

# FCC TEST REPORT

## FCC ID:2AZ4X-AB0308

**Report Number**..... : ZKT-210709L3291E

Date of Test..... Mar. 25, 2021 to Jul. 03, 2021

Date of issue ..... : Jul. 03, 2021

Total number of pages ..... 21

Test Result ..... : PASS

**Testing Laboratory**..... : Shenzhen ZKT Technology Co., Ltd.

Address ..... : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

**Applicant's name** ..... : Dongguan Leaper Electronic Technology CO.,LTD

Address ..... : NO.22 ,Xinbao second Street,Dalang new town, Dongguan City, China

**Manufacturer's name** ..... : Dongguan Leaper Electronic Technology CO.,LTD

Address ..... : NO.22 ,Xinbao second Street,Dalang new town, Dongguan City, China

**Test specification:**

Standard..... : FCC CFR Title 47 Part 18

Test procedure..... : /

Non-standard test method ..... : N/A

Test Report Form No. .... : TRF-EL-107\_V0

Test Report Form(s) Originator ..... : ZKT Testing

**Master TRF** ..... : Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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**Product name**..... : WIRELESS CHARGER

Trademark ..... : N/A

Model/Type reference ..... : AB0308

Ratings..... : Input: 5V 3A, 9V 2.67A  
Wireless Output:5V 1A,9V 1.1A,9V 1.67A

**Testing procedure and testing location:**

**Testing Laboratory** ..... : **Shenzhen ZKT Technology Co., Ltd.**

**Address** ..... : 1/F, No. 101, Building B, No. 6, Tangwei Community  
Industrial Avenue, Fuhai Street, Bao'an District,  
Shenzhen, China

**Tested by (name + signature)** ..... : **Alen He**



**Reviewer (name + signature)** ..... : **Joe Liu**



**Approved (name + signature)** ..... : **Lake Xie**



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**1. VERSION**

Report No.	Version	Description	Approved
ZKT-210709L3291E	Rev.01	Initial issue of report	Jul. 03, 2021

## 2. TEST SUMMARY

Test Item	Section in CFR 47	Result
AC Power Line Conducted Emission	18.307 (b)	Pass
Radiated Emission	18.305 (b)	Pass

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

## 2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.  
Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street,  
Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225  
Designation Number: CN1299  
IC Registered No.: 27033

## 2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
3	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
4	Conducted Adjacent channel power	U=1.38dB
5	Conducted output power uncertainty Above 1G	U=1.576dB
6	Conducted output power uncertainty below 1G	U=1.28dB
7	humidity uncertainty	U=5.3%
8	Temperature uncertainty	U=0.59℃
9	Radiated disturbance(30MHz-1000MHz)	U=4.8dB
10	Radiated disturbance(1GHz-6GHz)	U=4.9dB
11	Radiated disturbance(1GHz-18GHz)	U=5.0dB

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

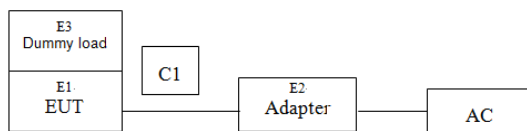
Product Name:	WIRELESS CHARGER
Model No.:	AB0308
Model Difference:	N/A
Serial No.:	N/A
Sample(s) No.:	ZKT-210709L3291-S
Hardware version:	N/A
Software version:	N/A
Operation Frequency:	110kHz ~ 205KHz
Modulation type:	MSK
Antenna Type:	Inductive loop coil Antenna
Antenna gain:	0dBi
Power supply:	Input: 5V 3A, 9V 2.67A Wireless Output: 5V 1A, 9V 1.1A, 9V 1.67A

#### 3.2 Test mode

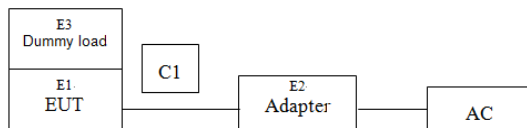
Transmitting mode	Keep the EUT in continuously transmitting mode
<i>Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i>	

#### 3.3 Block Diagram of EUT Configuration

##### Conducted Emission



##### Radiated Emission



#### 3.4 Test Conditions

Temperature: 23~26°C

Relative Humidity: 54~63 %

#### 3.5 Description Of Support Units (Conducted Mode)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E1	WIRELESS CHARGER	N/A	AB0308	N/A	EUT
E2	Adapter	NOKIA	FC0302	N/A	Auxiliary
E3	Dummy load	N/A	DL01	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	1.0M	DC cable unshielded

## Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.



