

# **FCC TEST REPORT**

REPORT NO.: RF110824C20A

**MODEL NO.:** PT-3010 (Refer to item 3.1 for more details)

FCC ID: SUFPT3020

**RECEIVED:** Aug. 24, 2011

**TESTED:** Sep. 19, 2011

**ISSUED:** Sep. 21, 2011

APPLICANT: Teraoka Weigh-System Pte Ltd

**ADDRESS:** 4, Leng Kee Road, #05-02/03/04/05/11, SIS

Building, Singapore 159088

**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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# **RELEASE CONTROL RECORD**

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Sep. 21, 2011

Report No.: RF110824C20A 3 Report Format Version 4.0.0 Reference No.: 110915C28



# 1. CERTIFICATION

**PRODUCT**: ESL Tag

**MODEL NO.:** PT-3010 (Refer to item 3.1 for more details)

**BRAND**: DIGI

**APPLICANT:** Teraoka Weigh-System Pte Ltd

**TESTED:** Sep. 19, 2011

**TEST SAMPLE:** ENGINEERING SAMPLE

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

ANSI C63.4-2003 ANSI C63.10-2009

The above equipment (Model: PT-3010) 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 : A CLA K DAVE DATE

DATE: Sep. 21, 2011

APPROVED BY : Sep. 21, 2011

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 3.0Vdc 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 -1.0dB at 2451.00MHz.		

# 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
Conducted emissions	9kHz~30MHz	2.44 dB
	30MHz ~ 200MHz	3.19 dB
Radiated emissions	200MHz ~1000MHz	3.21 dB
Nadiated emissions	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	ESL Tag
MODEL NO.	PT-3010 (Refer to Note for more details)
FCC ID	SUFPT3020
NOMINAL VOLTAGE	3Vdc (Battery)
MODULATION TYPE	FSK
DATA RATE	1.2kps
OPERATING FREQUENCY	2445 ~ 2459MHz
NUMBER OF CHANNEL	7
ANTENNA TYPE	PCB antenna with 5.3dBi gain
DATA CABLE	NA
I/O PORT	NA
ACCESSORY DEVICES	NA

#### NOTE:

1. The models as below are identical PCBA; difference is in size of LCD glass.

Brand Name	Model No.	Size of LCD glass
DIGI	PT-3010	Small
DIGI	PT-3020	Big

<sup>\*\*</sup>After pre-tested two of the EUT found model: PT-3010 was the worse, therefore chosen for the final tested and presented in the test report.

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

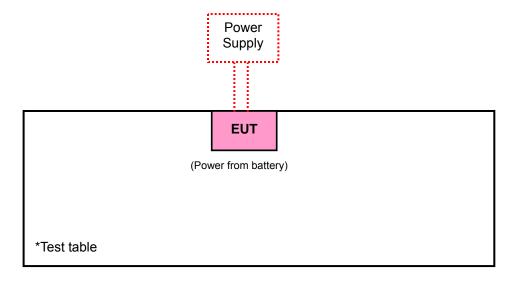


# 3.2 DESCRIPTION OF TEST MODES

7 channels are provided to this EUT:

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
1	2445	5	2453
2	2447	6	2455
3	2449	7	2459
4	2451		

# 3.2.1 CONFIGURATION OF SYSTEM UNDER TEST





Report Format Version 4.0.0

#### 3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE		APPLICA	ABLE TO		DESCRIPTION
MODE	RE≥1G	RE<1G	PLC	вм	
-	<b>√</b>		NOTE	<b>√</b>	-

Where **RE≥1G:** Radiated Emission above 1GHz RE<1G: Radiated Emission below 1GHz

BM: Bandedge Measurement

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

#### **RADIATED EMISSION TEST (ABOVE 1 GHz):**

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis and antenna ports (if EUT with antenna diversity

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

	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	AXIS
ĺ	1 to 7	1, 4, 7	FSK	Х

#### **RADIATED EMISSION TEST (BELOW 1 GHz):**

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

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

AVAILABLE CH	IANNEL TI	ESTED CHANNEL	MODULATION TYPE	AXIS
1 to 7		4	FSK	Х

#### **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).  $\boxtimes$ 

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

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
1 to 7	1, 7	FSK

#### **TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
ВМ	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu

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#### 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
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.

