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# FCC TEST REPORT

**REPORT NO.:** RF980909H08

**MODEL NO.:** R-R0003

**RECEIVED:** Sep. 09, 2009

**TESTED:** Sep. 25 to Oct. 20, 2009

**ISSUED:** Oct. 23, 2009

**APPLICANT:** Wanlida Group Co., Ltd.

**ADDRESS:** No. 618, Jiahe Road, Xiamen, Fujian, China

**ISSUED BY:** Bureau Veritas Consumer Products Services  
(H.K.) Ltd., Taoyuan Branch

**LAB LOCATION:** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen,  
Chiung Lin Hsiang, Hsin Chu Hsien 307,  
Taiwan

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## 1 CERTIFICATION

**PRODUCT :** Wireless Presenter  
**BRAND NAME :** Logitech  
**MODEL NO. :** R-R0003  
**TESTED:** Sep. 25 to Oct. 20, 2009  
**APPLICANT :** Wanlida Group Co., Ltd.  
**TEST ITEM:** ENGINEERING SAMPLE  
**STANDARDS :** 47 CFR Part 15, Subpart C (Section 15.247)  
ANSI C63.4-2003

The above equipment (Model: R-R0003) 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 :** Midoli Peng , **DATE:** Oct. 23, 2009  
( Midoli Peng, Specialist )

**TECHNICAL ACCEPTANCE :** Hank Chung , **DATE:** Oct. 23, 2009  
( Hank Chung, Deputy Manager )

**APPROVED BY :** May Chen , **DATE:** Oct. 23, 2009  
( May Chen, Deputy Manager )

## 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
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -8.49dB at 76.31MHz

### NOTE:

This report is prepared for FCC class II permissive change. Only radiated emission and maximum peak output power were presented in this test report.

### 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
Radiated emissions (30MHz-1GHz)	3.94 dB
Radiated emissions (1GHz ~18GHz)	2.49 dB
Radiated emissions (18GHz ~20GHz)	2.70 dB

### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	Wireless Presenter
<b>MODEL NO.</b>	R-R0003
<b>FCC ID</b>	SMFR-R0003
<b>POWER SUPPLY</b>	DC 3V from battery
<b>MODULATION TYPE</b>	DSSS
<b>CARRIER FREQUENCY OF EACH CHANNEL</b>	2403MHz ~ 2480MHz
<b>NUMBER OF CHANNEL</b>	78
<b>OUTPUT POWER</b>	1.233mW
<b>ANTENNA TYPE</b>	WIGGLE antenna (Antenna Gain : 1.65dBi) x2
<b>DATA CABLE</b>	NA
<b>I/O PORTS</b>	NA
<b>ASSOCIATED DEVICES</b>	NA

#### NOTE:

1. This report is prepared for FCC class II permissive change. The difference compared with the original report design is as the following:

Change History	Change item	Change description
New layout (PA0.28)	New layout	<ol style="list-style-type: none"> <li>1. Remove the LED</li> <li>2. Cut the LED trace</li> <li>3. Modify antenna to have higher gain and get better performance.</li> <li>4. New RF matching components, L21.8nH, C17 12pF, C15 &amp; C16 2.2pF</li> </ol>

2. The EUT was pre-tested under the following test modes for three different axes placements:

Test Mode	Description
Mode A	X-Y plane
<b>Mode B</b>	<b>X-Z plane</b>
Mode C	Y-Z plane

From the above modes, the worst emission level was found in **Mode B**. Therefore only the test data of the mode was recorded in this report individually.

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

## 3.2 DESCRIPTION OF TEST MODES

### 3.0 DESCRIPTION OF TEST MODES

Seventy-eight channels are provided to this EUT.

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		
20	2422	40	2442	60	2462		

#### NOTE:

1. Below 1 GHz, the channel 1, 38, and 78 were pre-tested in chamber. The channel 1, worst case one, was chosen for final test.
2. Above 1 GHz, the channel 1, 38, and 78 were tested individually.

