



BCT
Bontek Compliance Testing

Shenzhen Bontek Compliance Testing Laboratory Co., Ltd.

FCC PART 15 SUBPART B MEASUREMENT AND TEST REPORT

For

FINGERTEC WORLDWIDE SDN BHD

NO.6, 8 & 10, JALAN BK 3/2, BANDAR KINRARA, 47180 PUCHONG, SELANGOR, MALAYSIA

Model: K-KADEX

July19, 2012

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: RFID Card Reader
Test By:	Vincent jiang/ <i>Vincent jiang</i>
Report Number:	BCT12FR-0905E
Test Date:	June 28~July 19,2012
Reviewed By:	Kevin Chi/ <i>Kevin chi</i>
Approved By:	Kendy Wang/ <i>Kendy Wang</i>
Prepared By:	Shenzhen Bontek Compliance Testing Laboratory 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

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of Shenzhen Bontek Compliance Testing Laboratory Co., Ltd.

TABLE OF CONTENTS

1 - GENERAL INFORMATION	3
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
1.2 TEST STANDARDS	4
1.3 TEST SUMMARY	4
1.4 TEST METHODOLOGY	4
1.5 TEST FACILITY	4
1.6 TEST EQUIPMENT LIST AND DETAILS	5
2 - SYSTEM TEST CONFIGURATION	7
2.1 JUSTIFICATION	7
2.2 EUT EXERCISE SOFTWARE	7
2.3 SPECIAL ACCESSORIES	7
2.4 EQUIPMENT MODIFICATIONS	7
2.5 CONFIGURATION OF TEST SYSTEM	7
2.6 TEST SETUP DIAGRAM	7
3 - DISTURBANCE VOLTAGE AT THE MAINS TERMINALS	8
3.1 MEASUREMENT UNCERTAINTY	8
3.2 LIMIT OF DISTURBANCE VOLTAGE AT THE MAINS TERMINALS	8
3.3 EUT SETUP	8
3.4 INSTRUMENT SETUP	8
3.5 TEST PROCEDURE	9
3.6 SUMMARY OF TEST RESULTS	9
3.7 DISTURBANCE VOLTAGE TEST DATA	9
3.8 TEST RESULT	9
4 - RADIATED DISTURBANCES	12
4.1 MEASUREMENT UNCERTAINTY	12
4.2 LIMIT OF RADIATED DISTURBANCES	12
4.3 EUT SETUP	12
4.4 TEST RFID CARD READER SETUP	13
4.5 TEST PROCEDURE	13
4.6 CORRECTED AMPLITUDE & MARGIN CALCULATION	13
4.7 RADIATED EMISSIONS TEST RESULT	13
4.8 TEST RESULT	13
APPENDIX A - EUT PHOTOGRAPHS	16
EUT – FITTING VIEW	16
EUT – FRONT VIEW	16
EUT – REAR VIEW	16
EUT – OPEN VIEW	17
EUT - PCB VIEW	17
EUT - PCB VIEW	18
EUT - PCB VIEW	19
APPENDIX B - TEST SETUP PHOTOGRAPHS	20
CONDUCTED EMISSION	20
RADIATED EMISSION	20
APPENDIX C - BONTEK ACCREDITATION CERTIFICATES	21

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, 47180 PUCHONG, SELANGOR, MALAYSIA
Manufacturer: **FINGERTEC WORLDWIDE SDN BHD**
Address of manufacturer: NO.6, 8 & 10, JALAN BK 3/2, BANDAR KINRARA, 47180 PUCHONG, SELANGOR, MALAYSIA

General Description of E.U.T

EUT Description: RFID Card reader
Trademark: **FINGERTEC**
Model No.: K-Kadex
Power Rating: DC 12V
Adaptor Information: Switch mode power supply
Model: KSAFH1200300T1M3
Input: AC100-240V 50/60Hz 1.2A
Output: DC12V 3.0A

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.

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 Compliance Testing Laboratory 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 Compliance Testing Laboratory 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 03, 2011

IC Registration No.: 7631A

The 3m alternate test site of Shenzhen Bontek Compliance Testing Laboratory Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 7631A on January 25, 2011

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, March 22, 2012.

TUV - Registration No.: UA 50203122-0001

Shenzhen Bontek Compliance Testing Laboratory Co., Ltd. An assessment of the laboratory was conducted according to the "Procedures and Conditions for EMC Test Laboratories" with reference to EN ISO/IEC 17025 by a TUV Rheinland auditor. Audit Report NO. 17010783-002

1.6 Test Equipment List and Details

Test equipments list of Shenzhen Bontek Compliance Testing Laboratory Co., Ltd. .

