17. Spurious Emission At Antenna Terminals

Test Requirement: FCC Rules: 47CFR Part 15, Subpart B, Section 15.111

Test Procedure: ANSI C63.4 - 1992

Date of Test: 26 December 2002

Laboratory: Test Site #2 (Acme, WA)

17.1 Test Requirement (Section 15.111)

In addition to the radiated emissions limits, receivers that operate (tune) in the frequency range 30 to 960 MHz and CB receivers that provide terminals for the connection of an external receiving antenna may be tested to demonstrate compliance with the provisions of 15.109 with the antenna terminals shielded and terminated with a resistive termination equal to the impedance specified for the antenna, provided these receivers also comply with the following: With the receiver antenna terminal connected to a resistive termination equal to the impedance specified or employed for the antenna, the power at the antenna terminal at any frequency within the range of measurements specified in 15.33 shall not exceed 2.0 nanowatts.

CB receives and receivers that operate (tune) in the frequency range of 30 to 960 MHz that are provided only with a permanently attached antenna shall comply with the radiated emission limitations in this part, as measured with the antenna attached.

17.2 Test equipment

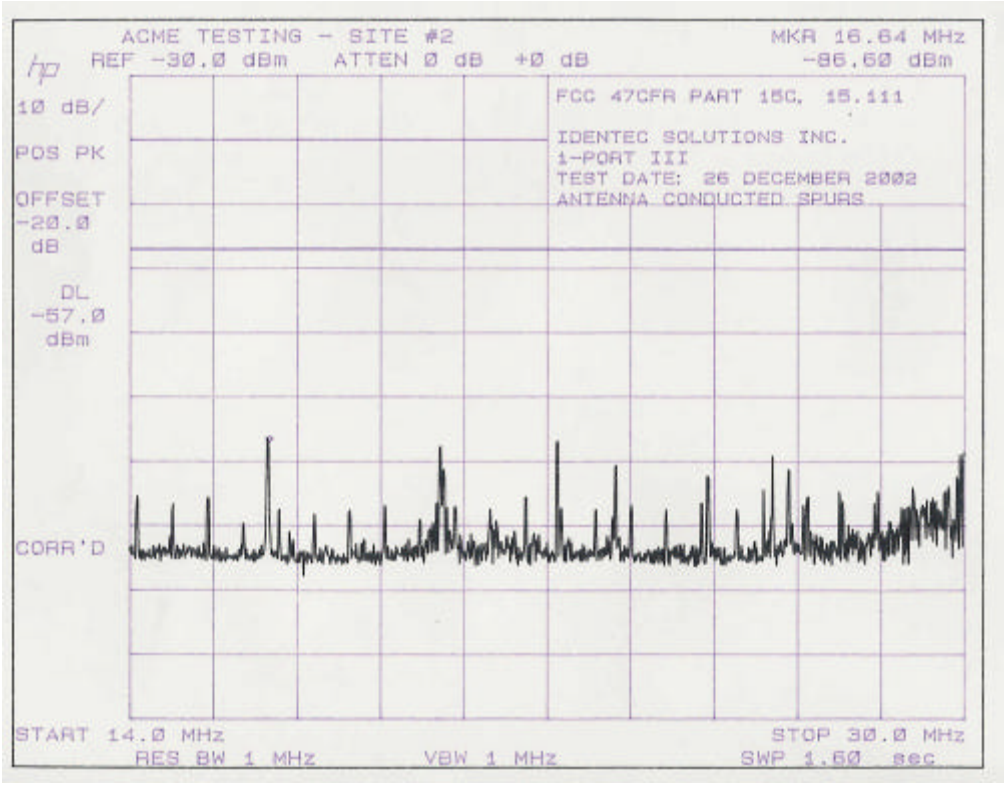
⇒ Spectrum Analyzer (blue): Hewlett-Packard 8566B, Serial Number 2410A00168, Calibrated: 17 April 2002, Calibration Due Date: 17 April 2003

