

TEST REPORT							
FCC ID:	2AQ2W-BQ10						
Test Report No::	TCT231018E004						
Date of issue::	Oct. 25, 2023						
Testing laboratory:	SHENZHEN TONGCE TESTIN	G LAB					
Testing location/ address:	2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fu Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China						
Applicant's name::							
Address::	5/F, 4th Bldg, Hedian Industrial Park, Guanlan, Longhua, Shenzhen, Guangdong 518110, China.						
Manufacturer's name:	Shenzhen Doageas Technology Co., Ltd.						
Address::	5/F, 4th Bldg, Hedian Industrial Park, Guanlan, Longhua, Shenzhen, Guangdong 518110, China.						
Standard(s):	FCC CFR Title 47 Part 15 Subp	art C					
Product Name::	Phone holder bluetooth speake	r wireless charger					
Trade Mark:	DOAGEAS						
Model/Type reference:	BQ10						
Rating(s)::	DC 9V or Rechargeable Li-ion E Wireless charging output: 5W /						
Date of receipt of test item:	Oct. 18, 2023						
Date (s) of performance of test:	Oct. 18, 2023 - Oct. 25, 2023						
Tested by (+signature):	Ronaldo LUO	Porales Courses					
Check by (+signature):	Beryl ZHAO	Boy TCT E					
Approved by (+signature):	Tomsin	Tomsies 3					

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## 1. General Product Information

## 1.1.EUT description

Product Name:	: Phone holder bluetooth speaker wireless charger					
Model/Type reference:	BQ10					
Sample Number:	TCT231018E003-0101					
Operation Frequency:	116.08kHz – 173.63kHz					
Modulation Technology:	Load modulation					
Antenna Type:	Inductive loop coil Antenna					
Rating(s):	DC 9V or Rechargeable Li-ion Battery DC 3.7V Wireless charging output: 5W / 10W / 15W					

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 None.



# 2. Test Result Summary

Requirement	CFR 47 Section	Result		
Antenna requirement	tenna requirement §15.203			
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:	Operating Environment:								
Condition	Conducted Emission	Radiated Emission							
Temperature:	25.1 °C	24.2 °C							
Humidity:	53 % RH	49 % RH							
Atmospheric Pressure:	1010 mbar	1010 mbar							
Test Mode:									
	Mode 1: Wireless Charging 5W (Full Load)								
	Mode 2: Wireless Charging 5W (Half Load)								
	Mode 3: Wireless Charging 5W (Null Load)								
	Mode 4: Wireless Charging 10W (Full Load)								
Engineering mode:	Mode 5: Wireless Charging 10W (Half Load)								
	Mode 6: Wireless Charging 10W (Null Load)								
	Mode 7: Wireless Charging 15W (Full Load)								
	Mode 8: Wireless Charging 15W (Half Load)								
Mode 9: Wireless Charging 15W (Null Load)									
Remark	All modes were tested, and t	he worse mode (Mode 7) is							
	reported only.								

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	ent Model No. Serial No.		FCC ID	Trade Name
Mobile Phone	SM-G9350	R28HA2ER3GT	/	SAMSUNG
Adapter	EP-TA200	R37R55T6KL2SE3	/	SAMSUNG

#### Note:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2. 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: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, 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

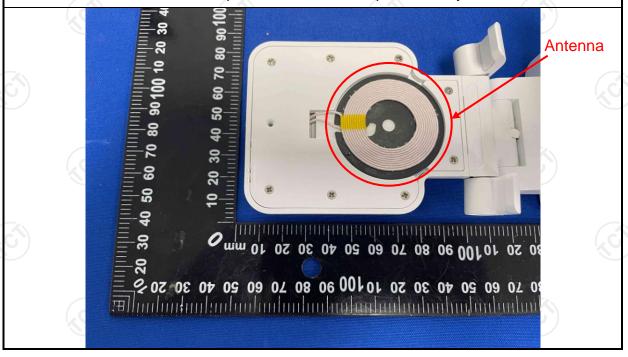
Standard requirement: FCC Part15 C Section 15.203

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 are inductive loop coil antenna which permanently attached.



