



# FCC TEST REPORT

**REPORT NO.:** RF120620C27  
**MODEL NO.:** G3K (refer to item 3.1 for more details)  
**FCC ID:** PRDMU12  
**RECEIVED:** Jun. 20, 2012  
**TESTED:** Jun. 26, 2012  
**ISSUED:** Jul. 11, 2012

**APPLICANT:** Acrox Technologies Co., Ltd

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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 Vil., Lin Kou Dist.,  
New Taipei City, 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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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120620C27	Original release	Jul. 11, 2012



# 1. CERTIFICATION

**PRODUCT:** 2.4GHz wireless Mouse

**MODEL NO.:** G3K (refer to item 3.1 for more details)

**BRAND:** ACROX (refer to item 3.1 for more details)

**APPLICANT:** Acrox Technologies Co., Ltd

**TESTED:** Jun. 26, 2012

**TEST SAMPLE:** ENGINEERING SAMPLE

**STANDARDS:** FCC Part 15, Subpart C (Section 15.249)

ANSI C63.10-2009

The above equipment (model: G3K) 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** : Polly Chien , **DATE** : Jul. 11, 2012  
Polly Chien / Specialist

**APPROVED BY** : Gary Chang , **DATE** : Jul. 11, 2012  
Gary Chang / Technical 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 1.5Vdc from battery.
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 -15.6dB at 189.08MHz.

### 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 emission	30MHz ~ 200MHz	3.19 dB
	200MHz ~1000MHz	3.21 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

<b>EUT</b>	2.4GHz wireless Mouse
<b>MODEL NO.</b>	G3K (refer to note as below)
<b>POWER SUPPLY</b>	1.5Vdc (battery) (1.5Vdc AA *1)
<b>MODULATION TYPE</b>	GFSK
<b>DATA RATE</b>	1Mbps
<b>OPERATING FREQUENCY</b>	2403 ~ 2480MHz
<b>NUMBER OF CHANNEL</b>	78
<b>ANTENNA TYPE</b>	Printed antenna
<b>DATA CABLE</b>	N/A
<b>I/O PORT</b>	N/A
<b>ACCESSORY DEVICES</b>	Receiver (Brand: ACROX, model: MRN)

**NOTE:**

1. The following models and brand names are electrically identical, different models and brand names are for marketing purpose.

BRAND	MODEL	REMARK
ACROX	G3K	for marketing different
	G3J	
	G3P	
	G3R	
@.com	DCD13089	
	DCD13090	
	DCD13091	
	DCD13092	
	DCD13093	

2. The EUT has transmitter and receiver functions.
3. The above EUT information is 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

78 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		

### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE $<$ 1G	PLC	BM	
-	√	√	NOTE	√	-

Where **RE $<$ 1G**: Radiated Emission below 1GHz      **RE $\geq$ 1G**: Radiated Emission above 1GHz  
**PLC**: Power Line Conducted Emission      **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 axis and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	1 to 78	1, 38, 78	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 axis and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	1 to 78	78	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.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	1 to 78	1, 78	GFSK



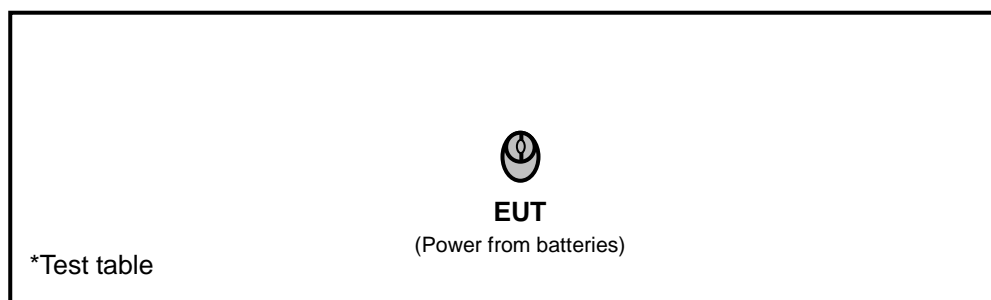
**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	22deg. C, 70%RH	1.5Vdc	Anderson Hong
RE<1G	25deg. C, 65%RH	1.5Vdc	Anderson Hong
BM	25deg. C, 65%RH	1.5Vdc	Anderson Hong

**3.3 DESCRIPTION OF SUPPORT UNITS**

The EUT has been tested as an independent unit.

