RETLIF TESTING LABORATORIES | Put Us To The Test℠
3131 Detwiler Road
Harleysville, PA 19438 USA
Tel: (215) 256-4133 • Fax: (215) 256-4130 • www.retlif.com

FCC Part 15, Subpart C, Section 15.249
Industry Canada, RSS-210 and RSS-GEN

Test Report

On

908 MHz Transceiver
FCC ID: Y3K-ROCM
IC: 8622A-ROCM

Customer Name:	Evolve Guest Controls
Customer P.O:	0001800
Date of Report Revision:	April 15, 2015
Test Report No:	R-2271P, Rev. A
Test Start Date:	January 23, 2015
Test Finish Date:	January 27, 2015
Test Technician:	David Fiore
Approved By:	Dean F. Landers
Report Prepared By:	Colleen Reitz

Technical Information

Report Number:	R-2271P, Rev. A
Customer:	Evolve Guest Controls
Address:	16 S. Maryland Avenue
	Port Washington, NY 11050
Manufacturer:	Mega World
Manufacturer Address:	Unit J, 13/F, World Tech Center, 95 How Ming Street
	Kwan Tong, Kowloon, Hong Kong
Test Sample:	908 MHz Transceiver
Model Number:	ROC[m] v2.0
FCC ID:	Y3K-ROCM
IC:	8622A-ROCM
Type:	Unlicensed Radio Apparatus
Power Requirements:	5 VDC derived from 115 VAC, 60 Hz Adapter
Frequency of Operation:	908 MHz
Equipment Class:	DXT
Equipment Use:	Mobile >20cm

Test Specification:
FCC Rules and Regulations Part 15, Subpart C, Section 15.249
Radio Standards Specification, RSS-210, Issue 8, June, 2010

Test Procedure:
ANSI C63.4:2009
RSS-GEN, Issue 4, November 2014

Test Facility:
Retlif Testing Laboratories
3131 Detwiler Road
Harleysville, PA 19438

FCC Registered Test Site Number: 98314

Tests Performed

The test methods performed on the 908 MHz Transceiver are shown below:

FCC Part 15, Subpart C	Industry Canada RSS-210	Industry Canada RSS-GEN	Test Method
15.249(a)	A2.9	N/A	Field Strength of Emissions
15.249(d)	A2.9(b)	N/A	Field Strength of Spurious Emissions
15.249(d)	A2.9(b)	N/A	Field Strength of Emissions-Band Edge
15.107 / 15.207(a)	N/A	7.2.2	Conducted Emissions
15.109(a)	N/A	7.2.3	Receiver Radiated Emissions

General Test Requirements

1. The measurement procedures of ANSI C63.4:2009 were utilized as specified in FCC Part 15, Subpart C, Section 15.31(a)(3) and IC RSS-GEN Section 4.1.
2. All radiated emissions measurements were performed on an Open Area Test Site (OATS), listed with the FCC and IC, in accordance with FCC Section 15.31(d) and IC Section 4.2.
3. The level of the fundamental field strength was measured with the AC input varied from 85 to 115% of rated. The worst case results were reported in accordance with FCC Section 15.231(e) and IC Section 4.3(e).
4. All measurements were performed at the specified 3 meter test distance as required by FCC Section 15.31(f) and IC Section 7.25.
5. The EUT was rotated throughout 360 degrees for all radiated emissions measurements as specified in FCC Section 15.31(f)(5) and IC Section 4.3(h).
6. All readily accessible EUT controls were adjusted in such a manner as to maximize the level of emissions in accordance with FCC Section 15.31(g) and IC Section 4.3(h).
7. Appropriate accessories were attached to all EUT ports during the performance of radiated emissions measurements as required by FCC Section 15.31(i) and IC Section 4.3(d).
8. AC line conducted emissions were measured utilizing a 50 Ohm / 50 MicroHenry LISN as specified in FCC Section 15.31(l) and IC Section 7.2.2.
9. The EUT operated at the frequency of 908 MHz. Testing was performed with the device operating at 1 frequency in the middle of the range of operation in accordance with FCC Section 15.31(m) and IC Section 4.3(f)(g).
10. The frequency spectrum was investigated from the lowest frequency generated in the device up to the 10^{th} harmonic of the highest fundamental frequency in accordance with FCC Section 15.33(a)(1) and IC Section 4.9.
11. Measurements below 1000 MHz were taken utilizing a Quasi-Peak Detector. Measurements above 1 GHz were taken utilizing an Average Detector in accordance with FCC Section 15.35(a) and IC Section 4.9. The peak value of emissions above 1 GHz was verified to meet the 20 dB requirement of FCC Section 15.35(b) and IC Section 7.2.1.

