

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
INTENTIONAL RADIATOR CERTIFICATION TO  
FCC PART 15 SUBPART C REQUIREMENT**

*OF*

**BT Speaker Alarm Clock with USB & Wireless Charging**

**Model No.: HW4**

**Trademark: iHome**

**FCC ID: EMOHW4**

**Report No.: ES180630006E2**

**Issue Date: July 17, 2018**

*Prepared for*

**SDI TECHNOLOGIES INC.  
1299, Main Street, Rahway, NJ 07065, U.S.A.**

*Prepared by*

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EMTEK(SHENZHEN) CO., LTD.**

**VERIFICATION OF COMPLIANCE**

Applicant:	SDI Technologies Inc. 1299, Main Street, Rahway, NJ 07065, U.S.A.
Manufacturer:	Hotel Technologies Inc. 1299, Main Street, Rahway, NJ 07065, U.S.A.
Factory:	Jadestar Electronics (Shenzhen) Co. Ltd. Block 5, He Tai Industrial Zone, He Ping Community, Fu Yuan Town, Bao An District.
Product Description:	BT Speaker Alarm Clock with USB & Wireless Charging
Trade Mark:	iHome
Model Number:	HW4

**We hereby certify that:**

The above equipment was tested by EMTEK(SHENZHEN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10-2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15C.

Date of Test : June 30, 2018 to July 13, 2018



Prepared/Tested by : Yaping Shen/Editor



Reviewer : Joe Xia/Supervisor

Approved & Authorized  
Signer :



Lisa Wang/Manager

## Modified Information

Version	Summary	Revision Date	Report No.
Ver.1.0	Original Report	/	ES180630006E2

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## 1 General Information

### 1.1 Product Description

Characteristics	Description
Product Name	BT Speaker Alarm Clock with USB & Wireless Charging
Model number	HW4
Operation Mode	Qi-5W Wireless Charging,9W Sumsung Fast Wireless Charging
Input Rating	DC 12V from adapter
Power Supply	AC120V/60Hz for adapter
Adapter	Model number:S060A1205000U Input rating: 100-240V~, 50/60Hz Max, 1500mA Output rating: DC 12V, 5000mA
Operating Frequency	145-290KHz
Modulation Technique	Induction
Antenna Type	Induction coil
Radio Software Version	1.21
Radio Hardware version	1.1

## 1.2 Related Submittal(s) / Grant(s)

This submittal(s) (test report) is intended for FCC ID: EMOHW4 filing to comply with the FCC Part 15, Subpart C Rules.

## 1.3 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

## 1.4 Special Accessories

Not available for this EUT intended for grant.

## 1.5 Equipment Modifications

Not available for this EUT intended for grant.

## 1.6 Test Facility

Site Description  
EMC Lab.

: Accredited by CNAS, 2016.10.24  
The certificate is valid until 2022.10.28  
The Laboratory has been assessed and proved to be in compliance with  
CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)  
The Certificate Registration Number is L2291.

Accredited by TUV Rheinland Shenzhen 2016.5.19  
The Laboratory has been assessed according to the requirements ISO/IEC  
17025.

Accredited by FCC, August 03, 2017  
Designation Number: CN1204  
Test Firm Registration Number: 882943

Accredited by Industry Canada, November 24, 2015  
The Certificate Registration Number is 4480A.

Accredited by A2LA, July 31, 2017  
The Certificate Number is 4321.01.

Name of Firm : EMTEK(SHENZHEN) CO., LTD.  
Site Location : Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen,  
Guangdong, China.

## **2 System Test Configuration**

### **2.1 EUT Configuration**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### **2.2 EUT Exercise**

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

### **2.3 Test Procedure**

#### **2.3.1 Conducted Emissions**

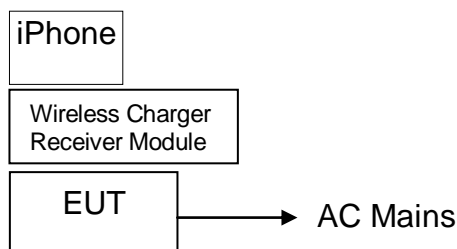
The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.

#### **2.3.2 Radiated Emissions**

The EUT is placed on a turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the fixed in a particular direction according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013.

## 2.4 Configuration of Tested System

**Fig. 2-1 Configuration of Tested System**



**Table 2-1 Equipment Used in Tested System**

Item	Equipment	Trade Mark	Model No.	FCC ID	Note
1.	BT Speaker Alarm Clock with USB & Wireless Charging	iHome	HW4	EMOHW4	<b>EUT</b>
2.	Adapter	iHome	S060A1205000U	N/A	<b>Support EUT</b>
3.	iPhone	Apple	A1524	N/A	<b>Support Equipment</b>
4.	Wireless Charger Receiver Module	Universal	N/A	N/A	<b>Support Equipment</b>
5.	SAMSUNG S9	Samsung	Samsung Galaxy S9	N/A	<b>Support EUT</b>

**Note:**

- (1) Unless otherwise denoted as EUT in 『Remark』 column, device(s) used in tested system is a support equipment.

