

# **EMC EMISSION - TEST REPORT**

Report Number	:	64.710.13.03482.01 - (E)	Date of Issue:	2013-11-20
Model / Serial No.	:	EH101		
Product Type	:	Electronic Hand Dynamomete	er	
Applicant	:	Zhongshan Camry Electronic	Co., LTD.	
Manufacturer	:	Zhongshan Camry Electronic	Co., LTD.	
License holder	:	Zhongshan Camry Electronic	Co., LTD.	
Address	:	Baishawan Industrial Park, Q	iwan Road East, E	East District,

Test Result : ■ Positive □ Negati



Zhongshan, Guangdong, China

Total pages including Appendices

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Jiangsu TÜV Product Service Ltd., Guangzhou Branch reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations. Jiangsu TÜV Product Service Ltd., Guangzhou Branch shall have no liability for any deductions, inferences or generalizations drawn by the client or others from Jiangsu TÜV Product Service Ltd., Guangzhou Branch issued reports.

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# **EMISSIONS TEST REGULATIONS:**

The emissions tests were performed according to the following regulations:				
■ - EMC - Directive 2004/108/EC and its amendments				
■ - EN 55014-1:2006+A1:2009+A2:2011	■ - Household appliances and similar □ - Portable tools □ - Semiconductor devices			

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### **Environmental Conditions In The Laboratory:**

<u>Actual</u>

Temperature: : 23.8°C
Relative Humidity: : 59%
Atmospheric Pressure: : 101.0kPa

### **Power Supply Utilized:**

Power supply system : 3 VDC (2 \* 1.5V AAA battery)

### STATEMENT OF MEASUREMENT UNCERTAINTY

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities that can account for a nominal measurement error of  $\pm 4$ dB. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

### **Symbol Definitions:**

■ - Applicable

☐ - Not Applicable

### **Test laboratory:**

□ - Jiangsu TÜV Product Service Ltd. Guangzhou Branch

Add: 5F, Communication Building, 163 Pingyun Rd, Huangpu West Ave. Guangzhou 510656 P.R.China

■ - GRGT

Add: 163 Ping Yun Rd, West of HuangPu Ave, Guangzhou, Guangdong, P.R.China

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## **Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)**

The Conducted Emissions (Interference Voltage) measurements were performed at the following test location:

### ■ - Test not applicable

□ - Test Area (TÜV SÜD) – shielded room

### **Test Equipment Used:**

	<b>Model Number</b>	Manufacturer	Description	Serial Number	Cal. Due
□ -	ESCI	Rohde & Schwarz	EMI Test Receiver	100727	2014-11-11
□ -	ENV216	Rohde & Schwarz	AMN	3506.6550.05	2014-11-11
□-	ESH2-Z3	Rohde & Schwarz	Passive voltage probe	0299.7810.56	2014-11-11
□-	RSU-M314-N	Compliance Direction Systems Inc.	RF Switch Box	08042801	2014-11-11
□-	LS16	AFJ	16A V-Network	16011030241	2014-11-11
□-	CL55C	AFJ	Click Meter	55041047172	2014-11-11
□-			Artificial Hand		
□-			Conical metal housing		

Measurement Uncertainty:  $\pm 3.3$ dB (9 kHz-150 kHz);  $\pm 2.4$ 8dB (150 kHz-30MHz);

Remarks: All test equipments used are calibrated on a regular basis.

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### **Emissions Test Conditions: INTERFERENCE POWER**

The INTERFERENCE POWER measurements were performed by using the absorbing clamp on the mains and interface cables in the frequency range 30 MHz - 300 MHz at the following test location:

### ■ - Test not applicable

□ - Test Area (TÜV SÜD) – shielded room

### **Test Equipment Used:**

Model Number	Manufacturer	Description	Serial Number	Cal. Due
□ - ESCI	Rohde & Schwarz	EMI Test Receiver	100727	2014-11-11
□ - RSU-M314-N	Compliance Direction Systems Inc.	RF Switch Box	08042801	2014-11-11
□ - F-201-23MM	FCC	Absorbing Clamp	150	2014-11-11

Measurement Uncertainty: ± 3.64dB (30-300MHz)

Remarks: All test equipments used are calibrated on a regular basis.

