FCC PART 15 B

MEASUREMENT AND TEST REPORT

For

FINGERTEC WORLDWIDE SDN BHD

NO.6, 8 & 10, JALAN BK 3/2, BANDAR KINRARA, 47100 PUCHONG, SELANGOR, MALAYSIA

MODEL: Keylock 8800

April 12, 2010

This Report Concerns:	**Equipment Type:**
☒ Original Report	Fingerprint Lock

Test By:	Yannl Guan/ Yannl Guan
Report Number:	**BCT10DR-0419E**
Test Date:	Apr 1~12, 2010
Reviewed By:	Thom Chen/ Thom Chen
Approved By:	Kendy Wang/ Kendy Wang
Prepared By:	**SHENZHEN BONTEK ELECTRONIC TECHNOLOGY CO., LTD.** 1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, China Tel: +86-755-86337020 Fax: +86-755-86337028

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1 - GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	**FINGERTEC WORLDWIDE SDN BHD**
Address of applicant:	NO.6, 8 & 10, JALAN BK 3/2, BANDAR KINRARA, 47100 PUCHONG, SELANGOR, MALAYSIA
Manufacturer:	**FINGERTEC WORLDWIDE LIMITED**
Address of manufacturer:	Peking University Founder Shiyan Science Park, Bao'an, Shenzhen, China. 518108

General Description of E.U.T

EUT Description:	**Fingerprint Lock**
Trade Name:	**FINGERTEC**
Model No.:	**Keylock 8800**
Power Rating:	Input: DC6V (4 Electromagnetic,a 1.5V)

Remark: * *The test data gathered are from the production sample provided by the manufacturer.*

1.2 Test Standards

The following Declaration of Conformity report of EUT is prepared in accordance with
FCC Rules and Regulations Part 15 Subpart B 2006

The objective of the manufacturer is to demonstrate compliance with the described above standards.

1.3 Test Summary

For the EUT described above. The standards used were FCC Part 15 Subpart B for Emissions

Table 1 : Tests Carried Out Under FCC Part 15 Subpart B

Standard	Test Items	Status
FCC Part 15 Subpart B	Conduction Emission, 0.15MHz to 30MHz	×
FCC Part 15 Subpart B	Radiation Emission, 30MHz to 1000MHz	√

√ Indicates that the test is applicable
× Indicates that the test is not applicable

1.4 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

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The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

The maximum emission levels emanating from the device are compared to the FCC Part 15 Subpart B limits for radiation emissions and the measurement results contained in this test report show that EUT is to be technically compliant with FCC requirements.

All measurement required was performed at SHENZHEN BONTEK ELECTRONIC TECHNOLOGY CO., LTD. at 1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, China

1.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC – Registration No.: 338263

SHENZHEN BONTEK ELECTRONIC TECHNOLOGY CO., LTD. , EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 338263, March, 2008.

IC Registration No.: 7631A

The 3m alternate test site of SHENZHEN BONTEK ELECTRONIC TECHNOLOGY CO., LTD. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 7631A on August 2009.

CNAS - Registration No.: L3923

SHENZHEN BONTEK ELECTRONIC TECHNOLOGY CO., LTD. to ISO/IEC 17025:25 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.
The acceptance letter from the CNAS is maintained in our files: Registration:L3923,February,2009.

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1.6 Test Equipment List and Details

Test equipments list of SHENZHEN BONTEK ELECTRONIC TECHNOLOGY CO., LTD. .

