FCC Test Report

Equipment	:	**7777-01YY**
Brand Name	:	**Orderman**
Model No.	:	**7777-01YY**
Marketing Name	:	**NCR Orderman7 MSR,NCR Orderman7 SC**
FCC ID	:	**JEH-7777-01YY**
Standard	:	**47 CFR FCC Part 15.209**
Operating Band	:	**125 kHz (channel frequency 125kHz)**
FCC Classification	:	**DXX**
Applicant	:	**NCR Corporation**
Address	:	2651 Satellite Blvd. Duluth, GA 30096 USA
Manufacturer	:	**Universal Global Scientific Industrial Co., Ltd.**
Address	:	141, Lane 351, Sec.1, Taiping Road, Tsaotuen, Nantou 54261, Taiwan

The product sample received on Nov. 5, 2014 and completely tested on Dec. 1, 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:

Vic Hsiao / Supervisor

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]: 0.4040020MHz 42.01 (Margin 15.76dB) - QP 37.02 (Margin 10.75dB) - AV	FCC 15.207	Complied
3.2	15.209	Transmitter Radiated Emissions	[dBuV/m at 3m]: 41.640kHz 36.77 (Margin 3.23dB) - PK	FCC 15.209	Complied

Revision History

Report No.	Version	Description	Issued Date
FR4N0432-01AT	Rev. 01	Initial issue of report	Dec. 17, 2014

1 General Description

1.1 Information

1.1.1 RF General Information

RF General Information					
Frequency Range	**Modulation**	**Ch. Frequency (kHz)**	**Channel Number**	**Field Strength (dBuV/m)**	**Co-location**
125 kHz	ASK	125	1	54.88	Yes
Note 1: Field strength performed peak level at 3m. Note 2: Co-location, Co-location is generally defined as simultaneously transmitting (co-transmitting) antennas within 20 cm of each other. (i.e., EUT has simultaneously co-transmitting that operating NFC+OSR+RFID+Wi-Fi and NFC+OSR+RFID+BT)					

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)	**Duty Cycle Correction Factor [dB] – (20 log x)**
☒ 100%	0
If worst duty < 100%, average emission = peak emission + 20 log x	

1.1.5 EUT Operational Condition

Supply Voltage	☐ AC mains	☒ DC	-
Type of DC Source	☐ Internal DC supply	☒ External DC Service Station	☒ From Li-ion Battery

1.2 Accessories and Support Equipment

Accessories Information				
Li-ion Battery	Brand Name	NCR	Model Name	7777-0105-8801
	Power Rating	3.7V⎓ 3150mAh		
LCD Panel	Brand Name	LG Display	Model Name	LH500WX1-SD03
Camera	Brand Name	Ability	Model Name	BD56A555
WiFi Module	Brand Name	USI	Model Name	WM-BAN-BM-07_S
OSR Module	Brand Name	TI	Model Name	CC1125
RFID Module	Brand Name	Melexis	Model Name	MLX90109
NFC Module	Brand Name	NXP	Model Name	PN547

Reminder: Regarding to more detail and other information, please refer to user manual.

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Service Station (Provide by customer)	Orderman	7779-0201-8801	-
2	Debug Board (Provide by customer)	-	-	-
3	Adapter	Meanwell	GSM36U12-P5L	-

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 Site Registration Number: FCC 636805			
Test Condition	**Test Site No.**	**Test Engineer**	**Test Environment**
AC Conduction	CO04-HY	Zeus	22°C / 52%
Radiated Emission	03CH03-HY	Allen	24°C / 57%

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		±2.2 dB
Emission bandwidth		±1.4 %
Unwanted emissions, conducted	9 – 150 kHz	±0.3 dB
	0.15 – 30 MHz	±0.4 dB
	30 – 1000 MHz	±0.5 dB
All emissions, radiated	9 – 150 kHz	±2.4 dB
	0.15 – 30 MHz	±2.2 dB
	30 – 1000 MHz	±2.5 dB
Temperature		±0.8 °C
Humidity		±3 %
DC and low frequency voltages		±3 %
Time		±1.4 %
Duty Cycle		±1.4 %

2 Test Configuration of EUT

2.1 The Worst Case Modulation Configuration

Modulation Mode	Field Strength (dBuV/m at 3m)
RFID-Read/Write	54.88

2.2 Test Channel Frequencies Configuration

Modulation Mode	Test Channel Frequencies (kHz)
RFID-Read/Write	125

2.3 The Worst Case Measurement Configuration

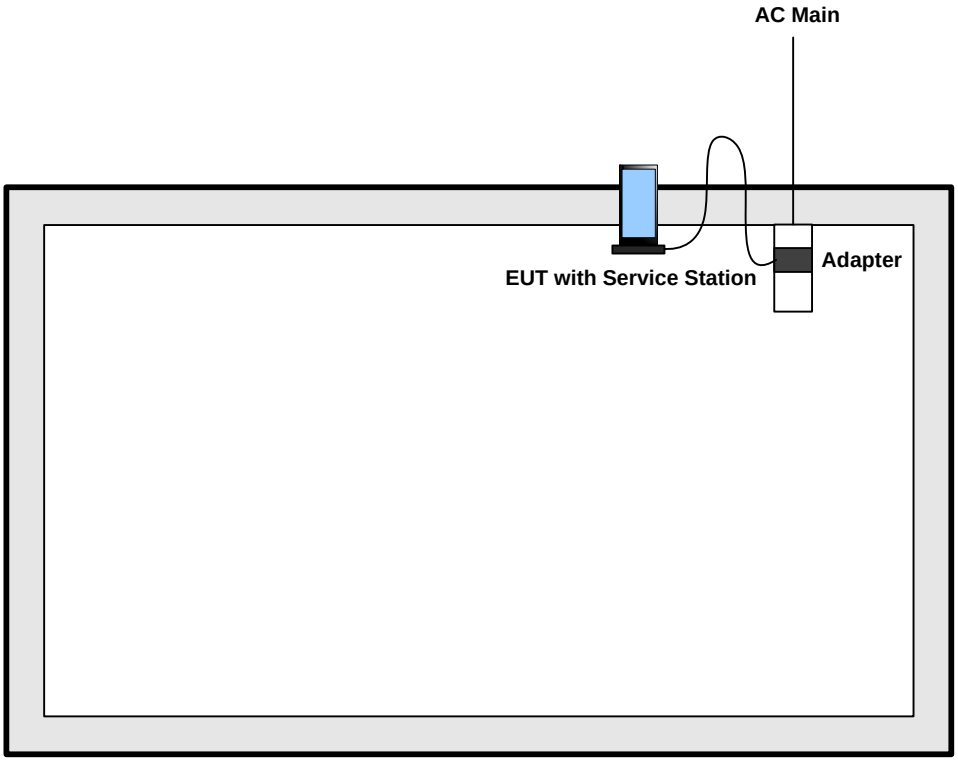
The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	Operating Mode Description
	Operating Mode Description
	1. EUT with Service Station Charge Mode

