SGS-CSTC Standards Technical Services Co., Ltd.

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FEDERAL COMMUNICATIONS COMMISSION
Registration number: 282399

TEST REPORT

Application No.:	GZEM1202000260HS
Applicant:	Guangdong Galanz Enterprises Co., Ltd.
FCC ID:	UHWCH1322D
Product Name:	Induction Cooker
Product Description:	Induction Cooker
Model No.:	CH1322D, TS02 ♣
Trade Mark:	Galanz, Hamilton Beach, Proctor Silex ♣
♣	Please refer to section 3 of this report for further details.
Standards:	CFR 47 FCC PART 18: 2012
Date of Receipt:	2013-01-20
Date of Test:	2013-01-21 to 2013-03-06
Date of Issue:	2013-03-11
Test Result :	**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Richard Li
Manager

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00		2013-03-11		Original

Authorized for issue by:				
Tested By		Crystal Wang **(Crystal Wang) / Project Engineer**		2013-01-21 to 2013-03-06 **Date**
Prepared By		Millie Li **(Millie Li) / Clerk**		2013-03-11 **Date**
Checked By		Richard Li **(Richard Li) / Reviewer**		2013-03-11 **Date**

3 Test Summary

Electromagnetic Interference (EMI)				
Test	**Test Requirement**	**Test Method**	**Class / Severity**	**Result**
Conducted Emission (9 kHz to 30 MHz)	FCC PART 18: 2012	FCC OST/ MP-5:1986	18.307(a)	PASS
Radiated Emission (9 kHz to 30 MHz)	FCC PART 18: 2012	FCC OST/ MP-5:1986	18.305(b)	PASS

Remark :

EUT: In this whole report EUT means Equipment Under Test.

♣ Remark:

Model No.: CH1322D, TS02

Trade Mark: Galanz, Hamilton Beach, Proctor Silex

According to the declaration from the applicant, two models are the same except the model name and the brand name.

CH1322D is “Galanz” of the Trade Mark;

TS02 is “Hamilton Beach” and “Proctor Silex” of the Trade Mark.

Therefore only one model **CH1322D** was tested in this report.

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5 General Information

5.1 Client Information

Applicant: Guangdong Galanz Enterprises Co., Ltd.

Address of Applicant: 25 Ronggui Nan.Rd., Shunde, Foshan, Guangdong. China

5.2 General Description of E.U.T.

Product Name: Induction Cooker

Model No.: CH1322D

5.1 Details of E.U.T.

Rated Supply (Voltage): AC120V 60Hz

Power Cable: 1.1m x 3 wires unscreened AC mains cable

Operating Frequency: 22-28KHz

5.2 Description of Support Units

The EUT has been tested with boiler with water.

5.3 Deviation from Standards

None.

5.4 General Test Climate During Testing

Temperature: 15-30 °C Humidity: 30~70 %RH Atmospheric Pressure: 860-1060 mbar

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory,

198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District,

Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

5.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **NVLAP (Lab Code: 200611-0)**

  SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

- **ACMA**

  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

  Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

- **FCC (Registration No.: 282399)**

  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

- **Industry Canada (Registration No.: 4620B-1)**

  The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering of Industry Canada for radio equipment testing with Registration No. 4620B-1.

- **VCCI (Registration No.: R-2460, C-2584, G-449 and T-1179)**

  The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2460, C-2584，G-449 and T-1179 respectively.

- **CBTL (Lab Code: TL129)**

  SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01:2006-10 and Rules of procedure IECEE 02:2006-10, and the relevant IECEE CB-Scheme Operational documents.

