HomeTek Technology (Chang-An) Inc.

ADDRESS: South of Shatou Industry District, Chang-An Town,
DongGuan City, GuangDong, China
PHONE : 86-769-85303005 FAX : 86-769-85303006
E - mail : dgxuhong@changan.net

FCC TEST REPORT
FOR

APPLICANT	:	GRIFFIN TECHNOLOGY CO.
ADDRESS	:	1619 Elm. Hill Pike, Nashville, TN. 37210 USA
EUT	:	iTrip Direct
MODEL NO.	:	9500-TRIPDA
FCC ID	:	PAV4026

Under Part 15, SUBPART B AND SUBPART C.

CLASS B

Certification

MEASUREMENT PROCEDURE USED

FCC RULES AND FCC / ANSI C63.4-2003

PREPARED BY :

HomeTek Technology (Chang-An) Inc.

South of Shatou Industry District, Chang-An Town,

DongGuan City, GuangDong, China

Report # : FBRP6005

EMC LAB HomeTek
HomeTek Technology (Chang-An) Inc.

ADDRESS: South of Shatou Industry District, Chang-An Town, DongGuan City, GuangDong, China
PHONE : 86-769-85303005 FAX : 86-769-85303006
E - mail : dgxuhong@changan.net

CERTIFICATION

EUT	: iTrip Direct
MODEL NO.	: 9500-TRIPDA
FCC ID	: PAV4026
Receipt Date	: 01/11/2006 Final Test Date: 01/20/2006
REPORT #	: FBRP6005
APPLICANT	: GRIFFIN TECHNOLOGY CO.
ADDRESS	: 1619 Elm. Hill Pike, Nashville, TN. 37210 USA

MEASUREMENT PROCEDURE USED :

FCC RULES AND REGULATION PART 15, SUBPART B AND SUBPART C
AND FCC / ANSI C63.4-2003

We hereby show that:

The measurement sown in this test report were made in accordance with and no deviation with the procedures indicated, and the maximum energy emitted by the equipment was found to be within the FCC limits applicable.

This test result of this report applies to above tested sample only.

This test report shall not be reproduce in part without written approval of HomeTek Technology (Chang-An) Inc.

PREPARED BY : BETTY GUO Assistant DATE : 01/20/2006

CHECK BY : GEORGE ZHOU Director DATE : 01/20/2006

APPROVED BY : GRANT HUANG / Manager DATE : 01/20/2006

TABLE OF CONTENTS

GENERAL INFORMATION

1	APPLICANT	:	GRIFFIN TECHNOLOGY CO.
2	ADDRESS	:	1619 Elm. Hill Pike, Nashville, TN. 37210 USA
3	MANUFACTURER	:	GRIFFIN TECHNOLOGY CO.
4	ADDRESS	:	1619 Elm. Hill Pike, Nashville, TN. 37210 USA
5	DESCRIPTION OF EUT	:	
	EUT	:	iTrip Direct
	FCC ID	:	PAV4026
	Model Number	:	9500-TRIPDA
	Serial #	:	N/A

6 FEATURES OF EUT :

Dimension : 2.45”×1.43”×0.9”(62.5mm×36.5mm×22mm)

Weight : 0.6 oz

Built-in antenna

Power : Provided by iPod (no batteries required)

Modulator : FM Stereo

Frequencies : 88.1MHz,107.9MHz

High stability crystal oscillator, phase-lock loop control

Frequency response : 50Hz to15KHz

Operating range : 10-30 ft

7 TEST MODE :

The EUT were investigated with three operation modes shown as below :

(1) FM 88.1MHz mode;

(2) FM107.9MHz mode;

(3) Charge mode;

The test mode of (3) Charge mode is worst case.

And the final test data were shown in this test report.

MODIFICATION LIST

THE FOLLOWING ACCESSORIES WERE ADDED TO THE EUT DURING TESTING :

NO MODIFICATION BY HOMETEK TECHNOLOGY(Chang-An) INC.

CONDUCTED POWER LINE TEST

1 TEST PROCEDURE

According to **ANSI C63.4 – 2003**.

2 RESULT OF CONDUCTED EMISSION TEST

N/A (Conducted Power Line Test is not applicable to this EUT (Model :9500-TRIPDA).

RADIATED EMISSION TEST

1 TEST INSTRUMENTS & FACILITIES

The following test Instruments was used during the radiated emission test :

Item	Instruments /facilities	Specification	Manufacturer	Model # / S/N#	Date of Cal.
1	OPEN AREA TEST SITE	☑ OATS 1			SEP/2005
2	EMI TEST RECEIVER	20Hz ~ 26.5GHz	ROHDE & SCHWARZ	845636/007	SEP/2005
3	PRE-AMPLIFIER	9KHz ~ 1300MHz	HEWLETT PACKARD	8447D 1937A02095	SEP/2005
4	BICONICAL/LOG BROADBAND ANTENNA	25MHz ~ 2GHz	ANTENNA RESEACH	LPB2520/A 1095	OCT/2005
5	Attenuation	50Ω/6dB	JYE BAO	FAT-N (M-F) 001	SEP/2005
6	Cable	10m	SUHNER	RG214/U OS3-003	SEP/2005
7	Cable	14m	BELDEN	9913 OS3-001	SEP/2005
8	EMI 32 (software)	N/A	AUDIX	19991013-0923	N/A

Note : Items 1 ~ 7 were calibrated within period of 1 year.

2 EUT OPERATING CONDITION

2.1 Configure the EUT according to the **ANSI C63.4 - 2003**.

2.2 The radiated emission in the frequency range from 30 MHz - 1000 MHz was test in a horizontal and vertical polarization at HomeTek(Chang-An) Lab's open site I.

2.3 The crystal frequency of the EUT is 7.6 MHz.

2.4 Install DC 3V Battery to EUT. Connect audio cable of EUT to audio output port of iPod player.

2.5 Turn on all the power of EUT and peripheral.

2.6 iPod player send 1KHz audio to EUT. (Apply audio signal 0.5Vrms to audio R/L of EUT).