No.	Instrument no.	Equipment	Manufacturer	Model No.	S/N	Calculator date	Calculator due date
1	BCT-EMC001	EMI Test Receiver	R&S	ESCI	100687	2010-4-14	2011-4-13
2	BCT-EMC002	EMI Test Receiver	R&S	ESPI	100097	2010-4-14	2011-4-13
3	BCT-EMC003	Amplifier	HP	8447D	1937A02492	2010-4-14	2011-4-13
4	BCT-EMC004	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07101	2010-4-14	2011-4-13
5	BCT-EMC005	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07102	2010-4-14	2011-4-13
6	BCT-EMC006	Power Clamp	SCHWARZBECK	MDS-21	3812	2010-4-14	2011-4-13
7	BCT-EMC007	Positioning Controller	C&C	CC-C-1F	MF7802113	N/A	N/A
8	BCT-EMC008	`Electrostatic Discharge Simulator	TESEQ	NSG437	125	2010-4-14	2011-4-13
9	BCT-EMC009	Fast Transient Burst Generator	SCHAFFNER	MODULA6150	34572	2010-4-14	2011-4-13
10	BCT-EMC010	Fast Transient Noise Simulator	Noiseken	FNS-105AX	31485	2010-4-14	2011-4-13
11	BCT-EMC011	Color TV Pattern Genenator	PHILIPS	PM5418	TM209947	N/A	N/A
12	BCT-EMC012	Power Frequency Magnetic Field Generator	EVERFINE	EMS61000-8K	608002	2010-4-14	2011-4-13
13	BCT-EMC013	N/A	N/A	N/A	N/A	N/A	N/A
14	BCT-EMC014	Capacitive Coupling Clamp	TESEQ	CDN8014	25096	2010-4-14	2011-4-13
15	BCT-EMC015	High Field Biconical Antenna	ELECTRO-METRICS	EM-6913	166	2010-4-14	2011-4-13

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16	BCT-EMC016	Log Periodic Antenna	ELECTRO-METRICS	EM-6950	811	2010-4-14	2011-4-13
17	BCT-EMC017	Remote Active Vertical Antenna	ELECTRO-METRICS	EM-6892	304	2010-4-14	2011-4-13
18	BCT-EMC018	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-324	2010-4-14	2011-4-13
19	BCT-EMC019	Horn Antenna	SCHWARZBECK	BBHA9120A	B08000991-0001	2010-4-14	2011-4-13
20	BCT-EMC020	Teo Line Single Phase Module	SCHWARZBECK	NSLK8128	D-69250	2010-4-14	2011-4-13
21	BCT-EMC021	10dB attenuator	SCHWARZBECK	MTAIMP-136	R65.90.0001#06	2010-4-14	2011-4-13
22	BCT-EMC022	Electric bridge	Zentech	100 LCR METER	803024	N/A	N/A
23	BCT-EMC023	RF Current Probe	FCC	F-33-4	80	2010-4-14	2011-4-13
24	BCT-EMC024	SIGNAL GENERATOR	HP	8647A	3349A02296	2010-4-14	2011-4-13
25	BCT-EMC025	MICROWAVE AMPLIFIER	HP	8349B	2627A00994	2010-4-14	2011-4-13
26	BCT-EMC026	Triple-Loop Antenna	EVERFINE	LLA-2	607004	2010-4-14	2011-4-13
27	BCT-EMC027	CDN	FRANKONIA	M2+M3	A3027019	2009-10-20	2010-10-19
28	BCT-EMC028	6dB Attenuator	FRANKONIA	75-A-FFN-06	1001698	2009-10-20	2010-10-19
29	BCT-EMC029	EMV-Mess-Systeme GMBH	FRANKONIA	FLL-75	1020A1109	2009-10-20	2010-10-19
30	BCT-EMC030	EM Injection Clamp	FCC	F-203I-13mm	091536	2009-10-20	2010-10-19
31	BCT-EMC031	9KHz-2.4GHz Signal generator	MARCONI INSTRUMENTS	2024	112260/042	2009-10-20	2010-10-19

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2 - SYSTEM TEST CONFIGURATION

2.1 Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

2.2 EUT Exercise Software

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software offered by manufacture, can let the EUT being normal operation.

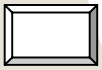
2.3 Special Accessories

As shown in section 2.5, interface cable used for compliance testing is shielded as normally supplied by **FINGERTEC WORLDWIDE SDN BHD** and its respective support equipment manufacturers.

2.4 Equipment Modifications

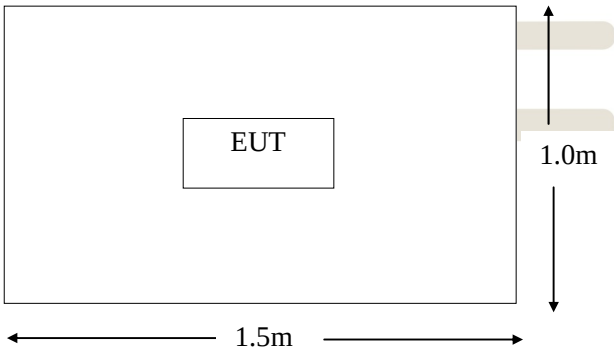
The EUT tested was not modified by BCT.

