

	TEST REI	POR	Т			
FCC ID:	2A4MTXDL-WA11					
Test Report No::	TCT220217E023		(C)	(c)		
Date of issue::	Feb. 28, 2022					
Testing laboratory:	SHENZHEN TONGCE	TESTING	S LAB			
Testing location/ address:	TCT Testing Industrial Park Fuqiao 5th Industrial Zone, Fuhai Street, Bao'an District Shenzhen, Guangdong, 518103, People's Republic of China					
Applicant's name::	Shenzhen Zhenghaixir	Technolo	gy Co., Ltd.			
Address:	Area 301A, No.7 Xiongyu Road, Tangxiachong Community, Yanchuan Street, Baoan District, Shenzhen, China					
Manufacturer's name:	Shenzhen Zhenghaixir	Technolo	gy Co., Ltd.			
Address:	Area 301A, No.7 Xiongyu Road, Tangxiachong Community, Yanchuan Street, Baoan District, Shenzhen, China					
Standard(s):	FCC CFR Title 47 Part 15 Subpart C					
Test item description:	Wireless Charger for V	/atch & Ea	arphone			
Trade Mark:	N/A	((0))	(
Model/Type reference:	XDL-WA11, ZHX-WA1	1, XDL-W	A12			
Rating(s)::	Input: DC 5V, 2A Output 1: 2.5W Max Output 2: 5W Max					
Date of receipt of test item:	Feb. 17, 2022					
Date (s) of performance of test:	Feb. 17, 2022 ~ Feb. 2	8, 2022				
Tested by (+signature):	Rleo LIU		Preo Cho	NGCE S		
Check by (+signature):	Beryl ZHAO		Boyl this	CT		
Approved by (+signature):	Tomsin		Joms Miss	947		

General disclaimer:

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1. General Product Information

1.1.EUT description

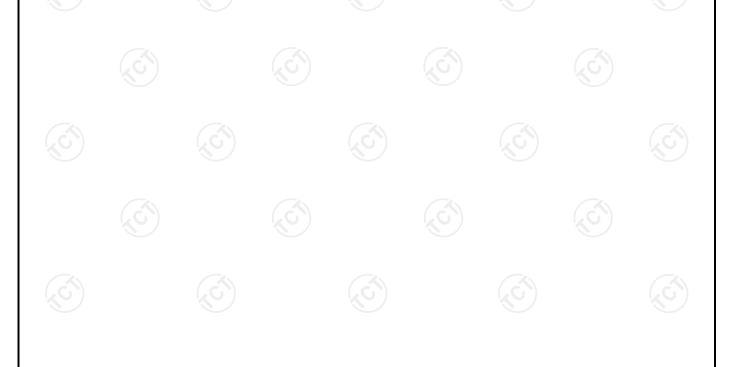
Test item description:	Wireless Charger for Watch & Earphone		
Model/Type reference:	XDL-WA11		
Sample Number:	TCT220217E023-0101		
Operation Frequency:	For 2.5W: 322.34kHz For 5W: 112.34kHz – 129.65kHz	(6)	
Modulation Technology:	Load modulation		
Antenna Type:	Inductive loop coil Antenna		
Rating(s):	Input: DC 5V, 2A Output 1: 2.5W Max Output 2: 5W Max		

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2.Model(s) list

No.	Model No.	Tested with
1	XDL-WA11	
Other models	ZHX-WA11, XDL-WA12	

Note: XDL-WA11 is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names. So the test data of XDL-WA11 can represent the remaining models.





Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Spurious Emission	§15.209(a)(f)	PASS

Note:

- 1. PASS: Test item meets the requirement.
- 2. Fail: Test item does not meet the requirement.





3. General Information

3.1. Test environment and mode

Operating Environment:							
Condition	Radiated Emission						
Temperature:	25 °C	25.3 °C					
Humidity:	55 % RH	52 % RH					
Atmospheric Pressure:	1010 mbar	1010 mbar					
Task Marda.							

Test Mode:

TM1	Keep the EUT in continuous transmitting(output: 2.5W max)
TM2	Keep the EUT in continuous transmitting(output: 5W max)
TM3	Keep the EUT in continuous transmitting(output: 2.5W + 5W)
REMARK	All modes had been tested, and the TM3 is the worst mode be showed in the report.

The sample was placed 0.8m for the measurement below above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case(Z axis) are shown in Test Results of the following pages.

