FCC TEST REPORT (15.407)
(WLAN)

REPORT NO.:	RF111017D14-3
MODEL NO.:	ICEFIRE-T10A
FCC ID:	RFHICEFIRE-T10A
RECEIVED:	Feb. 1, 2012
TESTED:	Feb. 2 ~ 29, 2012
ISSUED:	Mar. 7, 2012

APPLICANT:	ICP Electronics, Inc.
ADDRESS:	3F., No.22, Zhongxing Rd., Xizhi Dist., New Taipei City 221, Taiwan

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF111017D14-3	Original release	Mar. 7, 2012

1. CERTIFICATION

PRODUCT:	TABLET PC
BRAND NAME:	iEi
MODEL NO.:	ICEFIRE-T10A
APPLICANT:	ICP Electronics, Inc.
TESTED:	Feb. 2 ~ 29, 2012
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 15, Subpart E (Section 15.407)**
	ANSI C63.10-2009

The above equipment 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 : Annie Chang , **DATE:** Mar. 7, 2012
(Annie Chang / Senior Specialist)

APPROVED BY : Ken Liu , **DATE:** Mar. 7, 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 AND LIMIT**	**RESULT**	**REMARK**
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -17.35dB at 0.150MHz.
15.407(b/1/2/3) (b)(5)(6)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit. Minimum passing margin is -6.0dB at 62.48 & 5010MHz.
15.407(a/1/2)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

2.1 MEASUREMENT UNCERTAINTY

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

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz ~ 30MHz	2.41 dB
Radiated emissions	30MHz ~ 1GHz	3.87 dB
	Above 1GHz	3.36 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	TABLET PC
MODEL NO.	ICEFIRE-T10A
FCC ID	RFHICEFIRE-T10A
POWER SUPPLY	DC 11.1V (from battery) or DC 12V (from AC 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 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	16.6mW for 5180 ~ 5240MHz 52.5mW for 5260 ~ 5320MHz 55.0mW for 5500 ~ 5700MHz
ANTENNA TYPE	Dipole antenna with 2dBi gain
ANTENNA CONNECTOR	NA
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter, Battery, Docking

NOTE:

1. The EUT has following function:

Function		**Test Standard**	**Reference Report**
WiFi Module (Brand: AzureWave, Model: AW-NE773)	**WLAN 802.11an** **(5180~5320MHz, 5500~5700MHz)**	FCC Part 15, Subpart E (Section 15.407)	RF111017D14-3
	WLAN 802.11a **(For DFS report)** **(5260~5320MHz, 5500~5700MHz)**		RF111017D14-4
	WLAN 802.11an **(5745~5825 MHz)**	FCC Part 15, Subpart C (Section 15.247)	RF111017D14-2
	WLAN 802.11bgn		
Bluetooth Module (Brand: AzureWave, Model: AW-BT270)		FCC Part 15, Subpart C (Section 15.247)	RF111017D14-1
RFID (Brand: ICP, Model: ICEFIRE-RFID-TI)		FCC Part 15, Subpart C (Section 15.225)	RF111017D14

2. The EUT consumes power from an AC adapter, docking or battery, as follows:

Item	Brand	Model No.	Spec.
Adapter	PROTEK POWER	PMP60-12-B2	AC I/P: 100-240, 47-63Hz, 1.22-0.68A DC O/P: 11-13V, 5.46A Non-shielded AC 3-pin (1.8m) Non-shielded DC (1.3m) with one ferrite core
Adapter of docking	PROTEK POWER	PMP90-13-2	AC I/P: 100-240, 47-63Hz, 1.06-0.45A DC O/P: 19V, 4.74A Non-shielded AC 3-pin (1.8m) Non-shielded DC (1.3m) with one ferrite core
Battery	-	-	11.1Vdc

3. For Spurious Emissions test, following modes were pre-tested:

u EUT + Adapter
u EUT + Docking + Adapter
u EUT only
The worst emission level was found when the EUT was tested under **EUT + Docking + Adapter** mode, therefore, only its test data was recorded in this report.

4. The frequency bands used in this EUT are listed as follows:

Frequency Band (MHz)	2412~2462	5180~5320	5500~5700	5745~5825
802.11b	√	-	-	-
802.11g	√	-	-	-
802.11a	-	√	√	√
802.11n (20MHz)	√	√	√	√
802.11n (40MHz)	√	√	√	√

5. The EUT incorporates a SISO function. Physically, 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

6. 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):

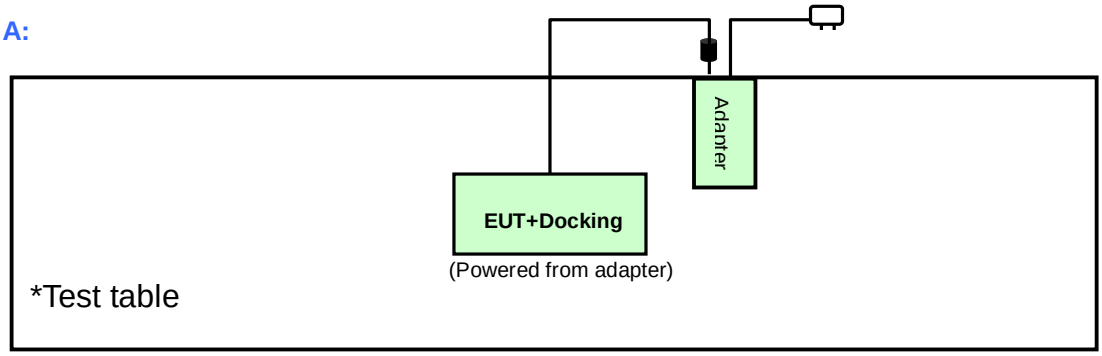
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

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

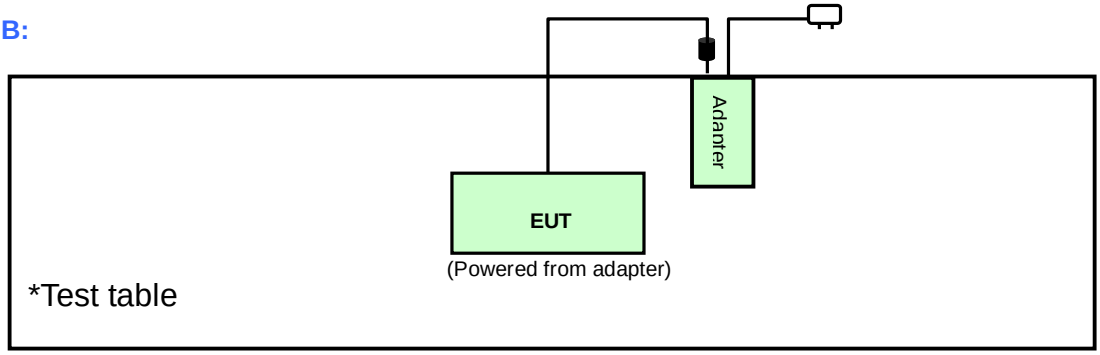
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	134	5670 MHz
110	5550 MHz		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Mode A:



Mode B:



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE³1G	RE<1G	PLC	APCM	
A	√	√	√	√	EUT + Docking + Adapter
B	-	-	√	-	EUT + Adapter

Where **RE³1G:** 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, XYZ Axis 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)	AXIS
A	802.11a	5180-5320	36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.0	Z
A	802.11n (20MHz)		36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.5	Z
A	802.11n (40MHz)		38 to 62	38, 46, 54, 62	OFDM	BPSK	13.5	Z
A	802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6.0	Z
A	802.11n (20MHz)		100 to 140	100, 116, 132, 140	OFDM	BPSK	6.5	Z
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5	Z

RADIATED EMISSION TEST (BELOW 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, 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)	AXIS
A	802.11a	5180-5320	36 to 64	36	OFDM	BPSK	6.0	Z
A	802.11a	5500-5700	100 to 140	140	OFDM	BPSK	6.0	Z

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

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

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ 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	5180-5320	36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.5
A	802.11n (40MHz)		38 to 62	38, 46, 54, 62	OFDM	BPSK	13.5
A	802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 132, 140	OFDM	BPSK	6.5
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	EUT CONFIGURE MODE	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
PLC	A & B	18deg. C, 75% RH	120Vac, 60Hz	Chad Lee
RE≥1G	A	18deg. C, 71% RH	120Vac, 60Hz	Nick Chen
RE<1G	A	18deg. C, 71% RH	120Vac, 60Hz	Nick Chen
APCM	A	14deg. C, 78% RH	120Vac, 60Hz	Jun Wu

3.3 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)

ANSI C63.10-2009

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

NOTE: The product has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together without other necessary accessories or support units.

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 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 0.50 MHz.

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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100276	Jan. 04, 2012	Jan. 03, 2013
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	100219	Nov. 24, 2011	Nov. 23, 2012
LISN With Adapter (for EUT)	AD10	C10Ada-001	Nov. 24, 2011	Nov. 23, 2012
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100218	Dec. 08, 2011	Dec. 07, 2012
Software	ADT_Cond_V7.3.7	NA	NA	NA
Software	ADT_ISN_V7.3.7	NA	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C10.01	Feb. 20, 2012	Feb. 19, 2013
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010773	Feb. 22, 2012	Feb. 21, 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 test was performed in Shielded Room No. 10.

