

Shenzhen Huaxia Testing Technology Co., Ltd.

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Website: Report Template Revision Date: 2021-11-03 www.cqa-cert.com

Report Template Version: V05

Test Report

Report No.: CQASZ20220200223E-01

Applicant: Shenzhen Itian Technology Co.,LTD

Address of Applicant: 5F, Bld. C, Hongde Ind. Park, Shiguan, Lianrun Rd. Dalang St., Longhua District,

shenzhen, China

Equipment Under Test (EUT):

Product: Wireless Charger

Model No.: A7, A6

Test Model No.: Α7

Brand Name: ITIAN

FCC ID: 2AUDO-A7A6

Standards: 47 CFR Part 15, Subpart C

Date of Receipt: 2022-2-22

Date of Test: 2022-2-22 to 2022-2-26

Date of Issue: 2022-2-28 **Test Result:** PASS*

*In the configuration tested, the EUT complied with the standards specified above

Tested By:

(Timo Lei)

Reviewed By:







1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20220200223E-01	Rev.01	Initial report	2022-2-28





2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15, Subpart C Section 15.203	ANSI C63.10 2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10 2013	PASS
20dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.215	ANSI C63.10 2013	PASS
Radiated Emission , Radiated Spurious Emissions	47 CFR Part 15, Subpart C Section 15.209	ANSI C63.10 2013	PASS



3 Contents

	Page
1 VERSION	
2 TEST SUMMARY	3
3 CONTENTS	4
4 GENERAL INFORMATION	5
4.1 Client Information	5
4.2 GENERAL DESCRIPTION OF EUT.	
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	5
4.4 TEST ENVIRONMENT	
4.5 DESCRIPTION OF SUPPORT UNITS	ϵ
4.6 STATEMENT OF THE MEASUREMENT UNCERTAINTY	
4.7 TEST LOCATION	7
4.8 TEST FACILITY	7
4.9 DEVIATION FROM STANDARDS	
4.10 Other Information Requested by the Customer	
4.11 EQUIPMENT LIST	8
5 TEST RESULTS AND MEASUREMENT DATA	9
5.1 Antenna Requirement	9
5.2 CONDUCTED EMISSIONS	
5.3 20DB OCCUPY BANDWIDTH	
5.4 RADIATED SPURIOUS EMISSION & RESTRICTED BANDS	
5.4.1 Spurious Emissions	
6 PHOTOGRAPHS - EUT TEST SETUP	20
6.1 RADIATED EMISSION	
6.2 CONDUCTED EMISSION	
7 PHOTOGRAPHS - EUT CONSTRUCTIONAL DETAILS	22





4 General Information

4.1 Client Information

Applicant:	Shenzhen Itian Technology Co.,LTD
Address of Applicant:	5F, Bld. C, Hongde Ind. Park, Shiguan, Lianrun Rd. Dalang St., Longhua District, shenzhen, China
Manufacturer:	Shenzhen Itian Technology Co.,LTD
Address of Manufacturer:	5F, Bld. C, Hongde Ind. Park, Shiguan, Lianrun Rd. Dalang St., Longhua District, shenzhen, China
Factory:	Shenzhen Itian Technology Co.,LTD
Address of Factory:	5F, Bld. C, Hongde Ind. Park, Shiguan, Lianrun Rd. Dalang St., Longhua District, shenzhen, China

4.2 General Description of EUT

Product Name:	Wireless Charger
Model No.:	A7, A6
Test Model No.:	A7
Brand Name:	ITIAN
Software Version:	A7-5001-V1
Hardware Version:	A7-V1.0-5001
Power Supply:	5V 2A / 9V 1.67A /12V 1.5A

4.3 Product Specification subjective to this standard

Equipment Category:	Non-ISM frequency
Operation Frequency range:	110.5kHz~205kHz
Modulation Type:	Induction
Antenna Type:	Induction coil
Antenna Gain:	0dBi
Power:	Output: 10.8W(Max)

Note:

- 1. In section 15.31(m), regards to the operating frequency range less 1 MHz.
- 2. Model No.: A7, A6.

Only the model A7 was tested, their electrical circuit design, layout, components used and internal wiring are identical, only the model is different.





