



FCC 47 CFR PART 15 SUBPART B

TEST REPORT

For

Applicant: 2Go Products, LLC

Address: 7770 Regents Rd # 113-632 San Diego CA 92122 USA

Product Name: Click 'n Dig Electronic Key Finder

Model Number: E4, F6

Brand Name: Click 'n Dig!

FCC ID: XFW2GOC26L

Report No.: SZSTS120303F1

Date of Issue: March. 09, 2012

Issued by: Shenzhen Super Test Service Technology Co., Ltd.

**Address: No.5, Langshan 2nd Rd., North Hi-Tech Industrial park, Nanshan,
Shenzhen, Guangdong, China**

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1. VERIFICATION OF CONFORMITY

Equipment Under Test:	Click 'n Dig Electronic Key Finder
Brand Name:	Click 'n Dig!
Model Number:	E4
Series Number:	F6
Description of Differences:	Only the color and model name are different.
FCC ID:	XFW2GOCD26L
Applicant:	2Go Products, LLC
	7770 Regents Rd # 113-632 San Diego CA 92122 USA
Manufacturer:	2Go Products, LLC
	7770 Regents Rd # 113-632 San Diego CA 92122 USA
Technical Standards:	FCC Part 15 B
File Number:	SZSTS120303F1
Date of test:	March. 08 - March. 09, 2012
Deviation:	None
Condition of Test Sample:	Normal

The above equipment was tested by STS for compliance with the requirements set forth in FCC Part 15 and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Tested by (+ signature): 

Zhang Ling March. 09, 2012

Review by (+ signature): 

July Wen March. 09, 2012

Approved by (+ signature): 

Terry Yang March. 09, 2012

2. GENERAL INFORMATION

2.1 PRODUCT INFORMATION

Equipment Under Test: Click 'n Dig Electronic Key Finder

Brand Name: Click 'n Dig!

Model Number: E4

Series Number: F6

Description of Differences: Only the color and model name are different.

Housing Type: Plastic

EUT Rating Voltage: DC: 3V by Li-ion Battery;

NOTE:

1. Please refer to Appendix 2 for the photographs of the EUT. For a more detailed features description about the EUT, please refer to User's Manual.

2.2 OBJECTIVE

Perform FCC Part 15 Subpart B tests for FCC Marking.

2.3 TEST STANDARDS AND RESULTS

Test items and the results are as bellow:

EMISSION			
Standard	Item	Result	Remarks
FCC 47 CFR Part 15 Subpart B	Conducted	PASS	Meet Class B limit
	Radiated	PASS	Meet Class B limit

- Note:
1. The test result judgment is decided by the limit of measurement standard
 2. The information of measurement uncertainty is available upon the customer's request.

2.4 ENVIRONMENTAL CONDITIONS

During the measurement the environmental conditions were within the listed ranges:

- Temperature: 15-35°C
- Humidity: 30-60 %
- Atmospheric pressure: 86-106 kPa

2.5 MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in Measurement” (GUM) published by ISO.

- Uncertainty of Conducted Emission, $U_c = \pm 1.8\text{dB}$
- Uncertainty of Radiated Emission, $U_c = \pm 3.2\text{dB}$

3. TEST METHODOLOGY

3.1 TEST FACILITY

Test Site:	Most Technology Service Co., Ltd.
Location:	No.5, Langshan 2nd Rd, North Hi-Tech Industrial park, Nanshan, Shenzhen, Guangdong, China
Description:	<p>There is one 3m semi-anechoic an area test sites and two line conducted labs for final test. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009 and CISPR 16 requirements. The FCC Registration Number is 490827.</p> <p>The CNAS Registration Number is CNAS L3573.</p>
Site Filing:	The site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4:2009 and CISPR 16 requirements that meet industry regulatory agency and accreditation agency requirement.
Ground Plane:	Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.

3.2 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4:2009,Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4:2009.

3.3 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

- (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

- (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

4 SETUP OF EQUIPMENT UNDER TEST

4.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

4.2 SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
--	--	--	--	--	--

Remark:

All the equipment/cables were placed in the worst-case [-configuration to maximize the emission during the test.

Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4. 3 TEST EQUIPMENT LIST

Instrumentation: The following list contains equipment used at MOST for testing. The equipment conforms to the CISPR 16-1 / ANSI C63.2 Specifications for Electromagnetic Interference and Field Strength Instrumentation from 10 kHz to 1.0 GHz or above.

