

Issued: 2016-5-11

### TEST REPORT

Applicant Name & : Foshan Shunde YA-IN Electric Appliance Manufacture Co., Ltd

Address No. 8 Longxiao Road. Longyongkou, Ronggui Town, Shunde, Foshan

Guangdong 528305 China

Manufacturing Site : Same as applicant

Sample Description

Product : Induction Cooktop Model No. : C74E-BBCC02

Electrical Rating : AC 240V~ 60Hz, 7400W

FCC ID : ZFB-C74E- BBCC

Date Received : 10 December 2015

Date Test Conducted : 10 December 2015-25 April 2016

Test standards : FCC Part 18: 2014

Test Result : Pass

Conclusion : The submitted samples complied with the above rules/standards.

Remark : None.

Prepared and Checked By:

Leo Luo Engineer

Intertek Guangzhou

Approved By:

Helen Ma Team Leader

Intertek Guangzhou

11 May 2016 Date

Signature

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## 1 <u>TEST RESULTS SUMMARY</u>

Test Item	Standard	Result
Conducted Emission (9 kHz-30 MHz)	FCC Part 18: 2014	Pass
Radiated Emission (9 kHz-30 MHz)	FCC Part 18: 2014	Pass
Radiated Emission (30 MHz-1 GHz)	FCC Part 18: 2014	Pass
Radiated Emission (above 1 GHz)	FCC Part 18: 2014	N/A

Remark: 1. The symbol "N/A" in above table means  $\underline{N}$  ot  $\underline{A}$ pplicable.

<sup>2.</sup> When determining the test results, measurement uncertainty of tests has been considered.



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## 2 Test Results Conclusion

(with Justification)

RE: EMC Testing Pursuant to FCC Part 18 performed on the Induction Cooktop, Model: C74E-BBCC02.

We tested the Induction Cooktop, Model: C74E-BBCC02, to determine if it was in compliance with the relevant FCC rules as marked on the Test Results Summary. We found that the unit met the requirement of FCC Part 18 when tested as received. The worst case's test data was presented in this test report.

The submitted sample C74E-BBCC02 is Induction Hotplates for household use.

### Conclusion:

The sample as received complied with the FCC Part 18 requirement.

The production units are required to conform to the initial sample as received when the units are placed on the market.



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### 3 LABORATORY MEASUREMENTS

### **Configuration Information**

**Equipment Under Test (EUT):** Induction Cooktop

Model: C74E-BBCC02

Serial No.: Not Labeled

**Support Equipment**: N/A

Rated Voltage: AC 240V~ 60Hz,

**Condition of Environment:** Temperature : 22~28°C

Relative Humidity: 35~60% Atmosphere Pressure 86~106kPa

#### Notes:

1. The EMI measurements had been made in the operating mode producing the largest emission in the frequency band being investigated consistent with normal applications.

An attempt had been made to maximize the emission by varying the configuration of the EUT.

#### 2. Test Sites:

All of the tests are performed at:

Foshan Shunde Guoce testing Technology Co., Ltd.

No.3, Desheng East Road, Shunde Daliang, Foshan, Guangdong, China.

This test facility and site measurement data have been fully placed on file with the FCC, test firm registration number is 756674.



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## 4 Test Configuration

Cooking Vessel (provided by manufacturer):

Fill container with 80% of water.

Material: stainless steel

Contact surface diameter 18cm, Top surface diameter 23cm

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.

Test the EUT in the lowest power level, middle level and the highest power level, the worst test data was presented in the report.

### 5 TEST RESULTS

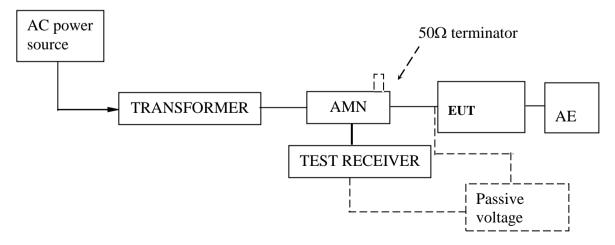
#### 5.1 Conducted Emission Test

**Test Result: Pass** 

**5.1.1 Used Test Equipment** 

Equipment No.	Equipment	Model	Manufacturer	Last Cal.	Due Date
SD00781	EMI receiver	SMR4503	SCHAFNER	2015.8.31	2016.8.30
201044CK0121	LISN	ESH2-Z5	Rohde & Schwarz	2015.8.31	2016.8.30
1244BK0003SD	10dB Pulse Limiter	PLA-10N	Compliance Direction Systems Inc.	2015.8.31	2016.8.30
201044CK0128-1	shielding room	NP-HJ2	Changzhou Nanping	2016.1.12	2017.1.11

