

Certification

To whom may concern,

We, Shenzhen Jiaweishi Electronic Technology Co., Ltd with brand name "JAWEST"  and Shenzhen Touch Think

Intelligence Co., Ltd with brand name "Touch Think" ,

hereby certify that

Shenzhen Jiaweishi Electronic Technology Co., Ltd

ADD: Building 4, Xinjianxing Industrial Park, Sunshine Second Road, Nanshan District, Shenzhen, Guangdong China 518000

and **Shenzhen Touch Think Intelligence Co., Ltd**

ADD: Building 4, Xinjianxing Industrial Park, Sunshine Second Road, Nanshan District, Shenzhen, Guangdong China 518000

Is the same company with different name.

Generally Shenzhen Touch Think Intelligence Co., Ltd is the exporter.

If there is anything need our support, please feel free to contact us.

Sincerely Regards,

Shenzhen Jiaweishi Electronic Technology Co., Ltd

Shenzhen Touch Think Intelligence Co., Ltd



深圳市触想智能股份有限公司
Shenzhen Touch Think Intelligence Co., Ltd

Add: No. 201-1, Building 4, Xijianxing Industrial Park, Sunshine Second Road, Nanshan District, Shenzhen, Guangdong China 518108
Tel.:86-755-66631 9858 Fax.: 86-755-6663 0142 ext 880
E-mail: homer@sztouchtec.com Web:www.touchtecs.com

All in One Industrial Panel PC Certificate Equivalent List

ICC Dijital Endüstriyel Teknolojiler Ltd. Şti. located in Turkey is the owner of the products which are named with IPC4 brand and product codes which are produced by Shenzhen Touch Think Intelligence Co., Ltd.

This document confirms that IPC4 products are produced under our standards of TPC models.

The all in one panel pc was compliance with the below standard:

EMI :

EN 55032:2015

EN 61000-3-2:2014, EN 61000-3-3:2013

EMS :

EN 55024:2010+A1:2015

EN 61000-4-2:2009, EN 61000-4-3:2006+A1:2008+A2:2010, EN 61000-4-4:2012, EN 61000-4-5:2014, EN 61000-4-6:2014, EN 61000-4-8:2010, EN 61000-4-11:2004

Supplier Product code:

TPC707A, TPC101, TPC104A, TPC1217A, TPC1217B, TPC1217C, TPC1507A, TPC1507B, TPC1507C, TPC1707A, TPC1707B, TPC1707C, TPC1907A, TPC1907B, TPC1907C, TPC1917A, TPC1917B, TPC1917C, TPC2157A, TPC2157B, TPC2157C, TPC2207A, TPC2207B, TPC2207C, TPC2367A, TPC2367B, TPC2367C, TPC2407A, TPC2407B, TPC2407C

IPC4 Product code:

IPC4-070W-XXYZ, IPC4-080W-XXYZ, IPC4-101W-XXYZ, IPC4-101W-XXYZ, IPC4-104W-XXYZ, IPC4-104W-XXYZ, IPC4-116W-XXYZ, IPC4-120W-XXYZ, IPC4-120W-XXYZ, IPC4-121W-XXYZ, IPC4-150W-XXYZ, IPC4-150W-XXYZ, IPC4-156W-XXYZ, IPC4-156W-XXYZ, IPC4-170W-XXYZ, IPC4-170W-XXYZ, IPC4-173W-XXYZ, IPC4-173W-XXYZ, IPC4-190W-XXYZ, IPC4-190W-XXYZ, IPC4-191W-XXYZ, IPC4-191W-XXYZ, IPC4-215W-XXYZ, IPC4-215W-XXYZ

*XXYZ letters definition : XX: CPU | Y: Touch Screen Type | Z: Body Color

*This document covers IPC4-BIO***-***** models which are modified models of TPC series

Please ref. the Certificates and the test reports for more information.

Supplier: Shenzhen Touch Think Intelligence Co., Ltd



Shenzhen BCTC Technology Co.,Ltd.
No.101, Yousong Road, Longhua New District,
Shenzhen, Guangdong, P.R.China

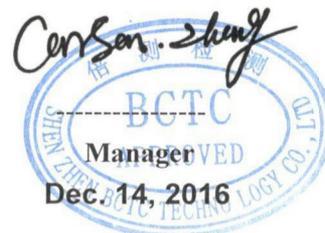


Certificate of Compliance

Certificate Number: BCTC- FY161206420 C

- Applicant** : **Shenzhen Touch Think Intelligence Co.,Ltd.**
No.201-1, the fourth building, Xinjianxing industrial park, sunshine industrial park, xili town, Nanshan district, Shenzhen City, Guangdong Province, China.
- Manufacturer** : **Shenzhen Touch Think Intelligence Co.,Ltd.**
No.201-1, the fourth building, Xinjianxing industrial park, sunshine industrial park, xili town, Nanshan district, Shenzhen City, Guangdong Province, China.
- Product** : **Touch the computer-integrated**
- M/N** : **TPC150**
TPC707A, TPC101, TPC104A, TPC1217A, TPC1217B, TPC1217C, TPC1507A, TPC1507B, TPC1507C, TPC1707A, TPC1707B, TPC1707C, TPC1907A, TPC1907B, TPC1907C, TPC1917A, TPC1917B, TPC1917C, TPC2157A, TPC2157B, TPC2157C, TPC2207A, TPC2207B, TPC2207C, TPC2367A, TPC2367B, TPC2367C, TPC2407A, TPC2407B, TPC2407C
- Trademark** : 
- Test Standard** : **EN 55032:2015**
EN 61000-3-2:2014, EN 61000-3-3:2013
EN 55024:2010+A1:2015
EN 61000-4-2:2009, EN 61000-4-3: 2006+A1:2008+A2:2010
EN 61000-4-4:2012, EN 61000-4-5:2014
EN 61000-4-6:2014, EN 61000-4-8:2010, EN 61000-4-11:2004

The EUT described above has been tested by us with the listed standards and found in compliance with the council EMC directive 2014/30/EU. It is possible to use CE marking to demonstrate the compliance with this EMC Directive. It is only valid in connection with the test report number: BCTC- FY161206420 E.



This certificate of conformity is based on a single evaluation of the submitted sample(s) of the above mentioned product. It does not imply an assessment of the whole product and relevant. Directives have to be observed.

Tel: 400-788-9558 0755-33019988
Http://www.bctc-lab.com Http://www.bctc-lab.com.cn



CERTIFICATE OF CONFORMITY

No. : HX1812046595

Applicant : Shenzhen Touch Think Intelligence Co., Ltd.

Address : No. 201-3, Building 4th, Xinjianxing Industrial Park, Sunshine Industrial Park, Xili Town, Nanshan District, Shenzhen City, Guangdong Province, China

Manufacturer : Shenzhen Touch Think Intelligence Co., Ltd.

Address : No. 201-3, Building 4th, Xinjianxing Industrial Park, Sunshine Industrial Park, Xili Town, Nanshan District, Shenzhen City, Guangdong Province, China

Product : Touchscreen Monitor

Model(s) : TPC1017, TPC1017A, TPC1017A-01, TPC1017A-02, TPC1017A-03, TPC1017A-04, TPC1017A-05, TPC1017C, TPC1017C-01, TPC1017C-02, TPC1017C-03, TPC1017C-04, TPC1017C-05

Trademark : N/A

Test Standard(s) : EN 55032: 2015;
EN 61000-3-2: 2014;
EN 61000-3-3: 2013;
EN 55024: 2010 + A1: 2015.

The EUT described above has been tested by us with the listed standards and found in compliance with the Council EMC Directive 2014/30/EU. It is possible to use CE marking to demonstrate the compliance with the EMC Directive.

The certificate applies to the tested sample above mentioned only and shall not imply an assessment of the whole production. It is only valid in connection with the test report number: HX1812046596.



Dec. 27, 2018

Shenzhen HX Detect Certification Co., Ltd.

8/F, Haoyunlai Building B, Baomin 2th Road, Xixiang Street, Baoan District, Shenzhen, China

HOTLINE:0755-29116082 Email: huaxunpc@163.com [Http://www.hx-lab.com](http://www.hx-lab.com)

EMC Test Report

Application No. : HX1812046595
Applicant : Shenzhen Touch Think Intelligence Co., Ltd.
Equipment Under Test (EUT)
EUT Name : Touchscreen Monitor
Model No. : TPC1017
Serial No. : See Page 4
Brand Name : N/A
Receipt Date : 2018-12-20
Test Date : 2018-12-20 to 2018-12-27
Issue Date : 2018-12-27
Standards : EN 55032: 2015;
EN 61000-3-2: 2014;
EN 61000-3-3: 2013;
EN 55024: 2010 + A1: 2015.
Conclusions : **PASS**

In the configuration tested, the EUT complied with the standards specified above. The EUT technically complies with the 2014/30/EU directive requirements

Test/Witness Engineer

: Yong Chen
Dec. 27, 2018

Approved & Authorized

: Jie Zhang
Dec. 27, 2018



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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1. General Information

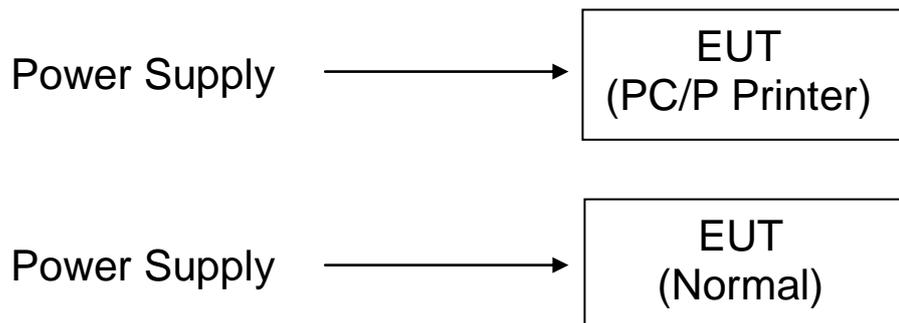
1.1. Client Information

Applicant	:	Shenzhen Touch Think Intelligence Co., Ltd.
Address	:	No. 201-3, Building 4th, Xinjianxing Industrial Park, Sunshine Industrial Park, Xili Town, Nanshan District, Shenzhen City, Guangdong Province, China
Manufacturer	:	Shenzhen Touch Think Intelligence Co., Ltd.
Address	:	No. 201-3, Building 4th, Xinjianxing Industrial Park, Sunshine Industrial Park, Xili Town, Nanshan District, Shenzhen City, Guangdong Province, China

1.2. General Description of EUT (Equipment Under Test)

EUT Name	:	Touchscreen Monitor
Model No.	:	TPC1017
Serial No.	:	TPC1017A, TPC1017A-01, TPC1017A-02, TPC1017A-03, TPC1017A-04, TPC1017A-05, TPC1017C, TPC1017C-01, TPC1017C-02, TPC1017C-03, TPC1017C-04, TPC1017C-05
Brand Name	:	N/A
Power Supply	:	DC12.0V, 4A
Remark: All above models are identical in schematic, structure and critical components except for only different appearance; therefore, EMC testing was performed withTPC1017only.		

1.3. Block Diagram Showing The Configuration of System Tested



1.4. Description of Support Units

The EUT has been tested as an independent unit.

1.5. Performance Criterion

Criterion A: The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a

performance level specified by the manufacturer when the equipment is used as intended.

Criterion B: After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended.

Criterion C: Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.

1.6. Test Facility

The testing report were performed by the Shenzhen HX Detect Certification Co., Ltd., in their facilities located at 8/F, Haoyunlai Building B, Baomin 2th Road, Xixiang Street, Baoan District, Shenzhen, China.

2. TEST Results Summary

EMISSION		
Description of test items	Standards	Results
Conducted disturbance at mains terminals	EN 55032: 2015	Pass
Radiated Disturbance	EN 55032: 2015	Pass
Harmonic current emissions	EN 61000-3-2: 2014	Pass
Voltage fluctuation and flicker	EN 61000-3-3: 2013	Pass
IMMUNITY		
Description of test items	Standards	Results
Electrostatic Discharge (ESD)	EN 61000-4-2: 2009	Pass
Radio-frequency, Continuous radiated disturbance	EN 61000-4-3: 2006+A1: 2008 +A2: 2010	Pass
EFT/B Immunity	EN 61000-4-4: 2012	Pass
Surge Immunity	EN 61000-4-5: 2014	Pass
Conducted RF Immunity	EN 61000-4-6: 2014	Pass
Power frequency magnetic field	EN 61000-4-8: 2010	N/A
Voltage dips, >95% reduction	EN 61000-4-11: 2004	Pass
Voltage dips, 30% reduction		
Voltage interruptions		
Note: N/A is an abbreviation for Not Applicable.		

3. Test Equipment Used

3.1. Test Equipment Used to Measure Conducted Emission					
No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
HX-EMC001	EMI Test Receiver	Rohde & Schwarz	ESCS30	Jan.02, 2018	1 Year
HX-EMC002	AMN	Rohde & Schwarz	ENV216	Jan.02, 2018	1 Year
HX-EMC003	AMN	SCHWARZBECK	NNBL 8226	Jan.02, 2018	1 Year
3.2. Test Equipment Used to Measure Radiated Emission					
No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
HX-EMC004	EMI Test Receiver	Rohde & Schwarz	ESI26	Jan.02, 2018	1 Year
HX-EMC005	Bilog Antenna	SCHWARZBECK	VULB9163	Jan.02, 2018	1 Year
HX-EMC006	Positioning Controller	C&C	CC-C-1F	N/A	N/A
3.3. Test Equipment Used to Measure Harmonic Current/ Voltage Fluctuation and Flicker					
No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
HX-EMC007	Harmonic Flicker Test System	CI	5001ix-CTS-400	Jan.02, 2018	1 Year
3.4. Test Equipment Used to Measure Electrostatic Discharge Immunity					
No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
HX-EMC008	ESD Tester	TESEQ	NSG437	Jan.02, 2018	1 Year
3.5. Test Equipment Used to Measure Conducted Immunity					
No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
HX-EMC009	RF Generator	FRANKONIA	CIT-10/75	Jan.02, 2018	1 Year
HX-EMC010	Attenuator	FRANKONIA	59-6-33	Jan.02, 2018	1 Year
HX-EMC011	M-CDN	LUTHI	M2/M3	Jan.02, 2018	1 Year
HX-EMC012	CDN	LUTHI	AF2	Jan.02, 2018	1 Year
HX-EMC013	EM Injection Clamp	LUTHI	EM101	Jan.02, 2018	1 Year
3.6. Test Equipment Used to Measure Radio Frequency Electromagnetic Fields Immunity					

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
HX-EMC014	Signal Generator	Rohde & Schwarz	SMT03	Jan.02, 2018	1 Year
HX-EMC015	Power Meter	Rohde & Schwarz	NRVD	Jan.02, 2018	1 Year
HX-EMC016	Voltage Probe	Rohde & Schwarz	URV5-Z2	Jan.02, 2018	1 Year
HX-EMC017	Voltage Probe	Rohde & Schwarz	URV5-Z2	Jan.02, 2018	1 Year
HX-EMC018	Power Amplifier	AR	150W1000	Jan.02, 2018	1 Year
HX-EMC019	Bilog Antenna	Chase	CBL6111C	Jan.02, 2018	1 Year
3.7. Test Equipment Used to Measure Electrical Fast Transient/Burst Immunity					
No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
HX-EMC020	Simulator	EMTEST	UCS500N5	Jan.02, 2018	1 Year
HX-EMC021	Auto-transformer	EMTEST	V4780S2	Jan.02, 2018	1 Year
3.8. Test Equipment Used to Measure Surge Immunity					
No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
HX-EMC022	Simulator	EMTEST	UCS500N5	Jan.02, 2018	1 Year
HX-EMC023	Coupling Clamp	EMTEST	HFK	Jan.02, 2018	1 Year
3.9. Test Equipment Used to Measure Voltage Dips and Interruptions Immunity					
No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
HX-EMC022	Simulator	EMTEST	UCS500N5	Jan.02, 2018	1 Year
HX-EMC023	Coupling Clamp	EMTEST	HFK	Jan.02, 2018	1 Year
3.10. Test Equipment Used to Measure Power frequency Magnetic Field					
No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
HX-EMC026	Power Frequency Magnetic Field Generator	EVERFINE	EMS61000-8	Jan.02, 2018	1 Year

4. Conducted Emission Test

4.1. Test Standard and Limit

4.1.1. Test Standard

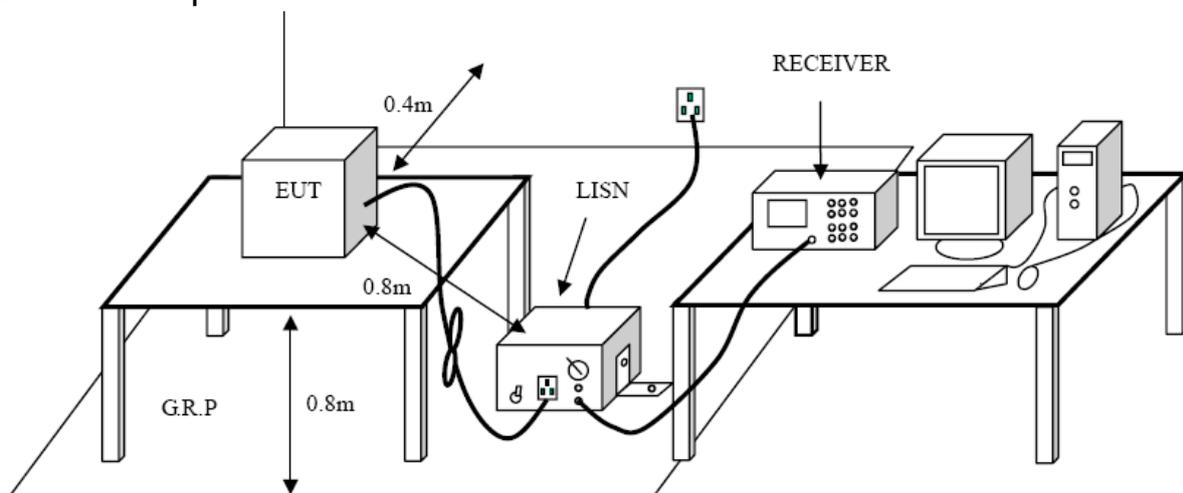
EN 55032: 2015.

4.1.2. Test Limit

Conducted Disturbance Test Limit (Class B)

Frequency	Maximum RF Line Voltage (Db μ V)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

4.2. Test Setup



4.3. Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50Uh of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

4.4. Test Condition

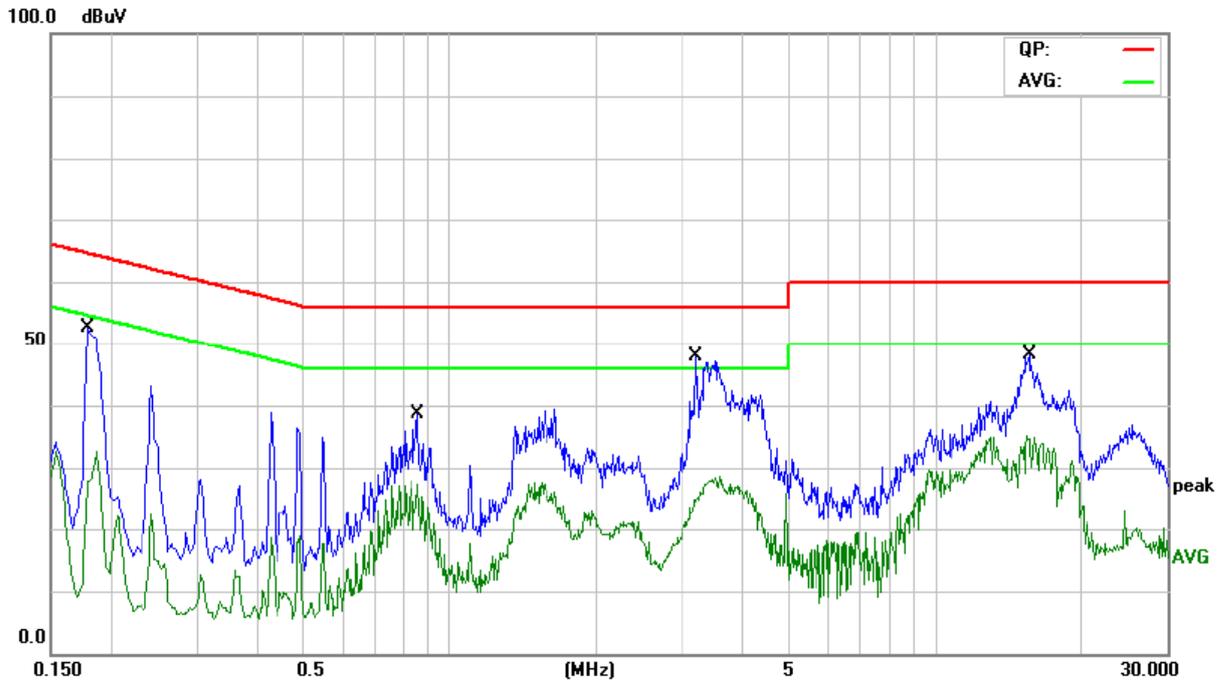
Temperature	:	25 °C
Relative Humidity	:	48 %
Pressure	:	1010 hPa
Test Power	:	AC 230V/50Hz

4.5. Test Data

Please refer to the following pages.

