FCC TEST REPORT

REPORT NO. : RF980506L14
MODEL NO. : AMW52 (refer to item 3.1 for more details)
RECEIVED : May 06, 2009
TESTED : May 11, 2009
ISSUED : May 15, 2009

APPLICANT : Acrox Technologies Co., Ltd

ADDRESS : 8F, No. 437, Rui Guang RD., Nei Hu Dist., Taipei 114, Taiwan, R.O.C.

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

LAB ADDRESS : No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang, Taipei Hsien 244, Taiwan, R.O.C.

TEST LOCATION : No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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1. CERTIFICATION

PRODUCT:	Wireless mouse
MODEL NO.:	AMW52 (refer to item 3.1 for more details)
BRAND:	TARGUS (refer to item 3.1 for more details)
APPLICANT:	Acrox Technologies Co., Ltd
TESTED:	May 11, 2009
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 15, Subpart C (Section 15.249)**
	ANSI C63.4-2003

The above equipment (model: AMW52) have 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 : Andrea Hsia , **DATE :** May 15, 2009
Andrea Hsia / Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE :** May 15, 2009
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE :** May 15, 2009
Gary Chang / Assistant Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.249)			
STANDARD PARAGRAPH	**TEST TYPE**	**RESULT**	**REMARK**
15.207	Conducted Emission Test	NA	Power supply is 3Vdc from batteries.
15.209 15.249 15.249 (d)	Radiated Emission Test Band Edge Measurement Limit: 50dB less than the peak value of fundamental frequency or meet radiated emission limit in section 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -10.86dB at 4863.58MHz.

2.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Wireless mouse
MODEL NO.	AMW52 (refer to NOTE 2 for more details)
FCC ID	PRDOPWIRTMU12
POWER SUPPLY	3Vdc form batteries
MODULATION TYPE	GFSK
OPERATING FREQUENCY	2402.79 ~ 2470.79MHz
NUMBER OF CHANNEL	69
ANTENNA TYPE	Printed antenna
DATA CABLE	NA
I/O PORT	NA
ACCESSORY DEVICES	NA

NOTE:

1. A set of the EUT include transmitter and receiver. This report covers transmitter only. The receiver is covered in another test report which report no.: FD980506L14.
2. The following models are provided to this EUT.

BRAND	MODEL	DIFFERENCE
TARGUS	AMW52	Marketing different
ACROX	MA5	

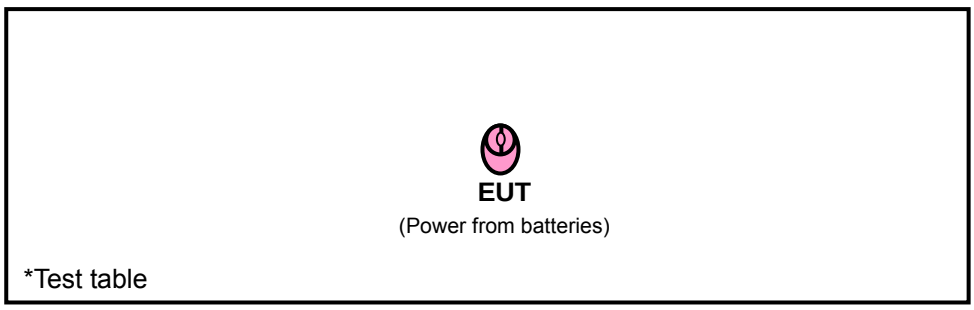
3. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

69 channels are provided to this EUT.

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2402.79	24	2425.79	47	2448.79
2	2403.79	25	2426.79	48	2449.79
3	2404.79	26	2427.79	49	2450.79
4	2405.79	27	2428.79	50	2451.79
5	2406.79	28	2429.79	51	2452.79
6	2407.79	29	2430.79	52	2453.79
7	2408.79	30	2431.79	53	2454.79
8	2409.79	31	2432.79	54	2455.79
9	2410.79	32	2433.79	55	2456.79
10	2411.79	33	2434.79	56	2457.79
11	2412.79	34	2435.79	57	2458.79
12	2413.79	35	2436.79	58	2459.79
13	2414.79	36	2437.79	59	2460.79
14	2415.79	37	2438.79	60	2461.79
15	2416.79	38	2439.79	61	2462.79
16	2417.79	39	2440.79	62	2463.79
17	2418.79	40	2441.79	63	2464.79
18	2419.79	41	2442.79	64	2465.79
19	2420.79	42	2443.79	65	2466.79
20	2421.79	43	2444.79	66	2467.79
21	2422.79	44	2445.79	67	2468.79
22	2423.79	45	2446.79	68	2469.79
23	2424.79	46	2447.79	69	2470.79

