Ke Mei Ou Laboratory Co., Ltd.

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Ke Mei Ou Lab Corp.
FEDERAL COMMUNICATIONS COMMISSION
Registration Number: 125782
INDUSTRY CANADA
Registration Number: IC4986

FCC TEST REPORT

Under :
FCC 15 Subpart C, Paragraph 15.231

Prepared For :

Pro-Lite, Inc.

3505 Cadillac Ave. Building D Costa Mesa, CA 92626

FCC ID: TWNDTR900-FC
EUT: Wireless USB
Model: DTR900-FC

April 30, 2006

Report Type: Original Report
Test Engineer: Peter Lin
Test Date: December 19, 2005
Review By: _____ Apollo Liu / Manager

TABLE OF CONTENTS

1. General Information

1. 1 Notes

The test results of this report relate exclusively to the test item specified in 1.5. The KMO Lab does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the KMO Lab.

1. 2 Testing Laboratory

Ke Mei Ou Laboratory Co., Ltd.
7A, Jiaxiangge, Jiahuixincheng, No.3027, Shennan Rd., Futian, Shenzhen, Guangdong, P.R.China.
Tel: +86 755 83642690 Fax: +86 755 83297077
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Internet: www.kmolab.com

Site on File with the Federal Communications Commission – United Sates
Registration Number: 125782
For 3 & 10 meter OATS

Site Listed with Industry Canada of Ottawa, Canada
Registration Number: IC4986
For 3 & 10 meter OATS

1. 3 Details of Applicant

Name : Pro-Lite, Inc.
Address : 3505 Cadillac Ave. Building D Costa Mesa, CA 92626
Contact : Andy Kaoh / General Manager
Tel : 714 668 9988
Fax : 714 668 9898

1. 4 Application Details

Date of Receipt of Application : December 9, 2005
Date of Receipt of Test Item : December 19, 2005
Date of Test : December 19~April 30, 2006

1. 5 Test Item

Manufacturer : Ningbo Youwon Electronics Tech. Co., Ltd.
Brand Name : Pro-Lite
Model No. : DTR900-FC
Description : Wireless USB

Additional Information

Frequency : 433.92MHz
Transmission Range : N/A
Number of Channels : 1
Antenna : The transmitter has a built in antenna and solder on the PCB
Power Supply : DC 4.5~ 5V
Extreme Temp. Tolerance : N/A

1. 6 Test Standards

FCC 15 Subpart C, Paragraph 15.231

Note: All radiated measurements were made in all three orthogonal planes. The values reported are the maximum values.

2. Technical Test

2. 1 Summary of Test Results

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.203	Antenna Requirement	PASS	Complies
FCC Part 15, Paragraph 15.207	Conducted Test	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.231(e) Limit	Field Strength of Fundamental	PASS	Complies
FCC Part 15, Subpart C Paragraph 15.231(e) Limit & Paragraph 15.209	Radiated Test	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.231Limit	Measured Bandwidth	PASS	Complies

3. EUT Modifications

No modification by Ke Mei Ou Laboratory Co., Ltd.

4. Conducted Power Line Test

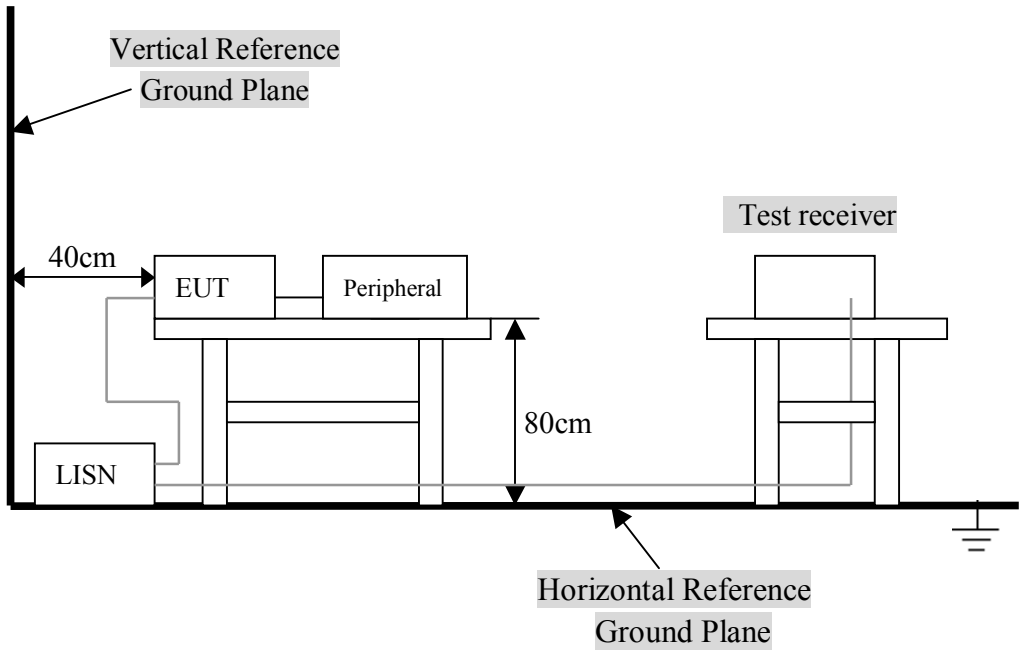
4. 1 Test Equipment

Please refer to Section 9 this report.

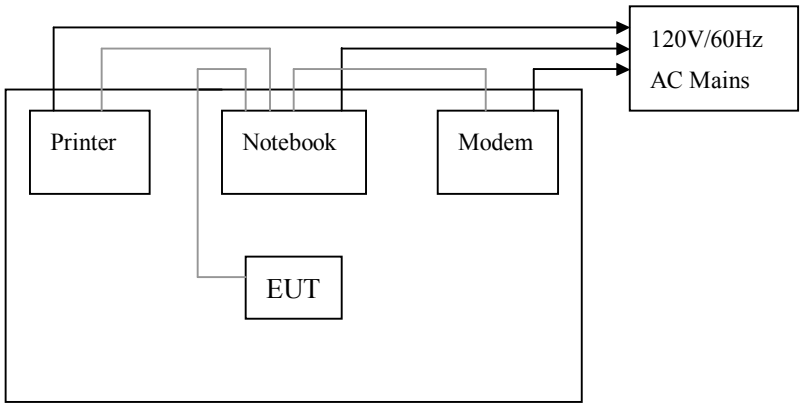
4. 2 Test Procedure

The EUT was tested according to ANSI C63.4 - 2003. For testing purpose the EUT was connected to PC computer through USB interface and operated using the customer software. The EUT was tested with typical modulation applied. The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 uHenry as specified by section 5.1 of ANSI C63.4 - 2003. cables and peripherals were moved to find the maximum emission levels for each frequency.

