FCC Test Report

Equipment	:	**WIRELESS CHARGING PAD**
Brand Name	:	**VERTU**
Model No.	:	**AC-35V**
FCC ID	:	**P7Q-AC35V**
Standard	:	**47 CFR FCC Part 15.209**
Operating Band	:	**110-205 kHz**
FCC Classification	:	**DCD (for 110-205kHz only)**
Equipment Type	:	**Wireless Power Transfer for Consumer Devices**
Output power	:	**5W (from Each Primary Coil)**
Applicant	:	**VERTU CORPORATION LTD. Beacon Hill Road, Church Crookham, Hampshire, GU52 8DY, UK**
Manufacturer	:	**Fugang Electric (Kunshan) Co.,Ltd. No. 6, Zheng Wei West Road, Jin Xi Town, Kun Shan City, Jiang Su Province, China**

The product sample received on May 22, 2014 and completely tested on May 23, 2014. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2009 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

Wayne Hsu / Assistant Manager

Testing Laboratory
1190

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Summary of Test Result

Conformance Test Specifications					
Report Clause	**Ref. Std. Clause**	**Description**	**Measured**	**Limit**	**Result**
1.1.2	15.203	Antenna Requirement	Antenna connector mechanism complied	FCC 15.203	Complied
3.1	15.207	AC Power-line Conducted Emissions	[dBuV]:15.07MHz 43.01 (Margin 16.99dB) – QP 36.16 (Margin 13.84dB) - AV	FCC 15.207	Complied
3.2	15.209	Transmitter Radiated Emissions	[dBuV/m at 3m]:117.30MHz 34.37 (Margin 9.13dB) - QP	FCC 15.209	Complied
3.3	15.215(c)	Emission Bandwidth	20dB Bandwidth 2.64 [kHz]	N/A	Complied

Revision History

Report No.	Version	Description	Issued Date
FR442944	Rev. 01	Initial issue of report	Jun. 09, 2014

1 General Description

1.1 Information

1.1.1 General Information

Wireless Power Transfer General Information			
Frequency Range	**Modulation**	**Charging Freq. (kHz)**	**Field Strength (dBuV/m)**
110-205 kHz	ASK	110-205	74.55
Power Transfer Method	**Output power from each primary coil**	**Max. coupling surface area**	**Charging Method**
Magnetic induction and only single primary coil coupling secondary coil	5W	40 cm^2	Client directly contact
Note 1: Field strength performed peak level at 3m.			

1.1.2 Antenna Information

Antenna Category	
☐	Equipment placed on the market without antennas
☒	Integral antenna (antenna permanently attached)
☐	External antenna (dedicated antennas)

1.1.3 Type of EUT

Identify EUT	
EUT Serial Number	N/A
Presentation of Equipment	☒ Production ; ☐ Pre-Production ; ☐ Prototype
Type of EUT	
☒	Stand-alone
☐	Combined (EUT where the radio part is fully integrated within another device) Combined Equipment - Brand Name / Model No.: …
☐	Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.: …
☐	Other:

1.1.4 Test Signal Duty Cycle

Operated Mode for Worst Duty Cycle	
☐	Operated normally mode for worst duty cycle
☒	Operated test mode for worst duty cycle
Test Signal Duty Cycle (x)	
☒	100%

1.1.5 EUT Operational Condition

Supply Voltage	☒ AC mains	☐ DC	
Type of DC Source	☐ Internal DC supply	☒ External DC adapter	☐ Battery
Test Voltage	☒ Vnom (5.00 V)	☒ Vmax (5.25 V)	☒ Vmin (4.75 V)
Test Climatic	☒ Tnom (25°C)	☒ Tmax (45°C)	☒ Tmin (-5°C)

1.2 Accessories and Support Equipment

Accessories				
AC Adapter	Brand Name	VERTU	Model Name	AC-32V
	Power Rating	I/P: 100-240Vac 0.45A ; O/P: 5V⎓2A		
USB Cable	Brand Name	VERTU		
	Model Name	CA-225DV fixed		
	Signal Line	1.5 meter, D-shielded cable, w/o ferrite core		

Support Equipment - RF Conducted and Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Smartphone	Vertu	SIGNATURE TOUCH(RM-980V)	P7QRM-980V

Support Equipment – Conduction & Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Smartphone	Vertu	SIGNATURE TOUCH(RM-980V)	P7QRM-980V
2	Notebook	DELL	E5530	DoC

1.3 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2009

1.4 Testing Location Information

Testing Location					
☒	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973			
Test Condition		**Test Site No.**	**Test Engineer**	**Test Environment**	
AC Conduction		CO04-HY	Zeus	23.0°C / 55%	
RF Conducted		TH01-HY	Howard	20.2°C / 64%	
Radiated Emission		03CH02-HY	Hunter	23.0°C / 55%	

1.5 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Uncertainty		
Test Item		**Uncertainty**
AC power-line conducted emissions		±2.26 dB
Emission bandwidth		±1.42 %
Unwanted emissions, conducted	9 – 150 kHz	±0.38 dB
	0.15 – 30 MHz	±0.42 dB
	30 – 1000 MHz	±0.51 dB
All emissions, radiated	9 – 150 kHz	±2.49 dB
	0.15 – 30 MHz	±2.28 dB
	30 – 1000 MHz	±2.56 dB
Temperature		±0.8 °C
Humidity		±3 %
DC and low frequency voltages		±3 %
Time		±1.42 %
Duty Cycle		±1.42 %

2 Test Configuration of EUT

2.1 The Worst Case Configuration

Modulation Mode	Field Strength (dBuV/m at 3m)
Charging	74.55
Wireless charger were performed all charging conditions including variable loading and non-charging operation, the worst mode is full charging loading.	

2.2 The Worst Charger Frequencies Configuration

Modulation Mode	Charger Frequencies (kHz)
Charging	139.45 kHz (F1)
Wireless charger frequencies are variable frequency range (110-205 kHz) and depend on charging loading. The charging frequency is 139.45 kHz.	

