



FCC TEST REPORT

FCC ID:2AS5I-SLCTNCC150

Product Name:	SLCT-NCC150 Wireless charging device
Trademark:	N/A
Model Number:	SLCT-NCC150 Wireless charging device SLCT-NCC150 10W
Prepared For :	shenzhen soling communication technology co.,ltd
Address :	Room 3101A, Tower A, Kejingji Binhe Times Square, Xiasha, Shatou Street, Futian District, Shenzhen, China
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Test Date:	Mar. 27, 2019 – Apr. 18, 2019
Date of Report :	Apr. 18, 2019
Report No.:	BCTC-FY190301423-2E



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TEST REPORT DECLARATION

Applicant : shenzhen soling communication technology co.,ltd
 Address : Room 3101A, Tower A, Kejingji Binhe Times Square, Xiasha, Shatou Street, Futian District, Shenzhen, China
 EUT Description : SLCT-NCC150 Wireless charging device
 Model Number : SLCT-NCC150 Wireless charging device
 Serial Model : SLCT-NCC150 10W
 Model Difference : The product is different for model number and outlook color.

Test Standards:

FCC Part 15 C

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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Prepared by(Engineer): Leke Xie

Leke Xie

Reviewer(Supervisor): Eric Yang

Eric Yang

Approved(Manager): Zero Zhou

Zero Zhou





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. Measurement Uncertainty

Available upon request.

1.3. Test Facility

Site Description
Name of Firm : Shenzhen BCTC Testing Co., Ltd.

Site Location : BCTC Building & 1-2F, East of B Building,
Pengzhou Industrial, Fuyuan 1st Road, Qiaotou
Community, Fuyong Street, Bao'an District,
Shenzhen, China

1.4. 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 : **SLCT-NCC150 Wireless charging device**

Applicant : **shenzhen soling communication technology co.,ltd**
Room 3101A, Tower A, Kejingji Binhe Times Square, Xiasha, Shatou Street, Futian District, Shenzhen, China

Manufacturer : **shenzhen soling communication technology co.,ltd**
Room 3101A, Tower A, Kejingji Binhe Times Square, Xiasha, Shatou Street, Futian District, Shenzhen, China

Model Number : SLCT-NCC150 Wireless charging device

Serial Model : SLCT-NCC150 10W

Model Difference : The product is different for model number and outlook color.

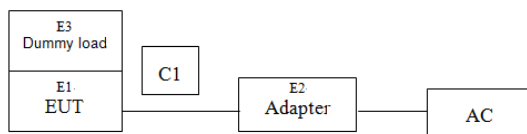
Power Supply : Input: DC12V/1.1A
Output: 10W

Work Frequency : 120-220KHz

2.2.Test mode

Test Modes	keeping TX+Charging mode
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2.3.Block Diagram of EUT Configuration



2.4.Test Conditions

Temperature: 23~26℃

Relative Humidity: 54~63 %



2.5. 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
E1	SLCT-NCC150 Wireless charging device	N/A	SLCT-NCC150 Wireless charging device	N/A	EUT
E2	Adapter	N/A	BCTC-003	N/A	Auxiliary
E3	Dummy load	N/A	DL01	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	1.0M	DC cable unshielded

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”.

3. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	Test Results
Conducted disturbance	Pass
Radiated disturbance	Pass

Remark: “N/A” means “Not applicable.”



4. TEST EQUIPMENT USED

4.1. For Conducted Emission Test

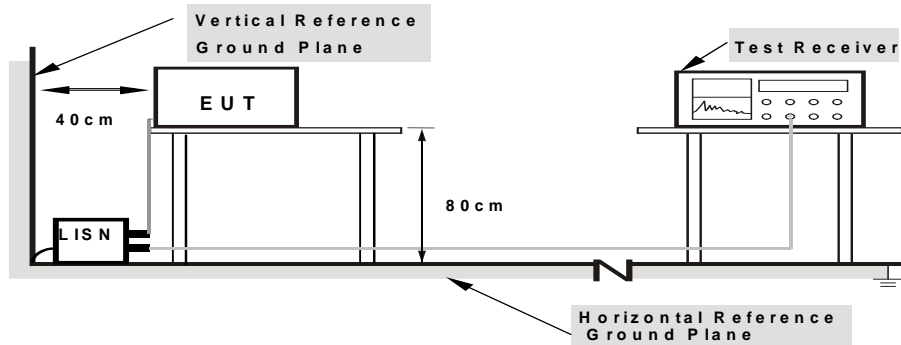
Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Test Receiver	R&S	ESR3	102075	2018.06.20	2019.06.20
2	LISN	SCHWARZBECK	NSLK8127	8127739	2018.06.19	2019.06.19
3	LISN	R&S	ENV216	101375	2018.06.20	2019.06.20
4	RF cables	Huber+Suhnar	9kHz-30MHz	B1702988-0008	2019.02.12	2020.02.12
5	Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

