THE AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

ELITE ELECTRONIC ENGINEERING INC.

Downers Grove, IL

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 18 June 2005*).

Presented this 30th day of August 2007.

President
For the Accreditation Council
Certificate Number 1786.01
Valid to September 30, 2009
Revised June 17, 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

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ELECTRICAL (AEMCLAP)

Valid to: September 30, 2009 Certificate Number: 1786.01

In recognition of the successful completion of the A2LA and the Automotive EMC Laboratory Accreditation Program (AEMCLAP)[1] evaluation process, accreditation is granted to this laboratory to perform the following automotive electromagnetic compatibility and other electrical tests:

Test Technology *AEMCLRP(1) (Rev. 4) Recognized Tests and Addendum May 25, 2007*	**Test Method(s)**
Electrostatic Discharge (ESD) *Appendix D* (Chrysler, Ford, GM) **Test Set-up Designation** RM13C	ISO 10605 (2001); DC-11224 (Change A) Sections 10.1, 10.2; ES-XW7T-1A278-AC (CI 280); GMW 3097 (2006) Sections 3.6.1, 3.6.2, 3.6.3, 3.6.4
Pin Conducted Emissions *Appendix E* (Chrysler) **Test Set-up Designation** RM17F, RM26A, RM28A	DC-11225 (Change A) Annex A
RF Conducted Emissions *Appendix F* (Chrysler, Ford, GM) **Test Set-up Designation:** RM17F, RM26A, RM28A	CISPR 25 (2002) Sections 6.2, 6.3; DC-11224 (Change A) Sections 6.2, 6.3; ES-XW7T-1A278-AC (CE420); GMW 3097 (2006) Section 3.3.2
RF Radiated Emissions *Appendix G* (Chrysler, Ford, GM) **Test Set-up Designation** RM27U, RM16U, RM25P	CISPR 25 (2002) Clause 6.4; DC-11224 (Change A) Section 6.4; ES-XW7T-1A278-AC (RE 310); GMW 3097 (2006) Section 3.3.1

Test Technology *AEMCLRP[(1)] (Rev. 4) Recognized Tests and Addendum May 25, 2007)*	**Test Method(s)**
Direct Injection Appendix H (Chrysler) **Test Set-up Designation** Test Stand #6, RM17F, RM26A, RM28A	ISO 11452-7 (2003); DC-11225 (Change A) Appendix B
Bulk Current Injection (BCI) Substitution Method *Appendix I* (Chrysler, Ford, GM) **Test Set-up Designation** RM17F, RM26A, RM28A	ISO 11452-4 (2005); DC-11224 (Change A) Section 7.2; ES-XW7T-1A278-AC (RI 112); GMW 3097 (2006) Section 3.4.1
Transverse Electromagnetic (TEM) Cell *Appendix J* (Chrysler) Up to 200 V3m from 1 to 200 MHz **Test Set-up Designation:** Test Stand #3	ISO 11452-3 (2001); DC-11224 (Change A) Section 7.5
Absorber-Lined Shielded Enclosure *Appendix K* (Chrysler, Ford, GM) **Test Set-up Designation:** RM16U, RM25U & RM27U for metallic bench RM25U & RM14N for non-metallic bench	ISO 11452-2 (2004); DC-11224 (Change A) Section 7.3, 7.4; ES-XW7T-1A278-AC (RI 114); GMW 3097 (2006) Section 3.4.2
Radiated Immunity Reverberation Method- Mode tuned *Appendix L* (Ford, GM) **Test Set-up Designation** Chamber ID: Mode Tuned Chamber RM24S Monitor Chamber RM24P	ISO/IEC 61000-4-21 (2003); GMW 3097 (2006) Section 3.4.3; ES-XW7T-1A278-AC (RI 114)
Absorber-Lined Shielded Enclosure RI Radar Pulse Only *Appendix M* (Ford, GM) **Test Set-up Designation:** RM25U & RM27U	ISO 11452-2 (2004); ES-XW7T-1A278-AC (RI 114); GMW 3097 (2006) Section 3.4.2

Non-AEMCLAP Tests

Test Technology	Test Method(s)
Direct Injection	DC PF-10540; SAE J11113-3
Electrostatic Discharge (ESD)	DC PF-10540, GM 9109P, GM 9119P; ES-XW7T-1A278-AB; SAE J1113-13
Radiated Emissions	ES-XW7T-1A278-AB; SAE J1113-41