4. 3 Test Setup



For the actual test configuration, Please refer to the related items – Photos of Testing.



4. 4 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2003. EUT was used PC USB port and the EUT will be stopped within 1 second. The EUT transmitted continuously and the duty cycle of transmitting was set to worst case condition (100% duty cycle), which provided by manufacturer during all the tests. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

A. EUT

Device	Manufacturer	Model #	FCC ID
Wireless USB	Ningbo Youwon Electronics Tech. Co., Ltd.	DTR900-FC	TWNDTR900-FC

B. Internal Devices

DEVICE	MANUFACTURER	MODEL #	FCCID / DoC
N/A			

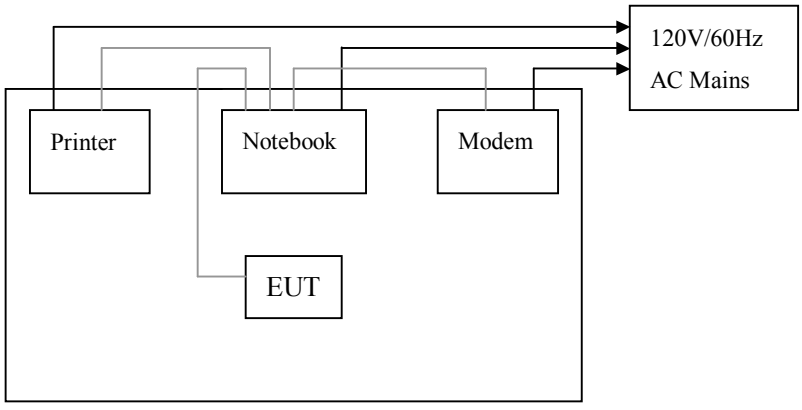
C. Peripherals

Device	Manufacturer	Model # Serial #	FCC ID/ DoC	Cable
Printer	HP	HP930C	DoC	1.5m unshielded power cord 1.2m unshielded data cable.
Modem	GVC	N/A	DoC	1.5m unshielded power cord 1.2m unshielded data cable.
Notebook	DELL	PP10L	DoC	1.5m unshielded power cord

4. 5 EUT Operating Condition

Operating condition is according to ANSI C63.4 - 2003.

A. For testing purposes setup the EUT and simulators as shown on follow.
B. The EUT was connected to PC computer through USB interface and operated using the customer software.
C. Enable RF signal and confirm EUT active.
D. Modulate output capacity of EUT up to specification.



4. 6 Conducted Power Line Emission Limits

FCC Part 15 Paragraph 15.207 (dBuV)		
FREQUENCY RANGE (MHz)	CLASS A QP/AV	CLASS B QP/AV
0.15 – 0.5	79/66	66-56/56-46
0.5 – 5.0	73/60	56/46
5.0 - 30	73/60	60/50

NOTE ：In the above table, the tighter limit applies at the band edges.

4. 7 Conducted Power Line Test Result

The frequency spectrum from 0.15 MHz to 30 MHz was investigated. All readings are quasi -peak values with a resolution bandwidth of 9 KHz.

- Temperature ： 26 ℃
- Humidity ： 53 % RH
- Result ： **PASSED**

USB Mode

EN55022 Class B							
Frequency (MHz)	Emission (dBuV) QP	Emission (dBuV) AV	LINE/ NEUTRAL	Limit (dBuV) QP	Limit (dBuV) AV	Margin (dB) QP	Margin (dB) AV
0.166	48.02	31.04	LINE	65.16	55.16	-17.14	-24.12
0.174	48.76	29.24	NEUTRAL	64.77	54.77	-16.01	-25.53
0.310	42.48	32.45	LINE	59.97	49.97	-17.49	-17.52
0.302	40.20	22.31	NEUTRAL	60.19	50.19	-19.99	-27.88
3.906	39.27	26.67	LINE	56.00	46.00	-16.73	-19.33
3.814	36.02	26.27	NEUTRAL	56.00	46.00	-19.98	-19.73

TTL Mode

EN55022 Class B							
Frequency (MHz)	Emission (dBuV) QP	Emission (dBuV) AV	LINE/ NEUTRAL	Limit (dBuV) QP	Limit (dBuV) AV	Margin (dB) QP	Margin (dB) AV
0.178	26.22	20.78	LINE	64.58	54.58	-38.36	-33.80
0.186	25.72	20.63	NEUTRAL	64.21	54.21	-38.49	-33.58
0.246	25.17	19.84	LINE	61.89	51.89	-36.72	-32.05
0.226	27.46	20.12	NEUTRAL	62.60	52.60	-35.14	-32.48
0.466	22.83	17.86	LINE	56.58	46.58	-33.75	-28.72
0.540	22.13	17.59	NEUTRAL	56.00	46.00	-33.87	-28.41

Note: NF = No Significant Peak was Found.

Remarks：

1.Uncertainty in conducted emission measured is <+/ -2dB.
2.QP and AV are abbreviations of quasi-peak and average individually.
3.The emission levels of other frequencies were very low against the limit.
4.The Quasi-peak emission level also meets average limit and measurement with the average detector is unnecessary.
5.Margin Value= Emission Level – Limit Value.

Conducted Emission

EN55022

EUT: Wireless USB, M/N: DTR900-FC

Manufacturer: Ningbo Youwon Electronics Tech. Co., Ltd.