4.2. For Radiated Emission Measurement

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4407B	MY45109572	2018.06.20	2019.06.20
2	Test Receiver (9kHz-7GHz)	R&S	ESR7	101154	2018.06.20	2019.06.20
3	Bilog Antenna (30MHz-3GHz)	SCHWARZBECK	VULB9163	VULB9163-942	2018.06.23	2019.06.23
4	Horn Antenna (1GHz-18GHz)	SCHWARZBECK	BBHA9120D	1541	2018.06.23	2019.06.22
5	Horn Antenna (18GHz-40GHz)	SCHWARZBECK	BBHA9170	822	2018.08.06	2019.08.06
6	Amplifier (9kHz-6GHz)	SCHWARZBECK	BBV9744	9744-0037	2018.06.20	2019.06.20
7	Amplifier (0.5GHz-18GHz)	SCHWARZBECK	BBV9718	9718-309	2018.06.20	2019.06.20
8	Amplifier (18GHz-40GHz)	MITEQ	TTA1840-35-HG	2034381	2018.08.06	2019.08.06
9	Loop Antenna (9kHz-30MHz)	SCHWARZBECK	FMZB1519B	014	2018.06.23	2019.06.23
10	RF cables1 (9kHz-30MHz)	Huber+Suhnar	9kHz-30MHz	B1702988-0008	2019.02.12	2020.02.12
11	RF cables2 (30MHz-1GHz)	Huber+Suhnar	30MHz-1GHz	1486150	2019.03.27	2020.03.27
12	RF cables3 (1GHz-40GHz)	Huber+Suhnar	1GHz-40GHz	1607106	2018.06.19	2019.06.19
13	Power Metter	Keysight	E4419	\	2018.06.15	2019.06.15
14	Power Sensor (AV)	Keysight	E9 300A	\	2018.06.15	2019.06.15
15	Signal Analyzer 20kHz-26.5GHz	KEYSIGHT	N9020A	MY49100060	2018.08.14	2019.08.13
16	Test Receiver 9kHz-40GHz	R&S	FSP40	100550	2018.06.13	2019.06.12
17	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
18	Software	Frad	EZ-EMC	FA-03A2 RE	\	\

5. CONDUCTED EMISSION TEST

5.1. Block Diagram of Test Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

5.2. Test Standard

FCC§15.207

5.3. Conducted Emission Limit

Frequency MHz	Limits dB(μV)	
	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.

5.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet FCC Part 15.207 requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.



5.5. Operating Condition of EUT

- 5.5.1. Setup the EUT and simulators as shown in Section 5.1.
- 5.5.2. Turn on the power of all equipments.
- 5.5.3. Let the EUT work in test modes (EUT Working) and test it.

5.6. 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 ESHS30) 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 ESHS30) is set at 10KHz.

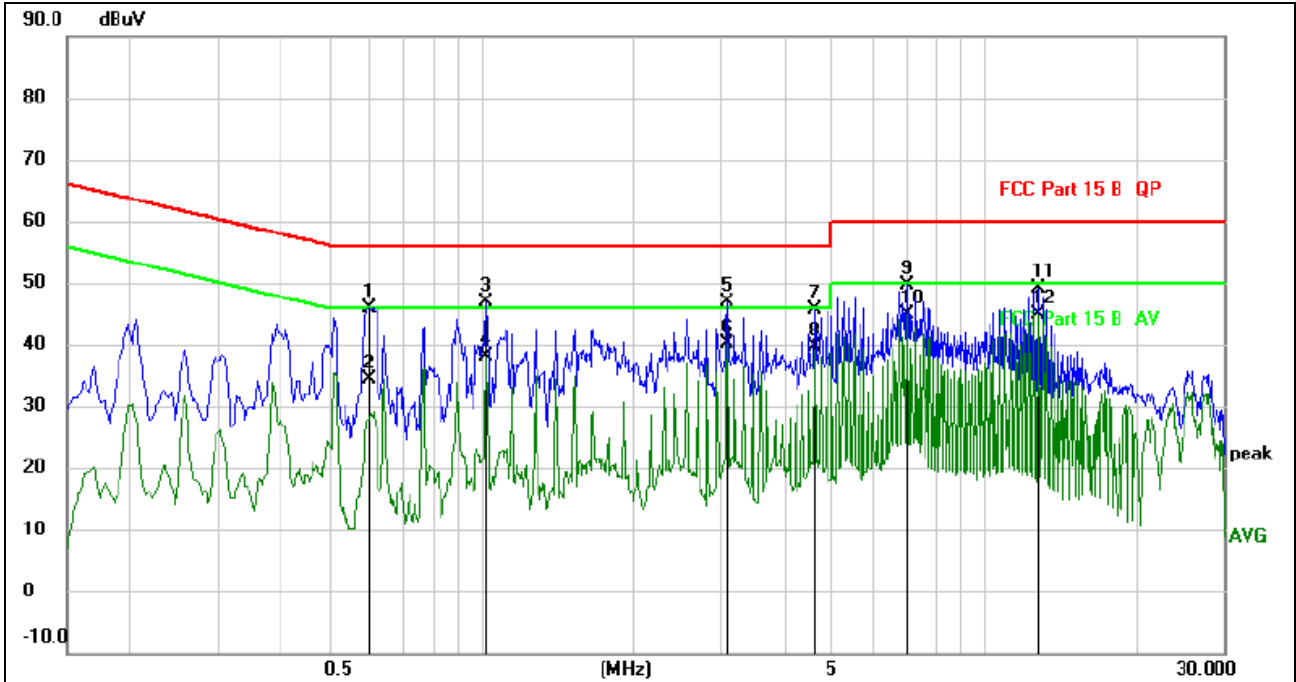
We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report.