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	BM	
-	√	√	NOTE	√	-

Where **PLC:** Power Line Conducted Emission **RE<1G:** Radiated Emission below 1GHz
RE≥1G: Radiated Emission above 1GHz **BM:** Bandedge Measurement

NOTE: No need to concern of Conducted Emission due to the EUT is powered by battery.

RADIATED EMISSION TEST (ABOVE 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations 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
1 to 69	1, 30, 69	GFSK

RADIATED EMISSION TEST (Below 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations 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
1 to 69	30	GFSK

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations 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
1 to 69	1, 75	GFSK

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 C (Section 15.249)
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.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit.

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, 15.249 as following:

15.209 Limit		
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
15.249 Limit		
Fundamental Frequency	**Field Strength of Fundamental (millivolts/meter)**	**Field Strength of Harmonics (microvolts/meter)**
902 ~ 928 MHz	50	500
2400 ~ 2483.5 MHz	50	500
5725 ~ 5875 MHz	50	500
24 ~ 24.25 GHz	250	2500

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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	100033	Jun. 30, 2008	Jun. 29, 2009
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Jul. 04, 2008	Jul. 03, 2009
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 27, 2009	Apr. 26, 2010
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jun. 24, 2008	Jun. 23, 2009
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 25, 2008	Dec. 24, 2009
Preamplifier Agilent	8447D	2944A10633	Nov. 03, 2008	Nov. 02, 2009
Preamplifier Agilent	8449B	3008A01964	Oct. 23, 2008	Oct. 22, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238141/4	May 20, 2008	May 19, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	May 20, 2008	May 19, 2009
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100.	TT93021703	NA	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA	NA

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

2. The test was performed in HwaYa Chamber 3.

3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 988962.

5. The IC Site Registration No. is IC 7450F-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 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

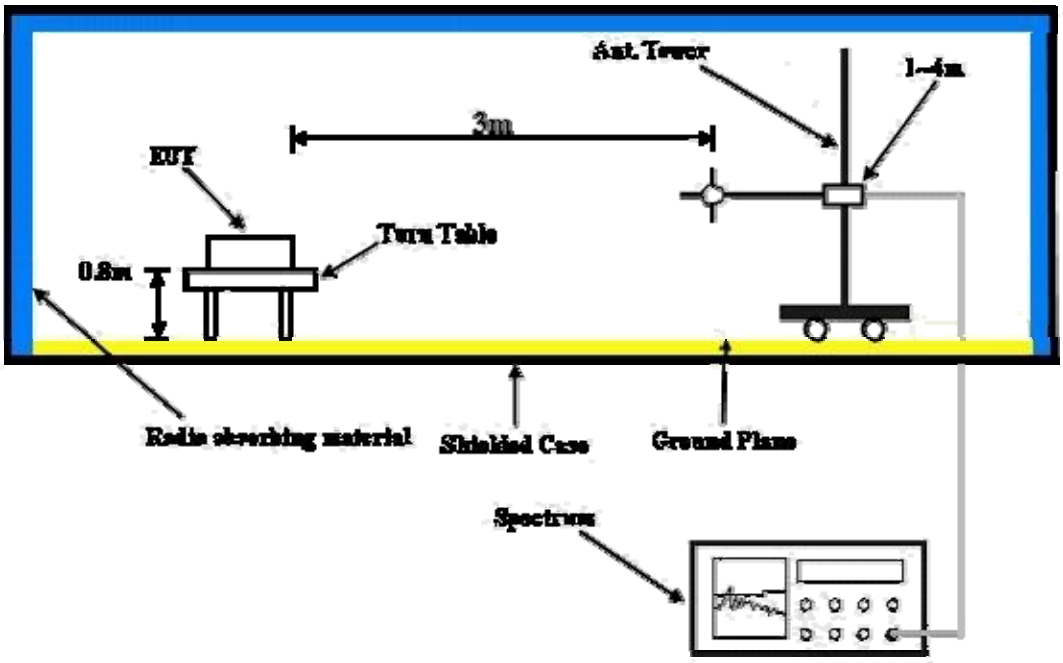
NOTE:

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



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

4.1.6 EUT OPERATING CONDITIONS

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

4.1.7 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	**FREQUENCY RANGE**	1 ~ 25GHz
MODULATION TYPE	GFSK	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 1013hPa	**TESTED BY**	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	42.87 PK	74.00	-31.13	1.38 H	198	10.43	32.44
2	2390.00	29.89 AV	54.00	-24.11	1.38 H	198	-2.55	32.44
3	2400.00	55.14 PK	74.00	-18.86	1.38 H	198	22.66	32.48
4	2400.00	3.58 AV	54.00	-50.42	1.38 H	198	-28.90	32.48
5	*2402.79	90.44 PK	114.00	-23.56	1.38 H	198	57.95	32.49
6	*2402.79	38.88 AV	94.00	-55.12	1.38 H	198	6.39	32.49
7	4805.58	62.73 PK	74.00	-11.27	1.00 H	300	24.51	38.22
8	4805.58	11.17 AV	54.00	-42.83	1.00 H	300	-27.05	38.22
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	2390.00	42.03 PK	74.00	-31.97	1.05 V	68	9.59	32.44
2	2390.00	29.06 AV	54.00	-24.94	1.05 V	68	-3.38	32.44
3	2400.00	52.19 PK	74.00	-21.81	1.05 V	68	19.71	32.48
4	2400.00	0.63 AV	54.00	-53.37	1.05 V	68	-31.85	32.48
5	*2402.79	80.53 PK	114.00	-33.47	1.05 V	68	48.04	32.49
6	*2402.79	28.97 AV	94.00	-65.03	1.05 V	68	-3.52	32.49
7	4805.58	61.69 PK	74.00	-12.31	1.14 V	217	23.47	38.22
8	4805.58	10.13 AV	54.00	-43.87	1.14 V	217	-28.09	38.22

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 average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:

$$20\log(\text{Duty cycle}) = 20\log\frac{0.264\ \text{ms}}{100\ \text{ms}} = -51.56\text{dB}$$

Please see page 16 for plotted duty.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 30	**FREQUENCY RANGE**	1 ~ 25GHz
MODULATION TYPE	GFSK	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 1013hPa	**TESTED BY**	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2431.79	91.09 PK	114.00	-22.91	1.34 H	31	58.51	32.58
2	*2431.79	39.53 AV	94.00	-54.47	1.34 H	31	6.95	32.58
3	**4863.58**	**63.14 PK**	**74.00**	**-10.86**	**1.00 H**	**300**	**24.69**	**38.45**
4	4863.58	11.58 AV	54.00	-42.42	1.00 H	300	-26.87	38.45
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	*2431.79	91.09 PK	114.00	-22.91	1.34 H	31	58.51	32.58
2	*2431.79	39.53 AV	94.00	-54.47	1.34 H	31	6.95	32.58
3	4863.58	63.14 PK	74.00	-10.86	1.00 H	300	24.69	38.45
4	4863.58	11.58 AV	54.00	-42.42	1.00 H	300	-26.87	38.45

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 average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:

$$20\log(\text{Duty cycle}) = 20\log\frac{0.263\ \text{ms}}{100\ \text{ms}} = -51.6\text{dB}$$

Please see page 16 for plotted duty.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 69	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	GFSK	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 1013hPa	TESTED BY	Brad Wu