3.2. Description of Support Units

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.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
2.5W coil load	(0)		10	1
5W coil load	/	/	/	/
Adapter	EP-TA200	R37M4PR3QD1SE3	/	SAMSUNG

Note:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



4. Facilities and Accreditations

4.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

• IC - Registration No.: 10668A-1

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

4.2. Location

SHENZHEN TONGCE TESTING LAB

Address: TCT Testing Industrial Park Fuqiao 5th Industrial Zone, Fuhai Street, Bao'an District Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

4.3. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expended 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	MU
1	Conducted Emission	± 3.10 dB
2	RF power, conducted	± 0.12 dB
3	Spurious emissions, conducted	± 0.11 dB
4	All emissions, radiated(<1 GHz)	± 4.56 dB
5	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
6	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB



5. Test Results and Measurement Data

5.1. Antenna requirement

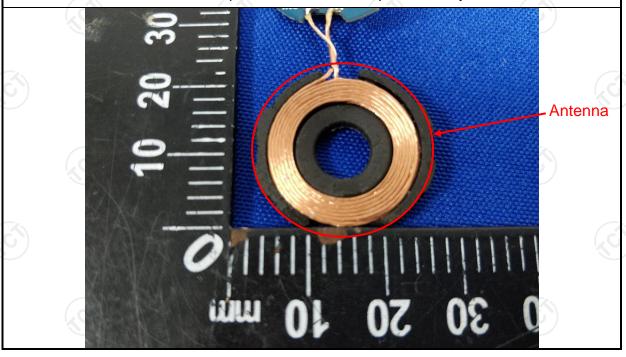
Standard requirement: FCC Part15 C Section 15.203

15.203 requirement:

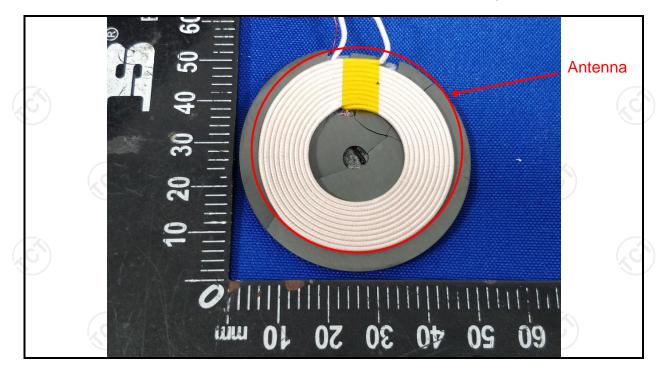
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

E.U.T Antenna:

The antennas iare inductive loop coil antenna which permanently attached.











5.2. Conducted Emission

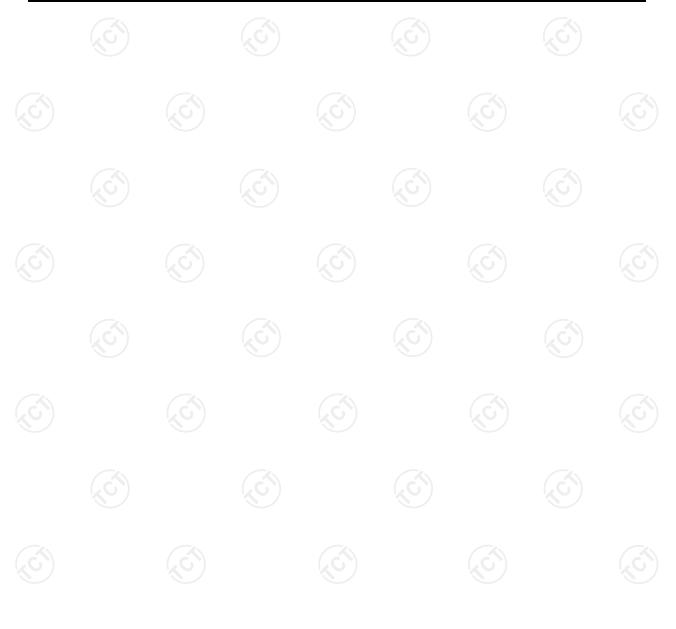
5.2.1. Test Specification

Test Requirement:	FCC Part15 C Section	FCC Part15 C Section 15.207				
Test Method:	ANSI C63.10:2013					
Frequency Range:	150 kHz to 30 MHz	150 kHz to 30 MHz				
Receiver setup:	RBW=9 kHz, VBW=30) kHz, Sweep time	e=auto			
Limits:	Frequency range (MHz) 0.15-0.5 0.5-5 5-30	Limit (Quasi-peak 66 to 56* 56 60	(dBuV) Average 56 to 46* 46 50			
	Refere	nce Plane	1/20			
Test Setup:	Test table/Insulation pla Remark: E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Test table height=0.8m	EMI Receiver	Iter — AC power			
Test Mode:	Refer to section 3.1 for details					
Test Procedure:	 The E.U.T is connected to an adapter through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. 					
	ANSI C63.10: 2013	on conducted me	easurement.			