No.	Equipment	Manufacturer	Model No.	S/N	Calculator date	Calculator due date
1	EMI Test Receiver	R&S	ESCI	100687	2011-4-7	2012-4-6
2	EMI Test Receiver	R&S	ESPI	100097	2011-7-25	2012-7-24
3	Amplifier	HP	8447D	1937A02492	2011-4-7	2012-4-6
4	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07101	2011-4-7	2012-4-6
5	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07102	2011-4-7	2012-4-6
6	Power Clamp	SCHWARZBECK	MDS-21	3812	2011-4-7	2012-4-6
7	Positioning Controller	C&C	CC-C-1F	MF7802113	N/A	N/A
8	Electrostatic Discharge Simulator	TESEQ	NSG437	125	2011-4-11	2012-4-10
9	Fast Transient Burst Generator	SCHAFFNER	MODULA6150	34572	2011-4-7	2012-4-6
10	Fast Transient Noise Simulator	Noiseken	FNS-105AX	10501	2011-6-16	2012-6-15
11	Color TV Pattern Generator	PHILIPS	PM5418	TM209947	N/A	N/A
12	Power Frequency Magnetic Field Generator	EVERFINE	EMS61000-8K	608002	2011-4-7	2012-4-6

14	Capacitive Coupling Clamp	TESEQ	CDN8014	25096	2011-4-7	2012-4-6
15	High Field Biconical Antenna	ELECTRO-METRICS	EM-6913	166	2011-11-28	2012-11-27
16	Log Periodic Antenna	ELECTRO-METRICS	EM-6950	811	2011-11-28	2012-11-27
17	Remote Active Vertical Antenna	ELECTRO-METRICS	EM-6892	304	2011-11-28	2012-11-27
18	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-324	2009-04-11	2012-04-10
19	Horn Antenna	SCHWARZBECK	BBHA9120A	0499	2011-11-28	2012-11-27
20	Teo Line Single Phase Module	SCHWARZBECK	NSLK8128	8128247	2011-10-24	2012-10-23
21	Triple-Loop Antenna	EVERFINE	LLA-2	711002	2011-4-7	2012-4-6
22	Electric bridge	Jhai	JK2812C	803024	N/A	N/A
23	RF POWER AMPLIFIER	FRANKONIA	FLL-75	1020A1109	2011-4-7	2012-4-6
24	CDN	FRANKONIA	CDN M2+M3	A3027019	2011-4-7	2012-4-6
25	6DB Attenuator	FRANKONIA	N/A	1001698	2011-4-7	2012-4-6
26	EM Injection clamp	FCC	F-203I-23mm	091536	2011-4-7	2012-4-6
27	9kHz-2.4GHz signal generator 2024	MARCONI	10S/6625-99-457-8730	112260/042	2011-4-7	2012-4-6
28	10dB attenuator	ELECTRO-METRICS	EM-7600	836	2011-4-7	2012-4-6
29	ISN	TESEQ	ISN-T800	30301	2011-6-23	2012-6-22
30	10KV surge generator	SANKI	SKS-0510M	048110003E 321	2011-11-14	2012-11-13
31	HRMONICS&FLIC KRE ANALYSER	VOLTECH	PM6000	200006700433	2011-6-27	2012-6-26
32	Spectrum Analyzer	R&S	FSP	100397	2011-11-2	2012-11-1
33	Broadband preamplifier	SCHWARZBECK	BBV9718	9718-182	2011-4-07	2012-4-06
34	Temperature & Humidity Chamber	TOPSTAT	TOS-831A	3438A05208	2011-4-07	2012-4-06

2 - SYSTEM TEST CONFIGURATION

2.1 Justification

The system was configured for testing in a typical fashion (as only 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.