Certification and Signatures

We certify that this report is a true representation of the results obtained from the tests of the equipment stated. We further certify that the measurements shown in this report were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.

Dean F. Landers
EMC Test Engineer
NVLAP Approved Signatory

Non-Warranty Provision
The testing services have been performed, findings obtained and reports prepared in accordance with generally accepted laboratory principles and practices. This warranty is in lieu of all others, either expressed or implied.

Non-Endorsement
This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement or certification of the product or material tested. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

Requirements and Test Results

Requirement:
FCC Section 15.249(a) and (d) - Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz and 24.0 - 24.25 GHz

IC RSS-210, A2.9(a) and (b):
This section provides standards for low-power devices that can be used for any application provided the following condition is met:

FCC Section 15.249(a): Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with Table 1.

IC A2.9(a): The field strengths measured at 3 meters shall not exceed the limits specified in Table 1.

Table 1 - Field Strength of Emissions

Fundamental Frequency	Field Strength - Fundamental (millivolts/meter)	Field Strength - Harmonics (microvolts/meter)
902 to 928 MHz	50	500
2400 to 2483.5 MHz	50	500
5725 to 5875	50	500
24.0 to 24.25 GHz	250	2500

- Results:
  The EUT was operated at 908 MHz. The field strength of the fundamental did not exceed 50 mV/m peak. The field strength of the harmonics did not exceed 500 µV/m peak.

FCC Section 15.249(d): Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

IC A2.9(b): Emissions radiated outside of the frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the limits of Table 2 (RSS-210), whichever is the less stringent.

- Results:
  Emissions radiated at the Band Edges and outside the specified frequency band were attenuated in accordance with the general radiated emissions limits of 15.209.

Requirements and Test Results (con't)

Requirement:
FCC Section 15.107/15.207(a) - Conducted Limits
For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits shown in Table 2, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of the paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applied at the boundary between the frequency ranges.

IC RSS-GEN, Section 7.2.2 -
Transmitter and Receiver AC Power Lines Conducted Emissions Limits
The purpose of this test is to measure unwanted radio frequency currents induced in any AC conductor external to the equipment which could conduct interference to other equipment via the AC electrical network.

Except when the requirements applicable to a given device state otherwise, for any liscense-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in Table 2. The tighter limit applies at the frequency range boundaries.

The conducted emissions shall be measured with a 50 ohm/50 microhenry line impedance stabilization network.

Table 2 - Conducted Emission Limits

Frequency of Emission (MHz)	**Conducted Limit (dBµV)**	
	Quasi-Peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50
*Decreases due to logarithm of the frequency		

- Results:
  The conducted emissions observed did not exceed the limits specified in Table 2 when tested with the receiver on.

Requirements and Test Results (con't)

Requirement:
FCC Section 15.109(a) - Receiver Radiated Emissions
Except for Class A digital devices, the field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the values shown in Table 3.

IC RSS-GEN, 7.2.3 - Receiver Spurious Emission Limits
Receiver spurious emissions at any discrete frequency shall not exceed 2 nanowatts in the band 30-1000 MHz, or 5 nanowatts above 1 GHz. All spurious emissions shall comply with the limits specified in Table 3.

Table 3 - Receiver Radiated Emission Limits

Frequency of Emission (MHz)	Field Strength (microvolts/meter)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960	500

- Results:
  The emissions observed did not exceed the limits specified in Table 3.

General Requirements FCC and IC

RF Exposure Limits

The following power measurement was calculated from field strength measurements as outlined in Paragraph 4.2 of RSS-102, Issue 2:

$$TP = \frac{(FS \times D)^2}{30 \times G}$$

FS = 0.00570821 (Peak)
D = 3 M
G = 6.02
TP = 1.62 microwatts

In accordance with Paragraph 2.5.1 of RSS-102, Issue 2, this device is exempt from SAR evaluation since the TP is less than 200 milliwatts and the device is portable.