### 3.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

#### Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY45109572	Sep. 22, 2020	Sep. 21, 2021
2	Spectrum Analyzer (1GHz-40GHz)	Agilent	E4446A	100363	Sep. 22, 2020	Sep. 21, 2021
3	Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	Sep. 22, 2020	Sep. 21, 2021
4	Bilog Antenna (30MHz-1400MHz)	Schwarzbeck	VULB9168	00877	Sep. 22, 2020	Sep. 21, 2021
5	Horn Antenna (1GHz-18GHz)	SCHWARZBEC K	BBHA9120D	1541	Sep. 22, 2020	Sep. 21, 2021
6	Horn Antenna (18GHz-40GHz)	A.H. System	SAS-574	588	Sep. 22, 2020	Sep. 21, 2021
7	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	N/A	Sep. 22, 2020	Sep. 21, 2021
8	Amplifier (1GHz-40GHz)	全聚达	DLE-161	097	Sep. 22, 2020	Sep. 21, 2021
9	Loop Antenna (9KHz-30MHz)	SCHWARZBEC K	FMZB1519B	014	Sep. 22, 2020	Sep. 21, 2021
10	RF cables1 (9kHz-30MHz)	N/A	9kHz-30MHz	N/A	Sep. 22, 2020	Sep. 21, 2021
11	RF cables2 (30MHz-1GHz)	N/A	30MHz-1GHz	N/A	Sep. 22, 2020	Sep. 21, 2021
12	RF cables3 (1GHz-40GHz)	N/A	1GHz-40GHz	N/A	Sep. 22, 2020	Sep. 21, 2021
13	CMW500 Test	R&S	CMW500	106504	Sep. 22, 2020	Sep. 21, 2021
14	ESG Signal Generator	Agilent	E4421B	GB40051203	Sep. 22, 2020	Sep. 21, 2021
15	Signal Generator	Agilent	N5182A	MY47420215	Sep. 22, 2020	Sep. 21, 2021
16	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
17	Software	Frad	EZ-EMC	FA-03A2 RE	\	\

#### Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Sep. 22, 2020	Sep. 21, 2021
2	LISN	CYBERTEK	EM5040A	E1850400149	Sep. 22, 2020	Sep. 21, 2021
3	Test Cable	N/A	C01	N/A	Sep. 22, 2020	Sep. 21, 2021
4	Test Cable	N/A	C02	N/A	Sep. 22, 2020	Sep. 21, 2021
5	EMI Test Receiver	R&S	ESRP3	101946	Sep. 22, 2020	Sep. 21, 2021
6	Absorbing Clamp	DZ	ZN23201	N/A	Sep. 22, 2020	Sep. 21, 2021

#### 4. CONDUCTED EMISSION TEST

##### 4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC 18.307(b)
Test Method:	ANSI C63.4:2014
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

##### 4.2 POWER LINE CONDUCTED EMISSION Limits

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quas -peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) \*Decreases with the logarithm of the frequency.

