EN 55022: 2006+A1: 2007
EN 55024: 1998+A1: 2001+A2: 2003
EN 61000-3-2: 2006
EN 61000-3-3: 1995+A1: 2001+A2: 2005
MEASUREMENT AND TEST REPORT

For

FINGERTEC WORLDWIDE SDN BHD

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

MODEL: TA300

Mar 17, 2010

This Report Concerns:	**Equipment Type:**
☒ Original Report	Fingerprint T&A System

Test By:	Yannl Guan/ Yannl Guan
Report Number:	**BCT10CR-0295E**
Test Date:	Mar 11~16, 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 T&A System**
Trade Name:	**FINGERTEC**
Model No.:	**TA300**
Power Rating:	Input: DC5V
Adapter/Charger:	Switching Adapter
Specification:	Brand: HONR M/N:ADS-5N-06 05004G Input: 100-240VAC 50/60Hz Max:0.3A Output: 5VDC 800mA Output Line Length: 1.5m

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

EN 55022: 2006+A1: 2007

EN 55024: 1998+ A1: 2001+A2: 2003

EN 61000-3-2: 2006

EN 61000-3-3: 1995+A1: 2001+A2: 2005

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

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1.3 Test Summary

For the EUT described above. The standards used were EN 55022 Class B for Emissions & EN 55024 for Immunity.

Table 1 : Tests Carried Out Under EN 55022: 2006+A1: 2007

Standard	Test Items	Status
EN 55022: 2006+A1: 2007	Disturbance Voltage at The Mains Terminals (150KHz To 30MHz)	√
	Radiated Disturbances (30MHz To 1000MHz)	√

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

Table 2 : Tests Carried Out Under EN 61000-3-2: 2006/ EN 61000-3-3: 1995+A1: 2001+A2: 2005

Standard	Test Items	Status
EN 61000-3-2: 2006	Harmonic Current Test	√
EN 61000-3-3: 1995+A1: 2001 +A2: 2005	Voltage Fluctuations and Flicker Test	√

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

Table 3 : Tests Carried Out Under EN 55024: 1998+ A1: 2001+A2: 2003

Standard	Test Items	Status
EN 61000-4-2: 2001	Electrostatic discharge Immunity	√
EN 61000-4-3: 2006	Radiated Susceptibility (80MHz to 1GHz)	√
EN 61000-4-4: 2004	Electrical Fast Transient/Burst Immunity	√
EN 61000-4-5: 2005	Surge Immunity	√
EN 61000-4-6: 2006	Conducted Susceptibility (150kHz to 80MHz)	√
EN 61000-4-8: 2001	Power Frequency Magnetic Field Immunity (50/60Hz)	X
EN 61000-4-11: 2004	Voltage Dips, Short Interruptions Immunity	√

√ 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 CISPR 16-1: 2002, radio disturbance and immunity measuring apparatus, and CISPR16-2: 2002, Method of measurement of disturbances and immunity.
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

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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.
The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

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	2009-4-14	2010-4-13
2	BCT-EMC002	EMI Test Receiver	R&S	ESPI	100097	2009-4-14	2010-4-13
3	BCT-EMC003	Amplifier	HP	8447D	1937A02492	2009-4-14	2010-4-13
4	BCT-EMC004	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07101	2009-4-14	2010-4-13
5	BCT-EMC005	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07102	2009-4-14	2010-4-13
6	BCT-EMC006	Power Clamp	SCHWARZBECK	MDS-21	3812	2009-4-14	2010-4-13
7	BCT-EMC007	Positioning Controller	C&C	CC-C-1F	MF7802113	N/A	N/A
8	BCT-EMC008	`Electrostatic Discharge Simulator	TESEQ	NSG437	125	2009-4-14	2010-4-13
9	BCT-EMC009	Fast Transient Burst Generator	SCHAFFNER	MODULA6150	34572	2009-4-14	2010-4-13
10	BCT-EMC010	Fast Transient Noise Simulator	Noiseken	FNS-105AX	31485	2009-4-14	2010-4-13
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	2009-4-14	2010-4-13
13	BCT-EMC013	N/A	N/A	N/A	N/A	N/A	N/A
14	BCT-EMC014	Capacitive Coupling Clamp	TESEQ	CDN8014	25096	2009-4-14	2010-4-13
15	BCT-EMC015	High Field Biconical Antenna	ELECTRO-METRICS	EM-6913	166	2009-4-14	2010-4-13

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16	BCT-EMC016	Log Periodic Antenna	ELECTRO-METRICS	EM-6950	811	2009-4-14	2010-4-13
17	BCT-EMC017	Remote Active Vertical Antenna	ELECTRO-METRICS	EM-6892	304	2009-4-14	2010-4-13
18	BCT-EMC018	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-324	2009-4-14	2010-4-13
19	BCT-EMC019	Horn Antenna	SCHWARZBECK	BBHA9120A	B08000991-0001	2009-4-14	2010-4-13
20	BCT-EMC020	Teo Line Single Phase Module	SCHWARZBECK	NSLK8128	D-69250	2009-4-14	2010-4-13
21	BCT-EMC021	10dB attenuator	SCHWARZBECK	MTAIMP-136	R65.90.0001#06	2009-4-14	2010-4-13
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	2009-4-14	2010-4-13
24	BCT-EMC024	SIGNAL GENERATOR	HP	8647A	3349A02296	2009-4-14	2010-4-13
25	BCT-EMC025	MICROWAVE AMPLIFIER	HP	8349B	2627A00994	2009-4-14	2010-4-13
26	BCT-EMC026	Triple-Loop Antenna	EVERFINE	LLA-2	607004	2009-4-14	2010-4-13
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.

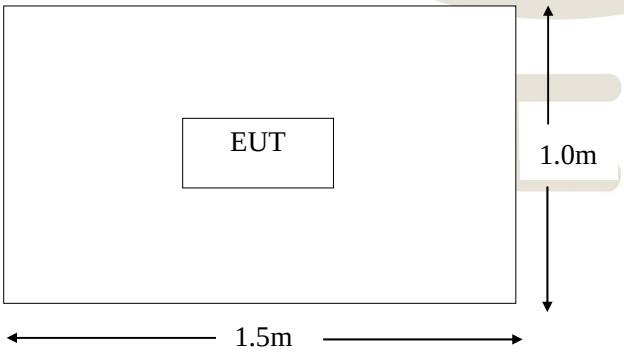
2.3 Special Accessories

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 Test Setup Diagram



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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 (Class B)

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

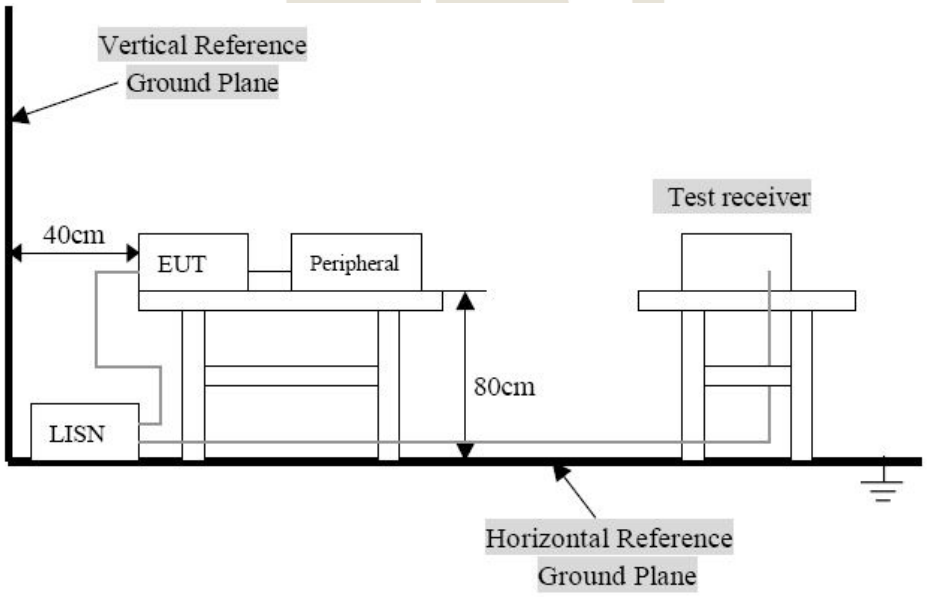
The setup of EUT is according with CISPR 16-1: 2002, CISPR16-2: 2002 measurement procedure. The specification used was the EN 55022 limits.

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.