6 Equipment Used during Test

Conducted Emission						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date (YYYY-MM-DD)	Calibration Interval
EMC0306	Shielding Room	Zhong Yu	8 x 3 x 3.8 m^3	N/A	N/A	N/A
EMC0118	Two-line v-netwok	R&S	ENV216	100359	2014-03-04	1Y
EMC0102	LISN	SCHAFFNER CHASE	MN2050D/1	1421	2013-9-6	1Y
EMC2046	Artificial Mains Network (LISN)	AFJ Instruments	LT32C	S.N.32031120150	2014-03-04	1Y
EMC0506	EMI Test Receiver	Rohde & Schwarz	ESCS30	100085	2014-03-04	1Y
EMC0107	Coaxial Cable	SGS	2m	N/A	2013-07-10	1Y
EMC0106	Voltage Probe	SGS	N/A	N/A	N/A	1Y
EMC0120	8 Line ISN	Fischer Custom Communications	FCC-TLISN-T8-02	20550	2013-11-5	1Y
EMC0121	4 Line ISN	Fischer Custom Communications	FCC-TLISN-T4-02	20549	2013-11-5	1Y
EMC0122	2 Line ISN	Fischer Custom Communications	FCC-TLISN-T2-02	20548	2013-11-5	1Y
EMC2047	CDN	Elektronik-Feinmechanik	L-801:AF2	2793	2014-11-11	3Y
EMC2048	CDN	Elektronik-Feinmechanik	L-801:M2/M3	2738	2014-11-11	3Y
EMC2062	6dB Attenuator	HP	8491A	24487	2014-01-04	1Y
EMC167	Conical metal housing	SGS-EMC	N/A	N/A	2013-12-16	1Y

RE in Chamber						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date (YYYY-MM-DD)	Calibration Interval
EMC0525	Compact Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	2014-08-30	2Y
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100283	2013-06-29	1Y
EMC0056	EMI Test Receiver	Rohde & Schwarz	ESCI	100236	2014-03-04	1Y
EMC0528	RI High frequency Cable	SGS	20 m	N/A	2013-06-01	1Y
EMC2025	Trilog Broadband Antenna 30-3000MHz	SCHWARZBECK MESS-ELEKTRONIK	VULB 9163	9163-450	2013-12-17	2Y
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	2013-11-27	2Y
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	2014-03-26	2Y
EMC2026	Horn Antenna 1-18GHz	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	9120D-841	2013-11-28	2Y
EMC0518	Horn Antenna	Rohde & Schwarz	HF906	100096	2014-07-01	2Y
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	2014-03-04	1Y
EMC2065	Amplifier	HP	8447F	N/A	2013-11-7	1Y
EMC0075	310N Amplifier	Sonama	310N	272683	2014-03-04	1Y
EMC0523	Active Loop Antenna	EMCO	6502	42963	2014-04-07	2Y
EMC2041	Broad-Band Horn Antenna (14)15-26.5(40)GHz	SCHWARZBECK MESS-ELEKTRONI	BBHA 9170	9170-375	2014-06-01	3Y
EMC0530	10m Semi-Anechoic Chamber	ETS	N/A	N/A	2014-04-27	2Y

General used equipment						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date (YYYY-MM-DD)	Calibration Interval
EMC0006	DMM	Fluke	73	70681569	2013-11-5	1Y
EMC0007	DMM	Fluke	73	70671122	2013-11-5	1Y

7 Emission Test Results

7.1 Conducted Emissions, 9 kHz to 30 MHz

Test Requirement: FCC Part 18

Test Method: FCC OST/ MP-5

Test Date: 2013-01-21

Power Supply: AC 120V 60Hz

Frequency Range: 9 kHz to 30 MHz

Detector: Peak for pre-scan, Quasi-Peak and Average for the final result.
(200 Hz Resolution Bandwidth for 9 kHz to 150 kHz,
9 kHz Resolution Bandwidth for 150 kHz to 30 MHz)

