

Test report

GTC43_01

EUT: Wall plug-in switch mode power supply family, 6Watts
Type: GTM41076-WWVV-X.X*
Tested type: GTM41076-0605-MED, GTM41076-0630-MED

Production level: 09/2006
S/N: xx

Manufacturer: GlobTek Inc.
186 Veterans Drive
Northvale NJ1
USA

Measurement procedure: EMC review of the EUT according the conformity with the provisions of 93/42/EEC Directive related standards:
EN 60601-1-2:2001

The standards were: kept
 not kept

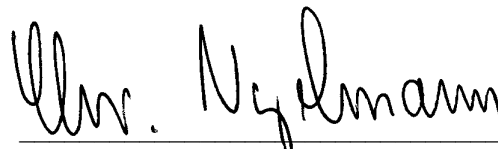
Applicant: GlobTek Inc.
186 Veterans Drive
Northvale NJ1
USA

Contact person: Mr. Bandivas, Mr. Rakovsky

Arrival of EUT: 09/07/2006
ID of EUT: PRC36_10, PRC36_11
Date(s) of test of EUT: 09/12/2006 - 09/13/2006, 10/23/2006

Burgrieden, 10/24/2006

Authorized signatory:



Dipl. Ing. (FH) Christian Vogelmann

Test laboratory: EMCE GmbH Ingenieurbüro für EMV-Prüfungen
und Schaltungsentwicklung
Laupheimer-Str. 25d
88483 Burgrieden / Germany
The electromagnetic field immunity tests were carried out at:
University of Applied Sciences Ulm / EMC Lab
Eberhard-Finckh-Str. 11 / 89075 Ulm - Germany
DAR- Registration No. DAT-P-153/98-01
FCC- Registration No. 90568

Test engineer: Mr. Vogelmann
EMCE GmbH Ingenieurbüro für EMV-Prüfungen
und Schaltungsentwicklung

EUT description: Switch mode power supply with fixed output voltage for
medical applications. The unit is designed as a wall plug in
power supply with interchangeable primary plugs.
Electrical characteristics:
Input voltage: 100-264VAC
Input frequency: 47-63Hz
Output: 5V / 1.2A continuous operation for PRC36_10
30V / 0.16A continuous operation for PRC36_11
The device is not life supporting or patient coupled.

EUT size: Approximately 74x43,5x34mm (LxWxH)

Used accessories:

Designation	Type	Manufacturer	S/N
High power resistor	5Ω	Frizlen	Inv.Nr. 539
High power resistor	180Ω		
Multimeter	77	Fluke	44930381
Multimeter	Protek 506	Protek	Inv.Nr. 573

EUT configuration: As delivered, no external electrical components.

Harness	Type	Length	Remarks
DC cable	2 wires / 18-22AWG	1.83m	Ferrite core on the DC line – located 75mm beside the housing

Additional information: The corresponding German editions of the regulations were used for the test procedures.
 Representative for the switch mode power supply family the devices with the lowest and highest output voltage were tested.
 For the model with the lowest output voltage the complete range of emc tests for the EN 60601-1-2:2001 were applied.

Model number description: GTM41076-WWVV-X.X

Where:

41076: Series Code

WW = Denotes Rated Wattage

(VV) = Rated Voltage

(X.X) = Denotes voltage differentiator

List of valid equipment

<input checked="" type="checkbox"/>	Inv-Nr.	Designation	Type	Manufacturer	S/N
<input checked="" type="checkbox"/>	001	Test receiver	ESS 5Hz - 1000 MHz	Rohde & Schwarz	833776/008
	002	Probe	ESH2-Z3	Rohde & Schwarz	-
	003	LISN 1	ESH3-Z5	Rohde & Schwarz	835268/007
<input checked="" type="checkbox"/>	004	LISN 2	ESH3-Z5	Rohde & Schwarz	835268/003
	005	LISN 3	NNB 4/32T	Rolf Heine HF-Technik	4/32T-96015
	006	LISN	NNBM 8125	Schwarzbeck	8125371
<input checked="" type="checkbox"/>	007	Absorbing clamp	MDS 21	Schwarzbeck	942436
	008	Antenna 9kHz - 30MHz	HFH2-Z2	Rohde & Schwarz	835776/0002
	009	Antenna 30 - 300MHz	VHBA9123 / BBA9106	Schwarzbeck	435
<input checked="" type="checkbox"/>	010	Antenna 250 -1200MHz	UHALP 9108A	Schwarzbeck	108
<input checked="" type="checkbox"/>	011	Antenna 30 - 300MHz	VHBA9123 / BBA9106	Schwarzbeck	0408/94
	012	Antenna 250 -1200MHz	UHALP 9108A	Schwarzbeck	166
	013	Antenna 9kHz - 30MHz	Loop antenna 1.5m	EMCE GmbH	-
	014	Open area test site	3m	EMCE GmbH	-
<input checked="" type="checkbox"/>	015	Open area test site	10m	EMCE GmbH	-
	020	Coupling clamp	IP4A	Haefely	082672-13
<input checked="" type="checkbox"/>	022	ESD-Gun	NSG 435	Schaffner	577
<input checked="" type="checkbox"/>	024	HF-Generator	SMY01	Rohde & Schwarz	844146/046
	025	Current clamp BCI	F-120-2	FCC	47
	026	Coupling device network	CDN 801-M3-25	FCC	92
	029	HF Amplifier	10W1000	Amplifier Research	10576
	030	Coupling device network	CDN-S9	EMCE GmbH	-
	031	Coupling device network	CDN-S9	EMCE GmbH	-
<input checked="" type="checkbox"/>	032	HF Amplifier	75A250	Amplifier Research	22789

<input checked="" type="checkbox"/>	Inv-Nr.	Designation	Type	Manufacturer	S/N
<input checked="" type="checkbox"/>	033	Coupling device network	CDN-AF2	EMCE GmbH	
<input checked="" type="checkbox"/>	034	Coupling device network	CDN-AF2	EMCE GmbH	
	035	3-Phase Coupling network	CDN-1000	EMC-Partner AG	CDN-1000-45
	036	Coupling device network	CDN-M5-25	EMCE GmbH	
	037	Coupling device network	CDN-S1	EMCE GmbH	
<input checked="" type="checkbox"/>	038	Helmholtz coil	Rectangular 1x1m	EMCE GmbH	
	039	Helmholtz coil	Rectangular 1x1m	EMCE GmbH	
<input checked="" type="checkbox"/>	040	Current transformer		EMCE GmbH	
	041	HZ-10	Shielded coil	Rohde & Schwarz	849788/020
<input checked="" type="checkbox"/>	042	AC-Source / Analyser / Norm impedance	EMV D5000/PAS	Spitzenberger + Spies	A274700/00501
<input checked="" type="checkbox"/>	xx	Susceptibility test equipment according EN 61000-4-3	Full anechoic chamber 3m test site	Siemens	xx
<input checked="" type="checkbox"/>	043	Receiver	3DH/E Field meter ESM-100	Maschek	971521
	044	CDN	CN-U	EMC-Partner AG	86
	045	CDN	DN-HF	EMC-Partner AG	86
	046	CDN	DN-LF2	EMC-Partner AG	86
	047	CDN	DN-LF1	EMC-Partner AG	86
<input checked="" type="checkbox"/>	048	ESD-/Burst-/Surge-Generator	Transient 2000	EMC-Partner AG	561
	049	ESD-Gun	ESD 2000	EMC-Partner AG	012
<input checked="" type="checkbox"/>	051	20 Channel Multiplexer	Agilent 34901A	Agilent Technologies Inc.	MY41013531
	054	Helmholtz coil	Rectangular 1.25x1.25m	EMCE GmbH	
	055	Helmholtz coil	Rectangular 1.25x1.25m	EMCE GmbH	

Scope:

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1 EMC - Test(s)

1.1 Emission according DIN EN 55011 (VDE 0875 Teil 11) / 08.2003

1.1.1 Conducted emission according DIN EN 55011 (VDE 0875 Teil 11) / 08.2003

1.1.1.1 Test set up

According DIN EN 55011 (VDE 0875 Teil 11) / 08.2003

Test location: Shielded room Laboratory
 —

The test equipment was checked and complied to the requirements.





1.1.1.2 Test

Regulation:

DIN EN 55011 (VDE 0875 Teil 11) /08.2003

9kHz - 30MHz 150kHz - 30MHz

ISM-Classification Group 1* Group 2**
 Limits: Class B Class A

*Group 1 comprises all ISM appliances, which use rf energy for internal functions.

**Group 2 comprises all ISM appliances, which use rf energy for tooling material.

Operation mode:

EUT arrangement: Tabletop Floor standing
 Supply voltage: 230V / 50Hz 100V / 50Hz

Port #	Lead	Remarks
#1	AC power line	L1/N
#2		
#3		

Continuous operation with max. permanent output current – 1.2A / 0.16A.

Environmental conditions:

Temperature: 15 - 35 °C
 Humidity: 30 - 60 %
 Air pressure: 860 - 1060 hPa

The environmental conditions during the test: were kept
 were not kept

Test results:

Measurements are made with a CISPR receiver. If the emanation is closer than 6dB to the limits or more, the receiver will stop and measure the exact value with quasipeak or average. The frequency, the maximum quasipeak value and the limit will be printed out.

Summary:

Limits for continuous disturbances: kept
 not kept

Remarks: Test results valid for PRC36_10 and PRC36_11.

Protocol scope:

Readings
 Diagram continuous emanations

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Terminal voltage

13. Sep 06 15:57

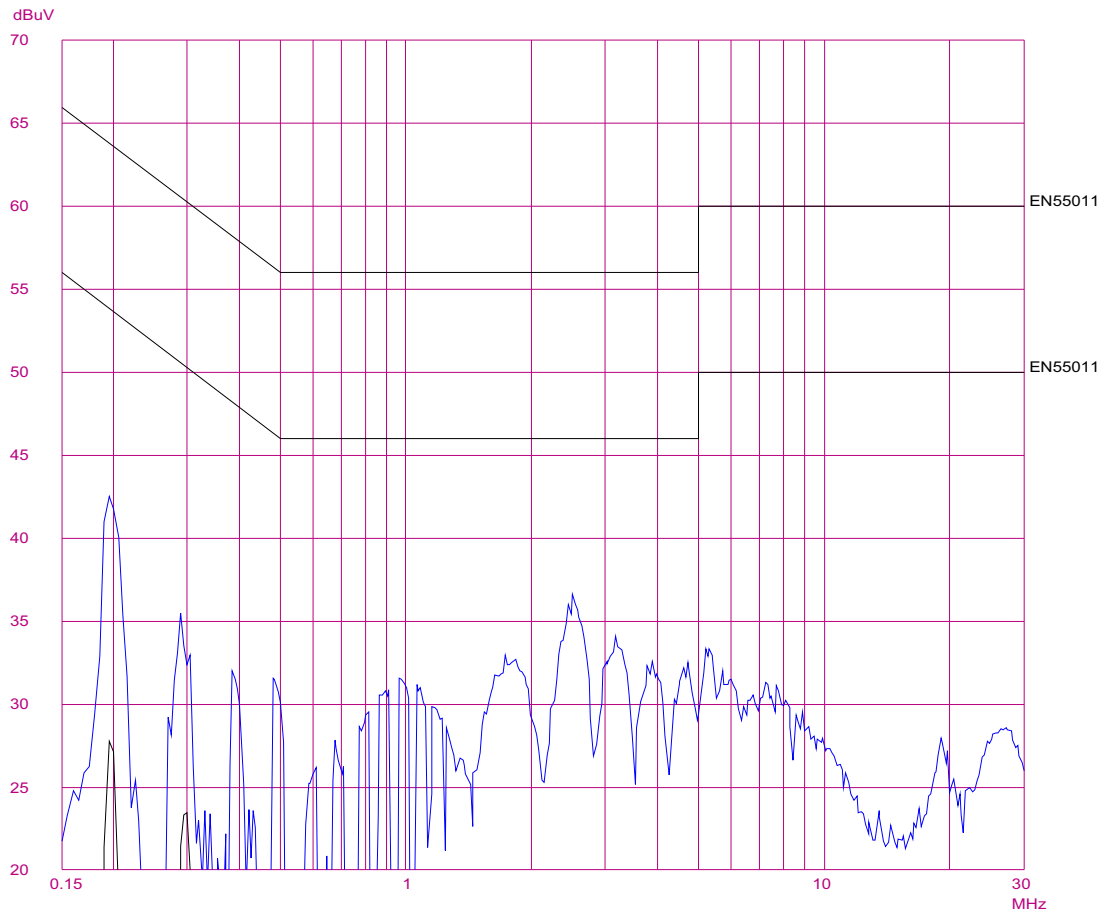
EUT: WALL PLUG-IN SMPS - GTM41067-0630 / 6W
 Manuf: GlobTec, Inc.
 Op Cond: Max. load current - 30V/0.16A - 230VAC
 Operator: Mr. Vogelmann
 Test Spec: EN 55011 ISM-Appliance class B
 Comment: Test_ID EUT PRC36_11
 GTC37_01, Phase L1

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement: x QP / + AV

Meas Time: 1 s
 Subranges: 50
 Acc Margin: 6dB



EMCE GmbH Ing_buero fuer EMV_Pruefungen
Terminal voltage

13. Sep 06 15:57

EUT: WALL PLUG-IN SMPS - GTM41067-0630 / 6W
Manuf: GlobTec, Inc.
Op Cond: Max. load current - 30V/0.16A - 230VAC
Operator: Mr. Vogelmann
Test Spec: EN 55011 ISM-Appliance class B
Comment: Test_ID EUT PRC36_11
GTC37_01, Phase L1

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement Results:

no Results

EMCE GmbH Ing_buero fuer EMV_Pruefungen

 Terminal voltage

13. Sep 06 16:09

EUT: WALL PLUG-IN SMPS - GTM41067-0630 / 6W

 Manuf: GlobTec, Inc.