4.4 Test Environment

Operating Environment	:
Radiated Emissions:	
Temperature:	25.5 °C
Humidity:	53 % RH
Atmospheric Pressure:	1009 mbar
Conducted Emissions:	
Temperature:	25.8 °C
Humidity:	58 % RH
Atmospheric Pressure:	1009 mbar
Radio conducted item to	est (RF Conducted test room):
Temperature:	27.1 °C
Humidity:	56 % RH
Atmospheric Pressure:	1009 mbar
Test Mode:	
Mode a:	Wireless output Mode at 10.8W (Max)

4.5 Description of Support Units

The EUT has been tested with associated equipment below.

1) Support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
Adapter	HUAWEI	LPL-C010050200Z	1	CQA

2) Cable

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
Wireless charge load	/	/	/	CQA





4.6 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate.

The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities.

The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the **Shenzhen Huaxia Testing Technology Co., Ltd.** quality system acc. to DIN EN ISO/IEC 17025.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CQA laboratory is reported:

No.	Item	Uncertainty	Notes
1	Radiated Emission (Below 1GHz)	5.12dB	(1)
2	Radiated Emission (Above 1GHz)	4.60dB	(1)
3	Occupied Bandwidth	1.1%	(1)
4	Temperature test	0.8℃	(1)
5	Humidity test	2.0%	(1)

⁽¹⁾This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

4.7 Test Location

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

4.8 Test Facility

A2LA (Certificate No. 4742.01)

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• FCC Registration No.: 522263

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

4.9 Deviation from Standards

None.

4.10 Other Information Requested by the Customer

None.





4.11 Equipment List

Test Equipment	Manufacturer	Model No.	Instrument No.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2021/9/10	2022/9/9
Spectrum analyzer	R&S	FSU26	CQA-038	2021/9/10	2022/9/9
Preamplifier	MITEQ	AMF-6D-02001800-29- 20P	CQA-036	2021/9/10	2022/9/9
Loop antenna	Schwarzbeck	FMZB1516	CQA-060	2021/9/16	2024/9/15
Bilog Antenna	R&S	HL562	CQA-011	2021/9/16	2024/9/15
Horn Antenna	R&S	HF906	CQA-012	2021/9/16	2024/9/15
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2021/9/16	2024/9/15
Coaxial Cable (Above 1GHz)	CQA	N/A	C007	2021/9/10	2022/9/9
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2021/9/10	2022/9/9
Antenna Connector	CQA	RFC-01	CQA-080	2021/9/10	2022/9/9
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2021/9/10	2022/9/9
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2021/9/10	2022/9/9
EMI Test Receiver	R&S	ESR7	CQA-005	2021/9/10	2022/9/9
LISN	R&S	ENV216	CQA-003	2021/9/10	2022/9/9
Coaxial cable	CQA	N/A	CQA-C009	2021/9/10	2022/9/9
DC power	KEYSIGHT	E3631A	CQA-028	2021/9/10	2022/9/9





5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement: 47 CFR Part 15C Section 15.203

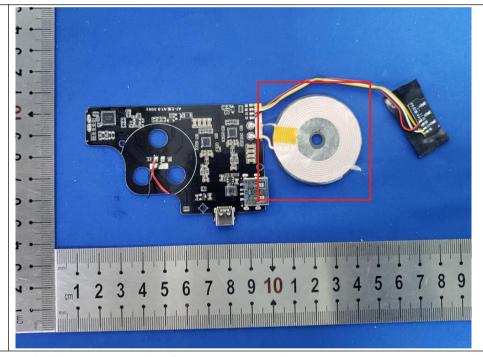
15.203 requirement:

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.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:



The antenna is Induction coil. The best case gain of the antenna is 0dBi.





