

TEST REPORT

Product : TANGO Wireless Charger
Trade mark : N/A
Model/Type reference : WCT-A5730A1
Serial number : N/A
Ratings : AC 100V-240V, 50/60Hz
FCC ID : 2AFBK-WCT-A5730A1
Report number : EED32H000859
Date : Jul. 13, 2015
Regulations : See below

Test Standards	Results
☒ 47 CFR FCC Part 15 Subpart C: 2014	PASS

Prepared for:

PowerSquare India Pvt. Ltd.

**3rd floor, Sri Narayani Arcade, 321-247/7-3-4 Kundalahalli, ITPL Main
Road, Brooke Field, Bangalore, India, 560037**

Prepared by:

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Date:

Jul. 13, 2015

Sheek Luo

Lab supervisor

Check No.: 2212856389



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N/A means not applicable.

1. GENERAL INFORMATION

Applicant: PowerSquare India Pvt. Ltd.
3rd floor, Sri Narayani Arcade, 321-247/7-3-4 Kundalahalli, ITPL
Main Road, Brooke Field, Bangalore, India, 560037

Manufacturer: Huizhou SPEED Wireless Technology Co., Ltd.
SX-01-02 Shangxia Section, Hi-tech District of East-river,
Huizhou, Guangdong

FCC ID: 2AFBK-WCT-A5730A1

Product: TANGO Wireless Charger

Trade mark: N/A

Model/Type reference: WCT-A5730A1

Serial Number: N/A

Report Number: EED32H000859

Sample Received Date: Jul. 03, 2015

Sample tested Date: Jul. 03, 2015 to Jul. 13, 2015

The above equipment was tested by Centre Testing International (Shenzhen) Corporation for compliance with the requirements set forth in the FCC Rules and the measurement procedure according to ANSI C63.10:2013.

2. TEST SUMMARY

No.	Test Item	Rule	Test Result
1	Conducted Emission	FCC 15.207	PASS
2	Radiated Emission	FCC 15.209	PASS

3. PRODUCT INFORMATION

Items	Description
Rating	AC 100V-240V, 50/60Hz
Antenna Type	Coil antenna
Operated frequency	205kHz

4. MEASUREMENT UNCERTAINTY

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

Measurement items	Uncertainty
Conducted Emission Test	3.2 dB
Radiated Emissions	4.5 dB

5. TEST EQUIPMENT LIST

Equipment	Manufacturer	Model	Serial No.	Due Date
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06/01/2016
Receiver	R&S	ESCI	100435	06/29/2016
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	484	05/23/2016
Multi device Controller	maturo	NCD/070/10711112	---	N/A
Loop Antenna	ETS-LINDGREN	6502	00071730	07/22/2015
Receiver	R&S	ESCI	100009	06/29/2016
LISN	R&S	ENV216	100098	06/29/2016

6. SUPPORT EQUIPMENT LIST

Device Type	Brand	Model	Series No.	Data Cable	Remark
Mobile phone	JIWU	H60	---	---	FCC DOC
---	---	---	---	---	---

7. AC CONDUCTED EMISSION TEST

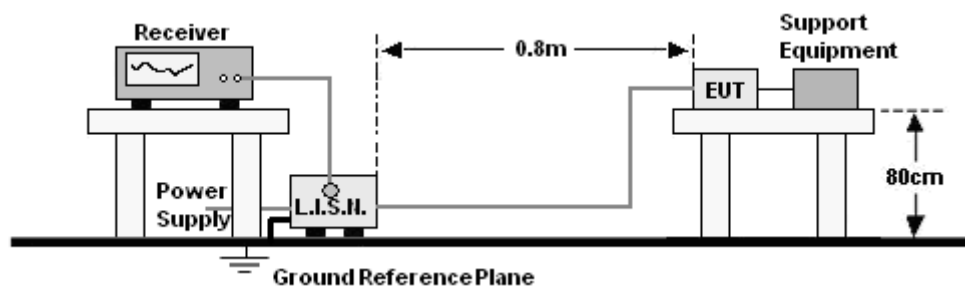
7.1. LIMITS

Limits for Class B digital devices

Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

7.2. BLOCK DIAGRAM OF TEST SETUP



7.3. PROCEDURE OF CONDUCTED EMISSION TEST

- The Product was placed on a nonconductive table above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

