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# FCC TEST REPORT

**REPORT NO.:** RF990414C06

**MODEL NO.:** FS-GM101

**RECEIVED:** Apr. 14, 2010

**TESTED:** May 04 to 14, 2010

**ISSUED:** May 19, 2010

**APPLICANT:** Favite Inc.

**ADDRESS:** No. 176, Taihe Road, Jhubei City, Hsinchu  
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**ISSUED BY:** Bureau Veritas Consumer Products Services  
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## 1 CERTIFICATION

**PRODUCT :** UHF RFID (902-928MHz)  
**BRAND NAME :** FAVITE  
**MODEL NO. :** FS-GM101  
**APPLICANT :** Favite Inc.  
**TESTED DATE:** May 04 to 14, 2010  
**TEST SAMPLE :** ENGINEERING SAMPLE  
**STANDARDS :** 47 CFR Part 15, Subpart C (Section 15.247),  
ANSI C63.4-2003

The above equipment (Model: FS-GM101) 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** : Carol Liao , **DATE:** May 19, 2010  
( Carol Liao, Specialist )

**TECHNICAL  
ACCEPTANCE** : Hank Chung , **DATE:** May 19, 2010  
( Hank Chung, Deputy Manager )

**APPROVED BY** : May Chen , **DATE:** May 19, 2010  
( May Chen, Deputy Manager )



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## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	Test Type and Limit	Result	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is -14.05dB at 0.220 MHz
15.247(a)(1)(l)	Number of Hopping Frequency Used Spec.:	PASS	Meet the requirement of limit
15.247(a)(1)(i)	Dwell Time on Each Channel Spec. : Max. 0.4 second	PASS	Meet the requirement of limit
15.247(a)(1)	Hopping Channel Separation Spec. : Min. 25 kHz or 20 dB bandwidth, which ever is greater	PASS	Meet the requirement of limit
15.247(a)(1)(i)	Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System Spec.: Max. 0.5 MHz	PASS	Meet the requirement of limit
15.247(b)(2)	Maximum Peak Output Power Spec.: max. 30dBm	PASS	Meet the requirement of limit
15.247(d)	Transmitter Radiated Emissions Spec.: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -2.00dB at 8124.75MHz
15.247(d)	Conducted Out-Band Emission Measurement	PASS	Meet the requirement of limit
15.203	Antenna Requirement	-	Antenna connector is a MHF standard connector.



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## 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	Value
Conducted emissions	2.45 dB
Radiated emissions (30MHz-1GHz)	3.3 dB
Radiated emissions (1GHz ~18GHz)	2.19 dB
Radiated emissions (18GHz ~40GHz)	2.55 dB



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### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	UHF RFID (902-928MHz)
<b>MODEL NO.</b>	FS-GM101
<b>FCC ID</b>	XLG-FS-GM101
<b>POWER SUPPLY</b>	DC 5V from host equipment
<b>MODULATION TYPE</b>	PR-ASK
<b>MODULATION TECHNOLOGY</b>	FHSS
<b>FREQUENCY RANGE</b>	902.75MHz ~ 927.25MHz
<b>NUMBER OF CHANNEL</b>	50
<b>OUTPUT POWER</b>	338.8mW
<b>ANTENNA TYPE</b>	Please see note 1
<b>DATA CABLE</b>	NA
<b>I/O PORTS</b>	NA
<b>ASSOCIATED DEVICES</b>	NA

#### NOTE:

1. There is one antenna provided to this EUT as following information:

Antenna Type	Connector Type	Gain (dBi)
Patch	MHF	5

2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.



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### 3.2 DESCRIPTION OF TEST MODES

Fifty channels are provided to this EUT.

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	902.75	21	913.25	42	923.75
1	903.25	22	913.75	43	924.25
2	903.75	23	914.25	44	924.75
3	904.25	24	914.75	45	925.25
4	904.75	25	915.25	46	925.75
5	905.25	26	915.75	47	926.25
6	905.75	27	916.25	48	926.75
7	906.25	28	916.75	49	927.25
8	906.75	29	917.25		
9	907.25	30	917.75		
10	907.75	31	918.25		
11	908.25	32	918.75		
12	908.75	33	919.25		
13	909.25	34	919.75		
14	909.75	35	920.25		
15	910.25	36	920.75		
16	910.75	37	921.25		
17	911.25	38	921.75		
18	911.75	39	922.25		
19	912.25	40	922.75		
20	912.75	41	923.25		



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### 3.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
-	√	√	√	√	NA

Where PLC: Power Line Conducted Emission  
RE<1G: Radiated Emission below 1GHz  
RE≥1G: Radiated Emission above 1GHz  
APCM: Antenna Port Conducted Measurement

#### Power Line Conducted Emission:

- Pre-Scan to determine the worst-case mode from all possible combinations between available modulations and packet types.
- Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Technology	Modulation Type
0 to 49	0	FHSS	PR-ASK

#### Radiated Emission Test (Below 1 GHz):

- 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.

Available Channel	Tested Channel	Modulation Technology	Modulation Type
0 to 49	0, 24, 49	FHSS	PR-ASK

#### Radiated Emission Test (Above 1 GHz):

- 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.

Available Channel	Tested Channel	Modulation Technology	Modulation Type
0 to 49	0, 24, 49	FHSS	PR-ASK



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**Conducted Out-Band Emission 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.

Available Channel	Tested Channel	Modulation Technology	Modulation Type
0 to 49	0, 49	FHSS	PR-ASK

**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.

Available Channel	Tested Channel	Modulation Technology	Modulation Type
0 to 49	0, 24, 49	FHSS	PR-ASK

※ **TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE <sup>3</sup> 1G	21deg. C, 71%RH, 1013 hPa	120Vac, 60Hz	Eric Lee
RE<1G	20deg. C, 73%RH, 1013 hPa	120Vac, 60Hz	Eric Lee
PLC	25deg. C, 70%RH, 1013 hPa	120Vac, 60Hz	Leo Peng
APCM	20deg. C, 60%RH, 1013 hPa	120Vac, 60Hz	Rex Huang



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### **3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS**

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**47 CFR Part 15, Subpart C. (15.247)**  
**ANSI C63.4 : 2003**

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

**NOTE:** The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



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### 3.5 DESCRIPTION OF SUPPORT UNITS

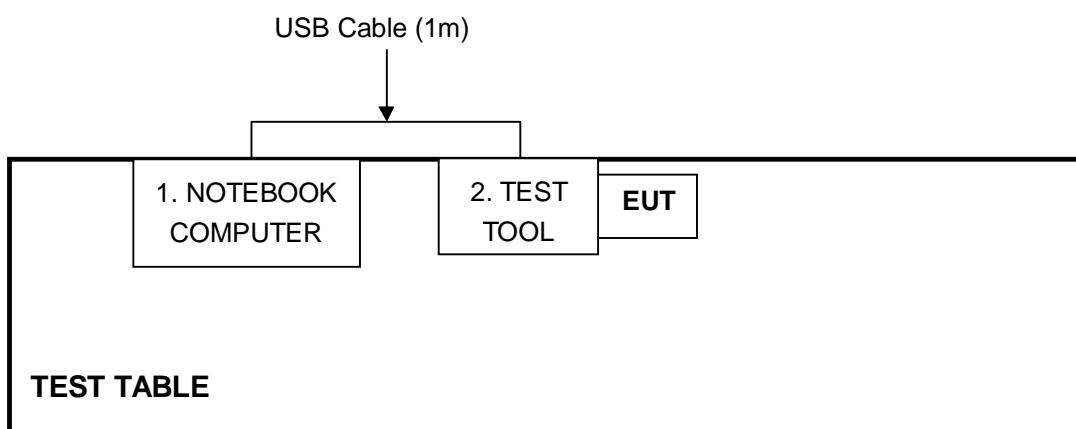
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	GSLB32S	FCC DoC
2	TEST TOOL	FAVITE	NA	NA	NA

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

**NOTE:** All power cords of the above support units are non shielded (1.8m).

### 3.6 CONFIGURATION OF SYSTEM UNDER TEST





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## 4 TEST PROCEDURES AND RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB $\mu$ V)	
0.15-0.5 0.5-5 5-30	Quasi-peak	Average
	66 to 56	56 to 46
	56	46
	60	50

Notes:

1. The lower limit shall apply at the transition frequencies.
2. 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
Test Receiver	ESCS 30	100375	Mar. 09, 2010	Mar. 08, 2011
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-522	Sep. 23, 2009	Sep. 22, 2010
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Oct. 26, 2009	Oct. 25, 2010
RF Cable (JYEBAO)	5DFB	COBCAB-001	Nov. 24, 2009	Nov. 23, 2010
50 ohms Terminator	50	3	Oct. 28, 2009	Oct. 27, 2010
Software	BV ADT_Cond_V7.3.7	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.