No.	Equipment	Manufacturer	Model No.	S/N	Calibration due date
1	Test Receiver	Rohde & Schwarz	ESCI	100492	2013/03/14
2	L.I.S.N.	Rohde & Schwarz	ENV216	100093	2013/03/14
3	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2013/03/14
4	Terminator	Hubersuhner	50Ω	No.1	2013/03/14
5	RF Cable	SchwarzBeck	N/A	No.1	2013/03/14
6	Test Receiver	Rohde & Schwarz	ESPI	101202	2013/03/14
7	Bilog Antenna	Sunol	JB3	A121206	2013/03/14
8	Test Antenna - Horn	Schwarzbeck	BBHA 9120C	--	2013/03/14
9	Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	--	2013/03/14
10	Cable	Resenberger	N/A	NO.1	2013/03/14
11	Cable	SchwarzBeck	N/A	NO.2	2013/03/14
12	Cable	SchwarzBeck	N/A	NO.3	2013/03/14
13	DC Power Filter	DuoJi	DL2×30B	N/A	2013/03/14
14	Single Phase Power Line Filter	DuoJi	FNF 202B30	N/A	2013/03/14
15	3 Phase Power Line Filter	DuoJi	FNF 402B30	N/A	2013/03/14
16	Test Receiver	Rohde & Schwarz	ESCI	100492	2013/03/14
17	Absorbing Clamp	Luthi	MDS21	3635	2013/03/14
18	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2013/03/14
19	AC Power Source	Kikusui	AC40MA	LM003232	2013/03/14
20	Test Analyzer	Kikusui	KHA1000	LM003720	2013/03/14
21	Line Impedence Network	Kikusui	LIN40MA-PCR-L	LM002352	2013/03/14
22	ESD Tester	Kikusui	KES4021	LM003537	2013/03/14
23	EMC PRO System	EM Test	UCS-500-M4	V0648102026	2013/03/14
24	Signal Generator	IFR	2032	203002/100	2013/03/14
25	Amplifier	A&R	150W1000	301584	2013/03/14
26	CDN	FCC	FCC-801-M2-25	47	2013/03/14
27	CDN	FCC	FCC-801-M3-25	107	2013/03/14
28	EM Injection Clamp	FCC	F-203I-23mm	403	2013/03/14
29	RF Cable	MIYAZAKI	N/A	No.1/No.2	2013/03/14
30	Universal Radio Communication Tester	ROHDE&SCHWARZ	CMU200	0304789	2013/03/14
31	Telecommunication Antenna	European Antennas	PSA 75301R/170	0304213	2013/03/14

NOTE: Equipments listed above have been calibrated and are in the period of validation.

5. 47 CFR PART 15B REQUIREMENTS

5.1 GENERAL INFORMATION

The EUT has been tested under normal operating (TX) all the time

The field strength of radiation emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis).

The following data show only with the worst case setup.

The worst case of Y axis was reported.

Based on client request, all normal using modes were tested but only the worst test data of the worst mode is reported by this report.