The Worst Case Mode for Following Conformance Tests			
Tests Item			Emission Bandwidth, Field Strength of Fundamental Emissions Transmitter Radiated Unwanted Emissions
Test Condition			Radiated measurement
User Position			☐ EUT will be placed in fixed position.
X Plane	**Y Plane**	**Z Plane**	☐ 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. EUT shall be performed three orthogonal planes. The worst planes is Y.
Operating Mode (Blow 30MHz)			Operating Mode Description
			2. EUT with AC power via Debug Board Transmitter
Operating Mode (Above 30MHz)			1. EUT with Service Station Charge Mode
			2. EUT with AC power via Debug Board Transmitter
Modulation Mode			RFID-Read/Write

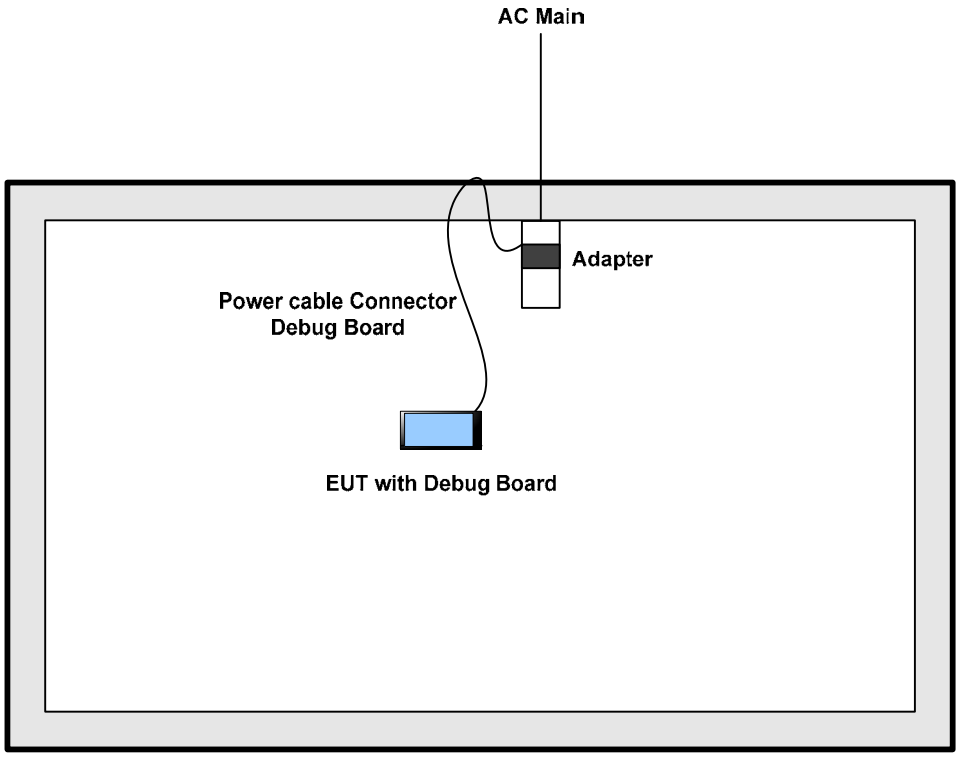
Note: The RF Function will be off when the EUT charge with Service Station.

2.4 Test Setup Diagram

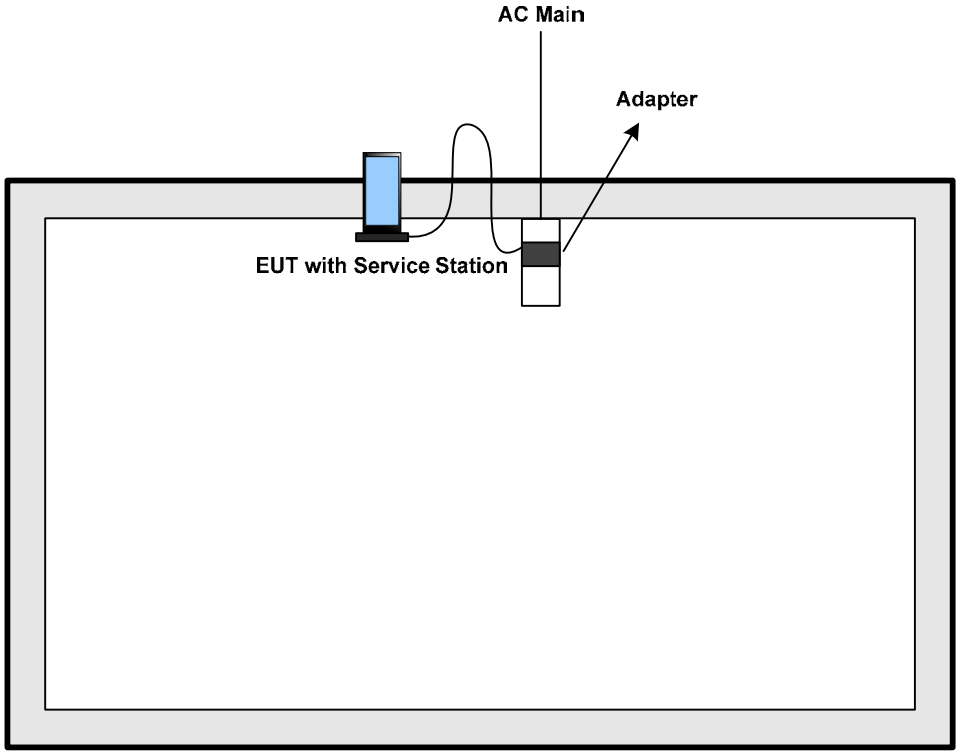
Test Setup Diagram - AC Line Conducted Emission Test (Operating Mode 1)