2.5 Configuration of Test System



EUT

2.6 Test Setup Diagram



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3 - RADIATED DISTURBANCES

3.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is 4.0 dB.

3.2 Limit of Radiated Disturbances

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)
30 ~ 88	3	40
88~216	3	43.5
216 ~ 960	3	46
960 ~ 1000	3	54

Note: (1) The tighter limit shall apply at the edge between two frequency bands.
(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

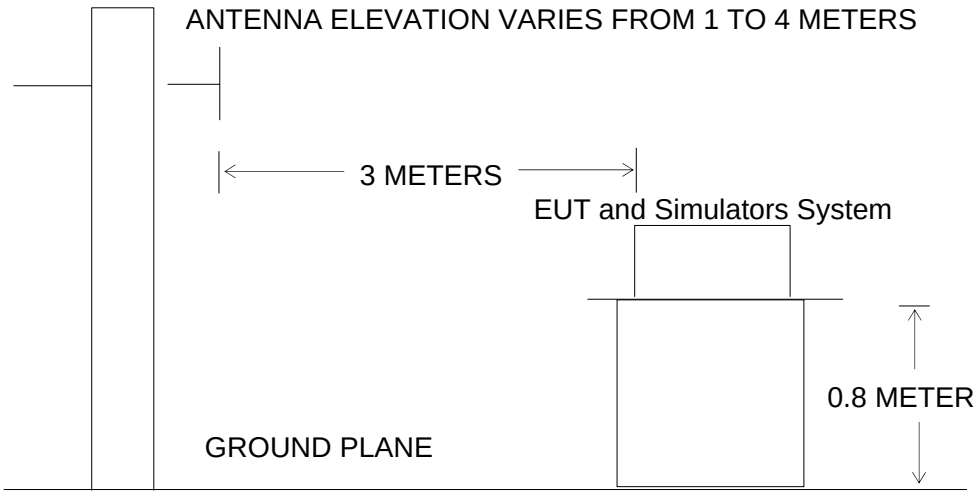
3.3 EUT Setup

The radiated emission tests were performed in the in the 3-meter anechoic chamber, using the setup accordance with the ANSI C63.4-2001. The specification used was the FCC Part 15 Subpart B limits.

The EUT was placed on the center of the test table.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

Block diagram of test setup (In chamber)



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3.4 Test Receiver Setup

According to FCC Part 15 rule, the frequency was investigated from 30 to 1000 MHz. During the radiated emission test, the test receiver was set with the following configurations:

Test Receiver Setting:

Detector……..Peak & Quasi-Peak
IF Band Width……..120KHz
Frequency Range……30MHz to 1000MHz
Turntable Rotated……0 to 360 degrees

Antenna Position:

Height……1m to 4m
Polarity……...Horizontal and Vertical

3.5 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings performed only when an emission was found to be marginal (within -10 dBμV of specification limits), and are distinguished with a "**QP**" in the data table.

3.6 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dBμV means the emission is 7dBμV below the maximum limit for Subpart B. The equation for margin calculation is as follows:

Margin = Limit – Corr. Ampl.

3.7 Radiated Emissions Test Result

Temperature (℃)	22~25
Humidity (%RH)	50~54
Barometric Pressure (mbar)	950~1000
EUT	Fingerprint Lock
M/N	Keylock 8800
Operating Mode	ON

Test data see following pages

Remark: (1) When PK reading is less than relevant limit 20dB, the QP reading and AV reading will not be recorded.
(2) Where QP reading is less than relevant AV limit, the AV reading will not be measured