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3.4 Instrument Setup

The test receiver was set with the following configurations:

Test Receiver 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 dBμV 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 EN 55022 Conducted margin, with the *worst* margin reading of:

3.7 Disturbance Voltage Test Data

Temperature (℃)	22~25
Humidity (%RH)	50~60
Barometric Pressure (mbar)	950~1000
EUT	Fingerprint T&A System
M/N	TA300
Operating Mode	ON & Connect to PC

Test data see following pages

3.8 Test Result

PASS

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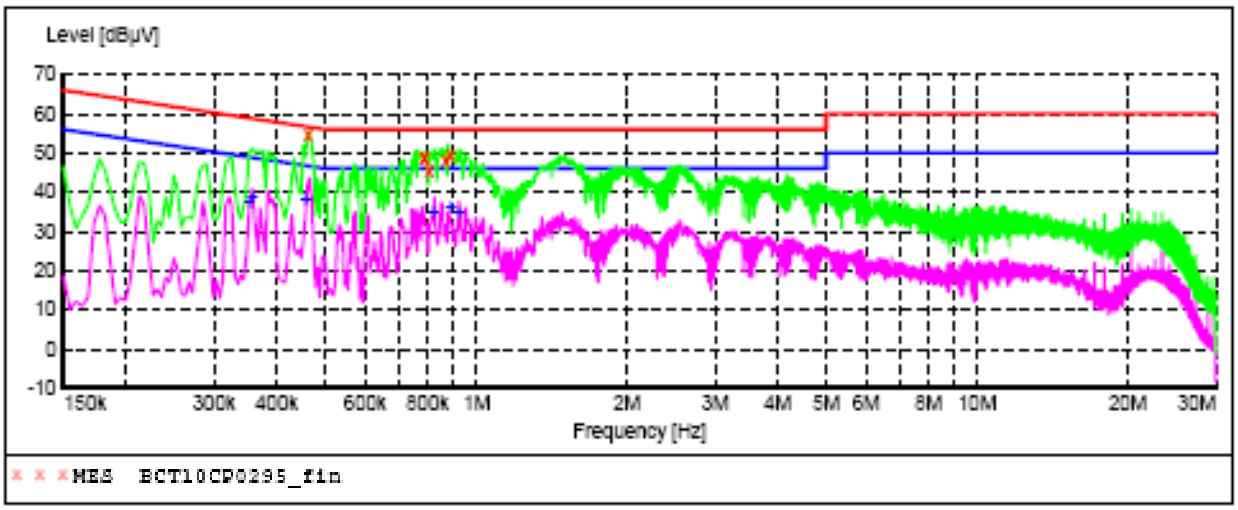
Conducted Emission Test Data

EUT:	Fingerprint T&A System	M/N: TA300
Operating Condition:	ON	
Test Site:	Shielded Room	
Operator:	Chen	
Test Specification:	AC 230V/50Hz for Adapter	
Comment:	Live Line	
Start of Test:	12/3/10/ 09:31 Tem:24℃ Hum:60%	

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



MEASUREMENT RESULT: "BCT10CP0295_fin"

12/3/2010 09:31

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.460500	54.60	10.6	57	2.1	QP	L1	GND
0.784500	48.90	10.5	56	7.1	QP	L1	GND
0.789000	48.50	10.5	56	7.5	QP	L1	GND
0.802500	45.30	10.5	56	10.7	QP	L1	GND
0.865500	47.90	10.5	56	8.1	QP	L1	GND
0.888000	49.60	10.5	56	6.4	QP	L1	GND

MEASUREMENT RESULT: "BCT10CP0295_fin2"

12/3/2010 09:31

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.352500	37.60	10.8	49	11.3	AV	L1	GND
0.357000	38.90	10.8	49	9.9	AV	L1	GND
0.456000	38.40	10.6	47	8.4	AV	L1	GND
0.820500	34.80	10.5	46	11.2	AV	L1	GND
0.888000	36.20	10.5	46	9.8	AV	L1	GND
0.924000	34.90	10.5	46	11.1	AV	L1	GND

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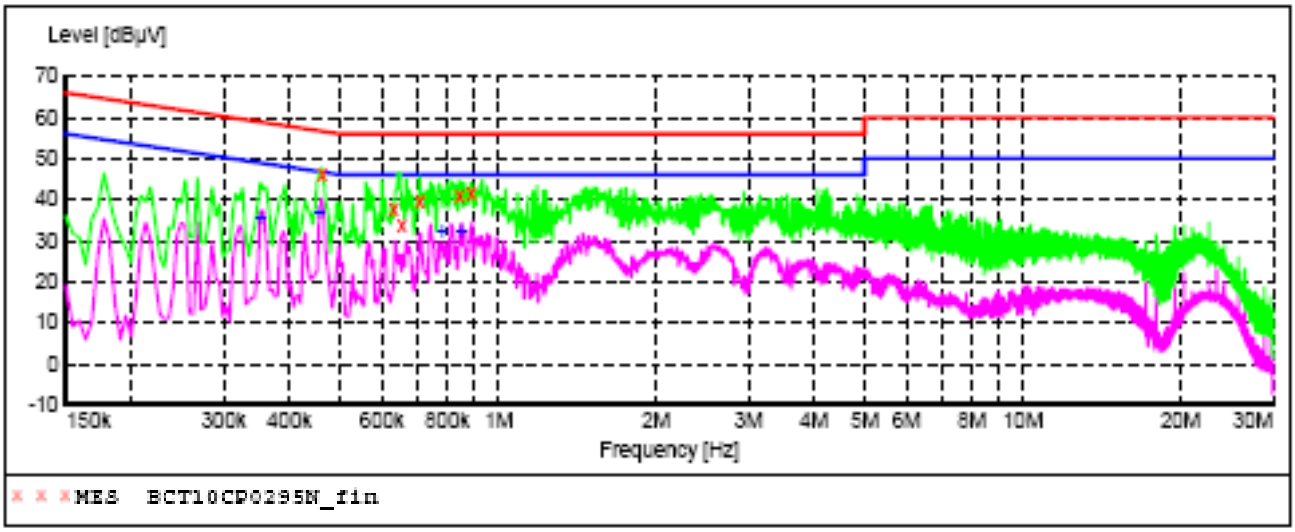
Conducted Emission Test Data

EUT:	Fingerprint T&A System	M/N: TA300
Operating Condition:	ON	
Test Site:	Shielded Room	
Operator:	Chen	
Test Specification:	AC 230V/50Hz for Adapter	
Comment:	Neutral Line	
Start of Test:	12/3/10/ 09:34 Tem:24℃ Hum:60%	

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



MEASUREMENT RESULT: "BCT10CP0295N_fin"

12/3/2010 09:34

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.460500	46.30	10.6	57	10.4	QP	N	GND
0.631500	37.40	10.5	56	18.6	QP	N	GND
0.654000	33.60	10.5	56	22.4	QP	N	GND
0.708000	39.70	10.5	56	16.3	QP	N	GND
0.843000	41.10	10.5	56	14.9	QP	N	GND
0.888000	41.80	10.5	56	14.2	QP	N	GND

MEASUREMENT RESULT: "BCT10CP0295N_fin2"

12/3/2010 09:34

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.352500	35.60	10.8	49	13.3	AV	N	GND
0.456000	37.20	10.6	47	9.6	AV	N	GND
0.780000	32.70	10.5	46	13.3	AV	N	GND
0.852000	32.50	10.5	46	13.5	AV	N	GND

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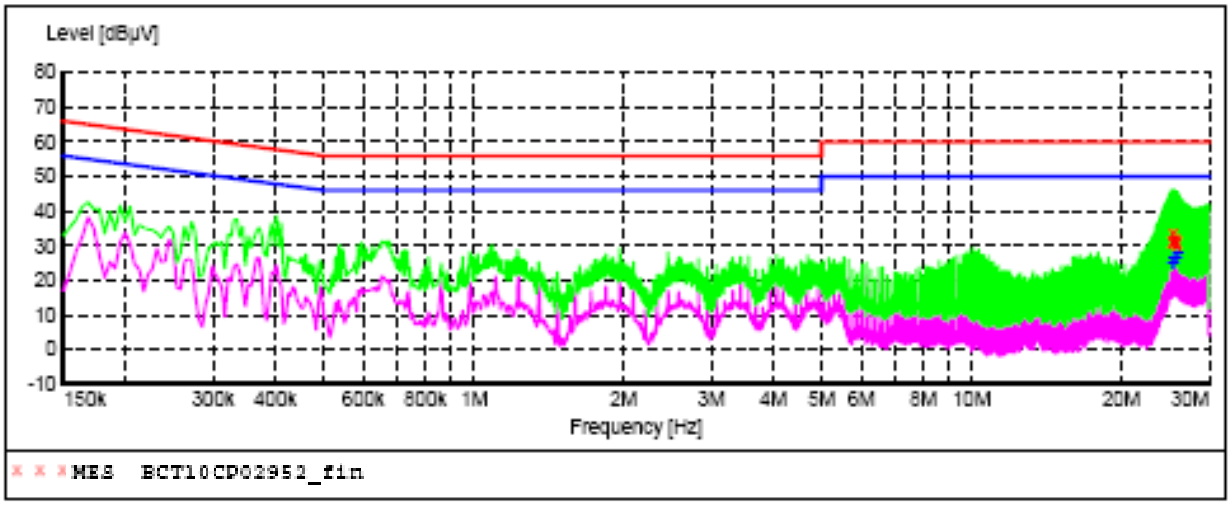
Conducted Emission Test Data

EUT:	Fingerprint T&A System	M/N: TA300
Operating Condition:	Connect to PC	
Test Site:	Shielded Room	
Operator:	Chen	
Test Specification:	AC 230V/50Hz for Adapter	
Comment:	Live Line	
Start of Test:	12/3/10/ 08:26 Tem:24℃ Hum:60%	

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



MEASUREMENT RESULT: "BCT10CP02952_fin"

12/3/2010 08:26

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
25.246500	31.10	11.1	60	28.9	QP	L1	GND
25.372500	33.00	11.1	60	27.0	QP	L1	GND
25.494000	31.20	11.1	60	28.8	QP	L1	GND
25.620000	32.10	11.1	60	27.9	QP	L1	GND
25.741500	30.10	11.1	60	29.9	QP	L1	GND
25.867500	31.10	11.1	60	28.9	QP	L1	GND

MEASUREMENT RESULT "BCT10CP02952_fin2"

12/3/2010 08:26

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
25.251000	24.90	11.1	50	25.1	AV	L1	GND
25.377000	26.80	11.1	50	23.2	AV	L1	GND
25.498500	25.20	11.1	50	24.8	AV	L1	GND
25.624500	26.60	11.1	50	23.4	AV	L1	GND
25.872000	26.50	11.1	50	23.5	AV	L1	GND
25.998000	28.40	11.1	50	21.6	AV	L1	GND