5.7. Test Result

PASS



EUT:	SLCT-NCC150 Wireless charging device	Model Name :	SLCT-NCC150 Wireless charging device
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	L
Test Voltage :	AC120V/60Hz	Test Mode:	Normal



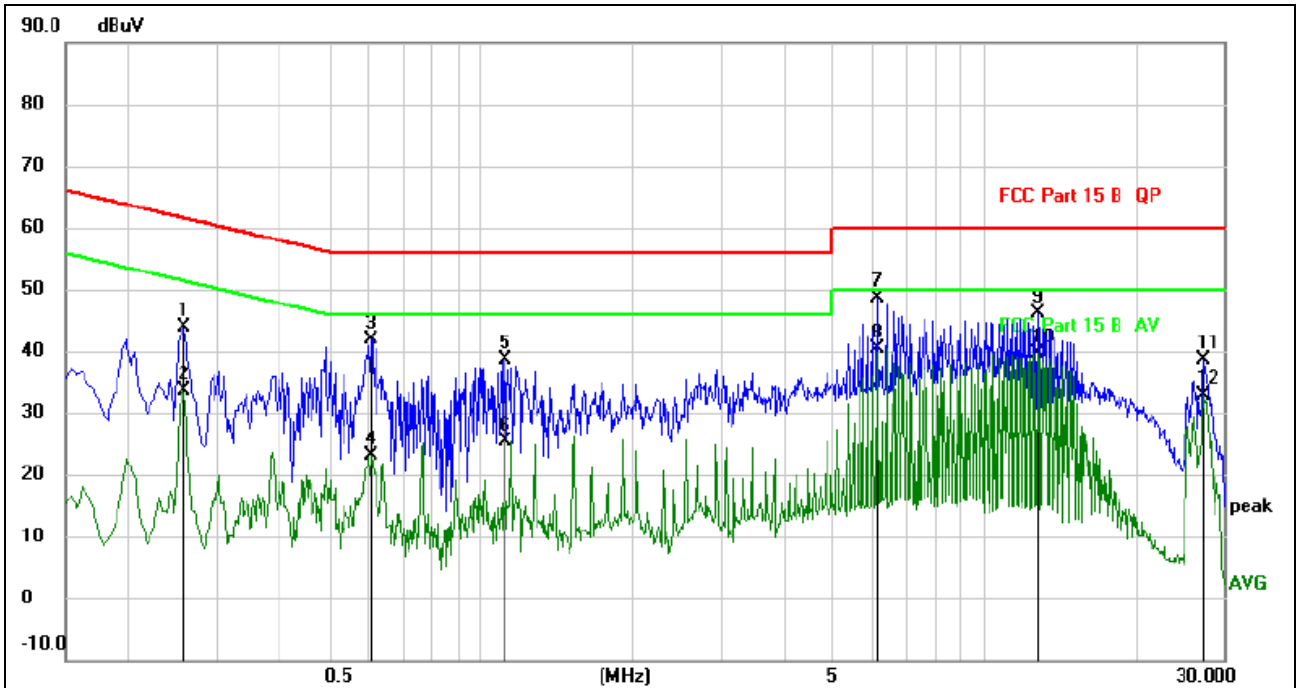
Remark:

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.5938	36.00	9.97	45.97	56.00	-10.03	QP	
2		0.5938	24.39	9.97	34.36	46.00	-11.64	AVG	
3		1.0260	37.36	9.57	46.93	56.00	-9.07	QP	
4		1.0260	28.48	9.57	38.05	46.00	-7.95	AVG	
5		3.0739	37.19	9.67	46.86	56.00	-9.14	QP	
6		3.0739	30.46	9.67	40.13	46.00	-5.87	AVG	
7		4.6100	35.79	9.77	45.56	56.00	-10.44	QP	
8		4.6100	29.76	9.77	39.53	46.00	-6.47	AVG	
9		7.0419	40.03	9.72	49.75	60.00	-10.25	QP	
10		7.0419	35.13	9.72	44.85	50.00	-5.15	AVG	
11		12.8057	39.33	9.70	49.03	60.00	-10.97	QP	
12	*	12.8057	35.26	9.70	44.96	50.00	-5.04	AVG	



EUT:	SLCT-NCC150 Wireless charging device	Model Name:	SLCT-NCC150 Wireless charging device
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	N
Test Voltage :	AC120V/60Hz	Test Mode:	Normal