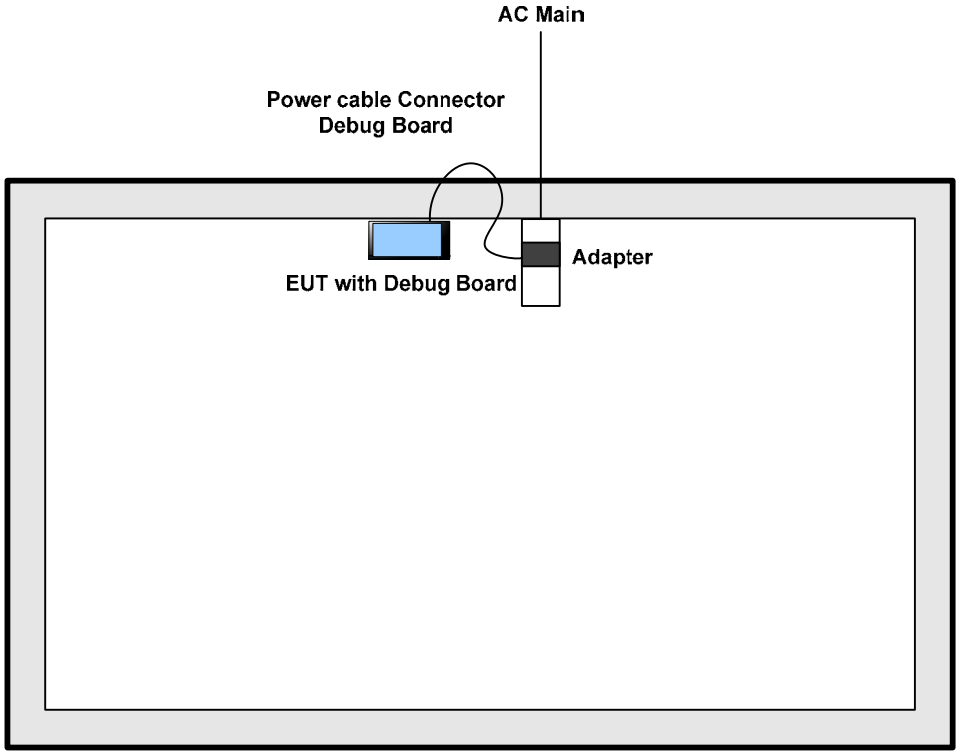
Test Setup Diagram - Radiated 9kHz~30MHz Test (Operating Mode 2)



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



Test Setup Diagram - Radiated 30MHz~1GHz Test (Operating Mode 2)



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

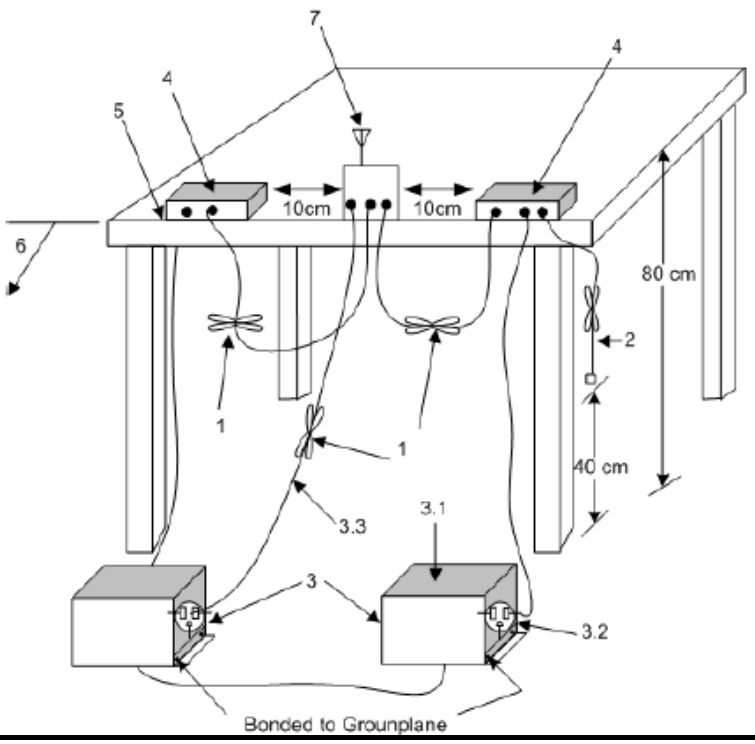
Refer a test equipment and calibration data table in this test report.

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.

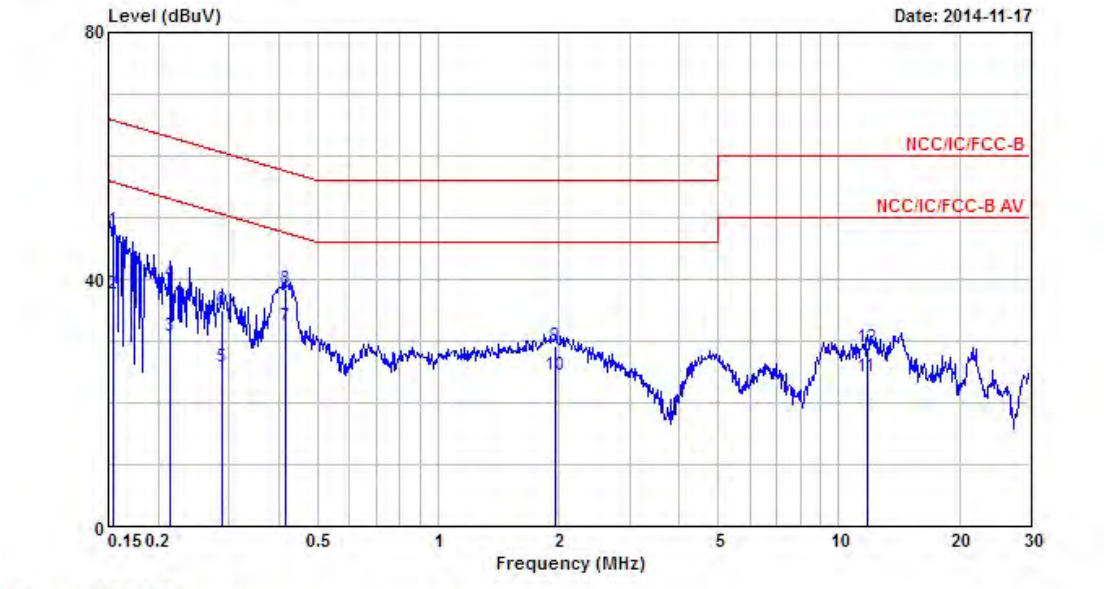
3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

