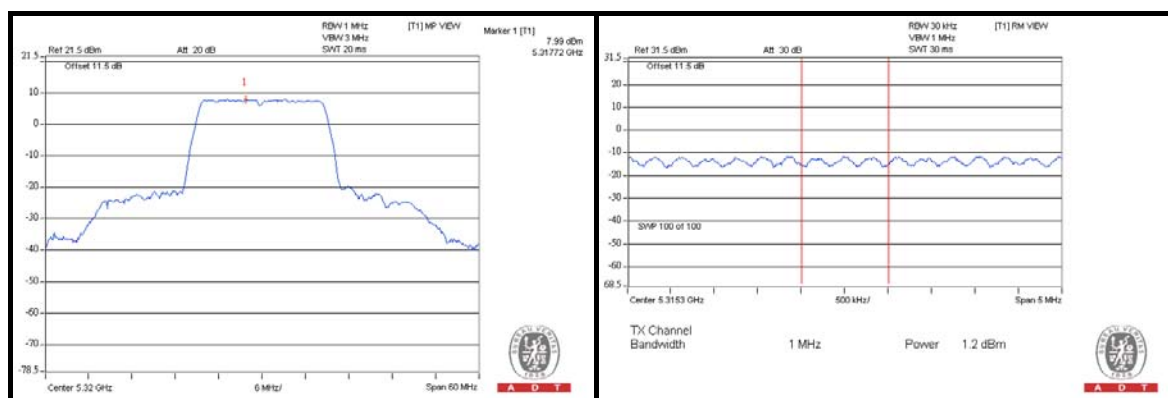
802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	9.76	3.32	6.44	13	PASS
40	5200	9.52	3.00	6.52	13	PASS
48	5240	9.63	3.02	6.61	13	PASS
52	5260	9.60	3.20	6.40	13	PASS
60	5300	9.69	3.26	6.43	13	PASS
64	5320	9.40	3.04	6.36	13	PASS
100	5500	9.55	3.16	6.39	13	PASS
116	5580	10.05	3.27	6.78	13	PASS
140	5700	9.50	3.11	6.39	13	PASS



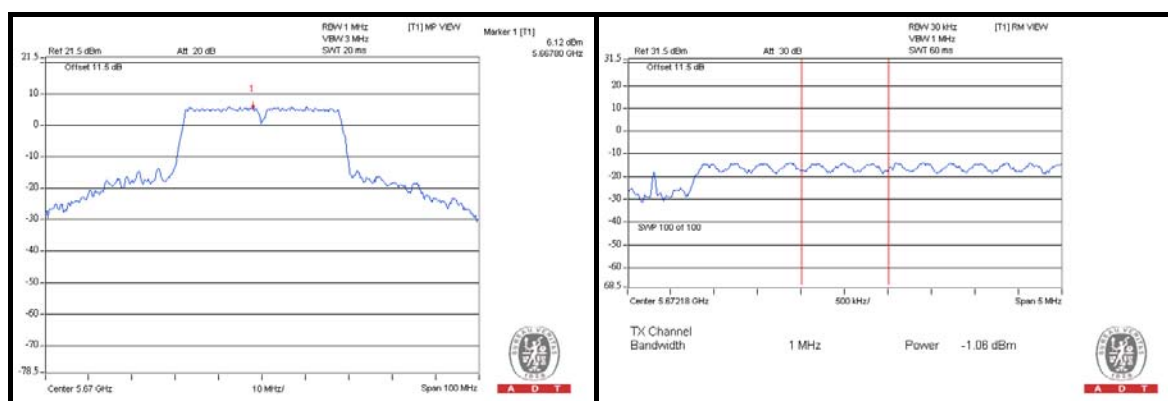
802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	8.47	1.69	6.78	13	PASS
40	5200	8.74	1.99	6.75	13	PASS
48	5240	8.27	1.66	6.61	13	PASS
52	5260	8.74	2.07	6.67	13	PASS
60	5300	8.90	2.17	6.73	13	PASS
64	5320	7.99	1.20	6.79	13	PASS
100	5500	7.55	0.85	6.70	13	PASS
116	5580	8.17	1.49	6.68	13	PASS
140	5700	8.62	1.97	6.65	13	PASS