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## **Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)**

The RADIATED EMISSIONS (ELECTRIC FIELD) measurements, in the frequency range of 30 MHz-1000 MHz, were tested in a horizontal and vertical polarization at the following test location:

### ☐ - Test not applicable

■ - Test Area (GRGT) – Anechoic ferrite lined shielded room

### Testing was performed at a test distance of:

- - 3 meters
- □ 10 meters

### **Test Equipment Used:**

	<b>Model Number</b>	Manufacturer	Description	Serial Number	Cal. Due
■ -	· ESU 40	Rohde & Schwarz	EMI Test Receiver	100106	2014-02-04
■ -	· 3142C	ETS	Bi-Log Antenna	75971	2014-07-31

Measurement Uncertainty: ±4.4dB (30MHz-1000MHz)

Remarks: All test equipments used are calibrated on a regular basis.

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## **Emissions Test Conditions: CONDUCTED EMISSIONS (Harmonics and Flicker)**

The Harmonic Current Emissions and Voltage Fluctuations and Flicker measurements were performed at the following test location:

### ■ - Test not applicable

□ - Test Area (TÜV SÜD) – Laboratory open area

### **Test Equipment Used:**

	Model Number	Manufacturer	Description	Serial Number	Cal. Due
□-	PCR6000LA	Kikusui	Multipurpose power supply	MG002890	2014-03-09
□-	PM6000-1	Voltech	Power analyzer	100006700229	2014-03-09
□-	IMP555	Voltech	Impedance network	1494	2014-03-09

Remarks: All test equipments used are calibrated on a regular basis.

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# **Equipment Under Test (EUT) Test Operation Mode - Emissions Tests:**

The equipment under test was ope	erated under the foll	owing conditions during emissions testing:
□ - Standby		
□ - Test Program (H - Pattern)		
□ - Test Program (Color Bar)		
□ - Test Program (Customer Specific	ed)	
■ - Normal Operating Mode		
o		
Configuration of the equipment ur	ider test:	
■ - See Constructional Data Form in	Appendix B	
■ - See Product Information Form(s)	in Appendix B	
The following peripheral devices a	and interface cables	were connected during the testing:
- DOL #	_	0 * 4 5) / 4 4 4 1 / /
■ - <u>DC battery</u>		2 * 1.5V AAA battery
O		
	<del></del>	
		:
		:
☐ - unshielded power cable		
□ - unshielded cables		
□ - shielded cables	TUVPS.No.:	
☐ - customer specific cables		
□ - <u> </u>		
<b>-</b>		

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# **Emissions Test Results:**

E 5100	<b>—</b> = 4 ···		T ABS: :-	ADLE
□ - PASS	□ - FAIL		T APPLIC	ARLE
Minimum limit margin		dB	at	MHz
Maximum limit exceeding		dB	at	MHz
Remarks:				
Interference Power at the Mains and Int	torface Cables 30	MHz - 300 MHz		
□ - PASS	- FAIL		T APPLICA	ABLE
Minimum limit margin		dB	at	MHz
Maximum limit exceeding		dB	at	MHz
				_
Remarks:  Radiated Emissions (Electric Field), 30				
		□ - NO	T APPLIC	ABLE
Radiated Emissions (Electric Field), 30		<b>□ - NO</b> dB		ABLE MHz
Radiated Emissions (Electric Field), 30 ■- PASS			at	
Radiated Emissions (Electric Field), 30 ■- PASS Minimum limit margin	□ - FAIL —	dB dB	at	MHz
Radiated Emissions (Electric Field), 30  - PASS  Minimum limit margin  Maximum limit exceeding	□ - FAIL —	dB dB	at	MHz
Radiated Emissions (Electric Field), 30  - PASS  Minimum limit margin  Maximum limit exceeding  Remarks:  met.	□ - FAIL — —	dB dB	at	MHz
Radiated Emissions (Electric Field), 30  - PASS  Minimum limit margin  Maximum limit exceeding  Remarks:  met.  Harmonic Current Emissions and Volta	□ - FAIL   age Changes and F	dB dB	at	MHz MHz
Radiated Emissions (Electric Field), 30  - PASS  Minimum limit margin  Maximum limit exceeding  Remarks:  met.  Harmonic Current Emissions and Volta	□ - FAIL — —	dB dB Silicker ■ - NO	at	MHz MHz ABLE
Radiated Emissions (Electric Field), 30  — PASS  Minimum limit margin  Maximum limit exceeding  Remarks:  met.  Harmonic Current Emissions and Volta  — PASS  Harmonic measurement exceeding limit	□ - FAIL   age Changes and F	dB dB  licker  - NO Above	at at T APPLIC	MHz MHz  MHz  ABLE  Harmonic
Radiated Emissions (Electric Field), 30  - PASS  Minimum limit margin  Maximum limit exceeding  Remarks:  met.  Harmonic Current Emissions and Volta	□ - FAIL   age Changes and F	dB dB Silicker ■ - NO	at	MHz MHz ABLE