3.8 Test Result

PASS

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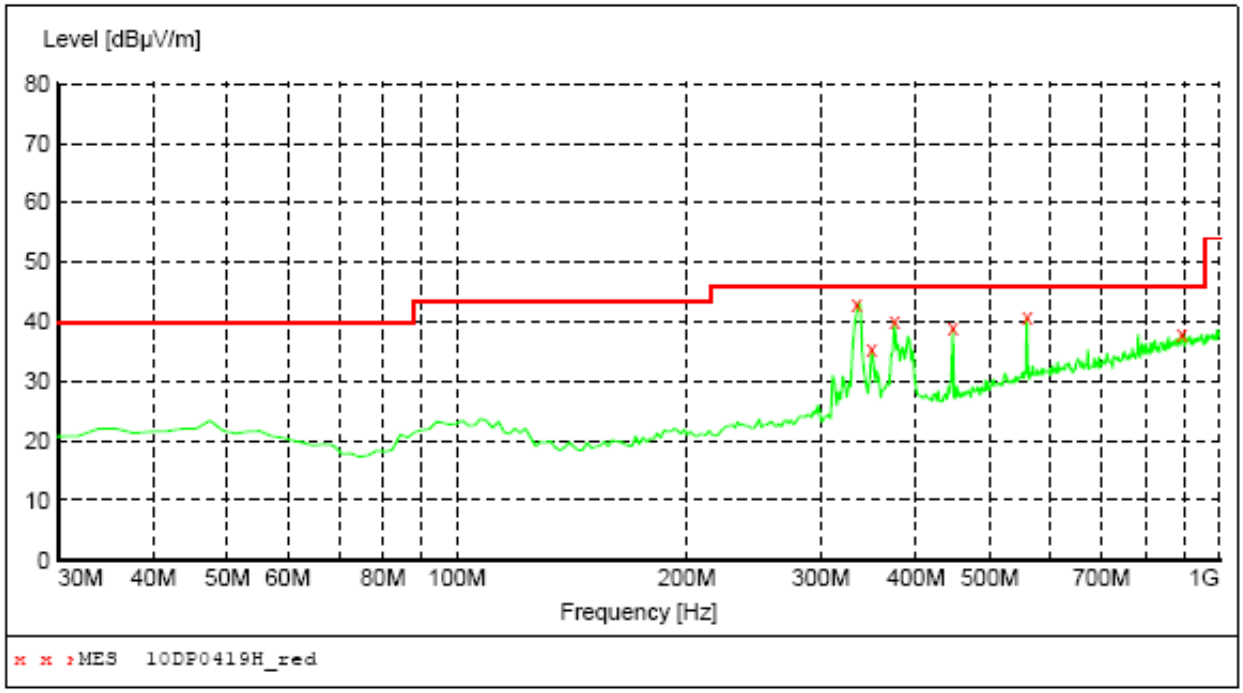
Radiated Emission Test Data:

EUT:	Fingerprint Lock
M/N:	Keylock 8800
Operating Condition:	ON
Test Site:	3m CHAMBER
Operator:	Chen
Test Specification:	DC 6V
Comment:	Polarization: Horizontal
Start of Test:	4/3/10/ 16:43 Tem:25℃ Hum:50%

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



MEASUREMENT RESULT: "10DP0419H_red"

4/3/2010 16:43

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
334.580000	43.00	19.9	46.0	3.0	QP	100.0	0.00	HORIZONTAL
350.100000	35.40	20.4	46.0	10.6	QP	100.0	0.00	HORIZONTAL
375.320000	40.10	20.8	46.0	5.9	QP	100.0	0.00	HORIZONTAL
447.100000	38.80	22.1	46.0	7.2	QP	100.0	0.00	HORIZONTAL
559.620000	40.70	25.4	46.0	5.3	QP	300.0	0.00	HORIZONTAL
893.300000	37.90	31.1	46.0	8.1	QP	100.0	0.00	HORIZONTAL