Equipment Lists

FCC Section 15.249(a) and IC RSS-GEN, A2.9 - Field Strength of Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
713D	MICRO-COAX	CABLE ASSEMBLY	3 FT. 50U50U	UFB311A1-0360-	9/30/2014	9/30/2015
713F	MICRO-COAX	CABLE ASSEMBLY	25 FT 50U50U	UFB311A1-2400-	9/30/2014	9/30/2015
8017	EMCO	DOUBLE RIDGE GUIDE	1 - 18 GHz	3115	8/21/2014	2/29/2016
8300	RETLIF	TEST SITE ATTENUATION	3/10 Meter OATS	RPA	8/7/2014	8/31/2015
8300C	UNKNOWN	3/10 METER CABLE	3/10 METER	3 METER CABLE	10/3/2014	10/31/2015
8317	AGILENT / HP	PRE-AMPLIFIER	1-26.5 GHz, 30 dB	8449B	6/12/2014	6/30/2015
8411	SONOMA INSTRUMENT	PRE-AMPLIFIER	9 kHz - 1 GHz	310N	9/30/2014	9/30/2015
8433	ETS LINDGREN	BICONILOG	20 - 6000 MHz	3142D	3/10/2014	9/30/2015
R650	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A	3/27/2014	3/31/2015

FCC Section 15.249(d) and IC RSS-GEN, A2.9(b) - Field Strength of Spurious Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
713D	MICRO-COAX	CABLE ASSEMBLY	3 FT. 50U50U	UFB311A1-0360-	9/30/2014	9/30/2015
713F	MICRO-COAX	CABLE ASSEMBLY	25 FT 50U50U	UFB311A1-2400-	9/30/2014	9/30/2015
8017	EMCO	DOUBLE RIDGE GUIDE	1 - 18 GHz	3115	8/21/2014	2/29/2016
8300	RETLIF	TEST SITE ATTENUATION	3/10 Meter OATS	RPA	8/7/2014	8/31/2015
8300C	UNKNOWN	3/10 METER CABLE	3/10 METER	3 METER CABLE	10/3/2014	10/31/2015
8317	AGILENT / HP	PRE-AMPLIFIER	1-26.5 GHz, 30 dB	8449B	6/12/2014	6/30/2015
8411	SONOMA INSTRUMENT	PRE-AMPLIFIER	9 kHz - 1 GHz	310N	9/30/2014	9/30/2015
8433	ETS LINDGREN	BICONILOG	20 - 6000 MHz	3142D	3/10/2014	9/30/2015
R650	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A	3/27/2014	3/31/2015
3207	ETS/EMCO	ANTENNA, ACTIVE LOOP	10 kHz to 30 MHz	6502	1/26/2015	1/31/2016

FCC Section 15.249(d), IC RSS-GEN, A2.9(b) - Field Strength of Emissions Band Edge

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
713D	MICRO-COAX	CABLE ASSEMBLY	3 FT. 50U50U	UFB311A1-0360-	9/30/2014	9/30/2015
713F	MICRO-COAX	CABLE ASSEMBLY	25 FT 50U50U	UFB311A1-2400-	9/30/2014	9/30/2015
8017	EMCO	DOUBLE RIDGE GUIDE	1 - 18 GHz	3115	8/21/2014	2/29/2016
8300	RETLIF	TEST SITE ATTENUATION	3/10 Meter OATS	RPA	8/7/2014	8/31/2015
8300C	UNKNOWN	3/10 METER CABLE	3/10 METER	3 METER CABLE	10/3/2014	10/31/2015
8317	AGILENT / HP	PRE-AMPLIFIER	1-26.5 GHz, 30 dB	8449B	6/12/2014	6/30/2015
8411	SONOMA INSTRUMENT	PRE-AMPLIFIER	9 kHz - 1 GHz	310N	9/30/2014	9/30/2015
8433	ETS LINDGREN	BICONILOG	20 - 6000 MHz	3142D	3/10/2014	9/30/2015
R650	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A	3/27/2014	3/31/2015

Equipment Lists (con't)

FCC Section 15.107/15.207(a) - Conducted Emissions
IC RSS-GEN, 7.2.2 - Transmitter and Receiver AC Power Lines Conducted Emission Limits