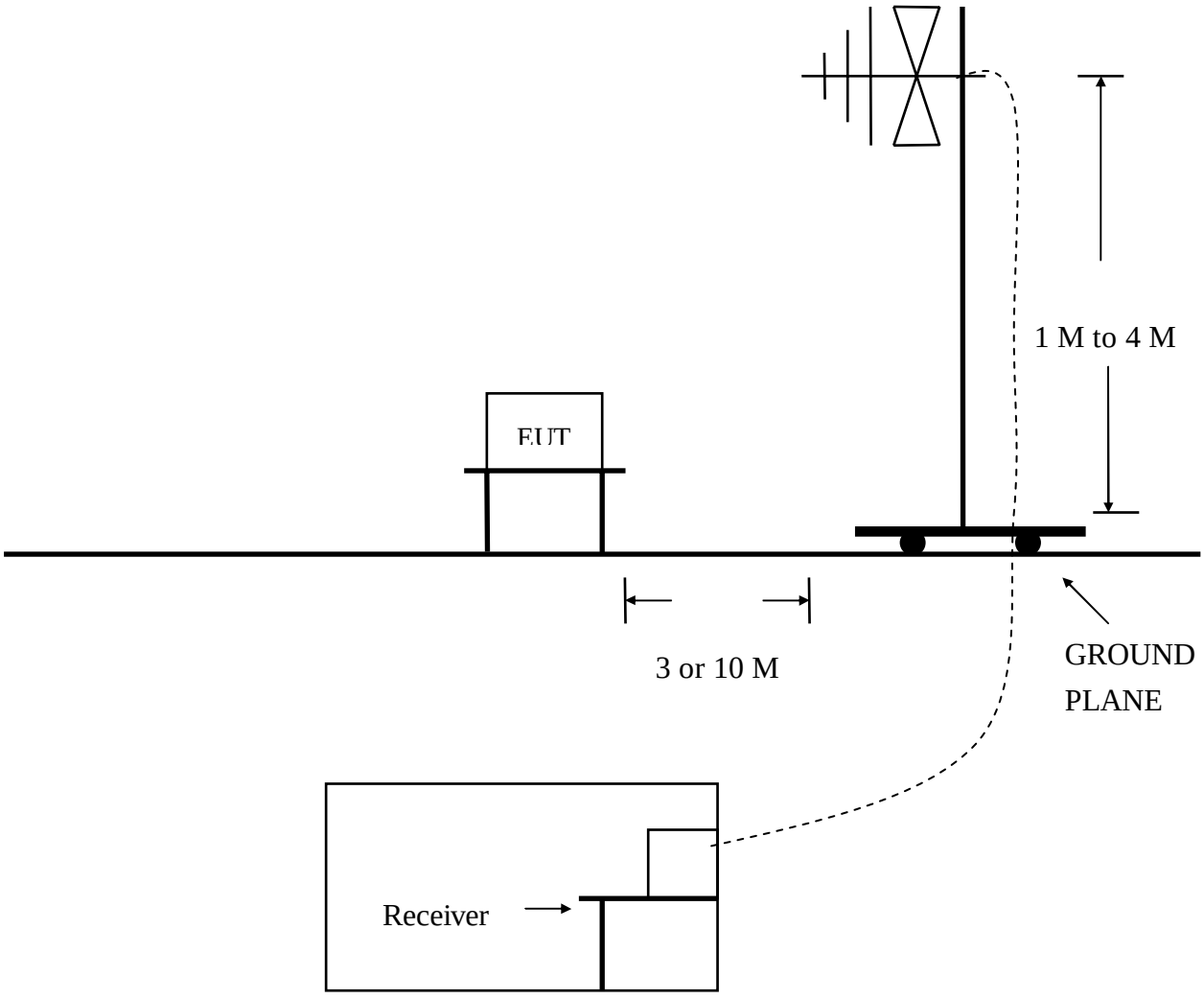
2.7 The EUT was operated in its normal operating mode for the purpose of the measurements.

2.8 The receiving antenna polarized horizontally was varied from 1 to 4 meters and the wooden turntable was rotated through 360 degrees to obtain the highest reading on the ESMI test receiver or on the display of the spectrum analyzer. And also, each emission was to be maximized by changing the orientation of the EUT.

