

FCC PART 18 TEST REPORT

For

Fruto Industrial International Ltd

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FCC ID:ZBNCIB80

Report Type: Original Report	Product Type: INDUCTION COOKTOP
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	INDUCTION COOKTOP
Model	CIB-80
Voltage Range	AC 120V/60Hz
Measure	37.5cm (L) x 31.0cm (W) x7.0 cm (H)
Operating frequency	27kHz
Date of Test	2019-08-30 to 2019-09-05
Sample serial number	190902551
Received date	2019-07-08
Sample/EUT Status	Good condition

Objective

This report is prepared on behalf of *Fruto Industrial International Ltd* in accordance with Part 2-Subpart J, and Part 18-Subparts A, B and C of the Federal Communication Commissions rules and regulations.

The objective of the manufacturer is to determine compliance with FCC Part 18 limits.

Based on the change made to the device, all the test items were performed.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with MP-5, FCC Methods of Measurements of Radio Noise Emissions from ISM Equipment, February 1986. All measurements were performed at Bay Area Compliance Laboratory Corporation. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		uncertainty
Conducted Emissions		$\pm 1.95\text{dB}$
Radiated Emissions	Below 1GHz	$\pm 4.75\text{dB}$
	Above 1GHz	$\pm 4.88\text{dB}$

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 342867, the FCC Designation No.: CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

OPERATING CONDITION/TEST CONFIGURATION

Justification

The EUT was operated at maximum (continuous) RF output power. The loads consisted of water in a pan in the test procedure.

EUT Exercise Software

No exercise software was used.

Special Accessories

No special accessory was used.

Equipment Modifications

No modifications were made to the EUT tested.

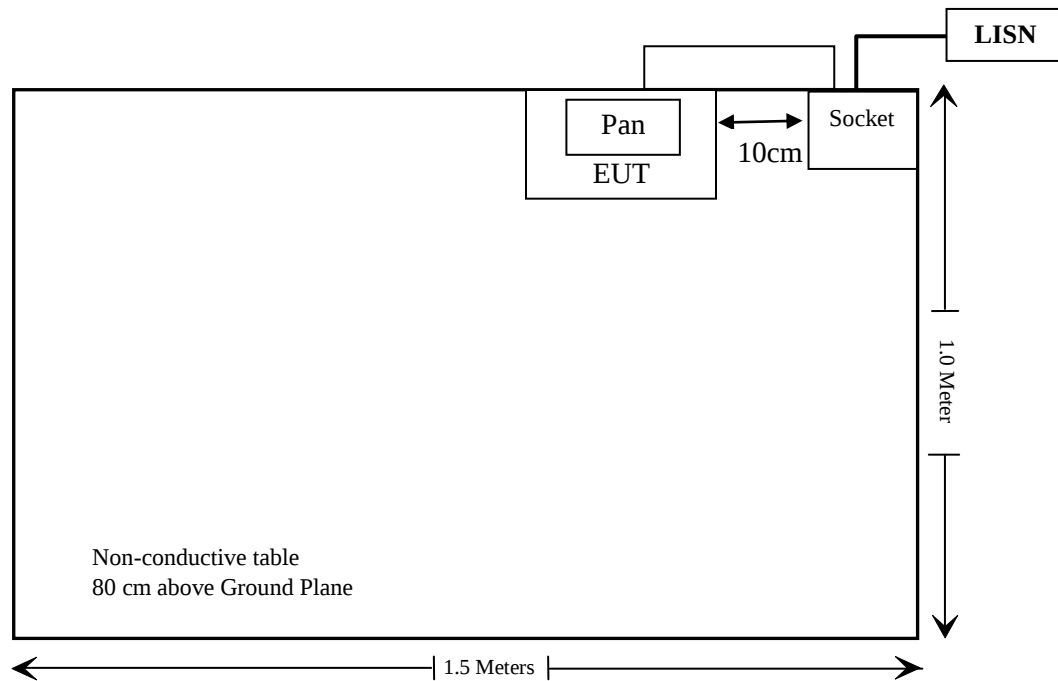
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
OUKE	Pan	N/A	N/A

