Testing Laboratory 1190

FCC RADIO TEST REPORT

FCC ID	:	2ALND-WPCWCTXCF02
Equipment	:	Wireless Power
Brand Name	:	INPAQ
Model Name	:	WPC-W-C-TX-CF-002
Applicant/ Manufacturer	:	INPAQ Technology Co., Ltd. No. 11, Ke-Yi St., Chunan, Miaoli 350 Taiwan R.O.C.
Standard	:	47 CFR FCC Part 15.209

The product was received on May 02, 2018, and testing was started from May 24, 2018 and completed on May 27, 2018. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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APPENDIX A. TEST PHOTOS

PHOTOGRAPHS OF EUT v01

History of this test report

Report No.	Version	Description	Issued Date
FR850217AW	01	Initial issue of report	Jun. 01, 2018

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.209	Transmitter Radiated Emissions	PASS	-
3.3	15.215(c)	Emission Bandwidth	PASS	-

Reviewed by: Sam Tsai

Report Producer: Jenny Yang

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	204.61	56.45
Power Transfer Method	**Output power from each primary coil**	**That may have multiple primary coils**	**Charging Method**
Magnetic induction and only single primary coil coupling secondary coil	15W	No	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

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:	The EUT place with the platform.

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	☒ From System

1.2 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 C63.10-2013
- KDB680106 D01 RF Exposure Wireless Charging Apps v03

1.3 Testing Location Information

Testing Location					
☒	HWA YA	ADD :	No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)		
		TEL :	886-3-327-3456	FAX :	886-3-327-0973
Test site Designation No. TW1190 with FCC.					
☐	JHUBEI	ADD :	No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)		
		TEL :	886-3-656-9065	FAX :	886-3-656-9085
Test site Designation No. TW0006 with FCC.					

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Daniel	22°C / 55%	27/May/2018
RF Conducted	TH06-HY	Tim	21.7°C / 62%	24/May/2018
Radiated Emission	03CH03-HY	Jeff	24.2°C / 53%	25/May/2018

1.4 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	Limit
Radio Frequency		± 6.7 X 10^{-8}	± 1 X 10^{-7}
All emissions, radiated	9 – 150 kHz	±2.5 dB	±6 dB
	0.15 – 30 MHz	±2.3 dB	±6 dB
	30 – 1000 MHz	±2.6 dB	±6 dB
Temperature		±0.8 °C	±1 °C
Humidity		±5 %	±5 %
DC and low frequency voltages		±0.9%	±3 %

2 Test Configuration of EUT

2.1 The Worst Case Configuration

Modulation Mode	Field Strength (dBuV/m at 3m)
ASK	56.45
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)
ASK	204.61 kHz
Wireless charger frequencies are variable frequency range (110-205 kHz) and depend on charging loading. The charging frequency is 204.61 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: 110Vac / 60Hz
Operating Mode	Operating Mode Description
1	USB Mode

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.
	☒ EUT will be placed in mobile position and operating multiple positions.
	☐ EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions.
Operating Mode < 1GHz	☒ 1. USB Mode
Modulation Mode	ASK
Orthogonal Planes of EUT	**Z Plane**
Worst Planes of EUT	V

2.4 Support Equipment

Support Equipment – AC Conduction				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5410	R33002
2	AC adapter for NB	DELL	LA65NS2-01	-
3	Load	-	-	-
4	Test jig	-	-	-

Note: Support equipment No.3 & 4 was provided by customer.

Support Equipment – Conducted				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Load	-	-	-
2	Notebook	DELL	E5410	DoC
3	Adapter for NB	DELL	HA65NM130	DoC
4	Test jig	-	-	-

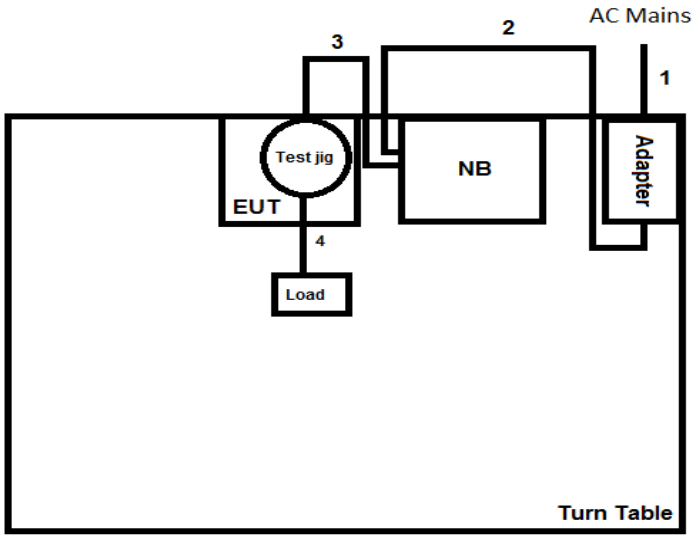
Note: Support equipment No.1 & 4 was provided by customer.

Support Equipment – Radiated				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5410	R33002
2	AC adapter of NB	DELL	LA65NS2-01	-
3	Load	-	-	-
4	Test jig	-	-	-

Note: Support equipment No.3 & 4 was provided by customer.

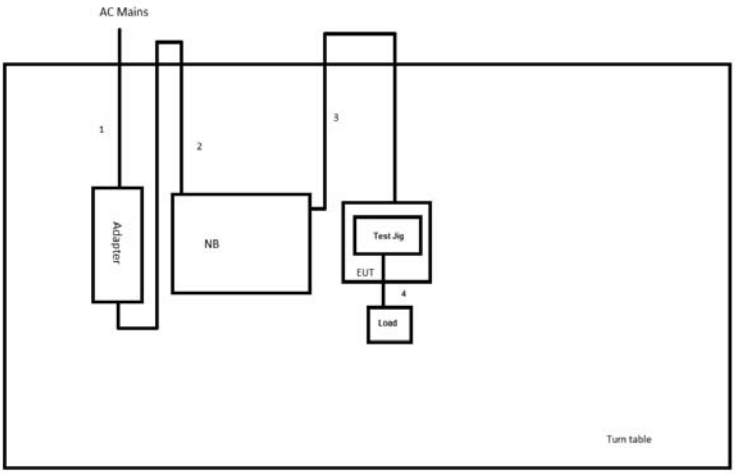
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1.5m	-
2	DC Power line	No	1.5m	-
3	USB cable	D	1.5m	-
4	Test jig Line	No	0.06m	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1.5m	-
2	DC Power line	No	1.5m	-
3	USB cable	D	1.5m	-
4	Test jig Line	No	0.06m	-

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

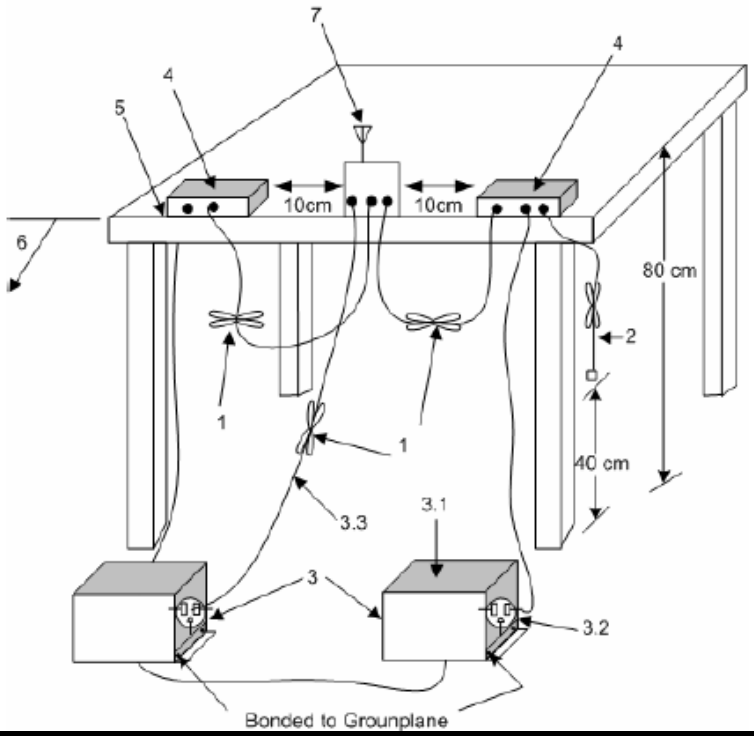
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method		
☒	Refer as ANSI C63.10-2013, 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.

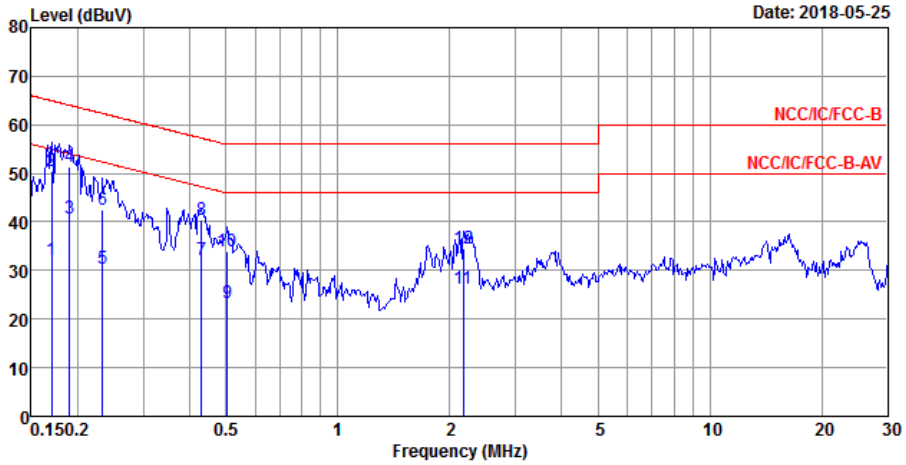
3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