5.2 Conducted Emissions

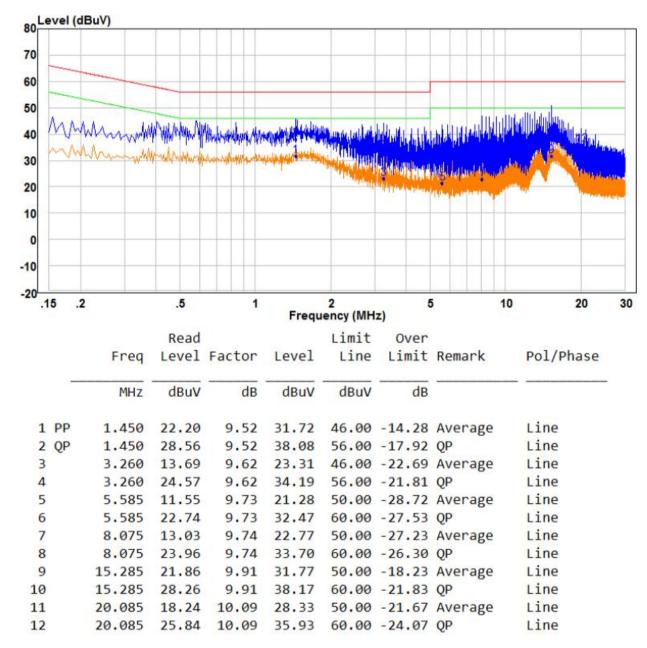
Test Requirement:	47 CFR Part 15C Section 15.2	207		
Test Method:	ANSI C63.10: 2013			
Test Frequency Range:	150kHz to 30MHz			
Limit:		Limit (dBuV)		
	Frequency range (MHz)	Quasi-peak	Average	
	0.15-0.5	66 to 56*	56 to 46*	
	0.5-5	56	46	
	5-30	60	50	
	* Decreases with the logarithn		00	
Test Procedure:	1) The mains terminal disturb room. 2) The EUT was connected Impedance Stabilization N impedance. The power connected to a second LIS plane in the same way a multiple socket outlet strip single LISN provided the ra 3) The tabletop EUT was pla ground reference plane. A placed on the horizontal ground reference reference plane. The LISN unit under test and bon mounted on top of the ground resolution and associated equipment. 5) In order to find the maximuland all of the interface call.	to AC power source letwork) which provide cables of all other SN 2, which was bonders the LISN 1 for the was used to connect leating of the LISN was reaced upon a non-metal and for floor-standing around reference plane. It has vertical ground reference plane was bonded N 1 was placed 0.8 m and to a ground reference plane. The LISN 1 and the EUT. It was at least 0.8 m from the mission, the relations and the relations are to the plane was at least 0.8 m from the mission, the relations and the source was at least 0.8 m from the mission, the relations and the source was at least 0.8 m from the mission, the relations are the source was at least 0.8 m from the mission, the relations are the source was at least 0.8 m from the source was at least 0.	through a LISN 1 is a 50Ω/50μH + 5Ω li units of the EUT is do to the ground reference unit being measure multiple power cables not exceeded. Allic table 0.8m above rrangement, the EUT ference plane. The regular reference plane for the horizontal ground from the boundary of ference plane for List distance was between the LISN 2. The positions of equipality and the positions of equipality and the LISN 2.	(Line inear were ence ed. A s to a e the was ear of The ound of the ISNs ween EUT
	ANSI C63.10: 2013 on cor	nducted measurement.		
Test Setup:	Shielding Room EUT AC Mains LISN1	AE LISN2 AC Ma	Test Receiver	
Test Results:	Pass			
	ı			

Measurement Data

The worst case:

Mode a:

Live line:



Remark:

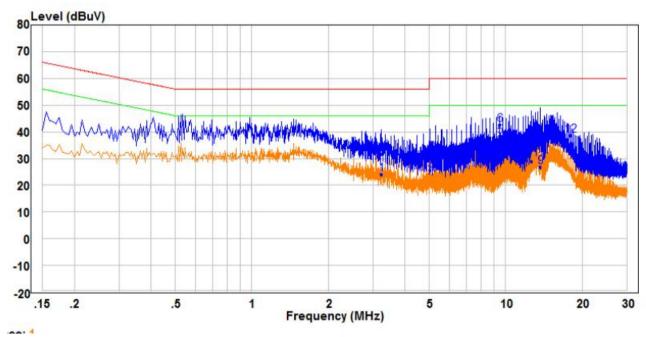
- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
- 3. If the Peak value under Average limit, the Average value is not recorded in the report.