3. The VCCI Site Registration No. C-1852.

4.1.3 TEST PROCEDURES

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

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

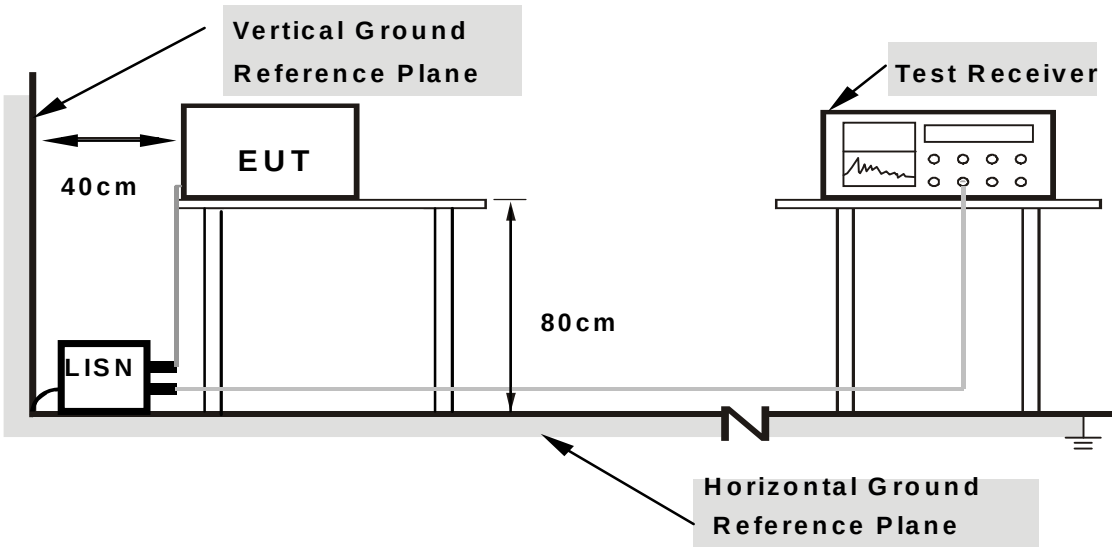
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 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).

4.1.6 EUT OPERATING CONDITIONS

a. Turn on the power of all equipment.
b. Connected the EUT with AC adapter or docking placed on testing table.
c. EUT ran a test program (provided by manufacture) to enable.
d. Set the EUT under transmission condition continuously at specific channel frequency.

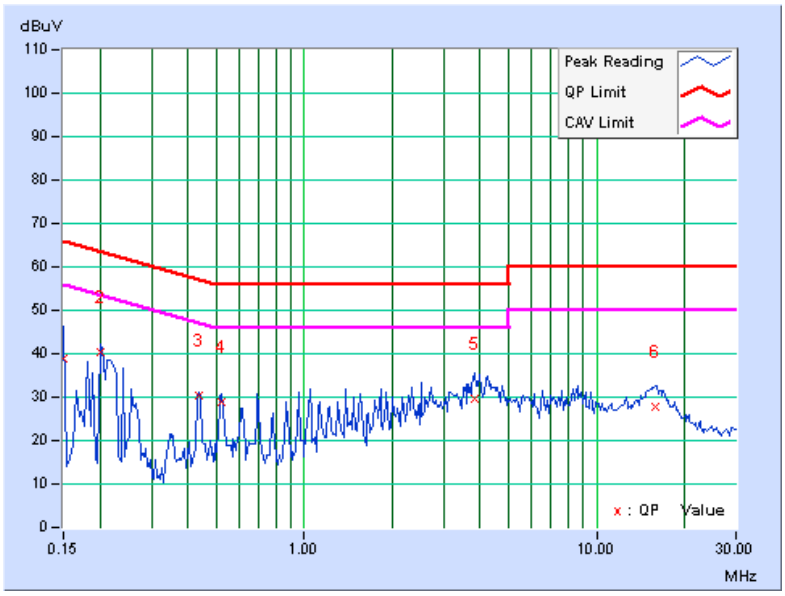
4.1.7 TEST RESULTS

CONDUCTED WORST CASE DATA: 802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	36	TEST MODE	A

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.13	38.92	-	39.05	-	66.00	56.00	-26.95	-
2	0.201	0.13	40.09	-	40.22	-	63.58	53.58	-23.36	-
3	0.437	0.21	30.22	-	30.43	-	57.13	47.13	-26.69	-
4	0.522	0.22	28.58	-	28.80	-	56.00	46.00	-27.20	-
5	3.827	0.44	29.35	-	29.79	-	56.00	46.00	-26.21	-
6	15.885	1.05	26.89	-	27.94	-	60.00	50.00	-32.06	-

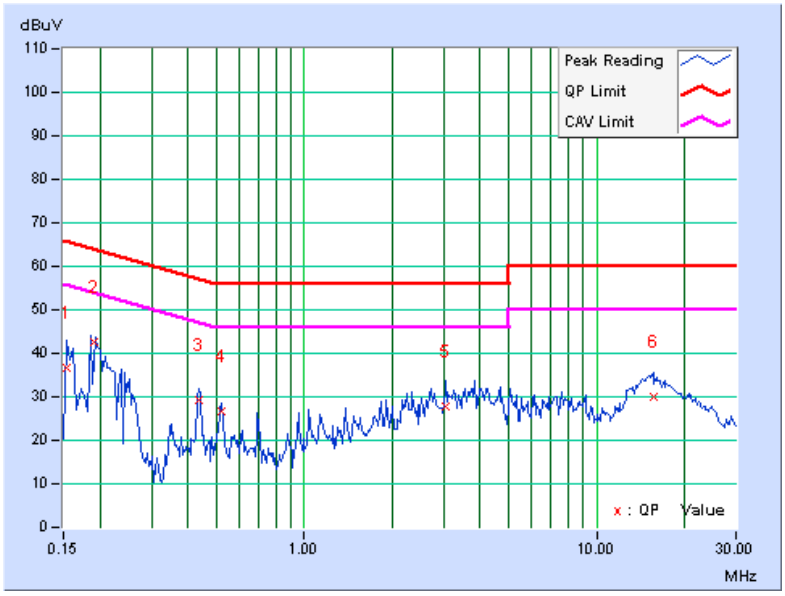
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



PHASE	Line 2	**6dB BANDWIDTH**	9kHz
CHANNEL	36	**TEST MODE**	A

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		**Factor**	**[dB (uV)]**		**[dB (uV)]**		**[dB (uV)]**		**(dB)**	
	[MHz]	**(dB)**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.154	0.13	36.64	-	36.77	-	65.79	55.79	-29.02	-
2	0.192	0.13	42.30	-	42.43	-	63.97	53.97	-21.54	-
3	0.434	0.21	28.88	-	29.09	-	57.18	47.18	-28.09	-
4	0.520	0.22	26.37	-	26.59	-	56.00	46.00	-29.41	-
5	3.044	0.36	27.60	-	27.96	-	56.00	46.00	-28.04	-
6	15.608	0.80	29.17	-	29.97	-	60.00	50.00	-30.03	-

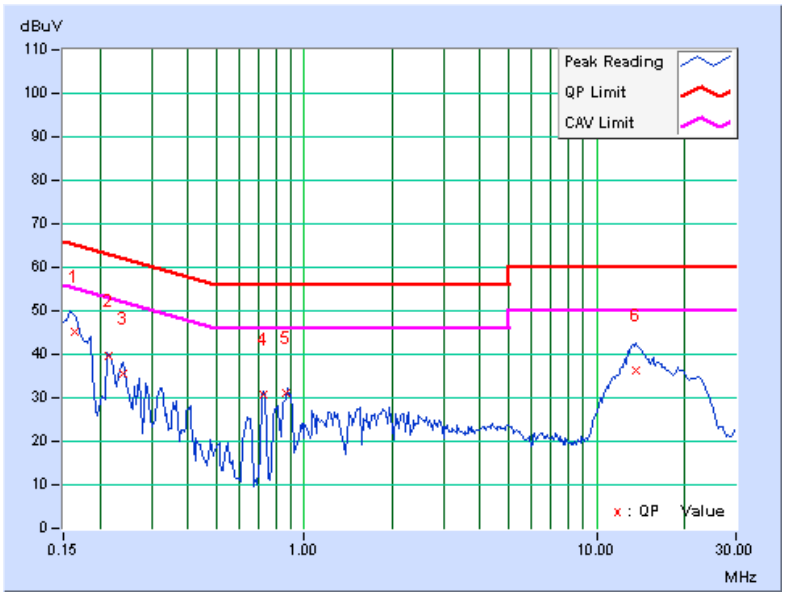
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



PHASE	Line 1	**6dB BANDWIDTH**	9kHz
CHANNEL	36	**TEST MODE**	B

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		**Factor**	**[dB (uV)]**		**[dB (uV)]**		**[dB (uV)]**		**(dB)**	
	[MHz]	**(dB)**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.163	0.13	45.04	-	45.17	-	65.31	55.31	-20.14	-
2	0.215	0.14	39.41	-	39.55	-	63.01	53.01	-23.46	-
3	0.240	0.15	35.38	-	35.53	-	62.10	52.10	-26.58	-
4	0.726	0.23	30.41	-	30.64	-	56.00	46.00	-25.36	-
5	0.871	0.23	30.83	-	31.06	-	56.00	46.00	-24.94	-
6	13.695	0.93	35.49	-	36.42	-	60.00	50.00	-23.58	-

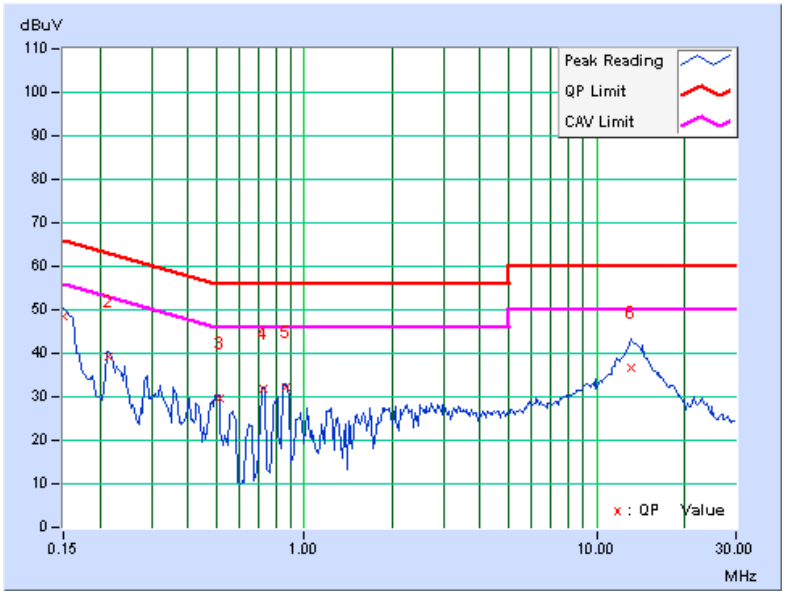
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



PHASE	Line 2	**6dB BANDWIDTH**	9kHz
CHANNEL	36	**TEST MODE**	B

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		**Factor**	**[dB (uV)]**		**[dB (uV)]**		**[dB (uV)]**		**(dB)**	
	[MHz]	**(dB)**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	**0.150**	**0.13**	**48.52**	**-**	**48.65**	**-**	**66.00**	**56.00**	**-17.35**	**-**
2	0.215	0.14	39.21	-	39.35	-	62.99	52.99	-23.65	-
3	0.512	0.22	29.39	-	29.61	-	56.00	46.00	-26.39	-
4	0.729	0.23	31.44	-	31.67	-	56.00	46.00	-24.33	-
5	0.864	0.23	31.94	-	32.17	-	56.00	46.00	-23.83	-
6	13.197	0.72	35.83	-	36.55	-	60.00	50.00	-23.45	-

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



4.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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. As shown in 15.35(b), 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.