Operating Condition: Normal

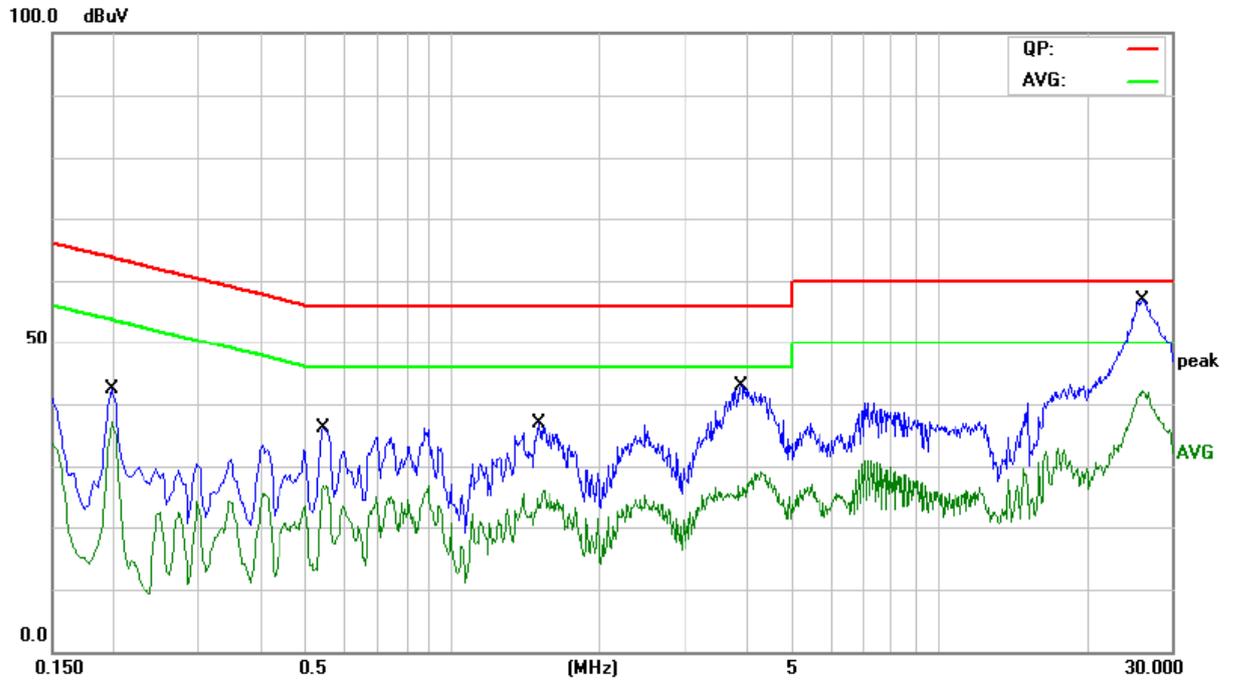
Test Specification: Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1780	41.97	10.57	52.54	64.57	-12.03	QP	
2		0.1787	17.30	10.57	27.87	54.54	-26.67	AVG	
3		0.8540	29.31	9.40	38.71	56.00	-17.29	QP	
4		0.8580	17.02	9.40	26.42	46.00	-19.58	AVG	
5	*	3.2139	38.51	9.39	47.90	56.00	-8.10	QP	
6		3.2139	15.33	9.39	24.72	46.00	-21.28	AVG	
7		15.5580	38.07	10.03	48.10	60.00	-11.90	QP	
8		15.7540	20.05	10.01	30.06	50.00	-19.94	AVG	

Operating Condition: Normal

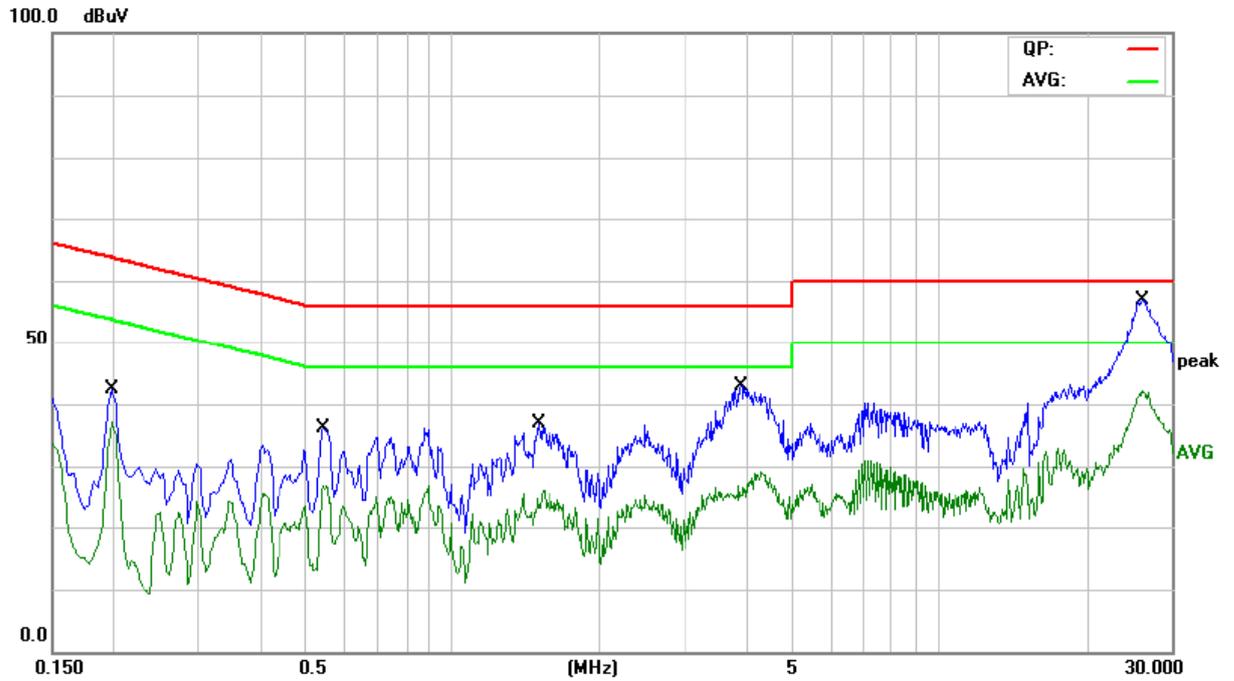
Test Specification: Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1980	30.61	10.34	40.95	63.69	-22.74	QP	
2		0.1980	26.95	10.34	37.29	53.69	-16.40	AVG	
3		0.5420	25.17	9.43	34.60	56.00	-21.40	QP	
4		0.5420	17.93	9.43	27.36	46.00	-18.64	AVG	
5		1.5020	23.80	9.32	33.12	56.00	-22.88	QP	
6		1.5020	14.37	9.32	23.69	46.00	-22.31	AVG	
7		3.9060	23.66	9.41	33.07	56.00	-22.93	QP	
8		3.9060	14.86	9.41	24.27	46.00	-21.73	AVG	
9	*	26.1940	40.96	10.07	51.03	60.00	-8.97	QP	
10		26.1940	29.65	10.07	39.72	50.00	-10.28	AVG	

Operating Condition: Normal (PC)

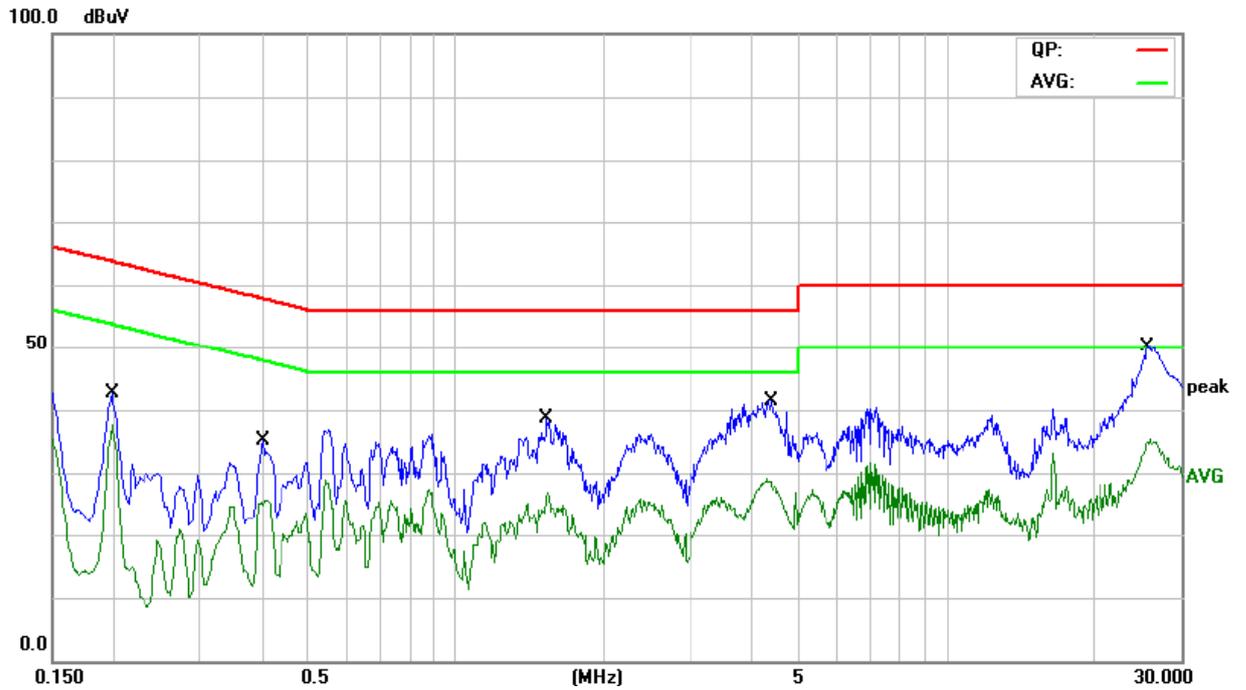
Test Specification: Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1980	30.61	10.34	40.95	63.69	-22.74	QP	
2		0.1980	26.95	10.34	37.29	53.69	-16.40	AVG	
3		0.5420	25.17	9.43	34.60	56.00	-21.40	QP	
4		0.5420	17.93	9.43	27.36	46.00	-18.64	AVG	
5		1.5020	23.80	9.32	33.12	56.00	-22.88	QP	
6		1.5020	14.37	9.32	23.69	46.00	-22.31	AVG	
7		3.9060	23.66	9.41	33.07	56.00	-22.93	QP	
8		3.9060	14.86	9.41	24.27	46.00	-21.73	AVG	
9	*	26.1940	40.96	10.07	51.03	60.00	-8.97	QP	
10		26.1940	29.65	10.07	39.72	50.00	-10.28	AVG	

Operating Condition: Normal (PC)

Test Specification: Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1980	30.23	10.34	40.57	63.69	-23.12	QP	
2	*	0.1980	26.90	10.34	37.24	53.69	-16.45	AVG	
3		0.4020	22.10	9.62	31.72	57.81	-26.09	QP	
4		0.4020	15.30	9.62	24.92	47.81	-22.89	AVG	
5		1.5260	23.74	9.32	33.06	56.00	-22.94	QP	
6		1.5260	17.20	9.32	26.52	46.00	-19.48	AVG	
7		4.3940	25.52	9.42	34.94	56.00	-21.06	QP	
8		4.3940	18.36	9.42	27.78	46.00	-18.22	AVG	
9		25.7060	32.90	10.10	43.00	60.00	-17.00	QP	
10		25.7060	22.14	10.10	32.24	50.00	-17.76	AVG	

5. Radiated Emission Test

5.1 Test Standard and Limit

5.1.1. Test Standard

EN 55032: 2015

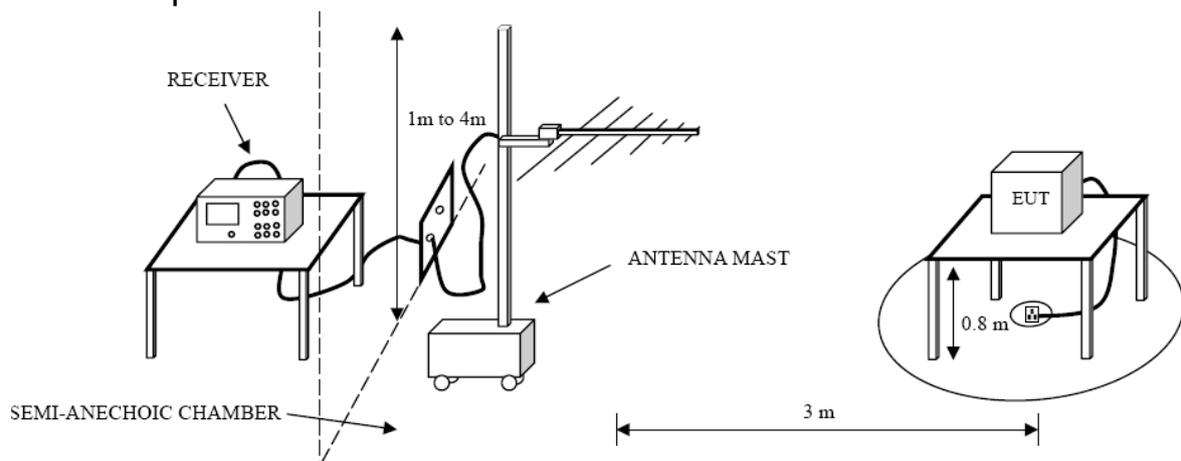
5.1.2. Test Limit

Radiated Disturbance Test Limit (Class B)

Frequency	Limit (Db μ V/m)
	Quasi-peak Level
30MHz~230MHz	40
230MHz~1000MHz	47

Remark: 1. The lower limit shall apply at the transition frequency.
2. The test distance is 3m.

5.2 Test Setup



5.3 Test Procedure

The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m. The table was rotated 360 degrees to determine the position of the highest radiation.

The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

The initial step in collecting radiated emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range.

If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.

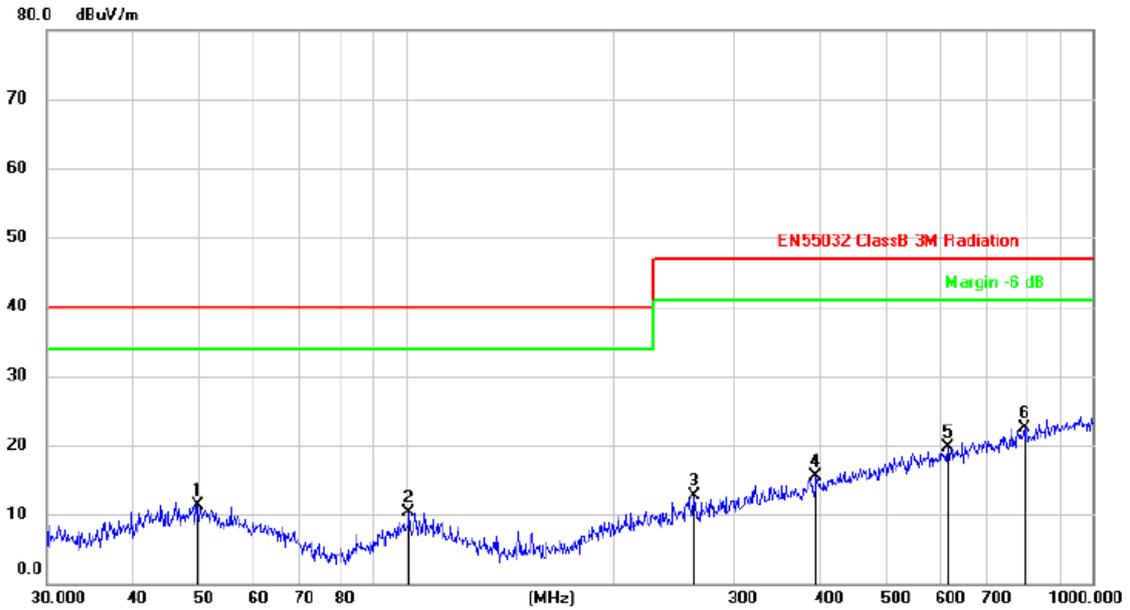
5.4 Test Condition

Temperature	:	25 °C
Relative Humidity	:	48 %
Pressure	:	1010 hPa
Test Power	:	AC 230V/50Hz

5.5 Test Data

Please refer to the following pages.

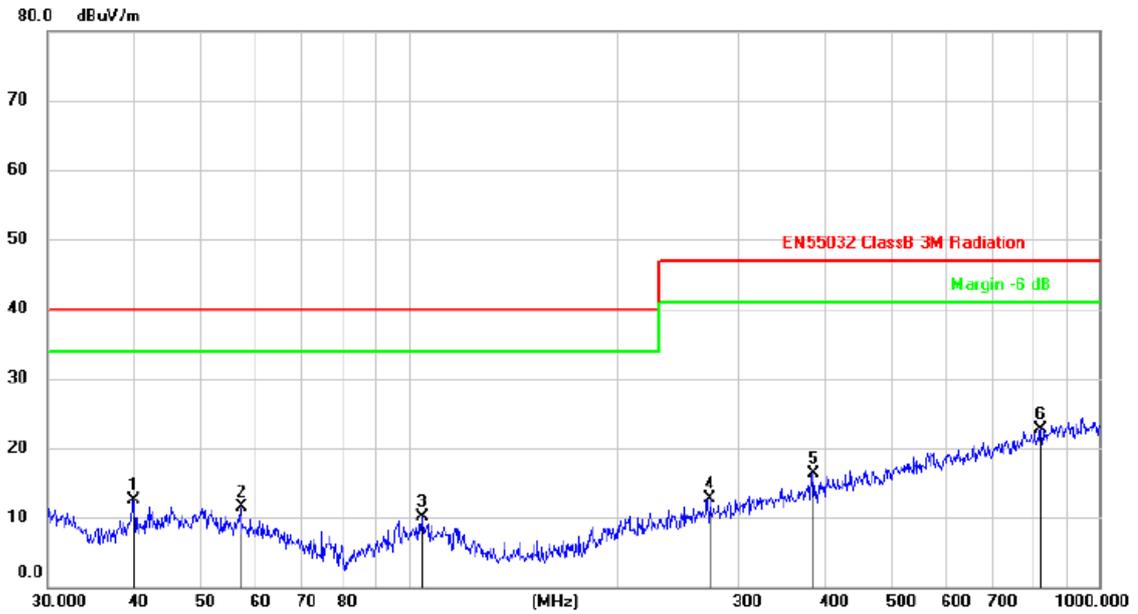
Operating Condition: Normal
Test Specification: Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dBuV/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		49.7318	23.98	-12.66	11.32	40.00	-28.68	QP
2		101.0566	24.68	-14.44	10.24	40.00	-29.76	QP
3		263.4673	24.38	-11.65	12.73	47.00	-34.27	QP
4		395.8745	24.15	-8.63	15.52	47.00	-31.48	QP
5		616.0732	24.77	-5.16	19.61	47.00	-27.39	QP
6	*	796.0013	25.28	-2.86	22.42	47.00	-24.58	QP

Operating Condition: Normal

Test Specification: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB	
1		39.8656	26.23	-13.68	12.55	40.00	-27.45	QP
2		57.0279	25.26	-13.71	11.55	40.00	-28.45	QP
3		104.6667	24.54	-14.44	10.10	40.00	-29.90	QP
4		273.8389	24.00	-11.35	12.65	47.00	-34.35	QP
5		386.2662	25.07	-8.83	16.24	47.00	-30.76	QP
6	*	824.4375	25.09	-2.43	22.66	47.00	-24.34	QP

6. Harmonic Current Emission Test

6.1 Test Standard and Limit

6.1.1. Test Standard

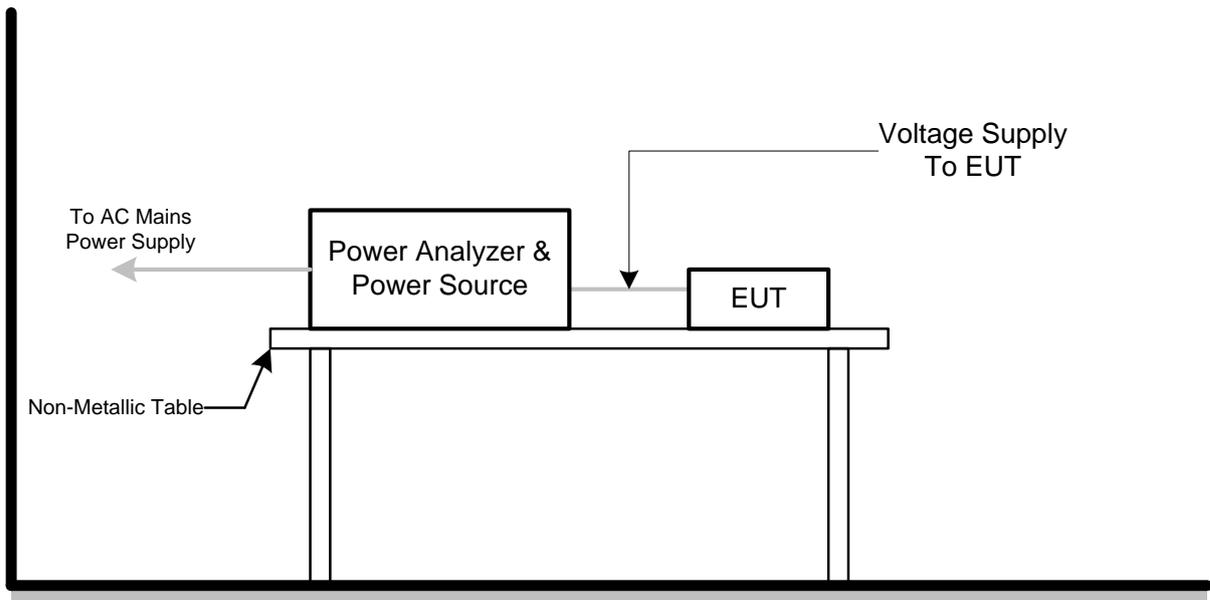
EN 61000-3-2: 2014

6.1.2. Limits

Harmonic Current Test Limit (Class A)

Harmonic order (n)	Maximum permissible harmonic current (A)
Odd harmonics	
3	2.30
5	1.14
7	0.77
9	0.40
11	0.33
13	0.21
$15 \leq n \leq 39$	$0.15 \times 15/n$
Even harmonics	
2	1.08
4	0.43
6	0.30
$8 \leq n \leq 40$	$0.23 \times 8/n$

6.2 Test Setup



6.3 Test Procedure

The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the maximum harmonic components under normal operating conditions.

The classification of EUT is according to section 5 of EN 61000-3-2: 2014. The EUT is classified as follows:

Class A: Balanced three-phase equipment, Household appliances excluding equipment as Class D, Tools excluding portable tools, Dimmers for incandescent lamps, audio equipment, equipment not specified in one of the three other classes.

Class B: Portable tools. Arc welding equipment which is not professional equipment.

Class C: Lighting equipment.

Class D: Equipment having a specified power less than or equal to 600 W of the following types: Personal computers and personal computer monitors and television receivers.