 Op Cond: Max. load current - 30V/0.16A - 230VAC

 Operator: Mr. Vogelmann

 Test Spec: EN 55011 ISM-Appliance class B

 Comment: Test_ID EUT PRC36_11

 GTC37_02, Phase N

Scan Settings (1 Range)

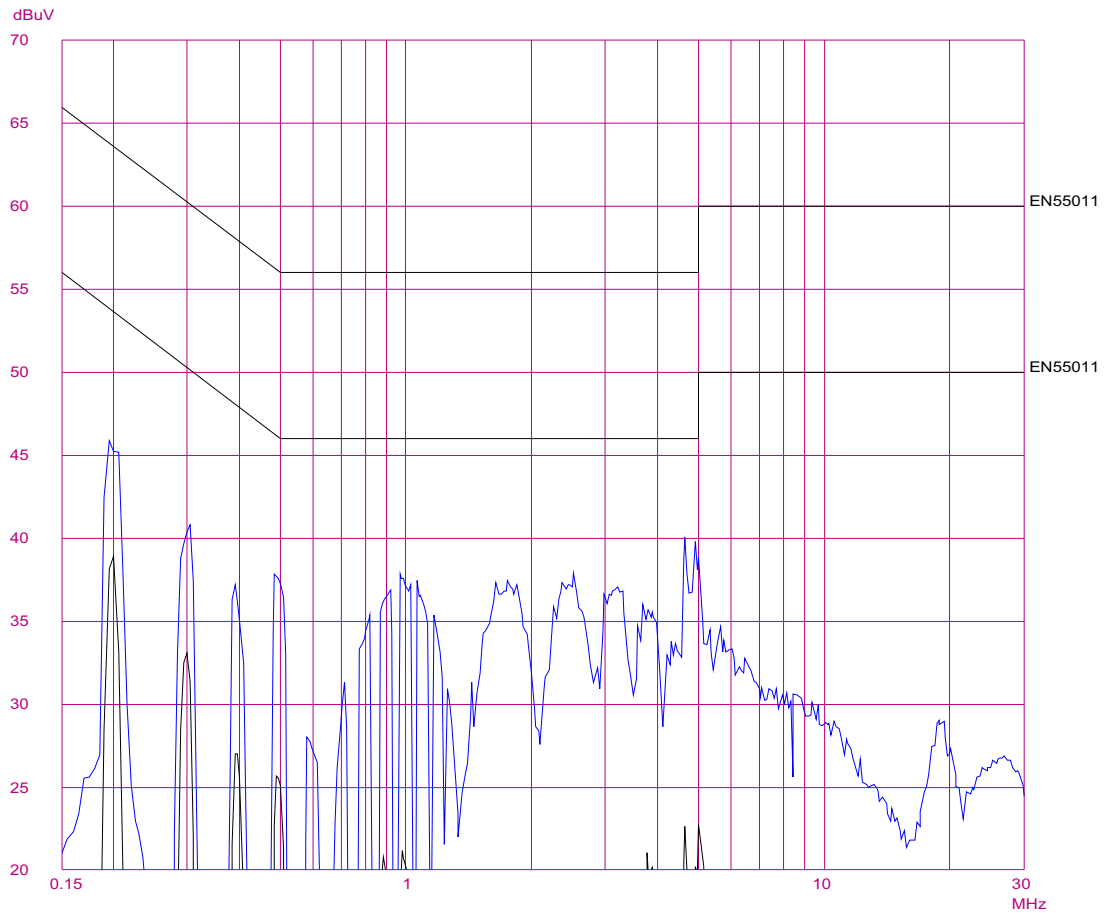
Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN OFF	60dB

Final Measurement: x QP / + AV

Meas Time: 1 s

 Subranges: 50

 Acc Margin: 6dB



EMCE GmbH Ing_buero fuer EMV_Pruefungen
Terminal voltage

13. Sep 06 16:09

EUT: WALL PLUG-IN SMPS - GTM41067-0630 / 6W
Manuf: GlobTec, Inc.
Op Cond: Max. load current - 30V/0.16A - 230VAC
Operator: Mr. Vogelmann
Test Spec: EN 55011 ISM-Appliance class B
Comment: Test_ID EUT PRC36_11
GTC37_02, Phase N

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement Results:

no Results

EMCE GmbH Ing_buero fuer EMV_Pruefungen

 Terminal voltage

14. Sep 06 08:19

EUT: WALL PLUG-IN SMPS - GTM41067-0630 / 6W

 Manuf: GlobTec, Inc.

 Op Cond: Max. load current - 30V/0.16A - 100VAC

 Operator: Mr. Vogelmann

 Test Spec: EN 55011 ISM-Appliance class B

 Comment: Test_ID EUT PRC36_11

 GTC37_03, Phase L1

Scan Settings (1 Range)

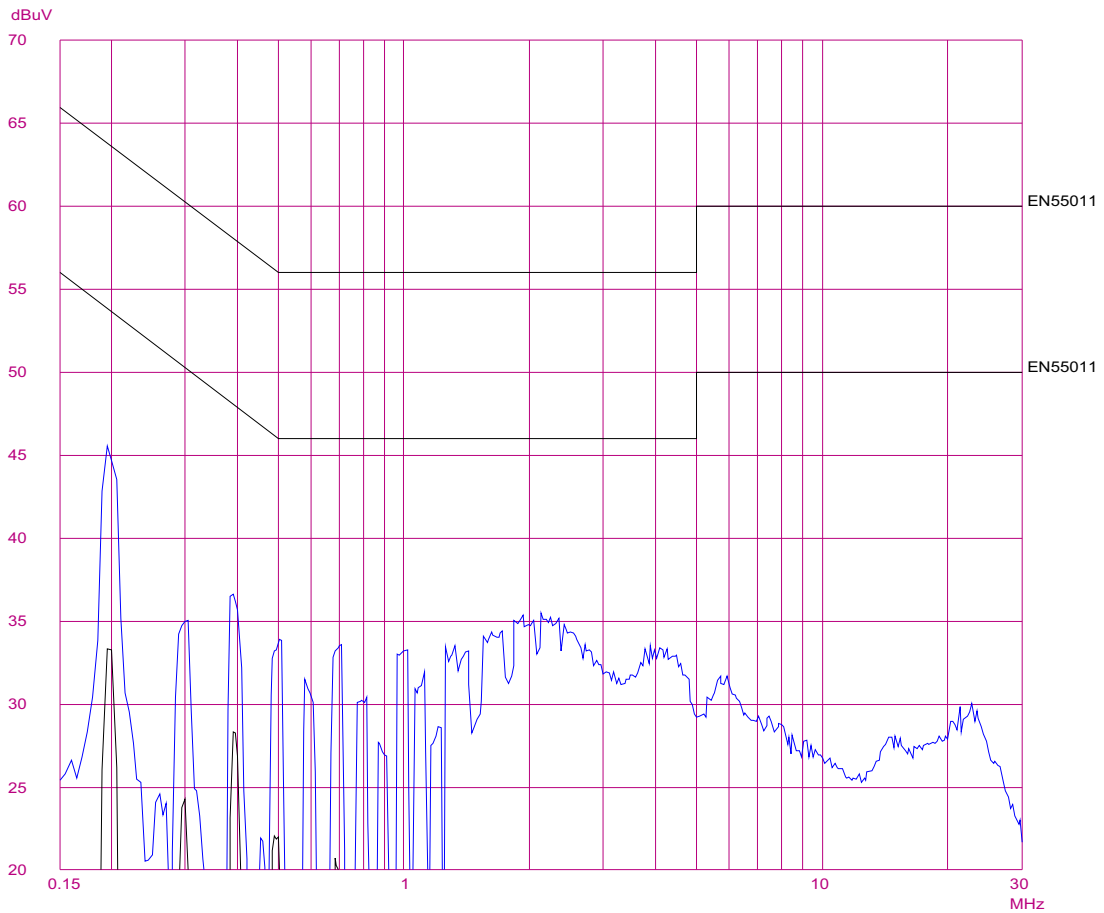
Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement: x QP / + AV

Meas Time: 1 s

 Subranges: 50

 Acc Margin: 6dB



EMCE GmbH Ing_buero fuer EMV_Pruefungen
Terminal voltage

14. Sep 06 08:19

EUT: WALL PLUG-IN SMPS - GTM41067-0630 / 6W
Manuf: GlobTec, Inc.
Op Cond: Max. load current - 30V/0.16A - 100VAC
Operator: Mr. Vogelmann
Test Spec: EN 55011 ISM-Appliance class B
Comment: Test_ID EUT PRC36_11
GTC37_03, Phase L1

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement Results:

no Results

EMCE GmbH Ing_buero fuer EMV_Pruefungen
 Terminal voltage

14. Sep 06 08:31

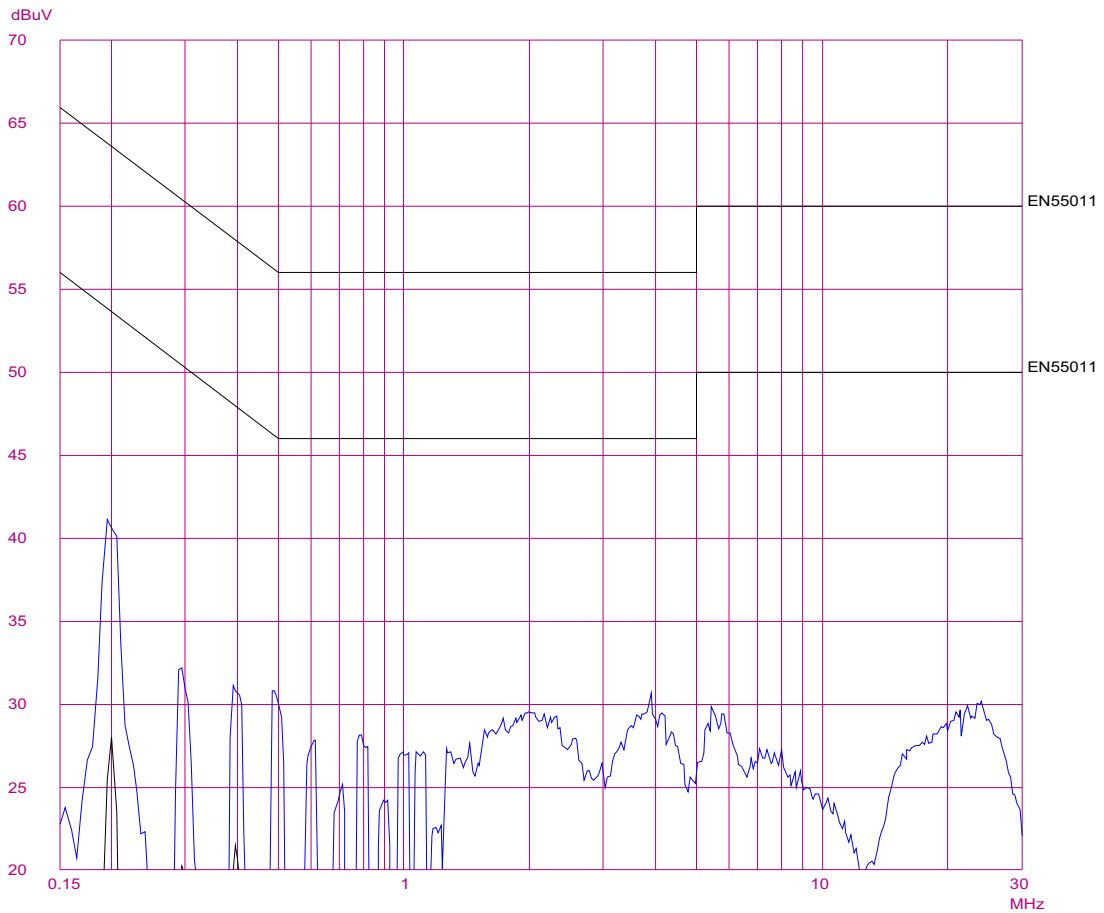
EUT: WALL PLUG-IN SMPS - GTM41067-0630 / 6W
 Manuf: GlobTec, Inc.
 Op Cond: Max. load current - 30V/0.16A - 100VAC
 Operator: Mr. Vogelmann
 Test Spec: EN 55011 ISM-Appliance class B
 Comment: Test_ID EUT PRC36_11
 GTC37_04, Phase N

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement: x QP / + AV

Meas Time: 1 s
 Subranges: 50
 Acc Margin: 6dB



EMCE GmbH Ing_buero fuer EMV_Pruefungen
Terminal voltage

14. Sep 06 08:31

EUT: WALL PLUG-IN SMPS - GTM41067-0630 / 6W
Manuf: GlobTec, Inc.
Op Cond: Max. load current - 30V/0.16A - 100VAC
Operator: Mr. Vogelmann
Test Spec: EN 55011 ISM-Appliance class B
Comment: Test_ID EUT PRC36_11
GTC37_04, Phase N

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement Results:

no Results

EMCE GmbH Ing_buero fuer EMV_Pruefungen

Terminal voltage

13. Sep 06 17:23

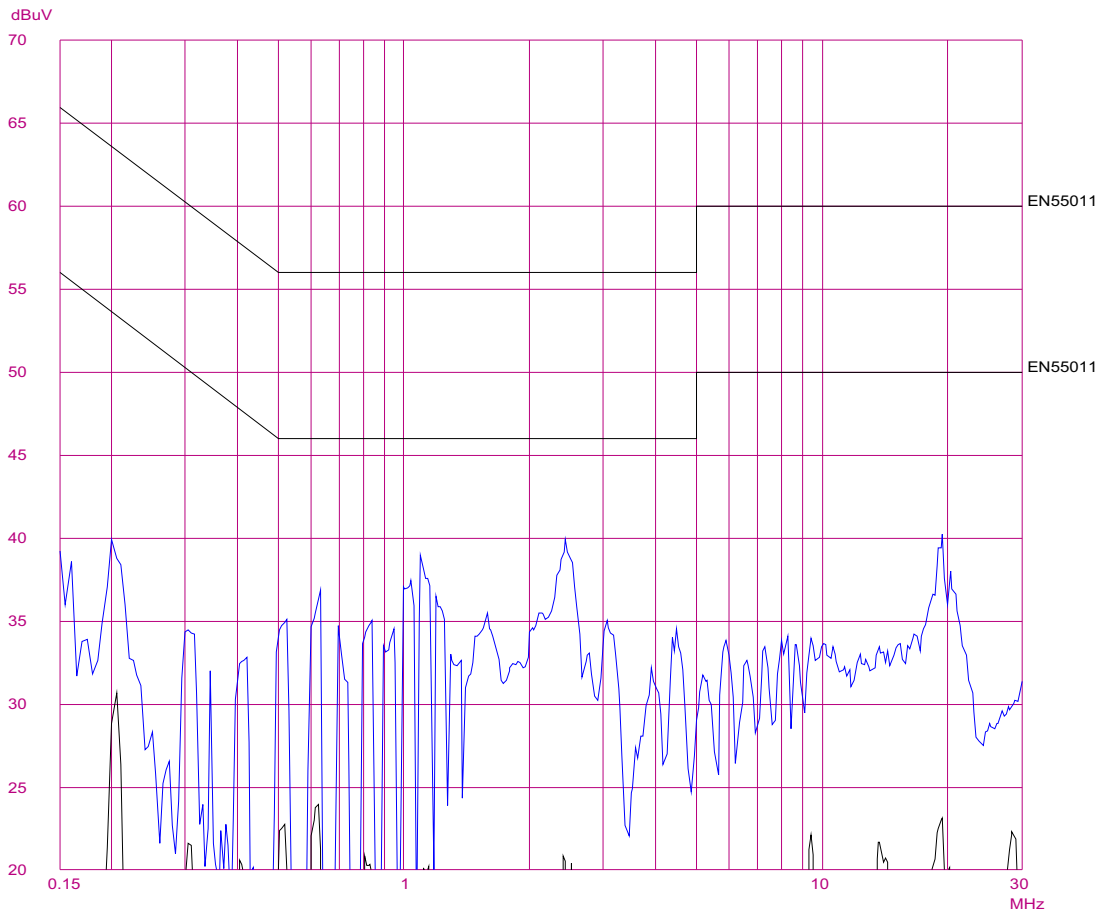
EUT: WALL PLUG-IN SMPS - GTM41067-0605 / 6W
 Manuf: GlobTec, Inc.
 Op Cond: Max. load current - 5V/1.2A - 230VAC
 Operator: Mr. Vogelmann
 Test Spec: EN 55011 ISM-Appliance class B
 Comment: Test_ID EUT PRC36_10
 GTC37_11, Phase L1