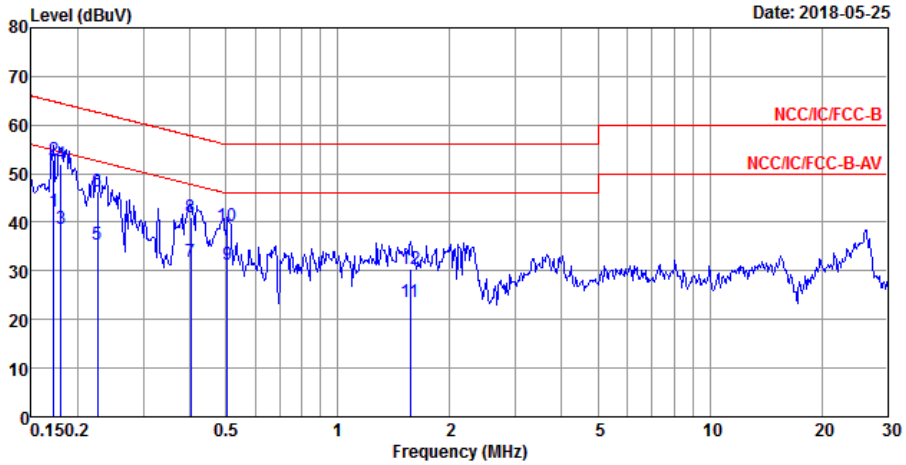
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	USB Mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17	32.32	-22.62	54.94	22.67	9.63	0.02	Average
2	0.17	50.60	-14.34	64.94	40.95	9.63	0.02	QP
3	0.19	40.72	-13.30	54.02	31.09	9.62	0.01	Average
4 MAX	0.19	51.32	-12.70	64.02	41.69	9.62	0.01	QP
5	0.23	30.49	-21.86	52.35	20.85	9.62	0.02	Average
6	0.23	42.43	-19.92	62.35	32.79	9.62	0.02	QP
7	0.43	32.06	-15.18	47.24	22.36	9.61	0.09	Average
8	0.43	40.57	-16.67	57.24	30.87	9.61	0.09	QP
9	0.50	23.42	-22.58	46.00	13.74	9.61	0.07	Average
10	0.50	34.00	-22.00	56.00	24.32	9.61	0.07	QP
11	2.18	26.41	-19.59	46.00	16.77	9.63	0.01	Average
12	2.18	34.67	-21.33	56.00	25.03	9.63	0.01	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	USB Mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17	42.27	-12.59	54.86	32.63	9.62	0.02	Average
2 MAX	0.17	52.99	-11.87	64.86	43.35	9.62	0.02	QP
3	0.18	38.78	-15.68	54.46	29.15	9.62	0.01	Average
4	0.18	51.90	-12.56	64.46	42.27	9.62	0.01	QP
5	0.23	35.56	-17.05	52.61	25.92	9.62	0.02	Average
6	0.23	46.43	-16.18	62.61	36.79	9.62	0.02	QP
7	0.40	31.95	-15.86	47.81	22.24	9.61	0.10	Average
8	0.40	41.01	-16.80	57.81	31.30	9.61	0.10	QP
9	0.50	31.31	-14.69	46.00	21.63	9.61	0.07	Average
10	0.50	39.14	-16.86	56.00	29.46	9.61	0.07	QP
11	1.57	23.70	-22.30	46.00	14.08	9.62	0.00	Average
12	1.57	30.37	-25.63	56.00	20.75	9.62	0.00	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.

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

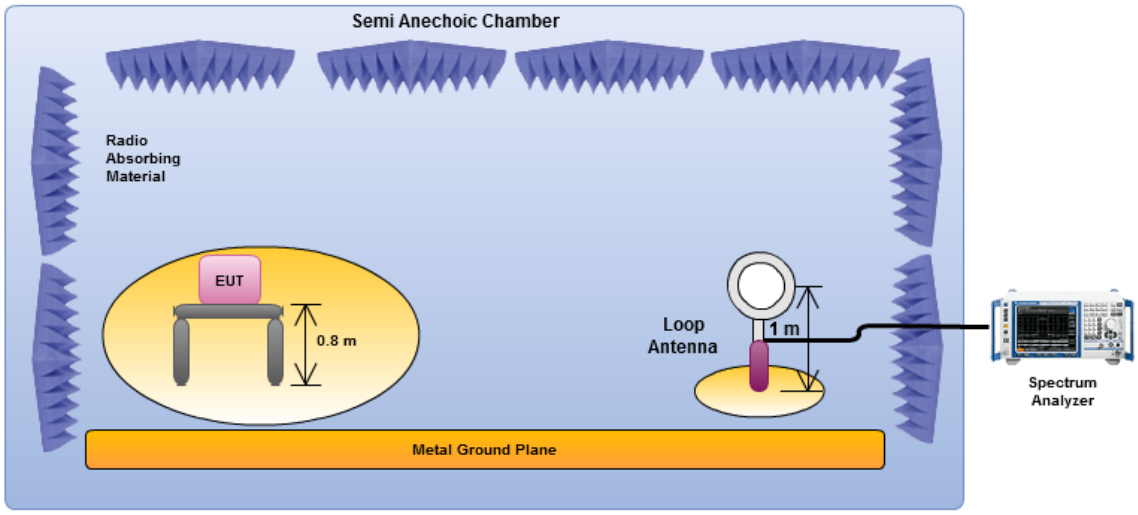
Refer a test equipment and calibration data table in this test report.