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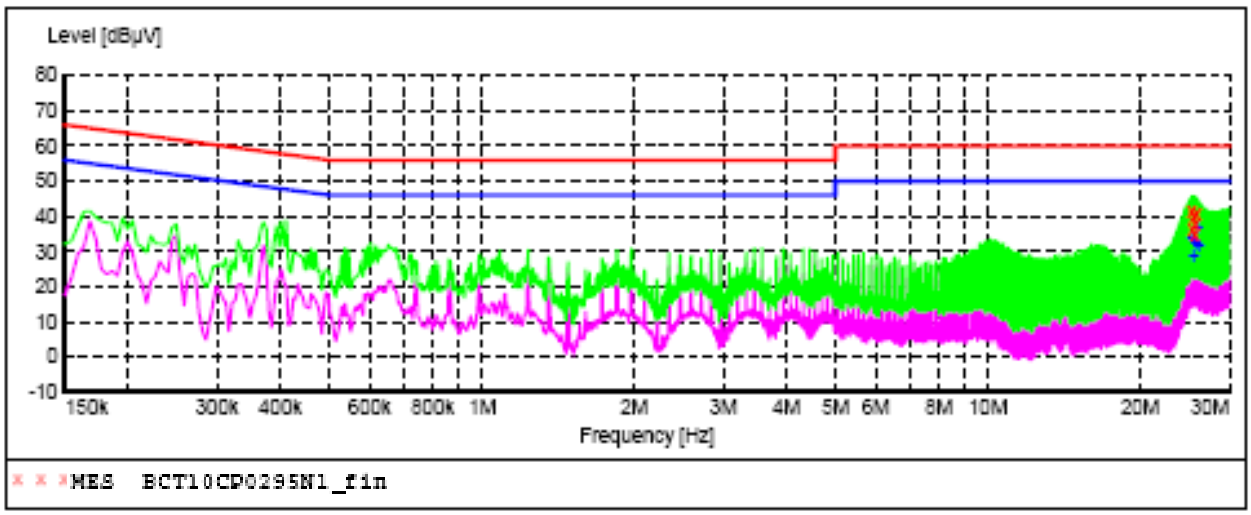
Conducted Emission Test Data

EUT:	Fingerprint T&A System	M/N: TA300
Operating Condition:	Connect to PC	
Test Site:	Shielded Room	
Operator:	Chen	
Test Specification:	AC 230V/50Hz for Adapter	
Comment:	Neutral Line	
Start of Test:	12/3/10/ 08:29 Tem:24℃ Hum:60%	

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



MEASUREMENT RESULT: "BCT10CP0295N1_fin"

12/3/2010 08:29

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
25.201500	41.10	11.0	60	18.9	QP	N	GND
25.323000	36.60	11.1	60	23.4	QP	N	GND
25.449000	40.20	11.1	60	19.8	QP	N	GND
25.570500	34.60	11.1	60	25.4	QP	N	GND
25.696500	37.90	11.1	60	22.1	QP	N	GND
25.822500	41.00	11.1	60	19.0	QP	N	GND

MEASUREMENT RESULT: "BCT10CP0295N1_fin2"

12/3/2010 08:29

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
25.327500	33.70	11.1	50	16.3	AV	N	GND
25.449000	29.20	11.1	50	20.8	AV	N	GND
25.575000	33.20	11.1	50	16.8	AV	N	GND
25.822500	32.80	11.1	50	17.2	AV	N	GND
25.948500	37.00	11.1	50	13.0	AV	N	GND
26.070000	31.50	11.1	50	18.5	AV	N	GND

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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 (Class B)

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)
30 ~ 230	3	40
230 ~ 1000	3	47

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.

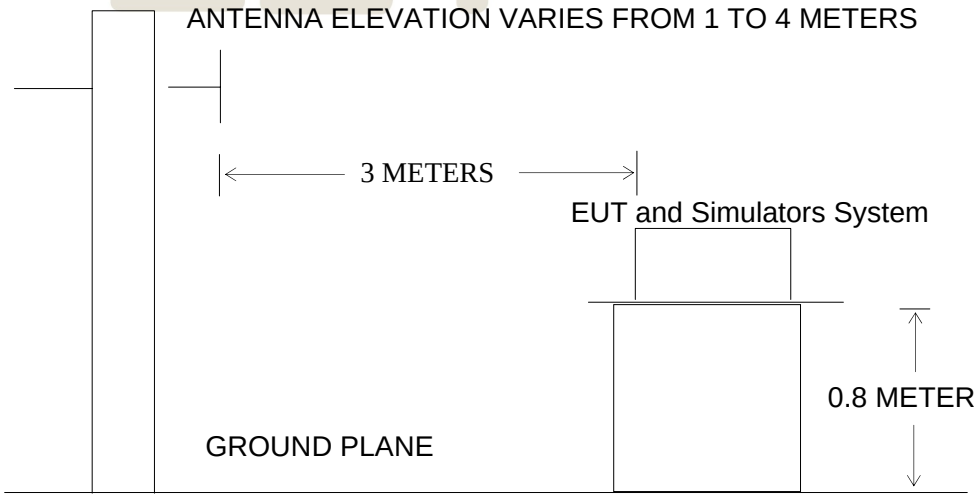
4.3 EUT Setup

The radiated emission tests were performed in the open area 3-meter test site, using the setup accordance with the CISPR 16-1: 2002, CISPR16-2: 2002. The specification used was EN 55022 Class 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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4.4 Test Receiver Setup

According to EN 55013 rules, 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

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 dBμV 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:

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 Class B. The equation for margin calculation is as follows:

Margin = Class B Limit – Corr. Ampl.

4.7 Radiated Emissions Test Result

Temperature (℃)	22~25
Humidity (%RH)	50~55
Barometric Pressure (mbar)	950~1000
EUT	Fingerprint T&A System
M/N	TA300
Operating Mode	ON & Connect to PC

4.8 Test Result

PASS

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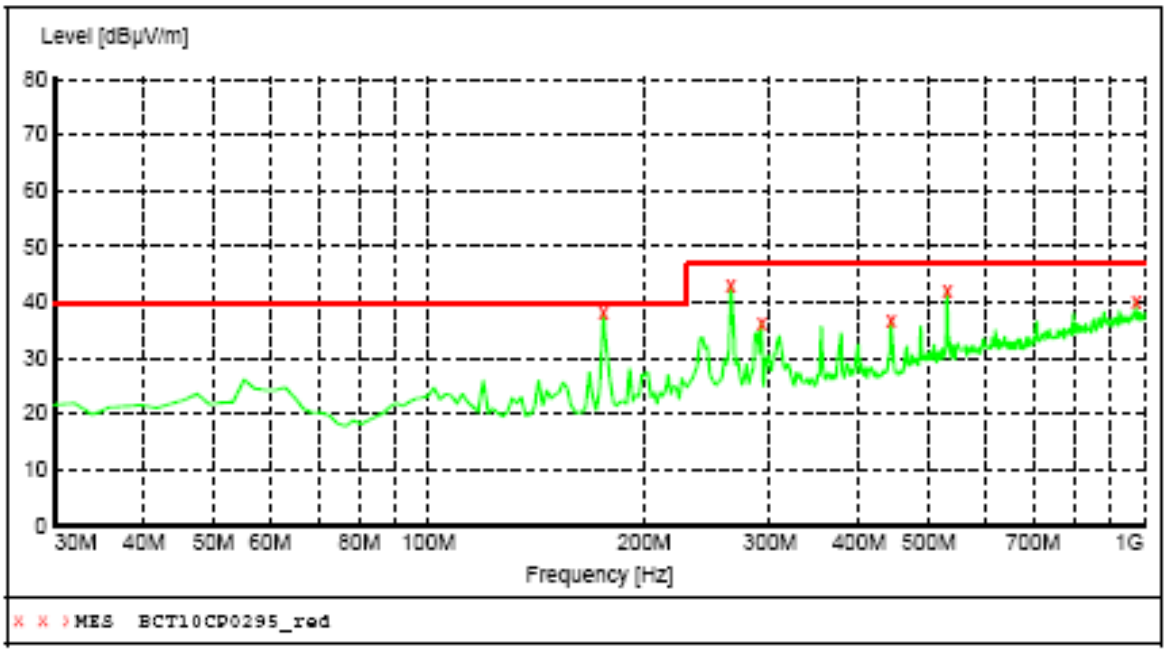
Radiated Emission Test Data

EUT:	Fingerprint T&A System	M/N: TA300
Operating Condition:	ON	
Test Site:	3m CHAMBER	
Operator:	Yang	
Test Specification:	AC 230V/50Hz for Adapter	
Comment:	Polarization: Horizontal	
Start of Test:	12/3/10/ 19:11 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: "BCT10CP0295_red"

12/3/2010 19:11

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
175.500000	38.10	14.7	40.0	1.9	QP	100.0	0.00	HORIZONTAL
264.740000	42.90	17.5	47.0	4.1	QP	100.0	0.00	HORIZONTAL
291.900000	36.40	18.5	47.0	10.6	QP	100.0	0.00	HORIZONTAL
443.220000	36.80	22.1	47.0	10.2	QP	100.0	0.00	HORIZONTAL
530.520000	42.20	24.7	47.0	4.8	QP	100.0	0.00	HORIZONTAL
974.780000	40.10	32.0	47.0	6.9	QP	100.0	0.00	HORIZONTAL

