Test Report EMC

Test Laboratory:
VDE Prüf- und Zertifizierungsinstitut GmbH
VDE Testing and Certification Institute
Laboratory for EMC measurements
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Accreditations/Recognitions:
DAkkS: D-PL-12061-01-01
Notified body EMC: BNetzA-bS-07/61-17/1
KBA: KBA-P00021-97
FCC (USA): 91098; Industry Canada: 7003A-2

Equipment under Test (EUT):

Applicant:	**MENEGHETTI S.p.A.;** Via Borgo Lunardon 8; 36027 Rosà (VI); Italy
Manufacturer:	**MENEGHETTI S.p.A.;** Via Borgo Lunardon 8; 36027 Rosà (VI); Italy
Report No.:	212194-EC1-2 (Supersedes report 212194-EC1-1)
EUT:	Induction cooking range with oven
Brand/model:	RUEI80*M4*M
EUT received:	2015-07-31

Applied standards:

Main Standard	Basic Standard
Title 47 CFR, Part 18, Subpart C: Technical standards	FCC/OST MP-5 (1986) FCC Methods of measurements of radio noise emissions from industrial, scientific, and medical equipment

Remarks to the Standards:	
Information about modifications to the EUT at the test laboratory:	In order to achieve compliance with the regulations, the following modifications were made to the EUT: None

Result:	**Pass**

Date of issue:	2015-08-27	
Tested by: (Authorization of test report)	Jan BRAASCH EMC Test Engineer	
Reviewed:	Lothar OTT Technical Manager Team	

Contents directory

1 Description of the Sample (EUT)

Type of EUT:	Induction cooking range with oven
Model:	RUEI80*M4*M The variable fields are related to the color version and racks support into the cavity Tested model variant: RUEI806M4IM
Serial number:	Engineering sample

Factory(ies):	-

Technical data:

Rated voltage:	120/240 V 120/208 V	Protection class:	I
Rated current:	-	RF power cooking zone 1:	1850 W (IND 180)
Rated power consumption:	11 kW 10 kW	RF power cooking zone 2:	2300 W (IND 210)
Rated frequency:	60 Hz	RF power cooking zone 3:	1400 W (IND 160)
Number of phases:	3	RF power cooking zone 4:	1850 W (IND 180)

Mains voltage during the test (If not otherwise specified):

Nominal voltage:	120 Volt	Nominal frequency:	60 Hz

Power Input and Load Terminals AC or DC

No.	Description
1	Mains input

Additional Terminals for Signal- Control and Data-Terminals, Ancillary devices

No.	Description of the Terminal	Specified length	Shield type
1	None		

Operating modes used for testing:

No.	Operating mode	Reason
1	Standby	
2	Heating on maximum setting	On all four cooking plates seperately

Support equipment for the EUT (Simulators):

Device	Description
Load	Minimum requirement of pan size 1 x 9,5 cm (upper left cooking plate) 3 x 14,5 cm (other three cooking places) Standard vessels used for the test 11,0 cm and 14,5 cm.

General remarks:
None

Generated frequencies:

ISM-Frequency:	None
Operational frequencies:	Operating frequency of the induction generators: 20 - 25 kHz Microprocessor Clock: 8 MHz (internally 40 MHz)

Disturbance sources

No.	Description	Manufacturer	Type designation	Remarks
1	Heating element	--	--	Oven part
2	Convection Fan	--	--	Oven part
3	Induction generators	E.G.O.	--	Induction hob

EMC measures

Description
No information available

2 Summary of test results

Test		Frequency range	Page	Remark	Result
1.	Terminal disturbance voltage AC Power input terminals § 18.307	9 kHz - 30 MHz	5	--	Pass
2.	Radiated emissions (Magnetic field strength) § 18.305	9 kHz - 30 MHz	25	--	Pass
3.	Radiated emissions (Electric field strength) § 18.305	30 MHz – 1 GHz *)	36	--	Pass

*) The upper value of the investigated frequency band was determined accoding to §$18.309.

3 Test and measuring results

3.1 Measurement of RF disturbance voltage (9 kHz - 30 MHz)

General information about the test:

Tested by:	Braasch, Jan
Test date:	2015-08-10

Instruments:		Test location: Shielded room No. SR1			
Inventory number	Description	Manufacturer	Type	Date of last calibration	Next calibration due
--	Cable with 10 dB attenuator	--	BigSR1-1 + 10 dB ATT.	-	-
1800151	Time-Domain EMI Receiver	Gauss Instruments	TDEMI 1G	2018-02-09	2017-02
1820054	Artificial Mains Network	Rohde & Schwarz	ESH2-Z5	2015-06-24	2016-02

Information concerning the test:

Test set-up:	The EUT was placed about 0,4 m above the floor groundplane. The distance to the next side groujndplane was > 0,8 m. The power cable of the EUT was routed to one artificial mains network (AMN)
Operating modes used:	1, 2
Test procedure:	The measurement was done with the average detector and the QP detector in the above referenced frequency range. Bandwidth of 200 Hz in the frequency range from 9 kHz to 150 kHz; Bandwidth of 9 kHz in the frequency range from 150 kHz to 30 MHz;

Result:	**Pass**

Protocol:	Next pages

Conducted Voltage Emission Measurement

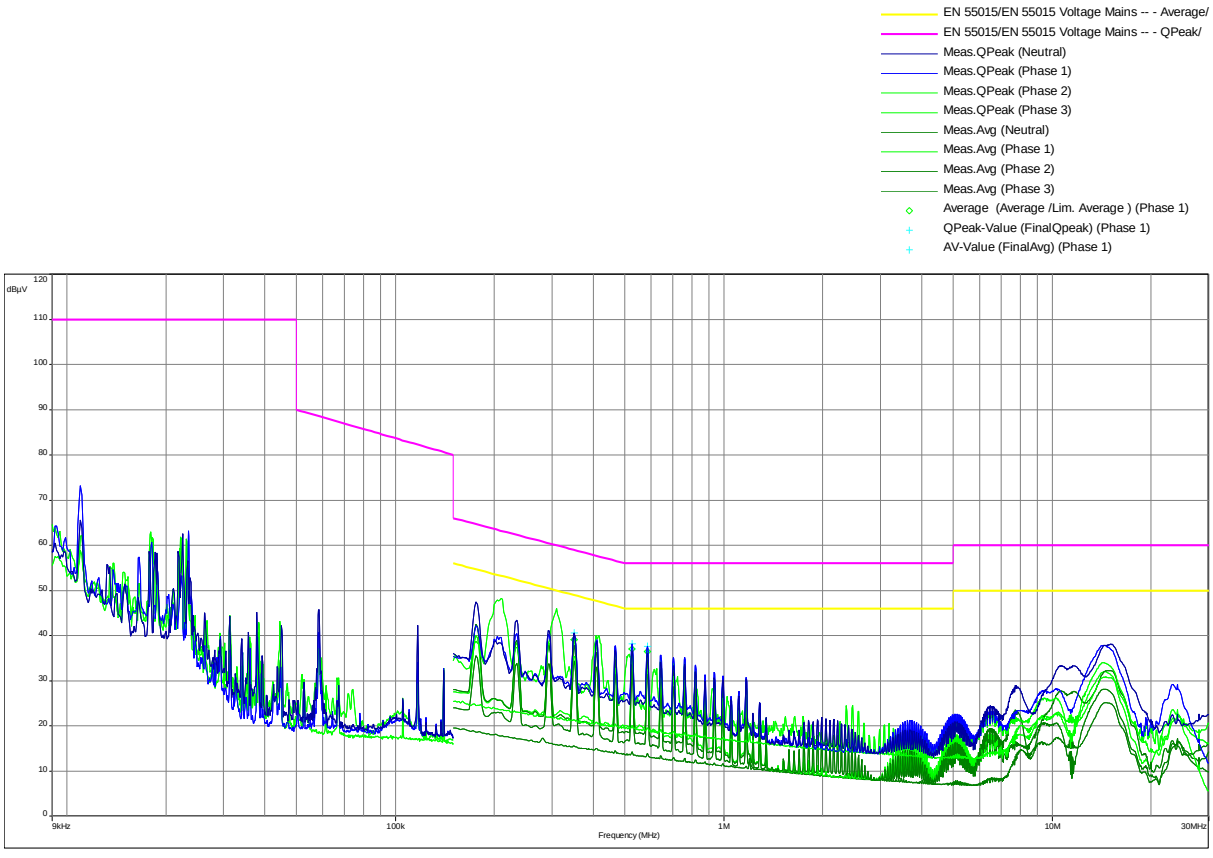
Project number: 212194	
Limit / Class	EN 55015 Voltage Mains / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Standby
Tested by	J. Braasch
Comment on test / measurement	--
Test date	10.08.2015
Test place	SR1
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
--	Cable with 10 dB attenuator	--	BigSR1-1 + 10 dB ATT.
1800151	Time-Domain EMI Receiver	Gauss Instruments	TDEMI 1G
1820054	Artificial Mains Network	Rohde & Schwarz	ESH2-Z5

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Neutral	100Hz	200Hz	1000 ms/Pts	Auto	OFF	OFF
150kHz - 30MHz	Neutral	2kHz	9kHz	1000 ms/Pts	Auto	OFF	OFF
9kHz - 150kHz	Phase 1	100Hz	200Hz	1000 ms/Pts	Auto	OFF	OFF
150kHz - 30MHz	Phase 1	2kHz	9kHz	1000 ms/Pts	Auto	OFF	OFF
9kHz - 150kHz	Phase 2	100Hz	200Hz	1000 ms/Pts	Auto	OFF	OFF
150kHz - 30MHz	Phase 2	2kHz	9kHz	1000 ms/Pts	Auto	OFF	OFF
9kHz - 150kHz	Phase 3	100Hz	200Hz	1000 ms/Pts	Auto	OFF	OFF
150kHz - 30MHz	Phase 3	2kHz	9kHz	1000 ms/Pts	Auto	OFF	OFF



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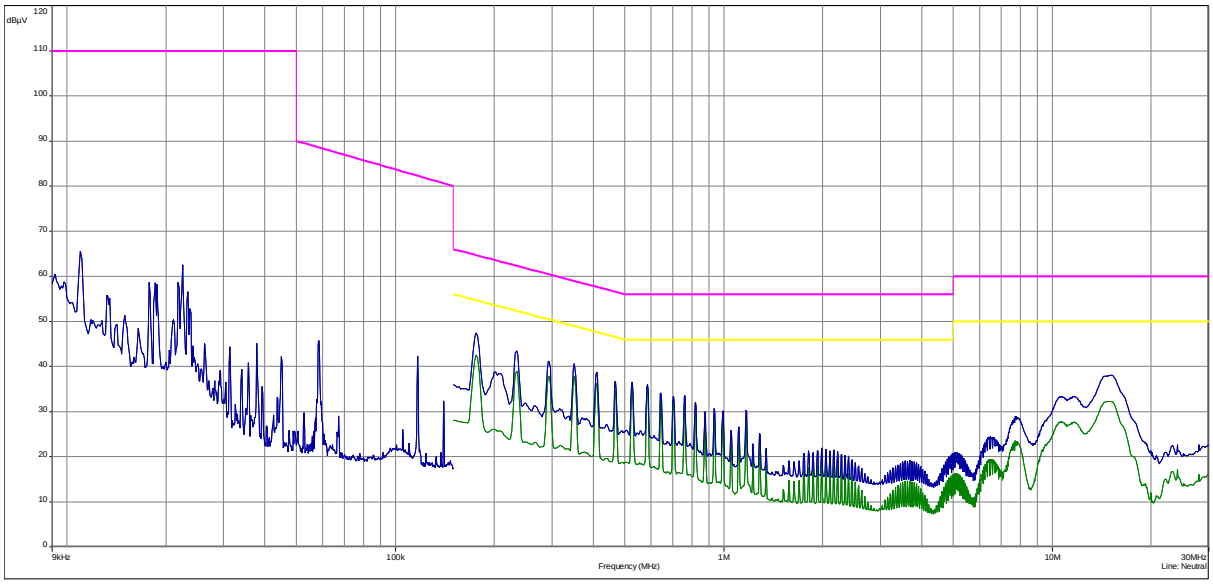
Position Graph: :

EN 55015/EN 55015 Voltage Mains -- - Average/
EN 55015/EN 55015 Voltage Mains -- - QPeak/
Meas.QPeak (Neutral)
Meas.Avg (Neutral)



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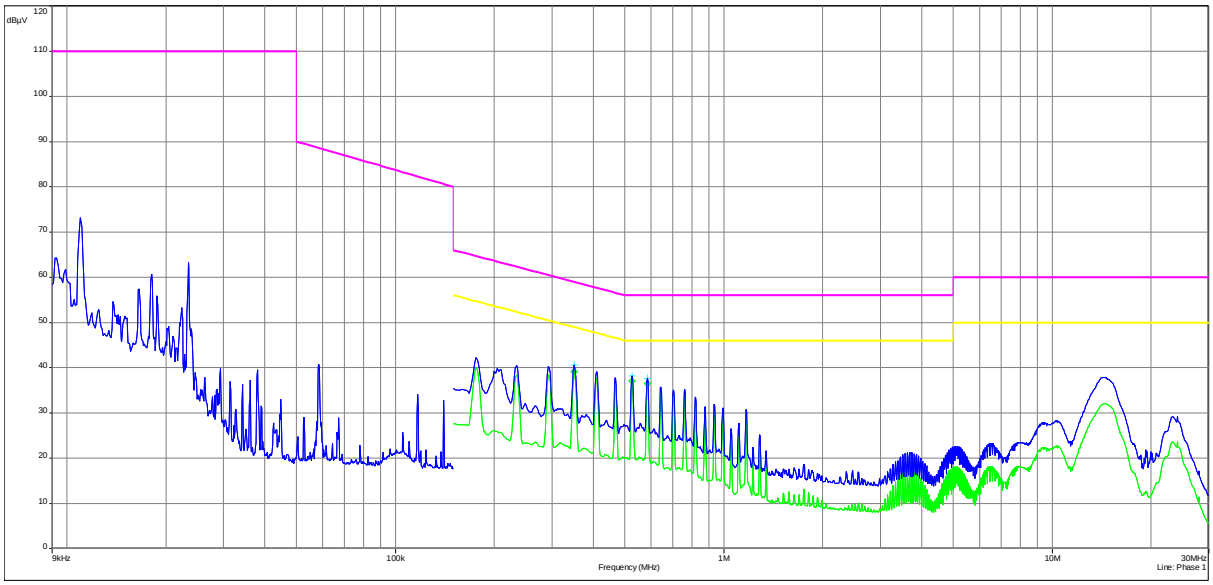
EN 55015/EN 55015 Voltage Mains -- - Average/
EN 55015/EN 55015 Voltage Mains -- - QPeak/
Meas.QPeak (Phase 1)
Meas.Avg (Phase 1)
Average (Average /Lim. Average) (Phase 1)
QPeak-Value (FinalQpeak) (Phase 1)
AV-Value (FinalAvg) (Phase 1)



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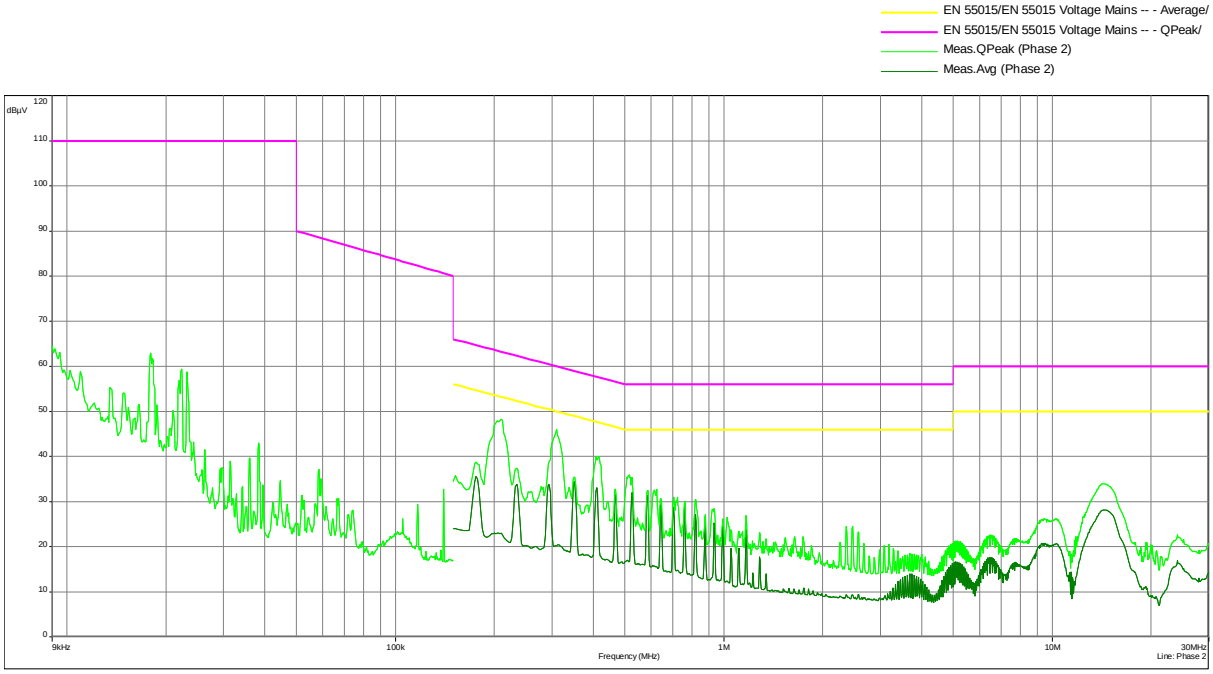

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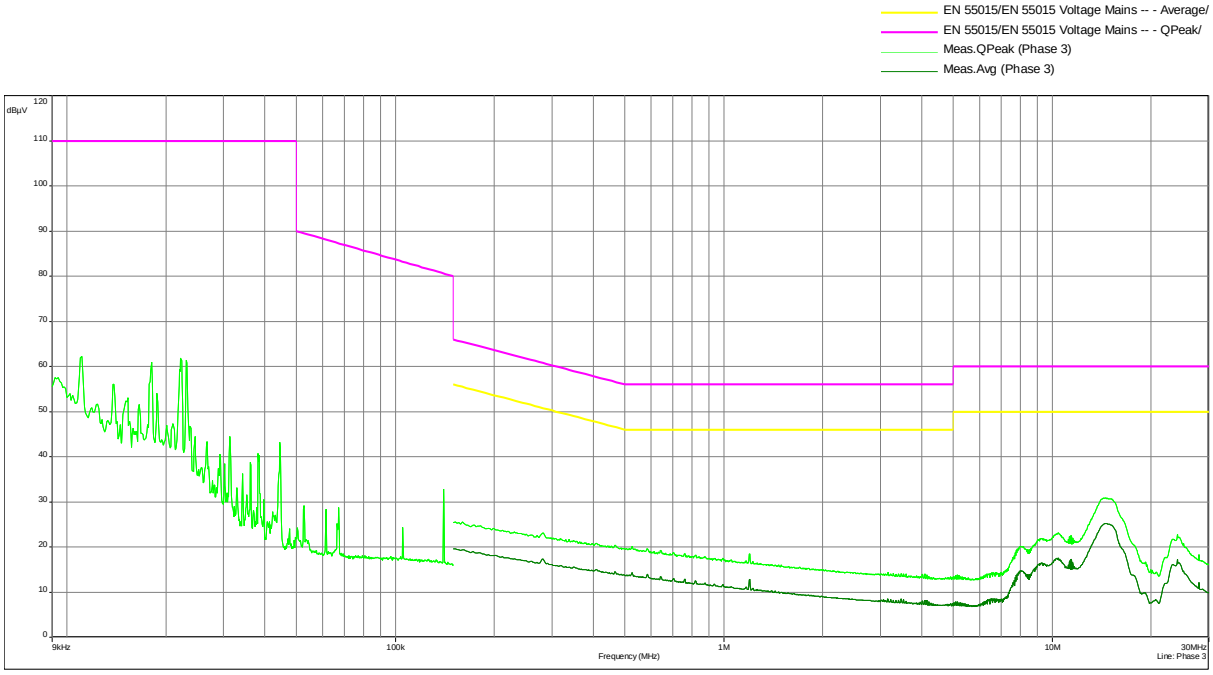

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Sub-Range Graphs :

Results:

FinalAvg (3)

Frequency (MHz)	*SR*	*AV-Value (dBµV)*	*AV-Limit (dBµV)*	*Margin (dB)*	*Line*	*Comments*	*Correction (dB)*
0.35	*4*	*39.13*	*48.96*	*9.83*	*1.00*	*Pass*	*10.00*
0.526	*4*	*36.99*	*46.00*	*9.01*	*1.00*	*Pass*	*10.00*
0.586	*4*	*36.50*	*46.00*	*9.50*	*1.00*	*Pass*	*10.00*

FinalQpeak (3)

Frequency (MHz)	*SR*	*QPeak-Value (dBµV)*	*QP-Limit (dBµV)*	*Margin (dB)*	*Line*	*Comments*	*Correction (dB)*
0.35	*4*	*40.55*	*58.96*	*18.41*	*1.00*	*Pass*	*10.00*
0.526	*4*	*38.16*	*56.00*	*17.84*	*1.00*	*Pass*	*10.00*
0.586	*4*	*37.60*	*56.00*	*18.40*	*1.00*	*Pass*	*10.00*