Remark:

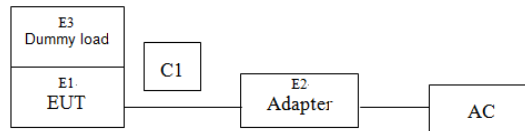
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2580	34.34	9.53	43.87	61.50	-17.63	QP	
2		0.2580	23.99	9.53	33.52	51.50	-17.98	AVG	
3		0.6060	31.89	9.98	41.87	56.00	-14.13	QP	
4		0.6060	13.14	9.98	23.12	46.00	-22.88	AVG	
5		1.1220	29.12	9.57	38.69	56.00	-17.31	QP	
6		1.1220	15.74	9.57	25.31	46.00	-20.69	AVG	
7		6.1500	38.94	9.75	48.69	60.00	-11.31	QP	
8	*	6.1500	30.73	9.75	40.48	50.00	-9.52	AVG	
9		12.8059	36.47	9.70	46.17	60.00	-13.83	QP	
10		12.8059	29.96	9.70	39.66	50.00	-10.34	AVG	
11		27.4100	28.79	9.72	38.51	60.00	-21.49	QP	
12		27.4100	23.11	9.72	32.83	50.00	-17.17	AVG	

6. RADIATED EMISSION MEASUREMENT

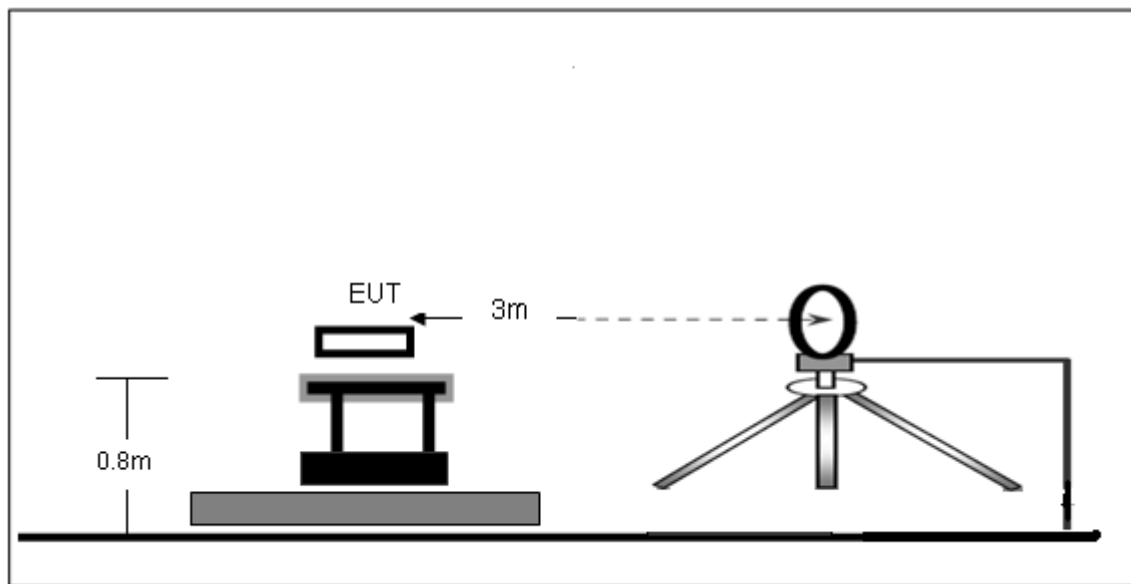
6.1. Block Diagram of Test Setup

6.1.1. Block Diagram of connection between the EUT and the simulators

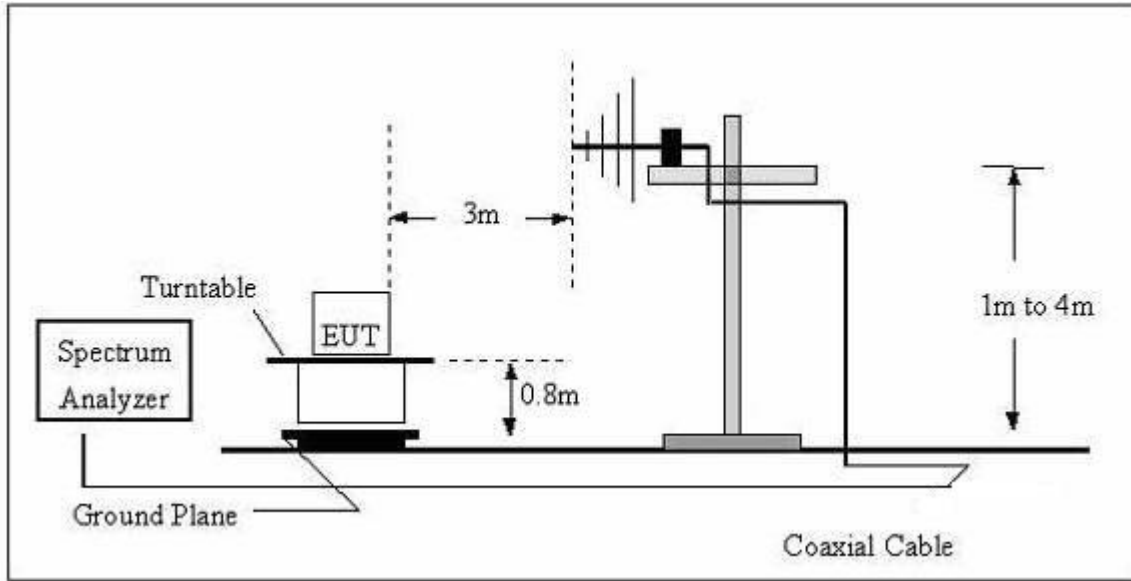


6.1.2. Anechoic Chamber Test Setup Diagram

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



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.205 limits.

6.2. Test Standard and Limit

FCC §15.209; §15.205

Test Standard	FCC Part15 C Section 15.209 and 15.205					
	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)	
Test Limit	0.009MHz~0.490MHz	2400/F(kHz)	-	-	300	
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30	
	1.705MHz-30MHz	30	-	-	30	
	30MHz~88MHz	100	40.0	Quasi-peak	3	
	88MHz~216MHz	150	43.5	Quasi-peak	3	
	216MHz~960MHz	200	46.0	Quasi-peak	3	
