



FCC TEST REPORT

FCC ID: 2AJC9GW13B

Product Name:	Wireless Charger
Trademark:	N/A
Model Number:	GW13B GW13A, A2513
Prepared For :	Shenzhen Gopod Tech Co., Ltd
Address :	5/6F, Building8, Lianjian Industrial Park, Huarong Road, Longhua, Shenzhen, China
Prepared By :	Shenzhen BCTC Technology Co., Ltd.
Address :	No.101,Yousong Road, Longhua New District, Shenzhen, China
Report No.:	BCTC-160709384-1E



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**TEST RESULT CERTIFICATION****Applicant's name**.....: Shenzhen Gopod Tech Co., Ltd

Address: 5/6F, Building8, Lianjian Industrial Park, Huarong Road, Longhua, Shenzhen, China

Manufacture's Name: Shenzhen Gopod Tech Co., Ltd

Address: 5/6F, Building8, Lianjian Industrial Park, Huarong Road, Longhua, Shenzhen, China

Product description

Product name: Wireless Charger

Trademark: N/A

Model and/or type
reference : GW13B

Serial Model: GW13A, A2513

Standards: FCC Part 15 C: 2015
ANSI C63.10:2013

Test Date: Jul. 22 - Jul. 28, 2016

Date of Report : Jul. 30, 2016

This device described above has been tested by BCTC, and the test results show that the equipment under And it is applicable only to the tested sample identified in the report.

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Testing Engineer : sky Huang
Sky Huang

Reviewer
(Supervisor) : Jade Yang
Jade Yang

Approved &
Authorized
Signer(Manager): Carson Zhang
Carson Zhang





1. GENERAL INFORMATION

1.1. Report information

- 1.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BCTC approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BCTC in any way guarantees the later performance of the product/equipment.
- 1.1.2. The sample/s mentioned in this report is/are supplied by Applicant, BCTC therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.
- 1.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BCTC, unless the applicant has authorized BCTC in writing to do so.

1.2. Test Facility

Site Description	
Name of Firm	: Shenzhen BCTC Technology Co., Ltd.
Site Location	: No.101, Yousong Road, Longhua New District, Shenzhen, China
Lab Qualifications	: Certificated by Industry Canada Registration No.: 12655A Date of registration: January 19, 2015 Certificated by FCC, USA Registration No.: 187086 Date of registration: November 28, 2014 Certificated by CNAS China Registration No.: CNAS L6046 Date of registration: February 3, 2013

1.3. Test Uncertainty

Conducted Emission = $\pm 2.66\text{dB}$
Uncertainty
Radiated Emission Uncertainty = $\pm 4.15\text{dB}$



2. PRODUCT DESCRIPTION

2.1.EUT Description

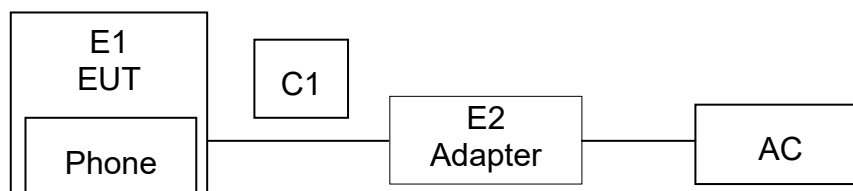
Description : Wireless Charger
Modulation Type: : MSK
Operation Frequency: : 110K~205KHz
Channel number : 20 channels
Model Number : GW13B
Serial Model : GW13A, A2513
Antenna type : Coil antenna
Antenna gain : 0dBi
Model Difference : All the same, is different for color.

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.

Channel List			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	0.110	11	0.160
02	0.115	12	0.165
~			
10	0.155	20	0.205

2.2.Block Diagram of EUT Configuration



2.3.Test Conditions

Temperature: 23~25℃

Relative Humidity: 55~63 %



2.4. Description Of Support Units (Conducted Mode)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Wireless Charger	N/A	GW13B	N/A	EUT
E-2	Adapter	N/A	S3010	N/A	Provide by test lab.
	Mobile phone	SAMSUNG	SM-G930FD	N/A	
	Battery model	SAMSUNG	SM-B07015000	N/A	electric quantity:0%,50%,90%

Item	Shielded Type	Ferrite Core	Length	Note
C1	No Shielded	NO	0.8M	Mini USB cable

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.5. TEST Results Summary

Table 1 Test Results Summary

Test Items	Test Results
Conducted disturbance	Pass
Radiated disturbance	Pass

Remark: “N/A” means “Not applicable.”

DESCRIPTION OF TEST MODES

For Conducted & Radiated Emission	
Final Test Mode	Description
Mode 1	TX Low Channel 110kHz
Mode 2	TX High channel 205kHz
Mode 3	TX Middle channel 155kHz
Mode 4	RX Mode
Mode 5	Transfer mode(Battery's electric quantity reference item2.4)

we pretest all mode, the report only show the worst mode.