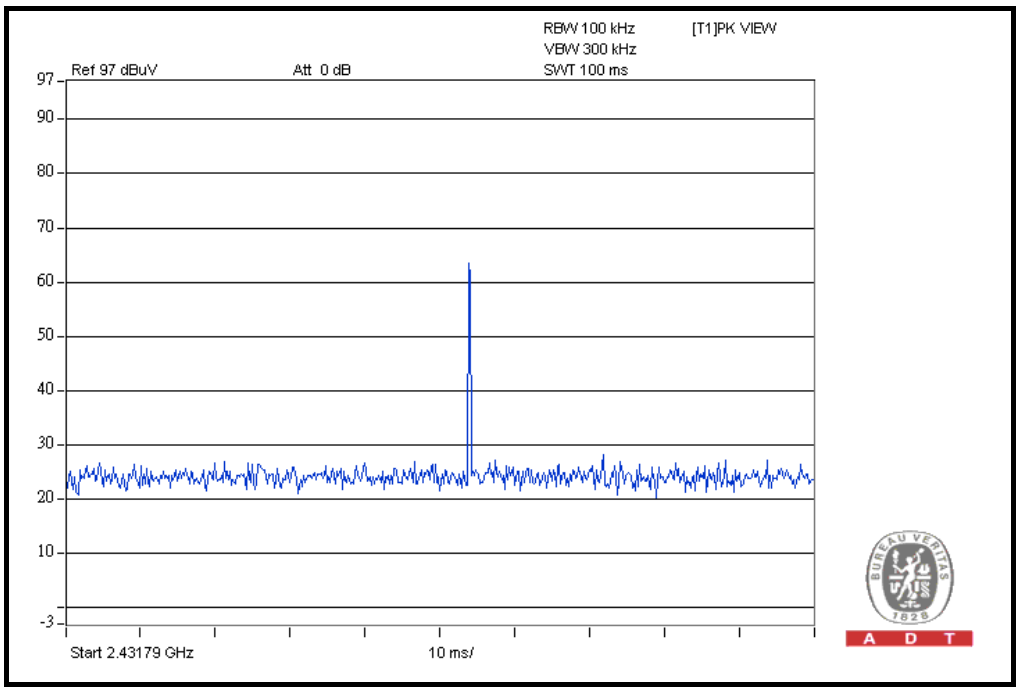
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2470.79	90.87 PK	114.00	-23.13	1.35 H	32	58.16	32.71
2	*2470.79	39.31 AV	94.00	-54.69	1.35 H	32	6.60	32.71
3	2483.50	54.02 PK	74.00	-19.98	1.35 H	32	21.26	32.76
4	2483.50	2.46 AV	54.00	-51.54	1.35 H	32	-30.30	32.76
5	4941.58	62.04 PK	74.00	-11.96	1.10 H	212	23.37	38.67
6	4941.58	10.48 AV	54.00	-43.52	1.10 H	212	-28.19	38.67
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	*2470.79	80.64 PK	114.00	-33.36	1.05 V	62	47.93	32.71
2	*2470.79	29.08 AV	94.00	-64.92	1.05 V	62	-3.63	32.71
3	2483.50	51.96 PK	74.00	-22.04	1.05 V	62	19.20	32.76
4	2483.50	0.40 AV	54.00	-53.60	1.05 V	62	-32.36	32.76
5	4941.58	60.86 PK	74.00	-13.14	1.05 V	276	22.19	38.67
6	4941.58	9.30 AV	54.00	-44.70	1.05 V	276	-29.37	38.67

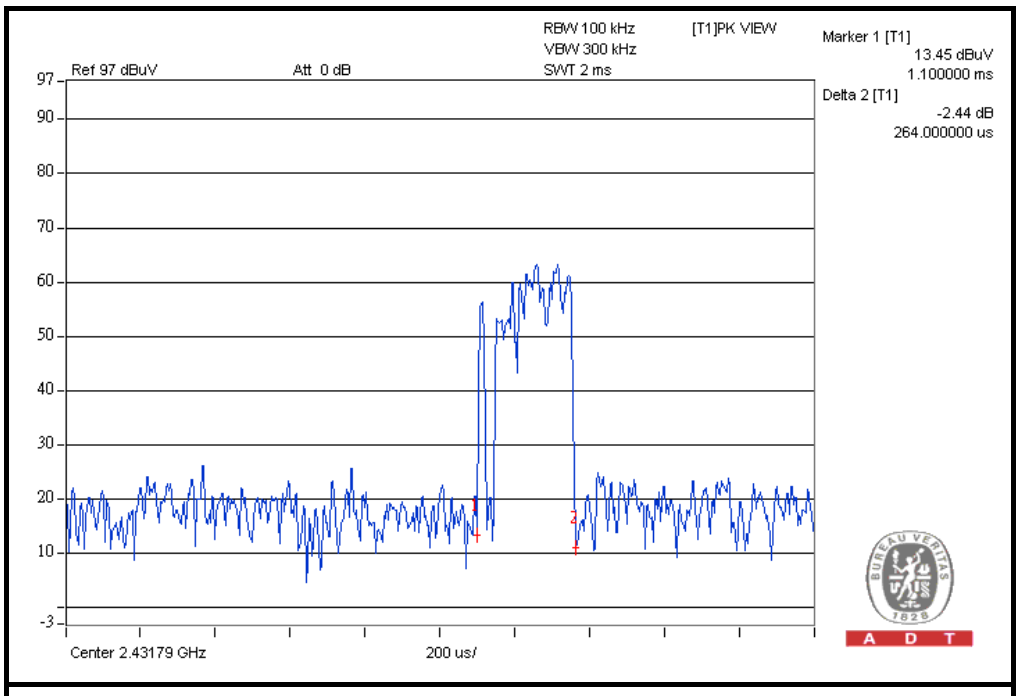
REMARKS:

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 average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:

$$20\log(\text{Duty cycle}) = 20\log\frac{0.263\ \text{ms}}{100\ \text{ms}} = -51.6\text{dB}$$

Please see page 16 for plotted duty.





$$20\log(\text{Duty cycle}) = 20\log\frac{0.264\ \text{ms}}{100\ \text{ms}} = -51.56\text{dB}$$

RADIATED WORST-CASE DATA: BELOW 1GHz

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 30	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	GFSK	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH, 1013hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	125.17	16.66 QP	43.50	-26.84	1.25 H	337	4.93	11.73
2	329.32	17.35 QP	46.00	-28.65	1.00 H	100	2.32	15.03
3	490.70	19.35 QP	46.00	-26.65	1.25 H	319	-0.86	20.22
4	652.07	22.89 QP	46.00	-23.11	1.00 H	337	-0.96	23.85
5	762.90	24.86 QP	46.00	-21.14	1.50 H	28	-0.77	25.63
6	933.99	28.12 QP	46.00	-17.88	1.00 H	40	-0.23	28.35
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	99.89	19.22 QP	43.50	-24.28	1.25 V	295	7.66	11.56
2	286.55	15.40 QP	46.00	-30.60	1.75 V	235	1.65	13.75
3	409.04	18.25 QP	46.00	-27.75	1.00 V	10	-0.03	18.27
4	562.64	21.55 QP	46.00	-24.45	1.00 V	331	-0.16	21.71
5	743.45	24.64 QP	46.00	-21.36	1.75 V	46	-0.80	25.44
6	899.00	27.19 QP	46.00	-18.81	1.75 V	166	-0.70	27.89

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

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

4.2 BAND EDGES MEASUREMENT

4.2.1 LIMITS OF BAND EDGES MEASUREMENT

Below –50dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100041	Apr. 22, 2008	Apr. 21, 2009

NOTE: 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 PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz and 300 kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.
The spectrum plots are attached on the following pages.

4.2.4 DEVIATION FROM TEST STANDARD

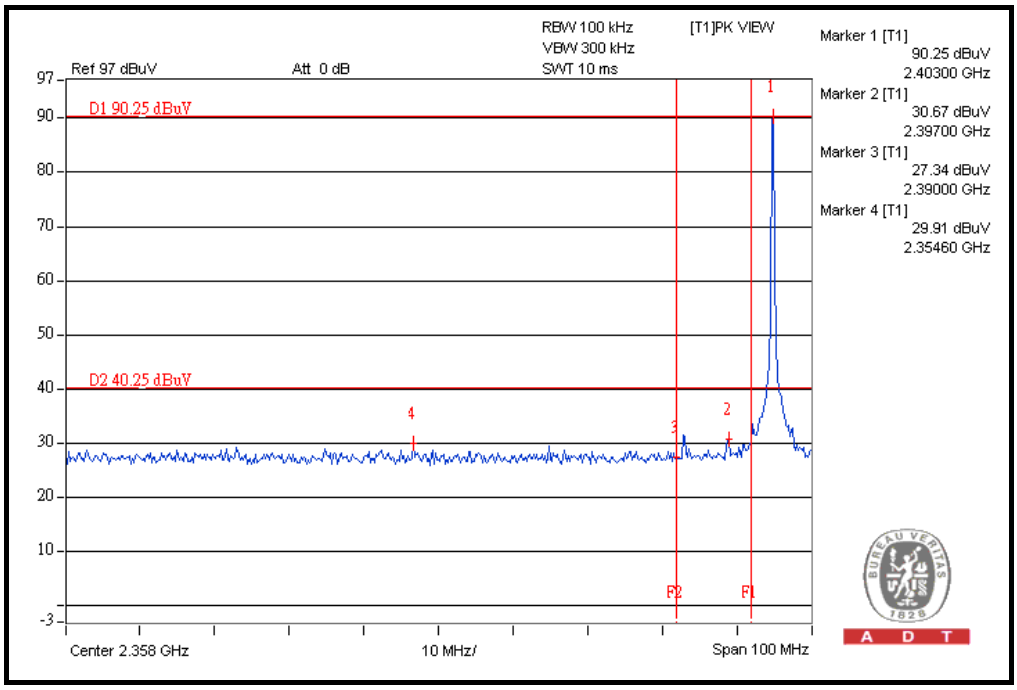
No deviation.