	Above 1000MHz		500	54.0	Quasi-peak	3
			-	74.0	Peak	3



6.3.EMI Test Receiver Setup

The system was investigated from 9kHz to1GHz.

During the radiated emission test, the EMI test receiver setup was set with the following configurations:

Frequency Range	RBW	Video B/W	Detector
9 kHz – 150 kHz	200 kHz	1 kHz	QP
150 kHz – 30MHz	9kHz	30kHz	QP
30 MHz – 1000 MHz	120 kHz	300 kHz	QP

Note: For the frequency bands 9-90 kHz and 110-490 kHz, the test was based on average detector.

6.4.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 a 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.

6.5.Test Result

PASS



9kHz-30MHz

EUT:	SLCT-NCC150 Wireless charging device	Model Name:	SLCT-NCC150 Wireless charging device
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Polarization :	Horizontal
Test Voltage :	AC 120V/60Hz		
Test Mode :	Normal		

Frequency (kHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
24.8500	39.43	20.15	59.58	139.70	-80.12	PK
24.8500	36.13	20.15	56.28	119.70	-63.42	AV
56.7800	50.61	20.33	70.94	132.52	-61.58	PK
56.7800	46.37	20.33	66.70	112.52	-45.82	AV
121.6900	68.21	20.55	88.76	125.90	-37.14	PK
121.6900	63.68	20.55	84.23	105.90	-21.67	AV
685.1000	31.14	20.64	51.78	70.89	-19.11	QP
965.6100	35.12	21.26	56.38	67.91	-11.53	QP
1222.3300	24.67	22.32	46.99	65.86	-18.87	QP

Note:

Pre-scan in the all of mode, the worst case in of was recorded.

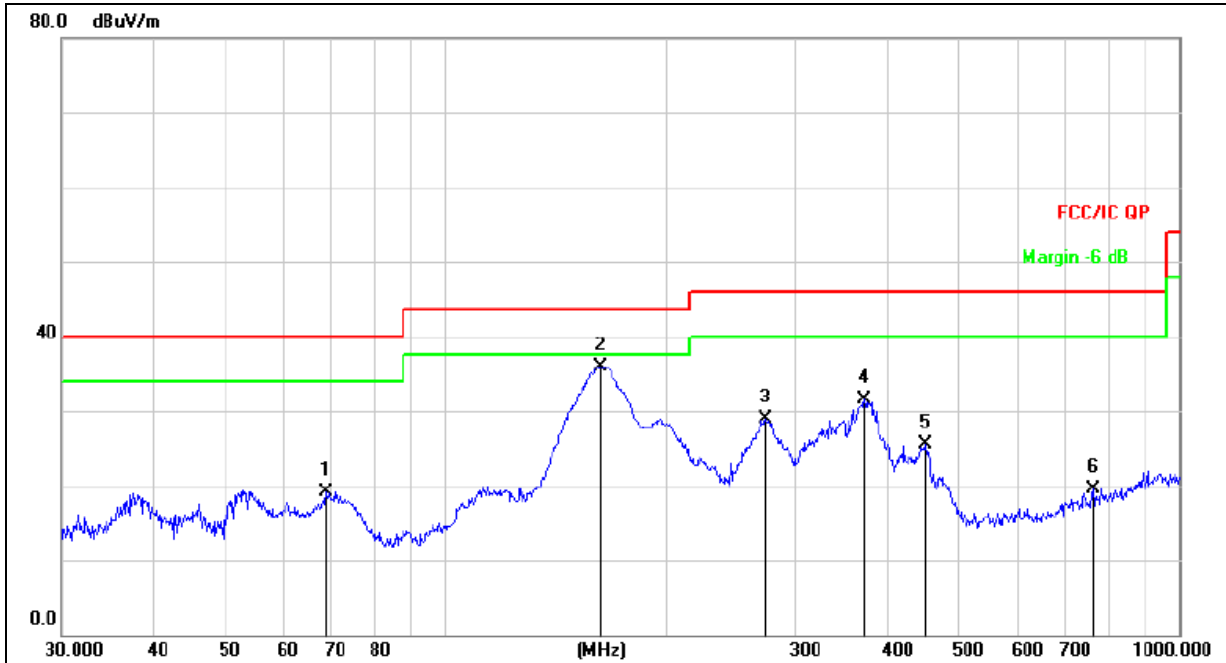
Factor = antenna factor + cable loss – pre-amplifier.

