



Engineering Solutions & Electromagnetic Compatibility Services

FCC 15.231 Test Data

for

Model: RE253

345 MHz Outdoor PIR

(RTL barcode: 20557)

for

Resolution Engineering

Report #: 2012101

Test Engineer: Jon Wilson

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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. Data is also presented for spurious, non-harmonic radiated emissions per 15.209.

Radiated Emissions Test Data – FCC Limits / 3m Distance

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
172.520	Qp	V	43.2	-21.5	21.7	43.5	-21.8	Pass
258.770	Qp	V	43.6	-13.7	29.9	46.0	-16.1	Pass
306.000	Qp	V	34.3	-7.9	26.4	46.0	-19.6	Pass
345.017*	Peak	H	66.1	27.4	93.5	97.3	-3.8	Pass
431.254	Qp	V	43.8	-7.5	36.3	46.0	-9.7	Pass
517.546	Qp	V	40.7	-8.8	31.9	46.0	-14.1	Pass
690.002	Peak	V	61.8	-5.9	55.9	77.3	-21.4	Pass
1035.012	Peak	H	56.3	-0.7	55.6	74.0	-18.4	Pass
1380.012	Peak	H	52.1	4.2	56.3	74.0	-17.7	Pass
1725.012	Peak	H	45.0	8.0	53.0	77.3	-24.3	Pass
2070.012	Peak	V	64.1	-14.6	49.5	77.3	-27.8	Pass
2415.012	Peak	V	60.5	-14.2	46.3	77.3	-31.0	Pass
2760.012	Peak	V	72.4	-14.2	58.2	74.0	-15.8	Pass
3105.012	Peak	V	60.0	-13.9	46.1	77.3	-31.2	Pass
3450.012	Peak	V	61.6	-13.4	48.2	77.3	-29.1	Pass

* fundamental

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 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 – 2012 testing

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
Spectrum Analyzer (100 Hz-22 GHz)	Hewlett Packard	HP-8566B	3138A07771	900930	9/13/12
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–26.0 GHz)	Rhein Tech Laboratories, Inc.	PR-1042	N/A	901364	7/14/12
Horn Antenna (2.0-4.0 GHz)	EMCO	3161-02	9804-1044	900772	6/13/12
Horn Antenna (4.0-8.0 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		March 26, 2012
Test Engineer	Signature	Date of Test

Radiated Emissions Test Equipment – 2013 testing

Part	Manufacturer	Model	Serial Number	RTL Bar Code	Calibration Due Date
Amplifier (20 MHz-2 GHz)	Rhein Tech Laboratories, Inc.	PR-1040	900905	900905	8/20/2013
Bilog Periodic Antenna (25 MHz-2 GHz)	Schaffner Chase	CBL6112	2099	900791	2/2/2014
EMI Receiver RF Section (9 kHz-6.5 GHz)	Hewlett Packard	85462A	3325A00159	900913	9/20/2013
RF Filter Section (100 kHz-6.5 GHz)	Hewlett Packard	85460A	3330A00107	900914	9/20/2013
Spectrum Analyzer	Rohde & Schwarz	FSU	1166.1660.50	901581	6/4/2013
Amplifier (1 GHz–26.0 GHz)	Rhein Tech Laboratories, Inc.	PR-1042	N/A	901364	9/28/2013
Horn Antenna (2.0-4.0 GHz)	EMCO	3161-02	9804-1044	900772	4/20/2015
Horn Antenna (4.0-8.2 GHz)	EMCO	3161-03	9508-1020	900321	4/20/2015
Emissions Testing Software	Rhein Tech Laboratories, Inc.	Automated Emission Tester	Rev. 14.0.2	N/A	N/A

Test Personnel:

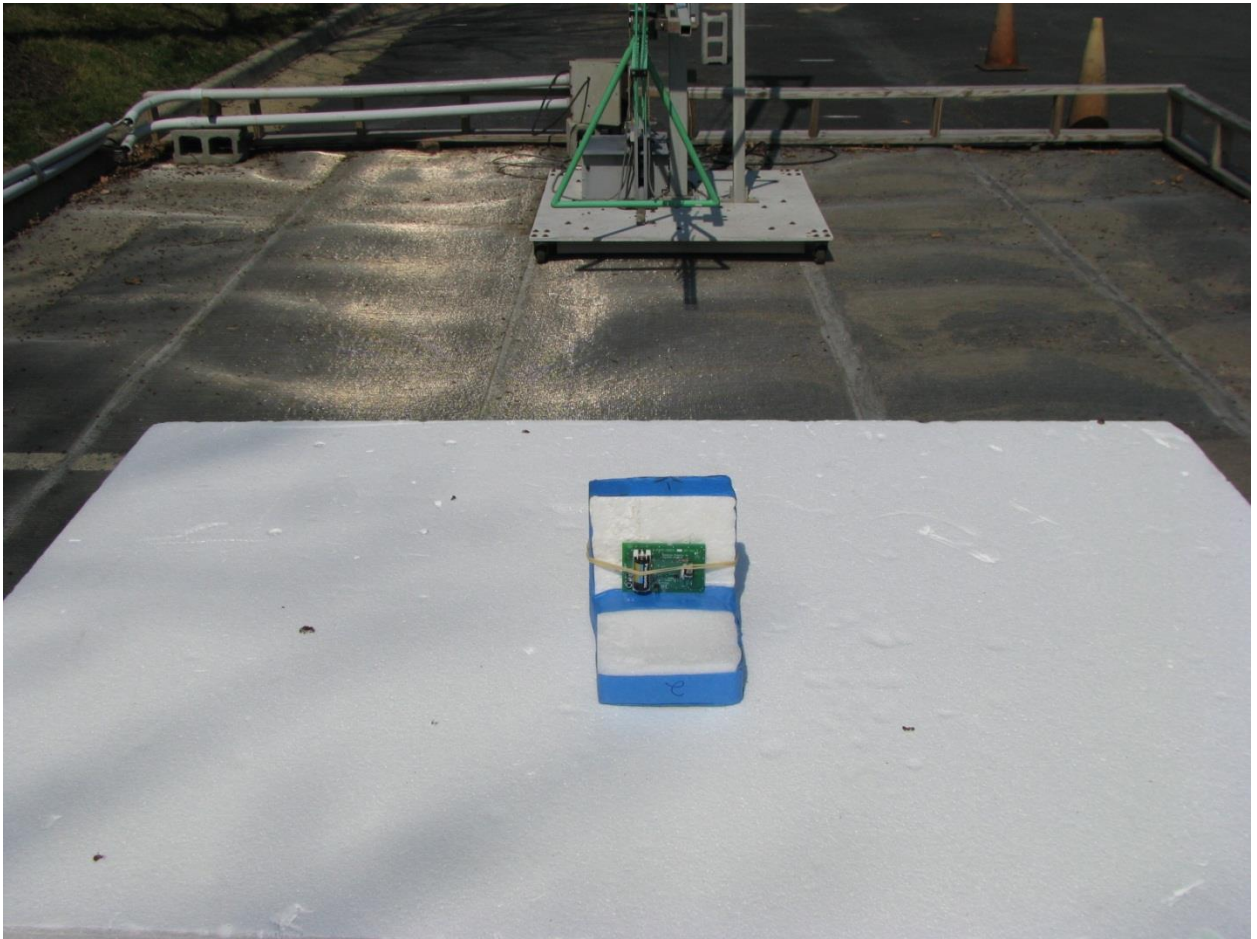
Jon Wilson		April 4, 2013
Test Engineer	Signature	Date of Test

