TÜVRheinland®

Produkte
Products

Prüfbericht - Nr.: *Test Report no.:*	**16029432 001**	**Seite 1 von 25** *Page 1 of 25*

Auftraggeber: *Client:*	**IBC-HEARTHWARE.INC** **880 Lakeside Drive Gurnee** **IL60031** **U.S.A**
Gegenstand der Prüfung: *Test item:*	**Induction Cooker**
Bezeichnung: *Identification:*	**30101** **30121** **FCC ID:** *FCC ID* **Y74HHPIDC**
Wareneingangs-Nr.: *Receipt no.:*	**173058844** **Eingangsdatum:** *Date of receipt:* **21.01.2011**
Prüfort: *Testing location:*	**TÜV Rheinland (Guangdong) Ltd. EMC Laboratory** **Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou 510650** **P. R. China** Listed test laboratory according to FCC rules section 2.948 for measuring devices under Parts 18
Prüfgrundlage: *Test specification:*	**FCC Part 18: 2009-10-1** **Conduct Emissions with limits described at section 18.307 (a)** **Radiated Emissions with limits described at section 18.305 (b)**
Prüfergebnis: *Test result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The test item passed the test specification(s).*
Prüflaboratorium: *Testing laboratory:*	**TÜV Rheinland (Guangdong) Ltd.**

geprüft / *tested by:*			**kontrolliert**/ *reviewed by:*		
03.Mar.2011	Yvonne Zheng Project Manager		04. Mar. 2011	Cherry He Project Manager	
Datum *Date*	**Name/ Stellung** *Name/Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name/ Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges/ *Other aspects:*

Abkürzungen:				*Abbreviations:*			
	P(ass)	=	*entspricht Prüfgrundlage*		*P(ass)*	=	*passed*
	F(ail)	=	*entspricht nicht Prüfgrundlage*		*F(ail)*	=	*failed*
	N/A	=	*nicht anwendbar*		*N/A*	=	*not applicable*
	N/T	=	*nicht getestet*		*N/T*	=	*not tested*

TEST SUMMARY

5.1 CONDUCTED EMISSION FOR FCC PART 18 PER SECTION 18.307 (A)
RESULT: *Pass*

5.2 RADIATED EMISSION FOR FCC PART 18 PER SECTION 18.305 (B)
RESULT: *Pass*

Contents

1 General Remarks

1.1 Complementary Materials

None

2 Test Sites

2.1 Test Facilities

1) TÜV Rheinland (Guangdong) Ltd. EMC Laboratory

Guangzhou Auto Market, Yuan Gang Section of Guangshan Road
Guangzhou 510650
P. R. China

2) SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

198 Kezhu Road, Scientech Park,
Guangzhou Economic & Technology Development District
Guanghzou, Guangdong, China 510663

The test at these test sites has been conducted under the supervision of a TÜV Rheinland engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Type	Manufacturer	S/N	Calibrated until
TÜV Rheinland (Guangdong) Ltd. EMC Laboratory				
EMI Test Receiver	ESCI	Rohde & Schwarz	100216	16.03.2011
Trilog-Broadband Antenna	VULB9168	Schwarzbeck	210	16.03.2011
Loop Antenna	HFH2-Z2	Rohde & Schwarz	100111	16.03.2011
Band Reject Filter	BRM50702	Micro-Tronics	023	16.03.2011
3m Semi-anechoic chamber	---	Albatross Projects	---	16.03.2011
EMI Test Receiver	ESU26	Rohde & Schwarz	100209	04.11.2011
Artificial Mains Network	ESH2-Z5	Rohde&Schwarz	100114	16.03.2011
SGS-CSTC Standards Technical Services Co., Ltd.				
EMI Test Receiver	Rohde&Schwarz	ESIB26	100249	28.10.2011
Bi-log Type Antenna	Schaffner-Chase	CBL6112B	2966	28.10.2011
Bi-log Type Antenna	Schaffner-Chase	CBL6143	5070	28.10.2011
310N Amplifier	Sonama	310N	272683	28.10.2011
10m Semi-Anechoic Chamber	ETS	N/A	N/A	28.10.2011
Active Loop Antenna	EMCO	6502	00042963	28.10.2011

2.3 Trace ability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for conducted emissions measurements is ± 2.68 dB. The estimated combined standard uncertainty for radiated emissions measurements at TUV is ± 4.94 dB, at SGS is ± 2.468 dB.