6.4 Test Condition

Temperature	:	25 °C
Relative Humidity	:	48 %
Pressure	:	1010 hPa
Test Power	:	AC 230V/50Hz

6.5 Test Data

Harmonics – Class-A per Ed. 3.0 (2014) (Run time)

Test category: Class-A per Ed. 3.0 (2014) (European limits)

Test Margin: 100

Tested by: HX

Start time: 14:12:27

End time: 14:22:48

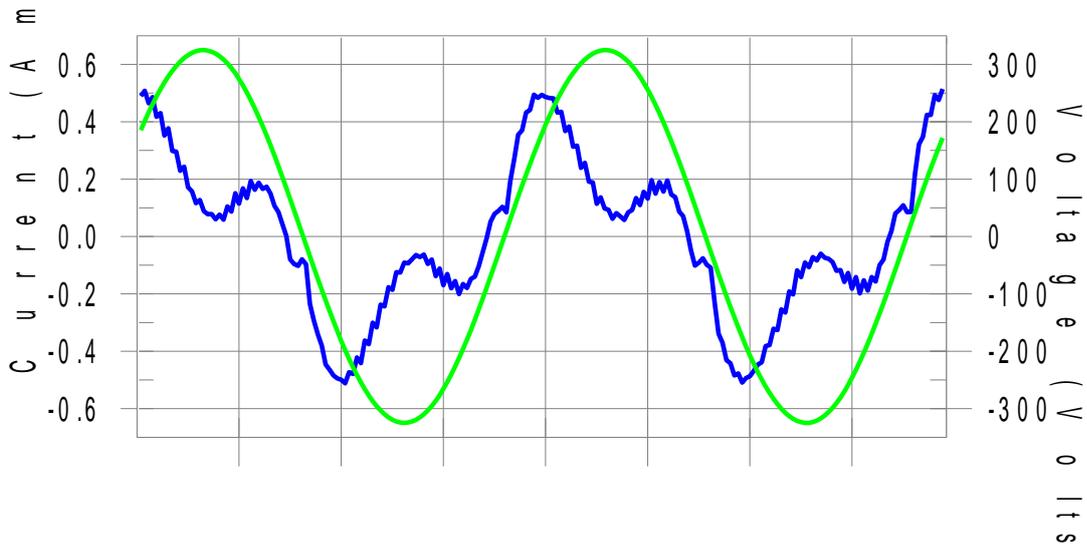
Test duration (min): 10

Data file name: H-000268.cts_data

Test Result: Pass

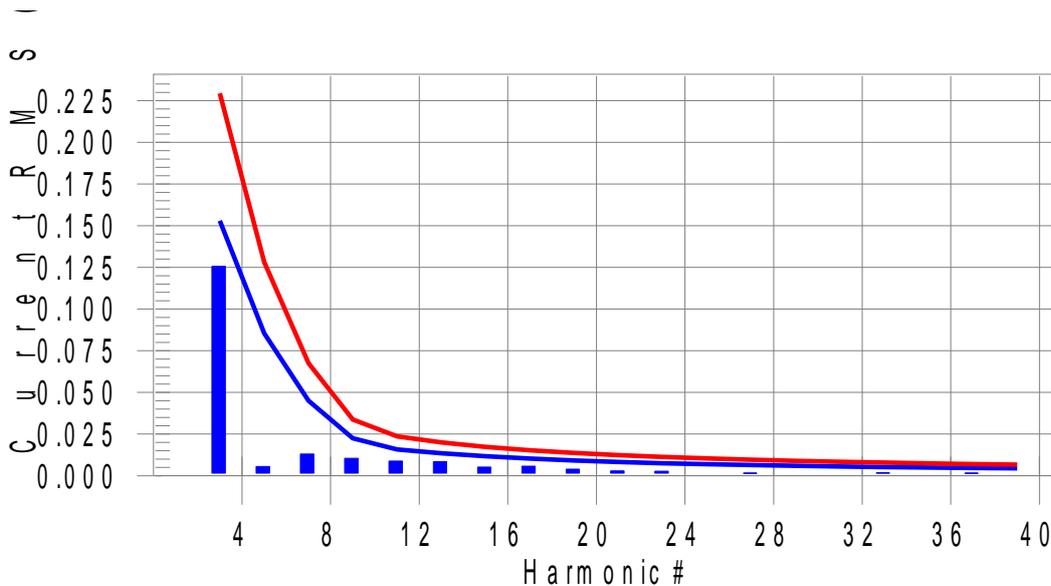
Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass **Worst harmonic was #17 with 10.34% of the limit.**

Current Test Result Summary (Run time)

Test category: Class-A per Ed. 3.0 (2014) (European limits)
 Test Margin: 100 Tested by: HX
 Start time: 14:12:27 End time: 14:22:48
 Test duration (min): 10 Data file name: H-000268.cts_data

Test Result: Pass Source qualification: Normal
 THC(A): 0.06 I-THD(%): 196.05 POHC(A): 0.016 POHC Limit(A): 0.283
 Highest parameter values during test:
 V_RMS (Volts): 229.94 Frequency(Hz): 50.00
 I_Peak (Amps): 0.351 I_RMS (Amps): 0.066
 I_Fund (Amps): 0.030 Crest Factor: 5.467
 Power (Watts): 5.2 Power Factor: 0.364

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	0.0	0.001	1.620	0.06	Pass
3	0.022	2.300	1.0	0.023	3.450	0.67	Pass
4	0.001	0.430	0.0	0.001	0.645	0.14	Pass
5	0.022	1.140	1.9	0.022	1.710	1.27	Pass
6	0.000	0.300	0.0	0.001	0.450	0.11	Pass
7	0.021	0.770	2.7	0.021	1.155	1.83	Pass
8	0.000	0.230	0.0	0.001	0.345	0.15	Pass
9	0.020	0.400	4.9	0.020	0.600	3.33	Pass
10	0.000	0.184	0.0	0.000	0.276	0.17	Pass
11	0.018	0.330	5.6	0.019	0.495	3.77	Pass
12	0.000	0.153	0.0	0.001	0.230	0.24	Pass
13	0.017	0.210	8.1	0.017	0.315	5.48	Pass
14	0.000	0.131	0.0	0.000	0.197	0.24	Pass
15	0.015	0.150	10.2	0.016	0.225	6.97	Pass
16	0.000	0.115	0.0	0.000	0.173	0.25	Pass
17	0.014	0.132	10.3	0.014	0.199	7.07	Pass
18	0.000	0.102	0.0	0.000	0.153	0.29	Pass
19	0.012	0.118	10.1	0.012	0.178	6.94	Pass
20	0.000	0.092	0.0	0.000	0.138	0.30	Pass
21	0.010	0.107	9.5	0.011	0.161	6.65	Pass
22	0.000	0.084	0.0	0.000	0.125	0.31	Pass
23	0.009	0.098	8.8	0.009	0.147	6.19	Pass
24	0.000	0.077	0.0	0.000	0.115	0.31	Pass
25	0.007	0.090	7.8	0.008	0.135	5.63	Pass
26	0.000	0.071	0.0	0.000	0.106	0.34	Pass
27	0.006	0.083	6.7	0.006	0.125	4.96	Pass
28	0.000	0.066	0.0	0.000	0.099	0.40	Pass
29	0.004	0.078	5.5	0.005	0.116	4.35	Pass
30	0.000	0.061	0.0	0.000	0.092	0.35	Pass
31	0.003	0.073	0.0	0.004	0.109	3.73	Pass
32	0.000	0.058	0.0	0.000	0.086	0.40	Pass
33	0.003	0.068	0.0	0.003	0.102	3.28	Pass
34	0.000	0.054	0.0	0.000	0.081	0.42	Pass
35	0.002	0.064	0.0	0.003	0.096	3.03	Pass
36	0.000	0.051	0.0	0.000	0.077	0.41	Pass
37	0.002	0.061	0.0	0.003	0.091	3.01	Pass
38	0.000	0.048	0.0	0.000	0.073	0.46	Pass
39	0.002	0.058	0.0	0.003	0.087	3.07	Pass
40	0.000	0.046	0.0	0.000	0.069	0.48	Pass

Voltage Source Verification Data (Run time)

Test category: Class-A per Ed. 3.0 (2014) (European limits)
 Test Margin: 100 Tested by: HX
 Start time: 14:12:27 End time: 14:22:48
 Test duration (min): 10 Data file name: H-000268.cts_data

Test Result: Pass Source qualification: Normal

Highest parameter values during test:

V_RMS (Volts):	229.94	Frequency(Hz):	50.00
I_Peak (Amps):	0.351	I_RMS (Amps):	0.066
I_Fund (Amps):	0.030	Crest Factor:	5.467
Power (Watts):	5.2	Power Factor:	0.364

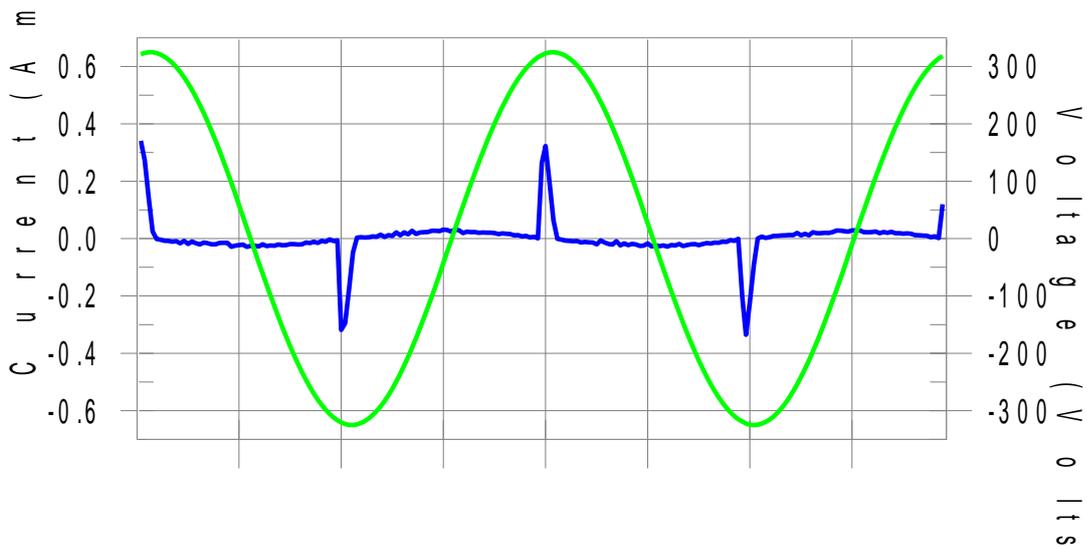
Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.071	0.460	15.51	OK
3	0.546	2.069	26.39	OK
4	0.068	0.460	14.75	OK
5	0.052	0.920	5.64	OK
6	0.024	0.460	5.16	OK
7	0.032	0.690	4.69	OK
8	0.009	0.460	1.95	OK
9	0.026	0.460	5.55	OK
10	0.014	0.460	3.13	OK
11	0.019	0.230	8.38	OK
12	0.011	0.230	4.95	OK
13	0.019	0.230	8.40	OK
14	0.006	0.230	2.45	OK
15	0.010	0.230	4.38	OK
16	0.010	0.230	4.19	OK
17	0.015	0.230	6.39	OK
18	0.010	0.230	4.52	OK
19	0.020	0.230	8.49	OK
20	0.011	0.230	4.92	OK
21	0.015	0.230	6.67	OK
22	0.004	0.230	1.59	OK
23	0.013	0.230	5.87	OK
24	0.003	0.230	1.50	OK
25	0.010	0.230	4.42	OK
26	0.003	0.230	1.36	OK
27	0.009	0.230	4.09	OK
28	0.004	0.230	1.62	OK
29	0.009	0.230	3.94	OK
30	0.003	0.230	1.24	OK
31	0.007	0.230	3.07	OK
32	0.003	0.230	1.43	OK
33	0.006	0.230	2.82	OK
34	0.003	0.230	1.33	OK
35	0.006	0.230	2.52	OK
36	0.003	0.230	1.24	OK
37	0.004	0.230	1.54	OK
38	0.003	0.230	1.27	OK
39	0.006	0.230	2.62	OK
40	0.005	0.230	2.22	OK

Harmonics – Class-A per Ed. 3.0 (2014)(Run time)

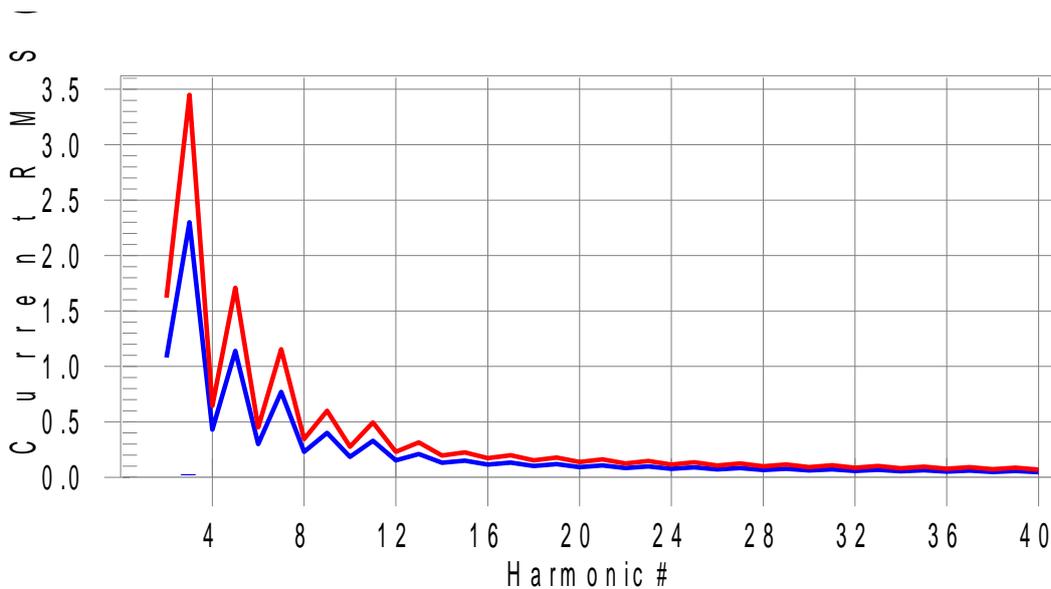
Test category: Class-A per Ed. 3.0 (2014) (European limits)
 Test Margin: 100 Tested by: HX
 Start time: 14:41:42 End time: 14:52:03
 Test duration (min): 10 Data file name: H-000266.cts_data

Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line European Limits



Test result: Pass Worst harmonic was #17 with 10.58% of the limit.

Current Test Result Summary (Run time)

Test category: Class-A per Ed. 3.0 (2014) (European limits)
 Test Margin: 100 Tested by: HX
 Start time: 14:41:42 End time: 14:52:03
 Test duration (min): 20 Data file name: H-000266.cts_data

Test Result: Pass Source qualification: Normal
 THC(A): 0.06 I-THD(%): 195.56 POHC(A): 0.016 POHC Limit(A): 0.283
 Highest parameter values during test:
 V_RMS (Volts): 229.93 Frequency(Hz): 50.00
 I_Peak (Amps): 0.350 I_RMS (Amps): 0.067
 I_Fund (Amps): 0.030 Crest Factor: 5.224
 Power (Watts): 5.4 Power Factor: 0.355

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	0.0	0.001	1.620	0.06	Pass
3	0.023	2.300	1.0	0.024	3.450	0.69	Pass
4	0.001	0.430	0.0	0.001	0.645	0.14	Pass
5	0.022	1.140	2.0	0.022	1.710	1.31	Pass
6	0.000	0.300	0.0	0.000	0.450	0.09	Pass
7	0.021	0.770	2.8	0.022	1.155	1.88	Pass
8	0.000	0.230	0.0	0.000	0.345	0.13	Pass
9	0.020	0.400	5.1	0.020	0.600	3.42	Pass
10	0.000	0.184	0.0	0.000	0.276	0.14	Pass
11	0.019	0.330	5.7	0.019	0.495	3.85	Pass
12	0.000	0.153	0.0	0.000	0.230	0.21	Pass
13	0.017	0.210	8.3	0.018	0.315	5.59	Pass
14	0.000	0.131	0.0	0.000	0.197	0.19	Pass
15	0.016	0.150	10.5	0.016	0.225	7.06	Pass
16	0.000	0.115	0.0	0.000	0.173	0.23	Pass
17	0.014	0.132	10.6	0.014	0.199	7.10	Pass
18	0.000	0.102	0.0	0.000	0.153	0.27	Pass
19	0.012	0.118	10.3	0.012	0.178	7.00	Pass
20	0.000	0.092	0.0	0.000	0.138	0.25	Pass
21	0.010	0.107	9.8	0.011	0.161	6.62	Pass
22	0.000	0.084	0.0	0.000	0.125	0.25	Pass
23	0.009	0.098	9.0	0.009	0.147	6.13	Pass
24	0.000	0.077	0.0	0.000	0.115	0.26	Pass
25	0.007	0.090	8.0	0.007	0.135	5.49	Pass
26	0.000	0.071	0.0	0.000	0.106	0.28	Pass
27	0.006	0.083	6.9	0.006	0.125	4.84	Pass
28	0.000	0.066	0.0	0.000	0.099	0.36	Pass
29	0.005	0.078	0.0	0.005	0.116	4.16	Pass
30	0.000	0.061	0.0	0.000	0.092	0.34	Pass
31	0.004	0.073	0.0	0.004	0.109	3.62	Pass
32	0.000	0.058	0.0	0.000	0.086	0.39	Pass
33	0.003	0.068	0.0	0.003	0.102	3.21	Pass
34	0.000	0.054	0.0	0.000	0.081	0.42	Pass
35	0.003	0.064	0.0	0.003	0.096	3.07	Pass
36	0.000	0.051	0.0	0.000	0.077	0.43	Pass
37	0.003	0.061	0.0	0.003	0.091	3.12	Pass
38	0.000	0.048	0.0	0.000	0.073	0.43	Pass
39	0.003	0.058	0.0	0.003	0.087	3.30	Pass
40	0.000	0.046	0.0	0.000	0.069	0.49	Pass

Voltage Source Verification Data (Run time)

Test category: Class-A per Ed. 3.0 (2014) (European limits)
 Test Margin: 100 Tested by: HX
 Start time: 14:41:42 End time: 14:52:03
 Test duration (min): 10 Data file name: H-000266.cts_data
 Comment: OPT DT/R 1V/2V/4V/8V/16V/1D (Receiver)
 Customer: OPT

Test Result: Pass Source qualification: Normal

Highest parameter values during test:

Voltage (Vrms): 229.93	Frequency(Hz): 50.00
I_Peak (Amps): 0.350	I_RMS (Amps): 0.067
I_Fund (Amps): 0.030	Crest Factor: 5.224
Power (Watts): 5.4	Power Factor: 0.355

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.070	0.460	15.29	OK
3	0.546	2.069	26.39	OK
4	0.068	0.460	14.70	OK
5	0.053	0.920	5.71	OK
6	0.023	0.460	5.01	OK
7	0.034	0.690	4.99	OK
8	0.009	0.460	1.92	OK
9	0.028	0.460	6.10	OK
10	0.014	0.460	3.11	OK
11	0.021	0.230	9.06	OK
12	0.012	0.230	5.28	OK
13	0.021	0.230	9.11	OK
14	0.006	0.230	2.74	OK
15	0.011	0.230	4.68	OK
16	0.010	0.230	4.30	OK
17	0.016	0.230	6.95	OK
18	0.011	0.230	4.91	OK
19	0.020	0.230	8.68	OK
20	0.012	0.230	5.06	OK
21	0.015	0.230	6.70	OK
22	0.004	0.230	1.57	OK
23	0.014	0.230	6.24	OK
24	0.004	0.230	1.57	OK
25	0.011	0.230	4.69	OK
26	0.003	0.230	1.45	OK
27	0.010	0.230	4.40	OK
28	0.004	0.230	1.69	OK
29	0.009	0.230	3.89	OK
30	0.003	0.230	1.40	OK
31	0.007	0.230	2.92	OK
32	0.003	0.230	1.42	OK
33	0.006	0.230	2.65	OK
34	0.003	0.230	1.42	OK
35	0.005	0.230	2.38	OK
36	0.003	0.230	1.10	OK
37	0.005	0.230	2.13	OK
38	0.003	0.230	1.30	OK
39	0.006	0.230	2.81	OK
40	0.005	0.230	2.37	OK

7. Voltage Fluctuation and Flicker Test

7.1 Test Standard and Limit

7.1.1. Test Standard

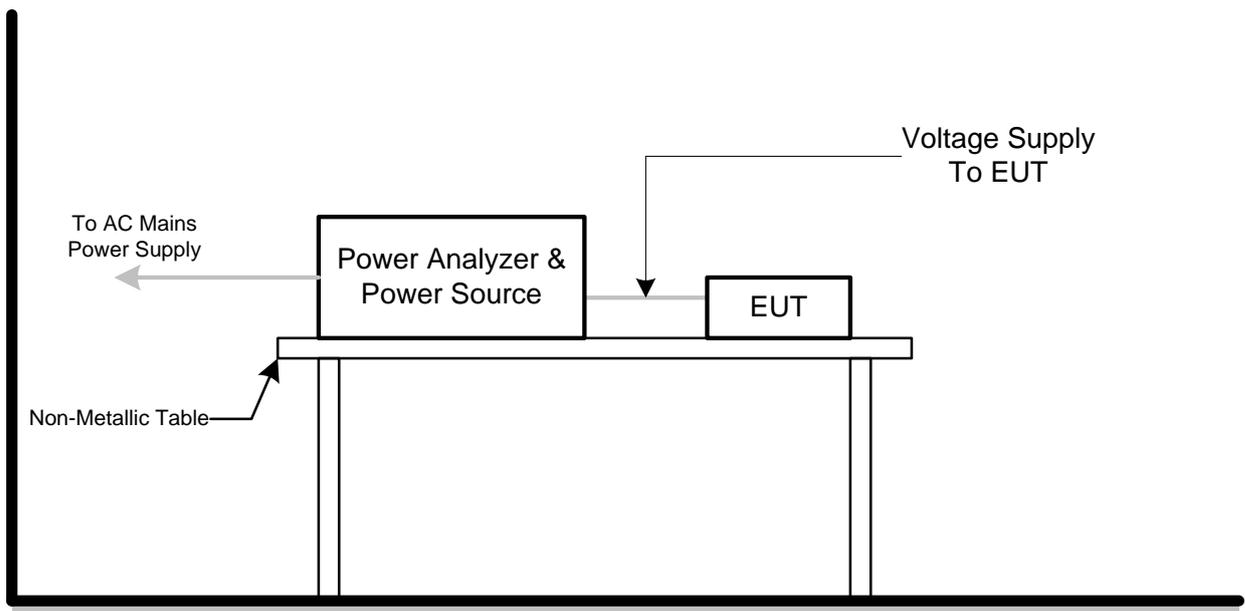
EN 61000-3-3: 2013

7.1.2. Limit

Voltage Fluctuation and Flicker Test Limit

Test Items	Limits
Pst	1.0
dc	3.3%
dmax	4.0%
dt	Not exceed 3.3% for 500ms

7.2 Test Setup



7.3 Test Procedure

7.3.1 Harmonic Current Test

Test was performed according to the procedures specified in Clause 5.0 of IEC555-2 and/or Sub-clause 6.2 of IEC/EN 61000-3-2 depend on which standard adopted for compliance measurement.

7.3.2 Fluctuation and Flickers Test:

Tests was performed according to the Test Conditions/Assessment of Voltage Fluctuations specified in Clause 5.0/6.0 of IEC555-3 and/or Clause 6.0/4.0 of IEC/EN 61000-3-3 depend on which standard adopted for compliance measurement.

All types of harmonic current and/or voltage fluctuation in this report are assessed by direct measurement using flicker-meter.

For the actual test configuration, please refer to the related Item –Block Diagram of system tested (please refer to 1.3).

7.3 Test Condition

Temperature	:	25 °C
Relative Humidity	:	48 %
Pressure	:	1010 hPa
Test Power	:	AC 230V/50Hz

7.4 Test Data

Please refer to the following pages.