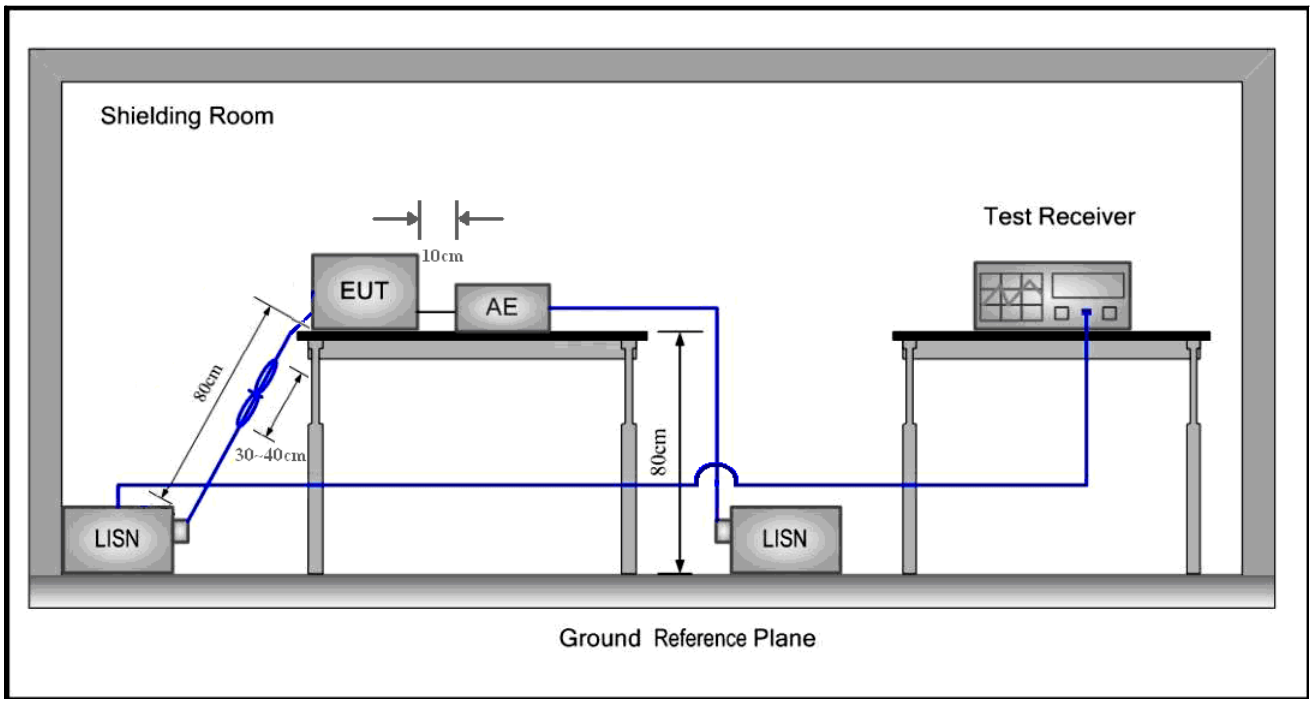
Limit:

Frequency range MHz	**AC mains terminals** dB (μV)	
	Quasi-peak	Average
0.009 to 0.05	110	—
0.05 to 0.15	90 to 80*	—
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50
Note1: The limit decreases linearly with the logarithm of the frequency in the range 0.05 MHz to 0.5MHz. Note2: The lower limit is applicable at the transition frequency.		

7.1.1 E.U.T. Operation

EUT Operation: Test the EUT in cooking mode with max power.

7.1.2 Test Setup and Procedure



1. The mains terminal disturbance voltage test was conducted in a shielded room.
2. The EUT was connected to nominal power supply through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3. The tabletop EUT was placed upon a non-metallic table 1 m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

7.1.3 Measurement Data

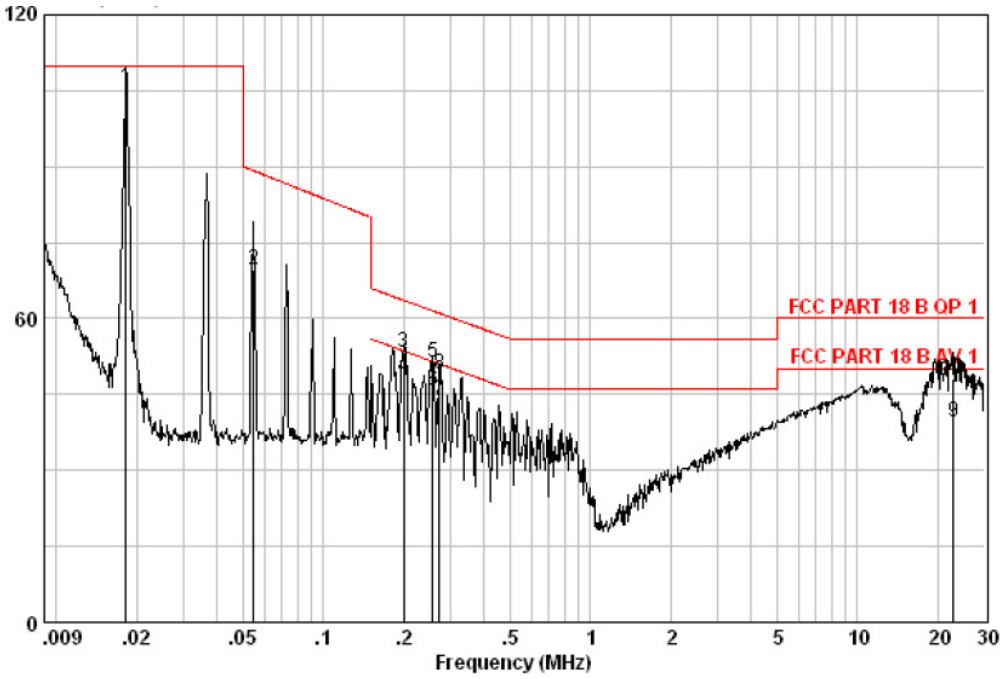
Pre-scan was performed with peak detected on both live and neutral cable. Quasi-peak & average measurements were performed at the frequencies which maximum peak emission level was detected.