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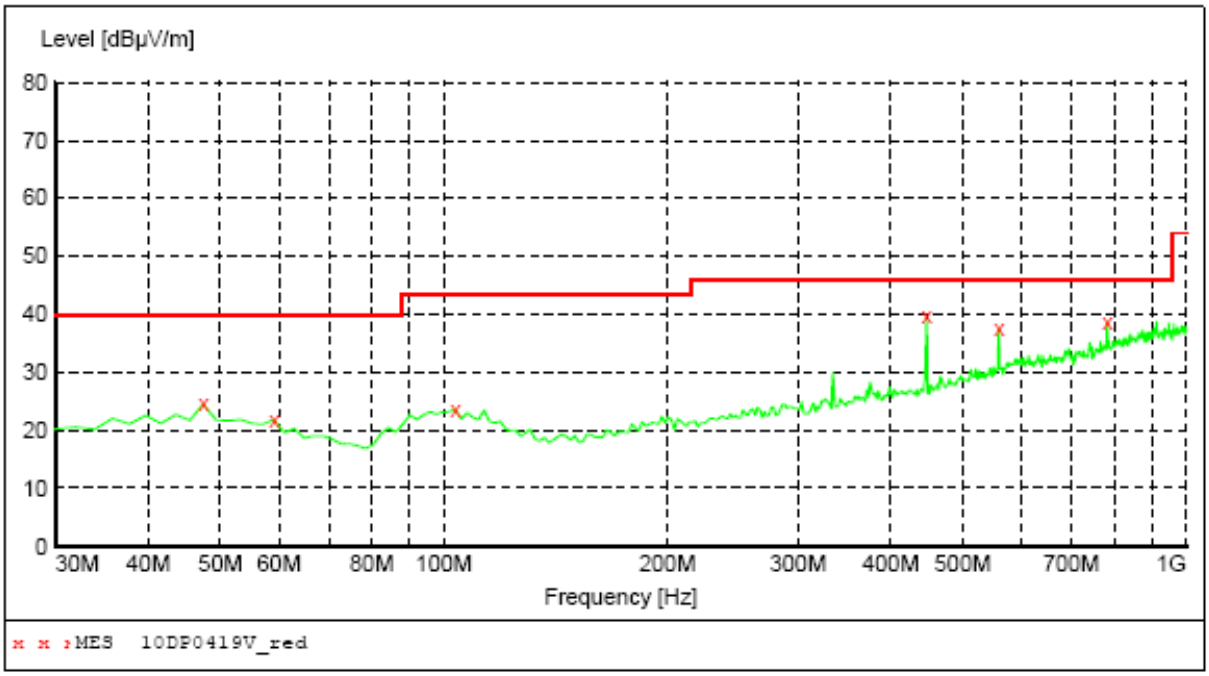
Radiated Emission Test Data:

EUT:	Fingerprint Lock
M/N:	Keylock 8800
Operating Condition:	ON
Test Site:	3m CHAMBER
Operator:	Chen
Test Specification:	DC 6V
Comment:	Polarization: Vertical
Start of Test:	4/3/10/ 16:31 Tem:25℃ Hum:50%

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



MEASUREMENT RESULT: "10DP0419V_red"

4/3/2010 16:31

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	24.50	15.8	40.0	15.5	QP	100.0	0.00	VERTICAL
59.100000	21.90	14.6	40.0	18.1	QP	100.0	0.00	VERTICAL
103.720000	23.70	17.2	43.5	19.8	QP	100.0	0.00	VERTICAL
447.100000	39.60	22.1	46.0	6.4	QP	100.0	0.00	VERTICAL
559.620000	37.70	25.4	46.0	8.3	QP	100.0	0.00	VERTICAL
782.720000	38.80	29.2	46.0	7.2	QP	100.0	0.00	VERTICAL

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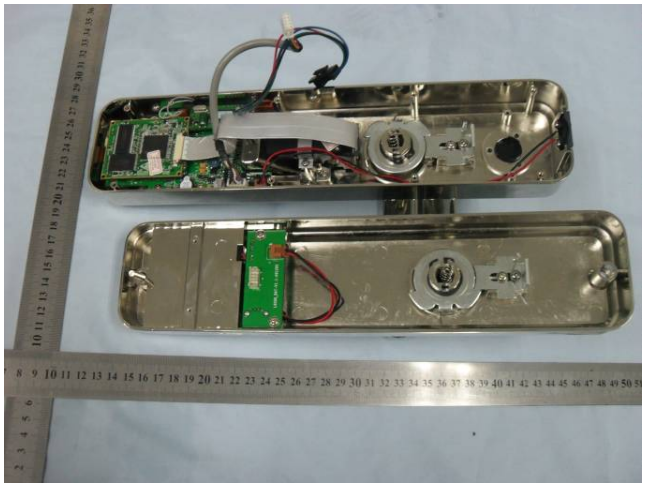
APPENDIX A - EUT PHOTOGRAPHS