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

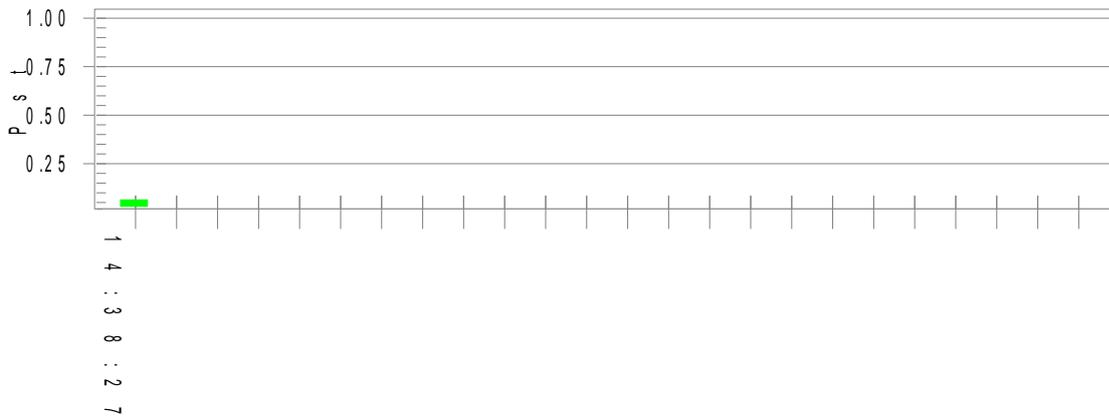
Test category: All parameters (European limits)
Test Margin: 100 **Tested by: HX**
Start time: 14:28:07 **End time: 14:38:28**
Test duration (min): 10 **Data file name: F-000267.cts_data**

Test Result: Pass

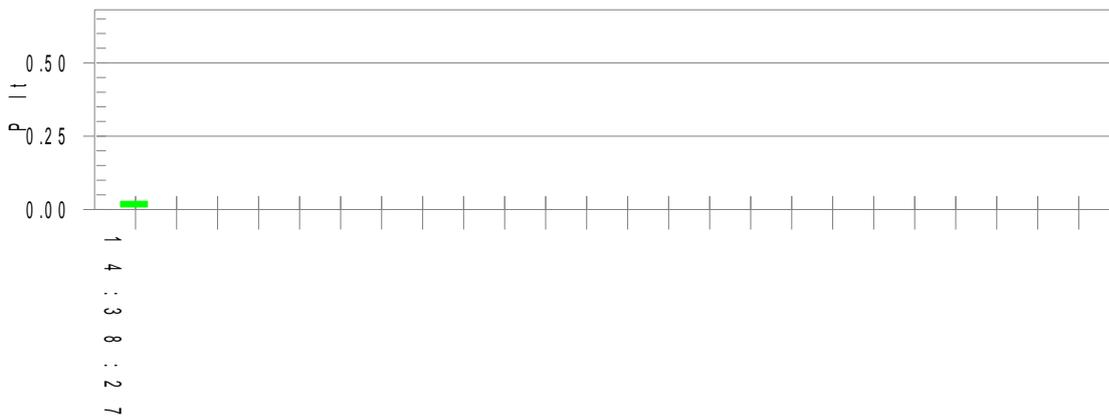
Status: Test Completed

Pst_i and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.91			
Highest dt (%):	0.00	Test limit (%):	3.30	Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.064	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.028	Test limit:	0.650	Pass

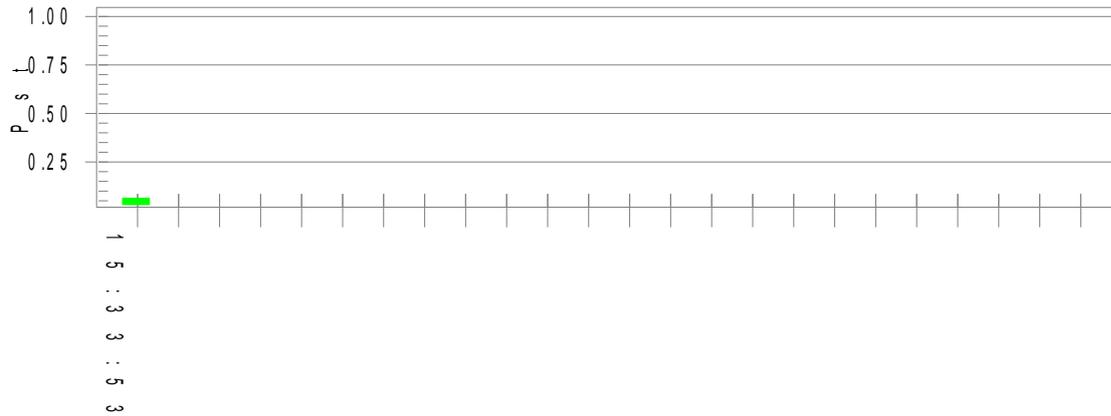
Flicker Test Summary per EN/IEC61000-3-3 (Run time)

Test category: All parameters (European limits)
Test Margin: 100 **Tested by:** HX
Start time: 15:23:33 **End time:** 15:33:54
Test duration (min): 10 **Data file name:** F-000269.cts_data

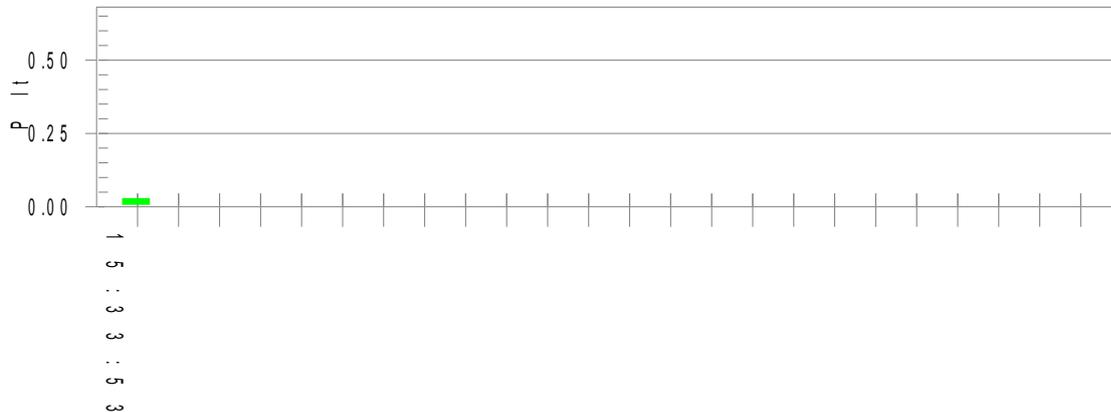
Test Result: Pass **Status:** Test Completed

Pst_i and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.92			
Highest dt (%):	0.00	Test limit (%):	3.30	Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.064	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.028	Test limit:	0.650	Pass

8. Electrostatic Discharge Immunity Test

8.1 Test Requirements

8.1.1 Test Standard

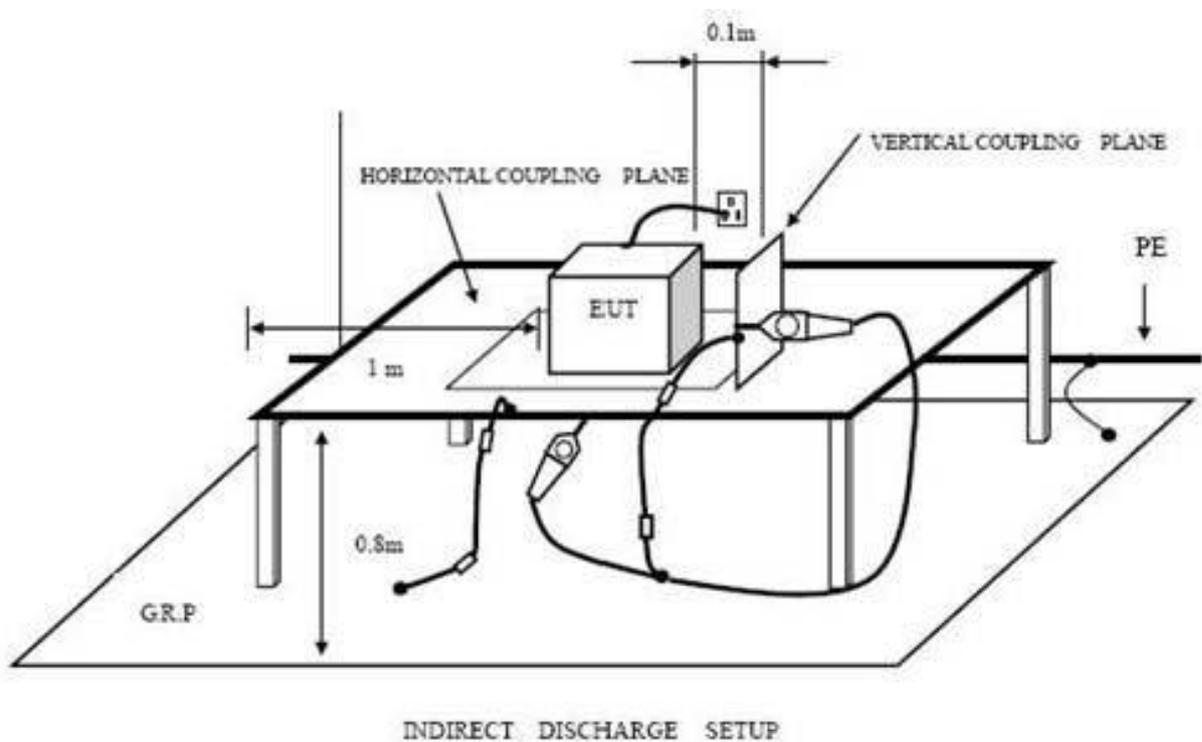
EN 55024: 2010 + A1: 2015 (EN 61000-4-2: 2009)

8.1.2 Test 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

8.1.3 Performance criterion: **B**

8.2 Test Setup



8.3 Test Procedure

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

8.3.2 Contact Discharge:

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

8.3.3 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.

8.3.4 Indirect discharge for vertical coupling plane

At least 10 single discharges (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.

8.4 Test Data

Please refer to the following pages.

Electrostatic Discharge Test Result

EUT	: <u>Touchscreen Monitor</u>	M/N	: <u>TPC1017</u>
Temperature	: <u>22°C</u>	Humidity	: <u>50%</u>
Power supply	: <u>AC230V/50Hz</u>	Test Mode	: <u>Normal</u>
Criterion: B			
Air Discharge: $\pm 8kV$ Contact Discharge: $\pm 4kV$			
For each point positive 10 times and negative 10 times discharge.			
Location	Kind A-Air Discharge C-Contact Discharge	Result	
Nonconductive Enclosure	A	PASS	
Slot of the EUT	A	PASS	
LED	A	PASS	
Port	A	PASS	
Conductive Enclosure	C	PASS	
Screw	C	PASS	
HCP	C	PASS	
VCP of front	C	PASS	
VCP of rear	C	PASS	
VCP of left	C	PASS	
VCP of right	C	PASS	
Remark:			

9. Radiated Electromagnetic Field Immunity Test

9.1 Test Requirements

9.1.1. Test Standard

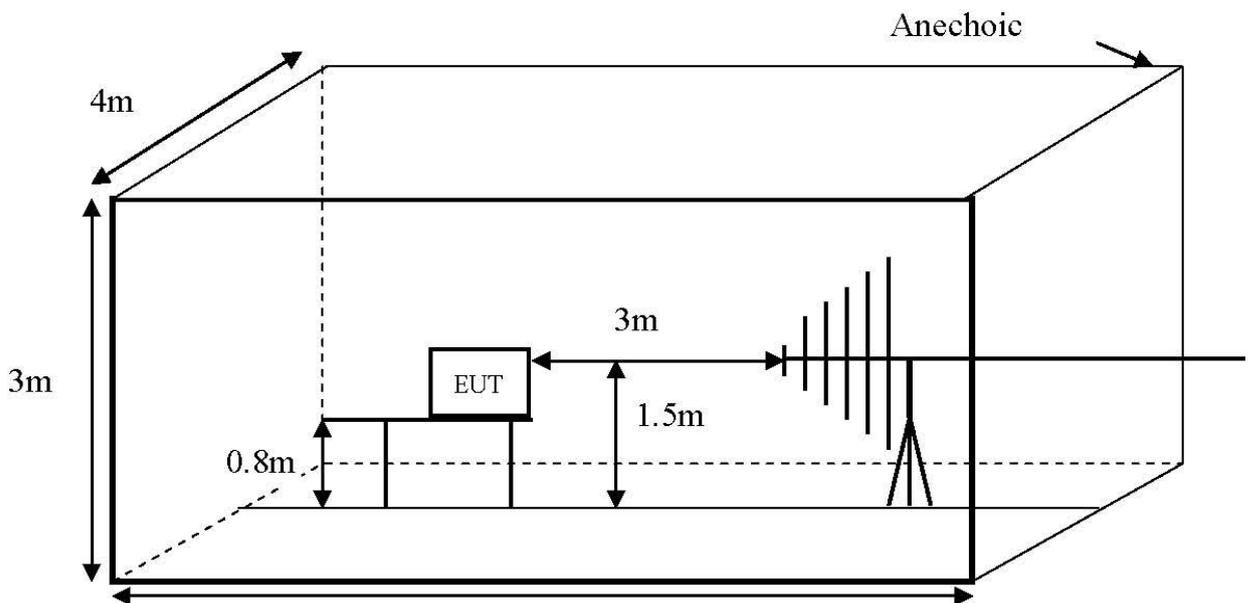
EN 55024: 2010 + A1: 2015 (EN 61000-4-3: 2006 + A1: 2008 + A2: 2010)

9.1.2. Test Level

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

9.1.3. Performance criterion: A

9.1 Test Setup



9.2 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 is 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 camera is used to monitor its screen.

All the scanning conditions are as following:

Condition of Test	Remark
Fielded strength	3V/m (Severity Level 2)
Radiated signal	Modulated
Scanning frequency	80-1000MHz
Sweep time of radiated	0.0015 Decade/s
Dwell time	1 Sec.

9.3 Test Data

Please refer to the following pages.

RF Field Strength Susceptibility Test Results

EUT	: <u>Touchscreen Monitor</u>	M/N	: <u>TPC1017</u>	
Temperature	: <u>22°C</u>	Humidity	: <u>50%</u>	
Power supply	: <u>AC230V/50Hz</u>	Test Mode	: <u>Normal</u>	
Criterion: A				
Modulation: Unmodulated				
Pulse: AM 1KHz 80%				
	Frequency Rang 1		Frequency Rang 2	
	80~1000MHz		/	
	Horizontal	Vertical	Horizontal	Vertical
Front	PASS	PASS	/	/
Right	PASS	PASS	/	/
Rear	PASS	PASS	/	/
Left	PASS	PASS	/	/
Remark:				

10. Electrical Fast Transient/Burst Test

10.1 Test Requirements

10.1.1. Test Standard

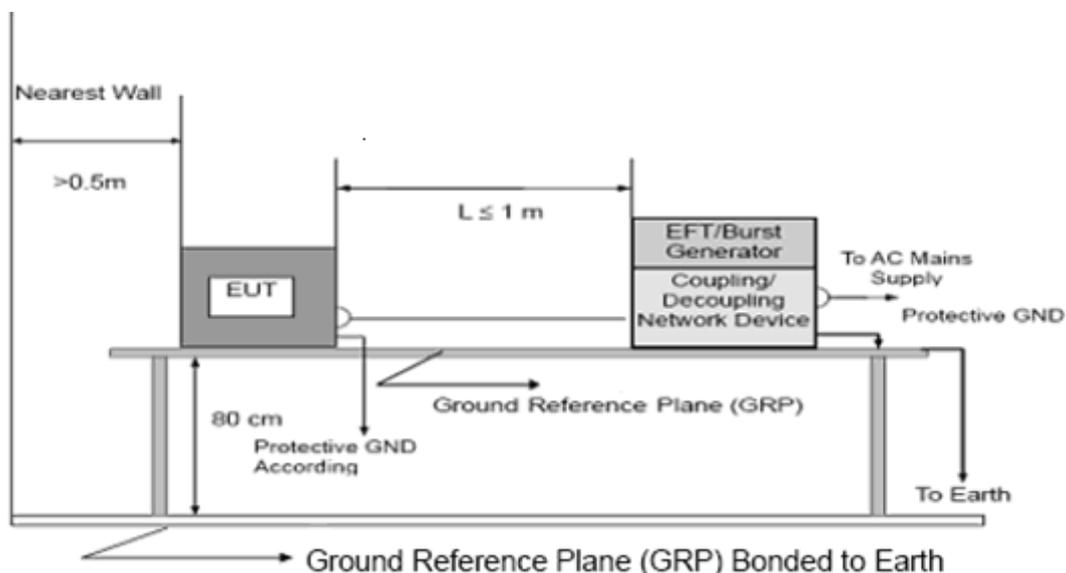
EN 55024: 2010 + A1: 2015 (EN 61000-4-4: 2012)

10.1.2. Level

Open Circuit Output Test Voltage $\pm 10\%$		
Level	On Switching Adapter 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

10.1.3. Performance criterion: B

10.2 Test Setup



10.3 Test Procedure

10.3.1 For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 1 minute.

10.3.2 For signal lines and control lines ports:

A coupling clamp is use to couple the EFT interference signal to the signal and control lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 1 minute.

10.3.3For DC input and DC output power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 1 minute.

10.4 Test Data

Please refer to the following pages.

Electrical Fast Transient/Burst Test Results

EUT : <u>Touchscreen Monitor</u>	M/N : <u>TPC1017</u>		
Temperature : <u>22°C</u>	Humidity : <u>50%</u>		
Power supply : <u>AC230V/50Hz</u>	Test Mode : <u>Normal</u>		
Criterion: B			
Line : <input checked="" type="checkbox"/> AC Mains Coupling : <input checked="" type="checkbox"/> Direct			
Line : <input type="checkbox"/> Signal <input type="checkbox"/> I/O Cable Coupling : <input type="checkbox"/> Capacitive			
Line	Voltage(kV)	Result(+)	Result(-)
L	1.0	Pass	Pass
N	1.0	Pass	Pass
L-N	1.0	Pass	Pass
PE	/	/	/
L-PE	/	/	/
N-PE	/	/	/
L-N-PE	/	/	/

11. Surge Immunity Test

11.1 Test Requirements

11.1.1. Test Standard

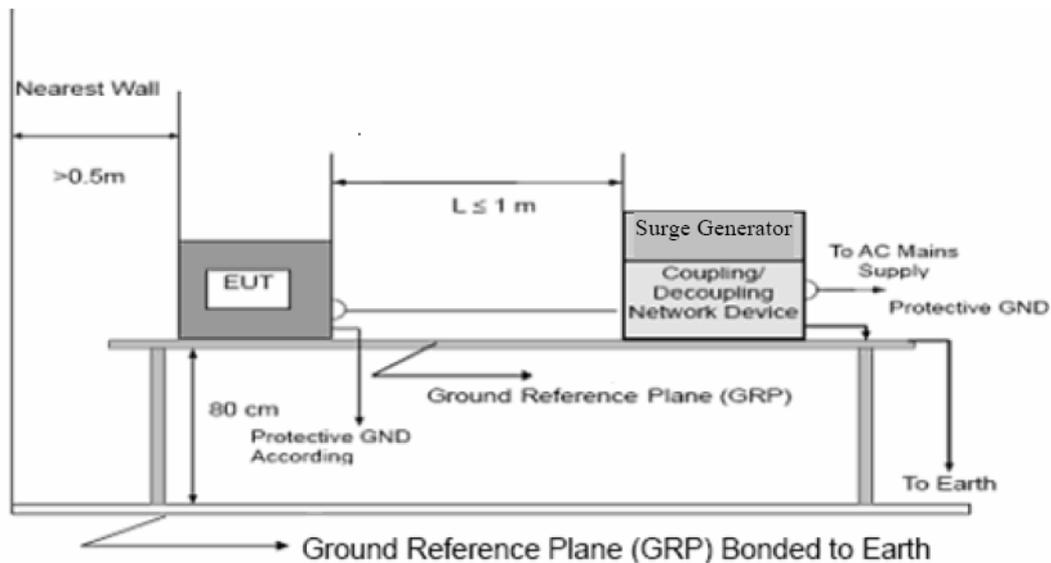
EN 55024: 2010 + A1: 2015 (EN 61000-4-5: 2014)

11.1.2. Level

Severity Level	Open-Circuit Test Voltage kV
1	1.5
2	1.0
3	1.0
4	4.0
*	Special

11.1.3. Performance criterion: **B**

11.2 Test Setup



11.3 Test Procedure

11.3.1 Set up the EUT and test generator as shown on Section 11.1.2.

11.3.2 For line to line coupling mode, provide a 1.0 KV 1.2/50us voltage surge

(at open-circuit condition) and 8/20us current surge to EUT selected points.

11.3.3 At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.

11.3.4 Different phase angles are done individually.

11.3.5 Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

11.4 Test Data

Please refer to the following pages.

Surge Immunity Test Results

EUT	: <u>Touchscreen Monitor</u>	M/N	: <u>TPC1017</u>	
Temperature	: <u>22°C</u>	Humidity	: <u>50%</u>	
Power supply	: <u>AC230V/50Hz</u>	Test Mode	: <u>Normal</u>	
Criterion: B				
Injected Line	Voltage(kV)	Phase	Result	
			(+)	(-)
L-N	1.0	0°	Pass	Pass
		90°	Pass	Pass
		180°	Pass	Pass
		270°	Pass	Pass
L-PE	2.0	0°	/	/
		90°	/	/
		180°	/	/
		270°	/	/
N-PE	2.0	0°	/	/
		90°	/	/
		180°	/	/
		270°	/	/
L-N-PE	2.0	0°	/	/
		90°	/	/
		180°	/	/
		270°	/	/

12. Conducted Immunity Test

12.1 Test Requirements

12.1.1. Test Standard

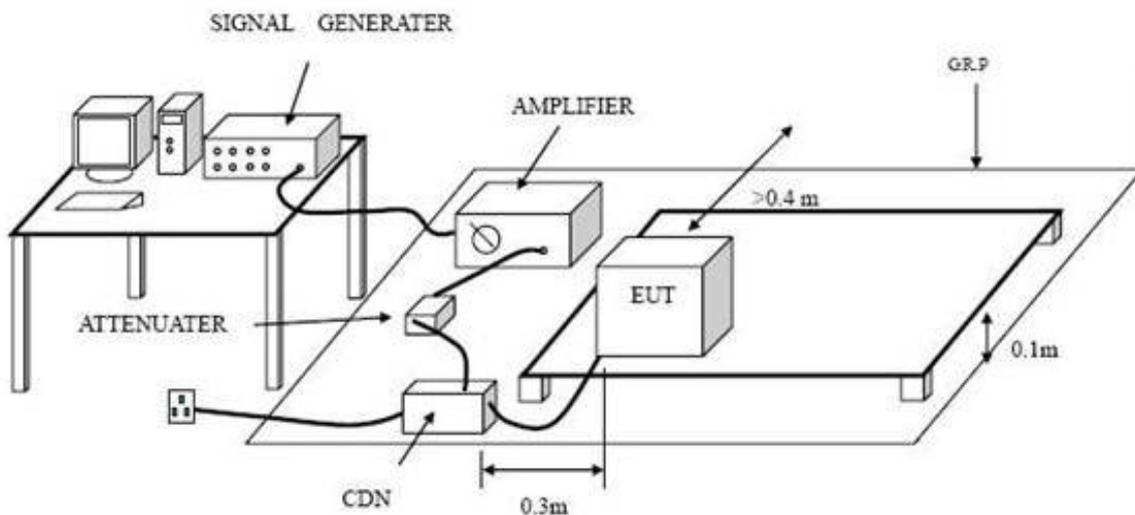
EN 55024: 2010 + A1: 2015 (EN 61000-4-6: 2014)

12.1.2. Level

Level	Voltage Level (e.m.f.) V
1	1
2	3
3	10
X	Special

12.1.3. Performance criterion: **A**

12.2 Test Setup



12.3 Test Procedure

12.3.1 Set up the EUT, CDN and test generators.

12.3.2 Let the EUT work in test mode and test it.

12.3.3 The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) 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).

12.3.4 The disturbance signal description below is injected to EUT through CDN.

12.3.5 The EUT operates within its operational mode(s) under intended climatic conditions after power on.

12.3.6 The frequency range is swept from 0.150MHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.

12.3.7 The rate of sweep shall not exceed $1.5 \cdot 10^{-3}$ decades/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.