The worst case:

Mode a:

Neutral line:



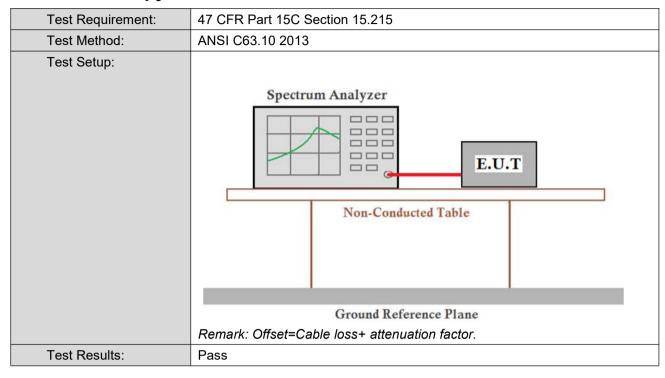
		Read			Limit	Over		
	Freq	Level	Factor	Level	Line	Limit	Remark	Pol/Phase
_	MHz	dBuV	dB	dBuV	dBuV	dB		
	3.245	14.18	9.77	23.95	46.00	-22.05	Average	Neutral
	3.245	21.82	9.77	31.59	56.00	-24.41	QP	Neutral
	5.035	15.85	9.82	25.67	50.00	-24.33	Average	Neutral
	5.035	22.33	9.82	32.15	60.00	-27.85	QP	Neutral
PP	9.505	28.43	9.88	38.31	50.00	-11.69	Average	Neutral
QP	9.505	32.72	9.88	42.60	60.00	-17.40	QP	Neutral
	12.585	19.17	9.80	28.97	50.00	-21.03	Average	Neutral
	12.585	27.70	9.80	37.50	60.00	-22.50	QP	Neutral
	13.695	17.10	9.77	26.87	50.00	-23.13	Average	Neutral
	13.695	25.55	9.77	35.32	60.00	-24.68	QP	Neutral
	17.975	22.13	9.80	31.93	50.00	-18.07	Average	Neutral
	17.975	28.92	9.80	38.72	60.00	-21.28	QP	Neutral
	PP QP	MHz 3.245 3.245 5.035 5.035 PP 9.505 QP 9.505 12.585 12.585 13.695 13.695 17.975	Freq Level MHz dBuV 3.245 14.18 3.245 21.82 5.035 15.85 5.035 22.33 PP 9.505 28.43 QP 9.505 32.72 12.585 19.17 12.585 27.70 13.695 17.10 13.695 25.55 17.975 22.13	### Red Level Factor	### Red Level Factor Level	### Red Factor Level Line	### Red Level Factor Level Line Limit	### Treq Level Factor Level Line Limit Remark MHz dBuV dB dBuV dBuV dB

Remark:

- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
- 3. If the Peak value under Average limit, the Average value is not recorded in the report.



5.3 20dB Occupy Bandwidth



Measurement Data

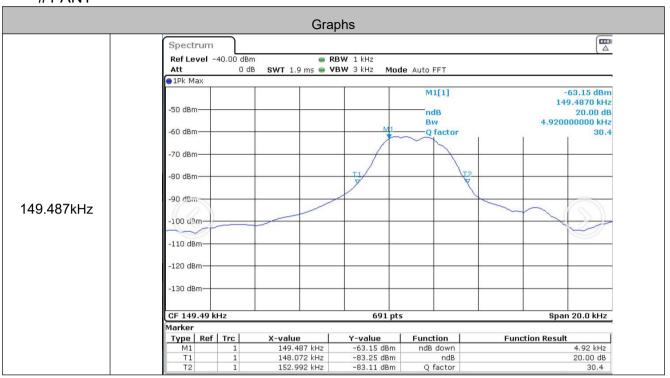
#1 ANT						
Test Frequency (kHz)	Test Frequency (kHz) 20dB Occupy Bandwidth (Hz)					
149.487	4920	Pass				

#2 ANT						
Test Frequency (kHz)	Test Frequency (kHz) 20dB Occupy Bandwidth (Hz)					
162.476kHz	5818	Pass				