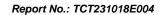




#### 5.2. Conducted Emission

## 5.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207							
Test Method:	ANSI C63.10:2013							
Frequency Range:	150 kHz to 30 MHz							
Receiver setup:	RBW=9 kHz, VBW=30	kHz, Sweep time	=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					
Test Setup:	Reference Plane  40cm  80cm LISN  Filter AC power  Test table/Insulation plane  Remark  E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m							
Test Mode:	Refer to section 3.1 for	details						
Test Procedure:	<ol> <li>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.</li> <li>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).</li> <li>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.</li> </ol>							
Test Result:	PASS							





#### 5.2.2. Test Instruments

Cond	Conducted Emission Shielding Room Test Site (843)										
Equipment	Manufacturer	Model	Serial Number	Calibration Due							
EMI Test Receiver	R&S	ESCI3	100898	Jun. 29, 2024							
Line Impedance Stabilisation Newtork(LISN)	Stabilisation Schwarzbeck N		8126453	Feb. 20, 2024							
Line-5	тст	CE-05	1	Jul. 03, 2024							
EMI Test Software	Shurple Technology	EZ-EMC	, 💮	1							

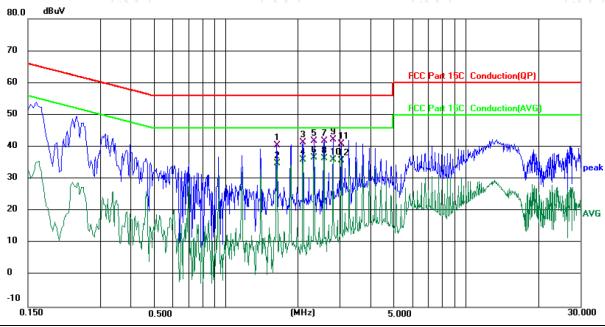




#### 5.2.3. Test data

#### Please refer to following diagram for individual

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



Site 844 Shielding Room

Phase: L1

Temperature: 25.1 (°C)

Humidity: 53 %

Limit: FCC Part 15C Conduction(QP)

Power: DC 9V(Adapter Input AC 120V/60Hz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu∀	dB	dBu∀	dBu∀	dB	Detector	Comment
1		1.6339	30.60	9.99	40.59	56.00	-15.41	QP	
2		1.6339	24.79	9.99	34.78	46.00	-11.22	AVG	
3		2.1018	31.34	10.01	41.35	56.00	-14.65	QP	
4		2.1018	25.90	10.01	35.91	46.00	-10.09	AVG	
5		2.3340	31.89	10.03	41.92	56.00	-14.08	QP	
6	*	2.3340	26.65	10.03	36.68	46.00	-9.32	AVG	
7		2.5700	31.95	10.02	41.97	56.00	-14.03	QP	
8		2.5700	26.44	10.02	36.46	46.00	-9.54	AVG	
9		2.8020	32.25	10.04	42.29	56.00	-13.71	QP	
10		2.8020	26.08	10.04	36.12	46.00	-9.88	AVG	
11		3.0379	30.83	10.04	40.87	56.00	-15.13	QP	
12		3.0379	25.86	10.04	35.90	46.00	-10.10	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)

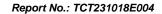
Limit  $(dB\mu V)$  = Limit stated in standard