3. TEST EQUIPMENT USED

3.1. For Conducted Emission Test

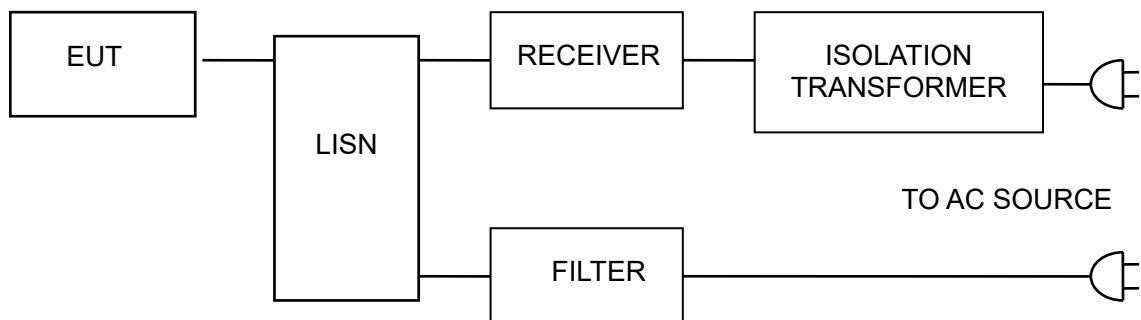
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Test Receiver	Rohde & Schwarz	ESCI30	828985/018	Aug. 24,2015	1 Year
2	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	Aug. 24,2015	1 Year
3	L.I.S.N.	Rohde & Schwarz	ESH2-Z5	834549/005	Aug. 24,2015	1 Year

3.2. For Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	ANRITSU	MS2661C	6200140915	Aug. 24,2015	1 Year
2	Test Receiver	Rohde&Schwarz	ESCI30	828985/018	Aug. 24,2015	1 Year
3	Bilog Antenna	Schwarzbeck	VULB9163	142	Aug. 24,2015	1 Year
4	50 Coaxial Switch	Anritsu Corp	MP59B	6100237248	Aug. 24,2015	1 Year
5	Cable	Schwarzbeck	AK9513	ACRX1	Aug. 24,2015	1 Year
7	Cable	Schwarzbeck	AK9513	CRRX2	Aug. 24,2015	1 Year
9	Single Phase Power Line Filter	MPE	23332C	N/A	Aug. 24,2015	1 Year
10	Single Phase Power Line Filter	MPE	23333C	N/A	Aug. 24,2015	1 Year
11	Signal Generator	HP	864A	3625U00573	Aug. 24,2015	1 Year
12	Loop Antenna	ARA	PLA-1030/B	1029	Aug. 24,2015	1 Year

4. CONDUCTED EMISSION TEST

4.1. Block Diagram Of Test Setup



4.2. Test Standard

FCC PART 15 B

4.3. Power Line Conducted Emission Limit

Frequency MHz	Limits dB(μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

4.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet FCC PART 15 B requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

4.5. Operating Condition of EUT

4.5.1 Setup the EUT and simulators as shown in Section 2..2

4.5.2 Turn on the power of all equipments.

4.5.3 Let the EUT work in test modes and test it.



4.6. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCI30) is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

The bandwidth of the test receiver (R&S Test Receiver ESCI) is set at 10KHz.

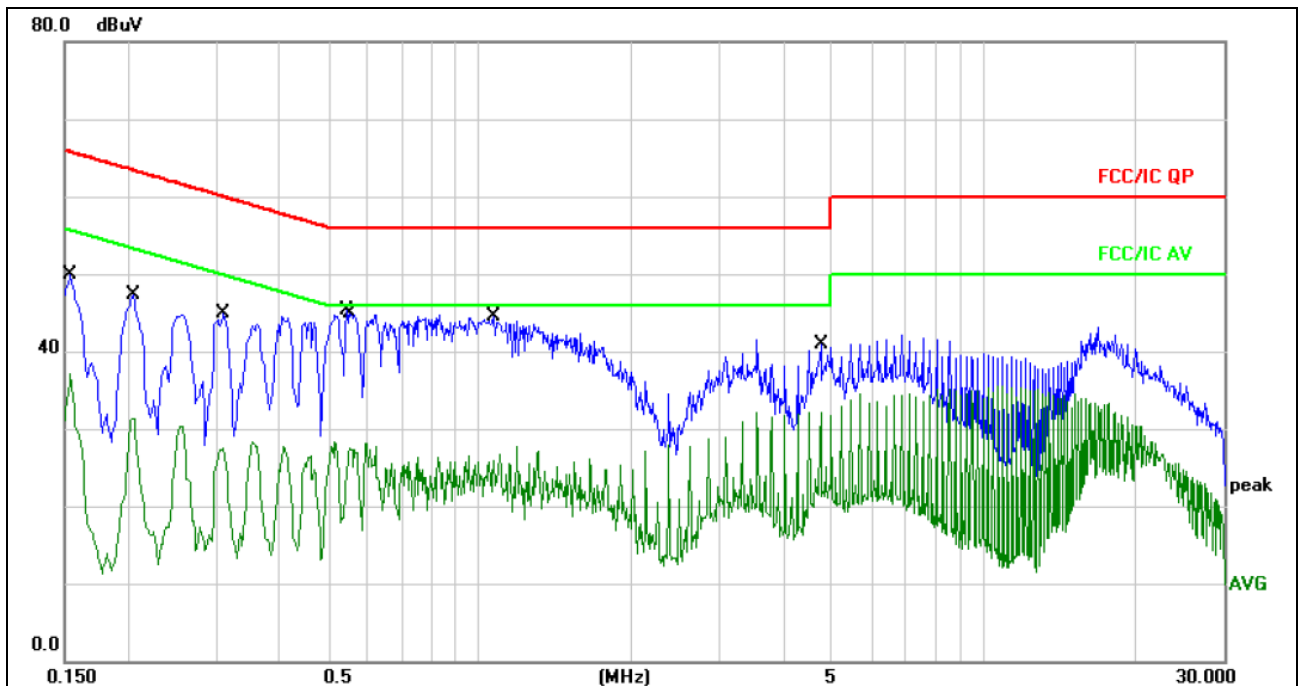
4.7. Test Result

PASS

Please refer to the following pages.
we pretest all mode, only the mode 5 was worst mode and the data recording in the report.



EUT:	Wireless Charger	Model Name :	GW13B
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage :	DC5V For Adapter input AC 120V/60Hz	Test Mode:	Mode 5



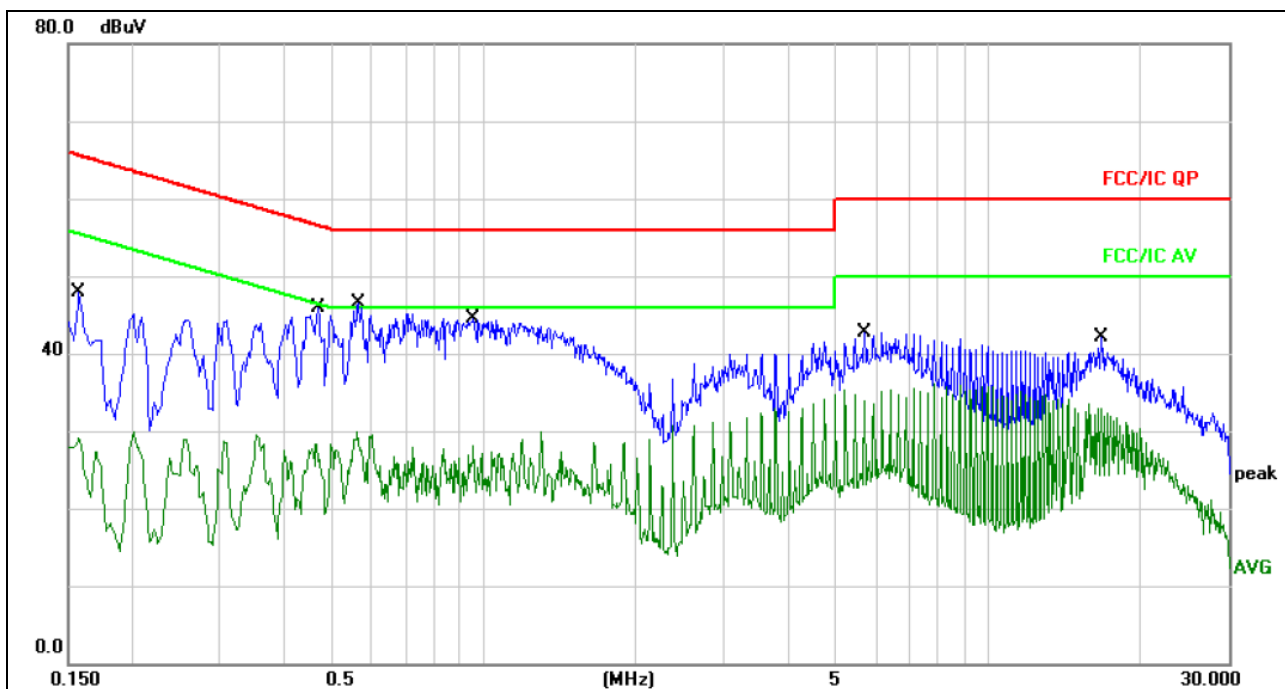
Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1539	39.87	10.05	49.92	65.78	-15.86	QP	
2		0.1539	26.97	10.05	37.02	55.78	-18.76	AVG	
3		0.2060	37.13	10.07	47.20	63.36	-16.16	QP	
4		0.2060	21.29	10.07	31.36	53.36	-22.00	AVG	
5		0.3100	34.74	10.09	44.83	59.97	-15.14	QP	
6		0.3100	17.38	10.09	27.47	49.97	-22.50	AVG	
7	*	0.5460	35.21	10.12	45.33	56.00	-10.67	QP	
8		0.5540	17.40	10.12	27.52	46.00	-18.48	AVG	
9		1.0700	34.40	10.17	44.57	56.00	-11.43	QP	
10		1.0700	15.74	10.17	25.91	46.00	-20.09	AVG	
11		4.7500	30.81	10.15	40.96	56.00	-15.04	QP	
12		4.7500	21.97	10.15	32.12	46.00	-13.88	AVG	



EUT:	Wireless Charger	Model Name. :	GW13B
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	N
Test Voltage :	DC5V For Adapter input AC 120V/60Hz	Test Mode:	Mode 5



Remark:

1. All readings are Quasi-Peak and Average values.

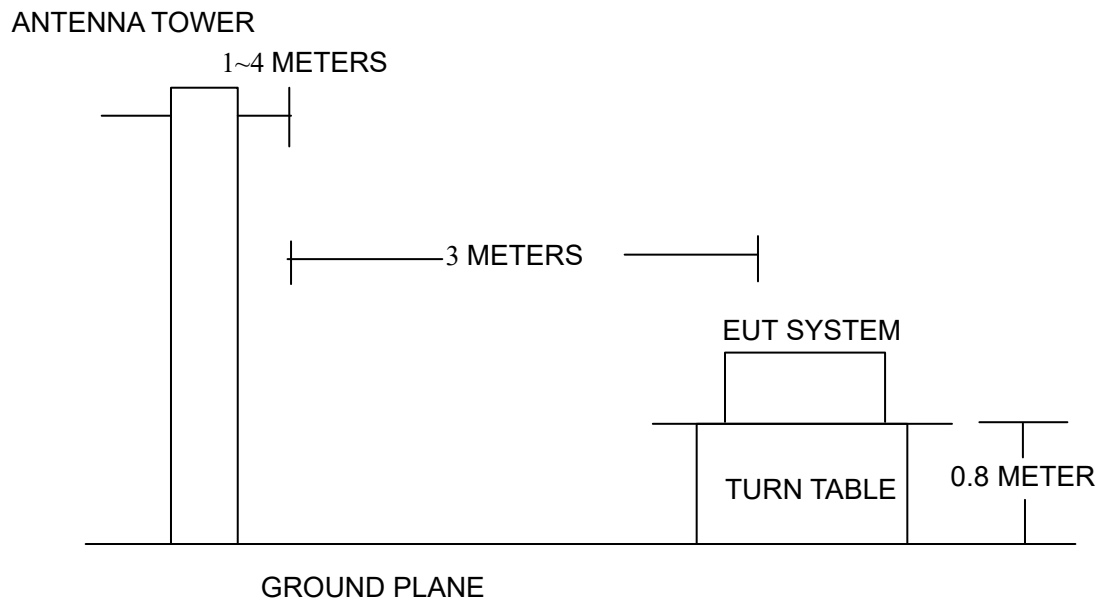
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1580	37.81	10.05	47.86	65.56	-17.70	QP	
2		0.1580	19.05	10.05	29.10	55.56	-26.46	AVG	
3		0.4660	18.15	10.11	28.26	46.58	-18.32	AVG	
4		0.4700	35.88	10.11	45.99	56.51	-10.52	QP	
5		0.5620	19.79	10.12	29.91	46.00	-16.09	AVG	
6	*	0.5660	36.37	10.12	46.49	56.00	-9.51	QP	
7		0.9540	34.26	10.16	44.42	56.00	-11.58	QP	
8		0.9540	17.89	10.16	28.05	46.00	-17.95	AVG	
9		5.6940	32.54	10.11	42.65	60.00	-17.35	QP	
10		5.6940	23.70	10.11	33.81	50.00	-16.19	AVG	
11		16.7900	31.84	10.16	42.00	60.00	-18.00	QP	
12		16.7900	22.75	10.16	32.91	50.00	-17.09	AVG	

5. RADIATED EMISSION MEASUREMENT

5.1. Block Diagram of Test Setup

5.1.1. Anechoic Chamber Test Setup Diagram



5.2. Test Standard

FCC Part 15 C: 2015

5.3. Radiated Emission Limit(Class B)

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (microvolt/meter)
0.009~0.490	300	2400/F(kHz)
0.490~1.705	30	24000/F(kHz)
1.705~30	30	30.0
30 ~ 88	3	100.0
88 ~ 216	3	150.0
216 ~ 960	3	200.0
960 ~ 1000	3	500.0

- Note:(1) The smaller limit shall apply at the edge between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or system.
(3) According to §15.31 (f)(2),
- 300 m Result(dBuV/m) = 3 m Result(dBuV/m) – 40log(300/3) (dBuV/m)
- 30 m Result(dBuV/m) = 3 m Result(dBuV/m) – 40log(30/3) (dBuV/m)
(4) According to field strength table of general requirement in §15.209 (a), field strength limits below

1.705 MHz were calculated as below.

- 9 kHz to 490 kHz : $20\log(2\,400 / F \text{ (kHz)})$ at 300 m (dBuV/m)
- 490 kHz to 1 705 kHz : $20\log(24\,000 / F \text{ (kHz)})$ at 30 m (dBuV/m)
- 1.705 MHz to 30 MHz : 30 at 30 m (dBuV/m)

(5) According to §15.209 (d), the measurements were tested by using Quasi peak detector except for the frequency bands 9 – 90 kHz, 110 – 490 kHz and above 1 GHz in these three bands on measurements employing an average detector.

5.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

Operating Condition of EUT

5.4.1. Setup the EUT as shown on APPENDIX II

5.4.2. Turn on the power of all equipments.

5.4.3. Let the EUT work in test mode (communication mode).

5.5. Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on an antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

The bandwidth setting on the test receiver is 120 KHz.

The EUT is tested in Anechoic Chamber. The frequency range from 30MHz to 1000MHz is checked. we test all mode, the data only show the worst mode.



5.6.Test Result

PASS

Please refer to the following pages.

9KHz-30MHz

EUT:	Wireless Charger	Model Name :	GW13B
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC5V For Adapter		
Test Mode :	TX Mode		

Freq.	Reading	Antenna Factor	Cable loss	Amp Factor	Result	Limit	Margin	Detector	State
(MHz)	(dBuV/m)	dB/m	dB	dB	(dBuV/m)	(dBuV/m) at 3 m	(dB)		P/F
0.110	72.05	48.34	0.16	29.87	90.68	126.77	-36.09	PK	PASS
0.110	66.17	48.34	0.16	29.87	84.80	106.77	-21.97	AV	PASS
0.155	74.77	48.34	0.16	29.87	93.40	123.79	-30.39	PK	PASS
0.155	64.79	48.34	0.16	29.87	83.42	103.79	-20.37	AV	PASS
0.205	73.86	48.38	0.17	29.89	92.52	121.37	-28.85	PK	PASS
0.205	65.06	48.38	0.17	29.89	83.72	101.37	-17.65	AV	PASS
0.220	43.53	48.38	0.17	29.89	62.19	120.76	-58.57	PK	PASS
0.220	32.13	48.38	0.17	29.89	50.79	100.76	-49.97	AV	PASS
0.310	43.75	48.44	0.19	29.89	62.49	117.78	-55.29	PK	PASS
0.310	30.93	48.44	0.19	29.89	49.67	97.78	-48.11	AV	PASS
0.410	43.41	48.47	0.19	29.89	62.18	115.35	-53.17	PK	PASS
0.410	33.02	48.47	0.19	29.89	51.79	95.35	-43.56	AV	PASS
1.963	16.75	49.12	0.20	29.94	36.13	60.00	-23.87	QP	PASS
1.958	16.12	49.12	0.20	29.94	35.50	60.00	-24.50	QP	PASS

NOTE:

Result=Reading+ antenna factor+cable loss-amp factor

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

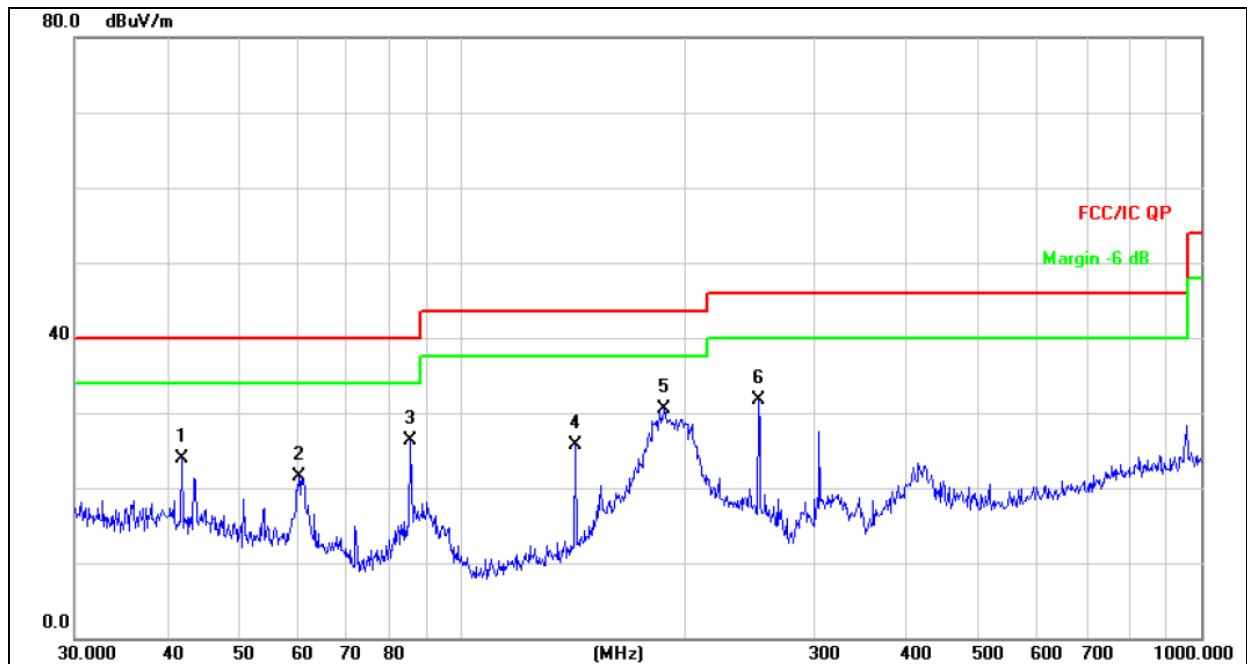
Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuV) + distance extrapolation factor.



30MHz-1GHz

EUT:	Wireless Charger	Model Name :	GW13B
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC5V For Adapter		
Test Mode :	Mode 5		



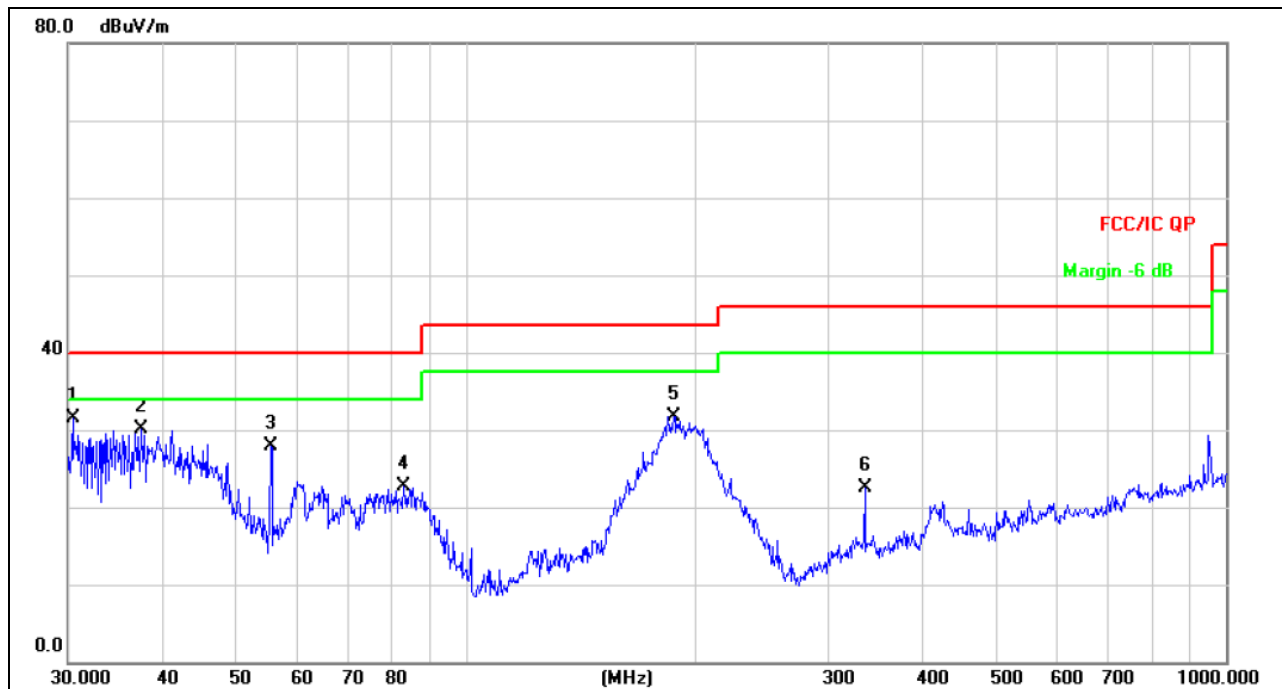
Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		41.8596	32.90	-9.08	23.82	40.00	-16.18	QP		
2		60.2801	33.07	-11.57	21.50	40.00	-18.50	QP		
3		85.2980	44.38	-18.10	26.28	40.00	-13.72	QP		
4		142.3243	38.94	-13.26	25.68	43.50	-17.82	QP		
5	*	187.7530	45.87	-15.29	30.58	43.50	-12.92	QP		
6		252.0627	45.84	-14.14	31.70	46.00	-14.30	QP		



EUT:	Wireless Charger	Model Name :	GW13B
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Vertical
Test Voltage :	DC5V For Adapter		
Test Mode :	Mode 5		



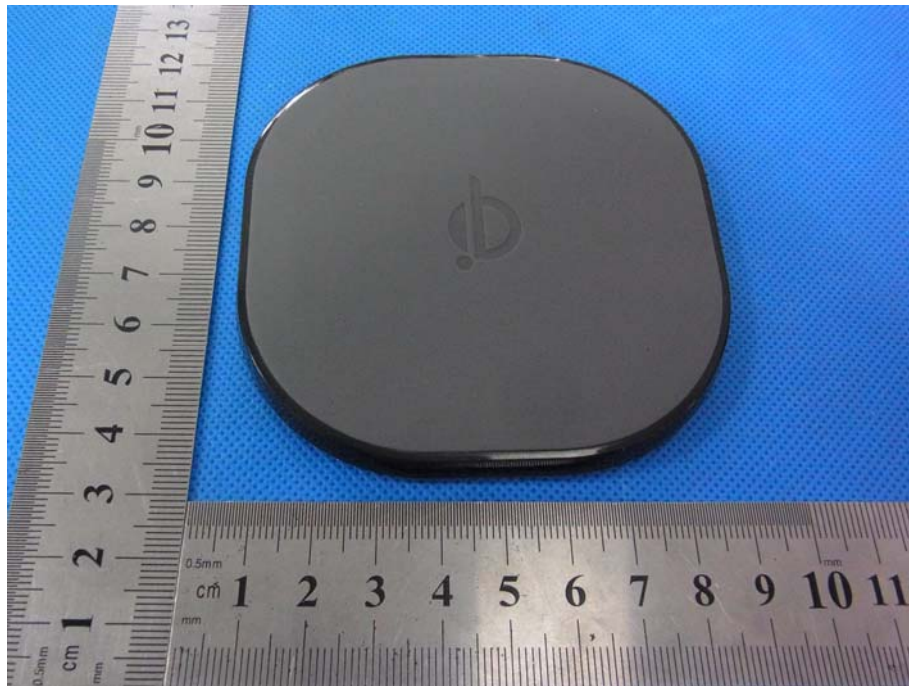
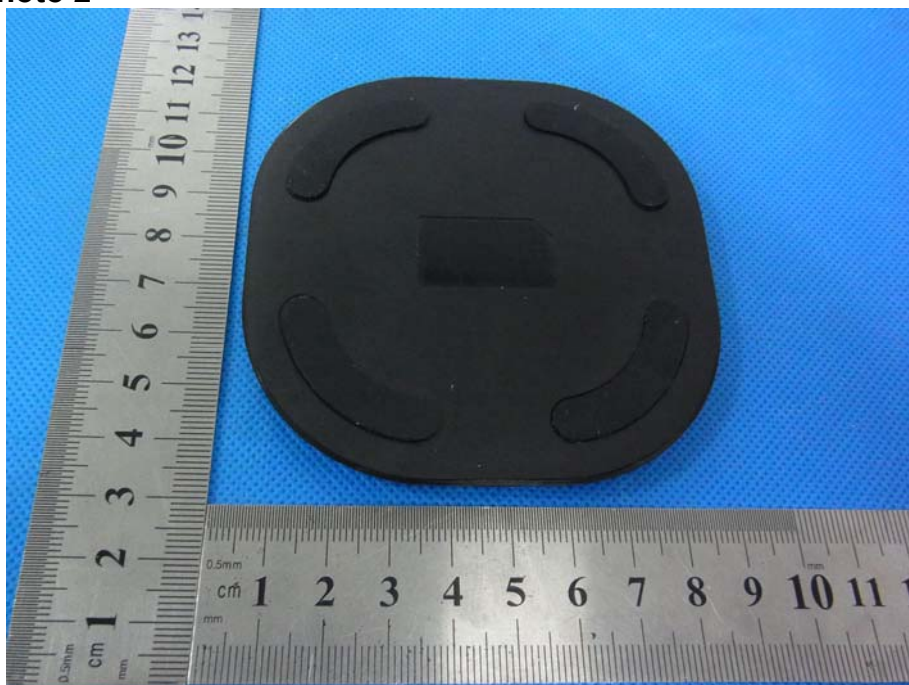
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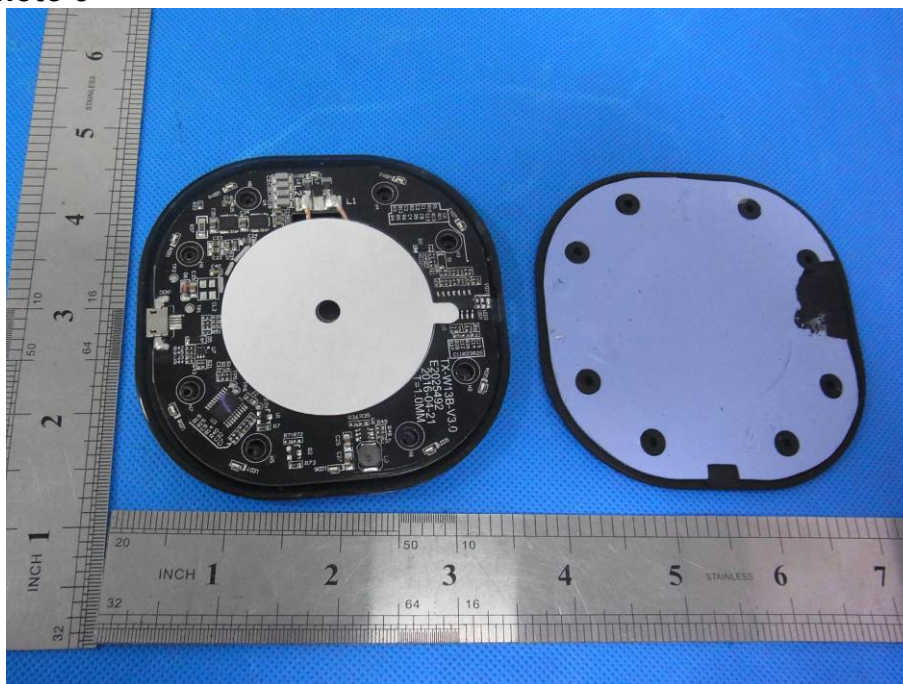
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree
1	*	30.4238	39.58	-8.08	31.50	40.00	-8.50	QP	
2		37.4165	38.73	-8.72	30.01	40.00	-9.99	QP	
3		55.4147	39.02	-11.16	27.86	40.00	-12.14	QP	
4		82.9385	40.79	-18.12	22.67	40.00	-17.33	QP	
5		187.7530	47.06	-15.29	31.77	43.50	-11.73	QP	
6		334.8589	34.10	-11.69	22.41	46.00	-23.59	QP	



APPENDIX I (PHOTOS OF THE EUT)

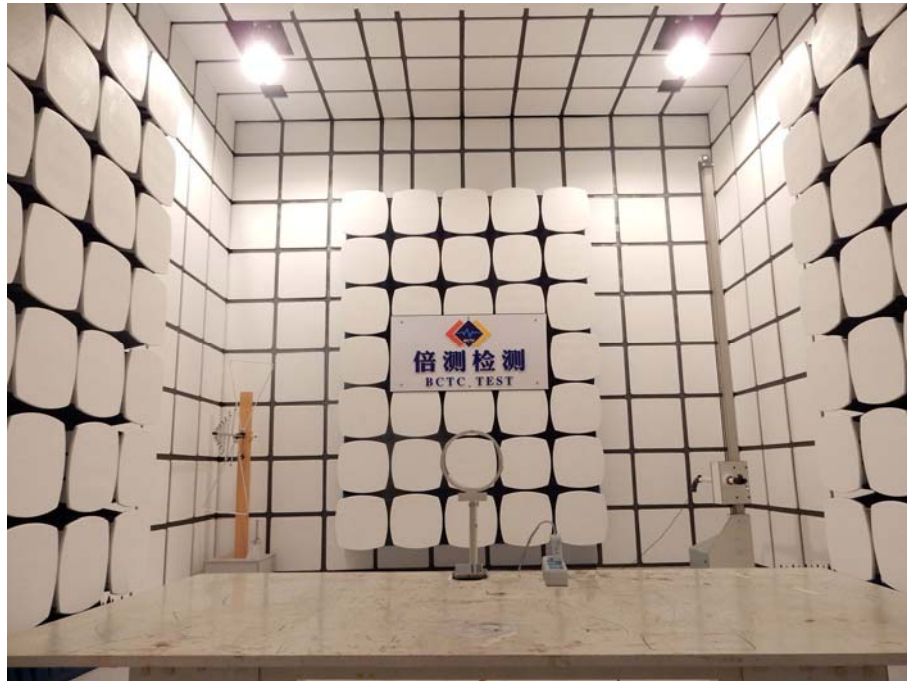
EUT Photo 1**EUT Photo 2**

EUT Photo 3

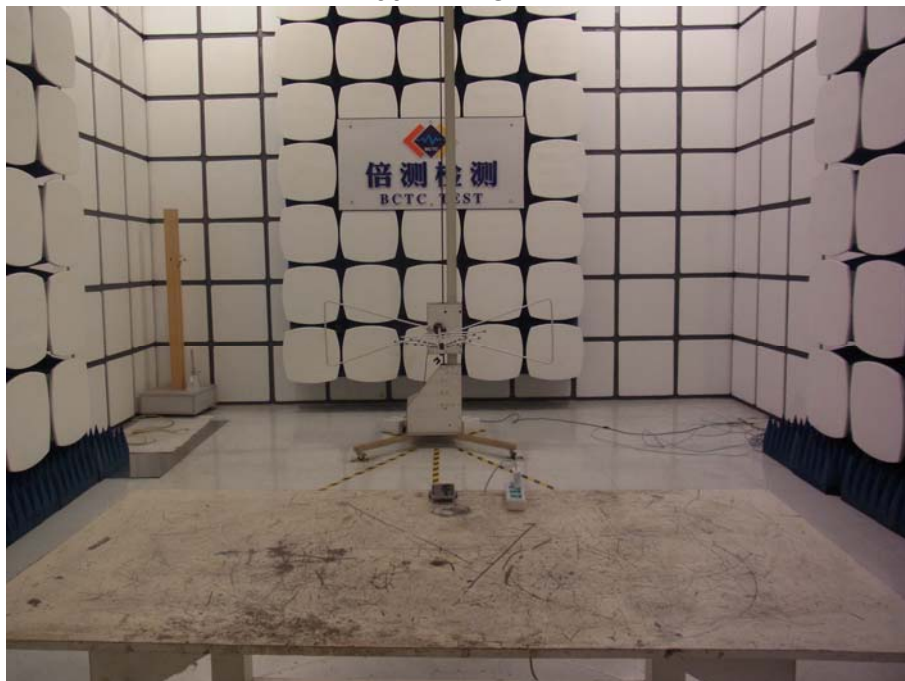


APPENDIX II (TEST PHOTOS OF THE EUT)

9KMz-30MHz



30MHz-1GMz





***** END OF REPORT *****