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

12.4 Test Data

Please refer to the following pages.

Injected Currents Susceptibility Test Results

EUT : <u>Touchscreen Monitor</u> M/N : <u>TPC1017</u>			
Temperature : <u>22°C</u>		Humidity : <u>50%</u>	
Power supply : <u>AC230V/50Hz</u>		Test Mode : <u>Transferring Video Signal</u>	
Criterion: A			
Frequency Range (MHz)	Injected Position	Voltage Level (e.m.f.)	Result
0.15 ~ 80	AC Mains	3V(rms), Unmodulated	PASS
0.15 ~ 80	DC Mains	3V(rms), Unmodulated	/
0.15 ~ 80	Signal Line	3V(rms), Unmodulated	/

13. Voltage Dips and Interruptions Immunity Test

14.1 Test Requirements

13.1.1. Test Standard

EN 55024: 2010 + A1: 2015 (EN 61000-4-11: 2004)

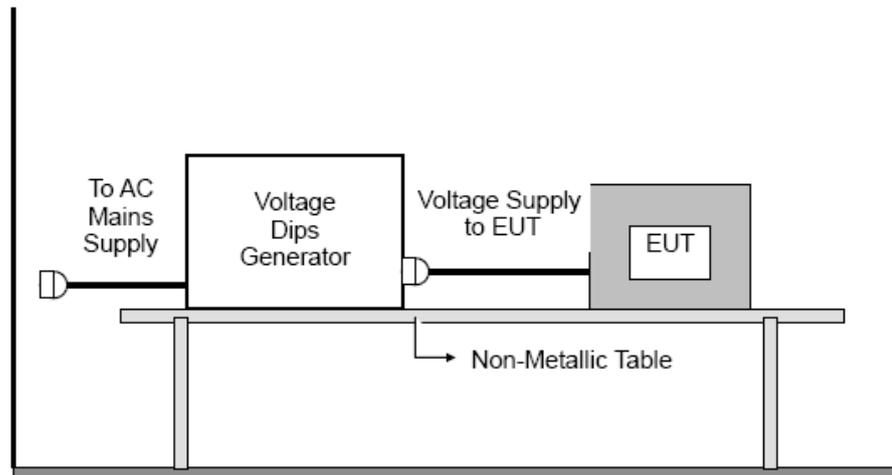
13.1.2. Level

Test Level for Voltage Dips and Interruptions

Test Level %U _T	Voltage dip and short interruptions %U _T	Duration (in period)
0	100	250
0	100	0.5
70	30	25
40	60	5

13.1.3. Performance criterion: **B&C**

14.2 Test Setup



14.3 Test Procedure

Set up the EUT and test generator as shown above. The EUT is tested for each selected combination of test level and duration with a sequence of three dips/interruptions with intervals of 10s minimum.

14.4 Test Data

Voltage Dips and Interruptions Test Results

EUT : <u>Touchscreen Monitor</u>	M/N : <u>TPC1017</u>			
Temperature : <u>22°C</u>	Humidity : <u>50%</u>			
Power supply : <u>AC230V/50Hz</u>	Test Mode : <u>Normal</u>			
Criterion: B&C				
Test Level % U _T	Voltage Dips & Short Interruptions % U _T	Duration (in period)	Phase Angle	Result
0	100	250P	0°~360°	PASS
70	30	25P	0°~360°	PASS
0	100	0.5P	0°~360°	PASS
<p>Remark: U_T is the rated voltage for the equipment.</p>				

14. Photographs - Constructional Details

Photo 1 Appearance of EUT



Photo 2 Appearance of EUT



Photo 3 Appearance of EUT

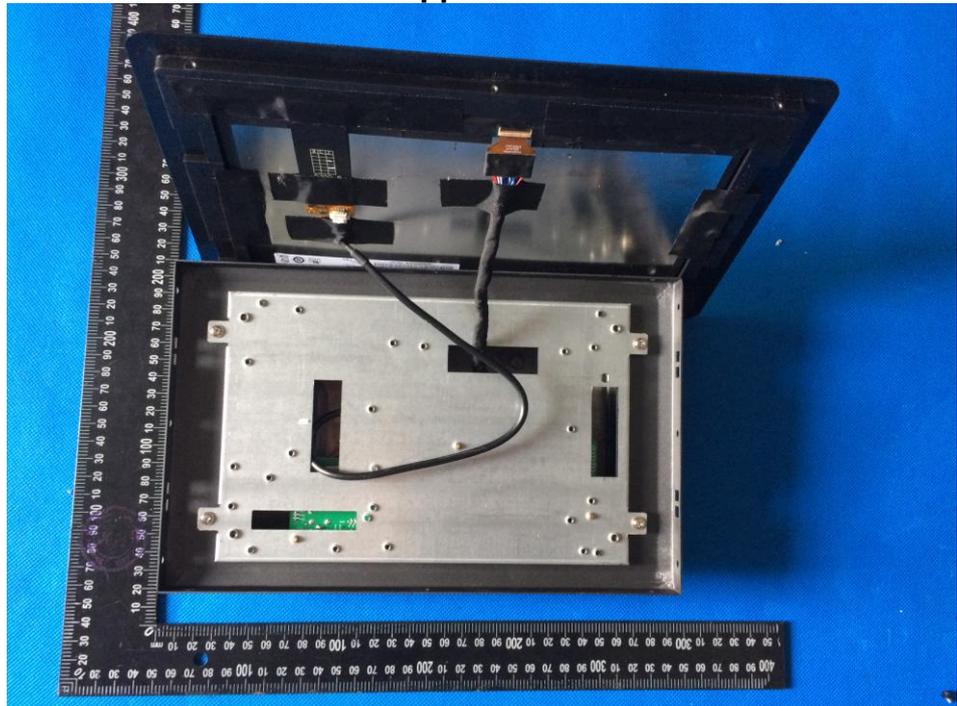
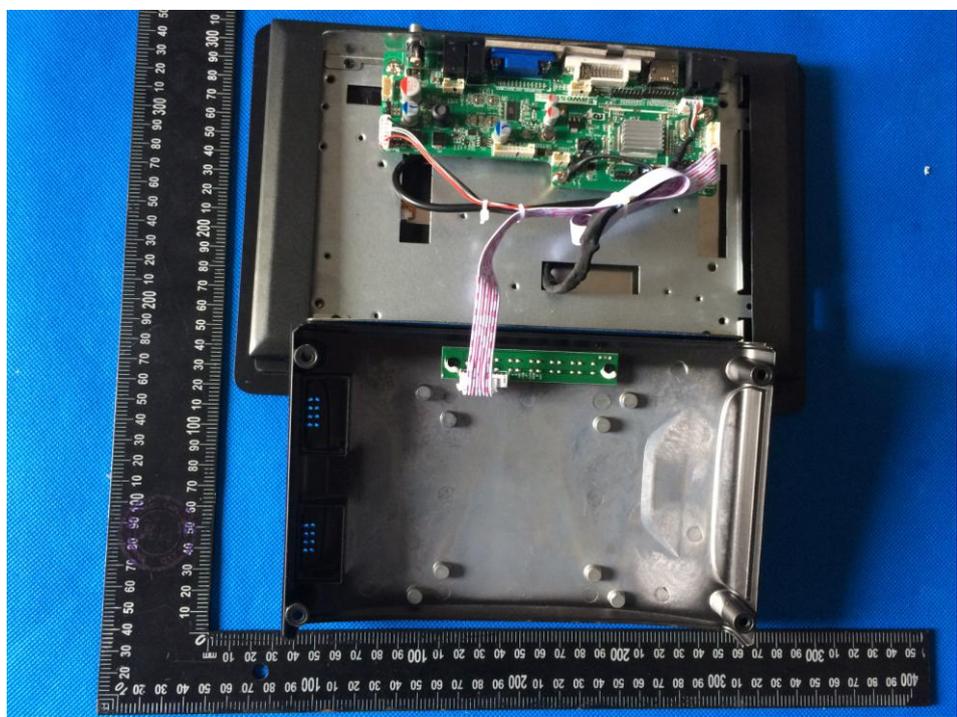


Photo 4 Appearance of EUT



END OF REPORT

Shenzhen BCTC Technology Co.,Ltd.
No.101, Yousong Road, Longhua New District,
Shenzhen, Guangdong, P.R.China



Certificate of Compliance

Certificate Number: BCTC-FY161206421C

- Applicant :** Shenzhen Touch Think Intelligence Co.,Ltd.
No.201-1, The fourth building, Xinjianxing industrial park, Sunshine industrial park, Xili town, Nanshan district, Shenzhen City, Guangdong Province, China.
- Manufacturer :** Shenzhen Touch Think Intelligence Co.,Ltd.
No.201-1, The fourth building, Xinjianxing industrial park, Sunshine industrial park, Xili town, Nanshan district, Shenzhen City, Guangdong Province, China.
- Product :** Touch the computer-integrated
- Trademark :** 
- M/N :** TPC150
TPC707A, TPC101,TPC104A, TPC1217A, TPC1217B, TPC1217C,
TPC1507A, TPC1507B, TPC1507C, TPC1707A, TPC1707B, TPC1707C,
TPC1907A, TPC1907B, TPC1907C, TPC1917A, TPC1917B, TPC1917C,
TPC2157A, TPC2157B, TPC2157C, TPC2207A, TPC2207B, TPC2207C,
TPC2367A, TPC2367B, TPC2367C, TPC2407A, TPC2407B, TPC2407C.
- Test Standard :** EN60950-1:2006+A2:2013

The EUT described above has been tested by us with the listed standards and found in compliance with the council LVD directive 2014/35/EU. It is possible to use CE marking to demonstrate the compliance with this LVD Directive. It is only valid in connection with the test report number: BCTC-FY161206421S.

CE



This certificate of conformity is based on a single evaluation of the submitted sample(s) of the above mentioned product. It does not imply an assessment of the whole product and relevant. Directives have to be observed.

Tel: 400-788-9558 0755-33019988
Http://www.bctc-lab.com Http://www.bctc-lab.com.cn



CERTIFICATE OF CONFORMITY

No. : HX1812046511

Applicant : Shenzhen Touch Think Intelligence Co., Ltd.

Address : No. 201-3, Building 4th, Xinjianxing Industrial Park, Sunshine Industrial Park, Xili Town, Nanshan District, Shenzhen City, Guangdong Province, China

Manufacturer : Shenzhen Touch Think Intelligence Co., Ltd.

Address : No. 201-3, Building 4th, Xinjianxing Industrial Park, Sunshine Industrial Park, Xili Town, Nanshan District, Shenzhen City, Guangdong Province, China

Product : Touchscreen Monitor

Model(s) : TPC1017, TPC1017A, TPC1017A-01, TPC1017A-02, TPC1017A-03, TPC1017A-04, TPC1017A-05, TPC1017C, TPC1017C-01, TPC1017C-02, TPC1017C-03, TPC1017C-04, TPC1017C-05

Trademark : N/A

Test Standard(s) : EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013.

The EUT described above has been tested by us with the listed standards and found in compliance with the Council LVD Directive 2014/35/EU, It is possible to use CE marking to demonstrate the compliance with the LVD Directives.

The certificate applies to the tested sample above mentioned only and shall not imply an assessment of the whole production. It is only valid in connection with the test report number: HX1812046512.



Dec. 25, 2018

Shenzhen HX Detect Certification Co., Ltd.

8/F, Haoyunlai Building B, Baomin 2th Road, Xixiang Street, Baoan District, Shenzhen, China

HOTLINE:0755-29116082 Email: huaxunprc@163.com [Http://www.hx-lab.com](http://www.hx-lab.com)

Shenzhen BCTC Technology Co.,Ltd.
No.101, Yousong Road, Longhua New District,
Shenzhen, Guangdong, P.R.China



Certificate of Compliance

Certificate Number: BCTC-FY161206422C

- Applicant** : **Shenzhen Touch Think Intelligence Co.,Ltd.**
No.201-1, the fourth building, Xinjianxing industrial park,sunshine industrial park,xili town,Nanshan district,Shenzhen City, Guangdong Province,China.
- Manufacturer** : **Shenzhen Touch Think Intelligence Co.,Ltd.**
No.201-1, the fourth building, Xinjianxing industrial park,sunshine industrial park,xili town,Nanshan district,Shenzhen City, Guangdong Province,China.
- Product** : **Touch the computer-integrated**
- Trademark** : 
- M/N** : **TPC150**
TPC707A, TPC101,TPC104A,,TPC1217A, TPC1217B, TPC1217C,
TPC1507A, TPC1507B, TPC1507C, TPC1707A, TPC1707B, TPC1707C,
TPC1907A, TPC1907B, TPC1907C, TPC1917A, TPC1917B, TPC1917C,
TPC2157A, TPC2157B, TPC2157C, TPC2207A, TPC2207B, TPC2207C,
TPC2367A, TPC2367B, TPC2367C, TPC2407A, TPC2407B, TPC2407C.
- Test Standard** : **IEC62321-1:2013**

The EUT described above has been consolidated by us and found in compliance with the council RoHS directive—2011/65/EU. It is possible to use CE marking to demonstrate the compliance with this RoHS Directive.



This certificate of conformity is based on a single evaluation of the submitted sample(s) of the above mentioned product. It does not imply an assessment of the whole product and relevant. Directives have to be observed.

Tel: 400-788-9558 0755-33019988
Http://www.bctc-lab.com Http://www.bctc-lab.com.cn



LVD Test Report

Application No. : HX1812046511

Applicant : Shenzhen Touch Think Intelligence Co., Ltd.

Equipment Under Test (EUT)

EUT Name : Touchscreen Monitor

Model No. : TPC1017

Serial No. : See Page 3

Brand Name : N/A

Receipt Date : 2018-12-18

Test Date : 2018-12-18 to 2018-12-25

Issue Date : 2018-12-25

Standards : EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011+A2: 2013

Conclusions : Complied

This report shows that the product technically complies with the Council LVD Directive 2014/35/EU requirements.

Test/Witness Engineer :



Approved & Authorized :

Jie Zhang
Dec. 25, 2018

This test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

TEST REPORT

**IEC/EN 60950-1
Information technology equipment – Safety –
Part 1: General requirements**

Report Number HX1812046512

Testing Laboratory Shenzhen HX Detect Certification Co., Ltd.

Address 8/F, Haoyunlai Building B, Baomin 2th Road, Xixiang Street, Baoan District, Shenzhen, China

Applicant's name Shenzhen Touch Think Intelligence Co., Ltd.

Address No. 201-1, Building 4, Xinjianxing Industrial Park, Sunshine Second Road, Nanshan District, Shenzhen, Guangdong, China

Manufacturer's name..... Shenzhen Touch Think Intelligence Co., Ltd.

Address No. 201-1, Building 4, Xinjianxing Industrial Park, Sunshine Second Road, Nanshan District, Shenzhen, Guangdong, China

Test specification:

Standard..... EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011+A2: 2013and/or
 IEC 60950-1: 2005 (Second Edition) + Am 1:2009

Test procedure LVD Test Procedure

Non-standard test method..... N/A

Test Report Form No...... IEC60950_1C

Test Report Form(s) Originator... TUV

Master TRF Dated 2013

Test item description..... Touchscreen Monitor

Trade Mark..... N/A

Model/Type reference TPC1017

Serial Model(s)..... TPC1017A, TPC1017A-01, TPC1017A-02, TPC1017A-03,
TPC1017A-04, TPC1017A-05, TPC1017C, TPC1017C-01,
TPC1017C-02, TPC1017C-03, TPC1017C-04, TPC1017C-05

Ratings DC12.0V, 4A

Summary of testing:

Tests performed (name of test and test clause):

The sample(s) tested complies with the requirements of IEC/EN 60950-1

These tests fulfil the requirements of standard ISO/IEC 17025.

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

Testing with model TPC1017 was considered as representative. Unless otherwise specified, all tests were conducted under worst case and carried out at 90 V / 60 Hz and 264 V / 50 Hz.

Heating test (4.5):

T_{ma} = 40 °C (Declared by manufacturer)

T_{amb} = 24.5 °C – 25.3°C

K-type thermocouple used for temperature measurement.

This test report includes:

Annex 1: Photos.

Summary of compliance with National Differences

Compliance with the National requirements of CENELEC common modification.

Copy of marking plate

Touchscreen Monitor

Model No.: TPC1017

Ratings: 12V, 4A



Shenzhen Touch Think Intelligence Co., Ltd.

Made In

China

Remark:

The marking plates of the other models are of the same pattern.

Test item particulars	
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: No direct connection with mains.
Mains supply tolerance (%) or absolute mains supply values	± 10% according to manufacturer
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	16 A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IP X0
Altitude during operation (m)	< 2000 m
Altitude of test laboratory (m)	Shenzhen of China < 2000 m
Mass of equipment (kg)	/
Possible test case verdicts:	
- test case does not apply to the test object.....: N/A (or N)	
- test object does meet the requirement	
- test object does not meet the requirement	

General remarks:

The test results presented in this report relate only to the object tested.
 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
 "(see Enclosure #)" refers to additional information appended to the report.
 "(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

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General product information:

The EUT is Class I equipment, metal enclosure, and having display function. Insulation of EUT depends on power supply board and earthing protection. Clearance and creepage between primary of power supply board and secondary of power supply board comply with requirement of standard.

The product has been tested according to standard IEC 60950-1: 2005 (2nd Edition) / EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011+A2: 2013 and those deviations taken into account of

<input checked="" type="checkbox"/> CENELEC common modifications		<input type="checkbox"/> United Kingdom	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Finland	<input type="checkbox"/> Denmark	<input type="checkbox"/> Ireland	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sweden	<input type="checkbox"/> Germany	<input type="checkbox"/> Spain	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Norway	<input type="checkbox"/> Switzerland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components		P
1.5.3	Thermal controls		N
1.5.4	Transformers	Internal power supply approved	P
1.5.5	Interconnecting cables	No Interconnecting cables	N
1.5.6	Capacitors bridging insulation	Internal power supply approved	P
1.5.7	Resistors bridging insulation		P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N
1.5.8	Components in equipment for IT power systems		N
1.5.9	Surge suppressors		P
1.5.9.1	General		P
1.5.9.2	Protection of VDRs		P
1.5.9.3	Bridging of functional insulation by a VDR		P
1.5.9.4	Bridging of basic insulation by a VDR		N
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N
1.6	Power interface		P
1.6.1	AC power distribution systems	TN distribution systems	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment		N
1.6.4	Neutral conductor		P
1.7	Marking and instructions		P

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N
	Rated voltage(s) or voltage range(s) (V)	100-240 V~	P
	Symbol for nature of supply, for d.c. only.....:		N
	Rated frequency or rated frequency range (Hz) :	50/60 Hz	P
	Rated current (mA or A)	Max. 1.8A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark	See marking plate	P
	Model identification or type reference	See model difference	P
	Symbol for Class II equipment only	Class I equipment	N
	Other markings and symbols		N
1.7.2	Safety instructions and marking	See the manual	P
1.7.2.1	General		P
1.7.2.2	Disconnect devices		N
1.7.2.3	Overcurrent protective device		N
1.7.2.4	IT power distribution systems		N
1.7.2.5	Operator access with a tool		N
1.2.7.6	Ozone		N
1.7.3	Short duty cycles	Continuous operation	N
1.7.4	Supply voltage adjustment		N
	Methods and means of adjustment; reference to installation instructions		N
1.7.5	Power outlets on the equipment		N
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	See critical components list	P
1.7.7	Wiring terminals		N
1.7.7.1	Protective earthing and bonding terminals		N
1.7.7.2	Terminals for a.c. mains supply conductors		N
1.7.7.3	Terminals for d.c. mains supply conductors		N
1.7.8	Controls and indicators		N
1.7.8.1	Identification, location and marking		N
1.7.8.2	Colours		N
1.7.8.3	Symbols according to IEC 60417		N

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.4	Markings using figures		N
1.7.9	Isolation of multiple power sources	Single power supply	N
1.7.10	Thermostats and other regulating devices	No these devices	N
1.7.11	Durability		P
1.7.12	Removable parts	No removable parts used	N
1.7.13	Replaceable batteries	No batteries	N
	Language(s)		—
1.7.14	Equipment for restricted access locations	Not intended for installation in restricted access location	N

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts		P
	Test by inspection		P
	Test with test finger (Figure 2A)	Hazardous parts not accessible	P
	Test with test pin (Figure 2B)	Hazardous parts not accessible	P
	Test with test probe (Figure 2C)	No TNV circuit	N
2.1.1.2	Battery compartments		N
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N
2.1.1.5	Energy hazards	No energy hazard in operator accessible area	P
2.1.1.6	Manual controls	No such device	N
2.1.1.7	Discharge of capacitors in equipment	See approved power supply report.	P
	Measured voltage (V); time-constant (s).....		—
2.1.1.8	Energy hazards – d.c. mains supply	No connected to d.c. mains supply	N
	a) Capacitor connected to the d.c. mains supply :		N

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Clause	Requirement + Test	Result - Remark	Verdict

	b) Internal battery connected to the d.c. mains supply :		N
2.1.1.9	Audio amplifiers :		N
2.1.2	Protection in service access areas		N
2.1.3	Protection in restricted access locations	Equipment not intended for use in restricted access location	N

2.2	SELV circuits		P
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V) :	< 60 V d.c	P
2.2.3	Voltages under fault conditions (V) :	< 60 V d.c	P
2.2.4	Connection of SELV circuits to other circuits ... :	SELV circuit only connected to other SELV circuits	P

2.3	TNV circuits		N
2.3.1	Limits	No TNV circuit	N
	Type of TNV circuits..... :		—
2.3.2	Separation from other circuits and from accessible parts		N
2.3.2.1	General requirements		N
2.3.2.2	Protection by basic insulation		N
2.3.2.3	Protection by earthing		N
2.3.2.4	Protection by other constructions :		N
2.3.3	Separation from hazardous voltages		N
	Insulation employed..... :		—
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed..... :		—
2.3.5	Test for operating voltages generated externally		N