### 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

#### **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 Type	Data Rate (Mbps)
1 to 78	1	DSSS	0.25

#### **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 Type	Data Rate (Mbps)
1 to 78	1, 38, 78	DSSS	0.25



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

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

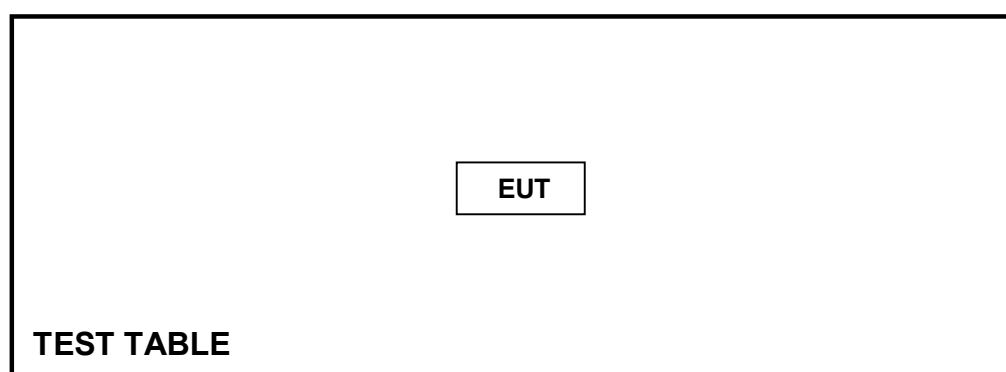
**47 CFR Part 15, Subpart C. (15.247)**  
**ANSI C63.4 : 2003**

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

### **3.5 DESCRIPTION OF SUPPORT UNITS**

The EUT has been tested as an independent unit.

### **3.6 CONFIGURATION OF SYSTEM UNDER TEST**



## 4 TEST TYPES AND RESULTS

### 4.1 RADIATED EMISSION MEASUREMENT

#### 4.1.1 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

**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.

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#### 4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Spectrum Analyzer	FSP40	100036	Dec. 9, 2008	Dec. 8, 2009
Agilent PSA Spectrum Analyzer	E4446A	MY46180622	Apr. 24 , 2009	Apr. 23 , 2010
HP Pre_Amplifier	8449B	3008A01923	Nov. 10, 2008	Nov. 9, 2009
ROHDE & SCHWARZ Test Receiver	ESCS30	847124/029	Aug. 28, 2009	Aug. 28, 2010
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	April 29, 2009	April 28, 2010
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 09, 2008	Dec. 08, 2009
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 22, 2009	Jan. 21, 2010
RF Switches	EMH-011	08009	Sep. 26, 2009	Sep. 25, 2010
RF CABLE (Chaintek)	Sucoflex 106	28077	Aug. 14, 2009	Aug. 13, 2010
RF Cable	8D	STCCAB-001	Sep. 26, 2009	Sep. 25, 2010
Software	ADT_Radiated_V7.6.15.9.2	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, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.

3. The test was performed in Open Site No. C.

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.

### 4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. 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.

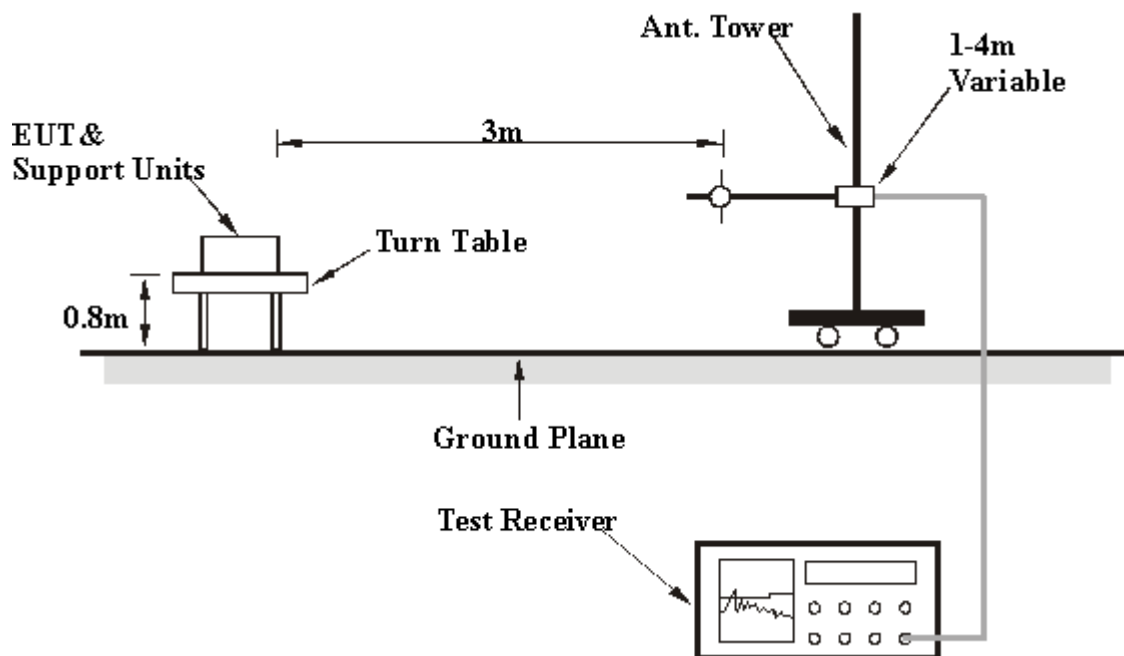
#### NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection 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.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.5 TEST SETUP



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

#### 4.1.6 EUT OPERATING CONDITIONS

Set the EUT under transmission / receiver condition continuously at specific channel frequency.

## 4.1.7 TEST RESULTS

### BELOW 1GHz WORST-CASE DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	DC 3V from battery	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25.0deg. C, 68.0%RH 965hPa	TESTED BY	Phoenix Huang

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	164.00	24.11 QP	43.50	-19.39	1.11 H	185	8.83	15.28
2	238.62	21.71 QP	46.00	-24.29	1.63 H	292	7.88	13.83
3	467.55	25.84 QP	46.00	-20.16	1.29 H	282	4.32	21.52
4	600.52	27.91 QP	46.00	-18.09	1.09 H	277	2.86	25.05
5	736.05	28.60 QP	46.00	-17.40	1.04 H	114	1.94	26.66
6	800.70	30.50 QP	46.00	-15.50	1.00 H	216	2.62	27.88
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	76.31	31.51 QP	40.00	-8.49	1.00 V	0	19.73	11.78
2	126.15	27.93 QP	43.50	-15.57	1.00 V	61	14.75	13.18
3	238.37	25.07 QP	46.00	-20.93	1.00 V	287	11.25	13.82
4	467.55	25.86 QP	46.00	-20.14	1.00 V	20	4.35	21.52
5	600.10	27.03 QP	46.00	-18.97	1.74 V	105	1.99	25.04
6	736.40	28.74 QP	46.00	-17.26	1.34 V	0	2.07	26.67
7	801.40	31.48 QP	46.00	-14.52	1.04 V	104	3.58	27.90

**REMARKS:**

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

# ABOVE 1GHz DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	DC 3V from battery	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28.0deg. C, 63.0%RH 965hPa	TESTED BY	Duke Tseng

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	2386.11	55.16 PK	74.00	-18.84	1.29 H	21	24.89	30.27
2	2386.11	36.06 AV	54.00	-17.94	1.29 H	21	5.79	30.27
3	*2403.00	89.30 PK			1.31 H	20	58.97	30.33
4	*2403.00	70.17 AV			1.31 H	20	39.84	30.33
5	4806.00	52.50 PK	74.00	-21.50	1.53 H	24	15.76	36.74
6	4806.00	33.37 AV	54.00	-20.63	1.53 H	24	-3.37	36.74
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	2388.77	56.01 PK	74.00	-17.99	2.07 V	100	25.73	30.28
2	2388.77	36.88 AV	54.00	-17.12	2.07 V	100	6.60	30.28
3	*2403.00	93.72 PK			2.08 V	101	63.39	30.33
4	*2403.00	74.59 AV			2.08 V	101	44.26	30.33
5	4806.00	48.38 PK	74.00	-25.62	1.14 V	81	11.64	36.74
6	4806.00	29.25 AV	54.00	-24.75	1.14 V	81	-7.49	36.74

- 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. The limit value is defined as per 15.247
  6. “ \* ” : Fundamental frequency





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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	DC 3V from battery	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28.0deg. C, 63.0%RH 965hPa	TESTED BY	Duke Tseng

