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

Test Report

Report No.:	CQASZ20240601091E-01
Applicant:	KERCHAN TECHNOLOGY GROUP LIMITED
Address of Applicant:	FLAT/RM A&B, 15/F, NEICH TOWER 128 GLOUCESTER ROAD WANCHAI 999077 HongKong China
Equipment Under Test	(EUT):
Product:	Wireless Charging Sound Machine
Model No.:	R9, R9BT, R9WG
Test Model No.:	R9
Brand Name: FCC ID:	Reacher 2BHLT-R9
Standards:	47 CFR Part 15, Subpart C
Date of Receipt:	2024-6-17
Date of Test:	2024-6-17 to 2024-6-26
Date of Issue:	2024-7-22
Test Result:	PASS*

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

Tested By: (Joe Wang) Timo Loj Reviewed By: _ (Timo Lei) Approved By: ______ A Lex PPROVED

(Alex Wang)

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	
CQASZ20240601091E-01	Rev.01	Initial report	2024-7-22	



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



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4 General Information

4.1 Client Information

Applicant:	KERCHAN TECHNOLOGY GROUP LIMITED
Address of Applicant:	FLAT/RM A&B, 15/F, NEICH TOWER 128 GLOUCESTER ROAD WANCHAI 999077 HongKong China
Manufacturer:	Shenzhen Hi-FiD Electronics Tech Co.,Ltd
Address of Manufacturer:	4-5F, B7 Building, Hengfeng Industrial Town, Zhoushi Rd, Bao'an District, Shenzhen City, Guangdong Province
Factory:	Shenzhen Hi-FiD Electronics Tech Co.,Ltd
Address of Factory:	4-5F, B7 Building, Hengfeng Industrial Town, Zhoushi Rd, Bao'an District, Shenzhen City, Guangdong Province

4.2 General Description of EUT

Product Name:	Wireless Charging Sound Machine	
Model No.:	R9, R9BT, R9WG	
Test Model No.:	R9	
Brand Name:	Reacher	
Software Version:	V1.0	
Hardware Version:	V1.0	
Power Supply:	Charge by adapter	
	MODEL: KA18F-0902000US	
	INPUT: 100-240V~50/60Hz 0.55A Max	
	OUTPUT: 9V 2000mA	

4.3 Product Specification subjective to this standard

Equipment Category:	Non-ISM frequency
Operation Frequency range:	115kHz~205kHz
Modulation Type:	Induction
Antenna Type:	Induction coil
Antenna Gain:	0dBi
Power:	Output: 15W(Max)

Note:

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



4.4 Test Environment

Radiated Emissions:	
Temperature:	25.5 °C
Humidity:	53 % RH
Atmospheric Pressure:	1009 mbar
Conducted Emissions:	
Temperature:	25.5 °C
Humidity:	53 % RH
Atmospheric Pressure:	100.9 mbar
Radio conducted item t	est (RF Conducted test room):
Temperature:	22.8 °C
Humidity:	49 % RH
Atmospheric Pressure:	100.9 mbar
Test Mode:	
Mode a:	Keep the EUT Wireless Out Put for Wireless charge load 5W
Mode b:	Keep the EUT Wireless Out Put for Wireless charge load 7.5W
Mode c:	Keep the EUT Wireless Out Put for Wireless charge load 10W
Mode d:	Keep the EUT Wireless Out Put for Wireless charge load 15W (Max

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	/	/	/	CQA

2) Cable

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



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.	Instrument No.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2023/9/8	2024/9/7
Spectrum analyzer	R&S	FSU26	CQA-038	2023/9/8	2024/9/7
Preamplifier	MITEQ	AMF-6D-02001800-29- 20P	CQA-036	2023/9/8	2024/9/7
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	2023/9/8	2024/9/7
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2023/9/8	2024/9/7
Antenna Connector	CQA	RFC-01	CQA-080	2023/9/8	2024/9/7
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2023/9/8	2024/9/7
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2023/9/8	2024/9/7
EMI Test Receiver	R&S	ESR7	CQA-005	2023/9/8	2024/9/7
LISN	R&S	ENV216	CQA-003	2023/9/8	2024/9/7
Coaxial cable	CQA	N/A	CQA-C009	2023/9/8	2024/9/7
DC power	KEYSIGHT	E3631A	CQA-028	2023/9/8	2024/9/7



5 Test results and Measurement Data

5.1 Antenna Requirement

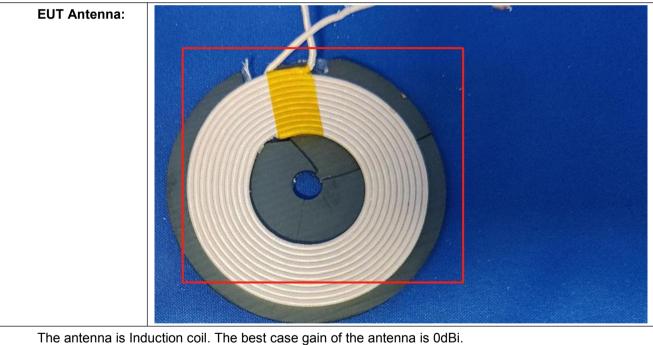
Standard requirement: 47 CFR Part 15C Section 15.203

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.

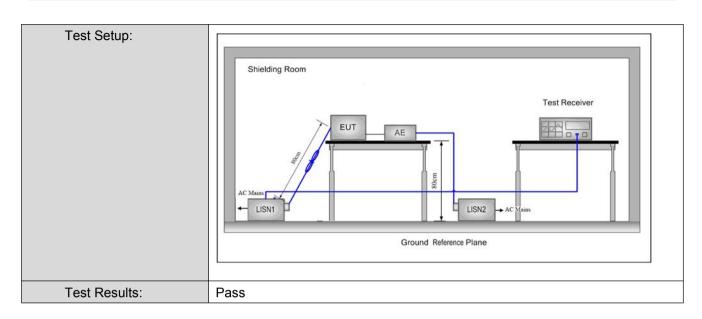




5.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207					
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 logarithm	n of the frequency.				
Test Procedure:	 The mains terminal disturt room. 	oance voltage test was	s conducted in a shielded			
	2) The EUT was connected to	AC power source thro	ough a LISN 1 (Line			
	Impedance Stabilization No	etwork) 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. 3) 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, 4) 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 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 					
		UT and associated equipment was at least 0.8 m from the LISN 2.				
	5) In order to find the maximu		•			
	equipment and all of the interface cables must be changed according t ANSI C63.10: 2013 on conducted measurement.					
	ANSI C63.10: 2013 on con	aucted measurement.				





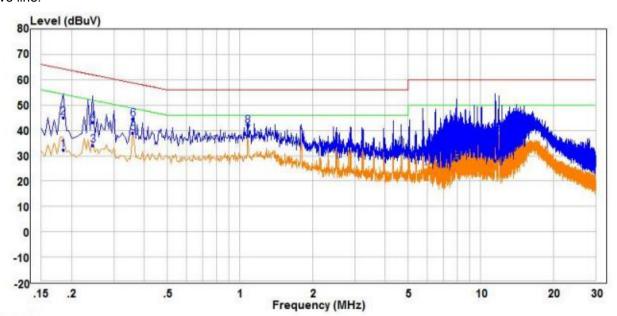


Measurement Data

The worst case:

Mode d:

Live line:



		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	_	MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.185	22.85	9.49	32.34	54.26	-21.92	Average	Line
2		0.185	35.42	9.49	44.91	64.26	-19.35	QP	Line
3		0.245	24.53	9.49	34.02	51.92	-17.90	Average	Line
4		0.245	33.77	9.49	43.26	61.92	-18.66	QP	Line
5		0.360	29.60	9.50	39.10	48.73	-9.63	Average	Line
6		0.360	34.83	9.50	44.33	58.73	-14.40	QP	Line
7	PP	1.080	28.64	9.52	38.16	46.00	-7.84	Average	Line
8	QP	1.080	32.34	9.52	41.86	56.00	-14.14	QP	Line
9		7.955	18.75	9.73	28.48	50.00	-21.52	Average	Line
10		7.955	30.10	9.73	39.83	60.00	-20.17	QP	Line
11		11.490	18.25	9.84	28.09	50.00	-21.91	Average	Line
12		11.490	28.69	9.84	38.53	60.00	-21.47	QP	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.

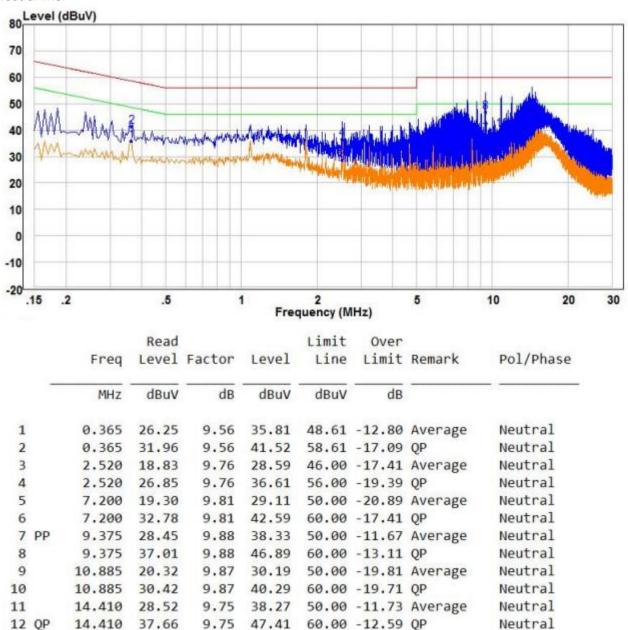
3. If the Peak value under Average limit, the Average value is not recorded in the report.



The worst case:

Mode d:

Neutral line:

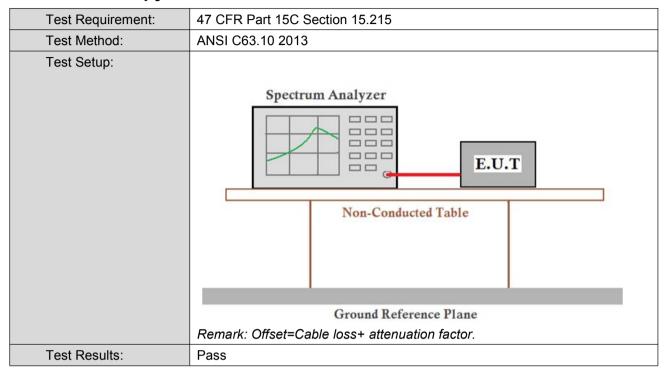


Remark:

- 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

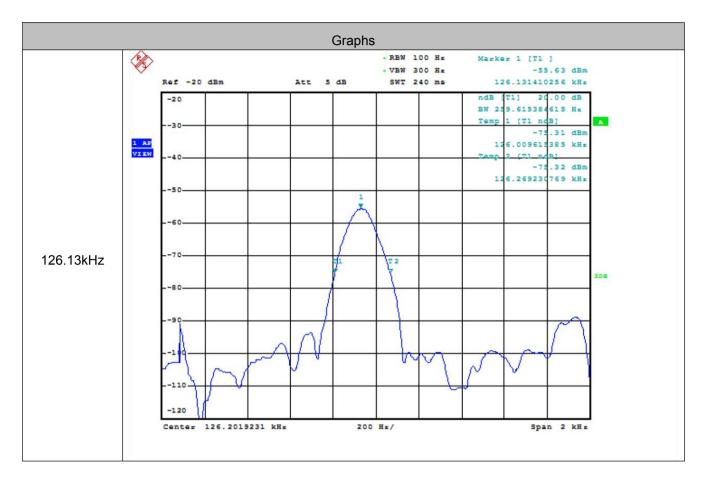


Measurement Data

Mode d				
Test Frequency (kHz)	Result			
126.13	259.61	Pass		



Test plot as follows:



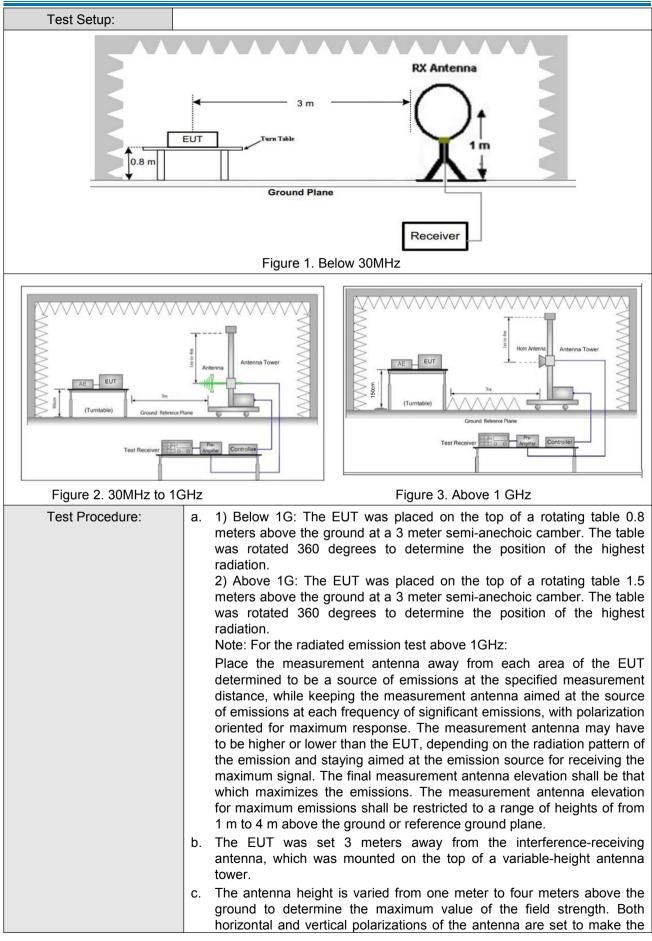


5.4 Radiated Spurious Emission & Restricted bands

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205						
Test Method:	ANSI C63.10 2013	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	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:	Frequency	Frequency (mic		Limit (dBuV/m)	Remark	Measureme distance (m	
	0.009MHz-0.490MHz	2	400/F(kHz)	-	-	300	
	0.490MHz-1.705MHz	, , , , , , , , , , , , , , , , , , ,		-	-	30	
	1.705MHz-30MHz			-	-	30	
	30MHz-88MHz			40.0	Quasi-peak	3	
	88MHz-216MHz			43.5	Quasi-peak	3	
	216MHz-960MHz			46.0	Quasi-peak	3	
	960MHz-1GHz 500		54.0	Quasi-peak	3		
	Above 1GHz		500	54.0	Average	3	
	Note: 15.35(b), frequency emissions is limit applicable to the e peak emission level rac	20c quip	B above the ment under t	maximum est. This p	permitted ave	erage emissior	

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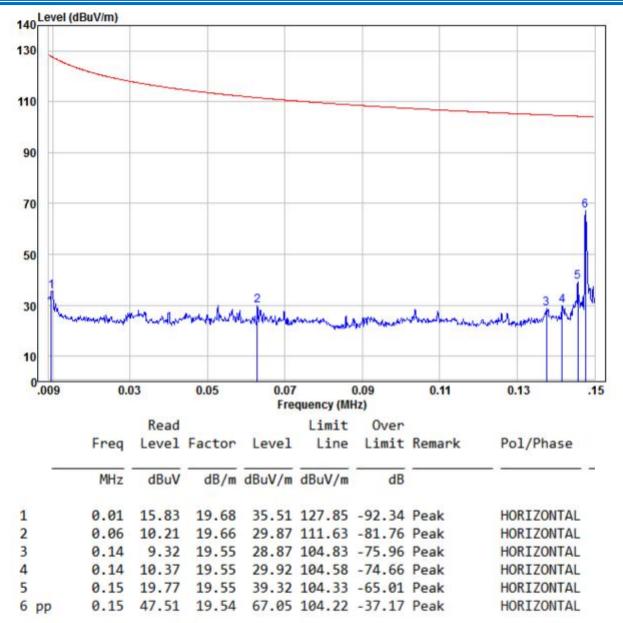




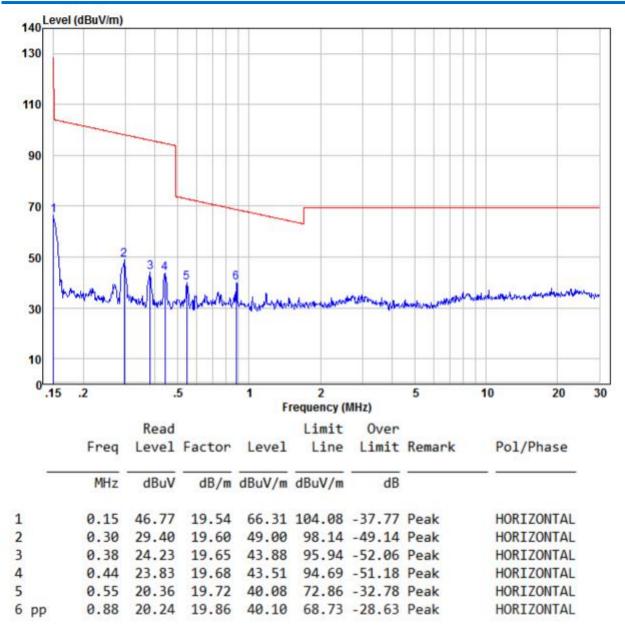
		measurement.
	d.	For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to 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:	Pas	38

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



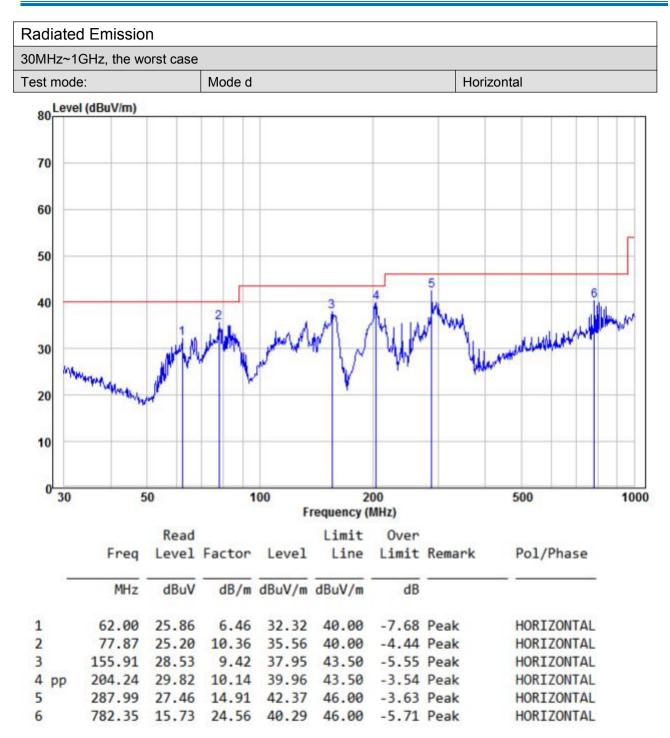






Note: No other emissions found between lowest internal used/generated frequencies to 30MHz. The peak level of the emission is less than the average limit, so the average level shall be less than1 the limit without test.





Remark:

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

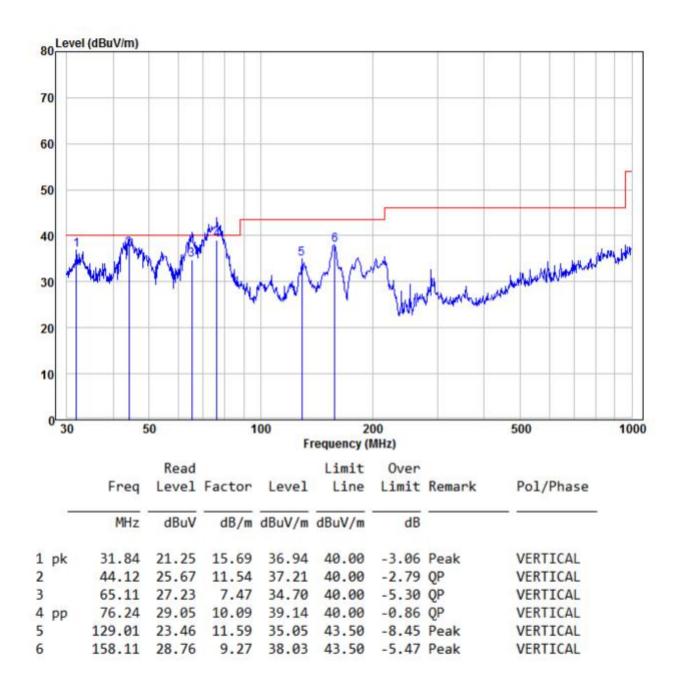
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor



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

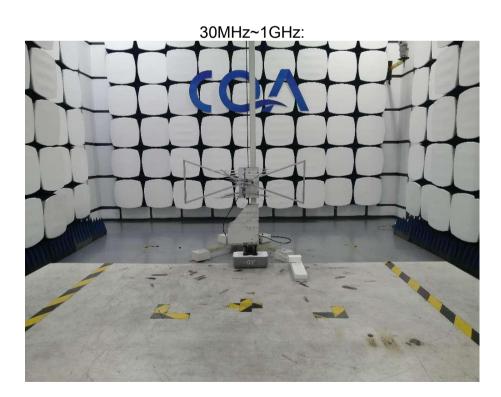
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor



6 Photographs - EUT Test Setup

6.1 Radiated Emission







6.2 Conducted Emission





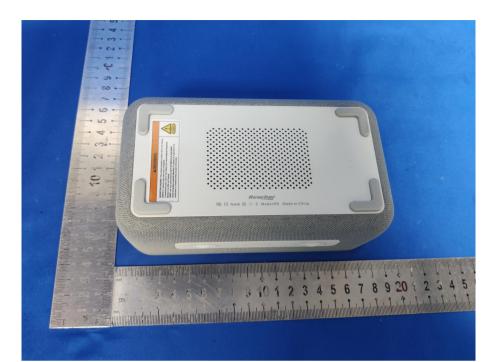
7 Photographs - EUT Constructional Details







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