Please see the attached Quasi-peak and Average test results.

Live line:

Peak Scan

Level (dBµV)



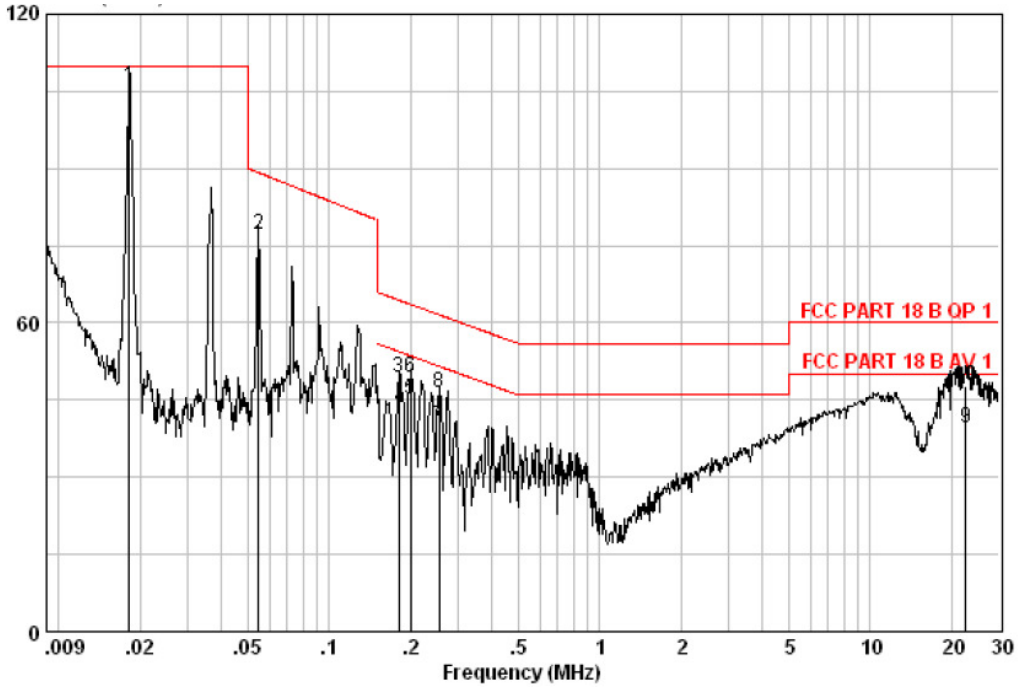
Quasi-peak and Average measurement:

Freq	Read Level	Cable Loss	LISN Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.018	95.69	0.00	9.95	105.64	110.00	-4.36	QP
0.055	60.08	0.00	9.67	69.75	89.14	-19.39	QP
0.200	43.61	0.13	9.62	53.36	63.62	-10.26	QP
0.200	38.55	0.13	9.62	48.30	53.62	-5.32	AVERAGE
0.256	41.48	0.10	9.63	51.21	61.56	-10.34	QP
0.256	36.20	0.10	9.63	45.93	51.56	-5.62	AVERAGE
0.272	34.05	0.09	9.63	43.78	51.07	-7.29	AVERAGE
0.272	39.18	0.09	9.63	48.91	61.07	-12.16	QP
22.896	28.94	0.27	10.39	39.60	50.00	-10.40	AVERAGE
22.896	37.49	0.27	10.39	48.15	60.00	-11.85	QP