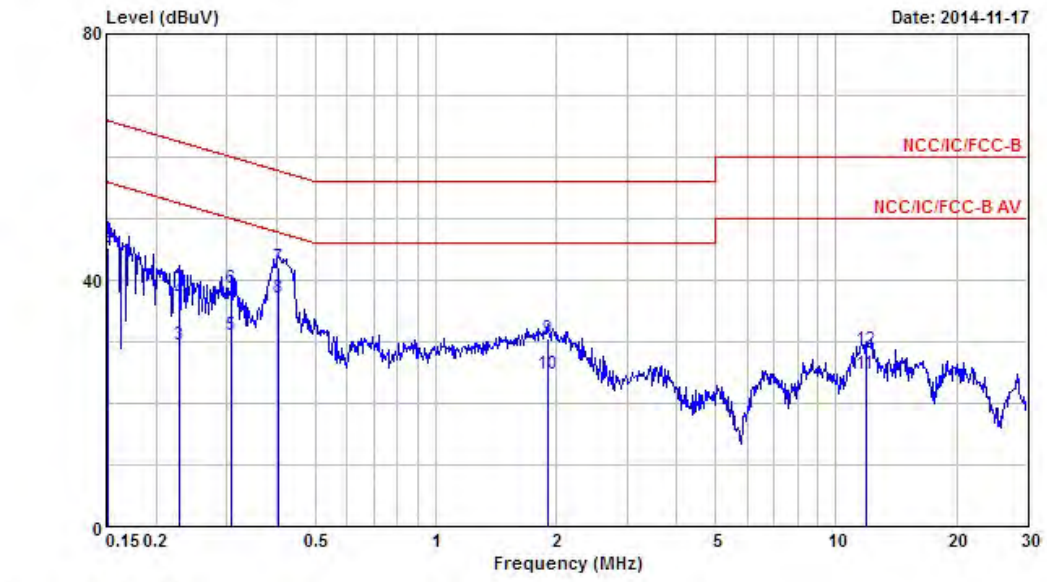
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	EUT with Service Station Charge Mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1548450	48.01	-17.73	65.74	47.64	0.02	0.35	QP
2	0.1548450	37.68	-18.06	55.74	37.31	0.02	0.35	Average
3	0.2139240	30.70	-22.35	53.05	30.17	0.02	0.51	Average
4	0.2139240	39.43	-23.62	63.05	38.90	0.02	0.51	QP
5	0.2878180	25.69	-24.90	50.59	25.11	0.03	0.55	Average
6	0.2878180	34.97	-25.62	60.59	34.39	0.03	0.55	QP
7	0.4148480	32.44	-15.11	47.55	31.80	0.03	0.61	Average
8	0.4148480	38.50	-19.05	57.55	37.86	0.03	0.61	QP
9	1.960	29.24	-26.76	56.00	28.38	0.06	0.80	QP
10	1.960	24.36	-21.64	46.00	23.50	0.06	0.80	Average
11	11.740	24.32	-25.68	50.00	23.30	0.22	0.80	Average
12	11.740	28.83	-31.17	60.00	27.81	0.22	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.)

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	EUT with Service Station Charge Mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1515980	34.40	-21.51	55.91	34.03	0.03	0.34	Average
2	0.1515980	45.23	-20.68	65.91	44.86	0.03	0.34	QP
3	0.2279670	29.58	-22.94	52.52	29.03	0.03	0.52	Average
4	0.2279670	36.95	-25.57	62.52	36.40	0.03	0.52	QP
5	0.3083410	30.93	-19.09	50.02	30.34	0.03	0.56	Average
6	0.3083410	38.55	-21.47	60.02	37.96	0.03	0.56	QP
7	0.4040020	42.01	-15.76	57.77	41.38	0.03	0.60	QP
8	0.4040020	37.02	-10.75	47.77	36.39	0.03	0.60	Average
9	1.900	30.65	-25.35	56.00	29.78	0.07	0.80	QP
10	1.900	24.61	-21.39	46.00	23.74	0.07	0.80	Average
11	11.870	24.65	-25.35	50.00	23.63	0.22	0.80	Average
12	11.870	28.81	-31.19	60.00	27.79	0.22	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.)

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

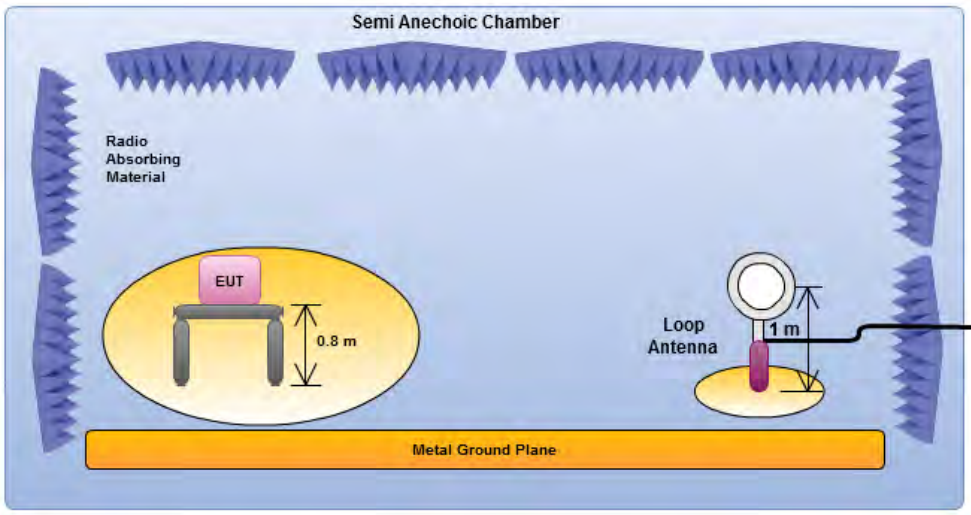
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