### 5.1.2 Block Diagram of Test Setup





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### **5.1.3 Test Setup and Procedure**

Test was performed according to FCC OST/ MP-5:1986. The EUT was set to achieve the maximum emission level. The mains terminal disturbance voltage was measured with the EUT in a shielded room. The EUT was connected to AC power source through an Artificial Mains Network which provides a  $50\Omega$  linear impedance Artificial hand is used if appropriate (for handheld apparatus). The load/control terminal disturbance voltage was measured with passive voltage probe if appropriate.

The table-top EUT was placed on a 0.8m high non-metallic table above earthed ground plane(Ground Reference Plane). And for floor standing EUT, was placed on a 0.1m high non-metallic supported on GRP. The EUT keeps a distance of at least 0.8m from any other of the metallic surface. The Artificial Mains Network is situated at a distance of 0.8m from the EUT.

During the test, mains lead of EUT excess 0.8m was folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0.3m and 0.4m.

The bandwidth of test receiver was set at 9 kHz. The frequency range from 9 kHz to 30MHz was checked.



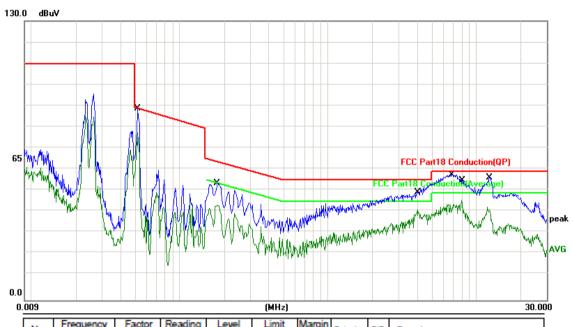
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### 5.1.4 Test Data & Curve

## At main terminal: Pass

## **Tested Wire: Live**

## **Operation Mode: the highest power**

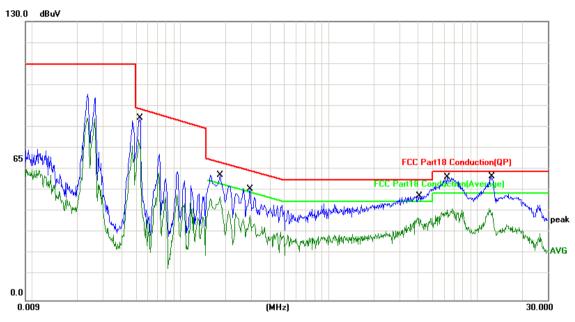


	No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
	1	0.0526	9.75	69.60	79.35	89.54	-10.19	QP	Р	
	2	0.1800	9.82	43.50	53.32	64.48	-11.16	QP	Р	
	3	0.1800	9.82	36.20	46.02	54.48	-8.46	AVG	Р	
	4	3.9950	10.22	39.70	49.92	56.00	-6.08	QP	Р	
Γ	5	3.9950	10.22	33.20	43.42	46.00	-2.58	AVG	Р	
Γ	6	6.8400	10.27	47.10	57.37	60.00	-2.63	QP	Р	
	7	6.8400	10.27	34.40	44.67	50.00	-5.33	AVG	Р	
	8	8.0649	10.28	45.00	55.28	60.00	4.72	QP	Р	
Γ	9	8.0649	10.28	37.10	47.38	50.00	-2.62	AVG	Р	
	10	12.2800	10.30	44.40	54.70	60.00	-5.30	QP	բ	
	11	12.2800	10.30	32.30	42.60	50.00	-7.40	AVG	Р	



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## Tested Wire: Neutral Operation Mode: the highest power