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### **GENERAL REMARKS:**

SUMMARY: All tests according to the regulations cited on page 3 were						
■ - Performed □ - <b>Not</b> Performed						
The Equipment Under Test						
■ - Fulfills the general approval requirer	ments cited on page 3.					
□ - Does not fulfill the general approval	requirements cited on pag	e 3.				
Testing Start Date:	2013-11-14	n				
Testing End Date:	2013-11-14					
- JIANGSU TÜV PRODUCT SERVICE LTD., GUANGZHOU BRANCH -						
Reviewed by: Technical Reviewer	Prepared by:	CALIFE IV.				
Mike Zhuo		Wendy Ye				

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# Appendix A

Test Setup Photos
and
Test Data Sheets



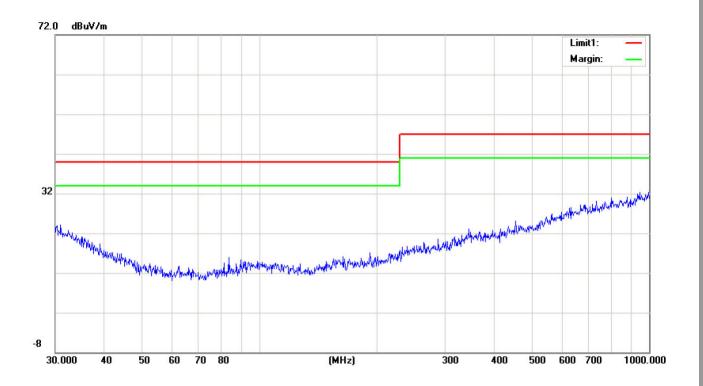
# Photo of setup Radiated emission (30MHz-1000MHz)



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### Radiated emission 30MHz-1000MHz



No significant emission was detected within 10 dB to limit.

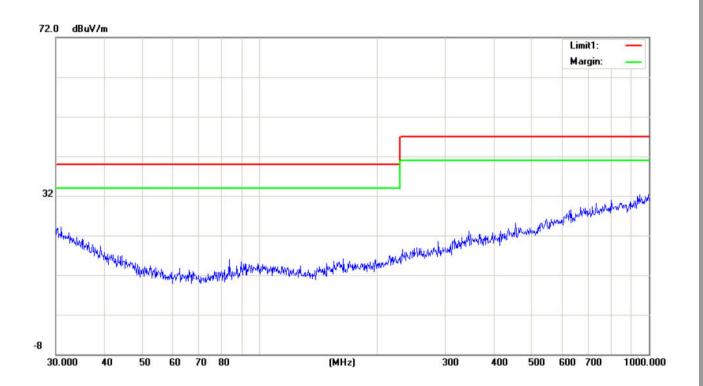
Model : EH101
Antenna polarity : Horizontal

Operation Mode : Measure mode

Test engineer : Wendy Ye
Test date : 2013-11-14



### Radiated emission 30MHz-1000MHz



No significant emission was detected within 10 dB to limit.

Model : EH101
Antenna polarity : Vertical

Operation Mode : Measure mode
Test engineer : Wendy Ye

Test date : 2013-11-14



### Appendix B

Constructional Data Form

and

Product Information Form(s)

Any safety relevant information or constructional aspect concerning the sample or equipment under test as submitted by the applicant / report holder / certificate holder or any authorized agent is deemed to have no adverse effect on the electromagnetic compatibility (EMC) performance. Insofar as safety or compliance with Low Voltage Directive (LVD) or any relevant directive is concerned, the applicant / report holder / certificate holder or any authorized agent is required, by virtue of the relevant EU Directive provisions, to have satisfied that the product concerned (for which a sample was tested) meets with LVD or other relevant directives before placing it on the market.