2.6 Location of original data

The original copies of all test data taken during actual testing were attached on Page 14-15, 18-21 of this report and delivered to the applicant. A copy has been retained in the TUV Rheinland (Guangzhou) file for certification follow-up purposes.

2.7 Status of facility used for testing

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory; Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou 510650, P. R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements, the register no. 833845.

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch, 198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guanghzou, Guangdong, China 510663, is listed on the US Federal Communications Commission list of facilities approved to perform measurements, the register no. 282399.

3 General Product Information

Brief description of the test sample:

The submitted samples 30101, 30121 are Induction Cookers for household use.

The two models are same except packing color. All the tests are performed on 30101.

3.1 Product Function and Intended Use

For details, refer to Technical Documentation and the User Manual.

3.2 Ratings and System Details

Type designation	30101	30121
Power Consumption	1350W	
System input voltage	AC 120V, 60Hz	
Protection class	II	

Refer to this report Technical Documentation for further information.

3.3 Independent Operation Modes

The basic operation modes are:

A: On Power adjustable
Temperature adjustable
Timer

B: Off

3.4 Submitted Documents

Block Diagram
Circuit Diagram
PCB Layout
External Photo
Internal Photo
Label and Location
User Manual

4 Test Set-up and Operation Mode

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Refer to Test set-up in chapter 5.

4.3 Special Accessories and Auxiliary Equipment

Cooking Vessel (provided by TUV EMC lab):

Material: stainless steel

Contact surface diameter 18cm, Top surface diameter 27cm

4.4 Countermeasures to achieve EMC Compliance

No additional countermeasures to the submitted test sample(s) were employed to achieve compliance.

4.5 Test set-up

Diagram 1 of Measurement Equipment Configuration for Testing Conducted Emission

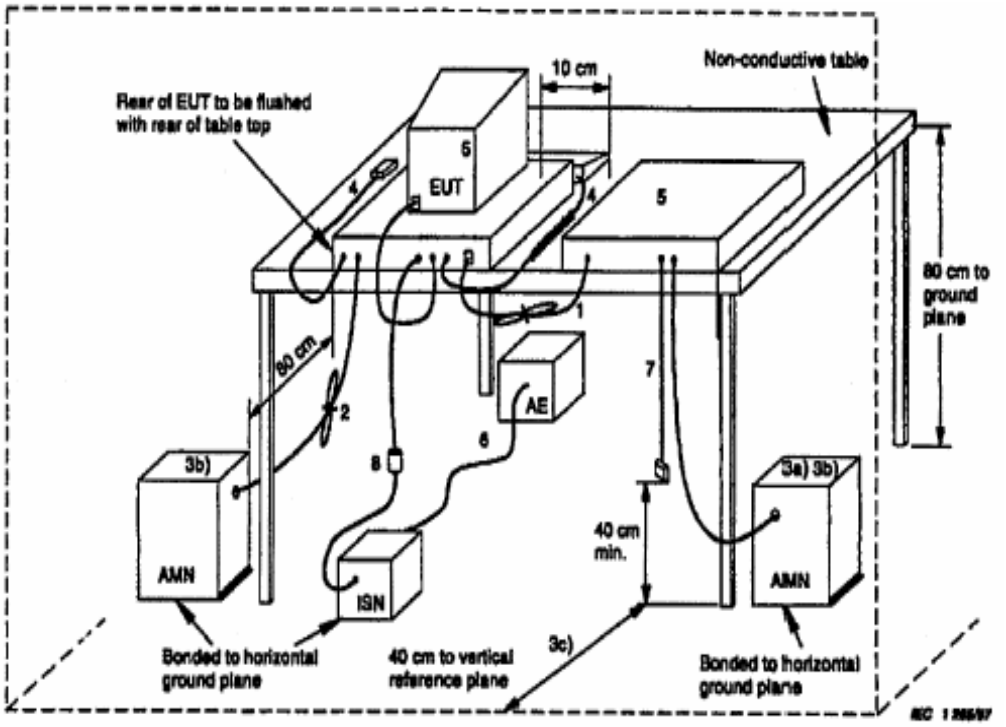
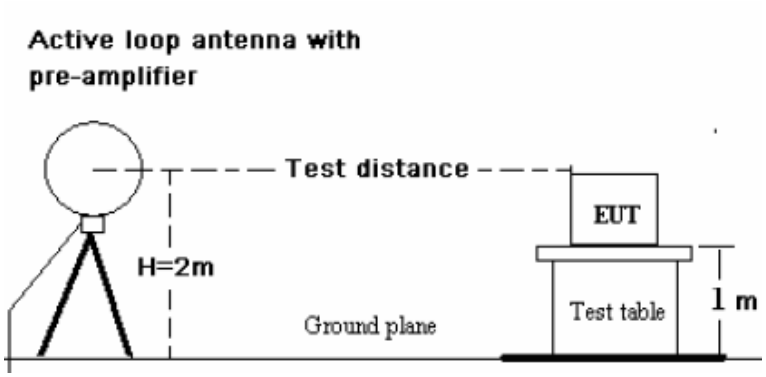
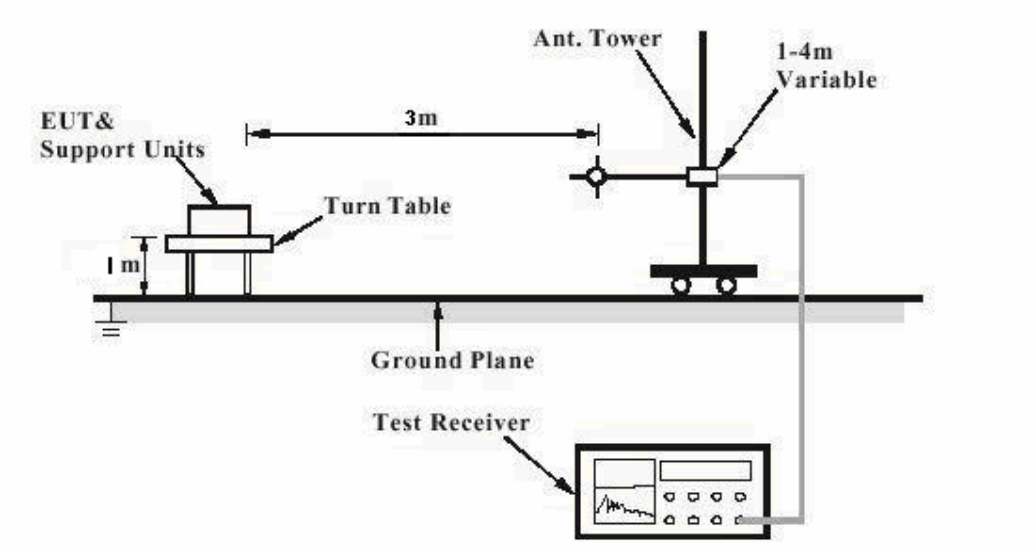


