EMC EMISSION - TEST REPORT

Report Number	:	**64.740.11.04333.01 – (E)**	Date of Issue:	2011-11-21

Model / Serial No.	:	ELP006V0090LT, ELP006V0120LT, ELP006V0150LT, ELP006V0240LT / NIL
Product Type	:	LED POWER SUPPLY
Applicant	:	Eaglerise Electric & Electronic (Foshan) Co., Ltd.
Manufacturer	:	Eaglerise Electric & Electronic (Foshan) Co., Ltd.
License holder	:	Eaglerise Electric & Electronic (Foshan) Co., Ltd.
Address	:	Guicheng Sci-Tech Industrial Park, Jianping Road, Nanhai Dis-trict, 528200 Foshan City, Guangdong Province, People's Re-public of China

Test Result	:	■ **Positive** ☐ **Negative**
Total pages including Appendices	:	36

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

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DIRECTORY - EMISSIONS

Jiangsu TÜV Product Service Ltd. Guangzhou Branch

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EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to the following regulations:

■ - EMC - Directive 2004/108/EC and its amendments

☐ - EN 61000-6-3:2007

☐ - EN61000-6-4:2007

☐ - EN 55011:1998+A1:1999+A2:2002	☐ - Group 1 ☐ - Class A	☐ - Group 2 ☐ - Class B
☐ - EN 55013:2001+A1:2003		
☐ - EN 55014-1:2006	☐ - Household appliances and similar ☐ - Portable tools ☐ - Semiconductor devices	
■ - EN 55015:2006+A1:2007+A2:2009		
☐ - EN 55022:1998+A1:2000+A2:2003	☐ - Class A	☐ - Class B
■ - EN 61000-3-2:2006+A1:2009+A2:2009		
■ - EN 61000-3-3:2008		
☐ - FCC Part 15	☐ - Class A	☐ - Class B
☐ - AS 3548 (1992)	☐ - Class A	☐ - Class B

Note: For undated references, the latest edition of the publication at the time of testing (including amendments) was applied.

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Environmental Conditions In The Laboratory:

	Actual
Temperature:	: 25-26 °C
Relative Humidity:	: 46-60 %
Atmospheric Pressure:	: 1002-1006 mBar

Power Supply Utilized:

Power Supply : 230V / 50 Hz /1 ϕ

STATEMENT OF MEASUREMENT UNCERTAINTY

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

Symbol Definitions:

■ - Applicable
☐ - Not Applicable

Test laboratory:

☐ - GRGT
Add: 163 Ping Yun Rd.West Of HuangPu Ave,Guangzhou 510656,P.O.Box.1411,China

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

■ - Waltek Services (Shenzhen) Co., Ltd.
Add: 1/F,Fukangtai building, Baima Road,Songgang,Bao'an District, Shenzhen City, Guangdong, China

Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE)* measurements were performed at the following test location:

☐ - Test not applicable

■ - Test Area (TÜV PS) –Shielded room

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■ -	ESCI	Rohde & Schwarz	EMI Test Receiver	TÜV PS
☐ -	ENV216	Rohde & Schwarz	AMN	TÜV PS
☐-	ESH2-Z3	Rohde & Schwarz	Passive voltage probe	TÜV PS
■-	RSU-M314-N	Compliance Direction Systems Inc.	RF Switch Box	TÜV PS
☐ -			Artificial Hand	TÜV PS
■-	LS16	AFJ	16A v-Network	16011030241 (TUVPS)
☐-			Conical metal housing	TÜV PS

Measurement Uncertainty: ±2.48dB (9kHz-30MHz)
Remarks: All test equipments used are calibrated on a regular basis.

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Emissions Test Conditions: RADIATED EMISSIONS (Magnetic Field)

The *RADIATED EMISSIONS (MAGNETIC FIELD)* measurements were performed at the following test location:

☐ - Test not applicable

■ - Test Area (TÜV PS) –Shielded room

Testing was performed at a test distance of :

■- 2 meters loops
☐ - 30 meters

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■-	HXYZ 9170	Schwarzbeck	3-LOOP Antenna	TÜV PS (YP170-193)
■-	ESCI	Rohde & Schwarz	EMI Test Receiver	TÜV PS (100727)
■ -	RSU-M314-N	Compliance Direction Systems Inc.	RF Switch Box	TÜV PS (08042801)

Measurement Uncertainty: ±2.50dB (9kHz-30MHz)
Remarks: All test equipments used are calibrated on a regular basis.

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Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *RADIATED EMISSIONS (ELECTRIC FIELD)* measurements, in the frequency range of 30 MHz-300 MHz, were tested in a horizontal and vertical polarization at the following test location :

☐ - Test not applicable

☐ - Test Area (GRGT) - Anechoic ferrite lined shielded room
■ - Test Area (WALTEK) –Laboratory open area (CDN method)

Testing was performed at a test distance of :

☐ - 3 meters
☐ - 10 meters
■ - CDN method

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
☐ -	ESU40	Rohde & Schwarz	EMI Test Receiver	GRGT
☐ -	3142C	ETS.LINDGREN	Antenna, Log Periodic	GRGT
■ -	CDN M016	TESEQ GmbH	CDN M-Type	25112 (WALTEK)
■ -	ESCI	ROHDE&SCHWARZ	Test Receiver	101155 (WALTEK)
■-	ATN6050	TESEQ GmbH	Attenuator 6dB	25376 (WALTEK)

Measurement Uncertainty: ±2.90dB (30MHz-300MHz)
Remarks: All test equipments used are calibrated on a regular basis.

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Emissions Test Conditions: CONDUCTED EMISSIONS (Harmonics and Flicker)

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

■ - Test not performed

☐ - Test Area (TÜV PS) –Laboratory open area
☐ - Test Area (GRGT) –Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
☐ -	PCR6000LA	Kikusui	Multi purpose power supply	TÜV PS
☐ -	PM6000-1	Voltech	Power anyalyser	TÜV PS
☐ -	IMP555	Voltech	Impedance network	TÜV PS
☐ -	5001ix-400-LF	California Instruments	AC Source	57549 (GRGT)
☐ -	PACS-1	California Instruments	Power Analyzer	72501 (GRGT)

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

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

The equipment under test was operated under the following conditions during emissions testing:

☐ - Standby

☐ - Test Program (H - Pattern)

☐ - Test Program (Color Bar)

☐ - Test Program (Customer Specified)

■ - Normal Operating Mode

☐ - _____

Configuration of the equipment under test:

■ - See Constructional Data Form in Appendix B

■ - See Product Information Form(s) in Appendix B

The following peripheral devices and interface cables were connected during the testing:

■ - Adjustable resistance Type : 200Ω/1.0A

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

■ - unshielded power cable

☐ - unshielded cables

☐ - shielded cables TUVPS.No.: _____

☐ - customer specific cables

☐ - _____

☐ - _____

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Emissions Test Results:

Conducted Emissions, 9 kHz - 30 MHz

■ - PASS ☐ - FAIL ☐ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: _____

Radiated Emissions (Magnetic Field), 9 kHz - 30 MHz

■ - PASS ☐ - FAIL ☐ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: No significant emission was detected within 10 dB to limit.

Radiated Emissions (Electric Field), 30 MHz - 300 MHz

■ - PASS ☐ - FAIL ☐ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: _____

Harmonic Current Emissions and Voltage Fluctuations and Flicker

■ - PASS ☐ - FAIL ☐ - NOT APPLICABLE

Harmonic measurement exceeding limit _____ Above at _____ Harmonic

Flicker measurement exceeding limit _____ Above the _____ Requirement

Remarks: When the EUTs are load with LED lamp with rated power less than 25W, the harmonic test was not applied. According to clause A.2 of EN 61000-3-3:2008, flicker test is not applied.

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China

GENERAL REMARKS:

All the models use the same circuit diagram and PCB layout, the rated output voltage is different among them and the transformer T1 of ELP006V0240LT is different from other models, so tests were only applied for ELP006V0090LT (output 9V), ELP006V0150LT (output 15V) and ELP006V0240LT (output 24V), the ELP006V0120LT (output 12V) can be covered.

SUMMARY:

All tests according to the regulations cited on page 3 were

■ - Performed

☐ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements cited on page 3.

☐ - **Does not** fulfill the general approval requirements cited on page 3.

Testing Start Date: 2011-11-10

Testing End Date: 2011-11-17

- Jiangsu TÜV Product Service Ltd. Guangzhou Branch -

Reviewed by: Kitty Xu

Prepared by: Elite Wu

Jiangsu TÜV Product Service Ltd. Guangzhou Branch

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Appendix A

Test Setup Photo(s)