Line 0 = Neutral, Line 1 = Phase 1, Line 2 = Phase 2, Line 3 = Phase 3

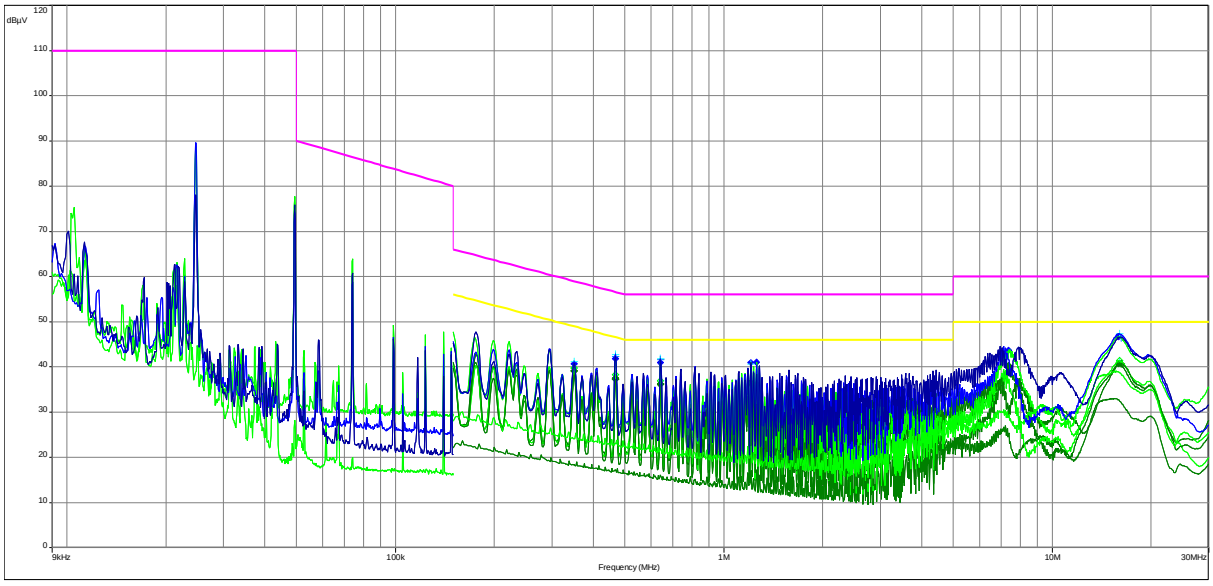
Project number: 212194	
Limit / Class	EN 55015 Voltage Mains / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Maximum heat setting (9), top left field
Tested by	J. Braasch
Comment on test / measurement	with smallest standard pot, diameter 110 mm
Test date	10.08.2015
Test place	SR1
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
--	Cable with 10 dB attenuator	--	BigSR1-1 + 10 dB ATT.
1800151	Time-Domain EMI Receiver	Gauss Instruments	TDEMI 1G
1820054	Artificial Mains Network	Rohde & Schwarz	ESH2-Z5

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Neutral	100Hz	200Hz	1000 ms/Pts	Auto	OFF	OFF
150kHz - 30MHz	Neutral	2kHz	9kHz	1000 ms/Pts	Auto	OFF	OFF
9kHz - 150kHz	Phase 1	100Hz	200Hz	1000 ms/Pts	Auto	OFF	OFF
150kHz - 30MHz	Phase 1	2kHz	9kHz	1000 ms/Pts	Auto	OFF	OFF
9kHz - 150kHz	Phase 2	100Hz	200Hz	1000 ms/Pts	Auto	OFF	OFF
150kHz - 30MHz	Phase 2	2kHz	9kHz	1000 ms/Pts	Auto	OFF	OFF
9kHz - 150kHz	Phase 3	100Hz	200Hz	1000 ms/Pts	Auto	OFF	OFF
150kHz - 30MHz	Phase 3	2kHz	9kHz	1000 ms/Pts	Auto	OFF	OFF



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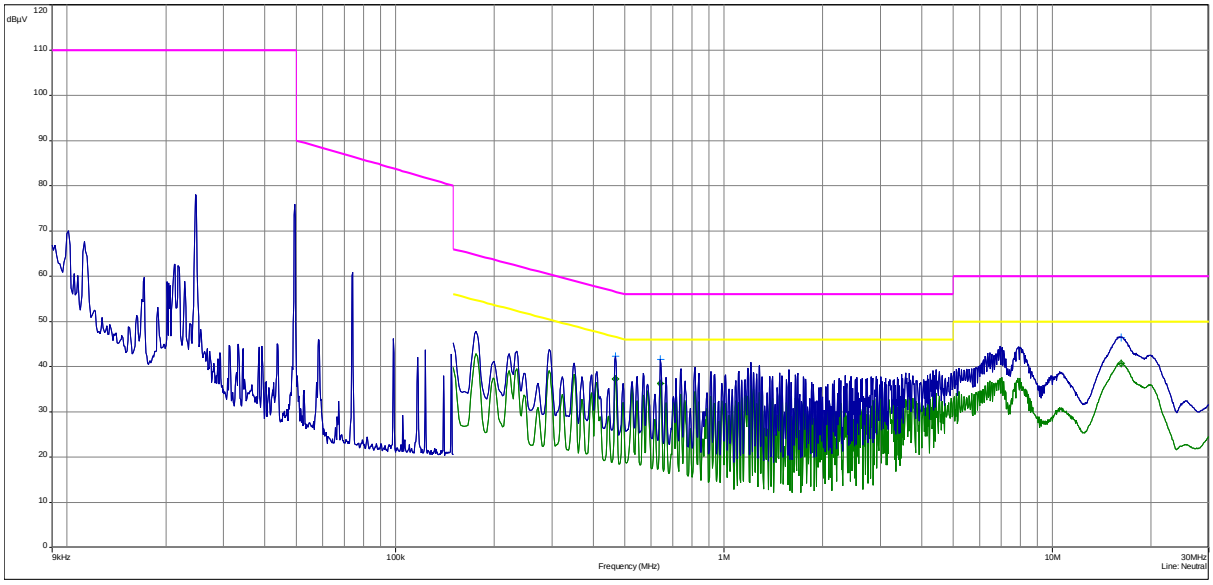
Position Graph:

EN 55015/EN 55015 Voltage Mains -- - Average/
EN 55015/EN 55015 Voltage Mains -- - QPeak/
Meas.QPeak (Neutral)
Meas.Avg (Neutral)
Average (Average /Lim. Average) (Neutral)
QPeak-Value (FinalQpeak) (Neutral)
AV-Value (FinalAvg) (Neutral)



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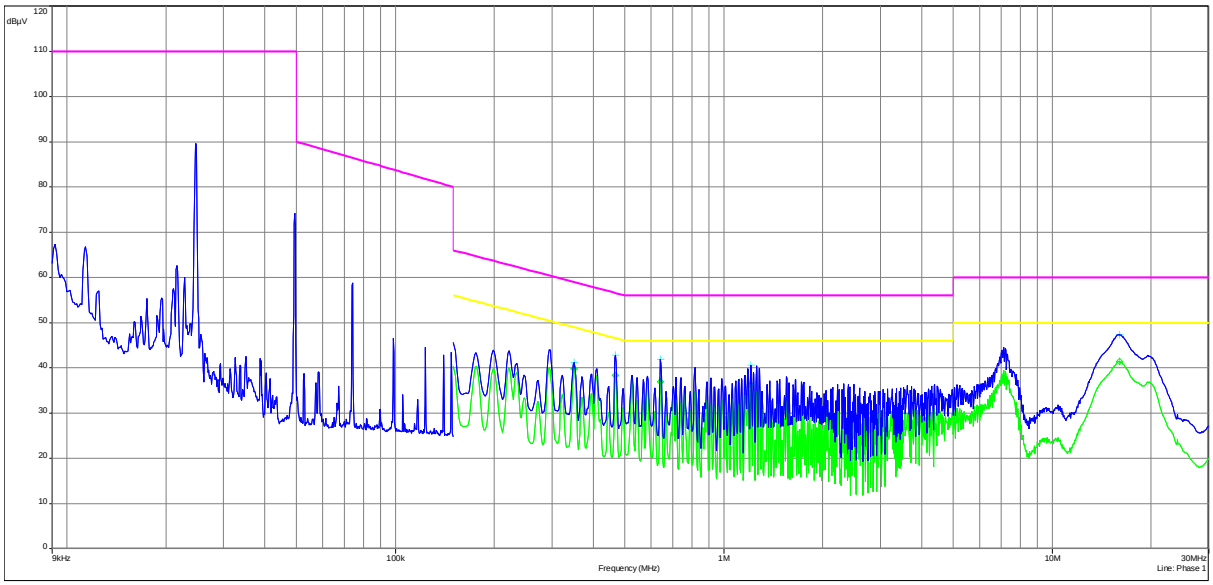
EN 55015/EN 55015 Voltage Mains -- - Average/
EN 55015/EN 55015 Voltage Mains -- - QPeak/
Meas.QPeak (Phase 1)
Meas.Avg (Phase 1)
Average (Average /Lim. Average) (Phase 1)
QPeak-Value (FinalQpeak) (Phase 1)
AV-Value (FinalAvg) (Phase 1)



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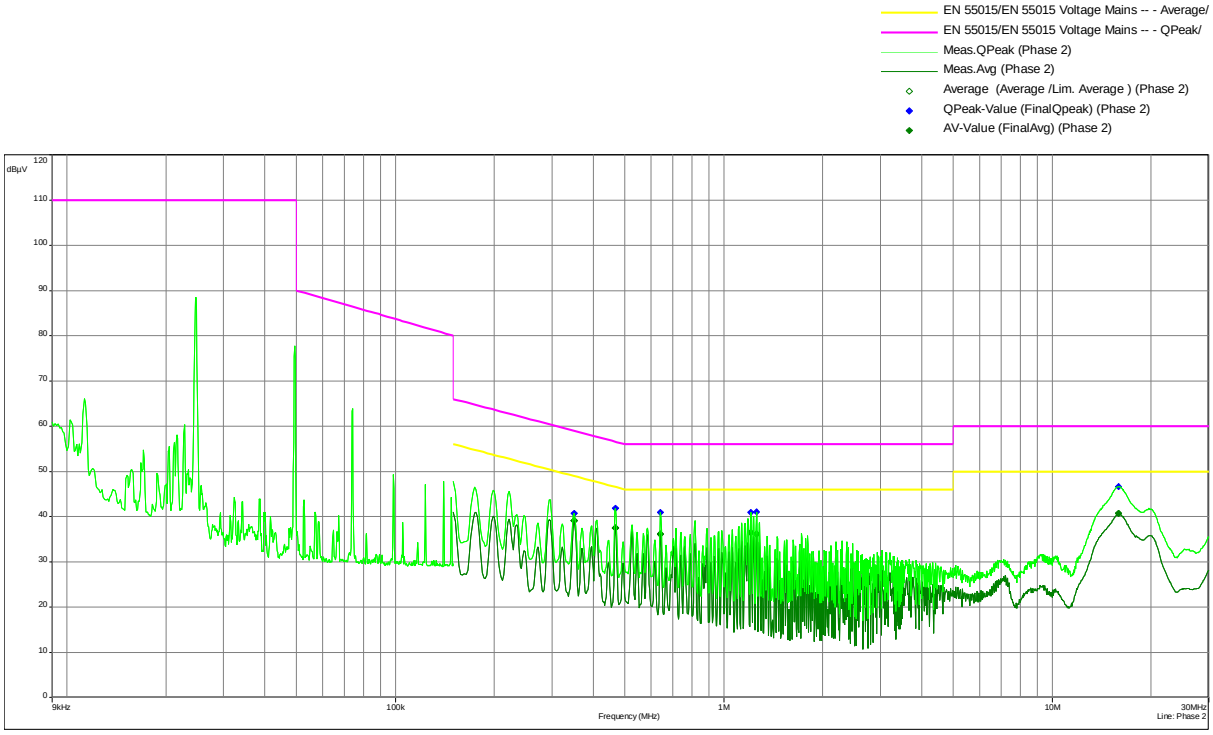

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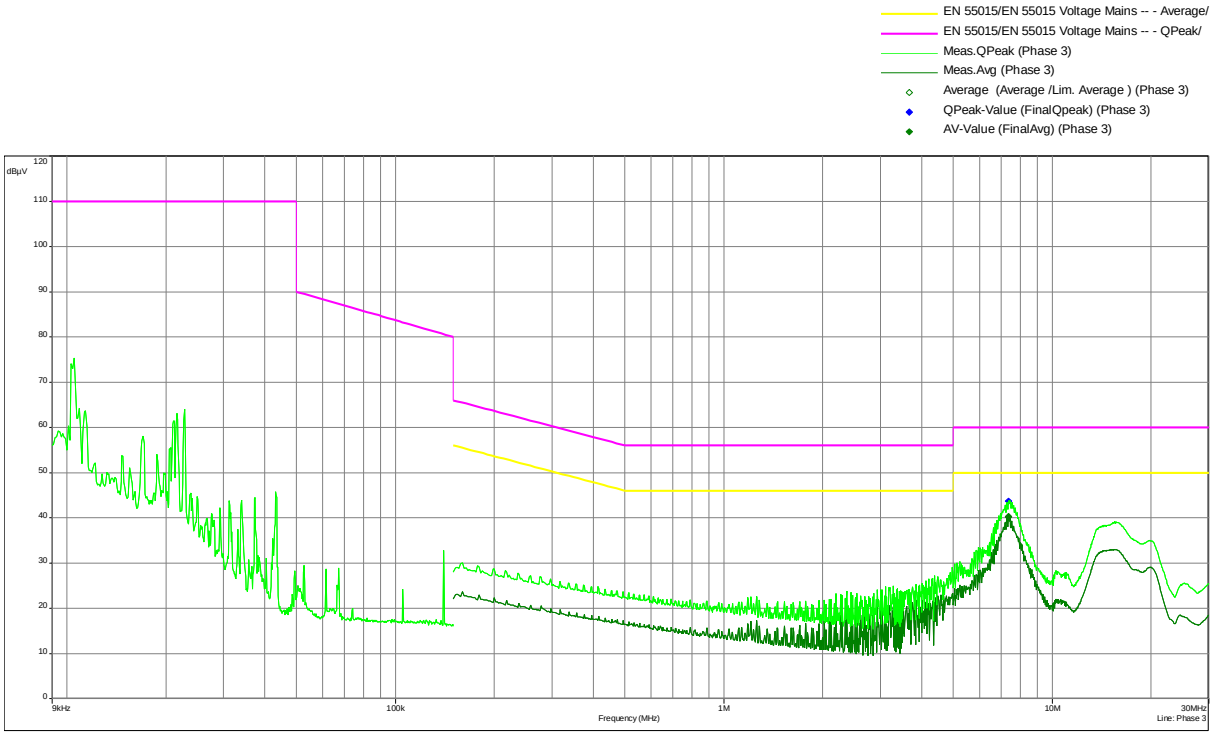

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Sub-Range Graphs :

Results:

FinalAvg (15)

Frequency (MHz)	SR	AV-Value (dBµV)	AV-Limit (dBµV)	Margin (dB)	Line	Comments	Correction (dB)
0.468	2	37.21	46.55	9.34	0.00	Pass	10.00
0.642	2	36.23	46.00	9.77	0.00	Pass	10.00
16.226	2	40.72	50.00	9.28	0.00	Pass	10.38
0.35	4	39.73	48.96	9.23	1.00	Pass	10.00
0.468	4	38.28	46.55	8.27	1.00	Pass	10.00
0.642	4	36.89	46.00	9.11	1.00	Pass	10.00
1.21	4	36.26	46.00	9.74	1.00	Pass	10.06
16.056	4	41.38	50.00	8.62	1.00	Pass	10.38
0.35	6	39.07	48.96	9.89	2.00	Pass	10.00
0.468	6	37.45	46.55	9.10	2.00	Pass	10.00
0.642	6	36.16	46.00	9.84	2.00	Pass	10.00
1.21	6	36.51	46.00	9.49	2.00	Pass	10.06
1.258	6	36.08	46.00	9.92	2.00	Pass	10.06
15.908	6	40.63	50.00	9.37	2.00	Pass	10.38
7.35	8	40.26	50.00	9.74	3.00	Pass	10.30

FinalQpeak (15)

Frequency (MHz)	SR	QPeak-Value (dBµV)	QP-Limit (dBµV)	Margin (dB)	Line	Comments	Correction (dB)
0.468	2	42.29	56.55	14.26	0.00	Pass	10.00
0.642	2	41.65	56.00	14.35	0.00	Pass	10.00
16.226	2	46.44	60.00	13.56	0.00	Pass	10.38
0.35	4	41.18	58.96	17.78	1.00	Pass	10.00
0.468	4	42.80	56.55	13.75	1.00	Pass	10.00
0.642	4	41.78	56.00	14.22	1.00	Pass	10.00
1.21	4	40.54	56.00	15.46	1.00	Pass	10.06
16.056	4	47.27	60.00	12.73	1.00	Pass	10.38
0.35	6	40.74	58.96	18.23	2.00	Pass	10.00
0.468	6	41.88	56.55	14.67	2.00	Pass	10.00
0.642	6	40.96	56.00	15.04	2.00	Pass	10.00
1.21	6	40.87	56.00	15.13	2.00	Pass	10.06
1.258	6	41.06	56.00	14.94	2.00	Pass	10.06
15.908	6	46.59	60.00	13.41	2.00	Pass	10.38
7.35	8	43.63	60.00	16.37	3.00	Pass	10.30

Line 0 = Neutral, Line 1 = Phase 1, Line 2 = Phase 2, Line 3 = Phase 3

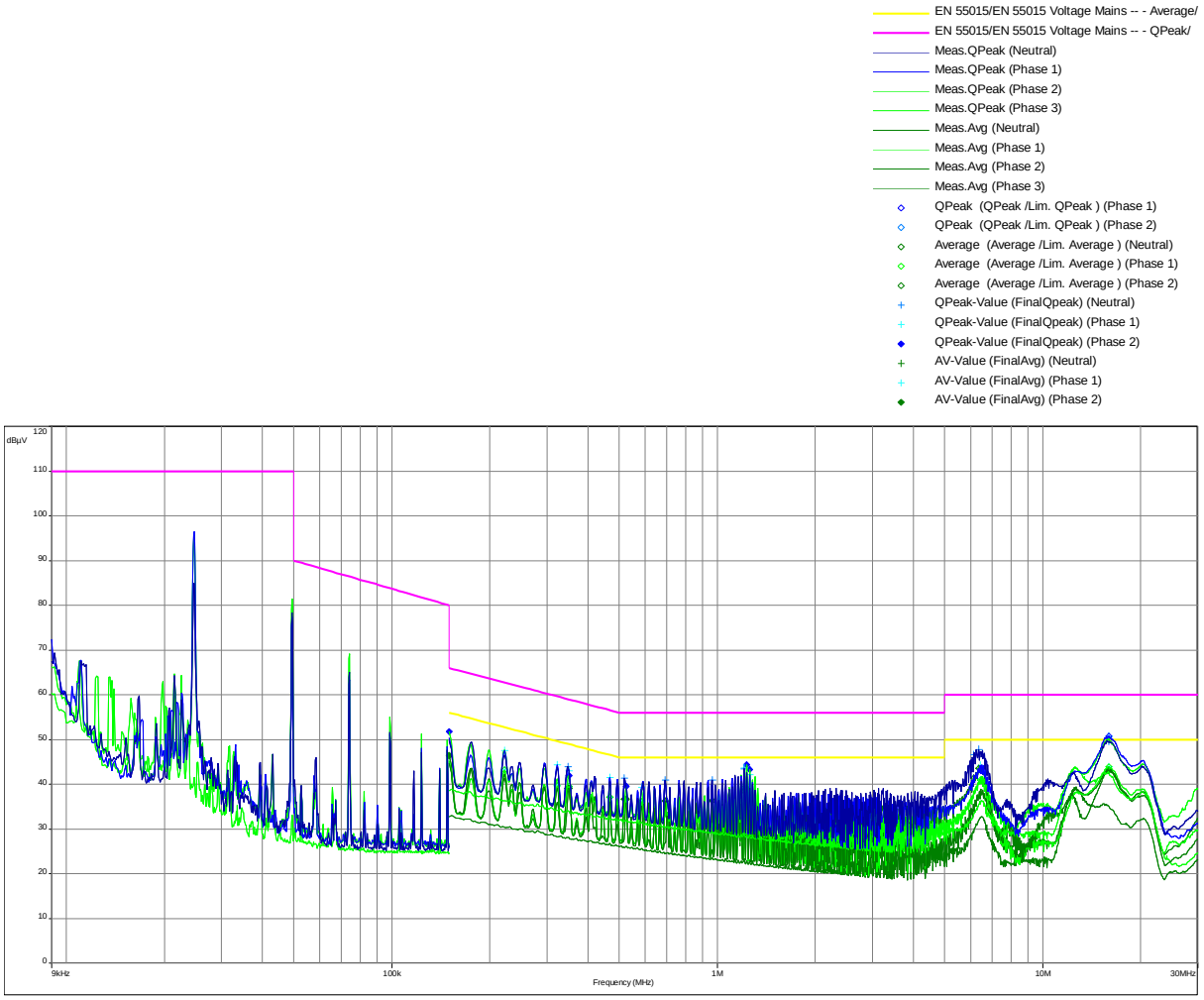
Project number: 212194	
Limit / Class	EN 55015 Voltage Mains / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Maximum heat setting (9), bottom left field
Tested by	J. Braasch
Comment on test / measurement	with smallest standard pot, diameter 145 mm
Test date	10.08.2015
Test place	SR1
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
--	Cable with 10 dB attenuator	--	BigSR1-1 + 10 dB ATT.
1800151	Time-Domain EMI Receiver	Gauss Instruments	TDEMI 1G
1820054	Artificial Mains Network	Rohde & Schwarz	ESH2-Z5

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Neutral	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Neutral	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF
9kHz - 150kHz	Phase 1	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Phase 1	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF
9kHz - 150kHz	Phase 2	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Phase 2	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF
9kHz - 150kHz	Phase 3	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Phase 3	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF



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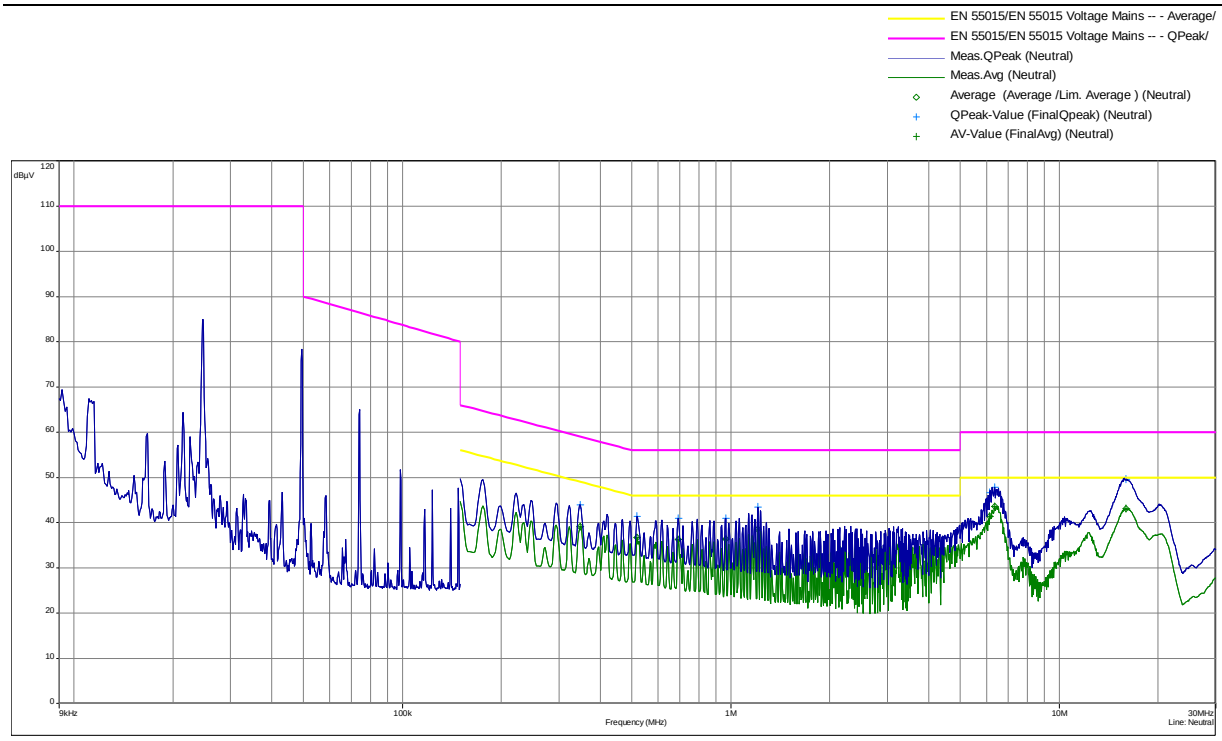
Position Graph:



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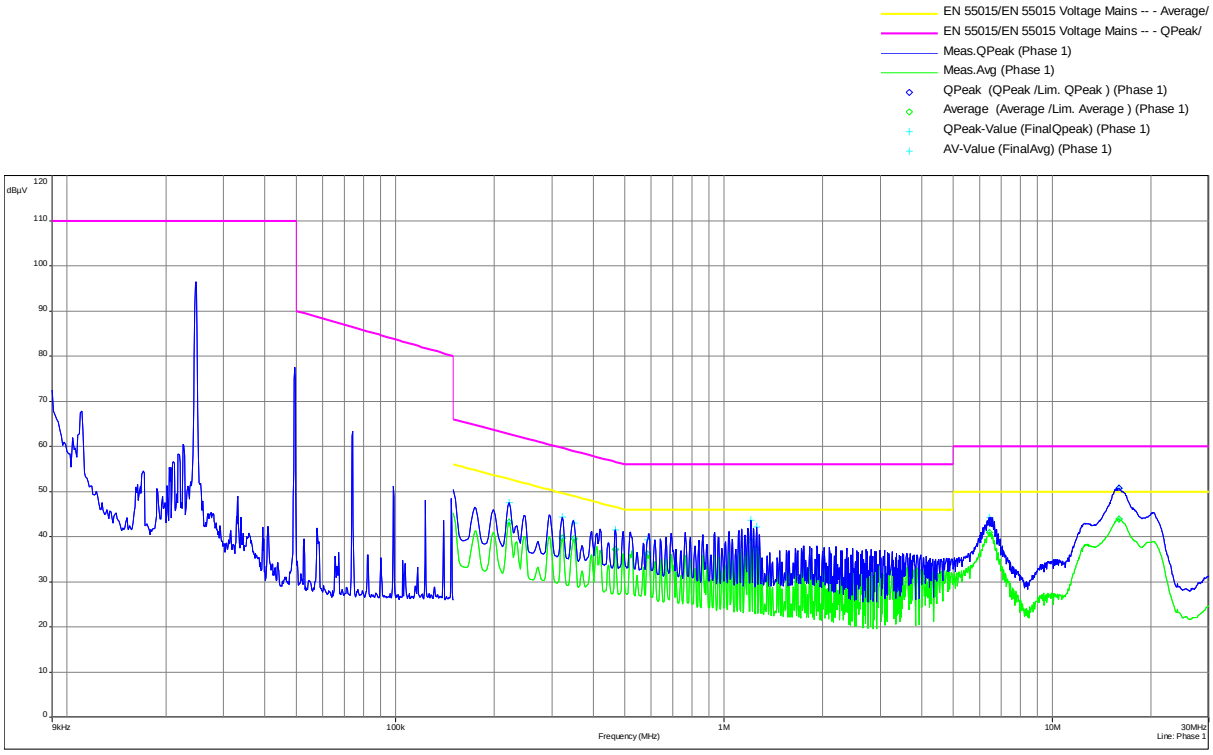

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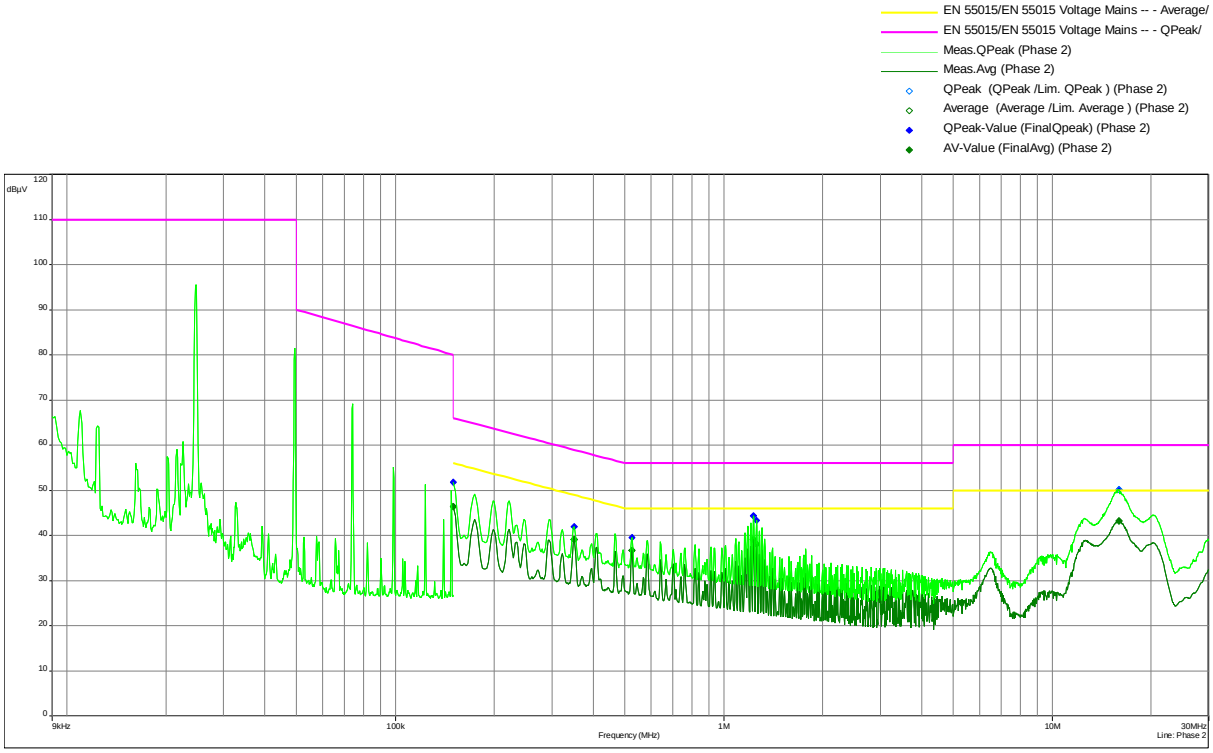

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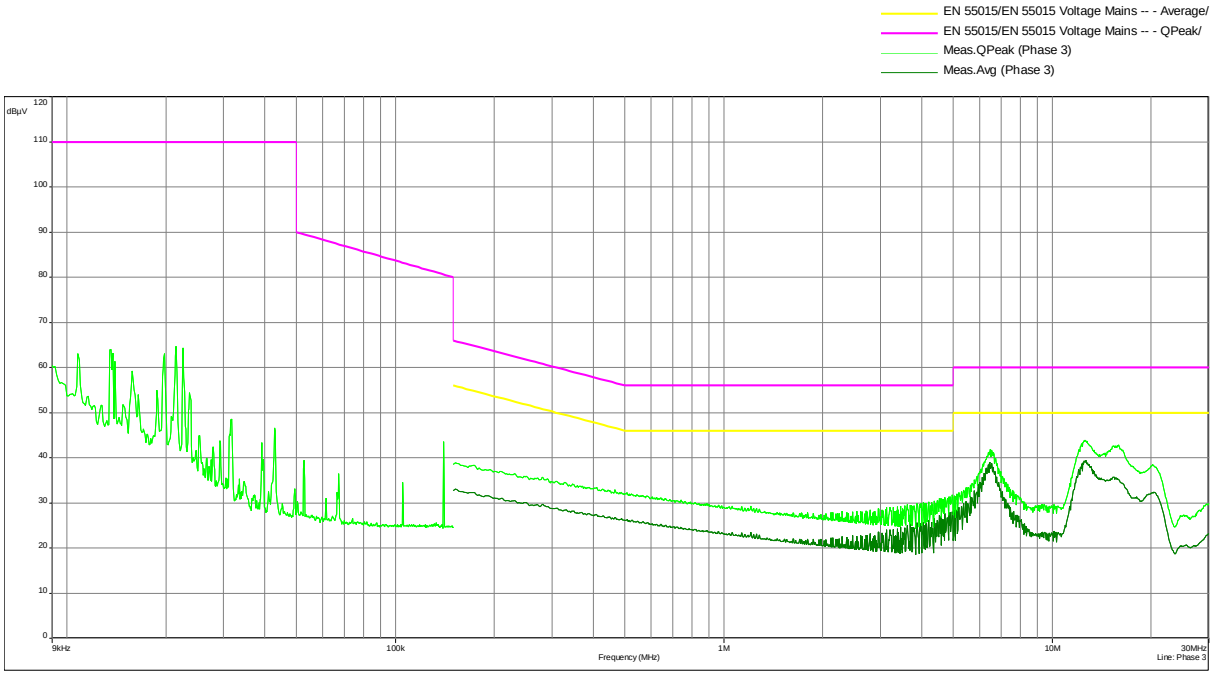

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Sub-Range Graphs :

Results:

FinalAvg (23)

Frequency (MHz)	SR	AV-Value (dBµV)	AV-Limit (dBµV)	Margin (dB)	Line	Comments	Correction (dB)
0.348	2	39.10	49.01	9.91	0.00	Pass	10.00
0.518	2	36.72	46.00	9.28	0.00	Pass	10.00
0.692	2	36.26	46.00	9.74	0.00	Pass	10.00
0.964	2	36.38	46.00	9.62	0.00	Pass	10.04
1.21	2	38.47	46.00	7.53	0.00	Pass	10.06
6.14	2	41.37	50.00	8.63	0.00	Pass	10.23
6.364	2	43.54	50.00	6.46	0.00	Pass	10.25
15.956	2	43.11	50.00	6.89	0.00	Pass	10.38
0.222	4	43.24	52.74	9.51	1.00	Pass	10.00
0.322	4	39.71	49.66	9.94	1.00	Pass	10.00
0.35	4	39.60	48.96	9.36	1.00	Pass	10.00
0.468	4	37.13	46.55	9.42	1.00	Pass	10.00
0.586	4	36.17	46.00	9.83	1.00	Pass	10.00
1.21	4	39.08	46.00	6.92	1.00	Pass	10.06
1.258	4	37.41	46.00	8.59	1.00	Pass	10.06
6.438	4	40.90	50.00	9.10	1.00	Pass	10.25
15.956	4	43.92	50.00	6.08	1.00	Pass	10.38
0.15	6	46.40	56.00	9.60	2.00	Pass	10.00
0.35	6	39.05	48.96	9.91	2.00	Pass	10.00
0.526	6	36.74	46.00	9.26	2.00	Pass	10.00
1.232	6	39.10	46.00	6.90	2.00	Pass	10.06
1.258	6	38.11	46.00	7.89	2.00	Pass	10.06
15.956	6	43.20	50.00	6.80	2.00	Pass	10.38

FinalQpeak (23)

Frequency (MHz)	SR	QPeak-Value (dBµV)	QP-Limit (dBµV)	Margin (dB)	Line	Comments	Correction (dB)
0.348	2	43.91	59.01	15.10	0.00	Pass	10.00
0.518	2	41.39	56.00	14.61	0.00	Pass	10.00
0.692	2	40.93	56.00	15.07	0.00	Pass	10.00
0.964	2	40.86	56.00	15.14	0.00	Pass	10.04
1.21	2	43.41	56.00	12.59	0.00	Pass	10.06
6.14	2	46.64	60.00	13.36	0.00	Pass	10.23
6.364	2	47.81	60.00	12.19	0.00	Pass	10.25
15.956	2	49.64	60.00	10.36	0.00	Pass	10.38
0.222	4	47.54	62.74	15.20	1.00	Pass	10.00
0.322	4	44.30	59.66	15.35	1.00	Pass	10.00
0.35	4	42.96	58.96	16.00	1.00	Pass	10.00
0.468	4	41.51	56.55	15.04	1.00	Pass	10.00
0.586	4	39.30	56.00	16.70	1.00	Pass	10.00
1.21	4	43.68	56.00	12.32	1.00	Pass	10.06
1.258	4	42.12	56.00	13.88	1.00	Pass	10.06
6.438	4	44.21	60.00	15.79	1.00	Pass	10.25
15.956	4	50.71	60.00	9.29	1.00	Pass	10.38
0.15	6	51.74	66.00	14.26	2.00	Pass	10.00
0.35	6	41.92	58.96	17.05	2.00	Pass	10.00
0.526	6	39.53	56.00	16.47	2.00	Pass	10.00
1.232	6	44.40	56.00	11.60	2.00	Pass	10.06
1.258	6	43.26	56.00	12.74	2.00	Pass	10.06
15.956	6	50.13	60.00	9.87	2.00	Pass	10.38

Line 0 = Neutral, Line 1 = Phase 1, Line 2 = Phase 2, Line 3 = Phase 3

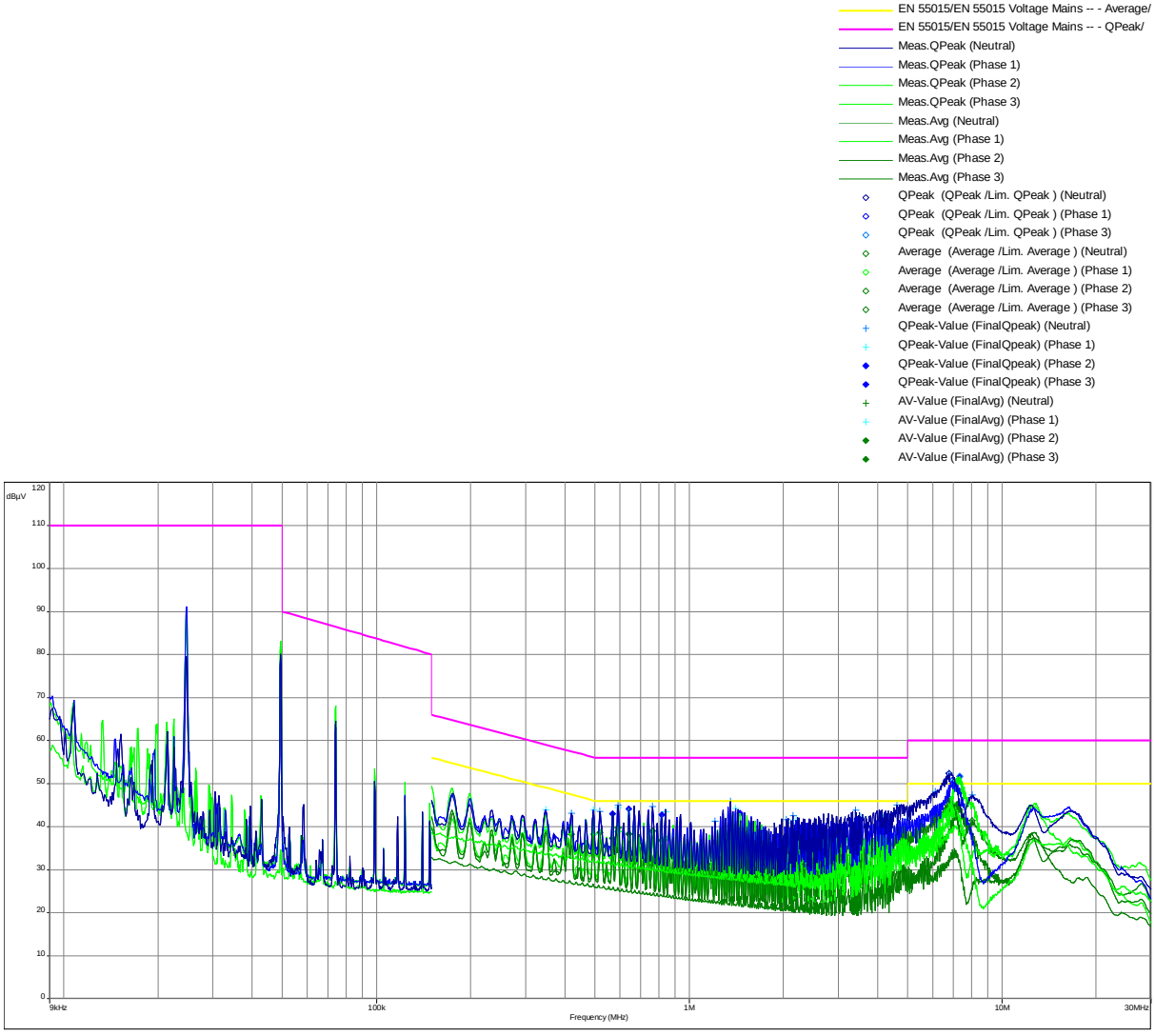
Project number: 212194	
Limit / Class	EN 55015 Voltage Mains / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Maximum heat setting (9), bottom right field
Tested by	J. Braasch
Comment on test / measurement	with smallest standard pot, diameter 145 mm
Test date	10.08.2015
Test place	SR1
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
--	Cable with 10 dB attenuator	--	BigSR1-1 + 10 dB ATT.
1800151	Time-Domain EMI Receiver	Gauss Instruments	TDEMI 1G
1820054	Artificial Mains Network	Rohde & Schwarz	ESH2-Z5

Prescan settings:

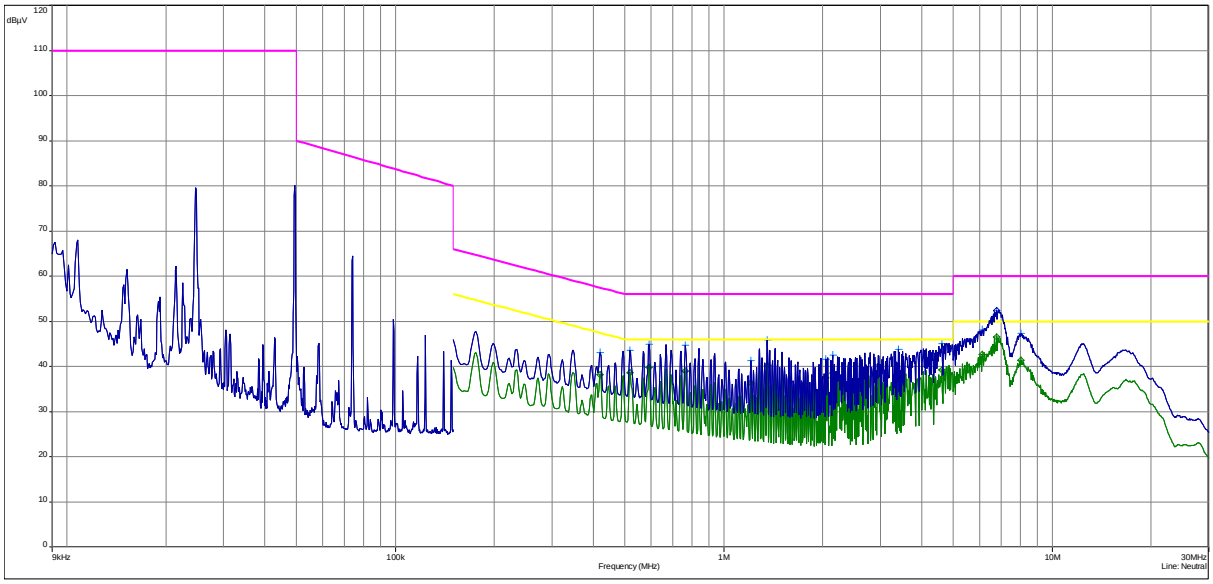
Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Neutral	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Neutral	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF
9kHz - 150kHz	Phase 1	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Phase 1	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF
9kHz - 150kHz	Phase 2	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Phase 2	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF
9kHz - 150kHz	Phase 3	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Phase 3	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF



VDE Testing and Certification Institute

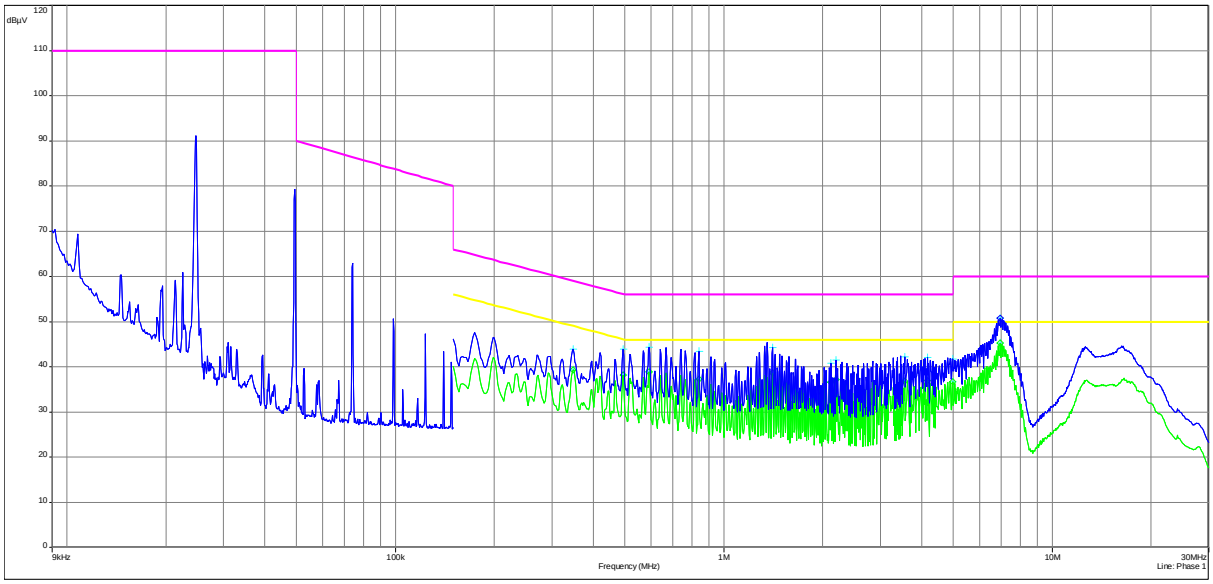
Position Graph:

EN 55015/EN 55015 Voltage Mains -- - Average/
EN 55015/EN 55015 Voltage Mains -- - QPeak/
Meas.QPeak (Neutral)
Meas.Avg (Neutral)
QPeak (QPeak /Lim. QPeak) (Neutral)
Average (Average /Lim. Average) (Neutral)
QPeak-Value (FinalQpeak) (Neutral)
AV-Value (FinalAvg) (Neutral)

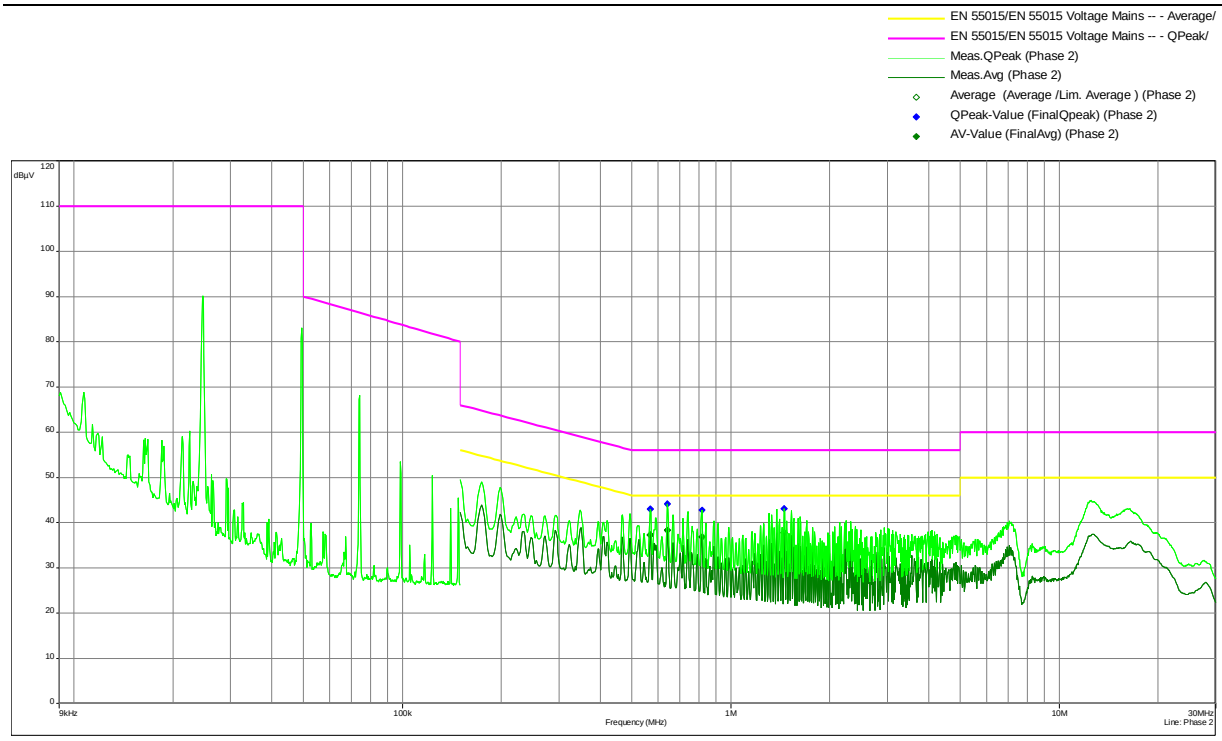


VDE Testing and Certification Institute

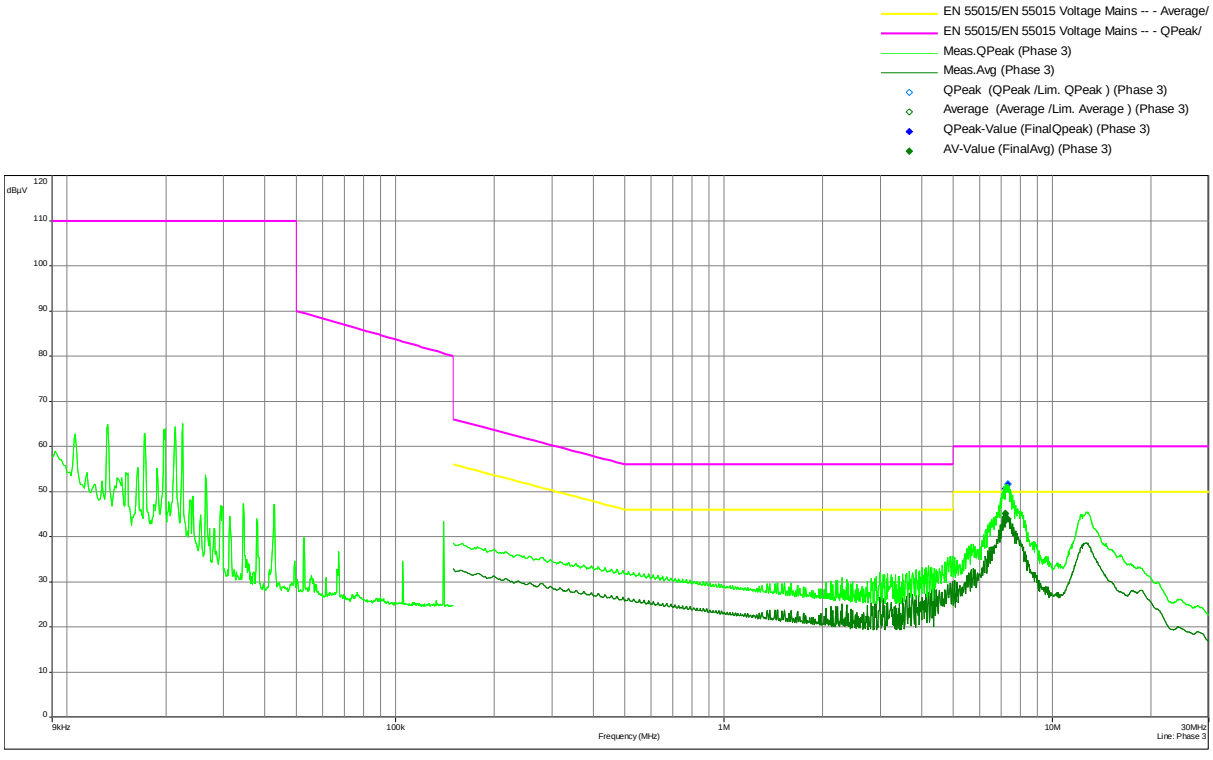
EN 55015/EN 55015 Voltage Mains -- - Average/
EN 55015/EN 55015 Voltage Mains -- - QPeak/
Meas.QPeak (Phase 1)
Meas.Avg (Phase 1)
QPeak (QPeak /Lim. QPeak) (Phase 1)
Average (Average /Lim. Average) (Phase 1)
QPeak-Value (FinalQpeak) (Phase 1)
AV-Value (FinalAvg) (Phase 1)



VDE Testing and Certification Institute



VDE Testing and Certification Institute



VDE Testing and Certification Institute

Sub-Range Graphs :

Results:

FinalAvg (30)

Frequency (MHz)	SR	AV-Value (dBµV)	AV-Limit (dBµV)	Margin (dB)	Line	Comments	Correction (dB)
0.42	2	38.22	47.45	9.23	0.00	Pass	10.00
0.518	2	38.66	46.00	7.34	0.00	Pass	10.00
0.592	2	39.79	46.00	6.21	0.00	Pass	10.00
0.764	2	38.93	46.00	7.07	0.00	Pass	10.01
1.21	2	36.38	46.00	9.62	0.00	Pass	10.06
1.356	2	40.18	46.00	5.82	0.00	Pass	10.06
2.046	2	37.50	46.00	8.50	0.00	Pass	10.08
2.146	2	38.47	46.00	7.53	0.00	Pass	10.08
3.404	2	38.76	46.00	7.24	0.00	Pass	10.11
4.614	2	39.22	46.00	6.78	0.00	Pass	10.12
6.118	2	42.60	50.00	7.40	0.00	Pass	10.22
6.782	2	46.49	50.00	3.51	0.00	Pass	10.28
8.04	2	41.35	50.00	8.65	0.00	Pass	10.29
0.348	4	39.36	49.01	9.65	1.00	Pass	10.00
0.494	4	38.17	46.10	7.93	1.00	Pass	10.00
0.592	4	38.82	46.00	7.18	1.00	Pass	10.00
0.84	4	37.28	46.00	8.72	1.00	Pass	10.02
1.406	4	38.58	46.00	7.42	1.00	Pass	10.06
2.12	4	36.53	46.00	9.47	1.00	Pass	10.08
2.196	4	37.19	46.00	8.81	1.00	Pass	10.08
3.552	4	36.85	46.00	9.15	1.00	Pass	10.11
4.168	4	36.90	46.00	9.10	1.00	Pass	10.12
4.984	4	36.66	46.00	9.34	1.00	Pass	10.13
6.956	4	45.22	50.00	4.78	1.00	Pass	10.30
0.568	6	37.32	46.00	8.68	2.00	Pass	10.00
0.642	6	38.27	46.00	7.73	2.00	Pass	10.00
0.816	6	36.80	46.00	9.20	2.00	Pass	10.02
1.456	6	37.76	46.00	8.24	2.00	Pass	10.06
7.202	8	45.13	50.00	4.87	3.00	Pass	10.30
7.326	8	43.90	50.00	6.10	3.00	Pass	10.30

FinalQpeak (30)

Frequency (MHz)	SR	QPeak-Value (dBµV)	QP-Limit (dBµV)	Margin (dB)	Line	Comments	Correction (dB)
0.42	2	43.11	57.45	14.34	0.00	Pass	10.00
0.518	2	43.55	56.00	12.45	0.00	Pass	10.00
0.592	2	44.90	56.00	11.10	0.00	Pass	10.00
0.764	2	44.66	56.00	11.34	0.00	Pass	10.01
1.21	2	41.22	56.00	14.78	0.00	Pass	10.06
1.356	2	45.85	56.00	10.15	0.00	Pass	10.06
2.046	2	41.58	56.00	14.42	0.00	Pass	10.08
2.146	2	42.55	56.00	13.45	0.00	Pass	10.08
3.404	2	43.74	56.00	12.26	0.00	Pass	10.11
4.614	2	44.98	56.00	11.02	0.00	Pass	10.12
6.118	2	48.13	60.00	11.87	0.00	Pass	10.22
6.782	2	52.36	60.00	7.64	0.00	Pass	10.28
8.04	2	47.30	60.00	12.70	0.00	Pass	10.29
0.348	4	43.92	59.01	15.09	1.00	Pass	10.00
0.494	4	43.83	56.10	12.27	1.00	Pass	10.00
0.592	4	44.31	56.00	11.69	1.00	Pass	10.00
0.84	4	43.45	56.00	12.55	1.00	Pass	10.02
1.406	4	44.18	56.00	11.82	1.00	Pass	10.06
2.12	4	40.75	56.00	15.25	1.00	Pass	10.08
2.196	4	41.46	56.00	14.54	1.00	Pass	10.08
3.552	4	42.18	56.00	13.82	1.00	Pass	10.11
4.168	4	42.09	56.00	13.91	1.00	Pass	10.12
4.984	4	41.77	56.00	14.23	1.00	Pass	10.13
6.956	4	50.78	60.00	9.22	1.00	Pass	10.30
0.568	6	42.95	56.00	13.05	2.00	Pass	10.00
0.642	6	44.15	56.00	11.85	2.00	Pass	10.00
0.816	6	42.76	56.00	13.24	2.00	Pass	10.02
1.456	6	43.10	56.00	12.90	2.00	Pass	10.06
7.202	8	50.67	60.00	9.33	3.00	Pass	10.30
7.326	8	51.64	60.00	8.36	3.00	Pass	10.30

Line 0 = Neutral, Line 1 = Phase 1, Line 2 = Phase 2, Line 3 = Phase 3

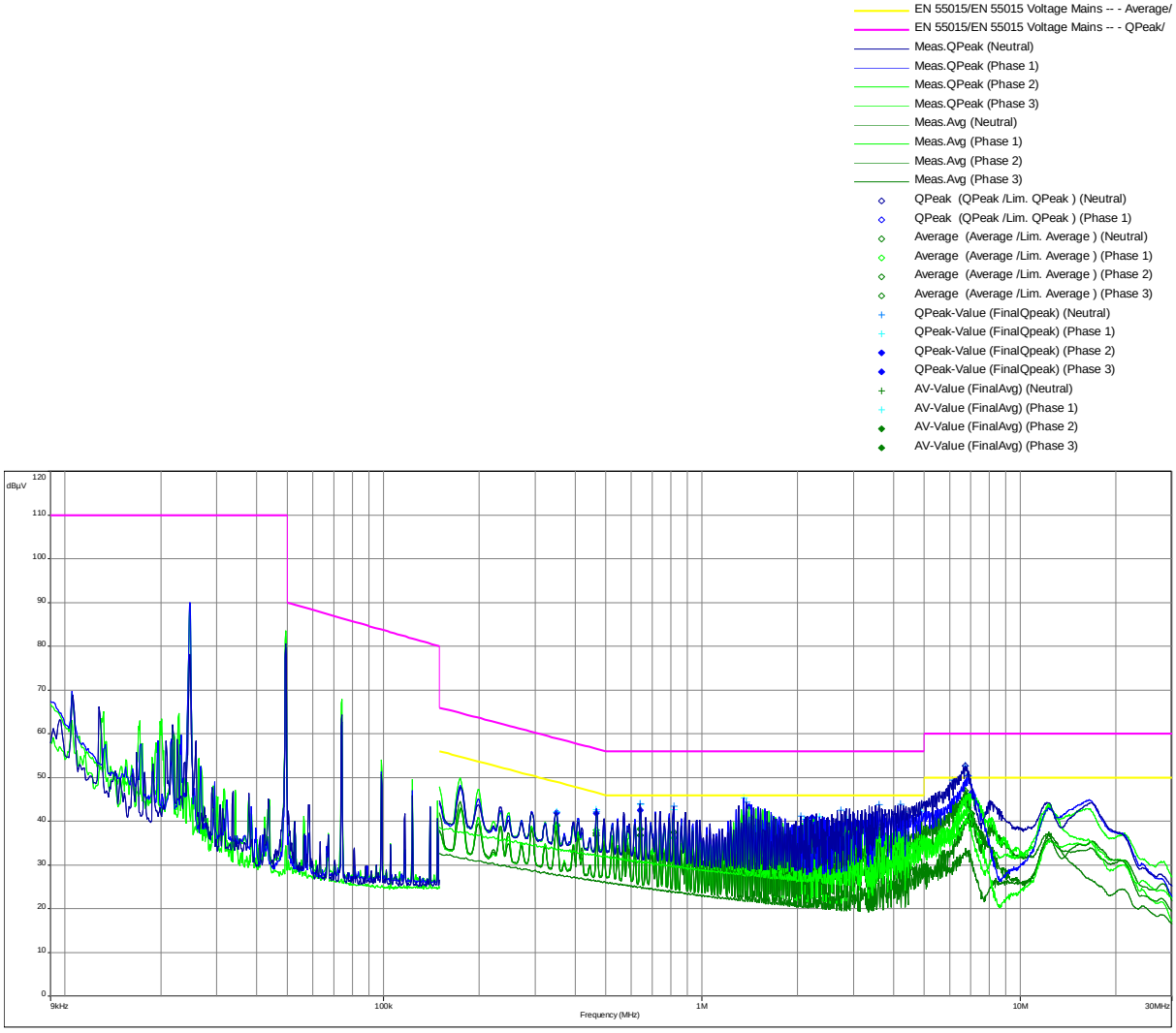
Project number: 212194	
Limit / Class	EN 55015 Voltage Mains / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Maximum heat setting (9), top right field
Tested by	J. Braasch
Comment on test / measurement	with smallest standard pot, diameter 145 mm
Test date	10.08.2015
Test place	SR1
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
--	Cable with 10 dB attenuator	--	BigSR1-1 + 10 dB ATT.
1800151	Time-Domain EMI Receiver	Gauss Instruments	TDEMI 1G
1820054	Artificial Mains Network	Rohde & Schwarz	ESH2-Z5

Prescan settings:

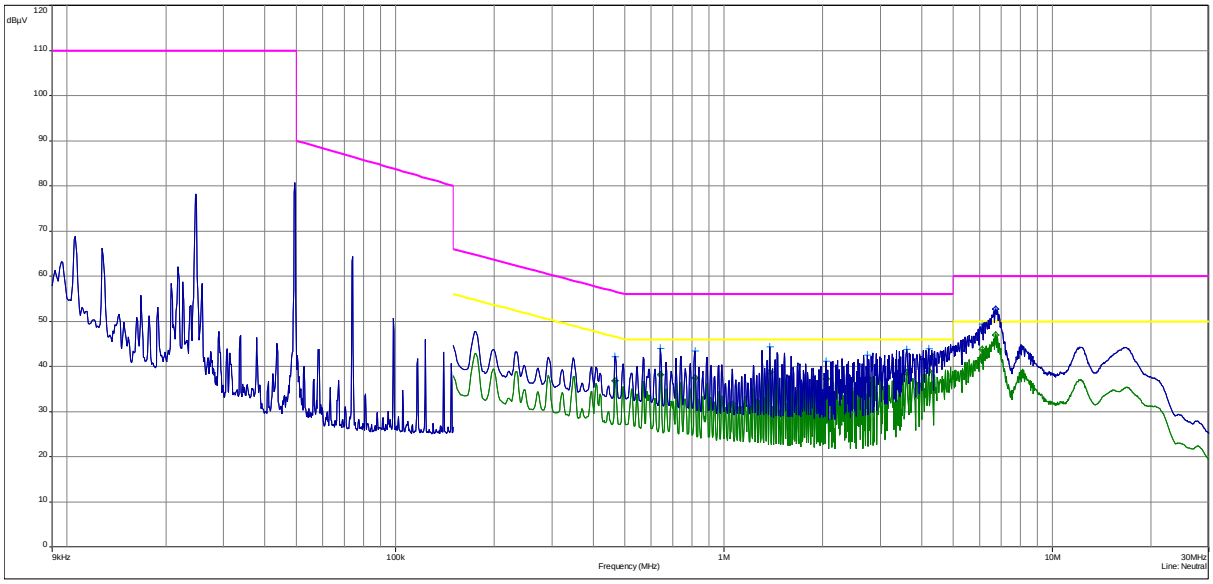
Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Neutral	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Neutral	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF
9kHz - 150kHz	Phase 1	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Phase 1	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF
9kHz - 150kHz	Phase 2	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Phase 2	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF
9kHz - 150kHz	Phase 3	100Hz	200Hz	1000 ms/Pts	20 dB	OFF	OFF
150kHz - 30MHz	Phase 3	2kHz	9kHz	1000 ms/Pts	20 dB	OFF	OFF



VDE Testing and Certification Institute

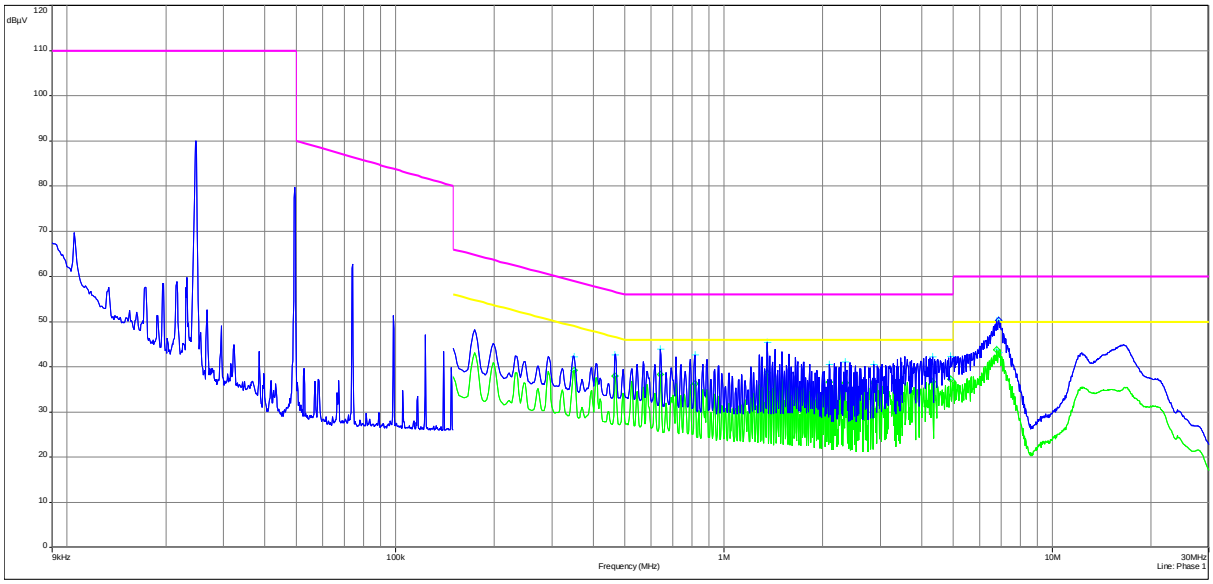
Position Graph:

EN 55015/EN 55015 Voltage Mains -- - Average/
EN 55015/EN 55015 Voltage Mains -- - QPeak/
Meas.QPeak (Neutral)
Meas.Avg (Neutral)
QPeak (QPeak /Lim. QPeak) (Neutral)
Average (Average /Lim. Average) (Neutral)
QPeak-Value (FinalQpeak) (Neutral)
AV-Value (FinalAvg) (Neutral)