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 1m.
☒	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz the frequency bands 394 kHz, 370-398kHz measurements employing an average detector and other below 30MHz measurements employing a CISPR quasi-peak detector. Test distance is 1m.
☒	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.

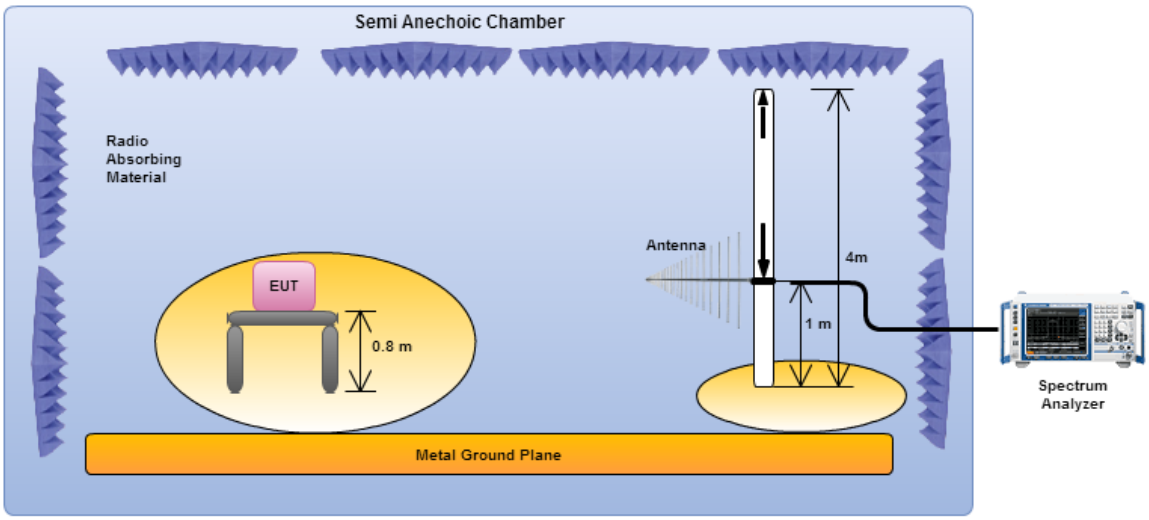
3.2.4 Test Setup

Transmitter Radiated Emissions (Below 30MHz)



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.

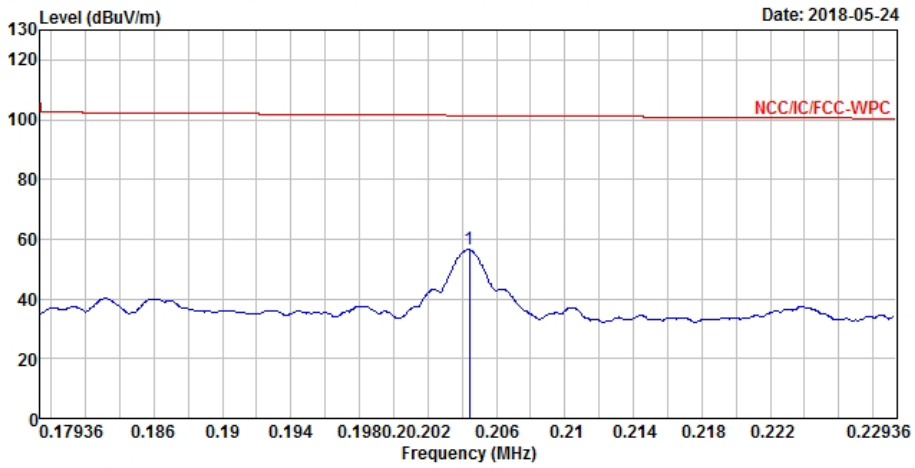
Transmitter Radiated Unwanted Emissions (Below 1GHz)



Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna.