**3.3.1 CONFIGURATION OF SYSTEM UNDER TEST**



**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:

**FCC Part 15, Subpart C (Section 15.249)**

ANSI C63.10-2009

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.

## 4. TEST TYPES AND RESULTS

### 4.1 RADIATED EMISSION AND BAND EDGE MEASUREMENT

#### 4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following

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

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits as below table, whichever is the lesser attenuation

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



#### 4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 19, 2012	Apr. 18, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 04, 2011	Aug. 03, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 03, 2012	Apr. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Sep. 06, 2011	Sep. 05, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 20, 2011	Jul. 19, 2012
Preamplifier Agilent	8449B	3008A01911	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8447D	2944A10638	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 19, 2011	Aug. 18, 2012
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 13, 2011	Aug. 12, 2012
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments except loop antenna is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  2. The test was performed in HwaYa Chamber 9.
  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 460141.
  5. The IC Site Registration No. is IC 7450F-4.

#### 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.

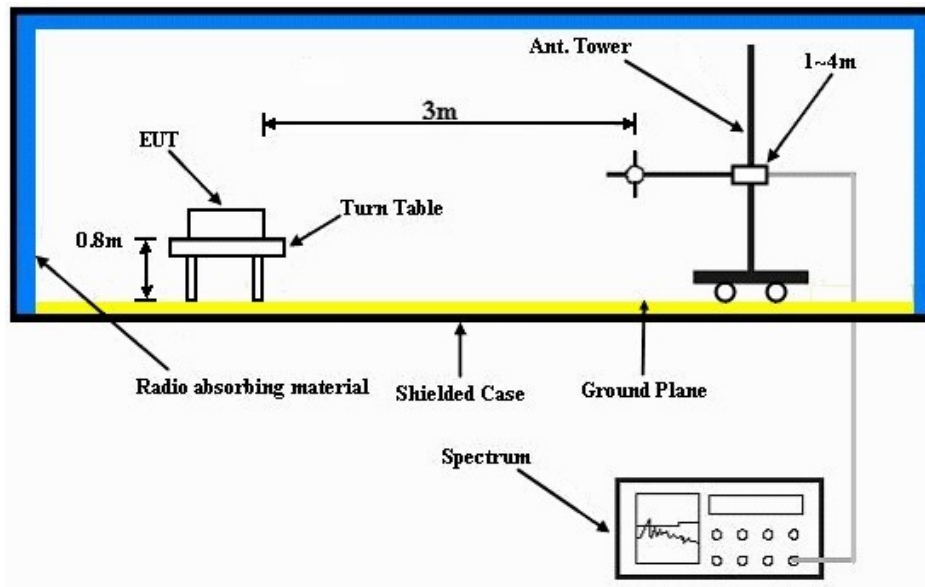
**NOTE:**

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 DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 70%RH	TESTED BY	Anderson Hong

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	38.9 PK	74.0	-35.1	1.42 H	34	7.50	31.40
2	2390.00	26.6 AV	54.0	-27.4	1.42 H	34	-4.80	31.40
3	2398.00	40.3 PK	74.0	-33.7	1.42 H	34	8.90	31.40
4	2398.00	32.1 AV	54.0	-21.9	1.42 H	34	0.70	31.40
5	2400.00	55.3 PK	74.0	-18.7	1.42 H	34	23.90	31.40
6	2400.00	3.7 AV	54.0	-50.3	1.42 H	34	-27.70	31.40
7	*2403.00	94.2 PK	114.0	-19.8	1.42 H	34	62.80	31.40
8	*2403.00	42.6 AV	94.0	-51.4	1.42 H	34	11.20	31.40
9	4806.00	53.5 PK	74.0	-20.5	1.10 H	20	16.10	37.40
10	4806.00	1.9 AV	54.0	-52.1	1.10 H	20	-35.50	37.40