Margin = Emission Level- Limit.



30MHz-1GHz

EUT:	SLCT-NCC150 charging device	Wireless	Model Name:	SLCT-NCC150 Wireless charging device
Temperature:	26 °C		Relative Humidity:	54%
Pressure:	101kPa		Polarization :	Horizontal
Test Voltage :	AC120V/60Hz			
Test Mode :	Normal			

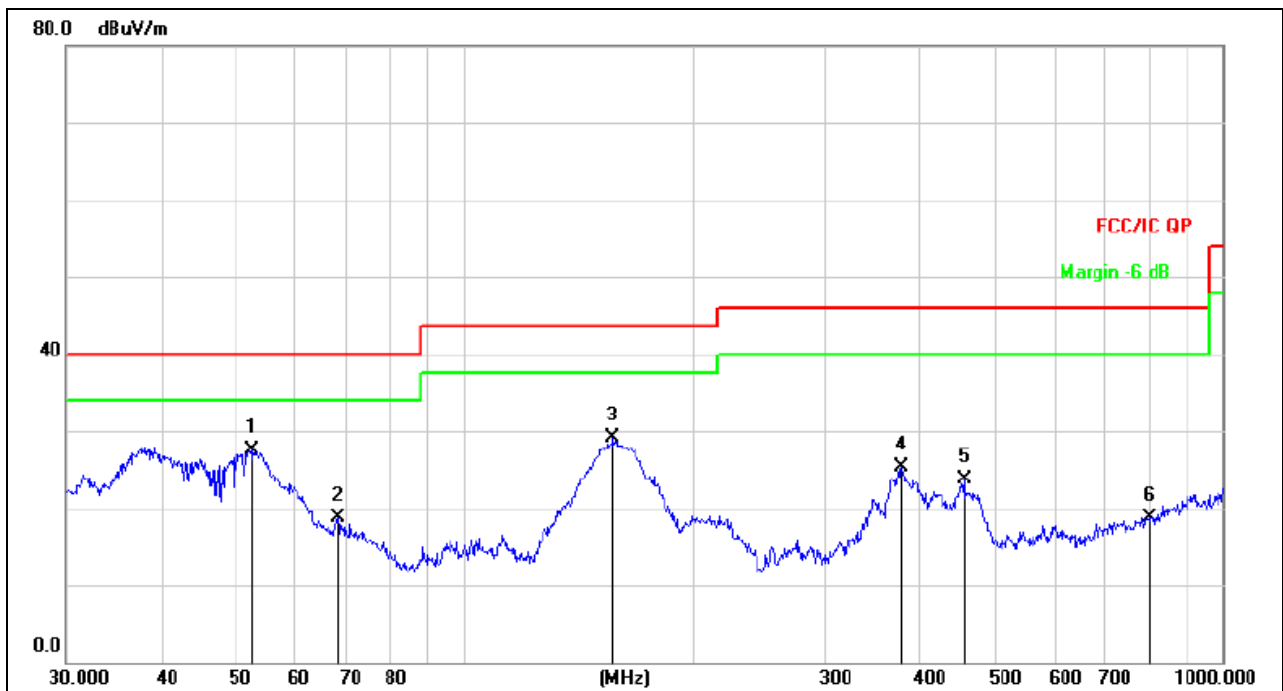


Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		68.8721	37.13	-17.93	19.20	40.00	-20.80	QP
2	*	162.6106	54.63	-18.69	35.94	43.50	-7.56	QP
3		273.2341	43.34	-14.43	28.91	46.00	-17.09	QP
4		372.0045	43.22	-11.73	31.49	46.00	-14.51	QP
5		449.5558	35.39	-9.98	25.41	46.00	-20.59	QP
6		763.3757	23.74	-4.15	19.59	46.00	-26.41	QP



EUT:	SLCT-NCC150 Wireless charging device	Model Name:	SLCT-NCC150 Wireless charging device
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Polarization :	Vertical
Test Voltage :	AC120V/60Hz		
Test Mode :	Normal		