3.2.5 Transmitter Radiated Emissions (Below 30MHz)

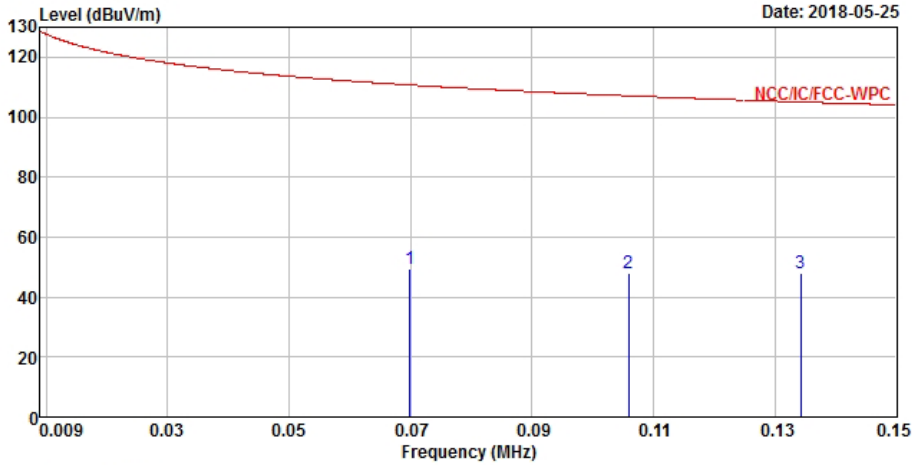
Transmitter Radiated Emissions (204.61 kHz)			
Modulation Mode	ASK	**Polarization**	H
Operating Mode	1	**Operating Function**	Wireless Charger



	Freq	Level	Over Limit	Limit Line	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	0.20442	56.45	-44.95	101.40	35.74	20.60	0.11	0.00	Peak	100	360

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: H(Horizontal).
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.
Note 6: The test result in peak detector is less than average limit , so that we tested in peak detector only.

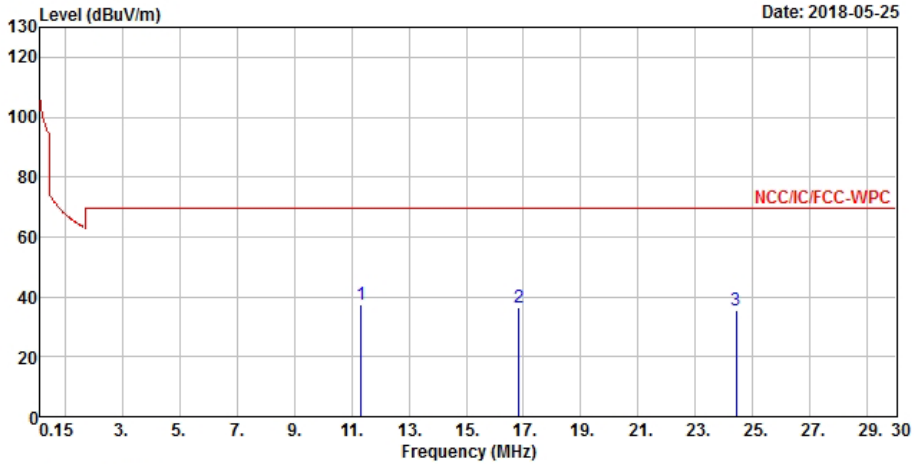
Transmitter Radiated Emissions (9 kHz – 150 kHz)			
Modulation Mode	ASK	**Polarization**	H
Operating Mode	1	**Operating Function**	Wireless Charger



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	0.06991	49.23	-61.49	110.72	28.22	20.94	0.07	0.00	Peak	100	0
2	0.10587	47.97	-59.14	107.11	27.20	20.69	0.08	0.00	Peak	100	0
3	0.13421	48.15	-56.90	105.05	27.39	20.67	0.09	0.00	Peak	100	0

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: H(Horizontal).
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 – 30 MHz)			
Modulation Mode	ASK	**Polarization**	H
Operating Mode	1	**Operating Function**	Wireless Charger

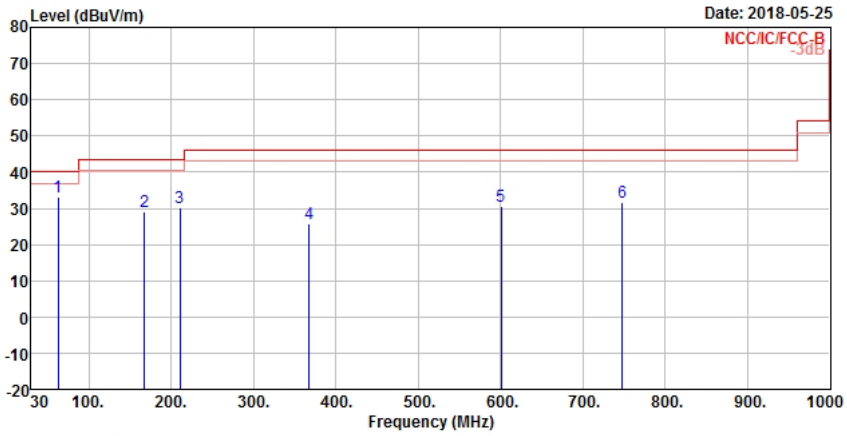


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	11.34375	37.56	-31.98	69.54	15.31	21.62	0.63	0.00	Peak	100	360
2	16.83615	36.26	-33.28	69.54	13.38	22.12	0.76	0.00	Peak	100	360
3	24.41805	35.44	-34.10	69.54	11.95	22.53	0.96	0.00	Peak	100	360

