

### Shenzhen Huaxia Testing Technology Co., Ltd.

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Report Template Version: V05 Report Template Revision Date: 2021-11-03

# **Test Report**

Report No.:	CQASZ20230801532E-01
Applicant:	Shenzhen Baseus Technology Co., Ltd.
Address of Applicant:	2 <sup>nd</sup> Floor, Building B, Baseus Intelligence Park, No.2008, Xuegang Rd, Gangtou
	Community, Bantian Street, Longgang District, Shenzhen.
Equipment Under Test	(EUT):
Product:	Wireless Charger
Model No.:	BS-W531
Test Model No.:	BS-W531
Brand Name:	baseus
FCC ID:	2A482-W531
Standards:	47 CFR Part 15, Subpart C
Date of Receipt:	2023-8-22
Date of Test:	2023-8-22 to 2023-9-7
Date of Issue:	2023-10-10
Test Result:	PASS*

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

Tested By:	Jol	
	(Joe Wang)	TESTING TEOL
Reviewed By:	Timo Loj	
	( Timo Lei )	<b>国华夏准测</b>
Approved By:	Janos	APPROVED *
	( Jack Ai )	

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.



## 1 Version

## **Revision History Of Report**

Report No.	Version	Description	Issue Date
CQASZ20230801532E-01	Rev.01	Initial report	2023-10-10



## 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

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## 4 General Information

## 4.1 Client Information

Applicant:	Shenzhen Baseus Technology Co., Ltd.		
Address of Applicant:	2 <sup>nd</sup> Floor, Building B, Baseus Intelligence Park, No.2008, Xuegang Rd,		
	Gangtou Community, Bantian Street, Longgang District, Shenzhen.		
Manufacturer:	Shenzhen Baseus Technology Co., Ltd.		
Address of Manufacturer:	2 <sup>nd</sup> Floor, Building B, Baseus Intelligence Park, No.2008, Xuegang Rd,		
	Gangtou Community, Bantian Street, Longgang District, Shenzhen.		
Factory:	Dongguan Anju Electronic Technology Co., Ltd		
Address of Factory:	3 Floor No.1 Hexie road, Shanwu village, Shijie town, Dongguan, 523295		
	Guangdong, P.R. China		

## 4.2 General Description of EUT

Product Name:	Wireless Charger
Model No.:	BS-W531
Test Model No.:	BS-W531
Brand Name:	baseus
Software Version:	W531_VW003_Magsafe_20230923
Hardware Version:	BS-W531-V2.0
Power Supply:	DC 9V=3A

## 4.3 Product Specification subjective to this standard

Equipment Category:	Non-ISM frequency
Operation Frequency range:	115KHz~205KHz
Modulation Type:	ASK
Antenna Type:	Induction coil
Antenna Gain:	0dBi
Power:	Output: 20W(Max)

Note:

1. In section 15.31(m), regards to the operating frequency range less 1 MHz.



## 4.4 Test Environment

Operating Environment	:
Radiated Emissions:	
Temperature:	25.5 °C
Humidity:	53 % RH
Atmospheric Pressure:	1009 mbar
Conducted Emissions:	
Temperature:	25.5 °C
Humidity:	55 % RH
Atmospheric Pressure:	1009 mbar
Radio conducted item t	est (RF Conducted test room):
Temperature:	27.1 °C
Humidity:	56 % RH
Atmospheric Pressure:	1009 mbar
Test Mode:	
Mode a:	Keep the EUT Wireless Charging pad for Airpods Out Put 5W (MAX)
Mode b:	Keep the EUT Wireless Charging pad for Phone Out Put 5W
Mode c:	Keep the EUT Wireless Charging pad for Phone Out Put 7.5W
Mode d:	Keep the EUT Wireless Charging pad for Phone Out Put 10W
Mode e:	Keep the EUT Wireless Charging pad for Phone Out Put 15W (MAX)
Mode f:	Keep the EUT Wireless Charging pad for Phone Out Put 20W (MAX)
Note: The above test modes al	l include full load,empty load,and half load, The worst-case state

Note: The above test modes all include full load, empty load, and half load, The worst-case state reflected in this report is the fully loaded state

## 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
Wireless charge load	1	/	/	CQA
Wireless charge load	1	/	/	CQA

2) Cable

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
/	1	/	1	1



## 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.

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°C	(1)
5	Humidity test	2.0%	(1)

Hereafter the best measurement capability for CQA laboratory is reported:

(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.