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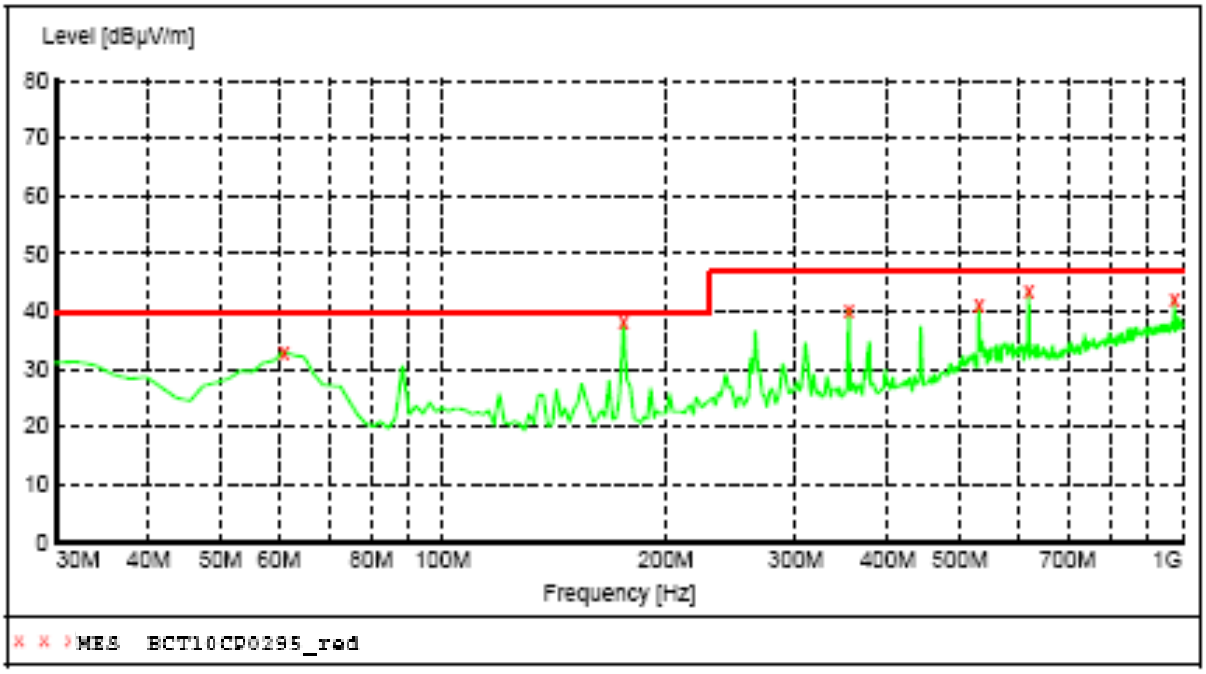
Radiated Emission Test Data

EUT:	Fingerprint T&A System	M/N: TA300
Operating Condition:	ON	
Test Site:	3m CHAMBER	
Operator:	Yang	
Test Specification:	AC 230V/50Hz for Adapter	
Comment:	Polarization: Vertical	
Start of Test:	12/3/10/ 19:14 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: "BCT10CP0295_red

12/3/2010 19:14

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarisation
61.040000	33.00	14.2	40.0	7.0	QP	100.0	0.00	VERTICAL
175.500000	38.30	14.7	40.0	1.7	QP	100.0	0.00	VERTICAL
353.980000	40.30	20.5	47.0	6.7	QP	100.0	0.00	VERTICAL
530.520000	41.20	24.7	47.0	5.8	QP	100.0	0.00	VERTICAL
619.760000	43.40	26.6	47.0	3.6	QP	100.0	0.00	VERTICAL
974.780000	42.10	32.0	47.0	4.9	QP	100.0	0.00	VERTICAL

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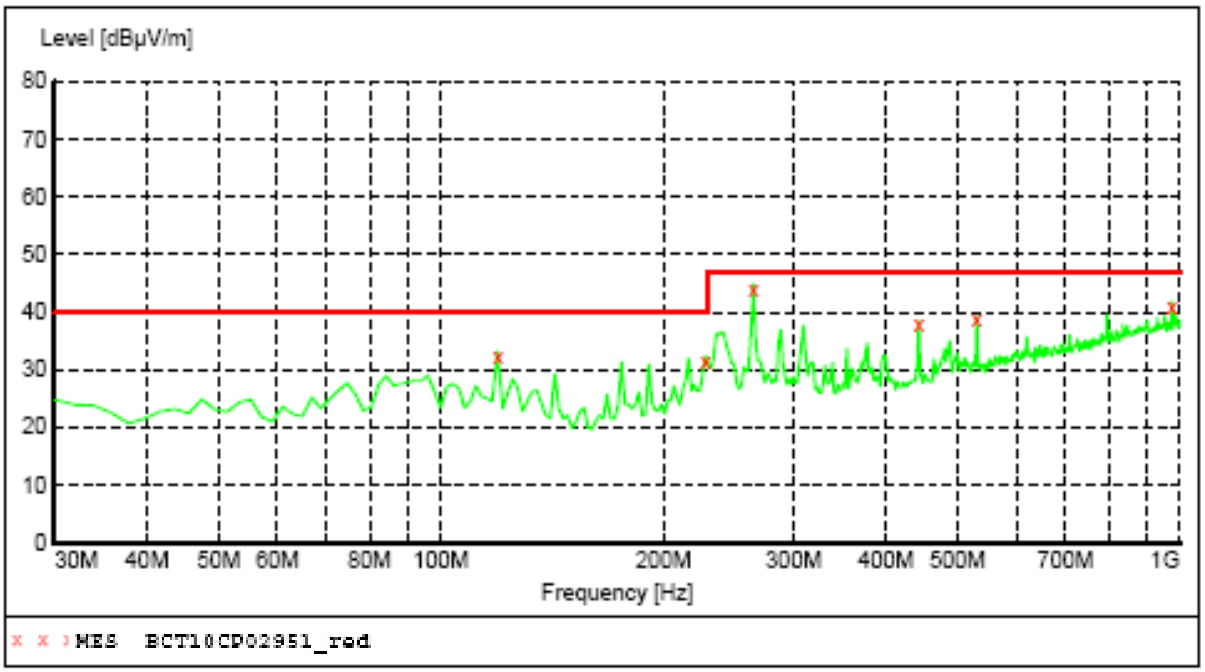
Radiated Emission Test Data

EUT:	Fingerprint T&A System	M/N: TA300
Operating Condition:	Connect to PC	
Test Site:	3m CHAMBER	
Operator:	Yang	
Test Specification:	AC 230V/50Hz for Adapter	
Comment:	Polarization: Horizontal	
Start of Test:	12/3/10/ 04:12 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: "BCT10CP02951_red"

12/3/2010 04:12

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
119.240000	32.20	15.2	40.0	7.8	QP	300.0	0.00	HORIZONTAL
227.880000	31.40	16.5	40.0	8.6	QP	100.0	0.00	HORIZONTAL
264.740000	44.00	17.5	47.0	3.0	QP	100.0	0.00	HORIZONTAL
443.220000	37.60	22.4	47.0	9.4	QP	100.0	0.00	HORIZONTAL
530.520000	38.40	24.7	47.0	8.6	QP	100.0	0.00	HORIZONTAL
974.780000	40.80	32.0	47.0	6.2	QP	300.0	0.00	HORIZONTAL

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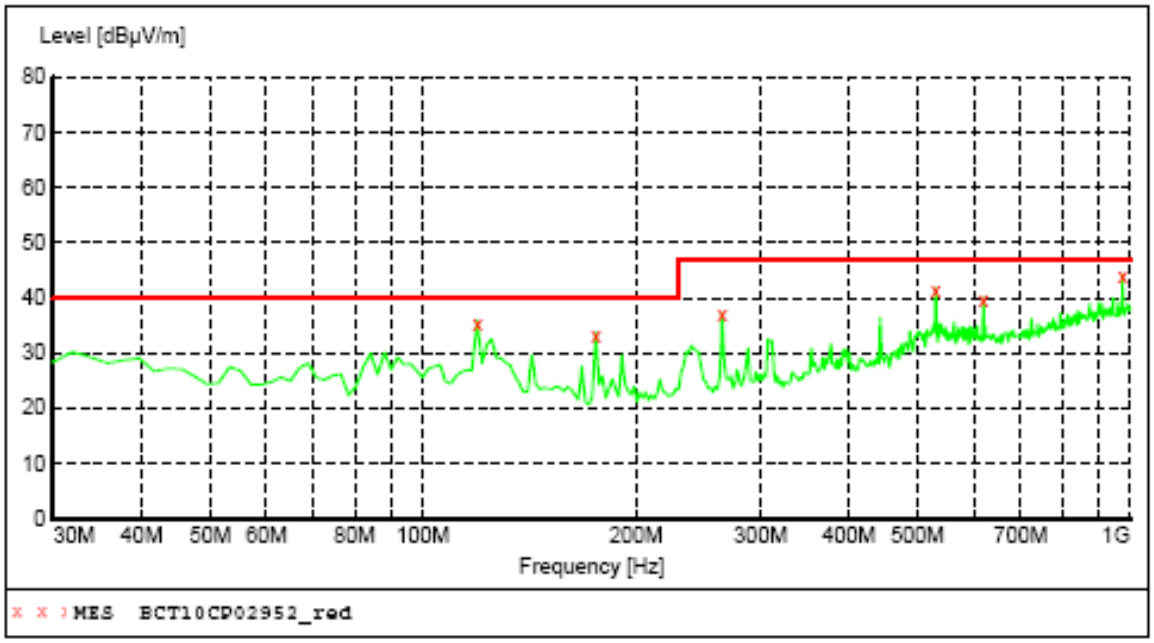
Radiated Emission Test Data

EUT:	Fingerprint T&A System	M/N: TA300
Operating Condition:	Connect to PC	
Test Site:	3m CHAMBER	
Operator:	Yang	
Test Specification:	AC 230V/50Hz for Adapter	
Comment:	Polarization: Vertical	
Start of Test:	12/3/10/ 04:15 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: "BCT10CP02952_red"

12/3/2010 04:15

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
119.240000	35.90	15.2	40.0	4.1	QP	100.0	0.00	VERTICAL
175.500000	33.80	14.7	40.0	6.2	QP	100.0	0.00	VERTICAL
264.740000	37.30	17.5	47.0	9.7	QP	100.0	0.00	VERTICAL
530.520000	41.90	24.7	47.0	5.1	QP	100.0	0.00	VERTICAL
619.760000	40.20	26.6	47.0	6.8	QP	100.0	0.00	VERTICAL
974.780000	44.30	32.0	47.0	3.0	QP	100.0	0.00	VERTICAL

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5 - HARMONIC CURRENT TEST (EN 61000-3-2)

5.1 Application of Harmonic Current Emission

Compliance to these standards ensures that tested equipment will not generate harmonic currents at levels that cause unacceptable degradation of the main environment. This directly contributes to meeting compatibility levels established in other EMC standards, which defines compatibility levels for low-frequency conducted disturbances in low-voltage supply systems.