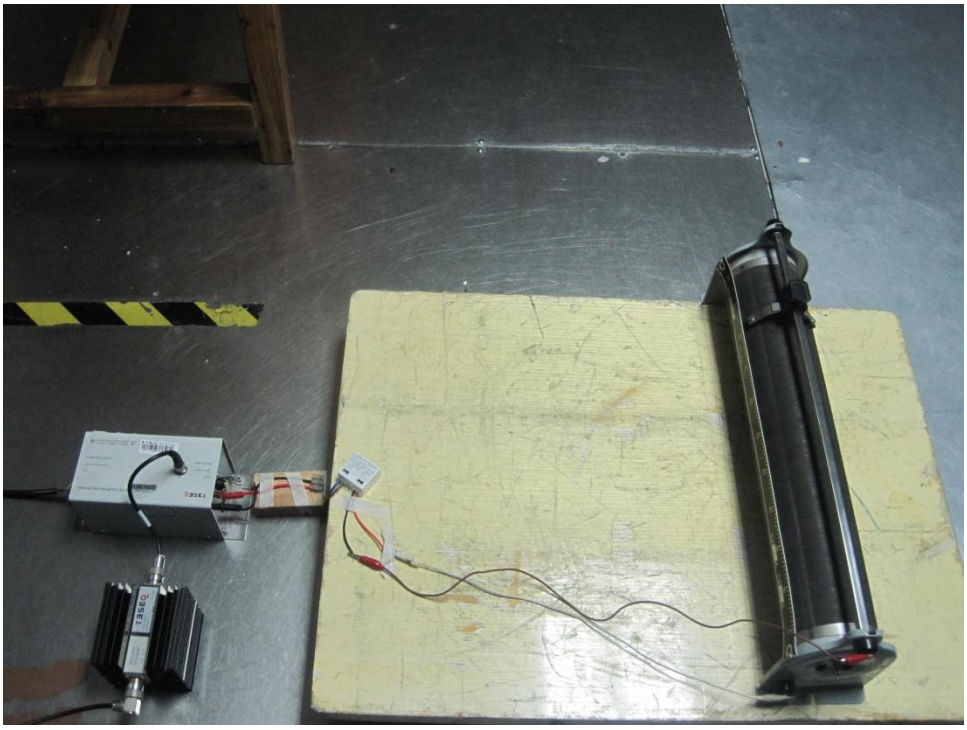
and

Test Data Sheets

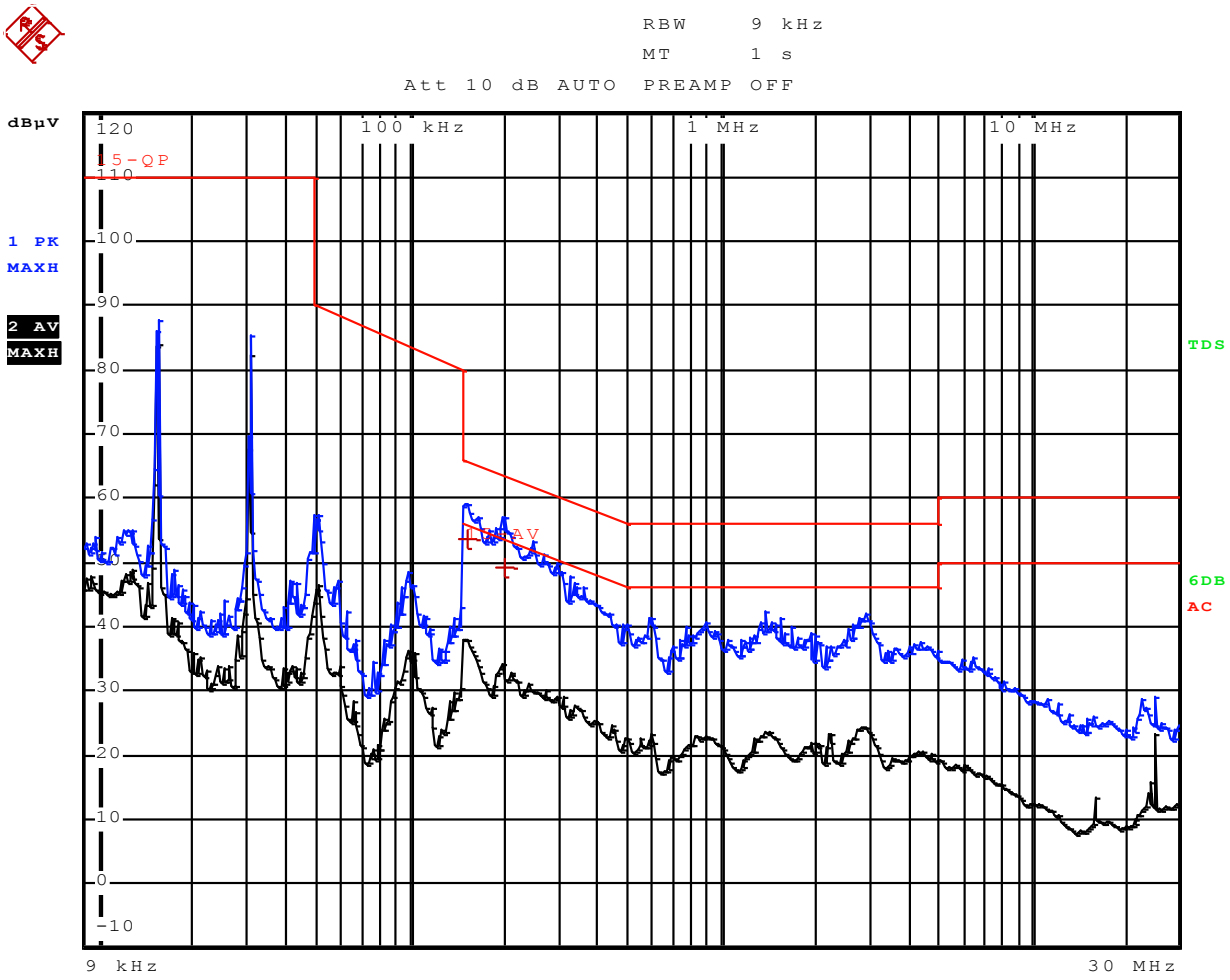
Photo of setup Conducted Emission

Photo of setup Radiated Emissions (Magnetic Field)

Photo of setup Radiated Emissions (Electric Field)



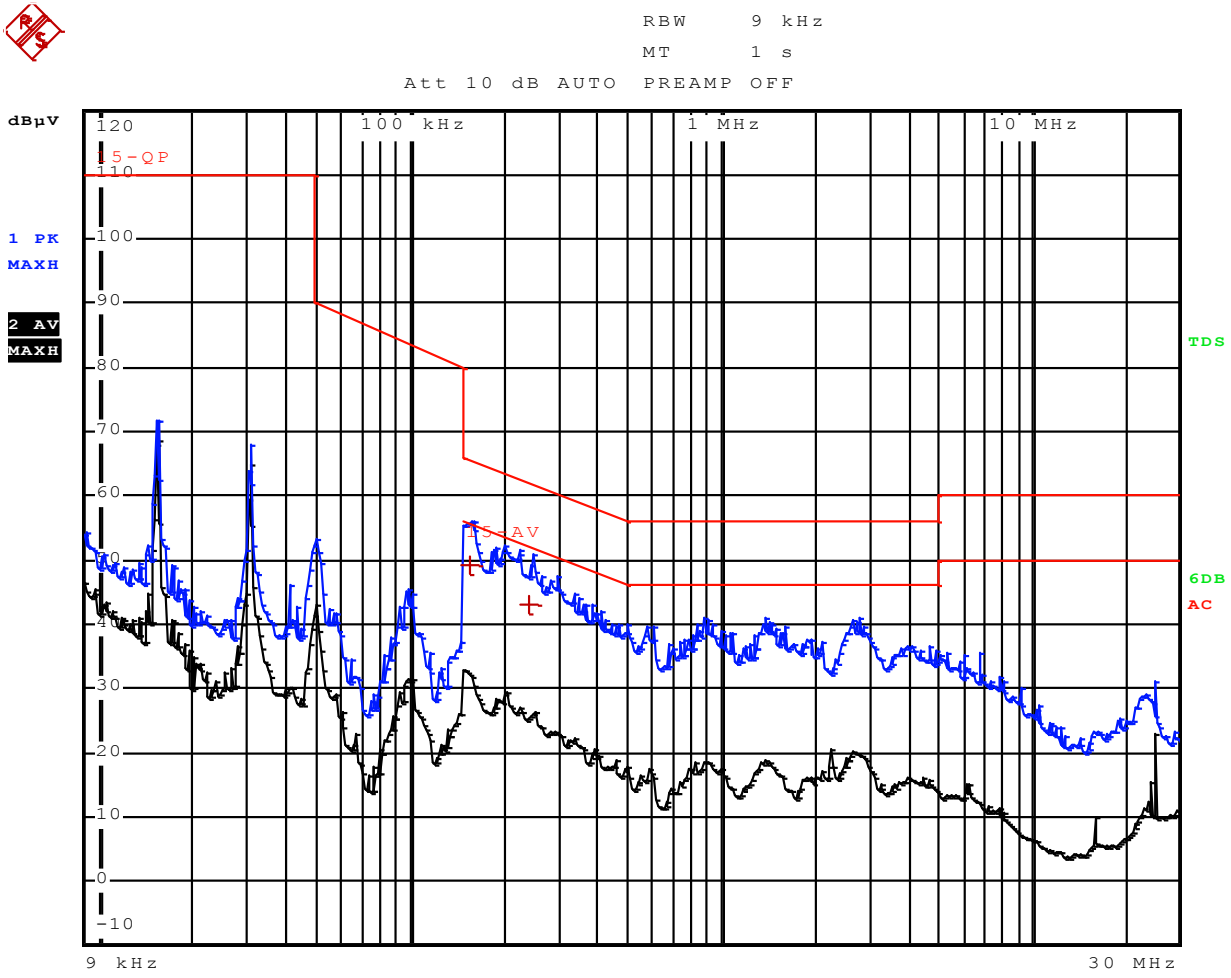
Conducted Emission (9kHz-30MHz)



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	154.5 kHz	53.71	-12.04
1 Quasi Peak	199.5 kHz	49.03	-14.60

Model	:	ELP006V0090LT
Operating Mode	:	Full load
Conduct Line/Port	:	L
Test By	:	Elite Wu
Test Date	:	2011-11-14

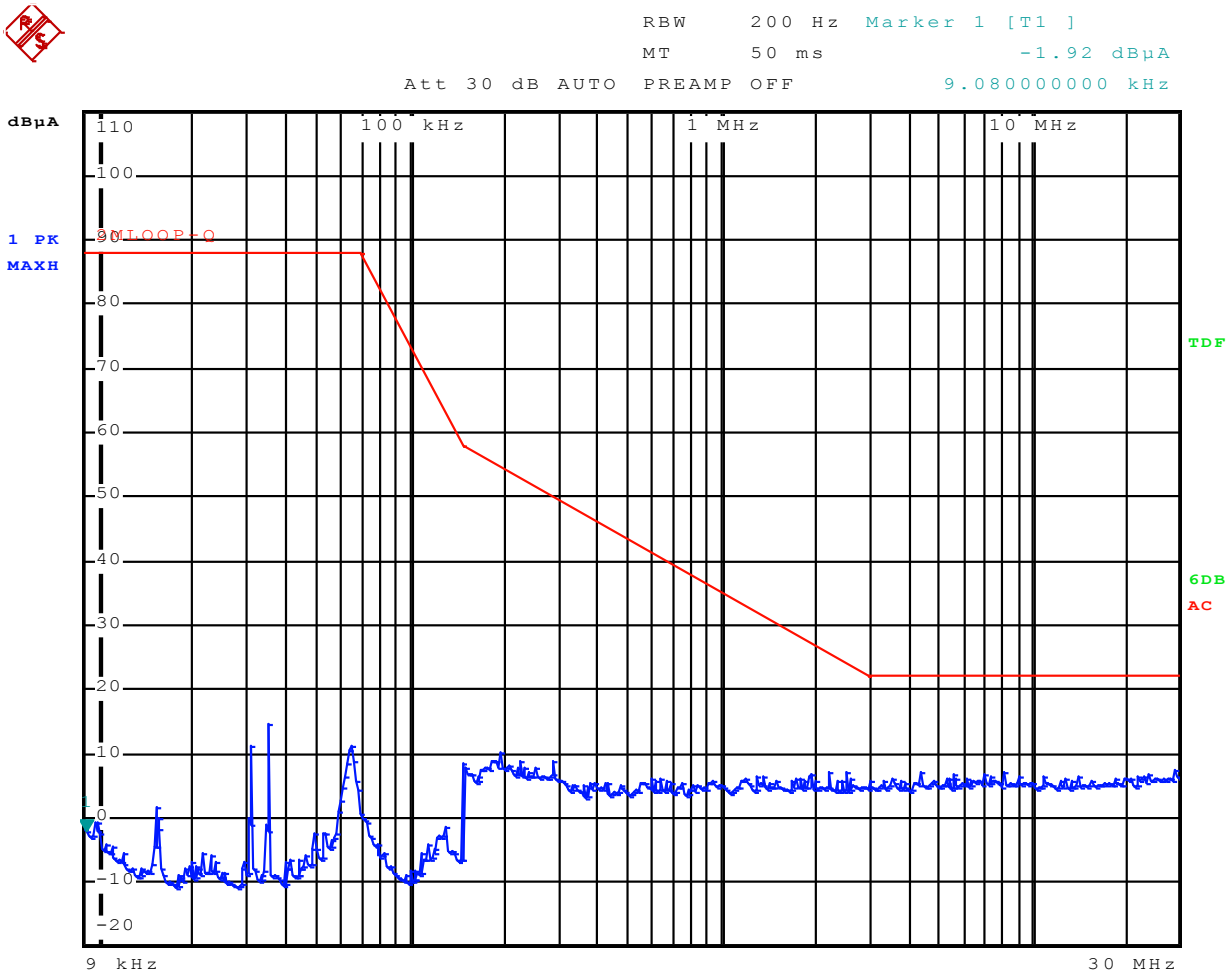
Conducted Emission (9kHz-30MHz)



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	159 kHz	49.35	-16.16
1 Quasi Peak	244.5 kHz	42.98	-18.96

Model	:	ELP006V0090LT
Operating Mode	:	Full load
Conduct Line/Port	:	N
Test By	:	Elite Wu
Test Date	:	2011-11-14

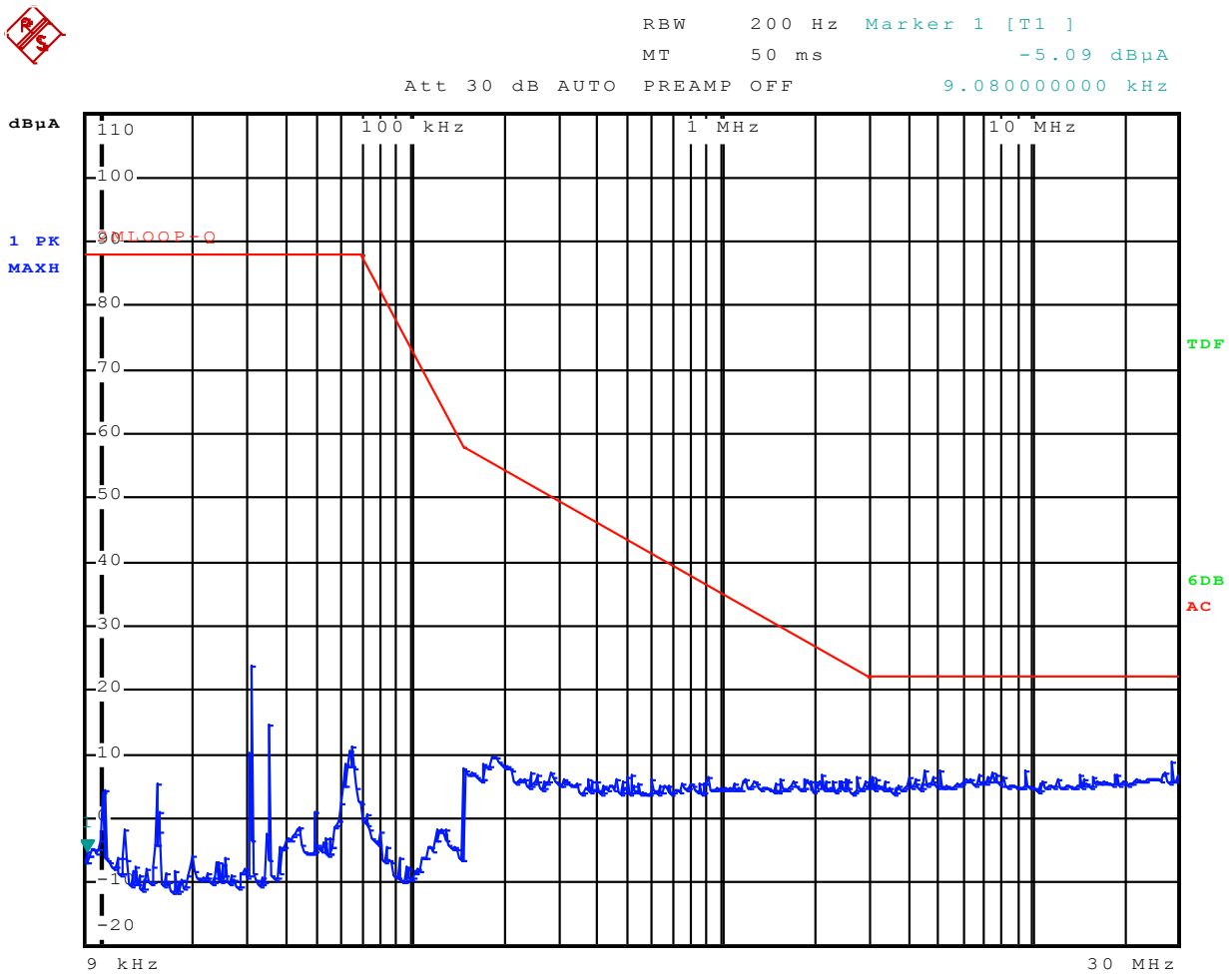
Radiated Emission (9kHz-30MHz)