## 3 Summary of Test Results

FCC Rules	Description Of Test	Result
§15.207	AC Power Conducted Emission	Compliant
§15.209	Radiated Emission	Compliant
§2.1049	20dB Bandwidth	Compliant
§15.203	Antenna Requirement	Compliant



#### 4 Description of test modes

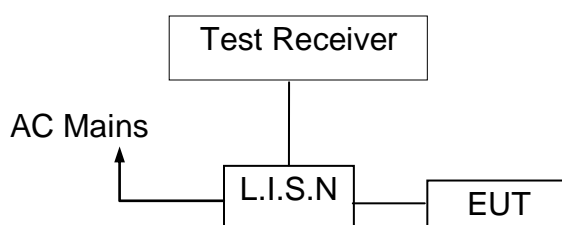
Channel	Frequency(KHz)
Low frequency	145
Mid frequency	220
High frequency	290

## 5 Conducted Emissions Test

### 5.1 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

### 5.2 Test SET-UP (Block Diagram of Configuration)



### 5.3 Measurement Equipment Used

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	Last Cal.	Due date
Test Receiver	Rohde & Schwarz	ESCS30	100018	05/16/2018	05/15/2019
L.I.S.N	Rohde & Schwarz	ENV216	100017	05/16/2018	05/15/2019
RF Switching Unit	CDS	RSU-M2	38401	05/16/2018	05/15/2019
Coaxial Cable	CDS	79254	46107086	05/16/2018	05/15/2019

### 5.4 Conducted Emission Limit

Conducted Emission Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

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

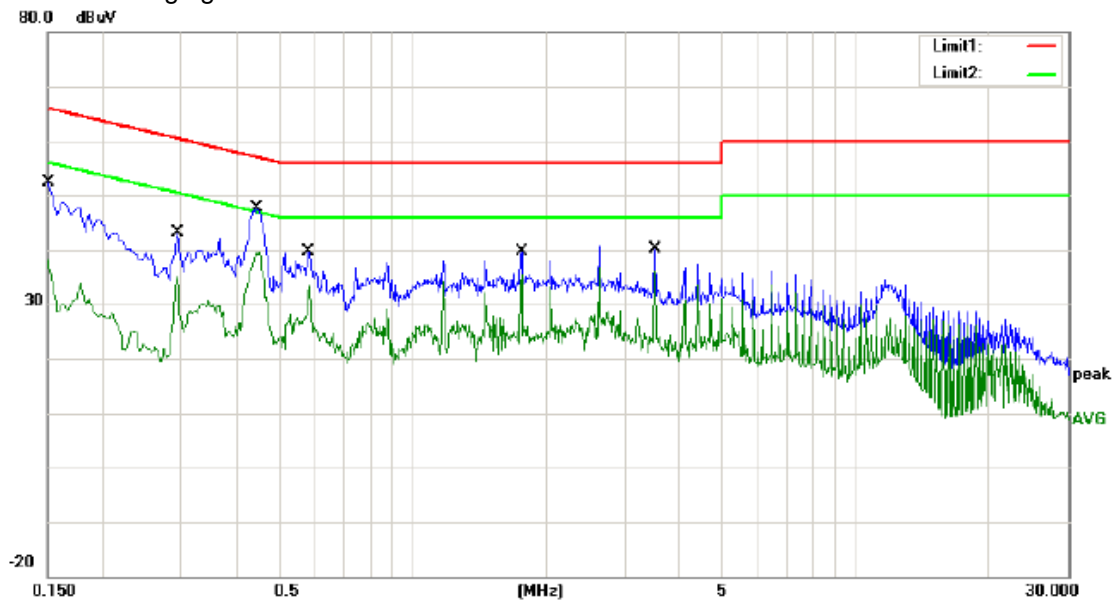
## 5.5 Measurement Result

Operation Mode:	TX	Test Date :	July 14, 2018
Frequency Range:	0.15MHz~30MHz	Temperature :	28℃
Test Result:	PASS	Humidity :	65 %
Test By:	Yaping Shen		

Pass

We pretested two power and three modes (max load, mid load, min load) for EUT. The worst mode (max load) test data see follow the table.

## Qi-5W Wireless Charging



Site site #1

Phase: L1

Temperature: 25

Limit: (CE)FCC PART 15 C QP

Power: AC 120V/60Hz

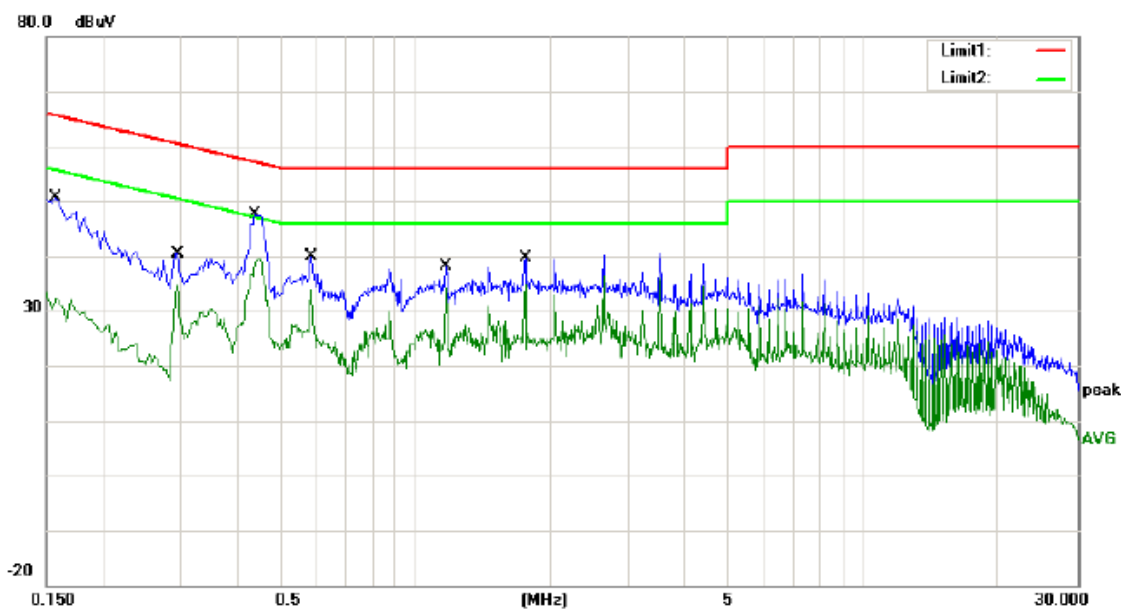
Humidity: 55 %

Mode: Wireless Charging QI-5W

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	40.30	9.78	50.08	66.00	-15.92	QP	
2		0.1500	28.34	9.78	38.12	56.00	-17.88	AVG	
3		0.2940	31.50	9.80	41.30	60.41	-19.11	QP	
4		0.2940	25.22	9.80	35.02	50.41	-15.39	AVG	
5		0.4460	35.98	9.83	45.81	56.95	-11.14	QP	
6	*	0.4460	29.70	9.83	39.53	46.95	-7.42	AVG	
7		0.5820	27.90	9.84	37.74	56.00	-18.26	QP	
8		0.5860	23.60	9.84	33.44	46.00	-12.56	AVG	
9		1.7540	27.66	9.84	37.50	56.00	-18.50	QP	
10		1.7540	25.64	9.84	35.48	46.00	-10.52	AVG	
11		3.5100	28.03	9.85	37.88	56.00	-18.12	QP	
12		3.5100	26.37	9.85	36.22	46.00	-9.78	AVG	

\*:Maximum data x:Over limit l:over margin Comment: Factor build in receiver. Operator: Yaping shen



Site site #1

Phase: **N**

Temperature: 25

Limit: (CE)FCC PART 15 C QP  
Mode: Wireless Charging QI-5W

Power: AC 120V/60Hz

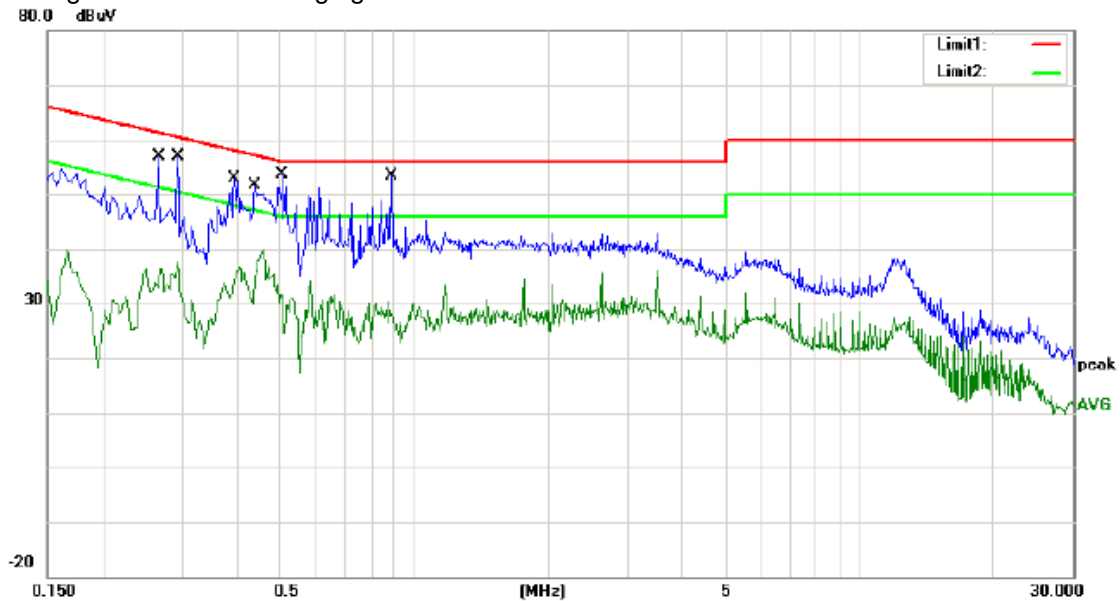
Humidity: 55 %

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1581	40.53	9.78	50.31	65.56	-15.25	QP	
2		0.1581	22.50	9.78	32.28	55.56	-23.28	AVG	
3		0.2940	30.69	9.80	40.49	60.41	-19.92	QP	
4		0.2940	25.18	9.80	34.98	50.41	-15.43	AVG	
5		0.4380	37.71	9.83	47.54	57.10	-9.56	QP	
6	*	0.4380	29.49	9.83	39.32	47.10	-7.78	AVG	
7		0.5860	30.05	9.84	39.89	56.00	-16.11	QP	
8		0.5860	23.99	9.84	33.83	46.00	-12.17	AVG	
9		1.1700	28.29	9.84	38.13	56.00	-17.87	QP	
10		1.1700	24.36	9.84	34.20	46.00	-11.80	AVG	
11		1.7540	29.76	9.84	39.60	56.00	-16.40	QP	
12		1.7540	25.03	9.84	34.87	46.00	-11.13	AVG	

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.    Operator: Yaping shen

## 9W Sumsung Fast Wireless Charging



Site site #1

Phase: **L1**

Temperature: 25

Limit: (CE)FCC PART 15 C\_QP

Power: AC 120V/60Hz

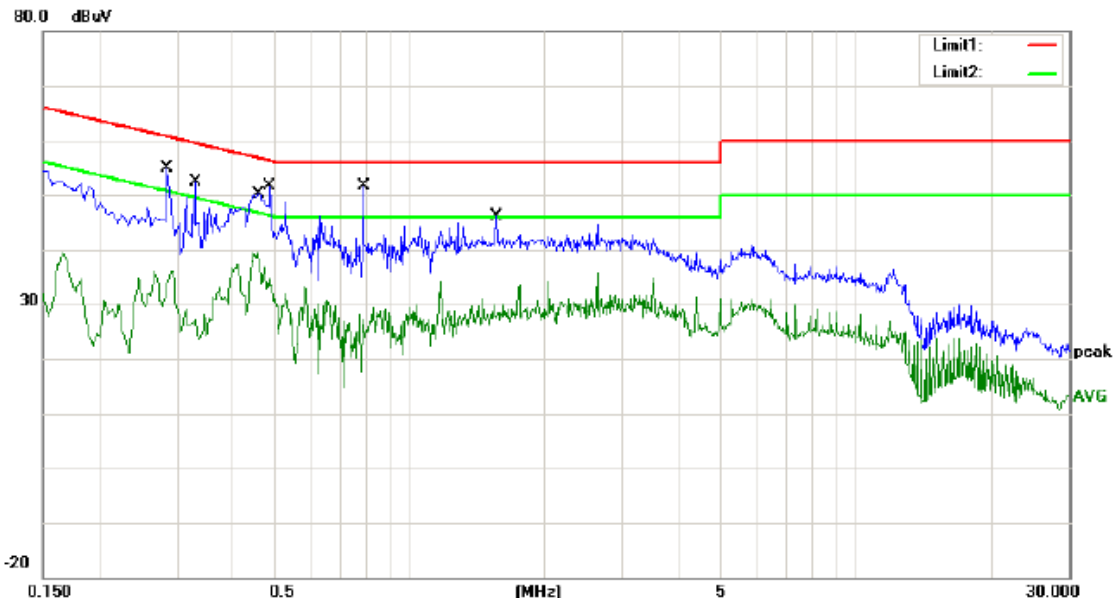
Humidity: 55 %

Mode: Wireless Charging Samsung-9W

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2660	45.30	9.80	55.10	61.24	-6.14	QP	
2		0.2660	26.61	9.80	36.41	51.24	-14.83	AVG	
3		0.2940	44.36	9.80	54.16	60.41	-6.25	QP	
4		0.2940	27.83	9.80	37.63	50.41	-12.78	AVG	
5		0.3940	41.30	9.82	51.12	57.98	-6.86	QP	
6		0.3940	26.72	9.82	36.54	47.98	-11.44	AVG	
7		0.4380	39.50	9.83	49.33	57.10	-7.77	QP	
8		0.4380	30.15	9.83	39.98	47.10	-7.12	AVG	
9		0.5060	39.99	9.84	49.83	56.00	-6.17	QP	
10		0.5060	23.58	9.84	33.42	46.00	-12.58	AVG	
11	*	0.8860	41.30	9.84	51.14	56.00	-4.86	QP	
12		0.8860	20.47	9.84	30.31	46.00	-15.69	AVG	

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.    Operator: Yaping shen



Site site #1 Phase: **N** Temperature: 25  
 Limit: (CE)FCC PART 15 C\_QP Power: AC 120V/60Hz Humidity: 55 %  
 Mode: Wireless Charging Samsung-9W  
 Note:

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.2860	45.11	9.80	54.91	60.64	-5.73	QP	
2	0.2860	26.38	9.80	36.18	50.64	-14.46	AVG	
3	0.3300	42.66	9.81	52.47	59.45	-6.98	QP	
4	0.3300	19.42	9.81	29.23	49.45	-20.22	AVG	
5	0.4580	40.37	9.83	50.20	56.73	-6.53	QP	
6	0.4580	29.59	9.83	39.42	46.73	-7.31	AVG	
7	0.4860	41.75	9.84	51.59	56.24	-4.65	QP	
8	0.4860	25.87	9.84	35.71	46.24	-10.53	AVG	
9 *	0.7860	41.82	9.84	51.66	56.00	-4.34	QP	
10	0.7860	19.47	9.84	29.31	46.00	-16.69	AVG	
11	1.5620	36.33	9.84	46.17	56.00	-9.83	QP	
12	1.5620	21.34	9.84	31.18	46.00	-14.82	AVG	

\*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: Yaping shen

## 5.6 Conducted Measurement Photo





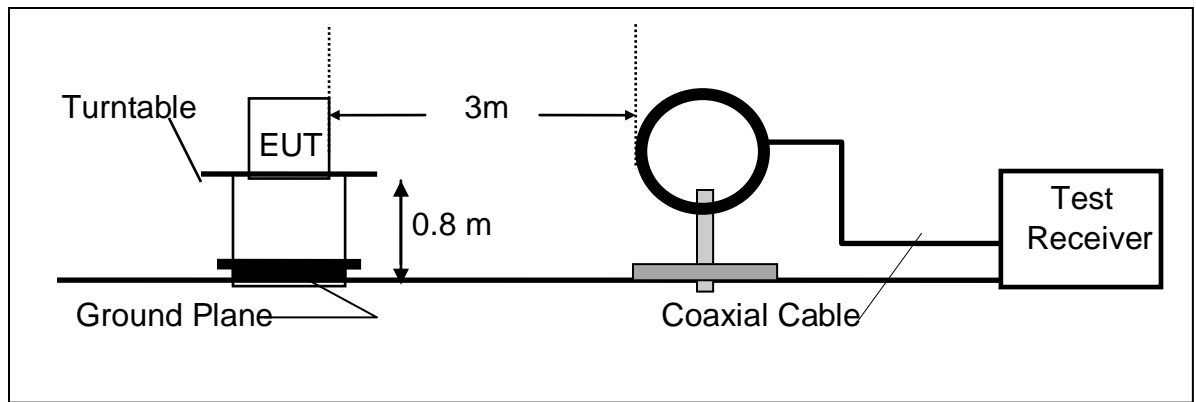
## 6 Radiated Emission Test

### 6.1 Measurement Procedure

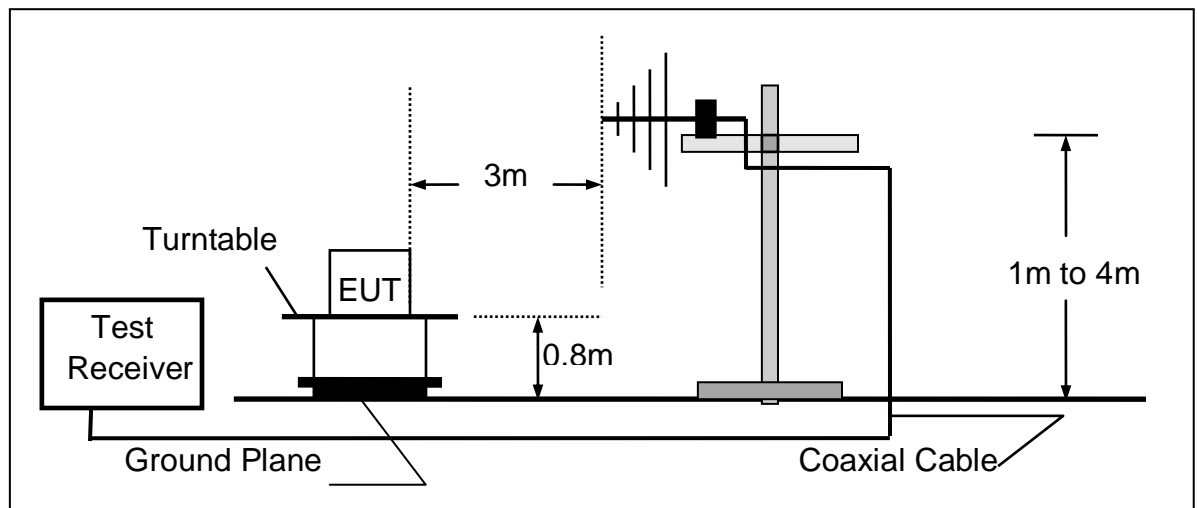
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

### 6.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



### 6.3 Measurement Equipment Used

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due date
Test Receiver	Rohde & Schwarz	ESCI	1166.5950.03	05/16/2018	05/15/2019
Signal Analyzer	Rohde & Schwarz	FSV30	103040	05/16/2018	05/15/2019
Loop Antenna	Schwarzbeck	FMZB 1519	012	05/16/2018	05/15/2019
Bilog Antenna	Schwarzbeck	VULB9163	000141	05/16/2018	05/15/2019
Power Amplifier	CDS	RSU-M352	818	05/16/2018	05/15/2019
Power Amplifier	HP	8447F	OPT H64	05/16/2018	05/15/2019
Color Monitor	SUNSP0	SP-140A	N/A	05/16/2018	05/15/2019
Single Line Filter	JIANLI	XL-3	N/A	05/16/2018	05/15/2019
Single Phase Power Line Filter	JIANLI	DL-2X100B	N/A	05/16/2018	05/15/2019
3 Phase Power Line Filter	JIANLI	DL-4X100B	N/A	05/16/2018	05/15/2019
DC Power Filter	JIANLI	DL-2X50B	N/A	05/16/2018	05/15/2019
Cable	Schwarzbeck	PLF-100	549489	05/16/2018	05/15/2019
Cable	Rosenberger	CIL02	A0783566	05/16/2018	05/15/2019
Cable	Rosenberger	RG 233/U	525178	05/16/2018	05/15/2019

### 6.4 Radiated Emission Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

FCC Part 15.209				
Frequency (MHz)	Field Strength Limitation		Field Strength Limitation Frequency tion at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	30m	100* 30	20log 30 + 40
30.0 – 88.0	100	3m	100	20log 100
88.0 – 216.0	150	3m	150	20log 150
216.0 – 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500

## 15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	( <sup>2</sup> )

Remark: 1. Emission level in dBuV/m=20 log (uV/m)  
 2. Measurement was performed at an antenna to the closed point of EUT distance of meters.  
 3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of § 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

## 6.5 Measurement Result

We pretested two power and three modes (max load, mid load, min load) for EUT. The worst mode (9W Samsung Fast Wireless charging max load) and worst test frequency(Low frequency: 145KHz)test data see follow the table.

Operation Mode:	Low frequency	Test Date :	June 11, 2018
Frequency Range:	9KHz~30MHz	Temperature :	20℃
Test Result:	PASS	Humidity :	55 %
Measured Distance:	3m	Test By:	Yaping Shen

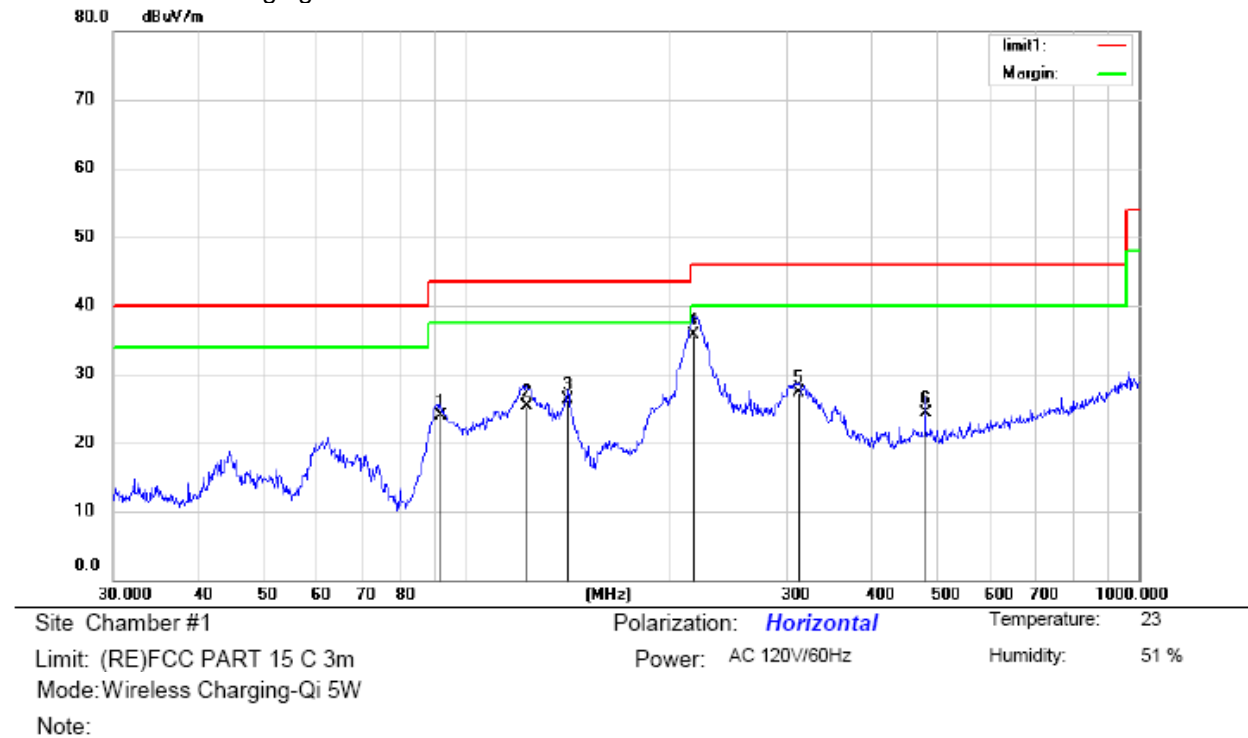
Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)	Note
0.14591(F)	H	72.15	104.32	-32.17	PK
0.292	H	64.37	98.30	-33.93	PK
0.438	H	62.88	94.77	-31.89	PK
0.584	H	63.05	72.28	-9.23	PK
0.730	H	61.42	70.34	-8.92	PK
0.14591(F)	V	74.79	104.32	-29.53	PK
0.292	V	65.19	98.30	-33.11	PK
0.438	V	63.11	94.77	-31.66	PK
0.584	V	65.43	72.28	-6.85	PK
0.730	V	62.57	70.34	-7.77	PK

**Note:**

- (1) All Readings are Peak Value.
- (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
- (3) The average measurement was not performed when the peak measured data under the limit of average detection.
- (4) EUT lying on the table position is the worst case result in the report.

We pretested two power and three modes (max load, mid load, min load) for EUT. The worst mode (max load) and worst test frequency(Low frequency: 145KHz)test data see follow the page.

## Qi-5W Wireless Charging



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		91.8161	41.60	-17.65	23.95	43.50	-19.55	QP		
2		122.8340	43.65	-18.29	25.36	43.50	-18.14	QP		
3		141.8262	45.85	-19.59	26.26	43.50	-17.24	QP		
4	*	218.3084	51.20	-15.49	35.71	46.00	-10.29	QP		
5		313.2760	39.80	-12.54	27.26	46.00	-18.74	QP		
6		482.2155	32.50	-8.26	24.24	46.00	-21.76	QP		

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.    Operator: Yaping shen



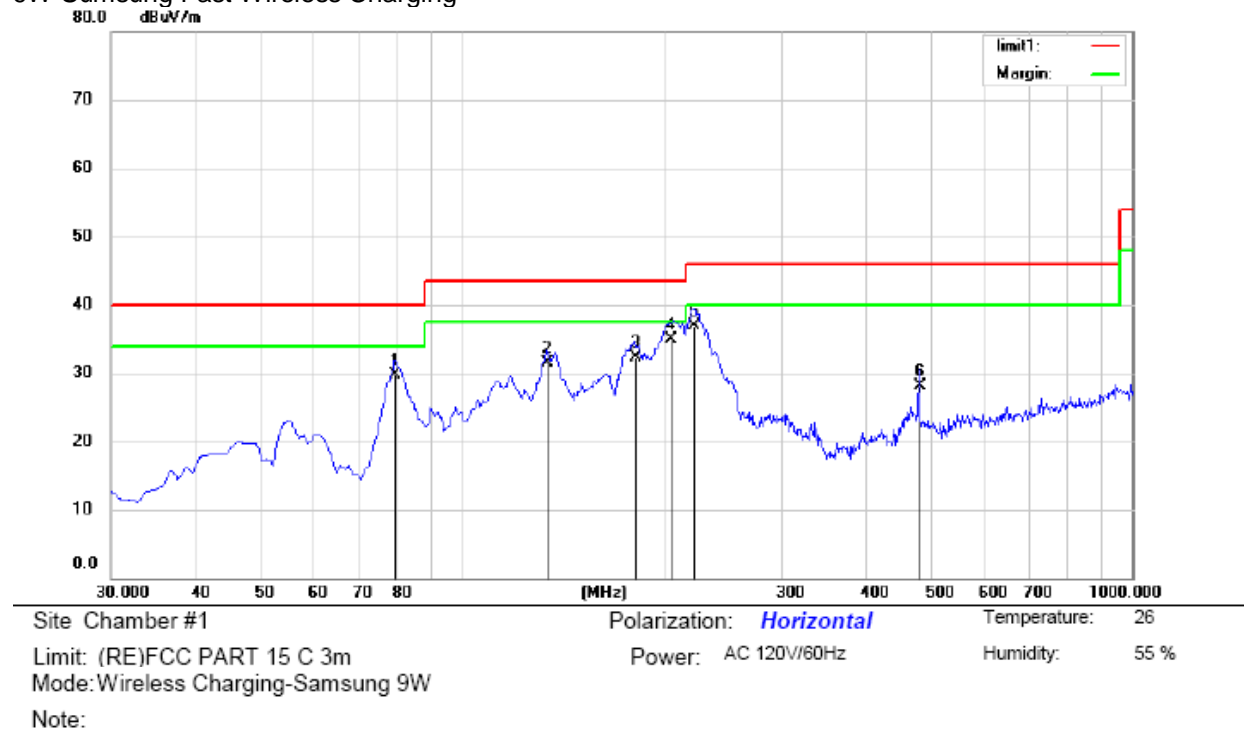
Site: Chamber #1  
 Limit: (RE)FCC PART 15 C 3m  
 Mode: Wireless Charging-Qi 5W  
 Note:

Polarization: **Vertical**  
 Power: AC 120V/60Hz  
 Temperature: 23  
 Humidity: 51 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		35.0048	43.60	-16.88	26.72	40.00	-13.28	QP		
2	*	44.5868	43.52	-14.38	29.14	40.00	-10.86	QP		
3		61.5618	43.69	-16.12	27.57	40.00	-12.43	QP		
4		99.8777	45.85	-16.28	29.57	43.50	-13.93	QP		
5		123.2654	48.60	-18.36	30.24	43.50	-13.26	QP		
6		218.3084	43.65	-15.49	28.16	46.00	-17.84	QP		

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.    Operator: Yaping shen

## 9W Sumsung Fast Wireless Charging



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		79.4700	52.36	-22.66	29.70	40.00	-10.30	QP		
2		133.7900	50.36	-18.86	31.50	43.50	-12.00	QP		
3		181.3200	51.69	-19.29	32.40	43.50	-11.10	QP		
4	*	204.6000	52.17	-17.30	34.87	43.50	-8.63	QP		
5		222.0600	53.55	-16.68	36.87	46.00	-9.13	QP		
6		482.0200	38.13	-9.98	28.15	46.00	-17.85	QP		

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.    Operator: Yaping shen



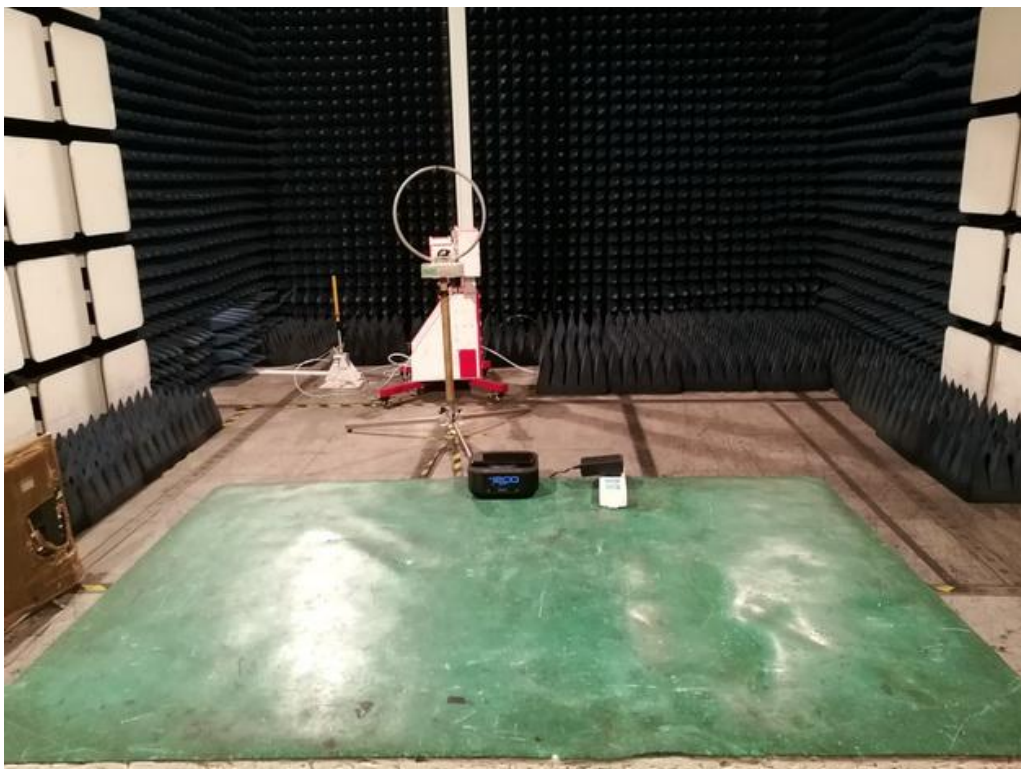
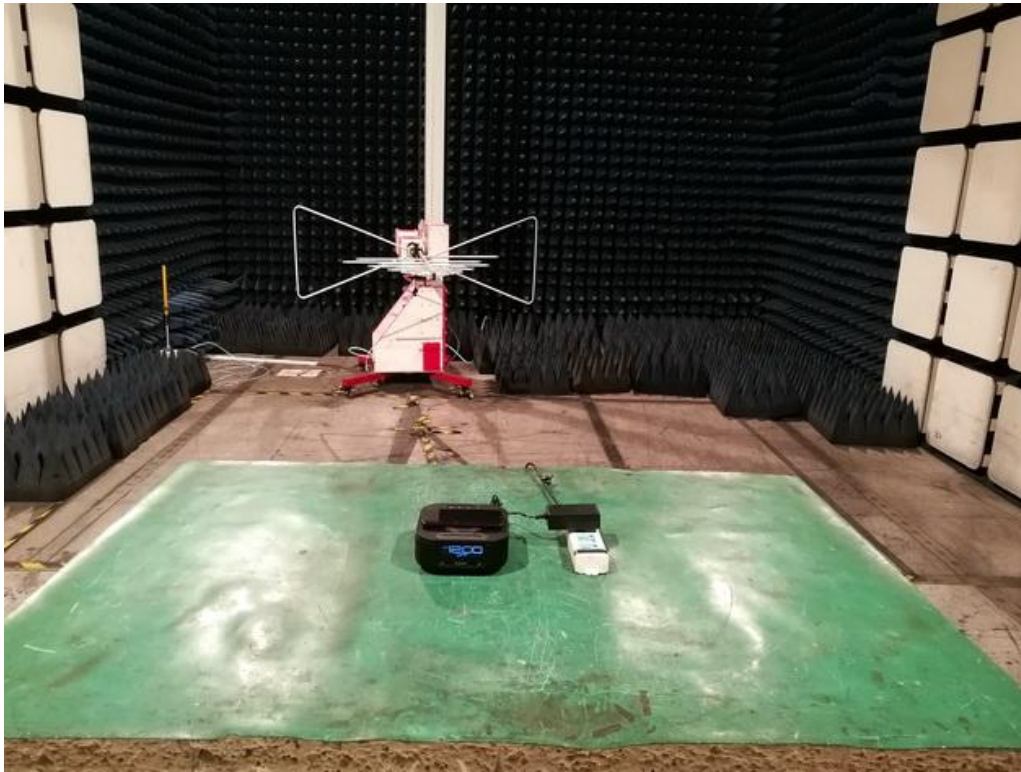
Site Chamber #1 Polarization: **Vertical** Temperature: 26  
 Limit: (RE)FCC PART 15 C 3m Power: AC 120V/60Hz Humidity: 55 %  
 Mode: Wireless Charging-Samsung 9W  
 Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	42.6100	47.25	-16.09	31.16	40.00	-8.84	QP		
2		51.3400	46.20	-15.59	30.61	40.00	-9.39	QP		
3		60.0700	45.99	-19.39	26.60	40.00	-13.40	QP		
4		146.4000	53.97	-21.66	32.31	43.50	-11.19	QP		
5		203.6300	50.14	-17.28	32.86	43.50	-10.64	QP		
6		220.1200	50.30	-16.75	33.55	46.00	-12.45	QP		

\*:Maximum data x:Over limit l:over margin Comment: Factor build in receiver. Operator: Yaping shen



## 6.6 Radiated Measurement Photos



## 7 20db Bandwidth

### 7.1 20dB Bandwidth Limit

None: for reporting purposed only.

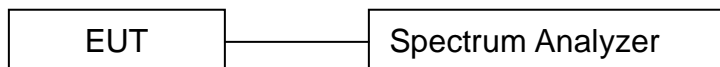
### 7.2 Test Instruments

Refer a test equipment and calibration data table in this test report.

### 7.3 Test Procedure

The bandwidth of the fundamental frequency was measured by spectrum analyzer with 10Hz RBW and 30Hz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

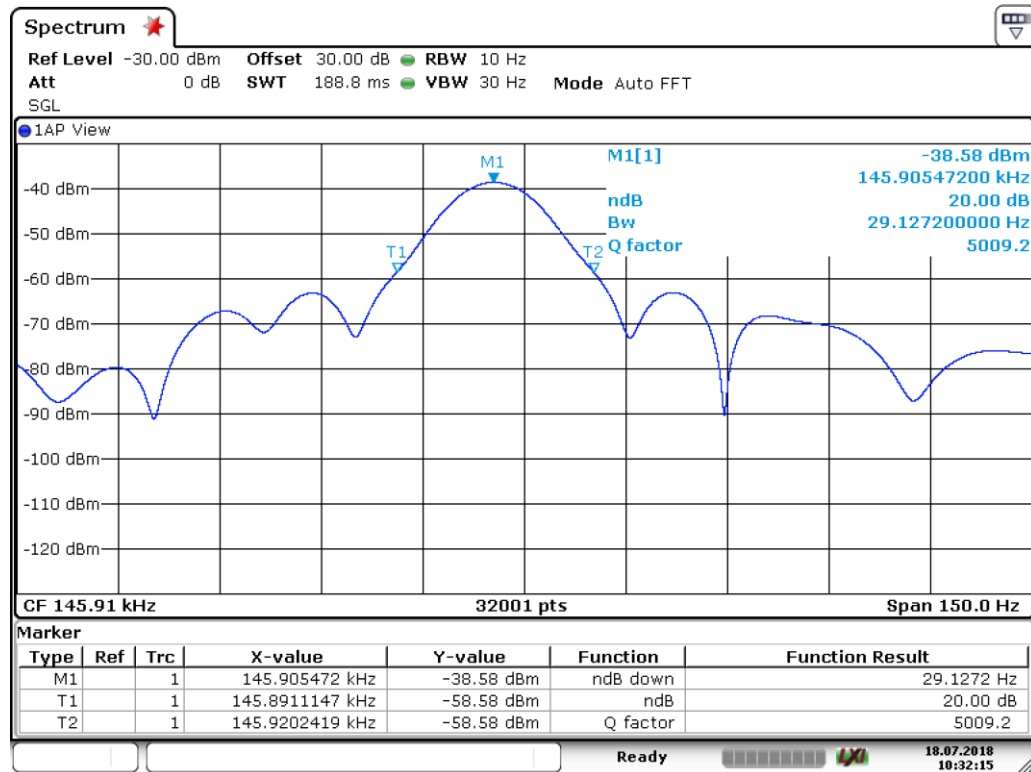
### 7.4 Test Setup



### 7.5 Test Result

Frequency (KHz)	20dB Bandwidth (Hz)	Results
145.91	29.13	PASS

## 20 dB Bandwidth Test plot



## **8 Antenna Application**

### **8.1 Antenna requirement**

For intentional device, according to FCC 47 CFR Section 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.

### **8.2 Result**

The EUT's antenna, permanent attached antenna, used an Induction coil and integrated on PCB, The antenna's gain meets the requirement.

## **9 Photos of EUT**

Please refer to external photos and internal photos.