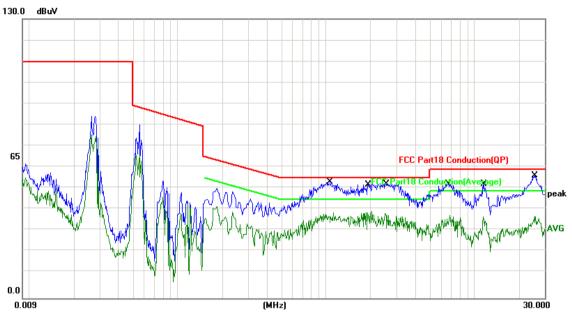


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.0532	9.75	68.65	78.40	89.43	-11.03	QP	Р	
2	0.1850	9.82	45.48	55.30	64.25	-8.95	QP	Р	
3	0.1850	9.82	37.48	47.30	54.25	-6.95	AVG	Р	
4	0.2949	9.90	37.70	47.60	60.38	-12.78	QP	Р	
5	0.2949	9.90	28.80	38.70	50.38	-11.68	AVG	Р	
6	4.0500	10.23	35.77	46.00	56.00	-10.00	QP	Р	
7	4.0500	10.23	26.37	36.60	46.00	-9.40	AVG	Р	
8	6.2950	10.26	44.54	54.80	60.00	-5.20	QP	Р	
9	6.2950	10.26	31.84	42.10	50.00	-7.90	AVG	Р	
10	12.6150	10.31	44.79	55.10	60.00	4.90	QP	Р	
11	12.6150	10.31	30.49	40.80	50.00	-9.20	AVG	Ρ	



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## Tested Wire: Live Operation Mode: Middle power



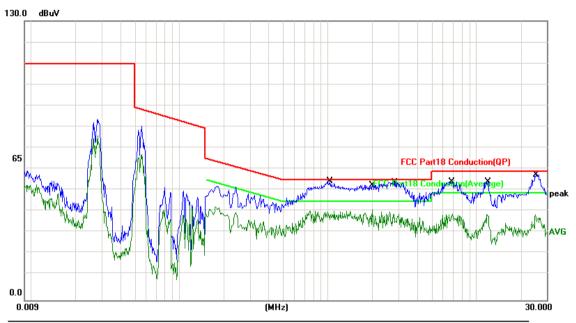
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	1.0700	10.16	42.44	52.60	56.00	-3.40	QP	Р	
2	1.0700	10.16	29.54	39.70	46.00	-6.30	AVG	Р	
3	1.9450	10.18	41.12	51.30	56.00	-4.70	QP	Р	
4	1.9450	10.18	28.72	38.90	46.00	-7.10	AVG	Р	
5	2.5650	10.19	42.61	52.80	56.00	-3.20	QP	Р	
6	2.5650	10.19	27.31	37.50	46.00	-8.50	AVG	Р	
7	6.7450	10.27	40.43	50.70	60.00	-9.30	QP	Р	
8	6.7450	10.27	25.63	35.90	50.00	-14.10	AVG	Р	
9	11.6150	10.30	38.80	49.10	60.00	-10.90	QP	Р	
10	11.6150	10.30	26.50	36.80	50.00	-13.20	AVG	Р	
-11	25.5100	10.37	43.93	54.30	60.00	-5.70	QP	Р	
12	25.5100	10.37	28.13	38.50	50.00	-11.50	AVG	Р	



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## **Tested Wire: Neutral**

## **Operation Mode: Middle power**



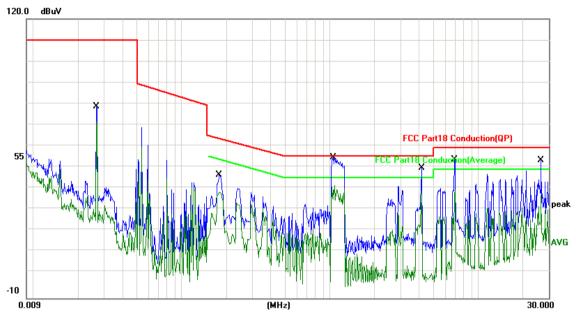
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	1.0400	10.16	43.80	53.96	56.00	-2.04	QP	Р	
2	1.0400	10.16	31.60	41.76	46.00	-4.24	AVG	Р	
3	2.0000	10.18	42.40	52.58	56.00	-3.42	QP	Р	
4	2.0000	10.18	29.80	39.98	46.00	-6.02	AVG	Р	
5	2.8350	10.20	40.60	50.80	56.00	-5.20	QP	Р	
6	2.8350	10.20	27.00	37.20	46.00	-8.80	AVG	Р	
7	6.9000	10.27	40.03	50.30	60.00	-9.70	QP	Р	
8	6.9000	10.27	25.73	36.00	50.00	-14.00	AVG	Р	
9	11.8600	10.30	38.30	48.60	60.00	-11.40	QP	Р	
10	11.8600	10.30	24.90	35.20	50.00	-14.80	AVG	Р	
-11	25.3650	10.37	44.20	54.57	60.00	-5.43	QP	Р	
12	25.3650	10.37	28.00	38.37	50.00	-11.63	AVG	Р	