No significant emission was detected within 10 dB to limit.

Model	:	ELP006V0090LT
Operating Mode	:	Full load
Antenna	:	LOOP X
Test By	:	Elite Wu
Test Date	:	2011-11-15

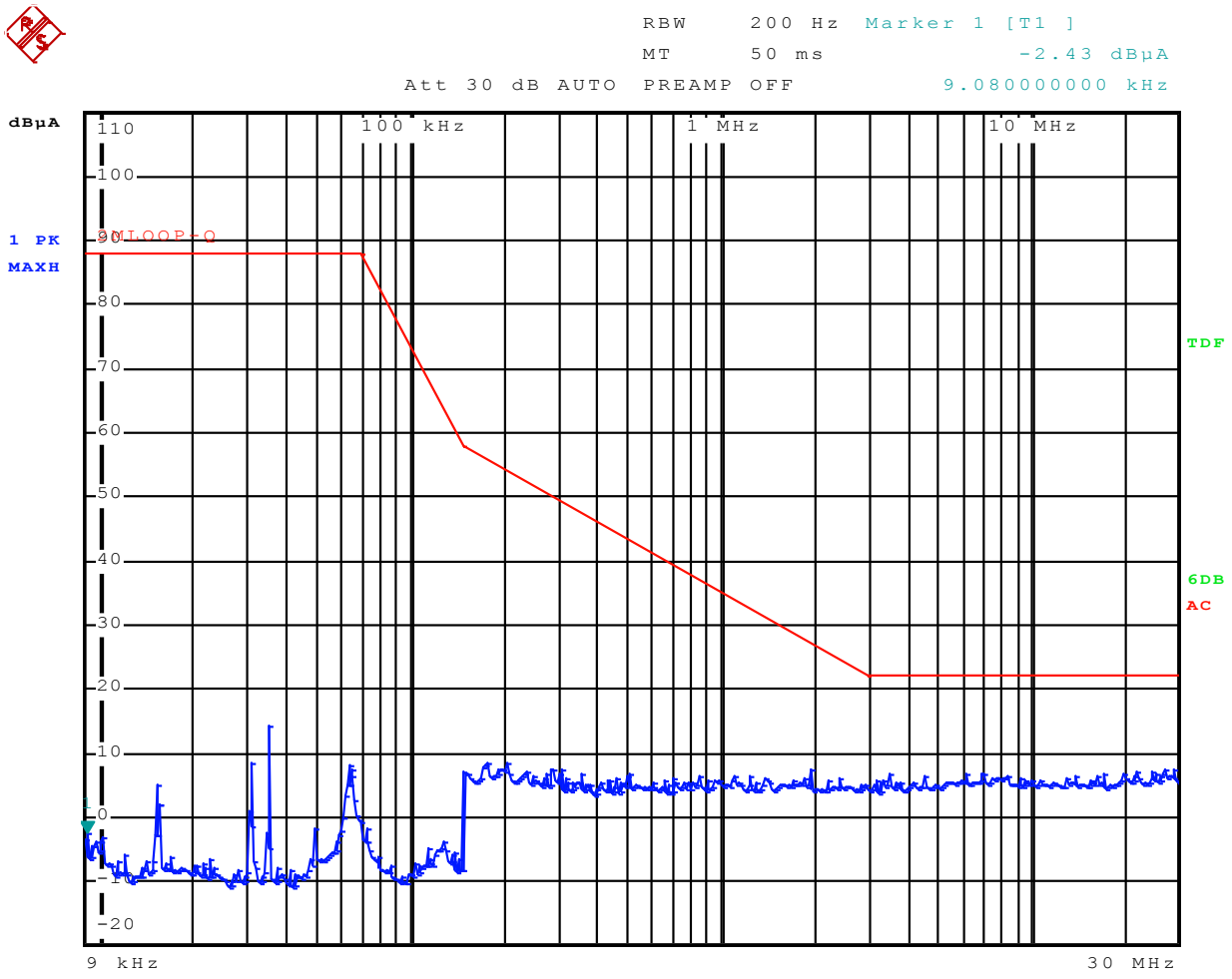
Radiated Emission (9kHz-30MHz)



No significant emission was detected within 10 dB to limit.

Model	:	ELP006V0090LT
Operating Mode	:	Full load
Antenna	:	LOOP Y
Test By	:	Elite Wu
Test Date	:	2011-11-15

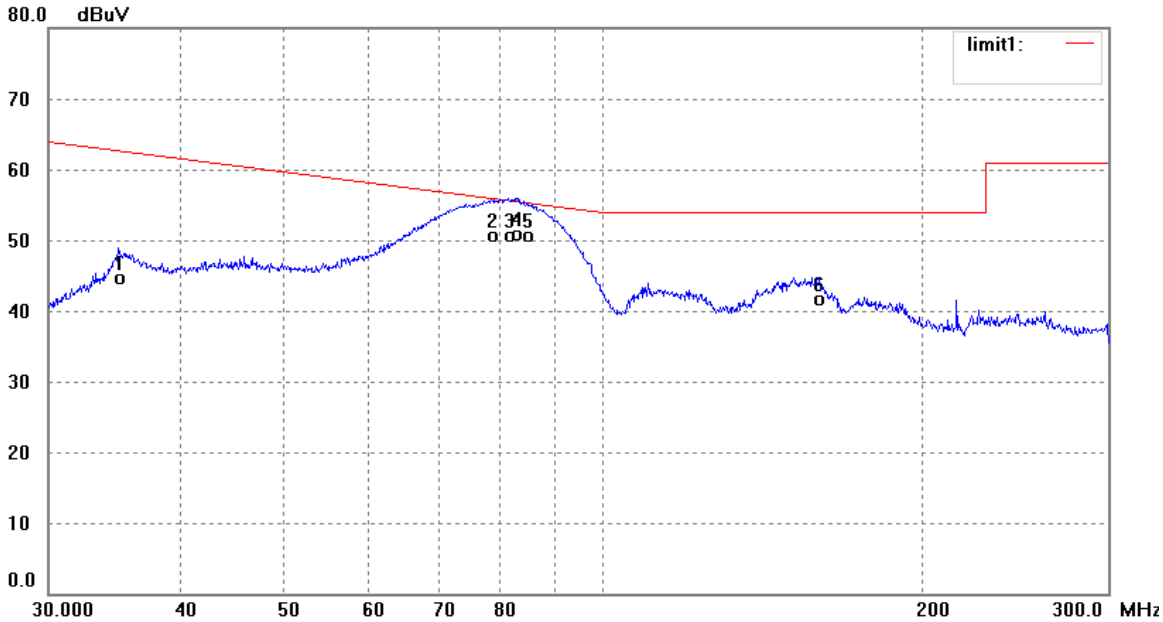
Radiated Emission (9kHz-30MHz)



No significant emission was detected within 10 dB to limit.

Model	:	ELP006V0090LT
Operating Mode	:	Full load
Antenna	:	LOOP Z
Test By	:	Elite Wu
Test Date	:	2011-11-15

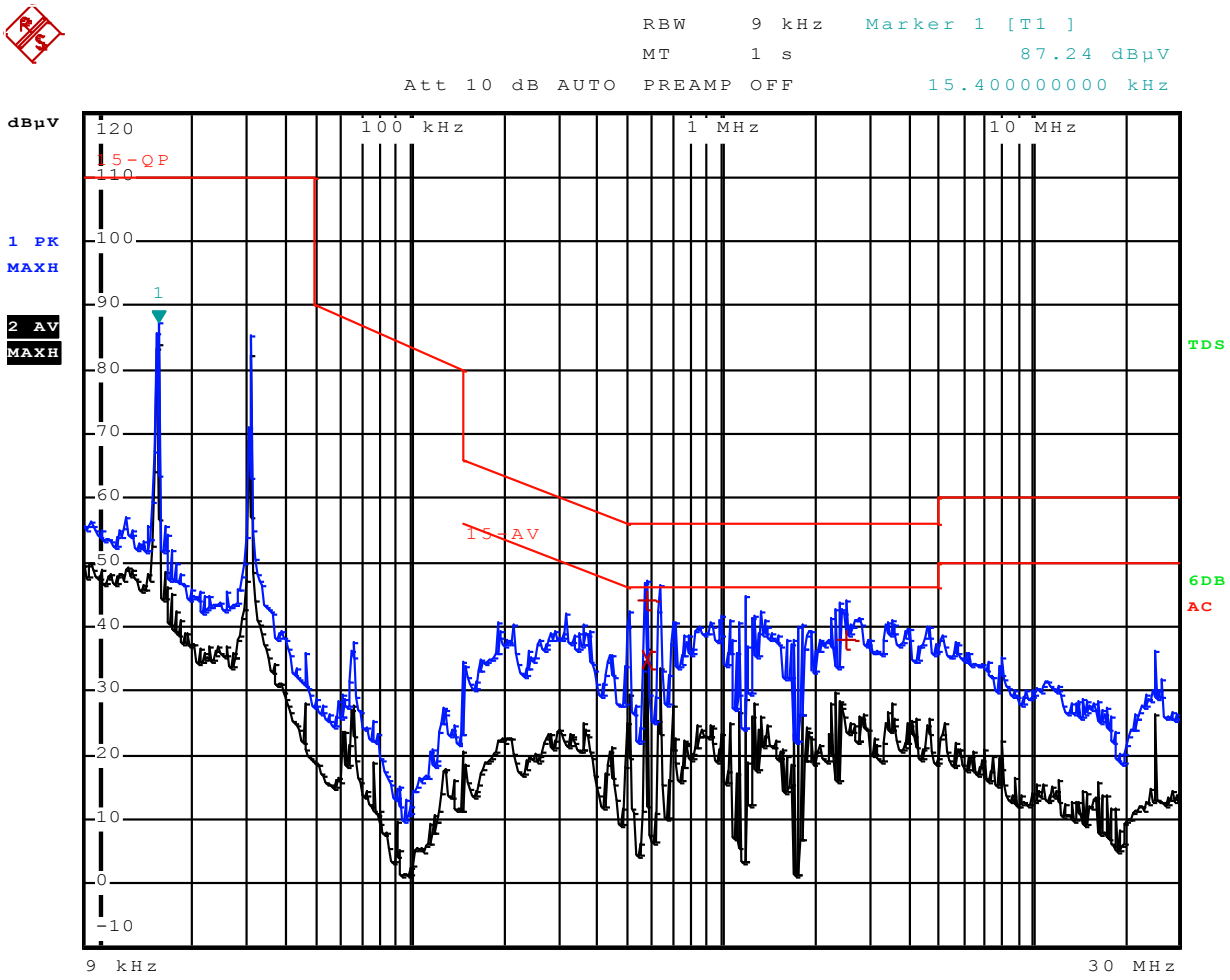
Radiated Emission (30MHz-300MHz)



