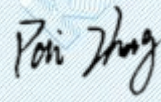
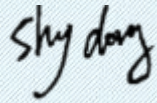


# TEST REPORT

Report No..... : KS2308S4368E  
 FCC ID..... : 2A6IU-WX22A  
 Applicant..... : Shenzhen Gaoyi Electronic Co.,Ltd  
 Address..... : Room 701 7th Floor, Building F, Huafeng Industrial Zone, Hangcheng Road  
 Xixiang Town, Bao An District, Shenzhen,China  
 Manufacturer..... : Dongguan Gaoyi Electronic Co.,Ltd  
 Address..... : ChangshengStreet,No.4,Tianmei Village,Huangjiang Town,DongguanCity,  
 China  
 Product Name..... : Fast car wireless charger  
 Model/Type reference..... : WX22A, WX22, WX22B  
 Standard..... : 47 CFR Part 15C  
 Date of Receipt..... : August 15, 2023  
 Date of Test Date..... : August 15, 2023 to August 31, 2023  
 Date of issue..... : September 1, 2023  
**Test result..... : Pass**

Conclusion..... : When determining of test conclusion, measurement uncertainty of tests  
 have been considered.

Prepared by:   
 ( Printed name + Signature) Pai Zheng

Approved by:   
 ( Printed name + Signature) Sky Dong

**Testing Laboratory Name...: KSIGN(Guangdong) Testing Co., Ltd.**  
 Address..... : West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial  
 Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong,  
 China

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# 1. TEST SUMMARY

## 1.1. Test Standards

The tests were performed according to following standards:

[FCC Rules and Regulations Part 15 Subpart C \(Section 15.207\)](#): Conducted limits.

[FCC Rules and Regulations Part 15 Subpart C \(Section 15.209\)](#): Radiated emission limits; general requirements.

[ANSI C63.10: 2013](#): American National Standard for Testing Unlicensed Wireless Devices

## 1.2. Report Version

Revised No.	Date of issue	Description
01	September 1, 2023	Original



### 1.3. Test Description

Test Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15C	Part 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15C	47 CFR 15.207(a)	Pass
Emissions in frequency bands (below 30MHz)	47 CFR Part 15C	47 CFR 15.209	Pass
Emissions in frequency bands (30MHz - 1GHz)	47 CFR Part 15C	47 CFR 15.209	Pass



### 1.4. Test Facility

**KSIGN(Guangdong) Testing Co., Ltd.**

West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

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

**CNAS-Lab Code: L13261**

KSIGN(Guangdong) Testing Co., Ltd. has been assessed and proved to be in Compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

**A2LA-Lab Cert. No.: 5457.01**

KSIGN(Guangdong) Testing Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing

**ISED#: 25693 CAB identifier.: CN0096**

KSIGN(Guangdong) Testing Co., Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

**FCC-Registration No.: 294912 Designation Number: CN1328**

KSIGN(Guangdong) Testing Co., Ltd. EMC Laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

### 1.5. Measurement Uncertainty

Test Items	Measurement Uncertainty
Conducted Emission (9-150kHz)	± 3.74dB
Conducted Emission (150k-30MHz)	± 3.34dB
RE (9kHz-30MHz)	± 2.20dB
RE (30-1000MHz)	± 5.7dB

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.



## 2. GENERAL INFORMATION

### 2.1. General Description Of EUT

Test Sample Number:	1-1(Normal Sample)
Product Name:	Fast car wireless charger
Model / Type reference:	WX22A, WX22, WX22B
Model Difference:	The difference between product models lies in the different model names. Other power supply modes, internal structures, circuits, and key components are the same, and will not affect safety and EMC performance.
Power Supply:	Input: 5V $\overline{=}$ 2A, 9V $\overline{=}$ 2A, 9V $\overline{=}$ 2.22A Wireless Output: 5W, 7.5W, 10W, 15W
Power Adaptor:	Input: AC 120V/ 60Hz Output: DC 5V, 9V
Operation Frequency:	115KHz-205KHz
Modulation Type:	ASK
Antenna Type:	Loop coil antenna
Antenna Gain:	0dBi
Note: For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.	

### 2.2. Accessory Equipment Information

Title	Manufacturer	Model No.	Technical Parameters	Provided by
Adapter	MCDODO	CH-810 Pro	Input: AC 120V, 60Hz Output: DC 5V, 9V	laboratory
Wireless charging load	EESON	2S	5W, 7.5W, 10W, 15W	laboratory

### 2.3. Description of Test Modes

No.	Title	Description of Mode
Test Mode1	Coil 1-Wireless charging mode(15W)	N/A
Test Mode2	Coil 1-Wireless charging mode(10W)	N/A
Test Mode3	Coil 1-Wireless charging mode(7.5W)	N/A
Test Mode4	Coil 1-Wireless charging mode(5W)	N/A
Test Mode5	Coil 2-Wireless charging mode(15W)	N/A
Test Mode6	Coil 2-Wireless charging mode(10W)	N/A
Test Mode7	Coil 2-Wireless charging mode(7.5W)	N/A
Test Mode8	Coil 2-Wireless charging mode(5W)	N/A
Test Mode9	Standby mode	N/A

Note:

- All test modes were pre-tested, The Mode 1 was the worst case and only the data of the worst case record in this report.
- The wireless charging module is a dual coil single charging system, Coil 1 and coil 2 cannot emit simultaneously



## 2.4. Measurement Instruments List

Conducted Emission at AC power line				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
LISN	R&S	ENV432	1326.6105.02	2024-02-17
EMI Test Receiver	R&S	ESR	102524	2024-02-17
Manual RF Switch	JS TOYO	/	MSW-01/002	2024-02-17
ISN CAT6	Schwarzbeck	CAT5 8158	227	2024-02-17
Color Signal Generator	Philips	PM5418	672926	2024-02-17
Power Absorbing Clamp	R&S	MDS-21	100925	2024-02-19

Emissions in frequency bands (below 30MHz)				
Emissions in frequency bands (30MHz - 1GHz)				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Color Signal Generator	Philips	PM5418	672926	2024-02-17
Ultra-Broadband logarithmic period Antenna	Schwarzbeck	VULB 9163	1230	2025-02-18
Pre-Amplifier	Schwarzbeck	BBV 9745	9745#129	2024-02-17
Broadcast Television Signal Generator	R&S	SFE100	141038	2024-02-17
Analog Signal Generator	Agilent	8648A	3847M00445	2024-02-17
EMI Test Receiver	R&S	ESR	102525	2024-02-17
Loop Antenna	Beijin ZHINAN	ZN30900C	18050	2024-02-19
Horn Antenna	Schwarzbeck	BBHA 9120 D	2023	2026-02-19
Pre-Amplifier	EMCI	EMC051835SE	980662	2024-02-17
Spectrum Analyzer	Keysight	N9020A	MY46471971	2024-02-17

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### 3. Evaluation Results (Evaluation)

#### 3.1. Antenna requirement

Test Requirement:	Refer to 47 CFR Part 15.203, 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 shall be considered sufficient to comply with the provisions of this section.
Antenna Information:	The antenna used in this product is a Coil Antenna.
Note: The antenna gain is 0dBi, and the antenna gain is provided by the applicant.	