5.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)									
Equipment	Calibration Due								
EMI Test Receiver	R&S	ESCI3	100898	Jul. 07, 2022					
Line Impedance Stabilisation Newtork(LISN)	Schwarzbeck	NSLK 8126	8126453	Mar. 11, 2022					
Line-5	тст	CE-05	N/A	Jul. 07, 2022					
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A					

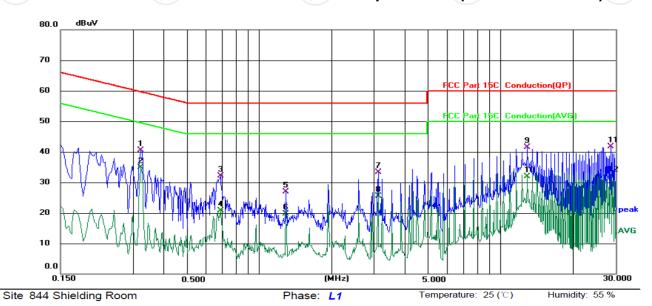




5.2.3. Test data

Please refer to following diagram for individual

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Limit: FCC Part 15C Conduction(QP)

Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3220	31.29	9.30	40.59	59.66	-19.07	QP	
2	*	0.3220	25.62	9.30	34.92	49.66	-14.74	AVG	
3		0.6900	22.89	9.18	32.07	56.00	-23.93	QP	
4		0.6900	11.62	9.18	20.80	46.00	-25.20	AVG	
5		1.2940	17.50	9.36	26.86	56.00	-29.14	QP	
6		1.2940	10.44	9.36	19.80	46.00	-26.20	AVG	
7		3.1099	23.70	9.52	33.22	56.00	-22.78	QP	
8		3.1099	15.99	9.52	25.51	46.00	-20.49	AVG	
9		12.9220	31.88	9.64	41.52	60.00	-18.48	QP	
10		12.9220	22.31	9.64	31.95	50.00	-18.05	AVG	
11		28.7540	31.83	9.84	41.67	60.00	-18.33	QP	
12		28.7540	22.31	9.84	32.15	50.00	-17.85	AVG	

Note:

Freq. = Emission frequency in MHz

Reading level ($dB\mu V$) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement $(dB\mu V)$ = Reading level $(dB\mu V)$ + Corr. Factor (dB)

Limit (dBµV) = Limit stated in standard

 $Margin (dB) = Measurement (dB\mu V) - Limits (dB\mu V)$

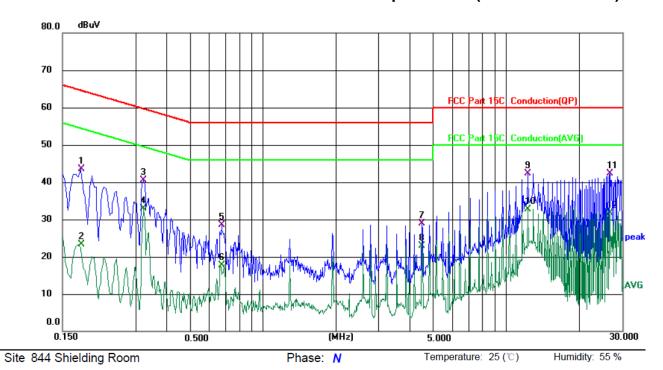
Q.P. =Quasi-Peak

AVG =average

^{*} is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz



Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Limit: FCC Part 15C Conduction(QP)

Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1780	34.00	9.55	43.55	64.58	-21.03	QP	
2		0.1780	13.75	9.55	23.30	54.58	-31.28	AVG	
3		0.3220	31.11	9.34	40.45	59.66	-19.21	QP	
4	*	0.3220	23.53	9.34	32.87	49.66	-16.79	AVG	
5		0.6780	19.25	9.21	28.46	56.00	-27.54	QP	
6		0.6780	8.59	9.21	17.80	46.00	-28.20	AVG	
7		4.5220	19.40	9.46	28.86	56.00	-27.14	QP	
8		4.5220	13.51	9.46	22.97	46.00	-23.03	AVG	
9		12.2780	32.61	9.64	42.25	60.00	-17.75	QP	
10		12.2780	22.99	9.64	32.63	50.00	-17.37	AVG	
11		26.8060	32.36	9.85	42.21	60.00	-17.79	QP	
12		26.8060	21.81	9.85	31.66	50.00	-18.34	AVG	

Note:

Freq. = Emission frequency in MHz

Reading level $(dB\mu V)$ = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement $(dB\mu V)$ = Reading level $(dB\mu V)$ + Corr. Factor (dB)