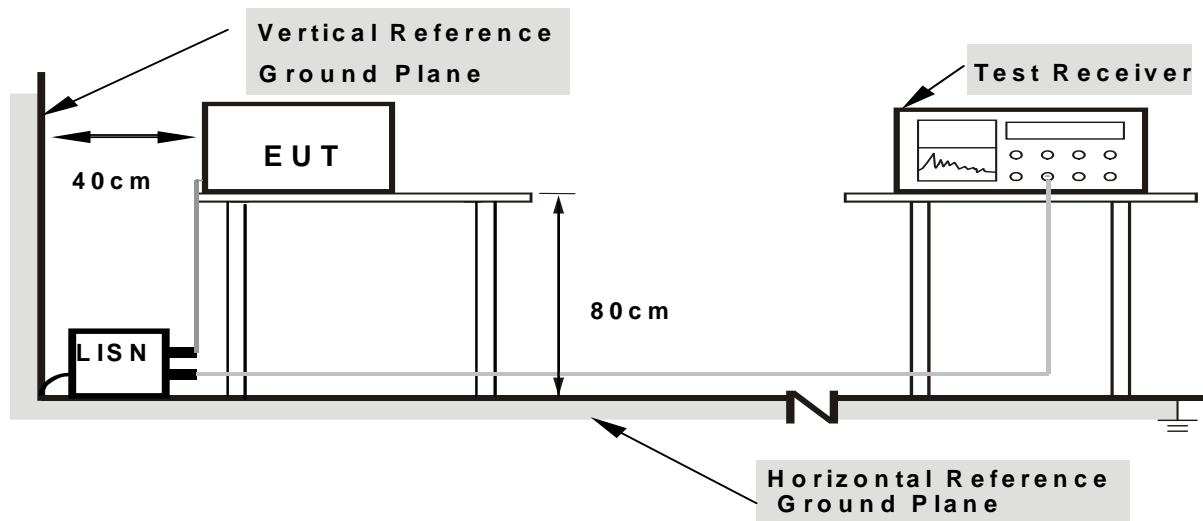
##### 4.3 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

##### 4.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.5 TEST SETUP



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

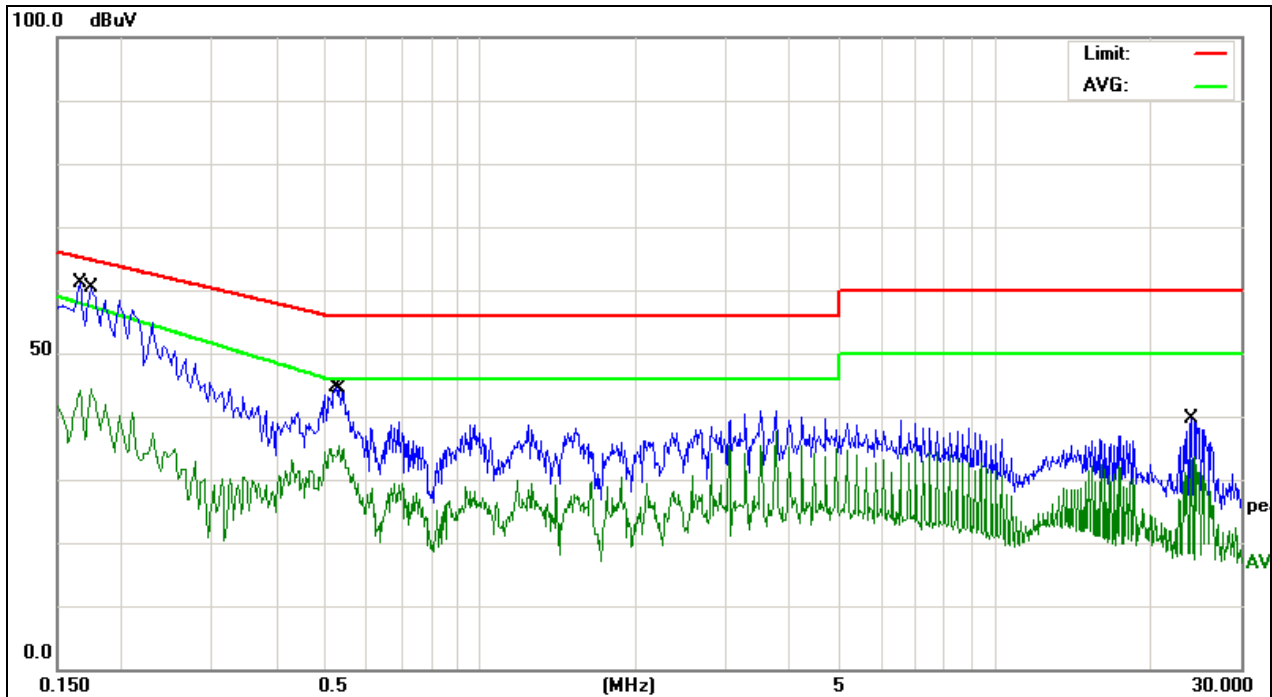
#### 4.6 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