EUT – Front View

EUT –Rear View

EUT – Open View



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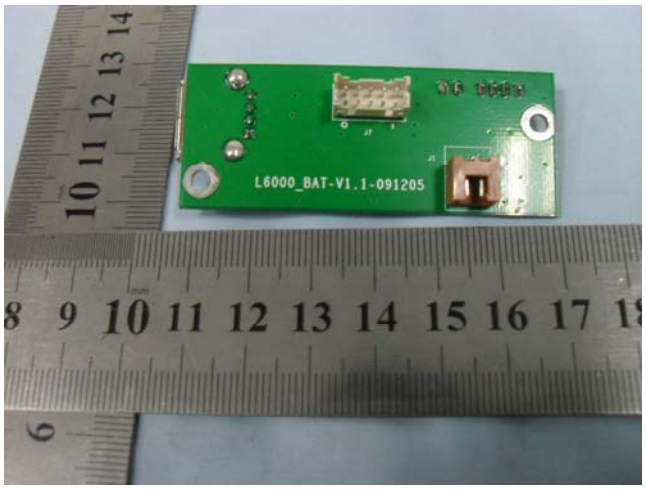
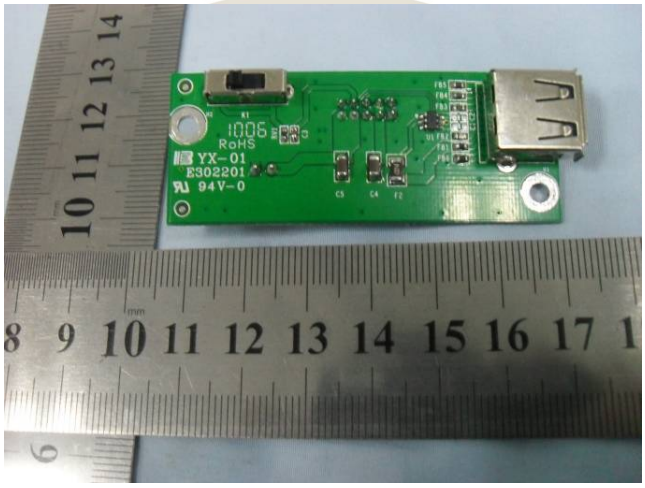
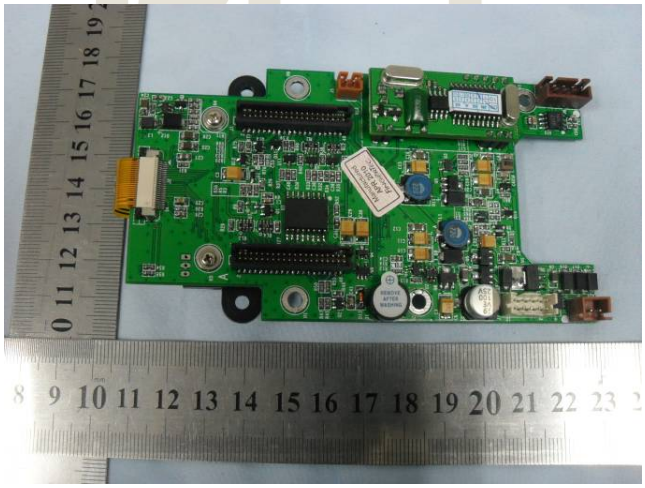
EUT – PCB View







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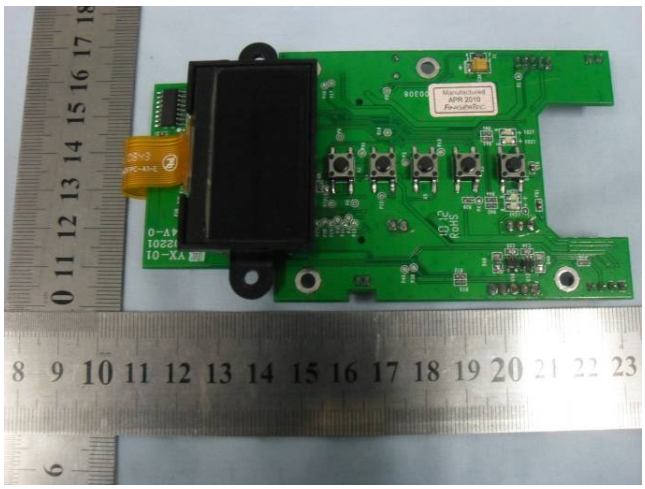