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector
1	35.0040	27.39	16.47	43.86	62.72	-18.86	QP
2	78.7240	33.29	16.59	49.88	55.99	-6.11	QP
3	81.6800	33.41	16.59	50.00	55.68	-5.68	QP
4	83.0080	33.61	16.58	50.19	55.55	-5.36	QP
5	84.9400	33.35	16.58	49.93	55.36	-5.43	QP
6	160.0000	24.20	16.70	40.90	54.00	-13.10	QP

Model : ELP006V0090LT
Operating Mode : Full load
Conduct Line/Port : AC mains
Test By : Elite Wu
Test Date : 2011-11-17

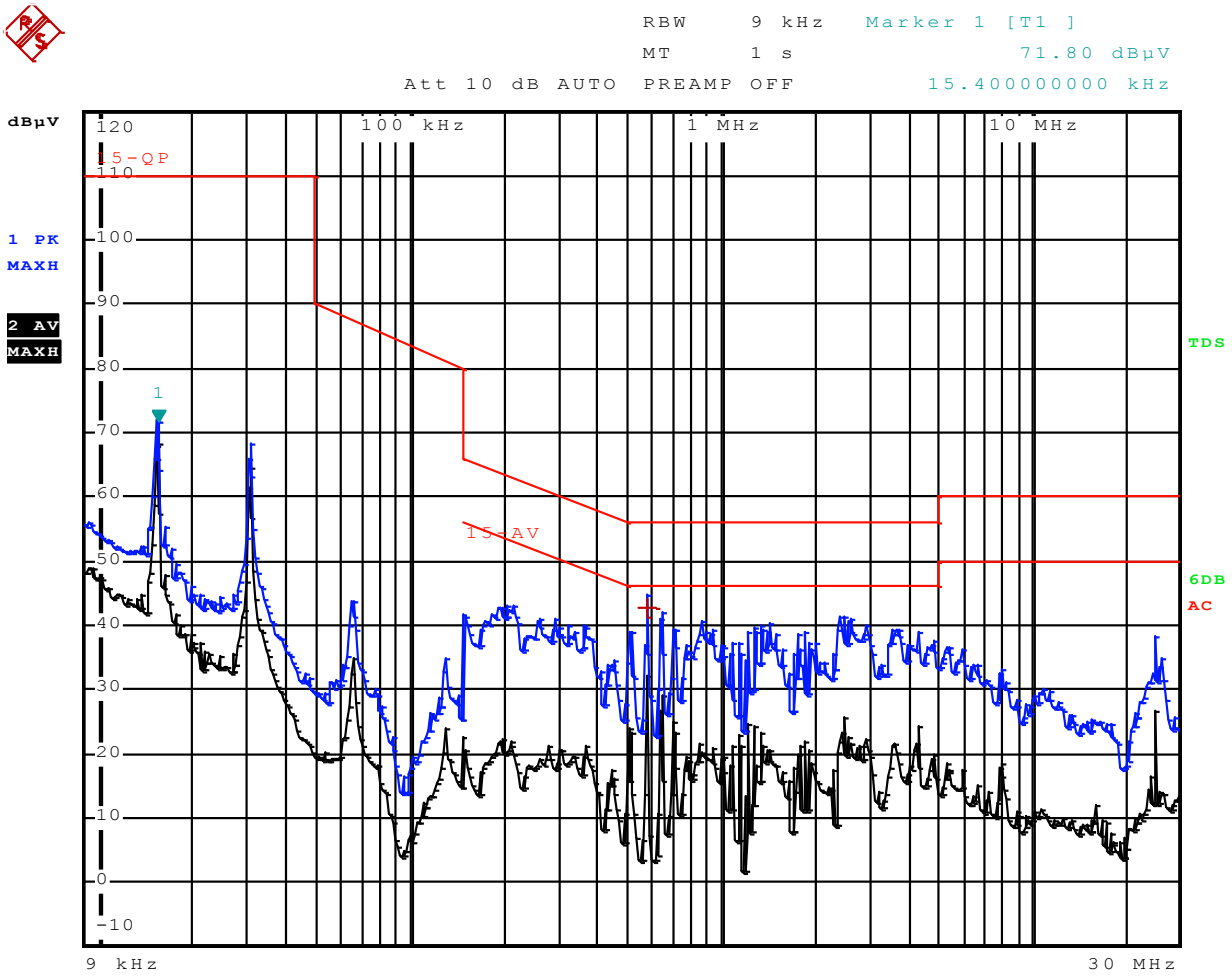
Conducted Emission (9kHz-30MHz)



TRACE		FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	573 kHz	44.11	-11.88
2	Average	573 kHz	35.00	-10.99
1	Quasi Peak	2.54 MHz	37.99	-18.00

Model : ELP006V0150LT
Operating Mode : Full load
Conduct Line/Port : L
Test By : Elite Wu
Test Date : 2011-11-10

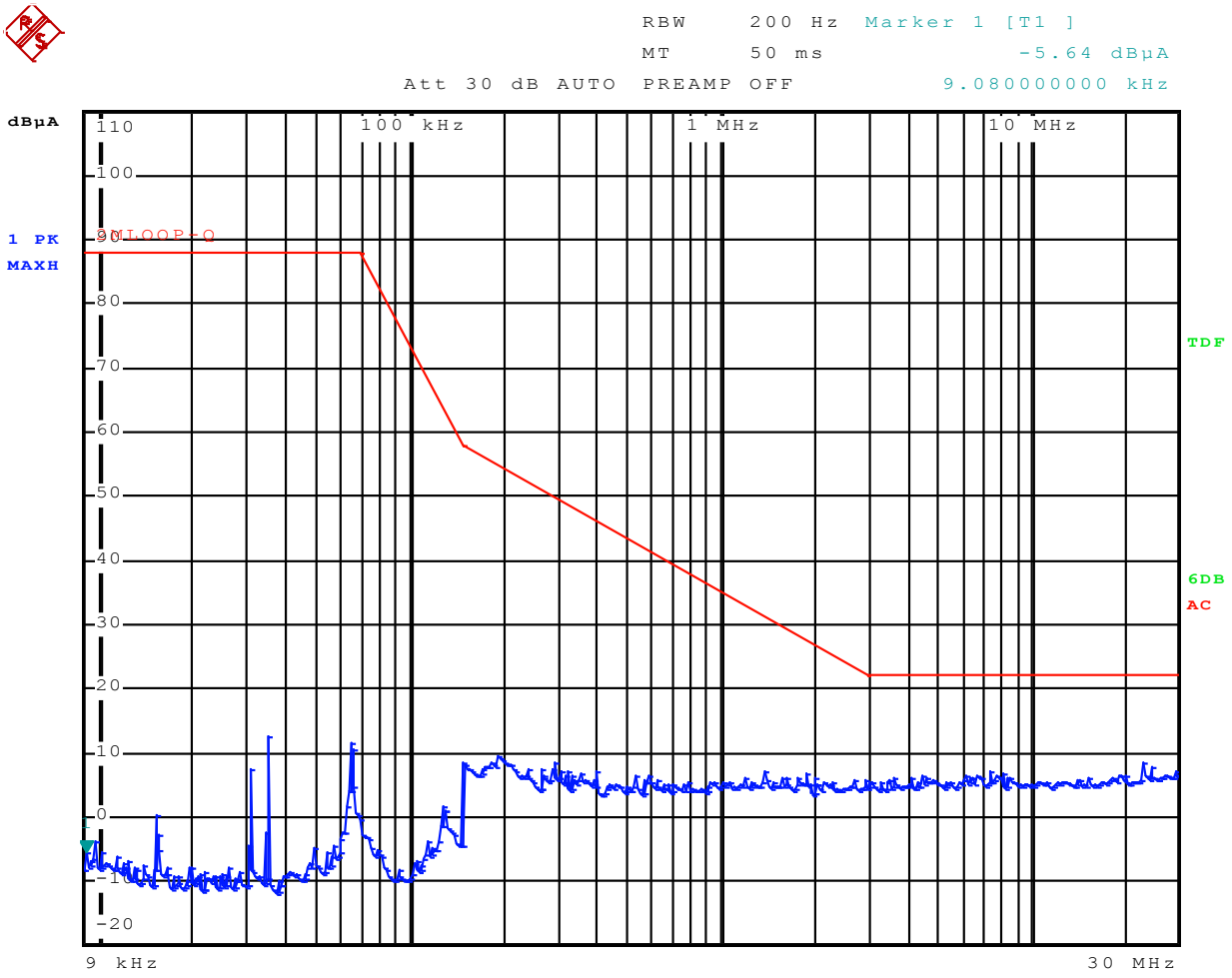
Conducted Emission (9kHz-30MHz)



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	577.5 kHz	42.61	-13.38

Model	:	ELP006V0150LT
Operating Mode	:	Full load
Conduct Line/Port	:	N
Test By	:	Elite Wu
Test Date	:	2011-11-10

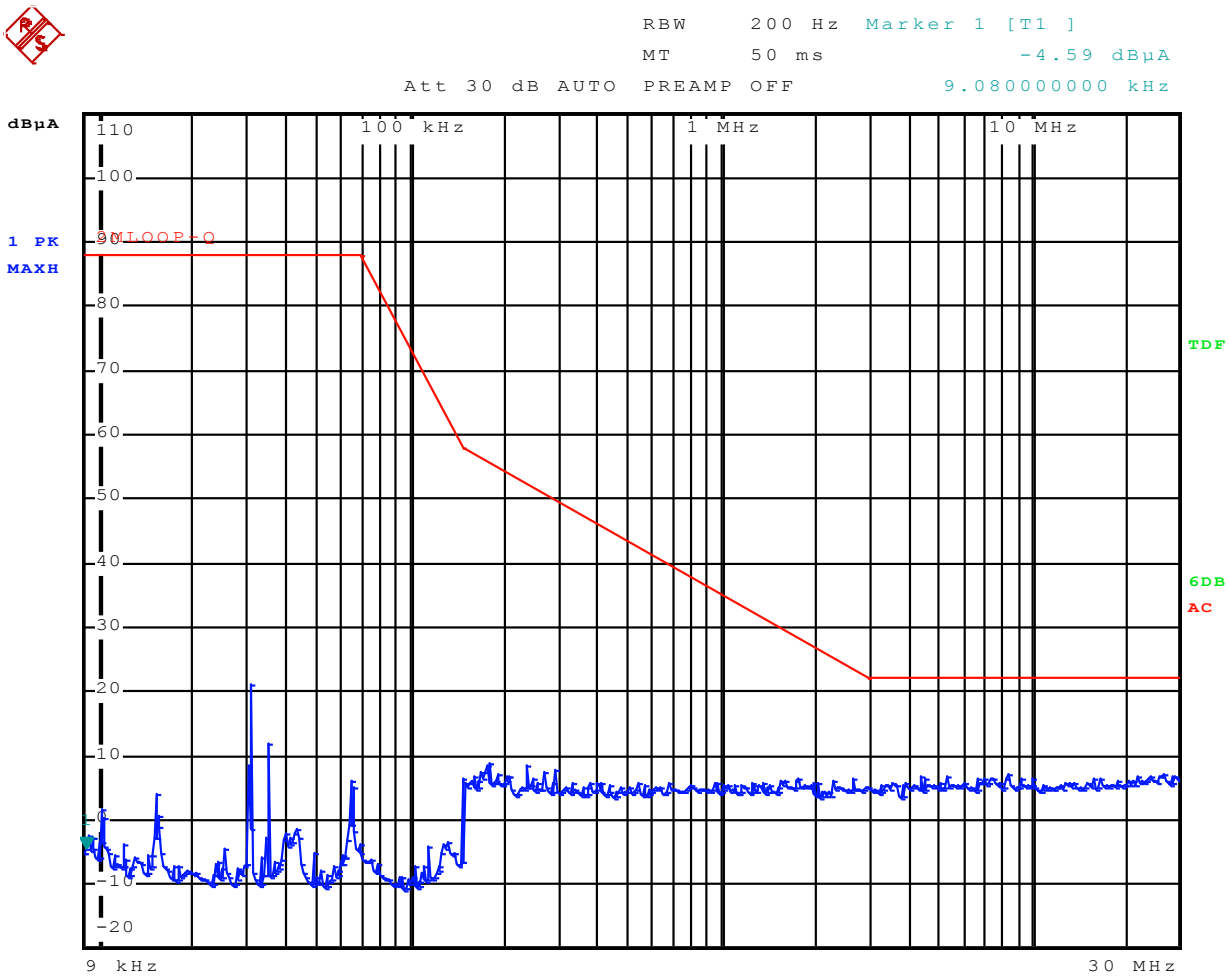
Radiated Emission (9kHz-30MHz)



No significant emission was detected within 10 dB to limit.

Model	:	ELP006V0150LT
Operating Mode	:	Full load
Antenna	:	LOOP X
Test By	:	Elite Wu
Test Date	:	2011-11-10

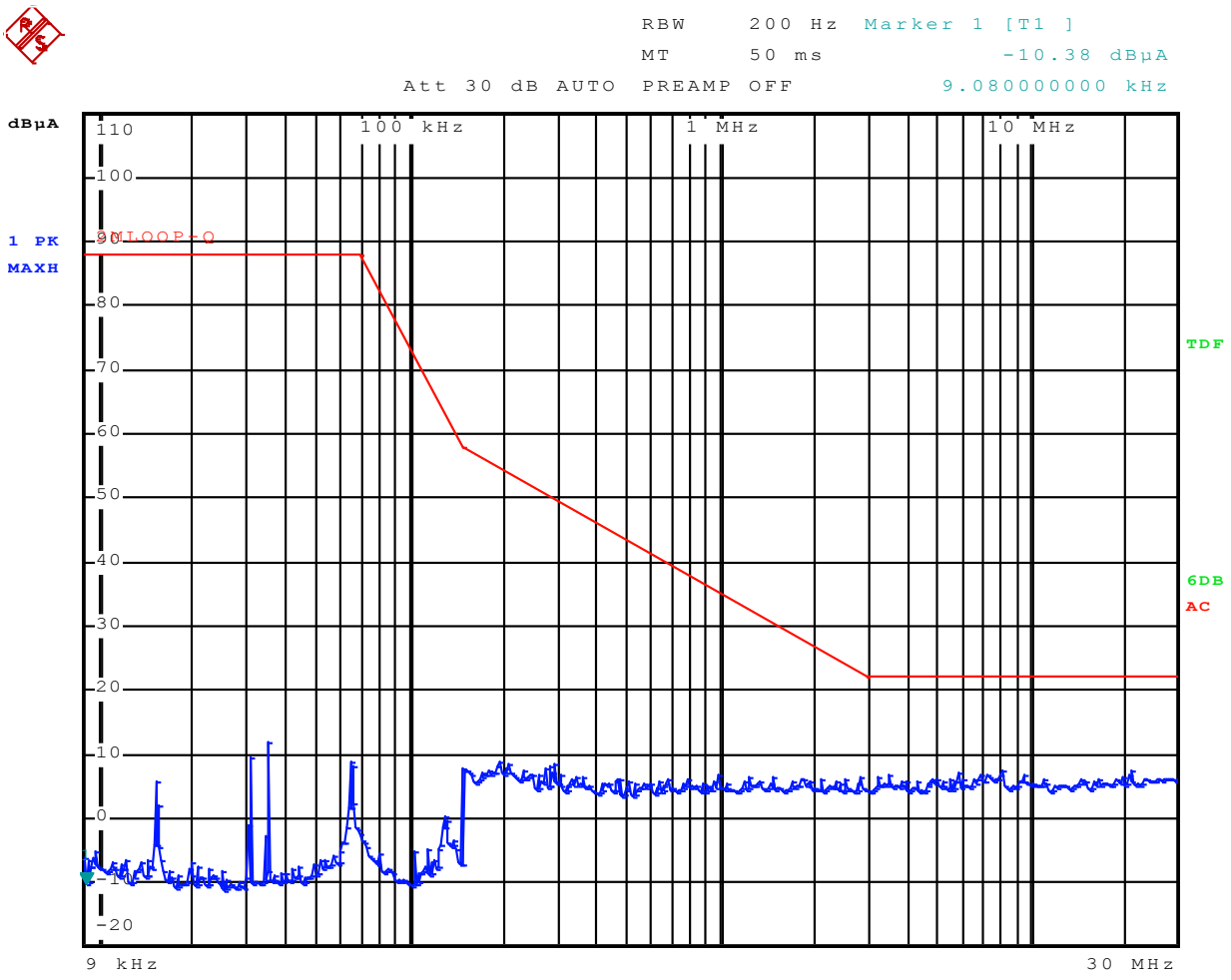
Radiated Emission (9kHz-30MHz)



No significant emission was detected within 10 dB to limit.

Model	:	ELP006V0150LT
Operating Mode	:	Full load
Antenna	:	LOOP Y
Test By	:	Elite Wu
Test Date	:	2011-11-10

Radiated Emission (9kHz-30MHz)



No significant emission was detected within 10 dB to limit.

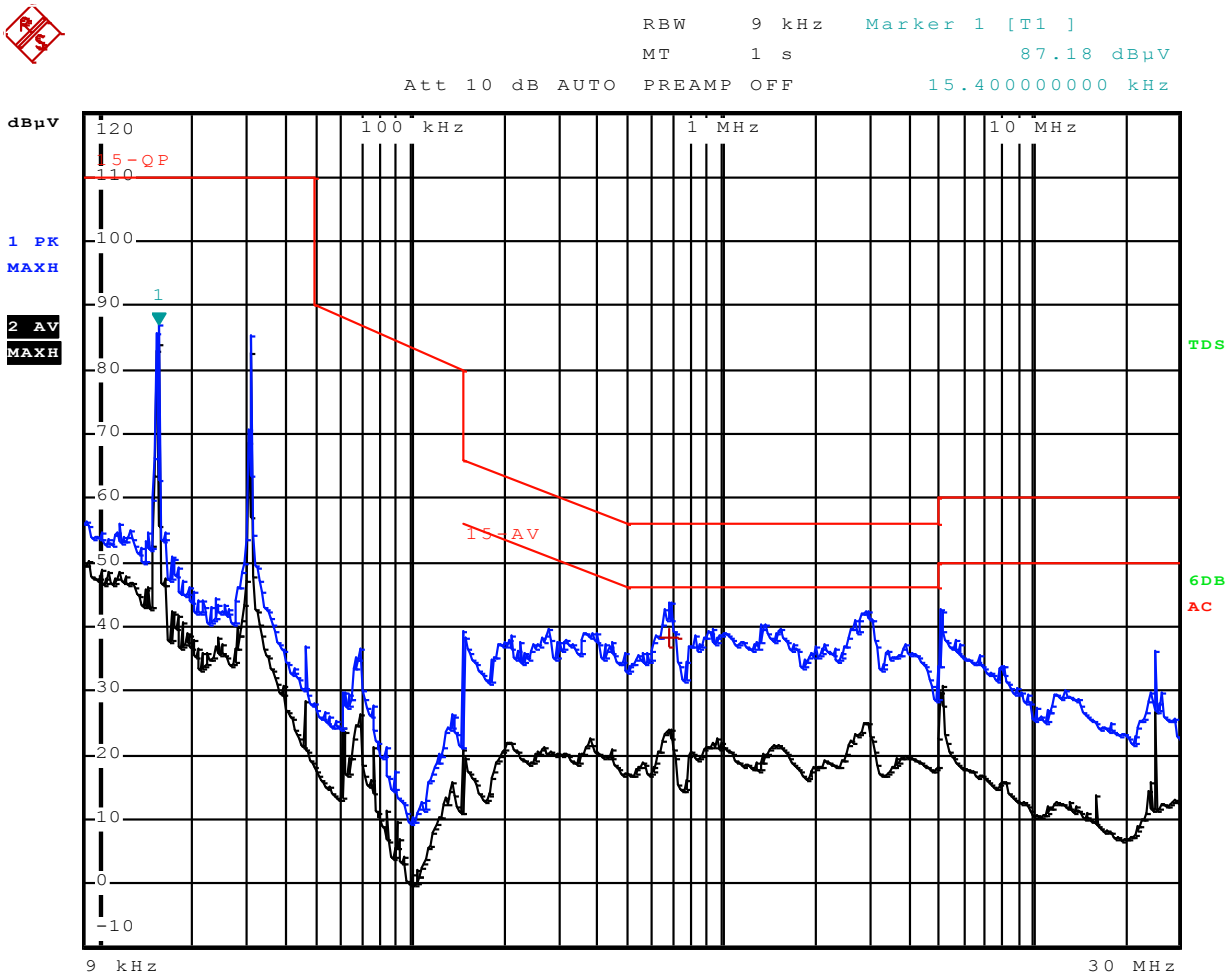
Model	:	ELP006V0150LT
Operating Mode	:	Full load
Antenna	:	LOOP Z
Test By	:	Elite Wu
Test Date	:	2011-11-10

Radiated Emission (30MHz-300MHz)

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector
1	59.0360	30.54	16.54	47.08	58.38	-11.30	QP
2	66.6960	33.68	16.56	50.24	57.36	-7.12	QP
3	84.9400	30.19	16.58	46.77	55.36	-8.59	QP
4	113.2680	26.31	16.59	42.90	54.00	-11.10	QP
5	118.3360	27.92	16.61	44.53	54.00	-9.47	QP
6	160.3679	22.21	16.70	38.91	54.00	-15.09	QP

Model : ELP006V0150LT
Operating Mode : Full load
Conduct Line/Port : AC mains
Test By : Elite Wu
Test Date : 2011-11-17

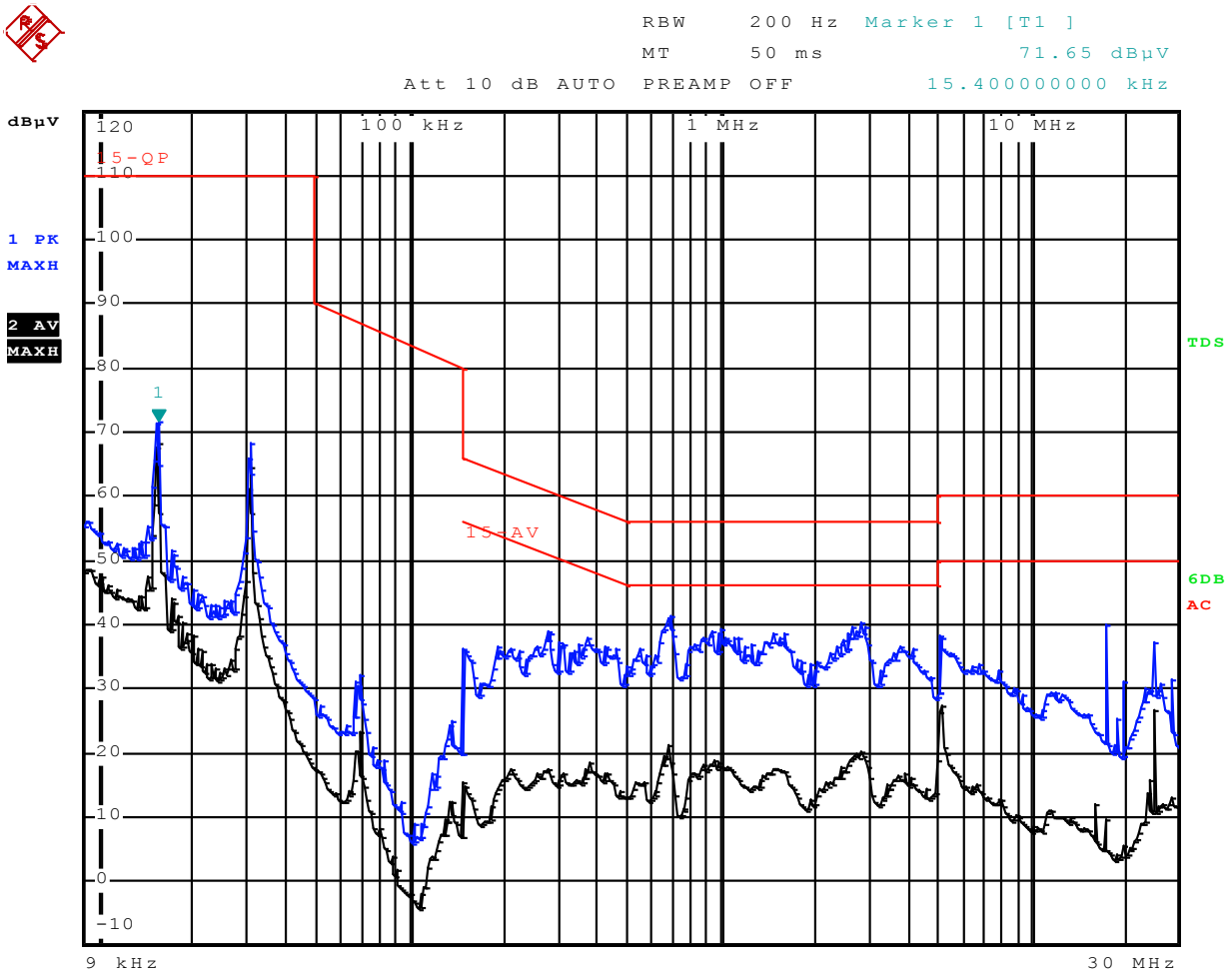
Conducted Emission (9kHz-30MHz)