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	*2440.00	86.43 PK			1.30 H	11	55.96	30.47
2	*2440.00	65.30 AV			1.30 H	11	34.83	30.47
3	4880.00	51.60 PK	74.00	-22.40	1.49 H	22	14.66	36.94
4	4880.00	32.47 AV	54.00	-21.53	1.49 H	22	-4.47	36.94
5	7320.00	56.19 PK	74.00	-17.81	1.06 H	320	13.06	43.13
6	7320.00	37.06 AV	54.00	-16.94	1.06 H	320	-6.07	43.13
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	*2440.00	92.50 PK			2.00 V	255	62.03	30.47
2	*2440.00	73.37 AV			2.00 V	255	42.90	30.47
3	4880.00	50.10 PK	74.00	-23.90	1.58 V	336	13.16	36.94
4	4880.00	30.97 AV	54.00	-23.03	1.58 V	336	-5.97	36.94
5	7320.00	57.13 PK	74.00	-16.87	1.36 V	64	14.00	43.13
6	7320.00	38.00 AV	54.00	-16.00	1.36 V	64	-5.13	43.13

- 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. The limit value is defined as per 15.247
  6. “ \* “ : Fundamental frequency



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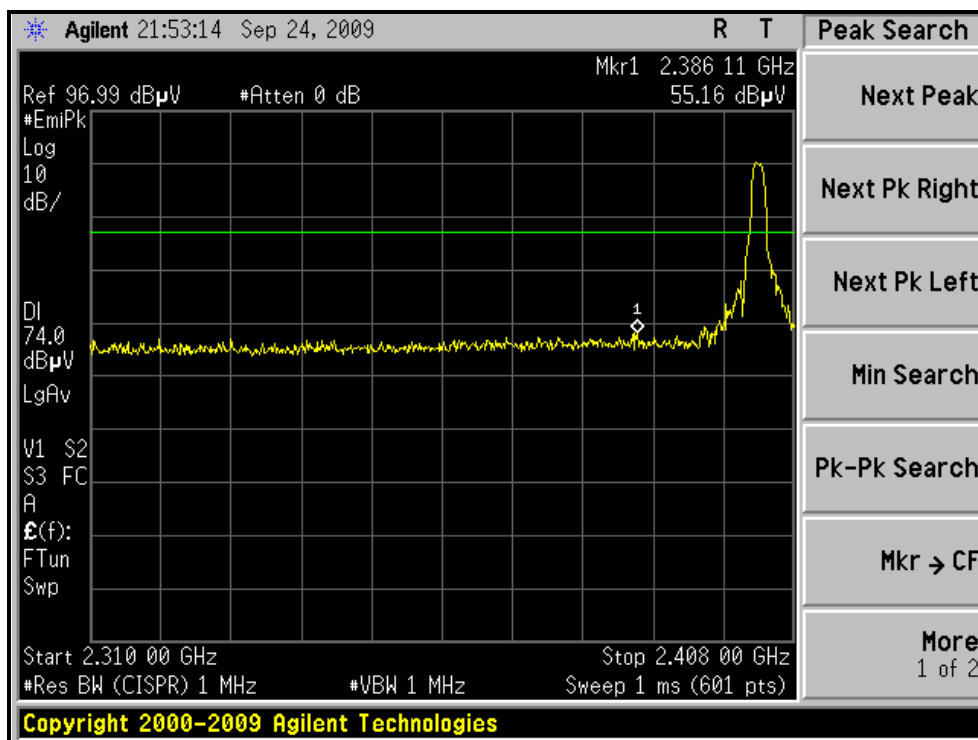
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 78	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	DC 3V from battery	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28.0deg. C, 63.0%RH 965hPa	TESTED BY	Duke Tseng

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	*2480.00	85.50 PK			1.31 H	15	54.88	30.62
2	*2480.00	66.37 AV			1.31 H	15	35.75	30.62
3	2483.61	57.73 PK	74.00	-16.27	1.31 H	20	27.10	30.63
4	2483.61	38.60 AV	54.00	-15.40	1.31 H	20	7.97	30.63
5	4960.00	55.65 PK	74.00	-18.35	1.01 H	280	18.50	37.15
6	4960.00	36.52 AV	54.00	-17.48	1.01 H	280	-0.63	37.15
7	7440.00	61.90 PK	74.00	-12.10	1.13 H	274	18.78	43.12
8	7440.00	42.77 AV	54.00	-11.23	1.13 H	274	-0.35	43.12
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	*2480.00	91.60 PK			2.01 V	258	60.98	30.62
2	*2480.00	72.47 AV			2.01 V	258	41.85	30.62
3	2483.59	64.01 PK	74.00	-9.99	2.01 V	256	33.38	30.63
4	2483.59	44.88 AV	54.00	-9.12	2.01 V	256	14.25	30.63
5	4960.00	49.30 PK	74.00	-24.70	1.09 V	64	12.15	37.15
6	4960.00	30.17 AV	54.00	-23.83	1.09 V	64	-6.98	37.15
7	7440.00	59.85 PK	74.00	-14.15	4.00 V	243	16.73	43.12
8	7440.00	40.72 AV	54.00	-13.28	4.00 V	243	-2.40	43.12