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## 4. Radio Spectrum Matter Test Results (RF)

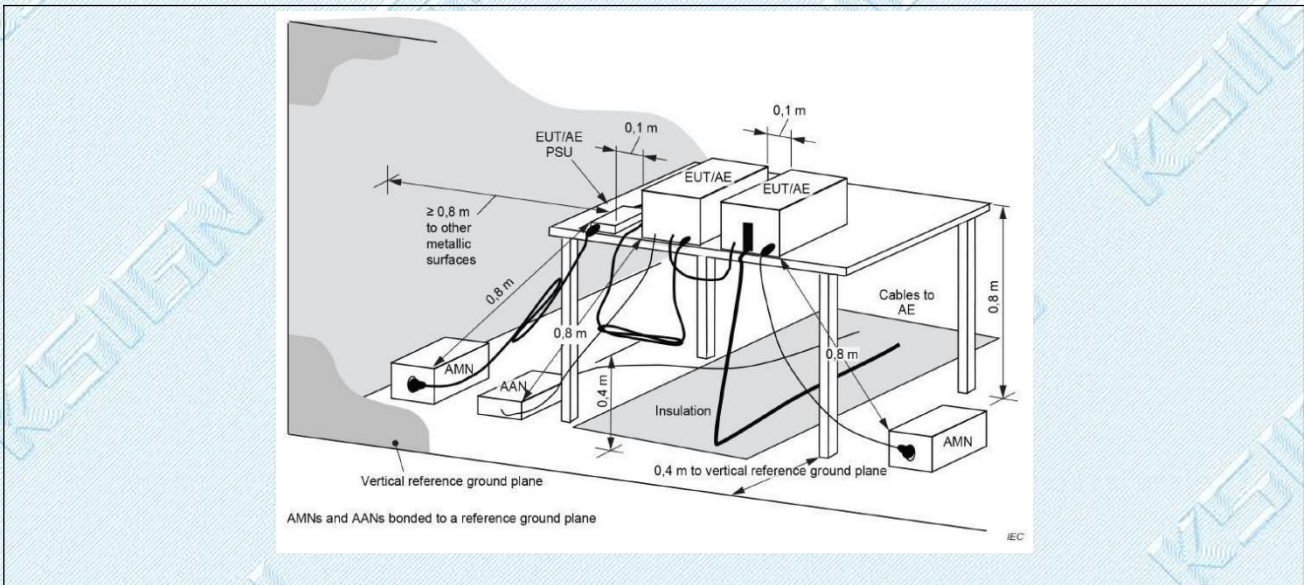
### 4.1. Conducted Emission at AC power line

Test Requirement:	Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 $\mu$ H/50 ohms line impedance stabilization network (LISN).		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
		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 Method:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices		

#### 4.1.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.6 °C
Humidity:	47.5 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3, Test Mode4, Test Mode5, Test Mode6, Test Mode7, Test Mode8, Test Mode9

#### 4.1.2. Test Setup Diagram:



**Note:**

- 1). QP Value (dB $\mu$ V) = QP Reading (dB $\mu$ V) + Factor (dB)
- 2). Factor (dB) = insertion loss of LISN (dB) + Cable loss (dB)
- 3). QPMargin (dB) = QP Limit (dB $\mu$ V) - QP Value (dB $\mu$ V)
- 4). AVMargin (dB) = AV Limit (dB $\mu$ V) - AV Value (dB $\mu$ V)

TRF RF\_R1

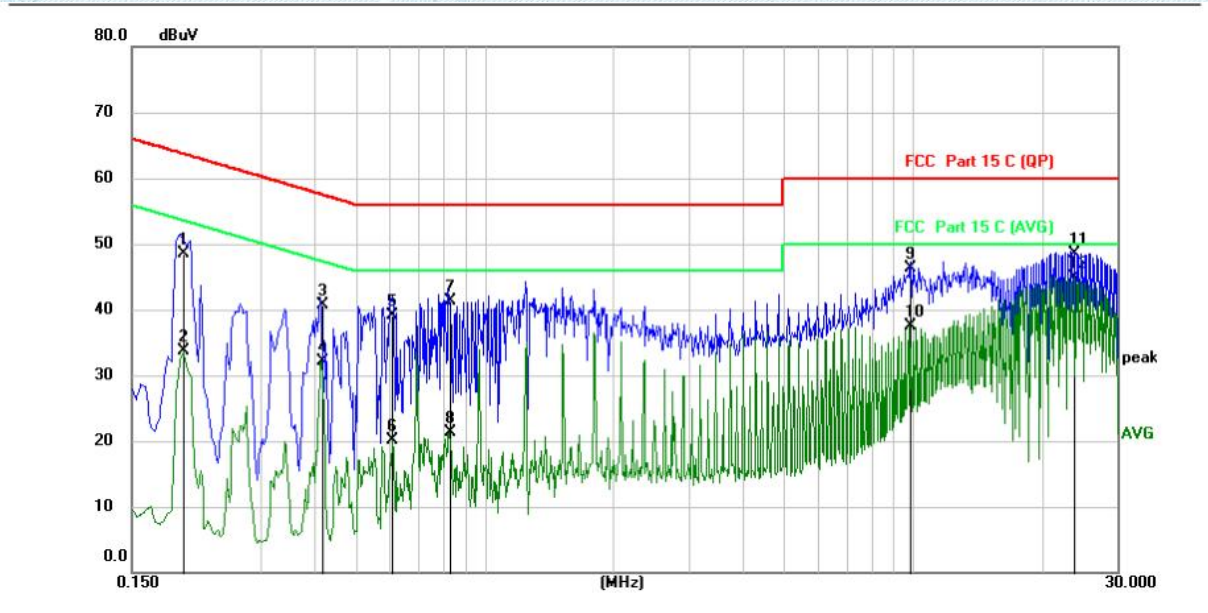
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### 4.1.3. Test Data:

Test Mode1 / Line: Line



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1980	37.51	11.03	48.54	63.69	-15.15	QP	
2	0.1980	22.76	11.03	33.79	53.69	-19.90	AVG	
3	0.4180	29.80	11.00	40.80	57.49	-16.69	QP	
4	0.4180	21.17	11.00	32.17	47.49	-15.32	AVG	
5	0.6100	28.05	11.01	39.06	56.00	-16.94	QP	
6	0.6100	9.18	11.01	20.19	46.00	-25.81	AVG	
7	0.8300	30.30	11.06	41.36	56.00	-14.64	QP	
8	0.8300	10.34	11.06	21.40	46.00	-24.60	AVG	
9	9.8579	33.76	12.49	46.25	60.00	-13.75	QP	
10	9.8579	25.00	12.49	37.49	50.00	-12.51	AVG	
11	23.8740	32.96	15.45	48.41	60.00	-11.59	QP	
12 *	23.8740	29.45	15.45	44.90	50.00	-5.10	AVG	

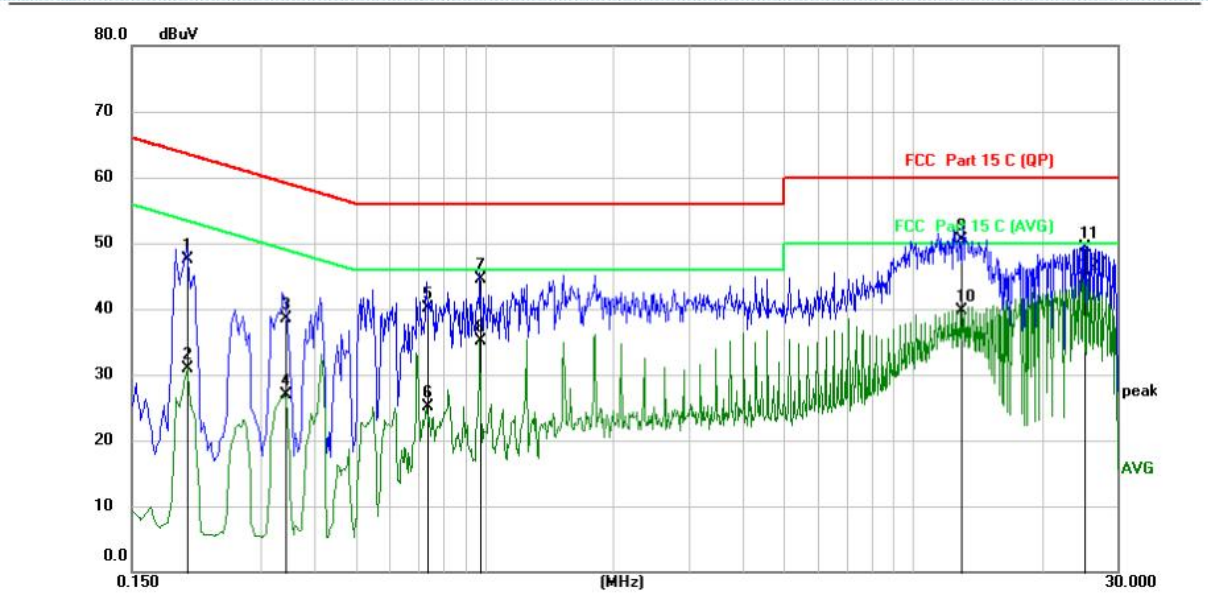
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**Test Mode1 / Line: Neutral**