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

Q.P. =Quasi-Peak

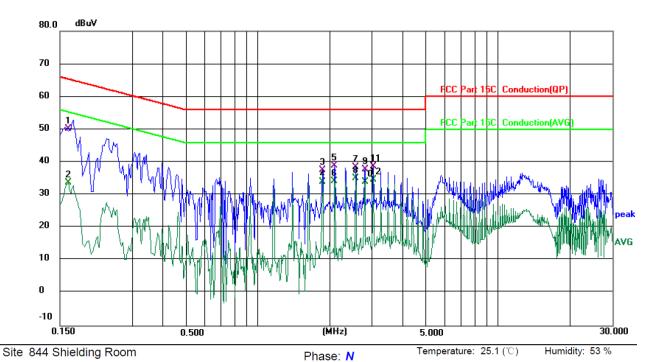
AVG =average

 $<sup>^{\</sup>star}$  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 9V(Adapter Input AC 120V/60Hz)

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBu∨	dB	dBu∀	dBu∀	dB	Detector	Comment
1	0.1620	40.02	10.10	50.12	65.36	-15.24	QP	
2	0.1620	23.64	10.10	33.74	55.36	-21.62	AVG	
3	1.8660	27.60	10.02	37.62	56.00	-18.38	QP	
4	1.8660	23.95	10.02	33.97	46.00	-12.03	AVG	
5	2.0979	29.00	10.02	39.02	56.00	-16.98	QP	
6	2.0979	24.11	10.02	34.13	46.00	-11.87	AVG	
7	2.5659	28.53	10.03	38.56	56.00	-17.44	QP	
8 *	2.5659	25.02	10.03	35.05	46.00	-10.95	AVG	
9	2.7980	27.65	10.05	37.70	56.00	-18.30	QP	
10	2.7980	23.93	10.05	33.98	46.00	-12.02	AVG	
11	3.0300	28.58	10.05	38.63	56.00	-17.37	QP	
12	3.0300	24.62	10.05	34.67	46.00	-11.33	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

<sup>\*</sup> is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz

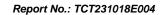




# **5.3. Radiated Spurious Emission Measurement**

## 5.3.1. Test Specification

Test Requirement:	FCC Part15	FCC Part15 C Section 15.209								
Test Method:	ANSI C63.10	D: 2013								
Frequency Range:	9 kHz to 25	GHz								
Measurement Distance:	3 m									
Antenna Polarization:	Horizontal &	Vertical								
Operation mode:	Refer to item	X\	(	(0)	ÇĞ					
	Frequency	Detector	RBW	VBW	Remark					
	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value					
Receiver Setup:	150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value					
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value					
	Frequer 0.009-0		Field Strength (microvolts/meter) 2400/F(KHz)		Measurement Distance (meters)					
	0.490-1.		2400/F(KHz)		30					
Limit:	1.705-3		30		30					
Ziiiit.	30-88		100		3					
	88-21		150		3					
	216-96		200		3					
	Above 9		500	)	3					
Test setup:	For radiated	emissions stance = 3m  Turn table	lm [	Pre-	Computer Amplifier Receiver					
	30MHz to 10	GHz								





	Antenna Tower  Search Antenna  RF Test Receiver  Turn Table  Ground Plane
Test Procedure:	<ol> <li>For the radiated emission test below 1GHz:         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.</li> <li>Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level</li> <li>For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.</li> <li>Use the following spectrum analyzer settings:         <ul> <li>(1) Span shall wide enough to fully capture the emission being measured;</li> <li>(2) Set RBW=120 kHz for f &lt; 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold;</li> </ul> </li> </ol>
Test mode:	Refer to section 3.1 for details
Test results:	PASS





#### 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	Jun. 29, 2024									
Spectrum Analyzer	R&S	FSQ40	200061	Jun. 29, 2024									
Pre-amplifier	HP	8447D	2727A05017	Jun. 27, 2024									
Loop antenna	Schwarzbeck	FMZB1519B	00191	Jul. 02, 2024									
Broadband Antenna	Schwarzbeck	VULB9163	340	Jul. 01, 2024									
Antenna Mast	Keleto	RE-AM	1	(S)									
Coaxial cable	SKET	RC-18G-N-M	/	Feb. 24, 2024									
Coaxial cable	SKET	RC_40G-K-M	1	Feb. 24, 2024									
EMI Test Software	Shurple Technology	EZ-EMC		,									