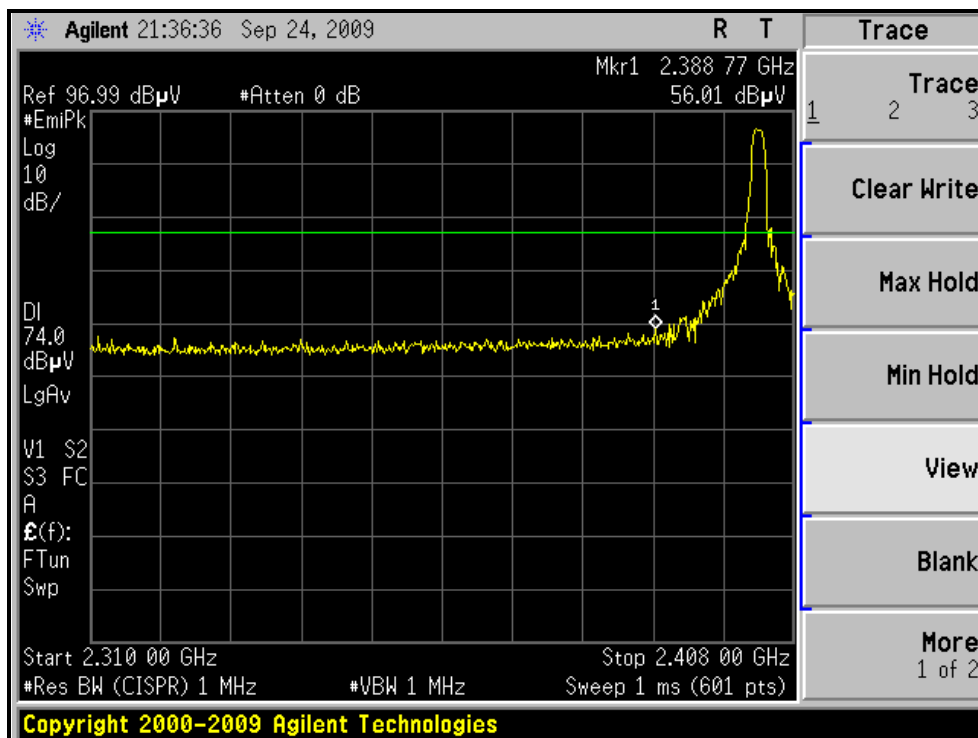
**REMARKS:**

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. The limit value is defined as per 15.247
6. “ \* ” : Fundamental frequency

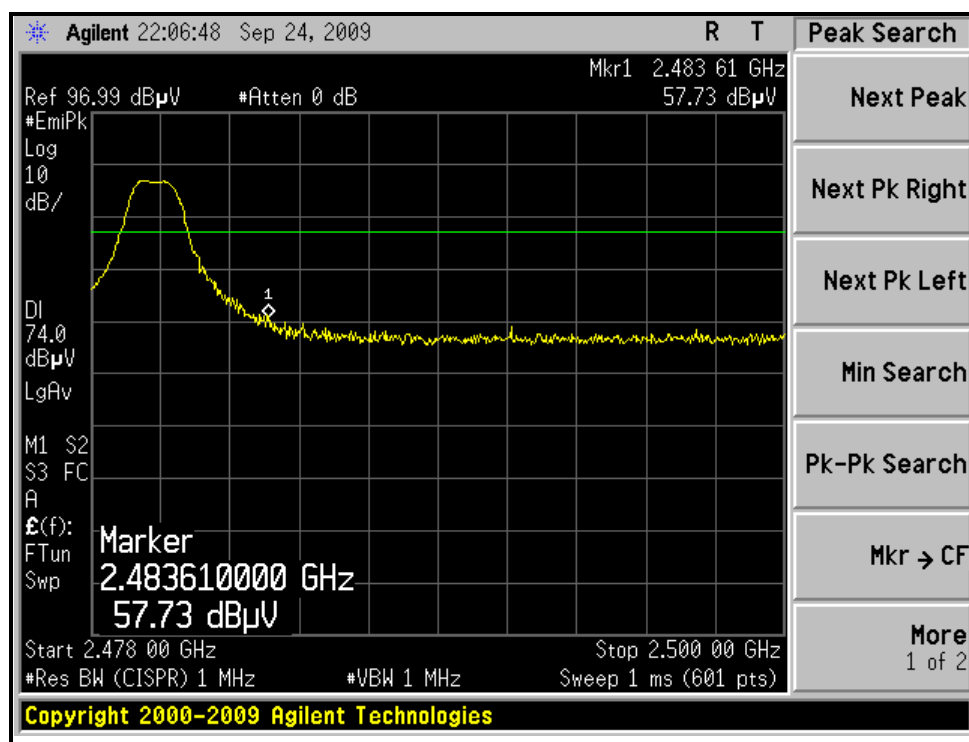
# RESTRICTED BANDEDGE (CH1, HORIZONTAL )