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	676.5 kHz	38.21	-17.78

Model	:	ELP006V0240LT
Operating Mode	:	Full load
Conduct Line/Port	:	L
Test By	:	Elite Wu
Test Date	:	2011-11-10

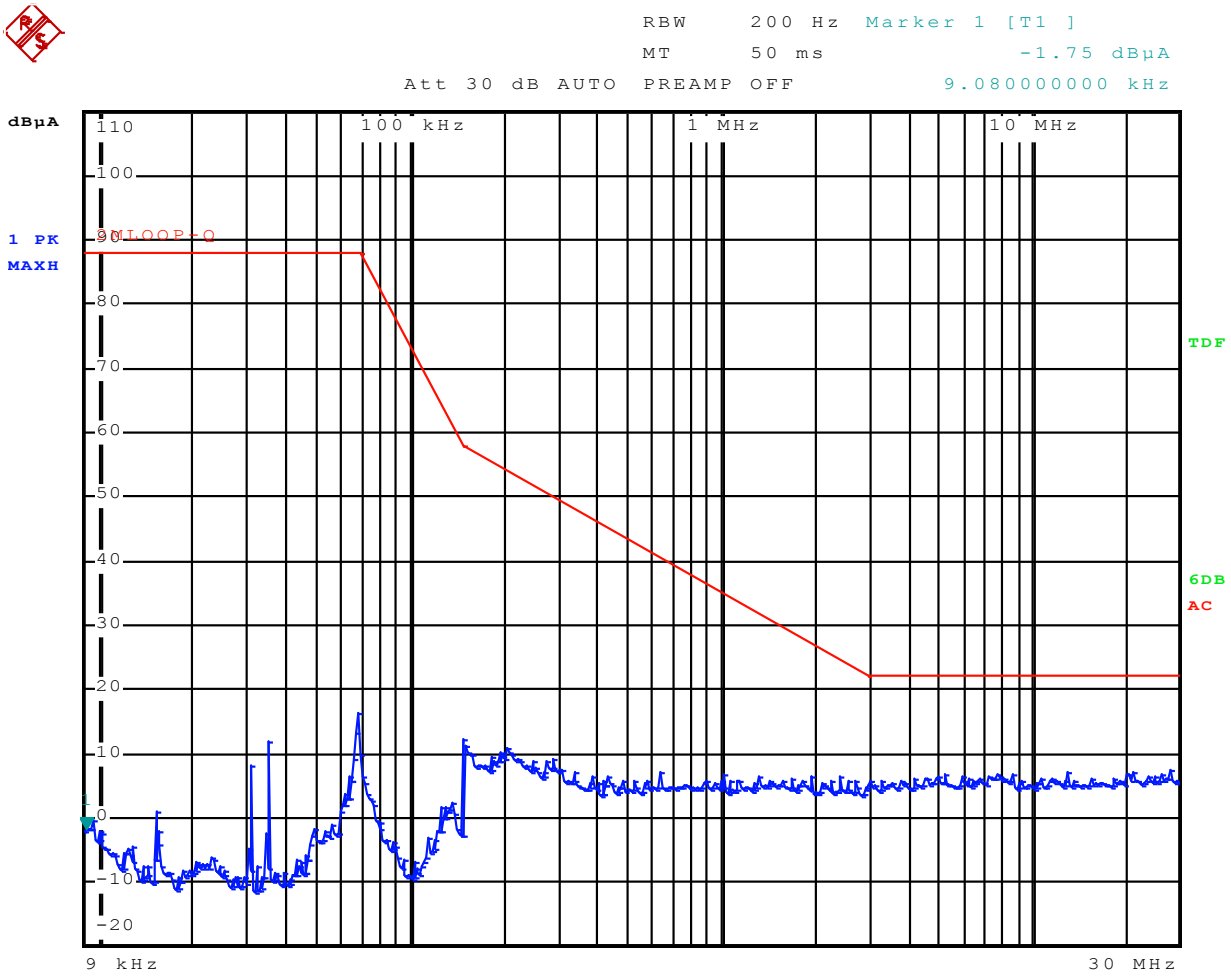
Conducted Emission (9kHz-30MHz)



No significant emission was detected within 10 dB to limit.

Model	:	ELP006V0240LT
Operating Mode	:	Full load
Conduct Line/Port	:	N
Test By	:	Elite Wu
Test Date	:	2011-11-10

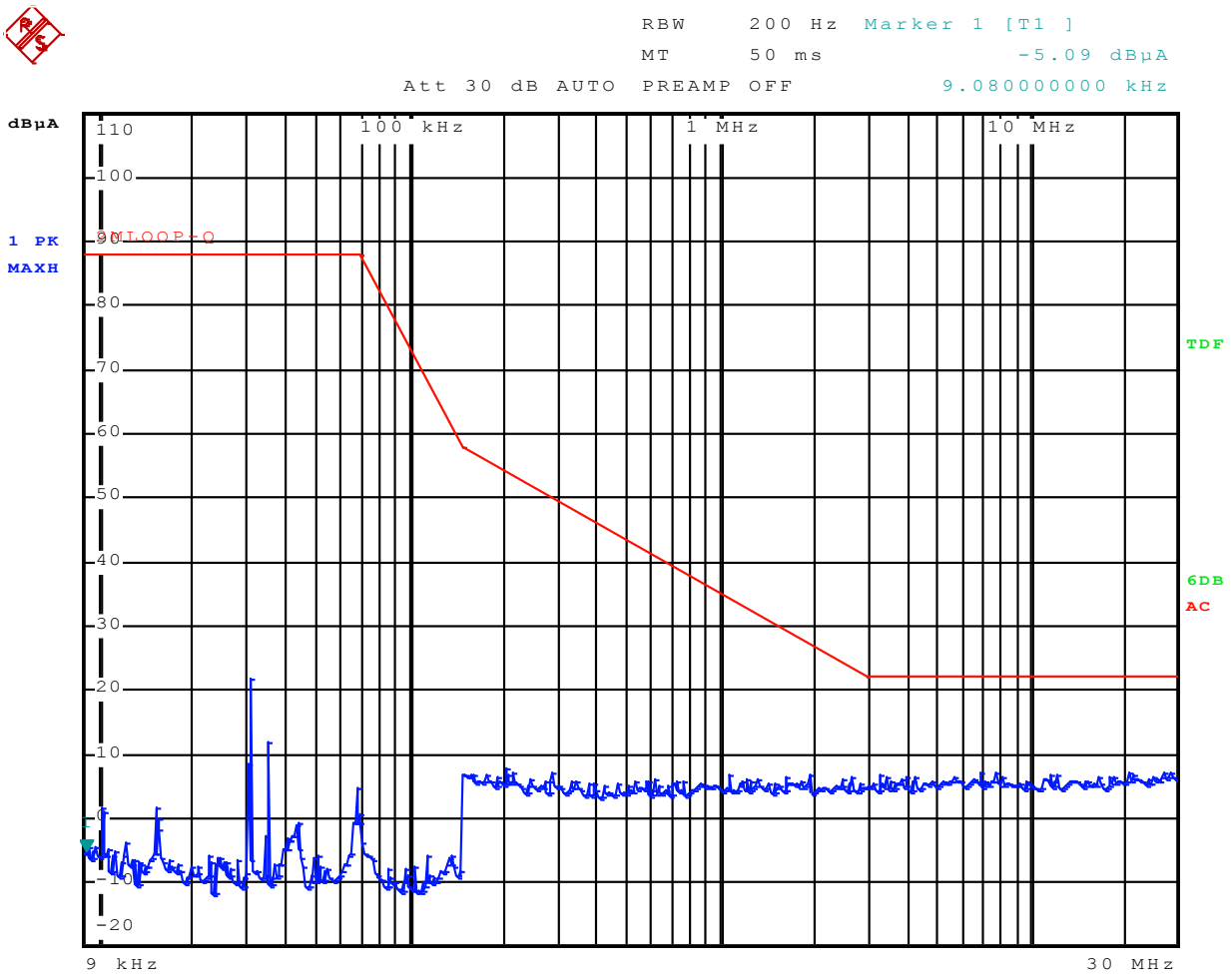
Radiated Emission (9kHz-30MHz)



No significant emission was detected within 10 dB to limit.

Model	:	ELP006V0240LT
Operating Mode	:	Full load
Antenna	:	LOOP X
Test By	:	Elite Wu
Test Date	:	2011-11-10

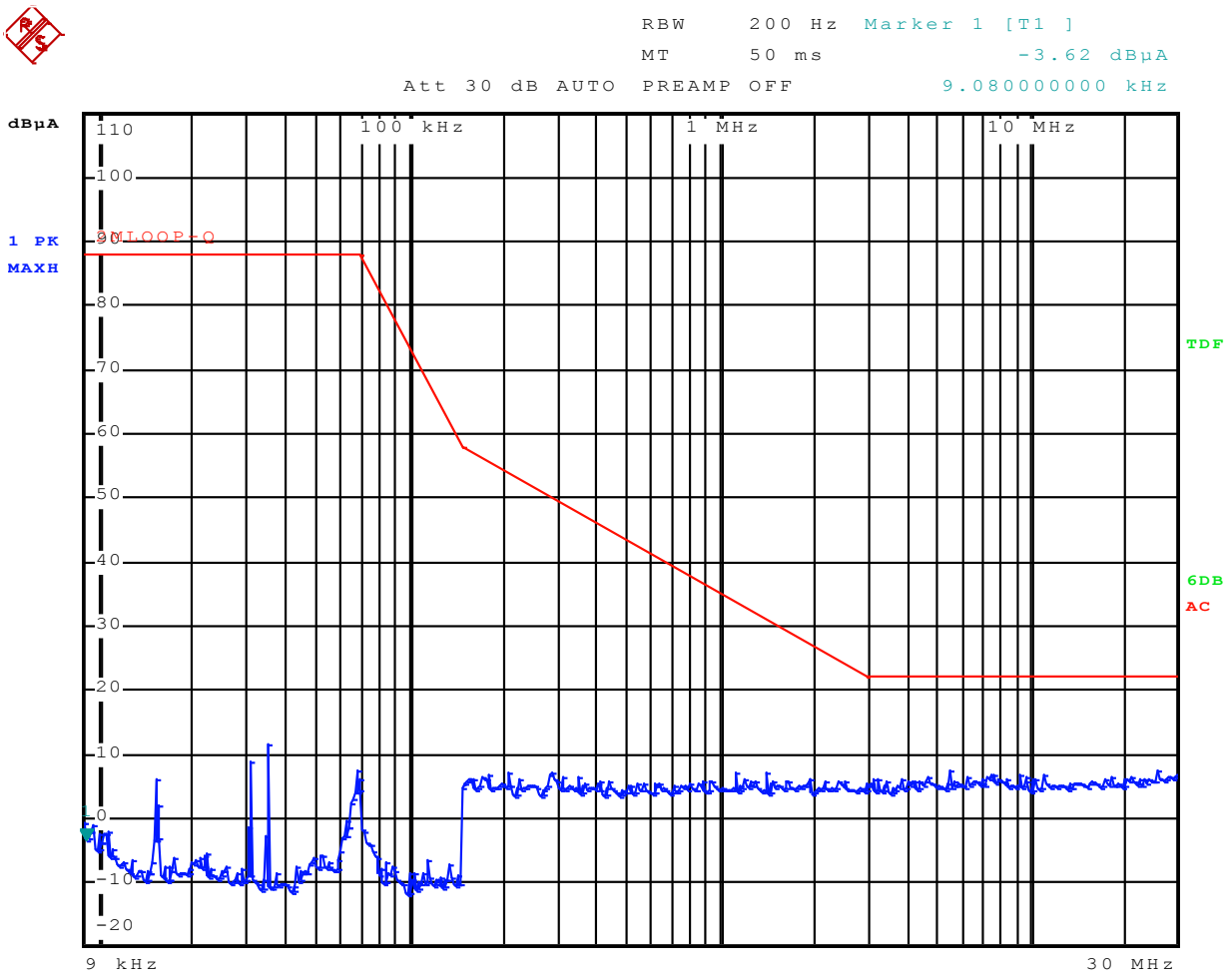
Radiated Emission (9kHz-30MHz)



No significant emission was detected within 10 dB to limit.

