



Engineering Solutions & Electromagnetic Compatibility Services

FCC 15.231 Radiated Test Data

for

Model: RE310P

433 MHz PIR

(RTL barcode: 020058)

for

Resolution Engineering

RTL Project Number 2011044

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.

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 |
|--------------------------|---------------|------------------------|-------------------------|-------------------------------|-------------------------|----------------|-------------|-----------|
| 433.95 | Pk | H | 66.1 | 30.5 | 96.6 | 100.8 | -4.2 | Pass |
| 867.833 | Pk | H | 75.2 | -4.6 | 70.6 | 80.8 | -10.2 | Pass |
| 1301.773 | Pk | H | 67.1 | 2.4 | 69.5 | 74.0 | -4.5 | Pass |
| 1735.693 | Pk | V | 54.8 | 6.0 | 60.8 | 80.8 | -20.0 | Pass |
| 2169.605 | Pk | V | 79.2 | -3.4 | 76.4 | 80.8 | -4.4 | Pass |
| 2603.525 | Pk | V | 76.1 | -2.2 | 73.9 | 80.8 | -6.9 | Pass |
| 3037.445 | Pk | V | 63.3 | -1.6 | 61.7 | 80.8 | -19.1 | Pass |
| 3471.365 | Pk | H | 69.6 | -1.5 | 68.1 | 80.8 | -12.7 | Pass |
| 3905.285 | Pk | H | 49.8 | 0.0 | 49.8 | 74.0 | -24.2 | Pass |
| 4339.205 | Pk | H | 51.9 | 4.6 | 56.5 | 74.0 | -17.5 | 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.

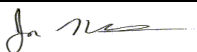
EUT Disposition

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 | 4/10/2011 |
| Bilog Periodic Antenna (25 MHz-2 GHz) | Antenna Research Associates, Inc | LPB-2520 | 1037 | 900724 | 7/12/2011 |
| EMI Receiver RF Section (9 kHz-6.5 GHz) | Hewlett Packard | 85462A | 3325A00159 | 900913 | 6/8/2011 |
| RF Filter Section (100 kHz-6.5 GHz) | Hewlett Packard | 85460A | 3330A00107 | 900914 | 6/8/2011 |
| Spectrum Analyzer | Hewlett Packard | 8596EM | 3826A00144 | 901215 | 1/13/2012 |
| Amplifier | RTL | 1003 | N/A | 901364 | 2/22/2012 |
| Horn Antenna 2-4 GHz | EMCO | 3161-02 | 9804-1044 | 900772 | 6/13/2012 |
| Horn Antenna 4-8.2 GHz | EMCO | 3161-03 | 9508-1020 | 900321 | 6/13/2012 |
| Emissions Testing Software | Rhein Tech Laboratories, Inc. | Automated Emission Tester | Rev. 14.0.2 | N/A | N/A |

Test Personnel:

| | | |
|---------------|---|---------------|
| Jon Wilson |  | April 2, 2011 |
| Test Engineer | Signature | Date of Test |

Test Configuration Photographs

X-axis



Y-axis



Z-axis



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Client: Resolution Engineering
Model: RE310P
FCC ID: N/A
Standards: FCC Part 2, 15
Report #: 2011044

EUT Photograph