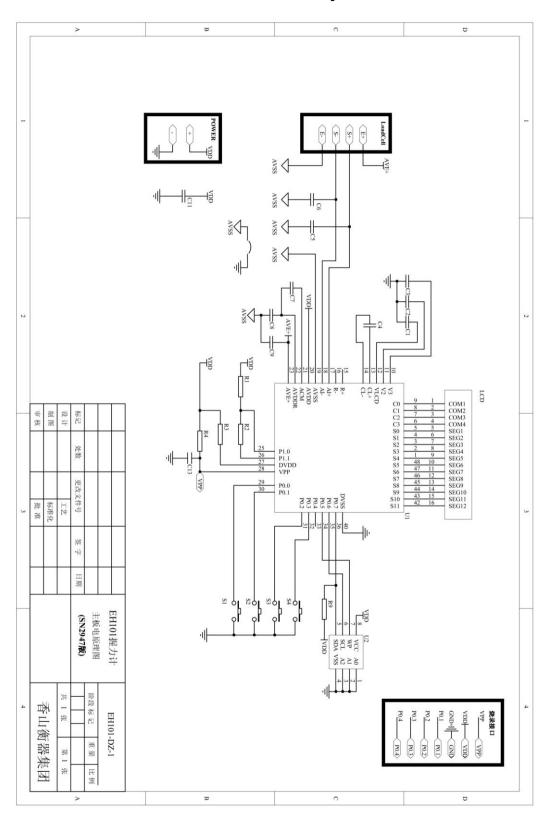
Where applicable, changes or modifications made to the original sample submitted for testing are documented herein. The applicant or manufacturer shall ensure that such changes or modifications are applied to the production units. Any further changes or modifications made to the production units may void the validity of this test report unless such changes or modifications have been formally assessed by Jiangsu TÜV Product Service Ltd., Guangzhou Branch through technical evaluations or other means as appropriate and it has been confirmed that the EMC performance or such units is not adversely affected.

The enclosed, if any, circuit diagram / parts list / printed circuit board diagram / component layout / user manual are strictly for reference only. Jiangsu TÜV Product Service Ltd. Guangzhou Branch shall not be held responsible for any error or omission in such documents. It is the manufacturer's responsibility to ensure that production units conform to the tested sample.

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# **Electric Circuitry**





### Appendix C

Constructional Photographs of

Equipment under test (EUT)

Any safety relevant information or constructional aspect concerning the sample or equipment under test as submitted by the applicant / report holder / certificate holder or any authorized agent is deemed to have no adverse effect on the electromagnetic compatibility (EMC) performance. Insofar as safety or compliance with Low Voltage Directive (LVD) or any relevant directive is concerned, the applicant / report holder / certificate holder or any authorized agent is required, by virtue of the relevant EU Directive provisions, to have satisfied that the product concerned (for which a sample was tested) meets with LVD or other relevant directives before placing it on the market.

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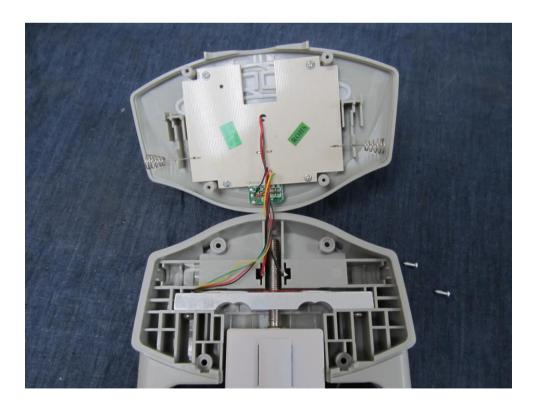




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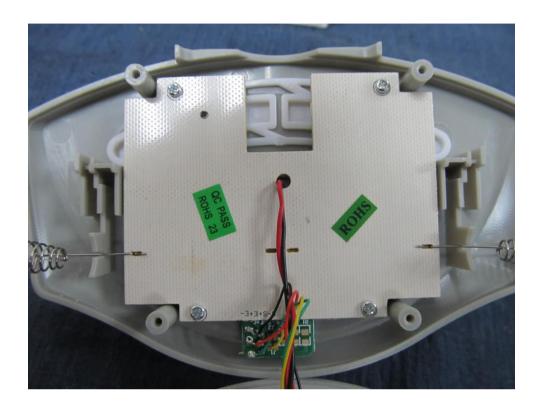