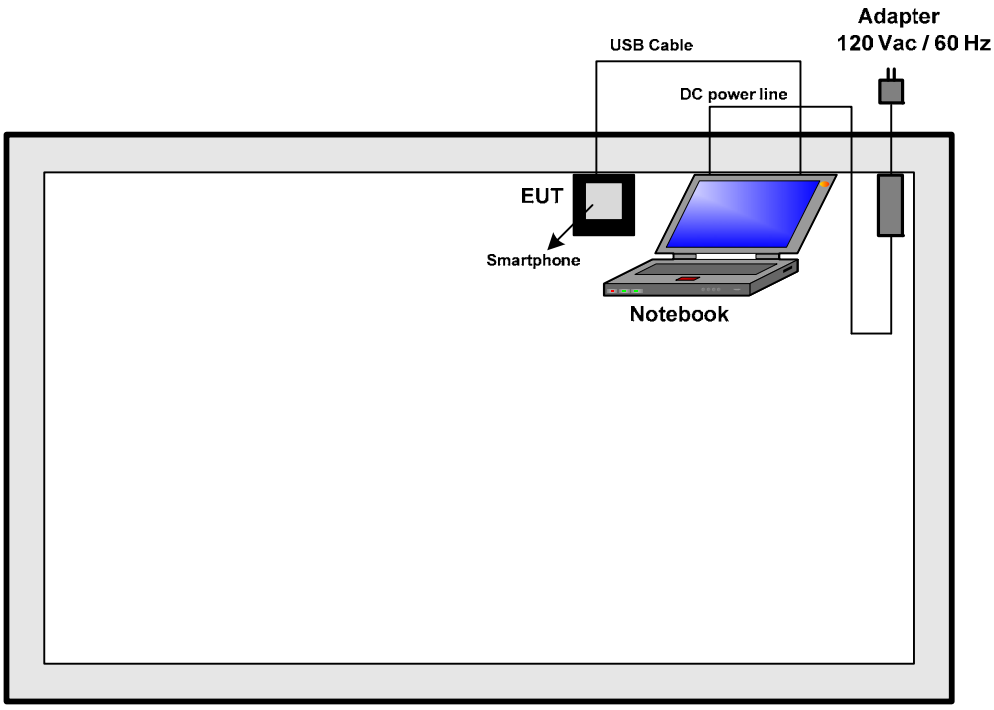
2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	Operating Mode Description
1	EUT with Notebook via USB cable
2	EUT via Adapter Charging
	For operating mode 1 was the worst case and it was recorded in this test report.

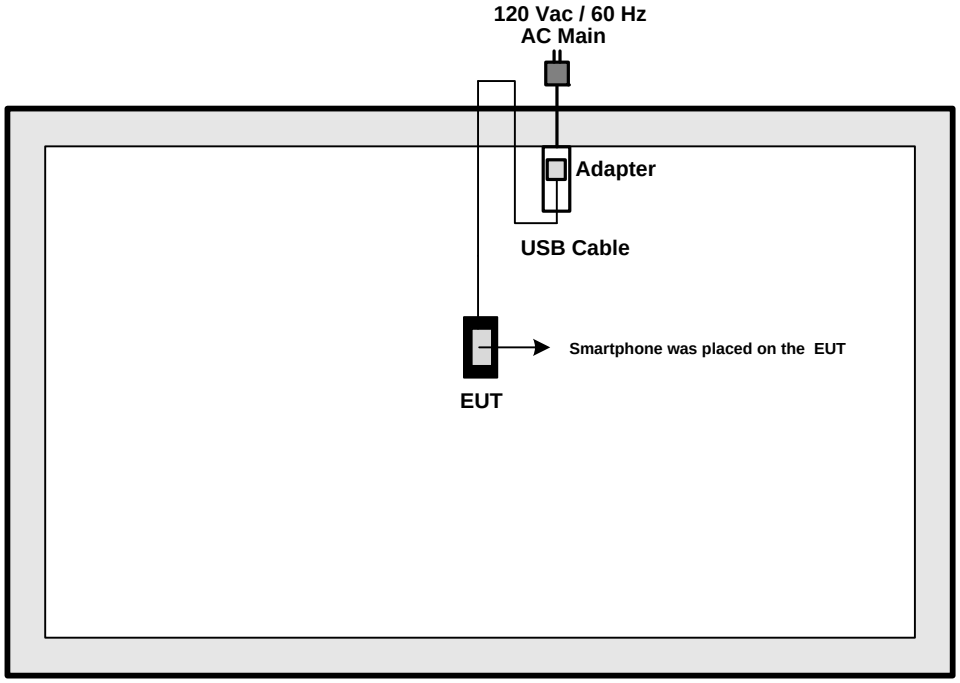
The Worst Case Mode for Following Conformance Tests			
Tests Item			Transmitter Radiated Emissions, Emission Bandwidth
Test Condition			Radiated measurement
User Position			☒ EUT will be placed in fixed position at X plane.
X Plane	**Y Plane**	**Z Plane**	☐ EUT will be placed in mobile position and operating multiple positions. EUT shall be performed two orthogonal planes.
			☐ EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions. EUT shall be performed two or three orthogonal planes.
Operating Mode <30 MHz			☒ 2. EUT via Adapter Charging
Operating Mode > 30 MHz			☒ 1. EUT with Notebook via USB cable
			☒ 2. EUT via Adapter Charging
			For operating mode 1 was the worst case and it was recorded in this test report.
Modulation Mode			Charging

2.4 Test Setup Diagram

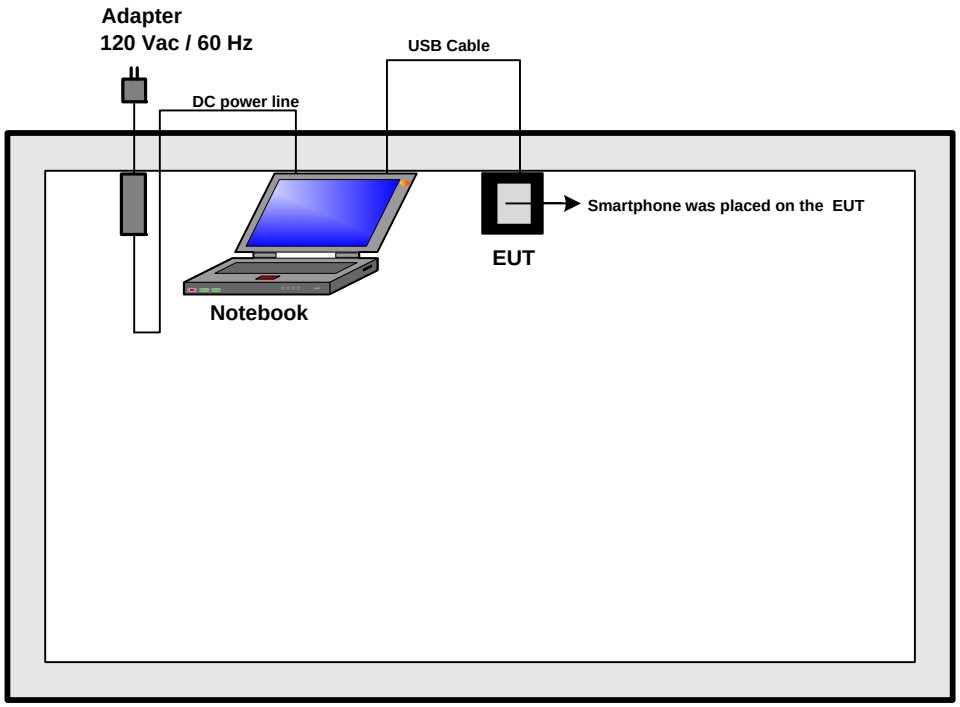
Test Setup Diagram – AC Line Conducted Emission Test mode 1



Test Setup Diagram - Radiated Test (9kHz~30MHz) mode 2



Test Setup Diagram - Radiated Test (30MHz~1GHz) mode 1



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

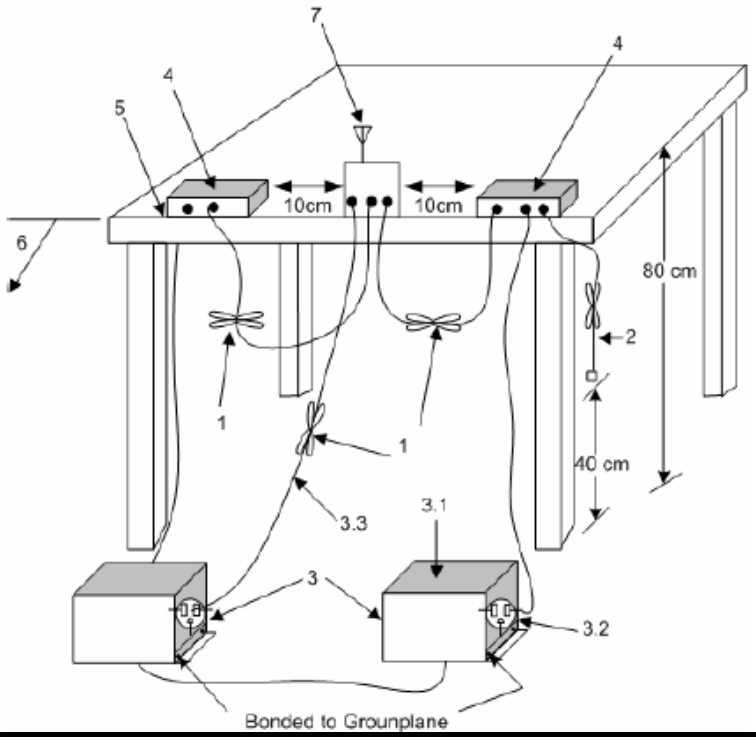
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method	
☒	Refer as ANSI C63.10-2009, clause 6.2 for AC power-line conducted emissions.
☒	If AC conducted emissions fall in operating band, then following below test method confirm final result.
☐	Accept measurements done with a suitable dummy load replacing the antenna under the following conditions: (1) Perform the AC line conducted tests with the antenna connected to determine compliance with FCC 15.207 limits outside the transmitter's fundamental emission band; (2) Retest with a dummy load to determine compliance with FCC 15.207 limits within the transmitter's fundamental emission band.
☒	For a device with a permanent antenna operating at or below 30 MHz, accept measurements done with a suitable dummy load, in lieu of the permanent antenna under the following conditions: (1) Perform the AC line conducted tests with the permanent antenna to determine compliance with the FCC 15.207 limits outside the transmitter's fundamental emission band; (2) Retest with a dummy load in lieu of the permanent antenna to determine compliance with the FCC 15.207 limits within the transmitter's fundamental emission band.

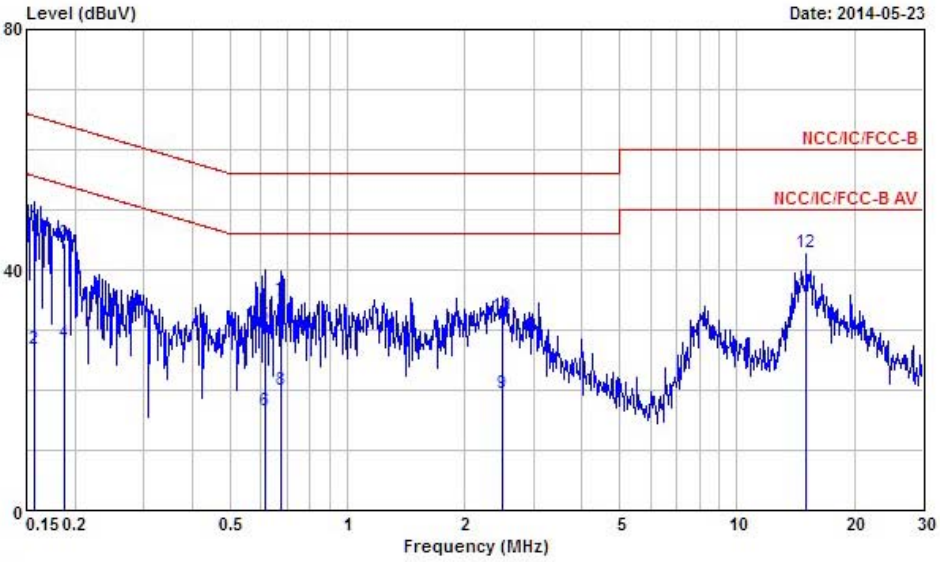
3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