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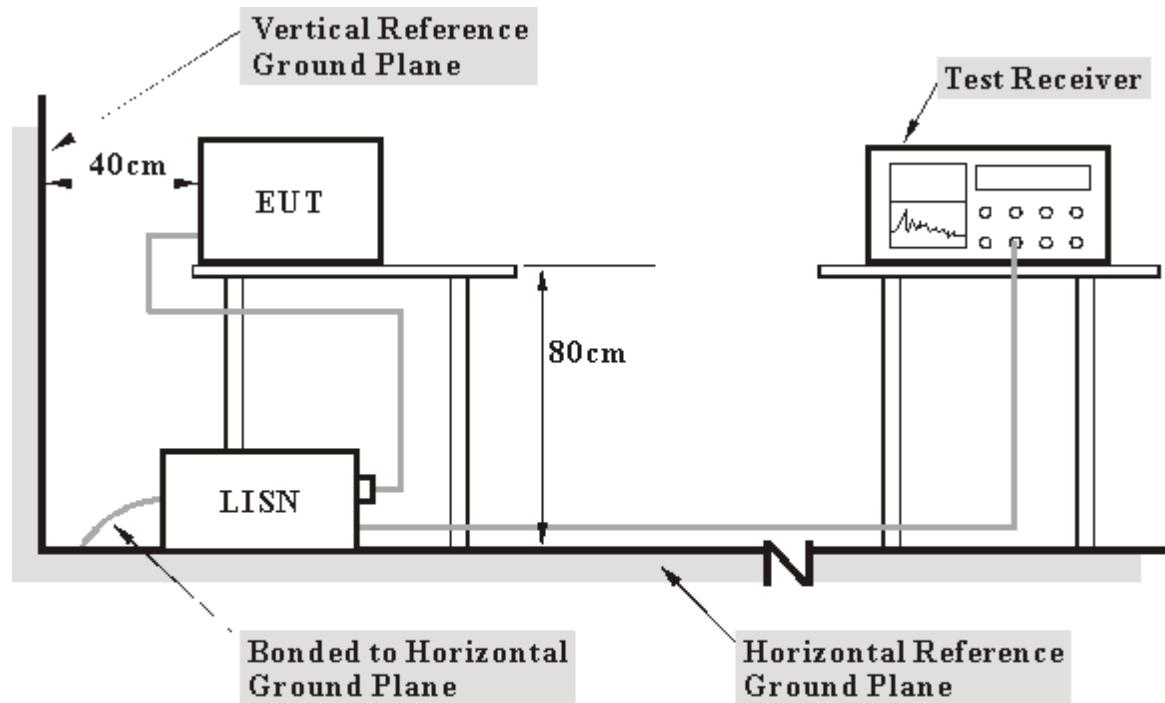
#### 4.1.3 TEST PROCEDURES

- 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.

#### 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) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

#### 4.1.6 EUT OPERATING CONDITIONS

- a. Placed the EUT on the testing table.
- b. Connected the EUT with the support unit 1 (Notebook computer) which was placed on a testing table via one test tool and one USB cable.
- c. The support unit 1 (Notebook computer) ran test program “PR9000 DEMO v201.0.1.31360” to enable EUT under transmission condition continuously at specific channel frequency.



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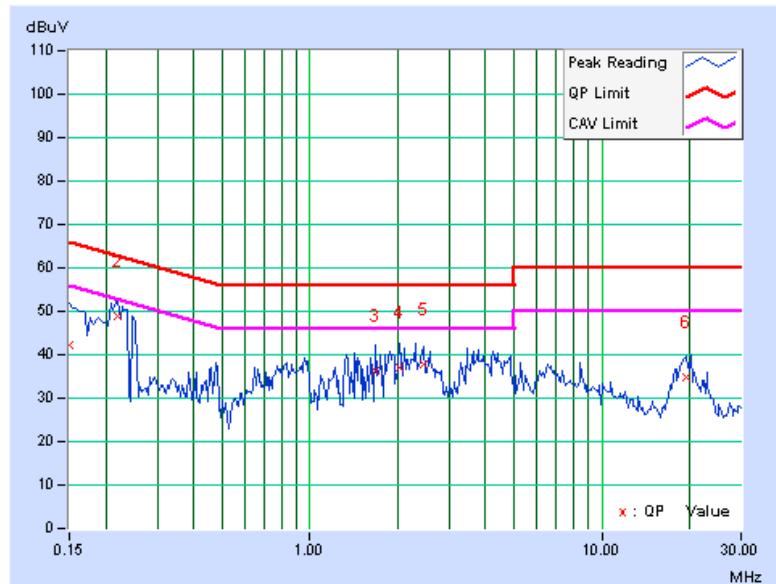
#### 4.1.7 TEST RESULTS

PHASE		Line (L)		6dB BANDWIDTH		9 kHz	
-------	--	----------	--	---------------	--	-------	--

No	Freq. [MHz]	Corr. Factor	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	0.150	0.05	42.13	-	42.18	-	66.00	56.00	-23.82	-
2	<b>0.220</b>	<b>0.05</b>	<b>48.71</b>	-	<b>48.76</b>	-	<b>62.81</b>	<b>52.81</b>	<b>-14.05</b>	-
3	1.676	0.12	36.25	-	36.37	-	56.00	46.00	-19.63	-
4	2.031	0.13	36.80	-	36.93	-	56.00	46.00	-19.07	-
5	2.457	0.14	37.60	-	37.74	-	56.00	46.00	-18.26	-
6	19.531	0.50	34.45	-	34.95	-	60.00	50.00	-25.05	-

**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

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





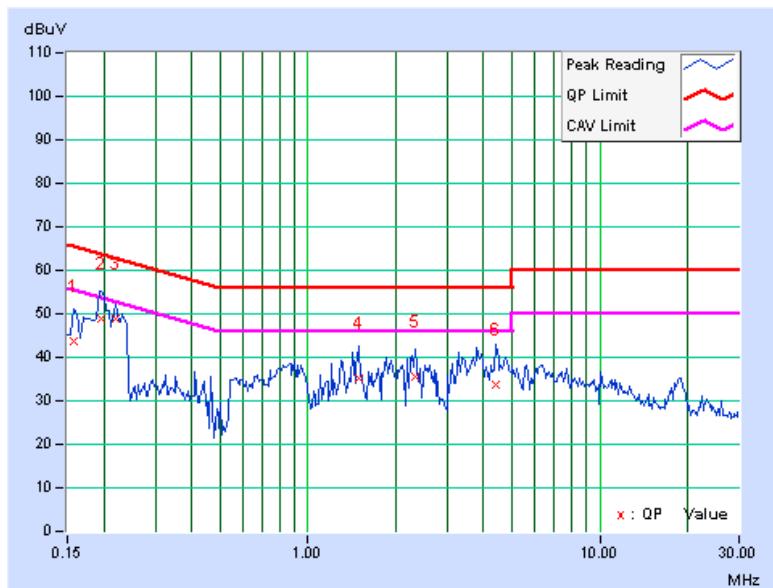
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
-------	-------------	---------------	-------

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
			Factor	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	(dB)	
	[MHz]	(dB)		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.
1	0.158	0.06	43.68	-	43.74	-	65.58	55.58	-21.83	-
2	0.197	0.06	48.95	-	49.01	-	63.74	53.74	-14.73	-
3	0.220	0.06	48.67	-	48.73	-	62.81	52.81	-14.08	-
4	1.496	0.12	35.16	-	35.28	-	56.00	46.00	-20.72	-
5	2.328	0.15	35.46	-	35.61	-	56.00	46.00	-20.39	-
6	4.414	0.21	33.67	-	33.88	-	56.00	46.00	-22.12	-

**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

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





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## 4.2 NUMBER OF HOPPING FREQUENCY USED

### 4.2.1 LIMIT OF HOPPING FREQUENCY USED

At least 50 hopping frequencies, and should be equally spaced.