4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

FREQUENCIES (MHz)	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m) *NOTE 3
	PK	PK
5150 ~ 5350	-27	68.3
5470 ~ 5725	-27	68.3

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

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

4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Mar. 04, 2011	Mar. 03, 2012
HP Preamplifier	8449B	3008A01201	Mar. 04, 2011	Mar. 03, 2012
Agilent Spectrum Analyzer	E4446A	MY46180403	Jun. 22, 2011	Jun. 21, 2012
ROHDE & SCHWARZ Test Receiver	ESCS 30	838251/021	Oct. 14, 2011	Oct. 13, 2012
Schwarzbeck Antenna	VULB 9168	137	Apr. 12, 2011	Apr. 11, 2012
Schwarzbeck Antenna	VHBA 9123	480	May 06, 2011	May 05, 2012
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	ADT_Radiated_V 7.6.15.9.2	NA	NA	NA
SUHNER RF cable	SF102	CABLE-CH6	Aug. 19, 2011	Aug. 18, 2012
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	May 16, 2011	May 15, 2012
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
Anritsu Power Sensor	MA2411B	0738404	Apr. 26, 2011	Apr. 25, 2012
Anritsu Power Meter	ML2495A	0842014	Apr. 26, 2011	Apr. 25, 2012
Temperature & Humidity Chamber	MHU-225AU	920409	May 09, 2011	May 08, 2012

NOTE: 1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Chamber No. 6.
4. The Industry Canada Reference No. IC 7450E-6.
5. The FCC Site Registration No. is 447212.

4.2.4 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 camber. 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.

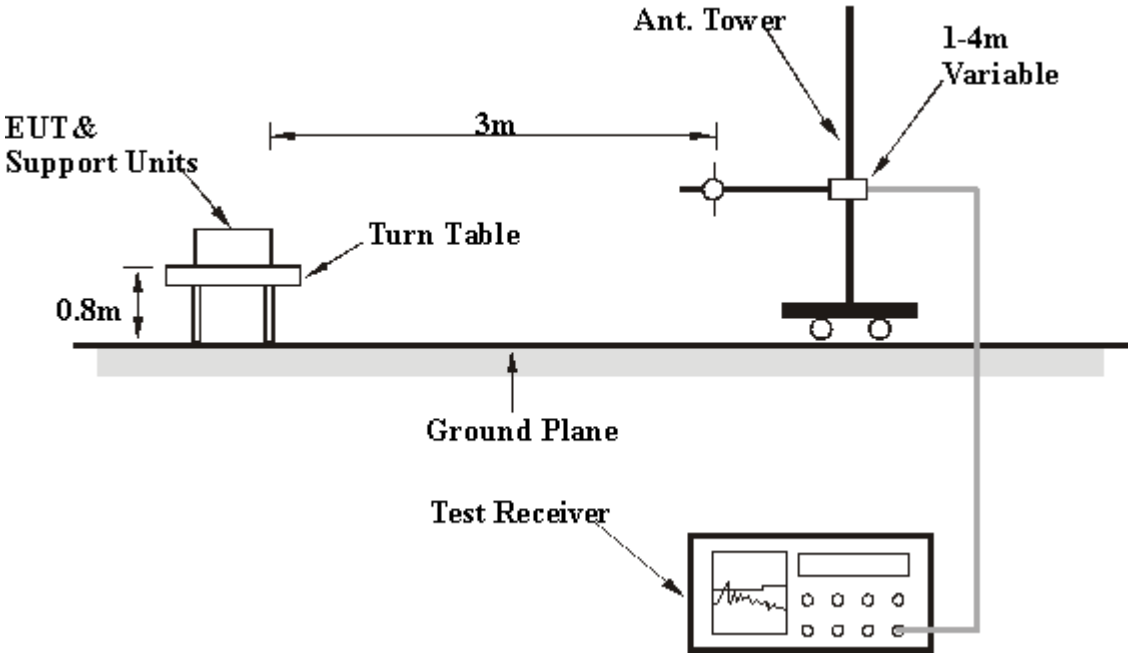
NOTE:

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.

4.2.5 DEVIATION FROM TEST STANDARD

No deviation.

4.2.6 TEST SETUP



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

4.2.7 EUT OPERATING CONDITION

Same as item 4.1.6.

4.2.8 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	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	45.3 PK	74.0	-28.7	1.04 H	250	7.95	37.37
2	5150.00	32.5 AV	54.0	-21.5	1.04 H	250	-4.87	37.37
3	*5180.00	84.5 PK			1.04 H	250	47.11	37.41
4	*5180.00	73.9 AV			1.04 H	250	36.45	37.41
5	#10360.00	56.3 PK	68.3	-12.0	1.00 H	59	9.06	47.25
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	44.4 PK	74.0	-29.6	1.08 V	155	7.00	37.37
2	5150.00	31.9 AV	54.0	-22.2	1.08 V	155	-5.52	37.37
3	*5180.00	84.0 PK			1.08 V	155	46.58	37.41
4	*5180.00	73.2 AV			1.08 V	155	35.75	37.41
5	#10360.00	56.2 PK	68.3	-12.1	1.01 V	163	8.94	47.25

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	86.1 PK			1.00 H	249	48.63	37.43
2	*5200.00	75.4 AV			1.00 H	249	37.95	37.43
3	#10400.00	56.4 PK	68.3	-11.9	1.00 H	64	9.10	47.31
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	85.4 PK			1.18 V	154	48.01	37.43
2	*5200.00	74.9 AV			1.18 V	154	37.50	37.43
3	#10400.00	56.1 PK	68.3	-12.2	1.00 V	193	8.77	47.31

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	85.6 PK			1.00 H	247	48.11	37.48
2	*5240.00	75.6 AV			1.00 H	247	38.10	37.48
3	5350.00	46.1 PK	74.0	-27.9	1.00 H	247	8.48	37.62
4	5350.00	32.8 AV	54.0	-21.2	1.00 H	247	-4.78	37.62
5	#10480.00	56.2 PK	68.3	-12.1	1.00 H	164	8.73	47.49
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	84.0 PK			1.08 V	159	46.49	37.48
2	*5240.00	73.8 AV			1.08 V	159	36.29	37.48
3	5350.00	46.0 PK	74.0	-28.0	1.08 V	159	8.41	37.62
4	5350.00	32.6 AV	54.0	-21.5	1.08 V	159	-5.07	37.62
5	#10480.00	56.1 PK	68.3	-12.2	1.00 V	154	8.59	47.49

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	52.1 PK	74.0	-21.9	1.00 H	248	14.75	37.37
2	5150.00	39.2 AV	54.0	-14.9	1.00 H	248	1.78	37.37
3	*5260.00	89.5 PK			1.00 H	248	52.02	37.51
4	*5260.00	79.1 AV			1.00 H	248	41.55	37.51
5	#10520.00	56.4 PK	68.3	-11.9	1.00 H	104	8.88	47.56
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	50.9 PK	74.0	-23.1	1.17 V	155	13.52	37.37
2	5150.00	38.0 AV	54.0	-16.0	1.17 V	155	0.66	37.37
3	*5260.00	88.0 PK			1.17 V	155	50.47	37.51
4	*5260.00	76.8 AV			1.17 V	155	39.30	37.51
5	#10520.00	56.1 PK	68.3	-12.2	1.00 V	139	8.57	47.56

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	89.4 PK			1.00 H	209	51.83	37.56
2	*5300.00	78.9 AV			1.00 H	209	41.35	37.56
3	10600.00	56.3 PK	74.0	-17.7	1.00 H	64	8.59	47.69
4	10600.00	42.4 AV	54.0	-11.6	1.00 H	64	-5.30	47.69
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	88.6 PK			1.00 V	179	50.99	37.56
2	*5300.00	77.7 AV			1.00 V	179	40.12	37.56
3	10600.00	56.1 PK	74.0	-17.9	1.02 V	155	8.38	47.69
4	10600.00	42.1 AV	54.0	-11.9	1.02 V	155	-5.58	47.69

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 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	87.4 PK			1.00 H	287	49.81	37.58
2	*5320.00	76.7 AV			1.00 H	287	39.10	37.58
3	5350.00	52.6 PK	74.0	-21.4	1.00 H	287	14.97	37.62
4	5350.00	37.9 AV	54.0	-16.1	1.00 H	287	0.29	37.62
5	10640.00	56.3 PK	74.0	-17.7	1.01 H	66	8.54	47.75
6	10640.00	42.5 AV	54.0	-11.5	1.01 H	66	-5.27	47.75
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	87.0 PK			1.00 V	207	49.40	37.58
2	*5320.00	76.0 AV			1.00 V	207	38.45	37.58
3	5350.00	49.8 PK	74.0	-24.2	1.00 V	207	12.19	37.62
4	5350.00	36.7 AV	54.0	-17.3	1.00 V	207	-0.94	37.62
5	10640.00	56.1 PK	74.0	-18.0	1.02 V	221	8.30	47.75
6	10640.00	42.1 AV	54.0	-11.9	1.02 V	221	-5.62	47.75