FCC/IC Cross Reference

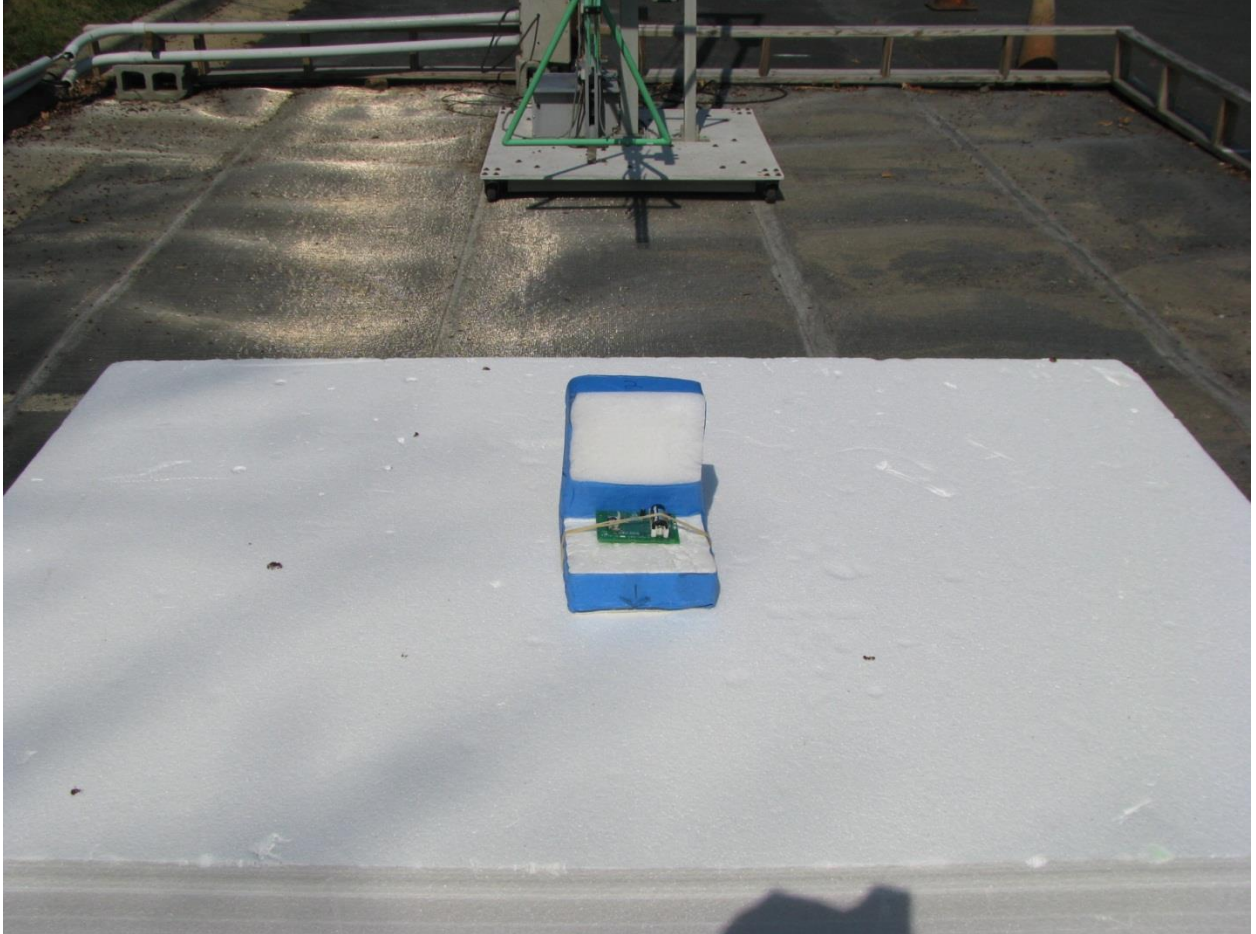
FCC 15.231(b)(2)	RSS-210 Issue 8 A1.1
FCC 15.35(b)	RSS-Gen Issue 3 7.2.3
FCC 15.205	RSS-Gen Issue 3 7.2.2
FCC 15.209	RSS-Gen Issue 3 7.2.5