External Cable List and Details

Cable Description	Length (m)	From/Port	To
Un-shielded Un-detachable AC Cable	1.0	LISN	Socket
Un-shielding Un-detachable AC Cable	1.2	EUT	Socket

Block Diagram of Test Setup



SUMMARY OF TEST RESULT

FCC Rules	Description of Test	Results
§18.307	AC Line Conducted Emissions	Compliance
§18.305	Field Strength	Compliance

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
CONDUCTED EMISSIONS					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2019-07-09	2020-07-08
Rohde & Schwarz	LISN	ENV216	3560.6650.12-101613-Yb	2019-01-25	2020-01-25
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2019-03-02	2020-03-01
Rohde & Schwarz	CE Test software	EMC 32	V8.53.0	NCR	NCR
RADIATED EMISSIONS					
Sonoma Instrument	Amplifier	310N	186238	2018-11-12	2019-11-12
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2019-07-09	2020-07-08
ETS	Passive Loop	6512	00029604	2018-7-14	2021-7-14

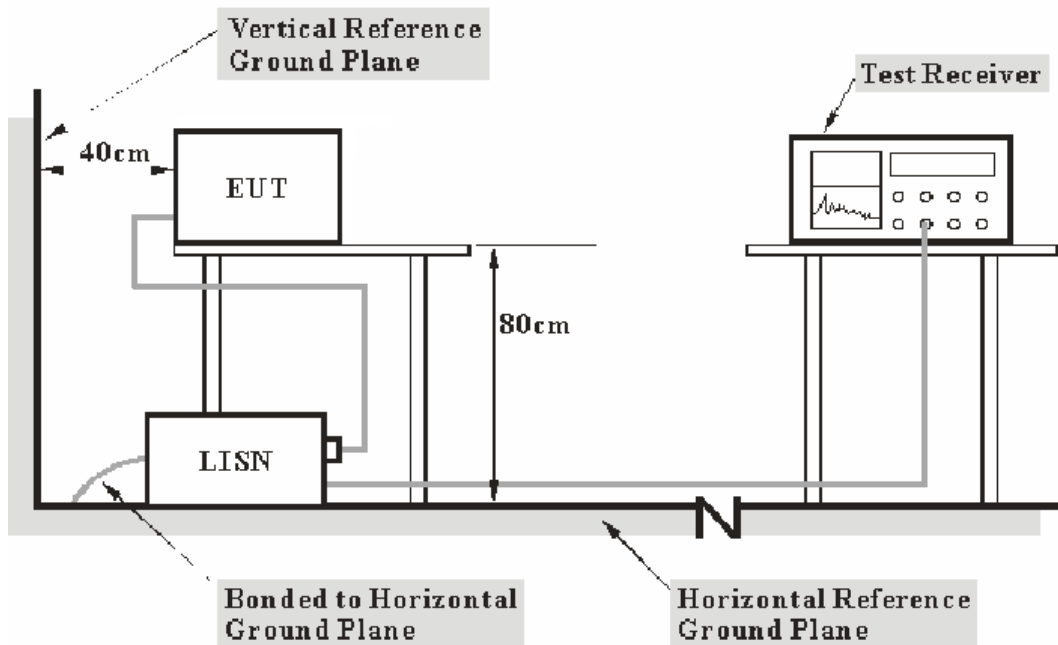
*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

CONDUCTED EMISSIONS

Applicable Standard

FCC §18.307

EUT Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with MP-5: 1986 measurement procedure. Specification used was with the FCC Part 18.

The socket was connected to a 120 VAC/ 60Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
9 kHz – 150 kHz	200 Hz
150 kHz – 30 MHz	9 kHz

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC PART 18,

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level complies with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL., $U_{(Lm)}$ is less than U_{cispr} , if L_m is less than L_{lim} , it implies that the EUT complies with the limit.

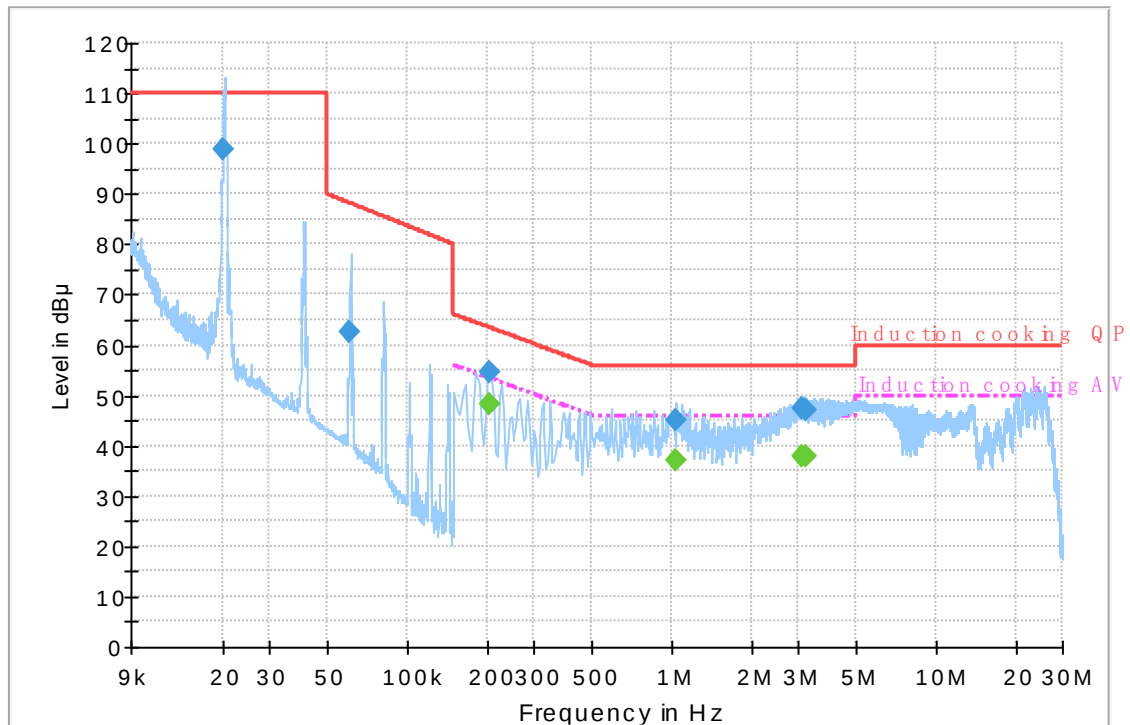
Test Data

Environmental Conditions

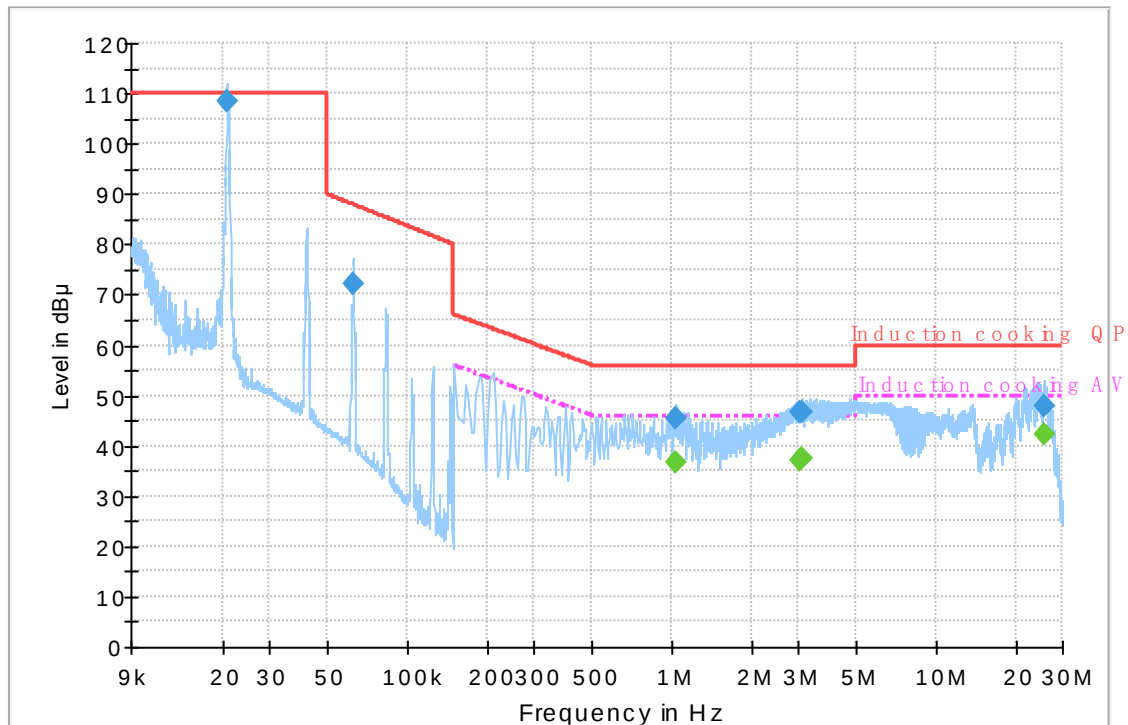
Temperature:	25 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Kiki Geng on 2019-08-30.

EUT operation mode: Working
AC 120V/60Hz, Line



Frequency (MHz)	Corrected Amplitude (dBμV)	Corrected Factor (dB)	Limit (dBμV)	Margin (dB)	Remark (PK/QP/Ave.)
0.020031	98.8	20.4	110.0	11.2	QP
0.060112	62.6	19.9	88.3	25.7	QP
0.205500	54.7	19.8	63.4	8.7	QP
1.034370	45.1	19.9	56.0	10.9	QP
3.096190	47.4	19.9	56.0	8.6	QP
3.226270	46.9	19.9	56.0	9.1	QP
0.205500	48.2	19.8	53.4	5.2	Ave.
1.034370	37.2	19.9	46.0	8.8	Ave.
3.096190	37.9	19.9	46.0	8.1	Ave.
3.226270	37.8	19.9	46.0	8.2	Ave.

AC 120V/60Hz, Neutral

Frequency (MHz)	Corrected Amplitude (dBμV)	Corrected Factor (dB)	Limit (dBμV)	Margin (dB)	Remark (PK/QP/Ave.)
0.020788	108.5	20.6	110.0	1.5	QP
0.062508	72.3	19.8	88.0	15.7	QP
1.042000	45.4	19.8	56.0	10.6	QP
3.050000	46.5	19.9	56.0	9.5	QP
3.106000	46.8	19.9	56.0	9.2	QP
25.770000	47.8	20.2	60.0	12.2	QP
1.042000	36.9	19.8	46.0	9.1	Ave.
3.050000	37.0	19.9	46.0	9.0	Ave.
3.106000	37.3	19.9	46.0	8.7	Ave.
25.770000	42.4	20.2	50.0	7.6	Ave.