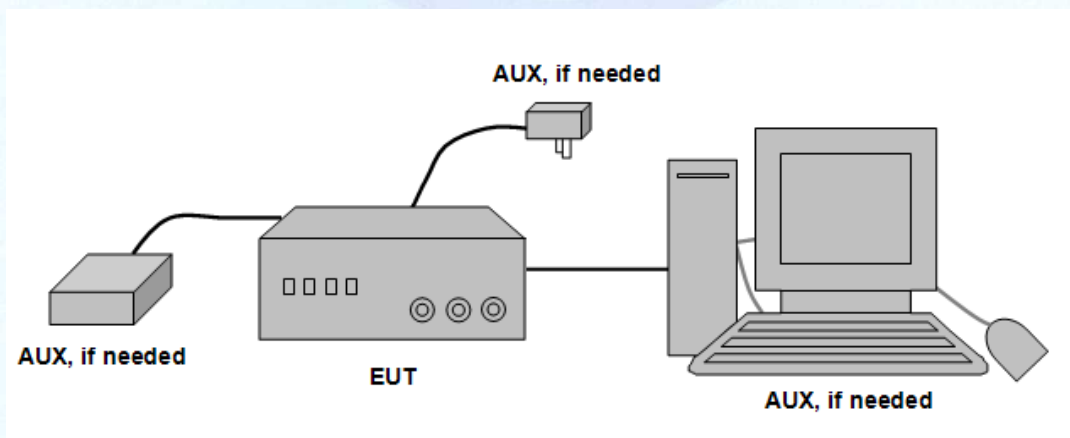
2.3 Special Accessories

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.

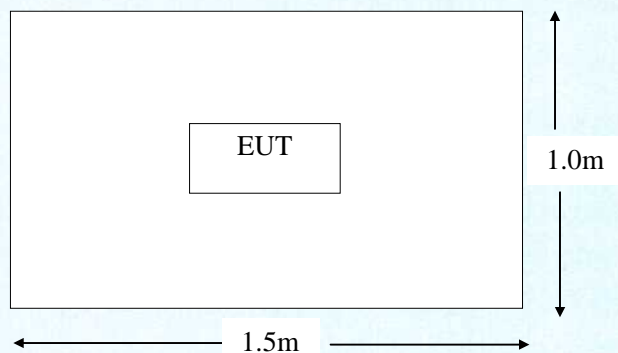
2.4 Equipment Modifications

The EUT tested was not modified by BCT.

2.5 Configuration of Test System



2.6 Test Setup Diagram



3 - DISTURBANCE VOLTAGE AT THE MAINS TERMINALS

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, and LISN.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is 3.4 dB.

3.2 Limit of Disturbance Voltage at The Mains Terminals

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150~0.500	66~56	56~46
0.500~5.000	56	46
5.000~30.00	60	50

Note: (1)The tighter limit shall apply at the edge between two frequency bands.

3.3 EUT Setup

The setup of EUT is according with ANSI C63.4-2009 measurement procedure. The specification used was the FCC Rules and Regulations Part 15 Subpart B limits.

The EUT was placed center and the back edge of the test table.

The AV cables were draped along the test table and bundled to 30-40cm in the middle.

The spacing between the peripherals was 10 cm.

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.



3.4 Instrument Setup

The test receiver was set with the following configurations:

Test RFID Card reader Setting:

Frequency Range.....150 KHz to 30 MHz
 Detector.....Peak & Quasi-Peak & Average
 Sweep Speed.....Auto
 IF Band Width.....9 KHz

3.5 Test Procedure

During the conducted emission test, the EUT power cord was connected to the auxiliary outlet of the first Artificial Mains.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance using all installation combination.

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

3.6 Summary of Test Results

According to the data in section 3.6, the EUT complied with the FCC Part 15 B Conducted margin, with the *worst* margin reading of:

3.7 Disturbance Voltage Test Data

Temperature (°C)	22~25
Humidity (%RH)	50~55
Barometric Pressure (mbar)	950~1000
EUT	RFID Card reader
M/N	K-Kadex
Operating Mode	Normal Operation

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

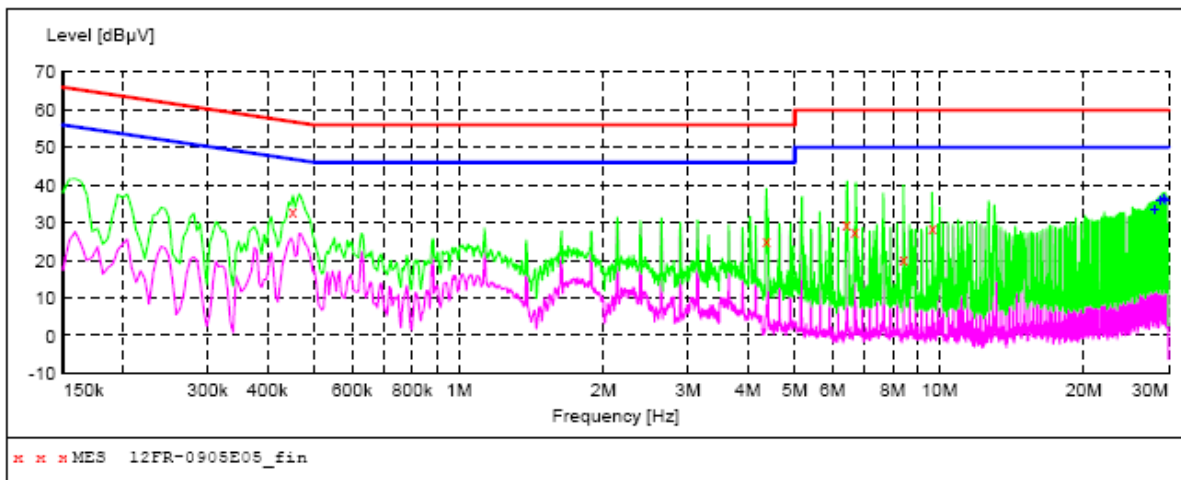
3.8 Test Result

PASS

Conducted Emission Test Data :

EUT: RFID Card reader
 M/N: K-Kadex
 Operating Condition: Normal Operation
 Test Site: Shielded Room
 Operator: Cheng
 Test Specification: AC 120V/60Hz for adapter
 Comment: Live Line
 Start of Test: 6/28/12/15:43 Tem:25°C Hum:50%

SCAN TABLE: "Voltage (9K-30M) FIN"
 Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "12FR-0905E05_fin"

6/28/2012 3:43PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.451500	33.30	10.3	57	23.5	QP	L1	GND
4.371000	25.00	10.3	56	31.0	QP	L1	GND
6.409500	29.60	10.4	60	30.4	QP	L1	GND
6.661500	27.90	10.4	60	32.1	QP	L1	GND
8.439000	20.30	10.5	60	39.7	QP	L1	GND
9.676500	28.70	10.5	60	31.3	QP	L1	GND

MEASUREMENT RESULT: "12FR-0905E05_fin2"

6/28/2012 3:43PM

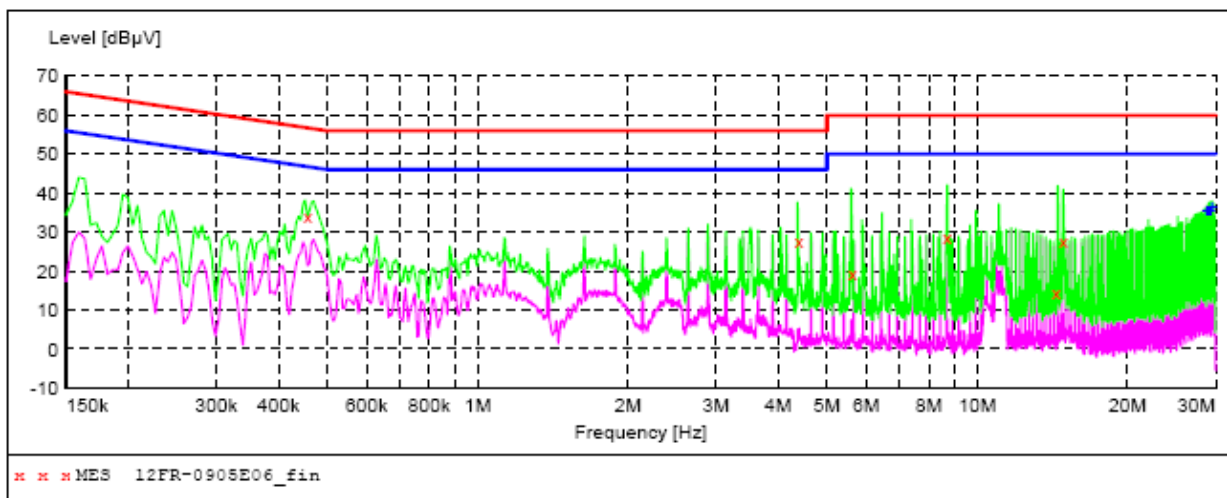
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
28.027500	33.50	11.0	50	16.5	AV	L1	GND
28.779000	35.80	11.1	50	14.2	AV	L1	GND
29.283000	36.30	11.1	50	13.7	AV	L1	GND
29.535000	36.00	11.1	50	14.0	AV	L1	GND

Conducted Emission Test Data:

EUT: RFID Card reader
 M/N: K-Kadex
 Operating Condition: Normal Operation
 Test Site: Shielded Room
 Operator: Cheng
 Test Specification: AC 120V/60Hz for adapter
 Comment: Neutral Line
 Start of Test: 6/28/12/ 15:46 Tem:25°C Hum:50%

SCAN TABLE: "Voltage (9K-30M) FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "12FR-0905E06_fin"

6/28/2012 3:46PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.456000	34.10	10.3	57	22.7	QP	N	GND
4.398000	27.60	10.3	56	28.4	QP	N	GND
5.631000	19.20	10.4	60	40.8	QP	N	GND
8.709000	28.50	10.5	60	31.5	QP	N	GND
14.397000	14.60	10.5	60	45.4	QP	N	GND
14.856000	27.70	10.5	60	32.3	QP	N	GND

MEASUREMENT RESULT: "12FR-0905E06_fin2"

6/28/2012 3:46PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
28.779000	35.40	11.1	50	14.6	AV	N	GND
29.031000	35.70	11.1	50	14.3	AV	N	GND
29.283000	35.60	11.1	50	14.4	AV	N	GND
29.535000	36.30	11.1	50	13.7	AV	N	GND

4 - RADIATED DISTURBANCES

4.1 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.

4.2 Limit of Radiated Disturbances

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dB μ V/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.

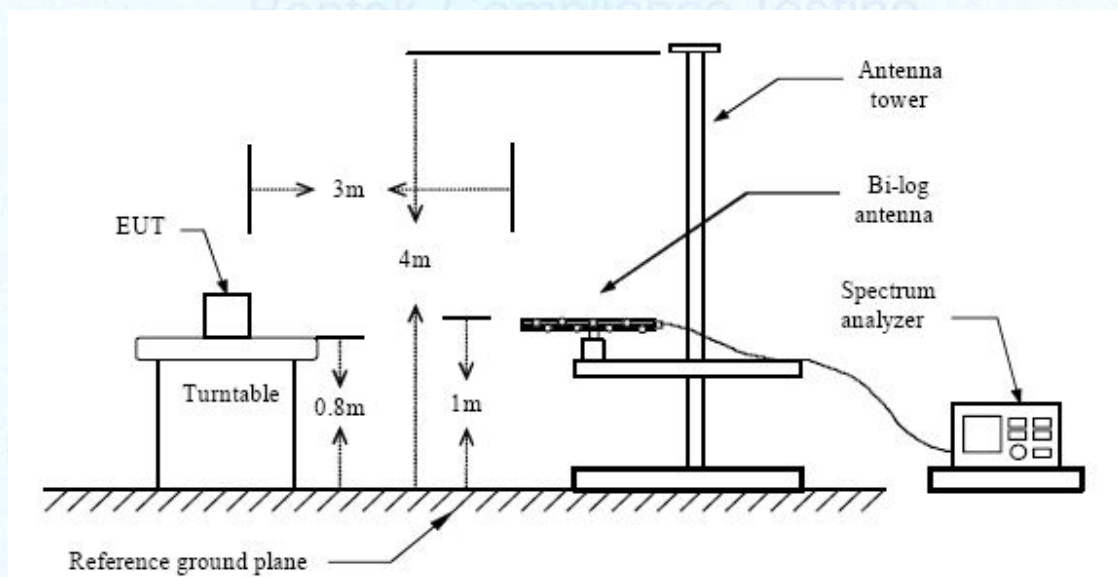
4.3 EUT Setup

The radiated emission tests were performed in the in the 3-meter anechoic chamber, using the setup accordance with the ANSI C63.4-2009. 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)



4.4 Test RFID Card reader 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 RFID Card reader 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

4.5 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 dB μ V of specification limits), and are distinguished with a "QP" in the data table.

4.6 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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

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

$$\text{Margin} = \text{Limit} - \text{Corr. Ampl.}$$

4.7 Radiated Emissions Test Result

Temperature (°C)	22~25
Humidity (%RH)	50~54
Barometric Pressure (mbar)	950~1000
EUT	RFID Card reader
M/N	K-Kadex
Operating Mode	Normal Operation

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

4.8 Test Result

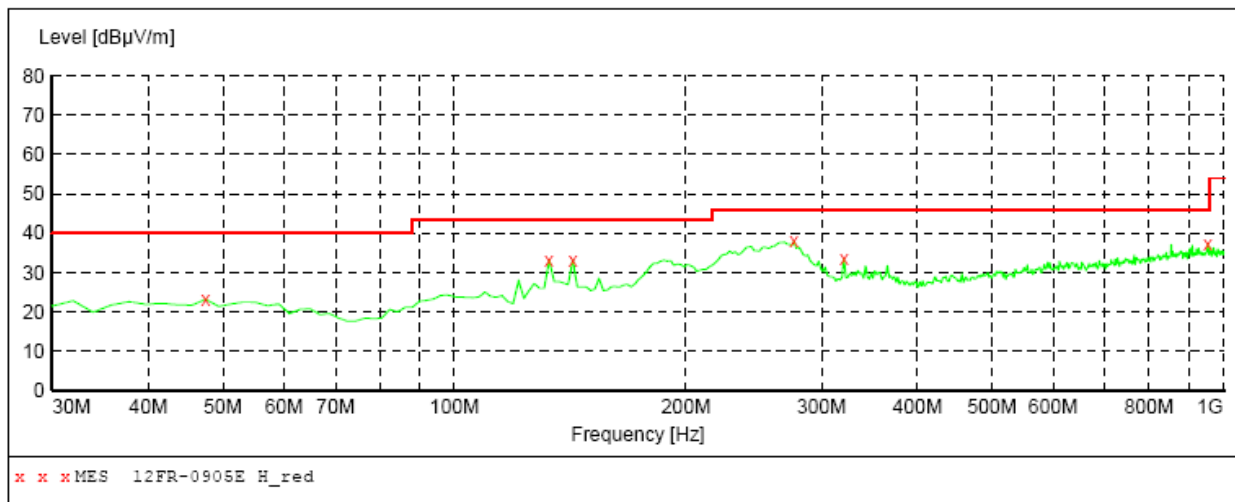
PASS

Radiated Emission Test Data:

EUT: RFID Card reader
 M/N: K-Kadex
 Operating Condition: Normal Operation
 Test Site: CHAMBER
 Operator: Li
 Test Specification: AC 120V/60Hz for adapter
 Comment: Polarization: Horizontal
 Start of Test: 6/28/12/23:13 Tem:25°C Hum:50%

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

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



MEASUREMENT RESULT: "12FR-0905E H_red"

6/28/2012 23:13

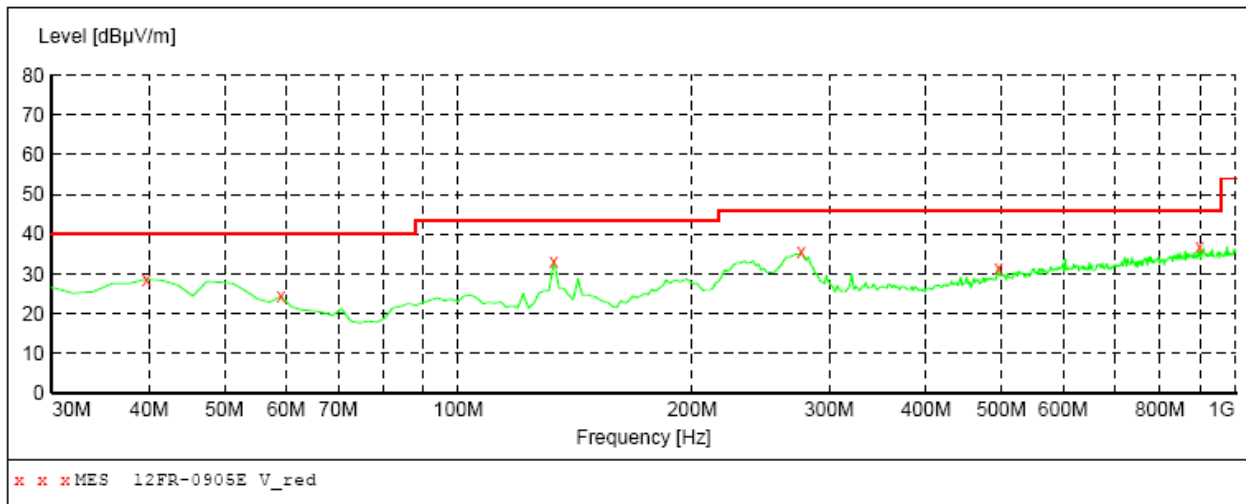
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	23.20	15.8	40.0	16.8	QP	100.0	0.00	HORIZONTAL
132.820000	33.40	12.8	43.5	10.1	QP	100.0	0.00	HORIZONTAL
142.520000	33.30	12.3	43.5	10.2	QP	100.0	0.00	HORIZONTAL
276.380000	38.00	18.0	46.0	8.0	QP	100.0	0.00	HORIZONTAL
321.000000	33.60	19.2	46.0	12.4	QP	100.0	0.00	HORIZONTAL
953.440000	37.40	29.6	46.0	8.6	QP	100.0	0.00	HORIZONTAL

Radiated Emission Test Data:

EUT: RFID Card reader
 M/N: K-Kadex
 Operating Condition: Normal Operation
 Test Site: CHAMBER
 Operator: Li
 Test Specification: AC 120V/60Hz for adapter
 Comment: Polarization: Vertical
 Start of Test: 6/28/12/ 23:12 Tem:25°C Hum:50%

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

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



MEASUREMENT RESULT: "12FR-0905E V_red"

6/28/2012 23:12

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
39.700000	28.80	15.8	40.0	11.2	QP	100.0	0.00	VERTICAL
59.100000	24.30	14.6	40.0	15.7	QP	100.0	0.00	VERTICAL
132.820000	33.40	12.8	43.5	10.1	QP	100.0	0.00	VERTICAL
276.380000	35.60	18.0	46.0	10.4	QP	100.0	0.00	VERTICAL
495.600000	31.50	23.7	46.0	14.5	QP	100.0	0.00	VERTICAL
899.120000	36.70	29.2	46.0	9.3	QP	100.0	0.00	VERTICAL

APPENDIX A - EUT PHOTOGRAPHS

EUT – Fitting View



EUT – Front View



EUT – Rear View



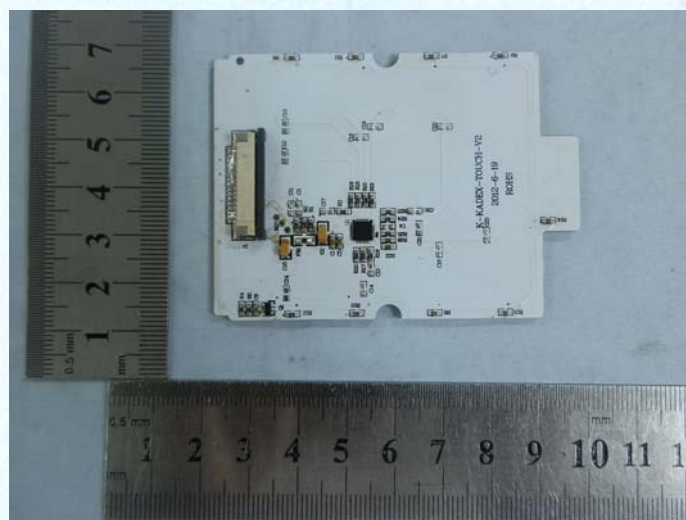
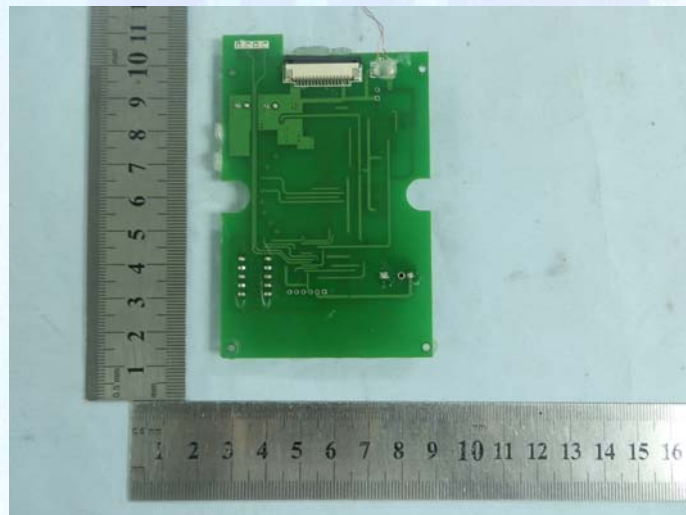
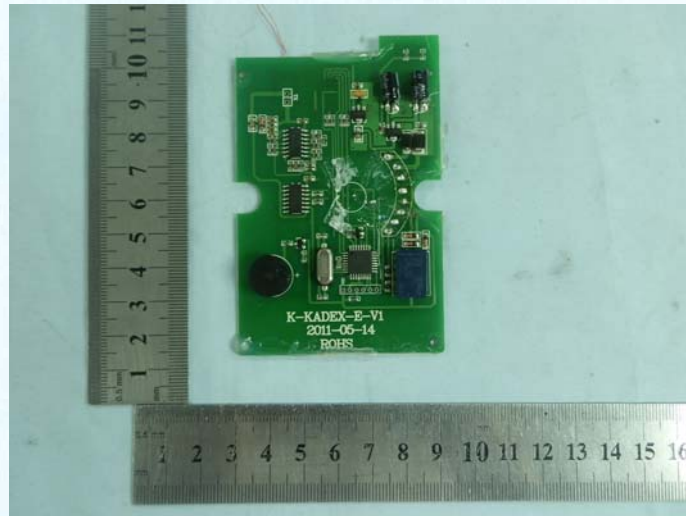
EUT – Open View



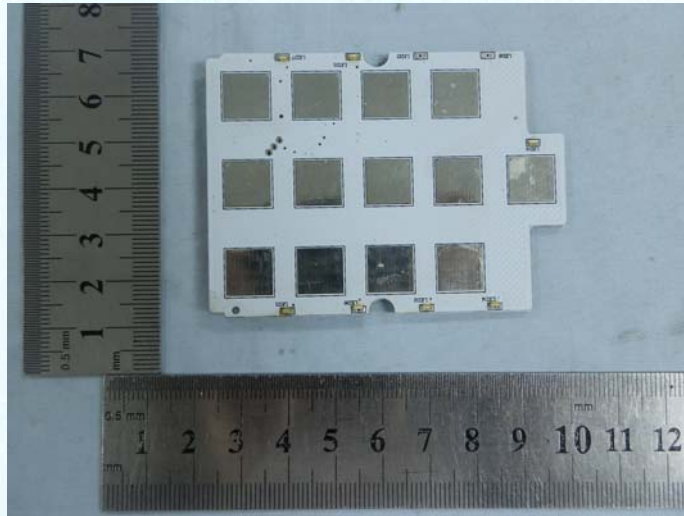
EUT - PCB View



EUT - PCB View



EUT - PCB View



APPENDIX B - TEST SETUP PHOTOGRAPHS

Conducted Emission



Radiated Emission



APPENDIX C - BONTEK ACCREDITATION CERTIFICATES

 
China National Accreditation Service for Conformity Assessment
LABORATORY ACCREDITATION CERTIFICATE
(Registration No. CNAS L3923)
Shenzhen Bontek Compliance Testing Laboratory Co., Ltd. <u>1/F., Block East H-3, OCT Eastern Ind. Zone, the 1st Road,</u> <u>Xiangshan East Street, Nanshan District, Shenzhen, Guangdong, China</u>
<i>is accredited 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 of testing.</i> <i>The scope of accreditation is detailed in the attached appendices bearing the same registration number as above. The appendices form an integral part of this certificate.</i>
Date of Issue: 2012-03-22 Date of Expiry: 2015-03-21 Date of Initial Accreditation: 2009-02-27 Date of Update: 2012-03-22

Signed on behalf of China National Accreditation Service for Conformity Assessment
<small>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 schemes for conformity assessment. CNAS is the signatory to International Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (ILAC MRA) and Asia Pacific Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (APLAC MRA).</small>
No.CNAS AL 2 0003595

Certificate

of

Appointment

No. UA 50203122-0001

The Applicant

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

has been authorized to carry out EMC tests
by order and under supervision of TÜV Rheinland according to
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/IEC61000-3-2/-3, EN/IEC61000-4-2/-4/-5/-6/-8/-11
EN/IEC61547, EN/IEC62040-2, EN/IEC61000-6-1
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.


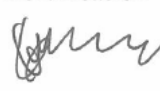
Audit Report No. 17010783-002

This certificate is valid until the next scheduled audit or up to 18 months,
at the discretion of TÜV Rheinland.

Date of issue: 06.05.2011

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>

Certification Body



Shawn Peng

FEDERAL COMMUNICATIONS COMMISSION

**Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046**

March 03, 2011

Registration Number: 338263

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

Attention: Tony Wu, General Manager

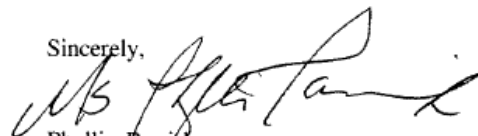
Re: Measurement facility located at Hua Qiao Cheng East Ind. Area, Shenzhen, China
Anechoic chamber (3 meter)
Date of Renewal: March 03, 2011

Dear Sir or Madam:

Your request for renewal of the registration of the subject measurement facility has been received. The information submitted has been placed in your file and the registration has been renewed. The name of your organization will remain on 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,



Phyllis Parrish
Industry Analyst