Limit $(dB\mu V) = Limit$ stated in standard

 $Margin (dB) = Measurement (dB\mu V) - Limits (dB\mu V)$

Q.P. =Quasi-Peak AVG =average

^{*} is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz

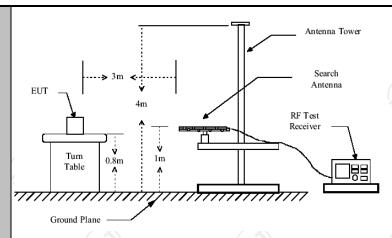


5.3. Radiated Spurious Emission Measurement

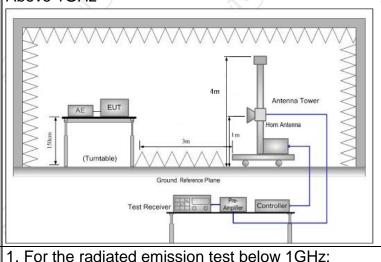
5.3.1. Test Specification

Toot Demuirement	ECC Daritat	C Cootie:	4E 200	(6)		(20)					
Test Requirement:	FCC Part15 C Section 15.209										
Test Method:	ANSI C63.10: 2013										
Frequency Range:	9 kHz to 25 GHz										
Measurement Distance:	3 m										
Antenna Polarization:	Horizontal & Vertical										
Operation mode:	Refer to item 3.1										
	Frequency	Detector	RBW	VBW		Remark					
	9kHz- 150kHz	Quasi-peal	200Hz	1kHz	Quas	si-peak Value					
Receiver Setup:	150kHz- 30MHz	Quasi-peal	9kHz	30kHz	Quas	si-peak Value					
•	30MHz-1GHz	Quasi-peal	120KHz	300KHz	Quas	si-peak Value					
	Al 401 l-	Peak	1MHz	3MHz		eak Value					
	Above 1GHz	Peak	1MHz	10Hz	Ave	erage Value					
	Frequen	_	Field Stre	/meter)	Measurement Distance (meters)						
	0.009-0.4		2400/F(I		300						
	0.490-1.7		24000/F(KHz)	30						
	1.705-3		30 100			30					
	30-88 88-216		150		3						
Limit:	216-96		200			3					
Emilie.	Above 9		500			3					
	N. C.	5)		(0)	ı	/C					
	Frequency		d Strength ovolts/meter)	Measure Distan (mete	ice	Detector					
	Above 1GHz	,	500		(, c	Average					
	7,5000 10112		5000			Peak					
Test setup:		Turn table Im									
	30MHz to 10	Ground GHZ	1 Plane	(6)		(6					





Above 1GHz



Test Procedure:

The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level. For the radiated emission test above 1GHz: Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final





5.3.2. Test Instruments

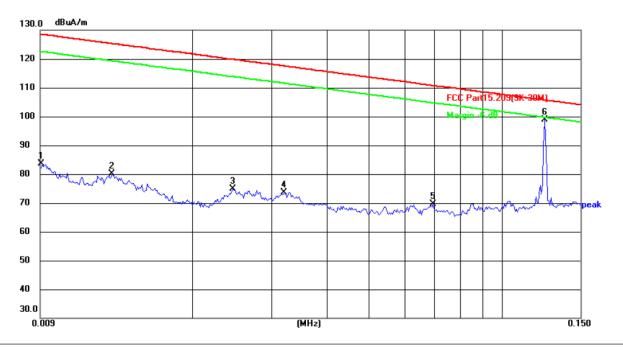
Radiated Emission Test Site (966)											
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due							
EMI Test Receiver	R&S	ESIB7	100197	Jul. 07, 2022							
Spectrum Analyzer	R&S	FSQ40	200061	Jul. 07, 2022							
Pre-amplifier	SKET	LNPA_0118G- 45	SK2021012 102	Mar. 11, 2022							
Pre-amplifier	SKET	LNPA_1840G- 50	SK2021092 03500	Apr. 08, 2022							
Pre-amplifier	HP	8447D	2727A05017	Jul. 07, 2022							
Loop antenna	ZHINAN	ZN30900A	12024	Sep. 05, 2022							
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 04, 2022							
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 04, 2022							
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Apr. 10, 2023							
Antenna Mast	Keleto	RE-AM	N/A	N/A							
Coaxial cable	SKET	RC_DC18G-N	N/A	Apr. 08, 2022							
Coaxial cable	SKET	RC-DC18G-N	N/A	Apr. 08, 2022							
Coaxial cable	SKET	RC-DC40G-N	N/A	Jul. 07, 2022							
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A							



5.3.3. Test Data

Please refer to following diagram for individual 9KHz-30MHz

9KHz-150KHz:

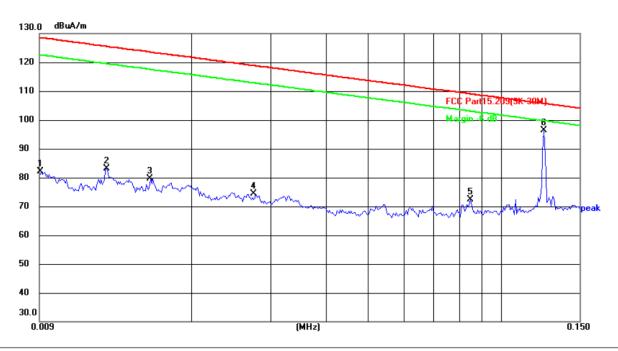


Site Polarization: Coaxial Temperature: 25(°C)

Limit: FCC Part15.209(9K-30M) Power: DC 5 V(Adapter Input AC 120 V/

No.	Frequency (MHz)	Reading (dBuA)	Factor (dB/m)	Level (dBuA/m)	Limit (dBuA/m)	Margin (dB)	Detector	P/F	Remark
1	0.0091	58.99	24.75	83.74	128.42	-44.68	peak	Р	
2	0.0131	57.94	22.20	80.14	125.26	-45.12	peak	Р	
3	0.0246	55.94	18.85	74.79	119.79	-45.00	peak	Р	
4	0.0320	54.30	19.34	73.64	117.50	-43.86	peak	Р	
5	0.0694	47.66	21.87	69.53	110.78	-41.25	peak	Р	
6 *	0.1242	73.85	25.12	98.97	105.72	-6.75	peak	Р	





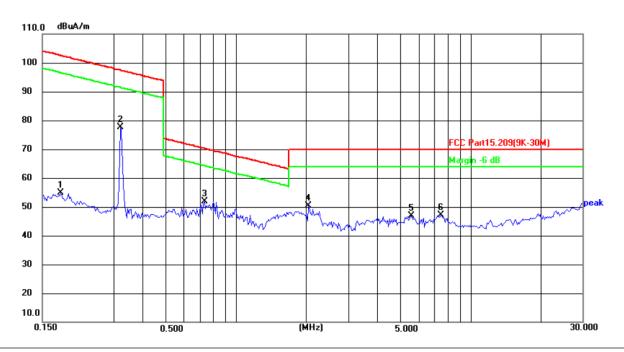
Site Polarization: Coplanar Temperature: 25(°C)
Limit: FCC Part15.209(9K-30M) Power: DC 5 V(Adapter Input AC 120 V/

						120			
No.	Frequency (MHz)	Reading (dBuA)	Factor (dB/m)	Level (dBuA/m)	Limit (dBuA/m)	Margin (dB)	Detector	P/F	Remark
1	0.0091	57.49	24.75	82.24	128.42	-46.18	peak	Р	
2	0.0128	60.80	22.36	83.16	125.46	-42.30	peak	Р	
3	0.0160	58.94	20.66	79.60	123.52	-43.92	peak	Р	
4	0.0275	55.45	19.04	74.49	118.82	-44.33	peak	Р	
5	0.0849	49.36	22.93	72.29	109.03	-36.74	peak	Р	
6 *	0.1242	71.35	25.12	96.47	105.72	-9.25	peak	Р	





150KHz-30MHz:

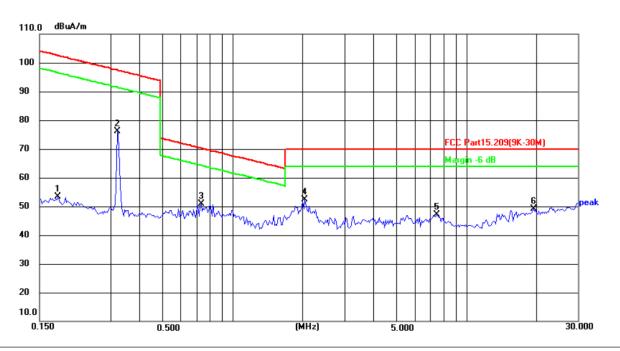


Site Polarization: Coaxial Temperature: 25(°C)
Limit: FCC Part15.209(9K-30M) Power: DC 5 V(Adapter Input AC Humidity: 55 %

No.	Frequency (MHz)	Reading (dBuA)	Factor (dB/m)	Level (dBuA/m)		Margin (dB)	Detector	P/F	Remark
1	0.1796	28.35	26.50	54.85	102.52	-47.67	peak	Р	
2	0.3220	51.20	26.40	77.60	97.45	-19.85	peak	Р	
3 *	0.7375	25.01	26.93	51.94	70.26	-18.32	peak	Р	
4	2.0438	21.08	29.24	50.32	70.00	-19.68	peak	Р	
5	5.6044	10.61	36.36	46.97	70.00	-23.03	peak	Р	
6	7.4652	6.50	40.72	47.22	70.00	-22.78	peak	Р	







Temperature: 25(℃) Site Polarization: Coplanar DC 5 V(Adapter Input AC Humidity: 55 %

70.00

-20.97

Limit: FCC Part15.209(9K-30M)

Reading

(dBuA)

26.85

49.70

24.01

23.08

6.50

23.46

Factor

(dB/m)

26.50

26.40

26.93

29.24

40.72

25.57

49.03

Frequency

(MHz) 0.1796

0.3220

0.7375

2.0438

7.4652

19.4115

No.