7.4. GRAPHS AND DATA

Product : TANGO Wireless Charger

Model/Type reference : WCT-A5730A1

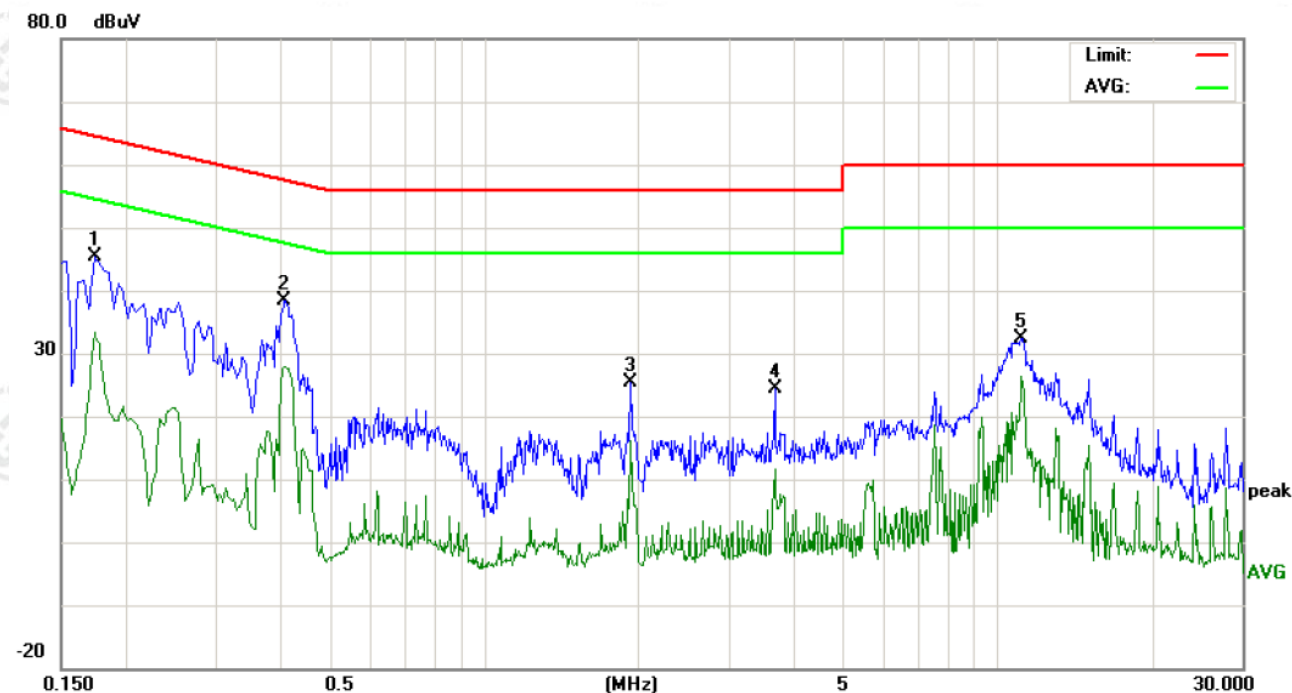
Power : AC 120V/60Hz

Temperature : 22℃

Mode : Charging

Humidity : 52%

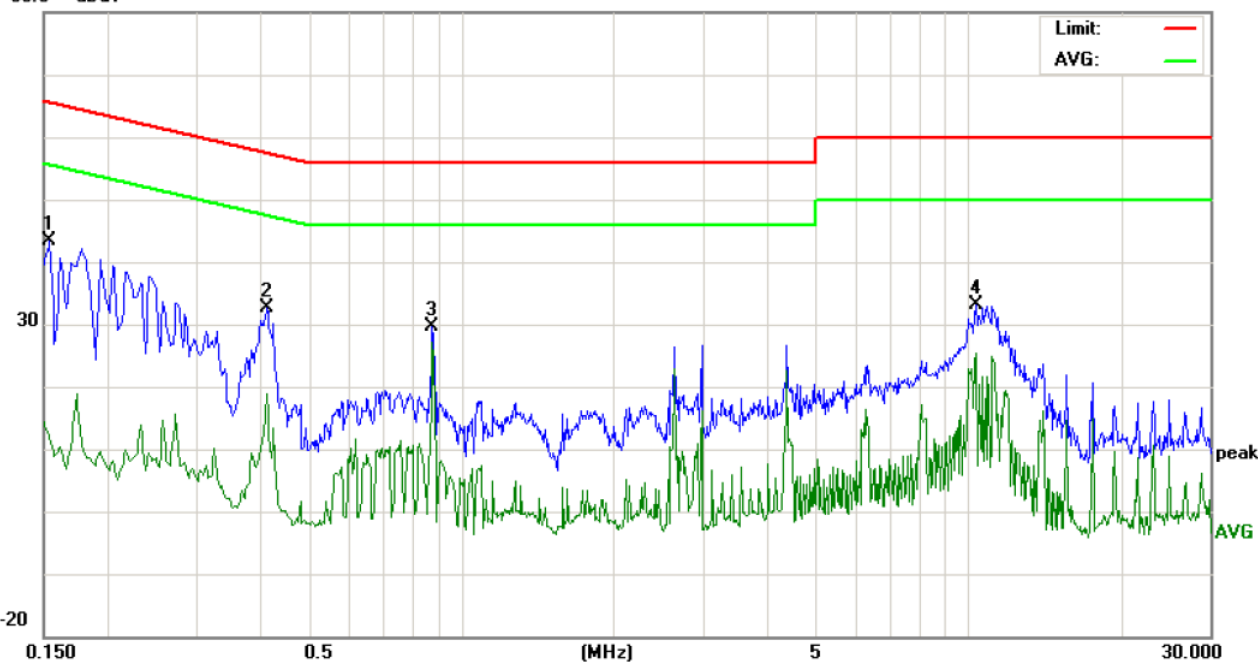
L:



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1740	35.37		23.45	9.90	45.27		33.35	64.76	54.76	-19.49	-21.41	P	
2	0.4100	28.45		18.07	9.90	38.35		27.97	57.65	47.65	-19.30	-19.68	P	
3	1.9380	15.57		6.30	9.90	25.47		16.20	56.00	46.00	-30.53	-29.80	P	
4	3.6940	14.36		1.82	9.90	24.26		11.72	56.00	46.00	-31.74	-34.28	P	
5	11.0860	22.39		15.22	9.98	32.37		25.20	60.00	50.00	-27.63	-24.80	P	

N:

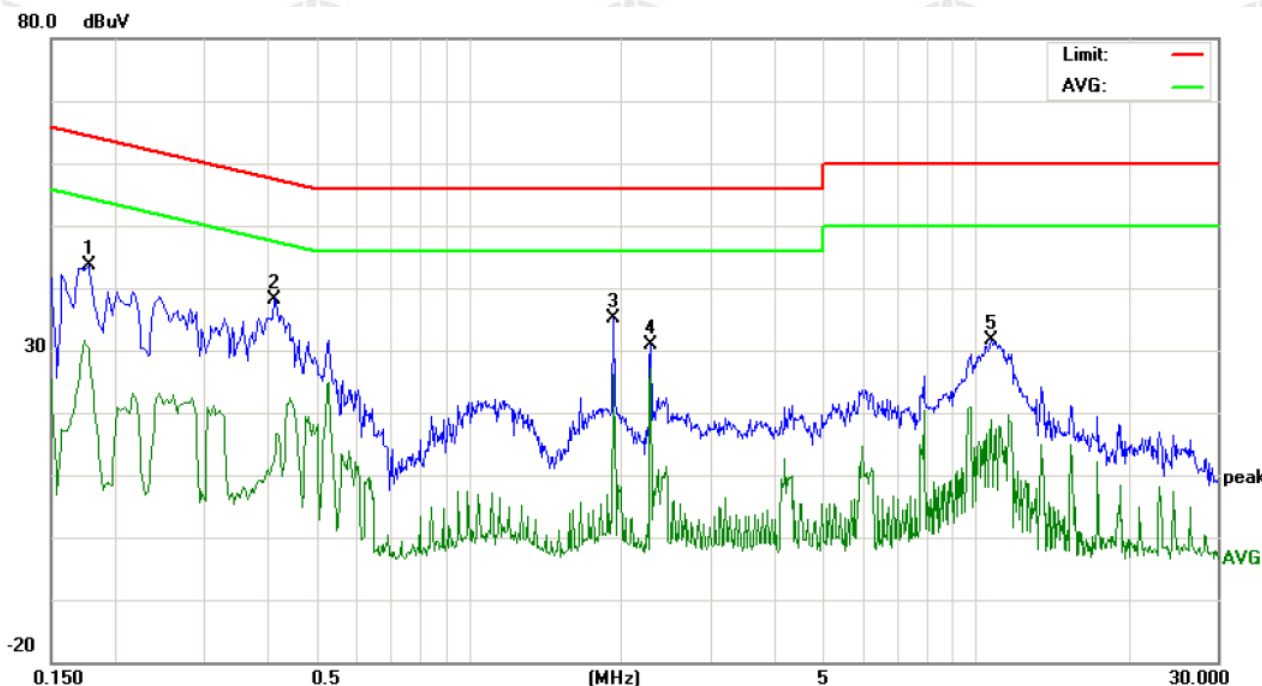
80.0 dBuV



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1539	33.37		1.89	9.90	43.27		11.79	65.78	55.78	-22.51	-43.99	P	
2	0.4140	22.71		8.93	9.90	32.61		18.83	57.57	47.57	-24.96	-28.74	P	
3	0.8780	19.68		17.24	9.90	29.58		27.14	56.00	46.00	-26.42	-18.86	P	
4	10.3700	23.03		15.35	9.99	33.02		25.34	60.00	50.00	-26.98	-24.66	P	

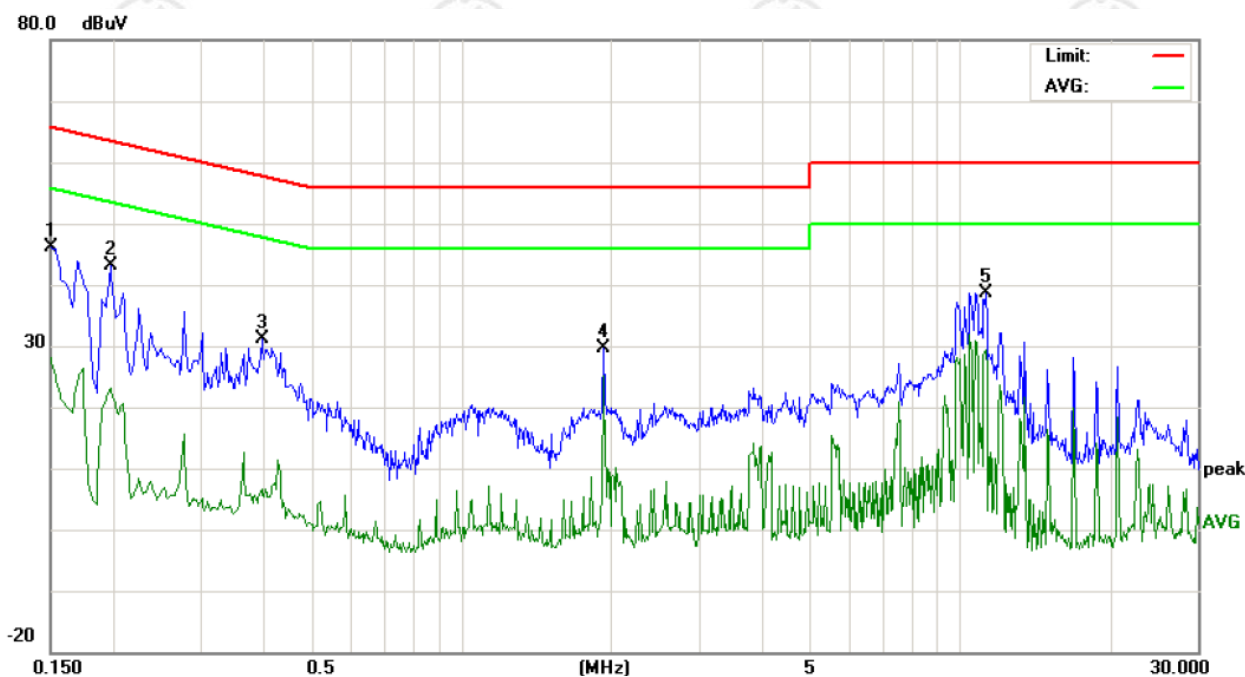
Product : TANGO Wireless Charger **Model/Type reference** : WCT-A5730A1
Power : AC 240V/60Hz **Temperature** : 22℃
Mode : Charging **Humidity** : 52%

L:



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1780	33.60		20.51	9.90	43.50		30.41	64.57	54.57	-21.07	-24.16	P	
2	0.4140	28.31		2.27	9.90	38.21		12.17	57.57	47.57	-19.36	-35.40	P	
3	1.9340	25.32		16.33	9.90	35.22		26.23	56.00	46.00	-20.78	-19.77	P	
4	2.2860	21.07		17.31	9.90	30.97		27.21	56.00	46.00	-25.03	-18.79	P	
5	10.7860	21.76		8.86	9.98	31.74		18.84	60.00	50.00	-28.26	-31.16	P	

N:



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1500	36.27		18.19	9.90	46.17		28.09	65.99	55.99	-19.82	-27.90	P	
2	0.1980	33.14		13.26	9.90	43.04		23.16	63.69	53.69	-20.65	-30.53	P	
3	0.3980	21.24		-3.34	9.90	31.14		6.56	57.89	47.89	-26.75	-41.33	P	
4	1.9340	19.78		15.27	9.90	29.68		25.17	56.00	46.00	-26.32	-20.83	P	
5	11.2900	28.71		19.41	9.97	38.68		29.38	60.00	50.00	-21.32	-20.62	P	