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN OFF	60dB

Final Measurement: x QP / + AV

Meas Time: 1 s
 Subranges: 50
 Acc Margin: 6dB



EMCE GmbH Ing_buero fuer EMV_Pruefungen Terminal voltage

13. Sep 06 17:23

EUT: WALL PLUG-IN SMPS - GTM41067-0605 / 6W
Manuf: GlobTec, Inc.
Op Cond: Max. load current - 5V/1.2A - 230VAC
Operator: Mr. Vogelmann
Test Spec: EN 55011 ISM-Appliance class B
Comment: Test_ID EUT PRC36_10
GTC37_11, Phase L1

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement Results:

no Results

EMCE GmbH Ing_buero fuer EMV_Pruefungen

Terminal voltage

13. Sep 06 16:54

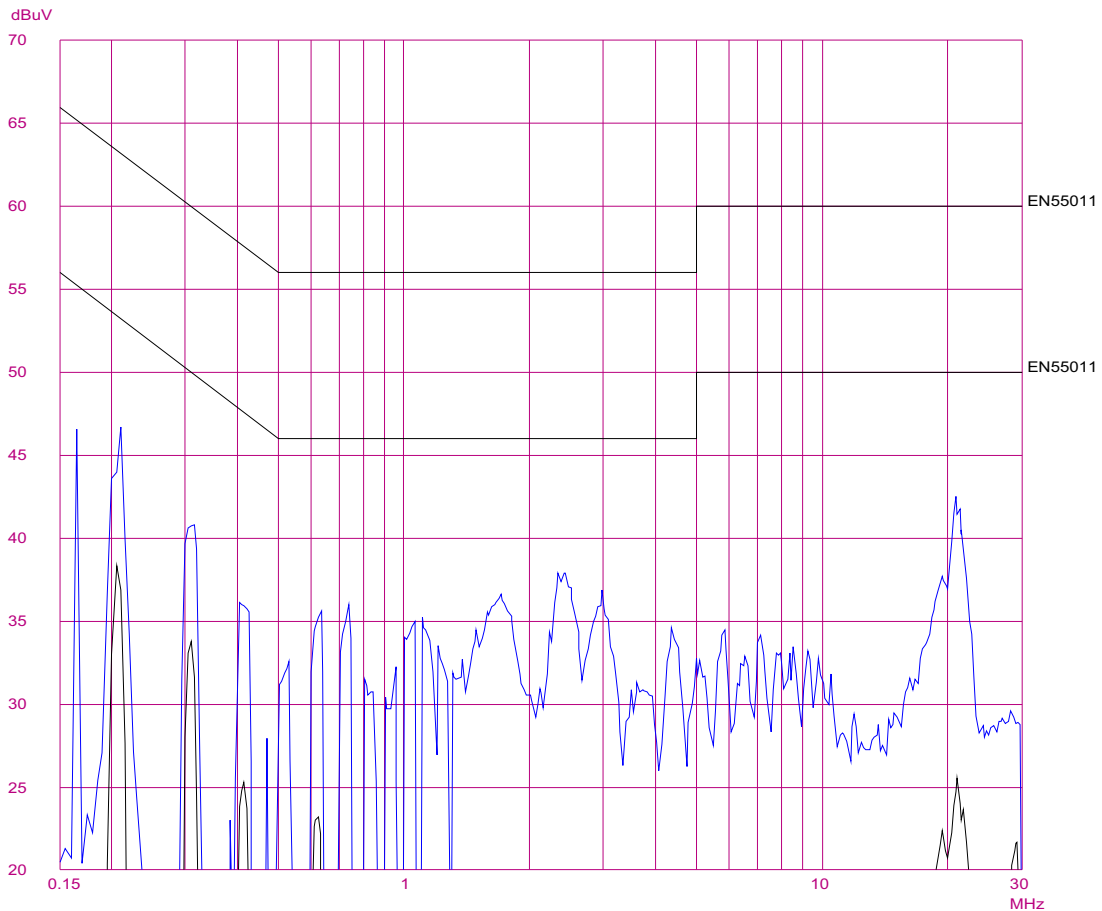
EUT: WALL PLUG-IN SMPS - GTM41067-0605 / 6W
 Manuf: GlobTec, Inc.
 Op Cond: Max. load current - 5V/1.2A - 230VAC
 Operator: Mr. Vogelmann
 Test Spec: EN 55011 ISM-Appliance class B
 Comment: Test_ID EUT PRC36_10
 GTC37_12, Phase N

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN OFF	60dB

Final Measurement: x QP / + AV

Meas Time: 1 s
 Subranges: 50
 Acc Margin: 6dB



EMCE GmbH Ing_buero fuer EMV_Pruefungen
Terminal voltage

13. Sep 06 16:54

EUT: WALL PLUG-IN SMPS - GTM41067-0605 / 6W
Manuf: GlobTec, Inc.
Op Cond: Max. load current - 5V/1.2A - 230VAC
Operator: Mr. Vogelmann
Test Spec: EN 55011 ISM-Appliance class B
Comment: Test_ID EUT PRC36_10
GTC37_12, Phase N

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement Results:

no Results

EMCE GmbH Ing_buero fuer EMV_Pruefungen

 Terminal voltage

13. Sep 06 17:58

EUT: WALL PLUG-IN SMPS - GTM41067-0605 / 6W

 Manuf: GlobTec, Inc.

 Op Cond: Max. load current - 5V/1.2A - 100VAC

 Operator: Mr. Vogelmann

 Test Spec: EN 55011 ISM-Appliance class B

 Comment: Test_ID EUT PRC36_10

 GTC37_13, Phase L1

Scan Settings (1 Range)

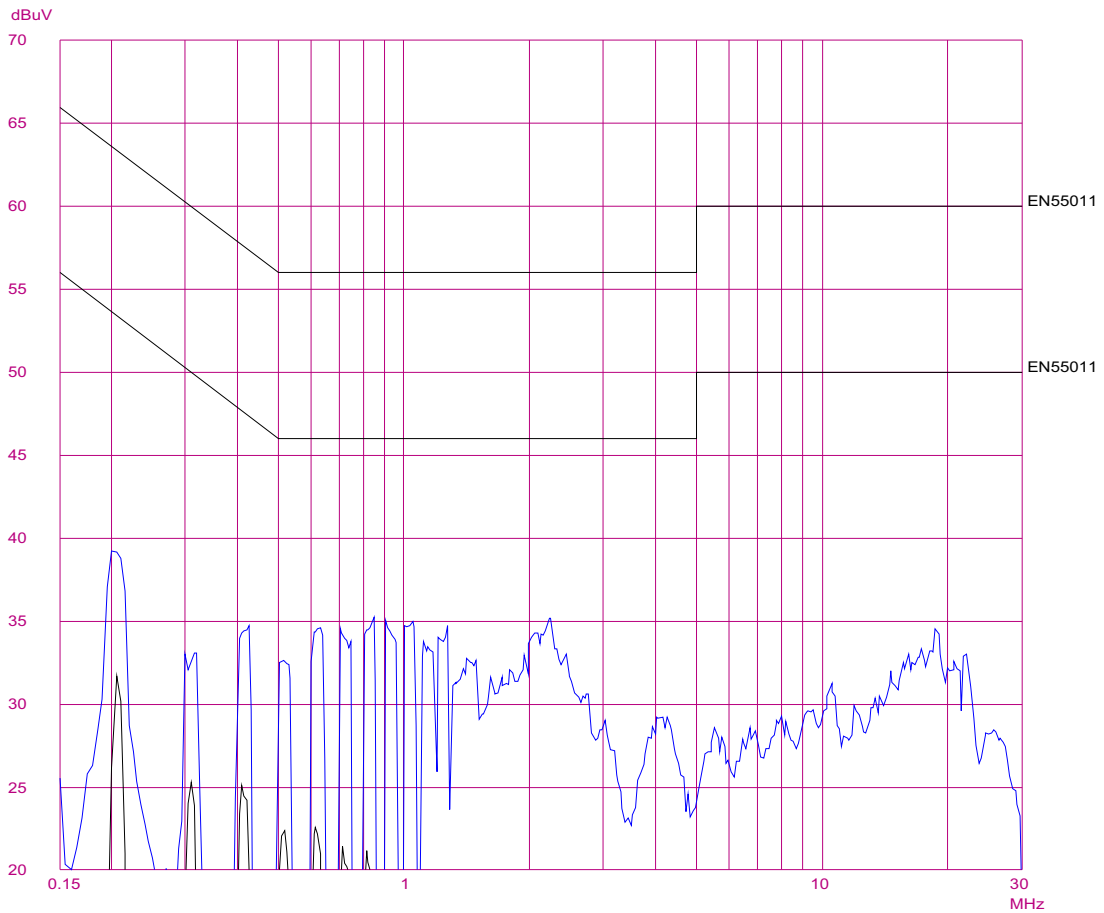
Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement: x QP / + AV

Meas Time: 1 s

 Subranges: 50

 Acc Margin: 6dB



EMCE GmbH Ing_buero fuer EMV_Pruefungen Terminal voltage

13. Sep 06 17:58

EUT: WALL PLUG-IN SMPS - GTM41067-0605 / 6W
Manuf: GlobTec, Inc.
Op Cond: Max. load current - 5V/1.2A - 100VAC
Operator: Mr. Vogelmann
Test Spec: EN 55011 ISM-Appliance class B
Comment: Test_ID EUT PRC36_10
GTC37_13, Phase L1

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement Results:

no Results

EMCE GmbH Ing_buero fuer EMV_Pruefungen

Terminal voltage

13. Sep 06 18:07

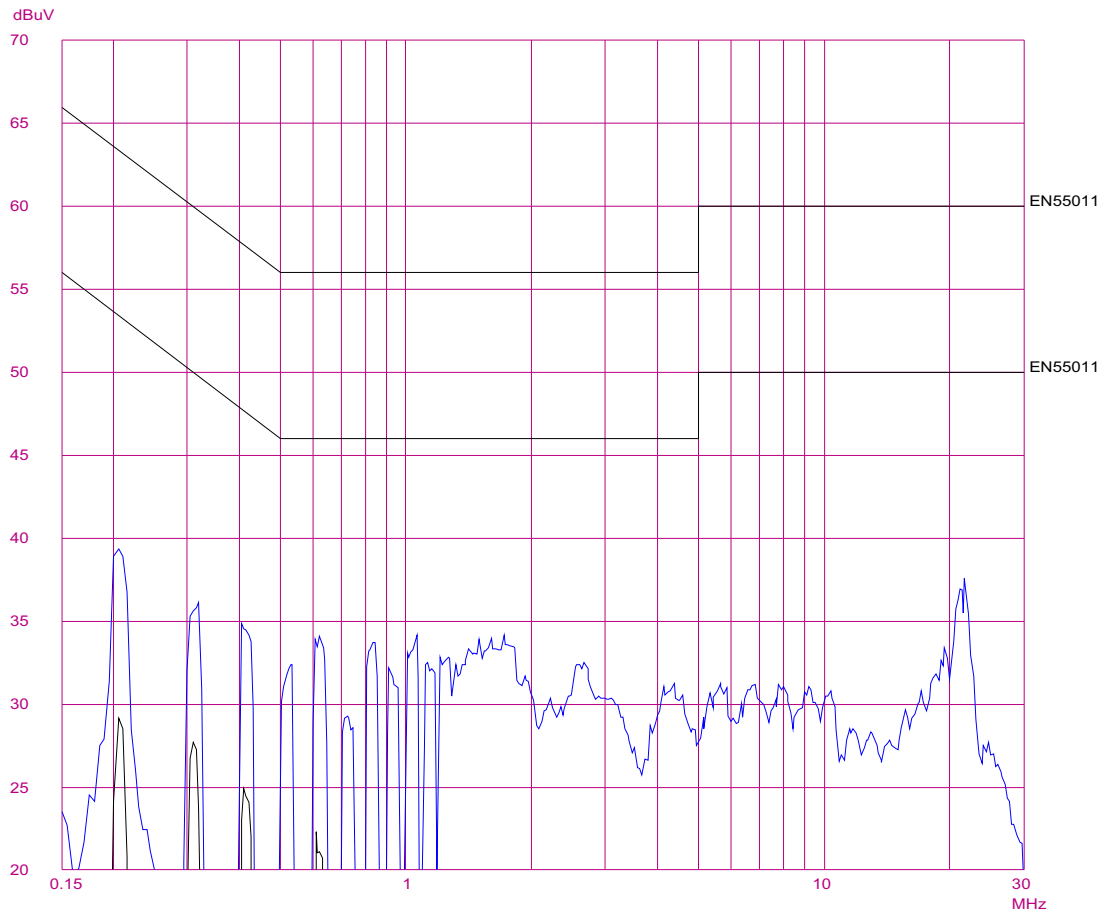
EUT: WALL PLUG-IN SMPS - GTM41067-0605 / 6W
 Manuf: GlobTec, Inc.
 Op Cond: Max. load current - 5V/1.2A - 100VAC
 Operator: Mr. Vogelmann
 Test Spec: EN 55011 ISM-Appliance class B
 Comment: Test_ID EUT PRC36_10
 GTC37_14, Phase N

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN OFF	60dB

Final Measurement: x QP / + AV

Meas Time: 1 s
 Subranges: 50
 Acc Margin: 6dB



EMCE GmbH Ing_buero fuer EMV_Pruefungen
Terminal voltage

13. Sep 06 18:07

EUT: WALL PLUG-IN SMPS - GTM41067-0605 / 6W
Manuf: GlobTec, Inc.
Op Cond: Max. load current - 5V/1.2A - 100VAC
Operator: Mr. Vogelmann
Test Spec: EN 55011 ISM-Appliance class B
Comment: Test_ID EUT PRC36_10
GTC37_14, Phase N

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement Results:

no Results

1.1.2 Radio disturbances according DIN EN 55011 (VDE 0875 Teil 11) / 08.2003

1.1.2.1 Test set up

According DIN EN 55011 (VDE 0875 Teil 11) / 08.2003

Test location:

<u>Precompliance</u>	<input type="checkbox"/>	Shielded room	<input type="checkbox"/>	Laboratory
<u>Full compliance</u>	<input type="checkbox"/>	Anechoic chamber	<input type="checkbox"/>	
	<input type="checkbox"/>	OATS 3m	<input checked="" type="checkbox"/>	OATS 10m

The test equipment was checked and complied to the requirements.