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.2020	36.52	11.04	47.56	63.53	-15.97	QP	
2		0.2020	19.96	11.04	31.00	53.53	-22.53	AVG	
3		0.3420	27.44	11.00	38.44	59.15	-20.71	QP	
4		0.3420	15.84	11.00	26.84	49.15	-22.31	AVG	
5		0.7340	29.01	11.04	40.05	56.00	-15.95	QP	
6		0.7340	14.04	11.04	25.08	46.00	-20.92	AVG	
7		0.9740	33.53	11.06	44.59	56.00	-11.41	QP	
8		0.9740	24.05	11.06	35.11	46.00	-10.89	AVG	
9		12.9339	37.02	13.41	50.43	60.00	-9.57	QP	
10		12.9339	26.33	13.41	39.74	50.00	-10.26	AVG	
11		25.0860	34.05	15.22	49.27	60.00	-10.73	QP	
12	*	25.0860	29.36	15.22	44.58	50.00	-5.42	AVG	

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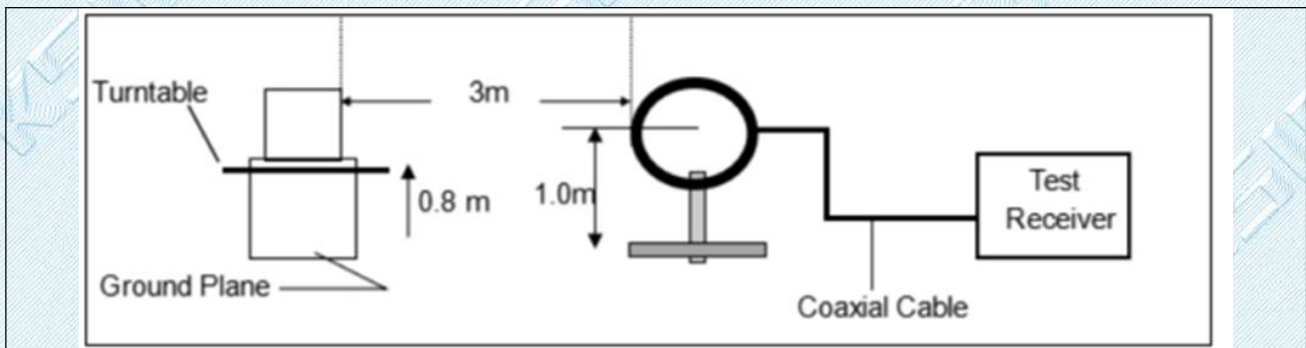
### 4.2. Emissions in frequency bands (below 30MHz)

Test Requirement:	47 CFR 15.209		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
<p>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.</p> <p>As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.</p>			
Test Method:	Radiated emissions tests		
Procedure:	ANSI C63.10-2013 section 6.6.4		

#### 4.2.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.3 °C
Humidity:	46.3 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3, Test Mode4, Test Mode5, Test Mode6, Test Mode7, Test Mode8, Test Mode9

#### 4.2.2. Test Setup Diagram:

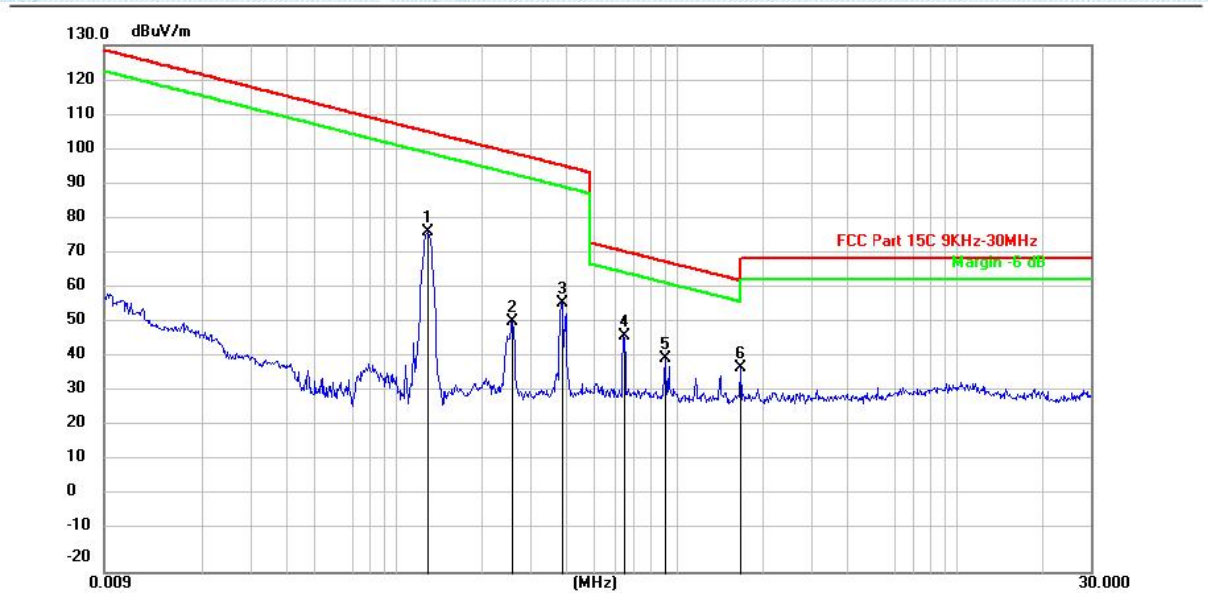


Note:  
 Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor



### 4.2.3. Test Data:

Test Mode1 / Axis: X



No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		0.1292	86.06	-9.26	76.80	105.38	-28.58	peak
2		0.2584	60.49	-9.18	51.31	99.36	-48.05	peak
3		0.3886	66.32	-9.47	56.85	95.81	-38.96	peak
4	*	0.6462	56.69	-9.52	47.17	71.40	-24.23	peak
5		0.9063	50.10	-9.22	40.88	68.46	-27.58	peak
6		1.6846	47.48	-9.30	38.18	63.07	-24.89	peak