We pretest AC 120V and AC 230V, the worst voltage was AC 120V and the data recording in the report.

#### 4.7 Test Result

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz		

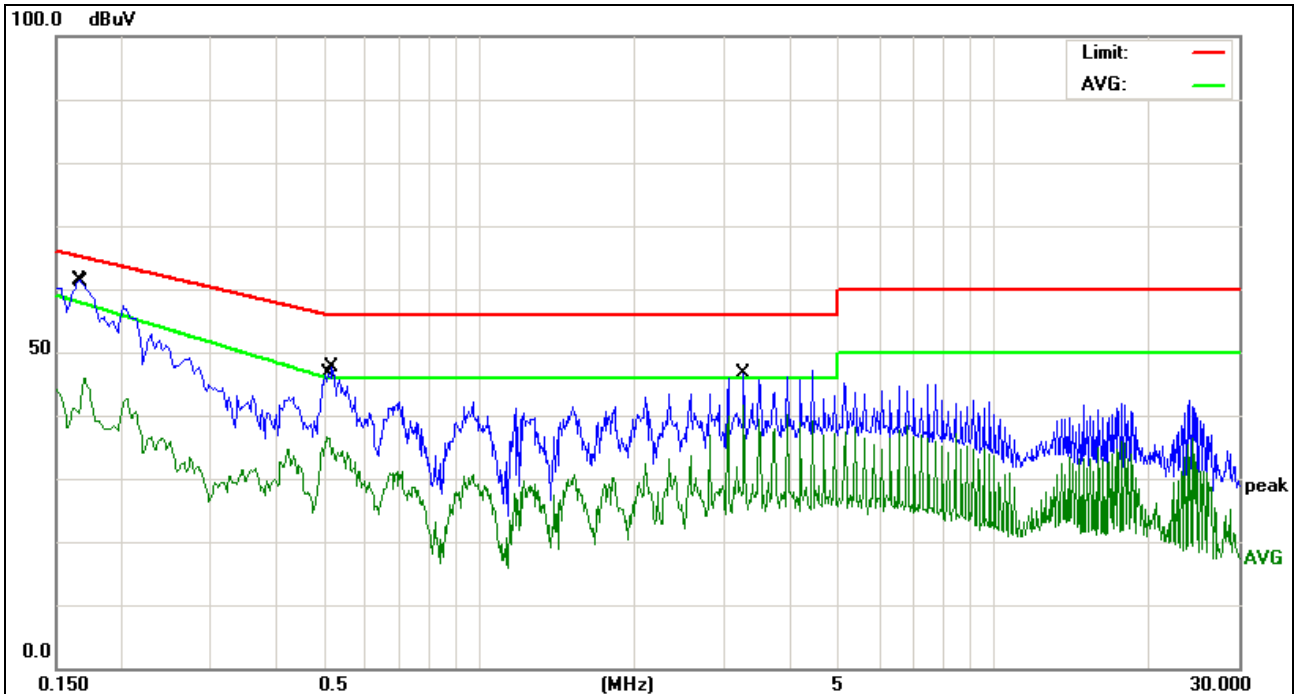


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1660	49.41	11.61	61.02	65.15	-4.13	QP
2		0.1740	32.80	11.48	44.28	57.39	-13.11	AVG
3		0.5220	34.54	10.01	44.55	56.00	-11.45	QP
4		0.5299	25.40	10.01	35.41	46.00	-10.59	AVG
5		24.0820	28.33	11.21	39.54	60.00	-20.46	QP
6		24.3180	22.32	11.21	33.53	50.00	-16.47	AVG

#### Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1660	49.89	11.61	61.50	65.15	-3.65	QP
2		0.1700	34.36	11.55	45.91	57.64	-11.73	AVG
3		0.5060	26.55	10.01	36.56	46.00	-9.44	AVG
4		0.5180	37.56	10.01	47.57	56.00	-8.43	QP
5		3.2740	36.59	10.03	46.62	56.00	-9.38	QP
6		3.2740	31.52	10.03	41.55	46.00	-4.45	AVG

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor

## 5. RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part 18.305(b)				
Test Method:	ANSI C63.4:2014				
Test Frequency Range:	9kHz to 1GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average

### 5.1 Radiated Emission Limits

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous).	Any ISM frequency .....	Below 500 .....	25 .....	300
		500 or more .....	25×SQRT(power/500) .....	1300
	Any non-ISM frequency ..	Below 500 .....	15 .....	300
		500 or more .....	15×SQRT(power/500) .....	1300
Industrial heaters and RF stabilized arc welders.	On or below 5,725 MHz ..	Any .....	10 .....	1,600
	Above 5,725 MHz .....	Any .....	(2) .....	(2)
Medical diathermy .....	Any ISM frequency .....	Any .....	25 .....	300
	Any non-ISM frequency ..	Any .....	15 .....	300
Ultrasonic .....	Below 490 kHz .....	Below 500 .....	2,400/F(kHz) .....	300
		500 or more .....	2,400/F(kHz)× SQRT(power/500).	300
Induction cooking ranges .....	490 to 1,600 kHz .....	Any .....	24,000/F(kHz) .....	30
	Above 1,600 kHz .....	Any .....	15 .....	30
	Below 90 kHz .....	Any .....	1,500 .....	430
	On or above 90 kHz .....	Any .....	300 .....	430

<sup>1</sup> Field strength may not exceed 10 μV/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

<sup>2</sup> Reduced to the greatest extent possible.

<sup>3</sup> Field strength may not exceed 10 μV/m at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.

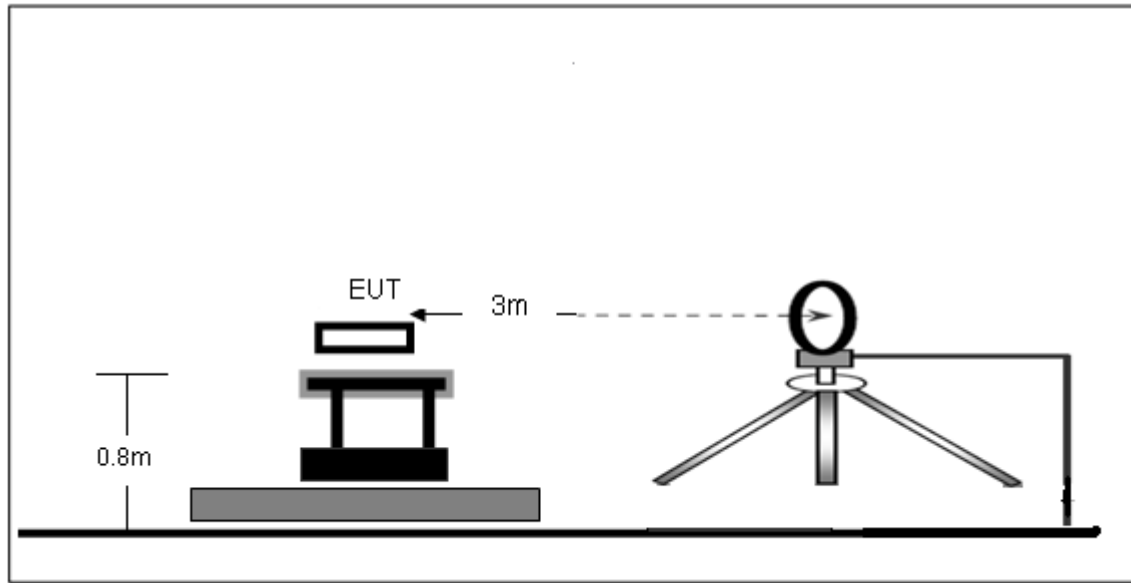
<sup>4</sup> Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.

