

FCC - TEST REPORT

Report Number	:	68.760.20.0126.01	Date of Issue:	April 08, 2020
Model	:	CP80-1		
Product Type	:	Watch Wireless Charger		
Applicant	:	Huawei Technologies Co., Ltd.		
Address	:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C		
Manufacturer	:	Huawei Device Co., Ltd.		
Address	:	No.2 of Xincheng Road, Songshan Lake Zone, 523808, Dongguan, Guangdong People's Republic OF CHINA		
Factory	:	Lanto Electronic Ltd.		
Address	:	No. 399 Baisheng RD, Jinxi Town, 215300 Kunshan City, Jiangsu Province, PEOPLE'S REPUBLIC OF CHINA		
Test Result	:	☒ Positive ☐ Negative		
Total pages including Appendices	:	19		

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2. Details about the Test Laboratory

Details about the Test Laboratory

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12&13, Zhiheng Wisdomland Business Park,
Nantou Checkpoint Road 2, Nanshan District,
Shenzhen City, 518052,
P. R. China

FCC Registration Number: 514049

Telephone: 86 755 8828 6998
Fax: 86 755 8828 5299

3. Description of the Equipment Under Test

Product:	Watch Wireless Charger
Model no.:	CP80-1
FCC ID:	QISCP80-1
Rating:	5Vdc 2A Max supplied by an external adapter
RF Transmission Frequency:	111-148KHz
Antenna Type:	Litz Wire Coil
Antenna Gain:	0dBi
Description of the EUT:	The Equipment Under Test (EUT) is a wireless charger which operated at 111-148kHz.

4. Summary of Test Standards

Test Standards	
FCC Part 18 10-1-18 Edition	Industrial, Scientific, and Medical equipment

5. Summary of Test Results

Technical Requirements			
FCC Part 18 10-1-18 Edition			
Test Condition		Pages	Test Result
§18.307	Conducted emission AC power port	10	Pass
§18.301	Operating frequencies	--	N/A
§18.305	Field strength	13	Pass
§18.309	Frequency range	See note 2	Pass
§18.303	Prohibited frequency bands	See note 3	Pass

Note 1: N/A=Not Applicable.

Note 2: Because the highest frequency of the internal sources of the EUT is less than 108MHz, so the measurement only is made up to 1GHz.

Note 3: The fundamental frequency of this product is 111-148kHz. Outside the band specified of §18.303, it is considered sufficiently to comply with the provisions of this section.

6. General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: QISCP80-1, complies with FCC Part 18.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

□ - Not Performed

The Equipment under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: March 19, 2020

Testing Start Date: March 20, 2020

Testing End Date: March 30, 2020

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

Reviewed by:


John Zhi
Project Manager

Prepared by:


Warlen Song
Project Engineer

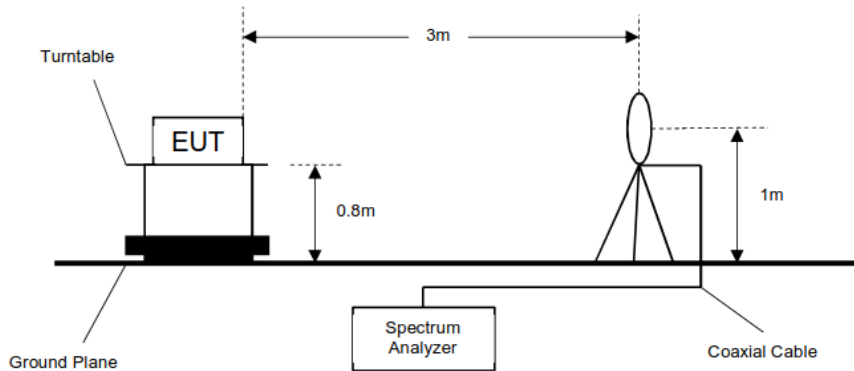


Tested by:

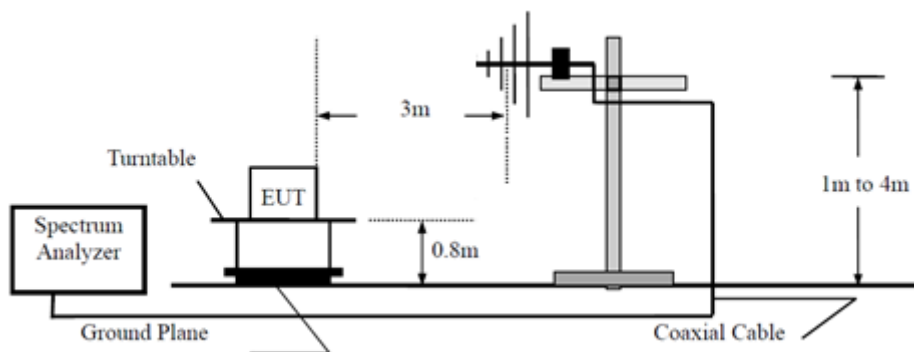

Tree Zhan
Test Engineer

7. Test Setups

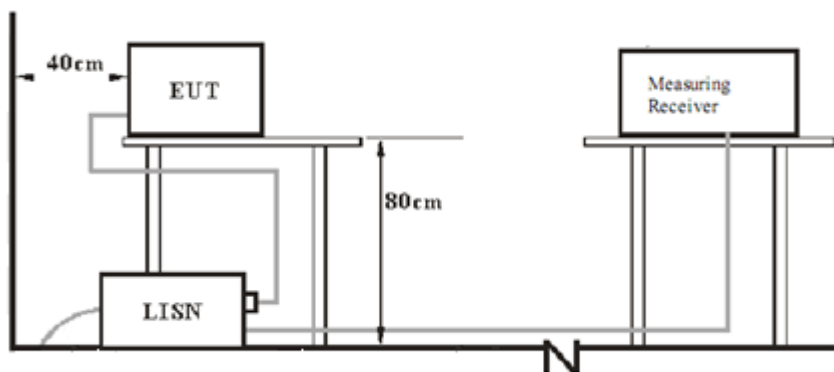
Below 30MHz



30MHz-1GHz



AC Power Line Conducted Emission test setups



8. Systems test configuration

Auxiliary Equipment Used during Test:

Description	Manufacturer	Model NO.	S/N
Wireless Watch	HUAWEI	---	---
Adapter	HUAWEI		

9. Technical Requirement

9.1 Conducted Emission Test

Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of AC line

Limit

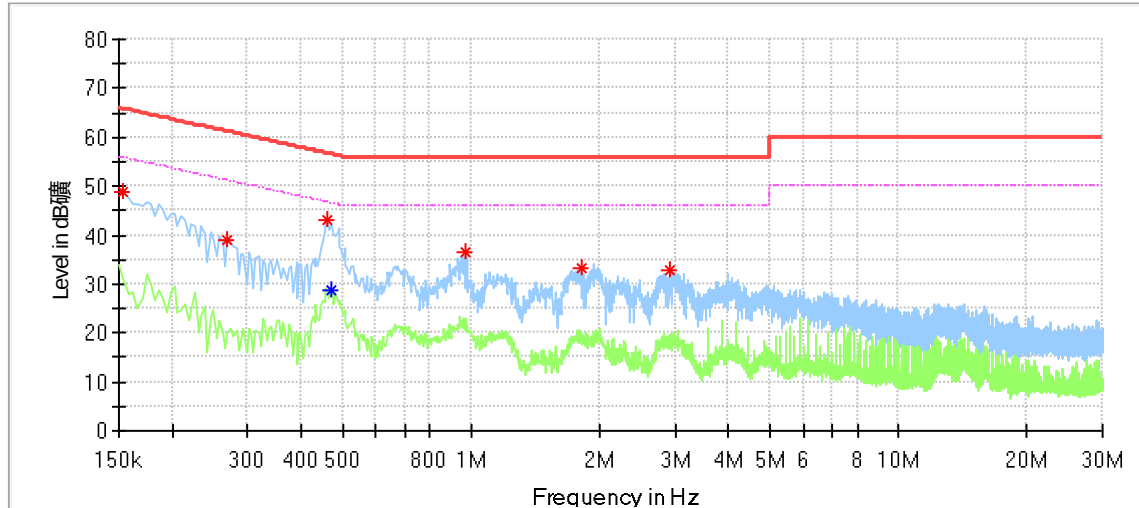
According to §18.307, conducted emissions limit as below:

Frequency MHz	QP Limit dB μ V	AV Limit dB μ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

*Decreasing linearly with logarithm of the frequency

Conducted Emission

Product Type : Watch Wireless Charger
 M/N : CP80-1
 Operating Condition : Charging Mode
 Test Specification : Line
 Comment : AC 120V/60Hz



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.154000	48.86	---	65.78	16.92	L1	9.5
0.270000	39.17	---	61.12	21.94	L1	9.5
0.462000	43.17	---	56.66	13.48	L1	9.5
0.470000	---	28.91	46.51	17.61	L1	9.5
0.974000	36.41	---	56.00	19.59	L1	9.6
1.806000	33.16	---	56.00	22.84	L1	9.6
2.914000	32.78	---	56.00	23.22	L1	9.6

Remark:

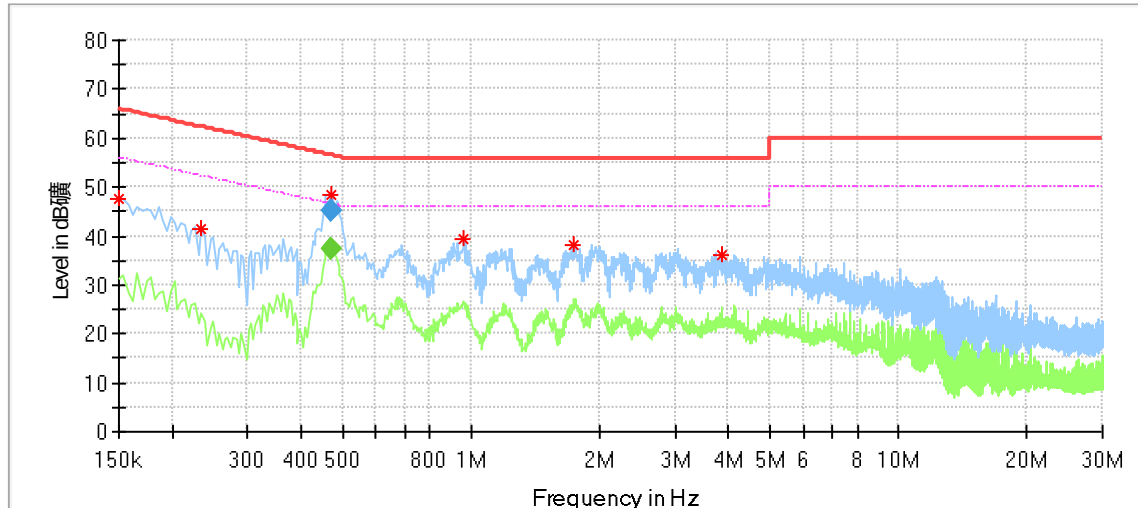
Level=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

Conducted Emission

Product Type : Watch Wireless Charger
 M/N : CP80-1
 Operating Condition : Charging Mode
 Test Specification : Neutral
 Comment : AC 120V/60Hz



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.150000	47.51	---	66.00	18.49	N	9.6
0.234000	41.60	---	62.31	20.71	N	9.5
0.469500	48.31	---	56.59	8.28	N	9.6
0.962000	39.42	---	56.00	16.58	N	9.6
1.742000	38.24	---	56.00	17.76	N	9.6
3.854000	36.12	---	56.00	19.88	N	9.6

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---	---	---

Remark:

Level=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

9.2 Radiated Emission Test for 9KHz-30MHz

Test Method

1: Field strength measurements are made in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna as specified in ANSI C63.4 clause 4.5.2, positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. This method is applicable for radiated radio-noise measurements from all units, cables, power cords, and interconnect cabling or wiring.

2: For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT.