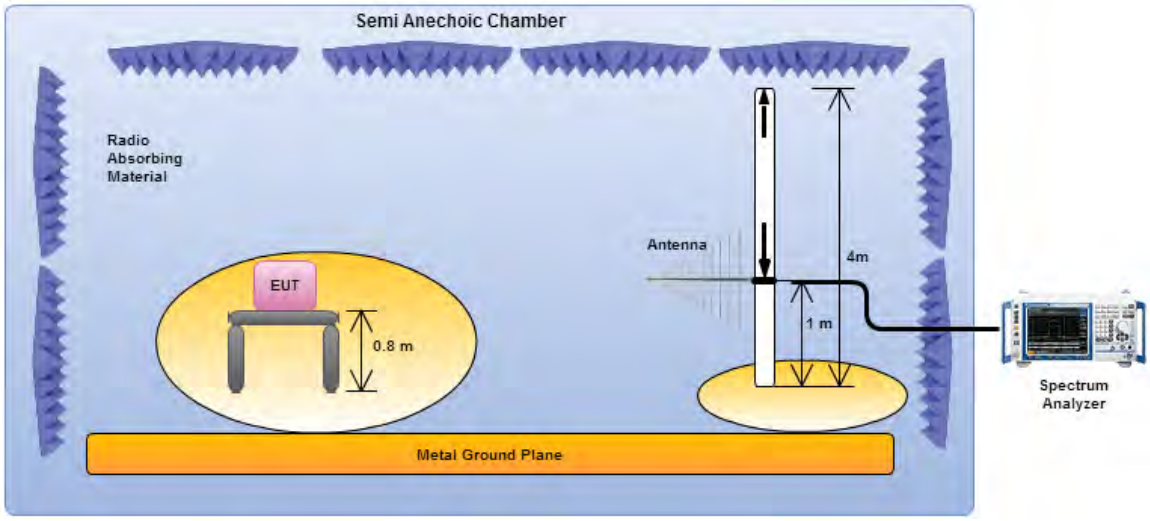
Test Method	
☒	Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1 GHz and test distance is 3m.
☒	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz. The frequency bands 9-90 kHz, 110-490 kHz measurements employing an average detector and other below 30MHz 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



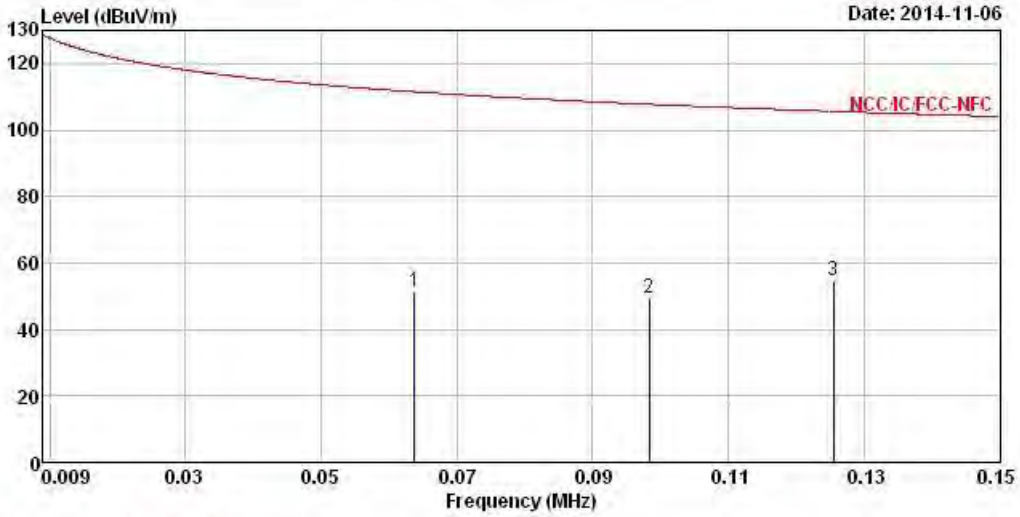
Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. The center of the loop shall be 1 m above the ground.



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 Unwanted Emissions (Below 30MHz)

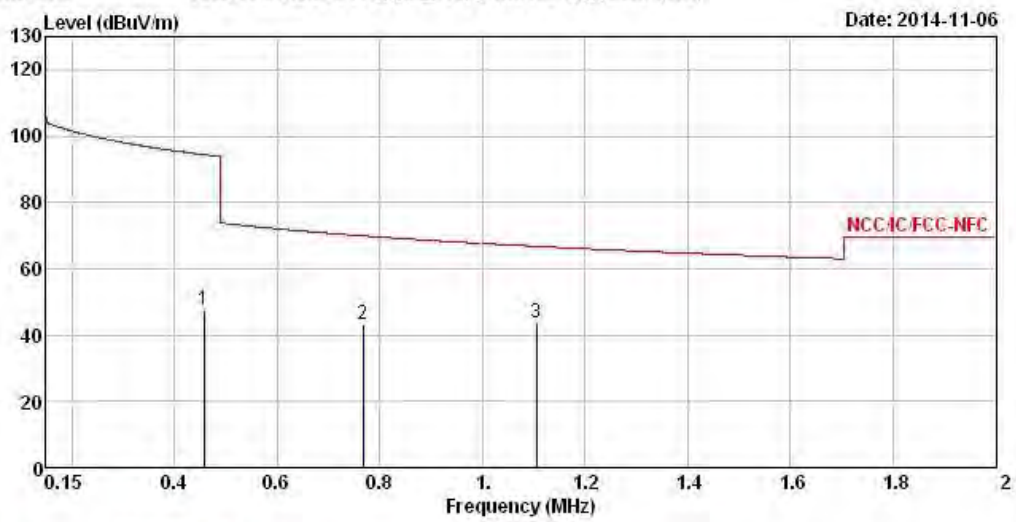
Transmitter Radiated Unwanted Emissions (9 kHz – 150 kHz)			
Modulation Mode	RFID-Read/Write	**Polarization**	H
Operating Mode	2		
Operating Function	EUT with AC power via Debug Board Transmitter		



	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	0.064	51.32	-60.20	111.52	31.02	20.20	0.10	0.00	Peak	---	---
2	0.098	49.41	-58.34	107.75	29.21	20.10	0.10	0.00	Peak	---	---
3	0.125	54.88	-50.76	105.64	34.63	20.15	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: H (Horizontal).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: The item 3 is Fundamental Emissions.

