

Test protocol: 1187-17-EE-17-PP002
Dated: 2017-06-13
Test engineer: Gröber

Page 1 of 6



**SLG Prüf- und
Zertifizierungs GmbH**

Contact person:
Haselbauer, Lars
Phone: 04192 8919083

Customer: Big Difference GmbH & Co. KG
Am Hasselt 20c
24576 Bad Bramstedt, Deutschland

Manufacturer: unknown

Test acc. to: EN 61000-6-3:2007+A1:2011

Kind of test: ☒ Standard type test ☐ EMC random test ☐ R&D test ☒ Partial tests
 ☐ Onsite test ☐ Statement of notified ☐ Test plan of notified ☒ Test plan of customer
 ☐ Expert valuation body body ☐ CB EMC Scheme

Test sample: Kind of product: Smart Charger SC-620 500W / 20A
 Types: Q6 plus 300W / 14A YAI1301774
 Serial No.: HBC3100750
 Protection class: III Date of delivery: 2017-06-09

Duration of test: from 17-06-13

Emission		Standard	Remark	Pass	Fail	W/O
Radio frequency disturbance voltage	..			..	..	..
Radiated electromagnetic field strength 30 - 1000 MHz @ 10 m	☒	EN 61000-6-3	Q6 plus	..	☒	..
	☒	EN 61000-6-3	SC-620	..	☒	..
Immunity						
ESD	..			..	..	..
Burst (fast transients)	..			..	..	..
Surge 1.2/50 µs	..			..	..	..
Surge 10/700	..			..	..	..
Injected currents	..			..	..	..
Radiated electromagnetic fields	..			..	..	..
Voltage dips and interruptions	..			..	..	..
Magnetic field with power frequency	..			..	..	..

Test result: ☐ Pass ☒ Fail ☐ without

Remark: This test protocol is only a brief information. All information on the performed EMC tests and the description of the test sample are part of the complete EMC test report.

approved:

Svadlenka
Head of EMC-Lab

tested:

Gröber
EMC-Lab



Test Results: Electrical Field Strength

Common Information

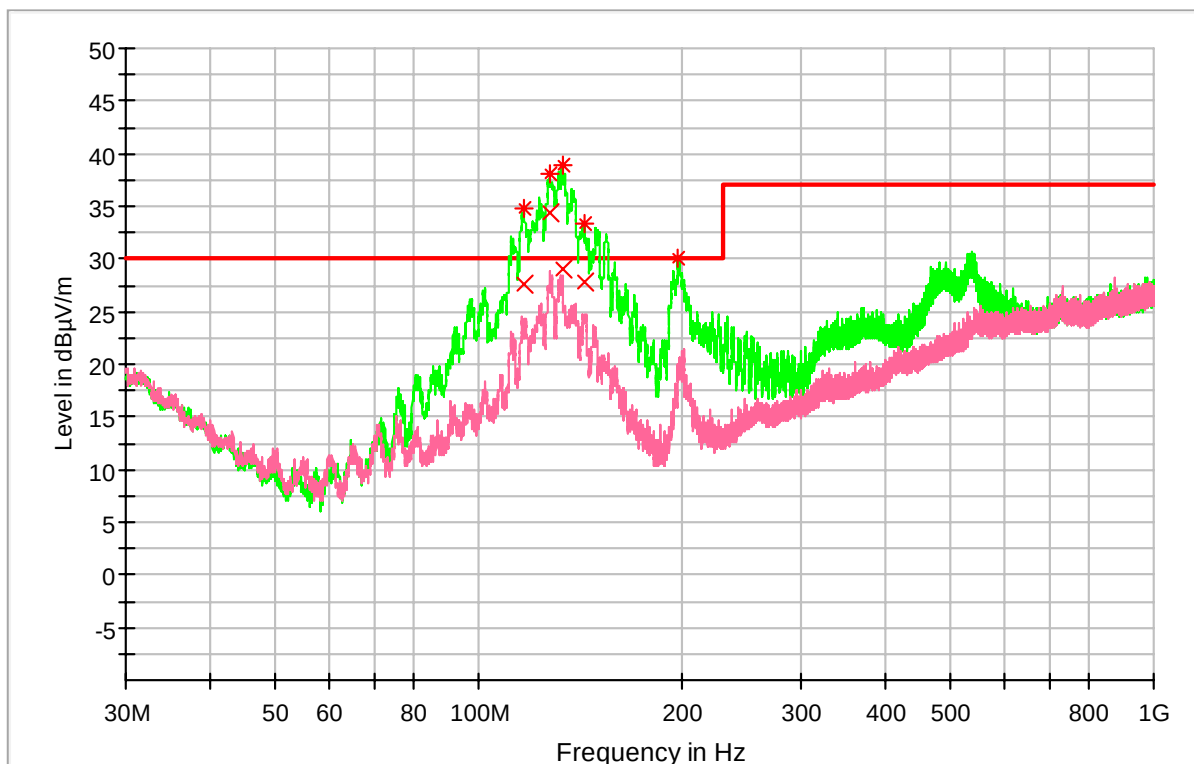
SLG Test Site: Lab 01
Operator: Gröber, S.
Date: 13.06.2017
Test name: 1187-17-EE 004
Test result: Failed

