



Engineering Solutions & Electromagnetic Compatibility Services

**FCC Part 15.231 Test Data**

**EUT: 56-0005-04 Rev F01 315 MHz Wrist Panic**

**for**

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

**Testing Conducted By  
Rhein Tech Laboratories, Inc.  
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Herndon, VA 20170**

**RTL Test Engineer: Dan Baltzell**

**RTL Project/Report Number: 2014029**

**February 18, 2014**

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 ANSI-ASQ National Accreditation Board/ACLASS. 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 **56-0005-04 Rev F01 315 MHz Wrist Panic (RTL Bar Code 21110)**.

### 15.231 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
315.0	Peak	H	69.5	16.1	85.6	95.9	-10.3	Pass
630.0	Peak	H	19.8	22.1	41.9	75.9	-34.0	Pass
945.0	Peak	V	19.6	24.8	44.4	75.9	-31.5	Pass
1260.0	Peak*	H	7.8	28.5	36.3	74.0	-37.7	Pass
1575.0	Peak	H	13.6	29.5	43.1	74.0	-30.9	Pass
1890.0	Peak	H	3.4	33.8	37.2	75.9	-38.7	Pass
2205.0	Peak	H	65.3	-8.8	56.5	74.0	-17.5	Pass
2520.0	Peak	V	45.3	-9.1	36.2	75.9	-39.7	Pass
2835.0	Peak	H	57.2	-9.1	48.1	74.0	-25.9	Pass
3150.0	Peak	V	54.0	-8.4	45.6	75.9	-30.3	Pass

\* IC restricted band

### 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**

Part	Manufacturer	Model	Serial Number	RTL Bar Code	Calibration Due Date
901592	Insulated Wire Inc.	KPS-1503-3600-KPR	SMK RF Cables 20'	NA	8/27/14
901593	Insulated Wire Inc.	KPS-1503-360-KPR	SMK RF Cables 36"	NA	8/27/14
900772	EMCO	3161-02	Horn Antenna 2 - 4 GHz	9804-1044	4/19/14
900932	Hewlett Packard	8449B OPT H02	Preamplifier 1-26.5 GHz	3008A00505	8/27/14
900791	Chase	CBL6111B	Bilog antenna (30 MHz – 2000 MHz)	N/A	2/2/15
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	11/13/14

**Test Personnel:**

Dan Baltzell		February 18, 2014
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 Photograph**

**Radiated Emissions**