6. LINE CONDUCTED EMISSION TEST(NOT APPLICABLE)

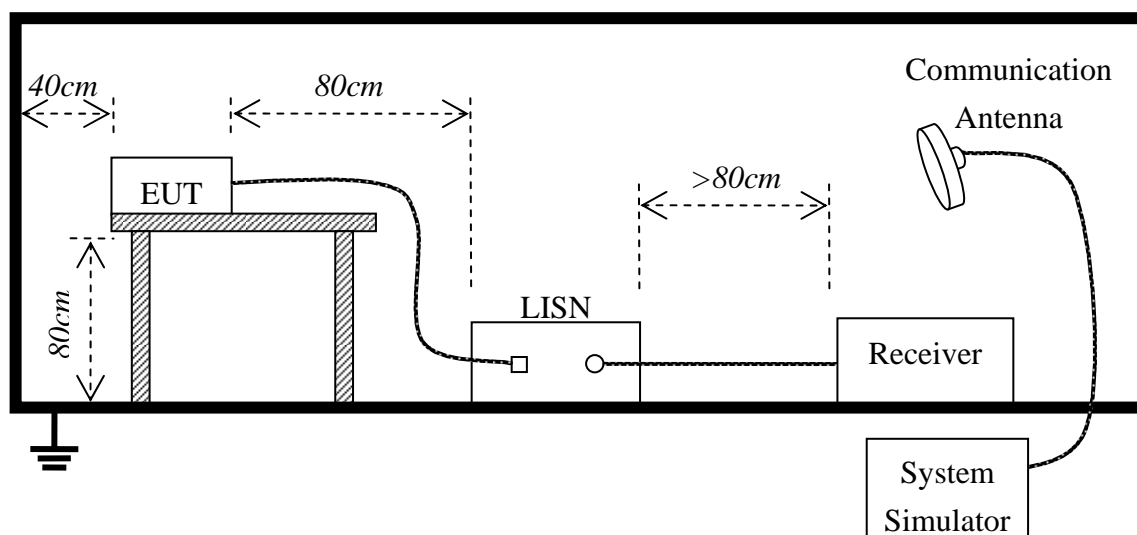
6.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz-500kHz	66-56	56-46
500kHz-5MHz	56	46
5MHz-30MHz	60	50

****Note:** 1. the lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

6.2. BLOCK DIAGRAM OF TEST SETUP



6.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per FCC Part 15 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per FCC Part 15.
- 3) All I/O cables were positioned to simulate typical actual usage as per FCC Part 15.
- 4) The EUT received DC 3V by battery.
- 5) All support equipments received power from a second LISN supplying power of AC 120V/60Hz, if any.
- 6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7) Analyzer / Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.
- 8) During the above scans, the emissions were maximized by cable manipulation.
- 9) The following test mode(s) were scanned during the preliminary test:

Preliminary Conducted Emission Test				
Frequency Range Investigated		150KHz TO 30 MHz		
Mode of operation	Date	Report No.	Data#	Worst Mode
--	--	--	--	--

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

6.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

EUT and support equipment was set up on the test bench as per step 9 of the preliminary test.

A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -20Db to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

The test data of the worst case condition(s) was reported on the Summary Data page.

6.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

(Not applicable: EUT is powered by battery.)

7. RADIATED EMISSION TEST

7.1. LIMITS OF RADIATED DISTURBANCES AT 3M DISTANCES FOR CLASS B

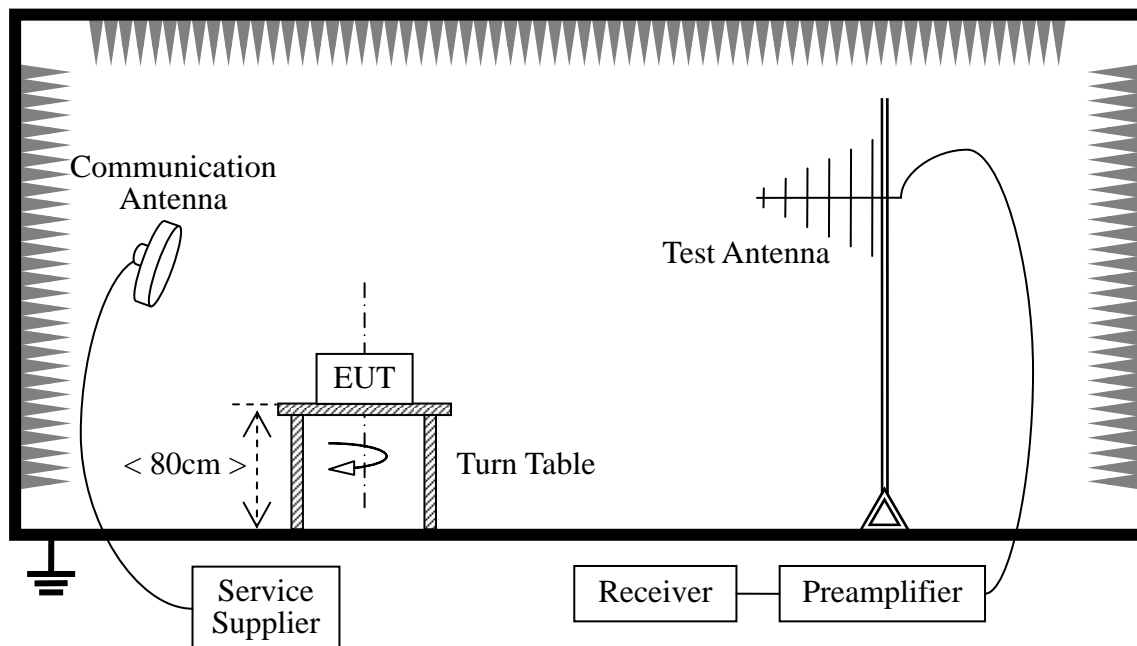
According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 - 0.490	$2400/F(\text{kHz})$	300
0.490 - 1.705	$24000/F(\text{kHz})$	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