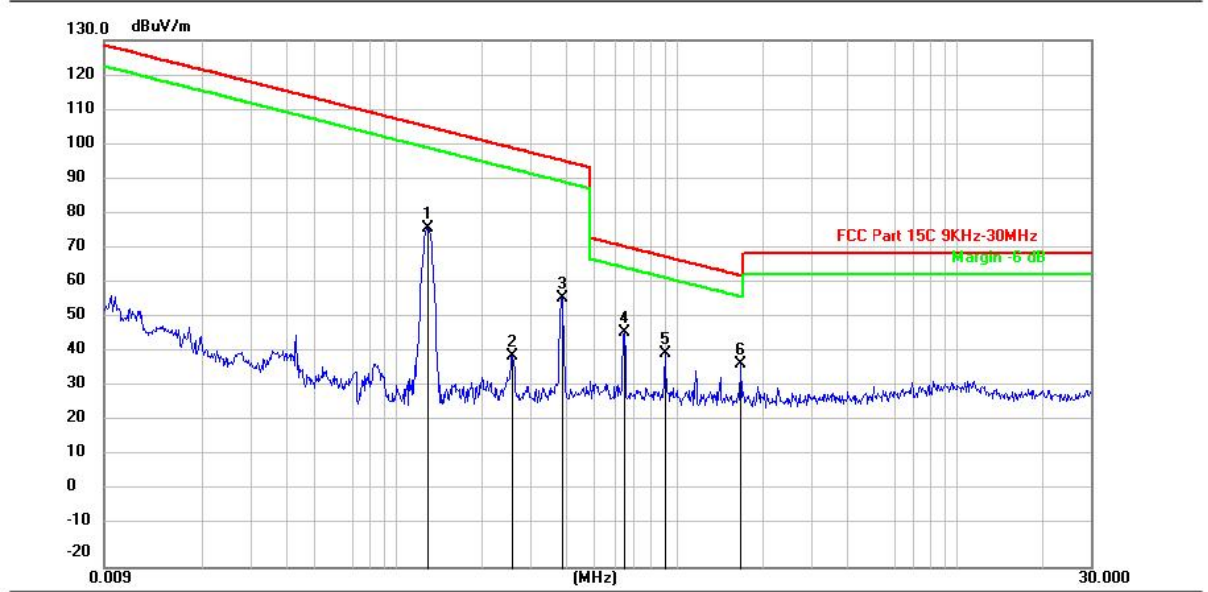
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Test Mode1 / Axis: Y



No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		0.1292	86.01	-9.26	76.75	105.38	-28.63	peak
2		0.2580	49.44	-9.18	40.26	99.37	-59.11	peak
3		0.3880	66.27	-9.46	56.81	95.83	-39.02	peak
4	*	0.6468	56.54	-9.52	47.02	71.39	-24.37	peak
5		0.9056	50.17	-9.22	40.95	68.47	-27.52	peak
6		1.6846	47.16	-9.30	37.86	63.07	-25.21	peak

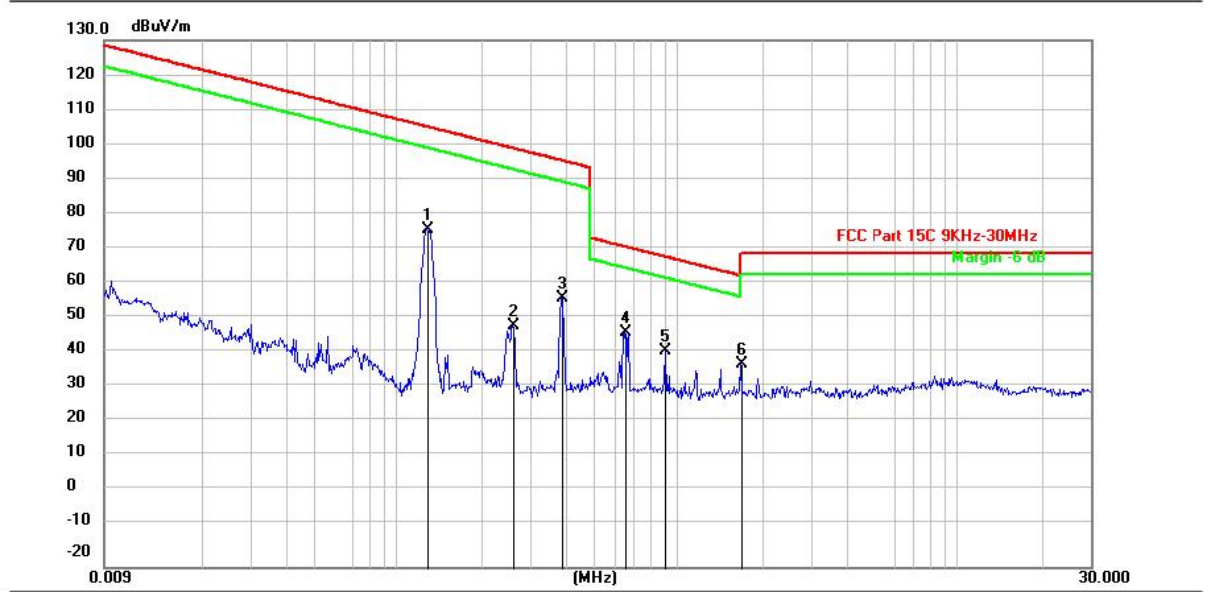
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Test Mode1 / Axis: Z



No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		0.1292	85.63	-9.26	76.37	105.38	-29.01	peak
2		0.2590	57.85	-9.19	48.66	99.34	-50.68	peak
3		0.3882	66.29	-9.46	56.83	95.82	-38.99	peak
4	*	0.6483	56.41	-9.52	46.89	71.37	-24.48	peak
5		0.9079	50.76	-9.22	41.54	68.44	-26.90	peak
6		1.6873	47.24	-9.30	37.94	63.06	-25.12	peak

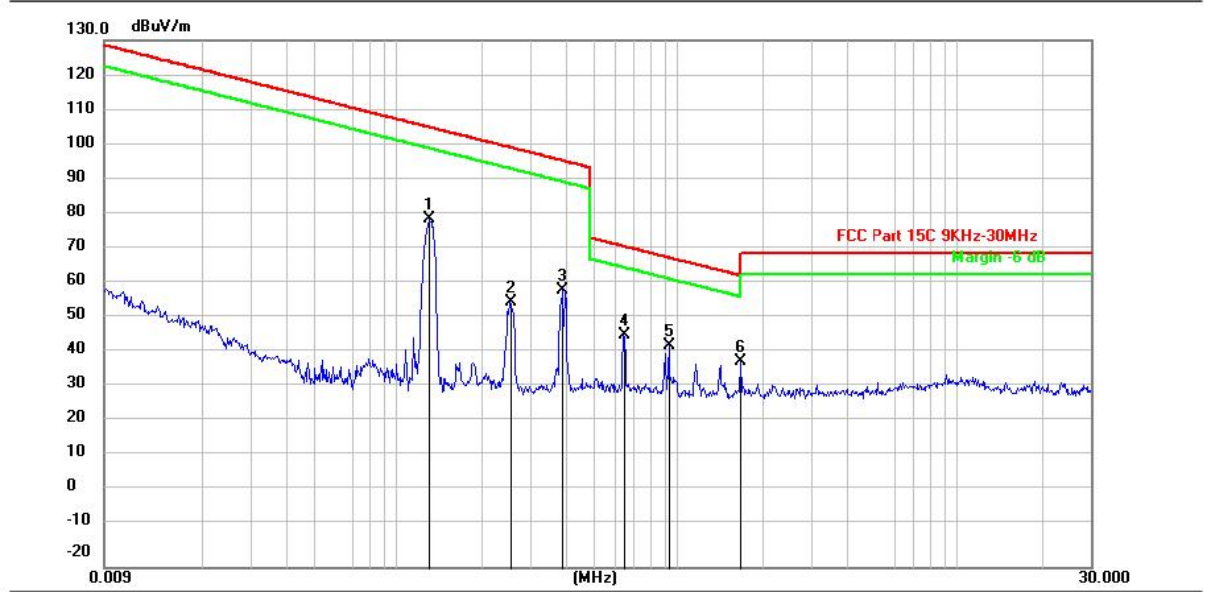
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Test Mode5 / Axis: X



No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		0.1307	88.29	-9.28	79.01	105.28	-26.27	peak
2		0.2540	64.59	-9.17	55.42	99.51	-44.09	peak
3		0.3911	68.38	-9.46	58.92	95.76	-36.84	peak
4		0.6461	55.69	-9.52	46.17	71.40	-25.23	peak
5		0.9363	52.50	-9.18	43.32	68.18	-24.86	peak
6	*	1.6846	47.98	-9.30	38.68	63.07	-24.39	peak

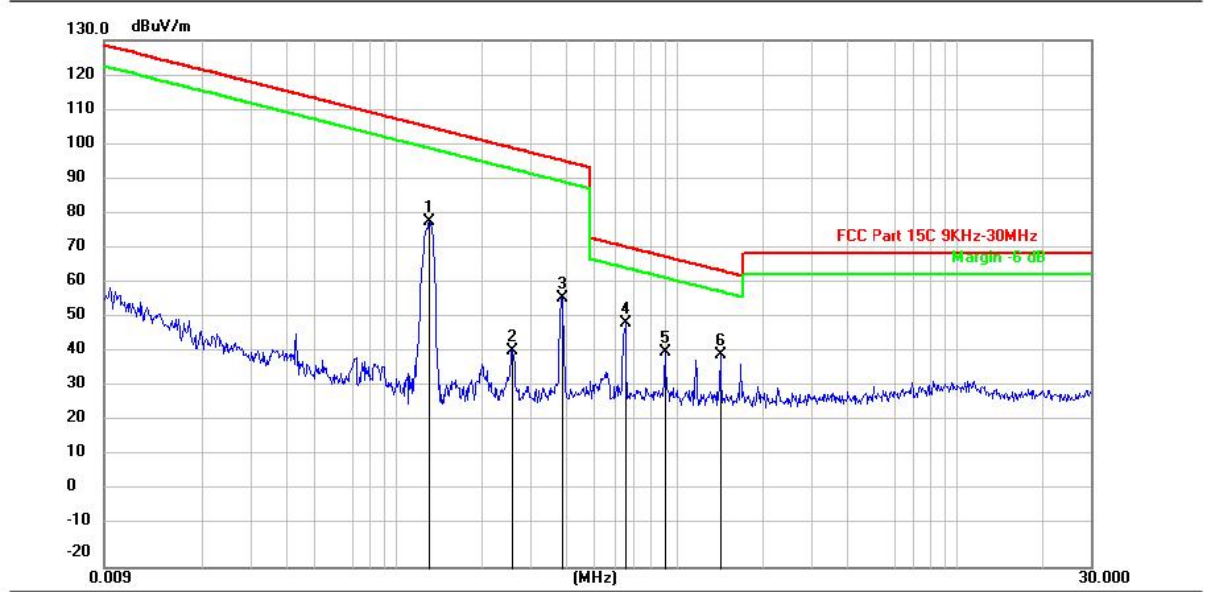
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Test Mode5 / Axis: Y



No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		0.1307	87.81	-9.28	78.53	105.28	-26.75	peak
2		0.2580	50.94	-9.18	41.76	99.37	-57.61	peak
3		0.3880	66.27	-9.46	56.81	95.83	-39.02	peak
4	*	0.6521	59.17	-9.52	49.65	71.32	-21.67	peak
5		0.9052	50.67	-9.22	41.45	68.47	-27.02	peak
6		1.4253	49.90	-9.23	40.67	64.53	-23.86	peak

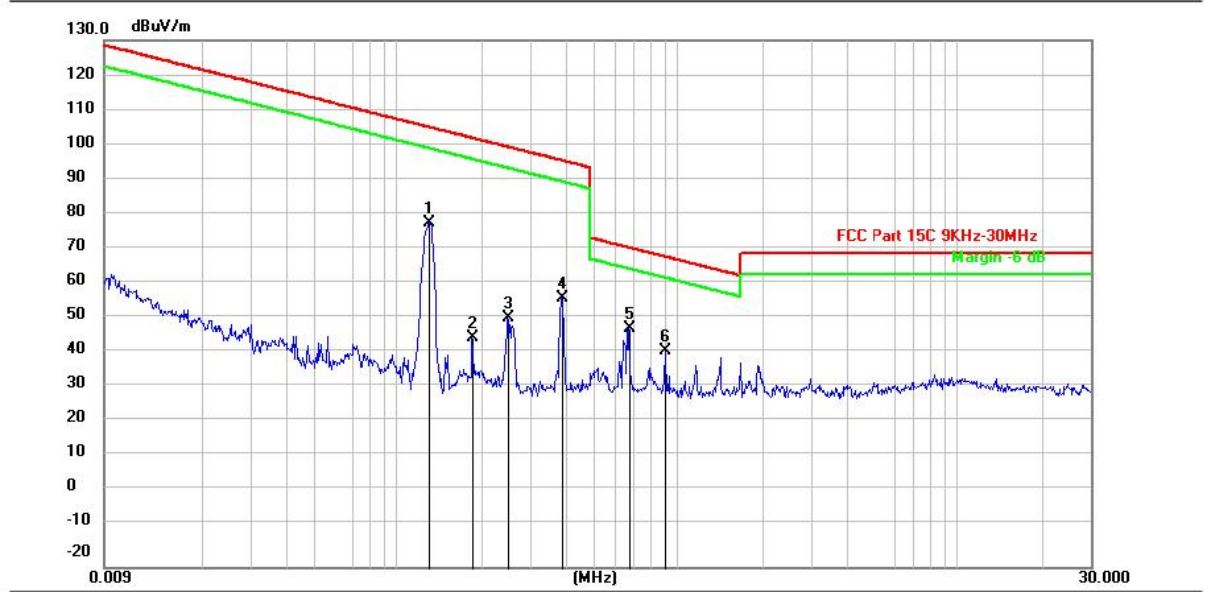
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**Test Mode5 / Axis: Z**



No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		0.1307	87.53	-9.28	78.25	105.28	-27.03	peak
2		0.1862	54.54	-9.03	45.51	102.20	-56.69	peak
3		0.2489	60.33	-9.17	51.16	99.68	-48.52	peak
4		0.3881	66.29	-9.46	56.83	95.83	-39.00	peak
5	*	0.6703	57.73	-9.50	48.23	71.08	-22.85	peak
6		0.9079	50.76	-9.22	41.54	68.44	-26.90	peak

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### 4.3. Emissions in frequency bands (30MHz - 1GHz)

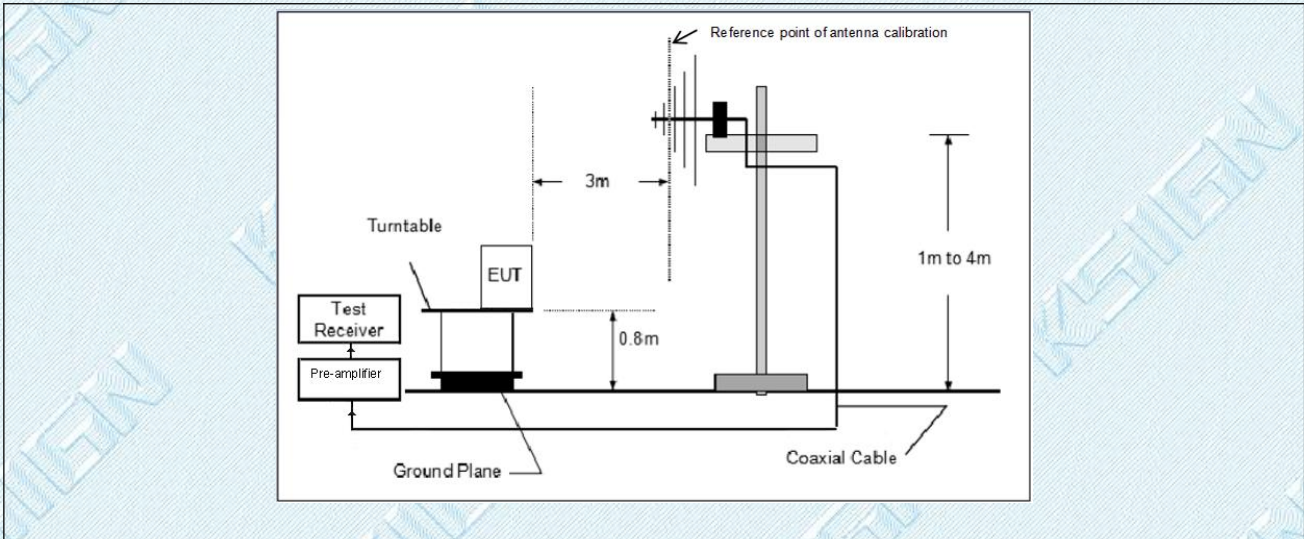
Test Requirement:	47 CFR 15.209		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
<p>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.</p> <p>As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.</p>			
Test Method:	Radiated emissions tests		
Procedure:	ANSI C63.10-2013 section 6.6.4		

#### 4.3.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.3 °C
Humidity:	46.3 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3, Test Mode4, Test Mode5, Test Mode6, Test Mode7, Test Mode8, Test Mode9



**4.3.2. Test Setup Diagram:**



Note:

- 1). Level (dB $\mu$ V/m) = Reading (dB $\mu$ V) + Factor (dB/m)
- 2). Factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)
- 3). Margin (dB) = Limit (dB $\mu$ V/m) - Level (dB $\mu$ V/m)



### 4.3.3. Test Data:

#### Test Mode1 / Polarization: Horizontal



No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1	*	40.9163	49.31	-16.62	32.69	40.00	-7.31	QP
2		55.6874	44.35	-15.96	28.39	40.00	-11.61	QP
3		77.2670	48.47	-20.75	27.72	40.00	-12.28	QP
4		138.6788	43.86	-21.10	22.76	43.50	-20.74	QP
5		151.7036	41.38	-21.02	20.36	43.50	-23.14	QP
6		196.0968	39.78	-18.98	20.80	43.50	-22.70	QP

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**Test Mode1 / Polarization: Vertical**



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1		47.0773	32.61	-15.81	16.80	40.00	-23.20	QP
2	*	149.0670	44.40	-21.08	23.32	43.50	-20.18	QP
3		164.7919	39.13	-20.52	18.61	43.50	-24.89	QP
4		179.4493	39.22	-19.79	19.43	43.50	-24.07	QP
5		217.6969	36.96	-18.37	18.59	46.00	-27.41	QP
6		229.3735	34.85	-18.04	16.81	46.00	-29.19	QP

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## 5. EUT TEST PHOTOS

Conducted Emission at AC power line



Emissions in frequency bands (below 30MHz)





**Emissions in frequency bands (30MHz - 1GHz)**

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## 6. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

External







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**Internal**



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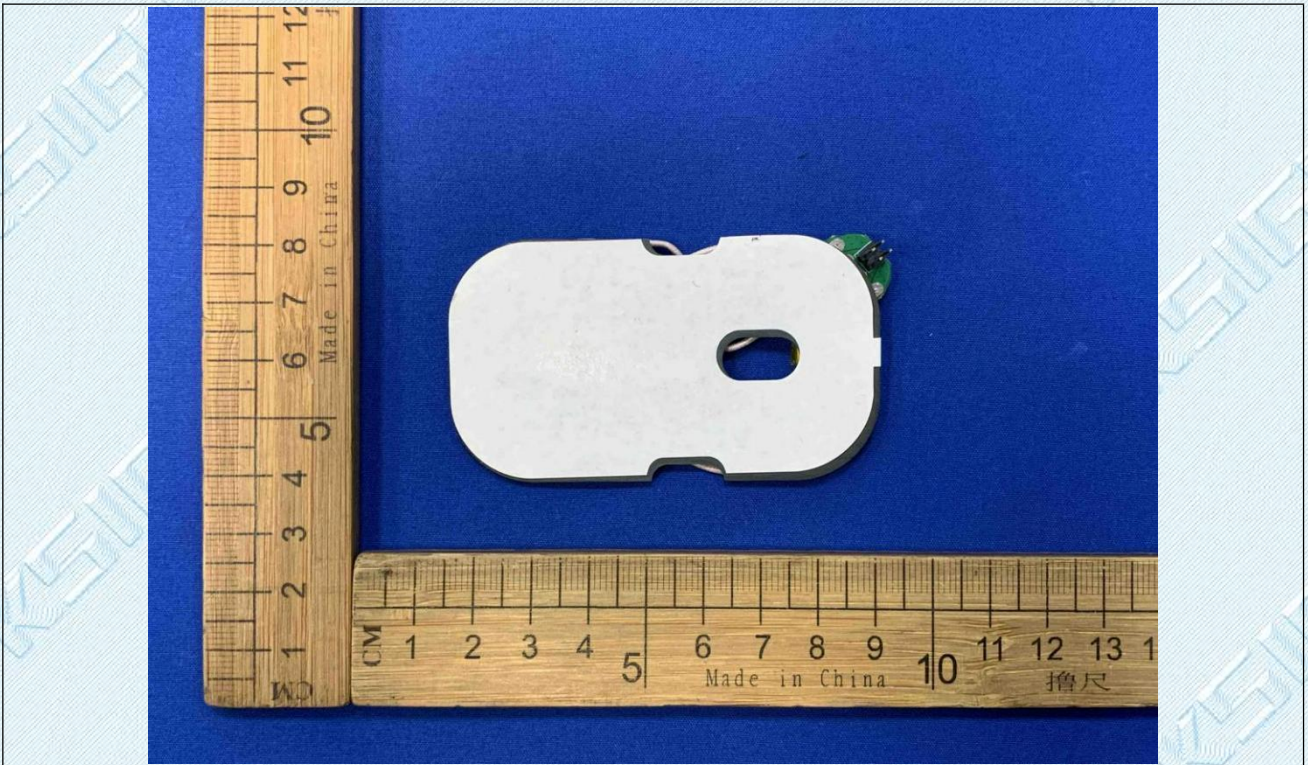
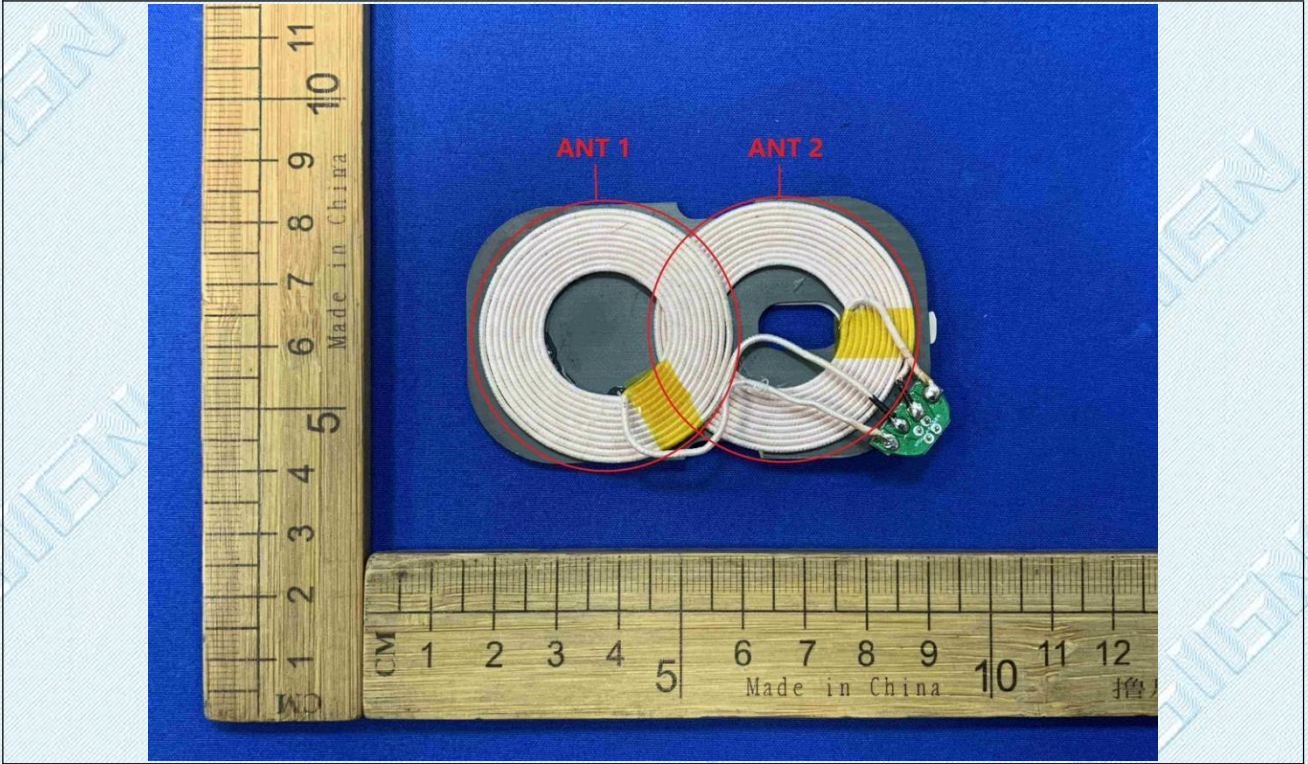