2.9 The photos of radiated test configuration, please refer to appendix A.

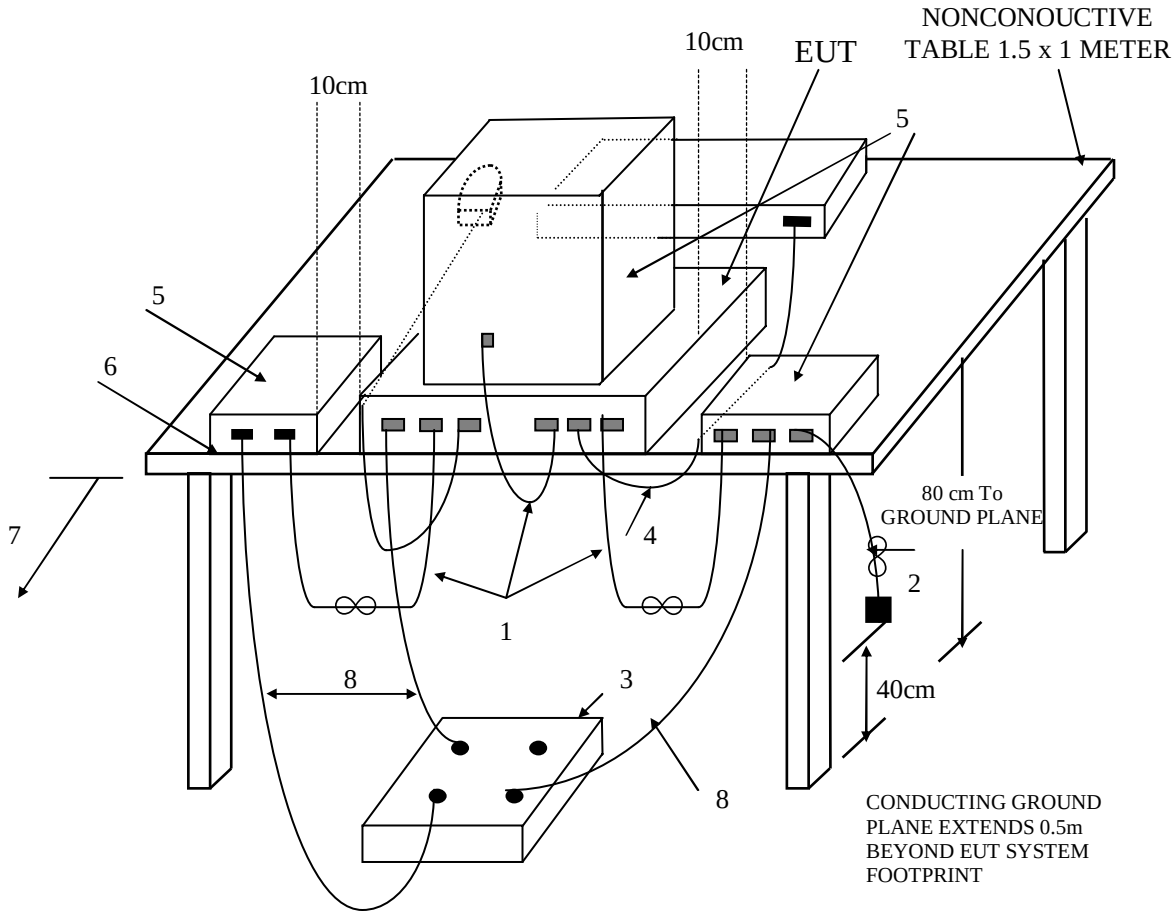
3 TEST SETUP

3.1 TEST SETUP OF OPEN SITE.



3.2 TEST SETUP OF EUT

ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE RANGE OF 9kHz TO 40 GHz ANSI C63.4-2003



(Details for setup configuration, please refer to appendix A.)

LEGEND:

1. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 to 40 cm long, hanging approximately in the middle between ground plane and table.
2. I/O cables that are connected to a peripheral shall be bundled in center. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1m.
3. If LISNs are kept in the test setup for radiated emissions, it is preferred that they be installed under the ground plane with the receptacle flush with the ground plane.
4. Cables of hand-operated devices, such as keyboards, mouses, etc., have to be placed as close as possible to the controller.
5. Non-EUT components of EUT system being tested.
6. The rear of all components of the system under test shall be located flush with the rear of the table.
7. No vertical conducting wall used.
8. Power cords drape to the floor and are routed over to receptacle.

Test Configuration

Tabletop Equipment Radiated Emission

4 CONFIGURATION OF THE EUT

The EUT was configured according to **ANSI C63.4 - 2003**. All I/O ports were connected to the appropriate peripherals. All peripherals and cables are listed below (including internal device) :

4.1 EUT

EUT Type	: ☐Proto Type ☑Engineer Type ☐Mass Production
Condition when received	: ☑Good ☐Damage : _____
Device	: iTrip Direct
Applicant	: GRIFFIN TECHNOLOGY CO.
Manufacturer	: GRIFFIN TECHNOLOGY CO.
Model Number	: 9500-TRIPDA
Serial Number	: N/A
FCC ID	: PAV4026
Power Cord (Output)	: Shielded, 1.1m
Power Supply Type	: Switching

4.2 PERIPHERALS

☑ iPod

Manufacturer	: Apple
Model Number	: A1051
Serial Number	: JQ53739LS43
FCC ID	: FCC DoC
Memory	: 4GB

4.3 REMARK : N/A

5 TEST PROCEDURE

5.1 The EUT was test according to **ANSI C63.4 – 2003 & FCC Part 15.35/15.209/15.239**.

5.2 The radiated test was performed at HomeTek(Chang-An) Lab's Open Site I.

5.3 This site is on file with the FCC laboratory division, test firm registration number: 140723, expiration Date : 2004/09/29.

5.4 For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies. The signal of higher emissions will be checked on a open test site. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.

5.5 For emission frequencies measured below and above 1 GHz, set the spectrum analyzer or a 100KHz and 1MHz resolution bandwidth respectively for each frequency measured in item 5.4.

5.6 The receiving antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Move the antenna to a position where the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0^{o} to 360^{o} with a speed as slow as possible and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna positior again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.

5.7 Repeat item 5.6 until all frequencies need to be measured were completed.

5.8 Repeat item 5.7 with search antenna in vertical polarized orientations.

5.9 Check seven frequencies of highest emission with varying the placement of cables (if any) associated with EUT to obtain the worst case and record the result.

5.10 The frequency range from 30 MHz to 1 GHz were investigated, the measurement were made at 3 meters, with a BI-log antenna.

6 LIMIT OF RADIATED EMISSION CLASS B

Frequency (MHz)	Measurement Distance	dBuV/m	uV/m
Fundamental frequency	3 (M)	48	250
30 - 88	3 (M)	40	100
88 - 216	3 (M)	43.5	150
216 - 960	3 (M)	46	200
Above 960	3 (M)	54	500

6.1 The tighter limit shall apply at the edge between two frequency bands.

6.2 Measurement distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or peripherals.

7 RESULT OF RADIATED EMISSION TEST

7.1 The frequency range from 30 MHz to 1 GHz was investigated.

7.2 All readings below or equal 1 GHz are quasi-peak or peak values with resolution bandwidth of 120 KHz. The reading of fundamental frequency is peak or average values. With resolution bandwidth of 120KHz.