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
8079	ROHDE & SCHWARZ	EMI TEST RECEIVER		ESH3	6/30/2014	6/30/2015
8496	NARDA	MED POWER ATTENUATOR	DC-11GHZ / 20W	768-10	6/2/2014	6/30/2015
8557	NARDA MICROWAVE	ATTENUATOR, COAXIAL	10 dB; DC - 11 GHz	768-10	6/3/2014	6/30/2015
8575	RIGOL	ANALYZER, SPECTRUM	9 kHz - 1.5 GHz	DSA815-TG	12/12/2014	12/31/2015
8633	SOLAR ELECTRONICS	LINE IMPEDANCE STABILIZATION NETWORK	150 kHz - 30 MHz	21106-50-BP-25-BNC	1/13/2015	1/31/2016
8634	SOLAR ELECTRONICS	LINE IMPEDANCE STABILIZATION NETWORK	150 kHz - 30 MHz	21106-50-BP-25-BNC	1/13/2015	1/31/2016

FCC Section 15.109(a) - Receiver Radiated Emissions
IC RSS-GEN, 7.2.3 - Receiver Spurious Emission Limits

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
713D	MICRO-COAX 50U50U	CABLE ASSEMBLY	3 FT.	UFB311A1-0360-	9/30/2014	9/30/2015
713F	MICRO-COAX 50U50U	CABLE ASSEMBLY	25 FT	UFB311A1-2400-	9/30/2014	9/30/2015
8017	EMCO	DOUBLE RIDGE GUIDE	1 - 18 GHz	3115	8/21/2014	2/29/2016
8300	RETLIF	TEST SITE ATTENUATION	3/10 Meter OATS	RPA	8/7/2014	8/31/2015
8300C	UNKNOWN	3/10 METER CABLE	3/10 METER	3 METER CABLE	10/3/2014	10/31/2015
8317	AGILENT / HP	PRE-AMPLIFIER	1-26.5 GHz, 30 dB	8449B	6/12/2014	6/30/2015
8411	SONOMA INSTRUMENT	PRE-AMPLIFIER	9 kHz - 1 GHz	310N	9/30/2014	9/30/2015
8433	ETS LINDGREN	BICONILOG	20 - 6000 MHz	3142D	3/10/2014	9/30/2015
R650	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A	3/27/2014	3/31/2015

FCC Part 15, Subpart C, Section 15.249(a) and IC RSS-210, Annex A2.9
Field Strength of Emissions

Test Data

Test Method:	**FCC Part 15, Subpart C, Section 15.249(a), Field Strength of Emissions** **IC RSS-210, Annex A2.9, Field Strengths and Frequency Bands**						
Customer:	Evolve Guest Controls				**Job No.:**	R-2271P	
Test Sample:	908 MHz Transceiver						
Part No.:	ROC[m] V2.0				**SN:** 11001		
Operating Mode:	Continuously transmitting a CW signal at 908 MHz						
Technician:	D.Fiore				**Date:**	01/23/2015	
Notes:	Detector: Quasi-Peak below 1GHz, Peak above 1GHz			Test Distance: 3 Meters			
Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)/Meters		dBµV	dB	dBµV/m	uV/m	uV/m
908.00	V / 1.00	178.0	74.48	0.65	75.13	5708.21	50,000
908.00	H / 2.86	152.3	70.43	0.65	71.08	3580.96	50,000
1816.00	V/1.28	157.3	49.94	-6.67	43.27	145.71	500
1816.00	H/1.36	152.2	47.15	-6.67	40.48	105.68	500
*2724.00	V/1.00	180.0	40.62	-4.8	35.82	61.80	500
*2724.00	H/1.00	180.0	40.25	-4.8	35.45	59.22	500
*3632.00	V/1.00	180.0	44.45	-1.19	43.26	145.55	500
*3632.00	H/1.00	180.0	44.01	-1.19	42.82	138.35	500
*4540.00	V/1.00	180.0	44.96	0.36	45.32	184.50	500
*4540.00	H/1.00	180.0	44.59	0.36	44.95	176.81	500
*5448.00	V/1.00	180.0	45.23	2.55	47.78	244.91	500
*5448.00	H/1.00	180.0	45.54	2.55	48.09	253.80	500
*6356.00	V/1.00	180.0	44.11	3.44	47.55	238.51	500
*6356.00	H/1.00	180.0	45.23	3.44	48.67	271.33	500
*7264.00	V/1.00	180.0	46.14	5.04	51.18	362.24	500
*7264.00	H/1.00	180.0	45.14	5.04	50.18	322.85	500
*8172.00	V/1.00	180.0	45.18	5.18	50.36	329.60	500
*8172.00	H/1.00	180.0	45.33	5.18	50.51	335.35	500
*9080.00	V/1.00	180.0	44.72	6.09	50.81	347.14	500
*9080.00	H/1.00	180.0	44.60	6.09	50.69	342.37	500
	The frequency range was scanned from 908 MHz to 9.080 GHz. All emissions not recorded were more						
	than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.						
	* Noise floor measurements, minimum sensitivity of measurement system.						