1

2

3

4

5

6

Power: Level Limit Margin Detector P/F Remark (dBuA/m) (dBuA/m) (dB) 53.35 102.52 -49.17 Р peak 76.10 97.45 -21.35 Р peak 50.94 70.26 -19.32 peak Ρ 52.32 70.00 -17.68 Ρ peak 47.22 70.00 -22.78 Р peak

Р

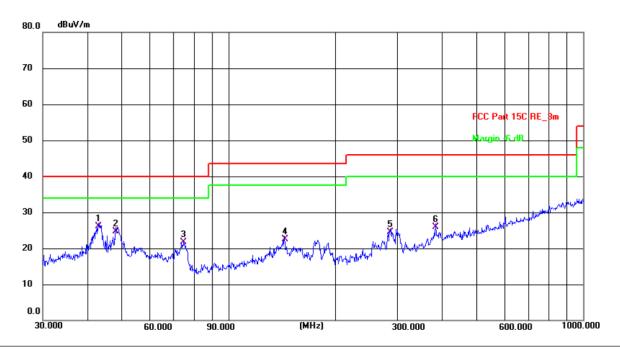
peak





30MHz-1GHz

Horizontal:



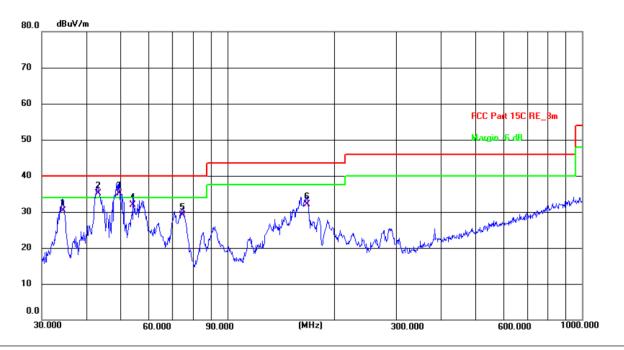
Site #2 3m Anechoic Chamber Polarization: *Horizontal* Temperature: 25.3(C) Humidity: 52 % Limit: FCC Part 15C RE_3m Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	43.0504	12.26	13.94	26.20	40.00	-13.80	QP	Р	
2	48.1625	10.98	13.82	24.80	40.00	-15.20	QP	Р	
3	74.9191	11.48	10.22	21.70	40.00	-18.30	QP	Р	
4	143.8295	9.22	13.28	22.50	43.50	-21.00	QP	Р	
5	285.9777	10.55	14.05	24.60	46.00	-21.40	QP	Р	
6	383.9318	9.21	16.69	25.90	46.00	-20.10	QP	Р	





Vertical:



Site #2 3m Anechoic Chamber Polarization: Vertical Temperature: 25.3(C) Humidity: 52 % Limit: FCC Part 15C RE_3m Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	34.3962	17.27	13.04	30.31	40.00	-9.69	QP	Р	
2 *	43.2014	21.25	13.93	35.18	40.00	-4.82	QP	Р	
3 !	49.5328	21.28	13.78	35.06	40.00	-4.94	QP	Р	
4	54.2608	18.34	13.50	31.84	40.00	-8.16	QP	Р	
5	74.9191	18.84	10.22	29.06	40.00	-10.94	QP	Р	
6	167.8240	19.58	12.59	32.17	43.50	-11.33	QP	Р	

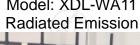
Note:

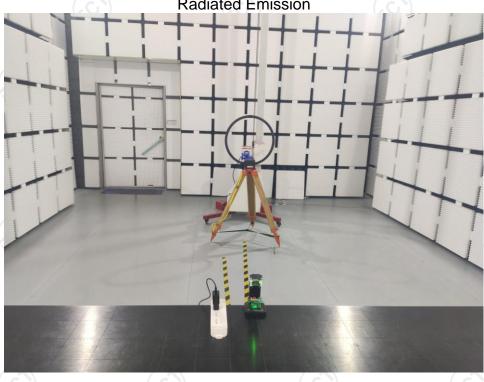
Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss - Pre-amplifier





Appendix A: Photographs of Test Setup Product: Wireless Charger for Watch & Earphone Model: XDL-WA11