### 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 03, 2009	Aug. 02, 2010

**NOTE:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.



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#### 4.2.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Set the SA on MaxHold Mode, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been recorded.
4. Set the SA on View mode and then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

#### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation



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#### 4.2.5 TEST SETUP

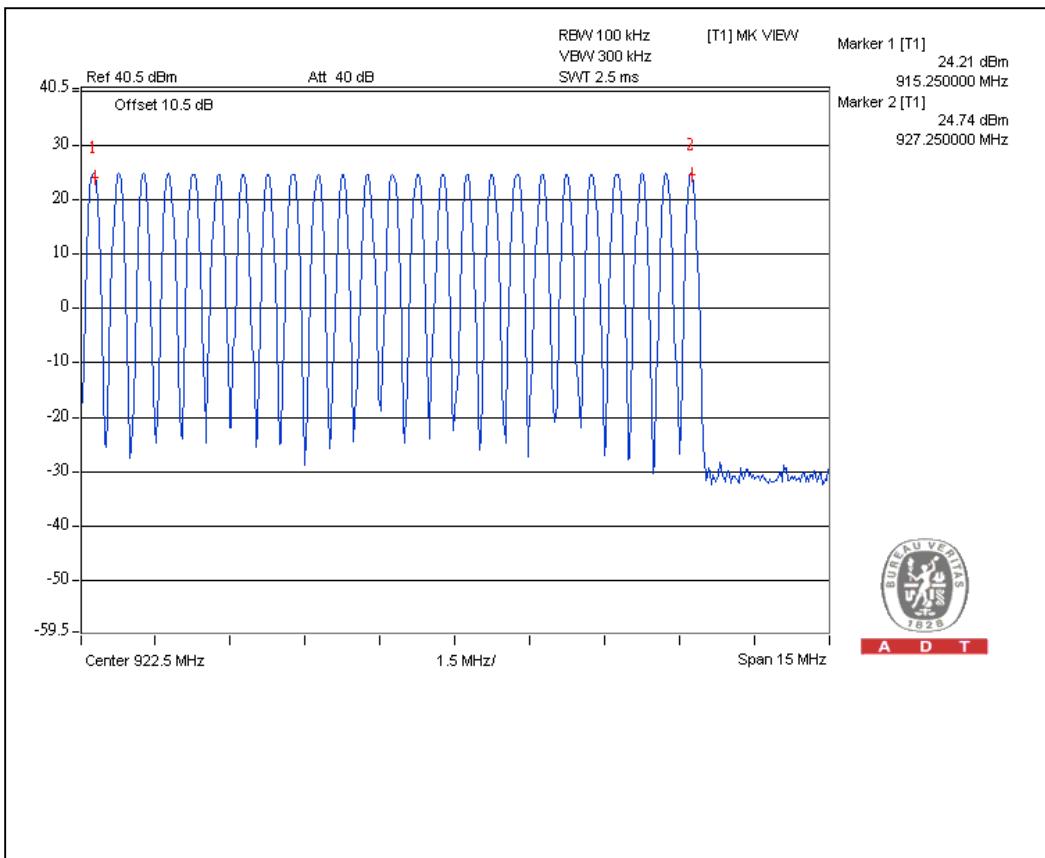
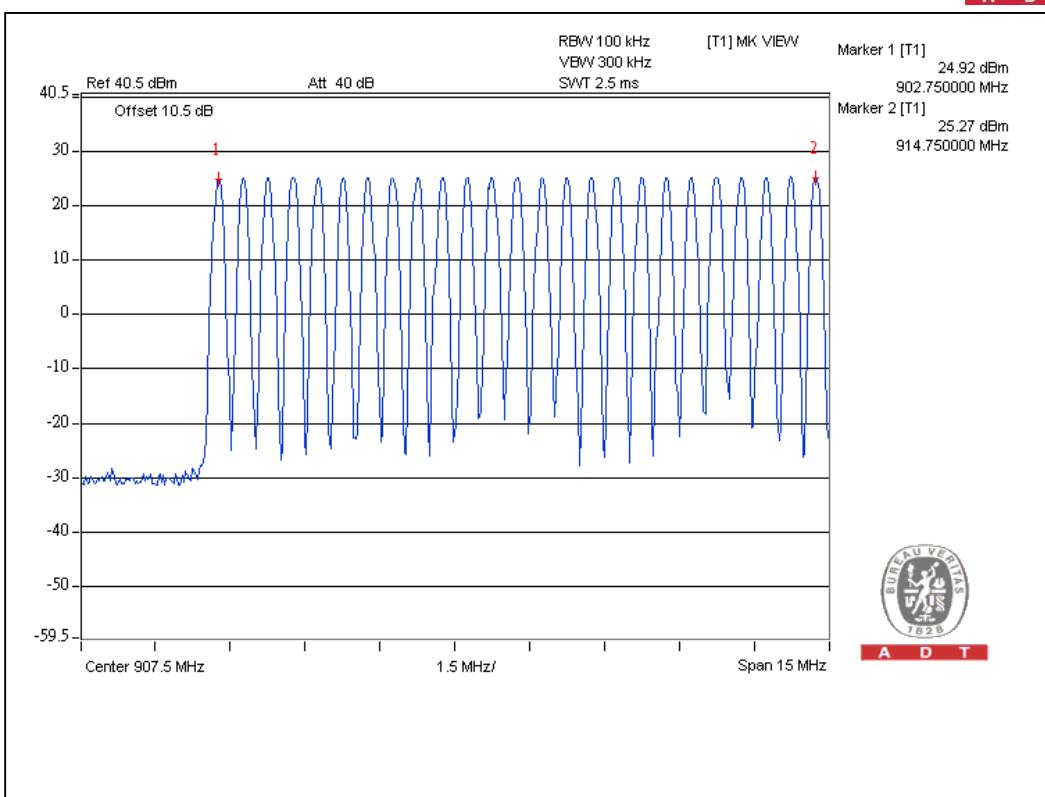


#### 4.2.6 TEST RESULTS

There are 50 hopping frequencies in the hopping mode. Please refer to next page for the test result. On the plots, it shows that the hopping frequencies are equally spaced.



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## 4.3 DWELL TIME ON EACH CHANNEL

### 4.3.1 LIMIT OF DWELL TIME USED

For FHSS, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period. For hybrid systems, the average time of occupancy on any frequency should not exceed 0.4 seconds within a time period in seconds equal to the number of hopping frequencies employed multiplied by 0.4.

### 4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 03, 2009	Aug. 02, 2010

#### NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.



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#### 4.3.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of SA on any frequency to be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
4. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
5. Repeat above procedures until all frequencies measured were complete.

#### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.3.5 TEST SETUP





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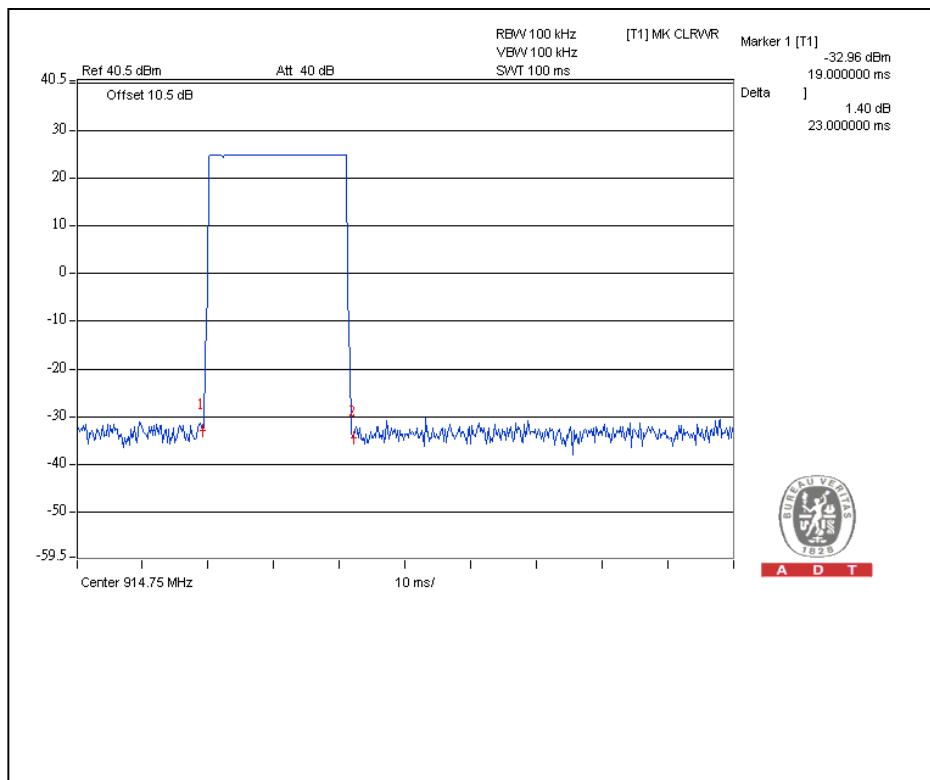
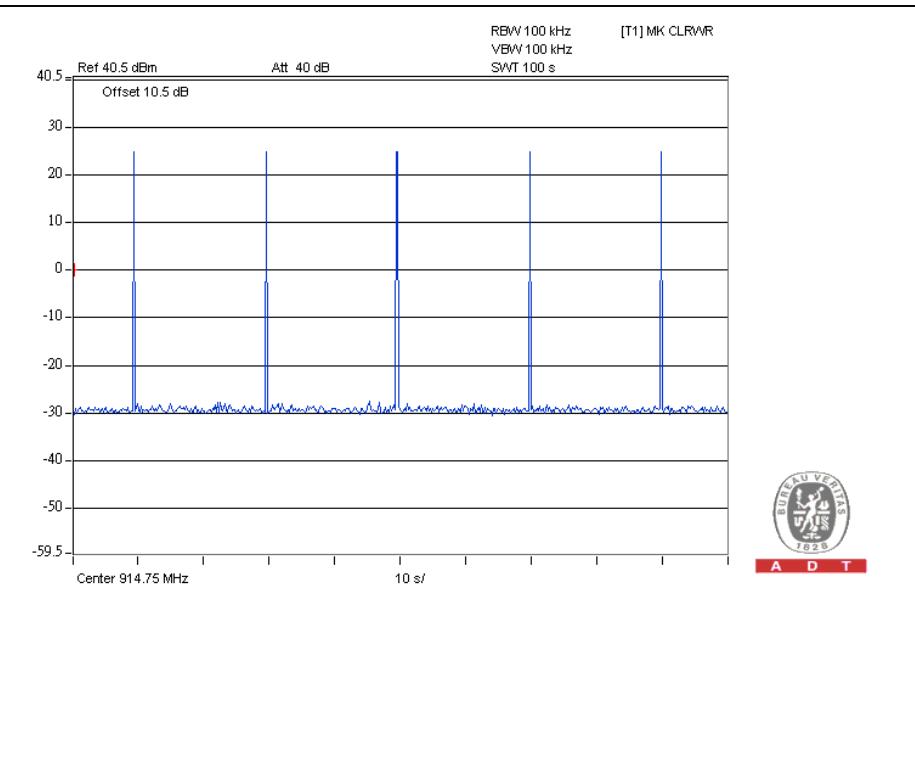
#### 4.3.6 TEST RESULTS