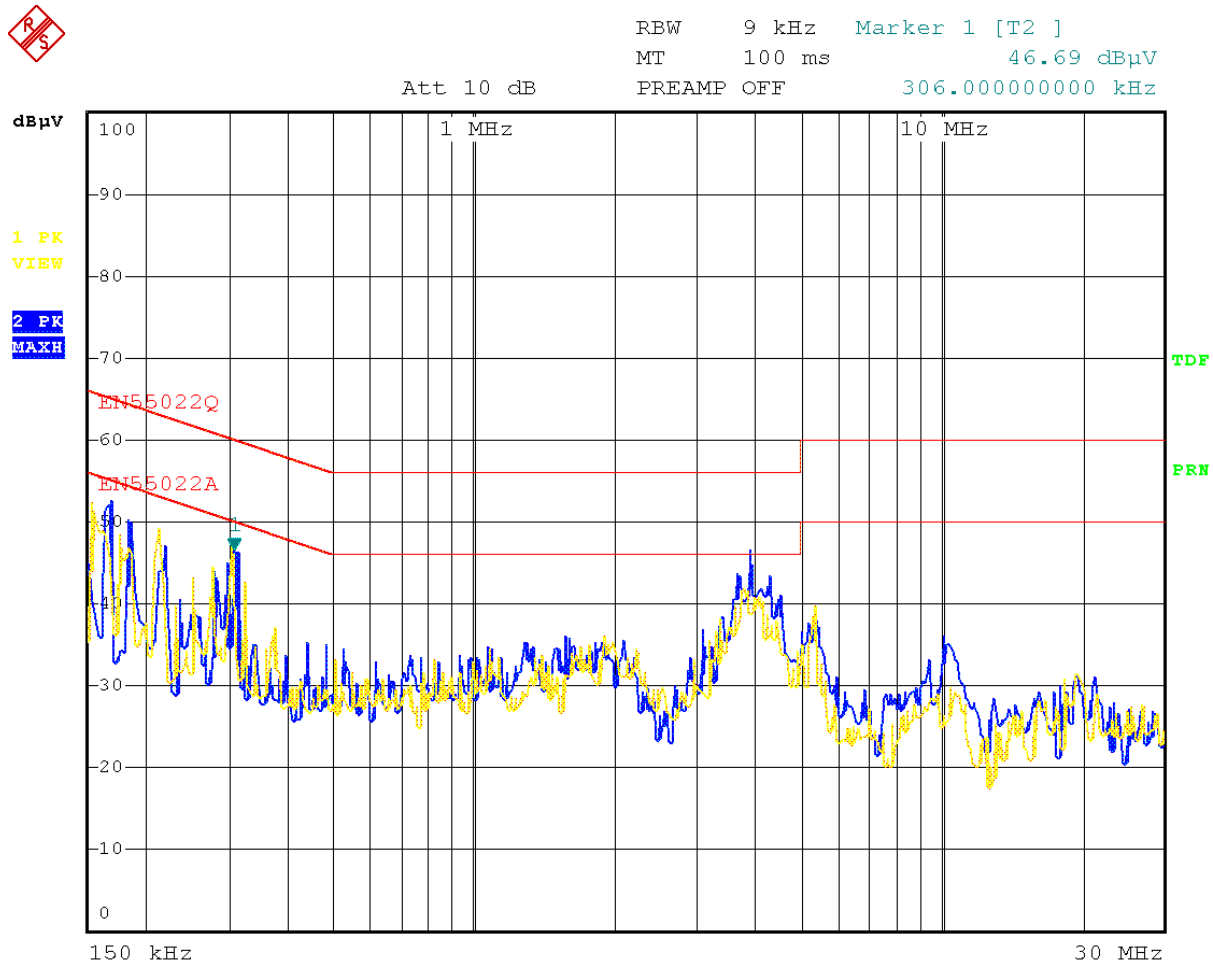
Operating Condition: USB Mode

Test Site: Ke Mei Ou Laboratory

Operator: Peter Lin

Test Specification: LINE&NEUTRAL

Comment:



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Conducted Emission

EN55022

EUT: Wireless USB, M/N: DTR900-FC

Manufacturer: Ningbo Youwon Electronics Tech. Co., Ltd.

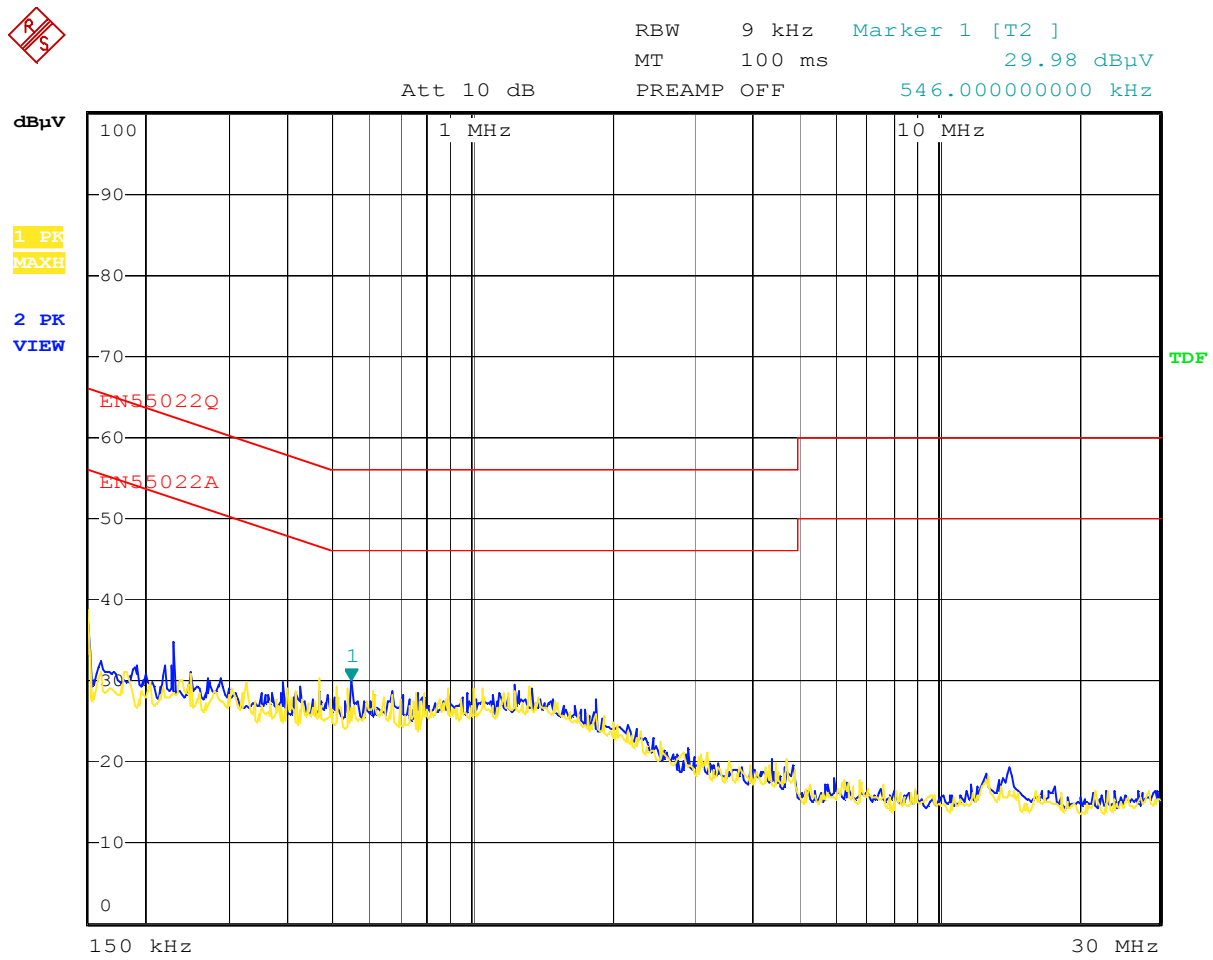
Operating Condition: TTL Mode

Test Site: Ke Mei Ou Laboratory

Operator: Peter Lin

Test Specification: LINE&NEUTRAL

Comment:



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5. Radiated Emission Test

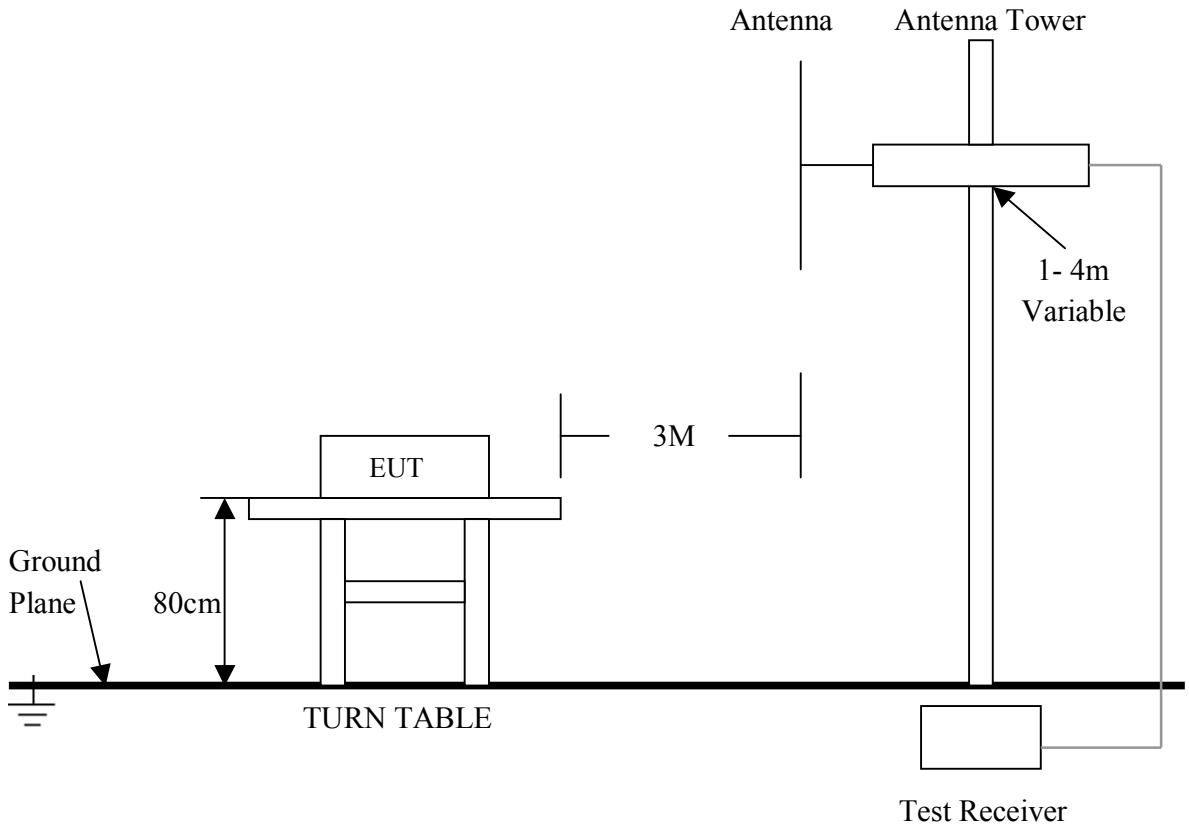
5. 1 Test Equipment

Please refer to Section 9 this report.

5. 2 Test Procedure

1. The EUT was tested according to ANSI C63.4 - 2003. The radiated test was performed at Ke Mei Ou Laboratory. This site is on file with the FCC laboratory division, Registration No. 125782.
2. The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
3. The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz , peak values with a resolution bandwidth of 1 MHz . Measurements were made at 3 meters.
4. The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
5. Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "**QP**" in the data table.
6. The antenna polarization : Vertical polarization and Horizontal polarization.

5. 3 Radiated Test Setup



For the actual test configuration , please refer to the related items – Photos of Testing.

5. 4 Configuration of The EUT

Same as section 4 . 4 of this report

5. 5 EUT Operating Condition

Same as section 4 . 5 of this report.

5. 6 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below ：

A. FCC Part 15 Subpart C Paragraph 15.231(e) Limit

Fundamental Frequency (MHz)	Field Strength of Fundamental (3m)		Field Strength of Harmonics (3m)	
	uV/m	dBuV/m	uV/m	dBuV/m
433.92	4398.68	72.9	439.9	52.9

Note:
(1) RF Voltage (dBuV) = 20 log RF Voltage (uV)
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
(3) The emission limit in this paragraph is based on measurement instrumentation employing an average detector. Measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency (MHz)	Distance (m)	Field Strength (dBuV/m)
30 - 88	3	40.0
88 - 216	3	43.5
216 - 960	3	46.0
ABOVE 960	3	54.0

Note:
(1) RF Voltage (dBuV) = 20 log RF Voltage (uV)
(2) In the Above Table, the tighter limit applies at the band edges.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the

5. 7 Radiated Emission Test Result

A. Fundamental Radiated Emission Data

Product : Wireless USB
Test Item : Fundamental Radiated Emission Data
Test Voltage : Power by PC USB port / DC 5V
Test Result : **PASS**
Test Mode : USB Mode & TTL Mode
Temperature : 25 ℃
Humidity : 56%RH

USB Mode

Freq. (MHz)	Emission (dBuV/m) Peak	Emission (dBuV/m) Average	HORIZ /VERT	Limits (dBuV/m) Peak	Limits (dBuV/m) Average	Margin (dB) Peak	Margin (dB) Average
433.92	75.86	71.32	HORIZ	92.90	72.90	-17.04	-1.58
433.92	73.13	69.44	VERT	92.90	72.90	-19.77	-3.46

TTL Mode

Freq. (MHz)	Emission (dBuV/m) Peak	Emission (dBuV/m) Average	HORIZ /VERT	Limits (dBuV/m) Peak	Limits (dBuV/m) Average	Margin (dB) Peak	Margin (dB) Average
433.92	75.29	70.41	HORIZ	92.90	72.90	-17.61	-2.49
433.92	72.50	68.65	VERT	92.90	72.90	-20.40	-4.25

Note: (1) Emission Level = Reading Level + Probe Factor + Cable Loss.
(2) The average measurement was not performed when the peak measured data under the limit of average detection.