### 4.10Other Information Requested by the Customer

None.



## 4.11Equipment List

Test Equipment	Manufacturer	Model No.			Calibration Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2022/9/9	2023/9/8
Spectrum analyzer	R&S	FSU26	CQA-038	2022/9/9	2023/9/8
Preamplifier	MITEQ	AMF-6D-02001800-29- 20P	CQA-036	2022/9/9	2023/9/8
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	2022/9/9	2023/9/8
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2022/9/9	2023/9/8
Antenna Connector	CQA	RFC-01	CQA-080	2022/9/9	2023/9/8
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2022/9/9	2023/9/8
Power divider	vider MIDWEST PWD-2533-02-SMA-79		CQA-067	2022/9/9	2023/9/8
EMI Test Receiver	R&S	ESR7	CQA-005	2022/9/9	2023/9/8
LISN	R&S	ENV216	CQA-003	2022/9/9	2023/9/8
Coaxial cable	CQA	N/A	CQA-C009	2022/9/9	2023/9/8
DC power	KEYSIGHT	E3631A	CQA-028	2022/9/9	2023/9/8





## 5 Test results and Measurement Data

### 5.1 Antenna Requirement

#### Standard requirement: 47 CFR Part 15C Section 15.203

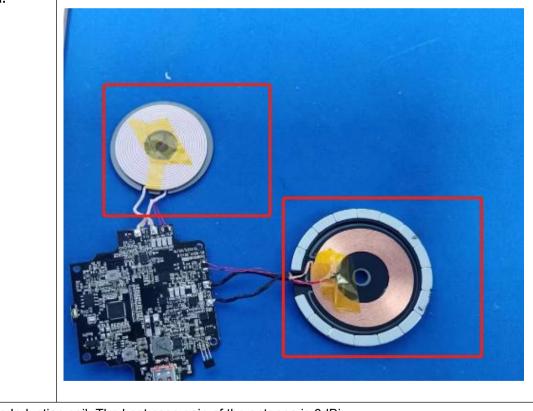
#### 15.203 requirement:

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.



Teet Decuire rest	47 CEP Part 15C Section 15 207					
Test Requirement:	47 CFR Part 15C Section 15.207					
Test Method:	ANSI C63.10: 2013					
Test Frequency Range:						
Limit:	Frequency range (MHz)	Limit (c	lBuV)			
		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 logarithm of the frequency.					
Test Procedure:	<ol> <li>The mains terminal disturbance voltage test was conducted in a shielded room.</li> <li>The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50µH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.</li> <li>The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.</li> <li>The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.</li> <li>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 Setup:	Shielding Room	AE B B B B B B B B B B B B B	Test Receiver			
Test Results:	Pass			-		
	1 400					