Number of transmission in a 20 s	Length of transmission time (msec)	Result (msec)	Limit (msec)
1 time	23.4	23.4	400

Test plots of the transmitting time slot are shown on next page.



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## 4.4 CHANNEL BANDWIDTH

For frequency hopping system operating in the 902-928MHz, If the 20dB bandwidth of hopping channel is greater than 25kHz, 20dB bandwidth of hopping channel shall be a minimum limit for the hopping channel separation.

### 4.4.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 03, 2009	Aug. 02, 2010

#### NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.



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#### 4.4.2 TEST PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

#### 4.4.3 DEVIATION FROM TEST STANDARD

No deviation

#### 4.4.4 TEST SETUP



#### 4.4.5 EUT OPERATING CONDITION

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

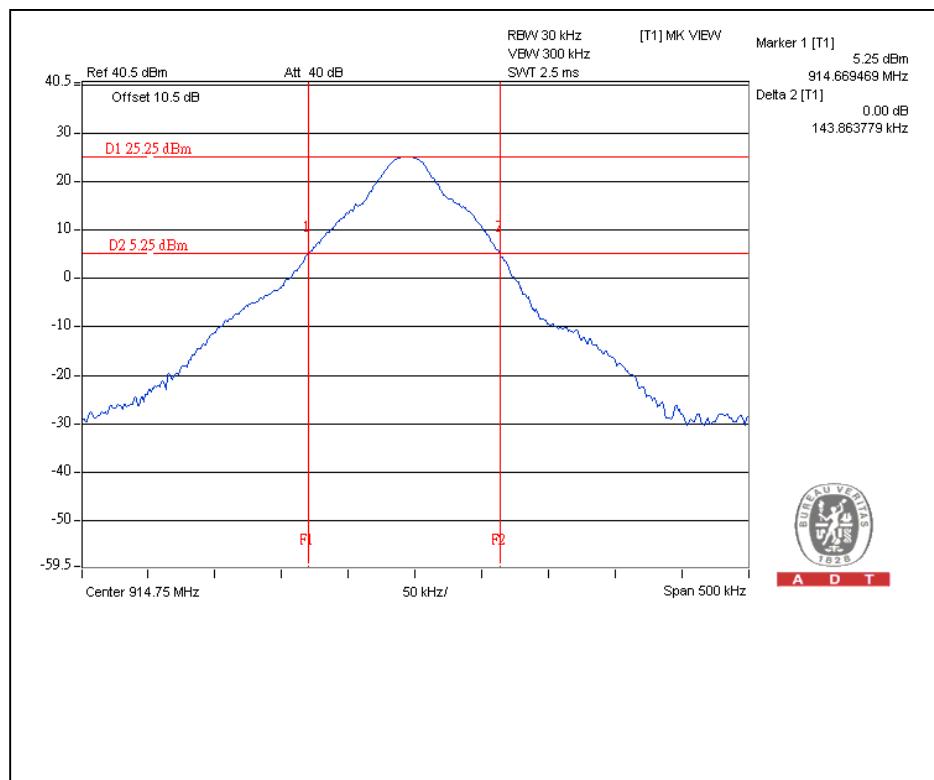


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#### 4.4.6 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)
0	902.75	0.14
24	914.75	0.14
49	927.25	0.14

#### Channel 24





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## 4.5 HOPPING CHANNEL SEPARATION

### 4.5.1 LIMIT OF HOPPING CHANNEL SEPARATION

At least 25 kHz or 20dB hopping channel bandwidth (whichever is greater).

### 4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 03, 2009	Aug. 02, 2010

**NOTE:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.



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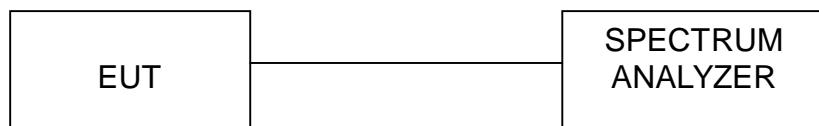
#### 4.5.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
3. By using the MaxHold function record the separation of two adjacent channels.
4. Measure the frequency difference of these two adjacent channels by SA MARK function. And then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

#### 4.5.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.5.5 TEST SETUP





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#### 4.5.6 TEST RESULTS

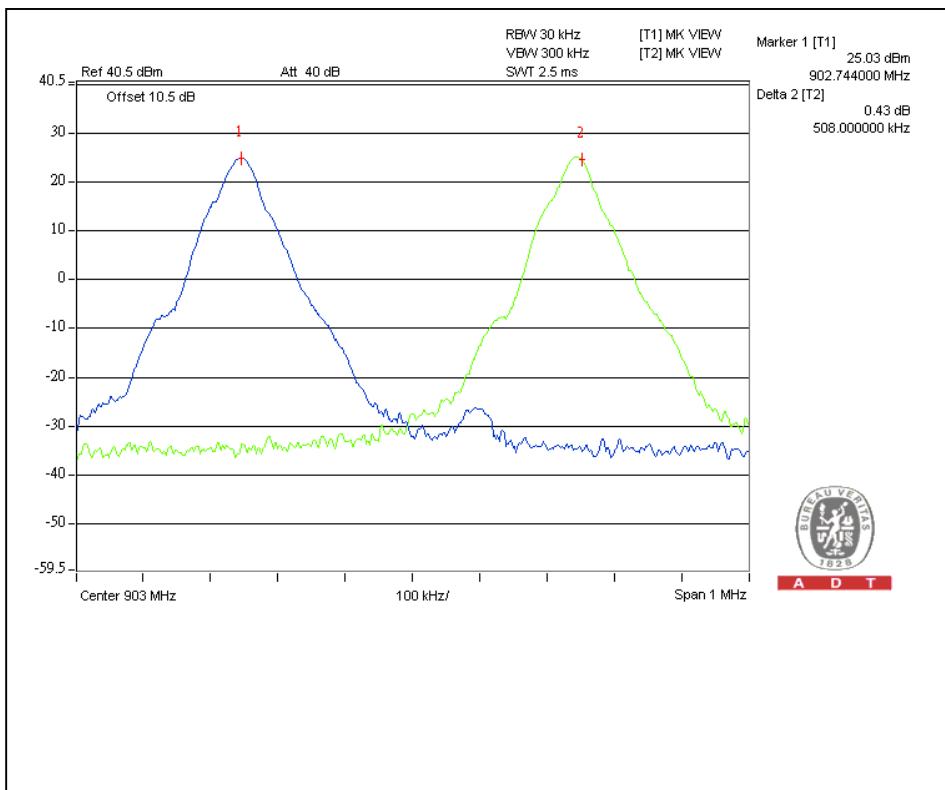
Channel	Frequency (MHz)	Adjacent Channel Separation	Minimum Limit (MHz)	Pass / Fail
0	902.75	508kHz	0.14	PASS
24	914.75	505kHz	0.14	PASS
49	927.25	506kHz	0.14	PASS

The minimum limit is 20dB bandwidth. Test results please refer to next two pages.