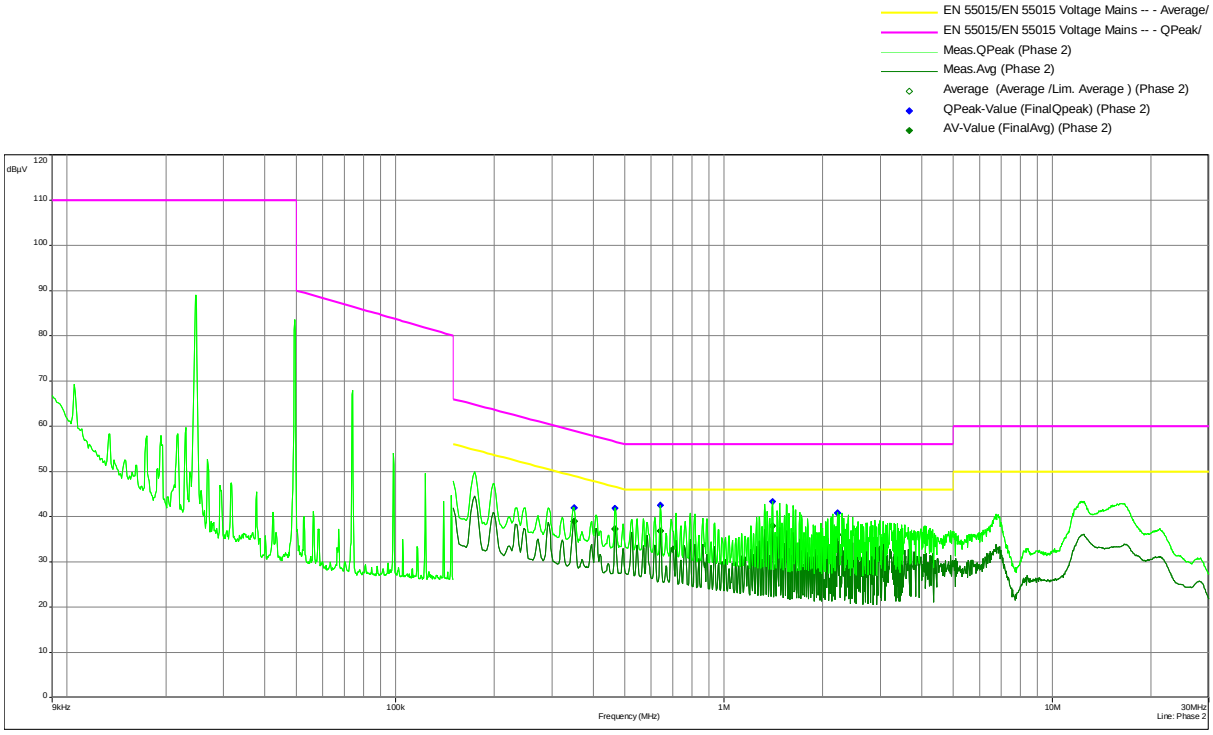


VDE Testing and Certification Institute

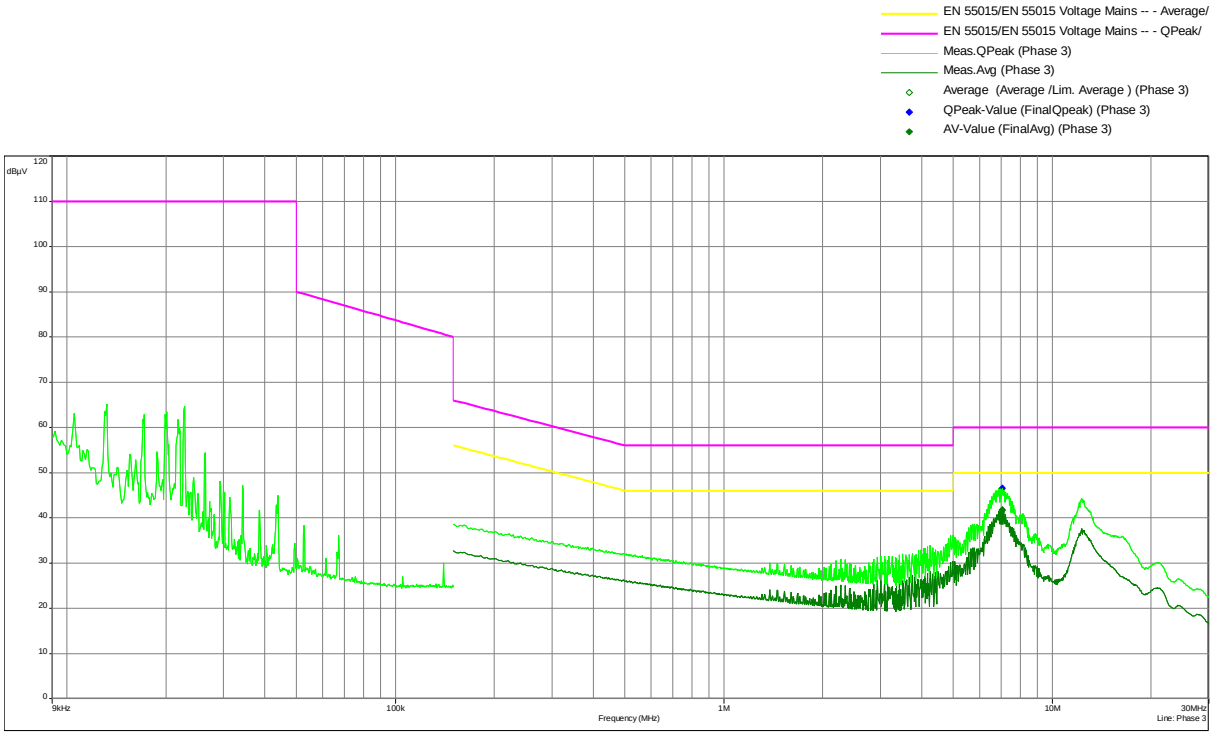
EN 55015/EN 55015 Voltage Mains -- - Average/
EN 55015/EN 55015 Voltage Mains -- - QPeak/
Meas.QPeak (Phase 1)
Meas.Avg (Phase 1)
QPeak (QPeak /Lim. QPeak) (Phase 1)
Average (Average /Lim. Average) (Phase 1)
QPeak-Value (FinalQpeak) (Phase 1)
AV-Value (FinalAvg) (Phase 1)



VDE Testing and Certification Institute



VDE Testing and Certification Institute



VDE Testing and Certification Institute

Sub-Range Graphs :

Results:

FinalAvg (28)

Frequency (MHz)	SR	AV-Value (dBµV)	AV-Limit (dBµV)	Margin (dB)	Line	Comments	Correction (dB)
0.466	2	36.76	46.58	9.83	0.00	Pass	10.00
0.642	2	38.21	46.00	7.79	0.00	Pass	10.00
0.816	2	37.46	46.00	8.54	0.00	Pass	10.02
1.382	2	38.72	46.00	7.28	0.00	Pass	10.06
2.048	2	37.22	46.00	8.78	0.00	Pass	10.08
2.738	2	37.43	46.00	8.57	0.00	Pass	10.09
3.602	2	38.61	46.00	7.39	0.00	Pass	10.11
4.218	2	38.95	46.00	7.05	0.00	Pass	10.12
6.118	2	43.77	50.00	6.23	0.00	Pass	10.22
6.734	2	46.92	50.00	3.08	0.00	Pass	10.28
0.35	4	39.24	48.96	9.72	1.00	Pass	10.00
0.466	4	37.90	46.58	8.68	1.00	Pass	10.00
0.642	4	38.26	46.00	7.74	1.00	Pass	10.00
0.816	4	36.20	46.00	9.80	1.00	Pass	10.02
1.356	4	38.62	46.00	7.38	1.00	Pass	10.06
2.098	4	36.55	46.00	9.45	1.00	Pass	10.08
2.344	4	36.44	46.00	9.56	1.00	Pass	10.08
2.86	4	36.41	46.00	9.59	1.00	Pass	10.10
4.316	4	36.63	46.00	9.37	1.00	Pass	10.12
4.908	4	37.21	46.00	8.79	1.00	Pass	10.13
6.782	4	43.81	50.00	6.19	1.00	Pass	10.28
6.882	4	43.05	50.00	6.95	1.00	Pass	10.29
0.35	6	38.96	48.96	10.00	2.00	Pass	10.00
0.466	6	37.31	46.58	9.28	2.00	Pass	10.00
0.642	6	36.85	46.00	9.15	2.00	Pass	10.00
1.406	6	37.91	46.00	8.09	2.00	Pass	10.06
2.22	6	36.03	46.00	9.97	2.00	Pass	10.08
7.054	8	41.77	50.00	8.23	3.00	Pass	10.30

FinalQpeak (28)

Frequency (MHz)	SR	QPeak-Value (dBµV)	QP-Limit (dBµV)	Margin (dB)	Line	Comments	Correction (dB)
0.466	2	42.14	56.58	14.44	0.00	Pass	10.00
0.642	2	44.00	56.00	12.00	0.00	Pass	10.00
0.816	2	43.44	56.00	12.56	0.00	Pass	10.02
1.382	2	44.38	56.00	11.62	0.00	Pass	10.06
2.048	2	41.16	56.00	14.84	0.00	Pass	10.08
2.738	2	42.48	56.00	13.52	0.00	Pass	10.09
3.602	2	43.75	56.00	12.25	0.00	Pass	10.11
4.218	2	43.89	56.00	12.11	0.00	Pass	10.12
6.118	2	49.34	60.00	10.66	0.00	Pass	10.22
6.734	2	52.68	60.00	7.32	0.00	Pass	10.28
0.35	4	42.20	58.96	16.76	1.00	Pass	10.00
0.466	4	42.67	56.58	13.91	1.00	Pass	10.00
0.642	4	43.89	56.00	12.11	1.00	Pass	10.00
0.816	4	42.60	56.00	13.40	1.00	Pass	10.02
1.356	4	45.40	56.00	10.60	1.00	Pass	10.06
2.098	4	40.50	56.00	15.50	1.00	Pass	10.08
2.344	4	41.07	56.00	14.93	1.00	Pass	10.08
2.86	4	40.46	56.00	15.54	1.00	Pass	10.10
4.316	4	42.14	56.00	13.86	1.00	Pass	10.12
4.908	4	42.34	56.00	13.66	1.00	Pass	10.13
6.782	4	50.10	60.00	9.90	1.00	Pass	10.28
6.882	4	50.23	60.00	9.77	1.00	Pass	10.29
0.35	6	41.90	58.96	17.07	2.00	Pass	10.00
0.466	6	41.81	56.58	14.77	2.00	Pass	10.00
0.642	6	42.52	56.00	13.48	2.00	Pass	10.00
1.406	6	43.34	56.00	12.66	2.00	Pass	10.06
2.22	6	40.84	56.00	15.16	2.00	Pass	10.08
7.054	8	46.50	60.00	13.50	3.00	Pass	10.30

Line 0 = Neutral, Line 1 = Phase 1, Line 2 = Phase 2, Line 3 = Phase 3

3.2 Measurement of the magnetic RF field strength (9 kHz – 30 MHz)

General information about the test:

Tested by:	Braasch, Jan
Test date:	2015-08-11

Instruments:		Test location: SAC			
Inventory number	Description	Manufacturer	Type	Date of last calibration	Next calibration due
1810100	Loop Antenna	Schwarzbeck	FMZB 1513	2015-02-26	2016-02
--	Cable	--	SAC1-1 + SAC1-2 + CP4-1 (Path 2)	-	-
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6	2014-12-17	2016-05
--	Turntable	Frankonia	FC02	-	-

Information concerning the test:

Test set-up:	The loop antenna was set-up at a height of ca. 2 m. The EUT was placed on a wooden pallet on the floor.
Operating modes used:	1, 2
Test procedure:	The measurement was done with the average detector on. Bandwidth of 200 Hz in the frequency range from 9 kHz to 150 kHz; Bandwidth of 9 kHz in the frequency range from 150 kHz to 30 MHz; The EUT was turned 360 degrees to find the maximum of emissions.

Result:	**Pass**

Protocol:	Next page

Radiated Electrical (Magnetical) Emission Measurement

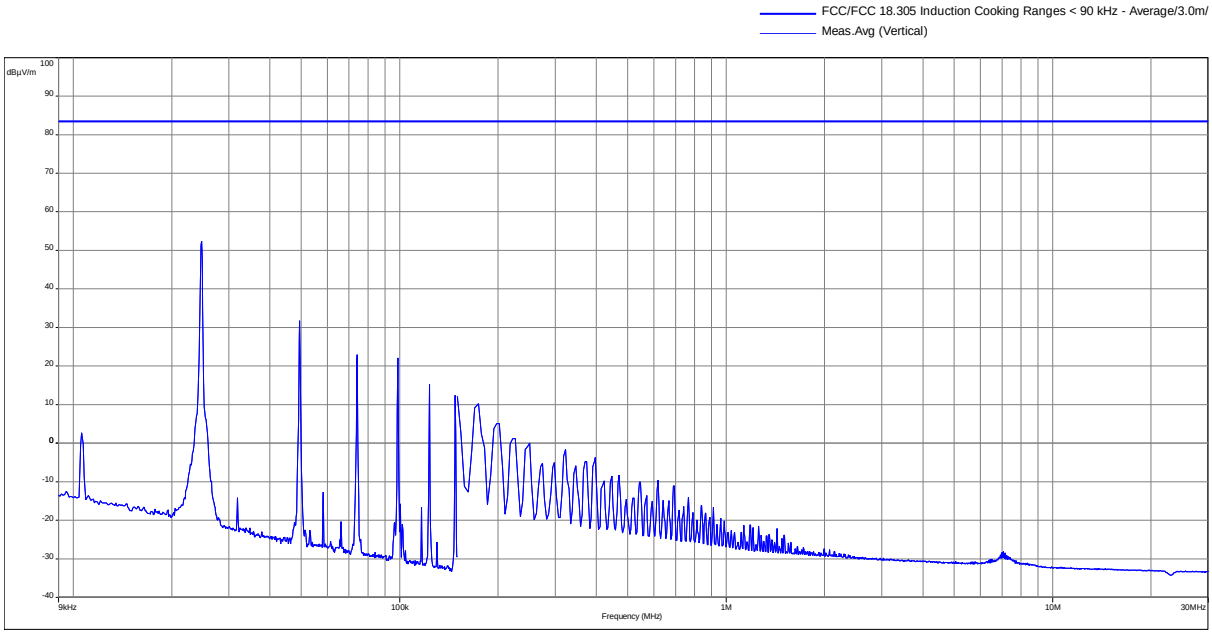
Project number: 212194 Magn	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	Height of the measurement antenna 2 m
Operating mode	Maximum heat setting (9), top right field
Tested by	J. Braasch
Comment on test / measurement	Antenna 0°, with smallest standard pot, diameter 145 mm
Test date	11.08.2015
Test place	SAC
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
1810100	Loop Antenna	Schwarzbeck	FMZB 1513
--	Cable	--	SAC1-1 + SAC1-2 + CP4-1 (Path 2)
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Vertical	100Hz	200Hz	200 ms/Pts	10 dB	OFF	OFF
150kHz - 30MHz	Vertical	4kHz	9kHz	200 ms/Pts	10 dB	OFF	ON



VDE Testing and Certification Institut

Results: Measured peak value is always lower than Average. With sufficient margin no finals

–

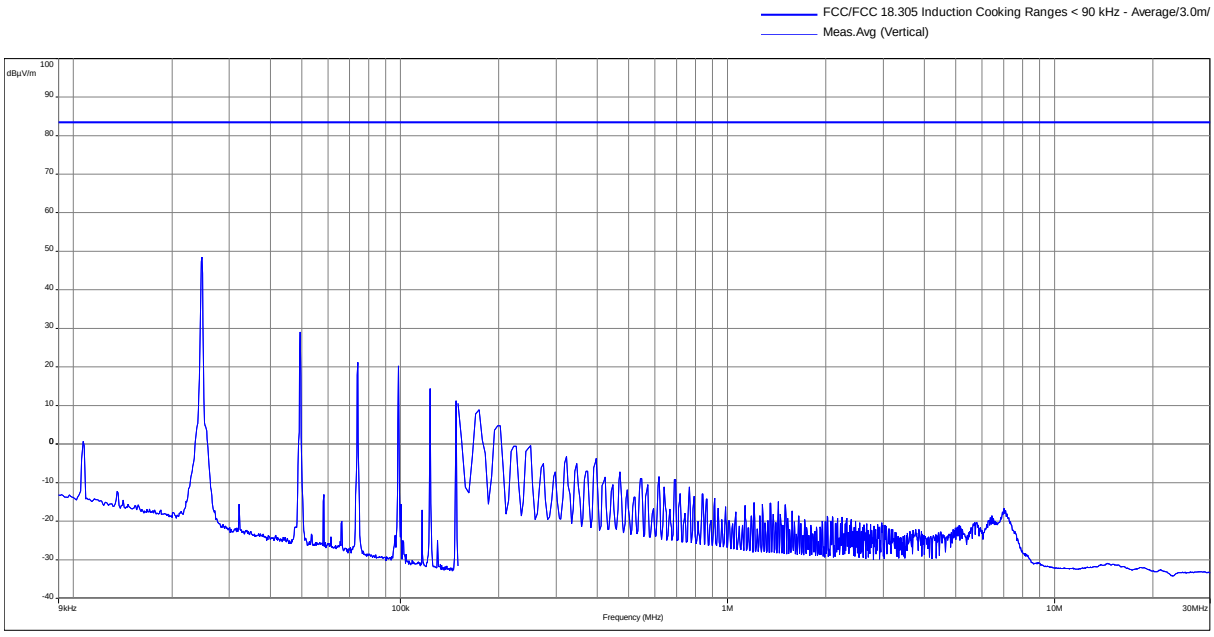
Project number: 212194 Magn	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	Height of the measurement antenna 2 m
Operating mode	Maximum heat setting (9), top right field
Tested by	J. Braasch
Comment on test / measurement	Antenna 90°, with smallest standard pot, diameter 145 mm
Test date	11.08.2015
Test place	SAC
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
1810100	Loop Antenna	Schwarzbeck	FMZB 1513
--	Cable	--	SAC1-1 + SAC1-2 + CP4-1 (Path 2)
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Vertical	100Hz	200Hz	200 ms/Pts	10 dB	OFF	OFF
150kHz - 30MHz	Vertical	4kHz	9kHz	200 ms/Pts	10 dB	OFF	ON



VDE Testing and Certification Institut

Results: Measured peak value is always lower than Average. With sufficient margin no finals

–

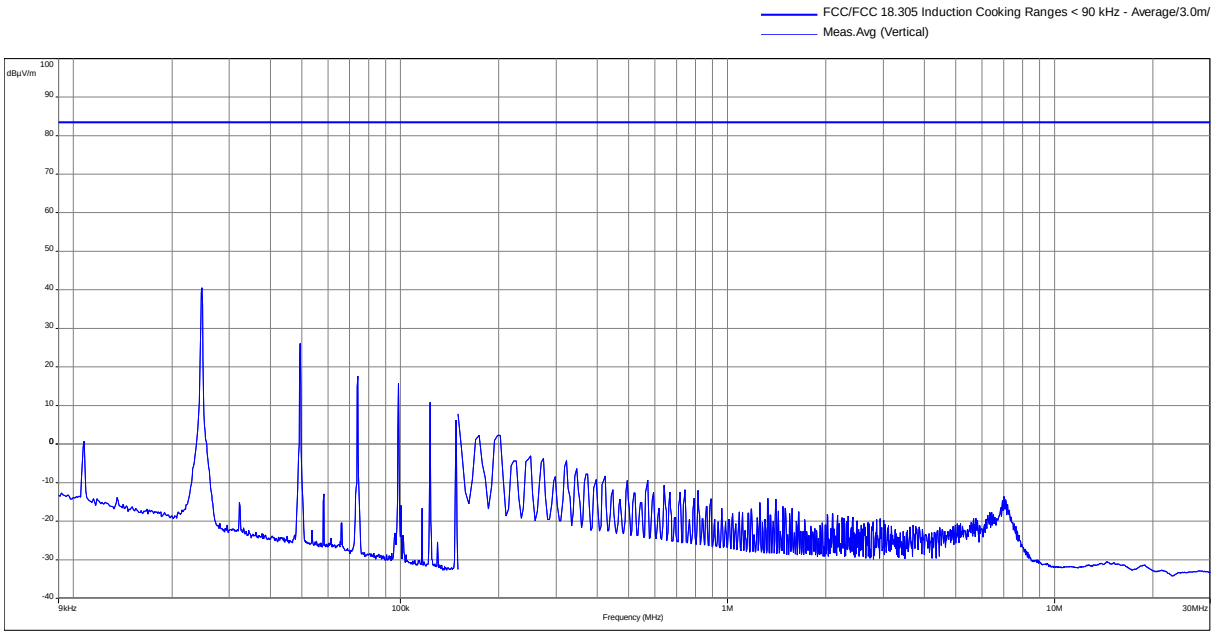
Project number: 212194 Magn	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	Height of the measurement antenna 2 m
Operating mode	Maximum heat setting (9), bottom right field
Tested by	J. Braasch
Comment on test / measurement	Antenna 90°, with smallest standard pot, diameter 145 mm
Test date	11.08.2015
Test place	SAC
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
1810100	Loop Antenna	Schwarzbeck	FMZB 1513
--	Cable	--	SAC1-1 + SAC1-2 + CP4-1 (Path 2)
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Vertical	100Hz	200Hz	200 ms/Pts	10 dB	OFF	OFF
150kHz - 30MHz	Vertical	4kHz	9kHz	200 ms/Pts	10 dB	OFF	ON



VDE Testing and Certification Institut

Results: Measured peak value is always lower than Average. With sufficient margin no finals

–

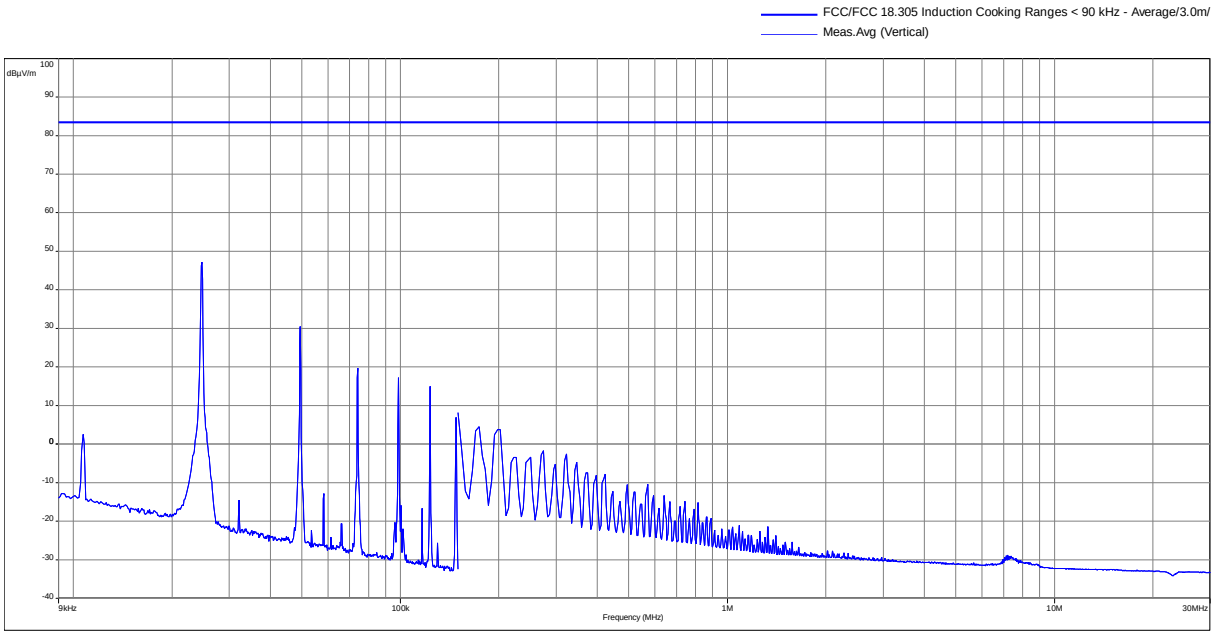
Project number: 212194 Magn	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	Height of the measurement antenna 2 m
Operating mode	Maximum heat setting (9), bottom right field
Tested by	J. Braasch
Comment on test / measurement	Antenna 0°, with smallest standard pot, diameter 145 mm
Test date	11.08.2015
Test place	SAC
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
1810100	Loop Antenna	Schwarzbeck	FMZB 1513
--	Cable	--	SAC1-1 + SAC1-2 + CP4-1 (Path 2)
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Vertical	100Hz	200Hz	200 ms/Pts	10 dB	OFF	OFF
150kHz - 30MHz	Vertical	4kHz	9kHz	200 ms/Pts	10 dB	OFF	ON