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	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	47.8 PK	74.0	-26.2	1.11 H	189	9.93	37.86
2	5460.00	37.1 AV	54.0	-16.9	1.11 H	189	-0.77	37.86
3	#5470.00	49.0 PK	68.3	-19.3	1.11 H	189	11.13	37.89
4	*5500.00	88.7 PK			1.11 H	189	50.71	37.98
5	*5500.00	78.4 AV			1.11 H	189	40.44	37.98
6	11000.00	56.2 PK	74.0	-17.8	1.02 H	53	7.83	48.39
7	11000.00	42.4 AV	54.0	-11.7	1.02 H	53	-6.04	48.39
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	46.7 PK	74.0	-27.3	1.05 V	167	8.82	37.86
2	5460.00	36.0 AV	54.0	-18.0	1.05 V	167	-1.83	37.86
3	#5470.00	47.8 PK	68.3	-20.5	1.05 V	167	9.92	37.89
4	*5500.00	87.9 PK			1.05 V	167	49.88	37.98
5	*5500.00	77.2 AV			1.05 V	167	39.20	37.98
6	11000.00	56.1 PK	74.0	-17.9	1.00 V	157	7.74	48.39
7	11000.00	42.2 AV	54.0	-11.9	1.00 V	157	-6.24	48.39

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

6. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	88.4 PK			1.00 H	271	50.27	38.11
2	*5580.00	78.2 AV			1.00 H	271	40.06	38.11
3	11160.00	56.3 PK	74.0	-17.7	1.00 H	97	7.99	48.28
4	11160.00	42.3 AV	54.0	-11.7	1.00 H	97	-5.98	48.28
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	87.8 PK			1.01 V	224	49.71	38.11
2	*5580.00	77.9 AV			1.01 V	224	39.78	38.11
3	11160.00	56.0 PK	74.0	-18.0	1.02 V	177	7.73	48.28
4	11160.00	41.7 AV	54.0	-12.3	1.02 V	177	-6.56	48.28

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 132	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	89.1 PK			1.00 H	244	50.90	38.22
2	*5660.00	79.1 AV			1.00 H	244	40.86	38.22
3	11320.00	56.5 PK	74.0	-17.5	1.00 H	74	8.17	48.31
4	11320.00	42.6 AV	54.0	-11.4	1.00 H	74	-5.72	48.31
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	*5660.00	88.2 PK			1.02 V	238	50.00	38.22
2	*5660.00	78.2 AV			1.02 V	238	39.93	38.22
3	11320.00	56.2 PK	74.0	-17.8	1.00 V	151	7.90	48.31
4	11320.00	42.3 AV	54.0	-11.7	1.00 V	151	-6.03	48.31

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	88.7 PK			1.01 H	241	50.46	38.27
2	*5700.00	78.5 AV			1.01 H	241	40.21	38.27
3	#5725.00	51.6 PK	68.3	-22.4	1.01 H	241	13.31	38.31
4	11400.00	56.2 PK	74.0	-17.8	1.04 H	285	7.95	48.27
5	11400.00	42.3 AV	54.0	-11.7	1.04 H	285	-5.96	48.27
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	87.9 PK			1.00 V	150	49.60	38.27
2	*5700.00	77.0 AV			1.00 V	150	38.71	38.27
3	#5725.00	50.5 PK	68.3	-23.5	1.00 V	150	12.23	38.31
4	11400.00	56.1 PK	74.0	-17.9	1.00 V	197	7.84	48.27
5	11400.00	42.3 AV	54.0	-11.7	1.00 V	197	-6.00	48.27

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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

802.11n (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	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	53.5 PK	74.0	-20.5	1.09 H	222	16.16	37.37
2	**5150.00**	**48.0 AV**	**54.0**	**-6.0**	**1.09 H**	**222**	**10.60**	**37.37**
3	*5180.00	85.8 PK			1.09 H	222	48.42	37.41
4	*5180.00	75.3 AV			1.09 H	222	37.91	37.41
5	#10360.00	56.3 PK	68.3	-12.0	1.02 H	218	9.06	47.25
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	52.2 PK	74.0	-21.8	1.06 V	149	14.86	37.37
2	5150.00	46.1 AV	54.0	-7.9	1.06 V	149	8.69	37.37
3	*5180.00	84.1 PK			1.06 V	149	46.70	37.41
4	*5180.00	74.0 AV			1.06 V	149	36.60	37.41
5	#10360.00	55.5 PK	68.3	-12.8	1.05 V	198	8.26	47.25

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	85.9 PK			1.23 H	155	48.43	37.43
2	*5200.00	75.4 AV			1.23 H	155	37.99	37.43
3	#10400.00	56.5 PK	68.3	-11.8	1.04 H	205	9.23	47.31
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	84.3 PK			1.18 V	169	46.88	37.43
2	*5200.00	74.0 AV			1.18 V	169	36.59	37.43
3	#10400.00	55.5 PK	68.3	-12.8	1.00 V	274	8.22	47.31

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	85.3 PK			1.25 H	199	47.83	37.48
2	*5240.00	74.9 AV			1.25 H	199	37.44	37.48
3	5350.00	51.7 PK	74.0	-22.3	1.25 H	199	14.09	37.62
4	5350.00	37.0 AV	54.0	-17.0	1.25 H	199	-0.59	37.62
5	#10480.00	56.6 PK	68.3	-11.7	1.04 H	185	9.14	47.49
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	84.5 PK			1.11 V	183	47.05	37.48
2	*5240.00	74.5 AV			1.11 V	183	37.03	37.48
3	5350.00	50.2 PK	74.0	-23.8	1.11 V	183	12.60	37.62
4	5350.00	36.5 AV	54.0	-17.5	1.11 V	183	-1.10	37.62
5	#10480.00	56.0 PK	68.3	-12.3	1.05 V	193	8.49	47.49

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	50.3 PK	74.0	-23.7	1.29 H	195	12.90	37.37
2	5150.00	39.8 AV	54.0	-14.2	1.29 H	195	2.46	37.37
3	*5260.00	88.8 PK			1.29 H	195	51.24	37.51
4	*5260.00	78.5 AV			1.29 H	195	41.01	37.51
5	#10520.00	56.6 PK	68.3	-11.8	1.02 H	188	8.99	47.56
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	49.4 PK	74.0	-24.6	1.13 V	201	12.00	37.37
2	5150.00	38.6 AV	54.0	-15.4	1.13 V	201	1.25	37.37
3	*5260.00	87.6 PK			1.13 V	201	50.05	37.51
4	*5260.00	77.8 AV			1.13 V	201	40.31	37.51
5	#10520.00	55.7 PK	68.3	-12.6	1.05 V	253	8.17	47.56

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	89.5 PK			1.21 H	159	51.92	37.56
2	*5300.00	79.3 AV			1.21 H	159	41.78	37.56
3	10600.00	56.3 PK	74.0	-17.7	1.04 H	216	8.64	47.69
4	10600.00	45.5 AV	54.0	-8.5	1.04 H	216	-2.17	47.69
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	88.9 PK			1.11 V	172	51.30	37.56
2	*5300.00	78.4 AV			1.11 V	172	40.87	37.56
3	10600.00	55.8 PK	74.0	-18.2	1.05 V	255	8.10	47.69
4	10600.00	45.2 AV	54.0	-8.8	1.05 V	255	-2.53	47.69

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 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	89.5 PK			1.22 H	180	51.87	37.58
2	*5320.00	79.4 AV			1.22 H	180	41.80	37.58
3	5350.00	51.9 PK	74.0	-22.1	1.22 H	180	14.28	37.62
4	5350.00	38.5 AV	54.0	-15.5	1.22 H	180	0.90	37.62
5	10640.00	56.6 PK	74.0	-17.4	1.03 H	182	8.86	47.75
6	10640.00	45.2 AV	54.0	-8.8	1.03 H	182	-2.53	47.75
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	88.9 PK			1.09 V	155	51.34	37.58
2	*5320.00	78.8 AV			1.09 V	155	41.23	37.58
3	5350.00	50.6 PK	74.0	-23.4	1.09 V	155	13.01	37.62
4	5350.00	38.0 AV	54.0	-16.0	1.09 V	155	0.34	37.62
5	10640.00	55.9 PK	74.0	-18.1	1.06 V	253	8.17	47.75
6	10640.00	45.1 AV	54.0	-8.9	1.06 V	253	-2.64	47.75

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	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	45.6 PK	74.0	-28.4	1.23 H	158	7.77	37.86
2	5460.00	35.5 AV	54.0	-18.5	1.23 H	158	-2.34	37.86
3	#5470.00	46.9 PK	68.3	-21.4	1.23 H	158	9.03	37.89
4	*5500.00	90.0 PK			1.23 H	158	51.98	37.98
5	*5500.00	79.7 AV			1.23 H	158	41.69	37.98
6	11000.00	56.7 PK	74.0	-17.3	1.00 H	192	8.32	48.39
7	11000.00	45.3 AV	54.0	-8.7	1.00 H	192	-3.13	48.39
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	44.9 PK	74.0	-29.1	1.10 V	181	7.07	37.86
2	5460.00	34.3 AV	54.0	-19.8	1.10 V	181	-3.61	37.86
3	#5470.00	45.5 PK	68.3	-22.8	1.10 V	181	7.63	37.89
4	*5500.00	88.2 PK			1.10 V	181	50.25	37.98
5	*5500.00	78.6 AV			1.10 V	181	40.60	37.98
6	11000.00	55.9 PK	74.0	-18.1	1.05 V	231	7.52	48.39
7	11000.00	45.1 AV	54.0	-8.9	1.05 V	231	-3.28	48.39

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

6. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	89.5 PK			1.21 H	160	51.40	38.11
2	*5580.00	79.3 AV			1.21 H	160	41.17	38.11
3	11160.00	56.5 PK	74.0	-17.5	1.02 H	219	8.23	48.28
4	11160.00	45.4 AV	54.0	-8.6	1.02 H	219	-2.85	48.28
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	88.9 PK			1.09 V	183	50.78	38.11
2	*5580.00	78.6 AV			1.09 V	183	40.50	38.11
3	11160.00	55.9 PK	74.0	-18.1	1.05 V	256	7.59	48.28
4	11160.00	45.1 AV	54.0	-8.9	1.05 V	256	-3.22	48.28

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 132	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	89.3 PK			1.20 H	158	51.03	38.22
2	*5660.00	79.2 AV			1.20 H	158	40.99	38.22
3	11320.00	56.3 PK	74.0	-17.7	1.00 H	153	8.02	48.31
4	11320.00	45.0 AV	54.0	-9.0	1.00 H	153	-3.30	48.31
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	*5660.00	88.5 PK			1.08 V	221	50.30	38.22
2	*5660.00	77.9 AV			1.08 V	221	39.71	38.22
3	11320.00	55.8 PK	74.0	-18.2	1.05 V	250	7.52	48.31
4	11320.00	45.1 AV	54.0	-8.9	1.05 V	250	-3.18	48.31

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	89.4 PK			1.22 H	165	51.09	38.27
2	*5700.00	79.1 AV			1.22 H	165	40.84	38.27
3	#5725.00	54.9 PK	68.3	-19.1	1.22 H	165	16.62	38.31
4	11400.00	56.5 PK	74.0	-17.5	1.00 H	208	8.24	48.27
5	11400.00	45.2 AV	54.0	-8.8	1.00 H	208	-3.09	48.27
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	88.8 PK			1.13 V	156	50.52	38.27
2	*5700.00	78.6 AV			1.13 V	156	40.37	38.27
3	#5725.00	53.5 PK	68.3	-20.5	1.13 V	156	15.23	38.31
4	11400.00	55.9 PK	74.0	-18.1	1.05 V	211	7.64	48.27
5	11400.00	44.7 AV	54.0	-9.3	1.05 V	211	-3.53	48.27

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

6. "#":The radiated frequency is out the restricted band.