Note:

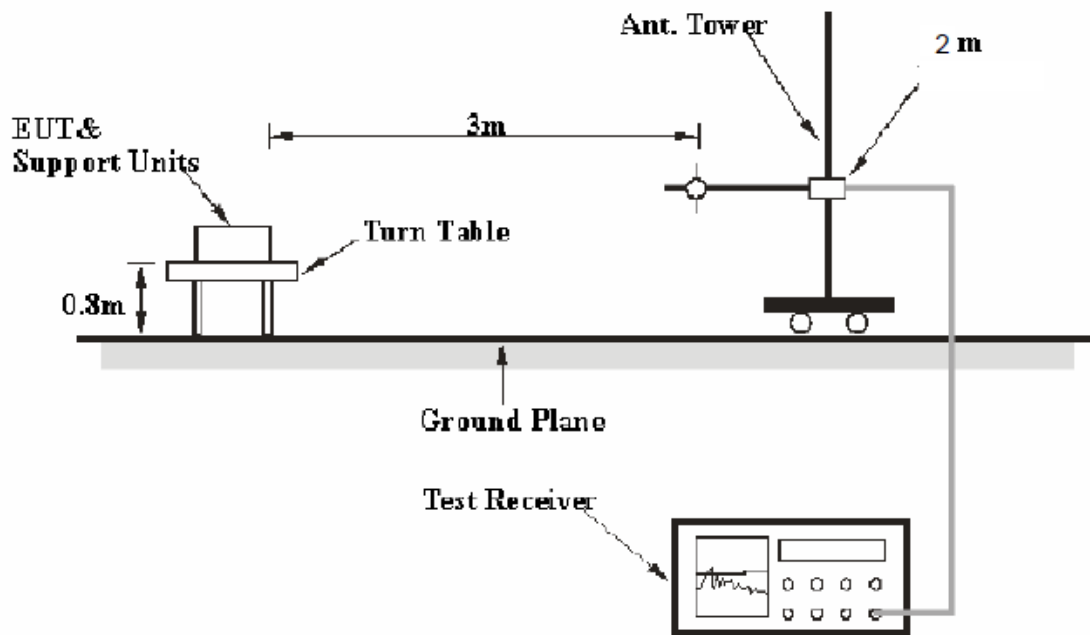
- 1) Corrected Amplitude = Reading + Correction Factor
- 2) Correction Factor = LISN VDF + Cable Loss + Transient Limiter Attenuation
- 3) Margin = Limit – Corrected Amplitude

FCC §18.305 – FIELD STRENGTH

Applicable Standard

FCC §18.305(b)

EUT Setup



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the FCC MP - 5.

The EUT was connected to 120 VAC/60 Hz power source.

EMI Test Receiver Setup and Spectrum Analyzer Setup

The system was investigated from 9 kHz to 30 MHz.

During the radiated emission test, the EMI test receiver and Spectrum Analyzer were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
9 kHz – 30 MHz	9 kHz	30 kHz	9 kHz	QP

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions to ensure that the EUT complied with all installation combinations.

The EUT was in the normal (naïve) operating mode during the final qualification test to represent the worst results.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 18,

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level complies with the limit if

$$L_m + U_{(L_m)} \leq L_{\text{lim}} + U_{\text{cispr}}$$

In BACL., $U_{(L_m)}$ is less than U_{cispr} , if L_m is less than L_{lim} , it implies that the EUT complies with the limit.

Test Data and Plots

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Zero Yan on 2019-09-05

9 kHz –30 MHz

Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Detector (PK/QP)	Antenna height (m)	Turntable position (degree)	Correction Factor (dB/m)	Limit (dB μ V/m)	Margin (dB)
0.56	47.12	QP	1.1	246	51.9	103.52	56.40
1.13	46.89	QP	1.2	172	46.2	103.52	56.63
15.46	39.64	QP	1.2	93	32.2	103.52	63.88
21.24	33.15	QP	1.4	263	31.9	103.52	70.37
24.36	36.52	QP	1.3	252	31.3	103.52	67.00
27.45	35.23	QP	1.1	136	30.9	103.52	68.29

Note:

- 1) Corrected Amplitude = Meter Reading + Correction Factor
- 2) Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain
- 3) Margin = Limit – Corrected Amplitude
- 4) The data below 20dB to the limit was not recorded.

******* END OF REPORT *******