B. General Radiated Emission Data & Harmonics Radiated Emission Data

Product : Wireless USB
Test Item : General Radiated Emission Data & Harmonics Radiated Emission Data
Test Voltage : Power by PC USB port / DC 5V
Test Result : **PASS**
Test Mode : USB Mode & TTL Mode
Temperature : 25 ℃
Humidity : 56%RH

USB Mode

Freq. (MHz)	Emission Peak (dBuV/m)	HORIZ / VERT	Limits (dBuV/m)	Margin (dB)
42.480	26.36	HORIZ	40.0	-13.64
40.360	38.12	VERT	40.0	-1.88
397.240	36.97	HORIZ	46.0	-9.03
48.680	28.37	VERT	40.0	-11.63
867.84	32.53	HORIZ	52.90	-20.37
867.84	33.10	VERT	52.90	-19.80
1301.76	32.30	HORIZ	52.90	-20.60
1301.76	30.21	VERT	52.90	-22.69

TTL Mode

Freq. (MHz)	Emission Peak (dBuV/m)	HORIZ / VERT	Limits (dBuV/m)	Margin (dB)
33.840	31.26	HORIZ	40.0	-8.74
35.040	30.63	VERT	40.0	-9.37
397.240	34.49	HORIZ	46.0	-11.51
416.160	36.92	VERT	46.0	-9.08
867.84	30.16	HORIZ	52.90	-22.74
867.84	31.22	VERT	52.90	-21.68
1301.76	31.05	HORIZ	52.90	-21.85
1301.76	29.59	VERT	52.90	-23.31

Note: (1) Emission Level = Reading Level + Probe Factor + Cable Loss.
(2) The average measurement was not performed when the peak measured data under the limit of average detection.

6. Technical Characteristic

6. 1 Band Edge

6.1.1 Test Equipment

Please refer to Section 9 this report.

6.1.2 Test Procedure

Please refer to Section 5.2 this report.

6.1.3 Radiated Test Setup

Please refer to Section 5.3 this report.

6.1.4 Configuration of The EUT

Same as section 4.4 of this report

6.1.5 EUT Operating Condition

Same as section 4.5 of this report.

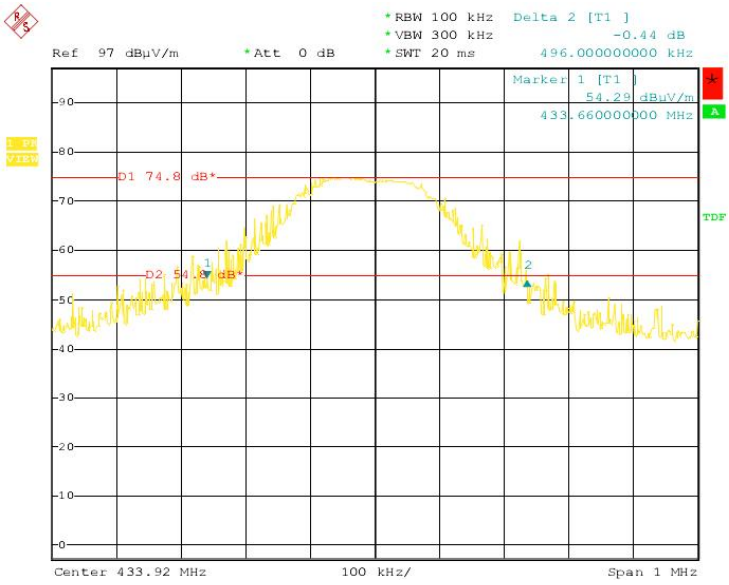
6.1.6 Band Edge FCC 15.231 Limit

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70MHz and below 900MHz. Bandwidth is determined at the points 20dB down from the modulated carrier.
B.W(20dBc) Limit = 0.25% x f (MHz) = 0.25% x 433.92MHz = 1.0848MHz
From the plot, the bandwidth is observed to be 0.496MHz, at 20dBc where the bandwidth limit is 1.0848MHz.

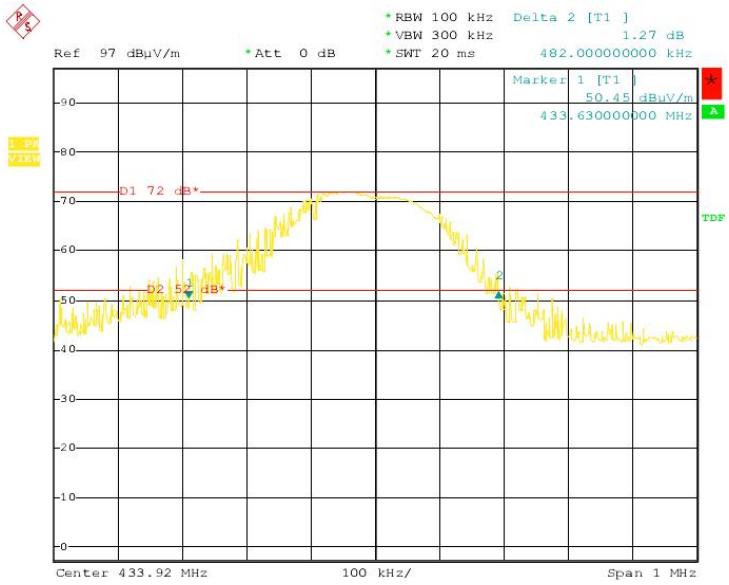
6.1.7 Band Edge Test Result

Product	: Wireless USB	Test Mode	: USB Mode & TTL Mode
Test Item	: Band Edge Data	Temperature	: 25 ℃
Test Voltage	: Power by PC USB port / DC 5V	Humidity	: 56%RH
Test Result	: **PASS**		

USB Mode



TTL Mode



Note: (1) The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in Section 15.209.