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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1	*	52.5753	42.57	-15.12	27.45	40.00	-12.55	QP
2		68.3907	36.52	-17.82	18.70	40.00	-21.30	QP
3		157.5588	48.07	-19.02	29.05	43.50	-14.45	QP
4		377.2591	36.95	-11.61	25.34	46.00	-20.66	QP
5		455.9058	33.47	-9.85	23.62	46.00	-22.38	QP
6		801.7862	22.36	-3.60	18.76	46.00	-27.24	QP



7. BANDWIDTH TEST

1. Set RBW = 3 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

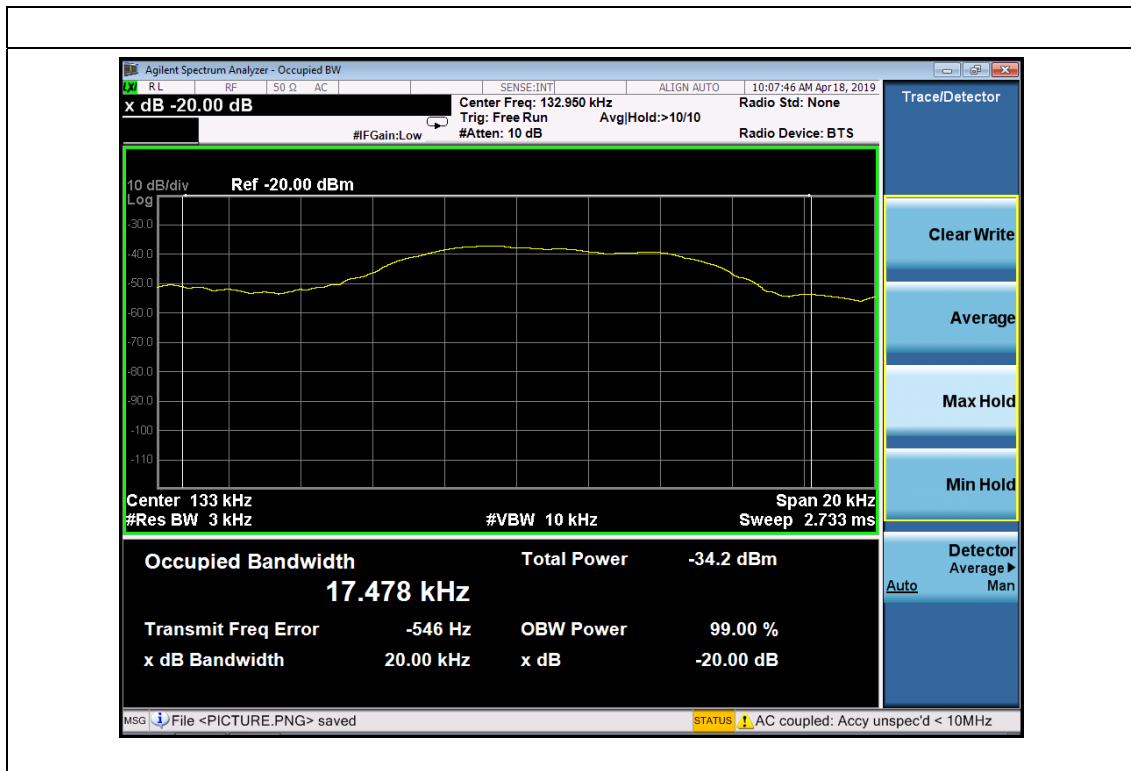
TEST SETUP





EUT:	SLCT-NCC150 Wireless charging device	Model Name:	SLCT-NCC150 Wireless charging device
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa		

Frequency (KHz)	20dB bandwidth (KHz)	99% bandwidth (KHz)	Result
133	20.00	17.478	Pass