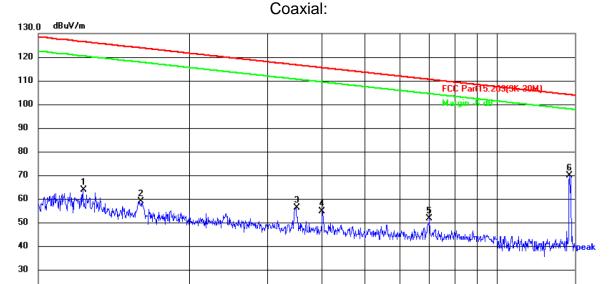


#### 5.3.3. Test Data

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

9KHz-150KHz:

10.0



Site: #3 3m Anechoic Chamber Polarization: Coaxial Temperature: 24.2(°C) Humidity: 52 %

(MHz)

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

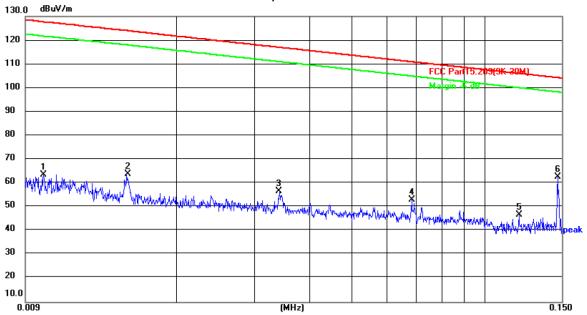
Power: DC 9V(Adapter Input AC 120V/60Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.0113	43.69	20.71	64.40	126.54	-62.14	peak	Р	
2	0.0153	39.05	20.67	59.72	123.91	-64.19	peak	Р	
3	0.0348	36.54	20.49	57.03	116.77	-59.74	peak	Р	
4	0.0400	34.77	20.54	55.31	115.56	-60.25	peak	Р	
5	0.0700	31.33	21.06	52.39	110.70	-58.31	peak	Р	
6 *	0.1459	49.74	20.60	70.34	104.32	-33.98	peak	Р	

0.150



#### Coplanar:



Site: #3 3m Anechoic Chamber Polarization: Coplanar Temperature: 24.2(°C) Humidity: 52 %

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

Power:DC 9V(Adapter Input AC 120V/60Hz)

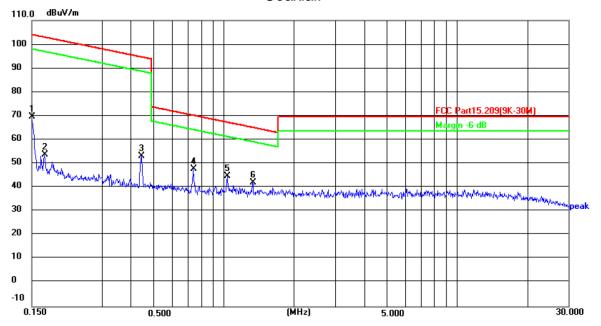
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.0100	42.89	20.73	63.62	127.60	-63.98	peak	Р	
2	0.0152	43.24	20.67	63.91	123.97	-60.06	peak	Р	
3	0.0340	36.26	20.49	56.75	116.97	-60.22	peak	Р	
4	0.0682	31.97	21.02	52.99	110.93	-57.94	peak	Р	
5	0.1200	25.99	20.61	46.60	106.02	-59.42	peak	Р	
6 *	0.1467	41.90	20.62	62.52	104.28	-41.76	peak	Р	