2.4	Limited current circuits		P
2.4.1	General requirements	See approved power supply report.	P
2.4.2	Limit values	0.7 mA	P
	Frequency (Hz) :	60 KHz	—
	Measured current (mA) :	0.224 mA	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Measured voltage (V)	-	—
	Measured circuit capacitance (nF or μ F)	1000 pF	—
2.4.3	Connection of limited current circuits to other circuits		P

2.5	Limited power sources		P
	a) Inherently limited output	See approved power supply report.	N
	b) Impedance limited output		N
	c) Regulating network limited output under normal operating and single fault condition		P
	d) Overcurrent protective device limited output		N
	Max. output voltage (V), max. output current (A), max. apparent power (VA)	4.97V,5.06A,17.61VA	—
	Current rating of overcurrent protective device (A) .:		—
	Use of integrated circuit (IC) current limiters		N

2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing		P
2.6.2	Functional earthing		P
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors		P
	Rated current (A), cross-sectional area (mm^2), AWG	1.7A,0.75 mm^2	—
2.6.3.3	Size of protective bonding conductors	See the 2.6.3.4	P
	Rated current (A), cross-sectional area (mm^2), AWG		—
	Protective current rating (A), cross-sectional area (mm^2), AWG		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	0.002 Ω , 32A, 2min	P
2.6.3.5	Colour of insulation.....	Yellow-green	P
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals		P

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Clause	Requirement + Test	Result - Remark	Verdict

	Rated current (A), type, nominal thread diameter (mm)		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment		P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		P
2.6.5.3	Disconnection of protective earth		P
2.6.5.4	Parts that can be removed by an operator		N
2.6.5.5	Parts removed during servicing		N
2.6.5.6	Corrosion resistance		P
2.6.5.7	Screws for protective bonding		N
2.6.5.8	Reliance on telecommunication network or cable distribution system		N

2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements		P
	Instructions when protection relies on building installation	F1 fuse used	P
2.7.2	Faults not simulated in 5.3.7		P
2.7.3	Short-circuit backup protection	F1 fuse regard as Short-circuit backup protection	P
2.7.4	Number and location of protective devices	F1 fuse, input inlet	P
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel		N

2.8	Safety interlocks		N
2.8.1	General principles	No safety interlocks	N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N
	Protection against extreme hazard		N
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches, relays and their related circuits		N

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Clause	Requirement + Test	Result - Remark	Verdict
2.8.7.1	Separation distances for contact gaps and their related circuits (mm)		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test		N
2.8.8	Mechanical actuators		N

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used	P
2.9.2	Humidity conditioning		P
	Relative humidity (%), temperature (°C)	93 %RH, 30 °C, 48 h	—
2.9.3	Grade of insulation	Basic insulation	P
2.9.4	Separation from hazardous voltages		P
	Method(s) used	Method 1 used	—

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General		P
2.10.1.1	Frequency		P
2.10.1.2	Pollution degrees	II	P
2.10.1.3	Reduced values for functional insulation	See the 5.3.4	P
2.10.1.4	Intervening unconnected conductive parts		P
2.10.1.5	Insulation with varying dimensions		P
2.10.1.6	Special separation requirements		N
2.10.1.7	Insulation in circuits generating starting pulses		N
2.10.2	Determination of working voltage	Internal power supply approved	P
2.10.2.1	General		P
2.10.2.2	RMS working voltage		P
2.10.2.3	Peak working voltage		P
2.10.3	Clearances	See approved power supply report.	P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply		P

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Clause	Requirement + Test	Result - Remark	Verdict
	b) Earthed d.c. mains supplies		N
	c) Unearthed d.c. mains supplies		N
	d) Battery operation		N
2.10.3.3	Clearances in primary circuits		P
2.10.3.4	Clearances in secondary circuits		N
2.10.3.5	Clearances in circuits having starting pulses		N
2.10.3.6	Transients from a.c. mains supply		N
2.10.3.7	Transients from d.c. mains supply		N
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N
2.10.3.9	Measurement of transient voltage levels		N
	a) Transients from a mains supply		N
	For an a.c. mains supply		N
	For a d.c. mains supply		N
	b) Transients from a telecommunication network :		N
2.10.4	Creepage distances	See approved power supply report.	P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests		—
2.10.4.3	Minimum creepage distances		P
2.10.5	Solid insulation		P
2.10.5.1	General		P
2.10.5.2	Distances through insulation	See approved power supply report.	P
2.10.5.3	Insulating compound as solid insulation		N
2.10.5.4	Semiconductor devices		N
2.10.5.5.	Cemented joints		N
2.10.5.6	Thin sheet material – General		N
2.10.5.7	Separable thin sheet material	See approved power supply report.	N
	Number of layers (pcs)		—
2.10.5.8	Non-separable thin sheet material		N
2.10.5.9	Thin sheet material – standard test procedure		N
	Electric strength test		—

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.10	Thin sheet material – alternative test procedure		N
	Electric strength test		—
2.10.5.11	Insulation in wound components		N
2.10.5.12	Wire in wound components		N
	Working voltage		N
	a) Basic insulation not under stress		N
	b) Basic, supplementary, reinforced insulation ...		N
	c) Compliance with Annex U		N
	Two wires in contact inside wound component; angle between 45° and 90°		N
2.10.5.13	Wire with solvent-based enamel in wound components		N
	Electric strength test		—
	Routine test		N
2.10.5.14	Additional insulation in wound components		N
	Working voltage		N
	- Basic insulation not under stress		N
	- Supplementary, reinforced insulation		N
2.10.6	Construction of printed boards		N
2.10.6.1	Uncoated printed boards		N
2.10.6.2	Coated printed boards		N
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N
2.10.6.4	Insulation between conductors on different layers of a printed board		N
	Distance through insulation		N
	Number of insulation layers (pcs)		N
2.10.7	Component external terminations		N
2.10.8	Tests on coated printed boards and coated components		N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning		N
2.10.8.3	Electric strength test		N
2.10.8.4	Abrasion resistance test		N
2.10.9	Thermal cycling		N

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N
2.10.11	Tests for semiconductor devices and cemented joints		N
2.10.12	Enclosed and sealed parts		N

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring	P
3.1.2	Protection against mechanical damage	Smooth and free of sharp edges	P
3.1.3	Securing of internal wiring	Wiring are reliably routed and secured where appropriate	P
3.1.4	Insulation of conductors		N
3.1.5	Beads and ceramic insulators	Not used	N
3.1.6	Screws for electrical contact pressure		N
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material	N
3.1.8	Self-tapping and spaced thread screws	No space thread screws / thread-cutting screws used	N
3.1.9	Termination of conductors	All conductors are reliably secured by use of solder pins or glue or other mechanical fixing means	P
	10 N pull test	No looseing	P
3.1.10	Sleeving on wiring		N

3.2	Connection to a mains supply		P
3.2.1	Means of connection		P
3.2.1.1	Connection to an a.c. mains supply	AC inlet	P
3.2.1.2	Connection to a d.c. mains supply		N
3.2.2	Multiple supply connections	Single main supply	N
3.2.3	Permanently connected equipment	No permanently connected equipment	N
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	See approved power supply report.	P

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Clause	Requirement + Test	Result - Remark	Verdict

3.2.5	Power supply cords		N
3.2.5.1	AC power supply cords		N
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
3.2.5.2	DC power supply cords		N
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage		P
3.2.8	Cord guards		N
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
3.2.9	Supply wiring space		N

3.3	Wiring terminals for connection of external conductors		N
3.3.1	Wiring terminals		N
3.3.2	Connection of non-detachable power supply cords		N
3.3.3	Screw terminals		N
3.3.4	Conductor sizes to be connected		N
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N

3.4	Disconnection from the mains supply		P
3.4.1	General requirement		P
3.4.2	Disconnect devices	AC Inlet	P
3.4.3	Permanently connected equipment		N
3.4.4	Parts which remain energized		N

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.5	Switches in flexible cords	No such switches	N
3.4.6	Number of poles - single-phase and d.c. equipment		P
3.4.7	Number of poles - three-phase equipment	Single – phase equipment	N
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices		P
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources	Only one supply connection provided.	N

3.5	Interconnection of equipment		P
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits	Used SELV circuits only	P
3.5.3	ELV circuits as interconnection circuits	No ELV circuit	N
3.5.4	Data ports for additional equipment		P

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N
	Angle of 10°	Wall-mounted type	N
	Test force (N)		N

4.2	Mechanical strength		P
4.2.1	General		P
	Rack-mounted equipment.		N
4.2.2	Steady force test, 10 N		P
4.2.3	Steady force test, 30 N		N
4.2.4	Steady force test, 250 N	250 N applied on outer enclosure, no hazards.	P
4.2.5	Impact test	1.3 m	P
	Fall test		N
	Swing test		P
4.2.6	Drop test; height (mm)		N
4.2.7	Stress relief test		P
4.2.8	Cathode ray tubes		N
	Picture tube separately certified		N
4.2.9	High pressure lamps		N

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.10	Wall or ceiling mounted equipment; force (N) .. :	1050N,1min	P
4.2.11	Rotating solid media		N
	Test to cover on the door.....:		N

4.3	Design and construction		P
4.3.1	Edges and corners	Edges and corners are rounded and/or smoothed	P
4.3.2	Handles and manual controls; force (N)..... :		N
4.3.3	Adjustable controls	No such controls	N
4.3.4	Securing of parts		N
4.3.5	Connection by plugs and sockets		N
4.3.6	Direct plug-in equipment	Stationary equipment	N
	Torque		—
	Compliance with the relevant mains plug standard :		N
4.3.7	Heating elements in earthed equipment		N
4.3.8	Batteries	No battery used	N
	- Overcharging of a rechargeable battery		N
	- Unintentional charging of a non-rechargeable battery		N
	- Reverse charging of a rechargeable battery		N
	- Excessive discharging rate for any battery		N
4.3.9	Oil and grease	No oil and grease	N
4.3.10	Dust, powders, liquids and gases		N
4.3.11	Containers for liquids or gases		N
4.3.12	Flammable liquids	No flammable liquids	N
	Quantity of liquid (l)		N
	Flash point (°C)		N
4.3.13	Radiation		N
4.3.13.1	General		N
4.3.13.2	Ionizing radiation		N
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N
	Part, property, retention after test, flammability classification		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation ...:		N
4.3.13.5	Lasers (including laser diodes) and LEDs		N
4.3.13.5.1	Lasers (including laser diodes)		N
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)		N
4.3.13.6	Other types		N
4.4	Protection against hazardous moving parts		N
4.4.1	General	No hazardous moving parts	N
4.4.2	Protection in operator access areas		N
	Household and home/office document/media shredders		N
4.4.3	Protection in restricted access locations		N
4.4.4	Protection in service access areas		N
4.4.5	Protection against moving fan blades		N
4.4.5.1	General		N
	Not considered to cause pain or injury. a).....:		N
	Is considered to cause pain, not injury. b)		N
	Considered to cause injury. c)		N
4.4.5.2	Protection for users		N
	Use of symbol or warning		N
4.4.5.3	Protection for service persons		N
	Use of symbol or warning		N
4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests	(see appended table 4.5.2)	P
	Normal load condition per Annex L		—
4.5.3	Temperature limits for materials	(see appended table 4.5.2)	P
4.5.4	Touch temperature limits	(see appended table 4.5.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict

4.5.5	Resistance to abnormal heat	(see appended table 4.5.5)	P
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4.6	Openings in enclosures		P
4.6.1	Top and side openings		P
	Dimensions (mm)		—
4.6.2	Bottoms of fire enclosures		P
	Construction of the bottom, dimensions (mm) :		—
4.6.3	Doors or covers in fire enclosures	No such parts use	N
4.6.4	Openings in transportable equipment		N
4.6.4.1	Constructional design measures		N
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings		N
4.6.4.3	Use of metallized parts		N
4.6.5	Adhesives for constructional purposes		N
	Conditioning temperature (°C), time (weeks) ... :		—

4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Appropriate use of components and suitable construction. Components mounted on PWB rated V-1 or better	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is required to cover all parts.	P
4.7.2.2	Parts not requiring a fire enclosure		N
4.7.3	Materials		P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures	Metal shell	P
4.7.3.3	Materials for components and other parts outside fire enclosures		N
4.7.3.4	Materials for components and other parts inside fire enclosures	See appended I	P

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Clause	Requirement + Test	Result - Remark	Verdict

4.7.3.5	Materials for air filter assemblies	No air filter assemblies	N
4.7.3.6	Materials used in high-voltage components	No high-voltage components	N

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General		P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N
5.1.3	Test circuit	Test circuit as in Figure 5A is used.	P
5.1.4	Application of measuring instrument	Measuring instrument as in Annex D	P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V)	264 V~	—
	Measured touch current (mA)	0.18mA	—
	Max. allowed touch current (mA)	3.5 mA	—
	Measured protective conductor current (mA) ...:		—
	Max. allowed protective conductor current (mA):		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N
5.1.7.1	General		N
5.1.7.2	Simultaneous multiple connections to the supply		N
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No connected to telecommunication networks	N
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks		N

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Clause	Requirement + Test	Result - Remark	Verdict

	a) EUT with earthed telecommunication ports .:		N
	b) EUT whose telecommunication ports have no reference to protective earth		N

5.2	Electric strength		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure		P

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors		N
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation		P
5.3.5	Electromechanical components	No electromechanical component provided.	N
5.3.6	Audio amplifiers in ITE		N
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment		N
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No flames, no metal melted, no enclosure deformation	P
5.3.9.2	After the tests	No damages and complied with 5.2.2	P

6	CONNECTION TO TELECOMMUNICATION NETWORKS		N
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N
6.1.1	Protection from hazardous voltages		N
6.1.2	Separation of the telecommunication network from earth		N
6.1.2.1	Requirements		N
	Supply voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions		N

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Clause	Requirement + Test	Result - Remark	Verdict

6.2	Protection of equipment users from overvoltages on telecommunication networks		N
6.2.1	Separation requirements		N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test		N
6.2.2.2	Steady-state test		N
6.2.2.3	Compliance criteria		N

6.3	Protection of the telecommunication wiring system from overheating		N
	Max. output current (A)		—
	Current limiting method		—

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N
7.1	General		N
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N
7.3	Protection of equipment users from overvoltages on the cable distribution system		N
7.4	Insulation between primary circuits and cable distribution systems		N
7.4.1	General		N
7.4.2	Voltage surge test		N
7.4.3	Impulse test		N

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		P
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N
A.1.1	Samples		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N
A.1.3	Mounting of samples		N
A.1.4	Test flame (see IEC 60695-11-3)		N
	Flame A, B, C or D		—
A.1.5	Test procedure		N

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Clause	Requirement + Test	Result - Remark	Verdict
A.1.6	Compliance criteria		N
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		P
A.2.1	Samples, material		—
	Wall thickness (mm).....		—
A.2.2	Conditioning of samples; temperature (°C)		N
A.2.3	Mounting of samples		N
A.2.4	Test flame (see IEC 60695-11-4)		N
	Flame A, B or C		—
A.2.5	Test procedure		N
A.2.6	Compliance criteria		N
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N
A.3.1	Mounting of samples		N
A.3.2	Test procedure		N
A.3.3	Compliance criterion		N

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		P
B.1	General requirements		P
	Position	DC fan	—
	Manufacturer	See appended table 1.5.1	—
	Type	See appended table 1.5.1	—
	Rated values	See appended table 1.5.1	—

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Clause	Requirement + Test	Result - Remark	Verdict
B.2	Test conditions		P
B.3	Maximum temperatures		P
B.4	Running overload test		N
B.5	Locked-rotor overload test		N
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for d.c. motors in secondary circuits		N
B.6.1	General		N
B.6.2	Test procedure		N
B.6.3	Alternative test procedure		N
B.6.4	Electric strength test; test voltage (V)		N
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		P
B.7.1	General		P
B.7.2	Test procedure		P
B.7.3	Alternative test procedure		N
B.7.4	Electric strength test; test voltage (V)		N
B.8	Test for motors with capacitors		N
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
	Operating voltage (V)		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N
	Position	(see appended table 1.5.1)	—
	Manufacturer	(see appended table 1.5.1)	—
	Type	(see appended table 1.5.1)	—
	Rated values		—
	Method of protection.....	Inherently limited	—
C.1	Overload test		N
C.2	Insulation	(see appended table 5.2)	N
	Protection from displacement of windings.....	Sec. triple insulated winding wire, tube and bobbin	N

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Clause	Requirement + Test	Result - Remark	Verdict
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		P
D.1	Measuring instrument		P
D.2	Alternative measuring instrument		N
E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N
G.1	Clearances		N
G.1.1	General		N
G.1.2	Summary of the procedure for determining minimum clearances		N
G.2	Determination of mains transient voltage (V)		N
G.2.1	AC mains supply		N
G.2.2	Earthed d.c. mains supplies		N
G.2.3	Unearthed d.c. mains supplies		N
G.2.4	Battery operation		N
G.3	Determination of telecommunication network transient voltage (V)		N
G.4	Determination of required withstand voltage (V)		N
G.4.1	Mains transients and internal repetitive peaks ..:		N
G.4.2	Transients from telecommunication networks ..:		N
G.4.3	Combination of transients		N
G.4.4	Transients from cable distribution systems		N
G.5	Measurement of transient voltages (V)		N
	a) Transients from a mains supply		N
	For an a.c. mains supply		N
	For a d.c. mains supply		N
	b) Transients from a telecommunication network		N
G.6	Determination of minimum clearances		N

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Clause	Requirement + Test	Result - Remark	Verdict

H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N
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J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		P
	Metal(s) used		—

K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N
K.1	Making and breaking capacity		N
K.2	Thermostat reliability; operating voltage (V)		N
K.3	Thermostat endurance test; operating voltage (V) :		N
K.4	Temperature limiter endurance; operating voltage (V)		N
K.5	Thermal cut-out reliability		N
K.6	Stability of operation		N

L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		N
L.1	Typewriters		N
L.2	Adding machines and cash registers		N
L.3	Erasers		N
L.4	Pencil sharpeners		N
L.5	Duplicators and copy machines		N
L.6	Motor-operated files		N
L.7	Other business equipment		N

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringing signal		N
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N

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Clause	Requirement + Test	Result - Remark	Verdict
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V)		N
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N
P	ANNEX P, NORMATIVE REFERENCES		—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N
	a) Preferred climatic categories		N
	b) Maximum continuous voltage		N
	c) Pulse current		N
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N
R.2	Reduced clearances (see 2.10.3)		N
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N
		UL certified wire used	—

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Clause	Requirement + Test	Result - Remark	Verdict

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		P
V.2	TN power distribution systems		P

W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N
W.1	Touch current from electronic circuits		N
W.1.1	Floating circuits		N
W.1.2	Earthed circuits		N
W.2	Interconnection of several equipments		N
W.2.1	Isolation		N
W.2.2	Common return, isolated from earth		N
W.2.3	Common return, connected to protective earth		N

X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N
X.1	Determination of maximum input current		N
X.2	Overload test procedure		N

Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N
Y.1	Test apparatus		N
Y.2	Mounting of test samples		N
Y.3	Carbon-arc light-exposure apparatus		N
Y.4	Xenon-arc light exposure apparatus		N

Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N
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AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N
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BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
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CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		N
CC.1	General		N
CC.2	Test program 1.....		N

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Clause	Requirement + Test	Result - Remark	Verdict

CC.3	Test program 2.....:		N
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DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		N
DD.1	General		N
DD.2	Mechanical strength test, variable N.....:		N
DD.3	Mechanical strength test, 250N, including end stops.....:		N
DD.4	Compliance.....:		N

EE	ANNEX EE, Household and home/office document/media shredders		N
EE.1	General		N
EE.2	Markings and instructions		N
	Use of markings or symbols.....:		N
	Information of user instructions, maintenance and/or servicing instructions.....:		N
EE.3	Inadvertent reactivation test.....:		N
EE.4	Disconnection of power to hazardous moving parts:		N
	Use of markings or symbols.....:		N
EE.5	Protection against hazardous moving parts		N
	Test with test finger (Figure 2A):		N
	Test with wedge probe (Figure EE1 and EE2):		N

1.5.1	TABLE: list of critical components	P
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Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Power supply	SHENZHEN MEGMEET ELECTRICAL CO., LTD	MLT199TL-M	Input:AC100- 240V ,50/60Hz, 1.7A MAX.; Output:12V,10A MAX.	GB 8898-1 IEC 60065:2001+ A1:2005	CB (No.:61398)
Appliance inlet	Dongguan Hongju Electronic Co., Ltd	S-03F-12	250V, 10A	IEC/ NE 60320	VDE/CQC
Fuse link (F1)	Suzhou Walter Electronic Co., Ltd	TSC	T6.3AH, 250 V AC	--	3C:200201020 7006694
Alt.	Haolilai Electronic Co., Ltd	50CT	T6.3AH, 250 V AC	--	3C:200501020 7153274
RV2	Xingqi(changzhou) Electronic Co., Ltd	TVR	680VDC	--	CQC03001007 654
Alt.	Xingqi(changzhou) Electronic Co., Ltd	TVR	680VDC	--	CQC03001005 165
CX1	Xiamen Fala Electronic Co., Ltd	MKP62	1uF, 275VAC, X2	--	CQC03001002 875
Alt.	Youpu Electronic(suzhou)Co. , Ltd	MPX	1uF, 275VAC, X2	--	CQC03001003 068
Alt.	Shenzhen Surong Capacitor Co., Ltd	MPX	1uF, 280Vac,X2	--	CQC06001018 191
CY3,CY4	Guangzhou Huiqiao Electronic Co., Ltd	AH	1000pF, 400Vac,Y1	--	CQC03001003 673
Alt.	Xiamen TDK Co., Ltd	CD	1000pF, 250Vac,Y1	--	CQC03001004 816
PC1B,PC2B,P C3B,PC4B	Dongzhi Semiconductor Co., Ltd	TLP781	reinforced insulation	--	CQC09001029 913/ CQC09001029 912

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Clause	Requirement + Test			Result - Remark	Verdict
Alt.	Guanxi Electronic Co., Ltd Dongshan Factory	K1010	reinforced insulation	--	CQC04001010530
Transformer (TD2A)	SHENZHEN MEGMEET ELECTRICAL CO., LTD	EPC46-001, MLT199TL-TD2A	Class B	--	CQC10001046056
Transformer (T1)	SHENZHEN MEGMEET ELECTRICAL CO., LTD	EF25-008, MLT199TL-T1	Class B	--	CQC10001046056
L2	Changchun Man-made Resin Factory CO., LTD	T375J	150°C, V-0	--	UL:E59481
PCB	Huizhou Shenghua CO., LTD	KB-5150	1.6mm, V-0	--	CQC03001004819
Alt.	Huizhou Shenghua CO., LTD	CCP-508	1.6mm, V-0	--	CQC03001004824
Alt.	Shenzhen Zhongluo ELECTRICAL CO., LTD	KB5150	1.6mm, V-0	--	CQC09001029413
DC fan	Shenzhen Zhixuan Electronic Co., Ltd	4010-A	12V, 80mA	--	Test with EUT

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V~)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90/50 Hz	2.285	--	206.40	F1	2.285	The input video color bar signal.
90/60 Hz	2.181	--	205.31	F1	2.181	
100/50 Hz	2.050	4	204.82	F1	2.050	
100/60 Hz	1.901	4	203.47	F1	1.901	
240/50 Hz	0.844	4	197.54	F1	0.844	
240/60 Hz	0.803	4	197.11	F1	0.803	
264/50 Hz	0.772	--	197.47	F1	0.772	
264/60 Hz	0.701	--	196.54	F1	0.701	

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Clause	Requirement + Test	Result - Remark				Verdict
2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Separation of L/N	< 420	240	2.0	4.0	2.4	4.0
Separation of fuse link (F1)	< 420	240	2.0	3.0	2.4	3.0
Primary circuit to earth	< 420	240	2.0	>8.0	2.4	>8.0
Primary circuit to secondary circuit on the PCB (between Primary and secondary of transformer T1)	528	240	4.4	7.8	4.8	7.8
Primary circuit to secondary circuit on the PCB(between Primary and secondary of transformer TD2A)	432	240	4.2	>12.0	4.8	>12.0
Primary circuit to secondary circuit on the PCB(between Primary and secondary of optocoupler PC3B or PC4B)	<420	240	4.0	7.0	4.8	>7.0
Primary circuit to secondary circuit on the PCB(between Primary and secondary of Y-cap CY2)	<420	240	4.0	7.5	4.8	7.5
Primary component HS1 to metal shell	<420	240	2.0	>4.0	2.4	>4.0
Primary component to metal shell	<420	240	2.0	>4.0	2.4	>4.0
Supplementary information: Test at 10 N for internal parts: OK.						