Diagram 2 of Measurement Equipment Configuration for Testing Radiated Emission



10m Semi-anechoic chamber (for 9 kHz-30 MHz)



3m Semi-anechoic chamber (for 30 MHz-1 GHz)

Diagram 3 of Equipment Configuration for Testing Conducted Emission

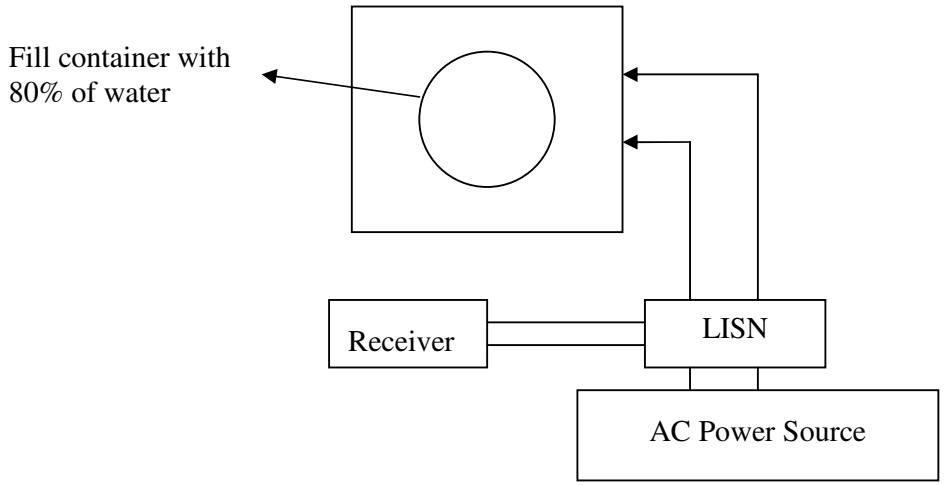
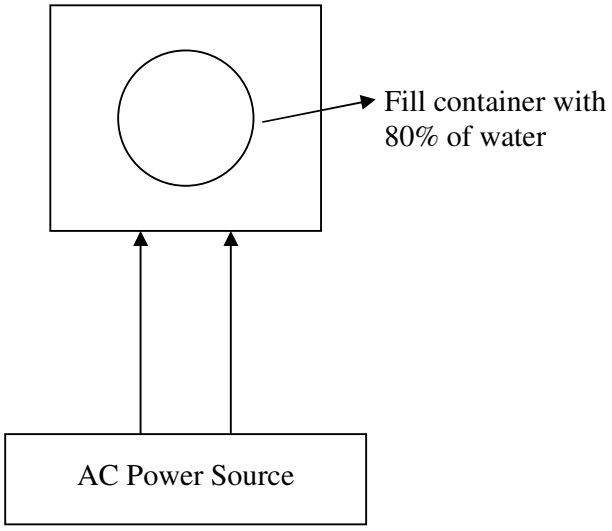


