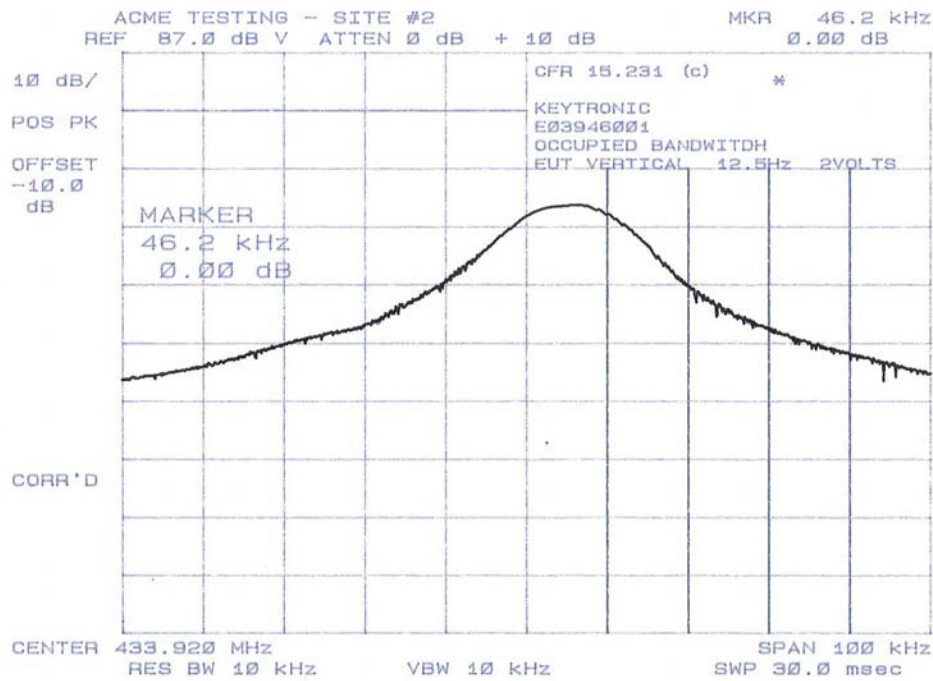


### 8.5 Test Results

The measured Emission Bandwidth of the EUT's fundamental emission was 46.2 kHz wide at the 20 dB down points from the peak of the modulated carrier.



The EUT complied with the Occupied Bandwidth requirement specified in 47 CFR Part 15 Subpart C Section 15.231(c)

### 8.6 Test Setup Photograph



## 9. Antenna Requirement

### 9.1 Requirement

47 CFR Section 15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

### 9.2 Results of Inspection

The EUT's antenna was permanently etched onto the printed circuit board. Specifically, a rectangular shaped trace running along the periphery of the circuit board was used. This trace was located on the "front" side of the printed circuit board (i.e. the side that did not contain the battery-mounting clips).

### 9.3 Photograph

For reasons of confidentiality, no photograph of the printed circuit board containing the etched antenna is included in this Test Report. Note: A photograph showing the "front" side of the printed circuit board was separately uploaded as a part of the FCC Part 15C Submittal. (See PIC\_REMOTE internal.pdf for this photograph).

## 10. Miscellaneous Comments and Notes

The firmware change required in order for the EUT to comply with the manually-initiated transmit time requirement specified in 47 CFR Part 15C Section 15.231(a)(1) was installed into Wireless Control Prototype # 420.

## 11. Non-Normative Information

### FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division  
7435 Oakland Mills Road  
Columbia, MD 21046

July 26, 2002

Registration Number: 90420

Acme Testing Co.  
P.O. Box 3  
2002 Valley Highway  
Acme, WA 98220-0003

Attention: Harry Hodes

Re: Measurement facility located at Acme  
Sites 1 & 2 (3, 10 & 30 meters)  
Date of Renewal: July 26, 2002

Gentlemen:

Your request for renewal of the registration of the subject measurement facility has been received. The information submitted has been placed in your file and the registration has been renewed. The name of your organization will remain on the list of facilities whose measurement data will be accepted in conjunction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Please note that the file must be updated for any changes made to the facility and the registration must be renewed at least every three years.