Neutral line:

Peak Scan

Level (dBµV)



Quasi-peak and Average measurement:

Freq	Read Level	Cable Loss	LISN Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.018	95.95	0.00	10.02	105.97	110.00	-4.03	QP
0.055	67.54	0.00	9.69	77.23	89.17	-11.93	QP
0.182	39.49	0.11	9.64	49.24	64.42	-15.18	QP
0.182	33.69	0.11	9.64	43.44	54.37	-10.93	AVERAGE
0.200	35.19	0.13	9.64	44.96	53.62	-8.66	AVERAGE
0.200	39.59	0.13	9.64	49.36	63.62	-14.26	QP
0.255	30.24	0.10	9.64	39.98	51.60	-11.62	AVERAGE
0.255	36.56	0.10	9.64	46.30	61.60	-15.30	QP
22.535	28.96	0.27	10.47	39.70	50.00	-10.30	AVERAGE
22.535	37.11	0.27	10.47	47.85	60.00	-12.15	QP

Level = Read Level + Cable Loss + LISN Factor.

7.2 Radiated Emissions, 9 kHz to 30 MHz

Test Requirement: FCC Part 18

Test Method: FCC OST/ MP-5

Power Supply: AC 120V 60Hz

Test Date: 2013-03-06

Frequency Range: 9 kHz to 30 MHz

Measurement Distance: 10 m

Detector: Peak for pre-scan, Average for the final result
(200 Hz Resolution Bandwidth for 9 kHz to 150 kHz
9 kHz Resolution Bandwidth for 150 kHz to 30 MHz)

Limit:

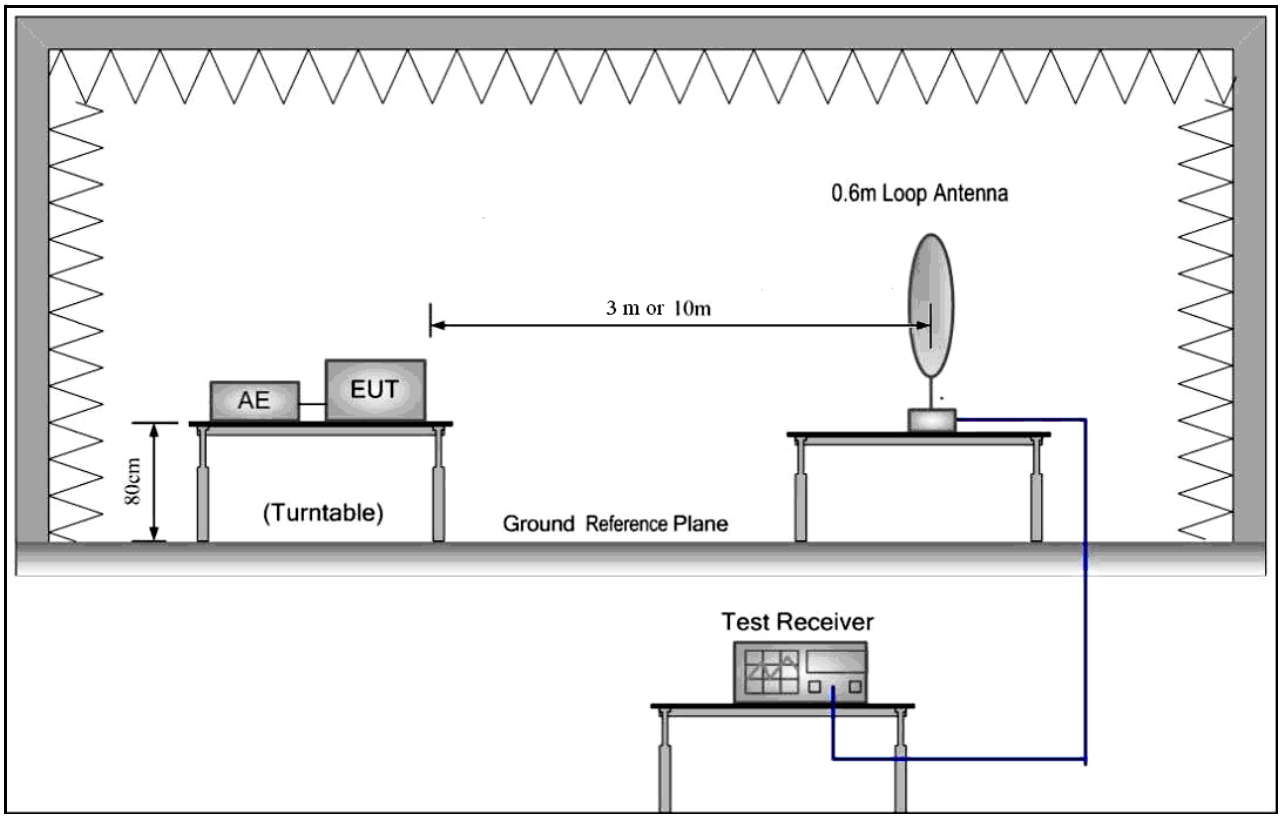
Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
Induction cooking ranges	Below 90 kHz	Any	1,500	[4]30
	On or above 90 kHz	Any	300	[4]30