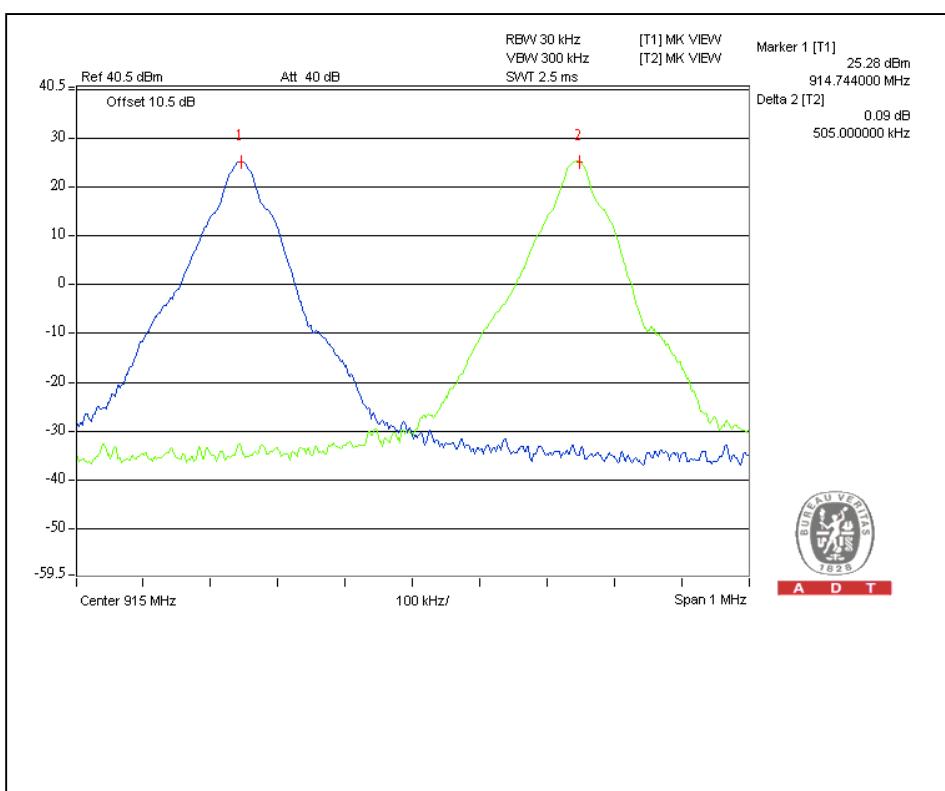


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## Channel 0



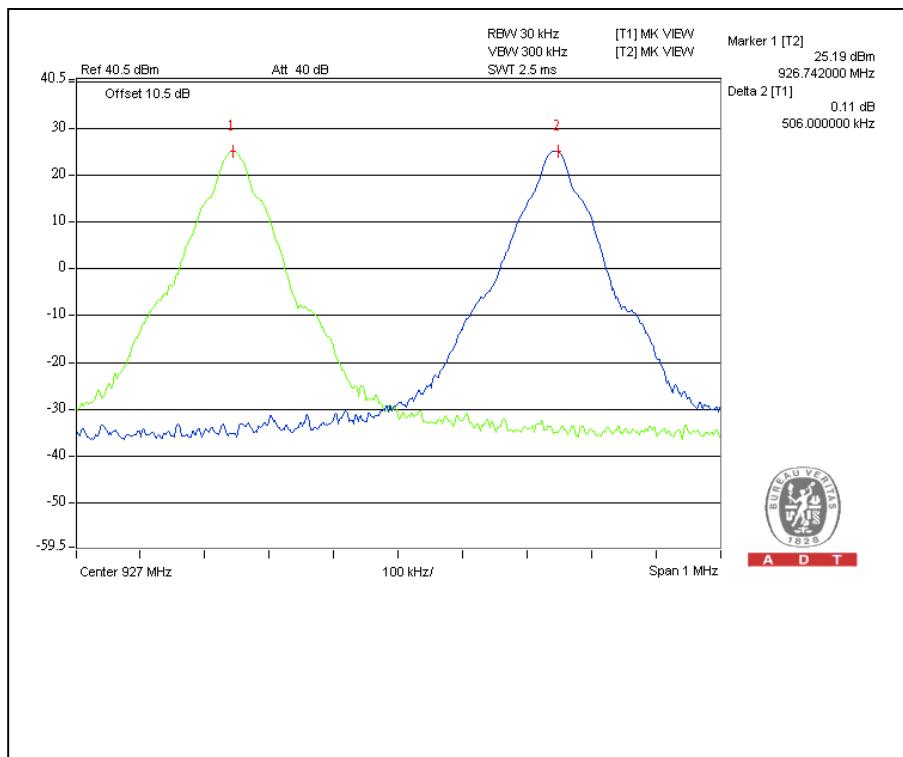
## Channel 24





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## Channel 49





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## 4.6 MAXIMUM PEAK OUTPUT POWER

### 4.6.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

### 4.6.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 03, 2009	Aug. 02, 2010

**NOTE:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.



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#### 4.6.3 TEST PROCEDURES

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- c. The center frequency of the spectrum analyzer is set to the fundamental frequency and using 3MHz RBW and 3 MHz VBW.
- d. Measure the captured power within the band and recording the plot.
- e. Repeat above procedures until all frequencies required were complete.

#### 4.6.4 DEVIATION FROM TEST STANDARD

No deviation



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#### 4.6.5 TEST SETUP



For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

#### 4.6.6 EUT OPERATING CONDITION

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

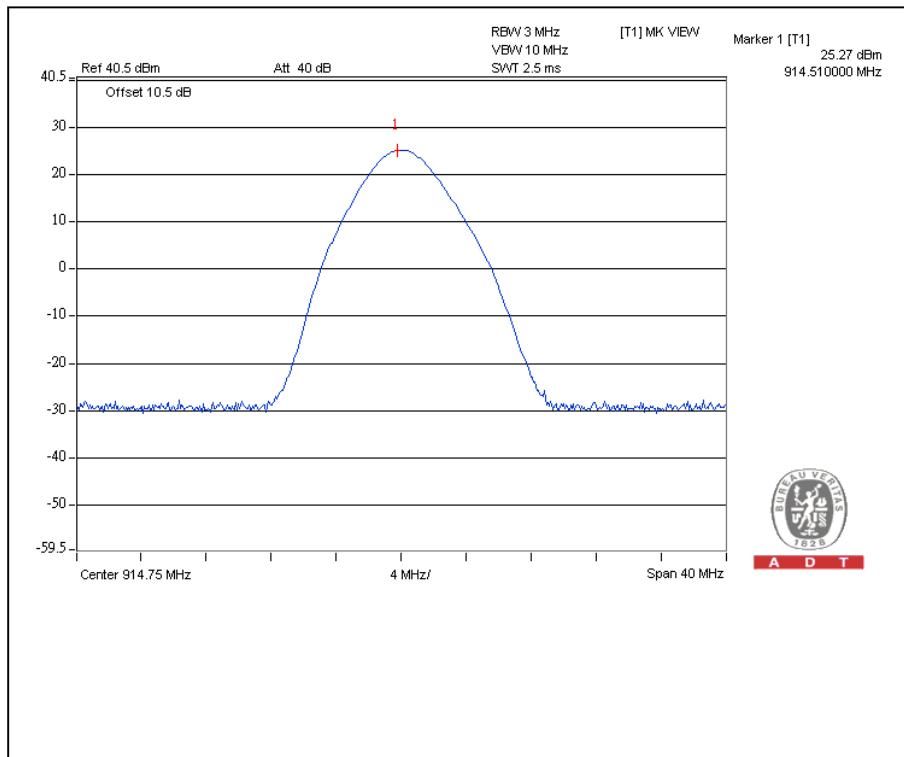


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#### 4.6.7 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
0	902.75	323.6	25.1	30	PASS
24	914.75	338.8	25.3	30	PASS
49	927.25	338.8	25.3	30	PASS

#### Channel 24





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## 4.7 RADIATED EMISSION MEASUREMENT

### 4.7.1 LIMITS OF RADIATED EMISSION 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

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.



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#### 4.7.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250253	Aug. 03, 2009	Aug. 02, 2010
Agilent Pre-Selector	N9039A	MY46520311	Aug. 17, 2009	Aug. 16, 2010
Agilent Signal Generator	N5181A	MY49060517	July 20, 2009	July 19, 2010
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-03	Nov. 18, 2009	Nov. 17, 2010
Agilent Pre-Amplifier	8449B	3008A02578	July 06, 2009	July 05, 2010
Miteq Pre-Amplifier	AFS33-1800265 0-30-8P-44	881786	NA	NA
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-360	Sep. 30, 2009	Sep. 29, 2010
AISI Horn_Antenna	AIH.8018	0000320091110	Nov. 16, 2009	Nov. 15, 2010
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Sep. 30, 2009	Sep. 29, 2010
RF CABLE	NA	RF104-201 RF104-203 RF104-204	Dec. 24, 2009	Dec. 23, 2010
RF Cable	NA	CHGCAB_001	NA	NA
Software	ADT_Radiated_V8.7.06	NA	NA	NA
CT Antenna Tower & Turn Table	NA	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 horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.  
3. The test was performed in 966 Chamber No. G.  
4. The FCC Site Registration No. is 656396.  
5. The VCCI Site Registration No. is R-1626.  
6. The CANADA Site Registration No. is IC 7450G-3.