Measurement facilities that have indicated that they are available to the public to perform measurement services on a fee basis may be found on the FCC website [www.fcc.gov](http://www.fcc.gov) under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely,  
  
Phyllis Parrish  
Information Technician



Industry Canada Industrie Canada  
<http://strategis.ic.gc.ca>

June 6, 2002

Our File: 46405- 3251  
Submission: 42375

Mr. Harry H. Hodes  
Acme Testing  
P.O. Box 3  
2002 Valley Highway  
Acme, Washington 98220-0003

Dear Mr. Hodes:

The Bureau has received your test report for the Open Area Test Site located at Acme, Washington, dated April 3, 2002. I have reviewed the report and find it complies with RSS 212, Issue 1 (Provisional).

The site is acceptable to Industry Canada for the performance of radiated measurements.

**Please reference the file number " IC 3251" in the body of all test reports containing measurements made on this site.**

This reference number is the indication to the Industry Canada Certification Officers that the site meets the requirements of RSS 212, Issue 1 (Provisional). Your company has been added to our published list of filed sites on the Bureau's web page. Please keep the contact information current by notifying us if it changes or is in error.

Keep informed of the latest Industry Canada regulations by visiting the Bureau's site on the World Wide Web: <http://spectrum.ic.gc.ca/deblab/english/debintre.html>

Whenever major construction or repairs to the site are completed, a re-submission of the site attenuation characteristics will be required, or every three years.

Yours sincerely,

Stéphane Picard  
on behalf of Head, EMC and Standards  
**Certification and Engineering Bureau**  
3701 Carling Ave., Building 94  
P.O. Box 11490, Station "H"  
Ottawa, Ontario  
K2H 8S2  
Tel. No. (613) 990-5318  
Fax. No. (613) 990-4752







American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025-1999

ACME TESTING CO.  
Site # 1 and Site # 2  
P.O. Box 3,  
2002 Valley Highway  
Acme, WA 98220-0003  
Harry H. Hodes Phone: 360 595 2785

ELECTRICAL (EMC)

Valid to: November 30, 2003

Certificate Number: 0829-01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following Electromagnetic Compatibility (EMC) tests:

<u>Test Technology</u>	<u>Test Method(s)</u>
<i>Basic Test Method Standards (Emissions):</i>	
Conducted & Radiated:	ANSI C63.4-1992 & ANSI C63.4-2000; EIA/TIA-603:1993 & TIA/EIA-603:2001; FCC OET MP-5:1986; CISPR 11:1991 & EN 55011:1992; CISPR 11:1997 + A1:1999 & EN 55011:1998 + A1:1999; CISPR 13:1996 + A1:1998; CISPR 13:2001 & EN 55013:2001 & EN 55013:1990 + A12:1994 + A13:1996 + A14:1999 CISPR 14-1:1993 + A1:1996 + A2:1998 & EN 55014-1:1993 + A1:1997 + A2:1999; CISPR 14-1:2000 + A1:2001 & EN 55014-1:2000 + A1:2001 CISPR 22:1993 + A1:1995 + A2:1996 & EN 55022:1994 + A1:1995 + A2:1997; CISPR 22:1997 + A1:2000 & EN 55022:1998 + A1:2000;
Harmonic Current:	IEC 61000-3-2:1995+A1:1997+A2:1998 & IEC 61000-3-2:2000 & EN 61000-3-2:1995+A1,A2:1998+A14:2000; IEC 61000-3-2:2000 & EN 61000-3-2:2000
Voltage Fluctuations & Flicker	IEC 61000-3-3:1994+ A1:2001 & EN 61000-3-3:1995+A1:2001
<i>Basic Test Method Standards (Immunity):</i>	
Audio Frequency Common Mode	IEC 61000-2-1:1990; IEC 61000-2-2:2002
Electrostatic Discharge (ESD):	IEC 801-2:1991; IEC 1000-4-2:1995; IEC 61000-4-2:1995 + A1:1998 + A2:2001; EN 61000-4-2:1995 + A1:1998 + A2:2001;
Radiated RF Fields:	IEC 801-3:1984; ENV 50140:1994; IEC 1000-4-3:1995 & IEC 61000-4-3:1995; EN 61000-4-3:1996 + A1:1998; ENV 50204:1995;
Electrical Fast Transient/Burst:	IEC 801-4:1998; IEC 1000-4-4:1995; IEC 61000-4-4:1995; EN 61000-4- 4:1995;

(A2LA Cert. No. 829.01) 05/08/02

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5301 Buckeystown Pike, Suite 350 • Frederick, MD 21704-8373 • Phone: 301-644 3248 • Fax: 301-662 2974