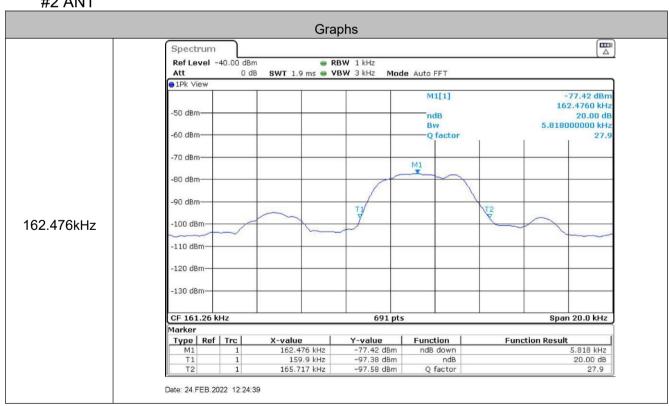


Test plot as follows:

#1 ANT



#2 ANT





5.4 Radiated Spurious Emission & Restricted bands

5.4.1 Spurious Emissions								
Test Requirement:	47 CFR Part 15C Secti	on 1	5.209 and 15	.205				
Test Method:	ANSI C63.10 2013							
Test Site:	Measurement Distance	: 3m	n (Semi-Anech	noic Cham	ber)			
Receiver Setup:	Frequency		Detector	RBW	VBW	Remark		
	0.009MHz-0.090MH	z	Peak	10kHz	30kHz	Peak		
	0.009MHz-0.090MH	z	Average	10kHz	30kHz	Average		
	0.090MHz-0.110MH	z	Quasi-peak	10kHz	30kHz	Quasi-peak		
	0.110MHz-0.490MH	Z	Peak	10kHz	30kHz	Peak		
	0.110MHz-0.490MH	z	Average	10kHz	30kHz	Average		
	0.490MHz -30MHz		Quasi-peak	10kHz	30kHz	Quasi-peak		
	30MHz-1GHz		Quasi-peak	100 kH	lz 300kHz	Quasi-peak		
	Above 1GHz		Peak	1MHz	3MHz	Peak		
			Peak	1MHz	10Hz	Average		
Limit:	Frequency	l	eld strength crovolt/meter)	Limit (dBuV/m)	Remark	Measuremen distance (m)		
	0.009MHz-0.490MHz	2	400/F(kHz)	-	-	300		
	0.490MHz-1.705MHz	24	1000/F(kHz)	ı	ı	30		
	1.705MHz-30MHz		30	ı	ı	30		
	30MHz-88MHz		100	40.0	Quasi-peak	3		
	88MHz-216MHz		150	43.5	Quasi-peak	3		
	216MHz-960MHz		200	46.0	Quasi-peak	. 3		
	960MHz-1GHz		500	54.0	Quasi-peak	3		
	Above 1GHz		500	54.0	Average	3		
	Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.							



Shenzhen Huaxia Testing Technology Co., Ltd.

Report No.: CQASZ20220200223E-01

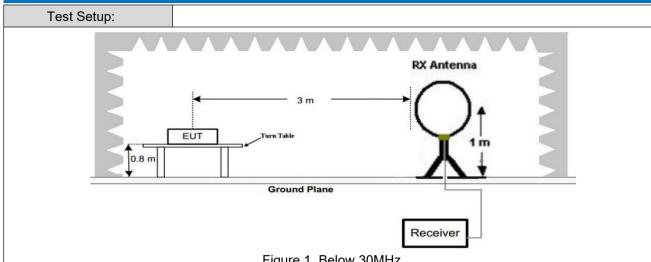
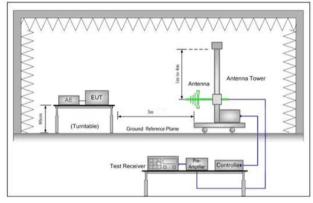


Figure 1. Below 30MHz



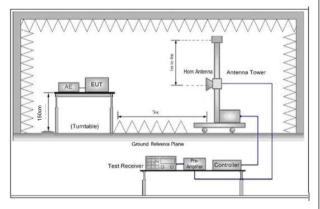


Figure 2. 30MHz to 1GHz

Figure 3. Above 1 GHz

Test Procedure:

- 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
 - 2) Above 1G: The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

Note: For the radiated emission test above 1GHz:

Place the measurement antenna 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 measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height 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



Shenzhen Huaxia Testing Technology Co., Ltd.

