RHEIN TECH LABORATORIES, INC.

Engineering Solutions & Electromagnetic Compatibility Services

FCC 15.231 Test Data

for

Model: RE308
433.9 MHz
(RTL barcode: 020400)

for

Resolution Engineering

RTL Project Number 2011138

Test Engineer: Jon Wilson

These tests are accredited and meet the requirements of ISO/IEC 17025 as verified by ANSI-ASQ National Accreditation Board/ACLASS. Refer to certificate and scope of accreditation AT-1445.

Description of testing presented in this test report

The data and limits presented in this report are for peak emissions limiting per 15.231(b)(2) which references 15.35(b), and peak limiting for restricted bands per 15.209(e) which again references 15.35(b)(2), as procured by Resolution Engineering. No average data is presented in this report.

Radiated Emissions Test Data – FCC Limits / 3m Distance

Green Antenna

Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pass/ Fail
433.912	Pk	V	69.7	30.5	100.2	100.8	-0.6	Pass
867.866	Pk	H	64.2	-3.2	61.0	80.8	-19.8	Pass
1301.781	Pk	H	58.8	3.4	62.2	74.0	-11.8	Pass
1735.711	Pk	V	56.5	7.8	64.3	80.8	-16.5	Pass
2169.590	Pk	V	57.2	7.7	64.9	80.8	-15.9	Pass
2603.510	Pk	V	50.4	9.0	59.4	80.8	-21.4	Pass
3037.430	Pk	V	46.5	7.2	53.7	80.8	-27.1	Pass
3471.350	Pk	H	45.0	7.7	52.7	80.8	-28.1	Pass
3905.270	Pk	H	42.2	8.8	51.0	74.0	-23.0	Pass
4339.190	Pk	H	41.1	13.1	54.2	74.0	-19.8	Pass

Red Antenna

Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pass/ Fail
433.906	Pk	H	64.1	30.5	94.6	100.8	-6.2	Pass
867.836	Pk	H	57.9	-3.2	54.7	80.8	-26.1	Pass
1301.766	Pk	H	58.9	3.4	62.3	74.0	-11.7	Pass
1735.696	Pk	H	63.9	7.8	71.7	80.8	-9.1	Pass
2169.590	Pk	H	58.6	7.7	66.3	80.8	-14.5	Pass
2603.510	Pk	H	44.8	9.0	53.8	80.8	-27.0	Pass
3037.430	Pk	H	49.3	7.2	56.5	80.8	-24.3	Pass
3471.350	Pk	V	45.6	7.7	53.3	80.8	-27.5	Pass
3905.270	Pk	V	47.0	8.8	55.8	74.0	-18.2	Pass
4339.190	Pk	V	41.9	13.1	55.0	74.0	-19.0	Pass

Test Procedure

Radiated emissions of the harmonics were tested at three meters. The EUT was tested in the three orthogonal planes with the receive antenna in both polarities. The emissions were maximized per ANSI C63.4:2003 8.3.1.2; that is, the measurement antenna height was varied between 1 and 4 m, and the EUT was rotated through 360° on a rotating turntable until the maximum emissions were found. Both horizontal and vertical measurement antenna polarizations were used. A resolution bandwidth of 100 kHz was used for frequencies less than 1000 MHz, and a resolution bandwidth of 1 MHz was used for frequencies greater than or equal to 1000 MHz. The video bandwidth was set to a value at least three times greater than the resolution bandwidth.

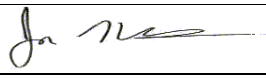
EUT Disposition

The EUT was adapted to continuously transmit for testing purposes.

Radiated Emissions Test Equipment

Part	Manufacturer	Model	Serial Number	RTL Bar Code	Calibration Due Date
Amplifier (20 MHz-2 GHz)	Rhein Tech Laboratories, Inc.	PR-1040	900905	900905	4/10/12
Bilog Periodic Antenna (25 MHz-2 GHz)	Schaffner Chase	CBL6112	2099	900791	12/12/12
EMI Receiver RF Section (9 KHz-6.5 GHz)	Hewlett Packard	85462A	3325A00159	900913	6/8/12
RF Filter Section (100 KHz-6.5 GHz)	Hewlett Packard	85460A	3330A00107	900914	6/8/12
Amplifier (1 GHz–26.4 GHz)	Hewlett Packard	8449B OPT H02	3008A00505	900932	7/14/12
Horn Antenna (2.0-4.0 GHz)	EMCO	3161-02	9804-1044	900772	6/13/12
Horn Antenna (4-8.2 GHz)	EMCO	3161-03	9508-1020	900321	6/13/12
Emissions Testing Software	Rhein Tech Laboratories, Inc.	Automated Emission Tester	Rev. 14.0.2	N/A	N/A

Test Personnel:

Jon Wilson		September 1, 2011
Test Engineer	Signature	Date of Test

Test Configuration Photographs

Radiated Emissions - Front

Radiated Emissions - Rear

EUT Photograph