#### 3.4 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	POWER SUPPLY	TOP WARD	TF-6603A	725942	NA

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

#### NOTE:

- 1. All power cords of the above support units are non shielded (1.8m).
- 2. Item 1 was under test table during 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, 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	ESIB7	100212	Aug. 02, 2011	Aug. 01, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSP 40	100041	Jul. 21, 2011	Jul. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 13, 2011	Apr. 12, 2012
HORN Antenna SCHWARZBECK	9120D	209	Aug. 25, 2011	Aug. 24, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 27, 2010	Dec. 26, 2011
Preamplifier Agilent	8447D	2944A10633	Nov. 02, 2010	Nov. 01, 2011
Preamplifier Agilent	8449B	3008A01964	Nov. 02, 2010	Nov. 01, 2011
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295014/4	Aug. 19, 2011	Aug. 18, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	Aug. 19, 2011	Aug. 18, 2012
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:

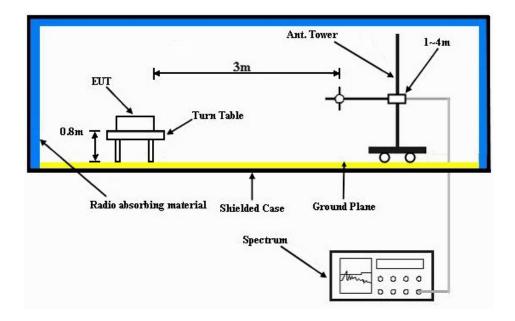
- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
- 2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
- 3. All modes 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 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	25deg. C, 65%RH	TESTED BY	Kay 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	39.6 PK	74.0	-34.4	1.04 H	356	8.50	31.10	
2	2390.00	26.9 AV	54.0	-27.1	1.04 H	356	-4.20	31.10	
3	2400.00	37.7 PK	74.0	-36.3	1.04 H	356	6.60	31.10	
4	2400.00	26.1 AV	54.0	-27.9	1.04 H	356	-5.00	31.10	
5	*2445.00	94.2 PK	114.0	-19.8	1.04 H	356	62.90	31.30	
6	*2445.00	92.9 AV	94.0	-1.1	1.04 H	356	61.60	31.30	
7	4890.00	49.0 PK	74.0	-25.0	1.00 H	318	12.00	37.00	
8	4890.00	42.9 AV	54.0	-11.1	1.00 H	318	5.90	37.00	
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M		
		EMISSION							
NO.	FREQ. (MHz)	LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m)	
<b>NO</b> .	FREQ. (MHz) 2390.00	LEVEL		MARGIN (dB) -35.2	7	ANGLE		FACTOR	
	` ,	LEVEL (dBuV/m)	(dBuV/m)	` ′	HEIGHT (m)	ANGLE (Degree)	(dBuV)	FACTOR (dB/m)	
1	2390.00	LEVEL (dBuV/m) 38.8 PK	(dBuV/m) 74.0	-35.2	<b>HEIGHT (m)</b>	ANGLE (Degree)	(dBuV) 7.70	FACTOR (dB/m) 31.10	
1 2	2390.00 2390.00	LEVEL (dBuV/m) 38.8 PK 25.9 AV	(dBuV/m) 74.0 54.0	-35.2 -28.1	1.62 V 1.62 V	ANGLE (Degree) 103 103	(dBuV) 7.70 -5.20	FACTOR (dB/m) 31.10 31.10	
1 2 3	2390.00 2390.00 2400.00	LEVEL (dBuV/m) 38.8 PK 25.9 AV 37.8 PK	(dBuV/m)  74.0  54.0  74.0	-35.2 -28.1 -36.2	1.62 V 1.62 V 1.62 V	ANGLE (Degree) 103 103 103	(dBuV) 7.70 -5.20 6.70	FACTOR (dB/m) 31.10 31.10 31.10	
1 2 3 4	2390.00 2390.00 2400.00 2400.00	LEVEL (dBuV/m) 38.8 PK 25.9 AV 37.8 PK 25.5 AV	(dBuV/m)  74.0  54.0  74.0  54.0  54.0	-35.2 -28.1 -36.2 -28.5	1.62 V 1.62 V 1.62 V 1.62 V	ANGLE (Degree)  103  103  103  103	7.70 -5.20 6.70 -5.60	FACTOR (dB/m)  31.10  31.10  31.10  31.10	
1 2 3 4 5	2390.00 2390.00 2400.00 2400.00 *2445.00	LEVEL (dBuV/m) 38.8 PK 25.9 AV 37.8 PK 25.5 AV 85.4 PK	74.0 54.0 74.0 54.0 114.0	-35.2 -28.1 -36.2 -28.5 -28.6	1.62 V 1.62 V 1.62 V 1.62 V 1.62 V	ANGLE (Degree)  103  103  103  103  103	7.70 -5.20 6.70 -5.60 54.10	FACTOR (dB/m) 31.10 31.10 31.10 31.10 31.30	