Diagram 4 of Equipment Configuration for Testing Radiated Emission



5 Test Results EMISSION

5.1 Conducted Emission for FCC Part 18 per Section 18.307(a)

RESULT: **Pass**

Date of testing	:	25.Feb.2011
Test specification	:	FCC Part 18 Per Section 18.307(a)
Limits	:	FCC Part 18 Per Section 18.307(a)
Deviations from Standard Test procedures	:	None
Test procedure		Procedure specified in FCC/OST MP-5 were followed
Kind of test site	:	Shielded room
Operation mode	:	A: On with max. power
Temperature	:	20°C
Humidity	:	55%

Test procedure:
1. Place the EUT as specified in FCC/OST MP-5 Clause 7. 1

2. Plug the LISN to a correct power source (pay attention to: AC/DC, voltage, frequency).

3. Connect the EUT to LISN.

4. Connect ESU26 and LISN via a 50-ohm coaxial cable and a pulse limiter then begin exploratory measurement.

5. Make final measurement.

If the result of the measurement with the Quasi Peak detector is below the Average limit, the measurement with Average Detector may be omitted.

Please refer to the following graphs for test data. Disturbances are far below the limit.

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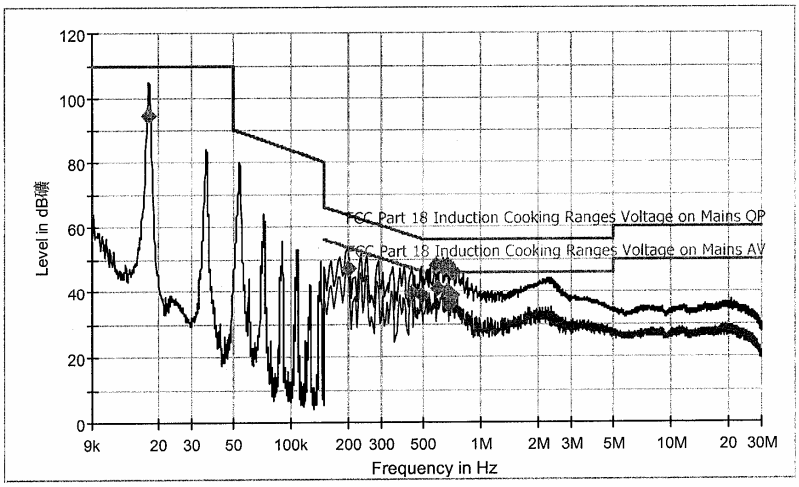
EMC Test Record (EMISSION)

Test Information

Manufacturer:	IBC
Test Item:	Induction Cooker
Identification:	30101
Test Standard:	FCC part 18
Test Detail:	Conducted Emission
Operation Mode:	On with max power
Climate Condition:	20℃; 55 %RH; 101 kPa.
Test Voltage/ Freq.:	AC120 V/ 60 Hz
Port / Line:	L1 & N
Result:	Pass
Hardware Setup:	1phase LISN ESH3-Z5 to ESU26
Level Unit:	dBuV

Subrange	Detectors	IF Bandwidth	Step Size	Meas. Time	Receiver
9kHz – 150kHz	Peak	200Hz	100Hz	50ms	ESU26
150kHz - 30MHz	Peak; Average	9kHz	4.5kHz	10ms	ESU26

FCC Part 18 DV ESH3-Z5 9k to 30M ESCI



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2011.2.26 Checked

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.017900	94.7	1000.0	0.200	L1	10.0	15.3	110.0	
0.577500	47.9	1000.0	9.000	L1	9.9	8.1	56.0	
0.591000	41.0	1000.0	9.000	L1	9.9	15.0	56.0	
0.631500	47.5	1000.0	9.000	L1	9.9	8.5	56.0	
0.667500	48.1	1000.0	9.000	L1	9.9	7.9	56.0	
0.721500	45.7	1000.0	9.000	N	9.9	10.3	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.199500	46.9	1000.0	9.000	L1	10.1	6.7	53.6	
0.433500	39.7	1000.0	9.000	L1	9.9	7.5	47.2	
0.487500	38.9	1000.0	9.000	L1	9.9	7.3	46.2	
0.667500	39.8	1000.0	9.000	L1	9.9	6.2	46.0	
0.685500	35.9	1000.0	9.000	L1	9.9	10.1	46.0	
0.703500	38.7	1000.0	9.000	L1	9.9	7.3	46.0	

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2011.2.26 Checker

5.2 Radiated Emission for FCC Part 18 per Section 18.305(b)

RESULT: **Pass**

Date of testing	:	18.Feb.2011
Test specification	:	FCC Part 18 Per Section 18.305(b)
Limits	:	FCC Part 18 Per Section 18.305(b)
Deviations from Standard Test procedures	:	None
Test procedure		Procedure specified in FCC/OST MP-5 were followed
Kind of test site	:	10m Semi-anechoic chamber (for 9kHz-30MHz) 3m Semi-anechoic chamber (for 30MHz-1GHz)
Operation mode	:	A: On with max. power
Temperature	:	23°C
Humidity	:	52%

Test procedure:

9 kHz-30MHz

1. An initial pre-scan was performed in the 10m chamber using the spectrum analyzer in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by a 0.6m loop antenna.

2. The loop antenna was set to the vertical X, for suspected emission frequency point the antenna was rotated 180 degrees and the maximum emission value was recorded.

3. Then the loop antenna was set to the horizontal Z axis, step 1 is repeated.

3. For each suspected emission frequency point recorded in step 1, the EUT was arranged to its worst case and the EUT was turned from 0 degrees to 360 degrees to read the maximum emission.

30MHz-1GHz

1. The EUT was turned on and placed on the top of a rotatable table 1 meter above the ground with 3-orthogonal XYZ direction and be kept close enough to the measurement receiving antenna (especially for the measurement frequency range above 30MHz). The table was then rotated 360 degrees to detect the suspected emission frequency points. The position of the worst radiation case with both horizontal and vertical receiving antenna polarization was then recorded together with the suspected emission frequency points above-mentioned.

2. The EUT was then set 3 meters away from the receiving antenna, which was mounted on a variable-height antenna tower.

3. For each suspected emission frequency point recorded in step 1, the EUT was arranged to its worst case that the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to read the maximum emission.

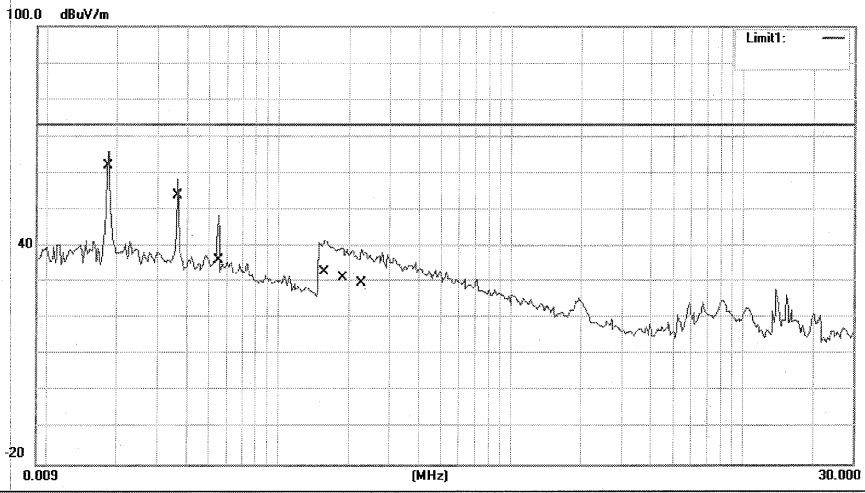
The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200Hz for frequency 9kHz to 150kHz, 9kHz for frequency 150kHz to 30MHz and 120 kHz for frequency 30MHz to 1GHz.

Please refer to the following graphs for test data.