7.3 The measurements were made at 3 meters of HomeTek(Chang-An) Lab's open site I.

7.4 Temperature : 19.7 ℃, Humidity : 23 % RH.

7.5 Deviation form the test standards and rules : None

7.6 The radiation emission result were gained by the following method :
Level = Reading Level + Probe Factor (Antenna Factor) + Cable Loss – Preamp Factor
Over Limit = Level – Limit Line

7.7 The radiated mission test was passed at minimum margin :
Horizontal 318.090 MHz/ 42.99 dBuV/m, Antenna Height 3.2 Meter,
Turn Table 210 degree, The Model : 9500-TRIPDA .

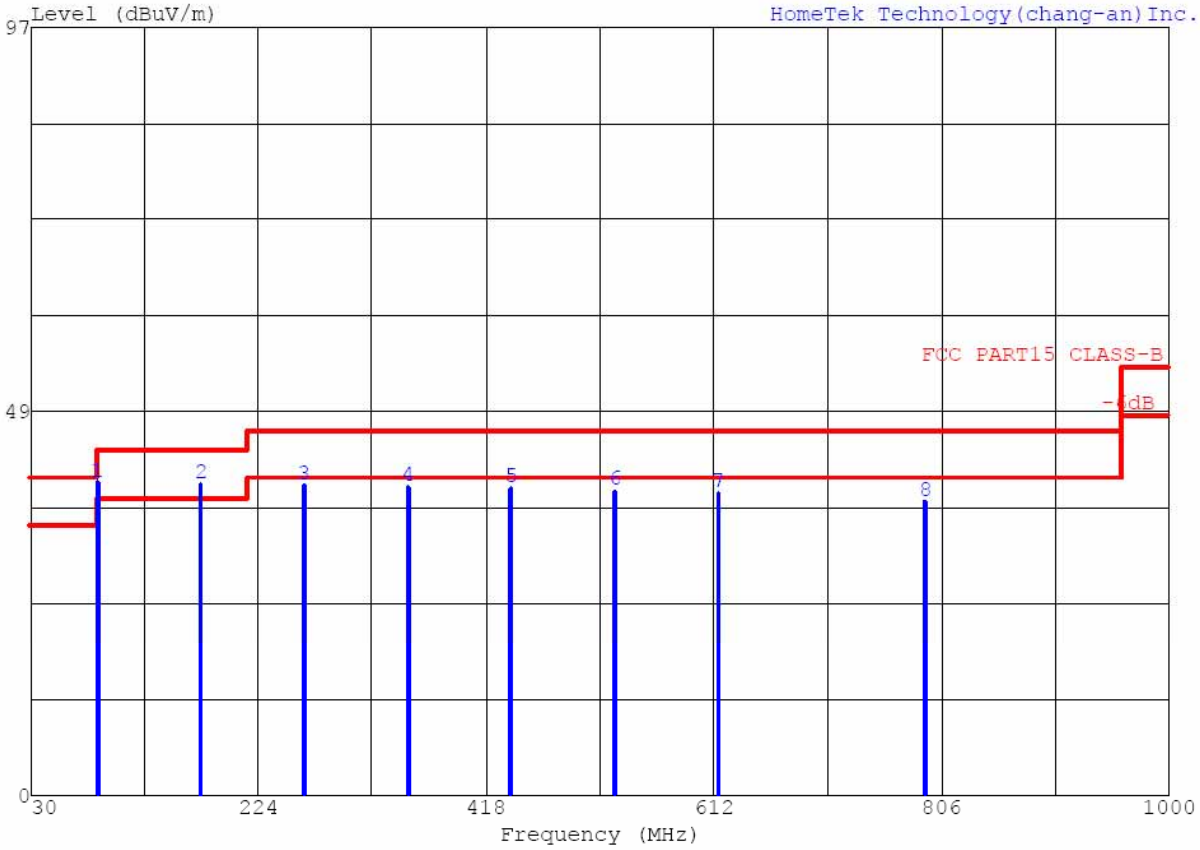
7.8 Result : **PASSED**

8 RADIATED EMISSION TEST DATA (PAGE 1)

HomeTek Technology(chang-an) Inc.

HomeTek Technology(chang-an) Inc
Tel:86-769-85303005 FAX:86-769-85303006

Data#: 1 File#: RP6005.EMI Date: 1-8,2006 Time: 08:14:49



Hometek
Trace :
Limit : FCC PART15 CLASS-B 3m
Probe : LPB-250/A-031028_3 HORIZONTAL
Margin: -6.0dB
EUT : 9500-TRIPDA
Power : For iPod
Memo : 88.1MHz
:
:

Ref Trace:

Page: 1

		Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	!	88.152	39.47	-8.43	47.90	55.75	8.96	2.58	27.83	QP
2	!	176.243	39.07	-4.43	43.50	53.77	9.61	3.11	27.43	QP
3		264.326	38.98	-7.02	46.00	49.03	11.90	5.22	27.17	QP
4		352.468	38.87	-7.13	46.00	47.75	13.92	4.61	27.41	QP
5		440.521	38.69	-7.31	46.00	45.52	15.54	5.53	27.90	QP
6		528.611	38.28	-7.72	46.00	42.17	16.97	7.40	28.26	QP
7		616.714	38.02	-7.98	46.00	40.19	18.06	8.19	28.42	QP
8		792.900	36.97	-9.03	46.00	37.08	20.44	7.76	28.32	QP