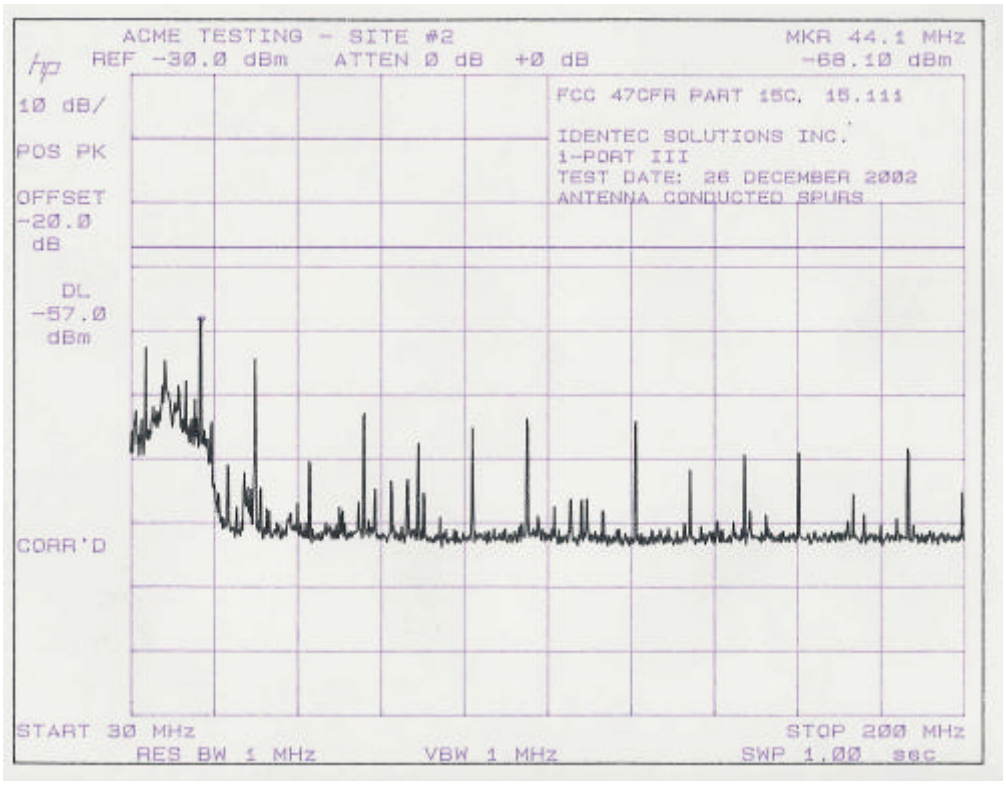
⇒ RF Preselector (blue): Hewlett-Packard 85685A, Serial Number 2648A00519, Calibrated: 17 April 2002, Calibration Due Date: 17 April 2003

⇒ Quasi Peak Adapter (blue): Hewlett-Packard 85650A, Serial Number 2043A00327, Calibrated: 17 April 2002, Calibration Due Date: 17 April 2003

17.3 Test Results

The EUT complied with the Spurious Emissions at the antenna terminals limit of 2.0 Nanowatts (-57.0 dBm) specified in 47 CFR Part 15 Section 15.111(a).