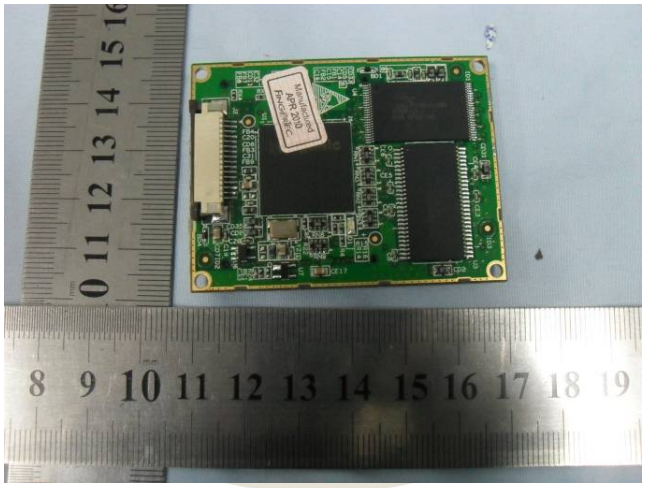

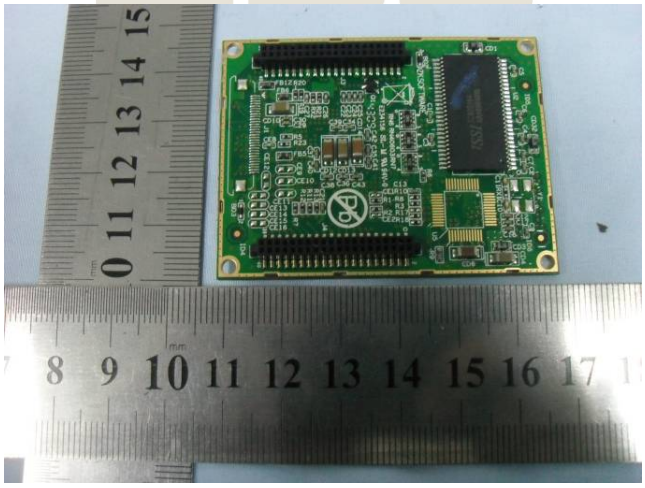

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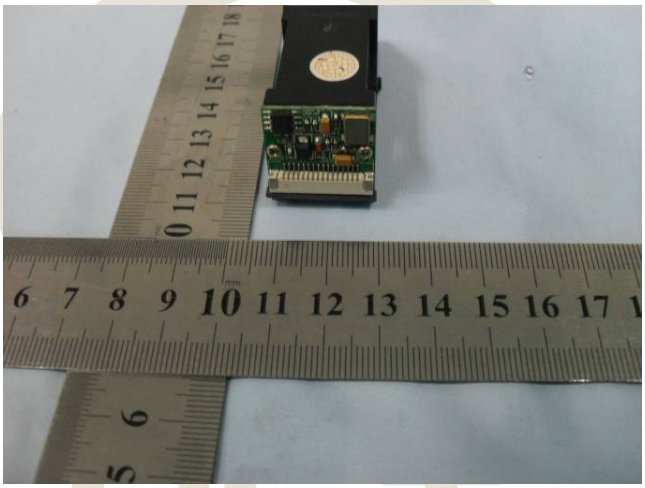
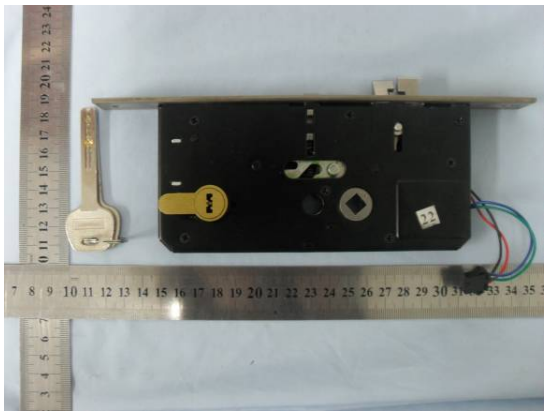
EUT – Front View of Fingerprint Facility





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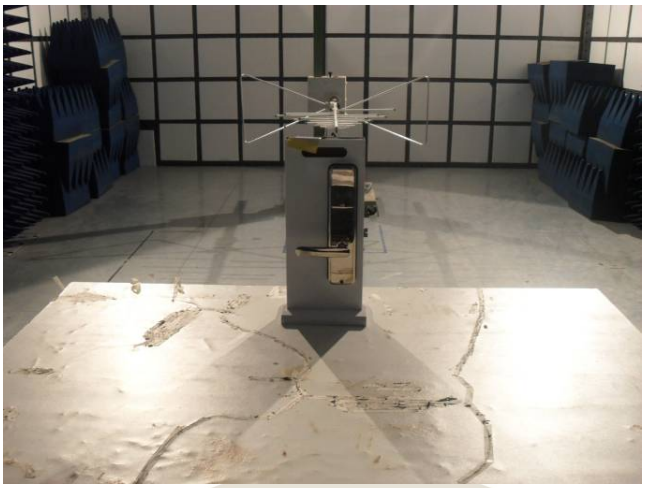
APPENDIX B - TEST SETUP PHOTOGRAPHS