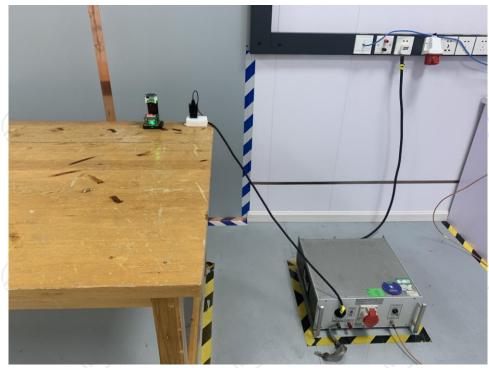








Conducted Emission























































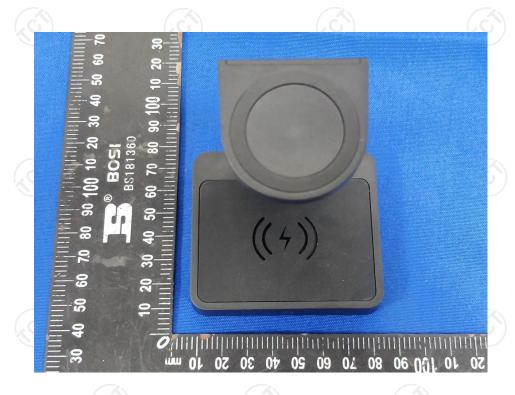




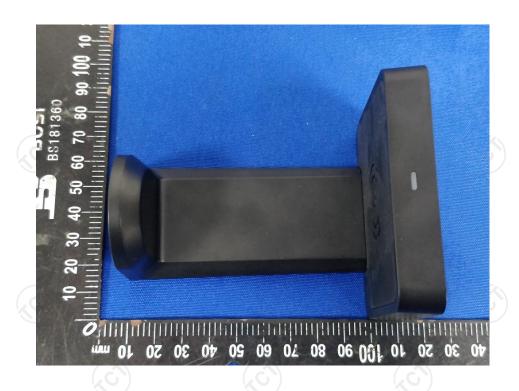
Appendix B: Photographs of EUT Product: Wireless Charger for Watch & Earphone

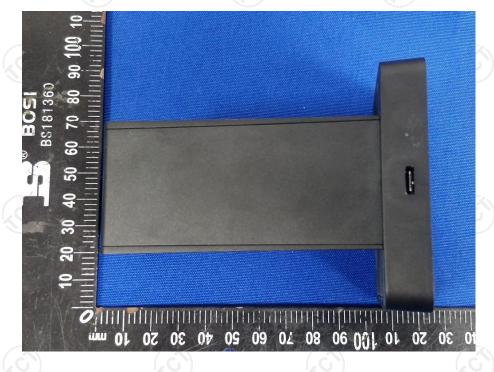
Model: XDL-WA11
External Photos







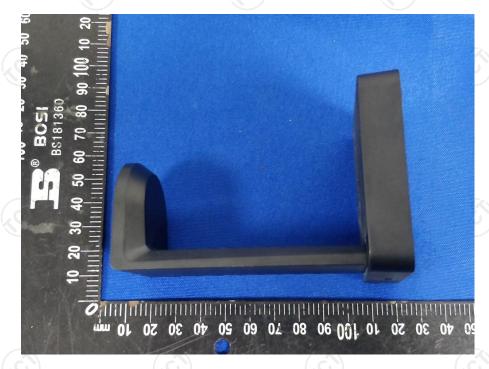












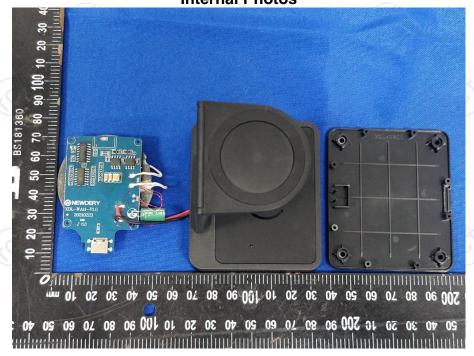


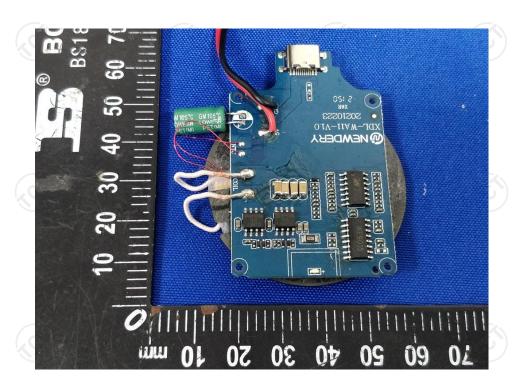






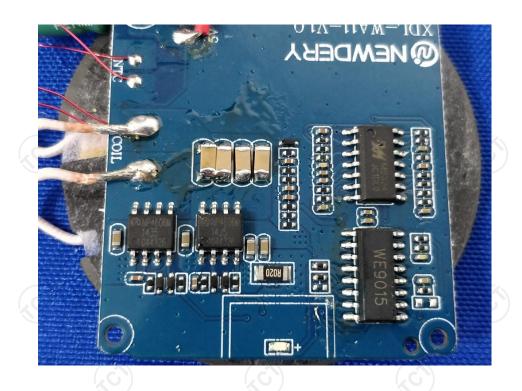
Product: Wireless Charger for Watch & Earphone Model: XDL-WA11 Internal Photos