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## **Tested Wire: Live**

## **Operation Mode: the lowest power**



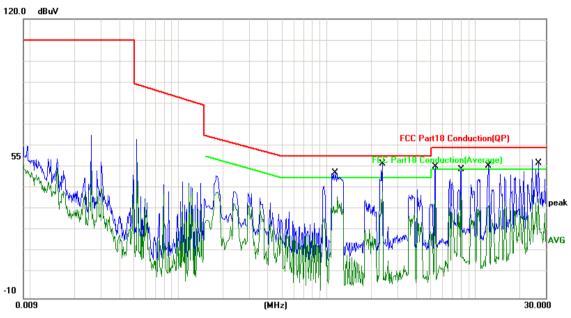
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.0269	9.75	43.75	53.50	110.00	-56.50	QP	Р	
2	0.0269	9.75	36.95	46.70	70.26	-23.56	AVG	Р	
3	0.1800	9.82	36.18	46.00	64.48	-18.48	QP	Р	
4	0.1800	9.82	29.48	39.30	54.48	-15.18	AVG	Р	
5	1.0549	10.16	35.60	45.76	56.00	-10.24	QP	Р	
6	1.0549	10.16	25.60	35.76	46.00	-10.24	AVG	Р	
7	4.2000	10.23	22.00	32.23	56.00	-23.77	QP	Р	
8	4.2000	10.23	10.60	20.83	46.00	-25.17	AVG	Р	
9	6.9600	10.27	29.93	40.20	60.00	-19.80	QP	Р	
10	6.9600	10.27	12.73	23.00	50.00	-27.00	AVG	Р	
-11	26.6700	10.38	29.72	40.10	60.00	-19.90	QP	Р	
12	26.6700	10.38	13.02	23.40	50.00	-26.60	AVG	Р	



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## **Tested Wire: Neutral**

## **Operation Mode: the lowest power**



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	1.1450	10.16	34.64	44.80	56.00	-11.20	QP	Р	
2	1.1450	10.16	21.64	31.80	46.00	-14.20	AVG	Р	
3	2.3800	10.19	28.50	38.69	56.00	-17.31	QP	Р	
4	2.3800	10.19	11.80	21.99	46.00	-24.01	AVG	Р	
5	5.4400	10.25	27.60	37.85	60.00	-22.15	QP	Р	
6	5.4400	10.25	11.00	21.25	50.00	-28.75	AVG	Р	
7	8.1000	10.28	23.92	34.20	60.00	-25.80	QP	Р	
8	8.1000	10.28	15.82	26.10	50.00	-23.90	AVG	Р	
9	12.3600	10.30	30.60	40.90	60.00	-19.10	QP	Р	
10	12.3600	10.30	16.40	26.70	50.00	-23.30	AVG	Р	
-11	26.8550	10.38	32.22	42.60	60.00	-17.40	QP	Р	
12	26.8550	10.38	13.62	24.00	50.00	-26.00	AVG	Ρ	



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## **5.1.5** Measurement Uncertainty

Uncertainty: 2.61 dB for frequency rang 9 kHz-150 kHz and 2.58 dB for frequency rang 150 kHz-30 MHz at a level of confidence of 95%.

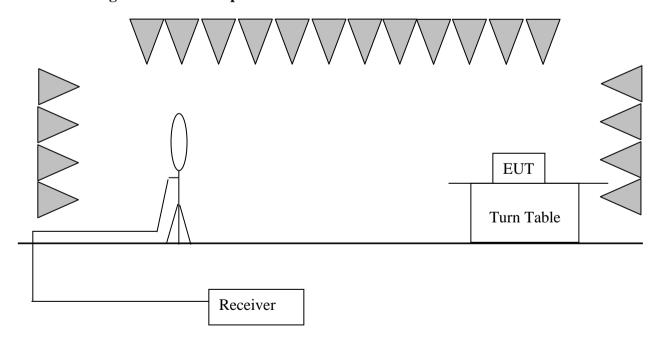
## 5.2 Radiated Emission(9kHz - 30 MHz)

**Test Result: PASS** 

**5.2.1** Used Test Equipment

Equipment No.	Equipment	Model	Manufacturer	Last Cal.	Due Date
SD00716	10m Semi-anechoic chamber SAC10		Frankonia GabH	2015.8.24	2016.8.23
201144CK0064	EMI Test Receiver(20Hz-40GHz)	ESU40	ROHDE&SCH WARZ	2015.8.31	2016.8.30
200744CP002-5	loop Antenna(φ0.6m ,9kHz- 30MHz)	HLA6120	TESEQ	2016.01.12	2017.01.11
SD00701	Turntable And Antenna Controller	FC02	FRANKONIA	N/A	N/A

## 5.2.2 Block Diagram of Test Setup





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#### **5.2.3** Test Setup and Procedure

The measurement was applied in a semi-anechoic chamber. The EUT were placed on a 1 m high wooden turntable above the horizontal metal ground plane. The turn table rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on an antenna tripod.

Loop antenna was used as receiving antenna. The antenna was supported in the vertical plane and was rotatable about a vertical axis to obtain the maximum emission. The antenna height of was set at 2 m above ground level.

The bandwidth setting on Receiver was 9 kHz. The frequency range from 9 kHz to 30MHz was checked.

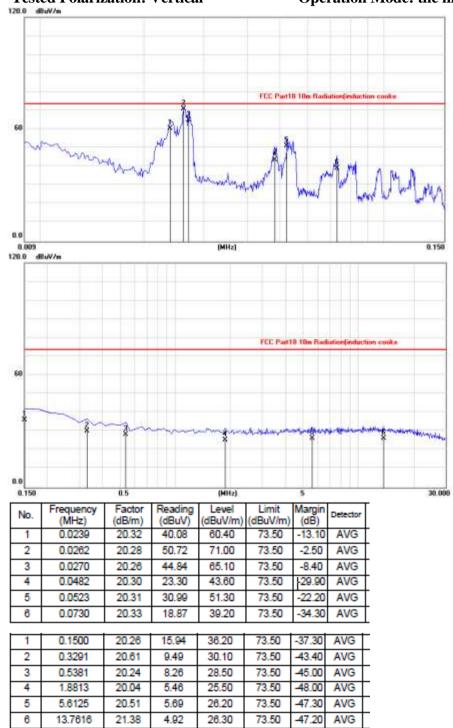
An initial pre-scan was performed in the 10m chamber using the spectrum analyzer in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by a 0.6m loop antenna.



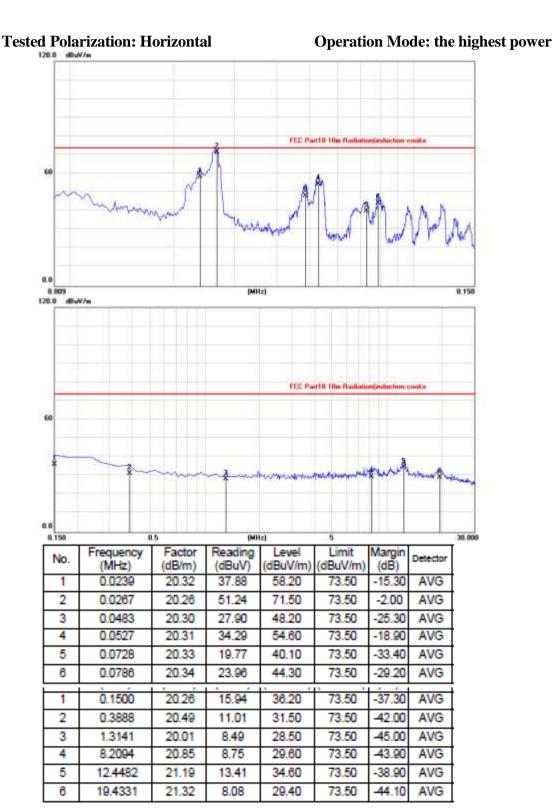
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# 5.2.4 Test Data & Curve Tested Polarization: Vertical