As shown in FCC section 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector. When average radiated emission measurements are specified in this part, including emission measurements below 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.

7.2 TEST DESCRIPTION

Test Setup:



The EUT received DC 3V. The Module is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading. During the measurement, the EUT is activated and transmitting with the other WIFI device (Supply by the Applicant) during the test.

For the Test Antenna:

- In the frequency range of 9 kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

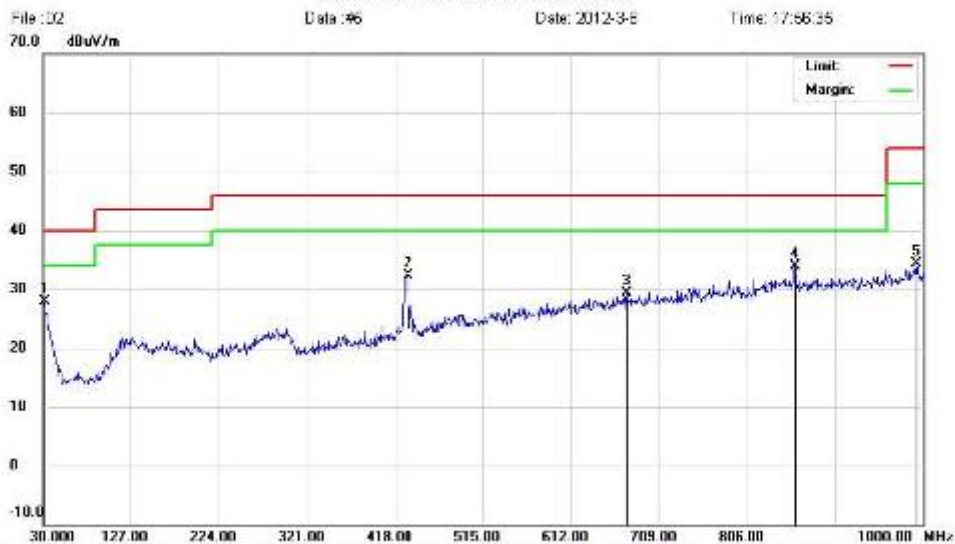
Preliminary Radiated Emission Test				
Frequency Range Investigated			30 MHz TO 1000 MHz	
Mode of operation	Date	Report No.	Data#	Worst Mode
Normal working Mode	2012-3-8	SZSTS120303F1	E4_0_(H, V)	<input checked="" type="checkbox"/>

7.3 TEST RESULT



Address: No.5, Langshen 2nd Rd., North Hi-Tech Industrial park
Guangdong, China
Tel: 0755-86170306 Fax: 0755-86170310

Radiated Emission Measurement



Site: site MOST 3M Polarization: **Horizontal** Temperature: 26
Limit: FCC Part 15 B 3M Radiation Power: 00.3W Humidity: 61 %
EUT: Click'n Dig Electronic Key Finder Distance:
M/N: E4
Mode: RX
Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	30.9700	3.93	24.05	27.98	40.00	-12.02	peak		
2		431.5800	12.04	20.32	32.36	45.00	-13.64	peak		
3		673.1100	4.79	24.53	29.32	46.00	-16.68	peak		
4		858.3800	6.84	27.05	33.89	46.00	-12.11	peak		
5		982.2400	6.22	29.02	34.24	54.00	-19.76	peak		