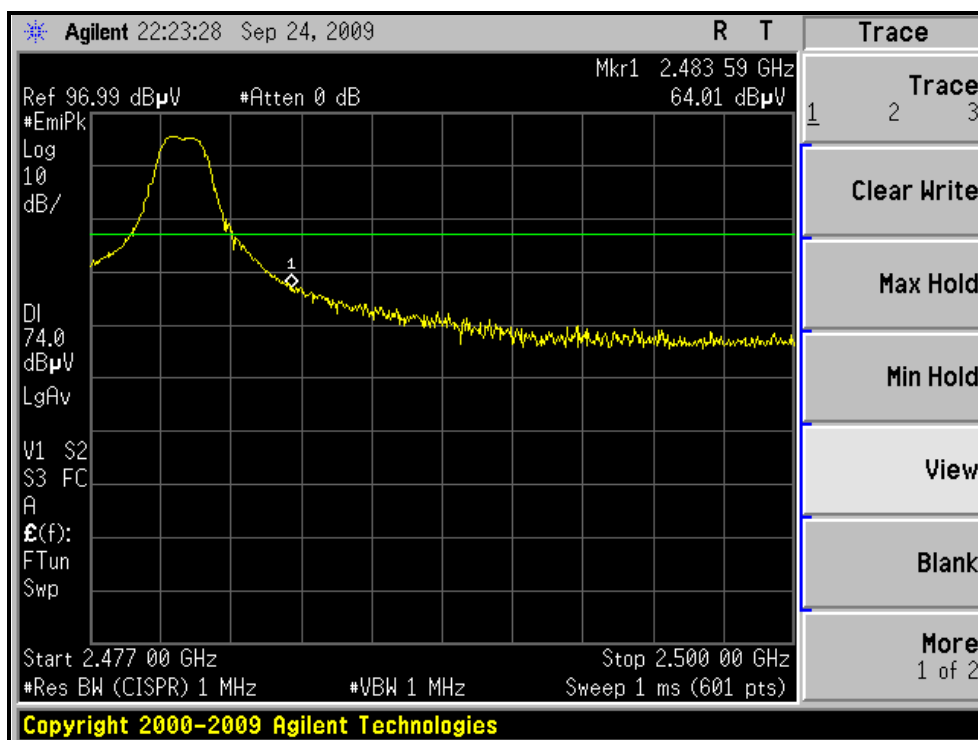
# RESTRICTED BANDEDGE (CH1, VERTICAL )



# RESTRICTED BANDEDGE (CH78, HORIZONTAL )



# RESTRICTED BANDEDGE (CH78, VERTICAL )



## 4.2 MAXIMUM PEAK OUTPUT POWER

### 4.2.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

### 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

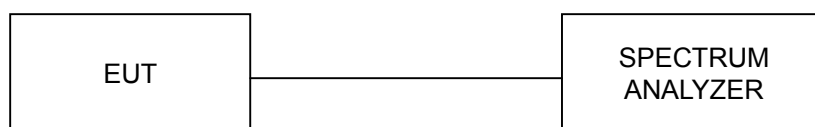
**NOTE:**

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

### 4.2.3 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. Set a reference level on the measuring instrument equal to the highest peak value.
3. The center frequency of the spectrum analyzer is set to the fundamental frequency and using 3 MHz RBW and 10 MHz VBW.
4. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
5. Repeat above procedures until all frequencies measured were complete.