(2) The average measurement was not performed when the peak measured data under the limit of average detection.

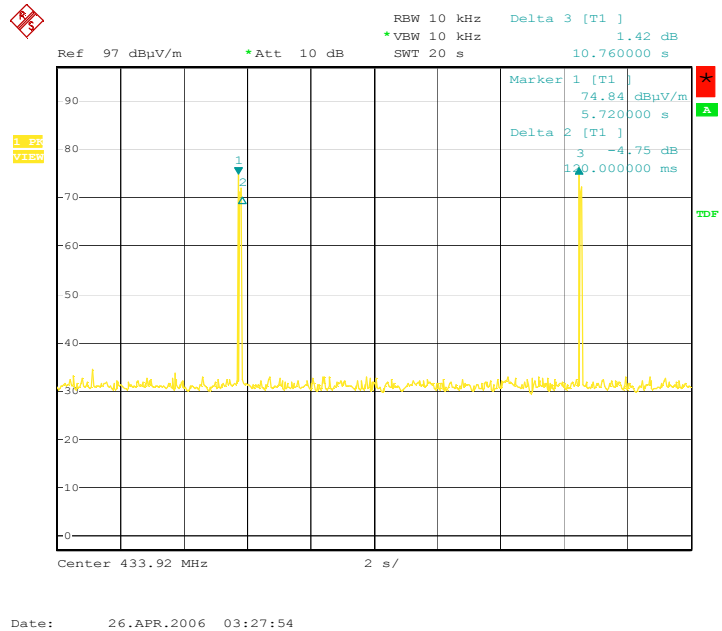
6. 2 Periodic Operation [FCC 47CFR 15.231e]

According to FCC 47CFR15.231e. The EUT shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmission shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

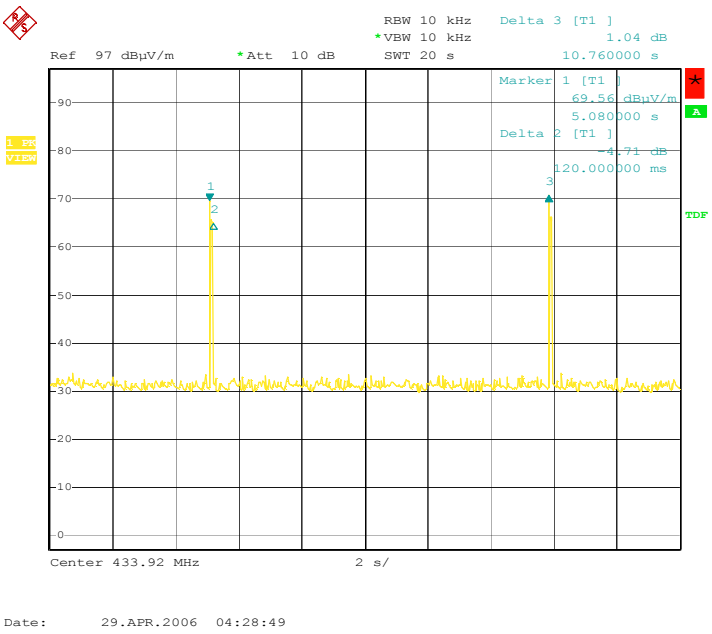
Results:

Since the EUT of each transmission is 120msec, so the silent period must not less than 10 seconds.
The following figures showed the duration of each transmission and silent period.

USB Mode



TTL Mode



6. 3 Antenna Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

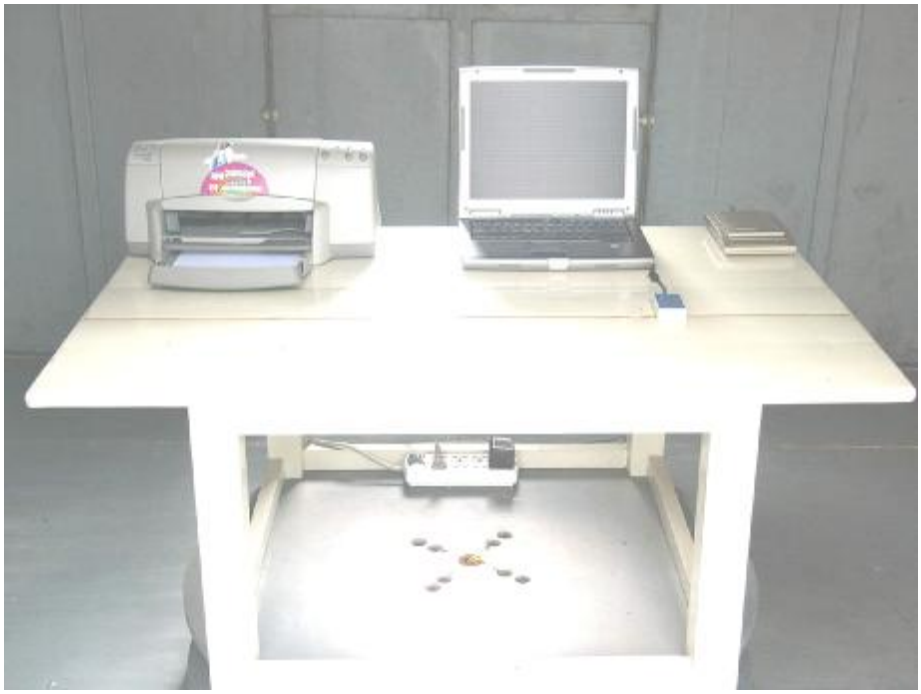
The EUT has a built in antenna which is a short wire solder on the PCB, This antenna meets the requirements of this section.