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	46.9 PK	74.0	-27.1	1.00 H	254	9.52	37.37
2	5150.00	35.3 AV	54.0	-18.7	1.00 H	254	-2.10	37.37
3	*5190.00	85.8 PK			1.00 H	254	48.41	37.42
4	*5190.00	75.6 AV			1.00 H	254	38.20	37.42
5	#10380.00	56.5 PK	68.3	-11.8	1.02 H	162	9.20	47.28
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	46.2 PK	74.0	-27.8	1.09 V	188	8.86	37.37
2	5150.00	34.2 AV	54.0	-19.8	1.09 V	188	-3.16	37.37
3	*5190.00	84.6 PK			1.09 V	188	47.15	37.42
4	*5190.00	74.3 AV			1.09 V	188	36.91	37.42
5	#10380.00	56.0 PK	68.3	-12.3	1.00 V	208	8.74	47.28

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	85.8 PK			1.00 H	263	48.35	37.47
2	*5230.00	74.9 AV			1.00 H	263	37.45	37.47
3	5350.00	46.5 PK	74.0	-27.5	1.00 H	263	8.89	37.62
4	5350.00	34.9 AV	54.0	-19.1	1.00 H	263	-2.69	37.62
5	#10460.00	56.4 PK	68.3	-11.9	1.05 H	184	9.00	47.44
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	84.3 PK			1.08 V	159	46.82	37.47
2	*5230.00	74.0 AV			1.08 V	159	36.55	37.47
3	5350.00	45.9 PK	74.0	-28.1	1.08 V	159	8.31	37.62
4	5350.00	33.8 AV	54.0	-20.2	1.08 V	159	-3.80	37.62
5	#10460.00	55.8 PK	68.3	-12.5	1.01 V	183	8.38	47.44

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	47.7 PK	74.0	-26.3	1.03 H	249	10.35	37.37
2	5150.00	35.9 AV	54.0	-18.1	1.03 H	249	-1.48	37.37
3	*5270.00	86.7 PK			1.03 H	249	49.20	37.52
4	*5270.00	76.5 AV			1.03 H	249	38.93	37.52
5	#10540.00	56.5 PK	68.3	-11.9	1.01 H	194	8.86	47.59
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	46.8 PK	74.0	-27.2	1.07 V	168	9.45	37.37
2	5150.00	35.0 AV	54.0	-19.0	1.07 V	168	-2.34	37.37
3	*5270.00	85.5 PK			1.07 V	168	47.96	37.52
4	*5270.00	75.4 AV			1.07 V	168	37.90	37.52
5	#10540.00	55.8 PK	68.3	-12.5	1.00 V	219	8.25	47.59

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	86.7 PK			1.03 H	239	49.16	37.57
2	*5310.00	76.2 AV			1.03 H	239	38.61	37.57
3	5350.00	49.9 PK	74.0	-24.1	1.03 H	239	12.30	37.62
4	5350.00	39.9 AV	54.0	-14.1	1.03 H	239	2.27	37.62
5	10620.00	56.7 PK	74.0	-17.3	1.00 H	158	8.99	47.72
6	10620.00	43.9 AV	54.0	-10.1	1.00 H	158	-3.85	47.72
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	85.3 PK			1.05 V	221	47.75	37.57
2	*5310.00	75.2 AV			1.05 V	221	37.65	37.57
3	5350.00	49.0 PK	74.0	-25.0	1.05 V	221	11.37	37.62
4	5350.00	38.1 AV	54.0	-16.0	1.05 V	221	0.43	37.62
5	10620.00	56.1 PK	74.0	-17.9	1.00 V	194	8.39	47.72
6	10620.00	43.4 AV	54.0	-10.6	1.00 V	194	-4.33	47.72

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	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	49.9 PK	74.0	-24.1	1.00 H	255	12.02	37.86
2	5460.00	38.3 AV	54.0	-15.7	1.00 H	255	0.48	37.86
3	#5470.00	51.3 PK	68.3	-17.0	1.00 H	255	13.39	37.89
4	*5510.00	85.7 PK			1.00 H	255	47.72	38.00
5	*5510.00	75.6 AV			1.00 H	255	37.58	38.00
6	11020.00	56.8 PK	74.0	-17.2	1.00 H	177	8.44	48.37
7	11020.00	44.6 AV	54.0	-9.4	1.00 H	177	-3.74	48.37
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	48.2 PK	74.0	-25.8	1.05 V	193	10.38	37.86
2	5460.00	36.2 AV	54.0	-17.8	1.05 V	193	-1.67	37.86
3	#5470.00	49.3 PK	68.3	-19.0	1.05 V	193	11.45	37.89
4	*5510.00	84.9 PK			1.05 V	193	46.92	38.00
5	*5510.00	75.0 AV			1.05 V	193	36.98	38.00
6	11020.00	56.2 PK	74.0	-17.8	1.13 V	176	7.85	48.37
7	11020.00	43.3 AV	54.0	-10.7	1.13 V	176	-5.08	48.37

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 110	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	85.7 PK			1.00 H	233	47.65	38.06
2	*5550.00	75.4 AV			1.00 H	233	37.31	38.06
3	11100.00	56.7 PK	74.0	-17.3	1.09 H	158	8.42	48.31
4	11100.00	44.2 AV	54.0	-9.9	1.09 H	158	-4.16	48.31
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	84.9 PK			1.00 V	219	46.84	38.06
2	*5550.00	74.8 AV			1.00 V	219	36.75	38.06
3	11100.00	55.8 PK	74.0	-18.2	1.00 V	197	7.51	48.31
4	11100.00	43.6 AV	54.0	-10.4	1.00 V	197	-4.70	48.31

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	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	85.8 PK			1.00 H	230	47.55	38.23
2	*5670.00	75.6 AV			1.00 H	230	37.35	38.23
3	#5725.00	49.3 PK	68.3	-24.7	1.00 H	230	11.00	38.31
4	11340.00	56.7 PK	74.0	-17.3	1.01 H	174	8.42	48.30
5	11340.00	43.9 AV	54.0	-10.1	1.01 H	174	-4.39	48.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	85.0 PK			1.05 V	218	46.74	38.23
2	*5670.00	75.0 AV			1.05 V	218	36.72	38.23
3	#5725.00	48.0 PK	68.3	-26.0	1.05 V	218	9.67	38.31
4	11340.00	56.0 PK	74.0	-18.0	1.00 V	271	7.67	48.30
5	11340.00	43.1 AV	54.0	-10.9	1.00 V	271	-5.18	48.30

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

6. "#":The radiated frequency is out the restricted band.

4. Margin value = Emission level – Limit value.

BELOW 1GHz WORST-CASE DATA：802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	211.30	33.1 QP	43.5	-10.4	1.12 H	223	21.29	11.84
2	243.78	33.6 QP	46.0	-12.4	1.04 H	211	20.29	13.28
3	286.92	34.4 QP	46.0	-11.6	1.24 H	229	19.37	15.07
4	299.04	33.9 QP	46.0	-12.1	1.03 H	214	18.33	15.55
5	445.44	32.7 QP	46.0	-13.3	1.12 H	250	12.86	19.80
6	716.42	34.8 QP	46.0	-11.3	1.12 H	10	10.14	24.61
7	911.77	32.3 QP	46.0	-13.7	1.00 H	145	4.35	27.94
8	959.77	32.4 QP	46.0	-13.6	1.00 H	70	3.84	28.55
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	62.48	31.2 QP	40.0	-8.8	1.25 V	40	18.10	13.13
2	386.78	37.2 QP	46.0	-8.8	1.26 V	10	18.97	18.26
3	515.73	32.9 QP	46.0	-13.1	1.02 V	40	11.34	21.56
4	586.02	33.5 QP	46.0	-12.5	1.00 V	298	10.39	23.13
5	650.97	34.3 QP	46.0	-11.7	1.00 V	349	10.51	23.81
6	904.50	33.2 QP	46.0	-12.8	1.22 V	217	5.32	27.84

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	18deg. C, 71%RH	TESTED BY	Nick Chen

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	212.75	32.7 QP	43.5	-10.8	1.13 H	235	20.76	11.90
2	243.78	33.3 QP	46.0	-12.7	1.02 H	220	20.05	13.28
3	286.92	34.2 QP	46.0	-11.8	1.42 H	226	19.09	15.07
4	402.78	33.2 QP	46.0	-12.8	1.12 H	214	14.46	18.71
5	445.44	33.1 QP	46.0	-12.9	1.31 H	253	13.32	19.80
6	650.97	32.3 QP	46.0	-13.7	1.02 H	91	8.46	23.81
7	781.37	33.9 QP	46.0	-12.2	1.00 H	10	7.68	26.17
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	**62.48**	**34.1 QP**	**40.0**	**-6.0**	**1.11 V**	**10**	**20.92**	**13.13**
2	387.75	36.0 QP	46.0	-10.0	1.24 V	7	17.71	18.29
3	455.62	32.8 QP	46.0	-13.2	1.28 V	10	12.73	20.06
4	517.18	33.0 QP	46.0	-13.0	1.23 V	10	11.38	21.59
5	650.97	33.7 QP	46.0	-12.3	1.00 V	340	9.87	23.81
6	846.33	32.1 QP	46.0	-14.0	1.00 V	352	4.86	27.19

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.