Model	:	ELP006V0240LT
Operating Mode	:	Full load
Antenna	:	LOOP Y
Test By	:	Elite Wu
Test Date	:	2011-11-10

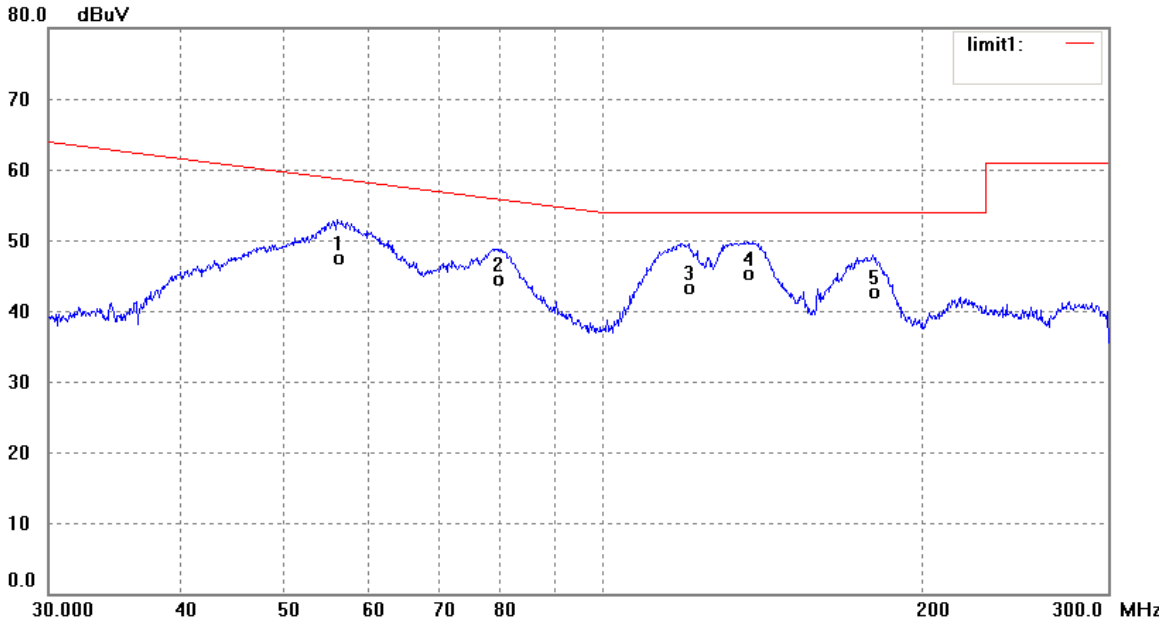
Radiated Emission (9kHz-30MHz)



No significant emission was detected within 10 dB to limit.

Model	:	ELP006V0240LT
Operating Mode	:	Full load
Antenna	:	LOOP Z
Test By	:	Elite Wu
Test Date	:	2011-11-10

Radiated Emission (30MHz-300MHz)



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector
1	56.3760	30.23	16.53	46.76	58.76	-12.00	QP
2	79.6360	27.08	16.59	43.67	55.89	-12.22	QP
3	120.8120	25.92	16.62	42.54	54.00	-11.46	QP
4	137.1240	27.84	16.67	44.51	54.00	-9.49	QP
5	180.3519	25.16	16.68	41.84	54.00	-12.16	QP

Model : ELP006V0240LT
Operating Mode : Full load
Conduct Line/Port : AC mains
Test By : Elite Wu
Test Date : 2011-11-17

Appendix B

Constructional Data Form

and

Product Information Form(s)

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

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

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

Appendix C

Constructional Photographs
of
Equipment under test (EUT)

ELP006V0090LT, ELP006V0120LT, ELP006V0150LT, ELP006V0240LT

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

EMC IMMUNITY - TEST REPORT

Report Number	:	**64.740.11.04333.01-(I)**	Date of Issue:	2011-11-21

Model / Serial No.	:	ELP006V0090LT, ELP006V0120LT, ELP006V0150LT, ELP006V0240LT / NIL
Product Type	:	LED POWER SUPPLY
Applicant	:	Eaglerise Electric & Electronic (Foshan) Co., Ltd.
Manufacturer	:	Eaglerise Electric & Electronic (Foshan) Co., Ltd.
License holder	:	Eaglerise Electric & Electronic (Foshan) Co., Ltd.
Address	:	Guicheng Sci-Tech Industrial Park, Jianping Road, Nanhai Dis-trict, 528200 Foshan City, Guangdong Province, People's Re-public of China

Test Result	:	■ **Positive**	☐ **Negative**
Total pages including Appendices	:	21	

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

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

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DIRECTORY - IMMUNITY

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IMMUNITY TEST REGULATIONS :

The immunity tests were performed according to the following regulations :

■ - EMC - Directive 2004/108/EC and its amendments

☐ - EN 61000-6-1:2007
☐ - EN61000-6-2:2005
☐ - EN 55020:2007
☐ - EN 55014-2:1997+A1:2001
☐ - EN 55024:1998+A1:2001+A2:2003

■ - IEC 61000-4-2:2008
■ - IEC 61000-4-3:2006+A1:2007
■ - IEC 61000-4-4:2004
■ - IEC 61000-4-5:2005
■ - IEC 61000-4-6:2008
☐ - IEC 61000-4-8:1993+A1:2000
■ - IEC 61000-4-11:2004

☐ - ENV 50204

☐ - EN 60601-1-2 / 2001

■ - EN 61547:2009

Note: For undated references, the latest edition of the publication at the time of testing (including amendments) was applied.

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Environmental Conditions In The Laboratory:

	Actual
Temperature:	: 25°C
Relative Humidity:	: 50%
Atmospheric Pressure:	: 1006 mBar

Power Supply Utilized:

Power Supply : 230V / 50 Hz /1 ϕ

STATEMENT OF MEASUREMENT UNCERTAINTY

The tolerances for each tests are reduced by the uncertainty reported on the calibration certificate for the measurement, all the parameters are within the tolerances required by the relevant standard, reduced by the uncertainty reported on the calibration certificate, so the laboratory has confidence that all the tests compliant with the relevant standards with a 95% confidence level.
Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Symbol Definitions:

■ - Applicable
☐ - Not Applicable

Test laboratory:

■ - GRGT
Add: 163 Ping Yun Rd.West Of HuangPu Ave,Guangzhou 510656,P.O.Box.1411,China

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

Immunity Test Conditions: ELECTROSTATIC DISCHARGE (ESD)

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

☐ **- Test not applicable**

■ - Test Area (TUVPS) - Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■ -	NSG435	Teseq	ESD tester	6155(TUVPS)
■ -	---	TÜV PS	H/V Coupling Plane	TÜV PS

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

Test Specification:

Discharge Voltage (Air):	☐ - 2 kV	■ - 8 kV	☐ - 6 kV
	☐- 4 kV	☐ - 15 kV	☐ - _ kV
Discharge Voltage (Contact):	☐ - 2 kV	☐ - 6 kV	☐ - _ kV
	■ - 4 kV	☐ - 8 kV	
Discharge Impedance:	■ - 330 Ω / 150 pF	☐ - 150 Ω / 150 pF	
Discharge Repetition Rate:	■ - ≥ 1 sec.		
Number of Discharges:	■ - ≥ 10 at all locations		
Kind of Discharges:	■ - Air discharge	■ - Conducted discharge (relay)	
	■ - Direct	■ - Indirect	
Polarity:	■ - Positive	■ - Negative	

Location of Discharge:
- ■ - HCP/VCP
- ■ - Each location on the surface touchable by hand
- ☐ - See drawing in Appendix A
- ☐ - _____

Result :

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

Remarks: _____

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Immunity Test Conditions: RADIATED ELECTROMAGNETIC FIELDS

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

☐ **- Test not applicable**

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

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■ -	RFD-100	ETS	Anechoic chamber	GRGT
■ -	STLP 9128 E	SCHWARZBECK	Log Periodic Antenna	GRGT
■ -	AP32SV150A	PRANA R&D	Power Amplifier I	GRGT
■ -	51011-EMC	BOOTON	Power sensor	GRGT
■ -	4232A	BOOTON	Isotropic Field Monitor	GRGT
■ -	SML03	R&S	R,F Signal Generator	GRGT

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

Test Specification:

Frequency Range:	☐ - 27 MHz - 500 MHz	☐ - 26 MHz - 1000 MHz
	☐ - 9 kHz - 27 MHz	■ - 80 MHz - 1000 MHz
Field Strength:	☐ - 1 V/m	■ - 3 V/m
	☐ - 10 V/m	☐ - _ V/m
Distance Antenna - EUT:	☐ - 1 m	■ - 3 m

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Test Specification (continued):

Modulation:	■ - AM :	80%	1kHz
	☐ - FM :	__ kHz dev.	__ kHz
	■ - sine wave:		
	☐ - unmodulated		
	☐ - Pulse	ON/OFF	Duty Cycle: __ %
Step:	☐ -≤ 0.015 decades / sec		■ - 1%
Polarization of Antenna:	■ - Horizontal	■ - Vertical	

Result :

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

Remarks: _____

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Immunity Test Conditions: FAST TRANSIENTS (BURST)

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

☐ **- Test not applicable**

■ - Test Area (TÜV PS) –Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■ -	MODULA6150	Teseq	Immunity test system	TÜV PS
☐ -	CDN8014	Teseq	Coupling Clamp	TÜV PS

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

Test Specification:

Pulse Amplitude - AC Power Port:	■ - 1,0 kV	☐ - 2,0 kV	
	☐ - 4,0 kV	☐ - ___ kV	
Pulse Amplitude - DC Power Port:	☐ - 1,0 kV	☐ - 2,0 kV	
	☐ - 4,0 kV	☐ - ___ kV	
Pulse Amplitude - Signal/Data Non control Port:	☐ - 0,5 kV	☐ - 1,0 kV	
	☐ - 2,0 kV	☐ - ___ kV	
Pulse Amplitude - Process: Measurement & Control Port	☐ - 0,5 kV	☐ - 1,0 kV	
	☐ - 2,0 kV	☐ - ___ kV	
Burst Frequency:	☐ - 2,5 kHz	■ - 5,0 kHz	☐ - ___ kHz
Time of Coupling:	☐ - 60 seconds	■ - 120 seconds	☐ - ___ seconds
Coupling Method:	■ - Coupling/decoupling network		☐ - Coupling clamp
Polarity:	■ - Positive	■ - Negative	

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Immunity Test Conditions: FAST TRANSIENTS (BURST), continued

Location of Coupling:

name of lines:	AC POWER CORD	
type of lines:	☐ - shielded	■ - unshielded
status of lines:	☐ - Passive	■ - active
kind of transmission:	■ - analog	☐ - digital
length of lines:		
name of lines:		
type of lines:	☐ - shielded	☐ - unshielded
status of lines:	☐ - Passive	☐ - active
kind of transmission:	☐ - analog	☐ - digital
length of lines:		
name of lines:		
type of lines:	☐ - shielded	☐ - unshielded
status of lines:	☐ - Passive	☐ - active
kind of transmission:	☐ - analog	☐ - digital
length of lines:		

Result :

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

Remarks:

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Immunity Test Conditions: SURGE TRANSIENTS

The immunity against *SURGE TRANSIENTS* events was performed in the following test location:

☐ **- Test not applicable**

■ - Test Area (TÜV PS) –Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■ -	MODULA6150	Teseq	Immunity test system	TÜV PS

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

Test Specification:

Pulse Amplitude - AC Power Port:	☐ - 1,0 kV	☐ - 2,0 kV
	☐ - 4,0 kV	■ - 0.5 kV
Pulse Amplitude - DC Power Port:	☐ - 1,0 kV	☐ - 2,0 kV
	☐ - 4,0 kV	☐ - ___ kV
Pulse Amplitude - Signal/Data Non control Port:	☐ - 0,5 kV	☐ - 1,0 kV
	☐ - 2,0 kV	☐ - ___ kV
Pulse Amplitude - Process: Measurement & Control Port	☐ - 0,5 kV	☐ - 1,0 kV
	☐ - 2,0 kV	☐ - ___ kV
Source Impedance:	■ - 2 Ω + 18 µF	☐ - 12 Ω + 9 µF
	☐ - 42 Ω + 0,1 µF	☐ - 42 Ω + 0,5 µF
Number of Surges:	■ - 5 surges/angle	☐ - ___ surges /angle
Angle:	☐ - 0 °	■ - 90 °
	☐ - 180 °	■ - 270 °
Repetition Rate:	■ - 60 sec.	☐ - ___ sec.
Polarity:	■ - Positive (90 °)	■ - Negative (270 °)