1.1.2.2 Test

Regulation:

DIN EN 55011 (VDE 0875 Teil 11) / 08.2003

<input type="checkbox"/>	9kHz - 30MHz	<input type="checkbox"/>	150kHz - 30MHz
<input checked="" type="checkbox"/>	30MHz - 1000MHz	<input type="checkbox"/>	11,7 – 12,7GHz

ISM-Classification	<input checked="" type="checkbox"/>	Group 1*	<input type="checkbox"/>	Group 2**
Limits:	<input checked="" type="checkbox"/>	Class B	<input type="checkbox"/>	Class A

*Group 1 comprises all ISM appliances, which use rf energy for internal functions.

**Group 2 comprises all ISM appliances, which use rf energy for tooling material.

Operation mode:

EUT arrangement:	<input checked="" type="checkbox"/>	Tabletop	<input type="checkbox"/>	Floor standing
Supply voltage:	<input checked="" type="checkbox"/>	230V / 50Hz	<input type="checkbox"/>	100V / 50Hz

Continuous operation with max. permanent output current – 1.2A / 0.16A.

Environmental conditions:

Temperature:	15 - 35 °C
Humidity:	30 - 60 %
Air pressure:	860 - 1060 hPa

The environmental conditions during the test:	<input checked="" type="checkbox"/>	were kept
	<input type="checkbox"/>	were not kept

Test results:

Measurements are made with a CISPR receiver. The frequency, the maximum quasipeak reading, correction factor of the antenna with attached cable and the limit will be listed.

Summary:

Limits for continuous disturbances: kept
 not kept

Remarks: Test results valid for PRC36_10 and PRC36_11.

Protocol scope:

- Readings - Antenna horizontal polarized.
- Diagram radio disturbances - Antenna horizontal polarized.
- Readings - Antenna vertical polarized.
- Diagram radio disturbances - Antenna vertical polarized.
- Precompliance measurement(s).



Readings - Antenna horizontal polarized – PRC36_10

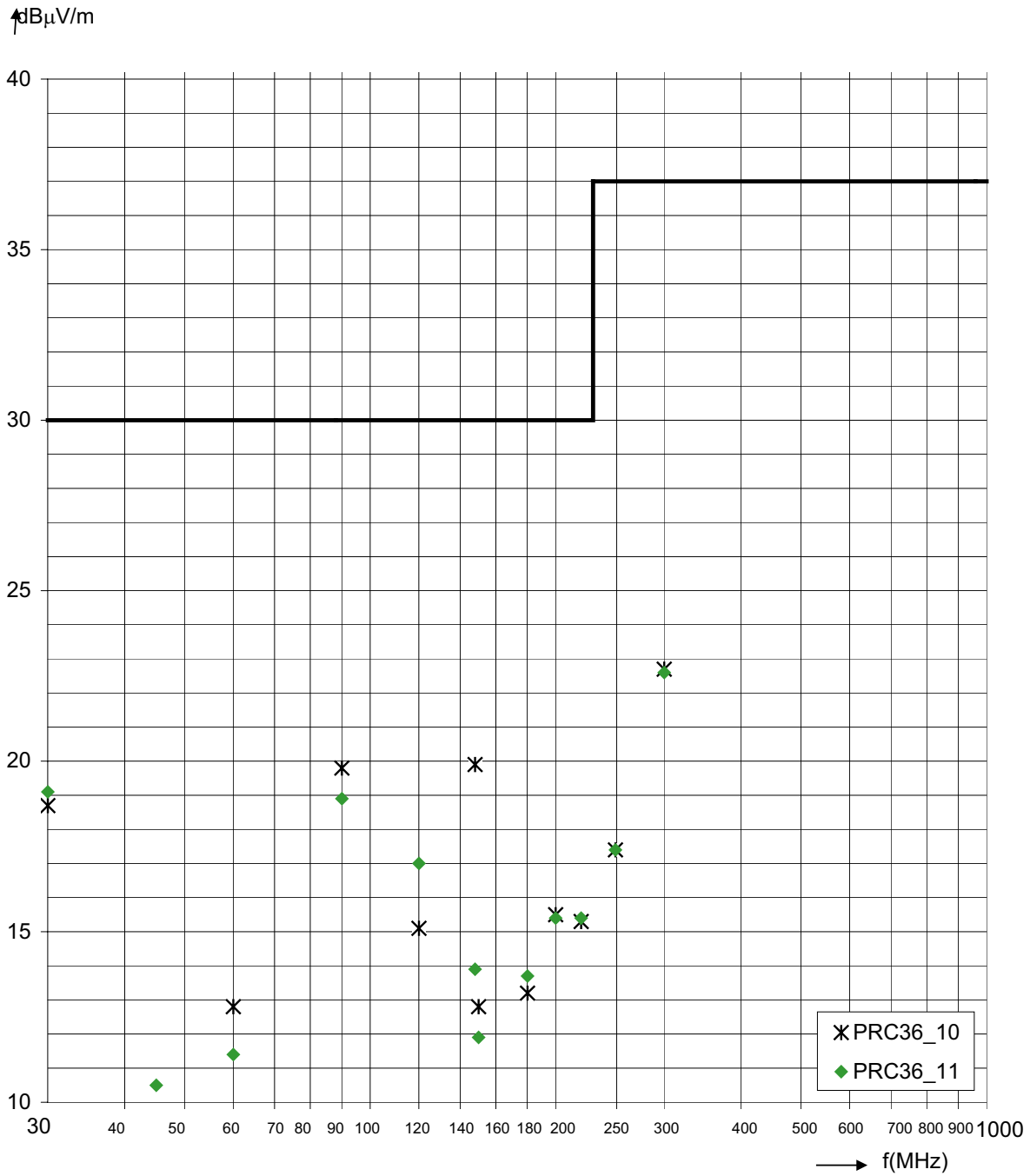
Frequency MHz	Measured value dB μ V	+ AF dB/m Antenna	+ KF dB Cable	Emission dB μ V/m	Limit dB μ V/m	Difference dB μ V	Ant.- Height meter	Ant.- Polar. H/V
30.000	4.7	13.0	1.0	18.7	30.0	11.3	4.0	H
45.000	-0.2	8.3	1.3	9.4	30.0	20.6	4.0	H
60.000	3.0	8.3	1.5	12.8	30.0	17.2	4.0	H
90.000	8.5	9.4	1.9	19.8	30.0	10.2	4.0	H
120.000	1.9	10.9	2.3	15.1	30.0	14.9	4.0	H
148.000	5.0	12.4	2.5	19.9	30.0	10.1	4.0	H
150.000	-2.2	12.5	2.6	12.8	30.0	17.2	4.0	H
180.000	-3.6	14.0	2.8	13.2	30.0	16.8	4.0	H
200.000	-2.5	15.0	3.0	15.5	30.0	14.5	4.0	H
220.000	-3.9	16.0	3.2	15.3	30.0	14.7	4.0	H
250.000	-2.8	16.8	3.4	17.4	37.0	19.6	4.0	H
300.000	5.5	13.5	3.7	22.7	37.0	14.3	4.0	H

Readings - Antenna horizontal polarized – PRC36_11

Frequency MHz	Measured value dB μ V	+ AF dB/m Antenna	+ KF dB Cable	Emission dB μ V/m	Limit dB μ V/m	Difference dB μ V	Ant.- Height meter	Ant.- Polar. H/V
30.000	5.1	13.0	1.0	19.1	30.0	10.9	4.0	H
45.000	0.9	8.3	1.3	10.5	30.0	19.5	4.0	H
60.000	1.6	8.3	1.5	11.4	30.0	18.6	4.0	H
90.000	7.6	9.4	1.9	18.9	30.0	11.1	4.0	H
120.000	3.8	10.9	2.3	17.0	30.0	13.0	4.0	H
148.000	-1.0	12.4	2.5	13.9	30.0	16.1	4.0	H
150.000	-3.1	12.5	2.6	11.9	30.0	18.1	4.0	H
180.000	-3.1	14.0	2.8	13.7	30.0	16.3	4.0	H
200.000	-2.6	15.0	3.0	15.4	30.0	14.6	4.0	H
220.000	-3.8	16.0	3.2	15.4	30.0	14.6	4.0	H
250.000	-2.8	16.8	3.4	17.4	37.0	19.6	4.0	H
300.000	5.4	13.5	3.7	22.6	37.0	14.4	4.0	H

Diagram radio disturbances - Antenna horizontal polarized
 Limits according DIN EN 55011 (VDE 0875 Teil 11) / 08.2003

 Class A
 Class B



Readings - Antenna vertical polarized – PRC36_10

Frequency	Measured	+ AF	+ KF	Emission	Limit	Difference	Ant.-	Ant.-
MHz	value	dB/m	dB		dB μ V/m	dB μ V	Height	Polar.
	dB μ V	Antenna	Cable	dB μ V/m			meter	H/V
30.000	6.8	13.0	1.0	20.8	30.0	9.2	1.0	V
45.000	3.5	8.3	1.3	13.1	30.0	16.9	1.0	V
60.000	1.0	8.3	1.5	10.8	30.0	19.2	1.0	V
90.000	0.3	9.4	1.9	11.6	30.0	18.4	1.0	V
120.000	5.8	10.9	2.3	19.0	30.0	11.0	1.0	V
148.000	-2.5	12.4	2.5	12.4	30.0	17.6	1.0	V
150.000	0.3	12.5	2.6	15.3	30.0	14.7	1.0	V
180.000	-0.7	14.0	2.8	16.1	30.0	13.9	1.0	V
200.000	-2.2	15.0	3.0	15.8	30.0	14.2	1.0	V
220.000	-3.4	16.0	3.2	15.8	30.0	14.2	1.0	V
250.000	-2.5	16.8	3.4	17.7	37.0	19.3	1.0	V
300.000	5.6	13.5	3.7	22.8	37.0	14.2	1.0	V

Readings - Antenna vertical polarized – PRC36_11

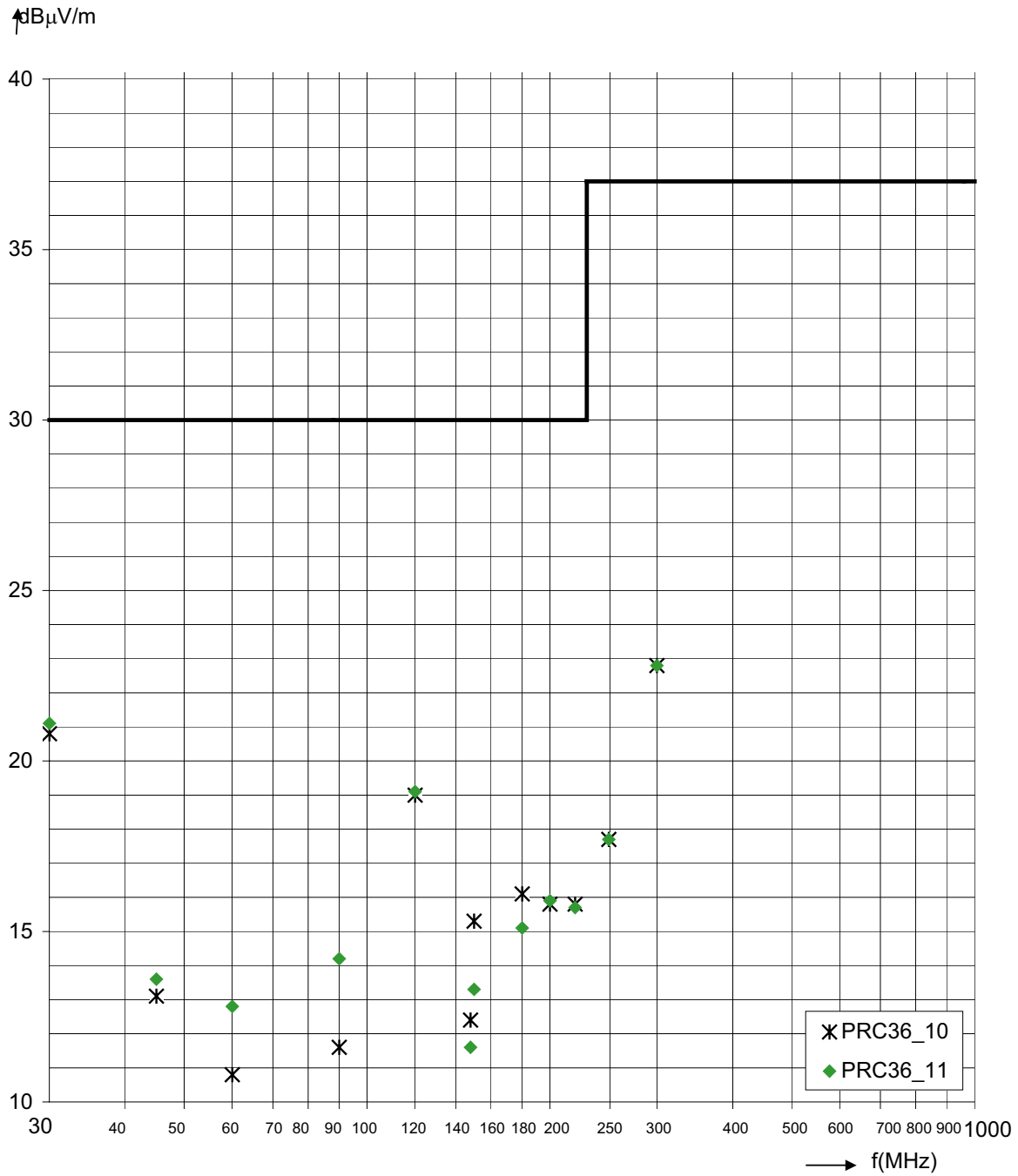
Frequency	Measured	+ AF	+ KF	Emission	Limit	Difference	Ant.-	Ant.-
MHz	value	dB/m	dB		dB μ V/m	dB μ V	Height	Polar.
	dB μ V	Antenna	Cable	dB μ V/m			meter	H/V
30.000	7.1	13.0	1.0	21.1	30.0	8.9	1.0	V
45.000	4.0	8.3	1.3	13.6	30.0	16.4	1.0	V
60.000	3.0	8.3	1.5	12.8	30.0	17.2	1.0	V
90.000	2.9	9.4	1.9	14.2	30.0	15.8	1.0	V
120.000	5.9	10.9	2.3	19.1	30.0	10.9	1.0	V
148.000	-3.3	12.4	2.5	11.6	30.0	18.4	1.0	V
150.000	-1.7	12.5	2.6	13.3	30.0	16.7	1.0	V
180.000	-1.7	14.0	2.8	15.1	30.0	14.9	1.0	V
200.000	-2.1	15.0	3.0	15.9	30.0	14.1	1.0	V
220.000	-3.5	16.0	3.2	15.7	30.0	14.3	1.0	V
250.000	-2.5	16.8	3.4	17.7	37.0	19.3	1.0	V
300.000	5.6	13.5	3.7	22.8	37.0	14.2	1.0	V

Diagram radio disturbances - Antenna vertical polarized

 Limits according DIN EN 55011 (VDE 0875 Teil 11) / 08.2003

Class A

 Class B



1.2 Harmonic current emissions according DIN EN 61000-3-2 (VDE 0838 Teil 2) / 12.2001

1.2.1 Test set up

According DIN EN 61000-3-2 (VDE 0838 Teil 2) / 12.2001

Test location: Shielded room Laboratory
 Open field _



1.2.2 Test

Regulation:

DIN EN 61000-3-2 (VDE 0838 Teil 2) / 12.2001

100Hz - 2000Hz

Limit:

Constant Harmonics

Fluctuating Harmonics

Class A

Class B

Class C

Class D

Operation mode:

EUT arrangement:

Tabletop

Floor standing

Supply voltage:

230V / 50Hz

100V / 50Hz

The EUT was supplied via an AC-Source.