Limits

According to §18.305, Field strength limit as below:

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 500 500 or more	25 $25 \times \text{SQRT}(\text{power}/500)$	300 ¹ 300
	Any non-ISM frequency	Below 500 500 or more	15 $15 \times \text{SQRT}(\text{power}/500)$	300 ¹ 300
Industrial heaters and RF stabilized arc welders	On or below 5,725 MHz Above 5,725 MHz	Any Any	10 (²)	1,600 (²)
Medical diathermy	Any ISM frequency Any non-ISM frequency	Any Any	25 15	300 300
Ultrasonic	Below 490 kHz	Below 500 500 or more	2,400/F(kHz) $2,400/F(\text{kHz}) \times \text{SQRT}(\text{power}/500)$	300 ³ 300
	490 to 1,600 kHz Above 1,600 kHz	Any Any	24,000/F(kHz) 15	30 30
Induction cooking ranges	Below 90 kHz	Any	1,500	⁴ 30
	On or above 90 kHz	Any	300	⁴ 30
¹ 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. ² Reduced to the greatest extent possible. ³ 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. ⁴ Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.				

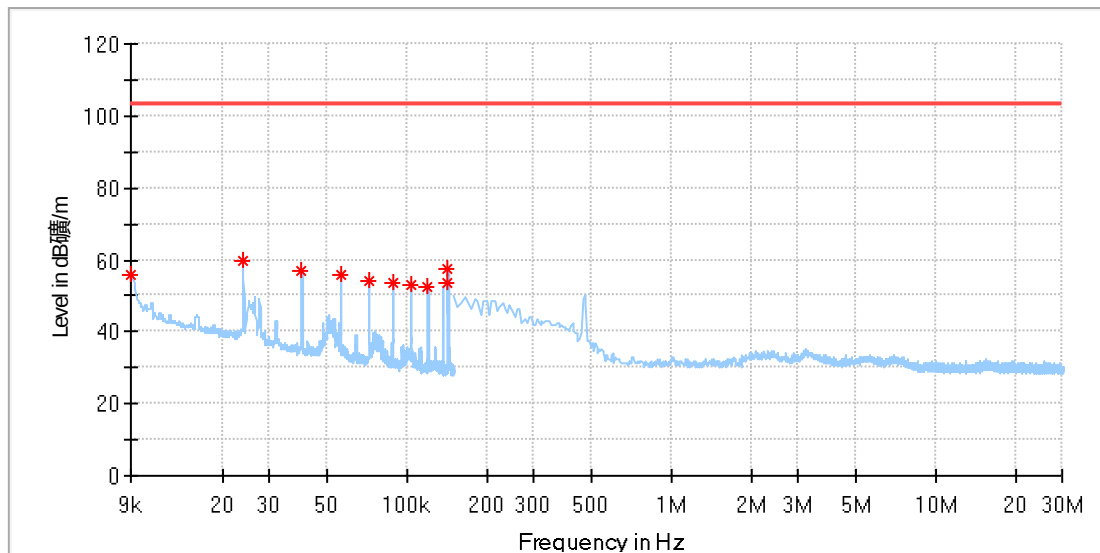
Note 1: Limit 3m(dBµV/m)=Limit 300m(dBµV/m)+40Log(300m/3m) (Below 30MHz)

Note 2: Limit 3m(dBµV/m)=Limit 300m(dBµV/m)+20Log(300m/3m) (Above 30MHz)

Note 3: this product is a wireless charger which operated at 111-148kHz with data transmission. So, it belongs to miscellaneous with non-SIM frequency.

Radiated Emission for 9KHz-30MHz

Product Type : Watch Wireless Charger
 M/N : CP80-1
 Operating Condition : Charging Mode
 Polarity : Horizontal
 Comment : 9KHz-30MHz



Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB)	Comment
0.023993	59.55	103.50	43.95	H	0.0	20	---
0.039973	57.08	103.50	46.42	H	0.0	20	---
0.056000	56.02	103.50	47.48	H	0.0	20	---
0.071980	54.34	103.50	49.16	H	0.0	20	---
0.088007	53.55	103.50	49.95	H	0.0	20	---
0.103987	52.96	103.50	50.54	H	0.0	20	---
0.120014	52.60	103.50	50.90	H	0.0	20	---
0.142762	57.69	103.50	45.81	H	99.0	20	---
0.009000	55.75	103.50	47.75	H	210.0	21	---
0.142339	53.77	103.50	49.73	H	224.0	20	---

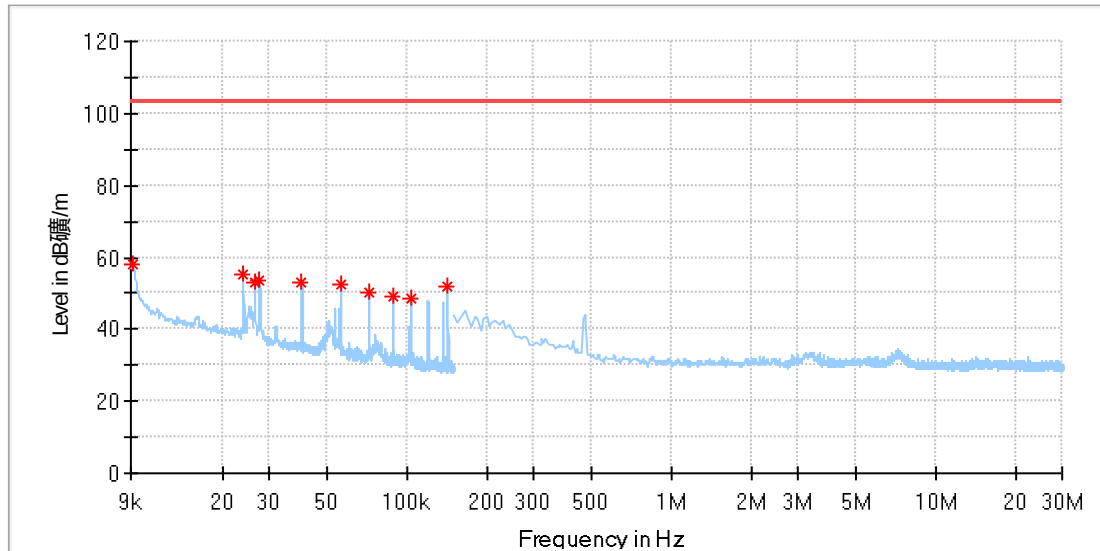
Remark:

Level=Reading Level + Correction Factor

Correction Factor=Antenna Factor + Cable Loss

(The Reading Level is recorded by software which is not shown in the sheet)

Product Type : Watch Wireless Charger
 M/N : CP80-1
 Operating Condition : Charging Mode
 Polarity : Vertical
 Comment : 9KHz-30MHz



Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB)	Comment
0.023993	55.15	103.50	48.35	V	0.0	20	---
0.039973	52.86	103.50	50.64	V	0.0	20	---
0.056000	52.57	103.50	50.93	V	0.0	20	---
0.071980	50.45	103.50	53.05	V	0.0	20	---
0.088007	49.19	103.50	54.31	V	0.0	20	---
0.103987	48.64	103.50	54.86	V	0.0	20	---
0.026531	53.22	103.50	50.28	V	1.0	20	---
0.142527	51.69	103.50	51.81	V	29.0	20	---
0.009188	58.00	103.50	45.50	V	99.0	21	---
0.027659	53.68	103.50	49.82	V	325.0	20	---

Remark:

Level=Reading Level + Correction Factor

Correction Factor=Antenna Factor + Cable Loss

(The Reading Level is recorded by software which is not shown in the sheet)

9.3 Radiated Emission Test for 30MHz-1GHz

Test Method

- 1: The EUT was placed on a turn table which is 0.8m above ground for below 1GHz at 3 meters chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2: The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
- 3: The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 4: For each suspected emission, the EUT was arranged to its worst case and then 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 find the maximum reading.
- 5: Use the following spectrum analyzer settings According to C63.4:
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 100 KHz, VBW ≥ RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

Note:

- 1: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Quasi-peak detection (QP) at frequency below 1GHz.