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



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL Channel 4		FREQUENCY RANGE	1 ~ 25GHz	
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu	

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	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	*2451.00	94.5 PK	114.0	-19.5	1.06 H	354	63.20	31.30
2	*2451.00	93.0 AV	94.0	-1.0	1.06 H	354	61.70	31.30
3	4902.00	48.2 PK	74.0	-25.8	2.00 H	193	11.20	37.00
4	4902.00	42.8 AV	54.0	-11.2	2.00 H	193	5.80	37.00
5	7353.00	50.5 PK	74.0	-23.5	1.00 H	97	7.30	43.20
6	7353.00	36.3 AV	54.0	-17.7	1.00 H	97	-6.90	43.20
		ANTENNA	POLARITY	Y & TEST DI	STANCE: V	ERTICAL A	T 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	*2451.00	84.0 PK	114.0	-30.0	1.94 V	103	52.70	31.30
2	*2451.00	82.5 AV	94.0	-11.5	1.94 V	103	51.20	31.30
3	4902.00	49.6 PK	74.0	-24.4	1.40 V	23	12.60	37.00
4	4902.00	44.7 AV	54.0	-9.3	1.40 V	23	7.70	37.00
5	7353.00	49.5 PK	74.0	-24.5	1.00 V	35	6.30	43.20
	7353.00	36.3 AV	54.0	-17.7	1.00 V	35	-6.90	43.20

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



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL Channel 7		FREQUENCY RANGE	1 ~ 25GHz	
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay 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	*2459.00	94.3 PK	114.0	-19.7	1.08 H	359	63.00	31.30		
2	*2459.00	92.8 AV	94.0	-1.2	1.08 H	359	61.50	31.30		
3	2483.50	41.6 PK	74.0	-32.4	1.08 H	359	10.20	31.40		
4	2483.50	32.3 AV	54.0	-21.7	1.08 H	359	0.90	31.40		
5	4918.00	49.2 PK	74.0	-24.8	1.00 H	177	12.20	37.00		
6	4918.00	43.6 AV	54.0	-10.4	1.00 H	177	6.60	37.00		
		ANTENNA	A POLARIT	/ & TEST DI	STANCE: V	ERTICAL A	T 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	*2459.00	85.5 PK	114.0	-28.5	1.00 V	102	54.20	31.30		
2	*2459.00	84.1 AV	94.0	-9.9	1.00 V	102	52.80	31.30		
3	2485.11	39.1 PK	74.0	-34.9	1.00 V	102	7.70	31.40		
4	2485.11	27.4 AV	54.0	-26.6	1.00 V	102	-4.00	31.40		
5	4918.00	48.5 PK	74.0	-25.5	1.12 V	344	11.50	37.00		
6	4918.00	42.3 AV	54.0	-11.7	1.12 V	344	5.30	37.00		

- 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.



# **BELOW 1GHz WORST-CASE DATA**

<b>EUT TEST CONDITION</b>		MEASUREMENT DETAIL		
CHANNEL Channel 4		FREQUENCY RANGE	Below 1000MHz	
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu	