#### 4.2.4 TEST SETUP



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

#### 4.2.5 DEVIATION FROM TEST STANDARD

No deviation

#### 4.2.6 EUT OPERATING CONDITIONS

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



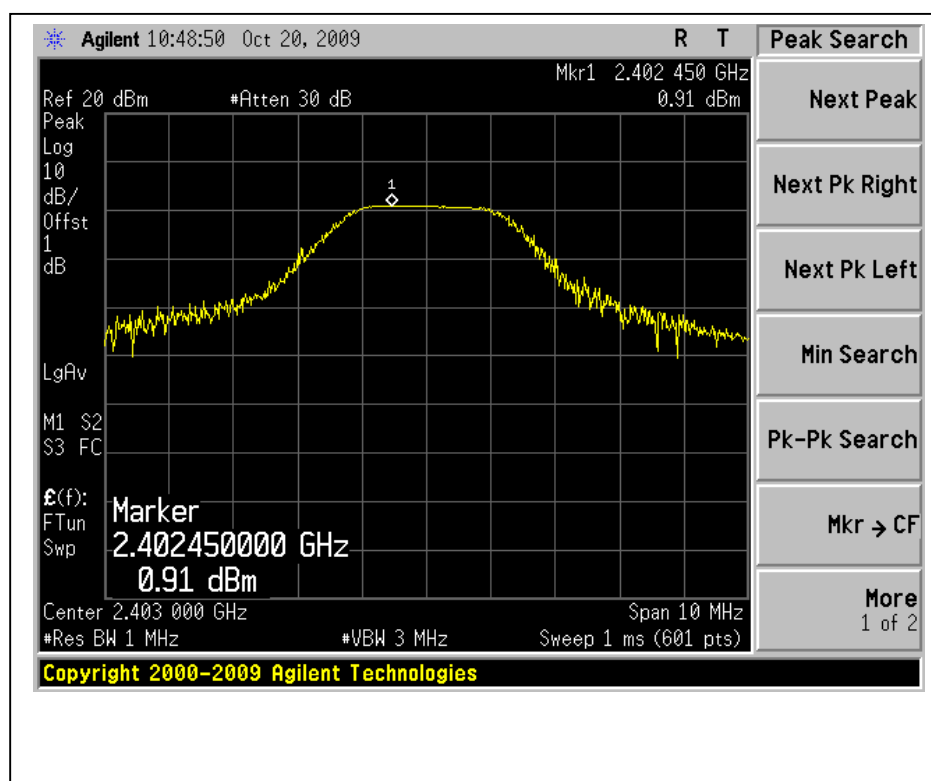
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## 4.2.7 TEST RESULTS

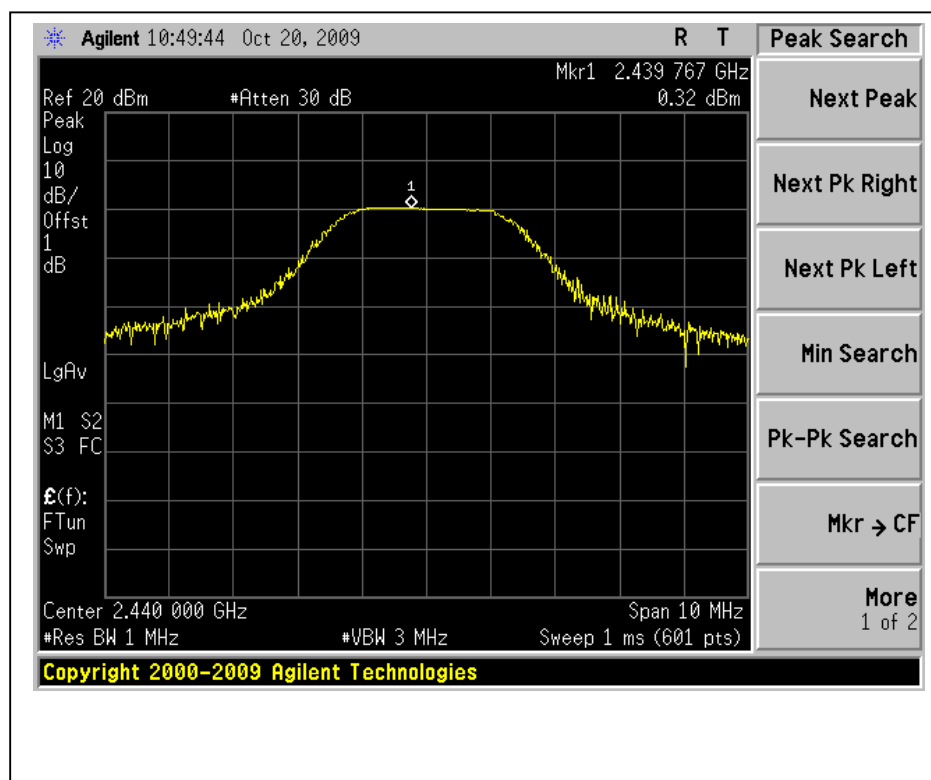
MODULATION TYPE	DSSS	TRANSFER RATE	0.25Mbps
INPUT POWER	DC 3V from battery	ENVIRONMENTAL CONDITIONS	24deg. C, 62%RH, 966hPa
TESTED BY	Eric Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2403	1.233	0.91	30	PASS
38	2440	1.076	0.32	30	PASS
78	2480	0.845	-0.73	30	PASS

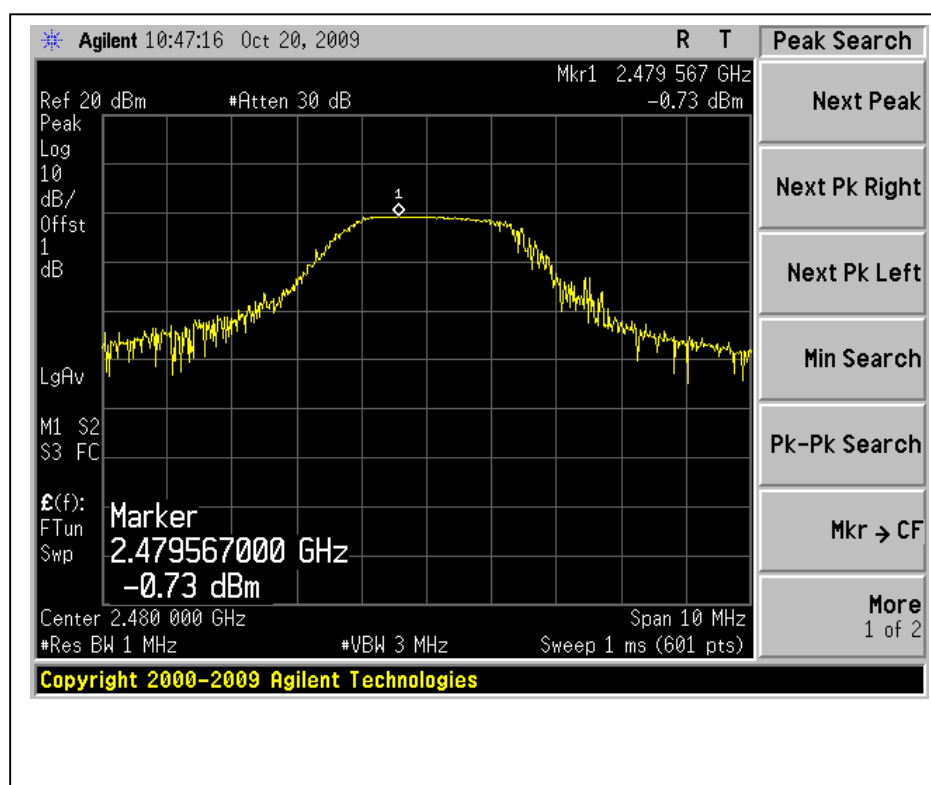
### Channel 1



## Channel 38



## Channel 78





## 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 by the following approval agencies according to ISO/IEC 17025.

<b>USA</b>	FCC, NVLAP
<b>Germany</b>	TUV Rheinland
<b>Japan</b>	VCCI
<b>Norway</b>	NEMKO
<b>Canada</b>	INDUSTRY CANADA, CSA
<b>R.O.C.</b>	TAF, BSMI, NCC
<b>Netherlands</b>	Telefication
<b>Singapore</b>	GOST-ASIA(MOU)
<b>Russia</b>	CERTIS(MOU)

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: 886-2-26052943

**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

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

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.

--- END ---