Test Method:	**FCC Part 15, Subpart C, Section 15.249(a), Field Strength of Emissions** **IC RSS-210, Annex A2.9, Field Strengths and Frequency Bands**						
Customer:	Evolve Guest Controls				**Job No.:**	R-2271P	
Test Sample:	908 MHz Transceiver						
Part No.:	ROC[m] V2.0				**SN:** 11001		
Operating Mode:	Continuously transmitting a CW signal at 908 MHz						
Technician:	D.Fiore				**Date:**	01/23/2015	
Notes:	Detector: Average				Test Distance: 3 Meters		
Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)-Meters		dBµV	dB	dBµV/m	uV/m	uV/m
1816.00	V/1.28	157.3	40.21	-6.67	33.54	47.53	500
1816.00	H/1.36	152.2	36.41	-6.67	29.74	30.69	500
*2724.00	V/1.00	180.0	31.31	-4.8	26.51	21.16	500
*2724.00	H/1.00	180.0	31.39	-4.8	26.59	21.35	500
*3632.00	V/1.00	180.0	29.90	-1.19	28.71	27.26	500
*3632.00	H/1.00	180.0	29.35	-1.19	28.16	25.59	500
*4540.00	V/1.00	180.0	29.58	0.36	29.94	31.41	500
*4540.00	H/1.00	180.0	29.62	0.36	29.98	31.55	500
*5448.00	V/1.00	180.0	28.86	2.55	31.41	37.20	500
*5448.00	H/1.00	180.0	29.01	2.55	31.56	37.84	500
*6356.00	V/1.00	180.0	28.93	3.44	33.27	46.08	500
*6356.00	H/1.00	180.0	28.98	3.44	33.42	46.88	500
*7264.00	V/1.00	180.0	30.06	5.04	35.10	56.89	500
*7264.00	H/1.00	180.0	30.04	5.04	35.08	56.75	500
*8172.00	V/1.00	180.0	29.82	5.18	35.00	56.23	500
*8172.00	H/1.00	180.0	29.84	5.18	35.02	56.36	500
*9080.00	V/1.00	180.0	30.29	6.09	36.38	65.92	500
*9080.00	H/1.00	180.0	30.28	6.09	36.37	65.84	500
	The frequency range was scanned from 908 MHz to 9.080 GHz. All emissions not recorded were more						
	than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.						
	* Noise floor measurements, minimum sensitivity of measurement system.						

FCC Part 15, Subpart C, Section 15.249(d) and IC RSS-GEN, A2.9(b)
Field Strength of Spurious Emissions

Test Data

Test Method:	**FCC Part 15, Subpart C, Field Strength of Spurious Emissions, 30 MHz to 10.0 GHz, Para:15.249(d), IC, RSS-210 Annex 2.9(b) – Field Strength of Spurious Emissions Operating in the Bands 902–928 MHz**		
Customer:	Evolve Guest Controls	**Job No.:**	R-2271P
Test Sample:	908 MHz Transceiver		
Model No.:	ROC[m] V2.0	**Serial No.:**	10835
Operating Mode:	Continuously Transmitting a Modulated signal at 908MHz.		
Technician:	D.Fiore	**Date:**	01/26/2015

