



**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT**  
**CERTIFICATION TO FCC PART 15 REQUIREMENTS**

*for*

**UNINTENTIONAL RADIATOR**

**433.92 MHz RECEIVER**

**MODEL: 200.0149**

**FCC ID NO: NATMIRD433**

**REPORT NO: 04U2633-1**

**ISSUE DATE: MARCH 30, 2004**

*Prepared for*

**SMARTIRE SYSTEM INC.  
#150 13151 VANIER PLACE  
RICHMOND, BC V6V2J1  
CANADA**

*Prepared by*

**COMPLIANCE ENGINEERING SERVICES, INC.  
561 F MONTEREY ROAD  
MORGAN HILL, CA 95037  
TEL: 408-463-0885  
FAX: 408-463-0888**



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## 1. VERIFICATION OF COMPLIANCE

COMPANY NAME : SMARTIRE SYSTEMS, INC.  
#150 13151 VANIER PLACE  
RICHMOND, BC V6V2J1 CANADA

CONTACT PERSON : ROBERT PATTERSON

EUT DESCRIPTION : 433.92 MHz RECEIVER

MODEL NAME/NUMBER : 200.0149

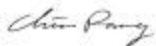
DATE TESTED : 03/30/2004

REPORT NUMBER : 04U2633-1

TYPE OF EQUIPMENT	SECURITY EQUIPMENT (UNINTENTIONAL RADIATOR)
EQUIPMENT TYPE	433.92 MHz SUPER HETERPDYNE RECEIVER
MEASUREMENT PROCEDURE	ANSI 63.4 / 2001
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15.109

The above equipment was tested by Compliance Engineering Services, Inc. for compliance with the requirements set forth in CFR 47, PART 15. This said equipment in the configuration described in this report shows that maximum emission levels emanating from equipment are within the compliance requirements.

Tested By:



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CHIN PANG  
EMC TECHNICIAN  
COMPLIANCE CERTIFICATION SERVICES

Approved & Released By:



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THU CHAN  
EMC SUPERVISOR  
COMPLIANCE CERTIFICATION SERVICES

## 2. PRODUCT DESCRIPTION

The SmarTire Receiver 200.0149 is a 433.92MHz super heterodyne receiver used in the SmarTire motorcycle Receiver. It receives wireless signals transmitted from the sensor modules mounted inside the tires of the automobile. The signal is demodulated by the receiver and processed by a microprocessor. The status of the tire pressure is then displayed.

## 3. TEST FACILITY

The 3 meter open area test site and conducted measurement facility used to collect the radiated data is located at 561F Monterey Road, Morgan Hill, California, U.S.A. A detailed description of the test facilities was submitted to the Commission on May 27, 1994.

The measuring instrument which was utilized in performing the tests documented herein has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment which is traceable to recognized national standards.

## 4. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.



No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government.

## 5. MEASUREMENT EQUIPMENT USED

TEST EQUIPMENT LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
Bilog Antenna	SUNOL SCIENCES	JB1	A121003	12/22/04
EMI Receiver	HP	8542E	3942A00280	11/21/04
RF Filter Section	HP	85420E	3705A00256	11/21/04

## 6. MEASUREMENT EQUIPMENT USED

### SETUP FOR DIGITAL DEVICE TESTS

#### SUPPORT EQUIPMENT

Not applicable, EUT is tested alone with 12Vdc car battery.

#### I/O CABLES

Not applicable, EUT is tested alone with 12Vdc car battery.

#### TEST SETUP

Not applicable, EUT is tested alone with 12Vdc car battery.

## 7. TEST CONFIGURATION

Turn on the EUT and set all the wires are placed on the turn table to their maximum length to simulate the worse emission conditions.

## 8. TESTS CONDUCTED

CFR 47, 15.109 RADIATED EMISSION TESTS	CONDUCTED AT 3 METERS
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## 9. RADIATED EMISSION TEST PROCEDURE

The EUT and all other support equipment are placed on a wooden table 80 cm above the ground screen. Antenna to EUT distance is 3 meters. During the test, the table is rotated 360 degrees to maximize emissions and the antenna is positioned from 1 to 4 meters above the ground screen to further maximize emissions. The antenna is polarized in both vertical and horizontal positions.