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Immunity Test Conditions: SURGE TRANSIENTS, continued

Location of Coupling:

name of lines:	AC POWER CORD	
type of lines:	☐ - shielded	■ - unshielded
status of lines:	☐ - Passive	■ - active
kind of transmission:	■ - analog	☐ - digital
length of lines:		
name of lines:		
type of lines:	☐ - shielded	☐ - unshielded
status of lines:	☐ - Passive	☐ - active
kind of transmission:	☐ - analog	☐ - digital
length of lines:		
name of lines:		
type of lines:	☐ - shielded	☐ - unshielded
status of lines:	☐ - Passive e	☐ - active
kind of transmission:	☐ - analog	☐ - digital
length of lines:		

Result:

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

Remarks:

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Immunity Test Conditions: CONDUCTED DISTURBANCE

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

☐ - Test not applicable

■ - Test Area (TÜV PS) –Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■-	CIT-10/75	Frankonia	C/S test generator	TÜV PS
■-	59-6-33	Aero flex/Weinschel	6dB attenuator	TÜV PS
■ -	M2+M3-801	Frankonia	CDN	TÜV PS
☐ -	F-203I-32mm	FCC	EM Injected Clamp	TÜV PS

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

Test Specification:

Frequency Range:	☐ - 0,15 MHz - 230 MHz		■ - 0,15 MHz - 80 MHz
Voltage Level (EMF):	☐ - 1 V	■ - 3 V	
	☐ - 10 V	☐ - __ V	
Modulation:	■ - AM :	80 %	1 kHz
	☐ - FM :	__ kHz dev.	___ kHz
	■ - sine wave:		
	☐ - unmodulated		
	☐ - Pulse	ON/OFF	Duty Cycle: __ %
Step:	■ -≤ 1%		

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Immunity Test Conditions: CONDUCTED DISTURBANCE, continued

Location of Coupling:

name of lines:	AC POWER CORD	
type of lines:	☐ - shielded	■ - unshielded
status of lines:	☐ - Passive	■ - active
kind of transmission:	■ - analog	☐ - digital
length of lines:	0.3m	
name of lines:		
type of lines:	☐ - shielded	☐ - unshielded
status of lines:	☐ - Passive	☐ - active
kind of transmission:	☐ - analog	☐ - digital
length of lines:		
name of lines:		
type of lines:	☐ - shielded	☐ - unshielded
status of lines:	☐ - Passive	☐ - active
kind of transmission:	☐ - analog	☐ - digital
length of lines:		

Result :

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

Remarks:

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Immunity Test Conditions: VOLTAGE DIPS, INTERRUPTIONS & VARIATIONS

The immunity against *VOLTAGE DIPS, INTERRUPTIONS & VARIATIONS* events, induced by radio frequency fields above 9 kHz, was performed in the following test location:

☐ **- Test not applicable**

■ - Test Area (TÜV PS) –Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■ -	MODULA6150	Teseq	Immunity test system	TÜV PS
■ -	INA6501	Teseq	Step power supply	TÜV PS

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

Test Specification:

Nominal Mains Voltage (V_{NOM}): ■ - 230 Vac ☐ -___ Vac ☐ - ___ Vdc

Level of Reduction (dip): ■ - 200 mS at 30% of V_{NOM}
☐ - 10 mS at 30% of V_{NOM}

Duration of Interruption (>.95*V_{NOM}): ■ - 10 mS ☐ -____ mS

Voltage Fluctuation: ☐ -V_{NOM} + 10% ☐ -V_{NOM} - 10%

Result :

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

Remarks: _____

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

The equipment under test was operated under the following conditions during immunity testing :

☐ - Standby

☐ - Test Program (H - Pattern)

☐ - Test Program (Color Bar)

☐ - Test Program (Customer Specified)

■ - Normal Operation

☐ - _____

_____

Configuration of the equipment under test:

☐ - See Constructional Data Form in Appendix B - Page B2

☐ - See Product Information Form(s) in Appendix B - Page B2

The following peripheral devices and interface cables were connected during the testing:

■ - Adjustable resistance Type : 200Ω/1.0A

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

■ - unshielded power cable

☐ - unshielded cables

☐ - shielded cables TÜVPS. No.: _____

☐ - customer specific cables

☐ - _____

☐ - _____

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China

GENERAL REMARKS:

All the models use the same circuit diagram, PCB layout, the rated output voltage is different among them and the transformer T1 of ELP006V0240LT is different from other models, these will not influence the immunity tests, so tests were applied for ELP006V0240LT only.

SUMMARY:

All tests according to the regulations cited on page 3 were

■ - Performed

☐ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements cited on page 3.

☐ - **Does not** fulfill the general approval requirements cited on page 3.

Testing Start Date: 2011-11-10

Testing End Date: 2011-11-15

- Jiangsu TÜV Product Service Ltd. Guangzhou Branch -

Reviewed by: Kitty Xu

Prepared by: Elite Wu

Jiangsu TÜV Product Service Ltd. Guangzhou Branch

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Appendix A

Test Setup Photo(s),

Photo of setup ESD

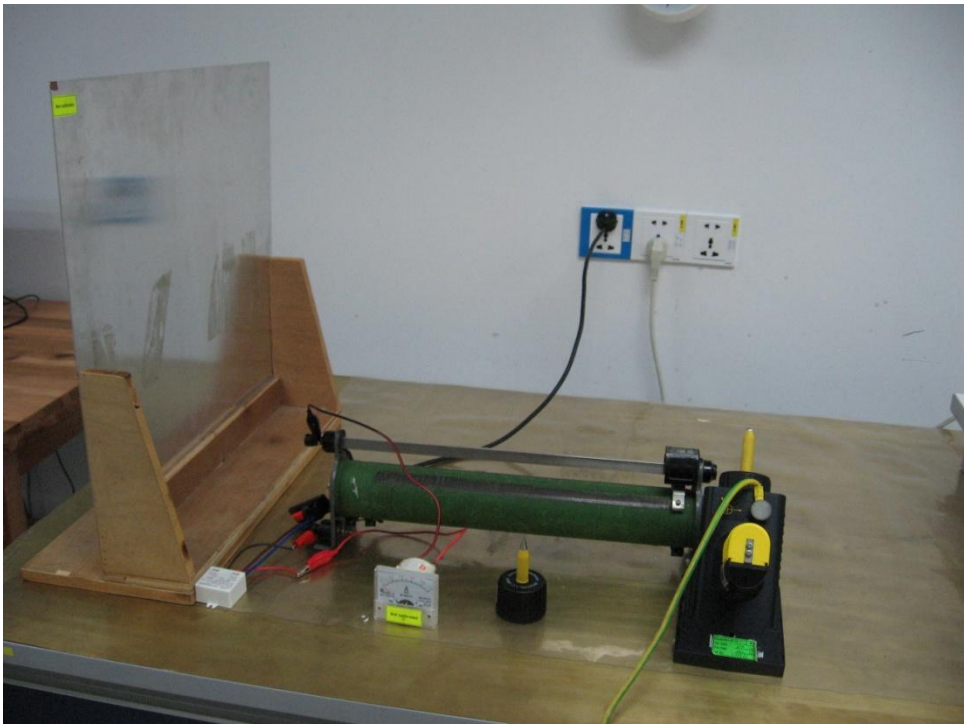


Photo of setup Radiated Electromagnetic Fields

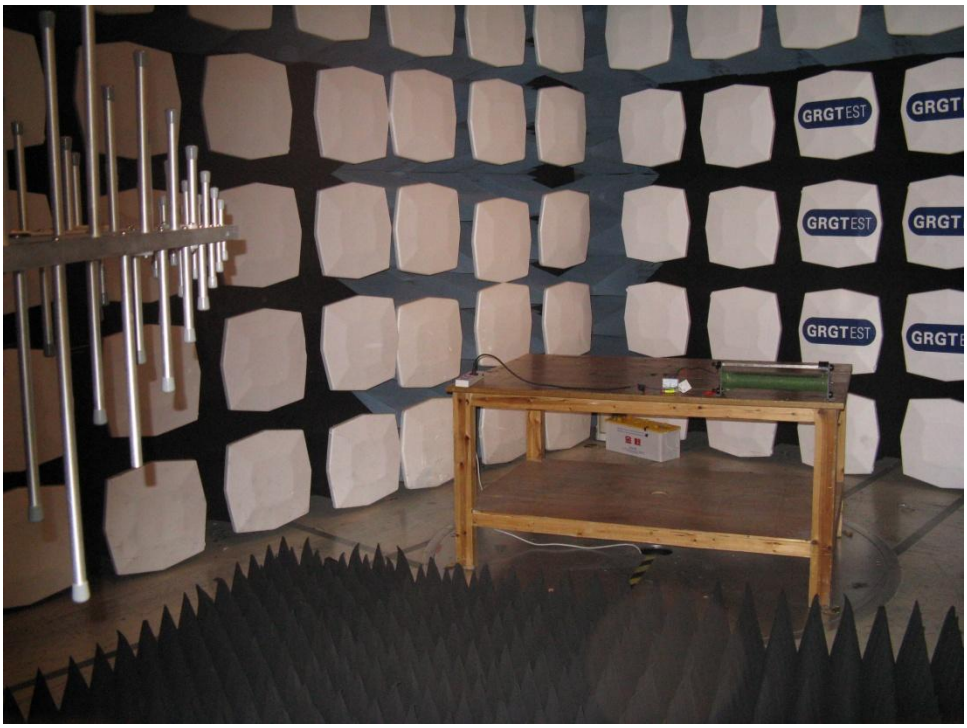
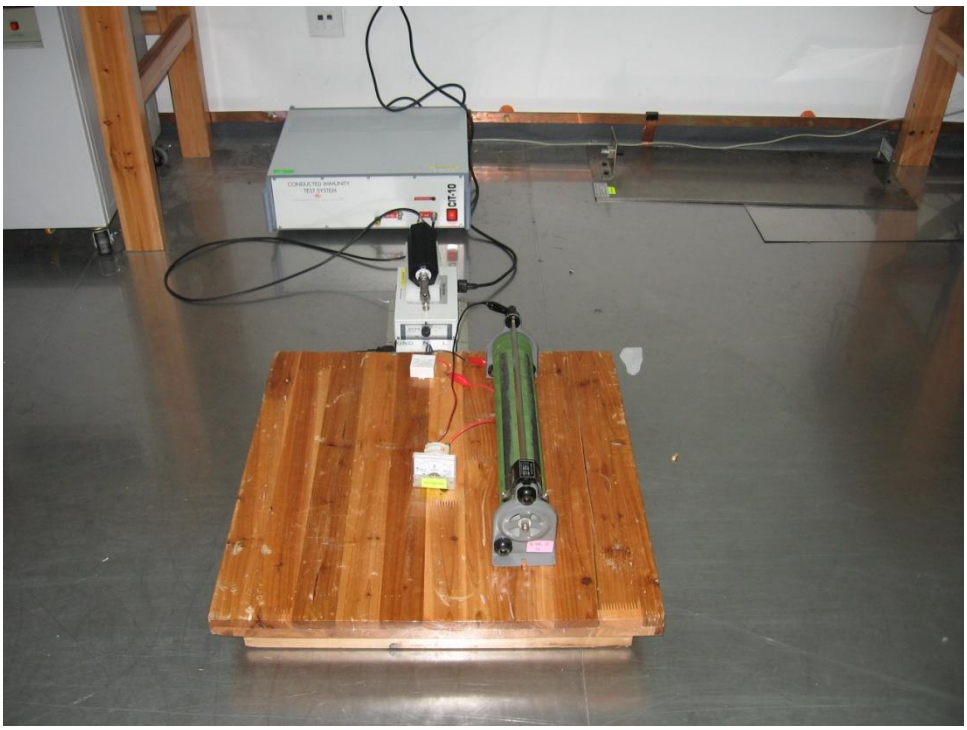


Photo of setup EFT and Surge and Voltage Dips & Short Interruptions

Photo of setup Conducted Immunity



Appendix B

Constructional Data Form

and

Product Information Form(s)

Refer to Emission Test Report

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

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

Appendix C

Constructional Photographs

of

Equipment Under Test (EUT)

Refer to Emission Test Report

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