##### REMARKS:

- Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- The other emission levels were very low against the limit.
- Margin value = Emission level – Limit value.
- \* \* \* : Fundamental frequency
- The average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:  
 $20 \log (\text{Duty cycle}) = 20 \log (0.264 \text{ ms} / 100 \text{ ms}) = -51.6 \text{ dB}$   
 Please see page 18 for plotted duty.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 70%RH	TESTED BY	Anderson Hong

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	37.9 PK	74.0	-36.1	1.00 V	39	6.50	31.40
2	2390.00	25.8 AV	54.0	-28.2	1.00 V	39	-5.60	31.40
3	2398.00	37.1 PK	74.0	-36.9	1.00 V	39	5.70	31.40
4	2398.00	25.7 AV	54.0	-28.3	1.00 V	39	-5.70	31.40
5	2400.00	51.8 PK	74.0	-22.2	1.00 V	39	20.40	31.40
6	2400.00	0.2 AV	54.0	-53.8	1.00 V	39	-31.20	31.40
7	*2403.00	78.8 PK	114.0	-35.2	1.00 V	39	47.40	31.40
8	*2403.00	27.2 AV	94.0	-66.8	1.00 V	39	-4.20	31.40
9	4806.00	52.8 PK	74.0	-21.2	1.00 V	186	15.40	37.40
10	4806.00	1.2 AV	54.0	-52.8	1.00 V	186	-36.20	37.40

**REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ \* “ : Fundamental frequency
6. The average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:  
 $20 \log (\text{Duty cycle}) = 20 \log (0.264 \text{ ms} / 100 \text{ ms}) = -51.6 \text{ dB}$   
Please see page 18 for plotted duty.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 70%RH	TESTED BY	Anderson Hong

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	95.9 PK	114.0	-18.1	1.39 H	40	64.30	31.60
2	*2440.00	44.3 AV	94.0	-49.7	1.39 H	40	12.70	31.60
3	4880.00	53.1 PK	74.0	-20.9	1.06 H	19	15.50	37.60
4	4880.00	1.5 AV	54.0	-52.5	1.06 H	19	-36.10	37.60
5	7320.00	52.9 PK	74.0	-21.1	1.00 H	80	9.10	43.80
6	7320.00	1.3 AV	54.0	-52.7	1.00 H	80	-42.50	43.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2440.00	80.2 PK	114.0	-33.8	1.00 V	79	48.60	31.60
2	*2440.00	28.6 AV	94.0	-65.4	1.00 V	79	-3.00	31.60
3	4880.00	52.6 PK	74.0	-21.4	1.24 V	194	15.00	37.60
4	4880.00	1.0 AV	54.0	-53.0	1.24 V	194	-36.60	37.60
5	7320.00	52.0 PK	74.0	-22.0	1.13 V	213	8.20	43.80
6	7320.00	0.4 AV	54.0	-53.6	1.13 V	213	-43.40	43.80

**REMARKS:**

- Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- The other emission levels were very low against the limit.
- Margin value = Emission level – Limit value.
- " \* " : Fundamental frequency
- The average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:  

$$20 \log (\text{Duty cycle}) = 20 \log (0.264 \text{ ms} / 100 \text{ ms}) = -51.6 \text{ dB}$$
Please see page 18 for plotted duty.