SGS-CSTC Standards Technical Services Co.,Ltd.
Tel:+86(0)20 8215 5314
Fax:+86(0)20 8207 5059

Conducted Emission Measurement

File :0394LR 0 Data :#1 Date: 2011-2-18 Time: 13:58:31



Site Conduction #1 Phase: Temperature: 23 C
Limit: FCC PART 18 Power: 120V Humidity: 52 %
EUT:
M/N:
Mode: V
Note:

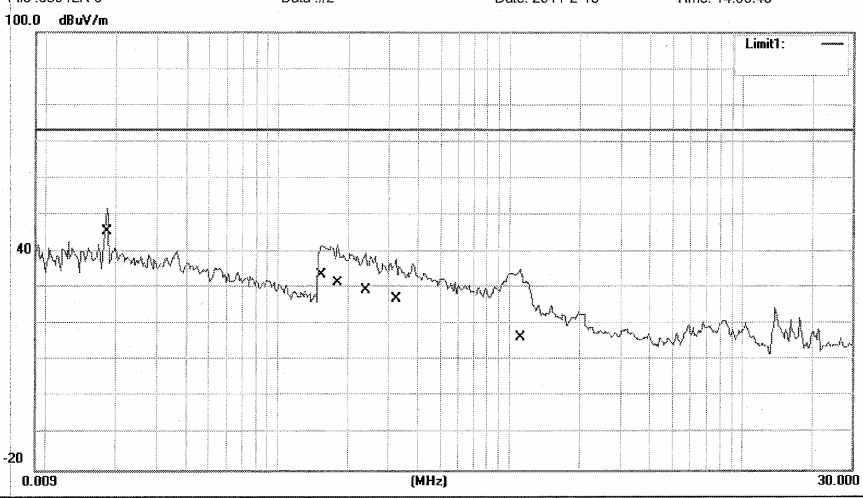
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0183	61.98	0.02	62.00	73.00	-11.00	AVG	
2		0.0367	53.88	0.07	53.95	73.00	-19.05	AVG	
3		0.0544	36.27	0.09	36.36	73.00	-36.64	AVG	
4		0.1578	32.82	0.10	32.92	73.00	-40.08	AVG	
5		0.1890	31.12	0.10	31.22	73.00	-41.78	AVG	
6		0.2281	29.47	0.10	29.57	73.00	-43.43	AVG	

*:Maximum data x:Over limit !:over margin

SGS-CSTC Standards Technical Services Co.,Ltd.
Tel:+86(0)20 8215 5314
Fax:+86(0)20 8207 5059

Conducted Emission Measurement

File :0394LR 0 Data :#2 Date: 2011-2-18 Time: 14:06:43



Site Conduction #1 Phase: Temperature: 23 C
Limit: FCC PART 18 Power: 120V Humidity: 52 %
EUT:
M/N:
Mode: H
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0183	45.63	0.02	45.65	73.00	-27.35	AVG	
2		0.1540	33.88	0.10	33.98	73.00	-39.02	AVG	
3		0.1812	31.48	0.10	31.58	73.00	-41.42	AVG	
4		0.2398	29.32	0.10	29.42	73.00	-43.58	AVG	
5		0.3257	26.75	0.13	26.88	73.00	-46.12	AVG	
6		1.1148	16.34	0.11	16.45	73.00	-56.55	AVG	

*:Maximum data x:Over limit !:over margin

2011.2.26

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EMC Test Record (Emission)

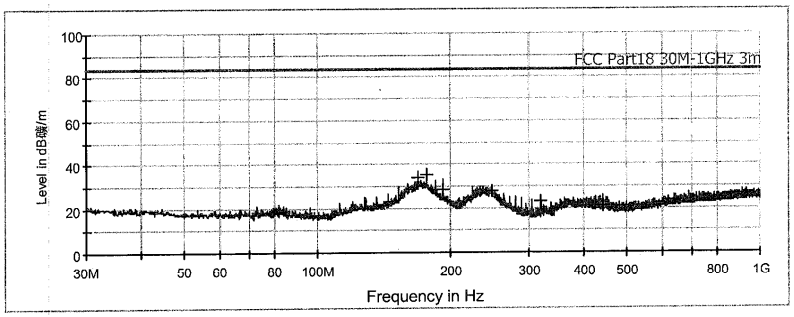
Common Information

Manufacturer:	IBC
Test Item:	Induction Cooker
Identification:	30101
Test Standard:	FCC part 18
Test Detail:	Radiated Emission
Operation Mode:	On with max power
Climate Condition:	20℃; 55 %RH; 101 kPa.
Test Voltage/ Freq:	AC120 V/ 60 Hz
Result:	Pass
Comment:	Test distance is 3m, Horizontal

Subrange 1

Frequency Range:	25M-1GHz
Receiver:	TUV ESCI 3
Transducer:	TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