Continuous operation with max. permanent output current – 1.2A.

Environmental conditions:

Temperature: 15 - 35 °C

Humidity: 30 - 60 %

Air pressure: 860 - 1060 hPa

The environmental conditions during the test:

were kept

were not kept

Test results:

Limits:

kept

not kept

informative

Remarks:

Test results valid for PRC36_10. The input power is less than 75W, there were no limits applied.

Diagrams: informative

Harmonic test table

Bar chart – Window #1

Diagram margin

Name:	Mr. Hauser	Serial no:	Prototype
Department:	EMC Testing	Operating modes:	Max. load 1.2A
Company:	EMCE GmbH	Comment1:	EUT PRC36_10
Test report no:	xx	Comment2:	230V/50Hz
Device:	Medical SMPS	Comment3:	--
Specimen:	Class A	Comment4:	--
Manufacturer:	Globtek Inc.		
Type:	GT-41076-0605-MED	Test date:	14.09.2006

Maximum RMS current and corresponding values in timewindow 1:

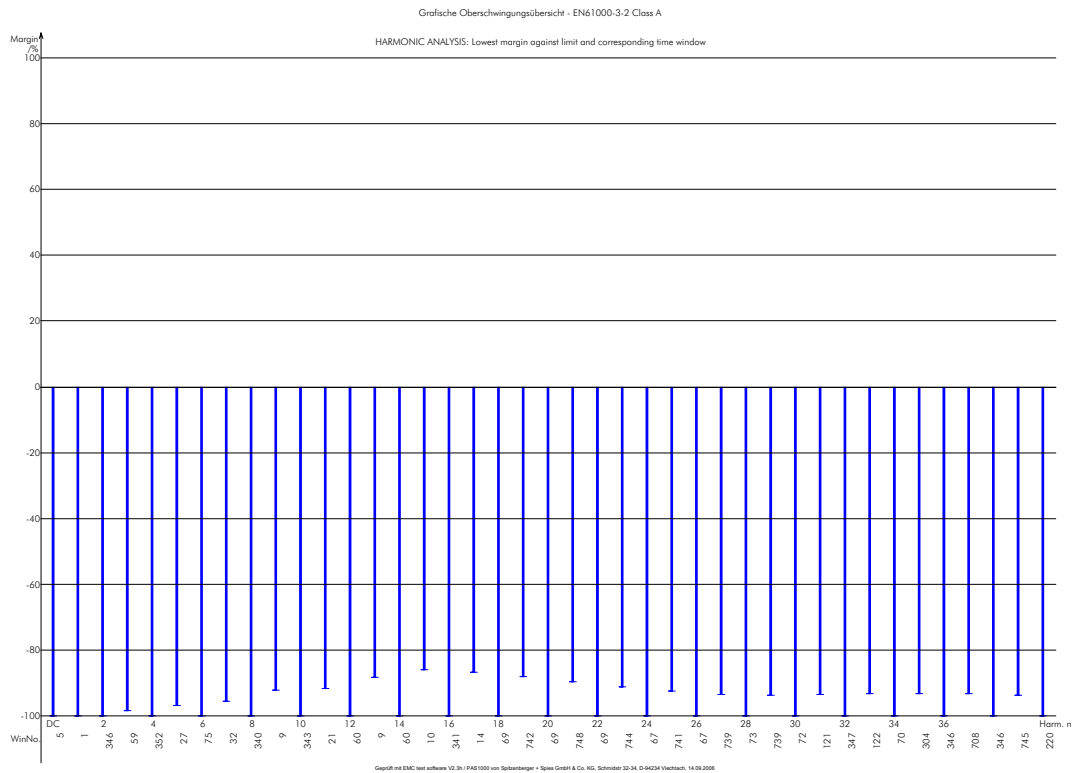
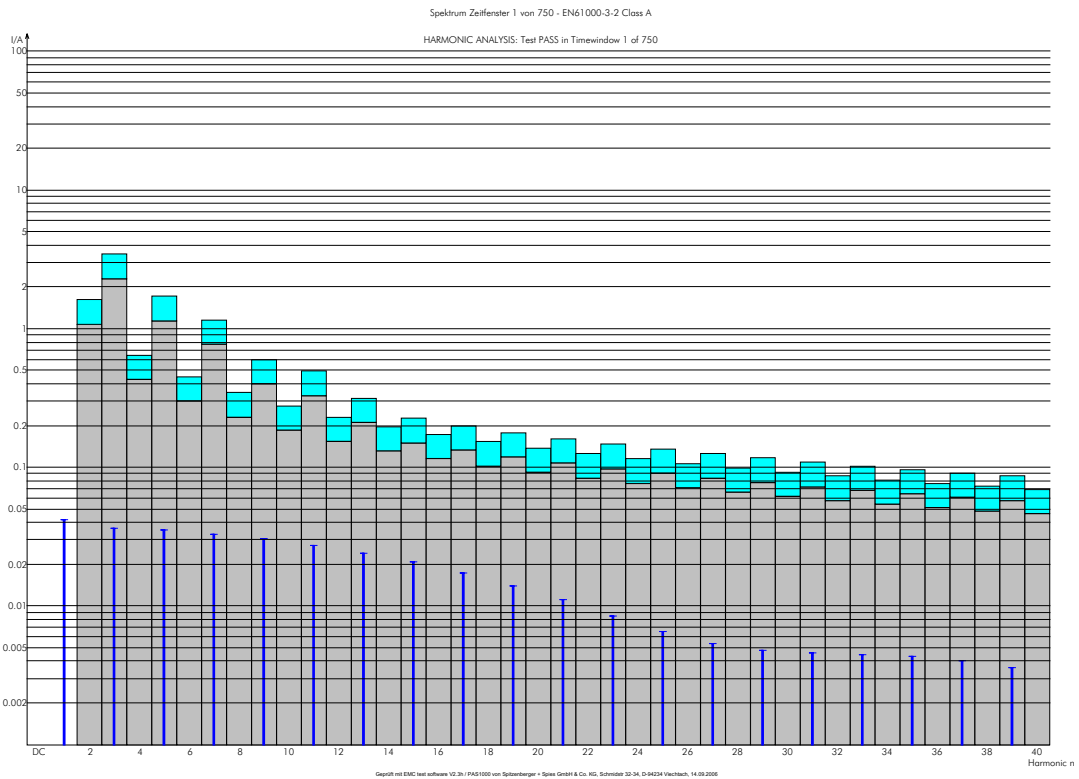
Voltage:	230.25 Vrms	THD=0.01 %	THV=0.018 V	POHV=0.009 V	PWHD=0.03 %	
Current:	0.096 Arms	0.455 Apk	THD=188.75 %	THC=0.086 A	POHC=0.020 A	PWHD=376.33
Power:	8.7 W	P1=8.7 W	22.2 VA			
Powerfactor:	0.392	CosPhi1: 0.886				

Testconditions: EN 61000-3-2 / A14, f=50 Hz, Phase=L1, Range=0.16 A
 Time window cycles=10/12 (200ms), Grouping of harmonics=on

HARMONIC ANALYSIS: Test PASS
 TobS = worst 2.5 min: tw 1..750 POHC: avg=0.020 A, limits=0.251 A

Ha	Entire measurement (2.5 min = 750 time windows)						Worst 2.5 min		Worst 2.5 min avg		P A S S	F A I L
	Maximum	Window	EN61000-3-2 Class A	Margin in MaxWin	100 to 150%	Ex-ceeded	100 to 150%	Ex-ceeded	Value	Ex-ceeded		
DC	0.0010 A	22	----	----	0	0	0	0	0.0009 A	0	X	
1	0.0426 A	3	----	----	0	0	0	0	0.0424 A	0	X	
2	0.0001 A	346	1.0800 A	-100.0 %	0	0	0	0	0.0000 A	0	X	
3	0.0372 A	59	2.3000 A	-98.4 %	0	0	0	0	0.0369 A	0	X	
4	0.0001 A	352	0.4300 A	-100.0 %	0	0	0	0	0.0000 A	0	X	
5	0.0357 A	27	1.1400 A	-96.9 %	0	0	0	0	0.0355 A	0	X	
6	0.0000 A	75	0.3000 A	-100.0 %	0	0	0	0	0.0000 A	0	X	
7	0.0336 A	32	0.7700 A	-95.6 %	0	0	0	0	0.0334 A	0	X	
8	0.0001 A	340	0.2300 A	-100.0 %	0	0	0	0	0.0000 A	0	X	
9	0.0309 A	9	0.4000 A	-92.3 %	0	0	0	0	0.0308 A	0	X	
10	0.0001 A	343	0.1840 A	-100.0 %	0	0	0	0	0.0000 A	0	X	
11	0.0279 A	21	0.3300 A	-91.6 %	0	0	0	0	0.0277 A	0	X	
12	0.0000 A	60	0.1533 A	-100.0 %	0	0	0	0	0.0000 A	0	X	
13	0.0245 A	9	0.2100 A	-88.3 %	0	0	0	0	0.0244 A	0	X	
14	0.0001 A	60	0.1314 A	-100.0 %	0	0	0	0	0.0000 A	0	X	
15	0.0210 A	10	0.1500 A	-86.0 %	0	0	0	0	0.0210 A	0	X	
16	0.0001 A	341	0.1150 A	-100.0 %	0	0	0	0	0.0000 A	0	X	
17	0.0175 A	14	0.1324 A	-86.8 %	0	0	0	0	0.0175 A	0	X	
18	0.0000 A	69	0.1022 A	-100.0 %	0	0	0	0	0.0000 A	0	X	
19	0.0142 A	742	0.1184 A	-88.0 %	0	0	0	0	0.0142 A	0	X	
20	0.0001 A	69	0.0920 A	-99.9 %	0	0	0	0	0.0000 A	0	X	
21	0.0112 A	748	0.1071 A	-89.5 %	0	0	0	0	0.0112 A	0	X	
22	0.0001 A	69	0.0836 A	-99.9 %	0	0	0	0	0.0000 A	0	X	
23	0.0087 A	744	0.0978 A	-91.1 %	0	0	0	0	0.0086 A	0	X	
24	0.0000 A	67	0.0767 A	-99.9 %	0	0	0	0	0.0000 A	0	X	
25	0.0067 A	741	0.0900 A	-92.5 %	0	0	0	0	0.0067 A	0	X	
26	0.0000 A	67	0.0708 A	-99.9 %	0	0	0	0	0.0000 A	0	X	
27	0.0054 A	739	0.0833 A	-93.5 %	0	0	0	0	0.0054 A	0	X	
28	0.0000 A	73	0.0657 A	-99.9 %	0	0	0	0	0.0000 A	0	X	
29	0.0048 A	739	0.0776 A	-93.8 %	0	0	0	0	0.0048 A	0	X	
30	0.0000 A	72	0.0613 A	-99.9 %	0	0	0	0	0.0000 A	0	X	
31	0.0046 A	121	0.0726 A	-93.6 %	0	0	0	0	0.0046 A	0	X	
32	0.0000 A	347	0.0575 A	-99.9 %	0	0	0	0	0.0000 A	0	X	
33	0.0046 A	122	0.0682 A	-93.3 %	0	0	0	0	0.0045 A	0	X	
34	0.0000 A	70	0.0541 A	-99.9 %	0	0	0	0	0.0000 A	0	X	
35	0.0044 A	304	0.0643 A	-93.1 %	0	0	0	0	0.0044 A	0	X	
36	0.0000 A	346	0.0511 A	-99.9 %	0	0	0	0	0.0000 A	0	X	
37	0.0041 A	708	0.0608 A	-93.2 %	0	0	0	0	0.0041 A	0	X	
38	0.0000 A	346	0.0484 A	-99.9 %	0	0	0	0	0.0000 A	0	X	
39	0.0037 A	745	0.0577 A	-93.6 %	0	0	0	0	0.0037 A	0	X	
40	0.0000 A	220	0.0460 A	-99.9 %	0	0	0	0	0.0000 A	0	X	

Geprüft mit EMC test software V2.31 / PAS1000 von Spitzenberger + Spies GmbH & Co. KG, Schindlstr. 32-34, D-94234 Viechnitz, 14.09.2006



1.3 Voltage fluctuations and flicker according DIN EN 61000-3-3 (VDE 0838 Teil 3) / 05.2002

1.3.1 Test set up

According DIN EN 61000-3-3 (VDE 0838 Teil 3) / 05.2002

Test location: Shielded room Laboratory
 Open field _



1.3.2 Test

Regulations:

DIN EN 61000-3-3 (VDE 0838 Teil 3) / 05.2002

Voltage changes measured at a norm impedance according the „Voltage Method“

$R_A = 0.24\Omega / X_A = 0.15\Omega$ at 50Hz

$R_N = 0.16\Omega / X_N = 0.10\Omega$ at 50Hz

Voltage changes measured according with the „Current Method“ - Precompliant.

Voltage changes caused by hand.

- dc < 3.30%

- dmax < 4.00%

- d(t) < 500ms

The observation time for one cycle is 1 minute.

Voltage changes, flicker caused by program

- dc < 3.30%

- dmax < 4.00%

- d(t) < 500ms

- Pst < 1

- Plt < 0.65

The observation time for one cycle is 10 minutes.

Operation mode:

EUT arrangement: Tabletop Floor standing

Supply voltage: 230V / 50Hz 100V / 50Hz

Operation with max. permanent output current – 1.2A.

To get the voltage dips, the EUT was switched on / off at maximum load current. This procedure was repeated 24 times to get the maximum values.

Environmental conditions:

Temperature: 15 - 35 °C
Humidity: 30 - 60 %
Air pressure: 860 - 1060 hPa

The environmental conditions during the test: were kept
 were not kept

Test results:

Limits: kept
 not kept
 Pst, Plt – not relevant
 informative

Remarks: Test results valid for PRC36_10.

Name: Mr. Hauser Serial no: Prototype
 Department: EMC Testing Operating modes: Max. load 1.2A
 Company: EMCE GmbH Comment1: EUT PRC36_10
 Test report no: xx Comment2: 230V/50Hz
 Device: Medical SMPs Comment3: --
 Specimen: Manual switching Comment4: --
 Manufacturer: Globtek Inc.
 Type: GT-41076-0605-MED Test date: 14.09.2006

Testconditions: 230 V / 50 Hz / Phase: L1 / Observations: 24 x 1 min / Ztest: (0.40+j0.25) Ohm

FLICKER: Test PASS!