#### 150KHz-30MHz:



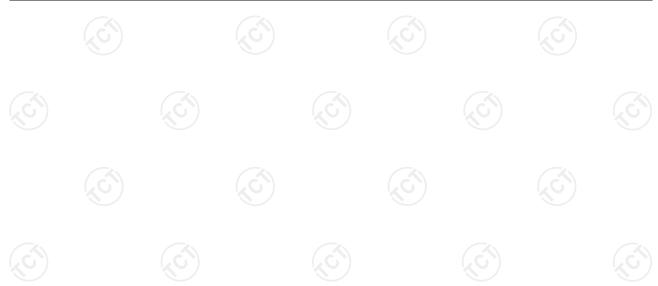


Site: #3 3m Anechoic Chamber Polarization: Coaxial Temperature: 24.2(°C) Humidity: 52 %

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

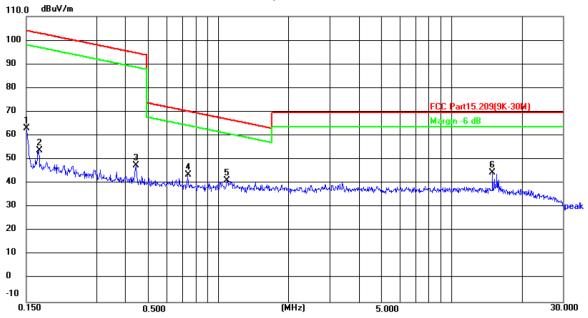
Power: DC 9V(Adapter Input AC 120V/60Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.1501	49.07	20.72	69.79	104.08	-34.29	peak	Р	
2	0.1698	32.88	20.77	53.65	103.01	-49.36	peak	Р	
3	0.4430	31.73	21.40	53.13	94.68	-41.55	peak	Р	
4 *	0.7403	25.81	22.08	47.89	70.23	-22.34	peak	Р	
5	1.0358	22.00	22.74	44.74	67.32	-22.58	peak	Р	
6	1.3287	18.60	23.35	41.95	65.16	-23.21	peak	Р	





#### Coplanar:



Site: #3 3m Anechoic Chamber Polarization: Coplanar Temperature: 24.2(°C) Humidity: 52 %

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

Power:DC 9V(Adapter Input AC 120V/60Hz)

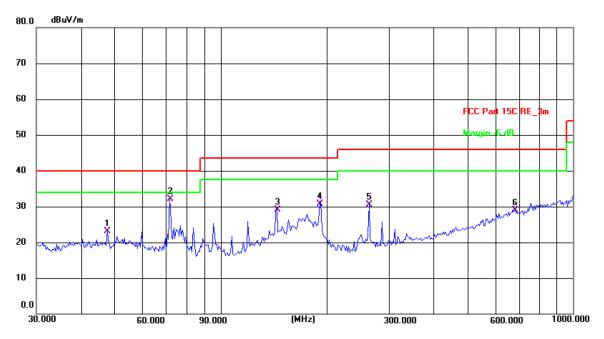
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.1500	42.46	20.72	63.18	104.08	-40.90	peak	Р	
2	0.1697	33.07	20.77	53.84	103.01	-49.17	peak	Р	
3	0.4432	26.07	21.40	47.47	94.67	-47.20	peak	Р	
4	0.7394	21.34	22.08	43.42	70.24	-26.82	peak	Р	
5	1.0938	18.42	22.84	41.26	66.84	-25.58	peak	Р	
6 *	15.0576	24.72	19.82	44.54	69.50	-24.96	peak	Р	





#### 30MHz-1GHz

#### Horizontal:



Site: #1 3m Anechoic Chamber Polarization: Horizontal Temperature: 24.2(C) Humidity: 49 %

