The American Association for Laboratory Accreditation

World Class Accreditation

# Accredited Laboratory

A2LA has accredited

# WASHINGTON LABORATORIES, LTD

*Gaithersburg, MD*

for technical competence in the field of

## Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 12th day of September 2008.

President & CEO
For the Accreditation Council
Certificate Number 2675.01
Valid to March 31, 2010
Revised January 13, 2009

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

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

WASHINGTON LABORATORIES, LTD[1]
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ELECTRICAL (EMC)

Valid to: March 31, 2010 Certificate Number: 2675.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following EMC, Product Safety, Radio and Telecommunication tests:

Test Method/Test Description:

***EMISSION STANDARDS AND TEST METHODS***

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|---|---|
| Radiated & Conducted Emissions | FCC Part 15 B/C/D/E using ANSI C63.4 (2003) & ANSI C63.17;<br>FCC Part 18 using FCC OST/MP-05 (1986);<br>FCC Report and Order ET Docket 98-153 (FCC 02-48);<br>Procedures IDB 20040420-001;<br>Procedures in IDB 20021108-001 with FCC Method 47 CFR Part 15, Subpart F: DA 00-705 (March 30, 2000) and KDB Pub. No. 558074, KDB Pub. No. 200433; DA 02-2138;<br>CISPR 22 (1997)+A1, (2000)+A2, (2002), CISPR 22 (2005);<br>EN 55022 (1998)+A1, (2000)+A2, (2003), EN 55022 (2006);<br>AS/NZS CISPR 22; CAN/CSA-CEI/IEC CISPR 22; CNS 13438;<br>KN 22 with RRL Notice # 2007-100 (Dec 26, 2007);<br>CISPR 11 (1997)+A1, (1999)+A2, (2002);<br>EN 55011 (1998)+A1, (1999)+A2, (2002); AS/NZS CISPR 11;<br>KN11 with RRL Notice 2007-100 (Dec 26, 2007); CNS 13803 |
| Harmonics | IEC 61000-3-2 (2000)+A1, (2001)+A2, (2004),<br>IEC 61000-3-2 (2005); EN 61000-3-2 (2000)+A2, (2005),<br>EN 61000-3-2 (2006);<br>AS/NZS 61000-3-2 |
| Flicker | IEC 61000-3-3 (1994)+A1, (2001)+A2, (2005);<br>EN 61000-3-3 (1995)+A1, (2001)+A2, (2005);<br>AS/NZS 61000-3-3 |

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| Generic / Product Specific Emissions Standards | IEC 61000-6-3; EN 61000-6-3; AS/NZS 61000.6.3;<br>IEC 61000-6-4; EN 61000-6-4; AS/NZS 61000.6.4;<br>CISPR 14-1 (2000)+A1, (2001)+A2, (2002),<br>(excluding measurement of clicks);<br>EN 55014-1 (2000)+A1, (2001)+A2, (2002),<br>(excluding measurement of clicks);<br>AS/NZS CISPR 14-1 (excluding measurement of clicks);<br>CNS 13783-1 (2001)+A1, (excluding measurement of clicks);<br>CISPR 25, sections 6.2, 6.3 and 6.4 only |

***IMMUNITY STANDARD AND TEST METHODS***

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| ESD | IEC 61000-4-2 (1995)+A1, (1997)+A2, (1998);<br>EN 61000-4-2 (1995)+A1, (1999)+A2, (2001);<br>KN 61000-4-2 |
| RF Immunity<br>Up to 2.7 GHz, 20 V/m | IEC 61000-4-3 (2002)+A1, (2002); IEC 61000-4-3 (2006);<br>EN 61000-4-3 (2002)+A1, (2003), EN 61000-4-3 (2006);<br>KN 61000-4-3 |
| EFT | IEC 61000-4-4 (1995)+A1, (2000)+A2, (2001);<br>IEC 61000-4-4 (2004);<br>EN 61000-4-4 (1995)+A1, (2001)+A2, (2002);<br>EN 61000-4-4 (2004); KN 61000-4-4 |
| Surge | IEC 61000-4-5 (1995)+A1, (2000), IEC 61000-4-5 (2005);<br>EN 61000-4-5 (1995)+A1, (2001), EN 61000-4-5 (2006);<br>KN 61000-4-5 |
| Conducted Immunity | IEC 61000-4-6 (1996)+A1, (2001),<br>IEC 61000-4-6 (2003)+A1, (2004)+A2, (2006);<br>EN 61000-4-6 (1996)+A1, (2001),<br>EN 61000-4-6 (2007), KN 61000-4-6 |
| Low Frequency Magnetic | IEC 61000-4-8 (1993)+A1, (2000);<br>EN 61000-4-8 (1994)+A1, (2001);<br>KN 61000-4-8 |
| Pulse Magnetic | IEC 61000-4-9 (1993)+A1, (2000);<br>EN 610000-4-9 (1993)+A1, (2001) |
| Damed Oscillator Magnetic | IEC 61000-4-10 (1993)+A1, (2000);<br>EN 61000-4-10 (1993)+A1, (2001) |
| Power Drop | IEC 61000-4-11 (1994)+A1, (2000), IEC 61000-4-11 (2004);<br>EN 61000-4-11 (1994)+A1, (2002), EN 61000-4-11 (2004);<br>KN 61000-4-11 |