4.3 PEAK TRANSMIT POWER MEASUREMENT

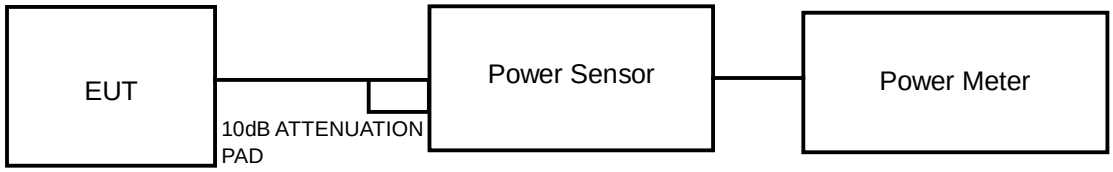
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.15 ~ 5.25GHz	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

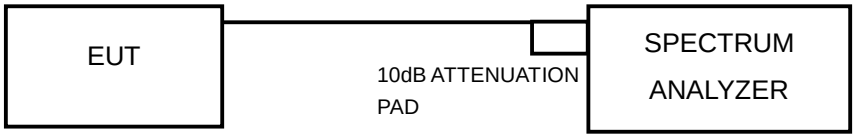
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.2.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

A power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

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

MODE A:

POWER OUTPUT: 802.11a

CHAN.	CHAN. FREQ. (MHz)	OUTPUT POWER (dBm)	OUTPUT POWER (mW)	POWER LIMIT (dBm)	PASS / FAIL
36	5180	11.8	15.1	17	PASS
40	5200	12.2	**16.6**	17	PASS
48	5240	12.1	16.2	17	PASS
52	5260	16.9	49.0	24	PASS
60	5300	17.1	51.3	24	PASS
64	5320	17.2	**52.5**	24	PASS
100	5500	17.4	**55.0**	24	PASS
116	5580	17.3	53.7	24	PASS
132	5660	17.0	50.1	24	PASS
140	5700	17.1	51.3	24	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	OUTPUT POWER (dBm)	OUTPUT POWER (mW)	POWER LIMIT (dBm)	PASS / FAIL
36	5180	11.8	15.1	17	PASS
40	5200	12.2	**16.6**	17	PASS
48	5240	12.2	**16.6**	17	PASS
52	5260	16.9	49.0	24	PASS
60	5300	17.2	**52.5**	24	PASS
64	5320	17.2	**52.5**	24	PASS
100	5500	17.3	53.7	24	PASS
116	5580	17.2	52.5	24	PASS
132	5660	16.9	49.0	24	PASS
140	5700	17.0	50.1	24	PASS

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	OUTPUT POWER (dBm)	OUTPUT POWER (mW)	POWER LIMIT (dBm)	PASS / FAIL
38	5190	11.9	15.5	17	PASS
46	5230	11.8	15.1	17	PASS
54	5270	12.1	16.2	24	PASS
62	5310	12.0	15.8	24	PASS
102	5510	14.1	25.7	24	PASS
110	5550	14.3	26.9	24	PASS
134	5670	14.1	25.7	24	PASS

MODE A:
26dB OCCUPIED BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
36	5180	26.47	PASS
40	5200	26.52	PASS
48	5240	26.54	PASS
52	5260	25.32	PASS
60	5300	25.79	PASS
64	5320	26.22	PASS
100	5500	26.98	PASS
116	5580	26.54	PASS
132	5660	29.73	PASS
140	5700	27.18	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
36	5180	27.12	PASS
40	5200	26.70	PASS
48	5240	26.46	PASS
52	5260	27.37	PASS
60	5300	26.28	PASS
64	5320	26.92	PASS
100	5500	26.73	PASS
116	5580	27.83	PASS
132	5660	29.00	PASS
140	5700	29.71	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
38	5190	53.66	PASS
46	5230	54.50	PASS
54	5270	54.36	PASS
62	5310	53.91	PASS
102	5510	52.87	PASS
110	5550	62.66	PASS
134	5670	67.24	PASS

4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB

4.4.2 TEST SETUP

4.4.3 TEST INSTRUMENTS

Refer to section 4.2.3 to get information of above instrument.

4.4.4 TEST PROCEDURE

1) Set RBW = 1 MHz, VBW ≤ 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.

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

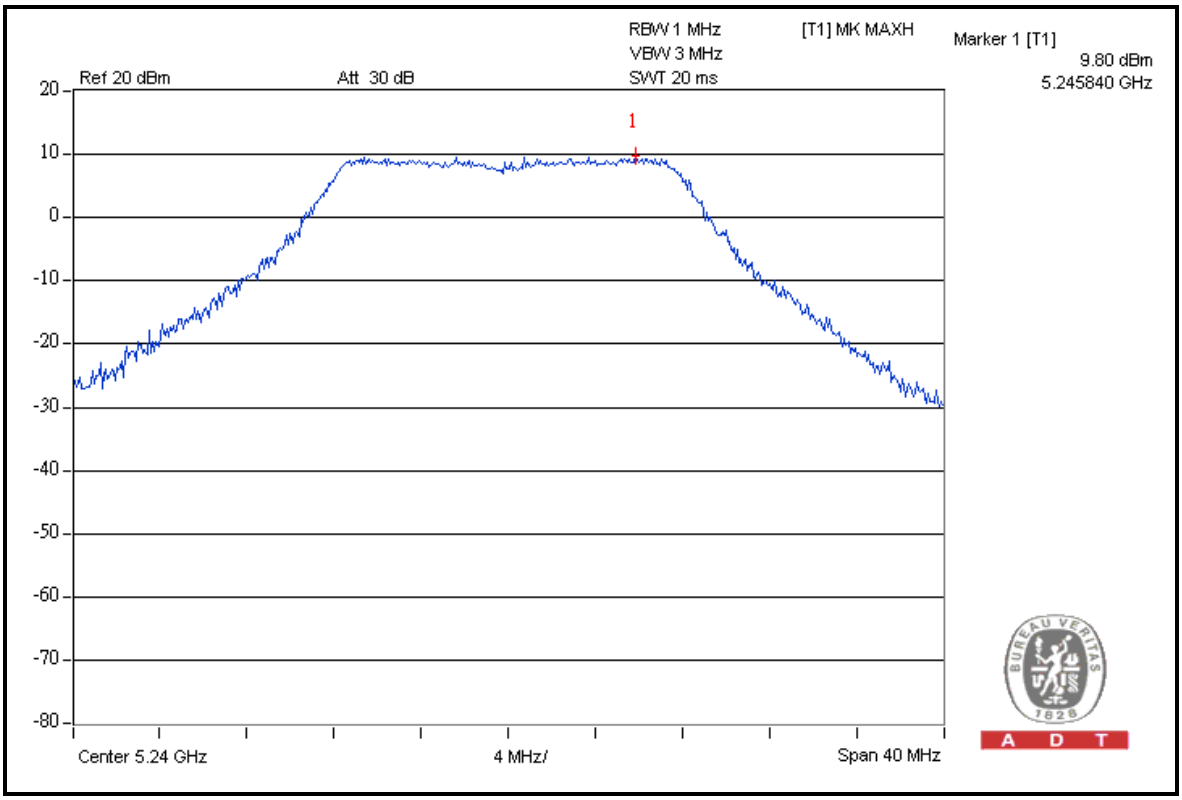
Same as 4.3.6

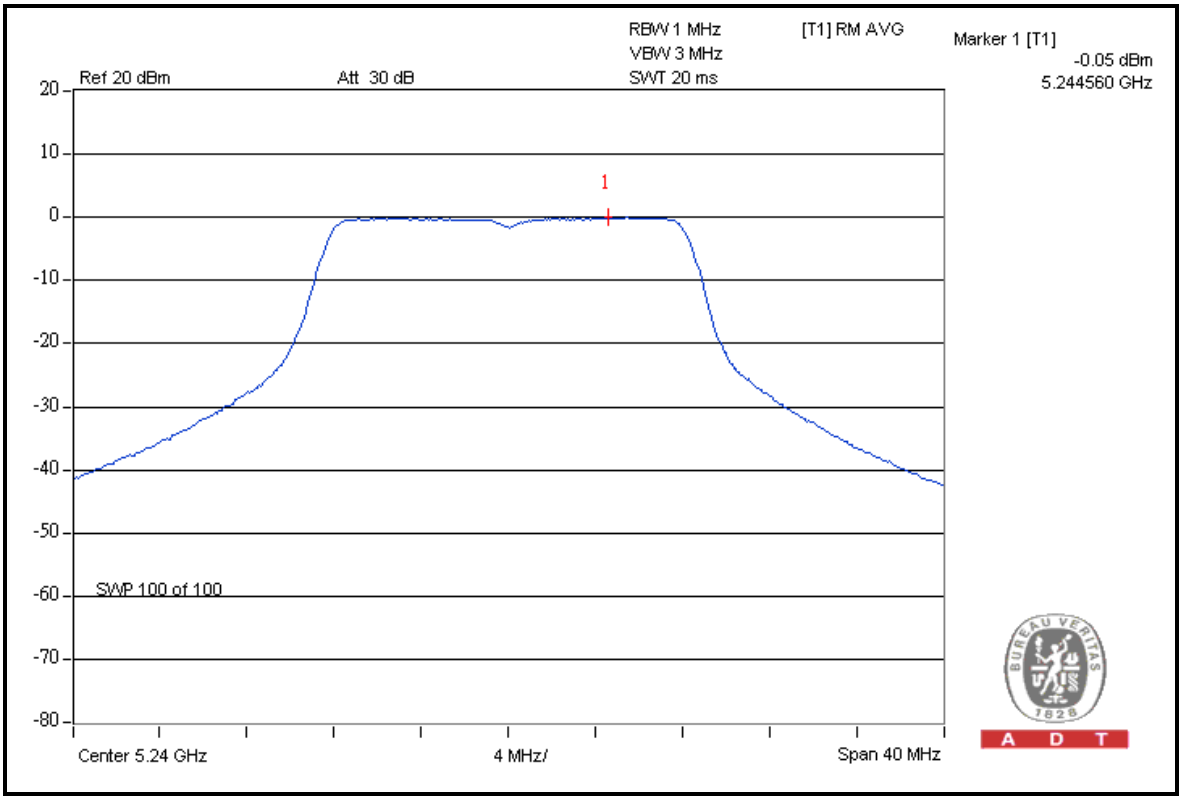
4.4.7 TEST RESULTS

MODE A:

802.11a

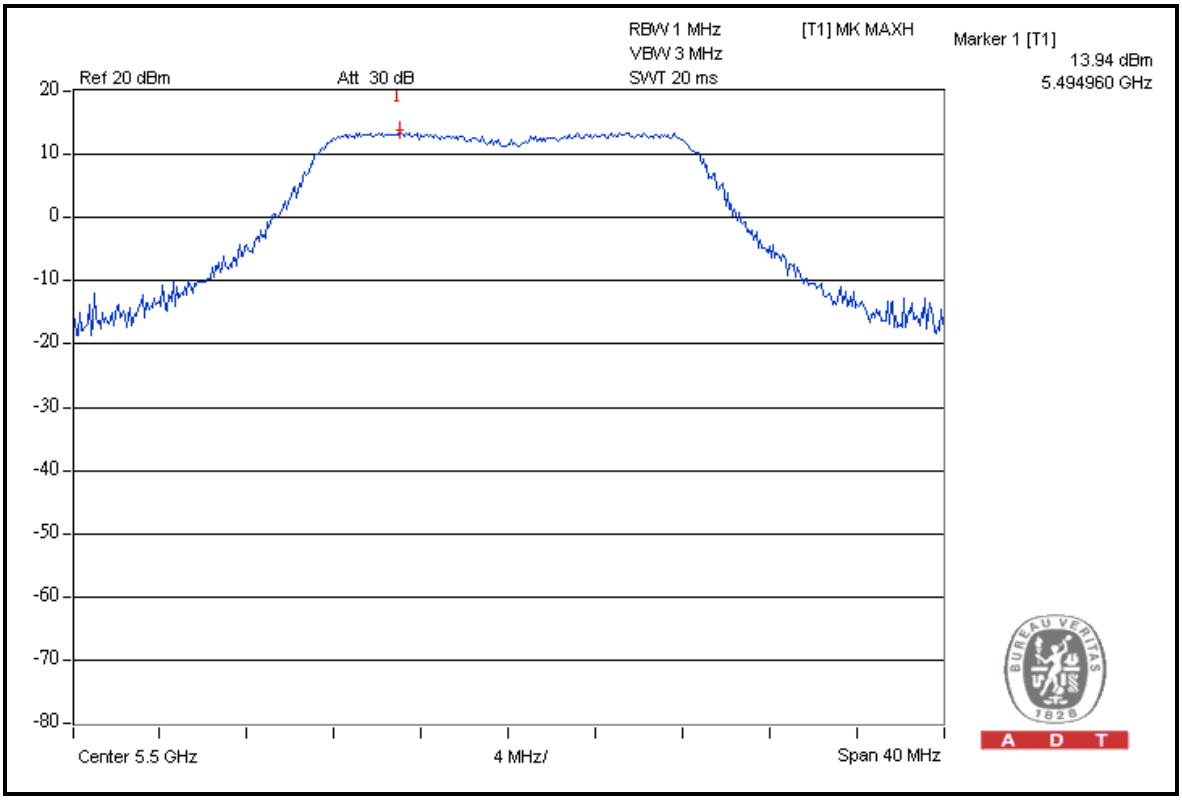
CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
36	5180	9.02	-0.73	9.75	13	PASS
40	5200	9.15	-0.16	9.31	13	PASS
48	5240	9.80	-0.05	9.85	13	PASS
52	5260	13.14	3.75	9.39	13	PASS
60	5300	13.23	3.76	9.47	13	PASS
64	5320	13.37	3.73	9.64	13	PASS
100	5500	13.45	4.05	9.40	13	PASS
116	5580	13.19	3.79	9.40	13	PASS
132	5660	13.13	3.63	9.50	13	PASS
140	5700	13.22	3.77	9.45	13	PASS

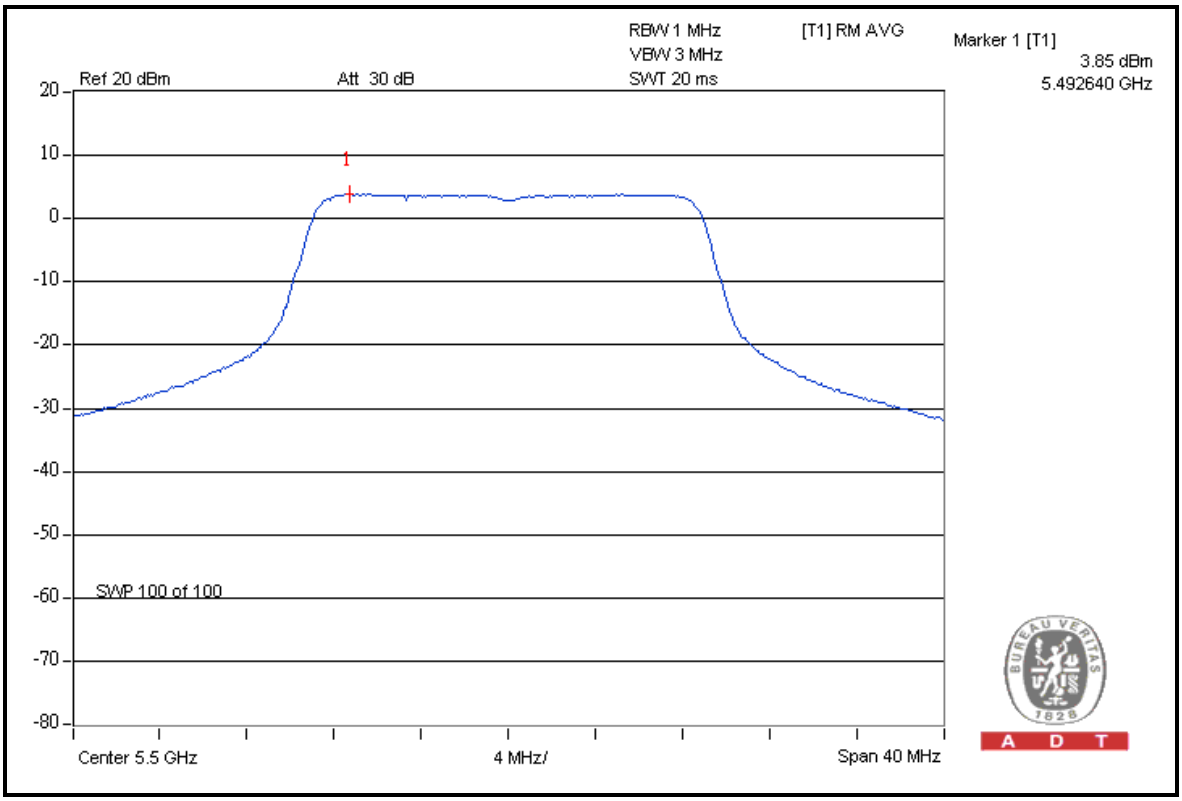

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK MAXH
Marker 1 [T1]
9.80 dBm
5.245840 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 5.24 GHz
4 MHz/
Span 40 MHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] RM AVG
Marker 1 [T1]
-0.05 dBm
5.244560 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
SWP 100 of 100
Center 5.24 GHz
4 MHz/
Span 40 MHz

802.11n (20MHz)

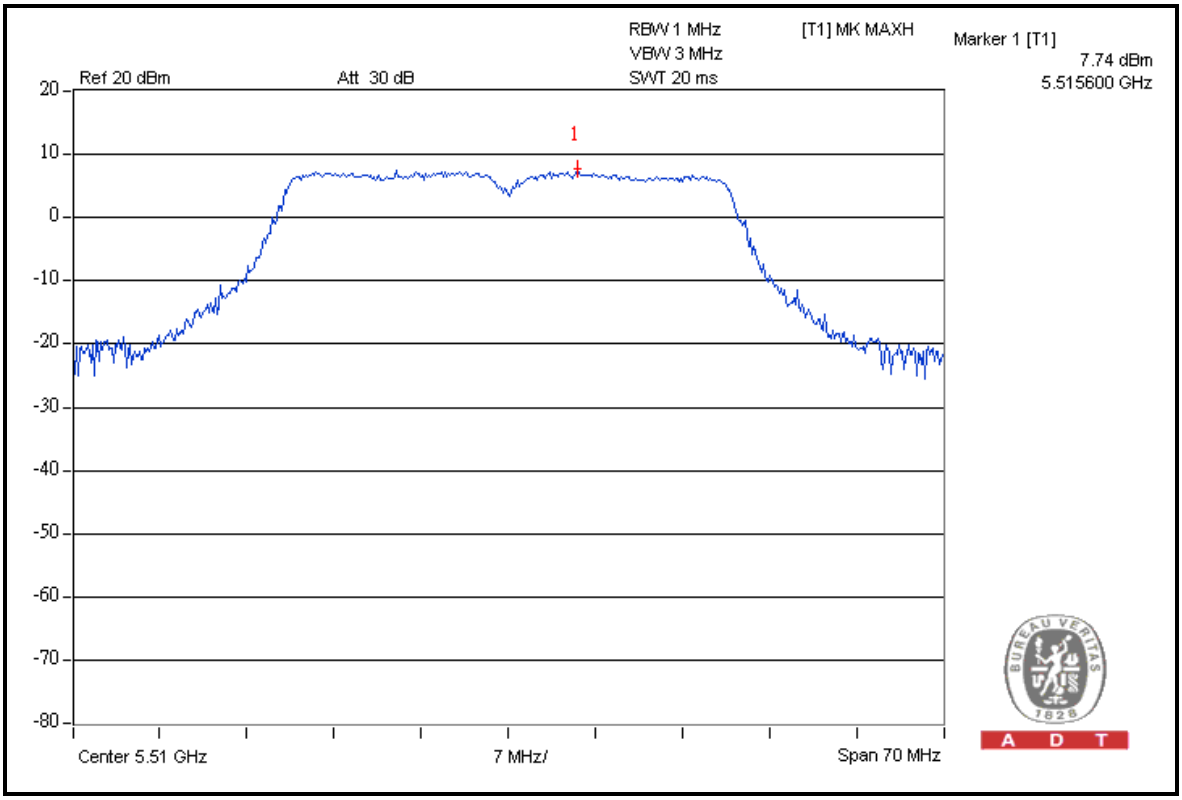
CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
36	5180	8.66	-0.91	9.57	13	PASS
40	5200	9.78	-0.20	9.98	13	PASS
48	5240	9.30	-0.18	9.48	13	PASS
52	5260	13.35	3.43	9.92	13	PASS
60	5300	13.04	3.30	9.74	13	PASS
64	5320	12.96	3.22	9.74	13	PASS
100	5500	13.94	3.85	10.09	13	PASS
116	5580	13.35	3.43	9.92	13	PASS
132	5660	12.87	3.33	9.54	13	PASS
140	5700	13.70	3.61	10.09	13	PASS