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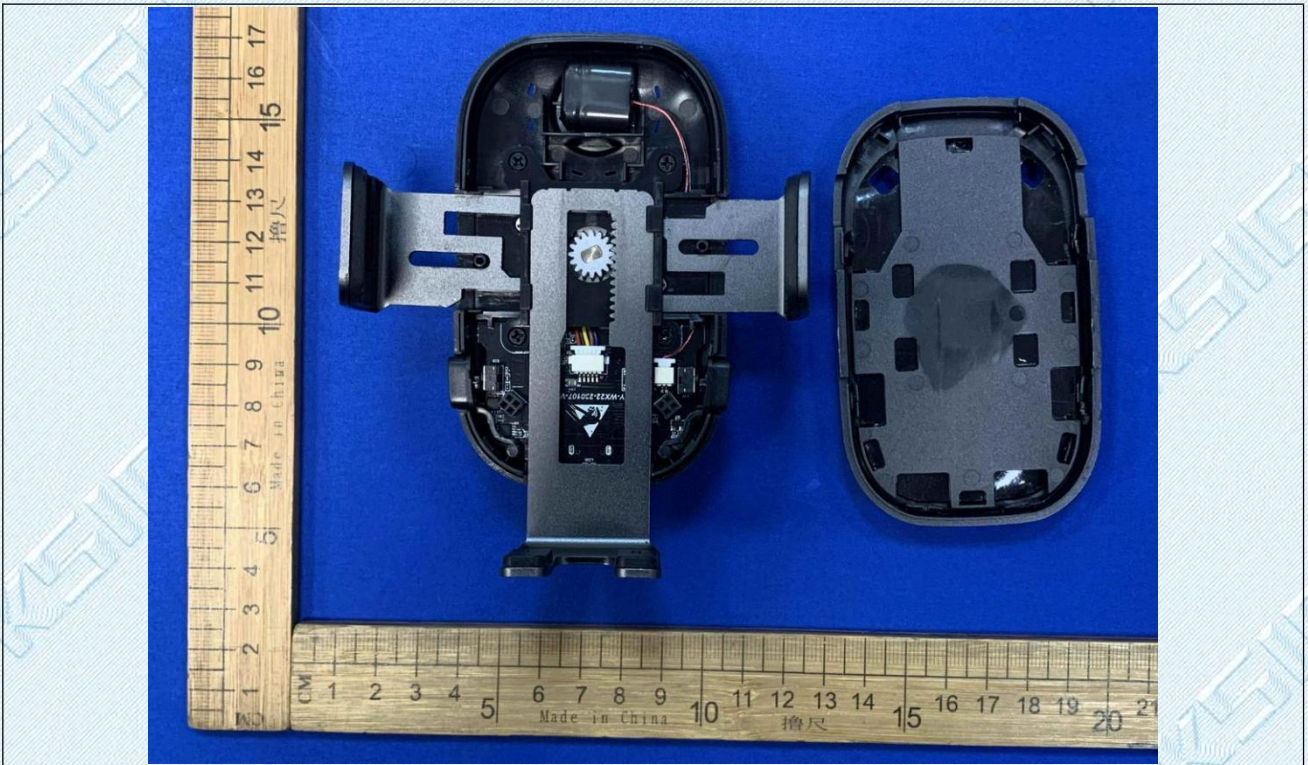


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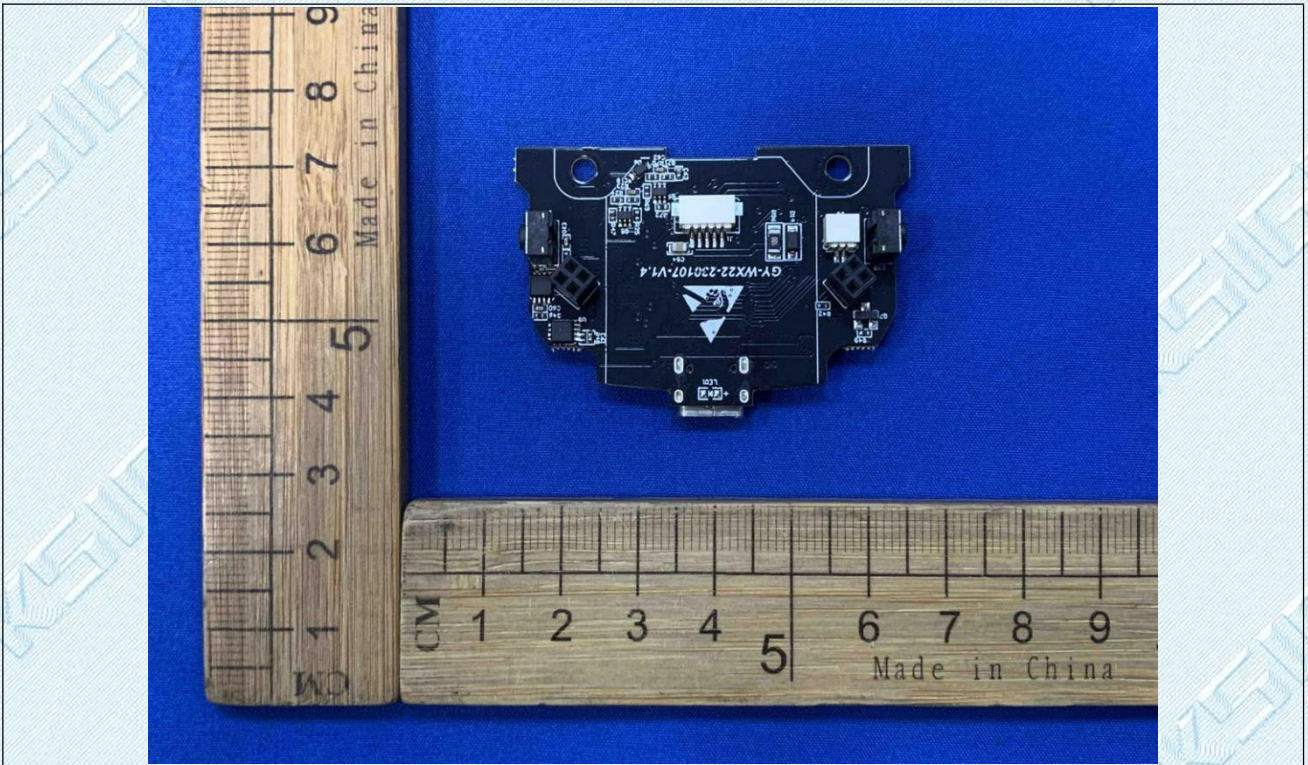


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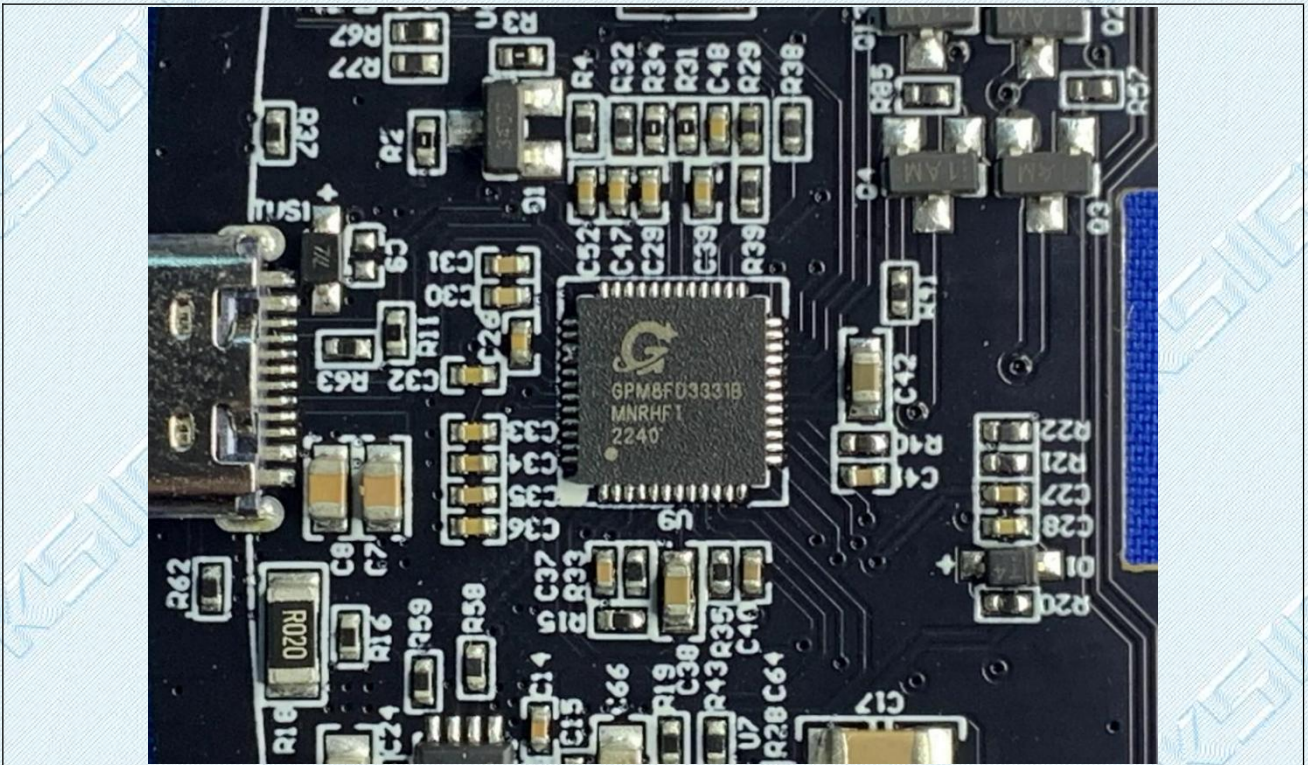
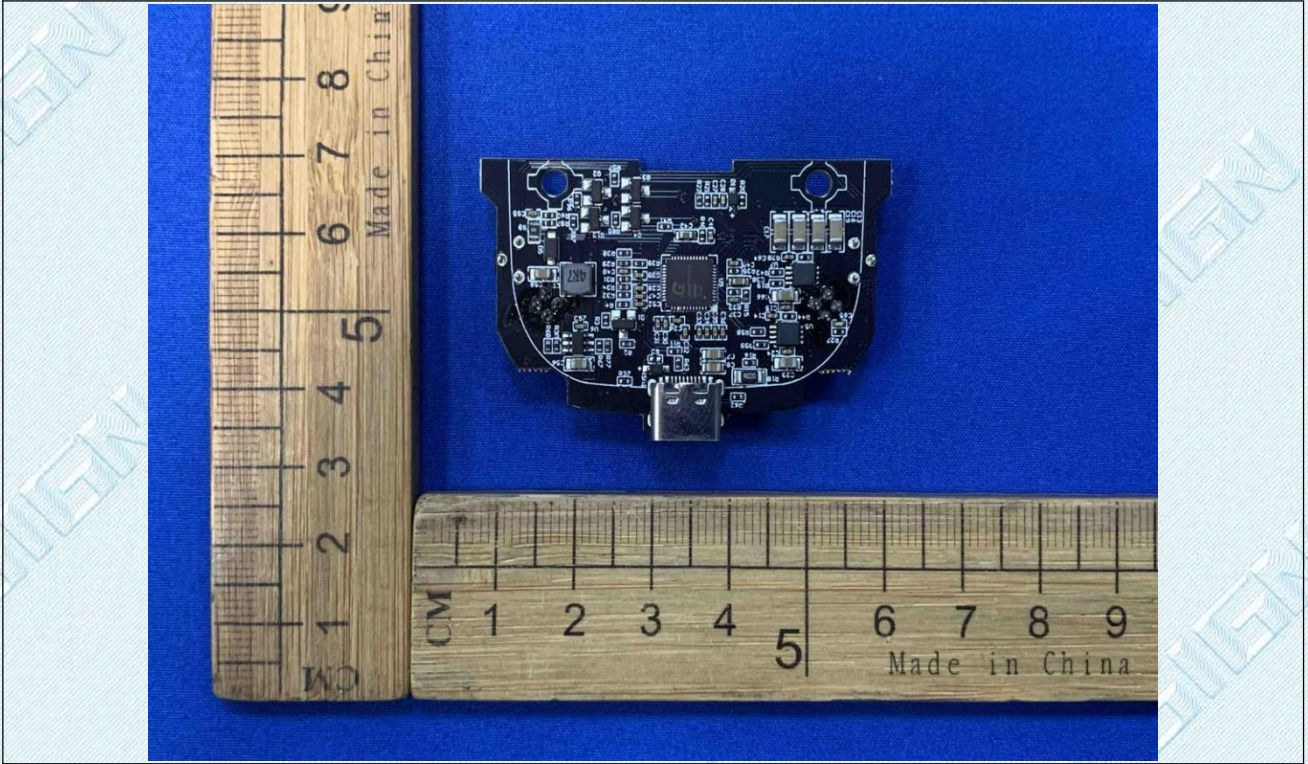


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--THE END--