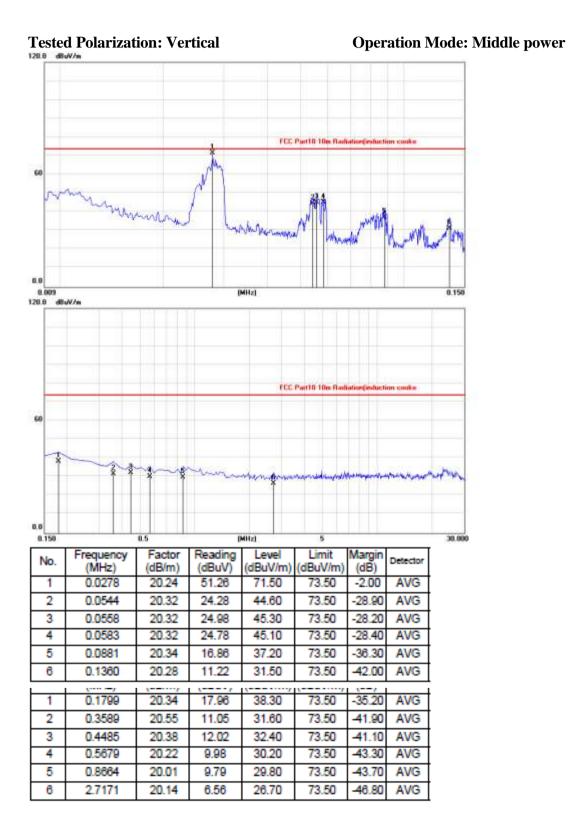
## **Operation Mode: the highest power**