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#### 4.7.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters chamber room. 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 10 dB 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 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

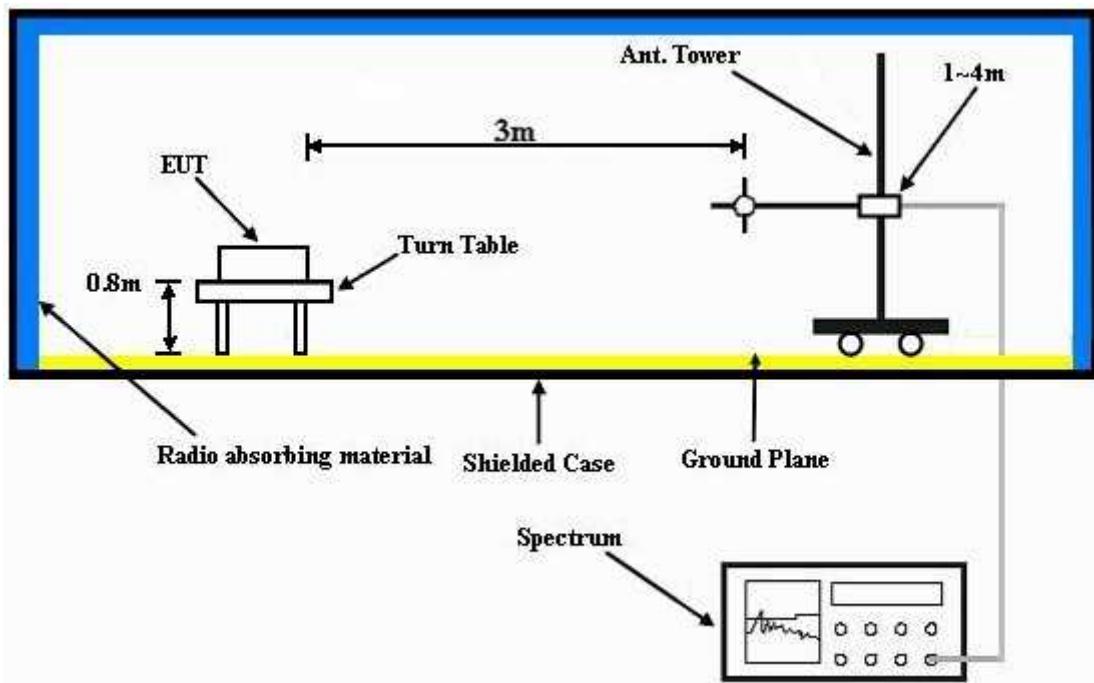
#### NOTE:

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 is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz.

#### 4.7.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.7.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.



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## 4.7.6 TEST RESULTS

CHANNEL	0	FREQUENCY RANGE	Below 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 73%RH, 1013 hPa	TESTED BY	Eric 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	120.00	38.28 QP	43.50	-5.22	2.25 H	141	26.31	11.97
2	143.92	37.79 QP	43.50	-5.71	2.25 H	114	24.27	13.52
3	167.96	36.30 QP	43.50	-7.20	1.50 H	294	23.21	13.09
4	215.92	40.04 QP	43.50	-3.46	1.25 H	93	28.73	11.31
5	239.84	36.31 QP	46.00	-9.69	1.00 H	268	23.91	12.40
6	263.88	41.55 QP	46.00	-4.45	1.00 H	119	28.25	13.30
7	287.81	41.38 QP	46.00	-4.62	1.00 H	251	27.32	14.06
8	311.85	40.84 QP	46.00	-5.16	1.00 H	251	26.08	14.76
9	335.89	39.26 QP	46.00	-6.74	1.00 H	255	23.86	15.40
10	359.81	43.71 QP	46.00	-2.29	1.00 H	249	27.68	16.03
11	902.00	63.64 PK	106.76	-43.12	1.04 H	359	37.44	26.20
12	902.00	57.12 AV	105.21	-48.09	1.04 H	359	30.92	26.20
13	*902.75	126.76 PK			1.01 H	0	100.56	26.20
14	*902.75	125.21 AV			1.01 H	0	99.01	26.20

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	37.46	37.34 QP	40.00	-2.66	1.00 V	154	23.60	13.74
2	71.92	29.38 QP	40.00	-10.62	1.25 V	360	18.34	11.04
3	95.96	37.07 QP	43.50	-6.43	1.00 V	196	27.47	9.60
4	143.92	35.63 QP	43.50	-7.87	1.00 V	193	22.11	13.52
5	167.96	36.29 QP	43.50	-7.21	1.00 V	207	23.20	13.09
6	191.88	33.32 QP	43.50	-10.18	1.00 V	138	22.19	11.13
7	215.92	37.22 QP	43.50	-6.28	1.00 V	83	25.91	11.31
8	311.85	36.27 QP	46.00	-9.73	1.75 V	233	21.51	14.76
9	335.89	35.86 QP	46.00	-10.14	1.50 V	75	20.46	15.40
10	359.81	37.49 QP	46.00	-8.51	1.25 V	54	21.46	16.03
11	902.00	64.80 PK	107.49	-42.69	1.01 V	358	38.60	26.20
12	902.00	57.50 AV	107.20	-49.70	1.01 V	358	31.30	26.20
13	*902.75	127.49 PK			1.00 V	359	101.29	26.20
14	*902.75	127.20 AV			1.00 V	359	101.00	26.20

**REMARKS:**

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “\*”: Fundamental frequency.



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<b>CHANNEL</b>	Channel 0	<b>FREQUENCY RANGE</b>	1 ~10GHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	20deg. C, 70%RH, 1013 hPa	<b>TESTED BY</b>	Eric Lee

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	2708.25	63.10 PK	74.00	-10.90	1.06 H	206	31.09	32.01
2	2708.25	50.30 AV	54.00	-3.70	1.06 H	206	18.29	32.01
3	3611.00	57.20 PK	74.00	-16.80	1.00 H	291	22.60	34.60
4	3611.00	44.40 AV	54.00	-9.60	1.00 H	291	9.80	34.60
5	4513.75	59.70 PK	74.00	-14.30	1.27 H	277	21.54	38.16
6	4513.75	46.90 AV	54.00	-7.10	1.27 H	277	8.74	38.16
7	5416.50	58.20 PK	74.00	-15.80	1.27 H	119	17.31	40.89
8	5416.50	45.40 AV	54.00	-8.60	1.27 H	119	4.51	40.89
9	8124.75	60.80 PK	74.00	-13.20	1.20 H	56	15.61	45.19
10	8124.75	48.00 AV	54.00	-6.00	1.20 H	56	2.81	45.19
11	9027.50	53.90 PK	74.00	-20.10	1.10 H	267	7.40	46.50
12	9027.50	41.10 AV	54.00	-12.90	1.10 H	267	-5.40	46.50

<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	2708.25	59.70 PK	74.00	-14.30	1.00 V	120	27.69	32.01
2	2708.25	46.90 AV	54.00	-7.10	1.00 V	120	14.89	32.01
3	3611.00	53.40 PK	74.00	-20.60	1.02 V	96	18.80	34.60
4	3611.00	40.60 AV	54.00	-13.40	1.02 V	96	6.00	34.60
5	4513.75	52.00 PK	74.00	-22.00	1.04 V	28	13.84	38.16
6	4513.75	39.20 AV	54.00	-14.80	1.04 V	28	1.04	38.16
7	5416.50	55.30 PK	74.00	-18.70	1.04 V	258	14.41	40.89
8	5416.50	42.50 AV	54.00	-11.50	1.04 V	258	1.61	40.89
9	8124.75	64.80 PK	74.00	-9.20	1.09 V	330	19.61	45.19
10	8124.75	52.00 AV	54.00	-2.00	1.09 V	330	6.81	45.19
11	9027.50	54.20 PK	74.00	-19.80	1.10 V	250	7.70	46.50
12	9027.50	41.40 AV	54.00	-12.60	1.10 V	250	-5.10	46.50

**REMARKS:**

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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<b>CHANNEL</b>	24	<b>FREQUENCY RANGE</b>	Below 1GHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	20deg. C, 73%RH, 1013 hPa	<b>TESTED BY</b>	Eric 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	120.03	38.10 QP	43.50	-5.40	2.00 H	102	26.13	11.97
2	143.95	37.14 QP	43.50	-6.36	2.02 H	153	23.62	13.52
3	167.99	36.10 QP	43.50	-7.40	1.49 H	299	23.02	13.08
4	215.97	39.86 QP	43.50	-3.64	1.23 H	86	28.54	11.32
5	239.79	36.12 QP	46.00	-9.88	1.01 H	268	23.73	12.39
6	263.92	41.10 QP	46.00	-4.90	1.03 H	269	27.80	13.30
7	288.00	41.32 QP	46.00	-4.68	1.05 H	326	27.25	14.07
8	312.10	40.03 QP	46.00	-5.97	1.56 H	250	25.26	14.77
9	336.01	40.00 QP	46.00	-6.00	1.01 H	299	24.60	15.40
10	359.92	43.15 QP	46.00	-2.85	1.05 H	300	27.12	16.03
11	*914.75	126.00 PK			1.04 H	356	99.72	26.28
12	*914.75	125.80 AV			1.04 H	356	99.52	26.28