Remark:

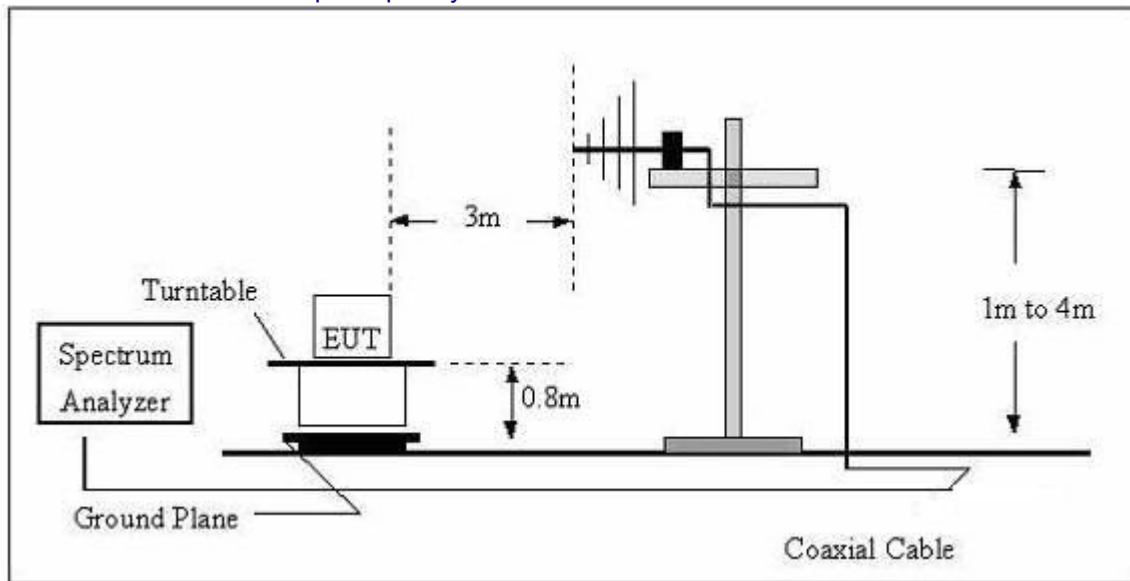
(1) Emission level dBuV/m for 0.009~30MHz = 20log (15) + 40log (300/3) dBuV/m;

## 5.2 Anechoic Chamber Test Setup Diagram

### (A) Radiated Emission Test-Up Frequency Below 30MHz



### (B) Radiated Emission Test-Up Frequency 30MHz~1GHz



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was with the FCC Part 18.305 Limit.

## 5.3 Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

## 5.4 DEVIATION FROM TEST STANDARD

No deviation



## 5.5 Test Result

### Measurement data:

Note: Limit dBuV/m @3m = Limit dBuV/m @300m+ 80  
Limit dBuV/m @3m = Limit dBuV/m @30m + 40

9 kHz~30 MHz

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(kHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
120.2	40.49	40.72	81.21	103.50	-22.29	PK
384.9	36.07	32.43	68.50	103.50	-35.00	PK
460.1	33.51	31.19	64.70	103.50	-38.80	PK
736.5	29.10	28.60	57.70	103.50	-45.80	PK
2219.5	33.58	21.22	54.80	103.50	-48.70	PK
4387.1	38.20	16.00	54.20	103.50	-49.30	PK

### Note:

Pre-scan in the all of mode, the worst case in of was recorded.