<u>Test Technology</u>	<u>Test Method(s)</u>
Surge:	IEC 801-5(D):1992 ( <i>single phase only, and excluding 10/700 surge testing</i> ); ENV 50142:1994 ( <i>single phase only, and excluding 10/700 surge testing</i> ); IEC 1000-4-5:1995 ( <i>single phase only, and excluding 10/700 surge testing</i> ); IEC 61000-4-5:1995 ( <i>single phase only, and excluding 10/700 surge testing</i> ); EN 61000-4-5:1995 ( <i>single phase only, and excluding 10/700 surge testing</i> );
RF Common Mode (Conducted):	ENV 50141:1994; IEC 1000-4-6:1996; IEC 61000-4-6:1996; EN 61000-4-6:1996;
Power Frequency Magnetic Fields:	IEC 1000-4-8:1994; IEC 61000-4-8:1994; EN 61000-4-8:1994; IEC 61000-4-8:2001
Voltage Dips, Short Interruptions, & Variations:	IEC 1000-4-11:1994; IEC 61000-4-11:1994; EN 61000-4-11:1994;
<i>Generic &amp; Product Family Standards:</i>	
	47 U.S. Code of Federal Regulations (47 CFR) FCC Methods, as follows: Part 15 (using ANSI C63.4-1992 & ANSI C63.4-2000); & Part 18 (using FCC OET MP-5:1986);
	ICES-003 Issue 2 Revision 1;
	CNS 13438:1997; CNS 13439:1994;
	Bellcore [Telcordia] GR-1089-CORE Issue 2 Revision 1:1999 ( <i>Sections 2, 3, 4.5.9, 4.5.10 [1<sup>st</sup> level surge only], 9.10.5, &amp; 9.10.6 Only</i> );
	AS/NZS 2064:1997; AS/NZS 3548:1995; AS/NZS 4251.1:1994; AS/NZS 4252.1:1994; AS/NZS 4268.2:1995
	EN 50081-1:1992; EN 50081-2:1993; EN 50082-1:1997; EN 50082-2:1995; IEC 61000-6-1:1997 & EN 61000-6-1:2001 IEC 61000-6-2:1999 & EN 61000-6-2:1999 & EN 61000-6-2:2001 IEC 61000-6-3:1996 & EN 61000-6-3:2001 IEC 61000-6-4:1997 & EN 61000-6-4:2001
	EN 50083-2:1995 + A1:1997; EN 50091-2:1995; EN 50130-4:1995 + A1:1998, EN 50199:1995; EN 50270:1999; EN 50293:2000;
	CISPR 11:1991 & EN 55011:1992; CISPR 11:1997 + A1:1998 & EN 55011:1998 + A1:1999; CISPR 13:1996 + A1:1998 & EN 55013:1990 + A12:1994 + A13:1996 + A14:1999 CISPR 13:2001 & EN 55013:2001; CISPR 14-1:1993 + A1:1996 + A2:1998 & EN 55014-1:1993 + A1:1997 + A2:1999; CISPR 14-1:2000 + A1:2001 & EN 55014-1:2000 + A1:2001 CISPR 14-2:1997 & EN 55014-2:1997



(A2LA Cert. No. 829.01) 05/08/02

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Test Technology

Test Method(s)

*Generic & Product Family Standards:*

CISPR 22:1993 + A1:1995 + A2:1996  
 & EN 55022:1994 + A1:1995 + A2:1997;  
 CISPR 22:1997 + A1:2000 & EN 55022:1998 + A1:2000;  
 CISPR 24: 1997 + A1:2001 & EN 55024:1998 + A1:2001  
 EN 55103-1:1996; EN 55103-2:1996;  
 IEC 60521:1988 & EN 60521:1995;  
 IEC 60555-2:1991 & EN 60555-2:1993;  
 IEC 60555-3:1990 & EN 60555-3:1991;  
 EN 60601-1-2:1984 (*EMC Requirements Only*);  
 IEC 60601-1-2:2001 (2<sup>nd</sup> Edition) (*EMC Requirements Only*)  
 & EN 60601-1-2:2001 (2<sup>nd</sup> Edition) (*EMC Requirements Only*)  
 IEC 60687:1992 & EN 60687:1992;  
 IEC 60870-2-1:1995 & EN 60870-2-1:1996  
 IEC 60945:1996 (*Clauses 9, 10, 11.2, 12.2, & 12.3 Only*),  
 & EN 60945:1996 (*Clauses 9, 10, 11.2, 12.2, & 12.3 Only*);  
 IEC 61000-3-2:1995+A1:1997+A2:1998  
 & EN 61000-3-2:1995+A1,A2:1998+A14:2000;  
 IEC 61000-3-2:2000 & EN 61000-3-2:2000;  
 IEC 61000-3-3:1994 + A1:2001 & EN 61000-3-3:1995 + A1:2001;  
 IEC 61036:1996 + A1:2000 & EN 61036:1996 + A1:2000;  
 IEC 61131-2:1992 & EN 61131-2:1994 + A11:1996 + A12:2000;  
 IEC 61204-3:2000 & IEC 61204-3:2000;  
 IEC 61268:1995 & EN 61268:1996;  
 IEC 61326:1997 + A1:1998 + A2:2000  
 & EN 61326:1997 + A1:1998 + A2:2000;  
 IEC 61800-3:1996 & EN 61800-3:1996 + A11:2000;