VDE Testing and Certification Institut

Results: Measured peak value is always lower than Average. With sufficient margin no finals

–

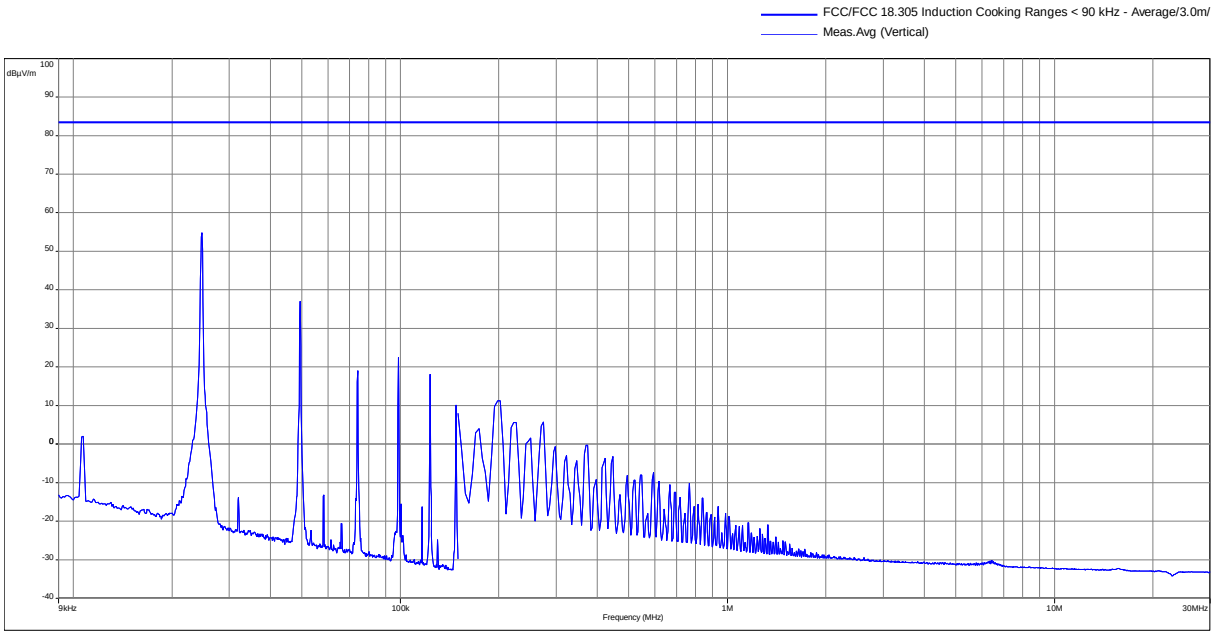
Project number: 212194 Magn	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	Height of the measurement antenna 2 m
Operating mode	Maximum heat setting (9), bottom left field
Tested by	J. Braasch
Comment on test / measurement	Antenna 0°, with smallest standard pot, diameter 145 mm
Test date	11.08.2015
Test place	SAC
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
1810100	Loop Antenna	Schwarzbeck	FMZB 1513
--	Cable	--	SAC1-1 + SAC1-2 + CP4-1 (Path 2)
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Vertical	100Hz	200Hz	200 ms/Pts	10 dB	OFF	OFF
150kHz - 30MHz	Vertical	4kHz	9kHz	200 ms/Pts	10 dB	OFF	ON



VDE Testing and Certification Institut

Results: Measured peak value is always lower than Average. With sufficient margin no finals

–

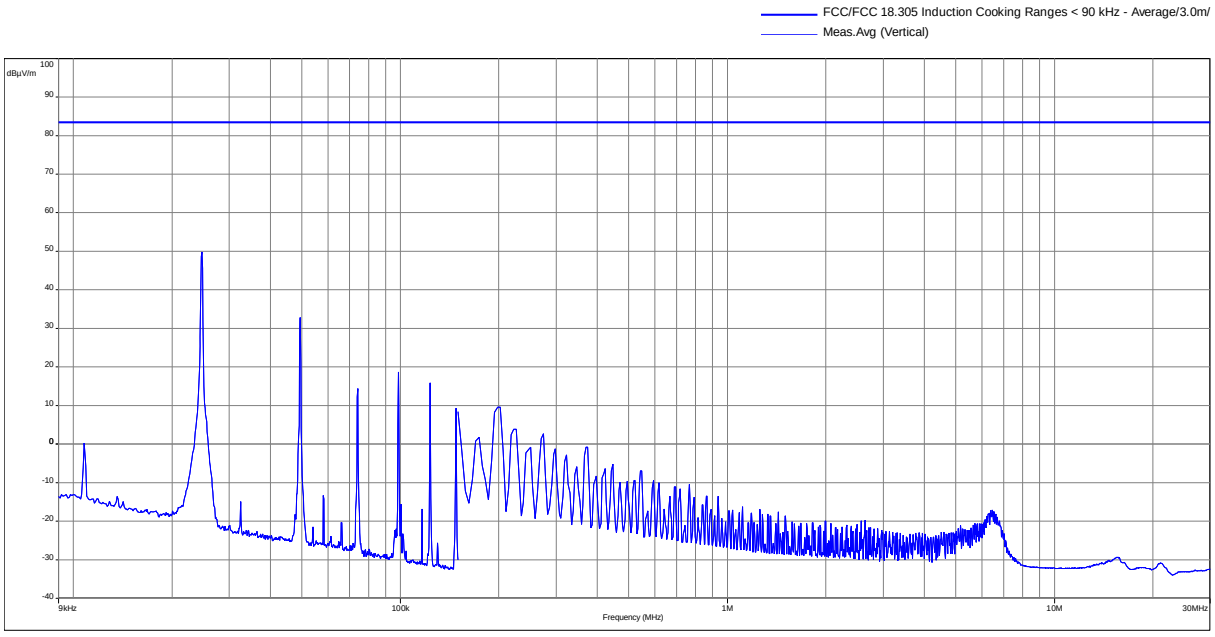
Project number: 212194 Magn	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	Height of the measurement antenna 2 m
Operating mode	Maximum heat setting (9), bottom left field
Tested by	J. Braasch
Comment on test / measurement	Antenna 0°, with smallest standard pot, diameter 145 mm
Test date	11.08.2015
Test place	SAC
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
1810100	Loop Antenna	Schwarzbeck	FMZB 1513
--	Cable	--	SAC1-1 + SAC1-2 + CP4-1 (Path 2)
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Vertical	100Hz	200Hz	200 ms/Pts	10 dB	OFF	OFF
150kHz - 30MHz	Vertical	4kHz	9kHz	200 ms/Pts	10 dB	OFF	ON



VDE Testing and Certification Institut

Results: Measured peak value is always lower than Average. With sufficient margin no finals

–

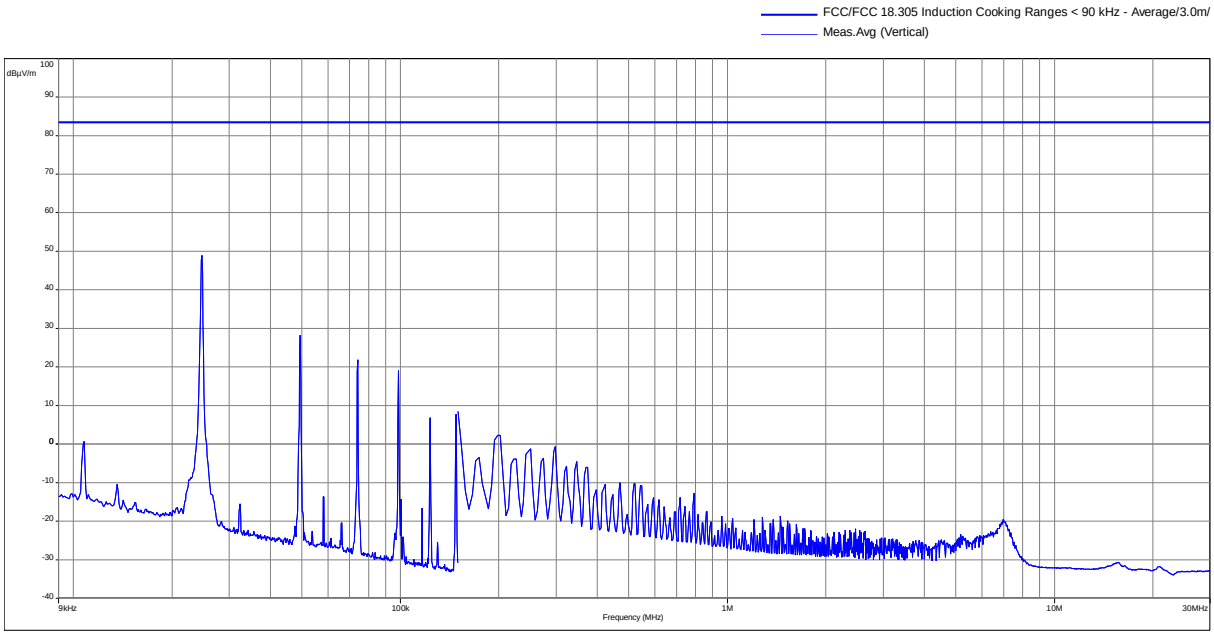
Project number: 212194 Magn	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	Height of the measurement antenna 2 m
Operating mode	Maximum heat setting (9), top left field
Tested by	J. Braasch
Comment on test / measurement	Antenna 0°, with smallest standard pot, diameter 110 mm
Test date	11.08.2015
Test place	SAC
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
1810100	Loop Antenna	Schwarzbeck	FMZB 1513
--	Cable	--	SAC1-1 + SAC1-2 + CP4-1 (Path 2)
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Vertical	100Hz	200Hz	200 ms/Pts	10 dB	OFF	OFF
150kHz - 30MHz	Vertical	4kHz	9kHz	200 ms/Pts	10 dB	OFF	ON



VDE Testing and Certification Institut

Results: Measured peak value is always lower than Average. With sufficient margin no finals

–

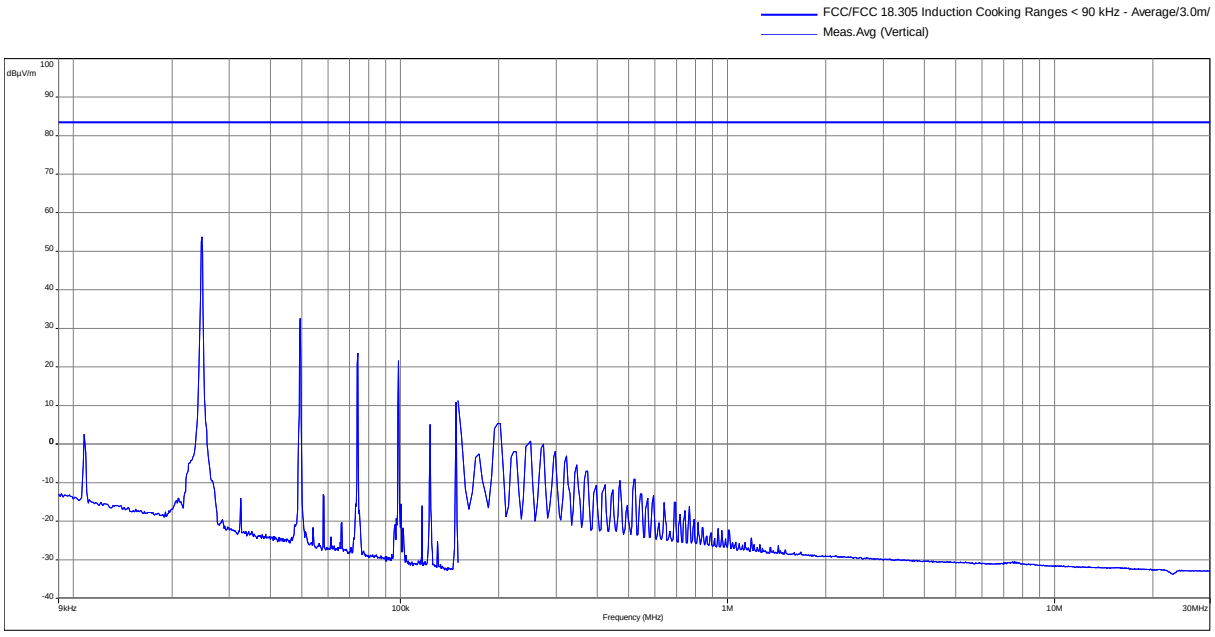
Project number: 212194 Magn	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	Height of the measurement antenna 2 m
Operating mode	Maximum heat setting (9), top left field
Tested by	J. Braasch
Comment on test / measurement	Antenna 0°, with smallest standard pot, diameter 110 mm
Test date	11.08.2015
Test place	
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
1810100	Loop Antenna	Schwarzbeck	FMZB 1513
--	Cable	--	SAC1-1 + SAC1-2 + CP4-1 (Path 2)
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Vertical	100Hz	200Hz	200 ms/Pts	10 dB	OFF	OFF
150kHz - 30MHz	Vertical	4kHz	9kHz	200 ms/Pts	10 dB	OFF	ON



VDE Testing and Certification Institut

Results: Measured peak value is always lower than Average. With sufficient margin no finals

–

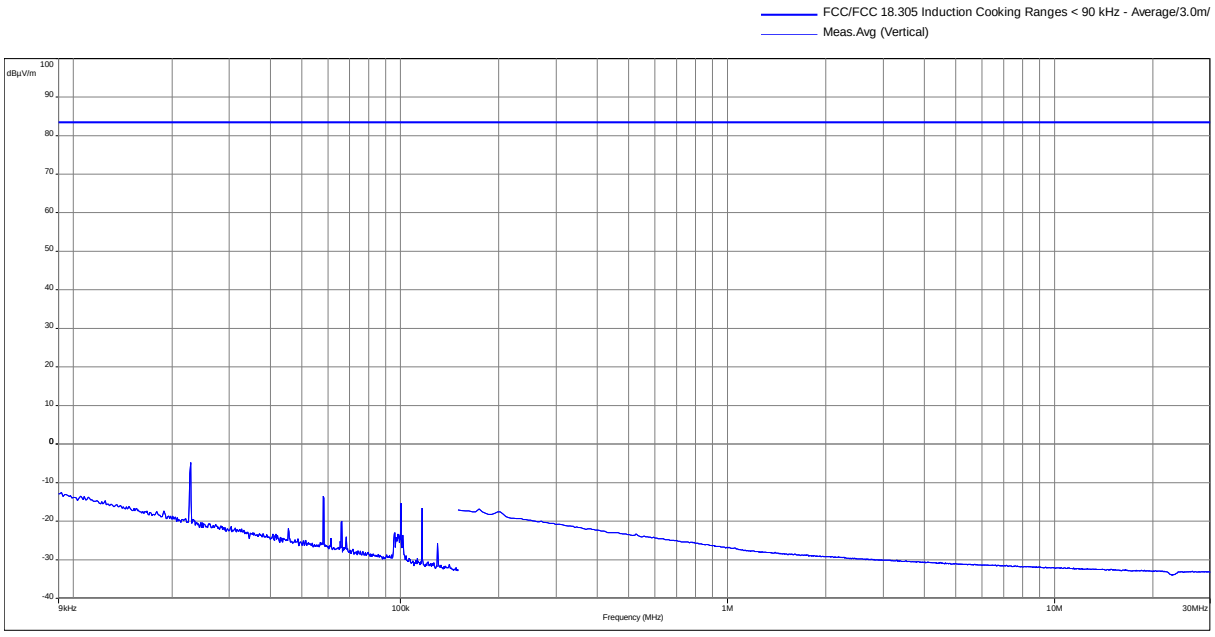
Project number: 212194 Magn	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	Height of the measurement antenna 2 m
Operating mode	standby
Tested by	J. Braasch
Comment on test / measurement	Antenna 0°
Test date	11.08.2015
Test place	SAC
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
1810100	Loop Antenna	Schwarzbeck	FMZB 1513
--	Cable	--	SAC1-1 + SAC1-2 + CP4-1 (Path 2)
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Vertical	100Hz	200Hz	200 ms/Pts	10 dB	OFF	OFF
150kHz - 30MHz	Vertical	4kHz	9kHz	200 ms/Pts	10 dB	OFF	ON



VDE Testing and Certification Institut

Results: Measured peak value is always lower than Average. With sufficient margin no finals

–

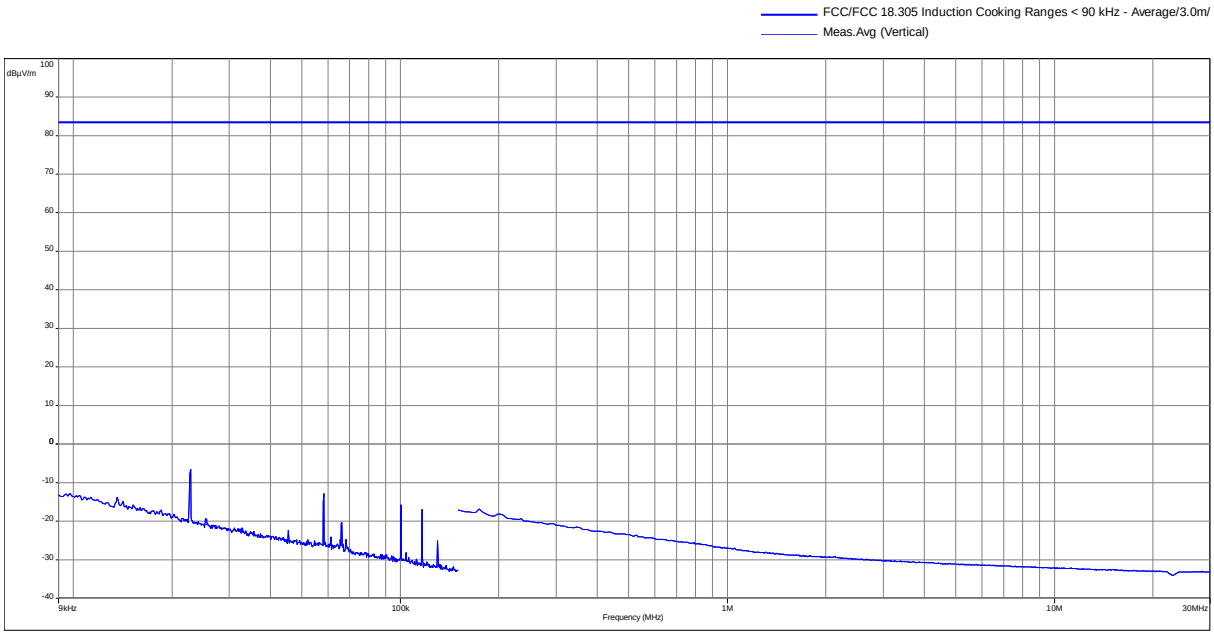
Project number: 212194 Magn	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	Induction cooking range RUEI
Brand	Fulgor
Comment on EUT	Height of the measurement antenna 2 m
Operating mode	standby
Tested by	J. Braasch
Comment on test / measurement	Antenna 0°
Test date	11.08.2015
Test place	SAC
Result	Pass

Instruments:

Inventory number	Description	Manufacturer	Type
1810100	Loop Antenna	Schwarzbeck	FMZB 1513
--	Cable	--	SAC1-1 + SAC1-2 + CP4-1 (Path 2)
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
9kHz - 150kHz	Vertical	100Hz	200Hz	200 ms/Pts	10 dB	OFF	OFF
150kHz - 30MHz	Vertical	4kHz	9kHz	200 ms/Pts	10 dB	OFF	ON



VDE Testing and Certification Institut

Results: Measured peak value is always lower than Average. With sufficient margin no finals

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3.3 Measurement of the electric RF field strength (Above 30 MHz)

General information about the test:

Tested by:	Braasch, Jan
Test date:	2015-08-11

Instruments:	Test location: SAC				
Inventory number	Description	Manufacturer	Type	Date of last calibration	Next calibration due
1810061	Trilog Super Broadband Antenna	Schwarzbeck	VULB 9163	2015-06-02	2018-06
1810096	Pre-Amplifier	Schwarzbeck	BBV 9743	2015-03-12	2016-03
--	Cable	--	SAC1-1 + SAC1-2 + CP6-2 (Path 1)	-	-
1800118	EMI Test Receiver	Rohde & Schwarz	ESI 26	2015-06-25	2017-06
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6	2014-12-17	2016-05
--	Turntable	Frankonia	FC02	-	-

Information concerning the test:

Test set-up:	Test distance 10 m; The EUT was placed on a wooden pallet on the floor.
Operating modes used:	1, 2
Test procedure:	The measurement was done with the average detector on. Bandwidth of 100 kHz in the frequency range from 30 MHz to 1000 MHz; Bandwidth of 1 MHz in the frequency range above 1 GHz The limits were linearly converted from 30 m to 10 m. The receiver readings were maximized by rotating the equipment under test, by variing the antenna height between 1 meter and 4 meters and by changing the antenna polarization (Horizontal and vertical polarization).