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: H(Horizontal).
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)

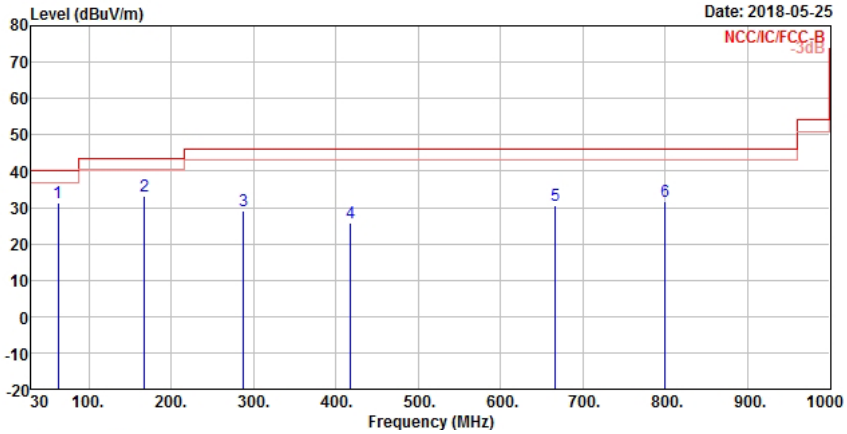
Transmitter Radiated Emissions (Above 30MHz)			
Modulation Mode	ASK	**Test Freq. (kHz)**	204.61 kHz
Operating Mode	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	62.98000	33.25	-6.75	40.00	47.56	11.48	1.68	27.47	Peak	100	0
2	167.74000	29.23	-14.27	43.50	39.01	14.78	2.49	27.05	Peak	100	0
3	210.42000	30.00	-13.50	43.50	40.02	14.25	2.60	26.87	Peak	100	0
4	367.56000	25.60	-20.40	46.00	29.85	19.82	3.00	27.07	Peak	100	0
5	600.36000	30.40	-15.60	46.00	30.94	23.69	3.72	27.95	Peak	100	0
6	747.80000	31.63	-14.37	46.00	30.12	24.96	4.36	27.81	Peak	100	0

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	ASK	**Test Freq. (kHz)**	204.61 kHz
Operating Mode	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	62.98000	31.33	-8.67	40.00	45.64	11.48	1.68	27.47	QP	258	189
2	167.74000	33.19	-10.31	43.50	42.97	14.78	2.49	27.05	Peak	100	360
3	288.02000	28.91	-17.09	46.00	35.02	18.13	2.43	26.67	Peak	100	360
4	418.00000	25.79	-20.21	46.00	28.59	21.39	3.19	27.38	Peak	100	360
5	666.32000	30.45	-15.55	46.00	30.21	23.99	4.16	27.91	Peak	100	360
6	800.18000	31.48	-14.52	46.00	29.55	24.97	4.69	27.73	Peak	100	360

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

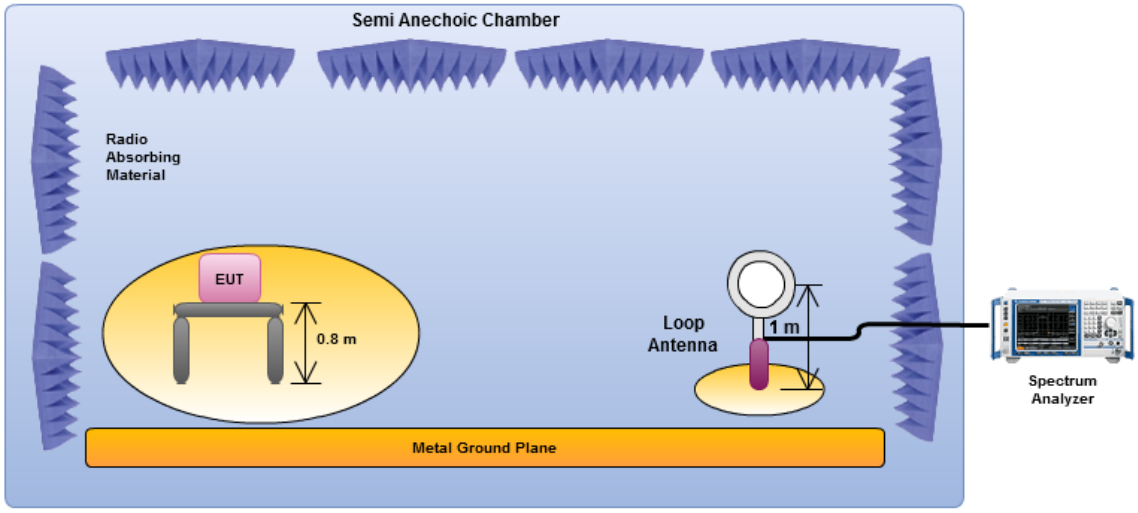
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
☒	For the emission bandwidth refer ANSI C63.10, clause 6.9.3 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