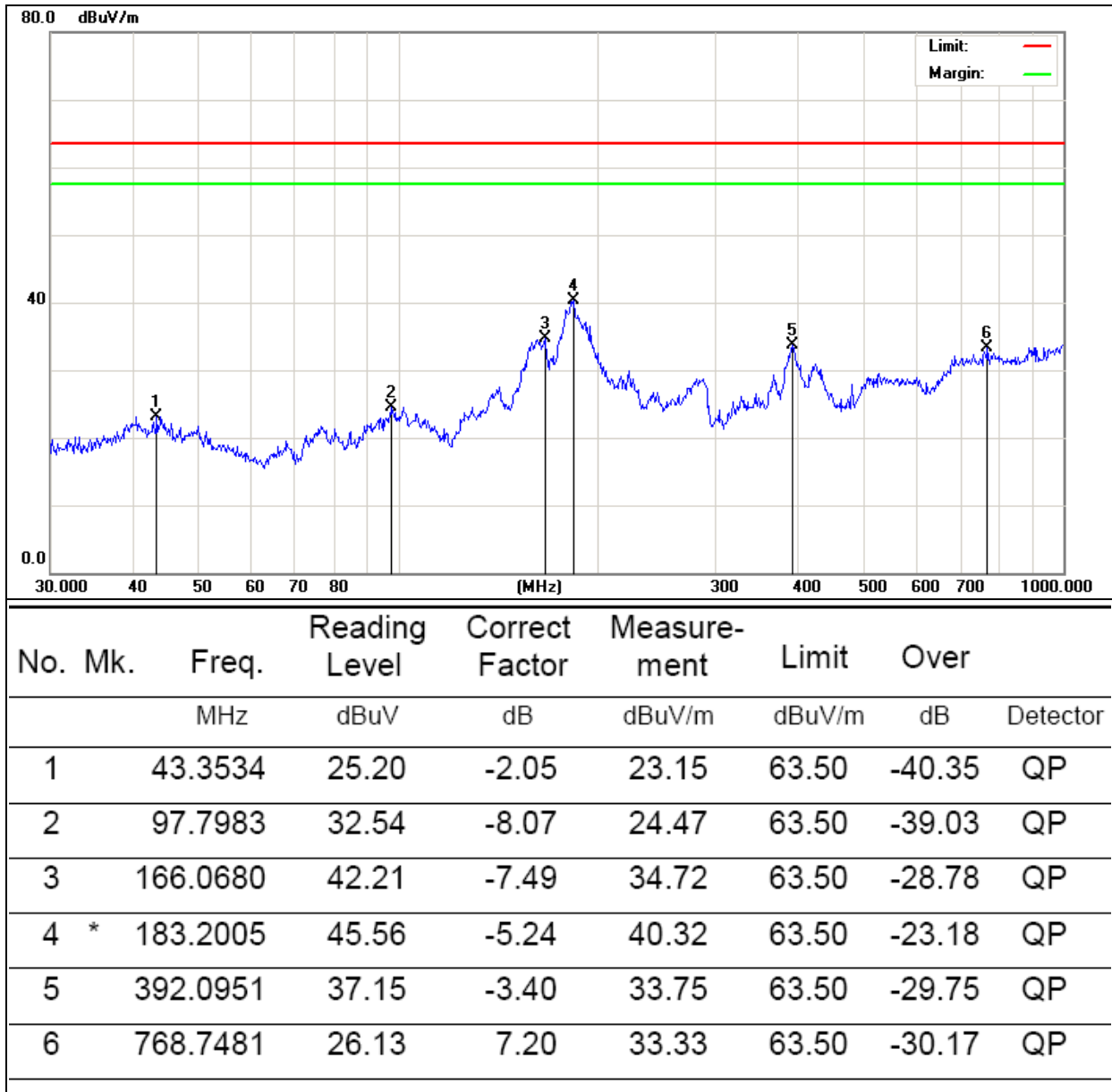
Factor = antenna factor + cable loss – pre-amplifier.

Margin = Emission Level- Limit.