Notes: Test Distance: 3 Meters Temp: 2.1°C RH: 71%
Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
0.009							267
|							|
0.490							4.8
0.490							49.97
|							|
1.705							14.07
1.705							30
|							|
8.00	Parallel/1.0	180.0	28.00	-9.55	18.45	8.37	|
8.00	Perpendicular/1.0	180.0	36.57	-9.55	27.02	22.44	|
|							|
30.00							30
125.00	V/1.00	302.0	28.56	9.56	38.12	80.53	|
125.00	H/2.96	165.7	25.15	9.56	34.71	54.38	|
|							|
166.67	V/1.00	49.3	29.93	11.60	41.53	119.26	|
166.67	H/2.01	147.5	27.68	11.60	39.28	92.04	|
|							|
216							150
216							200
|							|
250.01	V/1.00	89.7	28.95	16.71	45.66	191.87	|
250.01	H/2.53	32.6	27.25	16.71	43.96	157.76	|
|							|
291.64	V/1.00	28.0	21.24	17.15	38.39	83.08	|
291.64	H/1.72	323.4	24.58	17.15	41.73	122.04	|
|							|
333.35	V/1.00	36.4	22.39	18.02	40.41	104.83	|
333.35	H/1.00	25.9	26.22	18.02	44.24	162.93	|
|							|
416.68	V/1.32	237.2	20.24	21.00	41.24	115.35	|
416.68	H/2.24	171.6	19.22	21.00	40.22	102.57	|
|							|
960.00							200
960.00							500
|							|
|							|
1000.0							500
	The frequency range was scanned from 30 MHz to 9.08 GHz.						
	The emissions observed from the EUT do not exceed the specified limits.						
	Emissions not recorded were more than 20dB under the specified limit.						

Test Method:	**FCC Part 15, Subpart C, Field Strength of Spurious Emissions, 30 MHz to 10.0 GHz, Para:15.249(d), IC, RSS-210 Annex 2.9(b) – Field Strength of Spurious Emissions Operating in the Bands 902–928 MHz**		
Customer:	Evolve Guest Controls	**Job No.:**	R-2271P
Test Sample:	908 MHz Transceiver		
Model No.:	ROC[m] V2.0	**Serial No.:**	10835
Operating Mode:	Continuously Transmitting a Modulated signal at 908MHz.		
Technician:	D.Fiore	**Date:**	01/26/2015

Notes: Test Distance: 3 Meters Temp: 2.1°C RH: 71%
Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) /	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
*1.05	H/1.00	180.0	42.10	-10.96	31.14	36.05	500
*4.95	H/1.00	180.0	44.96	0.39	45.35	185.13	
*9.079	H/1.00	180.0	45.12	6.08	51.20	363.07	500

The frequency range was scanned from 30 MHz to 9.08 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.
*Noise floor measurements, minimum sensitivity of measurement system.

FCC Section 15.249(d), IC RSS-GEN, A2.9(b)
Field Strength of Emissions Band Edge

Test Data

Test Method:	**FCC Part 15, Subpart C, Field Strength of Spurious Emissions-Band Edge, 30 MHz to 10.0 GHz, Para:15.249(d), IC, RSS-210 Annex 2.9(b) – Field Strength of Spurious Emissions Operating in the Bands 902–928 MHz**		
Customer:	Evolve Guest Controls	**Job No.:**	R-2271P
Test Sample:	908 MHz Transceiver		
Model No.:	ROC[m] V2.0	**Serial No.:**	10835
Operating Mode:	Continuously Transmitting a Modulated signal at 908MHz.		
Technician:	D.Fiore	**Date:**	01/26/2015

Notes: Test Distance: 3 Meters Temp: 2.1°C RH: 71%
Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
30.00							100
41.67	V/1.00	146.3	25.58	13.58	39.16	90.78	
41.67	H/1.29	267.1	23.56	13.58	37.14	71.94	
88.00							100
88.00							150
125.00	V/1.00	302.0	28.56	9.56	38.12	80.53	
125.00	H/2.96	165.7	25.15	9.56	34.71	54.38	
166.67	V/1.00	49.3	29.93	11.60	41.53	119.26	
166.67	H/2.01	147.5	27.68	11.60	39.28	92.04	
216							150
216							200
250.01	V/1.00	89.7	28.95	16.71	45.66	191.87	
250.01	H/2.53	32.6	27.25	16.71	43.96	157.76	
291.64	V/1.00	28.0	21.24	17.15	38.39	83.08	
291.64	H/1.72	323.4	24.58	17.15	41.73	122.04	
333.35	V/1.00	36.4	22.39	18.02	40.41	104.83	
333.35	H/1.00	25.9	26.22	18.02	44.24	162.93	
416.68	V/1.32	237.2	20.24	21.00	41.24	115.35	
416.68	H/2.24	171.6	19.22	21.00	40.22	102.57	
902.00	V/118.2	180.0	-0.80	33.33	32.53	42.22	
902.00	H/118.2	180.0	-0.82	33.33	32.51	42.22	
928.00	V/1.00	180.0	-0.94	32.48	31.54	37.76	
928.00	H/1.00	180.0	-0.56	32.48	31.92	39.45	
960.00							200
960.00							500
1000.0							500