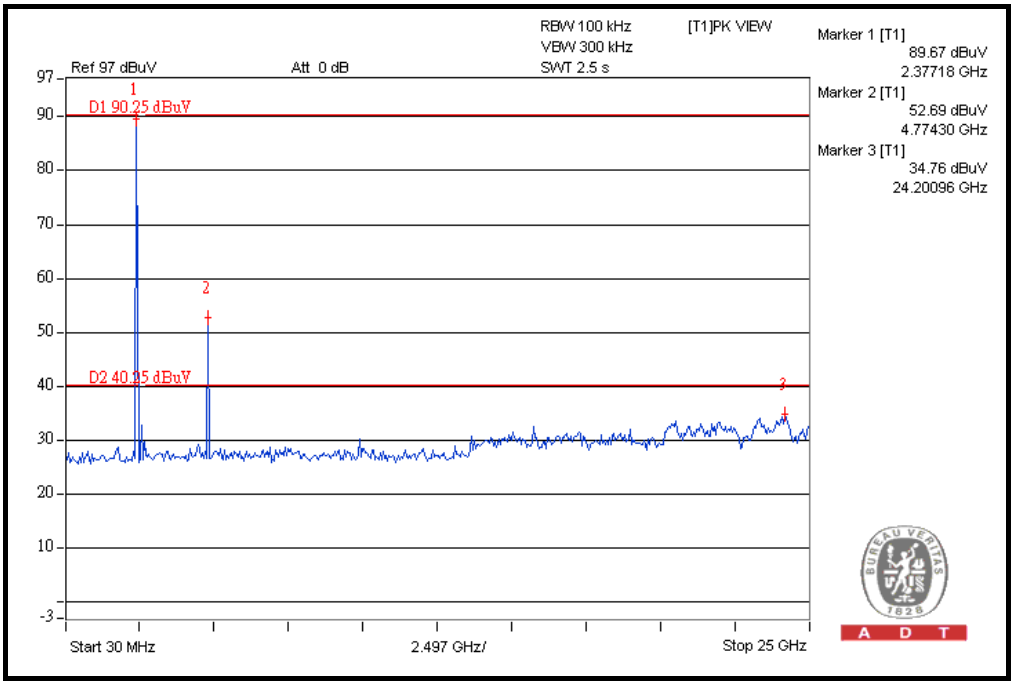
4.2.5 EUT OPERATING CONDITION

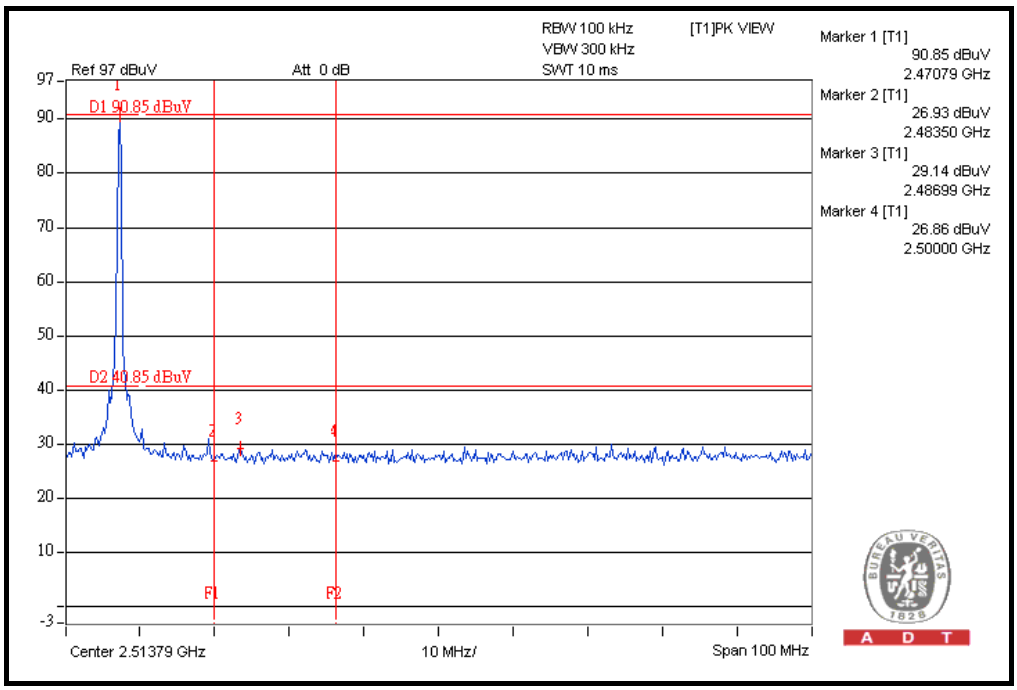
The software provided by client to enable the EUT under transmission condition continuously at lowest and highest channel frequencies individually.

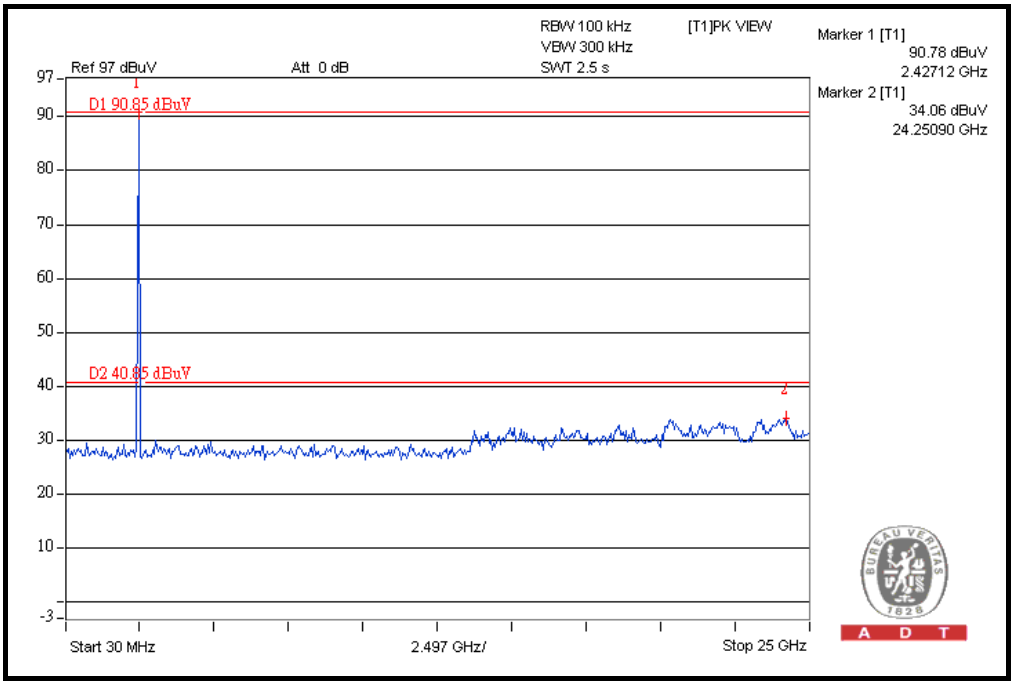
4.2.6 TEST RESULTS

The spectrum plots are attached on the following 4 images. D1 line indicates the highest level, and D2 line indicates the 50dB offset below D1. It shows compliance with the requirement in part 15.249 (d).






RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1]PK VIEW
Ref 97 dBuV
Att 0 dB
D1 90.85 dBuV
D2 40.85 dBuV
Marker 1 [T1]
90.85 dBuV
2.47079 GHz
Marker 2 [T1]
26.93 dBuV
2.48350 GHz
Marker 3 [T1]
29.14 dBuV
2.48699 GHz
Marker 4 [T1]
26.86 dBuV
2.50000 GHz
Center 2.51379 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1]PK VIEW
Ref 97 dBuV
Att 0 dB
D1 90.85 dBuV
D2 40.85 dBuV
Marker 1 [T1]
90.78 dBuV
2.42712 GHz
Marker 2 [T1]
34.06 dBuV
24.25090 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

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

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

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 any modifications are made to the EUT by the lab during the test.

---END---