7. Photos of Testing

7. 1 EUT Test Photographs

Conducted emission test view

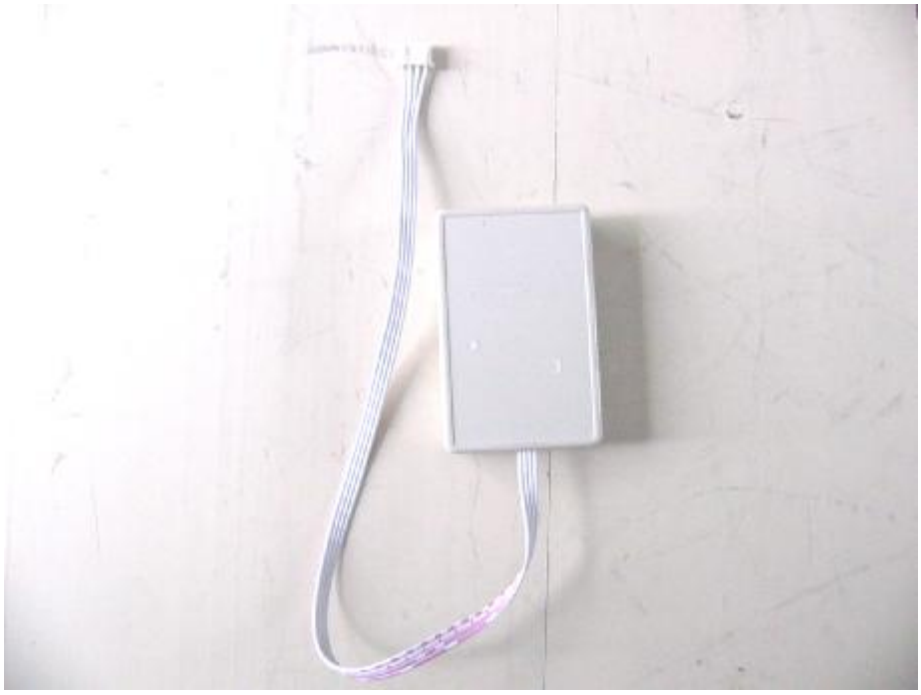
Radiated emission test view



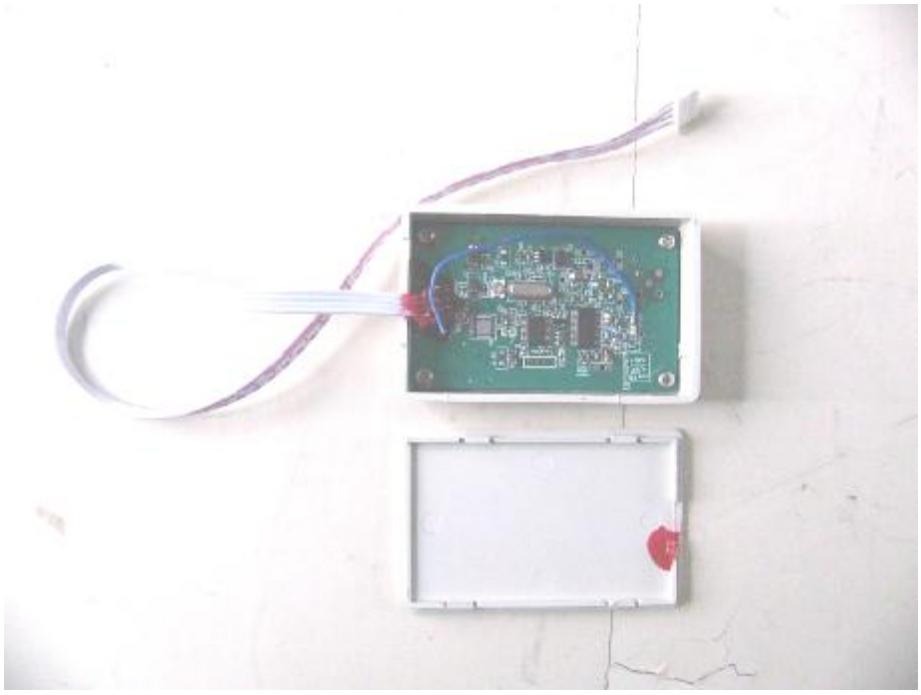
7. 2 EUT Detailed Photographs

EUT top view

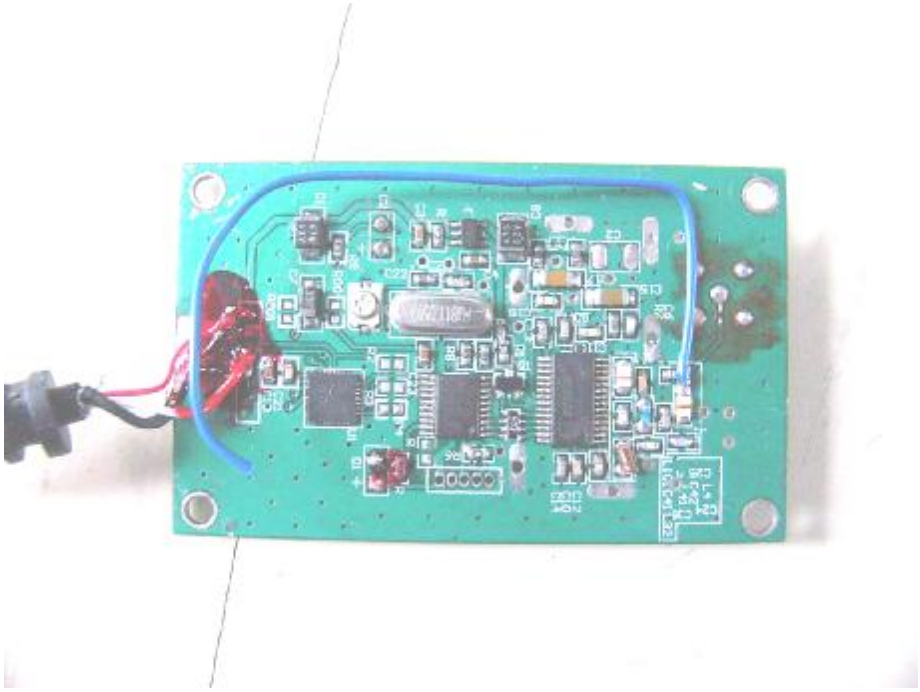
EUT bottom view



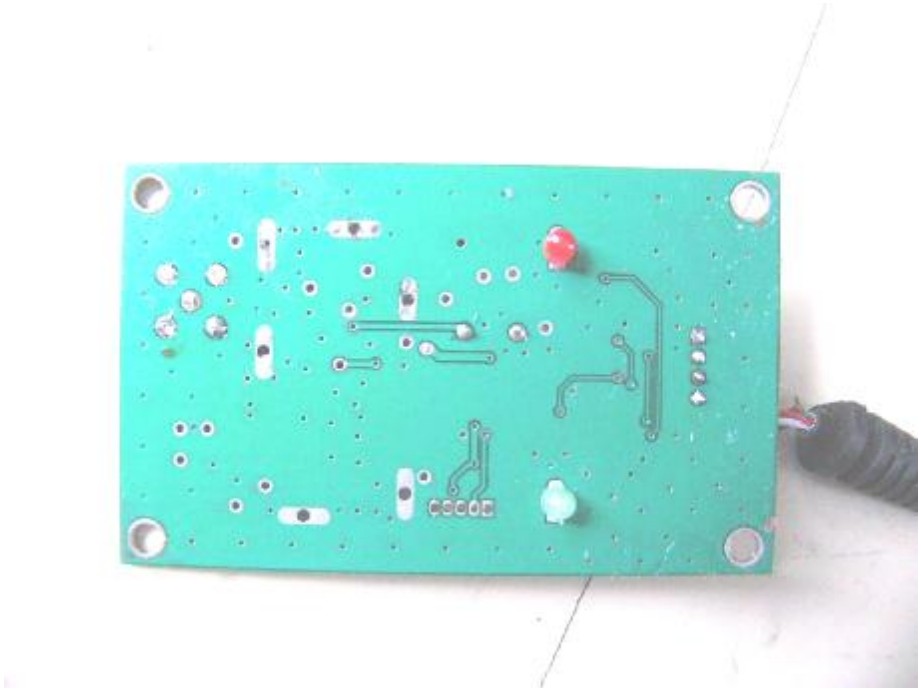
EUT inside whole view

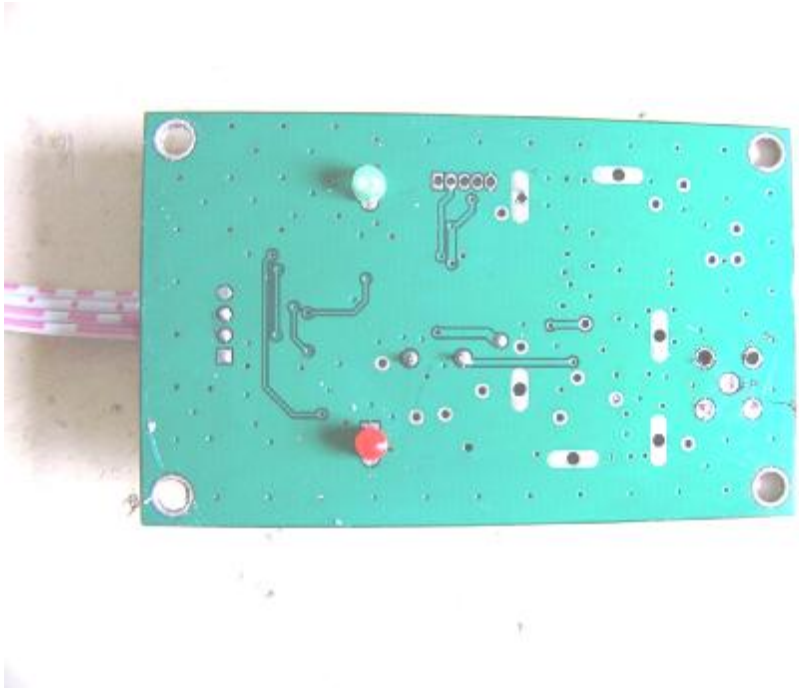


Main board component side



Main board solder side





8. FCC ID Label

FCC ID: TWNDTR900-FC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Label must not be a stick-on paper label. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT

EUT Bottom View/Proposed FCC ID Label Location

9. Test Equipment

The following test equipments were used during the radiated & conducted emission test:

Equipment/ Facilities	Manufacturer	Model #	Serial No.	Date of Cal.	Due Date
Turntable	KMO	KSZ001T	200306	NCR	NCR
Antenna Tower	KMO	KSZ002AT	200307	NCR	NCR
OATS	KMO	KSZSITE001	N/A	July 06, 2005	July 06, 2006
EMI Test Receiver	Rohde & Schwarz	ESPI3	100180	Oct.18, 2005	Oct.18, 2006
Signal Generator	Rohde & Schwarz	SMT03	100059	Feb.10, 2006	Feb.10, 2007
Signal Generator	FLUKE	PM5418+Y/C	LO747012	Feb.10, 2006	Feb.10, 2007
Signal Generator	FLUKE	PM5418TX	LO738007	Feb.10, 2006	Feb.10, 2007
Loop Antenna	SCHWARZBECK	FMZB1516	113	Jan. 30, 2005	Jan. 30, 2007