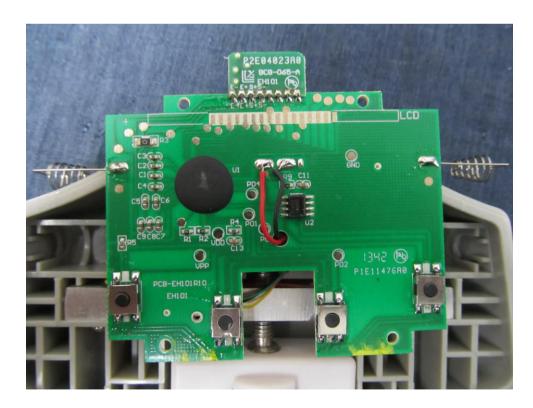




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# **EMC IMMUNITY - TEST REPORT**

Report Number	:	64.710.13.03482.01 <b>–</b> (I)	Date of Issue:	2013-11-20

Model / Serial No. : EH101

Product Type : Electronic Hand Dynamometer

Applicant : Zhongshan Camry Electronic Co., LTD.

Manufacturer : Zhongshan Camry Electronic Co., LTD.

License holder : Zhongshan Camry Electronic Co., LTD.

Address : Baishawan Industrial Park, Qiwan Road East, East District,

: Zhongshan, Guangdong, China

Test Result : ■ Positive □ Negative



Total pages including Appendices

dices : \_\_\_\_\_

Jiangsu TÜV Product Service Ltd., Guangzhou Branch is a subcontractor to TÜV SÜD Product Service, GmbH according to the principles outlined in ISO/IEC Guide 25 and EN 45001.

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Jiangsu TÜV Product Service Ltd., Guangzhou Branch reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations. Jiangsu TÜV Product Service Ltd., Guangzhou Branch shall have no liability for any deductions, inferences or generalizations drawn by the client or others from Jiangsu TÜV Product Service Ltd., Guangzhou Branch issued reports.

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### Remark:

Constructional Data Form and Product Information Form(s) and Constructional Photographs of EUT refer to emission test report

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### **IMMUNITY TEST REGULATIONS:**

□ - IEC 61000-4-8:1993+A1:2000

□ - IEC 61000-4-11:2004

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### **Environmental Conditions In The Laboratory:**

Actual

Temperature: : 24.0°C
Relative Humidity: : 55.2%
Atmospheric Pressure: : 101.7kPa

### **Power Supply Utilized:**

Power supply system : 3 VDC (2 \* 1.5V AAA battery)

### STATEMENT OF MEASUREMENT UNCERTAINTY

The tolerances for each tests are reduced by the uncertainty reported on the calibration certificate for the measurement, all the parameters are within the tolerances required by the relevant standard, reduced by the uncertainty reported on the calibration certificate, so the laboratory has confidence that all the tests compliant with the relevant standards with a 95% confidence level.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

### **Symbol Definitions:**

- - Applicable
- □ Not Applicable

### **Test laboratory:**

■ - Jiangsu TÜV Product Service Ltd. Guangzhou Branch Add: 5F, Communication Building, 163 Pingyun Rd, Huangpu Ave. West Guangzhou, P.R.China

□ - GRGT

Add: 163 Ping Yun Rd, West of HuangPu Ave, Guangzhou, Guangdong, P.R.China

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### Immunity Test Conditions: ELECTROSTATIC DISCHARGE (ESD)

The immunity against *ELECTROSTATIC DISCHARGE (ESD)* events was performed in the following location:

■ - Test Area (TUVPS) - Laboratory open area

### **Test Equipment Used:**

	Model Number	Manufacturer	Description	Serial Number	Cal. Due
■ -	NSG435	Teseq	ESD tester	6155	2014-11-11
■ -		TÜV PS	H/V Coupling Plane	TÜV PS	1

Remarks: All test equipments used are calibrated on a regular basis.

Test	Sne	cifi	cati	on.
1031	Opt	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Cati	OII.