For Induction cooking ranges and the operating frequency is below 90 kHz, the field strength limit is 1,500 μV/m@30m,
i.e. **20lg (1500)+20lg(30/10)=63.52+9.54=73.06dBuV/m @ 10m distance.**

7.2.1 E.U.T. Operation

EUT Operation: Test the EUT in cooking mode with max power.

7.2.2 Test Setup and Procedure



1. The magnetic emissions test was conducted in a semi-anechoic chamber.
2. The EUT was connected to AC power source through a mains power outlet which was bonded to the ground reference plane; The mains cables shall drape to the ground reference plane.
3. The tabletop EUT was placed upon a non-metallic table 1 m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. Before final measurements of magnetic emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emission spectrum signature data plots of the EUT.

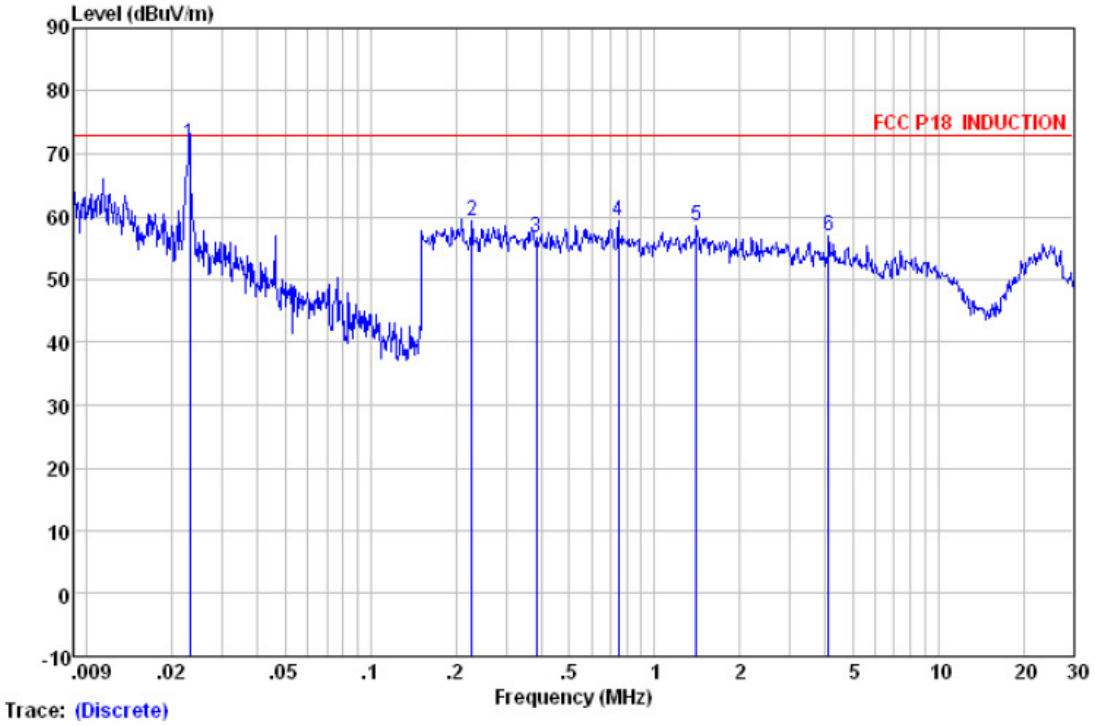
   The frequencies of maximum emission were determined in the final magnetic emissions measurement, The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. At each frequency, the EUT was rotated 360°, the antenna was supported in the vertical plane and be rotatable about a vertical axis. The antenna height was set at around 2 m above the ground reference plane.

