

FCC - TEST REPORT

Report Number	: 68.950.20.0121.01	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	: <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Negative		
Total pages including Appendices	: 19		

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2 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1

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 518052
P.R. China

Telephone: 86 755 8828 6998

Fax: 86 755 828 5299

FCC Registration No.: 514049

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 15 Subpart C 10-1-2019 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to ANSI C63.10 (2013).

5 Summary of Test Results

Technical Requirements						
FCC Part 15 Subpart C						
Test Condition		Pages	Test Site	Test Result		
				Pass	Fail	N/A
§15.207	Conducted emission AC power port	10	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	20dB bandwidth	13	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.205	Restricted bands of operation	14	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.209	Radiated emission	15	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.203	Antenna requirement	See note 1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note 1: The EUT uses an Integrated coil antenna, which gain is 0dBi. In accordance to §15.203, 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 Section 15.207, 15.209, 15.205 of the FCC Part 15, Subpart C rules.

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:

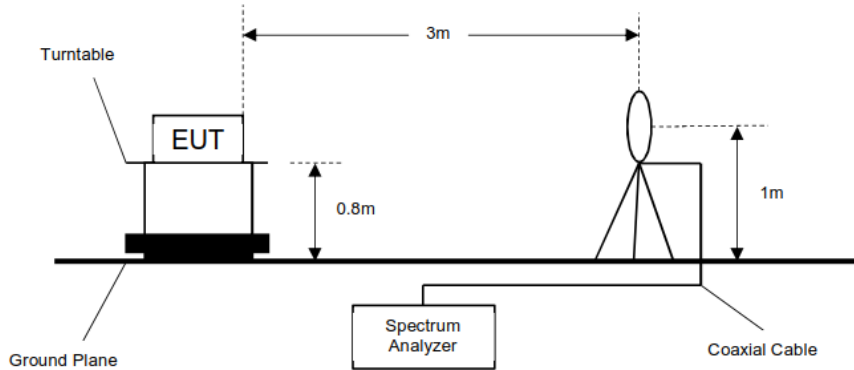



Tree Zhan
Test Engineer

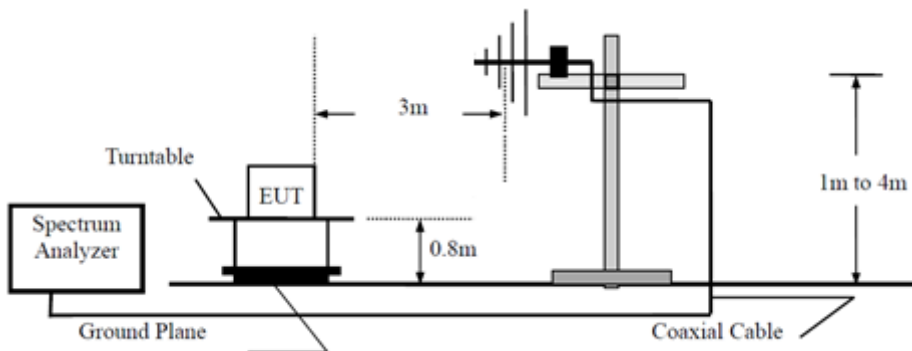
7 Test Setups

7.1 Radiated test setups

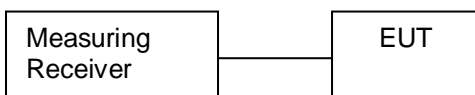
Below 30MHz



30MHz-1GHz



7.2 Conducted RF 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

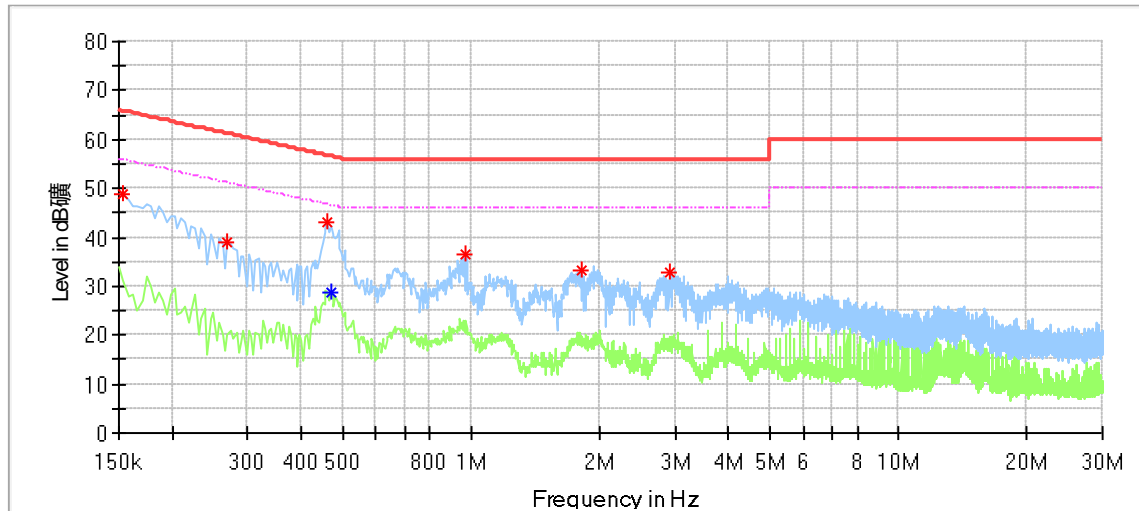
According to §15.207, conducted emissions limit as below:

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



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:

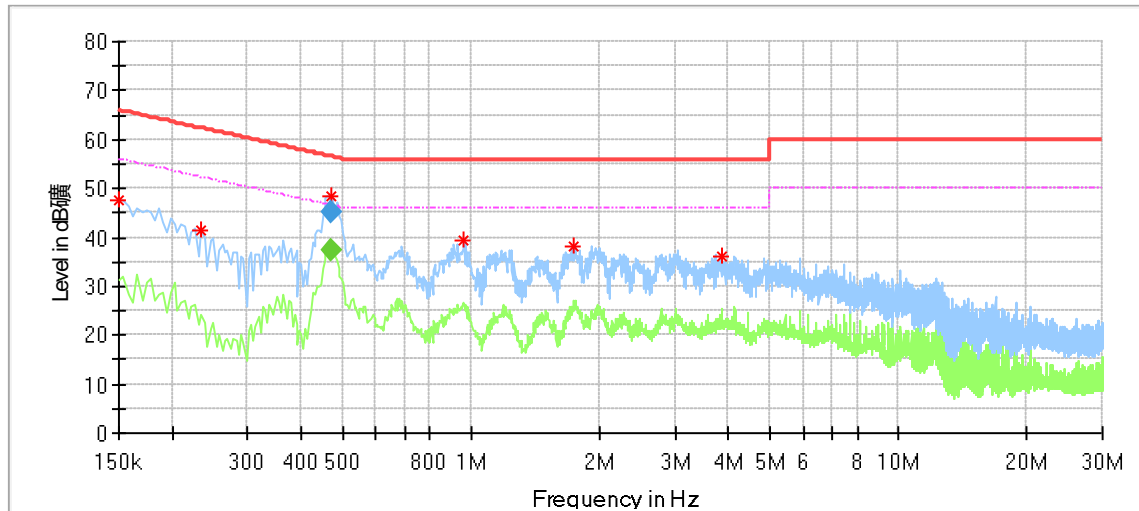
Level=Reading Level + Correction Factor

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



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 20 dB Bandwidth

Test Method

1. Use the following spectrum analyzer settings:
RBW=200Hz, VBW \geq 3RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Use the automatic bandwidth measurement capability of an instrument, may be employed using the X dB bandwidth mode with X set to 20 dB, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be \geq 20 dB.
3. Allow the trace to stabilize, record the X dB Bandwidth value.