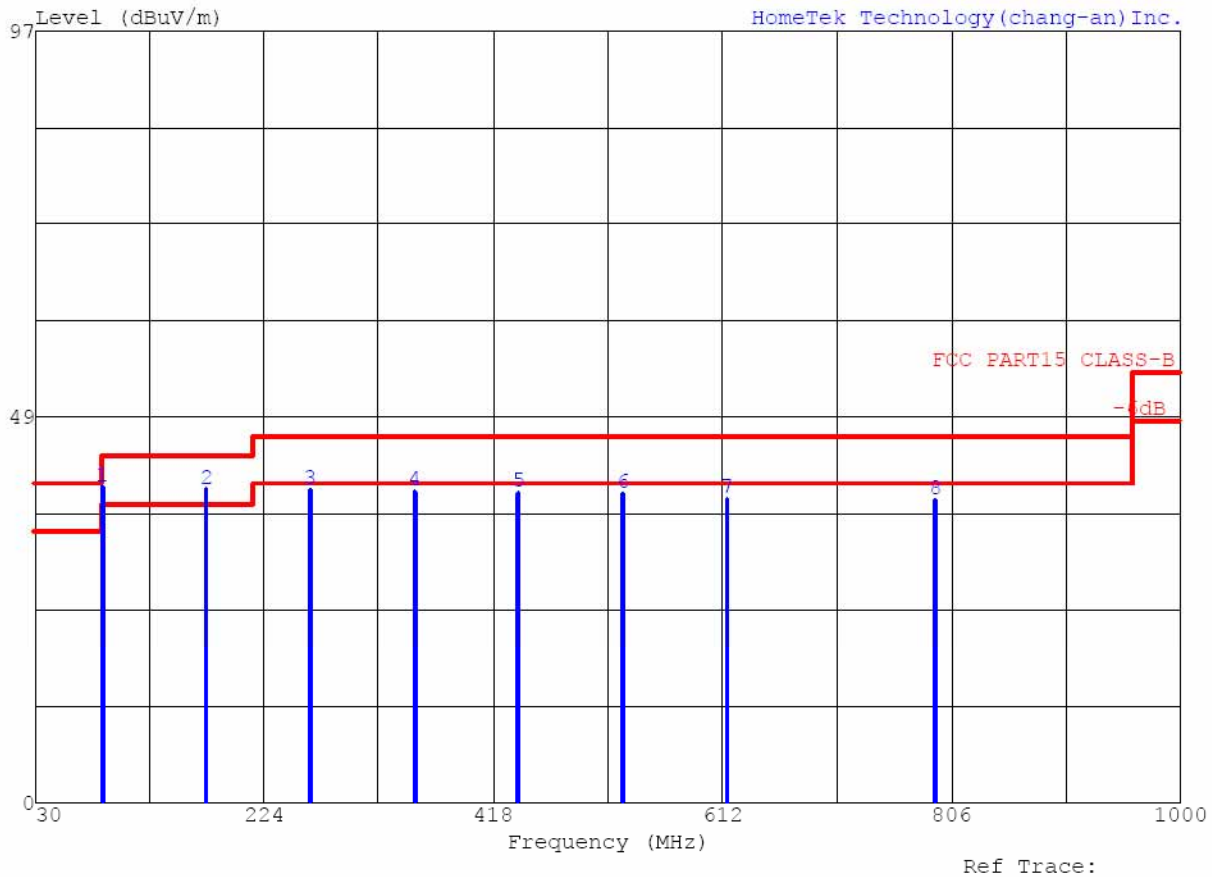
9 RADIATED EMISSION TEST DATA (PAGE 2)

HomeTek Technology(chang-an) Inc.

HomeTek Technology(chang-an) Inc

Tel:86-769-85303005 FAX:86-769-85303006

Data#: 2 File#: RP6005.EMI Date: 1-8,2006 Time: 09:10:41



Hometek
Trace :
Limit : FCC PART15 CLASS-B 3m
Probe : LPB-250/A-031028_3 VERTICAL
Margin: -6.0dB
EUT : 9500-TRIPDA
Power : For iPod
Memo : 88.1MHz
:
:

Ref Trace:

Page: 1

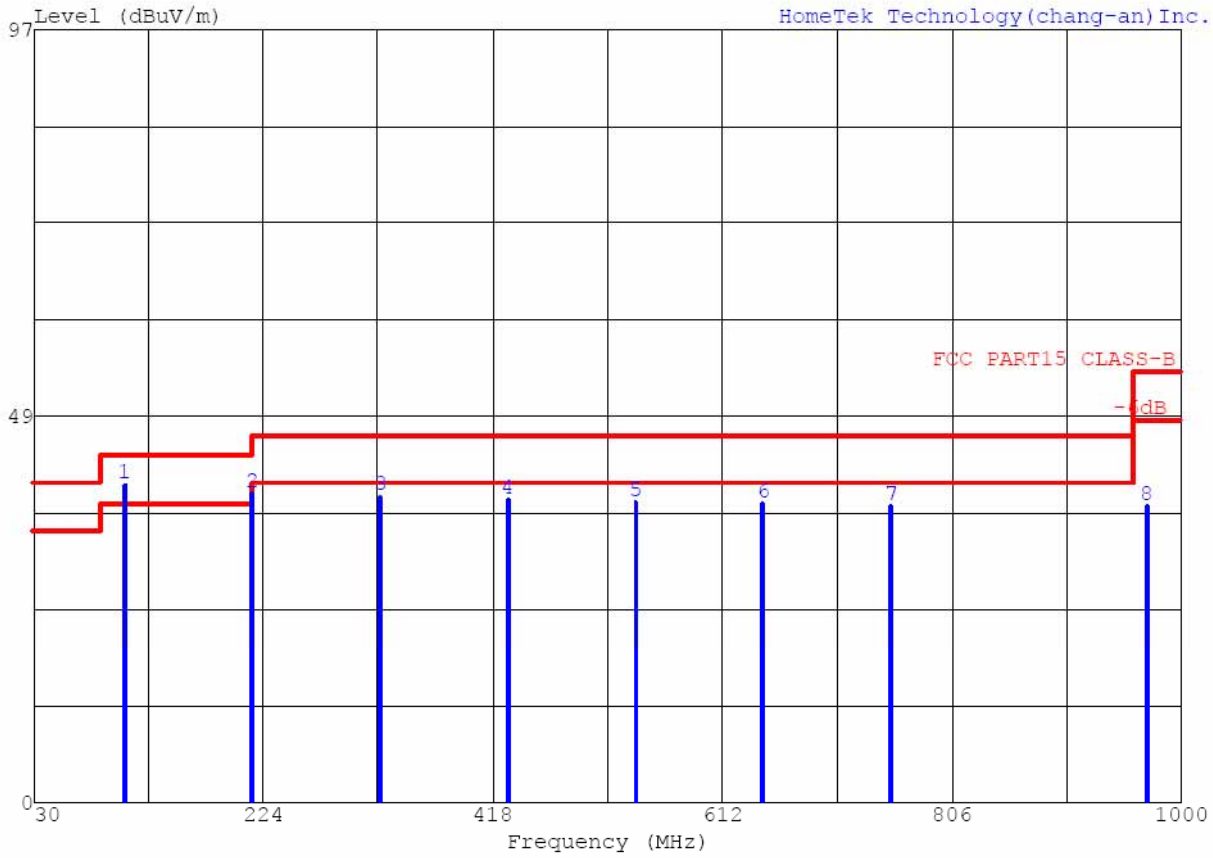
		Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	!	88.120	39.57	-8.33	47.90	55.85	8.96	2.58	27.83	QP
2	!	176.230	39.26	-4.24	43.50	53.96	9.61	3.11	27.43	QP
3		264.350	39.09	-6.91	46.00	49.14	11.90	5.22	27.17	QP
4		352.480	38.97	-7.03	46.00	47.85	13.92	4.61	27.41	QP
5		440.520	38.78	-7.22	46.00	45.61	15.54	5.53	27.90	QP
6		528.610	38.67	-7.33	46.00	42.56	16.97	7.40	28.26	QP
7		616.730	38.09	-7.91	46.00	40.26	18.06	8.19	28.42	QP
8		792.900	37.92	-8.08	46.00	38.03	20.44	7.76	28.32	QP