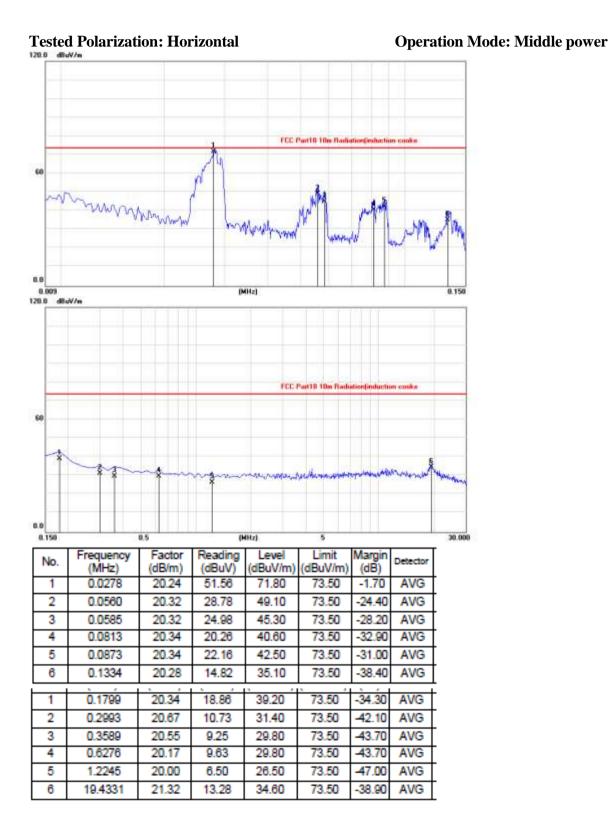




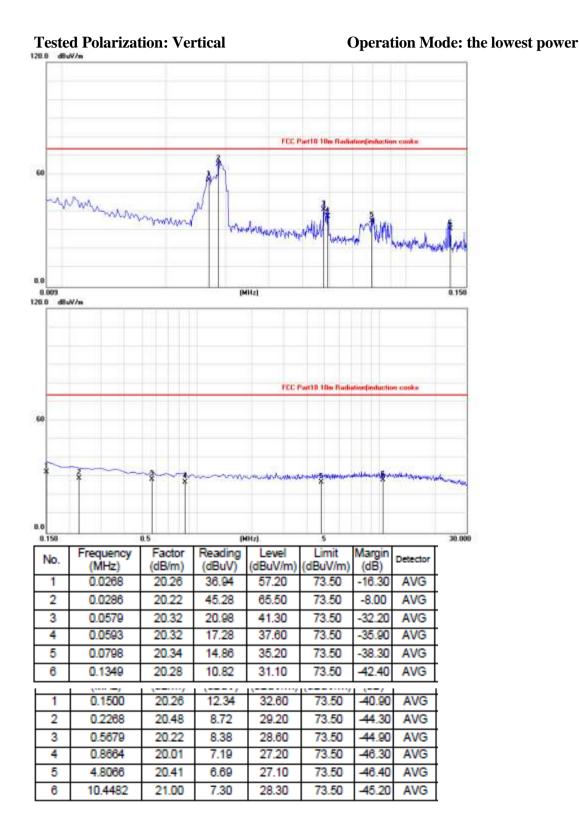




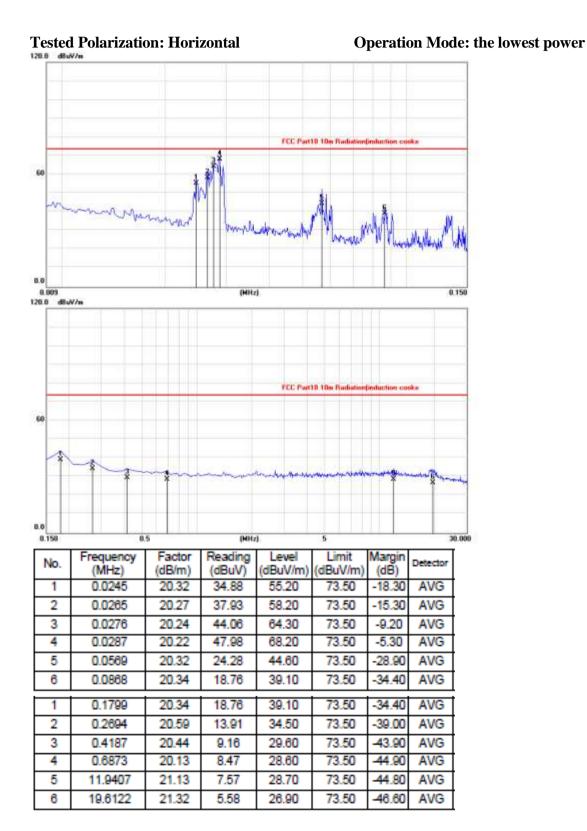














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## **5.2.5** Measurement uncertainty

The measurement uncertainty for magnetic field radiated emission test is under consideration.

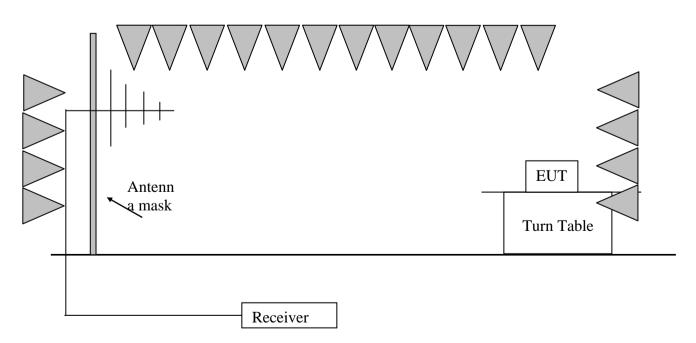
## 5.3 Radiated Emission (30 MHz- 1 GHz)

**Test Result: Pass** 

**5.3.1** Used Test Equipment

Coca Test Equip					
Equip. No.	Equipment	Model	Manufacturer	Last Cal.	Due Date
SD00716	10m Semi-anechoic chamber	SAC10	Frankonia GabH	2015.8.24	2016.8.23
201144CK0064	EMI Test Receiver (20Hz-40GHz)	ESU40	ROHDE&SCHW ARZ	2015.8.31	2016.8.30
1244BK0001SD	Pre-amplifier	PAP-0203-30	Compliance Direction System	2016.1.12	2017.1.11
200744CP002-4	Bilog Antenna (30MHz-2.0GHz)	CBL6112D	TESEQ	2016.1.12	2017.1.11
SD00701	Turntable And Antenna Controller	FC02	FRANKONIA	N/A	N/A

## 5.3.2 Block Diagram of Test Setup





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### 5.3.3 Test Setup and Procedure

The measurement was applied in a 3 m semi-anechoic chamber. The EUT and simulators were placed on a 1 m high wooden turntable above the horizontal metal ground plane. The turn table rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on an antenna mask. The antenna moved up and down between from 1 meter to 4 meters to find out the maximum emission level.

Broadband antenna was used as receiving antenna. Both horizontal and vertical polarization of the antenna was set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to FCC OST/ MP-5:1986 requirement during radiated test. The bandwidth setting on Test Receiver was 120 kHz. The frequency range from 30 MHz to 1 GHz was checked.

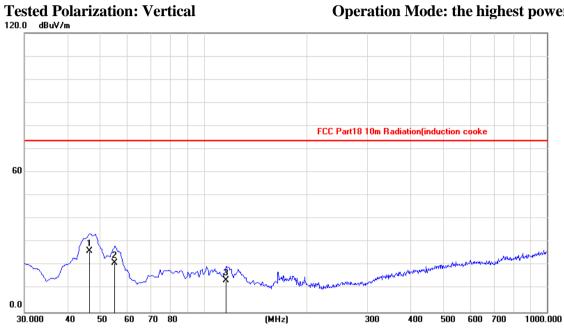
An initial pre-scan was performed in the 10m chamber using the spectrum analyzer in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph.



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### 5.3.4 Test Data & Curve

**Operation Mode: the highest power** 

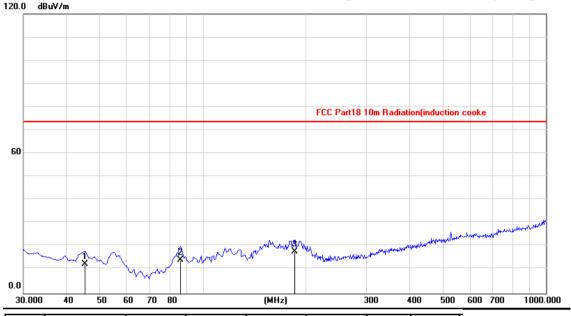


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	46.4900	-24.38	50.58	26.20	73.50	-47.30	AVG
2	55.2199	-26.99	48.19	21.20	73.50	-52.30	AVG
3	116.3299	-20.39	33.99	13.60	73.50	-59.90	AVG



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# Tested Polarization: Horizontal Operation Mode: the highest power

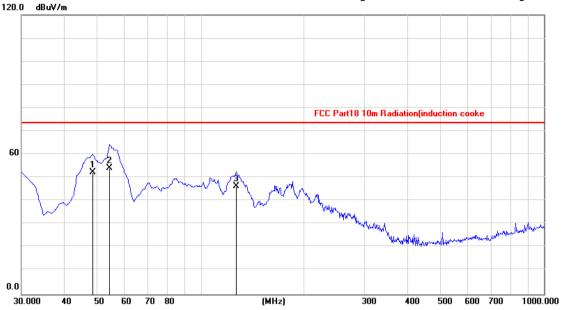


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	45.5200	-23.19	35.69	12.50	73.50	-61.00	AVG
2	86.2600	-24.31	38.61	14.30	73.50	-59.20	AVG
3	185.2000	-22.31	40.21	17.90	73.50	-55.60	AVG



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# Tested Polarization: Vertical Operation Mode: Middle power



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	48.4300	-25.03	77.33	52.30	73.50	-21.20	AVG
2	54.2500	-26.71	81.01	54.30	73.50	-19.20	AVG
3	127.0000	-20.52	66.72	46.20	73.50	-27.30	AVG



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# Tested Polarization: Horizontal Operation Mode: Middle power



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	55.2200	-26.51	73.21	46.70	73.50	-26.80	AVG
2	127.0000	-19.84	69.14	49.30	73.50	-24.20	AVG
3	191.0200	-22.09	73.39	51.30	73.50	-22.20	AVG



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# Tested Polarization: Vertical Operation Mode: the lowest power



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.4600	-24.70	70.90	46.20	73.50	-27.30	AVG
2	56.1900	-27.25	81.55	54.30	73.50	-19.20	AVG
3	104.6900	-20.93	63.53	42.60	73.50	-30.90	AVG



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No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)		Limit (dBuV/m)	Margin (dB)	Detector
1	57.1600	-27.07	70.67	43.60	73.50	-29.90	AVG
2	154.1600	-22.46	67.56	45.10	73.50	-28.40	AVG
3	188.1100	-22.22	70.02	47.80	73.50	-25.70	AVG

## **5.3.5** Measurement uncertainty

Uncertainty: 4.87 dB in the frequency range of 30-1000 MHz at a level of confidence of 95%