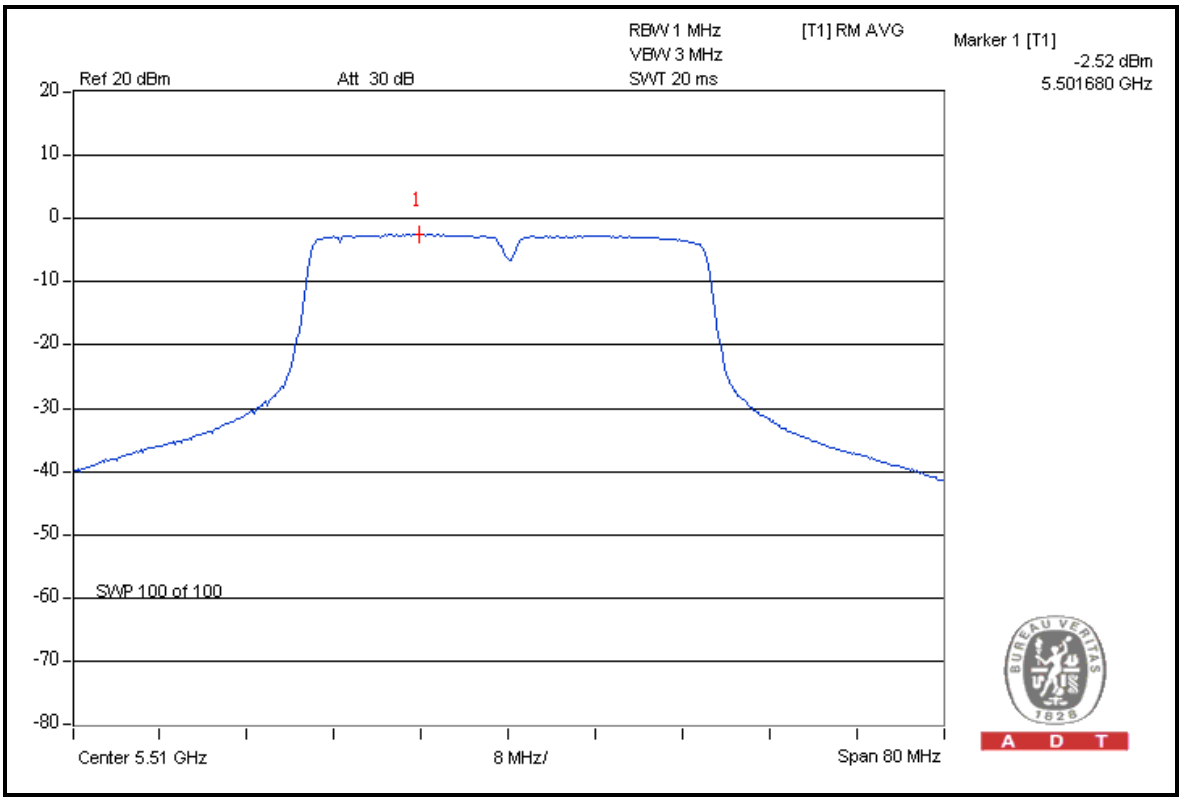

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK MAXH
Marker 1 [T1]
13.94 dBm
5.494960 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 5.5 GHz
4 MHz/
Span 40 MHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] RM AVG
Marker 1 [T1]
3.85 dBm
5.492640 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
SWP 100 of 100
Center 5.5 GHz
4 MHz/
Span 40 MHz

802.11n (40MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
38	5190	7.31	-2.70	10.01	13	PASS
46	5230	6.87	-3.28	10.15	13	PASS
54	5270	6.51	-3.62	10.13	13	PASS
62	5310	5.53	-4.38	9.91	13	PASS
102	5510	7.74	-2.52	10.26	13	PASS
110	5550	7.38	-2.36	9.74	13	PASS
134	5670	7.52	-2.38	9.90	13	PASS


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK MAXH
Marker 1 [T1]
7.74 dBm
5.515600 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 5.51 GHz
7 MHz/
Span 70 MHz

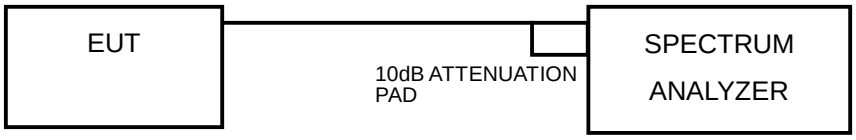

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] RM AVG
Marker 1 [T1]
-2.52 dBm
5.501680 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
SWP 100 of 100
Center 5.51 GHz
8 MHz/
Span 80 MHz

4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 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

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.2.3 to get information of above instrument.

4.5.4 TEST PROCEDURES

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Sweep time = auto, trigger set to “free run”.
4) Trace average at least 100 traces in power averaging mode.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.5.7 TEST RESULTS

MODE A:

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-0.73	4	PASS
40	5200	-0.16	4	PASS
48	5240	-0.05	4	PASS
52	5260	3.75	11	PASS
60	5300	3.76	11	PASS
64	5320	3.73	11	PASS
100	5500	4.05	11	PASS
116	5580	3.79	11	PASS
132	5660	3.63	11	PASS
140	5700	3.77	11	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-0.91	4	PASS
40	5200	-0.20	4	PASS
48	5240	-0.18	4	PASS
52	5260	3.43	11	PASS
60	5300	3.30	11	PASS
64	5320	3.22	11	PASS
100	5500	3.85	11	PASS
116	5580	3.43	11	PASS
132	5660	3.33	11	PASS
140	5700	3.61	11	PASS

802.11n (40MHz)

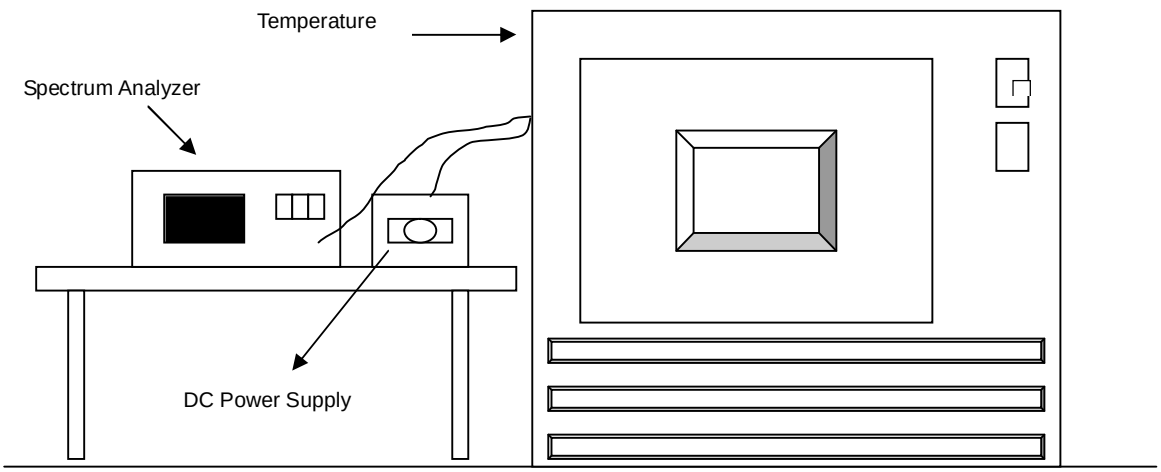
CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-2.70	4	PASS
46	5230	-3.28	4	PASS
54	5270	-3.62	11	PASS
62	5310	-4.38	11	PASS
102	5510	-2.52	11	PASS
110	5550	-2.36	11	PASS
134	5670	-2.38	11	PASS

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 4.2.3 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

MODE A:

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5200MHz									
TEMP. (℃)	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	120.0	5199.987884	-2.3300000	5199.987884	-2.3300855	5199.988177	-2.2736538	5199.987911	-2.3247758
40	120.0	5199.98818	-2.2730769	5199.988337	-2.2428978	5199.988242	-2.2611538	5199.987977	-2.3120903
30	120.0	5199.98826	-2.2576923	5199.988265	-2.2566922	5199.988136	-2.2815385	5199.98799	-2.3097073
20	120.0	5199.988437	-2.2236538	5199.98843	-2.2250685	5199.988384	-2.2338462	5199.988285	-2.2527951
10	120.0	5199.987273	-2.4475116	5199.987457	-2.4121154	5199.987475	-2.4086538	5199.987439	-2.4154824
0	120.0	5199.987682	-2.3688462	5199.987811	-2.3441214	5199.987304	-2.4415385	5199.987438	-2.4157589
-10	120.0	5199.987932	-2.3207692	5199.987919	-2.3231797	5199.987735	-2.3586538	5199.987871	-2.3324856
-20	120.0	5199.988134	-2.2819231	5199.988206	-2.2680798	5199.987777	-2.3505769	5199.988234	-2.2626815

FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5200MHz									
TEMP. (℃)	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	138.0	5199.98821	-2.2673077	5199.988264	-2.2568316	5199.988103	-2.2878846	5199.988526	-2.2066088
	120.0	5199.988437	-2.2236538	5199.98843	-2.2250685	5199.988384	-2.2338462	5199.988285	-2.2527951
	102.0	5199.988567	-2.1986538	5199.988594	-2.1934538	5199.988684	-2.1761538	5199.989022	-2.1110737

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.

Copies of accreditation and authorization certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5.phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Email: service.adt@tw.bureauveritas.com
Web Site: www.adt.com.tw

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

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

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

---END---