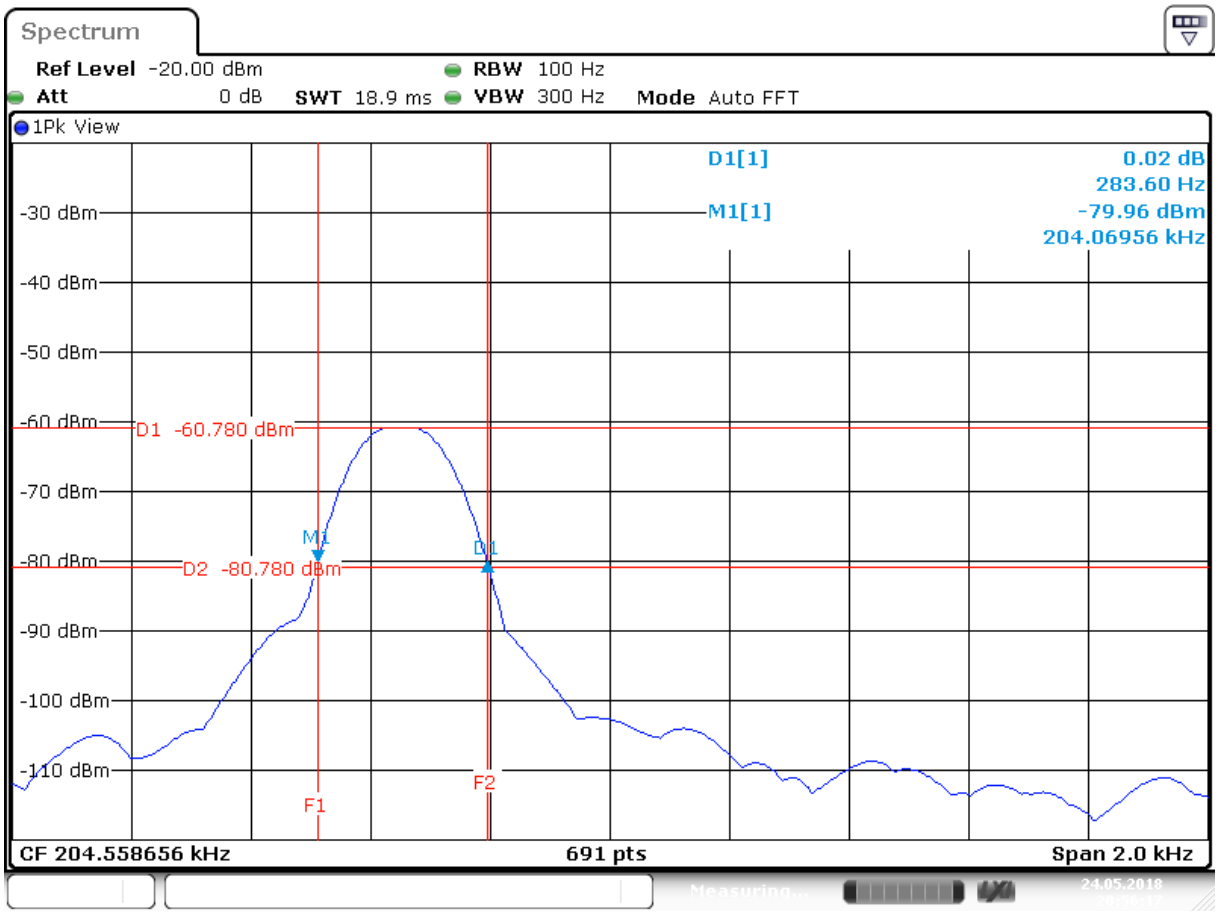
Emission Bandwidth



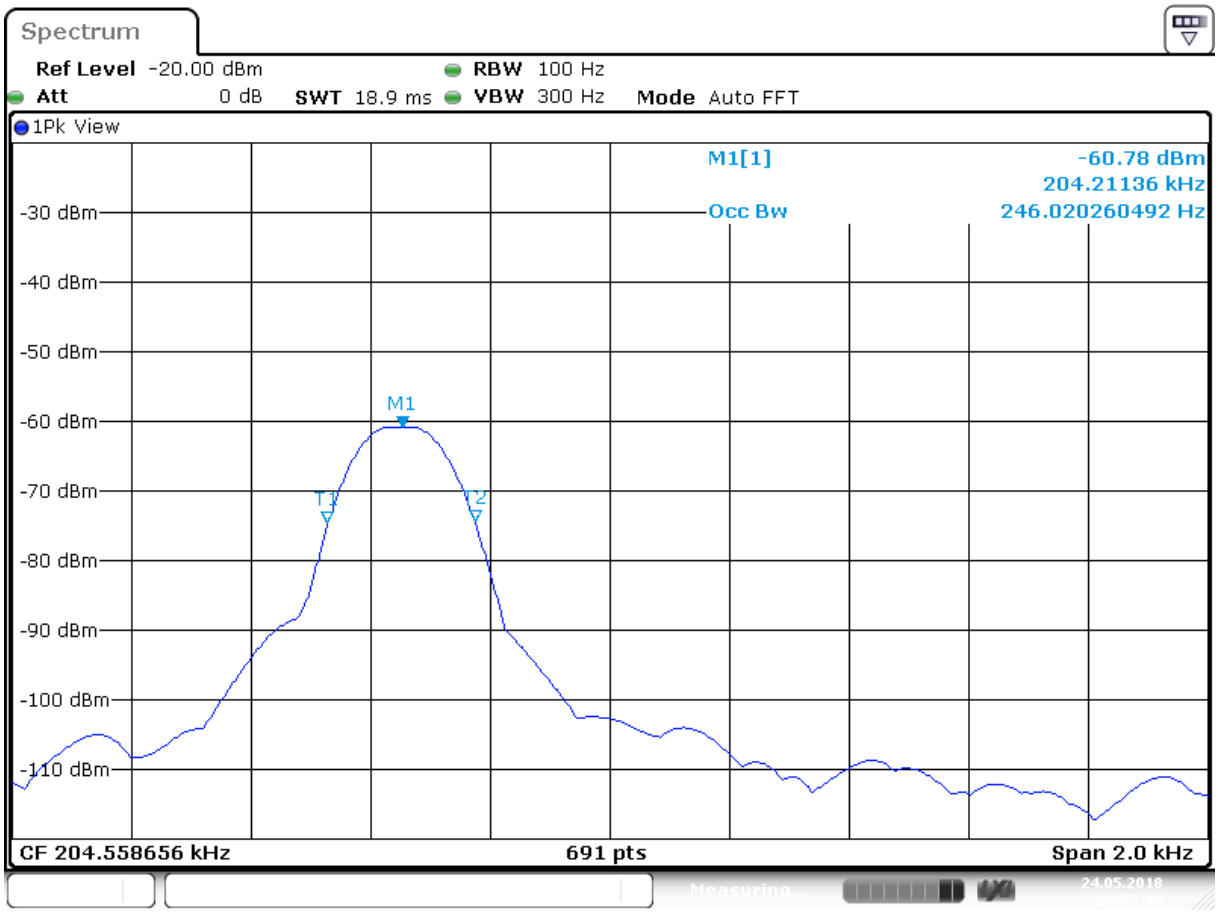
3.3.5 Test Result of Emission Bandwidth

Occupied Channel Bandwidth Result			
Modulation Mode	Frequency (kHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)
ASK	204.6	0.28	0.21
Limit		N/A	N/A
Result		Complied	

Emission Bandwidth Plot 20dB Bandwidth (204.61 kHz)



Emission Bandwidth Plot 99% Bandwidth (204.61 kHz)



4 Test Equipment and Calibration Data

< AC Conduction >

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESCS30	838251/003	9KHz ~ 2.75GHz	13/Jun/2017	12/Jun/2018
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	17/Nov/2017	16/Nov/2018
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832020001	9kHz ~ 30MHz	06/Oct/2017	05/Oct/2018
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	12/Oct/2017	11/Oct/2018

NCR : Non-Calibration Require

< RF Conducted >

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	29/Dec/2017	28/Dec/2018
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz~30 MHz	16/Mar/2018	15/Mar/2019

< Radiated Emission >

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	31/Oct/2017	30/Oct/2018
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	01/Nov/2017	31/Oct/2018
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	23/Apr/2018	22/Apr/2019
Spectrum	R&S	FSV40	101500	9kHz ~ 40GHz	28/Jun/2017	27/Jun/2018
Receiver	R&S	ESCS 30	100354	9kHz ~ 2.75GHz	08/Dec/2017	07/Dec/2018
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	26/Jan/2018	25/Jan/2019
Bilog Antenna	SCHAFFNER	CBL 6112B	22237	30MHz ~ 1GHz	08/Jul/2017	07/Jul/2018
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz~30 MHz	16/Mar/2018	15/Mar/2019