The frequency range was scanned from 30 MHz to 9.08 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.
No emissions were observed at the specified band edges, 902 MHz and 928 MHz

Test Method:	**FCC Part 15, Subpart C, Field Strength of Spurious Emissions, Band Edge 30 MHz to 10.0 GHz, Para:15.249(d), IC, RSS-210 Annex 2.9(b) – Field Strength of Spurious Emissions Operating in the Bands 902–928 MHz**		
Customer:	Evolve Guest Controls	**Job No.:**	R-2271P
Test Sample:	908MHz Transceiver		
Model No.:	ROC[m] V2.0	**Serial No.:**	10835
Operating Mode:	Continuously Transmitting a Modulated signal at 908MHz.		
Technician:	D.Fiore	**Date:**	01/26/2015

Notes: Test Distance: 3 Meters Temp: 2.1°C RH: 71%
Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) /	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
*1.05	H/1.00	180.0	42.10	-10.96	31.14	36.05	500
*4.95	H/1.00	180.0	44.96	0.39	45.35	185.13	|
*9.079	H/1.00	180.0	45.12	6.08	51.20	363.07	500

The frequency range was scanned from 30 MHz to 9.08 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.
*Noise floor measurements, minimum sensitivity of measurement system.

FCC Section 15.107/15.207(a) - Conducted Limits
IC RSS-GEN, 7.2.2 - Transmitter and Receiver AC Power Lines Conducted Emission Limits

Test Data

EMISSIONS TEST DATA SHEET	
Test Specification:	**FCC Part 15, Subpart B. Class B, Conducted Emissions, 150 kHz to 30 MHz Paragraph 15.107, RSS-GEN, Section 7.2.2**
Method:	Conducted Emissions, AC Power Ports, 150kHz to 30MHz
Job Number/Customer:	R-2271P-1 / Evolve Guest Controls
Test Sample:	908MHz Transceiver
Model Number:	ROC[m] V2.0
Serial Number:	10892
Operating Mode:	Continuously Receiving
Power Port Tested:	115VAC,60Hz
Technician:	D.Fiore
Date(s):	01/27/2015
Temperature:	21.3°
Relative Humidity:	30%

Frequency	Lead Tested	Peak Meter Reading	Quasi-Peak Meter Reading	Average Meter Reading		Quasi-Peak Limit	Average Limit
MHz		dBuV	dBuv	dBuV		dBuV	dBuV
0.448	Hot	47.30	X	27.34		56.91	46.91
0.896	Hot	41.80	X	X		56.00	46.00
2.78	Hot	30.30	X	X		56.00	46.00
3.83	Hot	36.60	X	X		56.00	46.00
6.51	Hot	35.12	X	X		60.00	50.00
7.66	Hot	33.70	X	X		60.00	50.00
0.448	Neutral	44.60	X	X		56.91	46.91
0.896	Neutral	39.20	X	X		56.00	46.00
2.78	Neutral	35.40	X	X		56.00	46.00
3.83	Neutral	35.70	X	X		56.00	46.00
6.51	Neutral	33.10	X	X		60.00	50.00
7.66	Neutral	30.40	X	X		60.00	50.00

The frequency range was scanned from 0.15 MHz to 30 MHz.
The highest emissions relative to the limit are presented.
The peak emissions observed from the EUT do not exceed the specified average limits.

EMISSIONS TEST DATA SHEET	
Test Specification:	**FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz, Paragraph 15.207(a), IC, RSS-GEN, Section 7.2.2**
Method:	Conducted Emissions, AC Power Ports, 150kHz to 30MHz
Job Number/Customer:	R-2271P-1 / Evolve Guest Controls
Test Sample:	908MHz Transceiver
Model Number:	ROC[m] V2.0
Serial Number:	10835
Operating Mode:	Continuously Transmitting a Modulated Signal at 908MHz
Power Port Tested:	115VAC,60Hz
Technician:	D.Fiore
Date(s):	01/27/2015
Temperature:	21.3°
Relative Humidity:	30%