802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
38	5190	5.86	-1.13	6.99	13	PASS
46	5230	6.18	-0.83	7.01	13	PASS
54	5270	6.00	-0.98	6.98	13	PASS
62	5310	6.19	-0.81	7.00	13	PASS
102	5510	6.37	-0.70	7.07	13	PASS
110	5550	6.16	-0.93	7.09	13	PASS
134	5670	6.12	-1.06	7.18	13	PASS

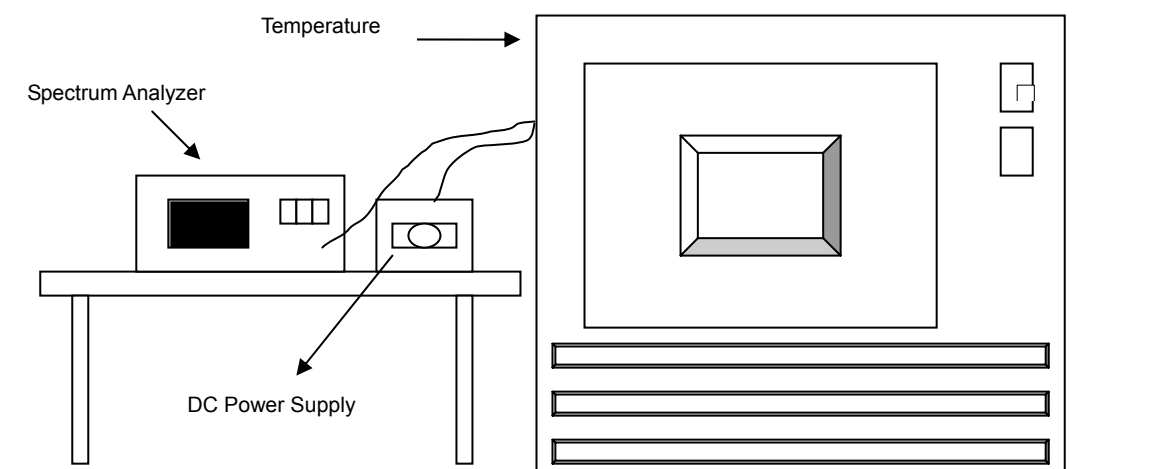


4.6 FREQUENCY STABILITY

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 DC 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: 5300MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
55	120	5299.9816	-0.0003	5299.9943	-0.0001	5299.9777	-0.0004	5299.996	-0.0001
50	120	5299.9909	-0.0002	5299.9948	-0.0001	5299.9906	-0.0002	5299.9949	-0.0001
40	120	5300.0149	0.0003	5300.0121	0.0002	5300.0154	0.0003	5300.0094	0.0002
30	120	5300.0108	0.0002	5300.0143	0.0003	5300.0121	0.0002	5300.0094	0.0002
20	120	5299.9736	-0.0005	5299.9762	-0.0004	5299.9761	-0.0005	5299.9771	-0.0004
10	120	5300.0071	0.0001	5300.0121	0.0002	5300.0133	0.0003	5300.008	0.0002
0	120	5300.0062	0.0001	5300.0079	0.0001	5300.0097	0.0002	5300.0073	0.0001
-10	120	5300.0223	0.0004	5300.018	0.0003	5300.0182	0.0003	5300.0185	0.0003
-20	120	5300.0100	0.0002	5300.0098	0.0002	5300.0092	0.0002	5300.0046	0.0001

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5300MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	120	5299.9733	-0.0005	5299.9759	-0.0005	5299.9767	-0.0004	5299.9775	-0.0004
	120	5299.9736	-0.0005	5299.9762	-0.0004	5299.9761	-0.0005	5299.9771	-0.0004
	120	5299.9743	-0.0005	5299.9767	-0.0004	5299.9769	-0.0004	5299.9784	-0.0004

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:

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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---