2.10.5	TABLE: Distance through insulation measurements					N
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries								N	
The tests of 4.3.8 are applicable only when appropriate battery data is not available									N	
Is it possible to install the battery in a reverse polarity position?									N	
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition	--	--	--	--	--	--	--	--	--	
Max. current during fault condition	--	--	--	--	--	--	--	--	--	
Test results:									Verdict	
- Chemical leaks									N	
- Explosion of the battery									N	
- Emission of flame or expulsion of molten metal									N	
- Electric strength tests of equipment after completion of tests									N	
Supplementary information:										

4.5.2	TABLE: maximum temperatures					P
	test voltage (V)	AC 90V / 60Hz		AC 264V /50Hz		—
		Normal t _{amb1}	Test t _{amb1}	Normal t _{amb2}	Test t _{amb2}	
	t _{amb1} (°C) ..	24.5	40	24.6	40	—
	t _{amb2} (°C) ..	25.1	40	25.3	40	—
maximum temperature T of part/at::		T (°C)				allowed Tmax (°C)
Coupler		35.6	51.4	32.0	48.0	--
Connector assembly		43.9	59.7	34.3	50.3	--
X-cap		40.5	56.3	32.7	48.7	--
Inductance L1 winding		51.2	67.0	34.7	50.7	110

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Clause	Requirement + Test			Result - Remark		Verdict
Inductance L2 winding	54.4	70.2	37.5	53.5		110
Inductance L3 winding	61.0	76.8	42.0	58.0		110
PCB close BD1	66.9	82.7	44.2	60.2		110
EC1	46.9	62.7	40.7	56.7		--
Transformer T4 winding	60.4	76.2	54.6	70.6		110
Transformer T4 core	60.7	76.5	54.3	70.3		--
PCB close QA2	62.5	78.3	59.6	75.6		--
Transformer T1 winding	43.8	59.6	42.0	58.0		110
Transformer T1 core	44.0	59.8	42.3	58.3		--
Transformer TD2A winding	63.0	78.8	61.5	77.5		110
Transformer TD2A core	51.4	67.2	49.8	65.8		--
PCB close DA3	61.0	76.8	59.2	75.2		--
Metal shell	35.8	51.6	34.3	50.3		--
Switch	31.0	46.8	28.7	44.7		--
Screen	37.9	53.7	37.6	53.6		--
temperature T of winding:		R ₁ (Ω)	R ₂ (Ω)	T (°C)	allowed T _{max} (°C)	insulation class
--		--	--	--	--	--
Note: The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described in sub-clause 1.4.5 Max. ambient temperature is 40°C.						

4.5.5	TABLE: ball pressure test of thermoplastic parts		P
	allowed impression diameter (mm)	≤ 2 mm	—
part	test temperature (°C)	impression diameter (mm)	
Connector assembly terminal	125	1.0	
<i>Remark: the bobbin of transformer and inductance is of hot solid material, no test required.</i>			

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Clause	Requirement + Test	Result - Remark	Verdict

4.7	TABLE: Resistance to fire					N
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Supplementary information:						

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
L/N of Input and unearthed terminal		AC	3000	No
L/N of Input and earthed metal shell		AC	1500	No
L/N of Input and earth		AC	1500	No
Supplementary information:				

5.3	TABLE: Fault condition tests					P
Ambient temperature (°C)		25.5 – 25.7			—	
Power source for EUT: Manufacturer, model/type, output rating		--			—	
Component No.	Fault	Supply voltage (Vdc)	Test time	Fuse #	Fuse current (A)	Observation
Air outlet	Blocked up	90	4h	F1	2.283	EUT can operate until steady conditions established, No hazard, MAX temperature of winding(PCB close BD1):85.7°C
DC fan	Locked	90	4h	F1	2.285	EUT can operate until steady conditions established, No hazard, MAX temperature of winding(PCB close TD2A):73.8°C

IEC/EN 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
EA7	S-C	264	<1s	F1	0.09	Unit shut down immediately, No hazard. Fault condition repealed, unit can return to work.
DA2	S-C	264	<1s	F1	0.09	Unit shut down immediately, No hazard. Fault condition repealed, unit can return to work.
Primary of PC3B	S-C	264	<1s	F1	0.13	Unit shut down immediately, No hazard. Fault condition repealed, unit can return to work.
Secondary of PC3B	S-C	264	<1s	F1	0.13	Unit shut down immediately, No hazard. Fault condition repealed, unit can return to work.
Q11(G-S)	S-C	264	<1s	F1	0.09	Unit shut down immediately, No hazard. Fault condition repealed, unit can return to work.
QP01(D-S)	S-C	264	<1s	F1	0.15	Input of unit diminished, components damaged, no hazard.
EC1	S-C	264	<1s	F1	0	Input of unit diminished, components damaged, no hazard.
supplementary information						
Electric strength test between pri. and sec. circuit: 3000 V a.c. / 1 min: Pass						

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p>ATTACHMENT TO TEST REPORT IEC 60950-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Information technology equipment – Safety – PART 1: GENERAL REQUIREMENTS</p>
<p>Differences according to : EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011+A2:2013</p>

<p>EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011+A2:2013 – CENELEC COMMON MODIFICATIONS</p>
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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions		P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		P

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.</p> <p>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.</p>	Added.	N
1.5.1	<p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>	Added.	N
1.7.2.1 (A1:2010)	<p>In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.</p>	Added.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p>	Replaced.	P
	<p>c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		
2.7.2	This subclause has been declared 'void'.	Declared.	N
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Deleted.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1	<p>Replace “60245 IEC 53” by “H05 RR-F”; “60227 IEC 52” by “H03 VV-F or H03 VVH2-F”; “60227 IEC 53” by “H05 VV-F or H05 VVH2-F2”.</p> <p>In Table 3B, replace the first four lines by the following:</p> <p>Up to and including 6 0,75^{a)} Over 6 up to and including 10 (0,75)^{b)} 1,0 Over 10 up to and including 16 (1,0)^{c)} 1,5 </p> <p>In the conditions applicable to Table 3B delete the words “in some countries” in condition^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Replaced.	N
3.3.4	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <p>Over 10 up to and including 16 1,5 to 2,5 1,5 to 4 </p> <p>Delete the fifth line: conductor sizes for 13 to 16 A</p>	Deleted.	N
4.3.13.6 (A1:2010)	<p>Replace the existing NOTE by the following:</p> <p>NOTE Z1 Attention is drawn to:</p> <p>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and</p> <p>2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).</p> <p>Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>	Replaced.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex H	<p>Replace the last paragraph of this annex by:</p> <p>At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 μSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.</p> <p>Replace the notes as follows:</p> <p>NOTE These values appear in Directive 96/29/Euratom.</p> <p>Delete NOTE 2.</p>	Replaced.	N
Bibliography	Additional EN standards.	Added.	—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
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ZB ANNEX (normative)			
SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N
1.2.13.14	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.		N
1.5.7.1	In Finland, Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	No such resistors.	N
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	No TNV circuits within the equipment.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>In Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laitte on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> <p>In Norway and Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p>	<p>The marking text must be provided when marketed in applicable countries.</p>	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkøplet utstyr – og er tilkøplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkøpling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p>		
1.7.5	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-1.7A.</p>	No socket-outlets provided.	N
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits within the equipment.	N
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits within the equipment.	N
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits within the equipment.	N
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.	Considered.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	The equipment is not direct plug-in equipment.	N
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits within the equipment.	N
3.2.1.1	<p>In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p> <p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE .250 V, 16 A</p>		N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>		N
3.2.1.1	<p>In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N
3.2.1.1	<p>In Ireland, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.</p>		N
3.2.4	<p>In Switzerland, for requirements see 3.2.1.1 of this annex.</p>		N
3.2.5.1	<p>In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>		N
3.3.4	<p>In the United Kingdom, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is:</p> <ul style="list-style-type: none"> • 1,25 mm² to 1,5 mm² nominal cross-sectional area. 		N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	In the United Kingdom , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	The equipment is not direct plug-in equipment.	N
4.3.6	In Ireland , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	The equipment is not direct plug-in equipment.	N
5.1.7.1	In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT. 	The equipment is not such equipment.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. <p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14. 	No TNV circuits within the equipment.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.2	In Finland, Norway and Sweden , the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.	No TNV circuits within the equipment.	N
7.2	In Finland, Norway and Sweden , for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	The equipment is not connected to the distribution systems.	N
7.3	In Norway and Sweden , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N
7.3	In Norway , for installation conditions see EN 60728-11:2005.		N

ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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**ATTACHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES**
Information technology equipment – Safety –
PART 1: GENERAL REQUIREMENTS

Differences according to : EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011+A2: 2013

Zx.	Protection against excessive sound pressure from personal music players		N
Zx.2	For equipment provided as package: Acoustic output $L_{Aeq,T}$ while playing the fixed "programme simulation noise" of EN 50332-1 (dBA)	Not applicable.	N
	For personal music player with analogue electrical output for a listening device: Electrical output as described in EN 50332-2 while playing the fixed "programme simulation noise" of EN 50332-1 (mV)	Same as above.	N
	Equipment exempted from safety provisions a) to e) below	Same as above.	N
	a) Protection of user provided against unintentional acoustic outputs exceeding stated levels	Same as above.	N
	b) Equipment has a standard acoustic output level not exceeding stated levels, and automatically returns to an output level not exceeding stated levels when the power is switched off	Same as above.	N
	c) Means for actively informing user of increased sound pressure when operated with an acoustic output exceeding stated levels	Same as above.	N
	d) Warning of subclause Zx.3 provided	Same as above.	N
	e) 1) For equipment provided as package: Acoustic output $L_{Aeq,T}$ while playing the fixed "programme simulation noise" of EN 50332-1 (dBA)	Same as above.	N
	e) 2) For personal music player with analogue electrical output for a listening device: Electrical output as described in EN 50332-2 while playing the fixed "programme simulation noise" of EN 50332-1 (mV)	Same as above.	N
Zx.3	Warning		N
	Symbol of IEC 60417-6044 provided	Same as above.	N
	Height of symbol (mm)	Same as above.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Wording "To prevent possible hearing damage, do not listen at high volume levels for long periods.", or similar, provided	Same as above.	N
	Alternative warning method used	Same as above.	N
Zx.4	Requirements for listening devices (headphones and earphones)		N
Zx.4.1	Wired listening devices with analogue input		N
	Input voltage with 94 dBA sound pressure output $L_{Aeq,T}$ while playing the fixed "programme simulation noise" of EN 50332-2 (mV)	Same as above.	N
Zx.4.2	Wired listening devices with digital input		N
	Acoustic output $L_{Aeq,T}$ of listening device with any playing device playing the fixed "programme simulation noise" of EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level) (dBA) :	Same as above.	N
	Digital interface standards used for testing ... :	Same as above.	N
	Equipment modes considered during testing :	Same as above.	N
Zx.4.3	Wireless listening devices		N
	Acoustic output $L_{Aeq,T}$ of listening device (in wireless mode) (dBA)	Same as above.	N
	Any playing and transmitting device playing the fixed "programme simulation noise" of EN 50332-1	Same as above.	N
	Wireless transmission standard used for testing	Same as above.	N
	Setting of volume and sound settings in the listening device	Same as above.	N
Zx.5	Measurement methods		N
	Time interval T according to EN 50332-1 or EN 50332-2, as applicable (s)	Same as above.	N

ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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ATTACHMENT TO TEST REPORT IEC 60950-1
FINLAND NATIONAL DIFFERENCES
 Information technology equipment – Safety –
 PART 1: GENERAL REQUIREMENTS

Differences according to : EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011+A2: 2013

	National Differences		P
General	See also Group Differences (EN 60950-1:2006/A11/A1)		P
1.5.7.1	In Finland resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	No such resistors.	N
1.5.9.4	In Finland , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	No TNV circuits within the equipment.	N
1.7.2.1	In Finland , CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in in Finland shall be as follows: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"	The marking text must be provided when marketed in Finland.	N
2.3.2	In Finland , there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits within the equipment.	N
2.10.5.13	In Finland , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits within the equipment.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	<p>In Finland, TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> - is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and - has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and - is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT. 	The equipment is not such equipment.	N
6.1.2.1 (A1:2010)	<p>In Finland, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>Alternatively for components, there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. 	No TNV circuits within the equipment.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14:2005 which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14:2005; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14:2005, in the sequence of tests as described in EN 60384-14:2005. 		
6.1.2.2	<p>In Finland, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.</p>	No TNV circuits within the equipment.	N
7.2	<p>In Finland, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>	The equipment is not connected to the distribution systems.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p>ATTACHMENT TO TEST REPORT IEC 60950-1 GERMANY NATIONAL DIFFERENCES Information technology equipment – Safety – PART 1: GENERAL REQUIREMENTS</p>
<p>Differences according to : VDE 0805-1:2011-01</p>

Annex ZC, 1.7.2.1	According to GPSG, section 2, clause 4: If certain rules on the use, supplementation or maintenance of an item of technical work equipment or ready-to-use commodity must be observed in order to guarantee safety and health, instructions for use in German must be supplied when it is brought into circulation.	Shall be evaluated during the national approval.	N
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EUT Photos

Photo 1 Appearance of EUT



Photo 2 Appearance of EUT



Photo 3 Appearance of EUT

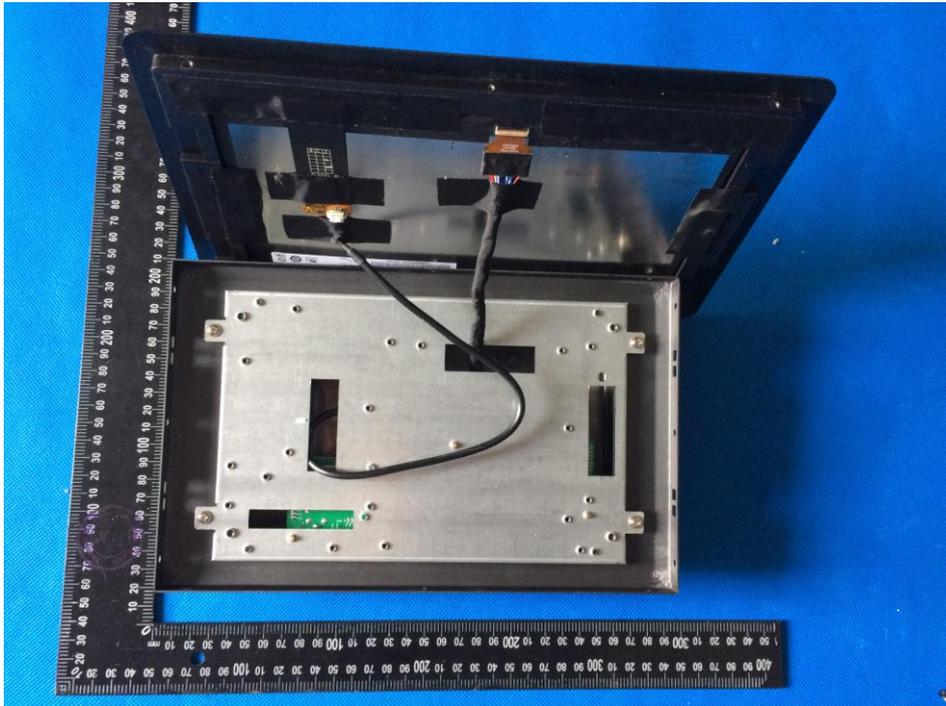
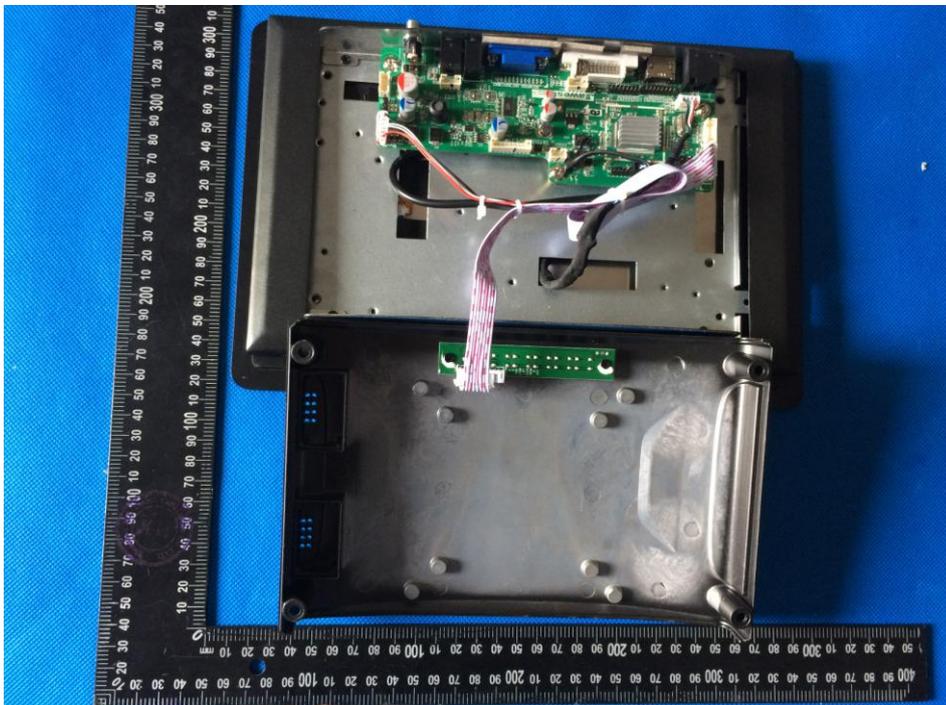


Photo 4 Appearance of EUT



END OF REPORT

Federal Communications Commission
Registration No.: 752021

Verification of Conformity

Applicant: Shenzhen Touch Think Intelligence Co., Ltd
No.201-1, The Fourth Building, Xinjianxing Industrial Park,
Yangguang Second Road, Nanshan District, Shenzhen
City

Manufacturer: Shenzhen Touch Think Intelligence Co., Ltd
No.201-1, The Fourth Building, Xinjianxing Industrial Park,
Yangguang Second Road, Nanshan District, Shenzhen
City

Equipment Under Test: Industrial All In One PC With Touch Screen/All In One
POS Machine With Touch Screen

Trade Name: N.A.

Model Name: TPC150, TPC151, TPC152, TPC153, TPC156, TPC158,
TPC170, TPC171, TPC172, TPC173, TPC176, TPC178,
TPC190, TPC191, TPC192, TPC193, TPC196, TPC198,
IPC150, IPC151, IPC152, IPC153, IPC156, IPC158,
IPC170, IPC171, IPC172, IPC173, IPC176, IPC178,
IPC190, IPC191, IPC192, IPC193, IPC196, IPC198

Power Supply: DC 12V

Type of Test: FCC Part 15 Subpart B

Measurement Procedure: ANSI C63.4: 2009

File Number: AT1309871F

Report Number: 201309931F

Date of Test: Sept. 26~Oct. 08, 2013

The above equipment was tested by Anbotek Compliance Laboratory Limited for compliance with the requirements set forth in the FCC Rules and Regulations Part 15 Subpart B and the measurement procedure according to ANSI C63.4. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements. The test results of this report relate only to the tested sample identified in this report.



Certified by

Tom Chen
Tom Chen
Manager

Oct. 10, 2013
Date

Shenzhen Anbotek Compliance Laboratory Limited
1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Tel: (86)755-2606654
Nanshan District, Shenzhen, Guangdong, China Fax: (86)755-26014772
[Http://www.anbotek.com](http://www.anbotek.com) Email: service@anbotek.com

Federal Communications Commission

Registration No.: 752021

Verification of Conformity

Applicant: Shenzhen Touch Think Electronic Technology Co., Ltd.
 No.201-1, The Fourth Building, Xinjianxing Industrial Park, Yangguang Second Road, Nanshan District, Shenzhen City

Manufacturer: Shenzhen Touch Think Electronic Technology Co., Ltd.
 No.201-1, The Fourth Building, Xinjianxing Industrial Park, Yangguang Second Road, Nanshan District, Shenzhen City

Equipment Under Test: Industrial All In One PC With Touch Screen/All In One POS Machine With Touch Screen

Trade Name: N.A.

Model Name: TPC150, TPC151, TPC152, TPC153, TPC156, TPC158, TPC170, TPC171, TPC172, TPC173, TPC176, TPC178, TPC190, TPC191, TPC192, TPC193, TPC196, TPC198, IPC150, IPC151, IPC152, IPC153, IPC156, IPC158, IPC170, IPC171, IPC172, IPC173, IPC176, IPC178, IPC190, IPC191, IPC192, IPC193, IPC196, IPC198

Power Supply: DC 12V

Type of Test: FCC Part 15 Subpart B

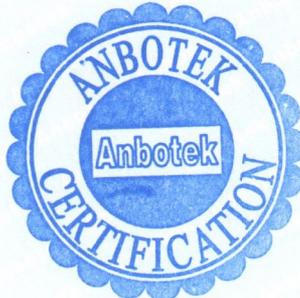
Measurement Procedure: ANSI C63.4: 2009

File Number: AT1309871F

Report Number: 201309931F

Date of Test: Sept. 26~Oct. 08, 2013

The above equipment was tested by Anbotek Compliance Laboratory Limited for compliance with the requirements set forth in the FCC Rules and Regulations Part 15 Subpart B and the measurement procedure according to ANSI C63.4. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements. The test results of this report relate only to the tested sample identified in this report.