Limit

Limit [kHz]

No Limit

Test result

Frequency	20dB bandwidth	Result		Result
KHz	KHz	F _L (KHz)	F _H (KHz)	
111KHz	1.013	128.45	--	Pass
148KHz	0.999	--	142.391	Pass

The fundamental frequency is outside the restricted bands of 15.205 section.

9.3 Radiated Emission Test

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 C63.10:

Limit

the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency MHz	Field Strength μ V/m	Field Strength dB μ V/m	Detector	Measurement distance meters
0.009-0.490	2400/F(kHz)	48.5-13.8	QP	300
0.490-1.705	24000/F(kHz)	33.8-23.0	QP	30
1.705-30	30	29.5	QP	30
30-88	100	40	QP	3
88-216	150	43.5	QP	3
216-960	200	46	QP	3
960-1000	500	54	QP	3
Above 1000	500	54	AV	3
Above 1000	5000	74	PK	3

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

Note 2: Limit 3m(dB μ V/m)=Limit 30m(dB μ V/m)+40Log(30m/3m) (Below 30MHz)

Radiated emissions test (9KHz-30MHz)

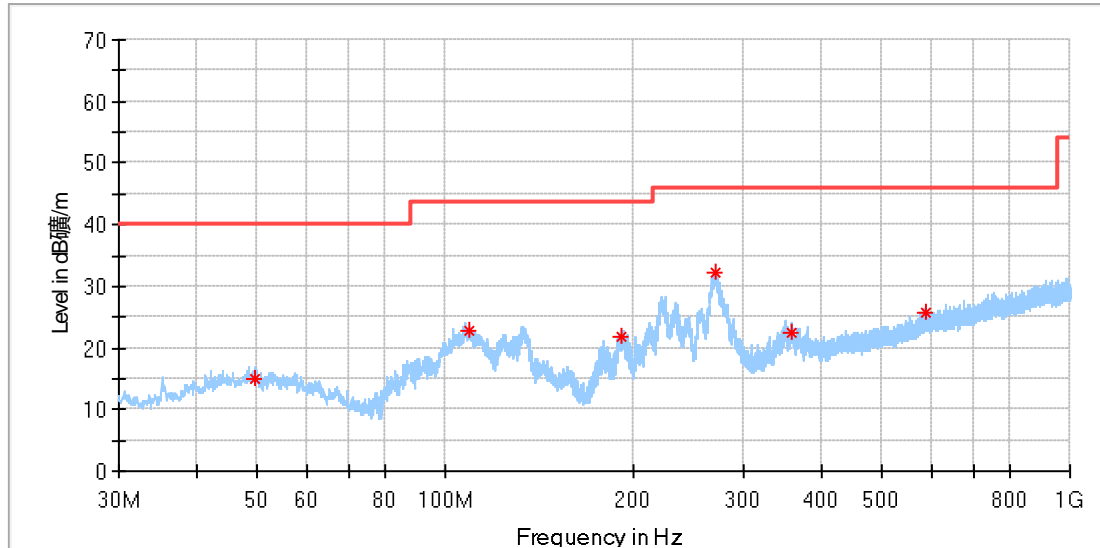
Frequency Band	Frequency MHz	Emission Level dBμV/m	Polarization	Limit dBμV/m	Detector	Margin dBμV/m	Correct factor (dB)	Result
9KHz-30MHz	0.023993	59.02	H	93.8	QP	34.78	20	Pass
	0.039973	56.38	H	93.8	QP	37.42	20	Pass
	0.129414*	67.93	H	93.8	QP	25.87	20	Pass
	Other frequency	--	H	93.8	QP	--	--	Pass
	0.023993	55.15	V	93.8	QP	38.65	20	Pass
	0.129367	56.48	V	93.8	QP	37.32	20	Pass
	0.009188	57.64	V	93.8	QP	36.16	20	Pass

Remark:

- (1) “*” means the emission(s) appear within the working band 111-148KHz.
- (2) Data of measurement within this frequency range shown “--” in the table above means the reading of emissions are the noise floor or attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Amplifier Gain
Below 1GHz: Corrector factor = Antenna Factor + Cable Loss
- (4) All tested frequencies comply for the strictest limit (93.8dBμV/m). so the test result can considered as Pass.