Radiated Emission



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APPENDIX C - BONTEK ACCREDITATION CERTIFICATES

China National Accreditation Service for Conformity Assessment

LABORATORY ACCREDITATION CERTIFICATE

(No. CNAS L3923)

China National Accreditation Service for Conformity Assessment has accredited

Shenzhen Bontek Electronic Technology Co., Ltd.

1/F., Block East H-3, OCT Eastern Ind. Zone,

Qiaocheng East Road, Nanshan District, Shenzhen, China

to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

The scope of accreditation is detailed in the attached schedule bearing the same accreditation number as above. The schedule forms an integral part of this certificate.

Date of Issue: 2009-02-27

Date of Expiry: 2012-02-26

Date of Initial Accreditation: 2009-02-27

Signed on behalf of China National Accreditation Service for Conformity Assessment

China National Accreditation Service for Conformity Assessment(CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation systems for conformity assessment. CNAS is the signatory to International Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (ILAC-MRA), and the signatory to Asia Pacific Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (APLAC-MRA).

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Certificate of Appointment

No. UA 50145371-0001

The Applicant

Bontek Compliance Testing Laboratory Ltd
1/F, Block East H-3, OCT Eastern Industrial Zone, Qiaocheng East Road, Nanshan
Shenzhen, Guangdong
P.R. China

has been authorized to carry out EMC tests

EN55011,EN55012,EN55013,EN55014-1,EN55014-2,EN55015,EN55020, CISPR11,CISPR12,CISPR13,CISPR14-1,CISPR14-2,CISPR15,EN55022, EN55024,EN55025,CISPR20,CISPR22,CISPR24,CISPR25,EN/IEC61547, EN/IEC61000-3-2,EN/IEC61000-3-3,EN/IEC61000-4-2,EN/IEC61000-4-4,EN/IEC61000-4-5,EN/IEC61000-4-8,EN/IEC61000-4-11,EN/IEC 61000-6-1,EN/IEC61000-6-2,EN/IEC61000-6-3,EN/IEC61000-6-4, EN/IEC60601-1-2,EN/IEC61326-1,EN/IEC61326-x(x=2,3,4, or 5)

An assessment of the laboratory was conducted according to the "Procedures and Conditions for Appointments of EMC Test Laboratories" with reference to EN ISO/IEC 17025 by a TÜV Rheinland auditor.
Audit Report No. 17010783-001
This certificate is valid until the next scheduled audit or up to 18 months, at the discretion of TÜV Rheinland.

Date of issue: 09.02.2009

Certification Body

TÜV Rheinland/CCIC (Qingdao) Co., Ltd.
18 Hong Kong Middle Road, Qingdao 266071, P.R.China
Tel: +86-532-8578-1778
Fax.: +86-532-8578-1079 http://www.chn.tuv.com

TÜV Rheinland / CCIC (Qingdao) Co. Ltd. TÜVRheinland Certification Body

Dipl.-Ing. S. O. Steinke

1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, P.R. China
Tel 86-755-86337020(53 Lines) Fax 86-755-86337028
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FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046

March 20, 2008

Registration Number: 338263

Bontek Compliance Testing Laboratory Ltd
1/F, Block East H-3, OCT Eastern Ind. Zone,
Qiaocheng East Road, Nanshan,
Shenzhen, 518055
China

Attention: Tony Wu

Re: Measurement facility located at Hua Qiao Cheng East Ind. Area,Shenzhen,China
Anechoic chamber (3 meter)
Date of Listing: March 20, 2008

Dear Sir or Madam:

Your request for registration of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC rules. The information has, therefore, been placed on file and the name of your organization added to the list of facilities whose measurement data will be accepted in conjunction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Please note that the file must be updated for any changes made to the facility and the registration must be renewed at least every three years.

Measurement facilities that have indicated that they are available to the public to perform measurement services on a fee basis may be found on the FCC website www.fcc.gov under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely,

Katie Hawkins

Katie Hawkins
Electronics Engineer

1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, P.R. China
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