Test Specification:			
Discharge Voltage (Air):	□ - 2 kV □ - 4 kV	■ - 8 kV □ - 15 kV	□ - 6 kV □ kV
<u>Discharge Voltage (Contact)</u> :	□ - 2 kV ■ - 4 kV	□ - 6 kV □ - 8 kV	□ kV
Discharge Impedance:	■ - 330 Ω / 150 pF	$\square$ - 150 $\Omega$ / 150 pF	
Discharge Repetition Rate:	■ - ≥ 1 sec.		
Number of Discharges:	■ - ≥ 10 at all locations		
Kind of Discharges:	<ul><li>■ - Air discharge</li><li>■ - Direct</li></ul>	<ul><li>■ - Conducted discharge</li><li>■ - Indirect</li></ul>	9

■ - Positive

■ - HCP/VCP

■ - Each location on the surface touchable by hand

Negative

□ - See drawing in Appendix A 

### Result:

Polarity:

**Location of Discharge:** 

■ - No degradation of function - Met Criterion A ☐ - Distortion of function - Met Criterion B ☐ - Error of function - Met Criterion C ☐ - Loss of function - Unrecoverable Failure

Remarks:		

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## **Immunity Test Conditions: RADIATED ELECTROMAGNETIC FIELDS**

The immunity against RADIATED ELECTROMAGNETIC FIELDS exposure was performed in the following location:

### ■ - Test not applicable

□ - Test Area (GRGT) - Anechoic ferrite lined shielded room

### **Test Equipment Used:**

	Model Number	Manufacturer	Description	Serial Number	
□ -	STLP 9128 E	SCHWARZBECK	Log Periodic Antenna	9128E-029	2013-07-29
□ -	AP32SV150A	PRANA R&D	Power Amplifier I	0611-768	2013-07-13
□ -	4232A	BOOTON	Isotropic Field Monitor	10543	2013-09-26
□ -	SML03	R&S	R,F Signal Generator	103002	2014-02-04

Remarks: All test equipments used are calibrated on a regular basis.

### **Test Specification:**

Frequency Range:		□ - 26 MHz - 1000 MHz □ - 80 MHz - 1000 MHz
Field Strength:	□ - 1 V/m □ - 10 V/m	□ - 3 V/m □ V/m
Distance Antenna - EUT:	□ - 1 m	□ - 3 m

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Test Specification (continued):			
Modulation:	□ - AM : □ - FM : □ - sine wave: □ - unmodulated	80% kHz dev.	1kHz kHz
	□ - Pulse	ON/OFF	Duty Cycle: %
Step:	□ - <u>&lt;</u> 0.015 decades / se	ec	□ - 1%
Polarization of Antenna:	□ - Horizontal	□ - Vertical	
Result: ☐ - No degradation of function ☐ - Distortion of function ☐ - Error of function ☐ - Loss of function	<ul><li>Met Criterion A</li><li>Met Criterion B</li><li>Met Criterion C</li><li>Unrecoverable Failure</li></ul>		
Remarks:			



## **Immunity Test Conditions: FAST TRANSIENTS (BURST)**

The immunity against FAST TRANSIENTS (BURST) events was performed in the following test location:

■ - Test not applicable							
□ - Test Area (TUVPS) - L	_aboratory	open area					
Test Equipment Used: Model Number	Manufac	turer	Description		Serial Numbe	r Cal.	Due
☐ - MODULA6150 ☐ - CDN8014	Teseq Teseq		Immunity test so Coupling Clamp		34595 25528		I-11-11 I-11-11
Remarks: All test equip	ments use	d are calib	orated on a regi	ular basis			
Test Specification:							
Pulse Amplitude - AC Po	wer Port:	□ - 1,0 l □ - 4,0 l		□ - 2,0 k □ l			
Pulse Amplitude - DC Po	wer Port:	□ - 1,0 I □ - 4,0 I		□ - 2,0 k □ l			
Pulse Amplitude - Signal/ Non control Port:	<u>/Data</u>	□ - 0,5 l □ - 2,0 l		□ - 1,0 k □ l			
Pulse Amplitude - Proces Measurement & Control Pe		□ - 0,5 l □ - 2,0 l		□ - 1,0 k □ l			
Burst Frequency:		□ - 2,5 I	кНz	□ - 5,0 k	Hz	<b>-</b>	kHz
Time of Coupling:		□ - 60 s	econds	□ - 120 s	econds	□	_seconds
Coupling Method:		□ - Coup	oling/decoupling	network		🗆 - Cou	ıpling clamp
Polarity:		□ - Posit	iive	□ - Nega	tive		