Monitor the frequency range of interest at a fixed antenna height and EUT azimuth. Frequency span should be small enough to easily differentiate between broadcast stations and intermittent ambients. Rotate EUT 360 degrees to maximize emissions received from EUT. If emission increases by more than 1 dB, or if another emission appears that is greater by 1 dB, return to azimuth where maximum occurred and perform additional cable manipulation to further maximize received emission.

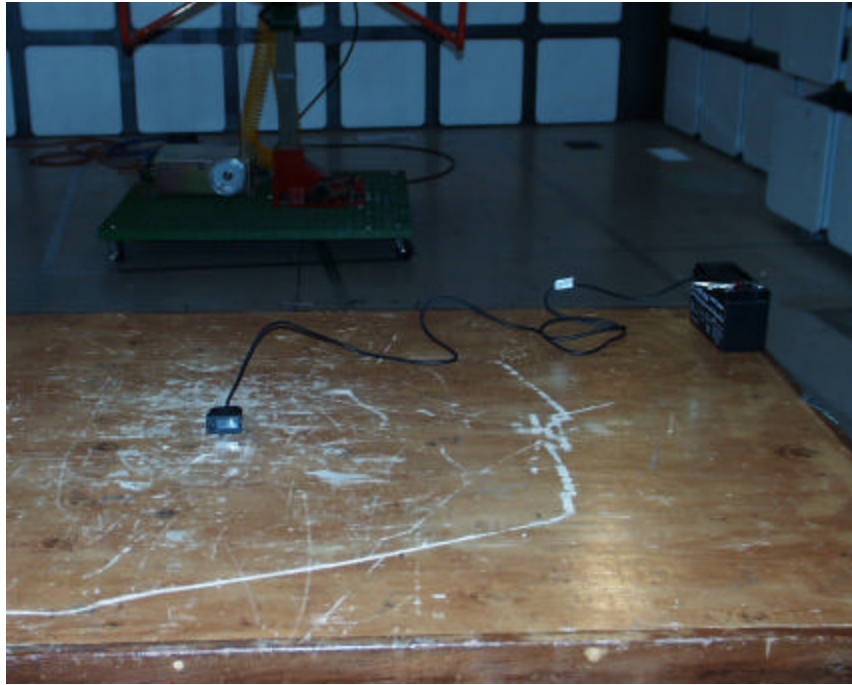
Move antenna up and down to further maximize suspected highest amplitude signal. If emission increased by 1 dB or more, or if another emission appears that is greater by 1dB or more, return to antenna height where maximum signal was observed and manipulate cables to produce highest emissions, noting frequency and amplitude.

## 10. EQUIPMENT MODIFICATIONS

To achieve compliance to FCC section 15.109, the following change(s) were made during compliance testing:

NOT APPLICABLE

## 11. TEST CONFIGURATION PHOTOS (Radiated Emission Test)





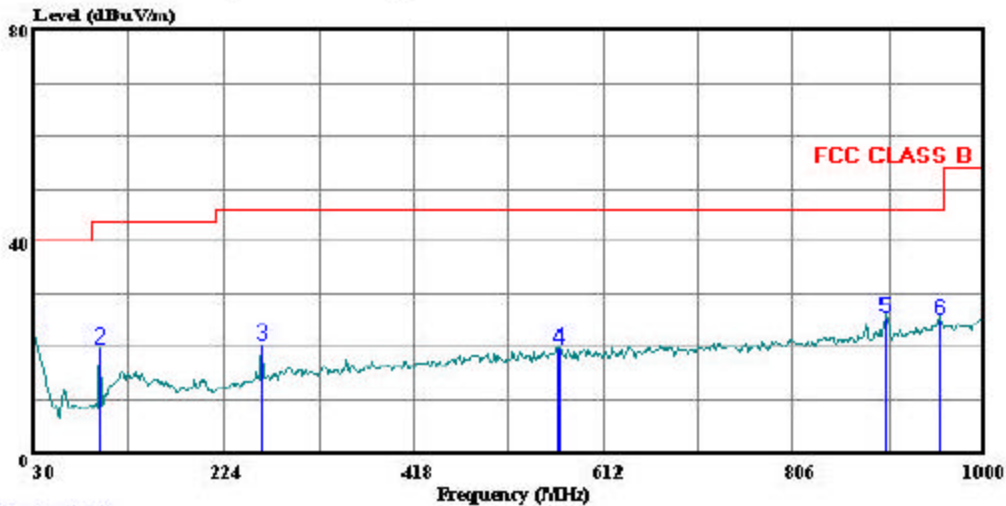
**RADIATED EMISSION DATA**

Vertical polarization



561F Monterey Road  
 San Jose, CA 95131  
 Tel: (408) 463-0888  
 Fax: (408) 463-0885

Data#: 15 File#: smartire\_2633.EMIDate: 03-30-2004 Time: 11:49:36



(Auxil ATC)

Trace: 10

Ref Trace:

Condition: FCC CLASS B VERTICAL  
 Test Operator: : Chin Pang  
 Project #: : 04U2633-1  
 Company: : Smartire Systems Inc.  
 BUT: : Smartire Motorcycle Receiver  
 Model No: : 200-0149  
 Configuration: : EUT Only  
 Target of Test: : FCC Class B  
 Mode of Operation: Receiving

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	Freq	Remark	Read Level	Factor	Level	Limit	Over
	MHz		dBuV	dB	dBuV/m	dBuV/m	dB
1	30.000	Peak	27.33	-4.99	22.34	40.00	-17.66
2	96.930	Peak	37.65	-18.04	19.61	43.50	-23.89
3	261.830	Peak	32.99	-12.59	20.40	46.00	-25.60
4	566.410	Peak	26.90	-7.23	19.67	46.00	-26.33
5	899.120	Peak	27.92	-2.39	25.53	46.00	-20.47
6	956.350	Peak	26.97	-1.58	25.39	46.00	-20.61

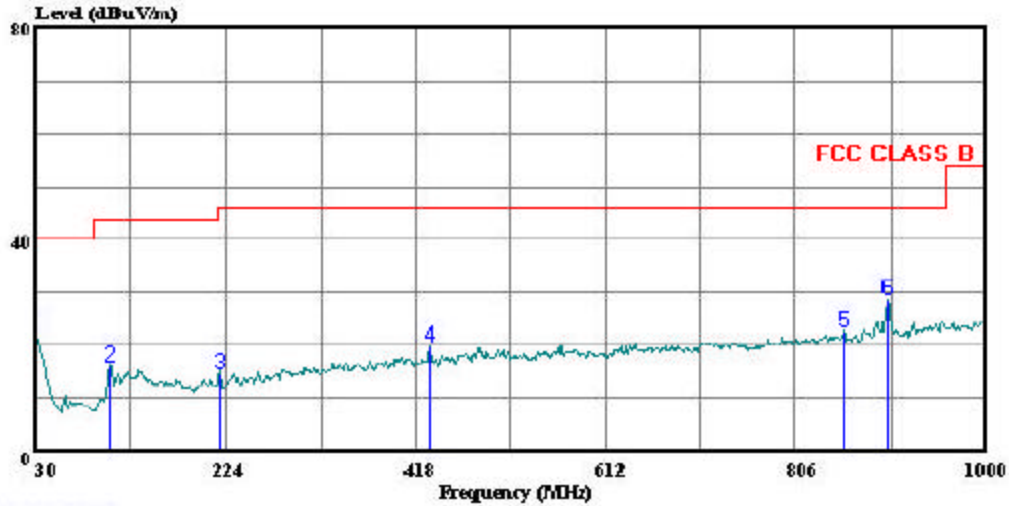
NOTE: No other emissions were detected above system noise floor up to 2GHz.