Certified by

Tom Chen
 Tom Chen
 Manager

Oct. 10, 2013
 Date

Shenzhen Anbotek Compliance Laboratory Limited
 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Tel: (86)755-2606654
 Nanshan District, Shenzhen, Guangdong, China Fax: (86)755-26014772
 Http://www.anbotek.com Email:service@anbotek.com

Test Report

Report No.: PZ-2019022101-02

Sample Model: 10.1" All in one Capacitive Touch Screen Panel PC

Sample Model: 10.1" Android Capacitive Touch Screen/ Quad-Core A64P1

Test Quantity: 1pc

Test Date: 2019.2.21-2019.2.22

Test Items: Drop Test

Standards: Drop from 800mm height with package, free drop by six times.

Test Results: Pass

Edit/Date: 丁华林 2019/2/21 Audit/Date: / Approval/Date: 蔡诗群 2019/2/22

一、Test Condition

- 1、Environment Condition: Temperature: 25±3°C, Humidity:60%±15%RH;
- 2、Test Condition: Drop from 800mm height with package, free drop by six times..
- 3、Ref. Standard: GB/T 4857.5-1992
- 4、Purpose: Under the above conditions, the appearance/structure/electrical performance match the requirements.

二、Test Machine

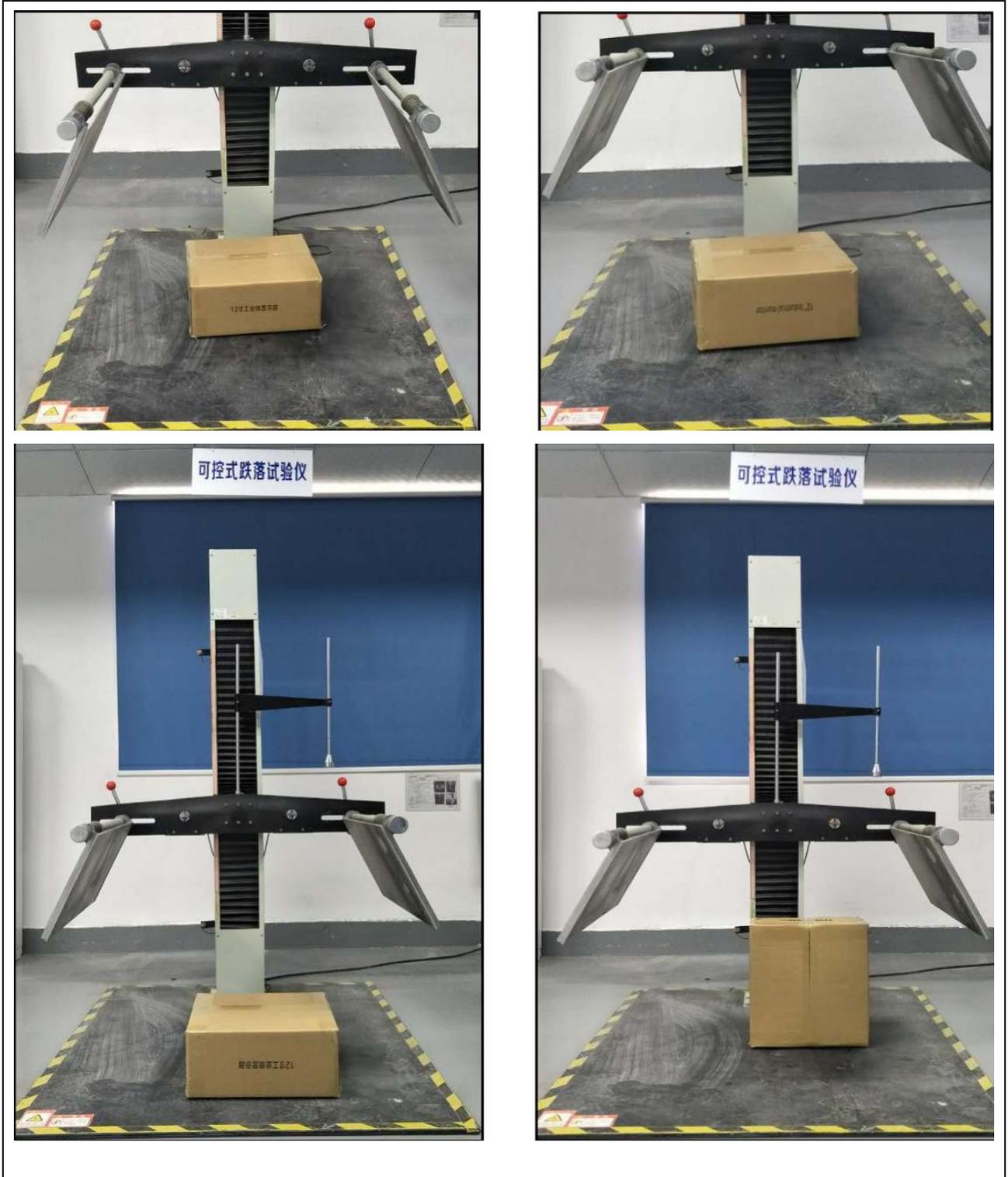
Name	Machine No.	Calibration Date	Recalibration Period
Drop Tester	RD-YF-010	2018.9.5	One Year

三、Test Data

Sample No.	10.1"	/	/	/	/
Test Result	PASS	/	/	/	/

四、Test Photos





END

Test Report

Report No.: PZ-2018122301-02

Sample Model: 11.6" All in one Capacitive Touch Screen Panel PC

Sample Model: 11.6" Android Capacitive Touch Screen/ Quad-Core A64P1

Test Quantity: 1pc

Test Date: 2018.12.22-2018.12.23

Test Items: Low Temperature

Standards: Low Temperature $-20^{\circ}\text{C}\pm 2^{\circ}\text{C}$ ($-4^{\circ}\text{F}\pm 28.4^{\circ}\text{F}$), Environment Humidity 0%RH, working 12H

Test Results: Pass

Edit/Date: 丁华林 2018/12/23 Audit/Date: _____ / _____

Approval/Date: 蔡诗群 2018/12/23

一、Test Condition

- 1、Environment Condition: Temperature: 25±3°C, Humidity:60%±15%RH;
- 2、Test Condition: Low Temperature -20°C±2°C, Humidity 0%RH, Continue testing 12H.
- 3、Ref. Standard: GB/T 28046-2011
- 4、Purpose: Under the condition of low temperature -20°C±2°C, humidity 0%RH, verify the products can working well or not.

二、Test Machine

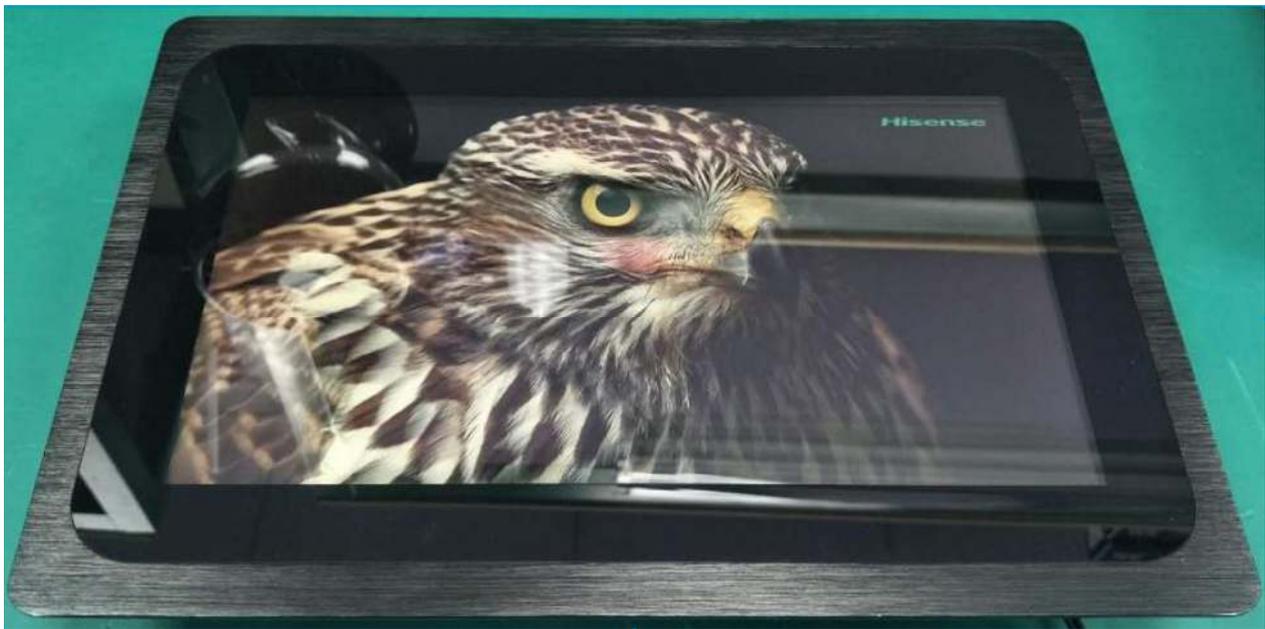
Name	Machine No.	Calibration Date	Recalibration Period
Temp & Humi Programmable Chamber	RD-YF-009	2018.9.5	One Year

三、Test Data

Sample No.	11.6"	/	/	/	/
Test Result	PASS	/	/	/	/

四、Test Photos





After the test process, all function working well.

END

Test Report

Report No.: PZ-2019022101-01

Sample Model: 10.1" All in one Capacitive Touch Screen Panel PC

Sample Model: 10.1" Android Capacitive Touch Screen/ Quad-Core A64P1

Test Quantity: 1pc

Test Date: 2019.2.21-2019.2.22

Test Items: Vibration Test

Standards: Test speed (240CPM), Frequency (4.0Hz), Test time (60Min).

Test Results: Pass

Edit/Date: 丁华林 2019/2/22 Audit/Date: _____ / _____

Approval/Date: 蔡诗群 2019/2/22

一、 Test Condition

- 1、 Environment Condition: Temperature: 25±3°C, Humidity:60%±15%RH;
- 2、 Test Condition: Test speed (240CPM), Frequency (4.0Hz), Test time (60Min).
- 3、 Ref. Standard: GB/T 4857.7-92
- 4、 Purpose: After Vibration test of simulated automobile transportation, the device match the applications requirements.

二、 Test Machine

Name	Machine No.	Calibration Date	Recalibration Period
Vibration test of simulated automobile transportation	RD-YF-011	2018.9.5	One Year

三、 Test Data

Sample No.	10.1"	/	/	/	/
Test Result	PASS	/	/	/	/

四、 Test Photos





END

Test Report

Report No.: PZ-2018122801-01

Sample Model: 11.6" All in one Capacitive Touch Screen Panel PC

Sample Model: 11.6" Android Capacitive Touch Screen/ Quad-Core A64P1

Test Quantity: 1pc

Test Date: 2018.12.27-2018.12.28

Test Items: High Temperature

Standards: High Temperature $70^{\circ}\text{C}\pm 2^{\circ}\text{C}$ ($158^{\circ}\text{F}\pm 35.6^{\circ}\text{F}$), Environment Humidity 0%RH, working 12H

Test Results: Pass

Edit/Date: 丁华林 2018/12/28

Audit/Date: _____ / _____

Approval/Date: 蔡诗群 2018/12/28

一、 Test Condition

- 1、 Environment Condition: Temperature: 20±3°C, Humidity:60%±15%RH;
- 2、 Test Condition: High Temperature 70°C±2°C, Humidity 0%RH,Continue 2H.
- 3、 Ref. Standard: GB/T 28046-2011
- 4、 Purpose: Under the condition of high temperature 70°C±2°C, humidity 0%RH, verify the products can working well or not.

二、 Test Machine

Name	Machine No.	Calibration Date	Recalibration Period
Temp & Humi Programmable Chamber	RD-YF-009	2018.9.5	One Year

三、 Test Data

Sample No.	11.6"	/	/	/	/
Test Result	PASS	/	/	/	/

四、 Test Photos





After the test process, all function working well.

END

Test Report

Report No.: PZ-2019120602-09

Sample Model: JWS116-W210-i7

Sample Model: Intel® Core™ i7-7500U Processor

Test Quantity: 1pc

Test Date: 2019.12.04-2019.12.06

Test Items: High Temperature

Standards: High Temperature $70^{\circ}\text{C}\pm 2^{\circ}\text{C}$ ($158^{\circ}\text{F}\pm 35.6^{\circ}\text{F}$), Environment Humidity 0%RH, working 12H

Test Results: Pass

Edit/Date: 丁华林 2019/12/8

Audit/Date: _____ / _____

Approval/Date: 蔡诗群 2019/12/8

一、Test Condition

- 1、Environment Condition: Temperature: 20±3°C, Humidity:60%±15%RH;
- 2、Test Condition: High Temperature 70°C±2°C, Humidity 0%RH,Continue 2H.
- 3、Ref. Standard: GB/T 28046-2011
- 4、Purpose: Under the condition of high temperature 70°C±2°C, humidity 0%RH, verify the products can working well or not.

二、Test Machine

Name	Machine No.	Calibration Date	Recalibration Period
Temp & Humi Programmable Chamber	RD-YF-009	2019.9.5	One Year

三、Test Data

Sample No.	JWS116-W210-i7	/	/	/	/
Test Result	PASS	/	/	/	/

四、Test Photos





After the test process, all function working well.

END

Test Report

Report No.: PZ-2019121601-09

Sample Model: JWS215-W210-I5

Sample Model: Intel® Core™ i5-7200U Processor

Test Quantity: 1pc

Test Date: 2019.12.14-2019.12.16

Test Items: Low Temperature

Standards: Low Temperature $-20^{\circ}\text{C}\pm 2^{\circ}\text{C}$ ($-4^{\circ}\text{F}\pm 28.4^{\circ}\text{F}$), Environment Humidity 0%RH, working 12H

Test Results: Pass

Edit/Date: 丁华林 2019/12/16 Audit/Date: _____ / _____

Approval/Date: 蔡诗群 2019/12/16

一、Test Condition

- 1、Environment Condition: Temperature: 25±3°C, Humidity:60%±15%RH;
- 2、Test Condition: Low Temperature -20°C±2°C, Humidity 0%RH, Continue testing 12H.
- 3、Ref. Standard: GB/T 28046-2011
- 4、Purpose: Under the condition of low temperature -20°C±2°C, humidity 0%RH, verify the products can working well or not.

二、Test Machine

Name	Machine No.	Calibration Date	Recalibration Period
Temp & Humi Programmable Chamber	RD-YF-009	2019.9.5	One Year

三、Test Data

Sample No.	JWS215-W210-I5	/	/	/	/
Test Result	PASS	/	/	/	/

四、Test Photos





After the test process, all function working well.

END

Test Report

Report No.: PZ-2019121206-04

Sample Model: JWS116-W210-I7

Sample Model: Intel® Core™ i7-7500U Processor

Test Quantity: 1pc

Test Date: 2019.12.10-2019.12.12

Test Items: Low Temperature

Standards: Low Temperature $-20^{\circ}\text{C}\pm 2^{\circ}\text{C}$ ($-4^{\circ}\text{F}\pm 28.4^{\circ}\text{F}$), Environment Humidity 0%RH, working 12H

Test Results: Pass

Edit/Date: 丁华林 2019/12/12 Audit/Date: _____/_____

Approval/Date: 蔡诗群 2019/12/12

一、Test Condition

- 1、Environment Condition: Temperature: 25±3°C, Humidity:60%±15%RH;
- 2、Test Condition: Low Temperature -20°C±2°C, Humidity 0%RH, Continue testing 12H.
- 3、Ref. Standard: GB/T 28046-2011
- 4、Purpose: Under the condition of low temperature -20°C±2°C, humidity 0%RH, verify the products can working well or not.

二、Test Machine

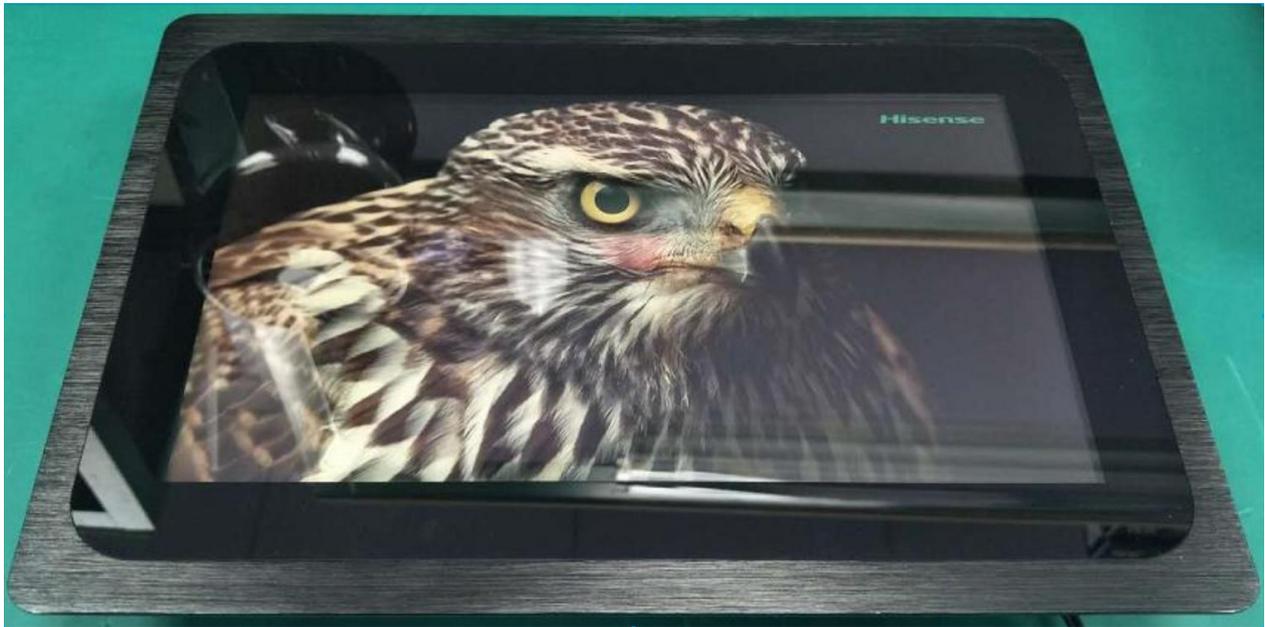
Name	Machine No.	Calibration Date	Recalibration Period
Temp & Humi Programmable Chamber	RD-YF-009	2019.9.5	One Year

三、Test Data

Sample No.	JWS116-W210-I7	/	/	/	/
Test Result	PASS	/	/	/	/

四、Test Photos





After the test process, all function working well.

END

Test Report

Report No.: PZ-2019120601-08

Sample Model: JWS215-W210-i5

Sample Model: Intel® Core™ i5-7200U Processor

Test Quantity: 1pc

Test Date: 2019.12.04-2019.12.06

Test Items: High Temperature

Standards: High Temperature $70^{\circ}\text{C}\pm 2^{\circ}\text{C}$ ($158^{\circ}\text{F}\pm 35.6^{\circ}\text{F}$), Environment Humidity 0%RH, working 12H

Test Results: Pass

Edit/Date: 丁华林 2019/12/8

Audit/Date: _____/_____

Approval/Date: 蔡诗群 2019/12/8

一、Test Condition

- 1、Environment Condition: Temperature: 20±3°C, Humidity:60%±15%RH;
- 2、Test Condition: High Temperature 70°C±2°C, Humidity 0%RH,Continue 2H.
- 3、Ref. Standard: GB/T 28046-2011
- 4、Purpose: Under the condition of high temperature 70°C±2°C, humidity 0%RH, verify the products can working well or not.

二、Test Machine

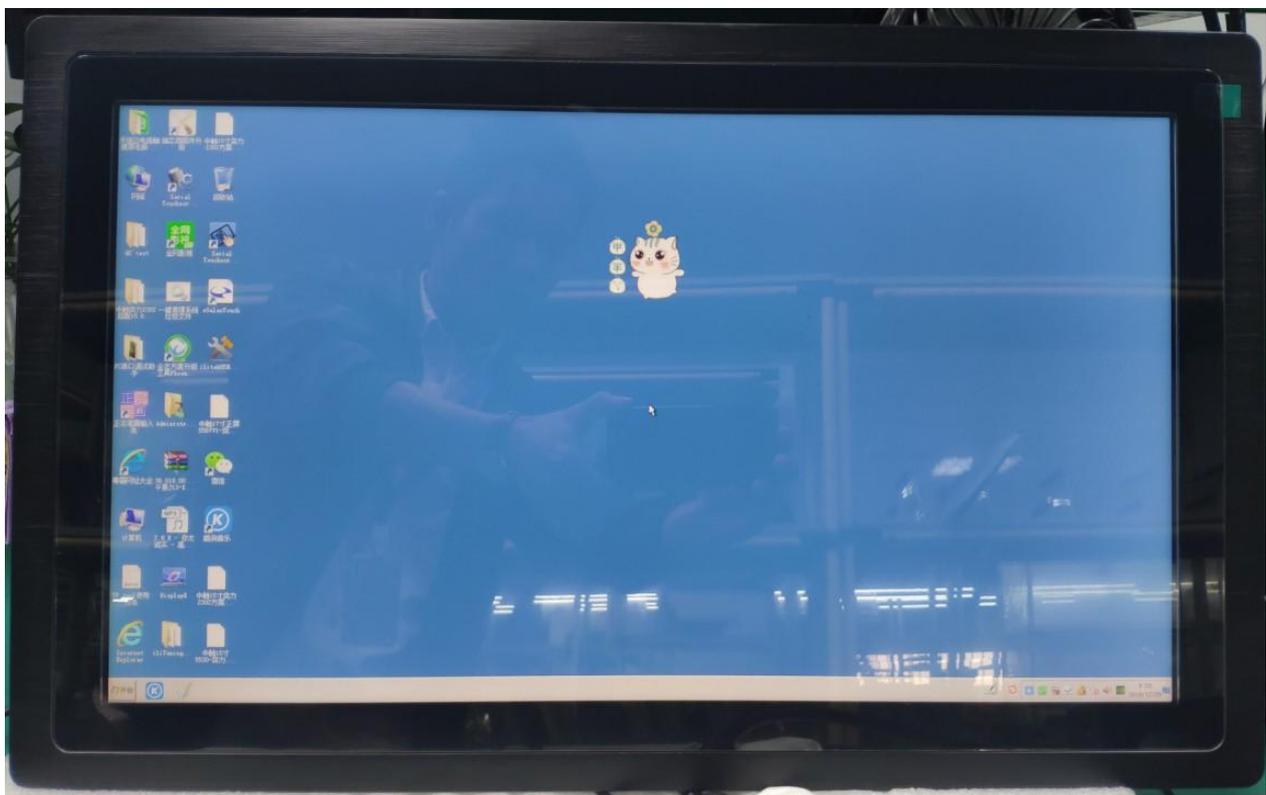
Name	Machine No.	Calibration Date	Recalibration Period
Temp & Humi Programmable Chamber	RD-YF-009	2019.9.5	One Year

三、Test Data

Sample No.	JWS215-W210-i5	/	/	/	/
Test Result	PASS	/	/	/	/

四、Test Photos





After the test process, all function working well.

END