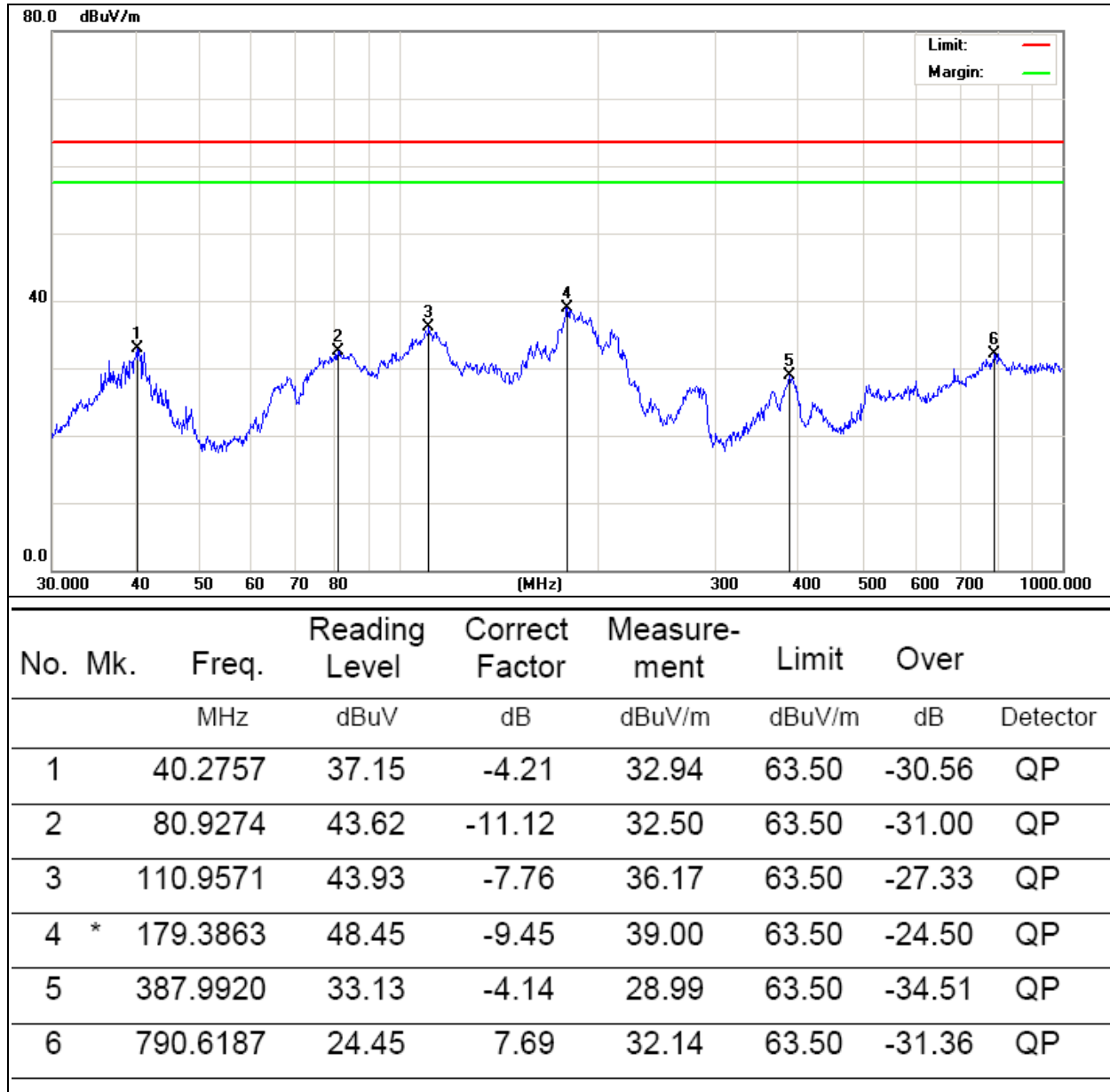


30MHz-1GHz

Temperature:	26℃	Relative Humidity:	60%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		



Temperature:	26°C	Relative Humidity:	60%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



Remarks:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

## 6. TEST SETUP PHOTO

Reference to the appendix I for details.

## 7. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

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