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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 78	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 70%RH	TESTED BY	Anderson Hong

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	96.0 PK	114.0	-18.0	1.35 H	40	64.30	31.70
2	*2480.00	44.4 AV	94.0	-49.6	1.35 H	40	12.70	31.70
3	2483.50	53.4 PK	74.0	-20.6	1.35 H	40	21.70	31.70
4	2483.50	1.8 AV	54.0	-52.2	1.35 H	40	-29.90	31.70
5	2485.50	41.1 PK	74.0	-32.9	1.35 H	40	9.40	31.70
6	2485.50	33.5 AV	54.0	-20.5	1.35 H	40	1.80	31.70
7	4960.00	52.8 PK	74.0	-21.2	1.06 H	23	15.00	37.80
8	4960.00	1.2 AV	54.0	-52.8	1.06 H	23	-36.60	37.80

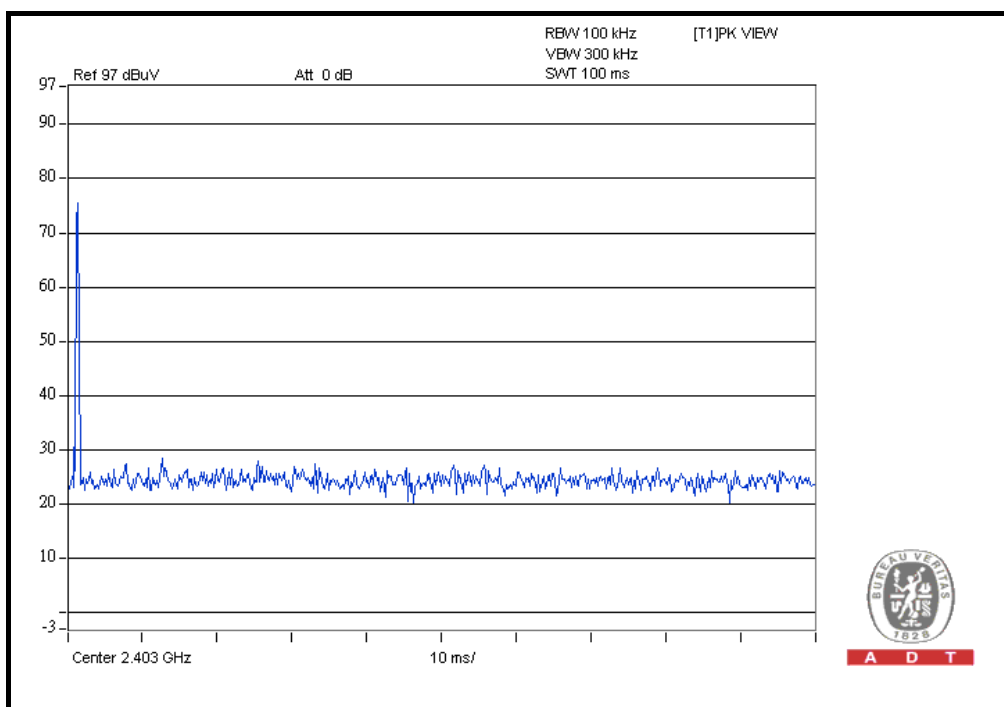
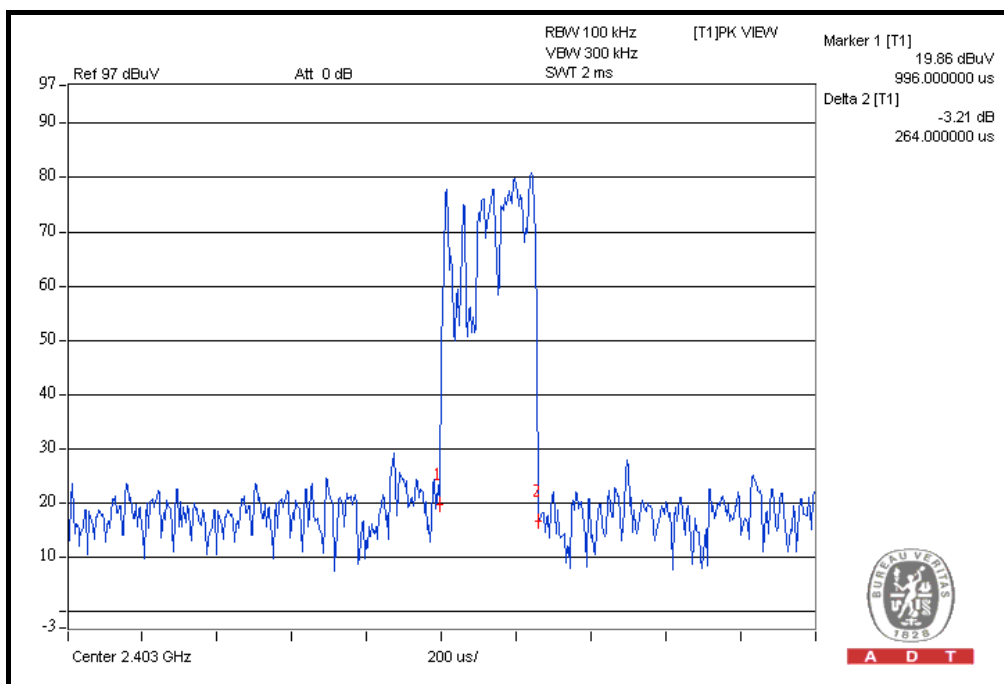
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2480.00	80.9 PK	114.0	-33.1	1.00 V	39	49.20	31.70
2	*2480.00	29.3 AV	94.0	-64.7	1.00 V	39	-2.40	31.70
3	2483.50	52.0 PK	74.0	-22.0	1.00 V	39	20.30	31.70
4	2483.50	0.4 AV	54.0	-53.6	1.00 V	39	-31.30	31.70
5	2485.50	38.7 PK	74.0	-35.3	1.00 V	39	7.00	31.70
6	2485.50	26.2 AV	54.0	-27.8	1.00 V	39	-5.50	31.70
7	4960.00	51.8 PK	74.0	-22.2	1.23 V	188	14.00	37.80
8	4960.00	0.2 AV	54.0	-53.8	1.23 V	188	-37.60	37.80

**REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ \* “ : Fundamental frequency
6. The average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:  
 $20 \log (\text{Duty cycle}) = 20 \log (0.264 \text{ ms} / 100 \text{ ms}) = -51.6 \text{ dB}$   
 Please see page 18 for plotted duty.



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$$20 \log (\text{Duty cycle}) = 20 \log (0.264 \text{ ms} / 100 \text{ ms}) = -51.6 \text{ dB}$$



### BELOW 1GHz WORST-CASE DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 78	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anderson Hong

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	161.92	20.7 QP	43.5	-22.8	2.00 H	6	6.80	13.90
2	175.50	22.7 QP	43.5	-20.8	1.00 H	78	9.50	13.20
3	189.08	21.7 QP	43.5	-21.8	1.25 H	17	9.70	12.00
4	295.78	20.7 QP	46.0	-25.3	2.00 H	17	6.00	14.70
5	515.00	24.5 QP	46.0	-21.5	1.25 H	17	4.00	20.50
6	544.10	27.2 QP	46.0	-18.8	1.25 H	17	6.10	21.10
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	107.60	23.0 QP	43.5	-20.5	1.50 V	208	12.60	10.40
2	189.08	27.9 QP	43.5	-15.6	1.25 V	17	15.90	12.00
3	243.40	22.8 QP	46.0	-23.2	1.00 V	13	10.00	12.80
4	295.78	24.3 QP	46.0	-21.7	1.00 V	82	9.60	14.70
5	350.10	20.4 QP	46.0	-25.6	1.00 V	82	4.20	16.20
6	699.30	29.4 QP	46.0	-16.6	1.25 V	340	6.60	22.80

#### REMARKS:

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

## 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



## 6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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

## **7. APPENDIX A – MODIFICATION 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---