Radiated emissions test (30MHz-1000MHz)

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



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
49.642500	14.83	40.00	25.17	100.0	H	79.0	18
108.812500	22.81	43.50	20.69	200.0	H	0.0	16
192.050625	21.87	43.50	21.63	100.0	H	87.0	16
271.469375	32.16	46.00	13.84	100.0	H	0.0	18
357.920625	22.56	46.00	23.44	100.0	H	79.0	20
587.810625	25.74	46.00	20.26	100.0	H	314.0	25

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	---	---	---	---		---	---

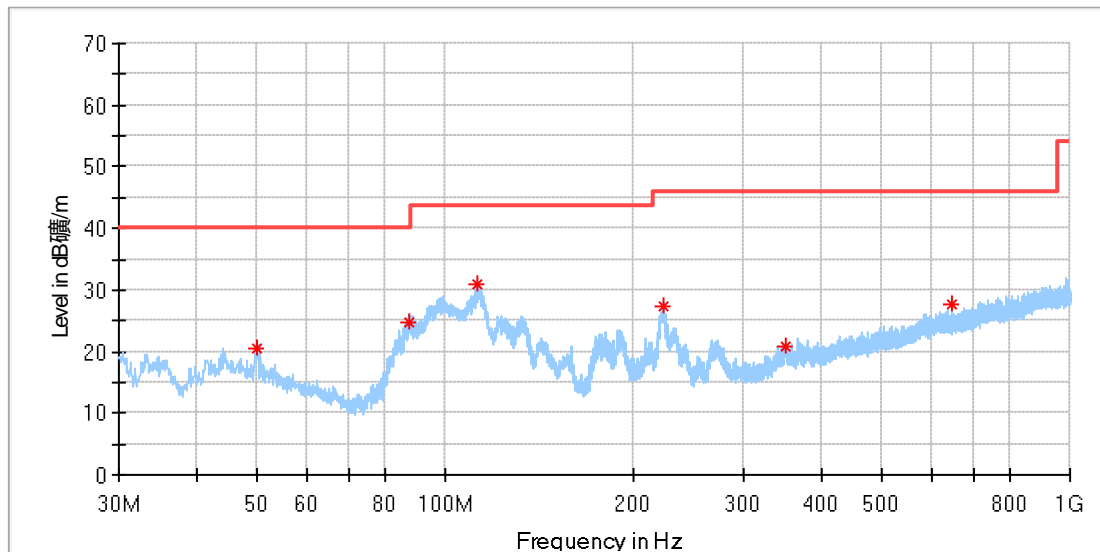
Remark:

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)

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



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
49.945625	20.51	40.00	19.49	100.0	V	358.0	18
87.654375	24.77	40.00	15.23	100.0	V	0.0	13
112.874375	30.93	43.50	12.57	100.0	V	64.0	15
223.272500	27.40	46.00	18.60	100.0	V	0.0	16
350.039375	20.91	46.00	25.09	100.0	V	33.0	21
646.495625	27.74	46.00	18.26	100.0	V	80.0	26

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	---	---	---	---		---	---

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)

10 Test Equipment List

List of Test Instruments

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	----	2020-7-7
Test software	Rohde & Schwarz	EMC32	Version 9.15.00	N/A

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	Version9.15.00	N/A

11 System Measurement 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	
Test Items	Extended Uncertainty
Uncertainty for Radiated Emission in 3m chamber 9kHz-30MHz	4.76dB
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