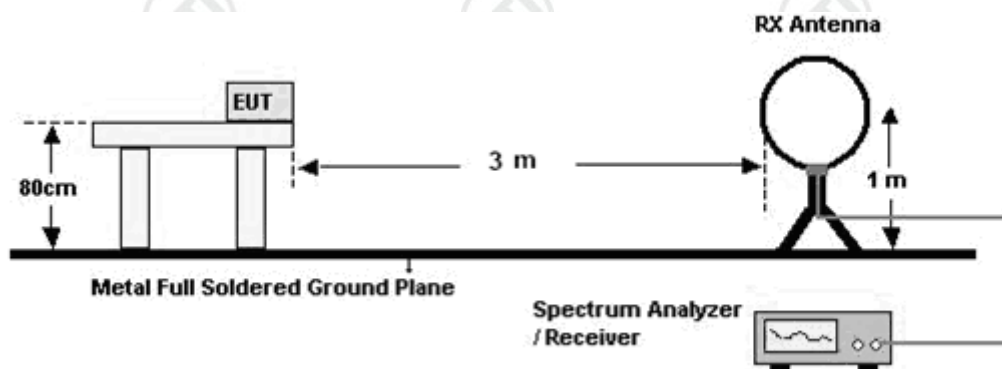
8. RADIATED EMISSION MEASUREMENT

8.1. LIMITS

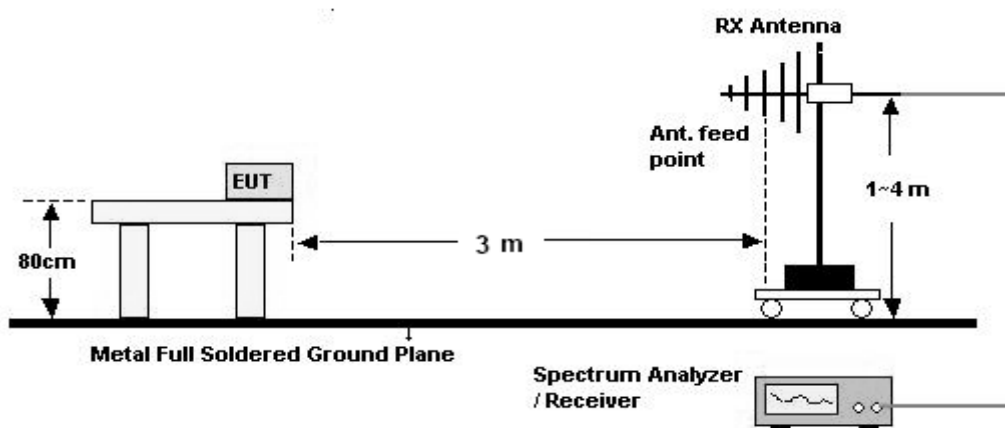
Frequency (MHz)	Field strength ($\mu\text{V/m}$)	Distance (m)
0.009-0.490	$2400/F(\text{kHz})$	300
0.490-1.705	$24000/F(\text{kHz})$	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

8.2. BLOCK DIAGRAM OF TEST SETUP

For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz - 1000MHz



8.3. TEST PROCEDURE

Below 30MHz

- a. The Product is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The maximum values of the field strength are recorded by adjusting the polarizations of the test antenna and rotating the turntable.
- b. For each suspected emission, the Product was arranged to its worst case and then turn table was turned from 0 degrees to 360 degrees to find the maximum reading.
- c. The test frequency analyzer system was set to Peak Detect (300Hz RBW in 9kHz to 150kHz and 10kHz RBW in 150kHz to 30MHz) Function and Specified Bandwidth with Maximum Hold Mode.

30MHz ~ 1GHz:

- a. The Product was placed on the non-conductive turntable 0.8m above the ground at a chamber.
- b. Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- c. For each frequency whose maximum record was higher or close to limit, measure its QP value (120 kHz RBW): vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

8.4. TEST RESULT

The TX operated frequency is 73 kHz.

A. Below 30MHz:

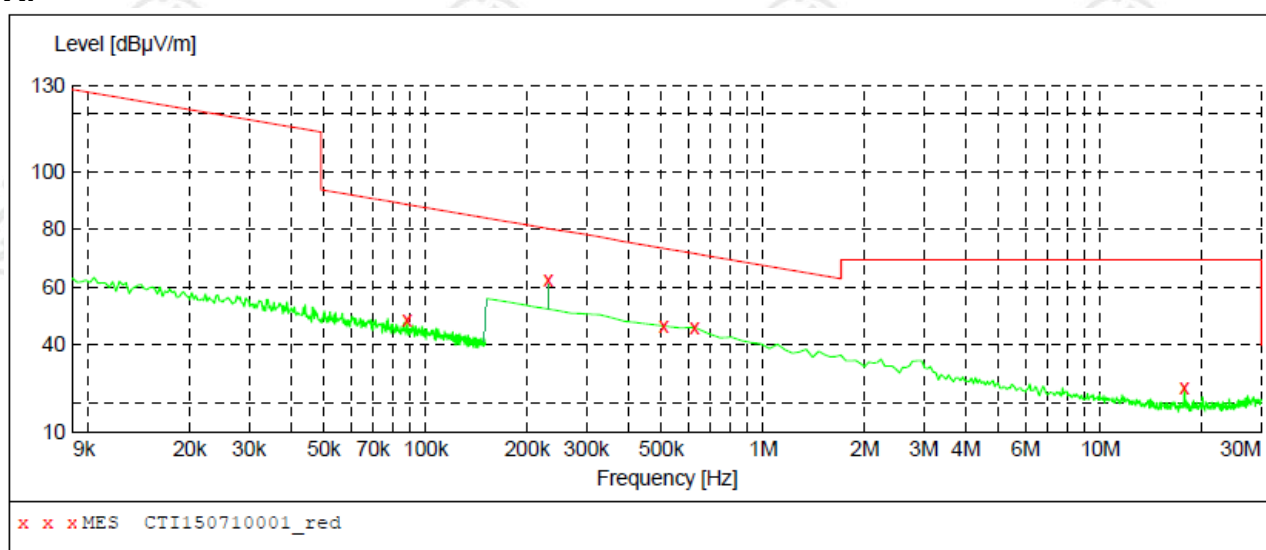
The radiation measurements are performed in X, Y, Z axis positioning. And worst case mode is recorded in the report.