Pre TUV 30M to 1G UVLB9168



Limit and Margin AV

Frequency (MHz)	Average (dBuV/m)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)	Polarization
168.350000	33.9	13.3	49.6	83.5	H
176.400000	35.2	12.2	48.3	83.5	H
192.350000	28.5	10.4	55.0	83.5	H
248.500000	28.2	11.6	55.3	83.5	H
320.650000	23.1	13.3	60.4	83.5	H
440.900000	21.1	15.8	62.4	83.5	H

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Date: 28/01/2011 - Time: 09:21:01 Tested by: _____ Reviewed by: _____

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

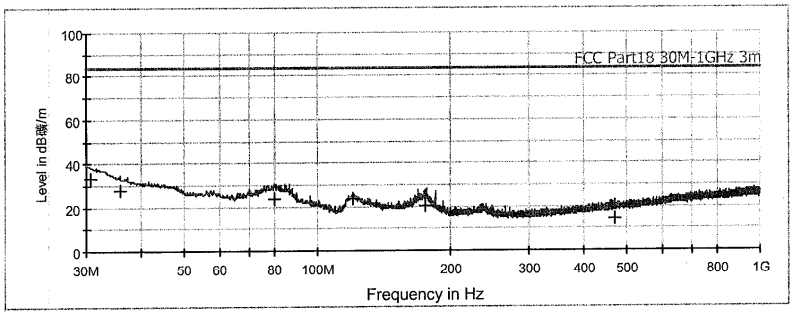
Common Information

Manufacturer:	IBC
Test Item:	Induction Cooker
Identification:	30101
Test Standard:	FCC part 18
Test Detail:	Radiated Emission
Operation Mode:	On with max power
Climate Condition:	20℃; 55 %RH; 101 kPa.
Test Voltage/ Freq:	AC120 V/ 60 Hz
Result:	Pass
Comment:	Test distance is 3m, Vertical

Subrange 1

Frequency Range:	25M-1GHz
Receiver:	TUV ESCI 3
Transducer:	TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

Pre TUV 30M to 1G UVLB9168



Limit and Margin AV

Frequency (MHz)	Average (dBuV/m)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)	Polarization
30.750000	33.5	13.2	50.0	83.5	V
35.700000	28.2	13.5	55.3	83.5	V
79.600000	23.8	9.4	59.7	83.5	V
120.550000	23.8	12.3	59.7	83.5	V
174.750000	20.3	12.5	63.2	83.5	V
470.600000	14.1	16.2	69.4	83.5	V