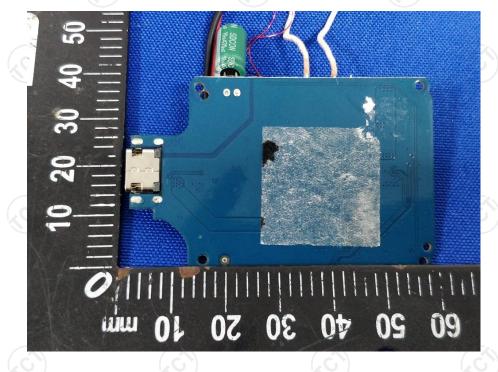




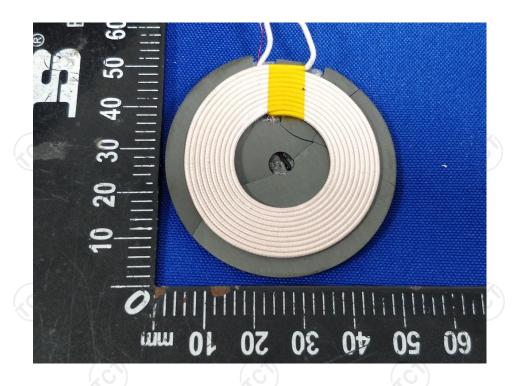


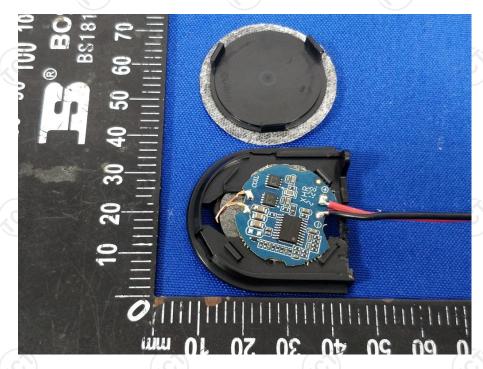






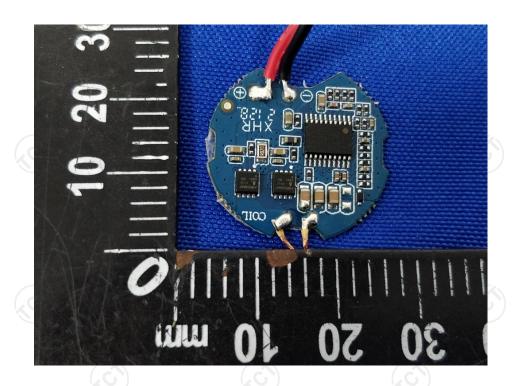


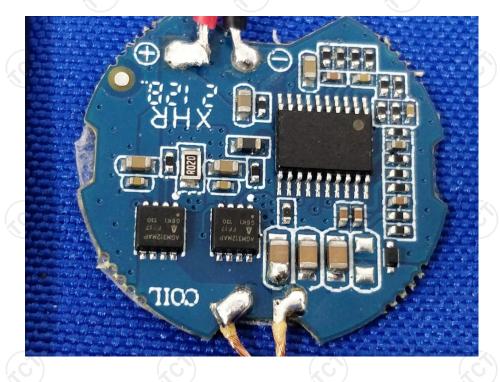




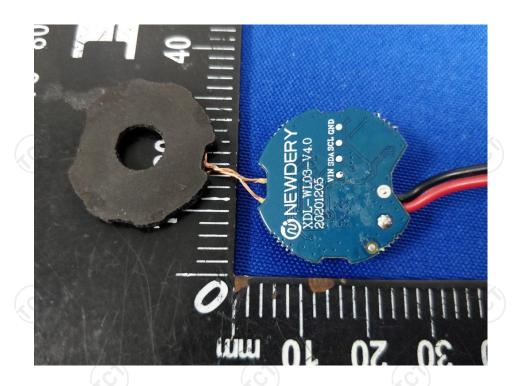






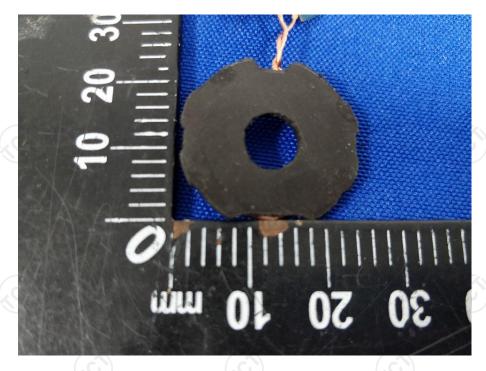












*****END OF REPORT****