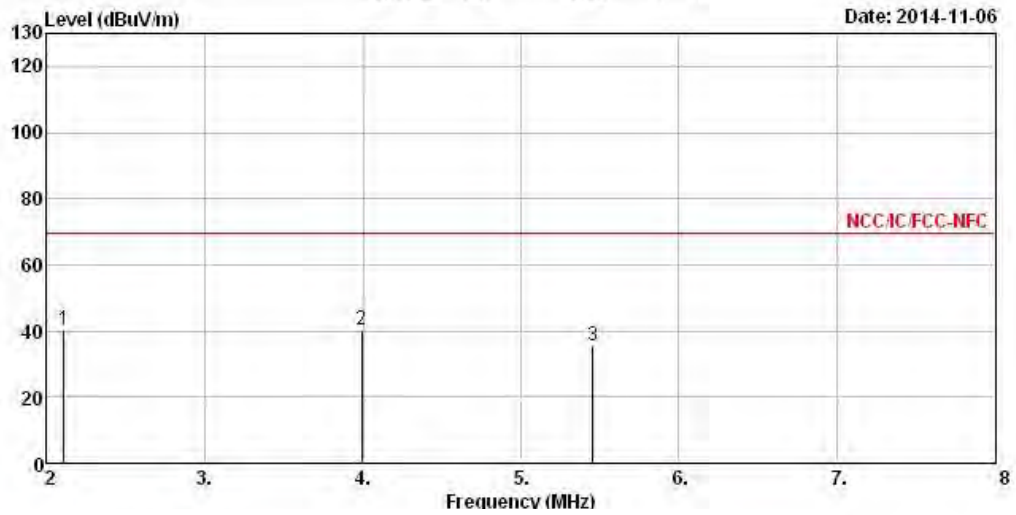
Transmitter Radiated Unwanted Emissions (150 kHz –2 MHz)			
Modulation Mode	RFID-Read/Write	**Polarization**	H
Operating Mode	1		
Operating Function	EUT with AC power via Debug Board Transmitter		



	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	0.457	47.30	-47.11	94.41	27.10	20.10	0.10	0.00	Peak	---	---
2	0.768	43.10	-26.81	69.91	23.02	19.98	0.10	0.00	Peak	---	---
3	1.105	43.65	-23.09	66.74	23.63	19.92	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: H (Horizontal).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

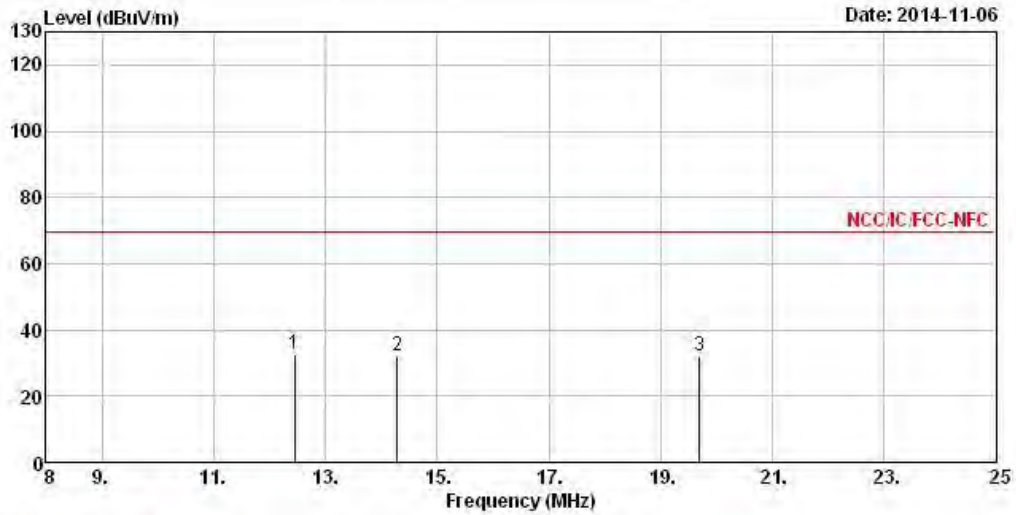
Transmitter Radiated Unwanted Emissions (2 MHz –8 MHz)			
Modulation Mode	RFID-Read/Write	**Polarization**	H
Operating Mode	1		
Operating Function	EUT with AC power via Debug Board Transmitter		



	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	2.108	40.32	-29.22	69.54	20.12	20.00	0.20	0.00	Peak	---	---
2	3.992	40.24	-29.30	69.54	19.93	20.00	0.31	0.00	Peak	---	---
3	5.456	35.52	-34.02	69.54	15.16	20.02	0.34	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: H (Horizontal).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