Limits

According to §18.305, Field strength limit as below:

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (μV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500 500 or more	25 $25 \times \text{SQRT}(\text{power}/500)$	300 ¹ 300
	Any non-ISM frequency	Below 500 500 or more	15 $15 \times \text{SQRT}(\text{power}/500)$	300 ¹ 300
Industrial heaters and RF stabilized arc welders	On or below 5,725 MHz Above 5,725 MHz	Any Any	10 (²)	1,600 (²)
Medical diathermy	Any ISM frequency Any non-ISM frequency	Any Any	25 15	300 300
Ultrasonic	Below 490 kHz	Below 500 500 or more	$2,400/F(\text{kHz})$ $2,400/F(\text{kHz}) \times \text{SQRT}(\text{power}/500)$	300 ³ 300
	490 to 1,600 kHz Above 1,600 kHz	Any Any	$24,000/F(\text{kHz})$ 15	30 30
Induction cooking ranges	Below 90 kHz	Any	1,500	⁴ 30
	On or above 90 kHz	Any	300	⁴ 30
¹ 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. ² Reduced to the greatest extent possible. ³ 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. ⁴ Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.				

Note 1: Limit 3m(dBμV/m)=Limit 300m(dBμV/m)+40Log(300m/3m) (Below 30MHz)

Note 2: Limit 3m(dBμV/m)=Limit 300m(dBμV/m)+20Log(300m/3m) (Above 30MHz)

Note 3: this product is a wireless charger which operated at 111-148kHz with data transmission. So, it belongs to miscellaneous with non-SIM frequency.

Radiated Emission

Model: CP80-1
 Test Mode: Charging Mode
 Test Voltage: AC 120V/60Hz

Frequency Band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Correct factor	Result
	MHz	dB μ V/m		dB μ V/m		dB μ V/m	(dB)	
30MHz-1000MHz	49.642500	14.83	H	63.52	QP	48.69	18	Pass
	108.812500	22.81	H	63.52	QP	40.71	16	Pass
	192.050625	21.87	H	63.52	QP	41.65	16	Pass
	271.469375	32.16	H	63.52	QP	31.36	18	Pass
	357.920625	22.56	H	63.52	QP	40.96	20	Pass
	587.810625	25.74	H	63.52	QP	37.78	25	Pass
	49.945625	20.51	V	63.52	QP	43.01	18	Pass
	87.654375	24.77	V	63.52	QP	38.75	13	Pass
	112.874375	30.93	V	63.52	QP	32.59	15	Pass
	223.272500	27.40	V	63.52	QP	36.12	16	Pass
	350.039375	20.91	V	63.52	QP	42.61	21	Pass
	646.495625	27.74	V	63.52	QP	35.78	26	Pass

Remark:

- 1) Level=Reading Level + Correction Factor
- 2) Correction Factor=Antenna Factor + Cable Loss
- 3) The Reading Level is recorded by software which is not shown in the sheet
- 4) The worst case data were reported and no other spurious and harmonics emissions were reported greater than listed emission above table.

10. Test Equipment List

Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2020-6-28
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2020-6-27
Horn Antenna	Rohde & Schwarz	HF907	102294	2020-6-27
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100398	2020-6-28
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2020-6-28
Signal Generator	Rohde & Schwarz	SMY01	839369/005	2020-6-28
Attenuator	Agilent	8491A	MY39264334	2020-7-7
3m Semi-anechoic chamber	TDK	9X6X6	----	N/A
Test software	Rohde & Schwarz	EMC32	Version 9.15.00	2020-6-28

Conducted Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2020-6-28
LISN	Rohde & Schwarz	ENV4200	100249	2020-6-28
LISN	Rohde & Schwarz	ENV432	101318	2020-7-19
LISN	Rohde & Schwarz	ENV216	100326	2020-6-28
Attenuator	Shanghai Huaxiang	TS2-26-3	080928189	2020-6-28
Test software	Rohde & Schwarz	EMC32	Version 9.15.00	N/A

11. Measurement System Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Items	Extended Uncertainty
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 5.12dB; Vertical: 5.10dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-18000MHz	Horizontal: 5.01dB; Vertical: 5.00dB;
Uncertainty for Conducted Emission 150kHz-30MHz (for test using AMN ENV432 or ENV4200)	3.21dB