#### 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	38.02	37.78 QP	40.00	-2.22	1.02 V	111	23.95	13.83
2	72.15	30.58 QP	40.00	-9.42	1.35 V	95	19.60	10.98
3	96.02	37.54 QP	43.50	-5.96	1.02 V	123	27.93	9.61
4	144.23	35.98 QP	43.50	-7.52	1.05 V	258	22.45	13.53
5	168.09	37.48 QP	43.50	-6.02	1.01 V	236	24.41	13.07
6	192.10	33.89 QP	43.50	-9.61	1.02 V	154	22.78	11.11
7	216.21	38.90 QP	46.00	-7.10	1.11 V	156	27.57	11.33
8	311.99	37.47 QP	46.00	-8.53	1.24 V	203	22.70	14.77
9	335.92	36.45 QP	46.00	-9.55	1.32 V	62	21.05	15.40
10	360.10	38.98 QP	46.00	-7.02	1.11 V	20	22.94	16.04
11	*914.75	127.00 PK			1.00 V	0	100.72	26.28
12	*914.75	126.80 AV			1.00 V	0	100.52	26.28

**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.



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<b>CHANNEL</b>	Channel 24	<b>FREQUENCY RANGE</b>	1 ~10GHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	20deg. C, 70%RH, 1013 hPa	<b>TESTED BY</b>	Eric 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	2744.25	63.00 PK	74.00	-11.00	1.10 H	291	30.89	32.11
2	2744.25	50.20 AV	54.00	-3.80	1.10 H	291	18.09	32.11
3	3659.00	56.70 PK	74.00	-17.30	1.01 H	299	21.92	34.78
4	3659.00	43.90 AV	54.00	-10.10	1.01 H	299	9.12	34.78
5	4573.75	60.20 PK	74.00	-13.80	1.05 H	180	21.80	38.40
6	4573.75	47.40 AV	54.00	-6.60	1.05 H	180	9.00	38.40
7	7318.00	57.40 PK	74.00	-16.60	1.03 H	262	13.29	44.11
8	7318.00	44.60 AV	54.00	-9.40	1.03 H	262	0.49	44.11
9	8232.75	57.20 PK	74.00	-16.80	1.18 H	60	11.90	45.30
10	8232.75	44.40 AV	54.00	-9.60	1.18 H	60	-0.90	45.30
11	9147.50	52.80 PK	74.00	-21.20	1.13 H	258	6.32	46.48
12	9147.50	40.00 AV	54.00	-14.00	1.13 H	258	-6.48	46.48

**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	2744.25	59.70 PK	74.00	-14.30	1.09 V	170	27.59	32.11
2	2744.25	46.90 AV	54.00	-7.10	1.09 V	170	14.79	32.11
3	3659.00	54.90 PK	74.00	-19.10	1.12 V	160	20.12	34.78
4	3659.00	42.10 AV	54.00	-11.90	1.12 V	160	7.32	34.78
5	4573.75	53.50 PK	74.00	-20.50	1.09 V	1	15.10	38.40
6	4573.75	40.70 AV	54.00	-13.30	1.09 V	1	2.30	38.40
7	7318.00	56.70 PK	74.00	-17.30	1.23 V	263	12.59	44.11
8	7318.00	43.90 AV	54.00	-10.10	1.23 V	263	-0.21	44.11
9	8232.75	60.00 PK	74.00	-14.00	1.07 V	310	14.70	45.30
10	8232.75	47.20 AV	54.00	-6.80	1.07 V	310	1.90	45.30
11	9147.50	53.90 PK	74.00	-20.10	1.08 V	246	7.42	46.48
12	9147.50	41.10 AV	54.00	-12.90	1.08 V	246	-5.38	46.48

**REMARKS:**

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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CHANNEL	49	FREQUENCY RANGE	Below 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 73%RH, 1013 hPa	TESTED BY	Eric 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	119.98	37.95 QP	43.50	-5.55	1.02 H	54	25.99	11.96
2	144.02	37.23 QP	43.50	-6.27	1.65 H	98	23.70	13.53
3	168.03	36.54 QP	43.50	-6.96	1.84 H	250	23.46	13.08
4	216.10	38.96 QP	46.00	-7.04	1.62 H	203	27.64	11.32
5	240.21	36.54 QP	46.00	-9.46	1.23 H	262	24.13	12.41
6	264.21	41.32 QP	46.00	-4.68	1.13 H	2	28.01	13.31
7	289.21	41.01 QP	46.00	-4.99	1.84 H	213	26.90	14.11
8	312.30	40.84 QP	46.00	-5.16	1.43 H	269	26.07	14.77
9	336.15	40.54 QP	46.00	-5.46	1.65 H	96	25.13	15.41
10	360.10	42.02 QP	46.00	-3.98	1.62 H	168	25.98	16.04
11	*927.25	125.50 PK			1.02 H	358	99.13	26.37
12	*927.25	125.22 AV			1.02 H	358	98.85	26.37
13	928.00	61.10 PK	105.50	-44.40	1.00 H	357	34.73	26.37
14	928.00	52.70 AV	105.22	-52.52	1.00 H	357	26.33	26.37

#### 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	38.20	37.10 QP	40.00	-2.90	1.11 V	203	23.24	13.86
2	72.01	30.98 QP	40.00	-9.02	1.20 V	348	19.97	11.01
3	96.15	37.98 QP	43.50	-5.52	1.18 V	256	28.36	9.62
4	144.54	36.24 QP	43.50	-7.26	1.00 V	287	22.69	13.55
5	168.10	37.23 QP	43.50	-6.27	1.20 V	8	24.16	13.07
6	191.92	34.98 QP	43.50	-8.52	1.69 V	8	23.85	11.13
7	215.89	38.10 QP	43.50	-5.40	1.20 V	201	26.79	11.31
8	312.12	37.20 QP	46.00	-8.80	1.30 V	6	22.43	14.77
9	336.09	38.21 QP	46.00	-7.79	1.40 V	65	22.80	15.41
10	360.10	38.23 QP	46.00	-7.77	1.65 V	62	22.19	16.04
11	*927.25	126.50 PK			1.00 V	0	100.13	26.37
12	*927.25	125.80 AV			1.00 V	0	99.43	26.37
13	928.00	61.60 PK	106.50	-44.90	1.01 V	1	35.23	26.37
14	928.00	53.10 AV	105.80	-52.70	1.01 V	1	26.73	26.37

**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.



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<b>CHANNEL</b>	Channel 49	<b>FREQUENCY RANGE</b>	1 ~10GHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	20deg. C, 70%RH, 1013 hPa	<b>TESTED BY</b>	Eric Lee

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	2781.75	62.30 PK	74.00	-11.70	1.16 H	255	30.10	32.20
2	2781.75	49.50 AV	54.00	-4.50	1.16 H	255	17.30	32.20
3	3709.00	58.10 PK	74.00	-15.90	1.00 H	291	23.13	34.97
4	3709.00	45.30 AV	54.00	-8.70	1.00 H	291	10.33	34.97
5	4636.25	58.40 PK	74.00	-15.60	1.00 H	108	19.74	38.66
6	4636.25	45.60 AV	54.00	-8.40	1.00 H	108	6.94	38.66
7	7418.00	57.10 PK	74.00	-16.90	1.00 H	292	12.88	44.22
8	7418.00	44.30 AV	54.00	-9.70	1.00 H	292	0.08	44.22
9	8345.25	57.20 PK	74.00	-16.80	1.12 H	261	11.80	45.40
10	8345.25	44.40 AV	54.00	-9.60	1.12 H	261	-1.00	45.40

<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	2781.75	60.80 PK	74.00	-13.20	1.17 V	162	28.60	32.20
2	2781.75	48.00 AV	54.00	-6.00	1.17 V	162	15.80	32.20
3	3709.00	55.40 PK	74.00	-18.60	1.15 V	103	20.43	34.97
4	3709.00	42.60 AV	54.00	-11.40	1.15 V	103	7.63	34.97
5	4636.25	53.10 PK	74.00	-20.90	1.05 V	358	14.44	38.66
6	4636.25	40.30 AV	54.00	-13.70	1.05 V	358	1.64	38.66
7	7418.00	57.60 PK	74.00	-16.40	1.12 V	288	13.38	44.22
8	7418.00	44.80 AV	54.00	-9.20	1.12 V	288	0.58	44.22
9	8345.25	60.70 PK	74.00	-13.30	1.12 V	223	15.30	45.40
10	8345.25	47.90 AV	54.00	-6.10	1.12 V	223	2.50	45.40

**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.



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## 4.8 CONDUCTED OUT-BAND EMISSION MEASUREMENT

### 4.8.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz RBW).

### 4.8.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 03, 2009	Aug. 02, 2010

#### NOTE:

- 1.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

### 4.8.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 20 MHz bandwidth from band edge. The band edges was measured and recorded.

### 4.8.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.8.5 EUT OPERATING CONDITION

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.