Test Technology	Test Method(s)
Absorption Chamber, Substitution Method	SAE J1113-21; ISO 11452-2; DC-10614; GMW 3097 / GMW 3100; ES-XW7T-1A278-AB, ES-XW7T-1A278-AC
Bulk Current Injection (BCI) Substitution Method	ES-XW7T-1A278-AB; SAE J1113-4
Bulk Current Injections (BCI) Closed Loop Method	ISO 11452-4; SAE J1113-4; GMW 3097:1999/GMW 3100:1999; ES-XW7T-1A278-AB
Road vehicles -- Electrical Disturbances from Conduction and Coupling	ISO 7637-1, ISO 7637-2, ISO 7637-3
Absorption Chamber	DC PF-10540
Transverse Electromagnetic (TEM) Cell	DC PF-10540; SAE J1113-24
Conducted Emissions	DC PF-10540
Dielectric Withstand Voltage	MIL-STD-202G Meth. 301
Insulation Resistance	MIL-STD-202G Meth. 302
Contact Resistance	MIL-STD-202G Meth. 307
DC Resistance	MIL-STD-202G Meth. 303
Contact Chatter	MIL-STD-202EG Meth. 310
Temperature Rise Vs. Current	EIA-364, 70A

Electrical Tests

Unlicensed Radio Frequency Devices	47 CFR Parts 11 *(Emergency Alert System (EAS)),Part* 15 (*Radio Frequency Devices)* and Part 18 *(Industrial, Scientific, and Medical Equipment);* FCC MP-5, (February 1986) *FCC Methods of Measurements of Radio Noise Emissions From Industrial, Scientific, and Medical Equipment;* ANSI C63.4-2003, *American National Standard for Methods of Measurement of Radio- Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz;* ANSI C63.17-1998, *American National Standard for Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communications Services (UPCS) Devices.*
Unlicensed Radio Frequency Devices (continued)	FCC KDB Publication No. 200443, Millimeter Wave Test Procedures; FCC Public Notice, DA 00-705, March 30, 2000, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems; FCC Public Notice, DA 02-2138, August 30, 2002, Measurement Guidelines for U-NII Devices; FCC KDB Publication, 558074, March 23, 2005, New Guidance on Measurement for Digital Transmission Systems in Section 15.247
Licensed Radio Service Equipment	47 CFR Parts 2 (*Frequency Allocations and Radio Treaty Matters; General Rules and Regulations*), Part 22 (*Public Mobile Services*), 24 (*Personal Communications Services*), Part 25 (*Satellite Communications)*, Part 27 (*Miscellaneous Wireless Communications Services*), Part 74 (*Experimental Radio Auxiliary, Special Broadcast and Other Program Distributional Services*), Part 80 *(Stations in the Maritime Services) Part* 87 (*Aviation Services*) Part 90 (*Private Land Mobile Radio Services*), Part 95 (*Personal Radio Services*), Part 97 (*Amateur Radio Services*), and Part 101 (*Fixed Microwave Services*); ANSI/TIA-603-C (2004), *Land Mobile FM or PM Communications Equipment Measurement and Performance Standards (except sections 2.2.18, 2.4.1 and 2.4.9)*
European Radio Test Standards	ETSI EN 300 086-1, ETSI EN 300 113-1, EN 300 220-1, EN 300 330-1, EN 300 440-1, EN 300 328-1, EN 300 422-1

Canadian Radio Tests	RSS-GEN, RSS-102, RSS 111, RSS-112, 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, 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-243, RSS-287 and RSS-310

[1] A2LA provides Accreditation for the Automotive EMC Laboratory Recognition Program (AEMCLRP) which is designated as the Automotive EMC Laboratory Accreditation Program (AEMCLAP). Chrysler, Ford Motor Company (Ford) and General Motors Corporation (GM) provide overall recognition as part of the AEMCLRP document (Fourth Edition, 01/27/06 and the Addendum May 25, 2007). This document is available on the A2LA web site (www.A2LA.org). Accreditation to the A2LA AEMCLAP requirements does not ensure recognition by the aforementioned organizations. Confirmation of recognition can be obtained from these organizations directly.