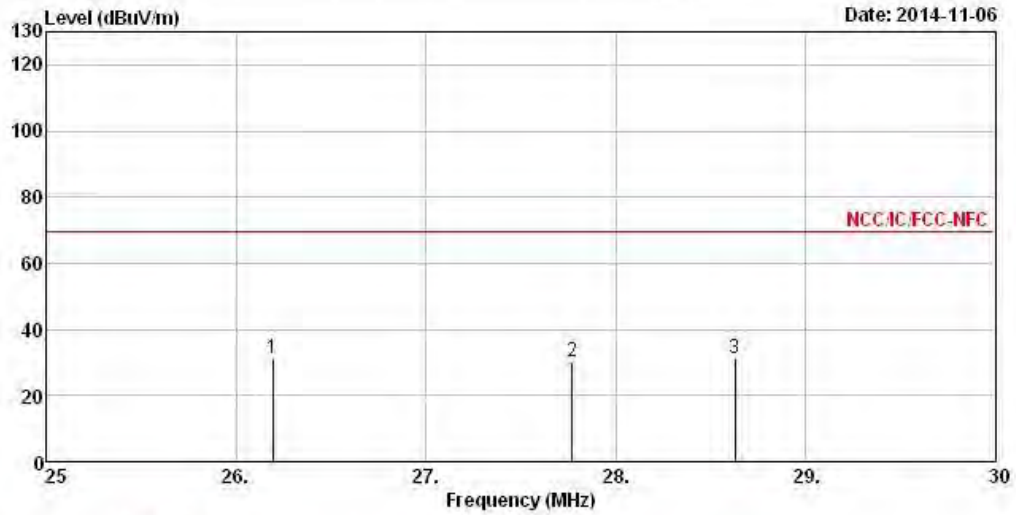
Transmitter Radiated Unwanted Emissions (8 MHz –25 MHz)			
Modulation Mode	RFID-Read/Write	**Polarization**	H
Operating Mode	1		
Operating Function	EUT with AC power via Debug Board Transmitter		



	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	12.454	32.82	-36.72	69.54	12.18	20.10	0.54	0.00	Peak	---	---
2	14.290	32.35	-37.19	69.54	11.66	20.10	0.59	0.00	Peak	---	---
3	19.696	31.98	-37.56	69.54	11.07	20.19	0.72	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: H (Horizontal).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (25 MHz –30 MHz)			
Modulation Mode	RFID-Read/Write	**Polarization**	H
Operating Mode	1		
Operating Function	EUT with AC power via Debug Board Transmitter		

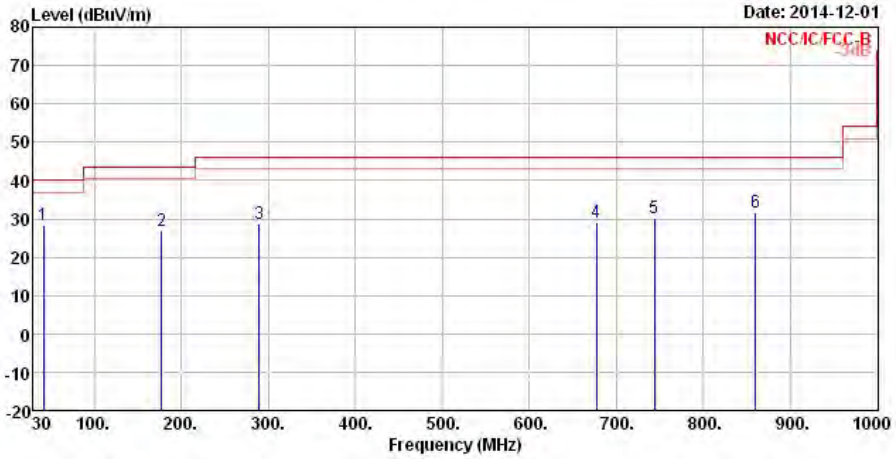


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	26.190	31.26	-38.28	69.54	10.36	20.10	0.80	0.00	Peak	---	---
2	27.770	30.31	-39.23	69.54	9.40	20.10	0.81	0.00	Peak	---	---
3	28.630	31.02	-38.52	69.54	10.10	20.10	0.82	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: H (Horizontal).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

3.2.6 Transmitter Radiated Unwanted Emissions (Above 30MHz)

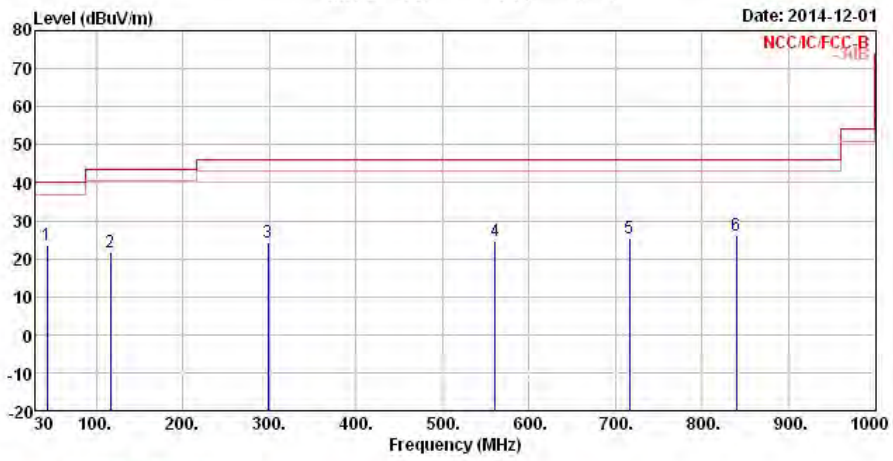
Transmitter Radiated Unwanted Emissions (Below 1GHz)			
Modulation Mode	RFID-Read/Write	**Polarization**	V
Operating Mode	1	**Operating Function**	EUT with Service Station Charge Mode



	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	41.751	28.42	-11.58	40.00	42.76	11.95	1.04	27.33	Peak	---	---
2	177.568	26.75	-16.75	43.50	42.20	9.50	2.19	27.14	Peak	---	---
3	289.461	28.82	-17.18	46.00	39.68	13.03	2.84	26.73	Peak	---	---
4	677.346	29.11	-16.89	46.00	33.75	18.68	4.46	27.78	Peak	---	---
5	743.851	30.29	-15.71	46.00	33.80	19.56	4.65	27.72	Peak	---	---
6	859.761	31.58	-14.42	46.00	33.69	20.34	4.98	27.43	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.