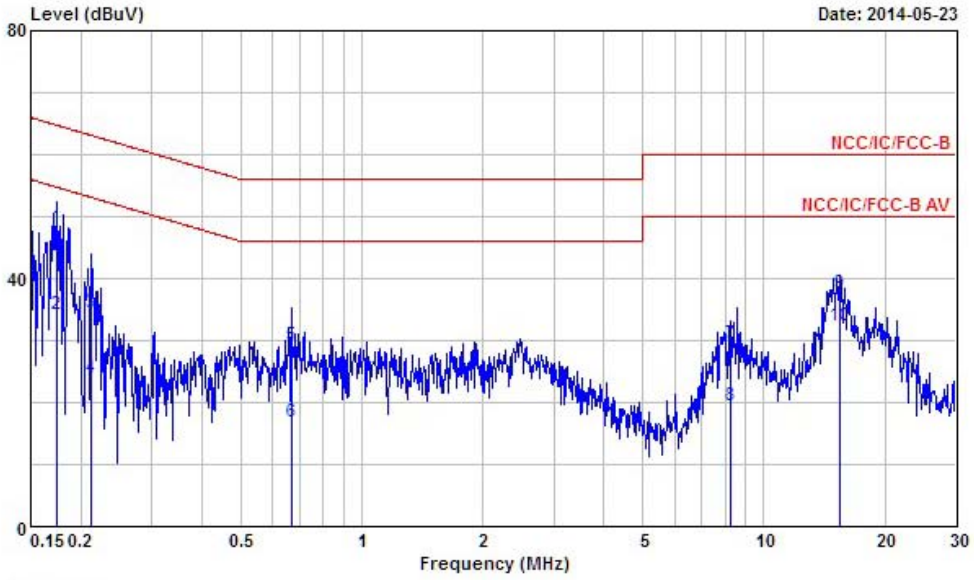
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	EUT with Notebook via USB cable		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1573260	47.07	-18.53	65.60	46.69	0.02	0.36	QP
2	0.1573260	26.73	-28.87	55.60	26.35	0.02	0.36	Average
3	0.1883800	44.38	-19.73	64.11	43.89	0.02	0.47	QP
4	0.1883800	27.78	-26.33	54.11	27.29	0.02	0.47	Average
5	0.6139960	30.74	-25.26	56.00	30.01	0.04	0.69	QP
6	0.6139960	16.60	-29.40	46.00	15.87	0.04	0.69	Average
7	0.6754350	34.72	-21.28	56.00	33.97	0.04	0.71	QP
8	0.6754350	19.92	-26.08	46.00	19.17	0.04	0.71	Average
9	2.500	19.48	-26.52	46.00	18.64	0.07	0.77	Average
10	2.500	32.47	-23.53	56.00	31.63	0.07	0.77	QP
11 @	15.070	36.16	-13.84	50.00	35.09	0.27	0.80	Average
12	15.070	43.01	-16.99	60.00	41.94	0.27	0.80	QP

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)
Note 3: When emissions are in operating band over limits, retest with a dummy load for final in-band results.

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	EUT with Notebook via USB cable		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1739880	48.23	-16.54	64.77	47.78	0.03	0.42	QP
2	0.1739880	34.19	-20.58	54.77	33.74	0.03	0.42	Average
3	0.2116700	34.58	-28.56	63.14	34.04	0.03	0.51	QP
4	0.2116700	24.03	-29.11	53.14	23.49	0.03	0.51	Average
5	0.6683160	29.21	-26.79	56.00	28.45	0.05	0.71	QP
6	0.6683160	16.85	-29.15	46.00	16.09	0.05	0.71	Average
7	8.280	29.50	-30.50	60.00	28.55	0.17	0.78	QP
8	8.280	19.35	-30.65	50.00	18.40	0.17	0.78	Average
9	15.390	37.55	-22.45	60.00	36.50	0.26	0.79	QP
10	15.390	32.47	-17.53	50.00	31.42	0.26	0.79	Average

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)
Note 3: When emissions are in operating band over limits, retest with a dummy load for final in-band results.

3.2 Transmitter Radiated Emissions

3.2.1 Transmitter Radiated Emissions Limit

Transmitter Radiated Emissions Limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: the frequency bands 9-90 kHz, 110-490 kHz measurements employing an average detector and other below 1GHz measurements employing a CISPR quasi-peak detector.

3.2.2 Measuring Instruments

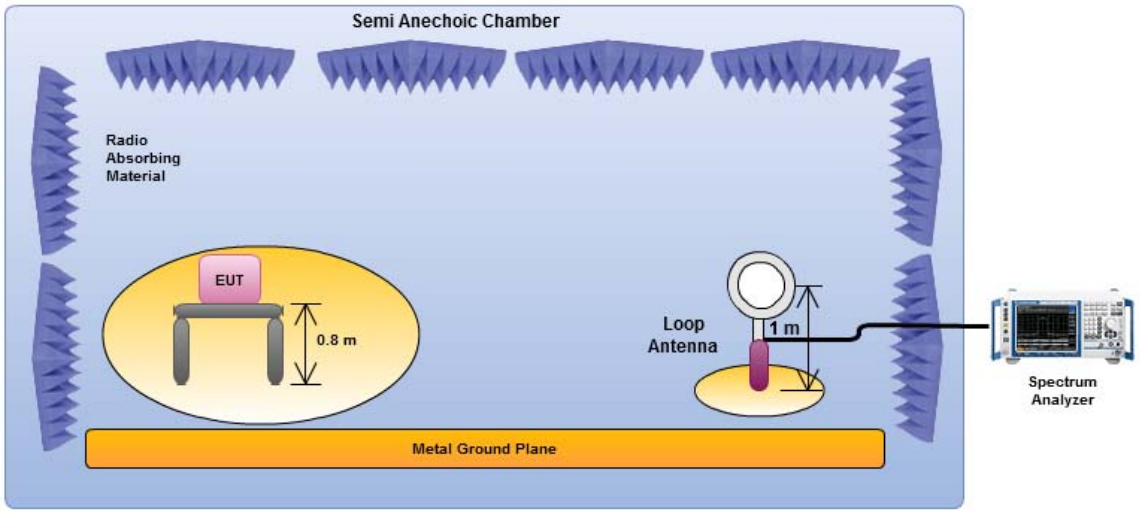
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method	
☒	Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1 GHz and test distance is 3m.
☒	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz the frequency bands 9-90 kHz, 110-490 kHz measurements employing an average detector and other below 30MHz measurements employing a CISPR quasi-peak detector. Test distance is 3m.
☒	At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the requirements; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be following below methods.
☐	The results shall be extrapolated to the specified distance by making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor.
☒	The results shall be by using the square of an inverse linear distance extrapolation factor (40 dB/decade).
☒	For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.
☒	The any unwanted emissions level shall not exceed the fundamental emission level.
☒	All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.2.4 Test Setup