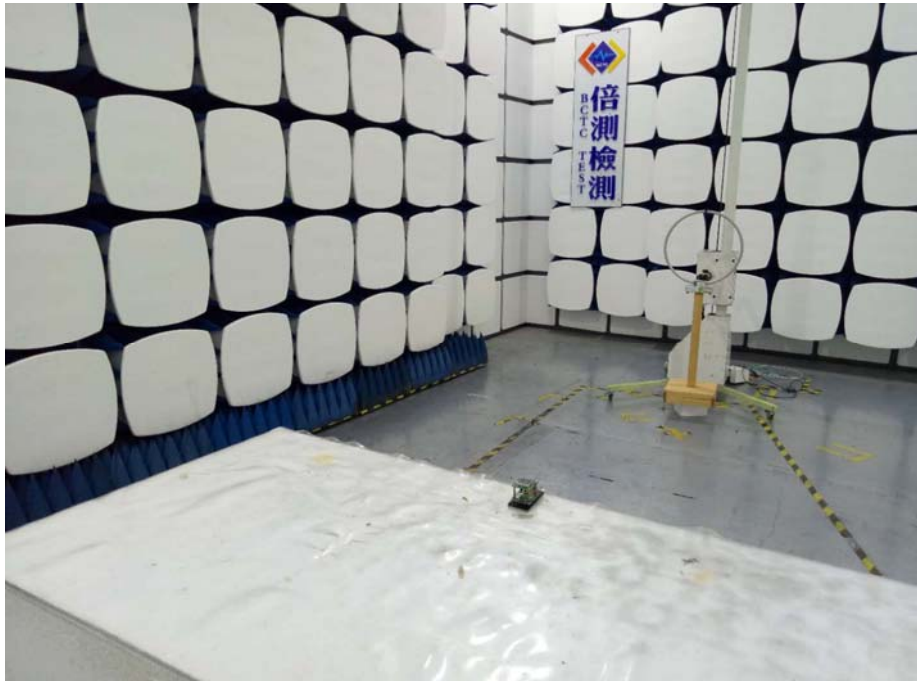
8. EUT TEST PHOTOS

Conducted Measurement Photos





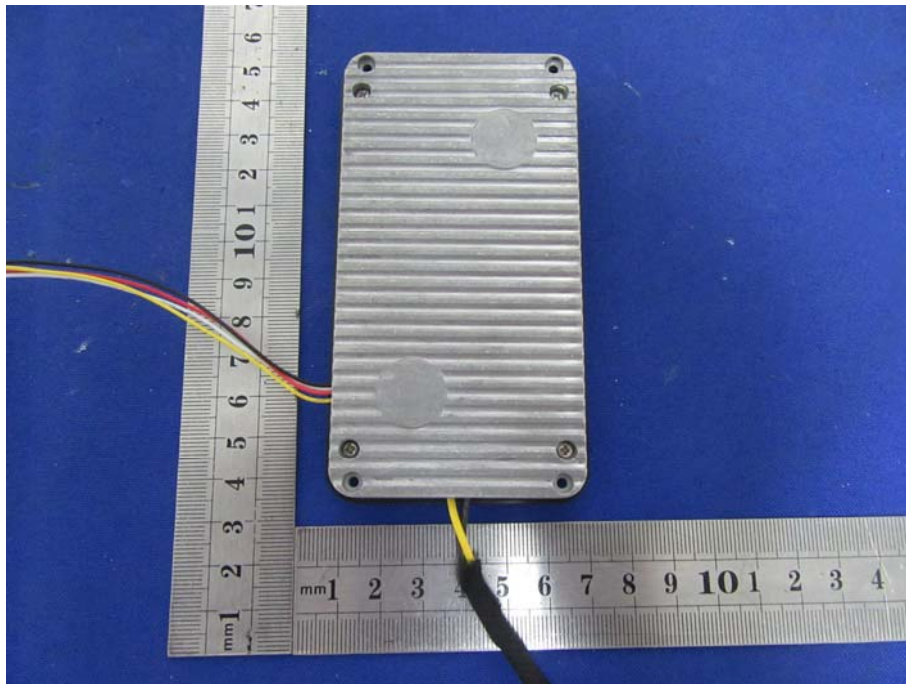
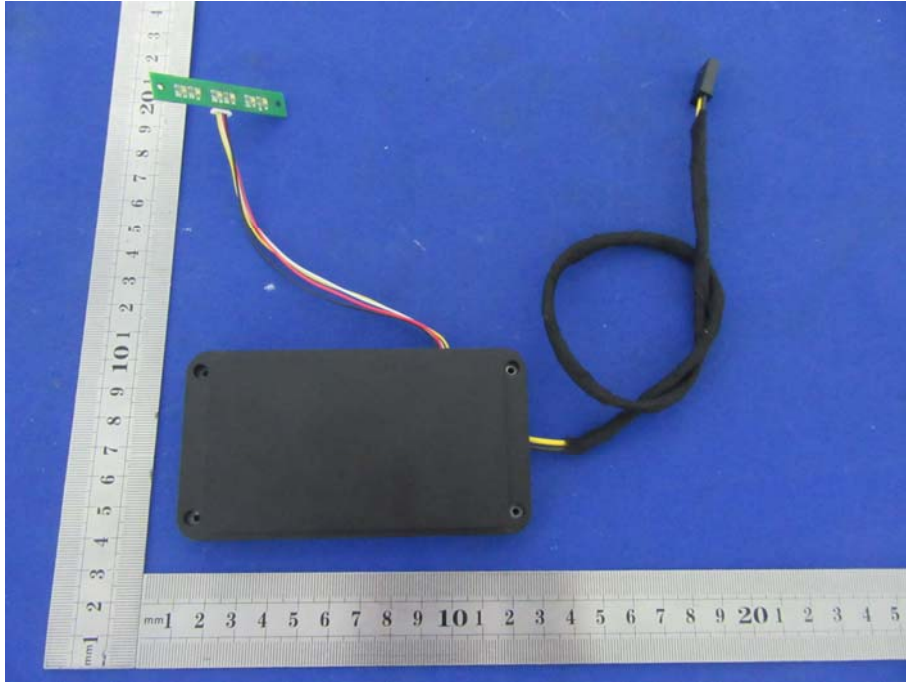
Radiated Measurement Photos
9KHz-30MHz



30MHz-1GHz



9. EUT PHOTOS



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