10 RADIATED EMISSION TEST DATA (PAGE 3)

HomeTek Technology(chang-an) Inc

HomeTek Technology(chang-an) Inc. Tel:86-769-85303005 FAX:86-769-85303006

Data#: 3 File#: RP6005.EMI Date: 1-8,2006 Time: 10:15:22



Hometek
Trace :
Limit : FCC PART15 CLASS-B3m
Probe : LPB-250/A-031028_3 HORIZONTAL
Margin: -6.0dB
EUT : 9500-TRIPDA
Power : For iPod
Memo : 107.9MHz
:
:

Ref Trace:

Page: 1

		Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	!	107.930	39.83	-8.07	47.9	55.41	9.56	2.62	27.76	QP
2	!	215.803	38.67	-4.83	43.50	51.58	10.90	3.46	27.27	QP
3		323.700	38.28	-7.72	46.00	48.22	13.23	4.06	27.24	QP
4		431.681	37.96	-8.04	46.00	45.26	15.37	5.18	27.86	QP
5		539.514	37.54	-8.46	46.00	39.87	17.18	8.76	28.28	QP
6		647.480	37.39	-8.61	46.00	40.90	18.37	6.56	28.45	QP
7		755.361	37.19	-8.81	46.00	36.83	20.06	8.69	28.39	QP
8		971.150	37.09	-16.91	54.00	31.76	22.28	10.84	27.79	QP

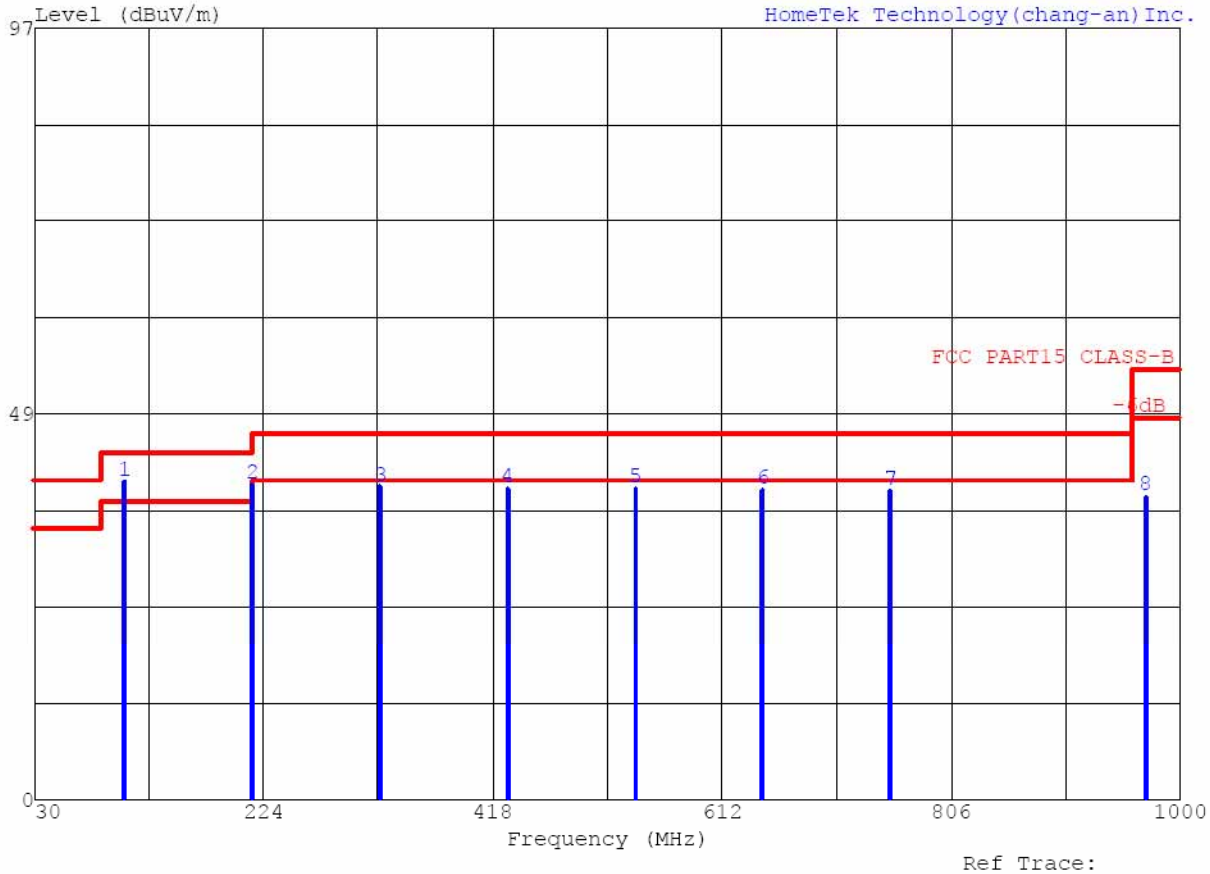
11 RADIATED EMISSION TEST DATA (PAGE 4)

HomeTek Technology(chang-an) Inc.