EUT Information

Type: Charger Q6 plus 300W/14A
Customer: Big Difference GmbH & Co KG
Test sample: 1189-17-E/001
Operation mode: Charging mode with 14 A
Test mains voltage: Battery 22,2 V
Radius of test setup: 0.35 m

EMI Auto Test Template: Inv.2691 (1) 00030-01000MHz CBL6112B Inv.0628 10m Auto

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	30 kHz	PK+	120 kHz	0,02 s	20 dB



— MHz 10m QP SAC_OATS [..\EN61000-6-3\2007+A1_2011\E-Field\]
— Preview Result 1H-PK+ [Preview Result 1H.Result:1]
* MaxPeak-PK+ [Critical_Freqs.Result:4]
— Preview Result 1V-PK+ [Preview Result 1V.Result:1]
× Final_Result QPK [Final_Result.Result:4]

Diagram 1: Radiated emission: charging mode

Evaluation Measuring values **above** the limits



Test Results: Electrical Field Strength

Common Information

SLG Test Site: Lab 01
Operator: Gröber, S.
Date: 13.06.2017
Test name: 1187-17-EE 004
Test result: Failed

EUT Information

Type: Charger Q6 plus 300W/14A
Customer: Big Difference GmbH & Co KG
Test sample: 1189-17-E/001
Operation mode: Charging 14 A
Test mains voltage: Battery 22,2 V
Radius of test setup: 0.35 m

EMI Auto Test Template: ESR7 Inv.2691 (1) 00030-01000MHz CBL6112B Inv.0628 10m Auto

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	QPK	120 kHz	1 s	20 dB

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Pol
117.030000	27.67	---	30.00	2.33	383.0	H
127.530000	34.31	---	30.00	-4.31	373.0	H
132.810000	28.96	---	30.00	1.04	300.0	H
143.010000	27.91	---	30.00	2.09	353.0	H

Table 1: Radiated emission: charging mode

Evaluation Measuring values **above** the limits



Test Results: Electrical Field Strength

Common Information

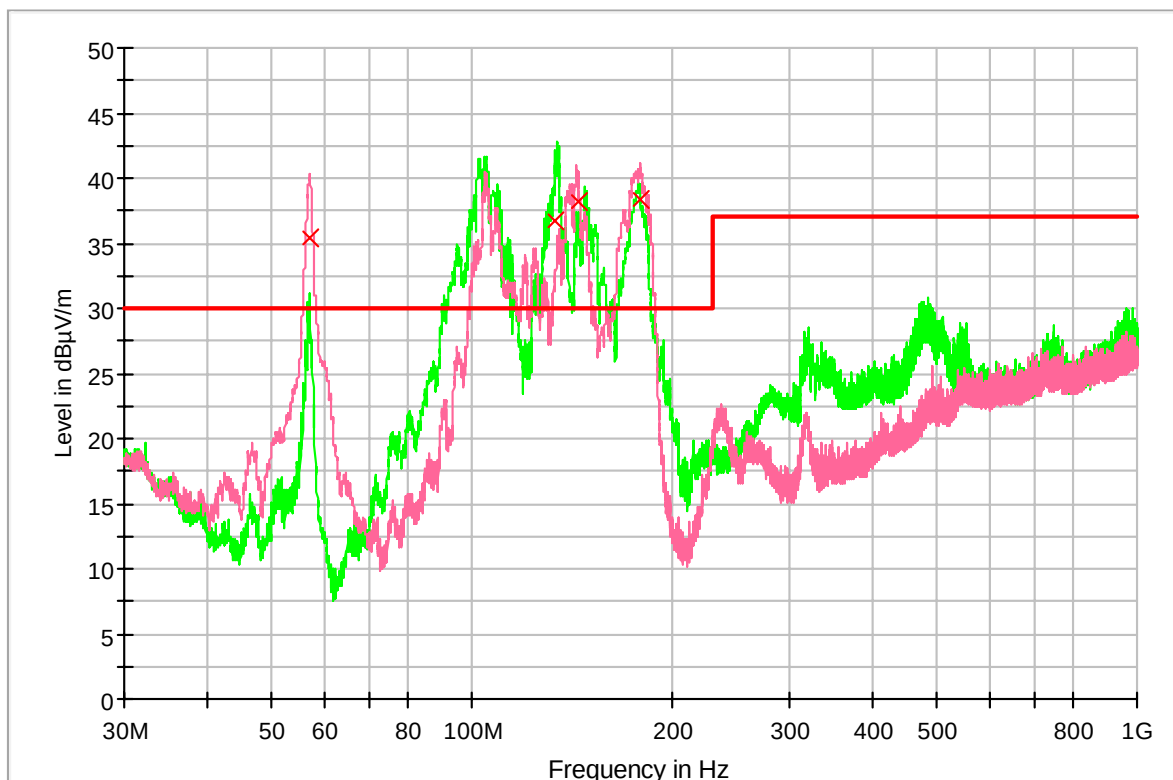
SLG Test Site: Lab 01
Operator: Gröber, S.
Date: 13.06.2017
Test name: 1187-17-EE 003
Test result: Failed