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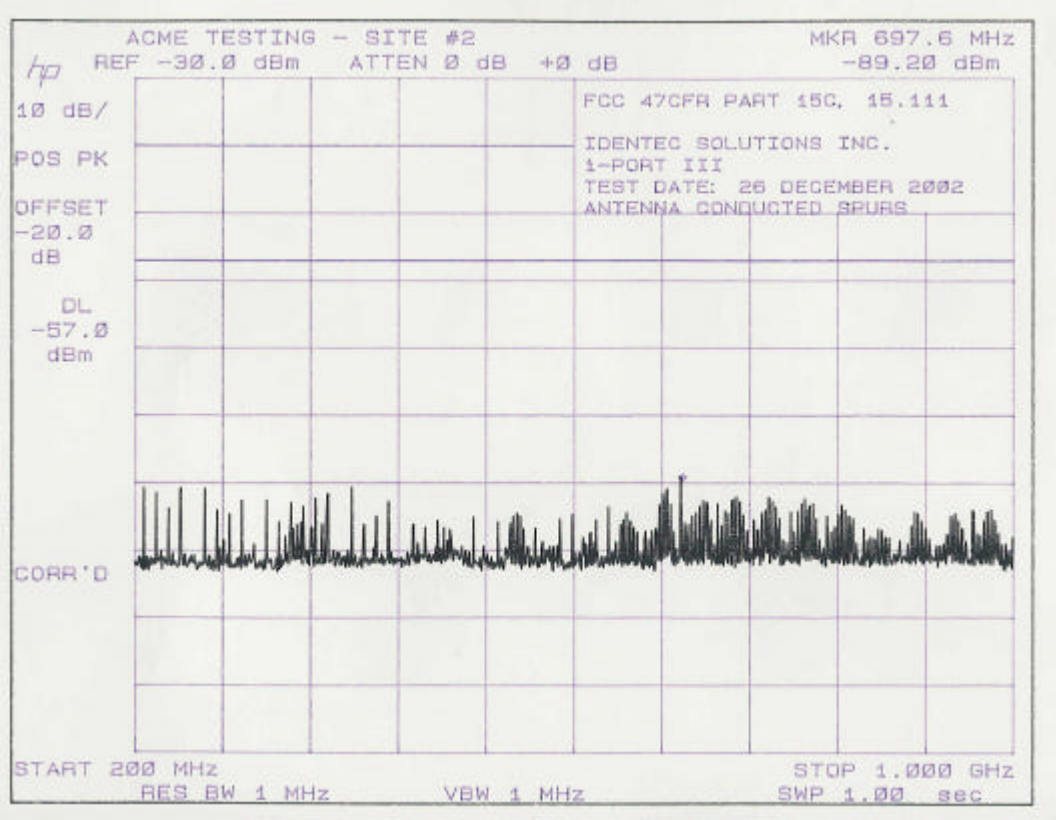
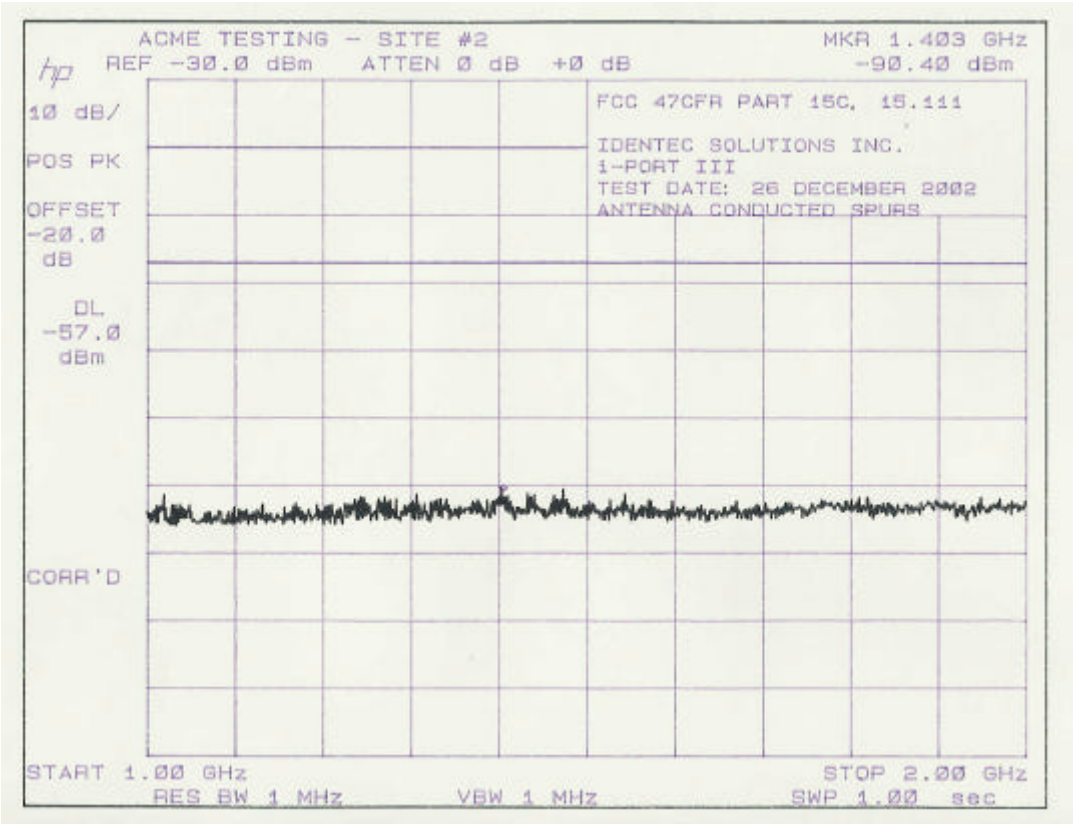
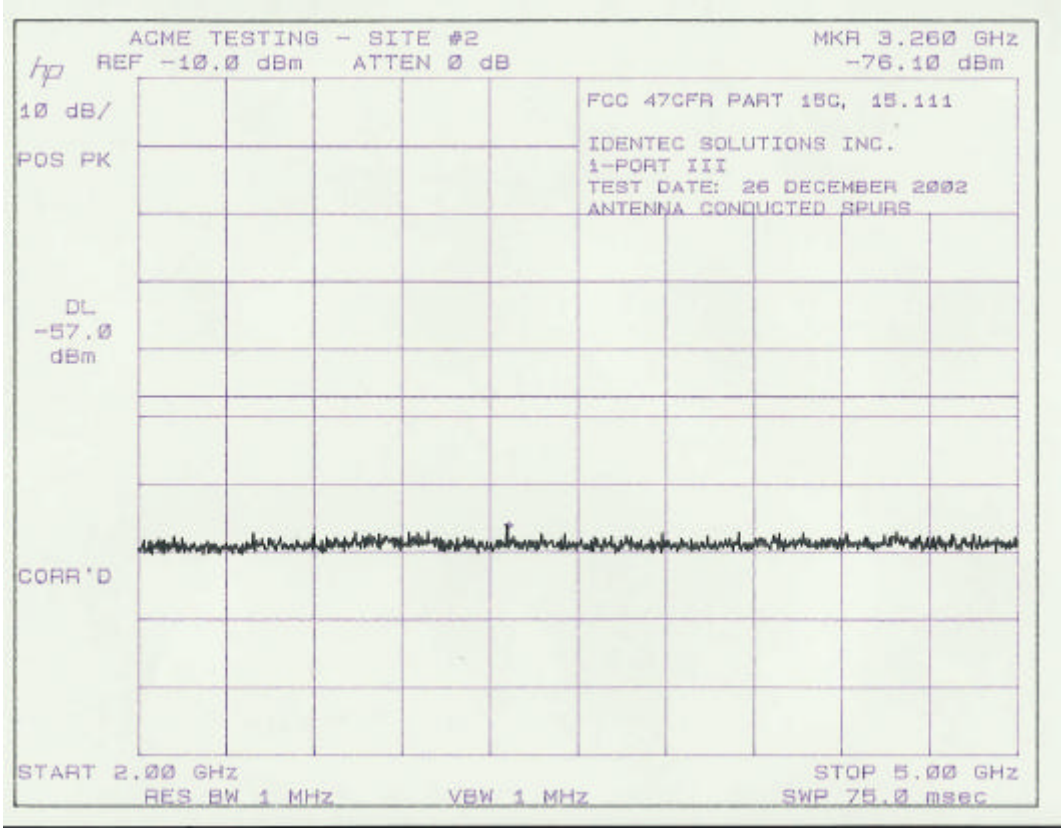
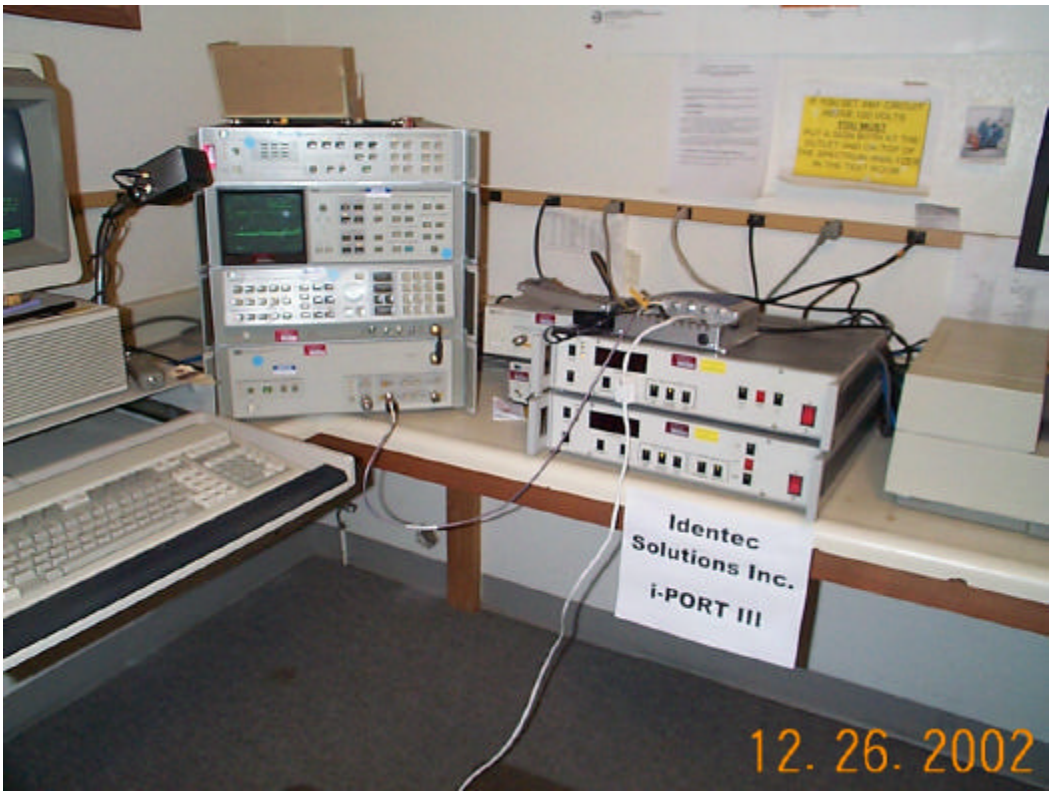
phone:888 226-3837 fax: 360 595-2722







17.4 Test Setup Photographs



18. Miscellaneous Comments and Notes

None.

19. Informative Information

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:

Test Technology	Test Method(s)
Basic Test Method Standards (Emissions):	
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
Basic Test Method Standards (Immunity):	
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;

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

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Test Technology	Test Method(s)
Surge:	IEC 801-5(D):1992 (*single phase only, and excluding 10/700 surge testing*); ENV 50142:1994 (*single phase only, and excluding 10/700 surge testing*); IEC 1000-4-5:1995 (*single phase only,and excluding 10/700 surge testing*); IEC 61000-4-5:1995 (*single phase only, and excluding 10/700 surge testing*); EN 61000-4-5:1995 (*single phase only, and excluding 10/700 surge testing*);
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;

Generic & Product Family 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 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
(*Sections 2, 3, 4.5.9, 4.5.10 [1st level surge only],9.10.5, & 9.10.6 Only*);

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

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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 (2nd Edition) *(EMC Requirements Only)*
	& EN 60601-1-2:2001 (2nd 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)

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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.

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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 30th day of April, 2002.

SEAL

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

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 under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely,

Phyllis Parrish
Information Technician