Product : TANGO Wireless Charger **Model/Type reference** : WCT-A5730A1

Power : AC 120V, 60Hz **Temperature** : 22°C

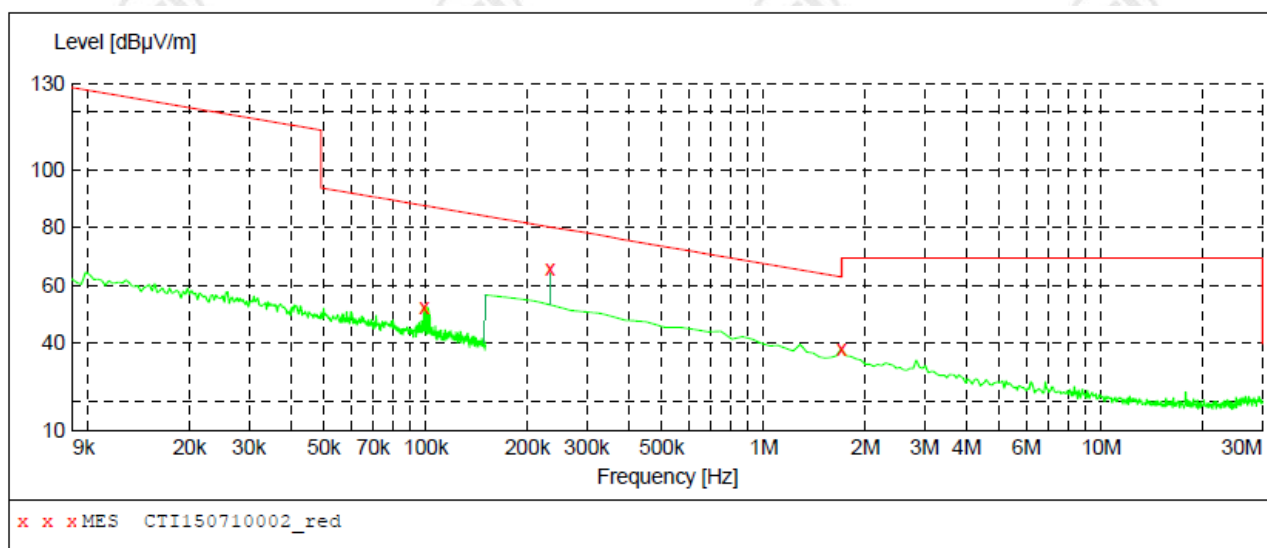
Mode : Charging **Humidity** : 52%

X:



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.088242	48.60	14.2	88.7	40.1	OP	100.0	39.00	HORIZONTAL
0.205000	61.10	14.1	101.4	40.3	AV	100.0	12.00	HORIZONTAL
0.508200	46.60	13.6	73.5	26.9	QP	100.0	312.00	HORIZONTAL
0.627600	46.10	13.6	71.7	25.6	QP	100.0	180.00	HORIZONTAL
17.761500	25.50	13.3	69.5	44.0	QP	100.0	260.00	HORIZONTAL

Y:



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.098676	52.50	14.2	87.7	35.2	QP	100.0	48.00	VERTICAL
0.205000	62.70	14.1	101.4	38.7	AV	100.0	277.00	VERTICAL
1.702200	38.10	13.8	63.0	24.9	QP	100.0	367.00	VERTICAL

B. 30MHz ~ 1GHz:

Product : TANGO Wireless Charger

Model/Type reference : WCT-A5730A1

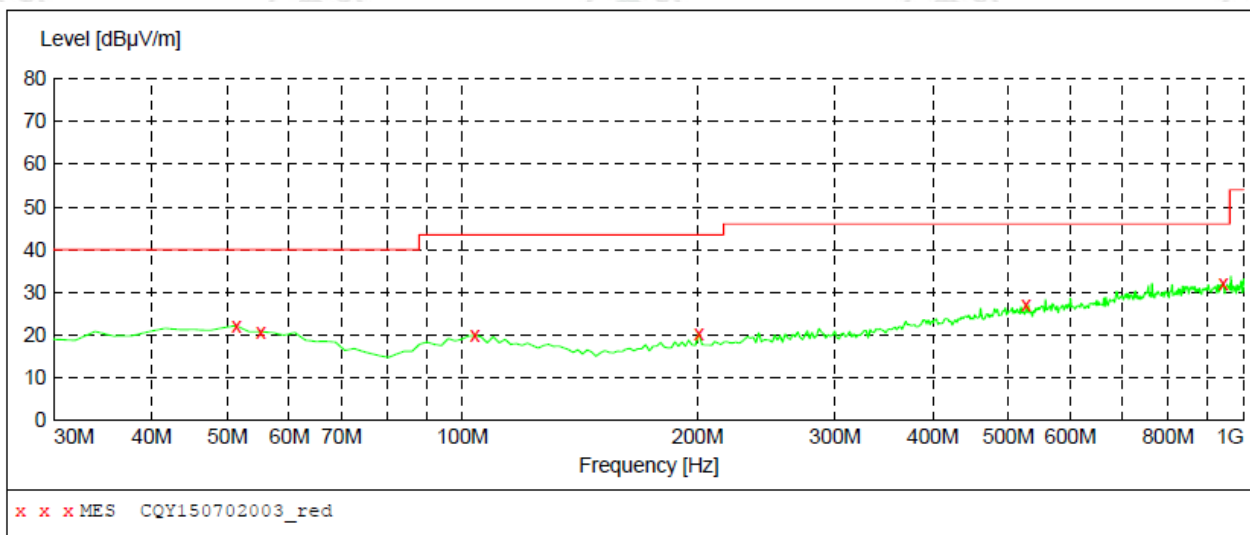
Power : AC 120V, 60Hz

Temperature : 22°C

Mode : Charging

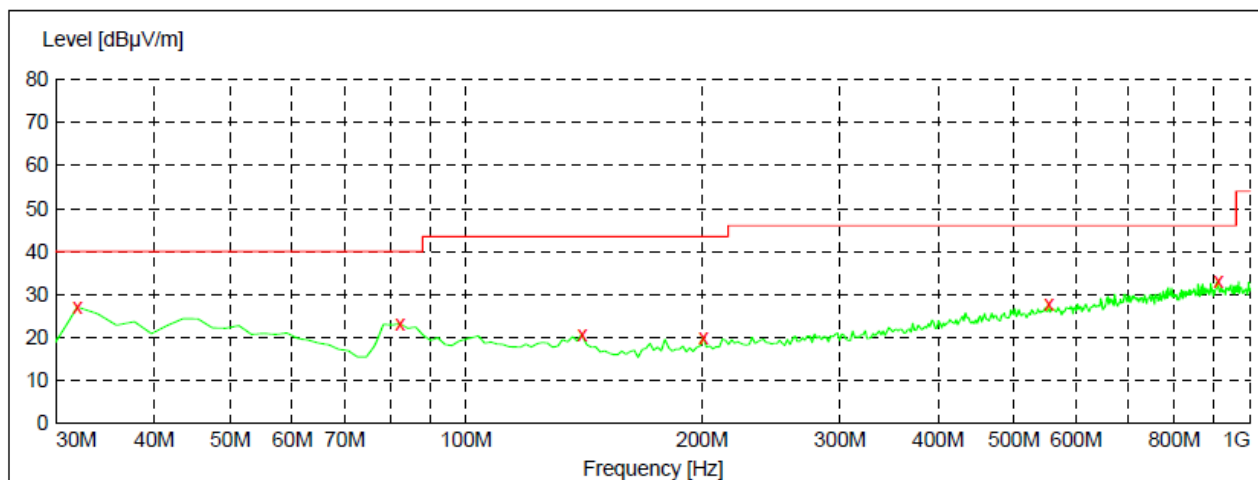
Humidity : 52%

H:



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
51.340000	22.20	16.3	40.0	17.8	QP	100.0	302.00	HORIZONTAL
55.220000	20.70	15.8	40.0	19.3	QP	100.0	186.00	HORIZONTAL
103.720000	19.80	14.5	43.5	23.7	QP	100.0	54.00	HORIZONTAL
200.720000	20.50	13.8	43.5	23.0	QP	100.0	202.00	HORIZONTAL
526.640000	27.10	21.7	46.0	18.9	QP	100.0	162.00	HORIZONTAL
941.800000	32.10	26.7	46.0	13.9	QP	100.0	214.00	HORIZONTAL

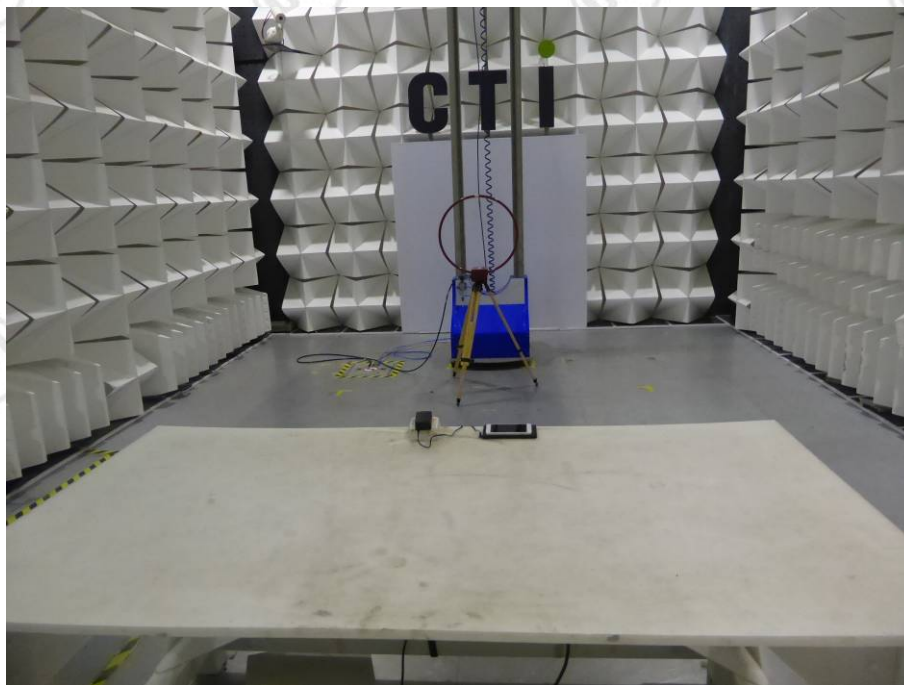
V:



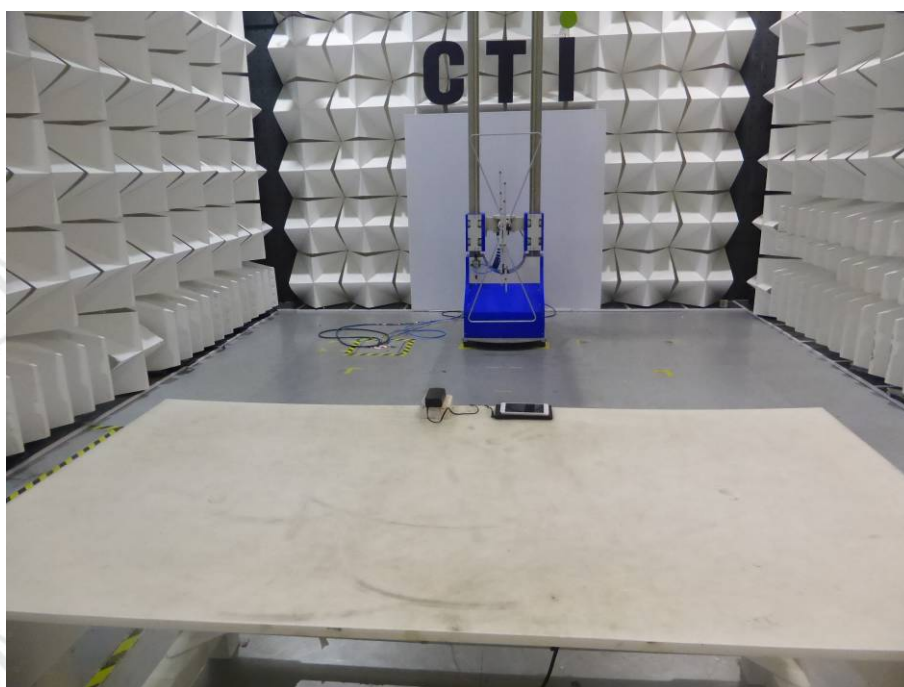
x x x MES CQY150702004_red

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
31.940000	27.10	14.1	40.0	12.9	QP	100.0	204.00	VERTICAL
82.380000	23.10	10.8	40.0	16.9	QP	100.0	245.00	VERTICAL
140.580000	20.70	11.8	43.5	22.8	QP	100.0	204.00	VERTICAL
200.720000	20.00	13.8	43.5	23.5	QP	100.0	188.00	VERTICAL
553.800000	27.70	21.8	46.0	18.3	QP	100.0	229.00	VERTICAL
910.760000	33.10	26.7	46.0	12.9	QP	100.0	229.00	VERTICAL

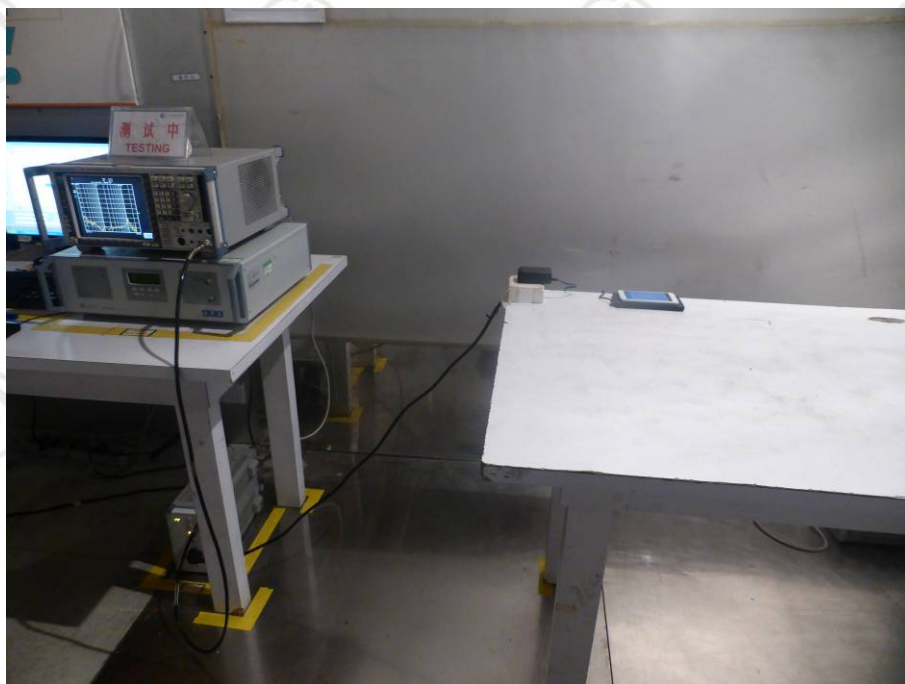
APPENDIX 1 PHOTOGRAPHS OF TEST SETUP



TEST SETUP OF RADIATED EMISSION (9kHz-30MHz)



TEST SETUP OF RADIATED EMISSION (30MHz-1GHz)



TEST SETUP OF CONDUCTED EMISSION

APPENDIX 2 EXTERNAL PHOTOGRAPHS OF PRODUCT



External View of product-1



External View of product-2



External View of product-3

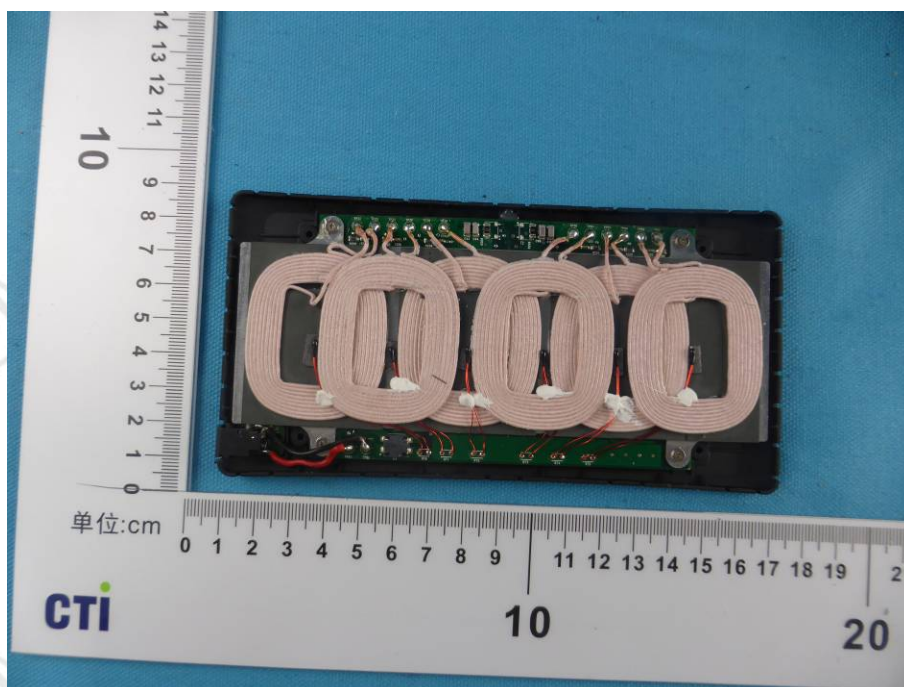


External View of product-4

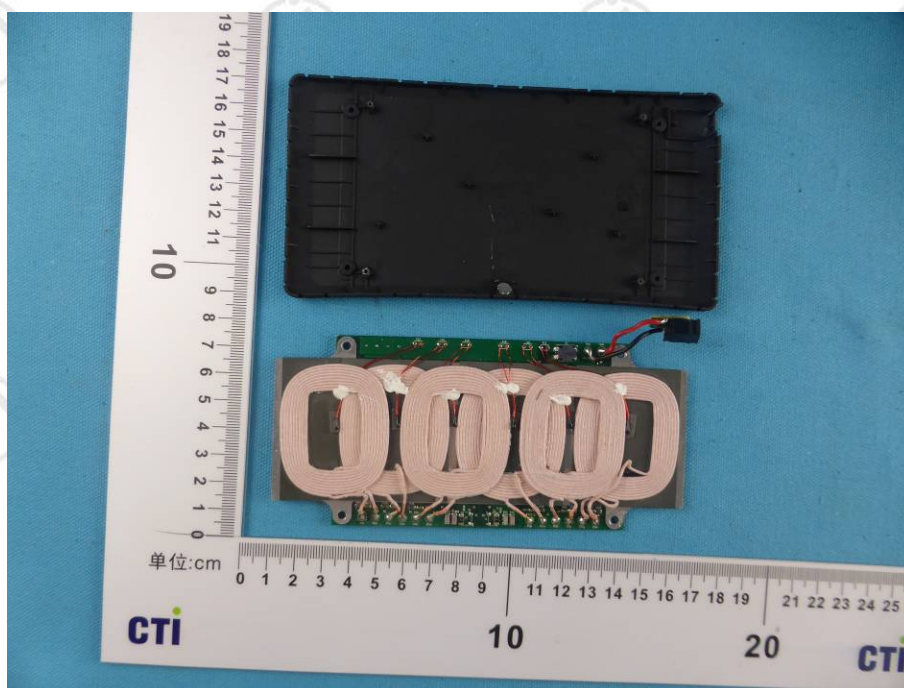
APPENDIX 3 INTERNAL PHOTOGRAPHS OF PRODUCT



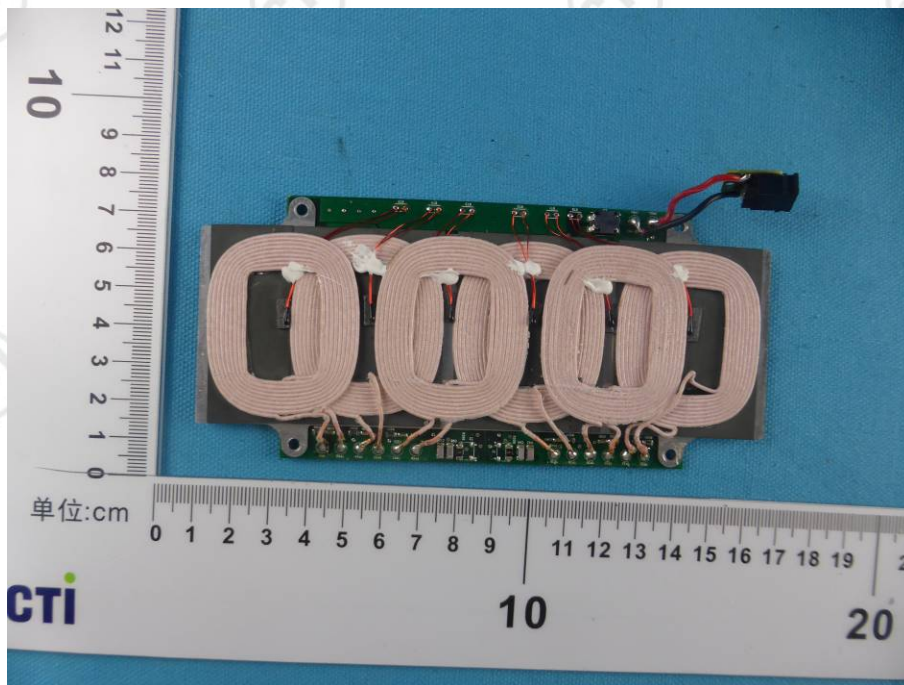
Internal View of product-1



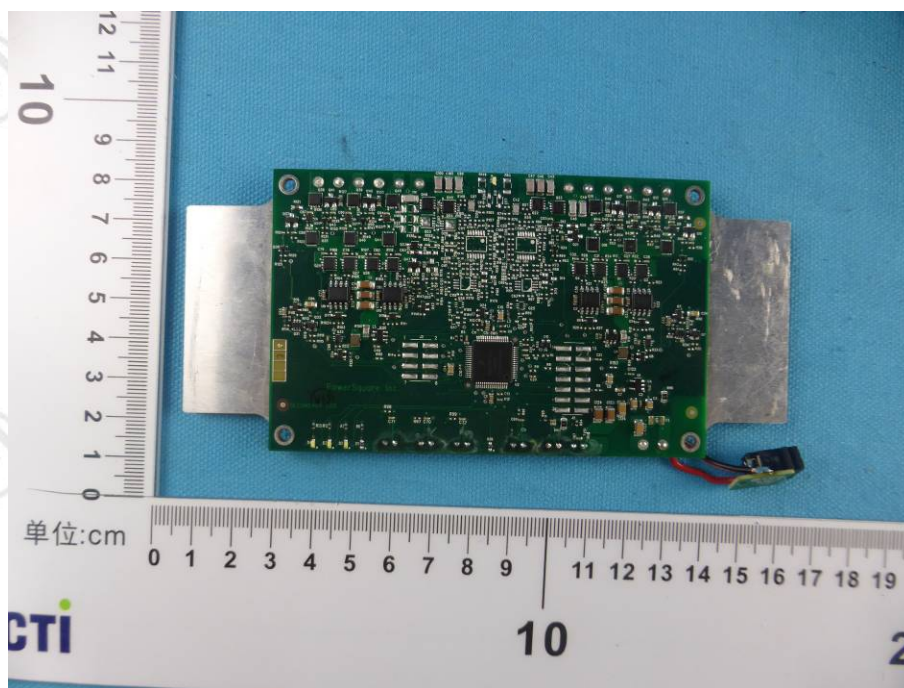
Internal View of product-2



Internal View of product-3



Internal View of product-4



Internal View of product-5

*** End of Report ***

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