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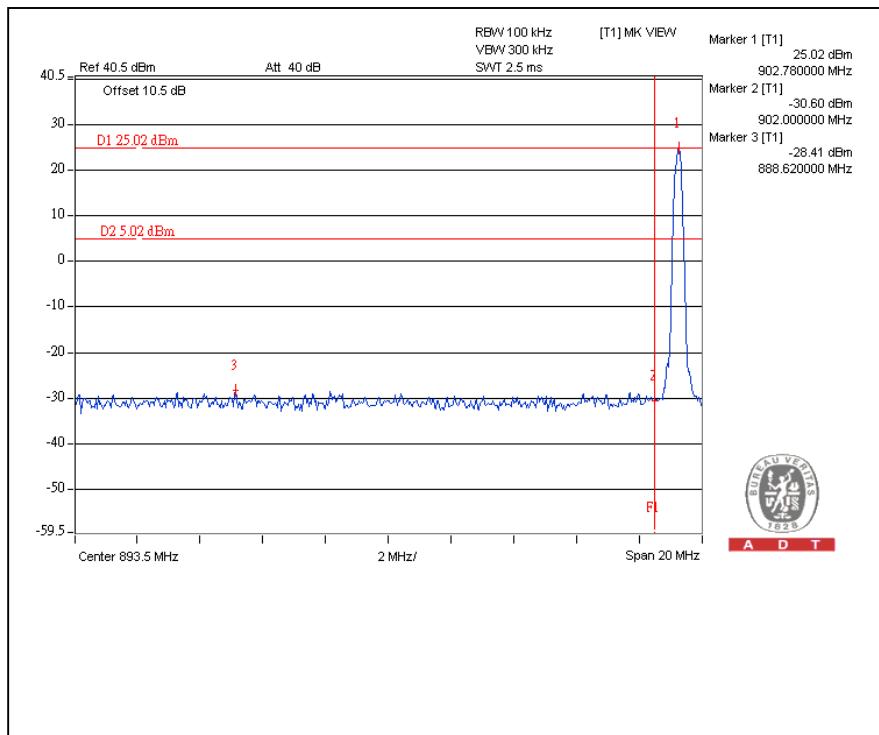
#### 4.8.6 TEST RESULTS

The spectrum plots are attached on the following 2 pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

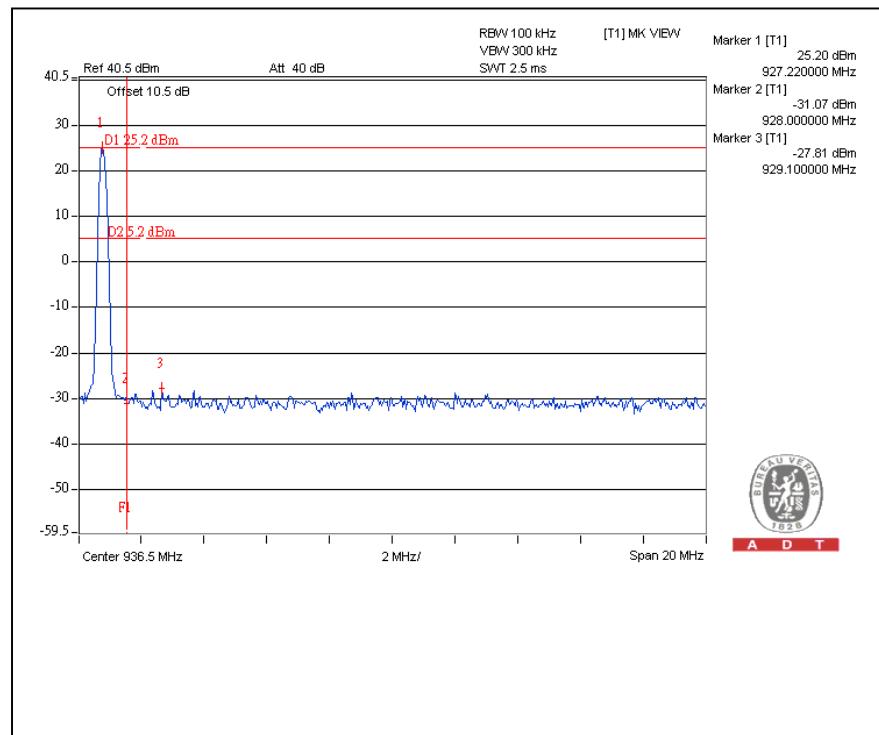


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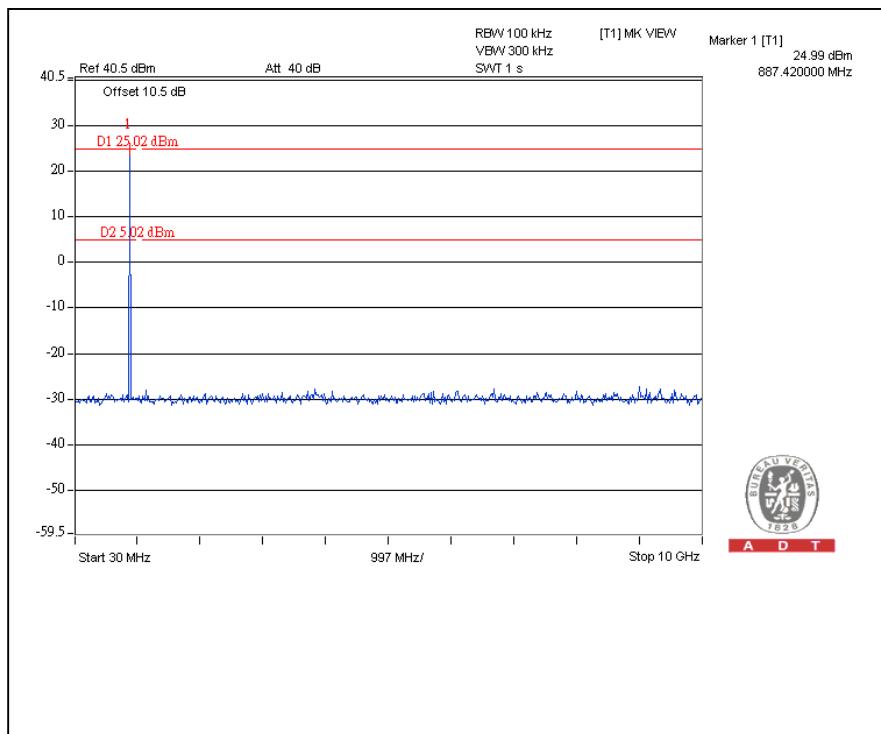
CH49



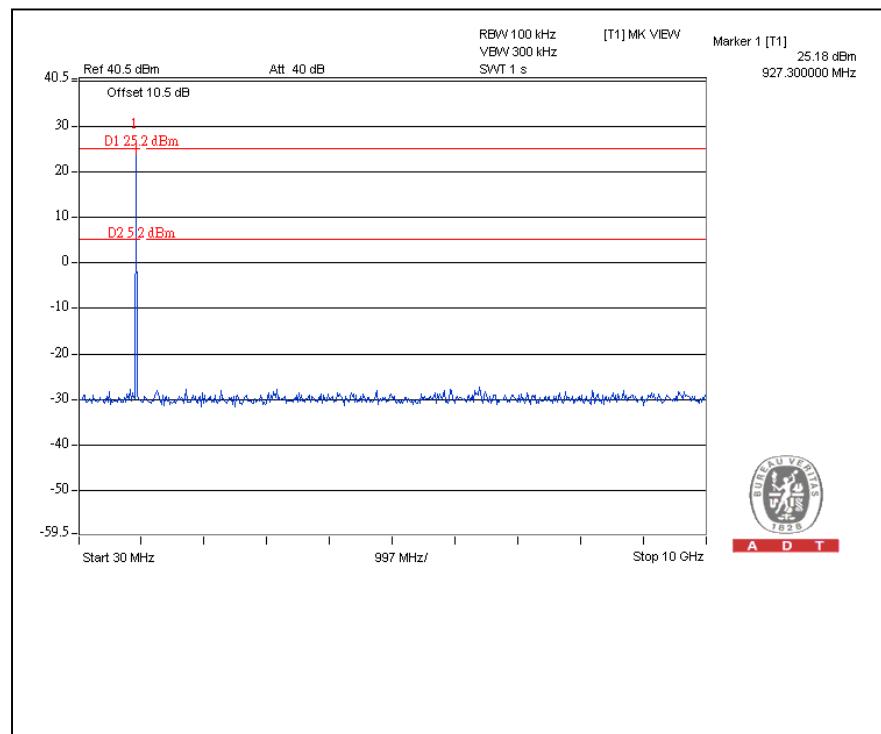


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## 5 INFORMATION ON THE TESTING LABORATORIES

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 certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

[www.adt.com.tw/index.5/phtml](http://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:** **Web Site:** [www.adt.com.tw](http://www.adt.com.tw)

Tel: 886-3-3183232  
Fax: 886-3-3185050

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



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## 6 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

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