EN 300 339:1998  
 EN 300 386 V1.3.1(09-2001),  
 EN 301 489-01 (09-2001)  
 ETS 300 683:1997  
 EN 301 489-03 (11-2001)  
 EN 300 385:1999  
 EN 301 489-04 (07-2000)  
 EN 300 279:1999  
 EN 301 489-05 (07-2000)  
 EN 301 489-09 (09-2000)  
 ETS 300 684:1997  
 EN 301 489-15 (09-2000)  
 EN 301 489-22 (11-2000)





*Radio Test Standards:*

47 U.S. Code of Federal Regulations (47 CFR) FCC Methods, as follows:  
Part 15 (using ANSI C63.4-1992 & ANSI C63.4-2000), &  
Part 90 (using ANSI C63.4-1992, ANSI C63.4-2000, & TIA/EIA-603);

Industry Canada, as follows:

RSS-119 Issue 6: March 2000;  
RSS-125 Issue 2: August 1996;  
RSS-210 Issue 4: December 2000;

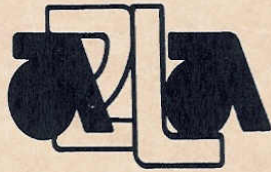
European Union [EU] & European Economic Area [EEA], as follows:

EN 300 086-1 V.1.2.1 (2001-03) & EN 300 086-2 V.1.2.1 (2001-02);  
EN 300 113-1 V1.3.1 (2001-03) & EN 300 113-2 V1.3.1 (2001-03);  
EN 300 219-1 V1.2.1 (2001-03) & EN 300 219-2 V1.2.1 (2001-03);  
EN 300 220-1 V1.3.1 (2000-09) & EN 300 220-2 V1.3.1 (2000-09)  
& EN 300 220-3 V1.1.1 (2000-03);  
EN 300 296-1 V1.1.1 (2001-03) & EN 300 296-2 V1.1.1 (2001-02);  
EN 300 330-1 V1.3.1 (2001-06) & EN 300 330-2 V1.1.1 (2001-06);  
EN 300 422-1 V1.2.1 (2000-08) & EN 300 422-2 V1.1.1 (2000-08);  
EN 300 440-1 V1.3.1 (2001-09) & EN 300 440-2 V1.1.1 (2001-09);  
EN 301 751 V1.2.1 (2000-12);  
EN 301 753 V1.1.1 (2001-03);  
EN 301 783-1 V1.1.1 (2000-09) & EN 301 783-2 V1.1.1 (2000-07)

On the following materials and products:

Electrical and electronic equipment for: information technology; industrial, scientific, and medical applications; residential service; receivers; licensed and unlicensed transmitters/transceivers; UPS systems; alarm/security systems; heavy industrial equipment; marine equipment; professional audio/video equipment; arc welders; PLC controllers; and scientific and laboratory apparatus.





THE AMERICAN  
ASSOCIATION  
FOR LABORATORY  
ACCREDITATION

### ACCREDITED LABORATORY

A2LA has accredited

**ACME TESTING CO.**  
**Acme, WA**

for technical competence in the field of

### Electrical Testing

The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 - 1999 "General Requirements for the Competence of Testing and Calibration Laboratories" and any additional program requirements in the identified field of testing. Testing and calibration laboratories that comply with this International Standard also operate in accordance with ISO 9001 or ISO 9002 (1994).

Presented this 30<sup>th</sup> day of April, 2002.



President  
For the Accreditation Council  
Certificate Number 829.01  
Valid to November 30, 2003

For tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation