

Test Report

Product Name : PVC Wireless Charger
Trade mark : N/A
Model No. : PWCP-011-01, PWCP-011-02, PWCP-011-03,
PWCP-011-04, PWCP-011-05
FCC ID : 2AT3QPWCP-011
Report Number : BLA-EMC-201907-A09-01
Date of sample receipt : July 05, 2019
Date of Test : July 05, 2019-July 22, 2019
Date of Issue : July 23, 2019
Test standard : 47 CFR Part 18
Test result : PASS

Prepared for:

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Prepared by:

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Date: July 23, 2019



2 Version

Version No.	Date	Description
00	July 23, 2019	Original

3 Test Summary

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted disturbance	47 CFR Part 18	FCC MP-5	Part 18.307	Pass
Radiated emission	47 CFR Part 18	FCC MP-5	Part 18.305	Pass

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5 General Information

- Details of E.U.T.**

Power supply:	Input: DC 5V
Cable:	USB cable: 30cm unshielded
Operation frequency:	169kHz
Antenna type:	Inductive Loop Coil Antenna
Modulation type:	Load modulation

- Description of Support Units**

Description	Manufacturer	Model No.	Serial No.
Adapter	SAMSUNG	ETAOU80EBE	N/A
Mobile Phone	iphone	X	N/A

- Measurement Uncertainty**

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	$\pm 4.34\text{dB}$	(1)
Radiated Emission	30MHz ~ 1000MHz	$\pm 4.24\text{dB}$	(1)
Radiated Emission	1GHz ~ 26.5GHz	$\pm 4.68\text{dB}$	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	$\pm 3.45\text{dB}$	(1)

Note (1): The measurement uncertainty is for coverage factor of $k=2$ and a level of confidence of 95%.

- **Test Location**

All tests were performed at:

Qianhai BlueAsia of Technical Services(Shenzhen) Co., Ltd.

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- No tests were sub-contracted.

- **Test Facility**

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

- FCC — Designation No.: CN1252

Qianhai BlueAsia of Technical Services(Shenzhen) Co., Ltd 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 files. Designation CN1252.

- ISED — CAB identifier No.: CN0028

Qianhai BlueAsia of Technical Services(Shenzhen) Co., Ltd has been registered by Certification and Engineering Bureau of ISED for radio equipment testing with CAB identifier CN0028.

- **Deviation from Standards**

None

- **Abnormalities from Standard Conditions**

None

6 Equipment List

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m SAC	SKET	9m*6m*6m	966	06-10-2018	06-09-2023
2	Broadband Antenna	SCHWARZBECK	VULB9168	00836 P:00227	07-14-2018 07-14-2019	07-13-2019 07-13-2020
3	Horn Antenna	SCHWARZBECK	9120D	01892 P:00331	07-14-2018 07-14-2019	07-13-2019 07-13-2020
4	EMI Test Software	EZ	EZ	N/A	N/A	N/A
5	Pre-amplifier	SKET	N/A	N/A	07-14-2018 07-14-2019	07-13-2019 07-13-2020
6	Spectrum analyzer	Rohde & Schwarz	FSP40	100817	05-24-2019	05-23-2020
7	EMI Test Receiver	Rohde & Schwarz	ESRP7	101199	03-21-2019	03-20-2020
8	Controller	SKET	N/A	N/A	N/A	N/A
9	Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
10	Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
11	Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A

Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	EMI Test Receiver	Rohde & Schwarz	ESPI3	101082	06-10-2019	06-09-2020
2	LISN	CHASE	MN2050D	1447	12-18-2018	12-17-2019
3	LISN	Rohde & Schwarz	ENV216	3560.6550.15	07-14-2018 07-14-2019	07-13-2019 07-13-2020
4	EMI Test Software	EZ	EZ	N/A	N/A	N/A
5	Coaxial Cable	BlueAsia	BLA-XC-05	N/A	N/A	N/A

7 Radio Spectrum Matter Test Results

• Conducted disturbance

Test Requirement Part 18.307
 Test Method: FCC MP-5
 Limit:

Frequency of emission (MHz)	Conducted limit (dBμV)	
	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.

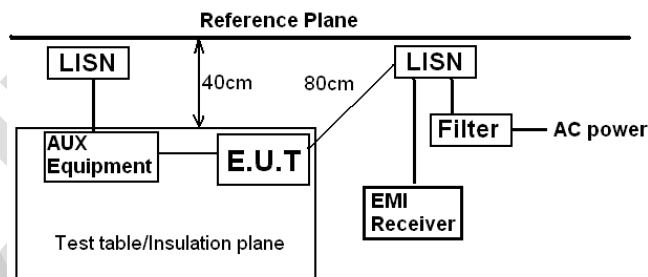
E.U.T. Operation

Operating Environment:

Temperature: 21.7 °C Humidity: 57.5 % RH Atmospheric Pressure: 1000 mbar

Test mode a: Charge mode_Keep the Mobile phone in charging mode

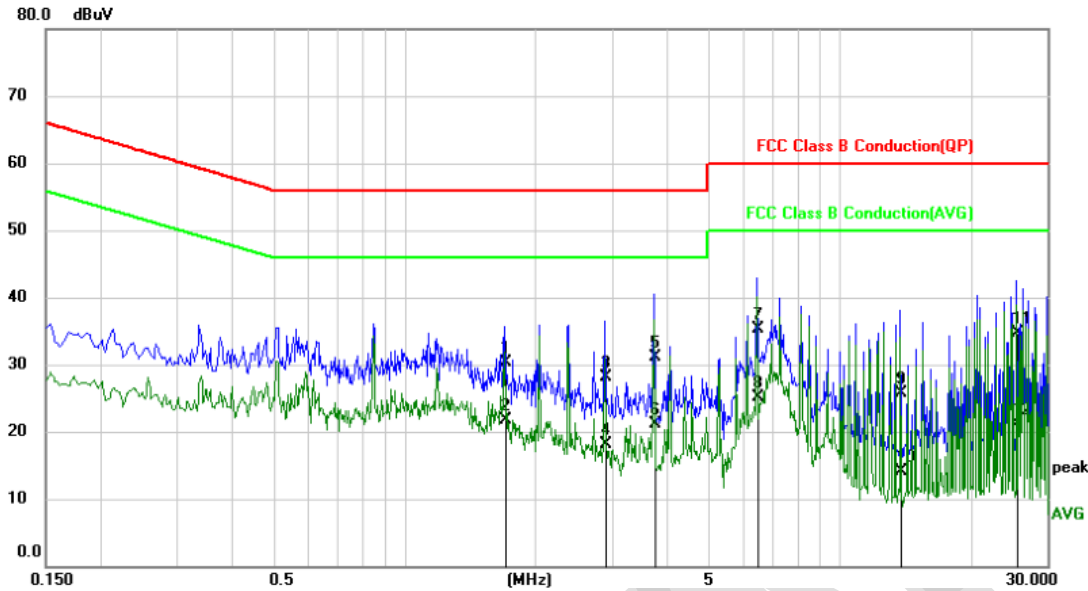
Test Setup Diagram



Remark:
 E.U.T: Equipment Under Test
 LISN: Line Impedance Stabilization Network
 Test table height=0.8m

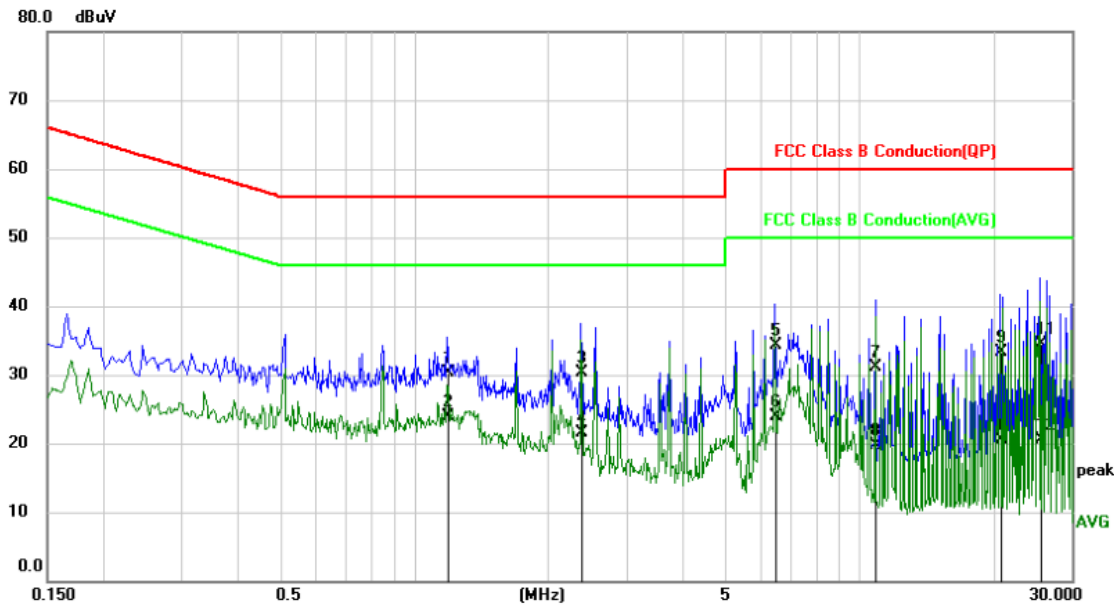
Measurement Procedure and Data

Line:Live Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		1.7020	20.48	9.83	30.31	56.00	-25.69	QP
2	*	1.7020	11.90	9.83	21.73	46.00	-24.27	AVG
3		2.8940	18.16	9.86	28.02	56.00	-27.98	QP
4		2.8940	8.24	9.86	18.10	46.00	-27.90	AVG
5		3.7420	21.33	9.85	31.18	56.00	-24.82	QP
6		3.7420	11.25	9.85	21.10	46.00	-24.90	AVG
7		6.4699	25.49	9.86	35.35	60.00	-24.65	QP
8		6.4699	15.31	9.86	25.17	50.00	-24.83	AVG
9		13.7820	15.66	9.96	25.62	60.00	-34.38	QP
10		13.7820	4.05	9.96	14.01	50.00	-35.99	AVG
11		25.5300	24.66	10.05	34.71	60.00	-25.29	QP
12		25.5300	11.01	10.05	21.06	50.00	-28.94	AVG

Line: Neutral Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		1.1900	20.41	9.83	30.24	56.00	-25.76	QP
2	*	1.1900	13.98	9.83	23.81	46.00	-22.19	AVG
3		2.3820	20.37	9.86	30.23	56.00	-25.77	QP
4		2.3820	11.68	9.86	21.54	46.00	-24.46	AVG
5		6.4660	24.53	9.85	34.38	60.00	-25.62	QP
6		6.4660	14.05	9.85	23.90	50.00	-26.10	AVG
7		10.8900	21.18	9.97	31.15	60.00	-28.85	QP
8		10.8900	9.81	9.97	19.78	50.00	-30.22	AVG
9		20.7620	23.16	10.06	33.22	60.00	-26.78	QP
10		20.7620	10.43	10.06	20.49	50.00	-29.51	AVG
11		25.5260	24.47	10.03	34.50	60.00	-25.50	QP
12		25.5260	10.46	10.03	20.49	50.00	-29.51	AVG

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
Final Level = Receiver Read level + LISN Factor + Cable Loss.

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6.2 Radiated emission

Test Requirement Part 18.305

Test Method: FCC MP-5

Measurement Distance: 3m

Limit:

(b) The field strength levels of emissions which lie outside the bands specified in §18.301, unless otherwise indicated, shall not exceed the following:

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500	25	300
		500 or more	$25 \times \text{SQRT}(\text{power}/500)$	¹ 300
	Any non-ISM frequency	Below 500	15	300
		500 or more	$15 \times \text{SQRT}(\text{power}/500)$	¹ 300
Industrial heaters and RF stabilized arc welders	On or below 5,725 MHz Above 5,725 MHz	Any Any	10 (²)	1,600 (²)
Medical diathermy	Any ISM frequency	Any	25	300
	Any non-ISM frequency	Any	15	300
Ultrasonic	Below 490 kHz	Below 500	$2,400/F(\text{kHz})$	300
		500 or more	$2,400/F(\text{kHz}) \times \text{SQRT}(\text{power}/500)$	³ 300
	490 to 1,600 kHz	Any	$24,000/F(\text{kHz})$	30
	Above 1,600 kHz	Any	15	30
Induction cooking ranges	Below 90 kHz	Any	1,500	⁴ 30
	On or above 90 kHz	Any	300	⁴ 30

¹Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

²Reduced to the greatest extent possible.

³Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.

⁴Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.

Remark:

1 This product belongs to non-ISM equipment, the field strength limit is 15uV/m at 300 meter distance.

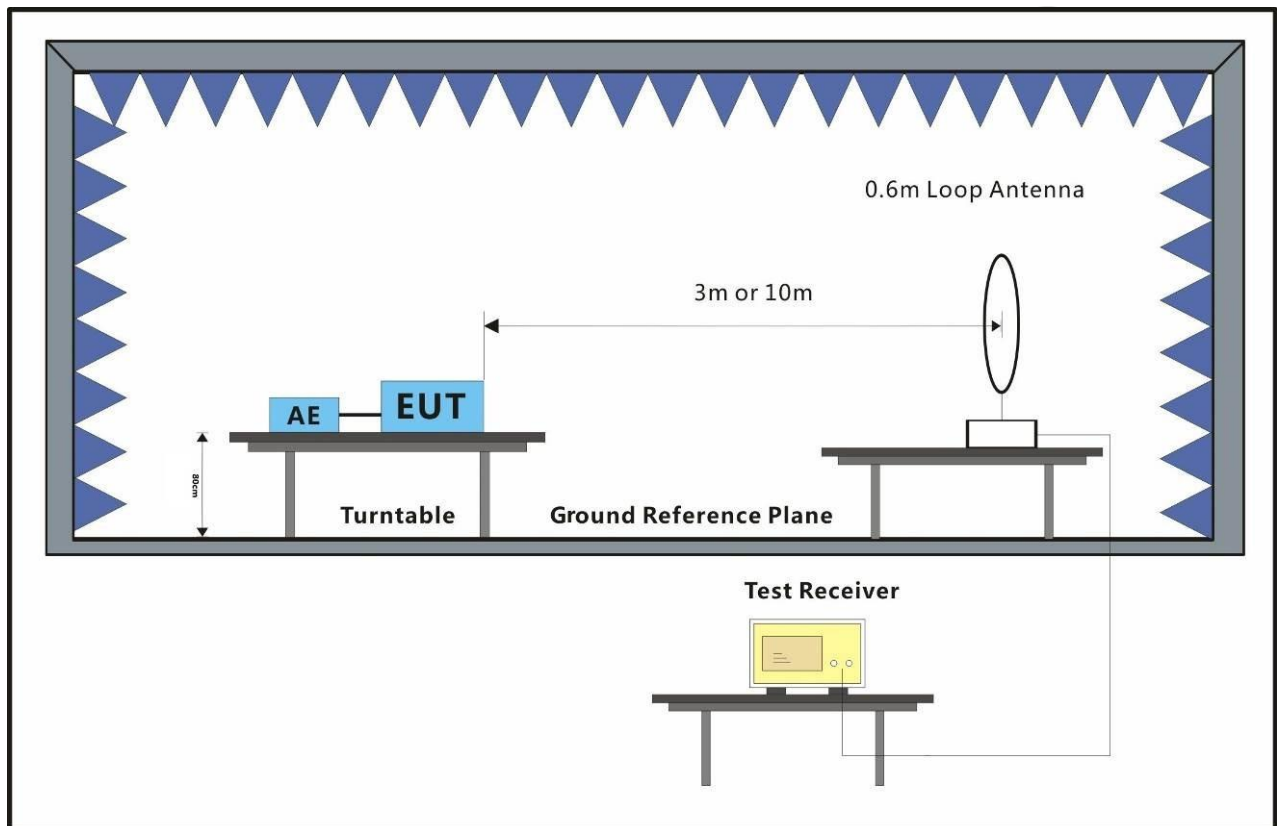
2 Limit: $20\log(15\text{uV/m}) + 20\log(300/3) = 23.52 + 40 = 63.52\text{dBuV/m}$ at 3 meters distance

E.U.T. Operation

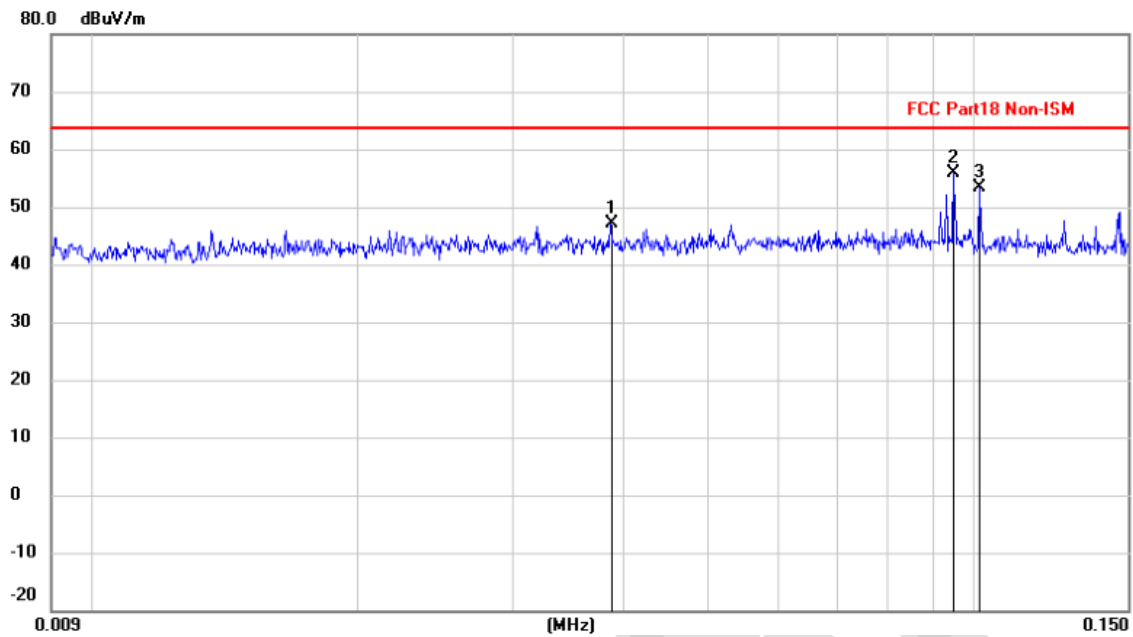
Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1000 mbar

Test mode a: Charge mode_Keep the Mobile phone in charging mode

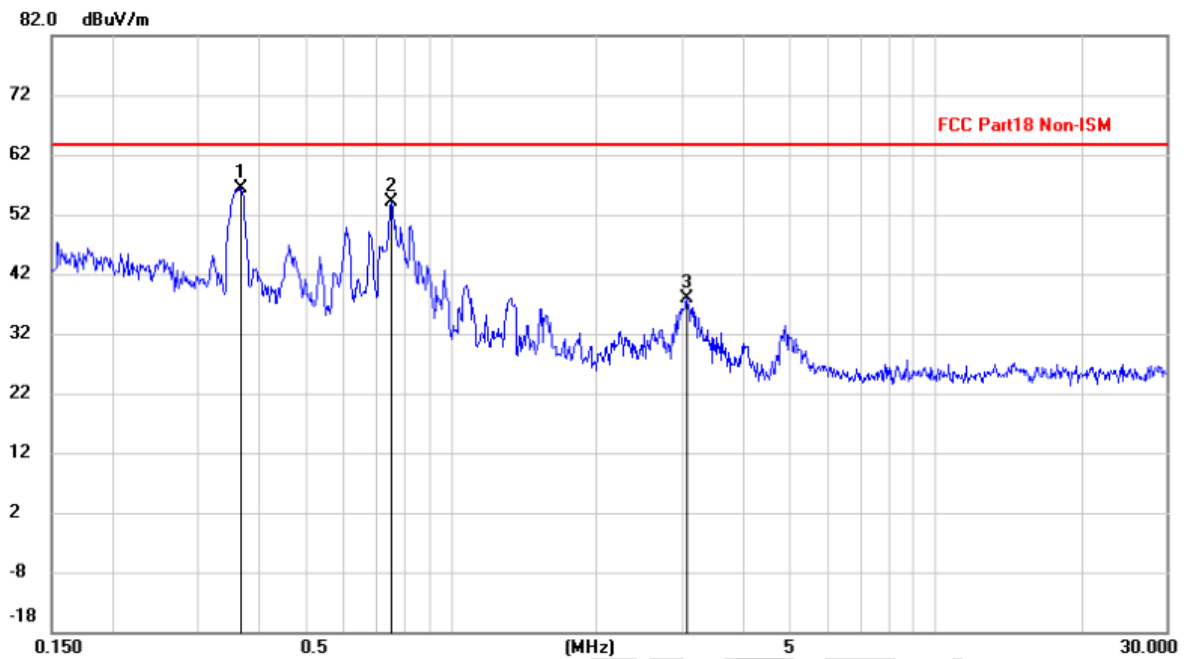
Test Setup Diagram**Measurement Procedure and Data**

9kHz-150kHz



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		0.0388	27.20	19.82	47.02	63.52	-16.50	QP
2	*	0.0950	35.97	20.02	55.99	63.52	-7.53	QP
3		0.1015	33.42	19.99	53.41	63.52	-10.11	QP

150kHz-30MHz



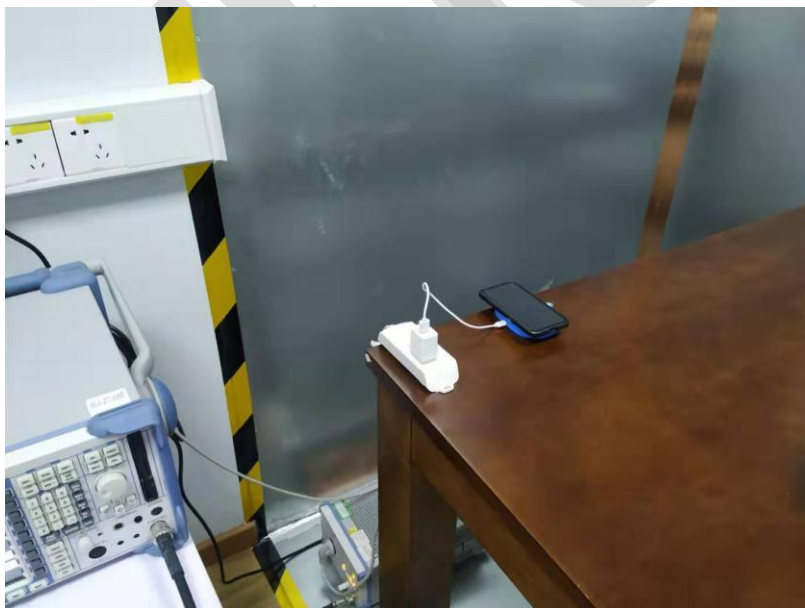
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	0.3673	36.23	20.17	56.40	63.52	-7.12	QP
2		0.7549	33.89	20.29	54.18	63.52	-9.34	QP
3		3.0737	17.45	20.41	37.86	63.52	-25.66	QP

7 Photographs

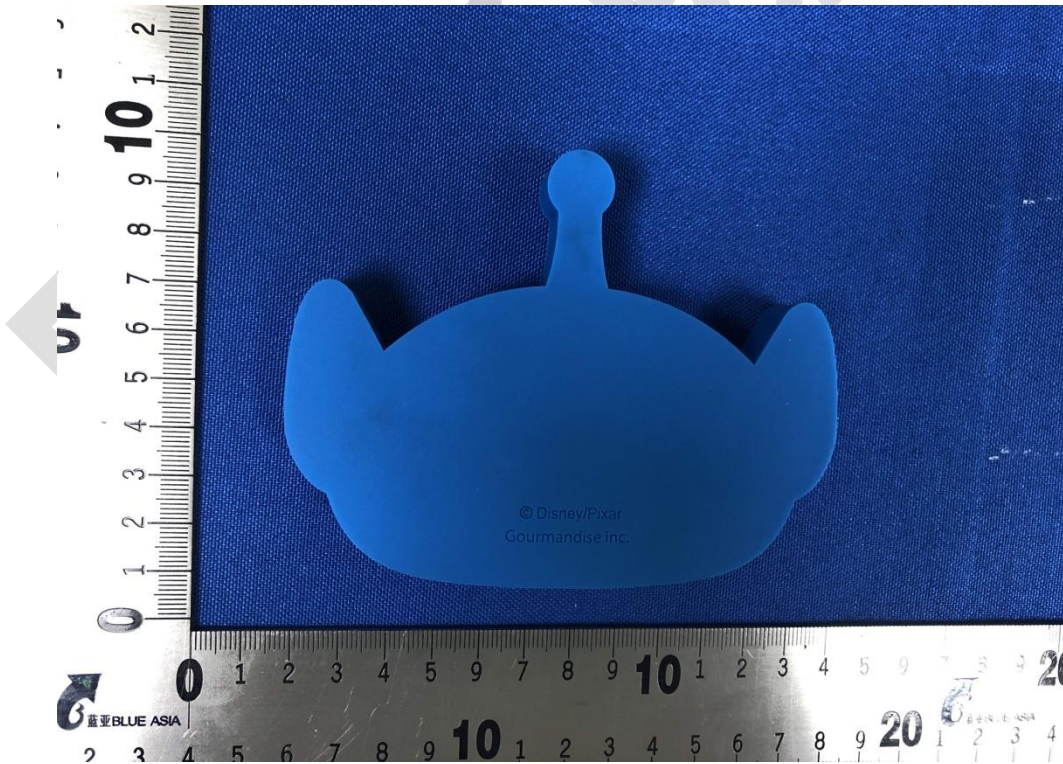
Test Setup Radiated emission

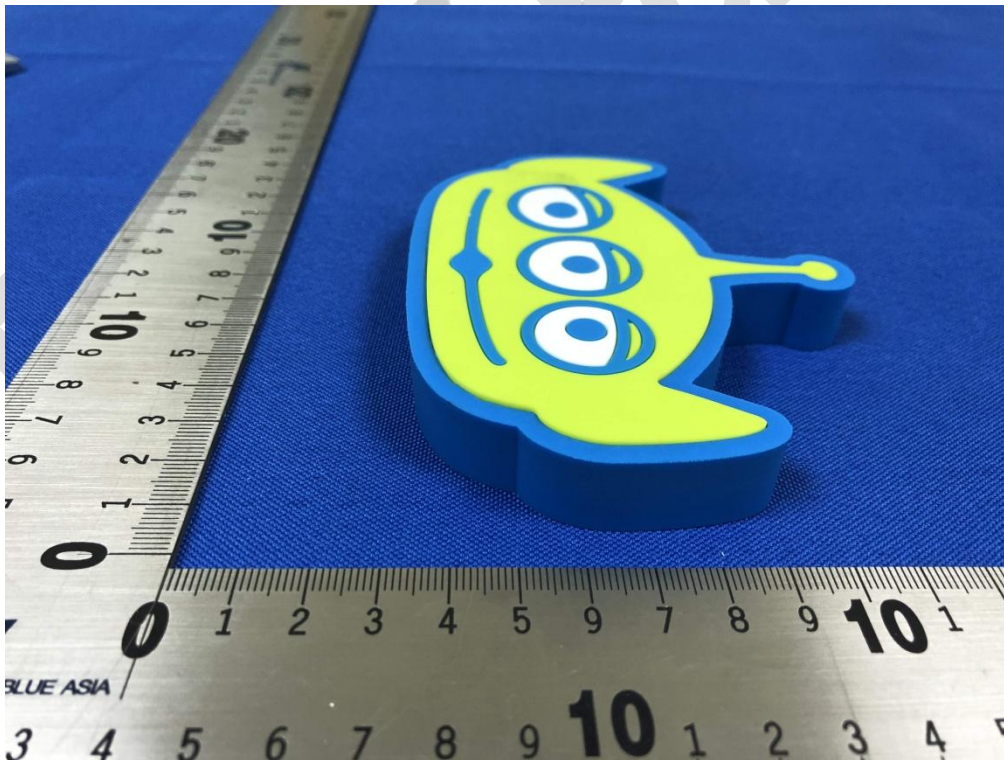


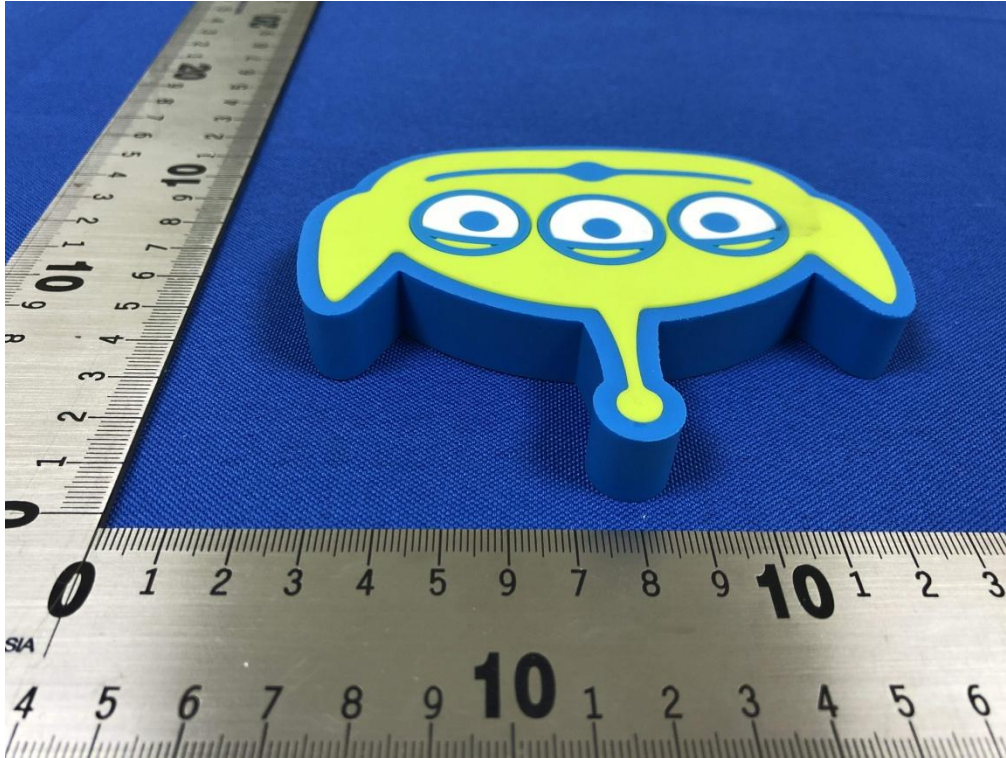
Conducted disturbance

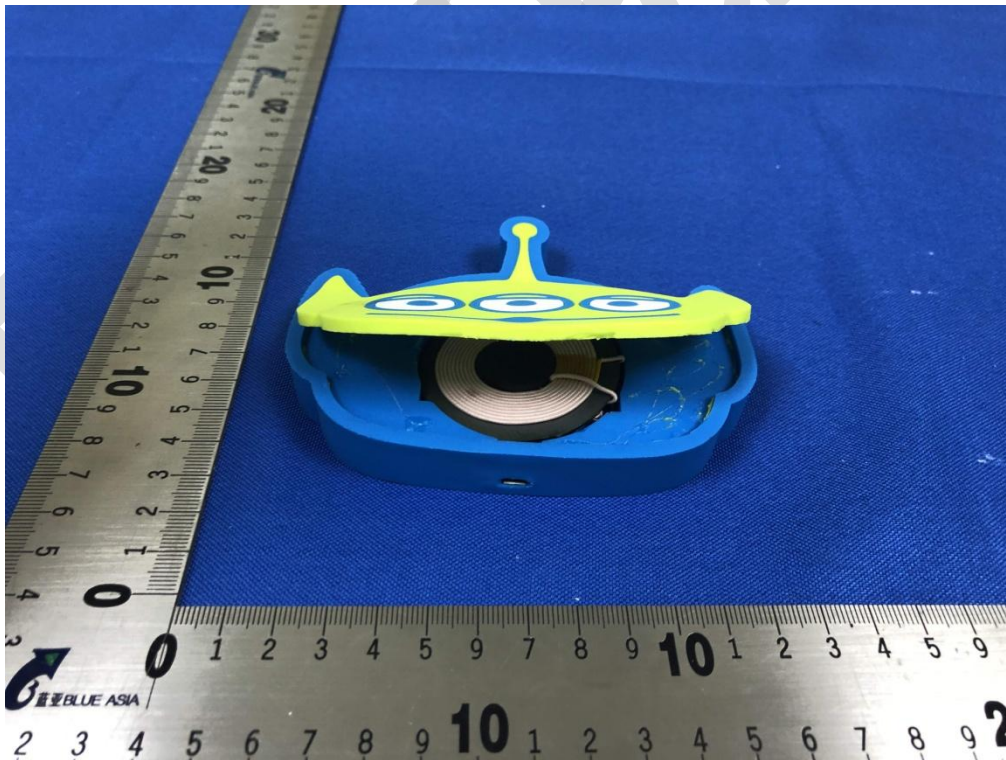
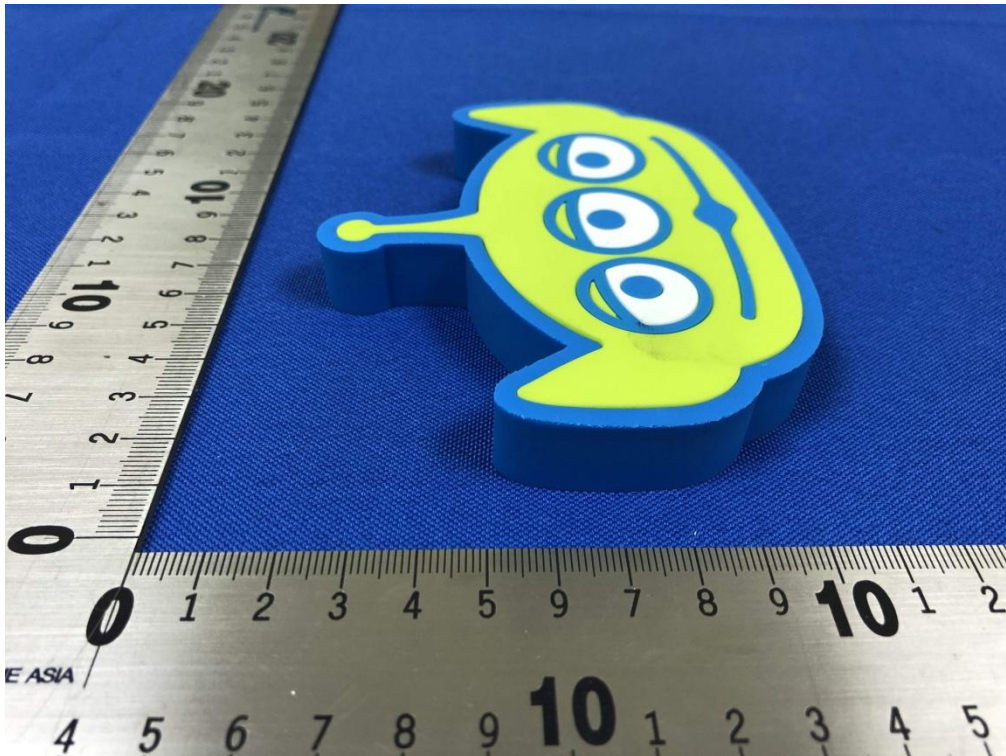


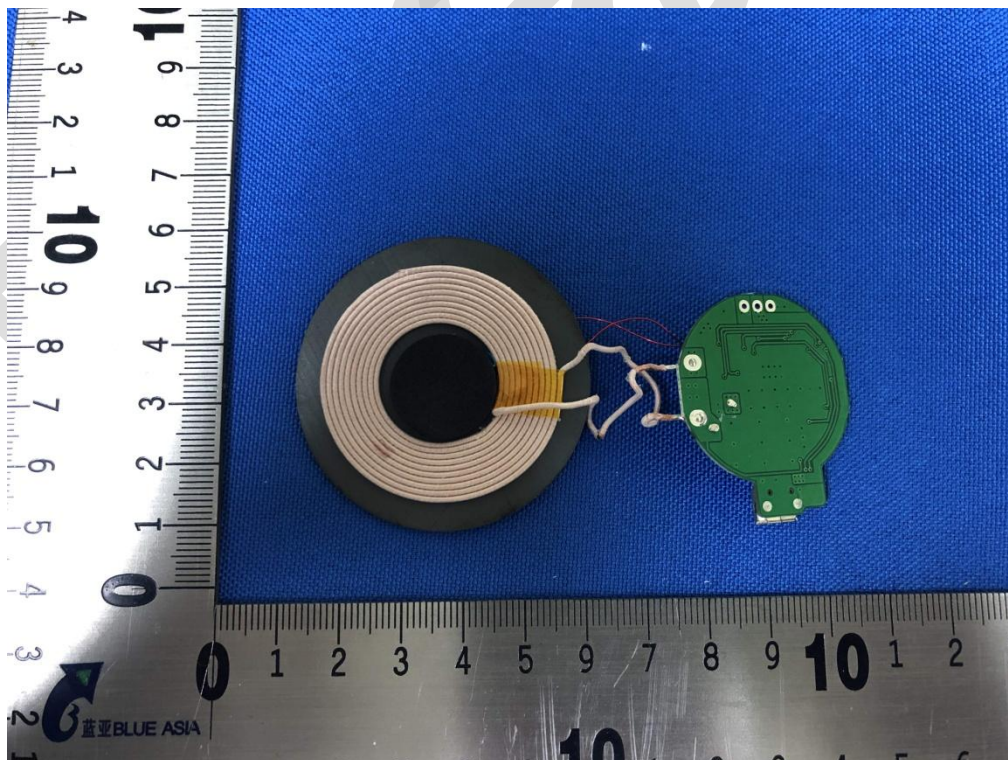
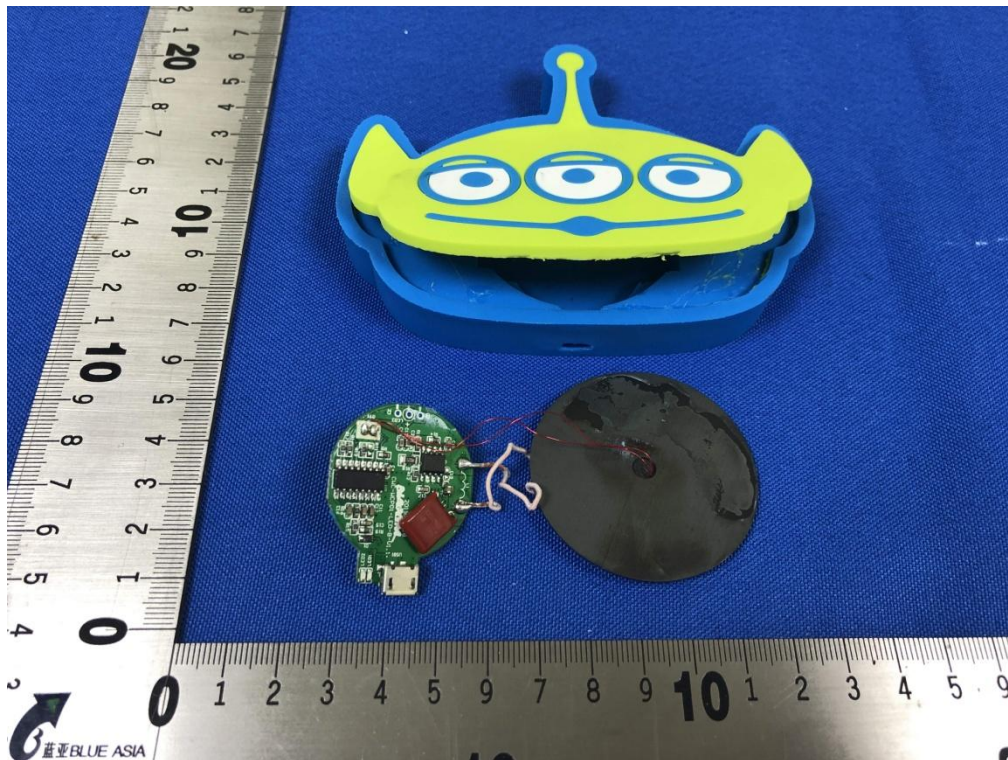
EUT Constructional Details (EUT Photos)

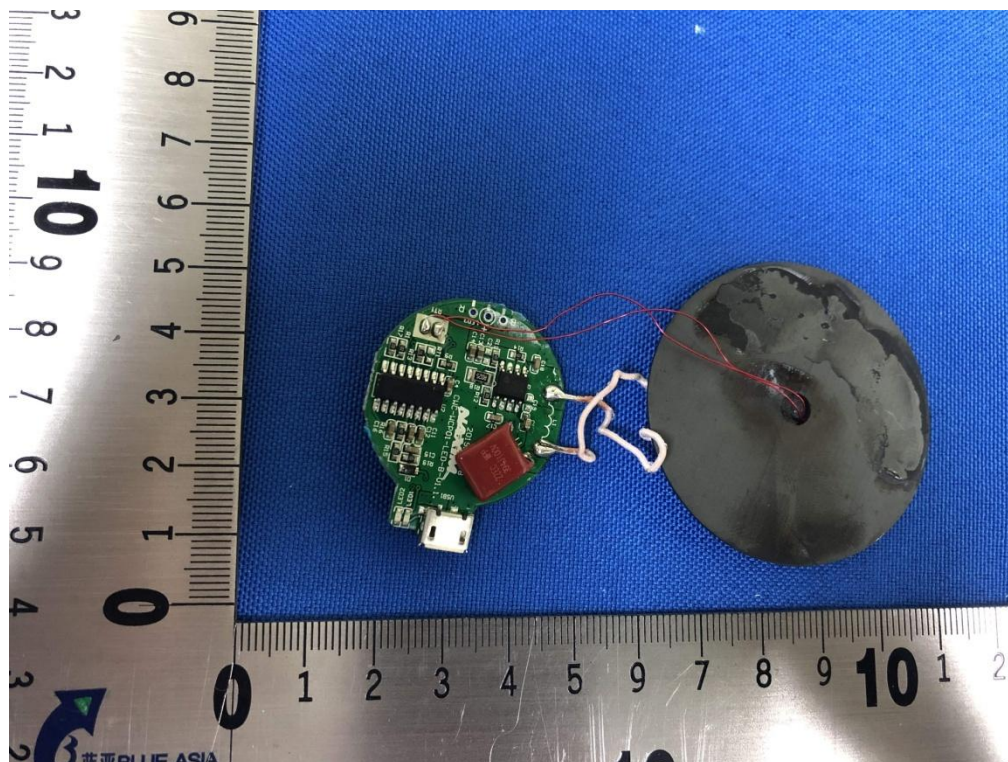












- End of the Report -