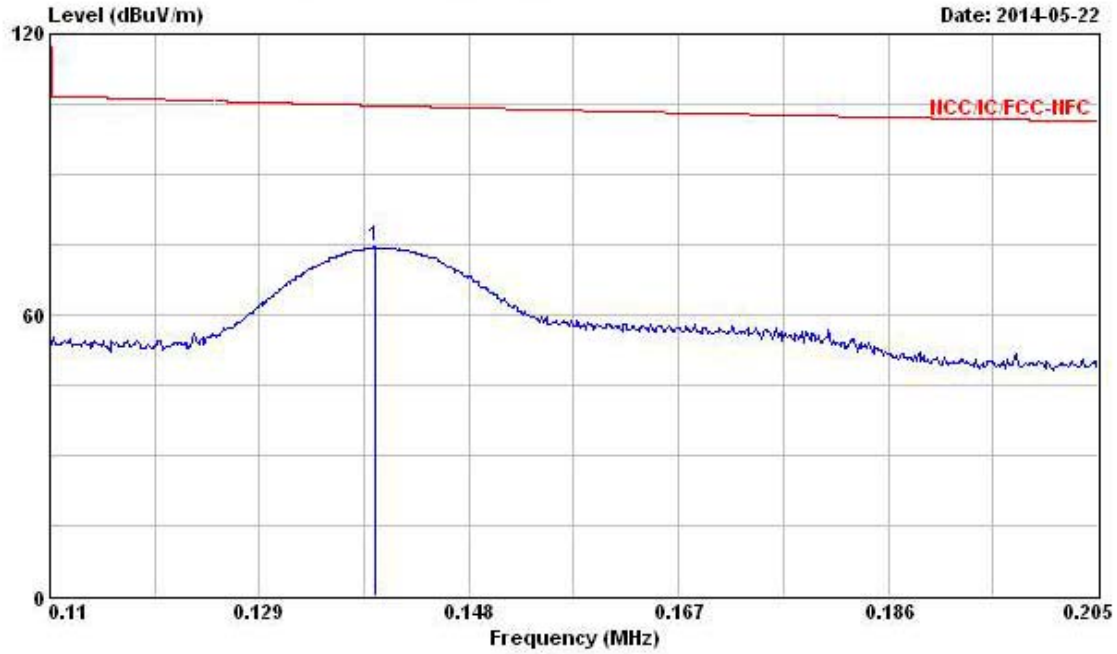
Transmitter Radiated Emissions



Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. The center of the loop shall be 1 m above the ground. Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna. the antenna height shall be varied from 1 m to 4 m.

3.2.5 Transmitter Radiated Emissions (Below 30MHz)

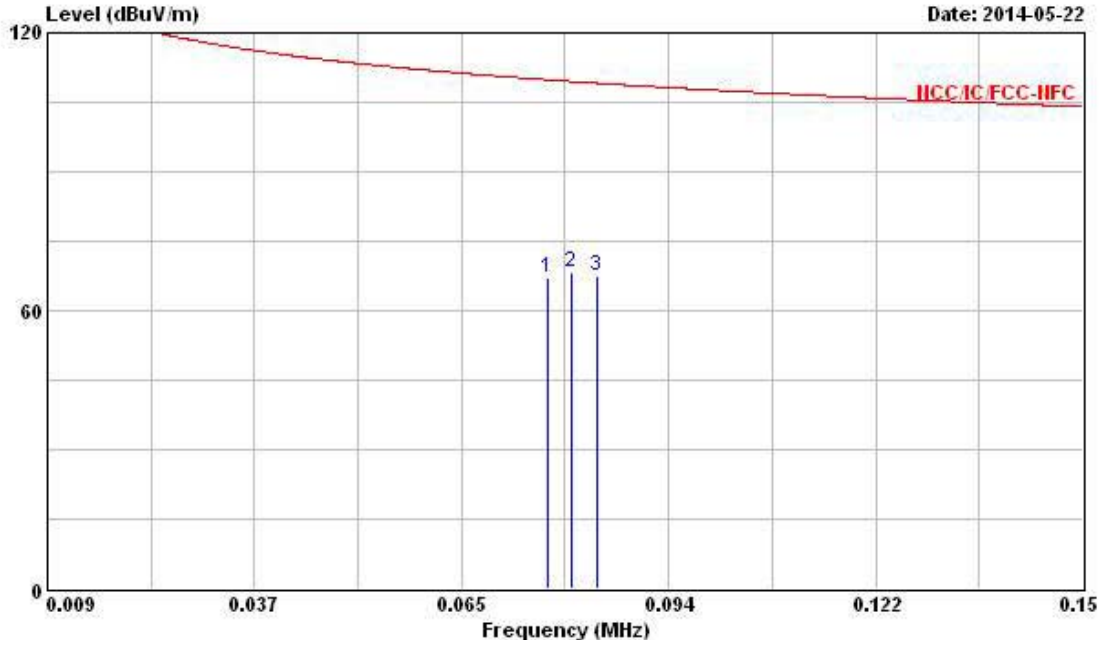
Transmitter Radiated Emissions (139.45 kHz)			
Modulation Mode	Charging	**Polarization**	H
Operating Mode	2	**Operating**	EUT via Adapter Charging



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	0.1394500	74.55	-30.17	104.72	54.34	20.15	0.06	0.00	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement worst emissions of receive antenna polarization: V (Vertical).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

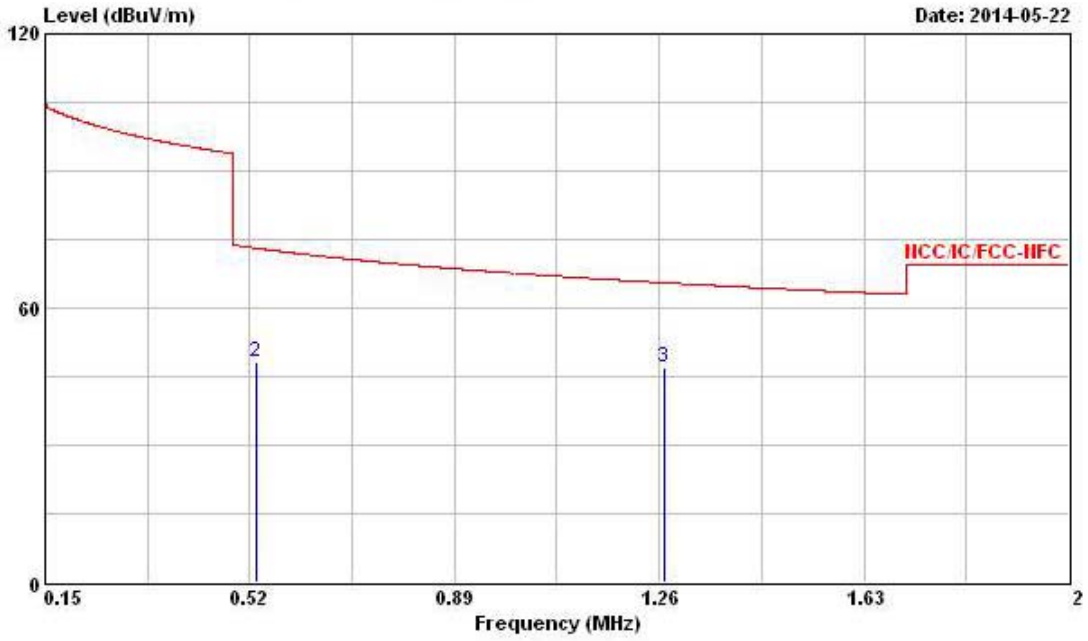
Transmitter Radiated Emissions (9 kHz – 150 kHz)			
Modulation Mode	Charging	**Polarization**	H
Operating Mode	2	**Operating Function**	EUT via Adapter Charging



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	0.0771030	67.28	-42.59	109.87	47.02	20.20	0.06	0.00	Peak	---	---
2	0.0803460	68.14	-41.37	109.51	47.88	20.20	0.06	0.00	Peak	---	---
3	0.0838710	67.66	-41.48	109.14	47.40	20.20	0.06	0.00	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement worst emissions of receive antenna polarization: V (Vertical).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

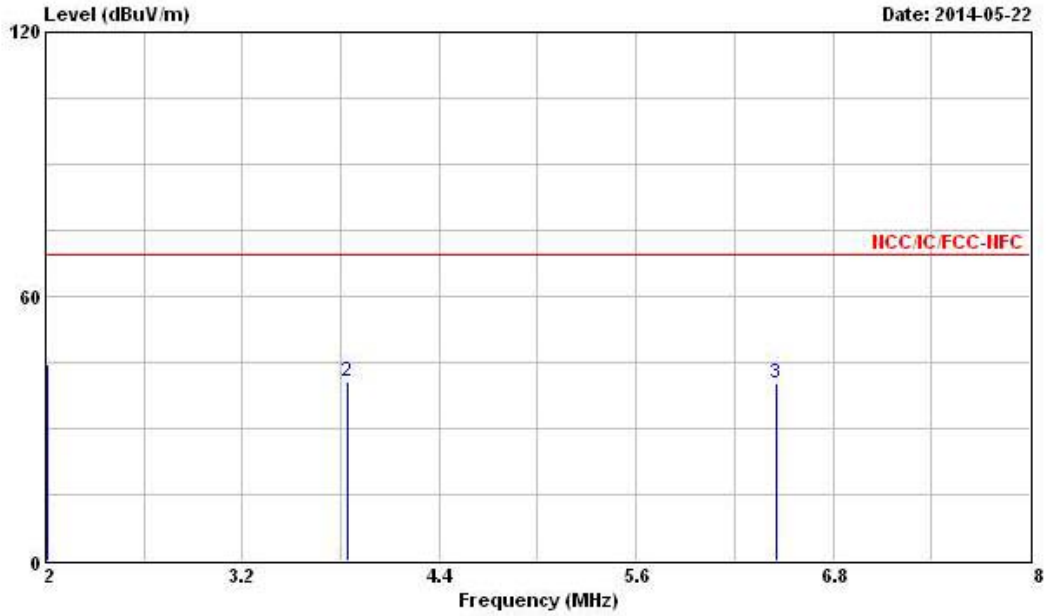
Transmitter Radiated Emissions (150 kHz – 2 MHz)			
Modulation Mode	Charging	**Polarization**	H
Operating Mode	2	**Operating Function**	EUT via Adapter Charging



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	0.1500000	68.86	-35.23	104.09	48.60	20.20	0.06	0.00	Peak	---	---
2	0.5329500	47.97	-25.11	73.08	27.82	20.09	0.06	0.00	Peak	---	---
3	1.270	47.12	-18.41	65.53	27.07	19.95	0.10	0.00	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement worst emissions of receive antenna polarization: V (Vertical).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

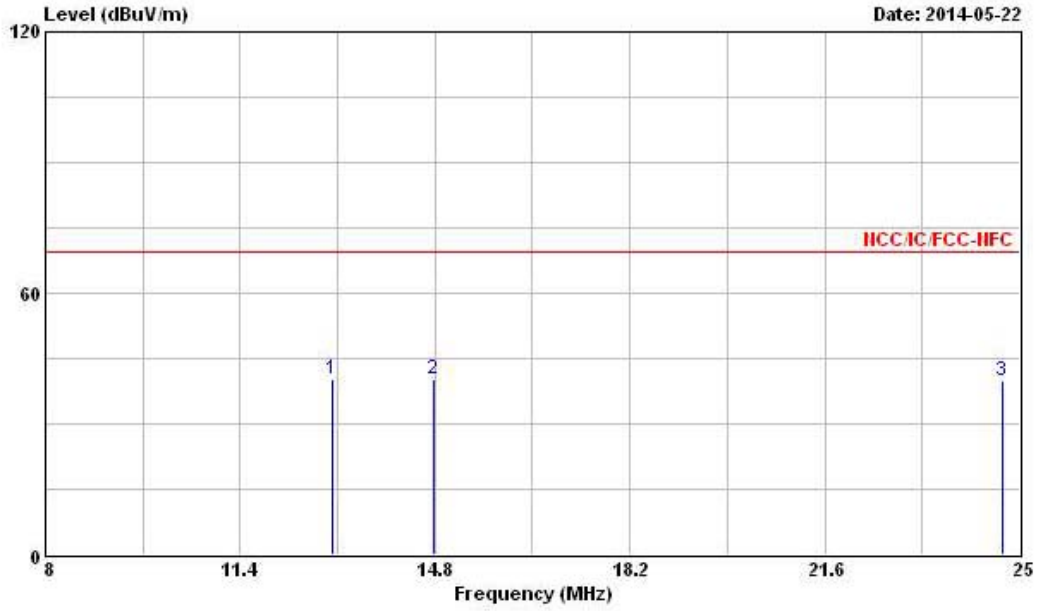
Transmitter Radiated Emissions (2 MHz – 8 MHz)			
Modulation Mode	Charging	**Polarization**	H
Operating Mode	2	**Operating Function**	EUT via Adapter Charging



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	2.010	44.66	-24.88	69.54	24.51	20.00	0.15	0.00	Peak	---	---
2	3.840	40.67	-28.87	69.54	20.41	20.02	0.24	0.00	Peak	---	---
3	6.460	40.22	-29.32	69.54	19.84	20.09	0.29	0.00	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement worst emissions of receive antenna polarization: V (Vertical).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

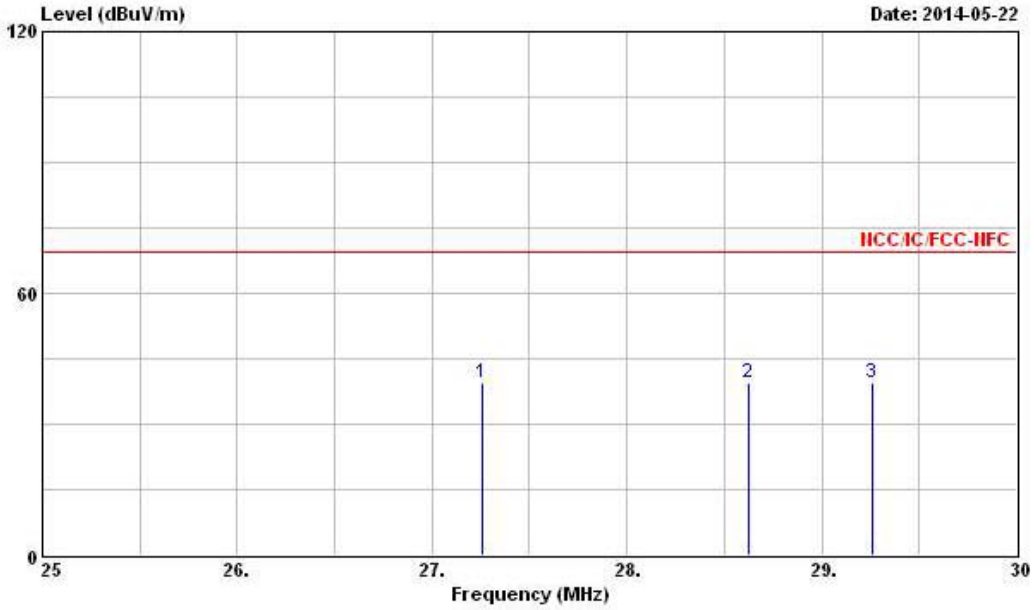
Transmitter Radiated Emissions (8 MHz – 25 MHz)			
Modulation Mode	Charging	**Polarization**	H
Operating Mode	2	**Operating Function**	EUT via Adapter Charging



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	13.020	40.29	-29.25	69.54	19.74	20.10	0.45	0.00	Peak	---	---
2	14.780	40.19	-29.35	69.54	19.57	20.10	0.52	0.00	Peak	---	---
3	24.690	39.74	-29.80	69.54	18.95	20.11	0.68	0.00	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement worst emissions of receive antenna polarization: V (Vertical).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

Transmitter Radiated Emissions (25 MHz – 30 MHz)			
Modulation Mode	Charging	**Polarization**	H
Operating Mode	2	**Operating Function**	EUT via Adapter Charging

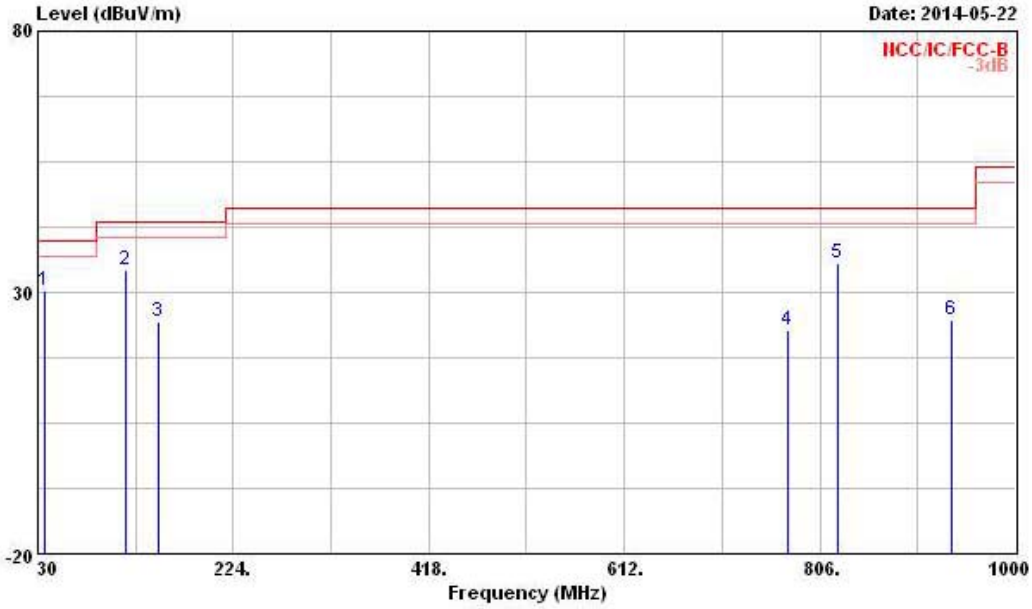


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	27.260	39.65	-29.89	69.54	18.84	20.10	0.71	0.00	Peak	---	---
2	28.620	39.60	-29.94	69.54	18.78	20.10	0.72	0.00	Peak	---	---
3	29.260	39.44	-30.10	69.54	18.61	20.10	0.73	0.00	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement worst emissions of receive antenna polarization: V (Vertical).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

3.2.6 Transmitter Radiated Emissions (Above 30MHz)

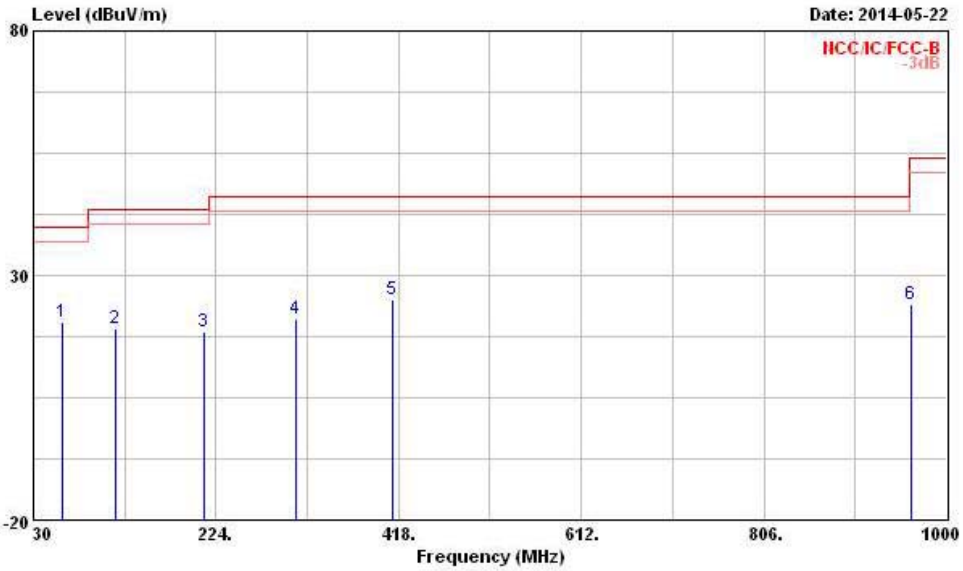
Transmitter Radiated Emissions (Above 30MHz)			
Modulation Mode	Charging	**Test Freq. (FX)**	F1
Operating Mode	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	36.790	30.35	-9.65	40.00	42.26	14.97	0.82	27.70	Peak	---	---
2	117.300	34.37	-9.13	43.50	48.41	12.15	1.50	27.69	Peak	---	---
3	149.310	24.28	-19.22	43.50	39.37	10.74	1.76	27.59	Peak	---	---
4	773.990	22.89	-23.11	46.00	26.89	19.89	4.24	28.13	Peak	---	---
5	824.430	35.48	-10.52	46.00	38.92	20.14	4.42	28.00	Peak	---	---
6	936.950	24.61	-21.39	46.00	26.89	20.76	4.68	27.72	Peak	---	---