Test Configuration Photographs

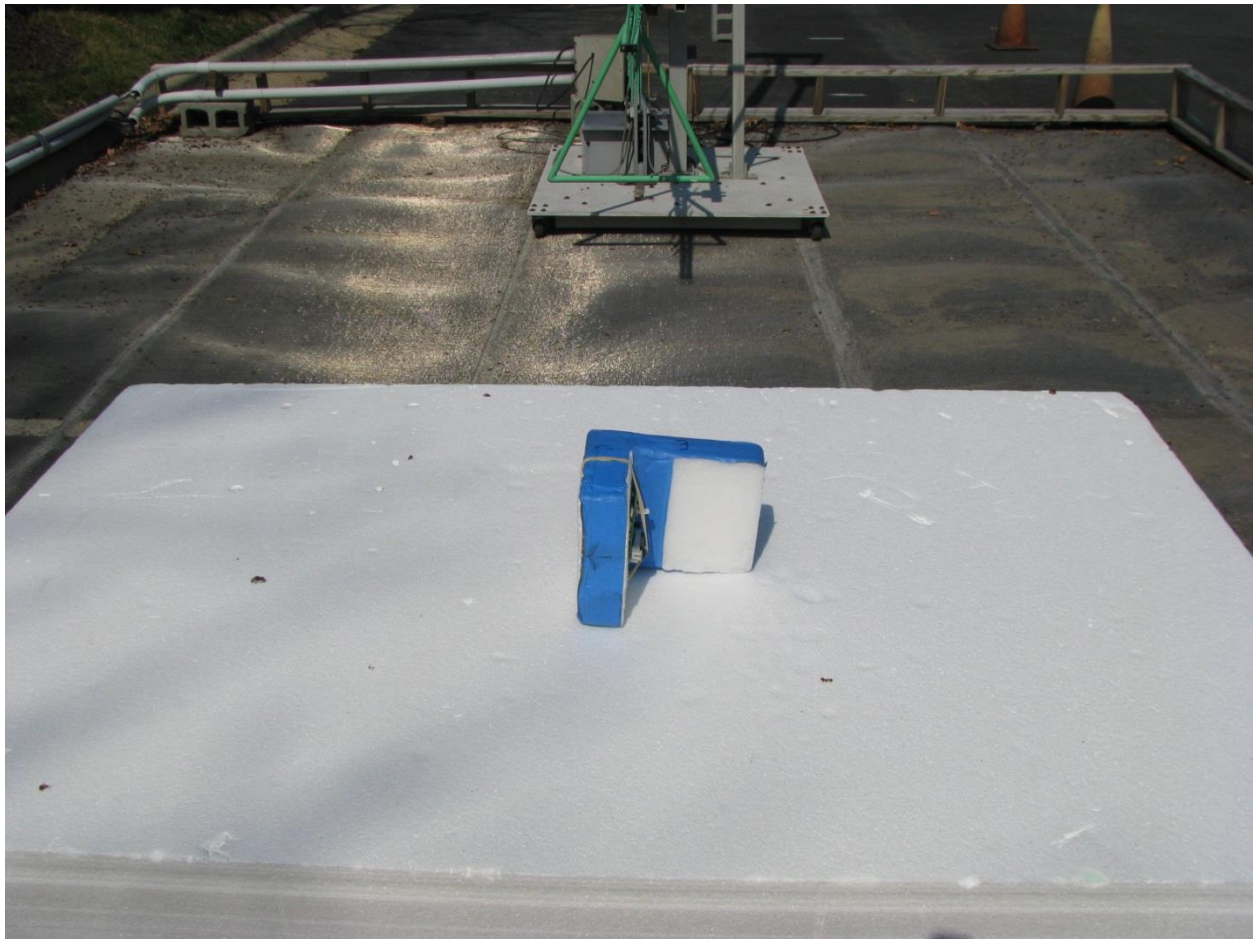
X-Axis



Y-Axis



Z-Axis



EUT Photograph