## 5.2 Conducted Emissions

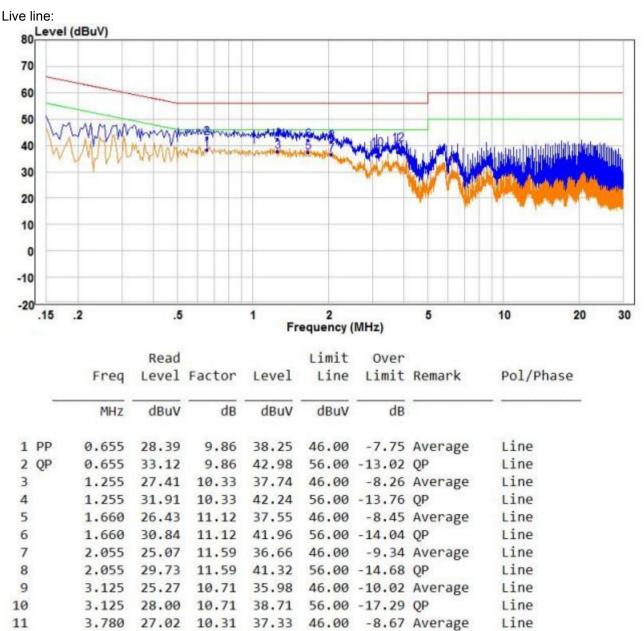


Line

#### **Measurement Data**

The worst case:

Mode e:



Remark:

12

1. The following Quasi-Peak and Average measurements were performed on the EUT:

3.780 30.22 10.31 40.53 56.00 -15.47 QP

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

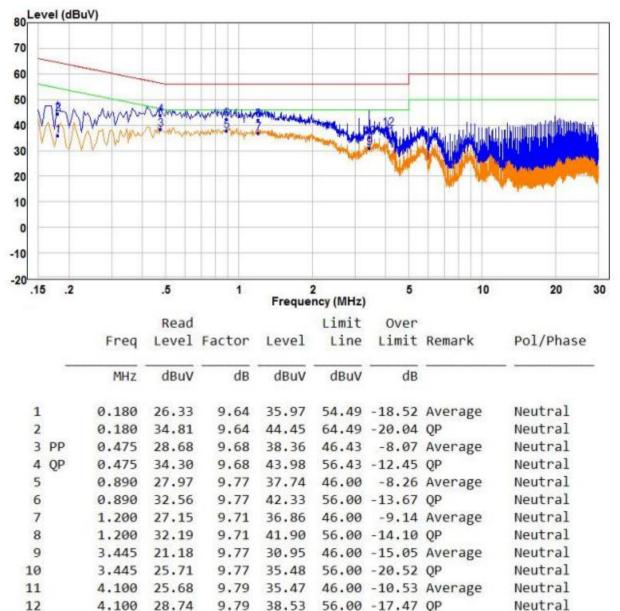
3. If the Peak value under Average limit, the Average value is not recorded in the report.



The worst case:

Mode e:

Neutral line:



Remark:

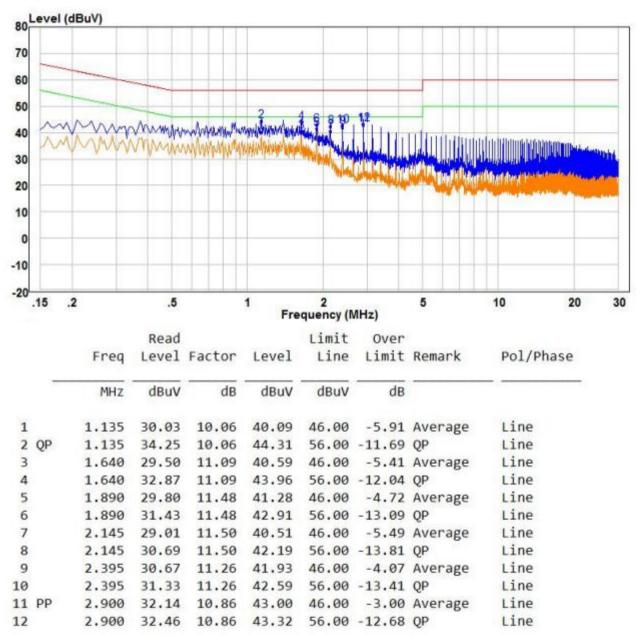
- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
- 3. If the Peak value under Average limit, the Average value is not recorded in the report.



The worst case:

Mode f:

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.

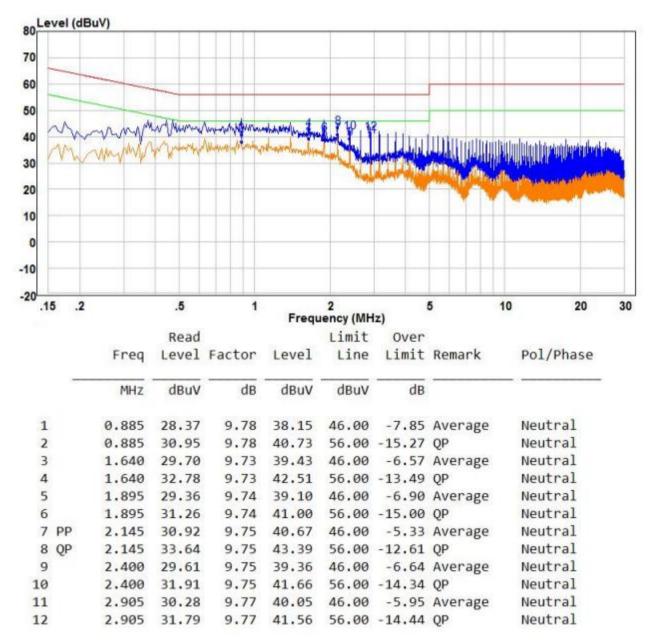
3. If the Peak value under Average limit, the Average value is not recorded in the report.



The worst case:

Mode f:

Neutral line:



Remark:

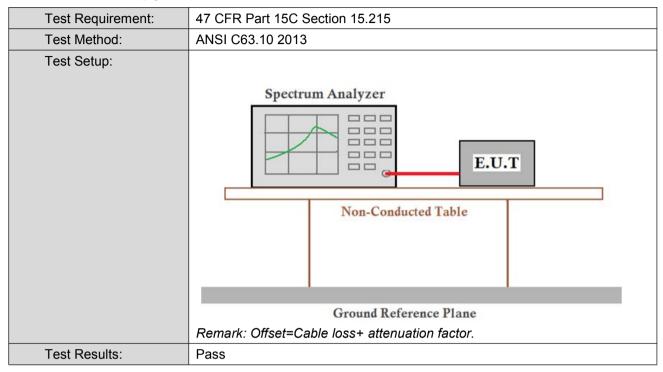
1. The following Quasi-Peak and Average measurements were performed on the EUT:

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.



## 5.3 20dB Occupy Bandwidth



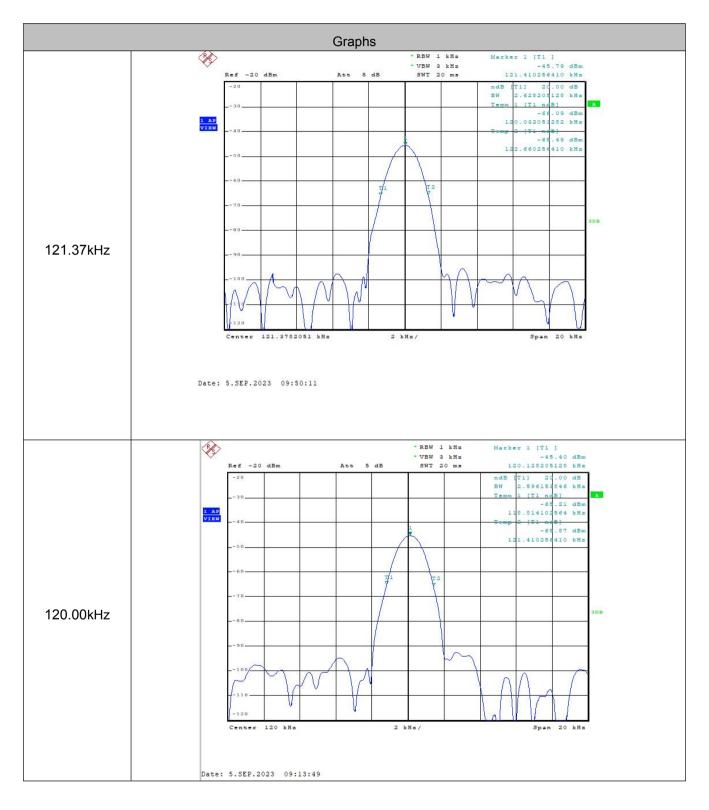
#### **Measurement Data**

Mode e				
Test Frequency (kHz)         20dB Occupy Bandwidth (Hz)         Result				
121.37	2628	Pass		

Mode f				
Test Frequency (kHz)         20dB Occupy Bandwidth (Hz)         Result				
120.00	2596	Pass		



#### Test plot as follows:



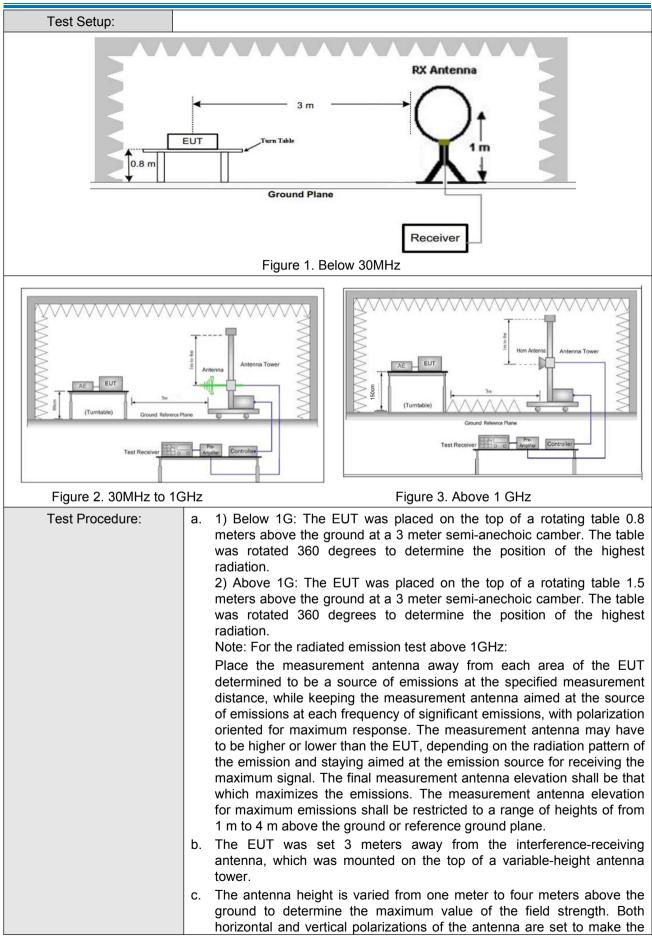


## 5.4 Radiated Spurious Emission & Restricted bands

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205						
Test Method:	ANSI C63.10 2013						
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)						
Receiver Setup:	Frequency		Detector	RBW	VBW	Remark	
	0.009MHz-0.090MH	z	Peak	10kHz	z 30kHz	Peak	
	0.009MHz-0.090MH	z	Average	10kHz	z 30kHz	Average	
	0.090MHz-0.110MH	z	Quasi-peak	10kHz	z 30kHz	Quasi-peak	
	0.110MHz-0.490MH	z	Peak	10kHz	z 30kHz	Peak	
	0.110MHz-0.490MH	z	Average	10kHz	z 30kHz	Average	
	0.490MHz -30MHz		Quasi-peak	10kHz	z 30kHz	Quasi-peak	
	30MHz-1GHz		Quasi-peak	100 kH	lz 300kHz	Quasi-peak	
	Above 1GHz		Peak	1MHz	: 3MHz	Peak	
			Peak	1MHz	: 10Hz	Average	
Limit:	L Fraguanay		eld strength crovolt/meter)	Limit (dBuV/m)	Remark	Measuremer distance (m	
			400/F(kHz)	-	-	300	
	0.490MHz-1.705MHz	24	000/F(kHz)	łz)		30	
	1.705MHz-30MHz		30	-	-	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.						









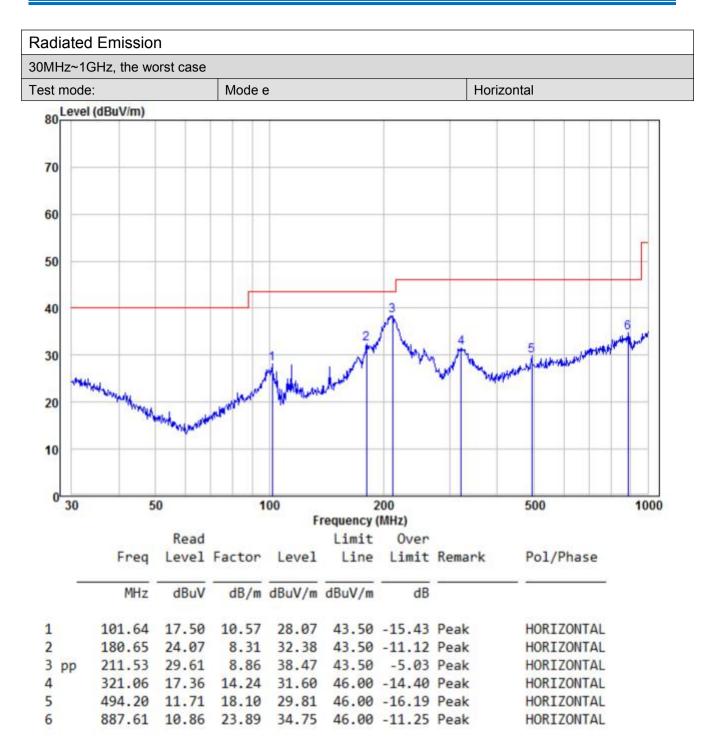
	measurement.	
	For each suspected emission, the EUT was arranged and then the antenna was tuned to heights from 1 mer the test frequency of below 30MHz, the antenna was meter) and the rotatable table was turned from 0 degrees to find the maximum reading.	ter to 4 meters (for tuned to heights 1
	The test-receiver system was set to Peak Detect Fund Bandwidth with Maximum Hold Mode.	tion and Specified
	If the emission level of the EUT in peak mode was 10 limit specified, then testing could be stopped and the EUT would be reported. Otherwise the emissions that margin would be re-tested one by one using pea average method as specified and then reported in a da	peak values of the did not have 10dB ak, quasi-peak or ata sheet.
	Repeat above procedures until all frequencies measur	ed was complete.
Test Results:	S	

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

Frequency MHz	Detector	Reading dB(uV)	Factor dB (1/m)	Level dB(uV/m) Peak	Limit dB(uV/m) Average	Margin dB	Pass/Fail
0.127	AV	41.72	19.80	61.52	105.56	-44.04	Pass
0.104	AV	41.10	19.80	60.90	107.29	-46.39	Pass
0.205	AV	39.08	19.80	58.88	101.37	-42.49	Pass
0.349	QP	38.25	19.80	58.05	96.75	-38.70	Pass
1.312	QP	18.11	19.70	37.81	65.25	-27.43	Pass
2.588	QP	12.74	19.70	32.44	69.54	-37.10	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 than1 the limit without test.

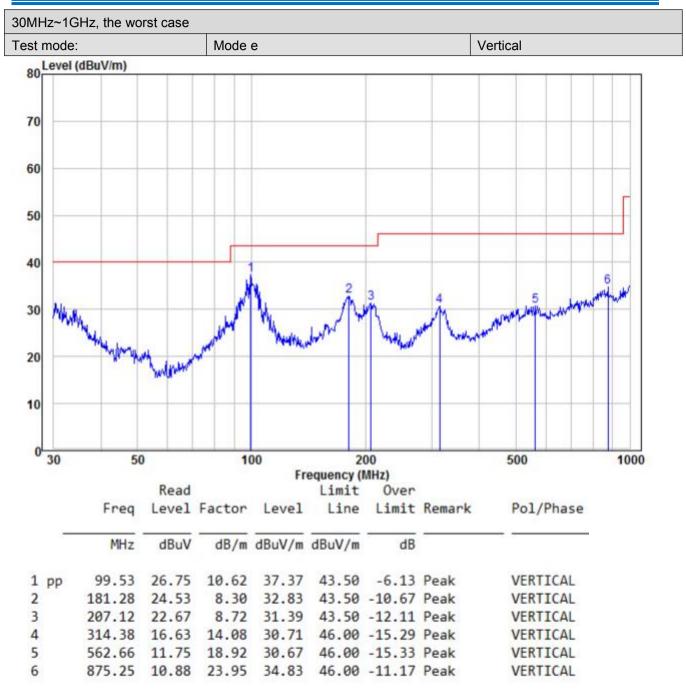




Remark:

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



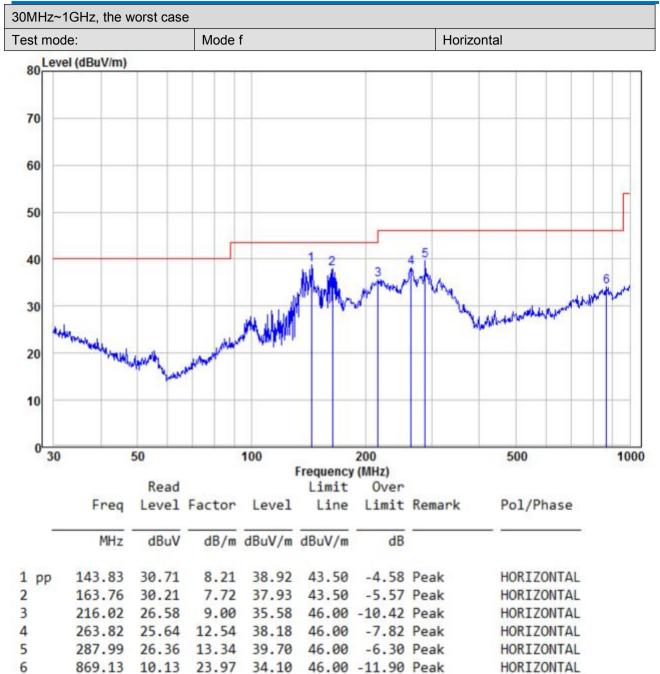


Remark:

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







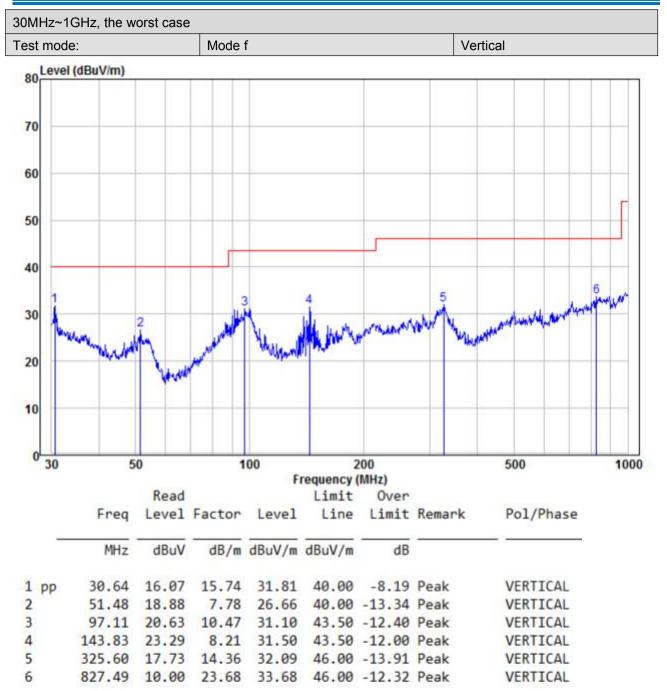
Remark:

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



### Shenzhen Huaxia Testing Technology Co., Ltd.

Report No.: CQASZ20230801532E-01



Remark:

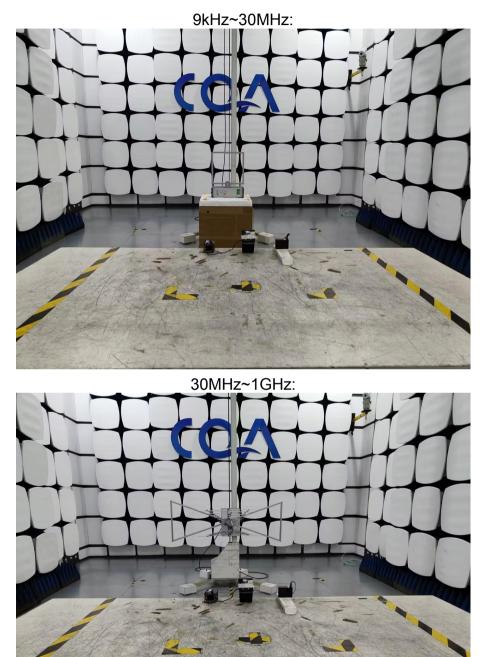
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:





## 6 Photographs - EUT Test Setup

## 6.1 Radiated Emission





#### 6.2 Conducted Emission





## 7 Photographs - EUT Constructional Details







## Shenzhen Huaxia Testing Technology Co., Ltd.







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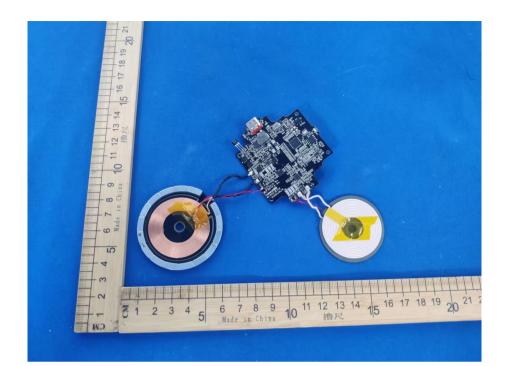






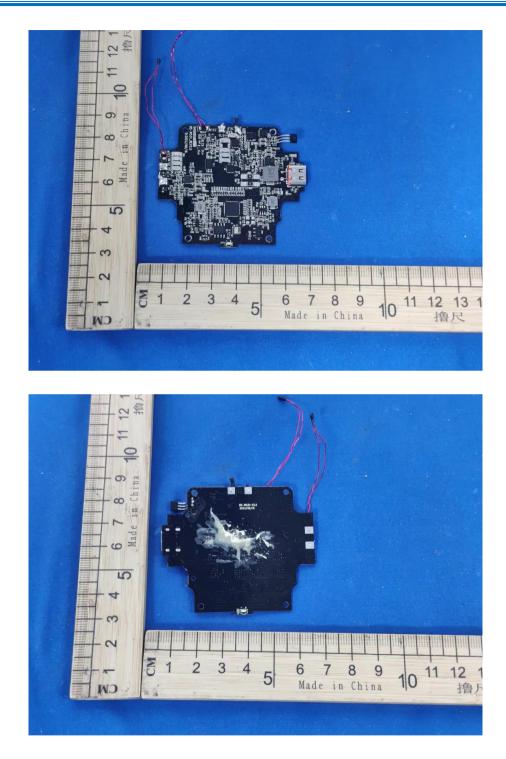


## Shenzhen Huaxia Testing Technology Co., Ltd.

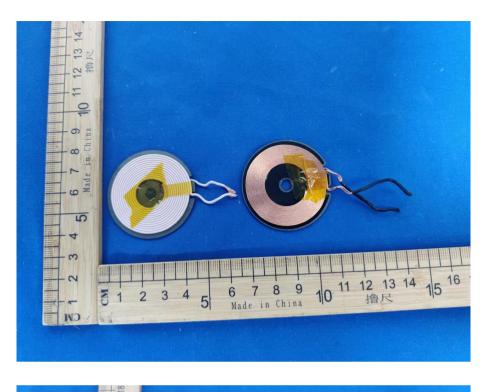














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