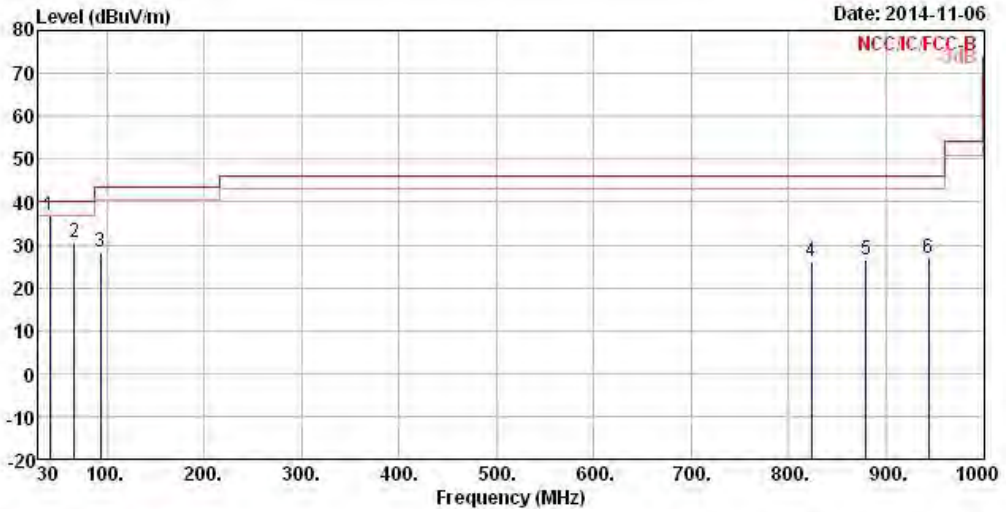
Transmitter Radiated Unwanted Emissions (Below 1GHz)			
Modulation Mode	RFID-Read/Write	**Polarization**	H
Operating Mode	1	**Operating Function**	EUT with Service Station Charge Mode



	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	43.421	23.62	-16.38	40.00	39.08	10.82	1.06	27.34	Peak	---	---
2	116.253	21.69	-21.81	43.50	34.97	12.15	1.75	27.18	Peak	---	---
3	298.150	24.26	-21.74	46.00	34.87	13.19	2.89	26.69	Peak	---	---
4	561.238	24.75	-21.25	46.00	30.31	18.31	3.97	27.84	Peak	---	---
5	715.853	25.37	-20.63	46.00	29.44	19.10	4.59	27.76	Peak	---	---
6	839.457	26.12	-19.88	46.00	28.49	20.19	4.93	27.49	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.

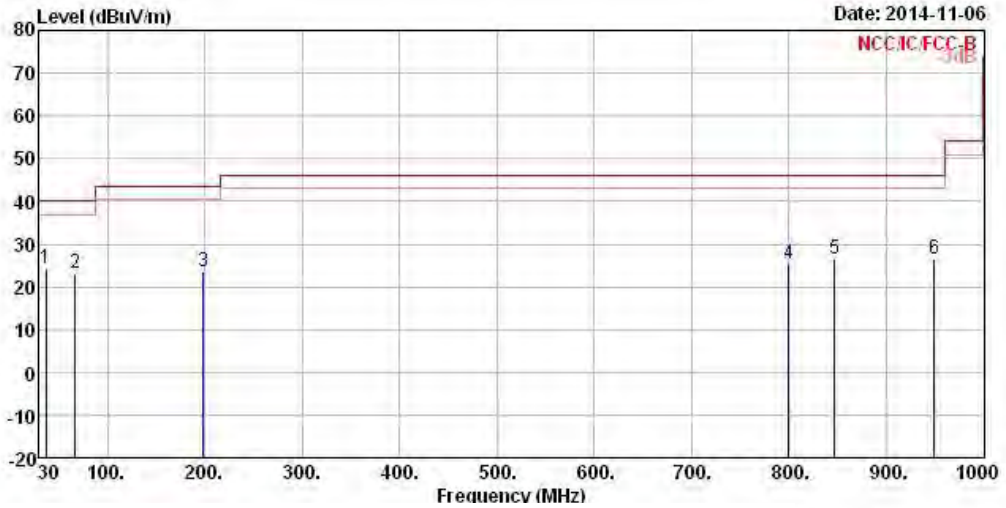
Transmitter Radiated Unwanted Emissions			
Modulation Mode	RFID-Read/Write	**Polarization**	V
Operating Mode	2		
Operating Function	EUT with AC power via Debug Board Transmitter		



	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	41.640	36.77	-3.23	40.00	51.11	11.95	1.04	27.33	Peak	---	---
2	66.860	30.63	-9.37	40.00	50.11	6.62	1.32	27.42	Peak	---	---
3	94.020	28.30	-15.20	43.50	43.91	10.12	1.53	27.26	Peak	---	---
4	823.460	26.07	-19.93	46.00	28.64	20.06	4.92	27.55	Peak	---	---
5	879.720	26.38	-19.62	46.00	28.24	20.41	5.09	27.36	Peak	---	---
6	943.740	26.90	-19.10	46.00	28.13	20.81	5.31	27.35	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.

Transmitter Radiated Unwanted Emissions			
Modulation Mode	RFID-Read/Write	**Polarization**	H
Operating Mode	1		
Operating Function	EUT with AC power via Debug Board Transmitter		



	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	36.790	24.19	-15.81	40.00	35.56	14.91	0.98	27.26	Peak	---	---
2	66.860	23.01	-16.99	40.00	42.49	6.62	1.32	27.42	Peak	---	---
3	198.780	23.65	-19.85	43.50	39.24	9.22	2.32	27.13	Peak	---	---
4	800.180	25.55	-20.45	46.00	28.62	19.64	4.92	27.63	Peak	---	---
5	846.740	26.38	-19.62	46.00	28.66	20.26	4.93	27.47	Peak	---	---
6	949.560	26.45	-19.55	46.00	27.62	20.86	5.33	27.36	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.

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	Apr. 14. 2014	AC Conduction
LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	8127-477	9kHz ~ 30MHz	Jan. 22, 2014	AC Conduction
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832020001	9kHz ~ 30MHz	Oct. 31, 2014	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
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	Nov. 30, 2013 Nov. 29, 2014 (Update)	Radiation
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	May 05, 2014	Radiation
Spectrum	R&S	FSP40	100004	9kHz ~ 40GHz	Mar. 27, 2014	Radiation
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30MHz ~ 1GHz	Sep. 20, 2014	Radiation
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	Nov. 16, 2013	Radiation
Turn Table	EM Electronics	EM Electronics	060615	0 ~ 360 degree	N/A	Radiation
Antenna Mast	MF	MF-7802	MF780208179	1 ~ 4 m	N/A	Radiation

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	9kHz ~ 30MHz	Dec. 02, 2012	Radiation

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