Frequency	Lead Tested	Peak Meter Reading	Quasi-Peak Meter Reading	Average Meter Reading		Quasi-Peak Limit	Average Limit
MHz		dBuV	dBuv	dBuV		dBuV	dBuV
0.303	Hot	51.50	X	43.50		60.16	50.16
0.461	Hot	52.40	X	32.80		56.67	46.67
1.39	Hot	43.50	X	X		56.00	46.00
2.72	Hot	40.80	X	X		56.00	46.00
3.65	Hot	37.40	X	X		56.00	46.00
6.77	Hot	36.40	X	X		60.00	50.00
0.303	Neutral	52.10	X	42.30		60.16	50.16
0.461	Neutral	47.70	X	30.41		56.67	46.67
1.39	Neutral	40.80	X	X		56.00	46.00
2.72	Neutral	37.00	X	X		56.00	46.00
3.65	Neutral	36.40	X	X		56.00	46.00
6.77	Neutral	33.80	X	X		60.00	50.00

The frequency range was scanned from 0.15 MHz to 30 MHz.
The highest emissions relative to the limit are presented.
The peak emissions observed from the EUT do not exceed the specified average limits.

FCC Section 15.109(a) - Receiver Radiated Emissions
IC RSS-GEN, 7.2.3 - Receiver Spurious Emission Limits

Test Data

Test Method:	**FCC Part 15, Subpart C, Radiated Emissions, 30 MHz to 5.0 GHz, Para:15.109(a), IC, RSS-210 Annex 7 – Field Disturbance Sensors Operating in the Bands 902–928 MHz**		
Customer:	Evolve Guest Controls	**Job No.:**	R-2271P
Test Sample:	908MHz Transceiver		
Model No.:	ROC[m] V2.0	**Serial No.:**	10892
Operating Mode:	Continuously Receiving		
Technician:	D.Fiore	**Date:**	01/27/2015

Notes: Test Distance: 3 Meters Temp: -3.1°C RH: 79 %
Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
30.00							100
41.67	V/1.00	157.9	25.64	13.58	39.22	91.41	
41.67	H/1.84	174.2	21.56	13.58	35.14	57.14	
88.00							100
88.00							150
125.01	V/1.00	326.4	26.45	9.56	36.01	63.17	
125.01	H/2.02	153.8	22.27	9.56	31.83	39.04	
166.68	V/1.00	91.5	30.02	11.60	41.62	120.50	
166.68	H/2.10	159.5	30.06	11.60	41.66	121.05	
216							150
216							200
250.00	V/1.00	301.9	28.53	16.71	45.24	182.81	
250.00	H/1.59	128.8	27.71	16.71	44.42	166.34	
291.67	V/1.00	339.4	25.68	17.15	42.83	138.52	
291.67	H/1.35	343.3	26.61	17.15	43.76	154.17	
333.35	V/1.00	177.0	20.6	18.02	38.62	85.31	
333.35	H/1.28	103.6	21.3	18.02	39.32	92.47	
416.68	V/1.00	295.2	19.89	21.00	40.89	110.79	
416.68	H/1.00	321.3	20.03	21.00	41.03	112.59	
960.00							200
960.00							500
1000.0							500

The frequency range was scanned from 30 MHz to 4.54 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.

Test Method:	**FCC Part 15, Subpart B, Class B, Radiated Emissions, 30 MHz to 5.0 GHz, Para:15.109(a), IC, RSS-210 Annex 7 – Field Disturbance Sensors Operating in the Bands 902–928 MHz**		
Customer:	Evolve Guest Controls	**Job No.:**	R-2271P
Test Sample:	908MHz Transceiver		
Model No.:	ROC[m] V2.0	**Serial No.:**	10892
Operating Mode:	Continuously Receiving		
Technician:	D.Fiore	**Date:**	01/27/2015
Notes:	Test Distance: 3 Meters	Temp: -3.1°C	RH: 79 %
	Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz		

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) /	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
*1.05	H/1.00	180.0	42.10	-10.96	31.14	36.05	500
*3.00	H/1.00	180.0	43.56	-3.23	40.33	103.87	
*4.53	H/1.00	180.0	44.96	0.39	45.35	185.13	500

	The frequency range was scanned from 30 MHz to 4.54 GHz.
	The emissions observed from the EUT do not exceed the specified limits.
	Emissions not recorded were more than 20dB under the specified limit.
	*Noise floor measurement, minimum sensitivity of measurement system.