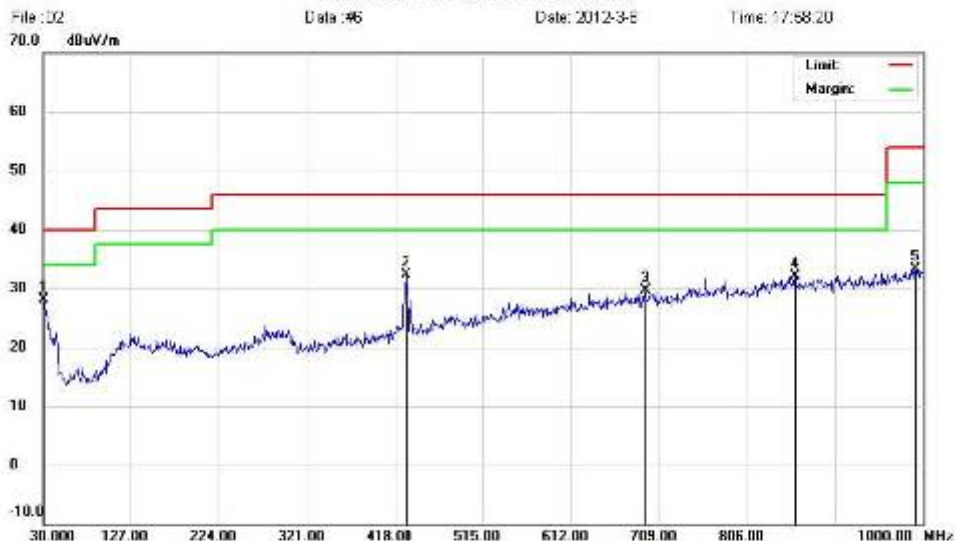
*Maximum data xOver limit lOver margin

Engineer Signature: Rex



Address: No.5, Langshen 2nd Rd., North Hi-Tech Industrial park
Guangdong, China
Tel: 0755-86170306 Fax: 0755-86170310

Radiated Emission Measurement



Site: site MOST 3M

Polarization: **Vertical**

Temperature: 26

Limit: FCC Part 15 B 3M Radiation

Power: 00.0V

Humidity: 61 %

EUT: Click'n Dig Electronic Key Finder

Distance:

MN: E4

Mode: RX

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	30.0000	3.27	24.80	28.07	40.00	-11.93	peak		
2		430.8100	11.93	20.31	32.24	48.00	-13.76	peak		
3		692.5100	5.25	24.48	29.73	46.00	-16.27	peak		
4		859.3500	5.03	27.02	32.05	46.00	-13.95	peak		
5		980.3000	4.32	29.08	33.40	51.00	-20.60	peak		

*:Maximum data x:Over limit l:over margin

Engineer Signature: Rex

Above 1 GHz**Operation Mode:** Normal working Mode**Test Date:** March 8, 2012**Temperature:** 24°C**Tested by:** Habby Guo**Humidity:** 70 % RH**Polarity:** Ver. / Hor.