Loop Antenna	Rohde & Schwarz	HFH2-Z2	872096/16	Jan. 30, 2005	Jan. 30, 2007
Bilog Antenna	Chase	CBL6111C	2576	Feb.01, 2006	Feb.01, 2007
Ultra Broadband Antenna	Rohde & Schwarz	HL 562	100110	June.05, 2005	June.05, 2006
AMN	Rohde & Schwarz	ESH3-Z5	100196	Oct. 23,2005	Oct. 23, 2006
AMN	Rohde & Schwarz	ESH3-Z5	100197	Oct. 23,2005	Oct. 23, 2006
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	N/A	N/A	N/A
Absorbing Clamp	Rohde & Schwarz	MDS-21	N/A	Oct. 29,2005	Oct. 29,2006
KMO Shielded Room	KMO	KMO-001	N/A	N/A	N/A
EMI Test Receiver	Rohde & Schwarz	ESCS30	100003	Feb. 27, 2005	Feb.27, 2006
AMN	Rohde & Schwarz	ESH3-Z5	100002	Feb.10, 2006	Feb.10, 2007
LISN	Kyoritsu	KNW-407	8-1441-8	Feb.10, 2006	Feb.10, 2007
EMI Test Receiver	Rohde & Schwarz	ESI26	838786/013	Feb.10, 2006	Feb.10, 2007
Bilog Antenna	Chase	CBL6112B	2591	Feb.10, 2006	Feb.10, 2007
Horn Antenna	Rohde & Schwarz	HF906	100014	Feb.10, 2006	Feb.10, 2007
Power Meter	Rohde & Schwarz	NRVD	100041	Feb.10, 2006	Feb.10, 2007
Radio Communication Test Set	Rohde & Schwarz	CMS 54	846621/024	Feb.10, 2006	Feb.10, 2007
Modulation Analyzer	Hewlett-Packard	8901B	2303A00362	Feb.10, 2006	Feb.10, 2007
SOHO Telephone Switching System	IKE	2000-108C	N/A	Feb.10, 2006	Feb.10, 2007
Temperature Chamber	TABAI	PSL-4GTW	N/A	Feb.10, 2006	Feb.10, 2007
3m Semi-Anechoic Chamber	Albatross Projects	9mX6mX6m	N/A	Feb.10, 2006	Feb.10, 2007