5.2 Measurement Data

Note: For detailed test data, refer to the following pages:

Standard used:	EN/IEC 61000-3-2 A14 (2006) Quasi-stationary - Equipment class A
Observation time:	150s
E. U. T.:	Fingerprint T&A System
M/N	TA300
Operation Mode	ON

5.3 Test Results

This EUT is deemed to comply with the requirements of EN61000-3-2: 2006 without test since the power of EUT is less than 75W.

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6 - VOLTAGE FLUCTUATIONS AND FLICKER TEST (EN 61000-3-3)

6.1 Application of Voltage Fluctuations and Flicker Test

Compliance to these standards ensures that tested equipment will not generate flickers and voltage change at levels that cause unacceptable degradation of the main environment. This directly contributes to meeting compatibility levels established in other EMC standards, which defines compatibility levels for low-frequency conducted disturbances in low-voltage supply systems.

6.2 Measurement Data

Note: For detailed test data, refer to the following pages:

Standard used:	EN/IEC 61000-3-3 Flicker
Short time (Pst):	10 min
Observation time:	10 min (1 Flicker measurement)
Flickermeter:	230V/50Hz
E. U. T.:	Fingerprint T&A System
M/N	TA300
Operation Mode	ON

Test Result	PASS
E. U. T.:	Fingerprint T&A System

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.428	1.00	PASS
Plt	0.428	0.65	PASS
dc [%]	1.805	3.30	PASS
dmax [%]	1.060	4.00	PASS
dt [s]	0.103	0.50	PASS

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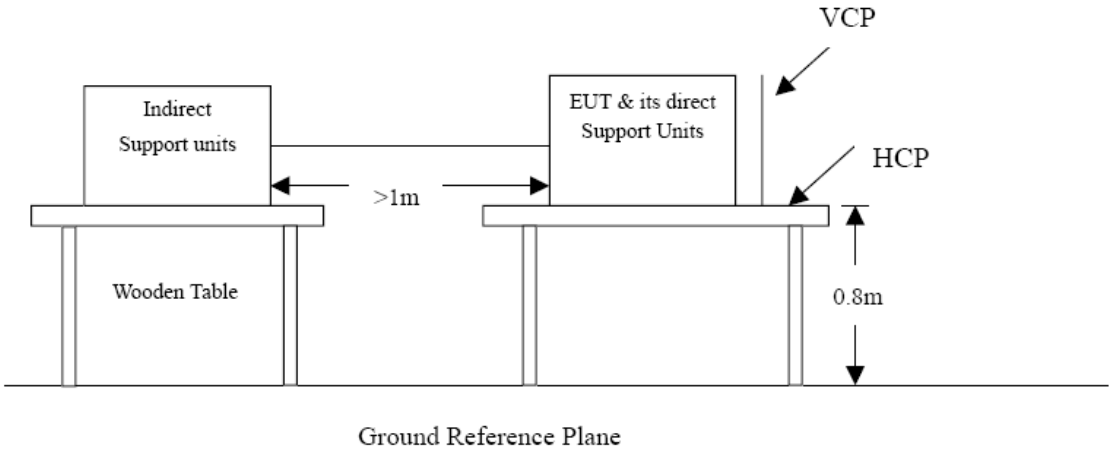
7 - Electrostatic Discharge immunity Test (IEC 61000-4-2)

7.1 Block Diagram of Test Setup



7.2 Test Standard

EN55024: 1998+A1: 2001+A2: 2003 (EN61000-4-2: 2001 Severity Level: 3 / Air Discharge: ±8KV Level: 2 / Contact Discharge: ±4KV)

7.3 Severity Levels and Performance Criterion

7.3.1 Severity level

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1.	±2	±2
2.	±4	±4
3.	±6	±8
4.	±8	±15
X	Special	Special

7.3.2 Performance criterion : B

7.4 Operating Condition of EUT

7.4.1 Setup the EUT as shown on Section 7.1.

7.4.2 Turn on the power of all equipments.

7.4.3 Let the EUT work in measuring mode (ON) and measure it.

7.5 Test Procedure

7.5.1 Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10

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times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

7.5.2 Contact Discharge:

All the procedure shall be same as Section 7.5.1. Except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

7.5.3 Indirect discharge for horizontal coupling plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

7.5.4 Indirect discharge for vertical coupling plane

At least 10 single discharge (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

7.6 Test Results

PASS

Please refer to the following pages

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Temperature (℃)	22~24
Humidity (%RH)	50~55
Barometric Pressure (mbar)	950~1000
EUT	Fingerprint T&A System
M/N	TA300
Operating Mode	ON

Table 1: Electrostatic Discharge Immunity (Air Discharge)

IEC 61000-4-2 Test Points	Test Levels									
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	-15 kV	+15 kV
Gap	A	A	A	A	A	A	A	A	/	/
LED	A	A	A	A	A	A	A	A	/	/
Buttons	A	A	A	A	A	A	A	A	/	/

Table 2: Electrostatic Discharge Immunity (Direct Contact)

IEC 61000-4-2 Test Points	Test Levels									
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	-15 kV	+15 kV
Blots	A	A	A	A	/	/	/	/	/	/
USB Port	A	A	A	A	/	/	/	/	/	/

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

IEC 61000-4-2 Test Points	Test Levels									
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	-15 kV	+15 kV
Front Side	A	A	A	A	/	/	/	/	/	/
Back Side	A	A	A	A	/	/	/	/	/	/
Left Side	A	A	A	A	/	/	/	/	/	/
Right Side	A	A	A	A	/	/	/	/	/	/

Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

IEC 61000-4-2 Test Points	Test Levels									
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	-15 kV	+15 kV
Front Side	A	A	A	A	/	/	/	/	/	/
Back Side	A	A	A	A	/	/	/	/	/	/
Left Side	A	A	A	A	/	/	/	/	/	/
Right Side	A	A	A	A	/	/	/	/	/	/

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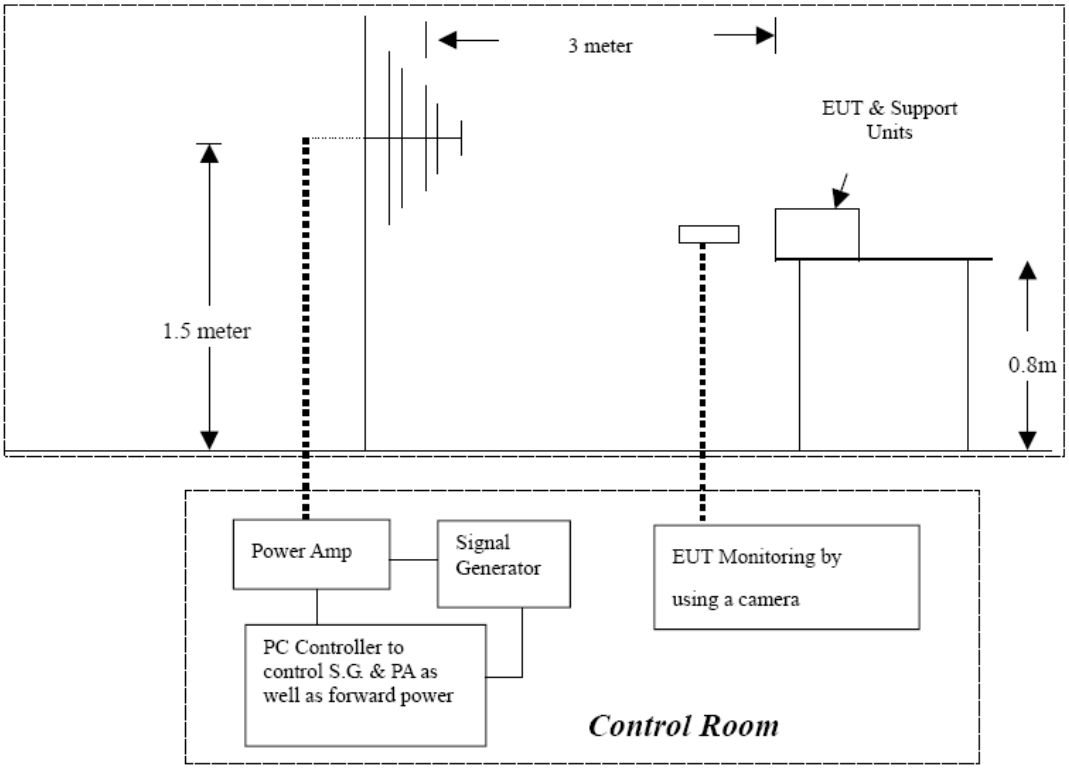
8 - RF Field Strength susceptibility TEST (IEC 61000-4-3)

8.1 Block Diagram of Test



8.2 Test Standard

EN55024: 1998+A1: 2001+A2: 2003 (EN61000-4-3: 2006, Severity Level: 2, 3V / m)

8.3 Severity Levels and Performance Criterion

8.3.1 Severity Levels

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

8.3.2 Performance Criterion: A

8.4 Operating Condition of EUT

8.4.1 Setup the EUT as shown on Section 8.1.

8.4.2 Turn on the power of all equipments.

8.4.3 Let the EUT work in measuring mode (ON) and measure it..

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8.5 Test Procedure

The EUT are placed on a table which is 0.8 meter high above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of the EUT must be faced this transmitting antenna and measured individually.
In order to judge the EUT performance, a CCD camera is used to monitor its screen .
All the scanning conditions are as following:

Condition of Test	Remark
1. Fielded Strength	3V/m (Severity Level 2)
2. Radiated Signal	Modulated
3. Scanning Frequency	80-1000MHz 1400-2700MHz
4. Sweep time of radiated	0.0015 Decade/s
5. Dwell Time	1 Sec.

8.6 Test Results

PASS

Please refer to the following page.

Temperature (℃)	22~24
Humidity (%RH)	50~55
Barometric Pressure (mbar)	950~1000
EUT	Fingerprint T&A System
M/N	TA300
Operating Mode	ON

Frequency Range (MHz)	Front (3 V/m)		Rear (3 V/m)		Left Side (3 V/m)		Right Side (3 V/m)	
80-1000 1400-2700	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
	A	A	A	A	A	A	A	A

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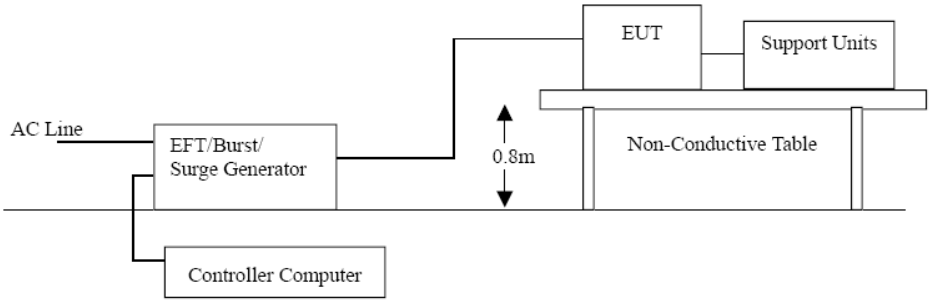
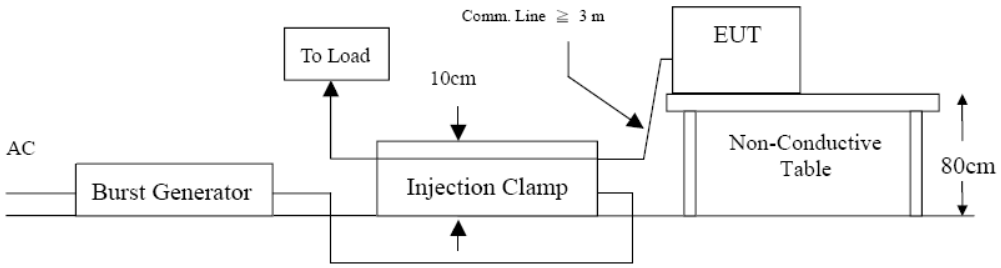
9 - Electrical Fast Transient/Burst Immunity Test (IEC 61000-4-4)

9.1 Block Diagram of Test Setup





9.2 Test Standard

EN55024: 1998+A1: 2001+A2: 2003 (EN61000-4-4: 2004, Severity Level, Level 3: 2KV)

9.3 Severity Levels and Performance Criterion

9.3.1 Severity level

Open Circuit Output Test Voltage ±10%		
Level	On Fingerprint T&A System Lines	On I/O (Input/Output) Signal data and control lines
1.	0.5 KV	0.25 KV
2.	1 KV	0.5 KV
3.	2 KV	1 KV
4.	4 KV	2 KV
X	Special	Special

9.3.2 Performance criterion : B

9.4 Operating Condition of EUT

9.4.1 Setup the EUT as shown in Section 9.1.

9.4.2 Turn on the power of all equipments.

9.4.3 Let the EUT work in test mode (ON) and measure it.

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9.5 Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

9.5.1 For input and output AC power ports:

It's unnecessary to test

9.5.2 For signal lines and control lines ports:

It's unnecessary to test.

9.5.3 For DC Input line ports:

The EUT is connected to the DC power mains by using a coupling device which couples the EFT interference signal to DC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

9.6 Test Result

PASS

Please refer to the following page.

Temperature (℃)	22~24
Humidity (%RH)	50~55
Barometric Pressure (mbar)	950~1000
EUT	Fingerprint T&A System
M/N	TA300
Operating Mode	ON

IEC 61000-4-4 Test Points		Test Levels (kV)							
		+0. 5	-0. 5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Line of EUT	L1	A	A	A	A	/	/	/	/
	L2	A	A	A	A	/	/	/	/
	Earth	/	/	/	/	/	/	/	/
	L1+L2	A	A	A	A	/	/	/	/
	L1 + Earth	/	/	/	/	/	/	/	/
	L2 + Earth	/	/	/	/	/	/	/	/
	L1+L2+Earth	/	/	/	/	/	/	/	/

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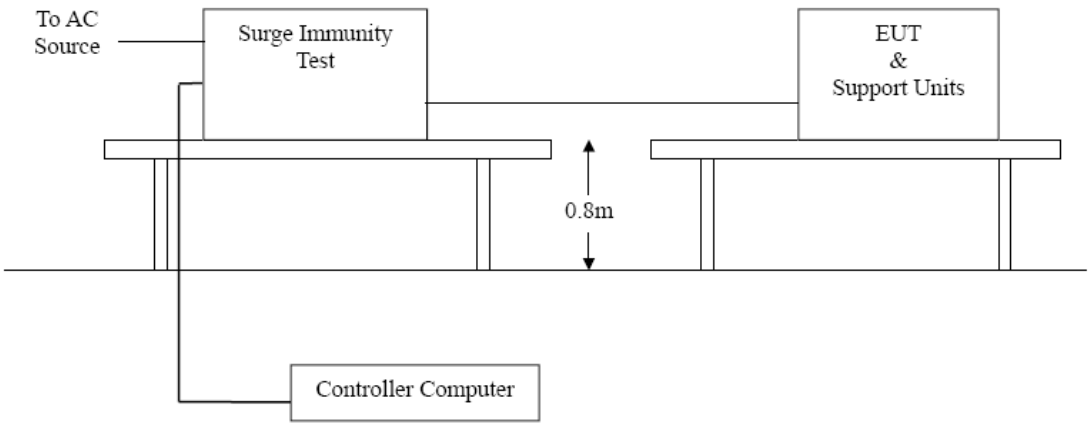
10 - Surge Immunity Test (IEC 61000-4-5)

10.1 Block Diagram of Test Setup



10.2 Test Standard

EN55024: 1998+A1: 2001+A2: 2003 (EN61000-4-5: 2005 Severity Level: Line to Line, Level 2: 1KV,Line to Earth , Level 3: 2KV)

10.3 Severity Levels and Performance Criterion

10.3.1 Severity level

Severity Level	Open-Circuit Test Voltage KV
1	5
2	0
3	0
4	4.0
*	Special

10.3.2 Performance criterion: B

10.4 Operating Condition of EUT

10.4.1 Setup the EUT as shown in Section 10.1.

10.4.2.Turn on the power of all equipments.

10.4.3.Let the EUT work in test mode (ON) and measure it.

10.5 Test Procedure

1)Set up the EUT and test generator as shown on Section 10.1.2.
2)For DC port coupling mode, provide a 1 KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.
3)At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
4)Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

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10.6 Test Result

PASS

Please refer to the following page.

Temperature (℃)	22~24
Humidity (%RH)	50~55
Barometric Pressure (mbar)	950~1000
EUT	Fingerprint T&A System
M/N	TA300
Operating Mode	ON

Table 1: Surge Power Supply

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N	A	/
2	1kV	±	L-N	A	/
3	2kV	±	L-PE, N-PE	/	/
4	4kV	±	L-N, L-PE, N-PE	/	/

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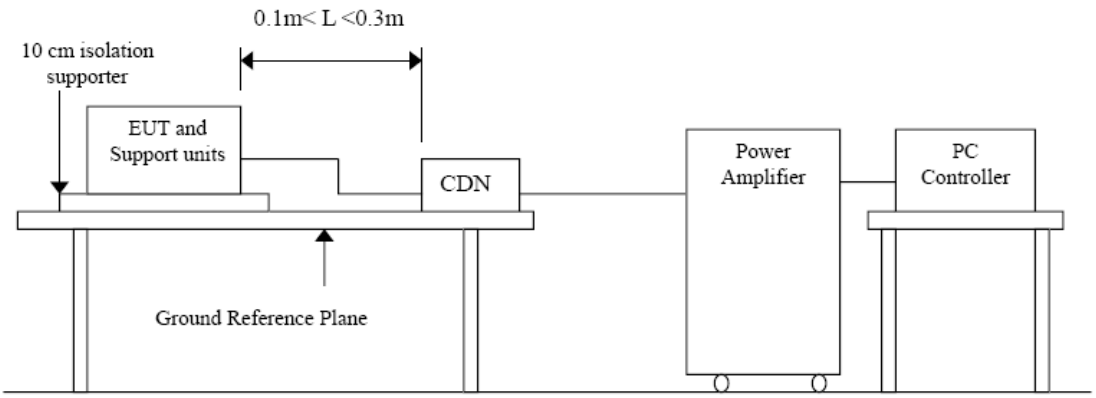
11 - Conducted Susceptibility Test (IEC 61000-4-6)

11.1 Block Diagram of Test Setup



11.2 Test Standard

EN55024: 1998+A1: 2001+A2: 2003 (EN61000-4-6: 2006, Severity Level 2: 3V (rms)).(0.15MHz ~ 80MHz)

11.3 Severity Levels and Performance Criterion

11.3.1 Severity level

Level	Field Strength V(rms)
1.	1
2.	3
3.	10
X	Special

11.3.2 Performance criterion: A

11.4 Operating Condition of EUT

11.4.1 Setup the EUT as shown in Section 11.1.

11.4.2 Turn on the power of all equipments.

11.4.3 Let the EUT work in test mode (ON) and measure it.

11.5 Test Procedure

11.5.1 For AC Mains

It's unnecessary to test.