EUT Information

Type: Charger SC-620 500W/20A
Customer: Big Difference GmbH & Co KG
Test sample: 1189-17-E/Z06
Operation mode: Charging 20 A
Test mains voltage: Battery 22,2 V
Radius of test setup: 0.60 m

EMI Auto Test Template: Inv.2691 (1) 00030-01000MHz CBL6112B Inv.0628 10m Auto

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	30 kHz	PK+	120 kHz	0,02 s	20 dB



— Preview Result 1H-PK+ [Preview Result 1H.Result:1]
— Preview Result 1V-PK+ [Preview Result 1V.Result:1]
— MHz 10m QP SAC_OATS [..\EN61000-6-3\2007+A1_2011\E-Field\
X Final_Result QPK [Final_Result.Result:4]

Diagram 2: Radiated emission: charging mode

Evaluation Measuring values **above** the limits



Test Results: Electrical Field Strength

Common Information

SLG Test Site: Lab 01
Operator: Gröber, S.
Date: 13.06.2017
Test name: 1187-17-EE 003
Test result: Failed

EUT Information

Type: Charger SC-620 500W/20A
Customer: Big Difference GmbH & Co KG
Test sample: 1189-17-E/Z06
Operation mode: Charging 20 A
Test mains voltage: Battery 22,2 V
Radius of test setup: 0.60 m

EMI Auto Test Template: ESR7 Inv.2691 (1) 00030-01000MHz CBL6112B Inv.0628 10m Auto

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	QPK	120 kHz	1 s	20 dB

Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
56.910000	35.34	30.00	-5.34	375.0	V	169.0
132.840000	36.79	30.00	-6.79	400.0	H	189.0
144.330000	38.25	30.00	-8.25	102.0	V	200.0
179.370000	38.37	30.00	-8.37	108.0	V	12.0

Table 2: Radiated emission: charging mode

Evaluation Measuring values **above** the limits

Photo documentation



Figure 1: Displayed data of type Q6 plus



Figure 2: Displayed Data of type SC-620



Figure 3: Measurement radiated emission at Q6 plus



Figure 4: Measurement radiated emission at SC-620

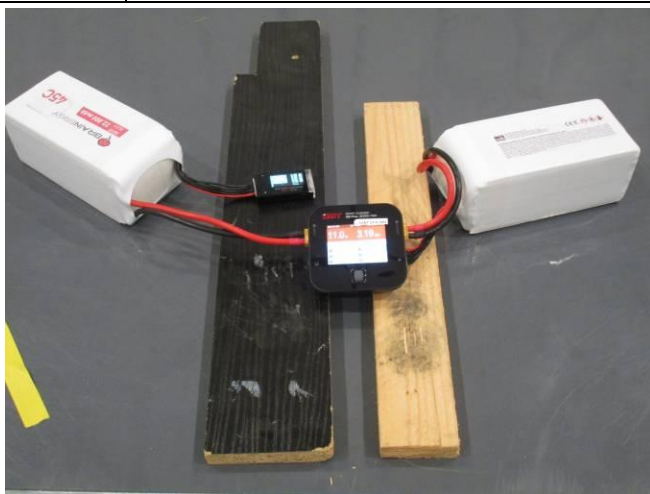


Figure 5: Test setup radiated emission Q6 plus

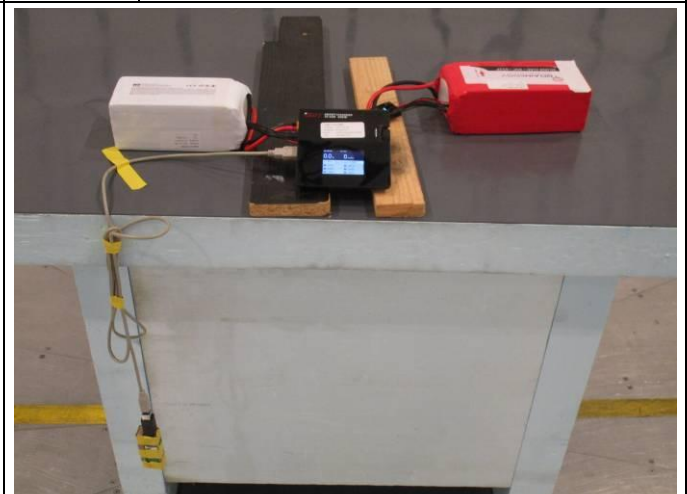


Figure 6: Test setup radiated emission SC-620