Time	Pmax	Pst	Sliding Plt	d(t)>3.30% [s]	dmax [%]	dc [%]	PASS	FAIL
16:24:48	-	-	-	0.000	0.094	-	X	
16:25:48	-	-	-	0.000	0.095	-	X	
16:26:48	-	-	-	0.000	0.107	-	X	
16:27:48	-	-	-	0.000	0.107	-	X	
16:28:47	-	-	-	0.000	0.107	-	X	
16:29:47	-	-	-	0.000	0.109	-	X	
16:30:47	-	-	-	0.000	0.110	-	X	
16:31:47	-	-	-	0.000	0.139	-	X	
16:32:47	-	-	-	0.000	0.139	-	X	
16:33:47	-	-	-	0.000	0.157	-	X	
16:34:47	-	-	-	0.000	0.159	-	X	
16:35:47	-	-	-	0.000	0.164	-	X	
16:36:47	-	-	-	0.000	0.239	0.154	X	
16:37:47	-	-	-	0.000	0.040	-	X	
16:38:47	-	-	-	0.000	0.040	-	X	
16:39:47	-	-	-	0.000	0.082	-	X	
16:40:47	-	-	-	0.000	0.082	-	X	
16:41:47	-	-	-	0.000	0.082	-	X	
16:42:47	-	-	-	0.000	0.089	-	X	
16:43:47	-	-	-	0.000	0.089	-	X	
16:44:47	-	-	-	0.000	0.155	-	X	
16:45:47	-	-	-	0.000	0.155	-	X	
16:46:47	-	-	-	0.000	0.155	-	X	
16:47:47	-	-	-	0.000	0.155	-	X	
Limits:		1.000	0.650	0.500	4.000	3.300		
Evaluated: dc, dmax average (0.117 %), d(t)								

FLICKER: Source test PASS!

Time	Pmax	Pst	Sliding Plt	d(t)>3.30% [s]	dmax [%]	dc [%]	PASS	FAIL
16:24:48	0.000	0.0080	-	0.000	0.016	-	X	
16:25:48	0.000	0.0080	-	0.000	0.016	-	X	
16:26:48	0.000	0.0070	-	0.000	0.016	-	X	
16:27:48	0.000	0.0080	-	0.000	0.021	-	X	
16:28:47	0.000	0.0070	-	0.000	0.026	-	X	
16:29:47	0.000	0.0070	-	0.000	0.026	-	X	
16:30:47	0.000	0.0070	-	0.000	0.030	-	X	
16:31:47	0.000	0.0070	-	0.000	0.031	-	X	
16:32:47	0.000	0.0070	-	0.000	0.032	-	X	
16:33:47	0.000	0.0070	-	0.000	0.034	-	X	
16:34:47	0.000	0.0070	-	0.000	0.035	-	X	
16:35:47	0.000	0.0070	-	0.000	0.035	-	X	
16:36:47	0.000	0.0070	-	0.000	0.036	-	X	
16:37:47	0.000	0.0070	-	0.000	0.038	-	X	
16:38:47	0.000	0.0070	-	0.000	0.038	-	X	
16:39:47	0.000	0.0070	-	0.000	0.038	-	X	
16:40:47	0.000	0.0070	-	0.000	0.038	-	X	
16:41:47	0.000	0.0070	-	0.000	0.038	-	X	
16:42:47	0.000	0.0070	-	0.000	0.038	-	X	
16:43:47	0.000	0.0070	-	0.000	0.040	-	X	
16:44:47	0.000	0.0070	-	0.000	0.040	-	X	
16:45:47	0.000	0.0070	-	0.000	0.040	-	X	
16:46:47	0.000	0.0070	-	0.000	0.040	-	X	
16:47:47	0.000	0.0070	-	0.000	0.040	-	X	
Evaluated: PST <= 0.4 dmax < 20% dmax1								

Gepfrft mit EMC test software V2.3h / PAS1000 von Spitzenberger + Spies GmbH & Co. KG, Schmidstr 32-34, D-94234 Viechtach, 14.09.2006

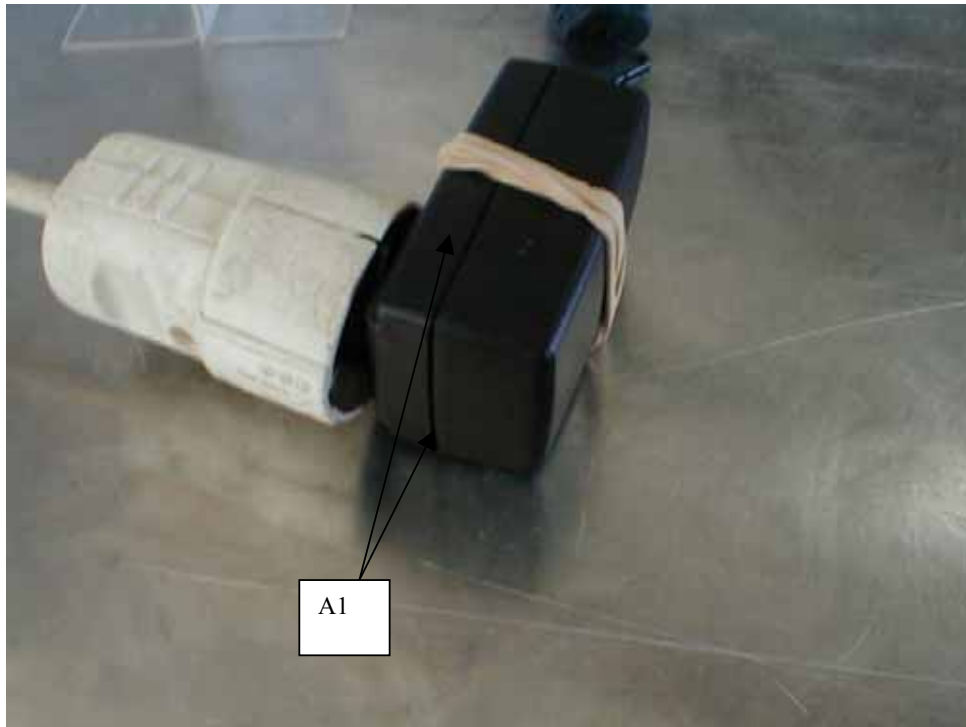
1.4 Electrostatic discharge immunity test according DIN EN 61000-4-2 (VDE 0847 Teil 4-2) / 12.2001

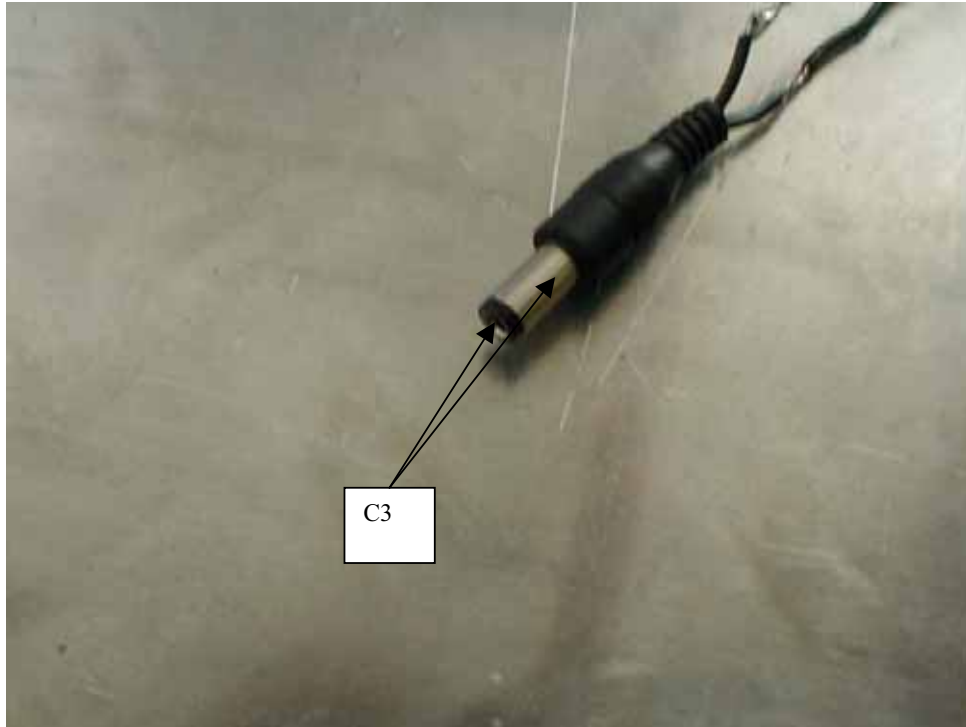
1.4.1 Test set up

According DIN EN 61000-4-2 (VDE 0847 Teil 4-2) / 12.2001

Test location: Shielded room Laboratory
 Open field _







1.4.2 Test

Regulation:

DIN EN 61000-4-2 (VDE 0847 Teil 4-2) / 12.2001

Number of discharges: 10 positive 10 negative
 Repetition rate: < 1 Pulse/s ___ Pulse/s
 Test level Contact Discharge: ±2kV ±4kV
 ±6kV ±_kV
 Test level Air Discharge: ±2kV ±4kV
 ±8kV ±_kV

Contact Discharge:

Port #	Discharge location	Test level ±2kV	Test level ±3kV	Test level ±4kV	Test level ±6kV	Test level ±8kV
C1	Horizontal coupling plate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C2	Vertical coupling plate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C3	DC Terminals	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Air Discharge:

Port #	Discharge location	Test level ±2kV	Test level ±4kV	Test level ±6kV	Test level ±8kV	Test level ±15kV
A1	Enclosure slits	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
A2	Cable penetration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The test level was increased step by step, starting from the lowest up to the given severity level, to evaluate the fault level. Minimum 10 discharges, with the most critical polarisation and level, were applied to the selected locations
 All used test equipment are calibrated periodically.

Operation mode:

EUT arrangement: Tabletop Floor standing
Supply voltage: 230V / 50Hz 100V / 50Hz

Continuous operation with max. permanent output current – 1.2A.

Environmental conditions:

Temperature: 15 - 35 °C
Humidity: 30 - 60 %
Air pressure: 860 - 1060 hPa

The environmental conditions during the test: were kept
 were not kept

Criterion:

Under the test conditions the equipment shall be able to provide the intended clinical benefit and remain safe. The equipment may exhibit degradation of performance (e. g. deviation from manufacturer's specification). However, the following degradations shall not be allowed:

- component failures
- changes in programmable parameters
- reset to factory defaults
- change of operating mode
- false alarms
- cessation of any intended operation, even if accompanied by an alarm
- error of a displayed numerical value sufficiently large to affect diagnosis or treatment
- initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an alarm
- failure of automatic diagnosis or treatment equipment to diagnose or treat, even if accompanied by an alarm
- output voltage tolerance $5V \pm 5\%$

Test results:

Immunity: Met criterion
 Met not criterion

Remarks: Test results valid for PRC36_10.

1.5 Radiated, radio-frequency, electromagnetic field immunity test according DIN EN 61000-4-3 (VDE 0847 Teil 4-3) / 11.2003

1.5.1 Test set up

According DIN EN 61000-4-3 (VDE 0847 Teil 4-3) / 11.2003

Location:

Precompliance Shielded room Laboratory
Full compliance Full anechoic chamber

The test equipment was checked and complied to the requirements.





1.5.2 Test

Regulation:

DIN EN 61000-4-3 (VDE 0847 Teil 4-3) / 11.2003

Frequency range:	<input checked="" type="checkbox"/>	80MHz - 2500MHz	<input type="checkbox"/>	26MHz - 1000MHz
Test level:	<input type="checkbox"/>	1V/m	<input checked="" type="checkbox"/>	3V/m
	<input type="checkbox"/>	10V/m	<input type="checkbox"/>	__ V/m
Modulation:	<input checked="" type="checkbox"/>	AM: 80%		
	<input checked="" type="checkbox"/>	AF: 1000Hz		
	<input type="checkbox"/>	not modulated		
	<input checked="" type="checkbox"/>	900MHz pulsed - duty cycle 50% / f_{rep} 200Hz		
Frequency step:	<input checked="" type="checkbox"/>	1% of the preceding frequency		
Dwell time:	<input checked="" type="checkbox"/>	3s	<input type="checkbox"/>	s
Antenna – EUT:	<input type="checkbox"/>	1m	<input checked="" type="checkbox"/>	3m
Antenna polarisation:	<input checked="" type="checkbox"/>	horizontal	<input checked="" type="checkbox"/>	vertical

All used test equipment are calibrated periodically.

Operation mode:

EUT arrangement:	<input checked="" type="checkbox"/>	Tabletop	<input type="checkbox"/>	Floor standing
Supply voltage:	<input checked="" type="checkbox"/>	230V / 50Hz	<input type="checkbox"/>	100V / 50Hz
EUT Position:	<input checked="" type="checkbox"/>	x-axis	<input checked="" type="checkbox"/>	z-axis
	<input checked="" type="checkbox"/>	y-axis	<input type="checkbox"/>	—

Continuous operation with max. permanent output current – 1.2A / 0.16A.