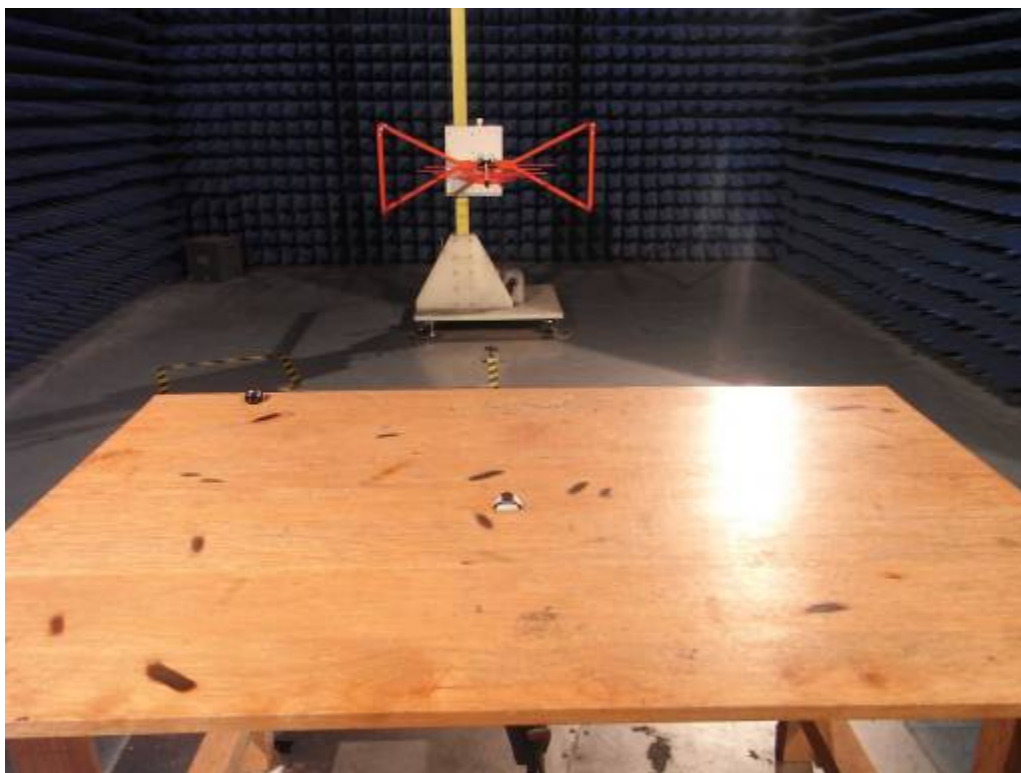
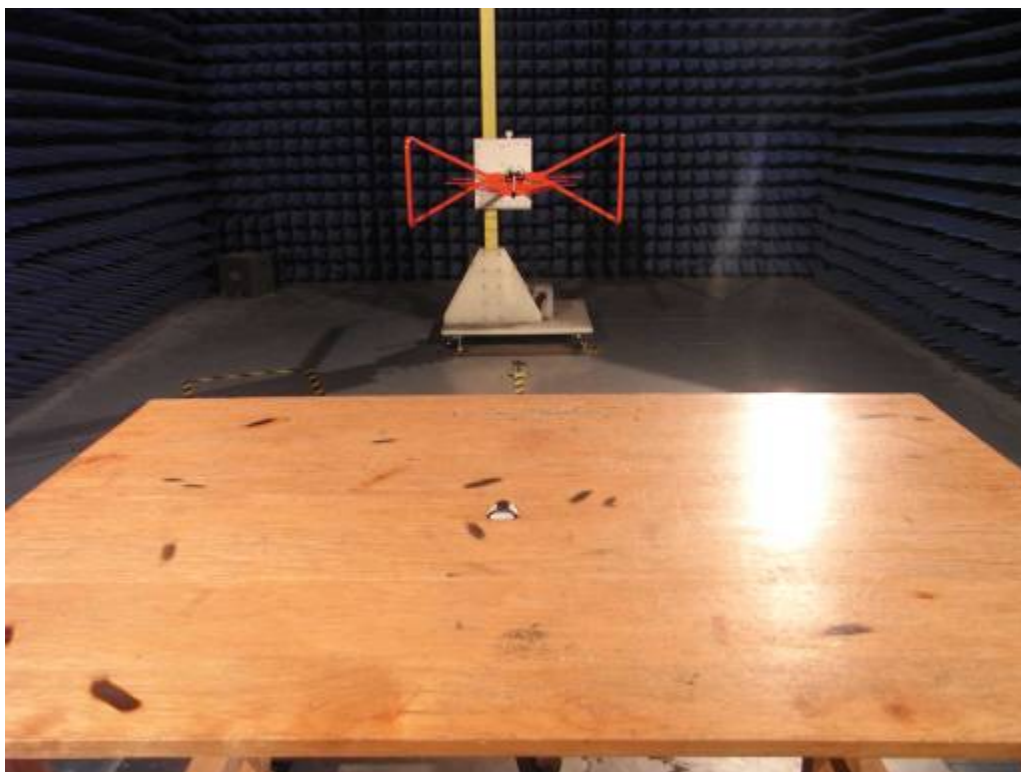
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
N/A										>20
N/A										>20

Notes:

1. Measuring frequencies from 1 GHz to 6GHz.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
3. The frequency that above 3GHz is mainly from the environment noise.

APPENDIX 1
PHOTOGRAPHS OF TEST SETUP

RE TEST SETUP





APPENDIX 2

PHOTOGRAPHS OF EUT

FRONT VIEW OF SAMPLE



BACK VIEW OF SAMPLE



VIEW OF OTHER MODEL



INTERNAL PHOTO OF SAMPLE – 1



INTERNAL PHOTO OF SAMPLE -2



-----END OF REPORT-----