Result:	

Protocol:	Next page

Radiated Electrical Emission Measurement

Project number: 212194 10m	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Standby
Tested by	J. Braasch
Comment on test / measurement	no load
Test date	11.08.2015
Test place	SAC
Result	Pass

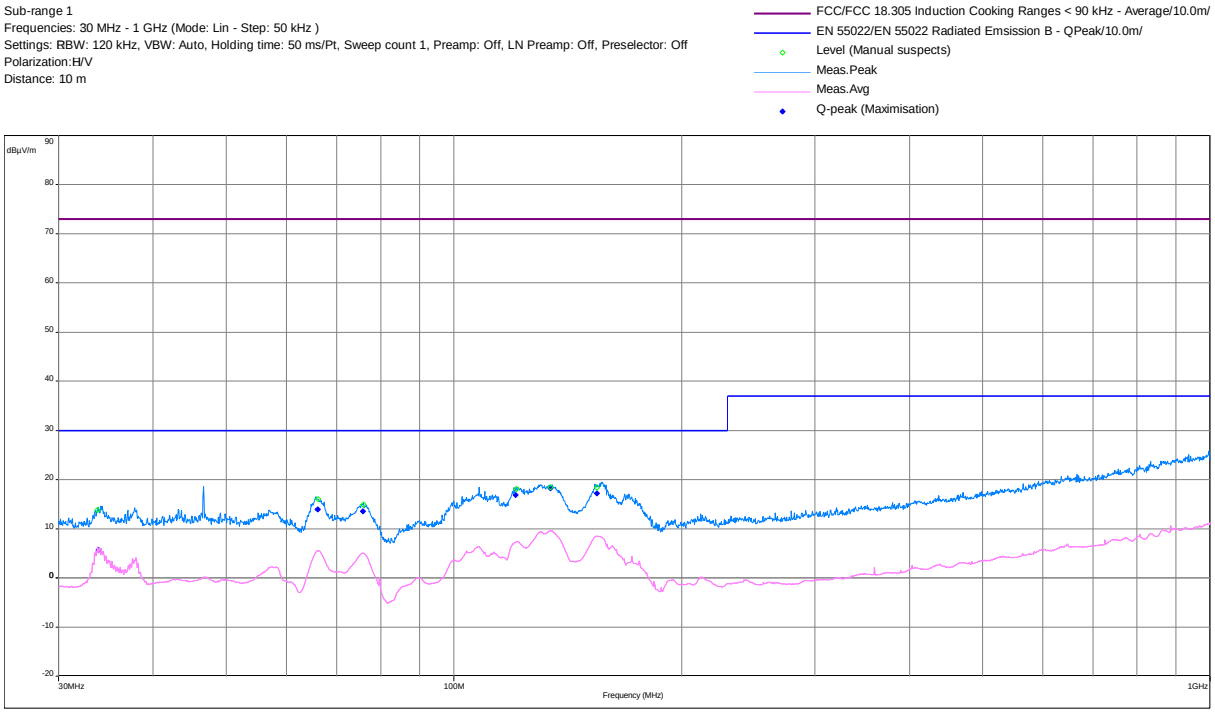
Instruments:

Inventory number	Description	Manufacturer	Type
1810061	Trilog Super Broadband Antenna	Schwarzbeck	VULB 9163
1810096	Pre-Amplifier	Schwarzbeck	BBV 9743
--	Cable	--	SAC1-1 + SAC1-2 + CP6-2 (Path 1)
1800118	EMI Test Receiver	Rohde & Schwarz	ESI 26
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
30MHz - 1GHz	H/V	50kHz	120kHz	50 ms/Pts	10 dB	OFF	OFF

Sub-range 1
Frequencies: 30 MHz - 1 GHz (Mode: Lin - Step: 50 kHz)
Settings: RBW: 120 kHz, VBW: Auto, Holding time: 50 ms/Pt, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:H/V
Distance: 10 m



VDE Testing and Certification Institut

Results:
Maximisation (6)

Frequency (MHz)	SR	Q-peak (dBµV/m)	Angle max (deg.)	Height max (m)	Polarisation	Comments	Correction (dB)
33.9	1	5.71	26.70	1.65	Vertical	Fail	-15.38
66.05	1	13.96	284.30	3.73	Vertical	Fail	-17.56
75.75	1	13.49	359.30	4.00	Vertical	Fail	-18.33
120.65	1	16.88	81.50	1.16	Vertical	Fail	-17.30
134.25	1	18.28	342.90	1.00	Vertical	Fail	-18.39
154.55	1	17.21	172.50	1.07	Vertical	Fail	-18.25

–

Project number: 212194 10m	
File number	212194
Limit / Class	EN 55022 Radiated Emsission / B
Equipment under test (EUT)	induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Maximum heat setting (9), top left field
Tested by	J. Braasch
Comment on test / measurement	with smallest standard pot, diameter 110 mm
Test date	11.08.2015
Test place	SAC
Result	Pass

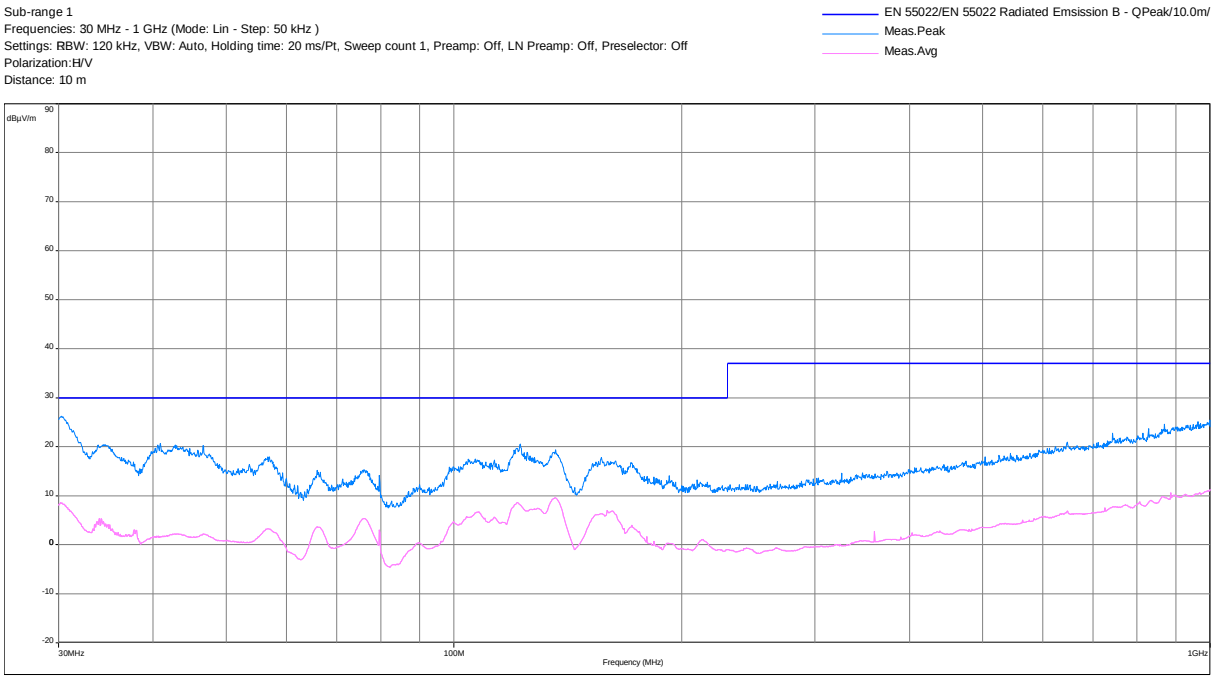
Instruments:

Inventory number	Description	Manufacturer	Type
1810061	Trilog Super Broadband Antenna	Schwarzbeck	VULB 9163
1810096	Pre-Amplifier	Schwarzbeck	BBV 9743
--	Cable	--	SAC1-1 + SAC1-2 + CP6-2 (Path 1)
1800118	EMI Test Receiver	Rohde & Schwarz	ESI 26
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
30MHz - 1GHz	H/V	50kHz	120kHz	20 ms/Pts	10 dB	OFF	OFF

Sub-range 1
Frequencies: 30 MHz - 1 GHz (Mode: Lin - Step: 50 kHz)
Settings: RBW: 120 kHz, VBW: Auto, Holding time: 20 ms/Pt, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:H/V
Distance: 10 m



VDE Testing and Certification Institut

Results: No finals

–

Project number: 212194 10m	
File number	212194
Limit / Class	FCC 18 / --
Equipment under test (EUT)	induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Standby
Tested by	J. Braasch
Comment on test / measurement	no load
Test date	11.08.2015
Test place	SAC
Result	Pass

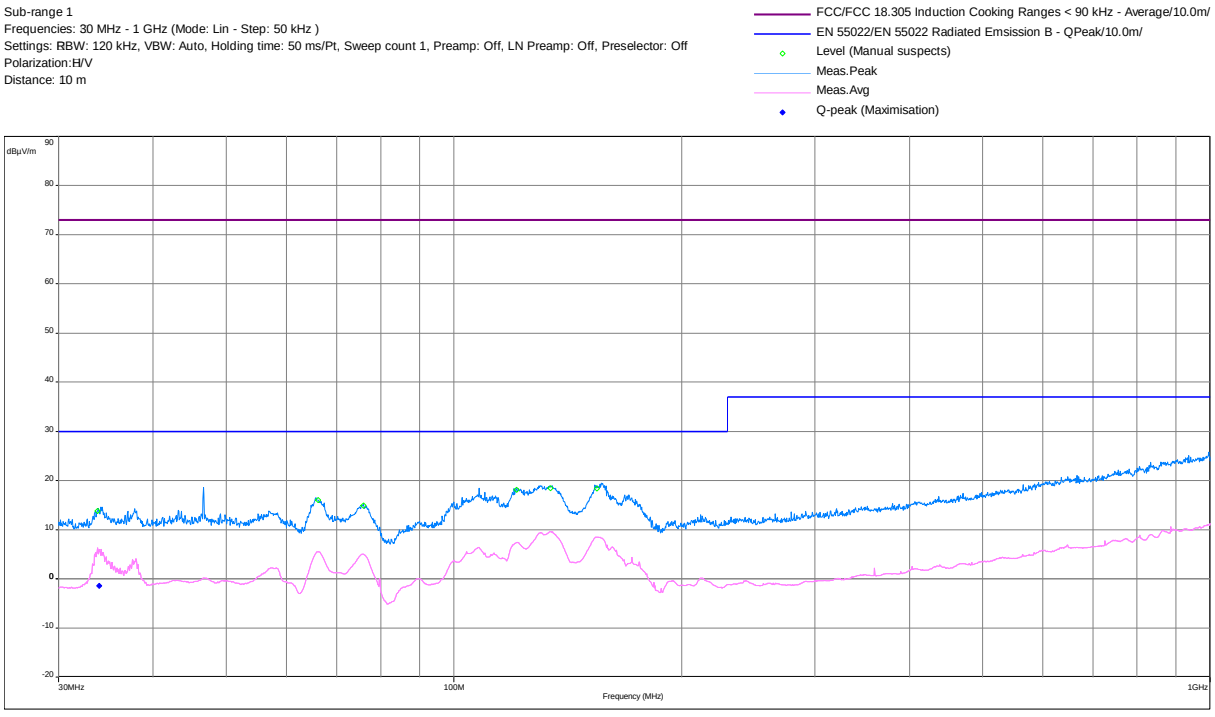
Instruments:

Inventory number	Description	Manufacturer	Type
1810061	Trilog Super Broadband Antenna	Schwarzbeck	VULB 9163
1810096	Pre-Amplifier	Schwarzbeck	BBV 9743
--	Cable	--	SAC1-1 + SAC1-2 + CP6-2 (Path 1)
1800118	EMI Test Receiver	Rohde & Schwarz	ESI 26
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
30MHz - 1GHz	H/V	50kHz	120kHz	50 ms/Pts	10 dB	OFF	OFF

Sub-range 1
Frequencies: 30 MHz - 1 GHz (Mode: Lin - Step: 50 kHz)
Settings: RBW: 120 kHz, VBW: Auto, Holding time: 50 ms/Pt, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:H/V
Distance: 10 m



VDE Testing and Certification Institut

Results:
Maximisation (1)

Frequency (MHz)	SR	Q-peak (dBµV/m)	Angle max (deg.)	Height max (m)	Margin (dB)	Polarisation	Comments	Correction (dB)
33.95	1	-1.42	0.00	1.80	-9999999998.58	Vertical	Fail	-15.37

–

Project number: 212194 10m	
File number	212194
Limit / Class	EN 55022 Radiated Emsission / B
Equipment under test (EUT)	induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Standby
Tested by	J. Braasch
Comment on test / measurement	no load
Test date	11.08.2015
Test place	SAC
Result	Pass

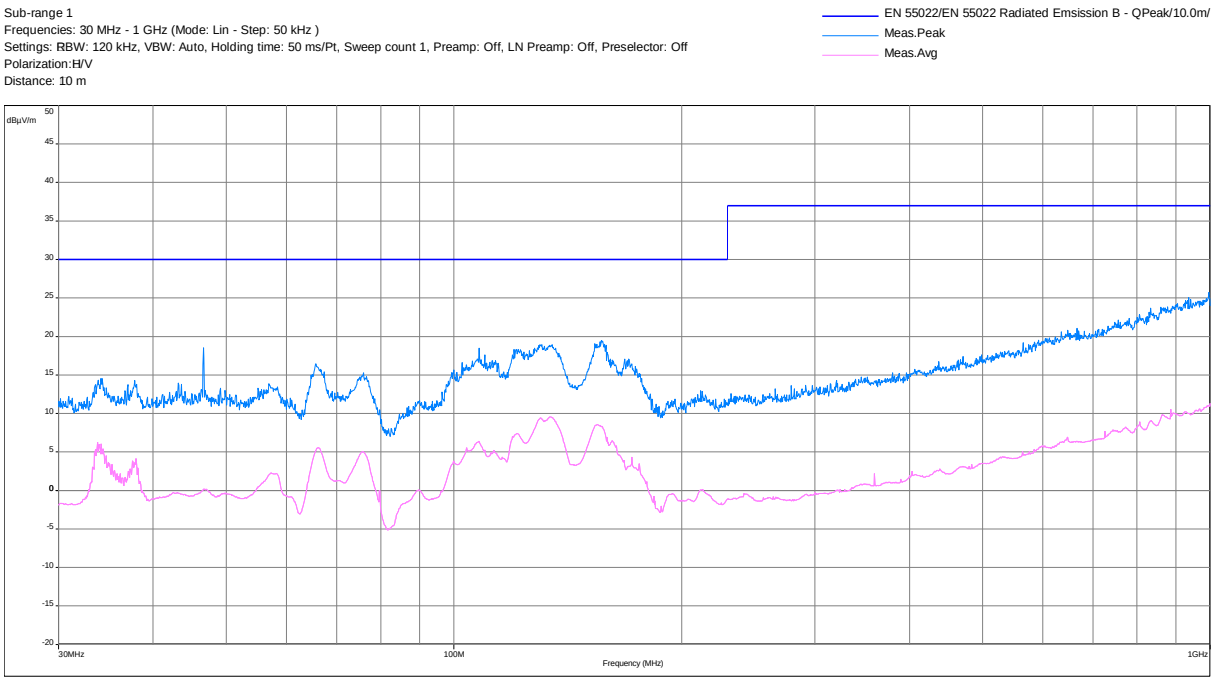
Instruments:

Inventory number	Description	Manufacturer	Type
1810061	Trilog Super Broadband Antenna	Schwarzbeck	VULB 9163
1810096	Pre-Amplifier	Schwarzbeck	BBV 9743
--	Cable	--	SAC1-1 + SAC1-2 + CP6-2 (Path 1)
1800118	EMI Test Receiver	Rohde & Schwarz	ESI 26
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
30MHz - 1GHz	H/V	50kHz	120kHz	50 ms/Pts	10 dB	OFF	OFF

Sub-range 1
Frequencies: 30 MHz - 1 GHz (Mode: Lin - Step: 50 kHz)
Settings: RBW: 120 kHz, VBW: Auto, Holding time: 50 ms/Pt, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:H/V
Distance: 10 m



VDE Testing and Certification Institut

Results: No finals

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Project number: 212194 10m	
File number	212194
Limit / Class	EN 55022 Radiated Emsission / B
Equipment under test (EUT)	induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Maximum heat setting (9), top right field
Tested by	J. Braasch
Comment on test / measurement	with smallest standard pot, diameter 145 mm
Test date	11.08.2015
Test place	SAC
Result	Pass

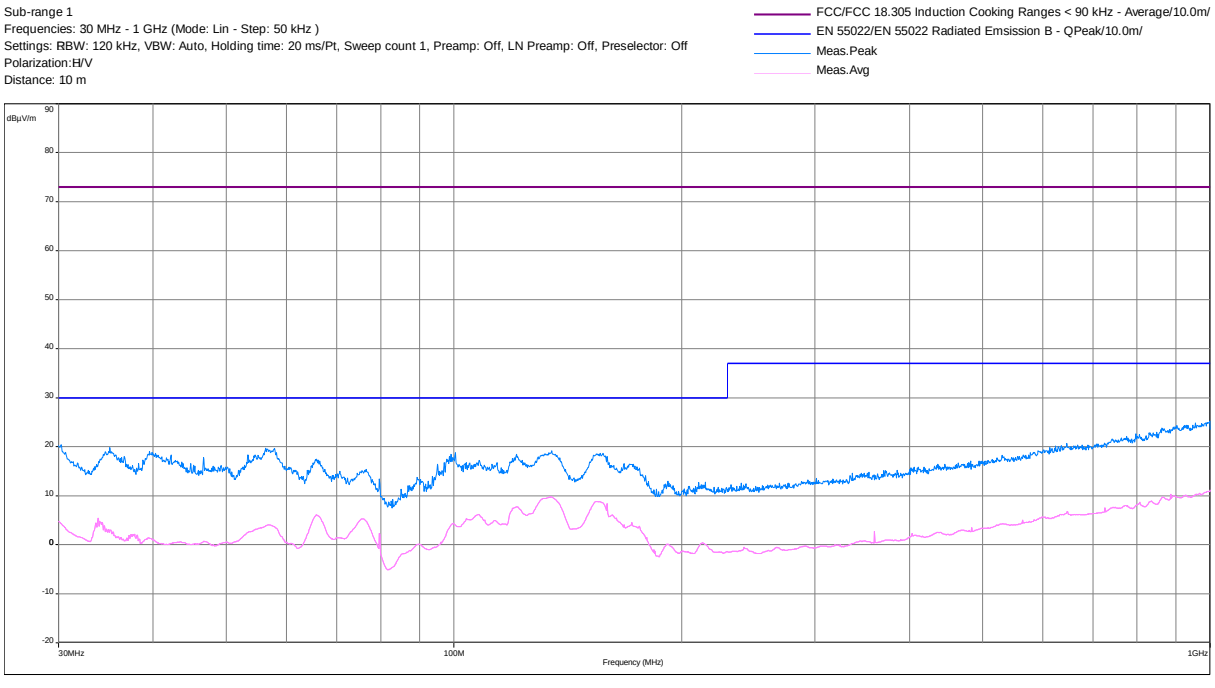
Instruments:

Inventory number	Description	Manufacturer	Type
1810061	Trilog Super Broadband Antenna	Schwarzbeck	VULB 9163
1810096	Pre-Amplifier	Schwarzbeck	BBV 9743
--	Cable	--	SAC1-1 + SAC1-2 + CP6-2 (Path 1)
1800118	EMI Test Receiver	Rohde & Schwarz	ESI 26
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
30MHz - 1GHz	H/V	50kHz	120kHz	20 ms/Pts	10 dB	OFF	OFF

Sub-range 1
Frequencies: 30 MHz - 1 GHz (Mode: Lin - Step: 50 kHz)
Settings: RBW: 120 kHz, VBW: Auto, Holding time: 20 ms/Pt, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:H/V
Distance: 10 m



VDE Testing and Certification Institut

Results:

–

Project number: 212194 10m	
File number	212194
Limit / Class	EN 55022 Radiated Emsission / B
Equipment under test (EUT)	induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Maximum heat setting (9), bottom right field
Tested by	J. Braasch
Comment on test / measurement	with smallest standard pot, diameter 145 mm
Test date	11.08.2015
Test place	SAC
Result	Pass

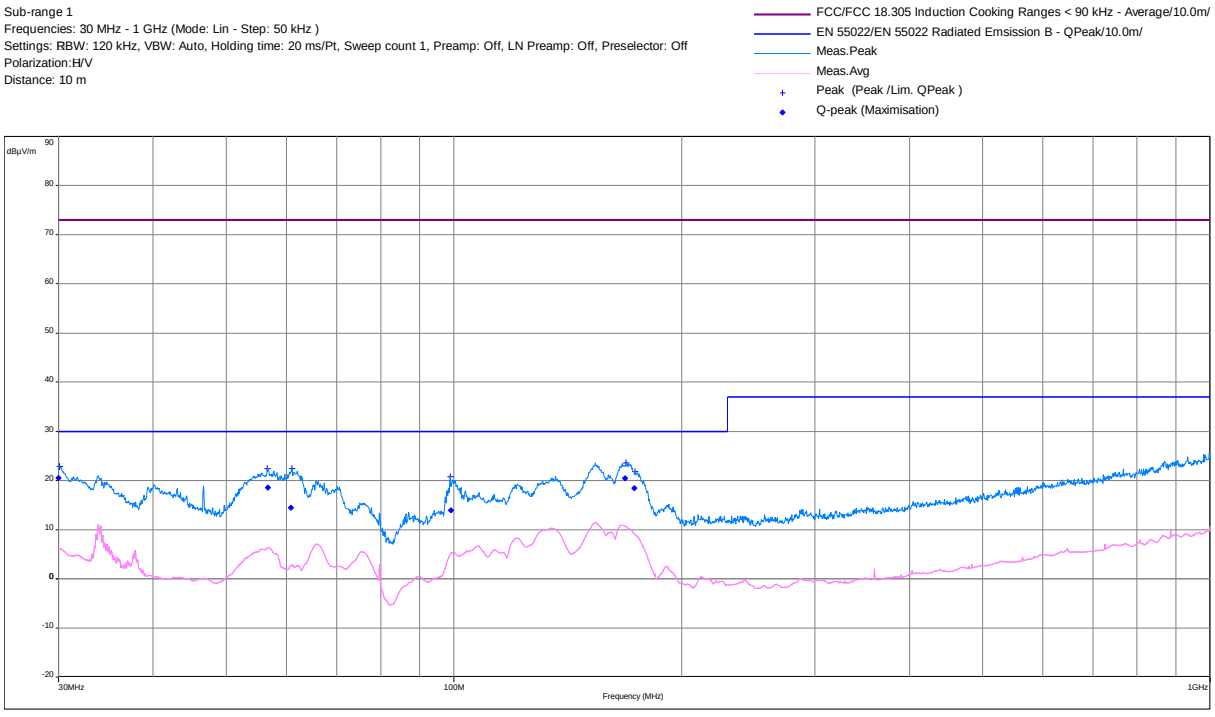
Instruments:

Inventory number	Description	Manufacturer	Type
1810061	Trilog Super Broadband Antenna	Schwarzbeck	VULB 9163
1810096	Pre-Amplifier	Schwarzbeck	BBV 9743
--	Cable	--	SAC1-1 + SAC1-2 + CP6-2 (Path 1)
1800118	EMI Test Receiver	Rohde & Schwarz	ESI 26
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
30MHz - 1GHz	H/V	50kHz	120kHz	20 ms/Pts	10 dB	OFF	OFF