Environmental conditions:

Temperature:	15 - 35 °C
Humidity:	30 - 60 %
Air pressure:	860 - 1060 hPa

The environmental conditions during the test:	<input checked="" type="checkbox"/>	were kept
	<input type="checkbox"/>	were not kept

Criterion:

Under the test conditions the equipment shall be able to provide the intended clinical benefit and remain safe. The equipment may exhibit degradation of performance (e. g. deviation from manufacturer's specification). However, the following degradations shall not be allowed:

- component failures
- changes in programmable parameters
- reset to factory defaults
- change of operating mode
- false alarms
- cessation of any intended operation, even if accompanied by an alarm
- error of a displayed numerical value sufficiently large to affect diagnosis or treatment
- initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an alarm
- failure of automatic diagnosis or treatment equipment to diagnose or treat, even if accompanied by an alarm
- output voltage tolerance $5V \pm 5\%$ / $30V \pm 5\%$

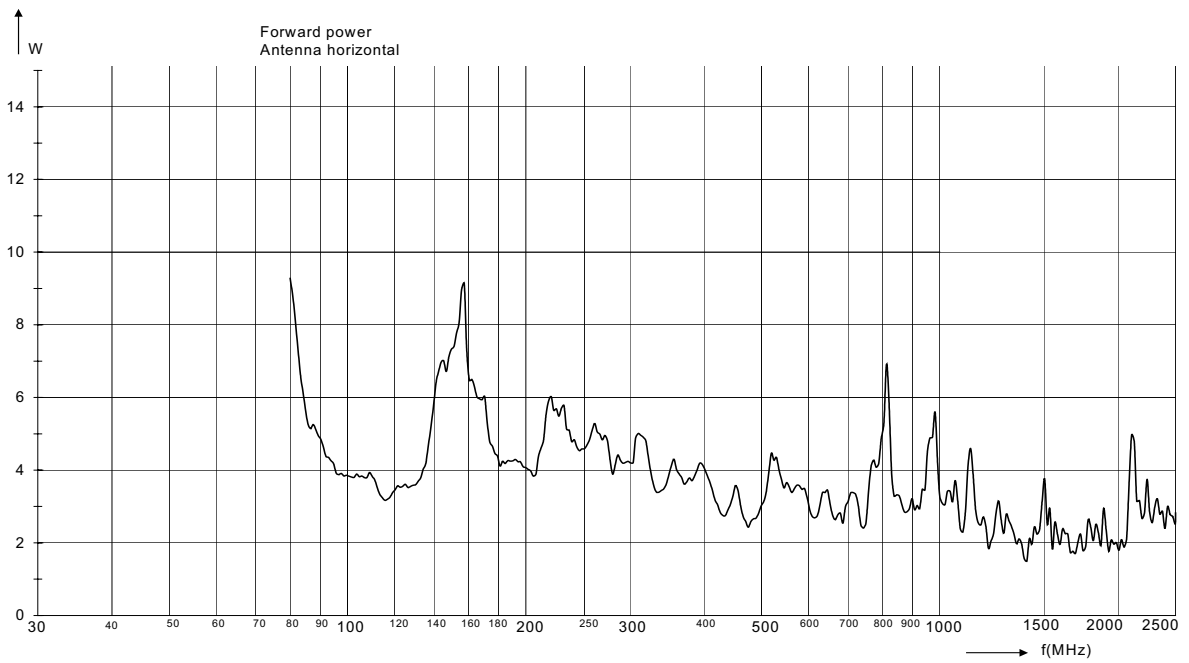
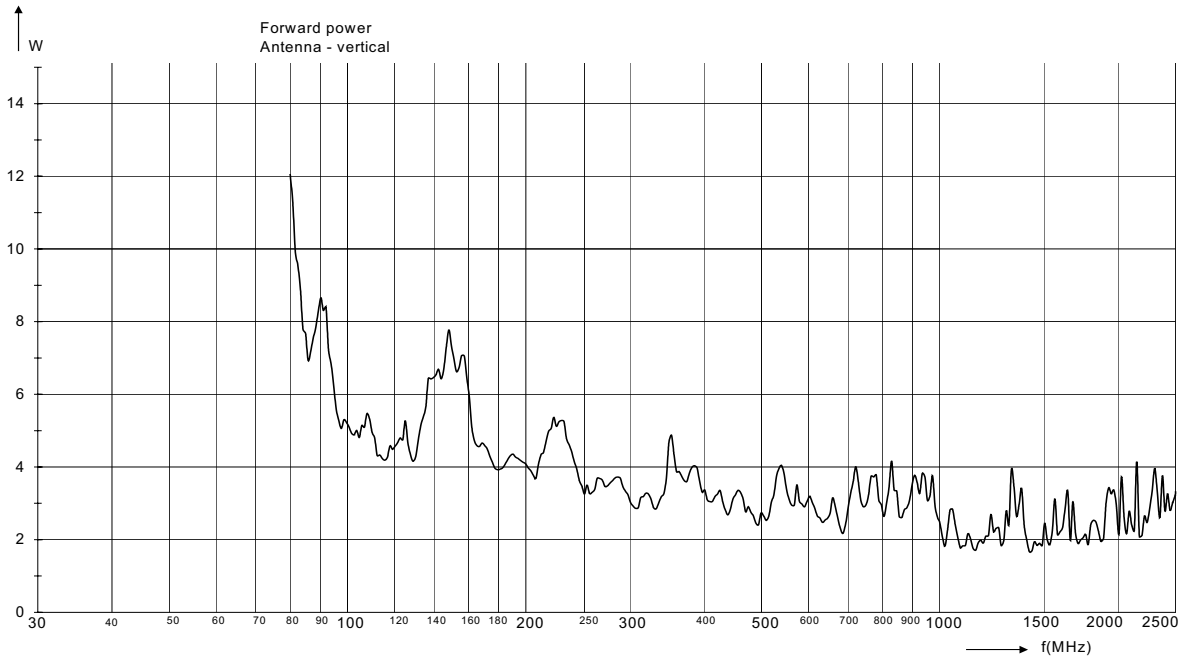
Test results:

Frequency	Ant.-Polarization	Test parameter / max. deviation for nominal output voltage	Remarks

Immunity: Met criterion
 Met not criterion

Remarks: Test results valid for PRC36_10 and PRC36_11.

Test level: 3V/m



1.6 Electrical fast transient / burst immunity test according DIN EN 61000-4-4 (VDE 0847 Teil 4-4) / 07.2002

1.6.1 Test set up

According DIN EN 61000-4-4 (VDE 0847 Teil 4-4) / 07.2002

Test location: Shielded room Laboratory
 Open field _



1.6.2 Test

Regulation:

DIN EN 61000-4-4 (VDE 0847 Teil 4-4) / 07.2002

Spike frequency:	<input checked="" type="checkbox"/>	5kHz	<input type="checkbox"/>	100kHz
Burst duration:	<input checked="" type="checkbox"/>	15ms	<input type="checkbox"/>	__ms
Burst repetition freq.:	<input checked="" type="checkbox"/>	3Hz	<input type="checkbox"/>	__Hz
Test duration:	<input checked="" type="checkbox"/>	>120s		
Polarity	<input checked="" type="checkbox"/>	positive	<input checked="" type="checkbox"/>	negative

Coupling ports:

Port #1: AC power line

Coupled to:	L ₁	L ₂	L ₃	N	PE
Step 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Step 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Step 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Step 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Step 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Step 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Step 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Coupling device:	<input checked="" type="checkbox"/>	CDN	<input type="checkbox"/>	Coupling clamp
Test level:	<input type="checkbox"/>	± 0.5kV	<input type="checkbox"/>	± 1kV
	<input checked="" type="checkbox"/>	± 2kV	<input type="checkbox"/>	± 4kV

All used test equipment are calibrated periodically.

Operation mode:

EUT arrangement:	<input checked="" type="checkbox"/>	Tabletop	<input type="checkbox"/>	Floor standing
Supply voltage:	<input checked="" type="checkbox"/>	230V / 50Hz	<input checked="" type="checkbox"/>	100V / 50Hz

Continuous operation with max. permanent output current – 1.2A.

Environmental conditions:

Temperature: 15 - 35 °C
Humidity: 30 - 60 %
Air pressure: 860 - 1060 hPa

The environmental conditions during the test: were kept
 were not kept

Criterion:

Under the test conditions the equipment shall be able to provide the intended clinical benefit and remain safe. The equipment may exhibit degradation of performance (e. g. deviation from manufacturer's specification). However, the following degradations shall not be allowed:

- component failures
- changes in programmable parameters
- reset to factory defaults
- change of operating mode
- false alarms
- cessation of any intended operation, even if accompanied by an alarm
- error of a displayed numerical value sufficiently large to affect diagnosis or treatment
- initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an alarm
- failure of automatic diagnosis or treatment equipment to diagnose or treat, even if accompanied by an alarm
- output voltage tolerance $5V \pm 5\%$

Test results:

Immunity: Met criterion
 Met not criterion

Remarks: No test to the DC – line, the cable is shorter than 3m.
Test results valid for PRC36_10.

1.7 Surge immunity test according DIN EN 61000-4-5 (VDE 0847 Teil 4-5) / 12.2001

1.7.1 Test set up

According DIN EN 61000-4-5 (VDE 0847 Teil 4-5) / 12.2001

Test location: Shielded room Laboratory
 Open field _



1.7.2 Test

Regulation:

DIN EN 61000-4-5 (VDE 0847 Teil 4-5) / 12.2001

Coupling ports:

Port #1: AC power line

Number of surges:	<input checked="" type="checkbox"/>	5 positive	<input checked="" type="checkbox"/>	5 negative
Phase angle:	<input checked="" type="checkbox"/>	0 Degree	<input checked="" type="checkbox"/>	90 Degree
	<input checked="" type="checkbox"/>	270 Degree	<input type="checkbox"/>	__ Degree
	<input type="checkbox"/>	no synchronization		
Repetition rate:	<input checked="" type="checkbox"/>	1 pulse / min	<input type="checkbox"/>	__ pulse / min
Coupling device:	<input checked="" type="checkbox"/>	CDN	<input type="checkbox"/>	__
Coupled to:	<input type="checkbox"/>	L _x - L _x	<input checked="" type="checkbox"/>	L _x - N
Test level:	<input checked="" type="checkbox"/>	± 0.5kV ⇒	<input checked="" type="checkbox"/>	± 1kV ⇒
	<input type="checkbox"/>	± 2kV ⇒	<input type="checkbox"/>	± 4kV
Source impedance:	<input checked="" type="checkbox"/>	2Ω+18μF	<input type="checkbox"/>	12Ω+9μF
	<input type="checkbox"/>	42Ω+0.1μF	<input type="checkbox"/>	42Ω+0.5μF
Coupled to:	<input type="checkbox"/>	L _x - PE	<input type="checkbox"/>	N - PE
Test level:	<input type="checkbox"/>	± 0.5kV ⇒	<input type="checkbox"/>	± 1kV ⇒
	<input type="checkbox"/>	± 2kV ⇒	<input type="checkbox"/>	± 4kV
Source impedance:	<input type="checkbox"/>	2Ω+18μF	<input type="checkbox"/>	12Ω+9μF
	<input type="checkbox"/>	42Ω+0.1μF	<input type="checkbox"/>	42Ω+0.5μF
Program control:	<input type="checkbox"/>	internal	<input checked="" type="checkbox"/>	external

All used test equipment are calibrated periodically.

Operation mode:

EUT arrangement:	<input checked="" type="checkbox"/>	Tabletop	<input type="checkbox"/>	Floor standing
Supply voltage:	<input checked="" type="checkbox"/>	230V / 50Hz	<input checked="" type="checkbox"/>	100V / 50Hz

Continuous operation with max. permanent output current – 1.2A.

Environmental conditions:

Temperature: 15 - 35 °C
Humidity: 30 - 60 %
Air pressure: 860 - 1060 hPa

The environmental conditions during the test: were kept
 were not kept

Criterion:

Under the test conditions the equipment shall be able to provide the intended clinical benefit and remain safe. The equipment may exhibit degradation of performance (e. g. deviation from manufacturer's specification). However, the following degradations shall not be allowed:

- component failures
- changes in programmable parameters
- reset to factory defaults
- change of operating mode
- false alarms
- cessation of any intended operation, even if accompanied by an alarm
- error of a displayed numerical value sufficiently large to affect diagnosis or treatment
- initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an alarm
- failure of automatic diagnosis or treatment equipment to diagnose or treat, even if accompanied by an alarm
- output voltage tolerance $5V \pm 5\%$

Test results:

Immunity: Met criterion
 Met not criterion

Remarks: Test results valid for PRC36_10.

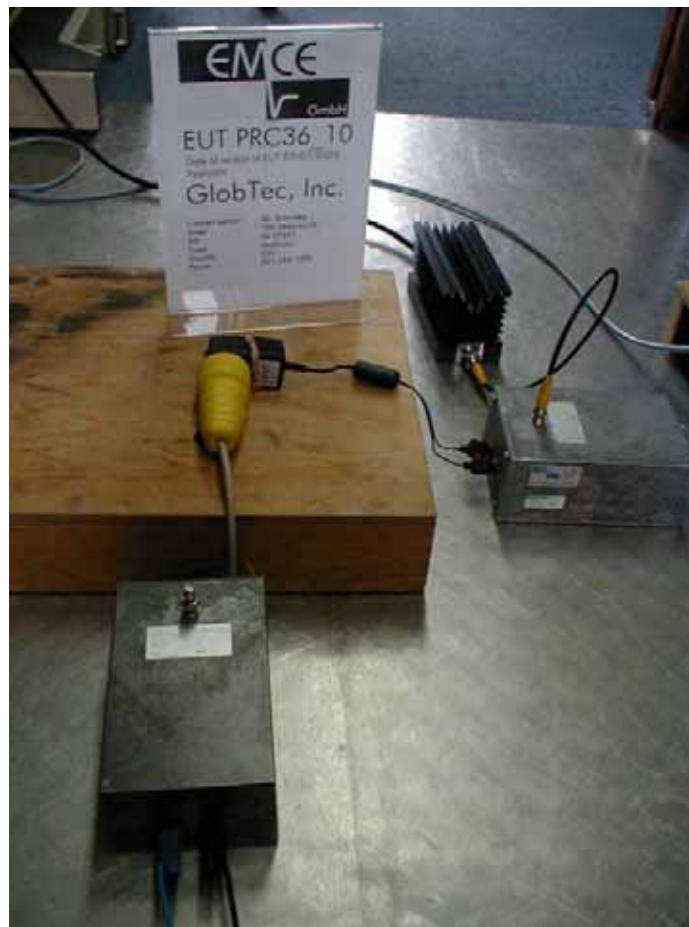
1.8 Immunity to conducted disturbances, induced by radio-frequency fields according DIN EN 61000-4-6 (VDE 0847 Teil 4-6) / 12.2001

1.8.1 Test set up

According DIN EN 61000-4-6 (VDE 0847 Teil 4-6) / 12.2001

Test location: Shielded room Laboratory
 Open field _

The test equipment was checked and complied to the requirements.





1.8.2 Test

Regulation:

DIN EN 61000-4-6 (VDE 0847 Teil 4-6) / 12.2001

Frequency range:	<input checked="" type="checkbox"/>	150kHz - 80MHz	<input type="checkbox"/>	150kHz - 230MHz
Test level:	<input type="checkbox"/>	1V	<input checked="" type="checkbox"/>	3V
	<input type="checkbox"/>	10V	<input type="checkbox"/>	__V
Modulation	<input checked="" type="checkbox"/>	AM: 80%		
	<input checked="" type="checkbox"/>	AF: 1000Hz		
	<input type="checkbox"/>	not modulated		
Frequency step:	<input checked="" type="checkbox"/>	1% of the preceding frequency		
Dwell time:	<input checked="" type="checkbox"/>	3s	<input type="checkbox"/>	s

Coupling ports:

Port #1: AC power line

Type of line:	<input checked="" type="checkbox"/>	unshielded	<input type="checkbox"/>	shielded
Signal type:	<input checked="" type="checkbox"/>	analogous	<input type="checkbox"/>	digital
Status of lines:	<input checked="" type="checkbox"/>	active	<input type="checkbox"/>	passive
Cable length EUT –CDN:		20cm		
Coupling device network:	<input checked="" type="checkbox"/>	CDN-AF2	<input type="checkbox"/>	CDN-M3
	<input type="checkbox"/>	CDN-M5	<input type="checkbox"/>	CDN-S9
Clamp:	<input type="checkbox"/>	F-120-2		

Port #2: DC output

Type of line:	<input checked="" type="checkbox"/>	unshielded	<input type="checkbox"/>	shielded
Signal type:	<input checked="" type="checkbox"/>	analogous	<input type="checkbox"/>	digital
Status of lines:	<input checked="" type="checkbox"/>	active	<input type="checkbox"/>	passive
Cable length EUT –CDN:		20cm		
Coupling device network:	<input checked="" type="checkbox"/>	CDN-AF2	<input type="checkbox"/>	CDN-M3
	<input type="checkbox"/>	CDN-M5	<input type="checkbox"/>	CDN-S9
Clamp:	<input type="checkbox"/>	F-120-2		

All used test equipment are calibrated periodically.