Horizontal polarization



561F Monterey Road  
 San Jose, CA 95131  
 Tel: (408) 463-0888  
 Fax: (408) 463-0885

Data#: 16 File#: smartire\_2633.EMIDate: 03-30-2004 Time: 11:51:24



(Auxiliary ATC)

Trace: 11

Ref Trace:

Condition: FCC CLASS B HORIZONTAL  
 Test Operator: : Chin Pang  
 Project #: : 04U2633-1  
 Company: : Smartire Systems Inc.  
 EUT: : Smartire Motorcycle Receiver  
 Model No: : 200-0149  
 Configuration: : EUT Only  
 Target of Test: : FCC Class B  
 Mode of Operation: Receiving

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	Read	Limit	Over
Freq	Remark	Level	Level
MHz		Factor	Line
		dB	dB
		dBuV	dBuV/m
		dBuV	dBuV/m
1	30.000 Peak	26.86 -4.99	21.87 40.00
2	105.660 Peak	31.50 -15.48	16.02 43.50
3	219.150 Peak	28.84 -14.43	14.41 46.00
4	431.580 Peak	28.98 -9.34	19.64 46.00
5	855.470 Peak	25.77 -3.28	22.49 46.00
6	900.090 Peak	31.03 -2.35	28.68 46.00

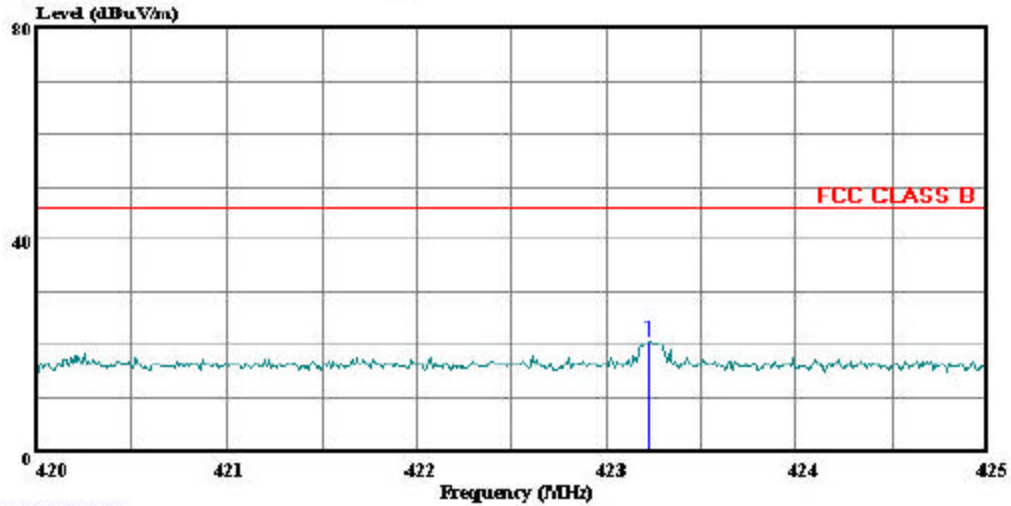
NOTE: No other emissions were detected above system noise floor up to 2GHz

Horizontal polarization (Fundamental Frequency)



561F Monterey Road  
 San Jose, CA 95131  
 Tel: (408) 463-0888  
 Fax: (408) 463-0885

Data#: 14 File#: smartire\_2633.EMIDate: 03-30-2004 Time: 11:45:19



(Auxiliary ATC)

Trace: 13

Ref Trace:

Condition: FCC CLASS B HORIZONTAL  
 Test Operator: : Chin Pang  
 Project #: : 04U2633-1  
 Company: : Smartire Systems Inc.  
 EUT: : Smartire Motorcycle Receiver  
 Model No: : 200-0149  
 Configuration: : EUT Only  
 Target of Test: : FCC Class B  
 Mode of Operation: Receiving

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	Freq	Remark	Read Level	Read Factor	Limit Level	Over Limit
	MHz		dBuV	dB	dBuV/m	dB
1	423.220	Peak	30.19	-9.52	20.67	46.00 -25.33

**END OF REPORT**