Note 1: ">20dB" means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

Transmitter Radiated Emissions (Above 30MHz)			
Modulation Mode	Charging	**Test Freq. (FX)**	F1
Operating Mode	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	60.070	20.39	-19.61	40.00	40.12	6.75	1.07	27.55	Peak	---	---
2	117.300	19.22	-24.28	43.50	33.26	12.15	1.50	27.69	Peak	---	---
3	211.390	18.48	-25.02	43.50	34.56	9.21	2.11	27.40	Peak	---	---
4	308.390	21.25	-24.75	46.00	32.43	13.48	2.56	27.22	Peak	---	---
5	412.180	24.95	-21.05	46.00	33.28	16.67	2.97	27.97	Peak	---	---
6	963.140	24.02	-29.98	54.00	25.95	20.99	4.77	27.69	Peak	---	---

Note 1: “>20dB” means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

3.3 Emission Bandwidth

3.3.1 Emission Bandwidth Limit

Emission Bandwidth Limit
N/A

3.3.2 Measuring Instruments

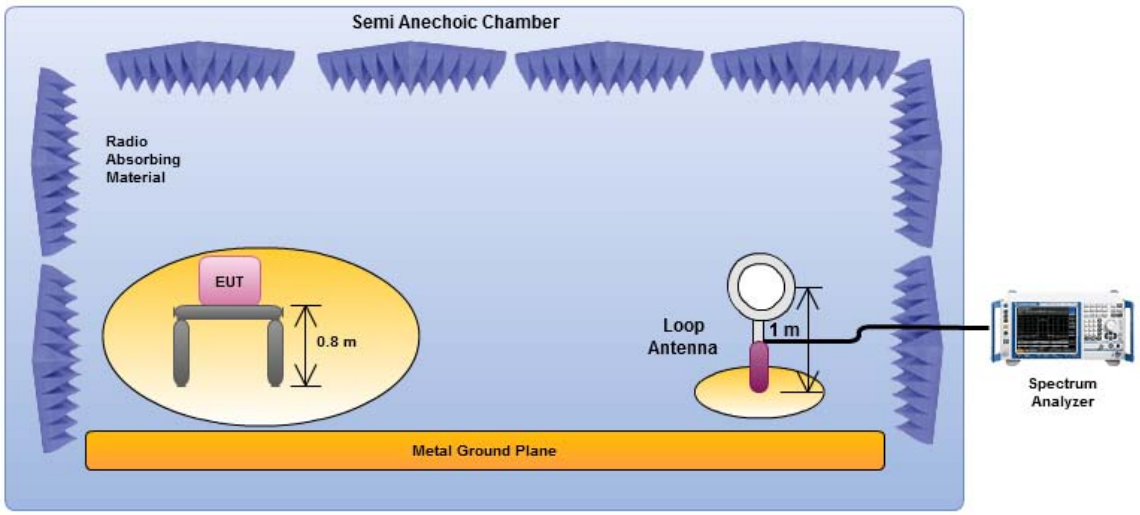
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
☒	For the emission bandwidth refer ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
☒	For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.

3.3.4 Test Setup

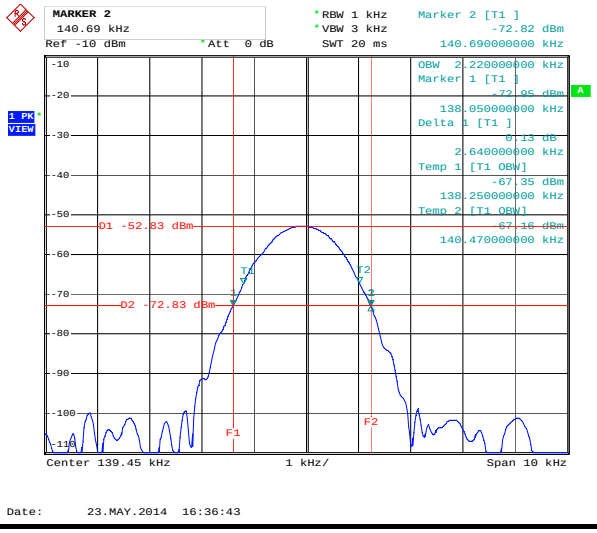
Emission Bandwidth



3.3.5 Test Result of Emission Bandwidth

Occupied Channel Bandwidth Result					
Modulation Mode	Frequency (kHz)	20dB Bandwidth (kHz)	F_L at 20dB BW (kHz)	F_H at 20dB BW (kHz)	99% Bandwidth (kHz)
Charging	100-205	2.64	138.05	140.69	2.22
Limit		N/A	N/A	N/A	N/A
Result		Complied			

Emission Bandwidth Plot



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz ~ 2.75GHz	Mar. 26, 2014	AC Conduction
LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	8127-477	9kHz ~ 30MHz	Jan. 21, 2014	AC Conduction
RF Cable-CON	HUBER+SUHNER	RG213/U	7.61183201e+012	9kHz ~ 30MHz	Oct. 30, 2013	AC Conduction
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	AC Conduction

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSV 40	101013	9KHz~40GHz	Jan. 25, 2014	RF Conducted

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP40	100593	9kHz ~ 40GHz	Oct. 03, 2013	Radiated Emission
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	May 10, 2014	Radiated Emission
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	Nov. 09, 2013	Radiated Emission
Amplifier	Agilent	8447D	2944A11149	100kHz ~ 1.3GHz	Jul. 18, 2013	Radiated Emission
Bilog Antenna	SCHAFFNER	CBL61128	2723	30MHz ~ 2GHz	Oct. 10, 2013	Radiated Emission
Turn Table	Chaintek Instruments	3000	MF7802058	0~ 360 degree	N/A	Radiated Emission

Note: Calibration Interval of instruments listed above is one year.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz - 30 MHz	Dec. 02, 2012	Radiated Emission

Note: Calibration Interval of instruments listed above is two year.