Operation mode:

EUT arrangement: Tabletop Floor standing
 Supply voltage: 230V / 50Hz 100V / 50Hz

Continuous operation with max. permanent output current – 1.2A / 0.16A.

Coupling- / Decoupling- Network	CDN-AF2 Inv. Nr. 033	CDN-AF2 Inv. Nr. 034	CDN-M3 Inv. Nr. 026	CDN-M5 Inv. Nr. 036	CDN-S1 Inv. Nr. 037	CDN-S9 Inv. Nr. 030	CDN-S9 Inv. Nr. 031	CDN-F-120-2 Inv. Nr. 025
Port								
#1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
#3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental conditions:

Temperature: 15 - 35 °C
 Humidity: 30 - 60 %
 Air pressure: 860 - 1060 hPa

The environmental conditions during the test: were kept
 were not kept

Criterion:

Under the test conditions the equipment shall be able to provide the intended clinical benefit and remain safe. The equipment may exhibit degradation of performance (e. g. deviation from manufacturer's specification). However, the following degradations shall not be allowed:

- component failures
- changes in programmable parameters
- reset to factory defaults
- change of operating mode
- false alarms
- cessation of any intended operation, even if accompanied by an alarm

- error of a displayed numerical value sufficiently large to affect diagnosis or treatment
- initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an alarm
- failure of automatic diagnosis or treatment equipment to diagnose or treat, even if accompanied by an alarm
- output voltage tolerance $5V \pm 5\%$ / $30V \pm 5\%$

Test results:

Immunity: Met criterion
 Met not criterion

Remarks: Test results valid for PRC36_10 and PRC36_11.

1.9 Immunity against low frequency magnetic fields according DIN EN 61000-4-8 (VDE 0847 Teil 4-8) / 12.2001

1.9.1 Test set up

According DIN EN 61000-4-8 (VDE 0847 Teil 4-8) / 12.2001

Test location: Shielded room Laboratory
 Open field _

The test equipment was checked and complied to the requirements.



1.9.2 Test

Regulation:

DIN EN 61000-4-8 (VDE 0847 Teil 4-8) / 12.2001

Frequency: 50Hz 60Hz
 Field strength – cont.: 1A/m 3A/m
 30A/m A/m
 Field strength – pulse: 300A/m 400A/m
 Coil: Rectangular type 1m x 1m
 2 rectangular type 1m x 1m x 0.8m
 Coil orientation: X-axis. Y-axis Z-axis
 Test duration: 5min/axis

All used test equipment are calibrated periodically.

Operation mode:

EUT arrangement: Tabletop Floor standing
 Supply voltage: 230V / 50Hz 100V / 50Hz

Continuous operation with max. permanent output current – 1.2A.

Environmental conditions:

Temperature: 15 - 35 °C
 Humidity: 30 - 60 %
 Air pressure: 860 - 1060 hPa

The environmental conditions during the test: were kept
 were not kept

Criterion:

Under the test conditions the equipment shall be able to provide the intended clinical benefit and remain safe. The equipment may exhibit degradation of performance (e. g. deviation from manufacturer's specification). However, the following degradations shall not be allowed:

- component failures
- changes in programmable parameters
- reset to factory defaults
- change of operating mode
- false alarms
- cessation of any intended operation, even if accompanied by an alarm
- error of a displayed numerical value sufficiently large to affect diagnosis or treatment
- initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an alarm
- failure of automatic diagnosis or treatment equipment to diagnose or treat, even if accompanied by an alarm
- output voltage tolerance $5V \pm 5\%$

Test results:

Immunity: Met criterion
 Met not criterion

Remarks: Test results valid for PRC36_10.

1.10 Voltage dips, short interruptions and voltage variations immunity tests according DIN EN 61000-4-11 (VDE 0847 Teil 4-11) / 02.2005

1.10.1 Test set up

According DIN EN 61000-4-11 (VDE 0847 Teil 4-11) / 02.2005

Test location: Shielded room Laboratory
 Open field _



1.10.2 Test

Regulation:

DIN EN 61000-4-11 (VDE 0847 Teil 4-11) / 02.2005

Name:	Mr. Hauser	Serial no:	Prototype
Department:	EMC Testing	Operating modes:	Max. load 1.2A
Company:	EMCE GmbH	Comment1:	EUT PRC36_10
Test report no:	xx	Comment2:	240V/50Hz
Device:	Medical SMPS	Comment3:	--
Specimen:	EN 60601-1-2	Comment4:	--
Manufacturer:	Globtek Inc.		
Type:	GT-41076-0605-MED	Test date:	14.09.2006

Test conditions: EN 61000-4-11 voltage dips, short interruptions and variations test
 Voltage / frequency: 240.0 V / 50.0 Hz
 Test phase: 1
 Executed test: EN 60601
 Test description: --
 Disturbances per step: 3 (per phase angle) / 10.5 sec delay between

Step	Disturbance	TestLevel	Duration	Phase angle(s) (Ref.Ph.1)
1	Voltage dip / short interruption	0 %	0.5 periods	0°
2	Voltage dip / short interruption	40 %	5 periods	0°
3	Voltage dip / short interruption	70 %	25 periods	0°
4	Voltage dip / short interruption	0 %	250 periods	0°

Name:	Mr. Hauser	Serial no:	Prototype
Department:	EMC Testing	Operating modes:	Max. load 1.2A
Company:	EMCE GmbH	Comment1:	EUT PRC36_10
Test report no:	xx	Comment2:	100V/50Hz
Device:	Medical SMPS	Comment3:	--
Specimen:	Class A	Comment4:	--
Manufacturer:	Globtek Inc.		
Type:	GT-41076-0605-MED	Test date:	14.09.2006

Test conditions: EN 61000-4-11 voltage dips, short interruptions and variations test
 Voltage / frequency: 100.0 V / 50.0 Hz
 Test phase: 1
 Executed test: EN 60601
 Test description: --
 Disturbances per step: 3 (per phase angle) / 10.5 sec delay between

Step	Disturbance	TestLevel	Duration	Phase angle(s) (Ref.Ph.1)
1	Voltage dip / short interruption	0 %	0.5 periods	0°
2	Voltage dip / short interruption	40 %	5 periods	0°
3	Voltage dip / short interruption	70 %	25 periods	0°
4	Voltage dip / short interruption	0 %	250 periods	0°

All used test equipment are calibrated periodically.

Operation mode:

EUT arrangement: Tabletop Floor standing
Supply voltage: 230V / 50Hz 100V / 50Hz

Continuous operation with max. permanent output current – 1.2A for PRC36_10 and 0.16A / 0.08A for PRC36_11.

Environmental conditions:

Temperature: 15 - 35 °C
Humidity: 30 - 60 %
Air pressure: 860 - 1060 hPa

The environmental conditions during the test: were kept
 were not kept

Criterion – Step #1, #2, #3:

Under the test conditions the equipment shall be able to provide the intended clinical benefit and remain safe. The equipment may exhibit degradation of performance (e. g. deviation from manufacturer's specification). However, the following degradations shall not be allowed:

- component failures
- changes in programmable parameters
- reset to factory defaults
- change of operating mode
- false alarms
- cessation of any intended operation, even if accompanied by an alarm
- error of a displayed numerical value sufficiently large to affect diagnosis or treatment
- initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an alarm
- failure of automatic diagnosis or treatment equipment to diagnose or treat, even if accompanied by an alarm
- output voltage tolerance 5V / 30V $\pm 5\%$

Test results – Step #1, #2, #3:

Immunity: Met criterion
 Met not criterion
 Reduced compliance level accepted by the
 – **“Guidance and Manufacturer’s Declaration
 Electromagnetic Immunity”**

Remarks: At Step #2 tested with an input voltage of 100VAC the deviation of the output voltage at rated load is more than specified. The output voltage drops to 0V.
 Test results valid for PRC36_10.
 with The power supply passes the voltage drops at Step #2 tested an input voltage of 100VAC with half rated load or less.
 Test results valid for PRC36_11.

Criterion – Step #4:

The EUT has to remain safe. A function degradation is allowed, but not a permanent failure and is restorable to pre-test state by the operator.

Test results – Step #4:

Immunity: Met criterion
 Met not criterion

Remarks: Test results valid for PRC36_10.

2 Summary

Regulation	Class / Test level	Result	Remark(s)
DIN EN 55011 VDE 0875 Teil 11 / 08.2003			
Conducted emission [0.15-30MHz]	B	Limits kept	
Radiated emission [30-1000MHz]	B	Limits kept	
DIN EN 61000-3-2 VDE 0838 Teil 2 / 12.2001			
Harmonic current emissions	A	n. r.	Pin < 75W
DIN EN 61000-3-3 VDE 0838 Teil 3/ 05.2002			
Flicker, Voltage fluctuations	Manual swichting	Limits kept	
DIN EN 61000-4-2 VDE 0847 Teil 4-2/ 12.2001			
Electrostatic discharge			
- Air discharge	±2/4/6kV	Met criterion	
- Contact discharge	±2/4/8kV	Met criterion	
DIN EN 61000-4-3 VDE 0847 Teil 4-3/ 11.2003			
Radiated, radio-frequency, electromagnetic field [80 – 2500MHz]	3V/m	Met criterion	
DIN EN 61000-4-4 VDE 0847 Teil 4-4 / 07.2002			
Electrical fast transient / burst			
- AC-Supply I / O	±2kV	Met criterion	
- DC line			n. r.
DIN EN 61000-4-5 VDE 0847 Teil 4-5 / 12.2001			
Surge			
- AC-Supply I / O	±0.5/1kV L-N	Met criterion	
- DC line			n. r.
DIN EN 61000-4-6 VDE 0847 Teil 4-6 / 12.2001			
Conducted disturbances, induced by radio-frequency fields [0.15 – 80MHz]			
- AC-Supply I / O	3V	Met criterion	
- DC line	3V	Met criterion	

Regulation	Class / Test level	Result	Remark(s)
DIN EN 61000-4-8 VDE 0847 Teil 4-8 / 12.2001			
Low frequency magnetic fields	3A/m	Met criterion	
DIN EN 61000-4-11 VDE 0847 Teil 4-11 / 02.2005			
Voltage dips, short interruptions and voltage variations			
- AC-Supply I / O	Step #1, #3 Step #2	Met criterion Reduced compliance level	See "Guidance and Manufacturer's Declaration –Electromagnetic Immunity"
	Step #4	Met criterion	

n. r. – not relevant

Burgrieden, 10/24/2006

Responsible for the test report:



Peter Hauser

Annex issued from the EN 60601-1-2:2001

a3) Advice to electromagnetic compatibility - Emission

Guidance and Manufacturer's Declaration – Electromagnetic Emissions		
The POWER SUPPLY is suitable for use in the specified electromagnetic environment. The customer and/or the user of POWER SUPPLY should assure that it is used in an electromagnetic environment as described below.		
Emissions Test	Compliance	Electromagnetic Environment Guidance
RF Emissions CISPR 11	Group 1	The POWER SUPPLY uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment. The POWER SUPPLY is suitable for use in all establishments including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
RF Emissions CISPR 11	Class B	
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

a6) Advice to electromagnetic compatibility - Immunity

Guidance and Manufacturer's Declaration – Electromagnetic Immunity			
<p>The POWER SUPPLY is suitable for use in the specified electromagnetic environment. The customer and/or the user of the POWER SUPPLY should assure that it is used in an electromagnetic environment as described below.</p>			
Immunity Test	IEC 60601-Test Level	Compliance Level	Electromagnetic Environment Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transients/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Mains power quality should be that of a typical commercial and/or hospital environment
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	± 1 kV differential mode ± 2 kV common mode	Mains power quality should be that of a typical commercial and/or hospital environment
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5% U_T for 0.5 cycle (> 95 % dip in U_T) 40% U_T for 5 cycles (60 % dip in U_T) 70% U_T for 25 cycles (30 % dip in U_T) < 5% U_T for 5 sec (> 95 % dip in U_T)	< 5% U_T for 0.5 cycle (> 95 % dip in U_T) 40% U_T for 5 cycles (60 % dip in U_T) valid for input range: 175VAC – 240VAC at rated load 40% U_T for 5 cycles (60 % dip in U_T) valid for input range: 100VAC – 240VAC at half rated load 70% U_T for 25 cycles (30 % dip in U_T) < 5% U_T for 5 sec (> 95 % dip in U_T)	<p>Mains power quality should be that of a typical commercial and/or hospital environment. The compliance level is identical with the test levels according IEC 60601-1-2 for the mains supply range 175VAC-240VAC. Below there is only a reduced compliance level for voltage dips.</p> <p>If the user of the POWER SUPPLY requires continued operation during power mains interruptions, it is recommended that the POWER SUPPLY be powered from an uninterruptible power supply or a battery.</p>


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Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	The power frequency magnetic field should be measured in the intended installation location to assure that it is sufficiently low..
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NOTE UT is the a.c. mains voltage prior to application of the test level

b1)

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Immunity Test	IEC 60601-Test Level	Compliance Level	Electromagnetic Environment Guidance
Conducted RF IEC 61000-4-6	3 V _{rms} 150 kHz to 80 MHz	3 V _{rms}	<p>Portable and mobile RF communications equipment should be used no closer to any part of the POWER SUPPLY including cables, than the recommended separation distance calculated from the equation appropriate for the frequency of the transmitter.</p> <p>Recommended Separation Distance:</p> $d = [3.5/3]\sqrt{P} = 1.17\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3V/m	$d = [3.5/10]\sqrt{P} = 0.35\sqrt{P}$ $d = [7.0/10]\sqrt{P} = 0.70\sqrt{P}$ <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m)</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol.</p> 
NOTE 1: At 80 MHz and 800 MHz the higher frequency range is to be used NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

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- a) Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast, and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the POWER SUPPLY is used exceeds the applicable RF compliance level above, the POWER SUPPLY should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the POWER SUPPLY.
- b) Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m

Recommended Separation Distances between Portable and Mobile RF Communications Equipment and the POWER SUPPLY

Rated Maximum Output Power of Transmitter / Watts	Separation distance / m		
	150 kHz to 80 MHz $d = 1.17\sqrt{P}$	80 MHz to 800 MHz $d = 0.35\sqrt{P}$	800 MHz to 2,5 GHz $d = 0.70\sqrt{P}$
0.01	0.12	0.04	0.07
0.1	0.37	0.11	0.22
1	1.17	0.35	0.70
10	3.70	1.11	2.21
100	11.70	3.50	7.00

For transmitters rated at a maximum output power not listed above, the separation distance can be estimated using the equation in the corresponding column, where P is the maximum output power rating of the transmitter in Watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz the higher frequency range is to be used

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.