Sub-range 1
Frequencies: 30 MHz - 1 GHz (Mode: Lin - Step: 50 kHz)
Settings: RBW: 120 kHz, VBW: Auto, Holding time: 20 ms/Pt, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:H/V
Distance: 10 m



VDE Testing and Certification Institut

Results:
Maximisation (6)

Frequency (MHz)	SR	Q-peak (dBµV/m)	Angle max (deg.)	Height max (m)	Margin (dB)	Limit (dBµV/m)	Polarisation	Comments	Correction (dB)
30	1	20.55	292.90	1.06	9.45	30.00	Vertical	Pass	-16.18
56.75	1	18.58	0.00	1.44	11.42	30.00	Vertical	Pass	-14.61
60.9	1	14.50	35.00	2.78	15.50	30.00	Vertical	Pass	-15.78
99	1	13.92	84.60	1.50	16.08	30.00	Vertical	Pass	-15.57
168.5	1	20.43	189.10	1.01	9.57	30.00	Vertical	Pass	-17.63
173.3	1	18.44	165.20	1.08	11.56	30.00	Vertical	Pass	-17.35

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Project number: 212194 10m	
File number	212194
Limit / Class	EN 55022 Radiated Emsission / B
Equipment under test (EUT)	induction cooking range RUEI
Brand	Fulgor
Comment on EUT	120 V AC 60 Hz
Operating mode	Maximum heat setting (9), bottom left field
Tested by	J. Braasch
Comment on test / measurement	with smallest standard pot, diameter 145 mm
Test date	11.08.2015
Test place	SAC
Result	Pass

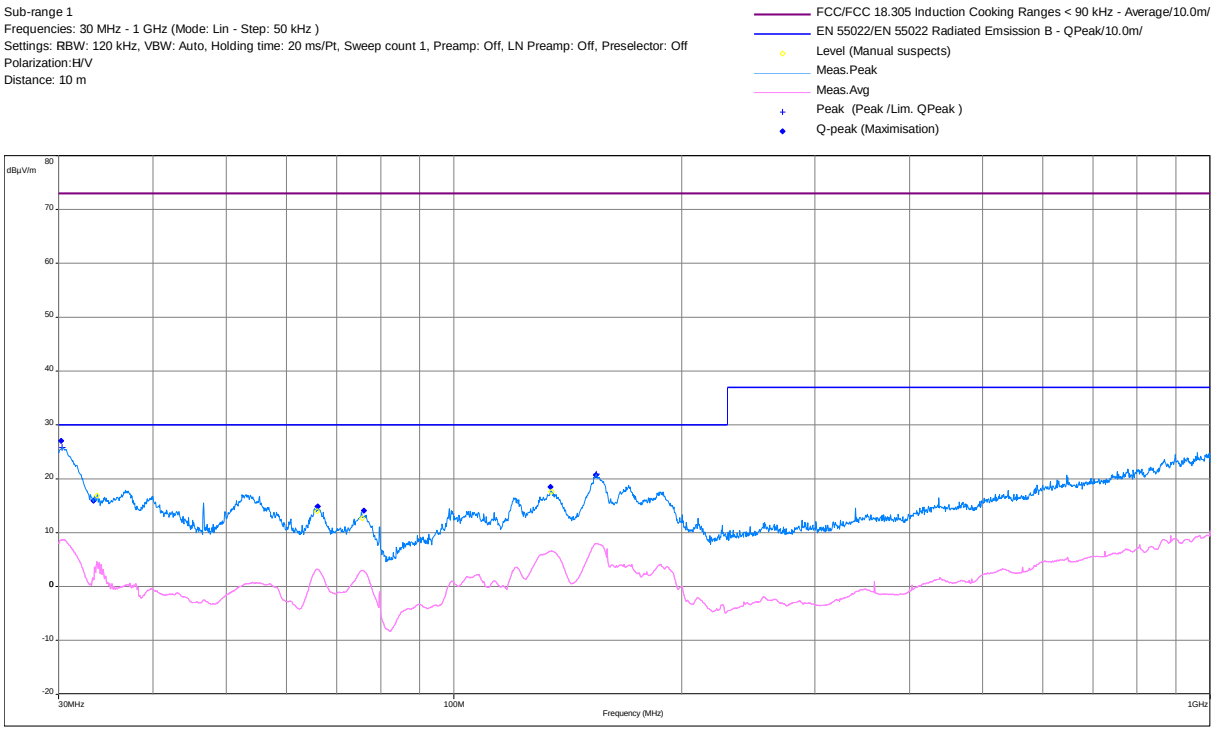
Instruments:

Inventory number	Description	Manufacturer	Type
1810061	Trilog Super Broadband Antenna	Schwarzbeck	VULB 9163
1810096	Pre-Amplifier	Schwarzbeck	BBV 9743
--	Cable	--	SAC1-1 + SAC1-2 + CP6-2 (Path 1)
1800118	EMI Test Receiver	Rohde & Schwarz	ESI 26
1800164	Time-Domain EMI Receiver	Gauss Instruments	TDEMI X6
--	Turntable	Frankonia	FC02

Prescan settings:

Subrange	Line	Frequency step	IF Bandwith	Measurement time	RF Attenuation	Preamplifier	Presel. Multisampling
30MHz - 1GHz	H/V	50kHz	120kHz	20 ms/Pts	10 dB	OFF	OFF

Sub-range 1
Frequencies: 30 MHz - 1 GHz (Mode: Lin - Step: 50 kHz)
Settings: RBW: 120 kHz, VBW: Auto, Holding time: 20 ms/Pt, Sweep count 1, Preamp: Off, LN Preamp: Off, Preselector: Off
Polarization:H/V
Distance: 10 m



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Results:
Maximisation (6)

Frequency (MHz)	SR	Q-peak (dBµV/m)	Angle max (deg.)	Height max (m)	Margin (dB)	Limit (dBµV/m)	Polarisation	Comments	Correction (dB)
30.25	1	27.02	276.00	1.00	2.98	30.00	Vertical	Pass	-16.13
33.35	1	15.89	334.30	1.96	14.11	30.00	Vertical	Pass	-15.47
66.05	1	14.87	321.60	3.14	15.13	30.00	Vertical	Pass	-17.56
76	1	14.13	358.90	3.93	15.87	30.00	Vertical	Pass	-18.30
134.15	1	18.43	326.80	1.07	11.57	30.00	Vertical	Pass	-18.38
154	1	20.71	197.20	1.00	9.29	30.00	Vertical	Pass	-18.26

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4 Appendix

4.1 Photos

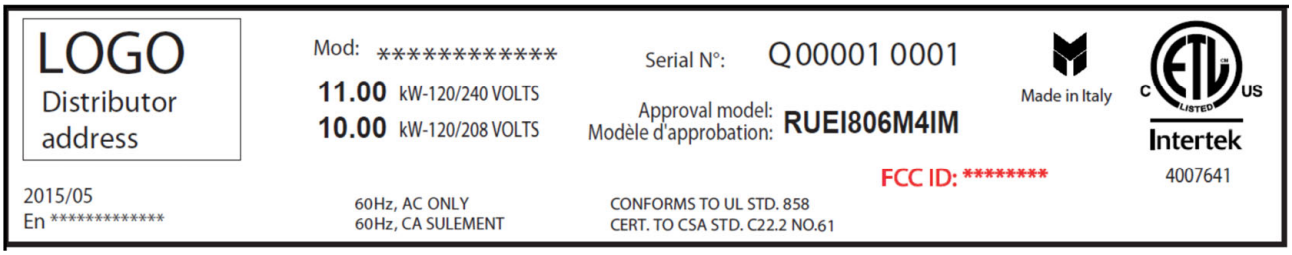

Figure 1: Draft of the type label

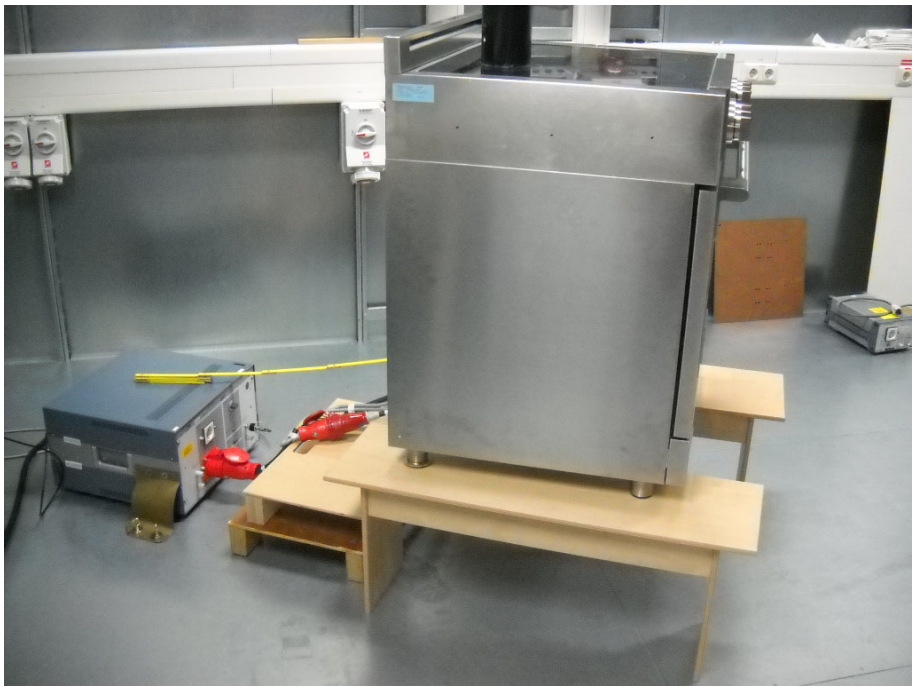

Figure 2: Disturbance Voltage measurement

Figure 3: Disturbance Voltage measurement

Figure 4: Disturbance Voltage measurement

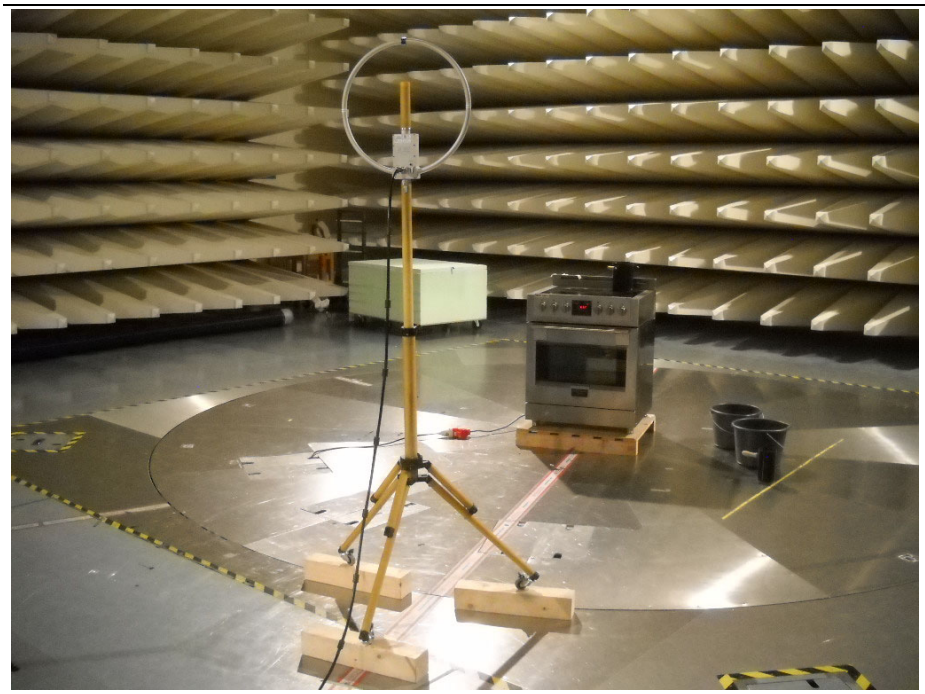

Figure 5: Radiated magnetic emission

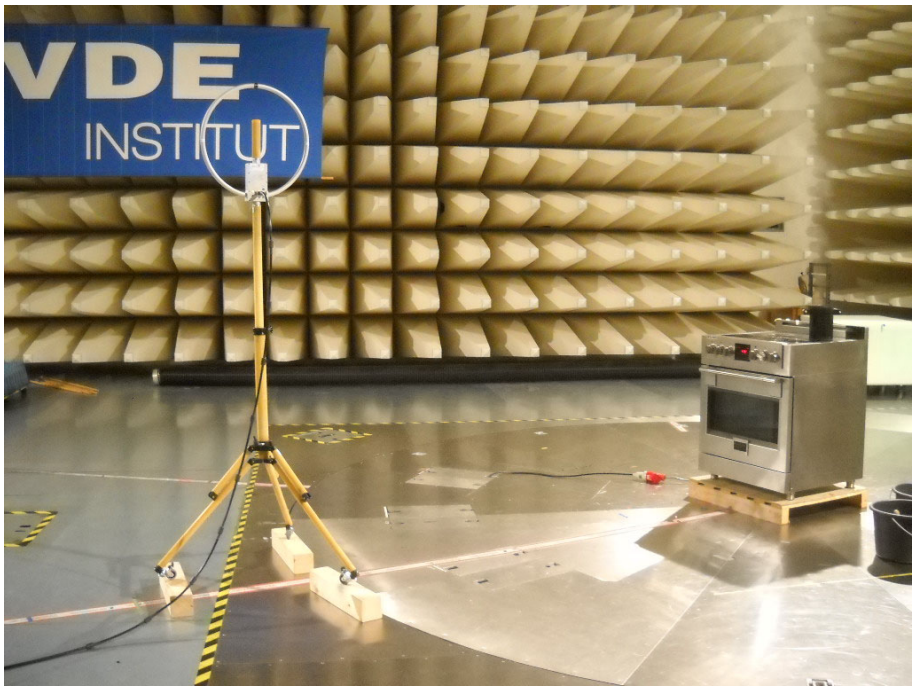

Figure 6: Radiated magnetic emission

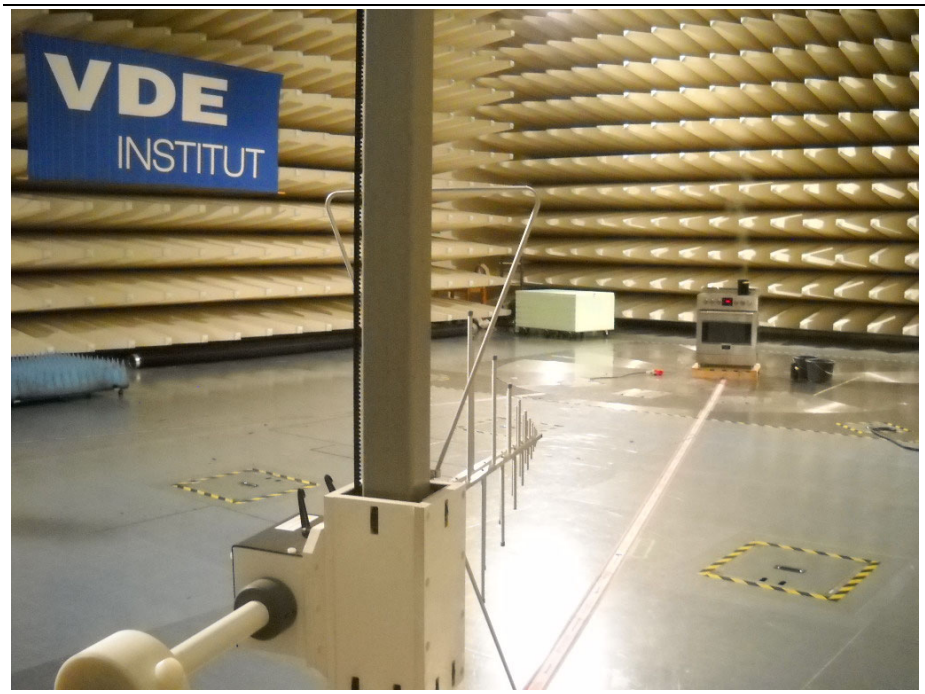

Figure 7: Radiated electric emission

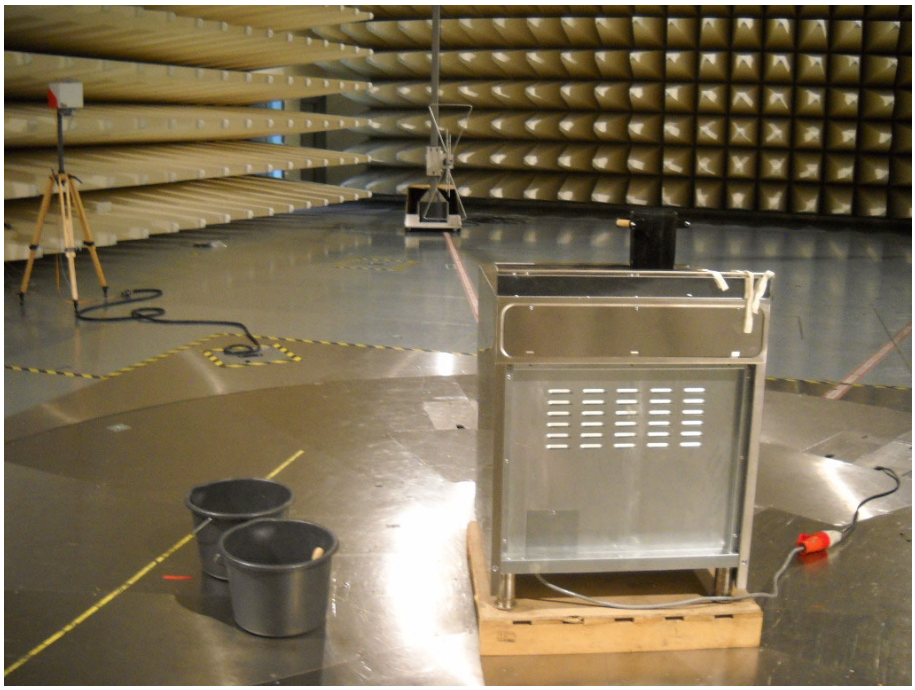

Figure 8: Radiated electric emission

4.2 Uncertainties of measurements

Conducted disturbances

Type of disturbance Test method	Used test equipment	Calculated uncertainty	U_{CISPR}
Disturbance voltage Mains terminals 9 kHz … 150 kHz 150 kHz … 30 MHz	50 Ω || (50 µH + 5 Ω) Artificial mains V-network Test receicer TDEMI	 3.4 dB 3.1 dB	 3.8 dB 3.4 dB
Disturbance voltage Unsym. load terminals and others 150 kHz … 30 MHz	1500 Ω Passive voltage probe Test receicer TDEMI	 2.5 dB	 2.9 dB
Asymmetrical disturbance voltage Telecommunication port 150 kHz … 30 MHz	ISN-T8 Test receicer TDEMI aLCL = 55 … 40 dB aLCL = 65 … 50 dB aLCL = 75 … 60 dB	 3.3 dB 3.8 dB 4.3 dB	 5.0 dB 5.0 dB 5.0 dB
Asymmetrical disturbance voltage Telecommunication port 150 kHz … 30 MHz	Capacitive voltage probe Test receiver TDEMI	 3.7 dB	 3.9 dB
Asymmetrical disturbance current Shielded cables 150 kHz … 30 MHz	RF Current Clamp ESH2-Z1 Test receiver TDEMI	 2.3 dB	 2.9 dB
Disturbance power Power cables and others 30 MHz … 300 MHz	Absorbing clamp Lüthi MDS 21 Test receiver ESCI	 4.1 dB	 4.5 dB

Radiated disturbances

Type of disturbance Test method	Used test equipment	Calculated uncertainty	U_{CISPR}
Magnetic field strength 9 kHz … 30 MHz	Loop antenna 60 cm (HFH2-Z2) Test receiver ESH 2 3 m test distance	 3.66 dB	 not specified
Magnetic field strength (Induced RF current) 9 kHz … 30 MHz	Loop antenna system 2 m Ø (Van Veen) Test receiver ESHS, ESI, ESCI	 3.64 dB	 not specified
Electric field strength Horiz. 30 MHz … 200 MHz Horiz. 200 MHz … 1000 MHz Vert. 30 MHz … 200 MHz Vert. 200 MHz … 1000 MHz	Biconical/Log.-per. combination antenna Test receiver ESVS 30, ESI, ESCI 10 m SAC no external preamp in use	 5.64 dB 4.29 dB 5.45 dB 3.7 dB	 6.3 dB 6.3 dB 6.3 dB 6.3 dB
Electric field strength 1 GHz … 3.5 GHz 3.5 GHz … 7 GHz	Log.per. antenna Spectrum Analyzer FSEK Switching unit with amplifiers + filter 3 m FAR (SAC with floor absorbers)	 5.03 dB 5,50 dB	 5.2 dB 5.5 dB above 6 GHz

The calculated numbers were calculated in accordance with CISPR 16-4-2 (Ed.2):2011. They are valid for the expanded uncertainty (k=2) of measurements that have been carried out in accordance with the provisions of the relevant parts of CISPR 16.

Harmonic currents (50 Hz … 2000 Hz) and Flicker

Type of disturbance Test method	Used test equipment	Measurement uncertainty*)	U_{CISPR}
Harmonic currents EN 61000-3-2 EN 61000-3-12	EN 61000-3-2/-3, -11/-12 Measuring system Spitzenberger & Spies	Fundamental frequency: ± 0.2% of the measured value Harmonic currents: ± 0.2% of the selected measurement range	not applicable
Flicker EN 61000-3-3 EN 61000-3-11	EN 61000-3-2/-3, -11/-12 Measuring system Spitzenberger & Spies	d_c: ± 5% d_{max}: ± 5% P_{st}: ± 8%	not applicable
*) The values presented in the above table were provided by the manufacturer of the measurement system. The publication of the manufacturer does not indicate whether these values are expanded uncertainties or not. An expansion factor was not provided with the data.			

Date: 2013-11-25

Immunity

Type of disturbance Test method	Used test equipment	Calculated uncertainty
Disturbance field strength IEC 61000-4-3 80-1000 MHz 1-3 GHz	Refer to Section 4.4 of this report	 1.79 dB 1.74 dB
Conducted RF IEC 61000-4-6 0.15 - 80 (230) MHz	Refer to Section 4.7 of this report	 0.97 dB

Except for the level of the disturbance when testing against IEC 61000-4-3 or 61000-4-6, there is no standardized procedure for the calculation of uncertainties in immunity measurements and no procedure how to deal with the results of such calculations during testing. Therefore the uncertainties of the immunity test set-ups have not been calculated. All instrumentation used for immunity tests is calibrated and within the specifications required by the basic standards (IEC 61000-4-X).