HomeTek Technology(chang-an) Inc

Tel:86-769-85303005 FAX:86-769-85303006

Data#: 4 File#: RP6005.EMI Date:1-8,2006 Time: 11:18:12



Hometek
Trace :
Limit : FCC PART15 CLASS-B 3m
Probe : LPB-250/A-031028_3 VERTICAL
Margin: -6.0dB
EUT : 9500-TRIPDA
Power : For iPod
Memo : 107.9MHz
:
:

Ref Trace:

Page: 1

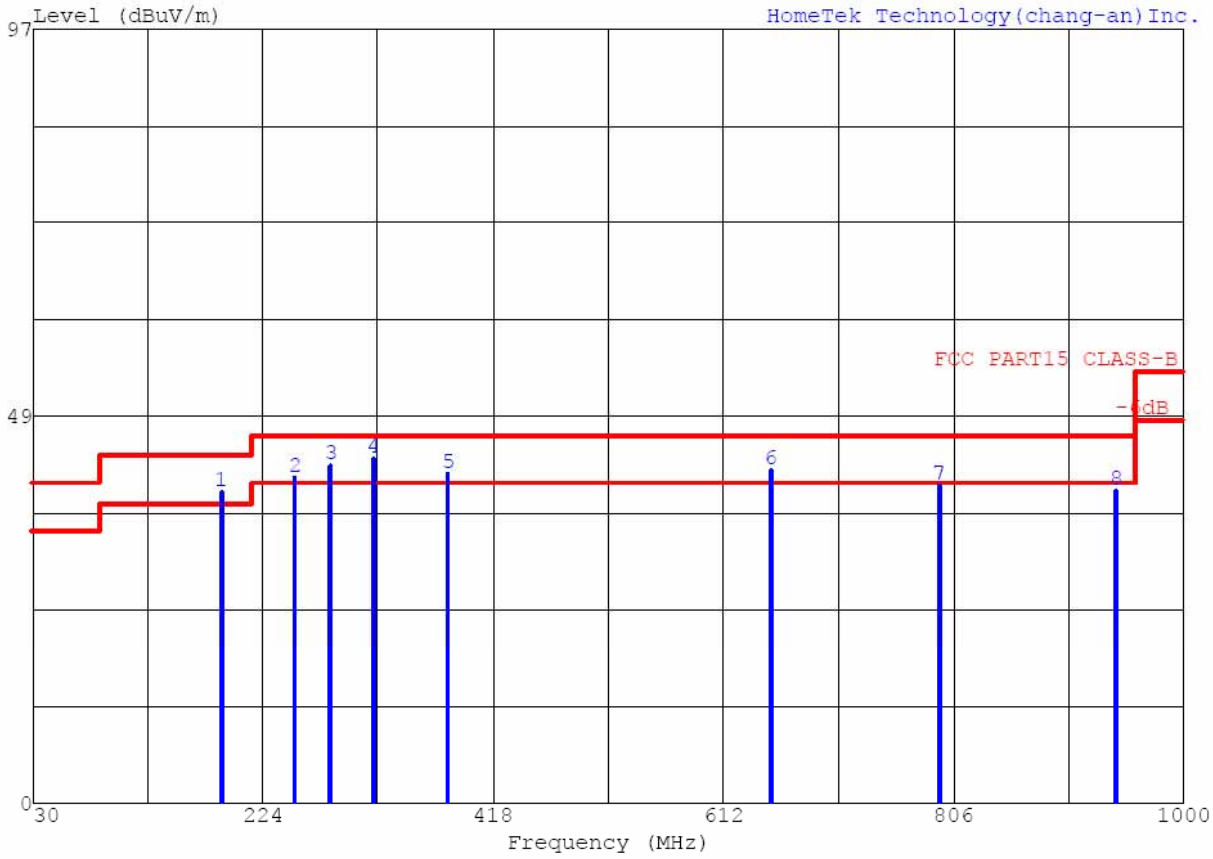
		Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	!	107.903	39.86	-8.04	47.90	55.44	9.56	2.62	27.76	QP
2	!	215.806	39.52	-3.98	43.50	52.43	10.90	3.46	27.27	QP
3		323.728	39.26	-6.74	46.00	49.20	13.23	4.06	27.24	QP
4		431.611	39.01	-6.99	46.00	46.31	15.37	5.18	27.86	QP
5		539.561	38.95	-7.05	46.00	41.28	17.18	8.76	28.28	QP
6		647.437	38.82	-7.18	46.00	42.33	18.37	6.56	28.45	QP
7		755.326	38.68	-7.32	46.00	38.32	20.06	8.69	28.39	QP
8		971.283	37.98	-16.02	54.00	32.65	22.28	10.84	27.79	QP

12 RADIATED EMISSION TEST DATA (PAGE 5)

HomeTek Technology(chang-an) Inc.
Tel:86-769-85303005 FAX:86-769-85303006

HomeTek Technology(chang-an) Inc

Data#: 5 File#: RP6005.EMI Date: 1-8,2006 Time: 14:32:19



Hometek
Trace :
Limit : FCC CLASS-B 3m
Probe : LPB-250/A-031028_3 HORIZONTAL
Margin: -6.0dB
EUT : 9500-TRIPDA
Power : DC 12V
Memo : CHARGE MODE
:
:

Ref Trace:

Page: 1

		Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	!	190.050	38.85	-4.65	43.50	52.94	9.90	3.36	27.35	Peak
2	!	252.130	40.67	-5.33	46.00	51.94	11.65	4.28	27.19	Peak
3	!	282.200	42.16	-3.84	46.00	53.12	12.27	3.90	27.14	Peak
4	!	318.090	42.99	-3.01	46.00	52.89	13.09	4.22	27.21	QP
5	!	381.140	41.16	-4.84	46.00	49.65	14.34	4.76	27.59	Peak
6	!	653.100	41.58	-4.42	46.00	45.05	18.47	6.52	28.45	Peak
7		794.360	39.68	-6.32	46.00	39.79	20.44	7.76	28.31	Peak
8		943.740	38.96	-7.04	46.00	34.63	22.05	10.15	27.87	Peak

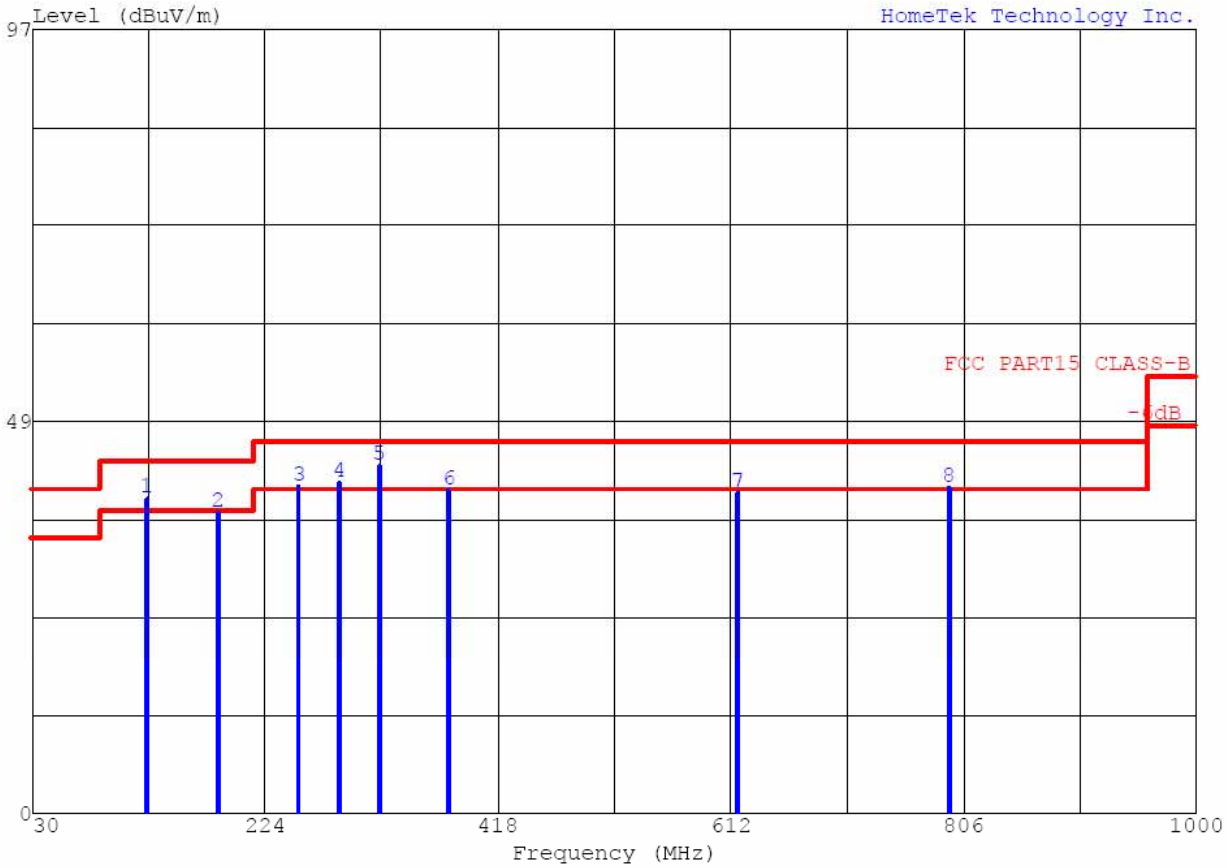
13 RADIATED EMISSION TEST DATA (PAGE 6)

HomeTek Technology Inc.

HomeTek Technology Inc

Tel:86-769-85303005 FAX:86-769-85303006

Data#: 6 File#: RP6005.EMI Date: 1-8,2006 Time: 15:15:17



Hometek
Trace :
Limit : FCC CLASS-B 3m
Probe : LPB-250/A-031028_3 VERTICAL
Margin: -6.0dB
EUT : 9500-TRIPDA
Power : DC 12V
Memo : CHARGE MODE
:
:

Ref Trace:

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 !	127.100	38.83	-4.67	43.50	51.96	10.47	4.07	27.67	Peak
2	186.170	37.12	-6.38	43.50	51.91	9.40	3.18	27.37	Peak
3 !	253.100	40.31	-5.69	46.00	51.47	11.65	4.38	27.19	Peak
4 !	287.050	40.87	-5.13	46.00	51.46	12.34	4.19	27.13	Peak
5 !	320.030	42.83	-3.17	46.00	52.93	13.13	3.99	27.22	QP
6	378.232	39.97	-6.03	46.00	48.57	14.32	4.66	27.57	Peak
7	618.790	39.67	-6.33	46.00	41.65	18.11	8.33	28.42	Peak
8 !	794.360	40.23	-5.77	46.00	40.34	20.44	7.76	28.31	Peak

PHOTO OF FCC ID LABEL

SAMPLE OF FCC ID LABEL :

FCC ID : #####

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 that may cause undesired operation.

Please refer to appendix B photo of ID location.