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| Ring Waves Immunity | IEC 61000-4-12 (1995)+A1, (2000), IEC 61000-4-12 (2006);<br>EN 61000-4-12 (1995)+A1, (2001), EN 61000-4-12 (2006) |
| Generic/Product Specific Immunity Standard | CISPR 24 (1997)+A1, (2001)+A2, (2002);<br>EN55024 (1998)+A1, (2001)+A2, (2003);<br>KN 24 with RRL Notice No 2007-101, (Dec 26, 2007);<br>AS/NZS CISPR 24:2002;<br>EN 61000-6-1; EN 61000-6-2; AS/NZS 4254.1;<br>EN 55103-2; EN 50130-4 |
| ***COMBINEDMISSIONS GENERIC/PRODUCT SPECIFIC STANDARDS*** | IEC 60601-1-2; EN 60601-1-2; IEC 61326; EN 61326 |

***RADIO TESTS***

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| Austrailia/New Zealand | AS/NZS 4268 |
| Europe | ETSI EN 300 086-2; ETSI EN 300 220-3; ETSI EN 300 328-2; ETSI EN 300 330-2; ETSI EN 300 390-2; ETSI EN 300 440-2;<br>ETSI EN 301 489-1; ETSI EN 301 489-3; ETSI EN 301 489-4; ETSI EN 301 489-5; ETSI EN 301 489-7; ETSI EN 301 489-8; ETSI EN 301 489-12; ETSI EN 301 489-15;<br>ETSI EN 301 489-17; ETSI EN 300 826; ETSI EN 302 326-1;<br>ETSI EN 301-489-20; ETSI EN 301 428; ETSI EN 301-443;<br>ETSI EN 301 459; ETSI EN 302 208-2; ETSI EN 300-219-2;<br>ETSI EN 300-219-1; ETSI EN 301 681;<br>ETSI EN 301 426 (sections 4.2.1 and 4.2.2 only);<br>ETSI EN 301 721 (sections 4.2.1, 4.2.2, 4.2.3 and 4.2.4 only) |
| USA | TIA/EIA 603-C using 47 CFR Parts 2, 22 (cellular and non-cellular), 24, 25, 26, 27, 74, 80, 87, 90, 95, 97 and 101 |
| Canada | RSS-Gen; RSS-102 *(excluding SAR)*; RSS-111; RSS-112;<br>RSS-117; RSS-118; RSS-119; RSS-123; RSS-125; RSS-128; RSS-129; RSS-131; RSS-132; RSS-133; RSS-134; RSS-135; RSS-136; RSS-137; RSS-138; RSS-139; RSS-141; RSS-142;<br>RSS-170; RSS-181; RSS-182; RSS-188; RSS-191; RSS-192; RSS-193; RSS-194; RSS-195; RSS-210; RSS-213; RSS-215; RSS-220; RSS-243; RSS-287; RSS-310 |

***MILITARY EMC STANDARDS AND TEST METHODS***

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| Conducted Emissions | MIL-STD-461E, F: Methods CE101, CE102, CE106;<br>MIL-STD-462D: Methods CE101, CE102, CE106;<br>MIL-STD-462: Methods CE01, CE02, CE03, CE06 |

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|---|---|
| Radiated Emissions | MIL-STD-461E, F: Methods RE101, RE102 and RE103;<br>MIL-STD-462D: Methods RE101, RE102 and RE 103;<br>MIL-STD-462: Methods RE01, RE02 and RE03 |
| Conducted Susceptibility | MIL-STD-461E, F: Methods CS101, CS 103; CS 104; CS 105, CS109, CS114, CS115, CS116;<br>MIL-STD-462D: Methods CS101, CS103, CS114, CS115, CS116;<br>MIL-STD-462: Methods, CS01, CS02, CS03, CS04, CS05, CS06, CS08 |
| Radiated Susceptibility | MIL-STD-461E, F: Methods RS101, RS103;<br>MIL-STD-461/462D: Methods RS101, RS103 |

***AIRBORNE EQUIPMENT***

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| Magnetic Effects | RTCA DO-160E, F: Section 15 |
| Power Input | RTCA DO-160E, F: Section 16 |
| Voltage Spikes | RTCA DO-160E, F: Section 17 |
| Audio Frequency Conducted susceptibility | RTCA DO-160E, F: Section 18 |
| Induced Signal Susceptibility | RTCA DO-160E, F: Section 19 |
| Conducted Susceptibility | RTCA DO-160E, F: Section 20.4 |
| Radiated Susceptibility | RTCA DO-160E, F: Section 20.5 |
| Lighting Induced Transient Susceptibility | RTCA DO-160E, F: Section 22 |
| ESD | RTCA DO-160E, F: Section 25 |

***PRODUCT SAFETY***
*Exclusion : UV exposure and resistance to UV exposure, ionizing radiation.*

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|---|---|
| ITE | IEC 60950 (2001); IEC 60950-1 (2005); EN 60950 (2000), EN 60950-1 (2006); AS/NZS 60950-1 (2003); ANSI/UL 60950-1 (2007); CAN/CSA C22.2 60950-1 (2007) |
| Measurement, Control and Lab use | IEC 61010-1 (2001); EN 61010-1 (2001) UL 61010-1 (2004); CAN/CSA C22.2 61010-1 (2004) |
| Medical Equipment | IEC 60601-1 (1988); IEC 60601-1-2; EN 60601-1 (1990); EN 60601-1-2; UL 60601-1 (2003) |
| Machinery | IEC 60204-1 (1997); EN 60204-1 (1997) |
| Transmitters | EN 60215 (1989) |

[1]This accreditation also covers testing performed at the following satellite laboratory listed below.

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***ENVIRONMENTAL***

| | |
|---|---|
| High Temperature | MIL-STD-810, Method 501.4 |
| Low Temperature | MIL-STD-810, Method 502.4 |
| Humidity | MIL-STD-810, Method 507.4 |
| Immersion | MIL-STD-810, Method 512.4 |