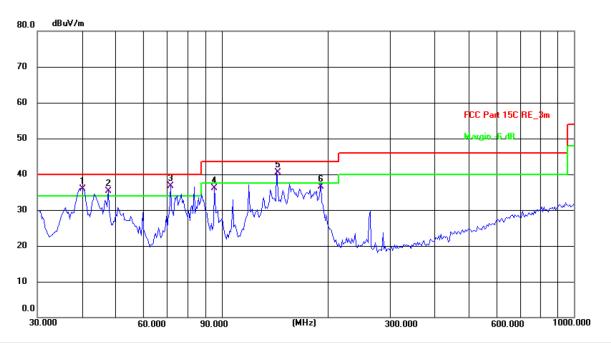
Limit: FCC Part 15C RE\_3m Power: DC 9 V(Adapter Input AC 120 V/60 Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector	P/F	Remark
1	47.6584	9.42	13.68	23.10	40.00	-16.90	QP	Р	
2 *	71.5806	21.41	10.64	32.05	40.00	-7.95	QP	Р	
3	144.3347	15.05	14.08	29.13	43.50	-14.37	QP	Р	
4	191.0738	19.83	10.82	30.65	43.50	-12.85	QP	Р	
5	263.8190	17.72	12.80	30.52	46.00	-15.48	QP	Р	
6	684.7453	6.87	21.99	28.86	46.00	-17.14	QP	Р	





#### Vertical:



Site: #1 3m Anechoic Chamber Polarization: Vertical Temperature: 24.2(C) Humidity: 49 %

Limit: FCC Part 15C RE\_3m Power: DC 9 V(Adapter Input AC 120 V/60 Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector	P/F	Remark
1!	40.2754	21.61	14.20	35.81	40.00	-4.19	QP	Р	
2 !	47.6584	21.54	13.68	35.22	40.00	-4.78	QP	Р	
3 !	71.5805	26.06	10.64	36.70	40.00	-3.30	QP	Р	
4	95.4269	25.87	10.26	36.13	43.50	-7.37	QP	Р	
5 *	143.3259	26.45	14.05	40.50	43.50	-3.00	QP	Р	
6	191.0738	25.72	10.82	36.54	43.50	-6.96	QP	Р	

#### Note:

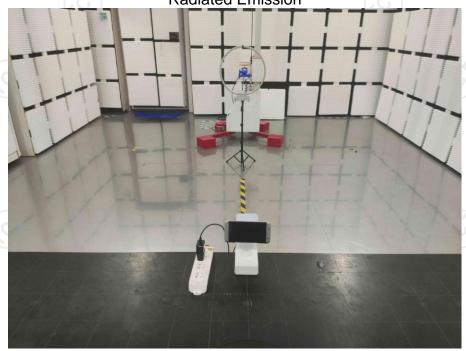
Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss - Pre-amplifier Wireless charging power supply can only be adapter power supply, not battery power supply.





Appendix A: Photographs of Test Setup
Product: Digital Clock & Bluetooth Speaker & Phone Stand & Wireless Charger Model: BQ12

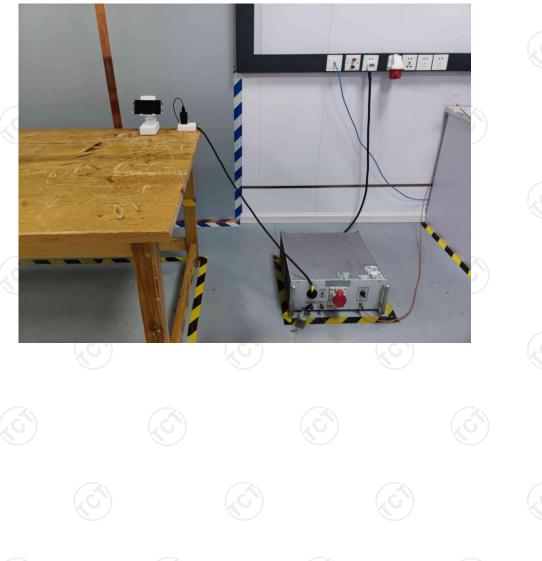
**Radiated Emission** 







#### Conducted Emission













## Appendix B: Photographs of EUT

Refer to the test report No. TCT231018E003