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# Immunity Test Conditions: FAST TRANSIENTS (BURST), continued

Location of Coupling:				
name of lines: type of lines: status of lines: kind of transmission: length of lines:	AC POWER CORD	□ - shielded □ - Passive □ - analog	□ - unshielded □ - active □ - digital	
name of lines: type of lines: status of lines: kind of transmission: length of lines:		□ - shielded □ - Passive □ - analog	□ - unshielded □ - active □ - digital	
name of lines: type of lines: status of lines: kind of transmission: length of lines:		□ - shielded □ - Passive □ - analog	□ - unshielded □ - active □ - digital	
Result:  □ - No degradation of function □ - Distortion of function □ - Error of function □ - Loss of function □ - Loss of function □ - Unrecoverable Failure				
Remarks:				

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## **Immunity Test Conditions: SURGE TRANSIENTS**

The immunity against Surge Transients events was performed in the following test location:

### ■ - Test not applicable

□ - Test Area (TUVPS) - Laboratory open area

### **Test Equipment Used:**

Model Number	Manufacturer			erial Number	
□ - MODULA6150	Teseq	Immunity test s	system 3	4595	2014-11-11
Test Specification: Pulse Amplitude - AC Pov		1,0 kV	□ - 2,0 kV		
Pulse Amplitude - DC Pov	wer Port: □-	4,0 kV 1,0 kV 4,0 kV	□ - 0.5 kV □ - 2,0 kV □ kV		
Pulse Amplitude - Signal/I		0,5 kV 2,0 kV	□ - 1,0 kV □ kV		
Pulse Amplitude - Process Measurement & Control F		0,5 kV 2,0 kV	□ - 1,0 kV □ kV		
Source Impedance:		2 Ω + 18 μF 42 Ω + 0,1 μF	□ - 12 Ω + □ - 42 Ω + 0	•	
Number of Surges:	□ - :	5 surges/angle	□ sur	ges /angle	
Angle:		0 ° 180 °	□ - 90 ° □ - 270 °		
Repetition Rate:	□ - ·	60 sec.	□ sec	: <b>.</b>	
Polarity:	□-	Positive	□ - Negativ	e	

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# Immunity Test Conditions: SURGE TRANSIENTS, continued

**Location of Coupling:** 

name of lines: type of lines: status of lines: kind of transmission: length of lines:	AC POWER CORD	□ - shielded □ - Passive □ - analog	□ - unshielded □ - active □ - digital
name of lines: type of lines: status of lines: kind of transmission: length of lines:		□ - shielded □ - Passive □ - analog	□ - unshielded □ - active □ - digital
name of lines: type of lines: status of lines: kind of transmission: length of lines:		□ - shielded □ - Passive e □ - analog	□ - unshielded □ - active □ - digital
Result:  ☐ - No degradation of fun  ☐ - Distortion of function  ☐ - Error of function  ☐ - Loss of function	- Met Criter - Met Criter	rion B	
Remarks:			

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## **Immunity Test Conditions: CONDUCTED DISTURBANCE**

The immunity against CONDUCTED DISTURBANCE events, induced by radio frequency fields above 9 kHz, was performed in the following test location:

### ■ - Test not applicable

□ - Test Area (TUVPS) - Laboratory open area

### **Test Equipment Used:**

	Model Number	Manufacturer	Description	Serial Number	Cal. Due
□-	CIT-10/75	Frankonia	C/S test generator	102D1319	2014-11-11
□-	75-A-MFN-06	BIRD	6dB attenuator	0638	2014-11-11
□ -	M2+M3-801	Frankonia	CDN	A3011123	2014-11-11
□ -	F-203I-32mm	FCC	EM Injected Clamp	08511	2014-11-11

Remarks: All test equipments used are calibrated on a regular basis.