Report No.: CQASZ20220200223E-01

	measurement.
	d. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
	e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
	f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
	g. Repeat above procedures until all frequencies measured was complete.
Test Results:	Pass

Radiated Emission below 9k~30MHz				
the worst case				
Test mode: Mode a				

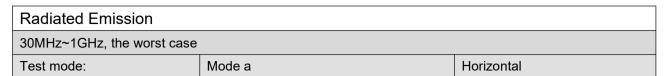
#1 ANT

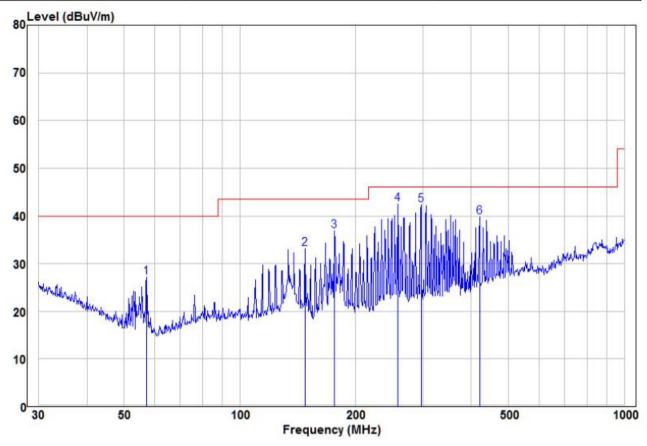
Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) Peak	Limit dB(uV/m) Average	Margin dB	Pass/Fail
0.1494	Face	42.08	19.63	61.71	104.12	-42.41	Pass
0.1494	Side	41.11	19.63	60.74	104.12	-43.38	Pass

#2 ANT

Frequency MHz	Polarization	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) Peak	Limit dB(uV/m) Average	Margin dB	Pass/Fail
0.1625	Face	40.35	19.63	59.98	103.39	-43.41	Pass
0.1625	Side	41.29	19.63	60.92	103.39	-42.47	Pass

Note: No other emissions found between lowest internal used/generated frequencies to 30MHz. The peak level of the emission is less than the average limit, so the average level shall be less than the limit without test.





	Freq	Read Level	Factor	Level	Limit Line	Over Limit		Pol/Phase
-	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1	57.19	21.01	6.16	27.17	40.00	-12.83	Peak	HORIZONTAL
2	147.92	24.73	8.39	33.12	43.50	-10.38	Peak	HORIZONTAL
3	176.27	28.79	8.07	36.86	43.50	-6.64	Peak	HORIZONTAL
4 pp	257.42	30.21	12.32	42.53	46.00	-3.47	Peak	HORIZONTAL
5	296.18	28.75	13.60	42.35	46.00	-3.65	Peak	HORIZONTAL
6	420.58	23.92	15.80	39.72	46.00	-6.28	Peak	HORIZONTAL

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

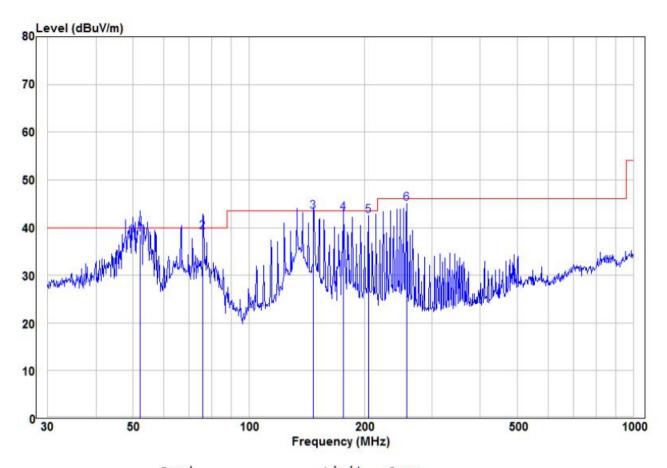
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor



Shenzhen Huaxia Testing Technology Co., Ltd.