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	37.68	18.1 QP	40.0	-21.9	1.00 H	124	4.60	13.50		
2	156.28	21.2 QP	43.5	-22.3	2.00 H	133	6.50	14.70		
3	259.33	22.1 QP	46.0	-23.9	1.00 H	82	8.70	13.40		
4	414.87	32.7 QP	46.0	-13.3	1.00 H	202	14.90	17.80		
5	467.36	32.8 QP	46.0	-13.2	2.00 H	253	13.50	19.30		
6	545.14	30.3 QP	46.0	-15.7	2.00 H	250	9.10	21.20		
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	37.68	24.3 QP	40.0	-15.7	1.00 V	10	10.80	13.50		
2	103.78	23.9 QP	43.5	-19.6	1.00 V	46	13.20	10.70		
3	206.83	16.8 QP	43.5	-26.7	1.00 V	166	6.10	10.70		
4	414.87	24.9 QP	46.0	-21.1	1.00 V	256	7.10	17.80		
5	519.86	26.0 QP	46.0	-20.0	1.00 V	232	5.40	20.60		
6	650.13	26.2 QP	46.0	-19.8	1.00 V	199	2.90	23.30		

- 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

Shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation

#### 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER R&S	FSP40	100039	Feb. 23, 2011	Feb. 22, 2012

**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.

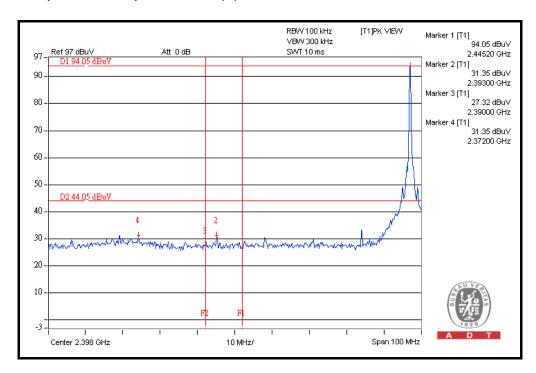
# 4.2.5 EUT OPERATING CONDITION

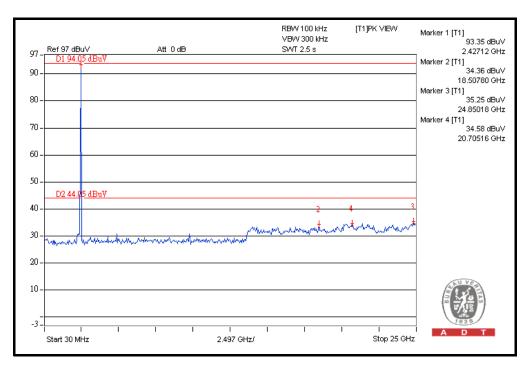
The software provided by client to enable the EUT under transmission condition continuously at lowest and highest channel frequencies individually.



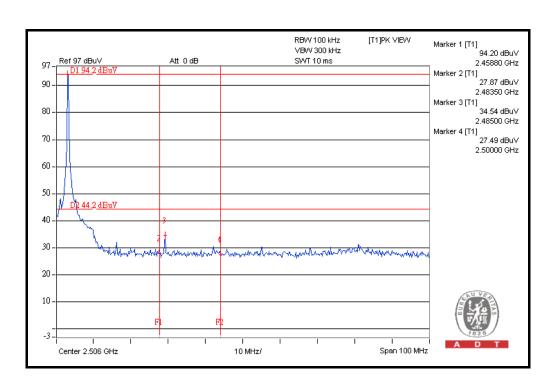
# 4.2.6 TEST RESULTS

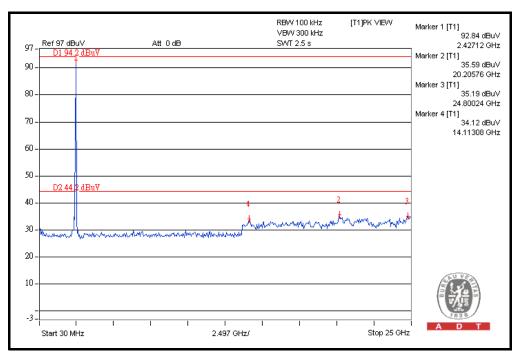
The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 50dB offset below D1. It shows compliance with the requirement in part 15.249 (d).













5. PHOTOGRAPHS OF THE TEST CONFIGURATION				
Please refer to the attached file (Test Setup Photo).				



# 6. INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab Hsin Chu EMC/RF Lab

Tel: 886-2-26052180 Tel: 886-3-5935343 Fax: 886-2-26051924 Fax: 886-3-5935342

# **Hwa Ya EMC/RF/Safety Telecom Lab**

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

Email: service.adt@tw.bureauveritas.com

Web Site: www.adt.com.tw

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



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

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