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	COL	UN	, – ,		cai		

Test Specification: Frequency Range:	□ - 0,15 MHz - 230 MHz		□ - 0,15 MHz - 80 MHz	
Voltage Level (EMF):	□ - 1 V □ - 10 V	□ - 3 V □ V		
Modulation:	□ - AM : □ - FM : □ - sine wave: □ - unmodulated	80 % kHz dev.	1 kHz kHz	
	□ - Pulse	ON/OFF	Duty Cycle: %	
Step:	□ - <u>&lt;</u> 1%			

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# Immunity Test Conditions: CONDUCTED DISTURBANCE, continued

Location of Coupling:						
name of lines:	AC POWER CORD					
type of lines:		☐ - shielded	☐ - unshielded			
status of lines:		□ - Passive	☐ - active			
kind of transmission:		□ - analog	□ - digital			
length of lines:		0.3m				
name of lines:						
type of lines:		□ - shielded	☐ - unshielded			
status of lines:		□ - Passive	☐ - active			
kind of transmission:		□ - analog	□ - digital			
length of lines:			<u></u>			
name of lines:						
type of lines:		☐ - shielded	 □ - unshielded			
status of lines:		□ - Passive	☐ - active			
kind of transmission:		□ - analog	□ - digital			
length of lines:			<u></u>			
Result:						
☐ - No degradation of fun	□ - No degradation of function - Met Criterion A					
☐ - Distortion of function	□ - Distortion of function - Met Criterion B					
□ - Error of function - Met Criterion C						
☐ - Loss of function	- Unrecove	rable Failure				
Remarks:						

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## **Immunity Test Conditions: VOLTAGE DIPS, INTERRUPTIONS & VARIATIONS**

The immunity against *Voltage Dips, Interruptions & Variations* events, induced by radio frequency fields above 9 kHz, was performed in the following test location:

■ - Test not applicable								
□ - Test Area (TUVPS) - Laboratory open area								
Test	Test Equipment Used:							
	Model Number	Manufact	urer	Description		Serial Number	Cal. Due	
-   -	MODULA6150 INA6501	Teseq Teseq		Immunity test s Step power su		34595 159	2014-11-11 2014-11-11	
Rem	arks: All test equip	nents use	d are cali	brated on a reg	ular basis	<b>5.</b>		
Test Specification: Nominal Mains Voltage (V <sub>NOM</sub> ):			□ - 230	Vac	□V	′ac □ -	Vdc	
Level of Reduction (dip):		□ - 500 ms at 30% of V <sub>NOM</sub> □ - 200 ms at 60% of V <sub>NOM</sub>						
<u>Duration of Interruption</u> (>.95*V <sub>NOM</sub> ):		□ - 10ms (50Hz) □ - 8.34ms (60Hz)						
Voltage Fluctuation:		□ -V <sub>NOM</sub> + 10% □ -V <sub>NOM</sub>		- 10%				
Result:  ☐ - No degradation of function ☐ - Distortion of function ☐ - Error of function ☐ - Loss of function		- Met C - Met C	riterion A riterion B riterion C overable Failure					
Remarks:								

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# **Equipment Under Test (EUT) Test Operation Mode - Immunity Tests:**

The equipment under test was o	perated under the follow	owing conditions during immunity testing :
□ - Standby		
□ - Test Program (H - Pattern)		
□ - Test Program (Color Bar)		
□ - Test Program (Customer Spec	cified)	
■ - Normal Operating Mode		
- <u> </u>		
Configuration of the equipment	under test:	
☐ - See Constructional Data Form	ı in Appendix B - Page E	32
☐ - See Product Information Form	(s) in Appendix B - Pag	e B2
	., ,,	were connected during the testing:
The following peripheral action	Julia interiace dables	were connected during the testing.
■ - <u>DC battery</u>	Type :	2 * 1.5V AAA battery
O	Type :	
O		
O		
<b>-</b>		
D -		
D -		
<ul><li>unshielded power cable</li></ul>		
□ - unshielded cables		
□ - shielded cables	TÜVPS. No.:	
☐ - customer specific cables		

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### **GENERAL REMARKS:**

SUMMARY:								
All tests according to the regulations cite	ed on page 3 were							
■ - Performed								
□ - <b>Not</b> Performed								
The Equipment Under Test	The Equipment Under Test							
■ - Fulfills the general approval require	ements cited on page 3.							
☐ - Does not fulfill the general approva	I requirements cited on page 3.							
Testing Start Date:	2013-11-15							
9								
Testing End Date:	2013-11-15							
	-							
- Jiangsu TÜV Product Service Ltd.	Guangzhou Branch -							
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Reviewed by: Technical Reviewer	Prepared by:							
Mike Zhuo		Wendy Ye						

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# Appendix A

Test Setup Photo(s)

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Test setup: ESD