7.2.3 Measurement Data

Vertical:

Peak scan

Level (dBμV/m)



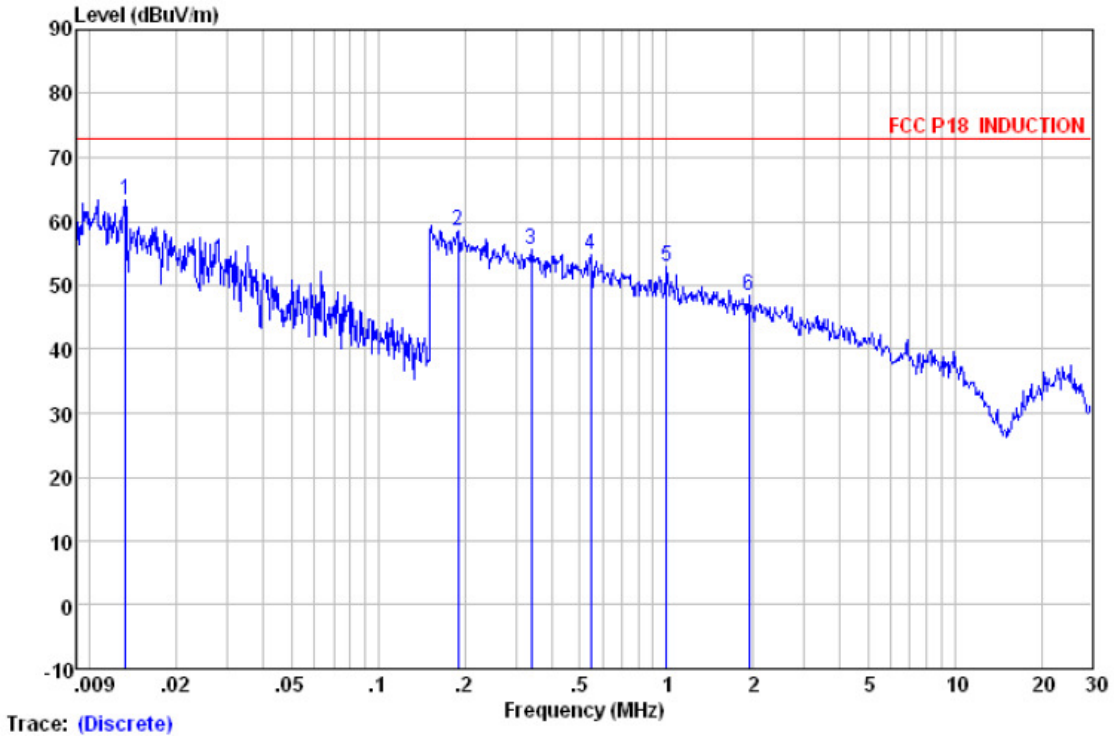
Average measurement

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
0.023	85.03	17.46	0.00	30.77	71.72	73.06	-1.34	Average
0.227	76.60	13.42	0.12	30.83	59.31	73.06	-13.75	Average
0.385	74.01	13.40	0.04	30.83	56.62	73.06	-16.44	Average
0.749	76.59	13.50	0.05	30.85	59.29	73.06	-13.77	Average
1.409	76.04	13.46	0.04	30.90	58.64	73.06	-14.42	Average
4.112	74.88	12.72	0.14	30.92	56.82	73.06	-16.24	Average

Horizontal:

Peak scan

Level (dBμV/m)



Average measurement

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
0.013	72.95	21.05	0.00	30.76	63.24	73.06	-9.82	Average
0.190	75.75	13.51	0.12	30.83	58.55	73.06	-14.51	Average
0.341	72.99	13.40	0.06	30.83	55.62	73.06	-17.44	Average
0.546	72.18	13.42	0.05	30.84	54.81	73.06	-18.25	Average
1.002	70.07	13.60	0.02	30.88	52.81	73.06	-20.25	Average
1.934	65.97	13.31	0.06	30.91	48.43	73.06	-24.63	Average

Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor.

--End of Report--