Report No.: CQASZ20220200223E-01

30MHz~1GHz, the worst case				
Test mode:	Mode a	Vertical		



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1	52.21	31.00	7.63	38.63	40.00	-1.37	QP	VERTICAL
2	75.98	30.00	9.13	39.13	40.00	-0.87	QP	VERTICAL
3 рр	147.40	35.00	8.36	43.36	43.50	-0.14	QP	VERTICAL
4	176.27	35.00	8.07	43.07	43.50	-0.43	QP	VERTICAL
5 pk	204.96	33.87	8.64	42.51	43.50	-3.99	QP	VERTICAL
6	257.42	32.64	12.32	44.96	46.00	-1.04	QP	VERTICAL

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

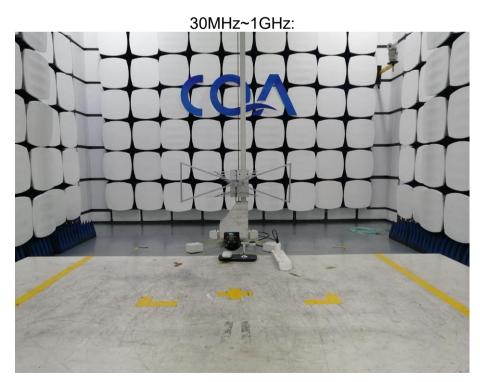
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor



6 Photographs - EUT Test Setup

6.1 Radiated Emission

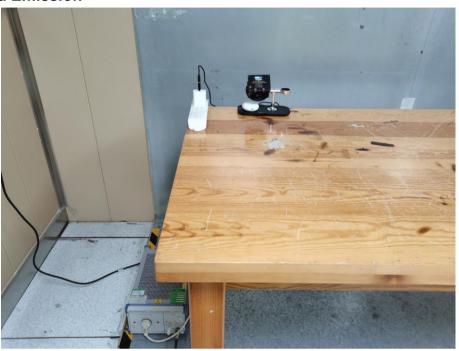








6.2 Conducted Emission





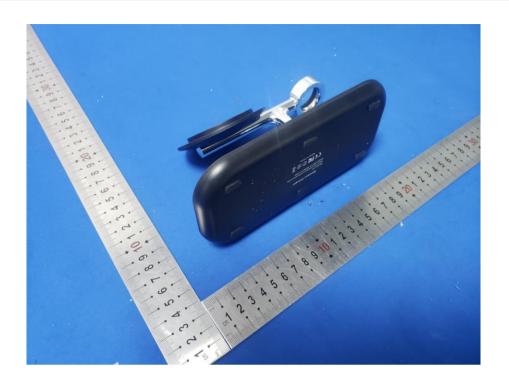
7 Photographs - EUT Constructional Details







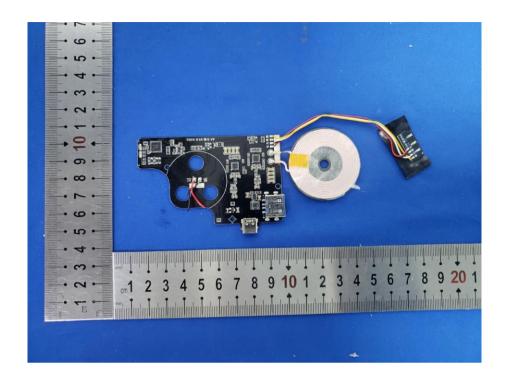


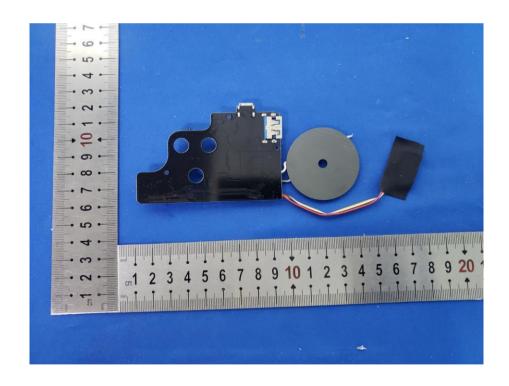


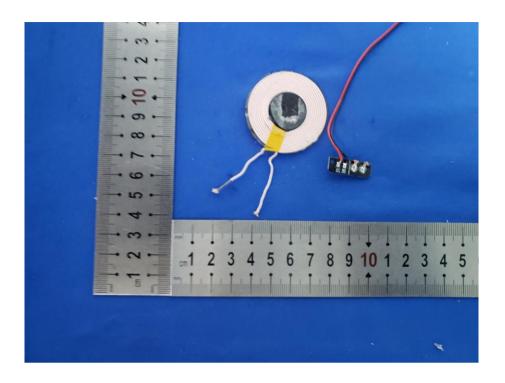












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