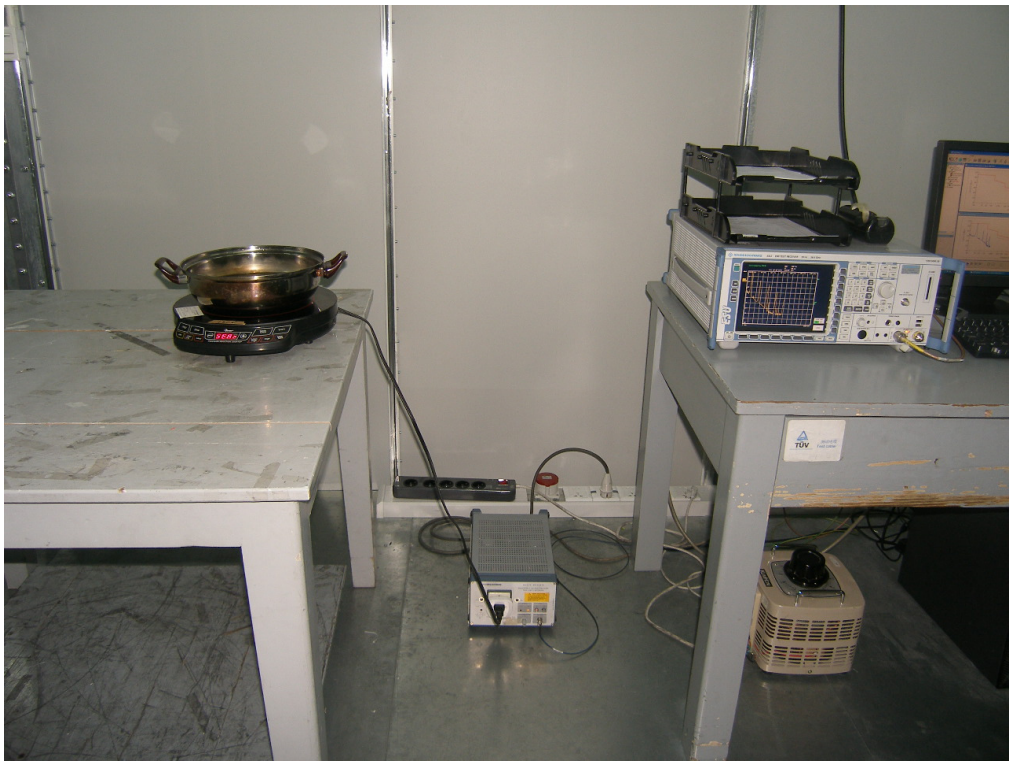
YMZ 2011.2.26

2011.2.26

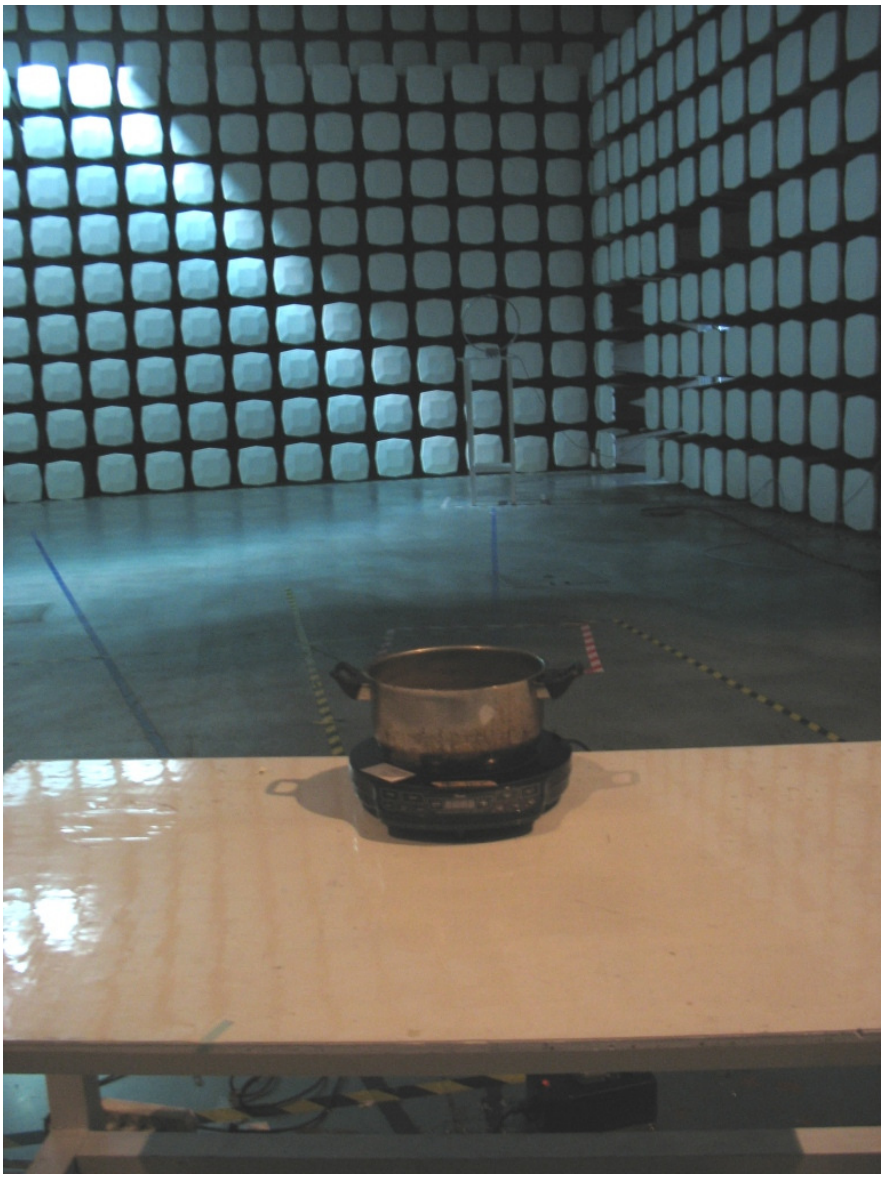
Date: 28/01/2011 - Time: 09:12:29 Tested by: _____ Reviewed by: _____

6 Photographs of the Test Set-Up

Photograph 1: Set-up for Conducted Emission



Photograph 2: Set-up for Radiated Emission



9 kHz – 30 MHz (10m distance)

30MHz - 1GHz (3m distance)

7 List of Tables

8 List of Photographs