



Engineering Solutions & Electromagnetic Compatibility Services

FCC Part 15.231 Test Data

345 MHz Flood

Model: 56-0077-02 RevD01

for

**Resolution Engineering, Inc.
1402 Heggen Street
Hudson, WI 54016
Contact: Josh Gathje**

Testing Conducted By:

**Rhein Tech Laboratories, Inc.
360 Herndon Parkway, Suite 1400
Herndon, VA 20170
RTL Test Engineer: Jon Wilson**

RTL Project/Report Number: 2016184

August 1, 2016

This report may not be reproduced, except in full, without the full written approval of Rhein Tech Laboratories, Inc. and Resolution Engineering. Test results relate only to the item tested.

These tests are accredited and meet the requirements of ISO/IEC 17025 as verified by ANAB. Refer to certificate and scope of accreditation AT-1445.

Testing Represented in Report

The data and limits presented in this report are for radiated emissions 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. Data is also presented for spurious, non-harmonic radiated emissions per 15.209. The Equipment Under Test (EUT) was the **345 MHz Flood (RTL Bar Code 22097)**.

Test Procedure

Radiated fundamental and spurious emissions 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; 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 120 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.

15.231 Radiated Spurious Harmonics Emissions Test Data – Peak

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
345.000	Peak	H	78.8	15.5	94.3	97.3	-3.0	Pass
690.000	Peak	V	55.3	-4.9	50.4	77.3	-26.9	Pass
1035.000	Peak	V	42.1	-0.2	41.9	74.0	-32.1	Pass
1380.000	Peak	H	40.8	4.0	44.8	74.0	-29.2	Pass
1725.000	Peak	H	38.8	7.3	46.1	77.3	-31.2	Pass
2070.000	Peak	H	76.7	-16.0	60.7	77.3	-16.6	Pass
2415.000	Peak	V	70.0	-15.6	54.4	77.3	-22.9	Pass
2760.000	Peak	V	54.5	-15.2	39.3	74.0	-34.7	Pass
3105.000	Peak	H	51.4	-14.4	37.0	77.3	-40.3	Pass
3450.000	Peak	V	41.8	-14.0	27.8	77.3	-49.5	Pass

All spurious emissions in the applicable frequency range were investigated; only harmonic emissions were present as noted above.

Radiated Emissions Test Equipment

RTL Bar Code	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900930	Hewlett Packard	85662A	Spectrum Analyzer Display	3144A20839	4/21/17
900931	Hewlett Packard	8566B	Spectrum Analyzer (100 Hz – 22 GHz)	3138A07771	4/21/17
900905	Rhein Tech Laboratories, Inc.	PR-1040	Amplifier (20 MHz – 2 GHz)	900905	9/11/16
901683	Com-Power Corp.	PAM-118A	Preamplifier (500 MHz – 18 GHz)	551076	4/13/17
900791	Chase	CBL6112	Antenna (30 MHz – 2 GHz)	2099	6/11/17
900772	EMCO	3161-02	Horn Antenna 2 - 4 GHz	9804-1044	4/9/18

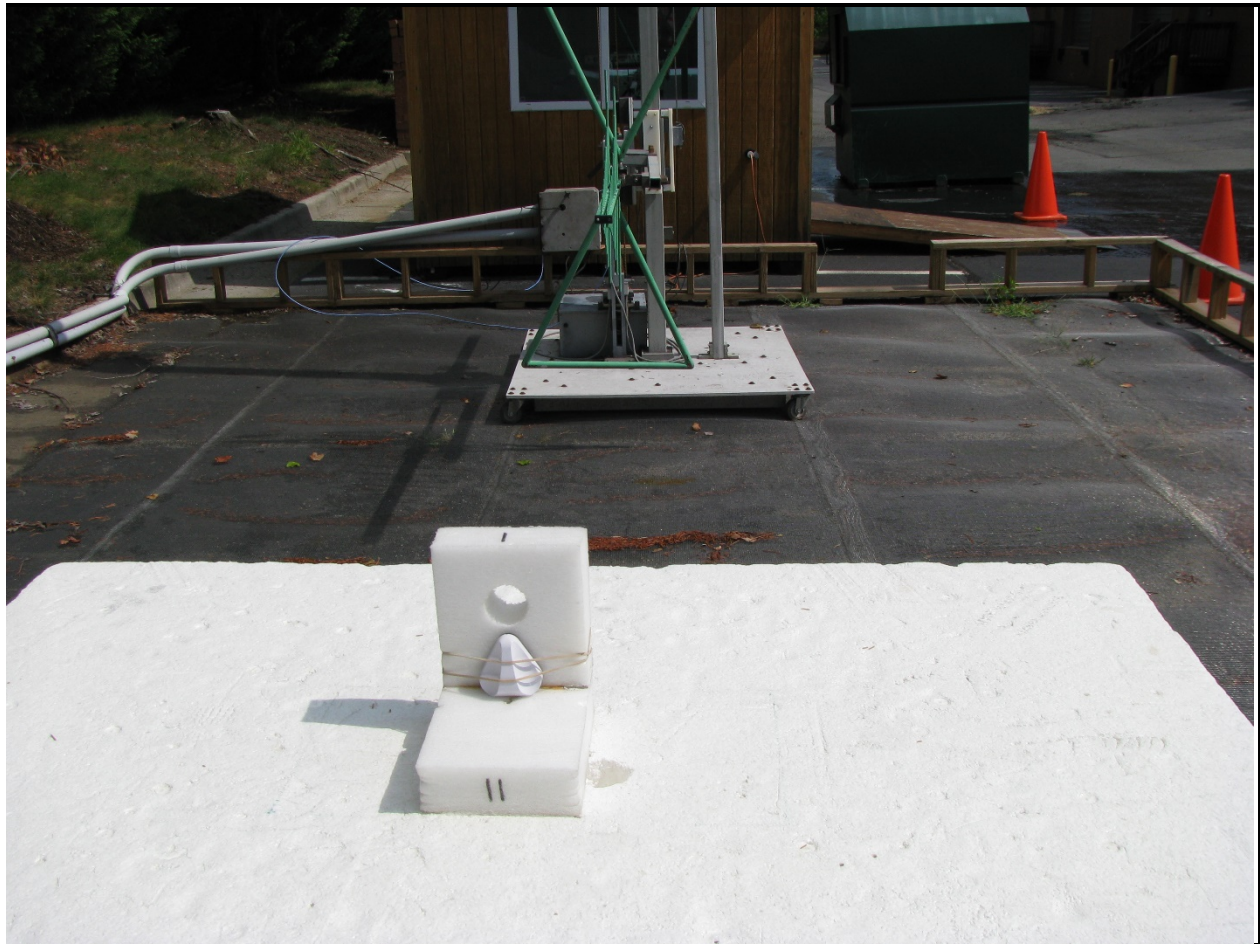
Test Personnel:

Jon Wilson		July 29, 2016
Test Engineer	Signature	Date of Test

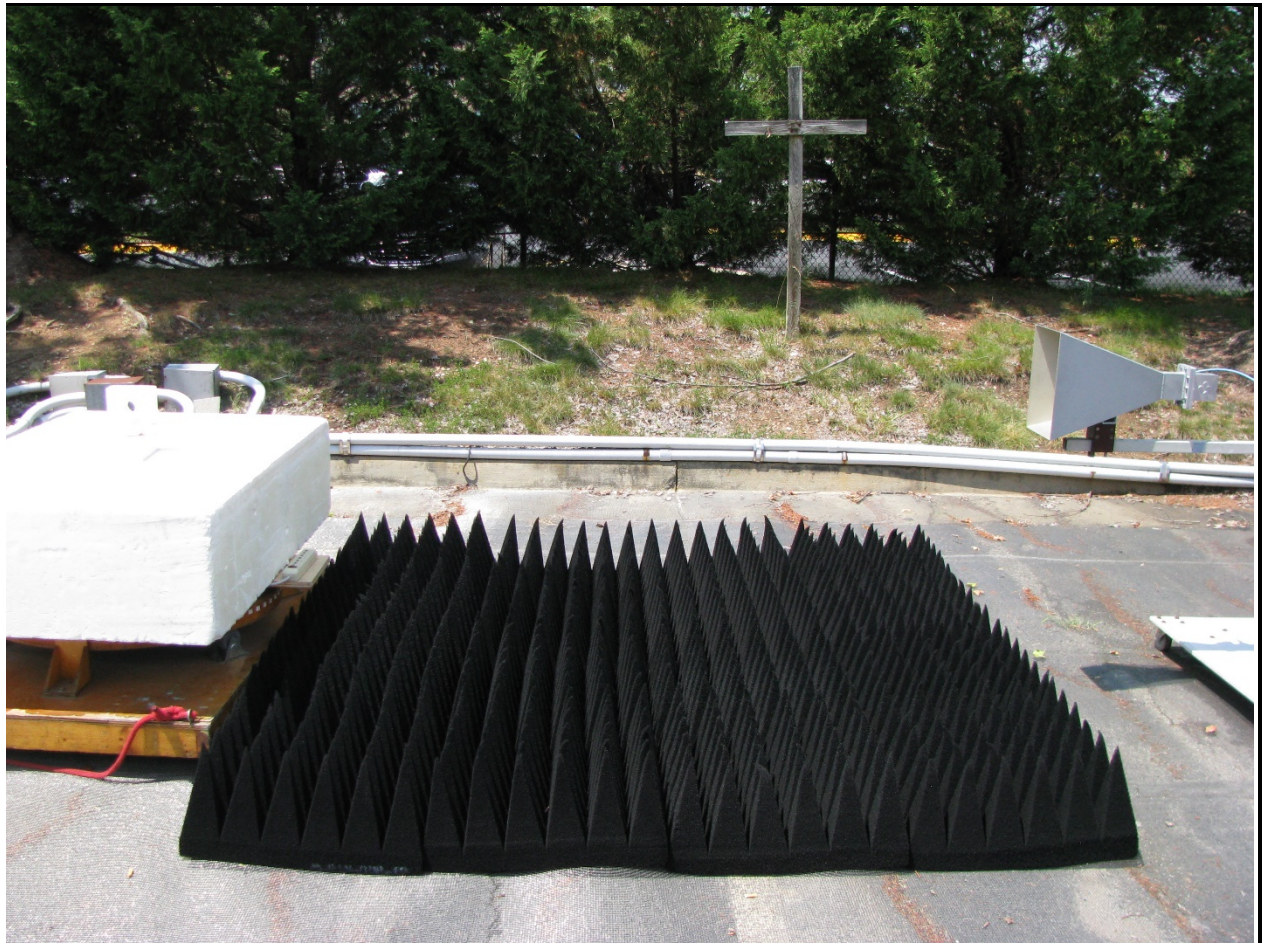
FCC/IC Cross Reference

FCC 15.231(b)(2)	RSS-210 Issue 8 A1.1
FCC 15.35(b)	RSS-Gen Issue 3 7.2.3
FCC 15.205	RSS-Gen Issue 3 7.2.2
FCC 15.209	RSS-Gen Issue 3 7.2.5

Appendix A: Test Configuration Photographs



Radiated Emissions (Less Than 1 GHz)



Radiated Emissions (Greater Than 1 GHz)

Appendix B: EUT Photographs