11.5.2 For signal lines and control lines ports:

It's unnecessary to test.

11.5.3 For DC Input line ports:

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1) Set up the EUT, CDN and test generators as shown on Section 11.1.
2) Let the EUT work in test mode and measure it.
3) The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling network) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
4) The disturbance signal described below is injected to EUT through CDN.
5) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
6) The frequency range is swept from 150KHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.
7) The rate of sweep shall not exceed 1.5*10-3decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

11.6 Test Results

PASS

Please refer to the following page.

Frequency Range (MHz): 0.15~80MHz
Modulation: Amplitude 80%, 1kHz sinewave
Severity Level: 3Vr.m.s.

Temperature (℃)	22~24
Humidity (%RH)	50~55
Barometric Pressure (mbar)	950~1000
EUT	Fingerprint T&A System
M/N	TA300
Operating Mode	ON

Level	Voltage Level (e.m.f.) U_0	Pass	Fail
1	1	/	/
2	3	A	/
3	10	/	/
X	Special	/	/

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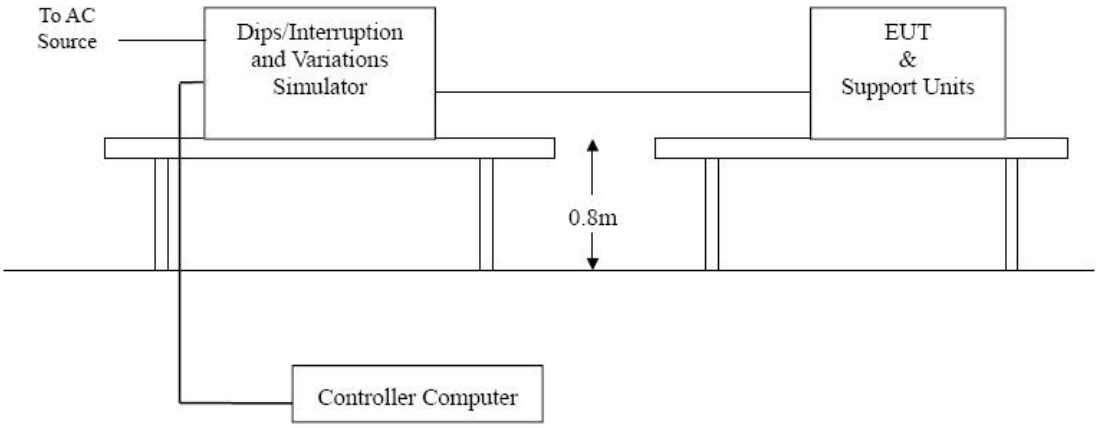
12 - Voltage Dips, Short Interruptions Immunity Tests (IEC 61000-4-11)

12.1 Block Diagram of Test Setup



12.2 Test Standard

EN55024: 1998+A1: 2001+A2: 2003 (EN61000-4-11: 2004)

12.3 Severity Levels and Performance Criterion

12.3.1 Severity level

Test Level %UT	Voltage dip and short interruptions %UT	Duration (in period)
0	100	0.5 1 5 10 25 50 *
40	60	
70	30	

12.3.2 Performance criterion: A&B

12.4 EUT Configuration

The configuration of EUT is listed in Section 3.4.

12.5 Operating Condition of EUT

12.5.1 Turn on the power of all equipments.

12.5.2 Let the EUT work in test mode (ON) and measure it.

12.6 Test Procedure

1)Set up the EUT and test generator as shown on Section 12.1.2.
2)The interruption is introduced at selected phase angles with specified duration.
3)Record any degradation of performance.

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12.7 Test Result

PASS

Please refer to the following page.

Temperature (℃)	22~24
Humidity (%RH)	50~55
Barometric Pressure (mbar)	950~1000
EUT	Fingerprint T&A System
M/N	TA300
Operating Mode	ON

Level	U2	td	Phase Angle	N	Pass	Fail
1	>95%	10ms	0/90/180/270	3	B	/
2	30%	500ms	N/A	3	C	/
3	>95%	5000ms	N/A	3	C	/

Note:

A. The apparatus shall continue to operate as intended during and after the test. The manufacturer specifies some minimum performance level. The performance level may be specified by the manufacturer as a permissible loss of performance.

B. The apparatus shall continue to operate as intended after the test. This indicates that the EUT does not need to function at normal performance levels during the test, but must recover. Again some minimal performance is defined by the manufacture. No change in operating state or loss or data is permitted.

C. Temporary loss of function is allowed. Operation of the EUT may stop as long as it is either automatically reset or can be manually restored by operation of the controls.

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13 - TEST RESULTS

The following tests were performed on the **FINGERTEC WORLDWIDE SDN BHD**'s product; model: **TA300**; the actual test results are contained within the Test Data section of this report.

13.1 IEC 61000-4-2 Electrostatic Discharge Immunity Test Configuration

The EUT was subjected to the electrostatic discharge tests required by EN 55024 and all lower levels specified in IEC 61000-4-2.

The EUT continued to perform as intended during and after the application of the ESD. Test setup photographs presented in Appendix C.

13.2 IEC 61000-4-3 Radiated Susceptibility Test Configuration

The EUT was subjected to a 3-volt/meter, 80% Amplitude, 1 kHz Sine wave field as required by EN 55024 and all lower levels specified in IEC 61000-4-3.

The EUT continued to perform as intended during and after the application of the electromagnetic field. Test setup photographs presented in Appendix C.

13.3 IEC 61000-4-4 Electrical Fast Transient/Burst Immunity Test Configuration

The EUT was subjected to the electrical fast transient tests required by EN 55024 and all lower levels specified in IEC 61000-4-4.

The EUT continued to perform as intended during and after the application of the EFT/B. Test setup photographs presented in Appendix C.

13.4 IEC 61000-4-5 Surge Immunity Test Configuration

The EUT was subjected to the Surge Immunity tests required by EN 55024 and all lower levels specified in IEC 61000-4-5.

The EUT continued to perform as intended during and after the application of the Surge Immunity Test. Test setup photographs presented in Appendix C.

13.5 IEC 61000-4-6 Conducted Susceptibility Test Configuration

The EUT was subjected to the Conducted Susceptibility tests required by EN 55024 and all lower levels specified in IEC 61000-4-6.

The EUT continued to perform as intended during and after the application of the Conducted Susceptibility Test. Test setup photographs presented in Appendix C.

13.6 IEC 61000-4-11 Voltage Dips, Short Interruptions Immunity Tests Configuration

The EUT was subjected to the Voltage Dips/Interruptions tests required by EN 55024 and all lower levels specified in IEC 61000-4-11.

The EUT continued to perform as intended during and after the application of the Voltage Dips/Interruptions Test. Test setup photographs presented in Appendix C.

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APPENDIX A - PRODUCT LABELING

CE Marking Label Specification

Specification: Text is Black or white in color and is left justified. Labels are printed in indelible ink on permanent adhesive backing and shall be affixed at a conspicuous location on the EUT or silk-screened onto the EUT.

CE

Proposed Label Location on EUT

EUT Rear View/Proposed CE Marking Location

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APPENDIX B - EUT PHOTOGRAPHS

EUT – Combined View

EUT – Front View

EUT –Rear View

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EUT – Front View of Adapter

EUT – Rear View of Adapter

EUT – Line View

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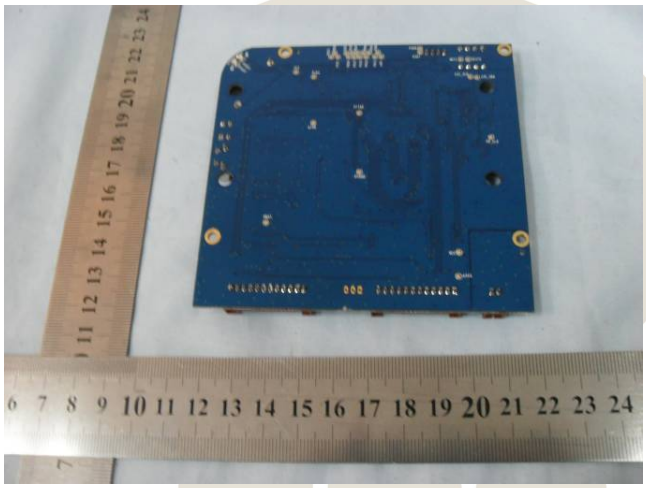
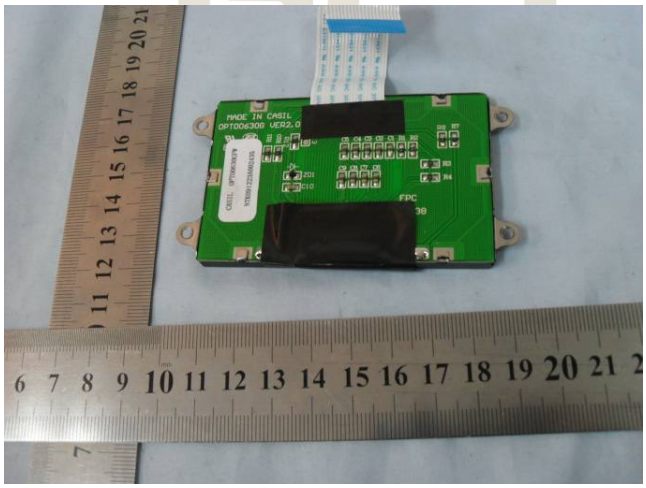
EUT – PCB View





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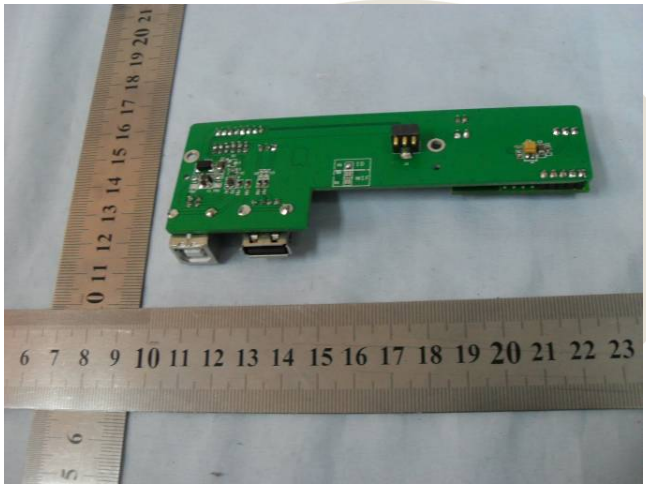

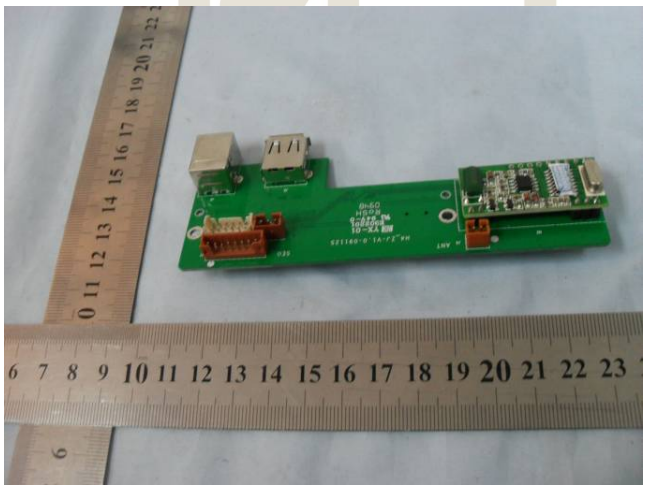

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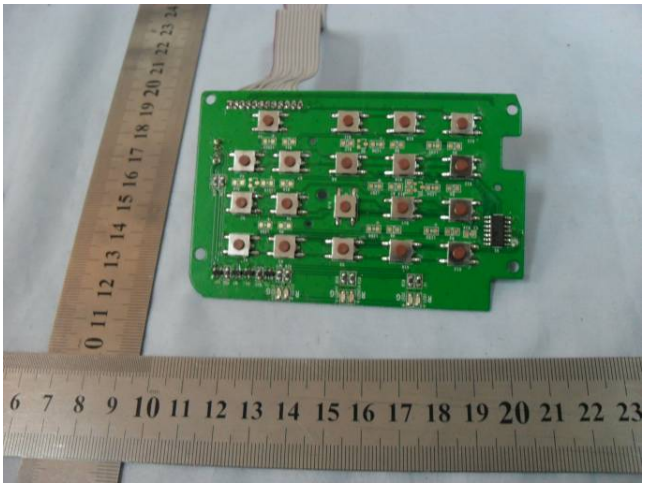
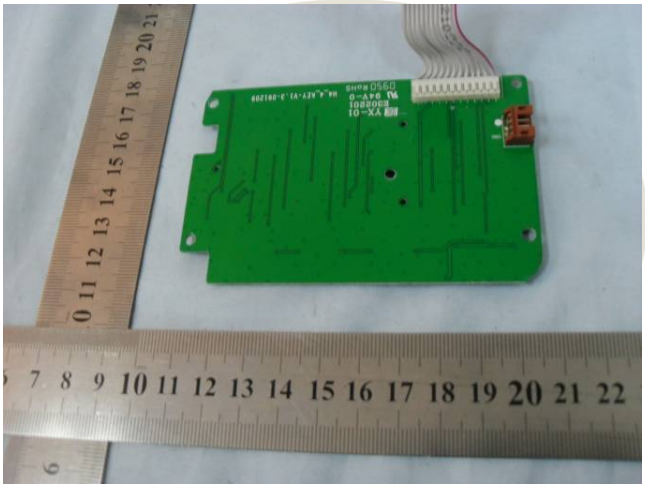
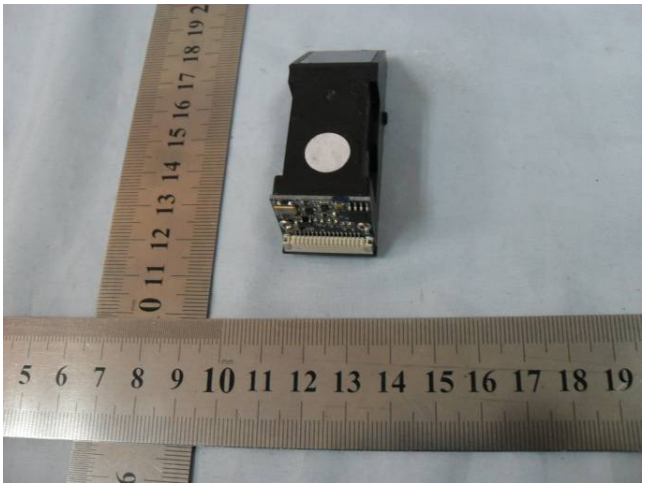




EUT – Front View of Fingerprint Facility



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APPENDIX C - TEST SETUP PHOTOGRAPHS

Conducted Emission

Radiated Emission

Electrostatic Discharge Immunity Test (IEC 61000-4-2)

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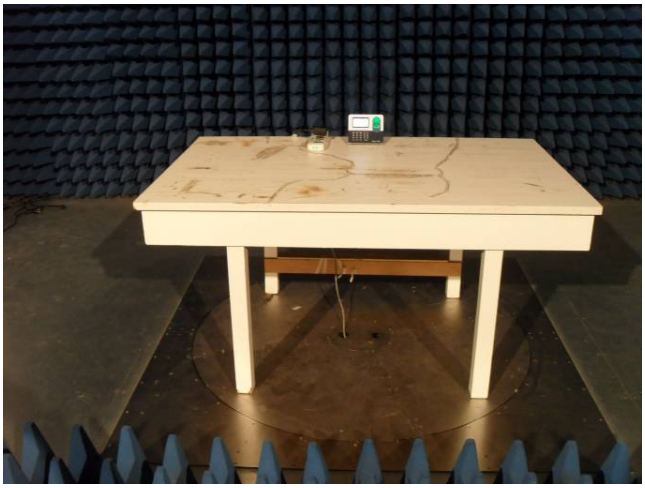
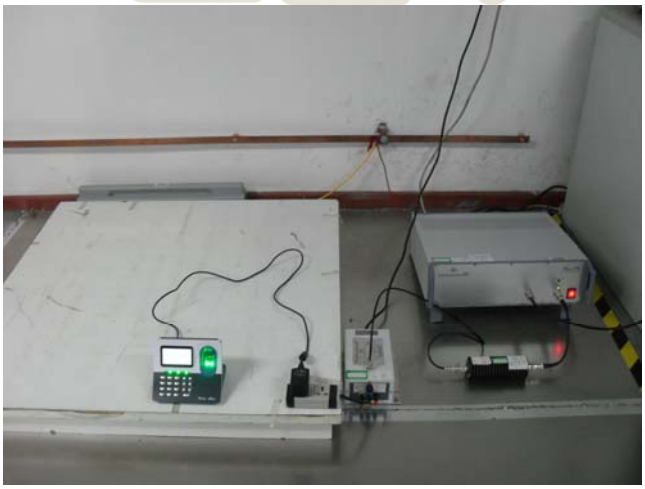
Radiated Susceptibility Test (IEC 61000-4-3)



Electrical Fast Transient/Burst Immunity/Voltage Dips, Short Interruptions Immunity Test (IEC 61000-4-4/5/11)

Conducted Susceptibility Test (IEC 61000-4-6)



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Radiated Emission TO PC

Conducted Emission TO PC

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APPENDIX D - 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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TÜVRheinland®

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. TÜVRheinland Certification Body

Dipl.-Ing. S. O. Steinke

TÜV Rheinland/CCIC (Qingdao) Co., Ltd.
18 Hong Kong Middle Road, Qingdao 266071, P.R.China
Tel: +86-532-8578-1778
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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
Tel 86-755-86337020(53 Lines) Fax 86-755-86337028
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Industry Canada Industrie Canada

May 2nd, 2008

OUR FILE: 46405-7631
Submission No: 126111

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

Attention: Tony Wu

Dear Sir/Madame:

The Bureau has received your application for the registration / renewal of a 3/10m alternate test site. Be advised that the information received was satisfactory to Industry Canada. The following number(s) is now associated to the site(s) for which registration / renewal was sought **(7631A-1).** Please reference the appropriate site number in the body of test reports containing measurements performed on the site.

- Your primary code is: **7631**

- The company number associated to the site(s) located at the above address is: **7631A**

Furthermore, to obtain or renew a unique site number, the applicant shall demonstrate that the site has been accredited to ANSI C63.4-2003 or later. A scope of accreditation indicating the accreditation by a recognized accreditation body to ANSI C63.4-2003 shall be accepted. Please indicate in a letter the previous assigned site number if applicable and the type of site (example: 3 meter OATS or 3 meter chamber). If the test facility is not accredited to ANSI C63.4-2003 or later, the test facility shall submit test data demonstrating full compliance with the ANSI standard. The Bureau will evaluate the filing to determine if recognition shall be granted.

The frequency for re-validation of the test site and the information that is required to be filed or retained by the testing party shall comply with the requirements established by the accrediting organization. However, in all cases, test site re-validation shall occur on an interval not to exceed two years. There is no fee or form associated with an OATS filing. OATS submissions are encouraged to be submitted electronically to the Bureau using the following URL;
http://strategis.ic.gc.ca/epic/internet/inceb-bhst.nsf/en/h_tt00052e.html.

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