



The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Laboratory

A2LA has accredited

YAZAKI TESTING CENTER

Canton, MI

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 6th day of January 2010.



A handwritten signature in black ink, reading "Peter Abney".

President & CEO
For the Accreditation Council
Certificate Number 1804.02
Valid to September 30, 2011

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

YAZAKI TESTING CENTER

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ELECTRICAL (AEMCLAP/EMC)¹

Valid to: September 30, 2011

Certificate Number: 1804.02

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

Test Technology

Test Method(s)

AEMCLRP⁽¹⁾ (Rev. 4) Recognized Tests and Addendum May 25, 2007

Electrostatic Discharge (ESD)

Appendix D

(Chrysler, Ford, GM)

Test Set-up/Location Designation:

Conducted Interference Room

ISO 10605 (2001, 2008);

DC-11224 (2007/06) Section 10.1, 10.2;

ES-XW7T-1A278-AC (CI 280);

GMW 3097 (2006) Section 3.6

RF Conducted Emissions

Appendix F

(Chrysler, Ford, GM)

Test Set-up/Location Designation:

Semi-Anechoic Chambers #1 and #2

CISPR 25 (2002, 2008) Sections 6.2 , 6.3;

DC-11224 (2007/06) Sections 6.2, 6.3;

ES-XW7T-1A278-AC (CE 420);

GMW 3097 (2006) Section 3.3.2

RF Radiated Emissions

Appendix G

(Chrysler, Ford, GM)

Test Set-up Designation:

Semi-Anechoic Chambers #1 and #2

CISPR 25 (2002, 2008) Section 6.4;

DC-11224 (2007/06) 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 (continued)

Direct Injection (DRFI)

Appendix H

(Chrysler)

Test Set-up/Location Designation:

Vehicle Reverb Chamber

Bulk Current Injection (BCI)

Appendix I

Substitution Method

(Chrysler, Ford, GM)

Test Set-up/Location Designation:

Vehicle Reverb Chamber

Transverse Electromagnetic (TEM) Cell

Appendix J

(Chrysler)

(200 V/m up to 200 MHz)

Test Set-up/Location Designation:

TEM/GTEM

Absorber-Lined Shielded Enclosure (ALSE)

Appendix K

(GM, Ford, Chrysler)

Test Set-up/Location Designation:

Semi-Anechoic Chambers #1 and #2

With Ground Plane, 200 MHz to 3.2 GHz

Reverberation Radiated Immunity Mode Tuned

Appendix L

(Ford, GM)

Test Set-up Designation/Location:

Component Reverb Chamber

400 MHz to 3.1GHz All Modulations

Non-AEMCLAP Tests

Conducted Transient Immunity

Conducted Transient Immunity – Signal Lines,
Coupling Clamp

Bulk Current Injection (BCI)

Test Method(s)

ISO 11452-7 (2003);
DC-11225 (2007/07) Appendix B

ISO 11452-4 (2005);
DC-11224 (2007/06) Section 7.2;
ES-XW7T-1A278-AC (RI 112);
GMW 3097 (2006) Section 3.4.1

ISO 11452-3 (2001);
DC-11224 (2007/06) Section 7.5

ISO 11452-2 (2004);
DC-11224 (2007/06) Section 7.3;
ES-XW7T-1A278-AC (RI 114);
GMW 3097 (2006) Section 3.4.2

ISO/IEC 61000-4-21 (2003);
GMW 3097 (2006), Section 3.4.3;
ES-XW7T-1A278-AC (RI 114)

ISO 7637-2 (2004);
Ford ES-XW7T-1A278-AC (CI 210, CI 220, CI 250,
CI 260 except f, CI 270);
GMW3097 (2006) Section 3.5.1;
DC 11224 (2007/06) Section 9.1

ISO 7637-3 ; DC 11224 Section 9.2.3 ;
GMW3097 Section 3.5.3

DC 10614 Section 7.3

Test Technology**Test Method(s)*****Non-AEMCLAP Tests (continued)***

Radiated Emissions – Reverberation Method	GMW3097 (2004) Section 3.3.3
Conduct Transient Emissions	Ford ES-XW7T-1A278-AC (CE 420); DC 11224 (2007/2006) Section 6.5
Supply Voltage Range	DC 10615 (2007-2006) Section 6.1
Jump Start Test	GMW3172 (2005-2008) Section 5.2.2; DC 10615 (2007-2006) Section 8.2
Reverse Polarity Test	GMW3172 (2005-2008) Section 5.2.3; DC 10615 (2007-2006) Section 8.5
Over-voltage	GMW3172 (2005-2008) Section 5.2.4; DC 10615 (2007-2006) Section 8.4
Voltage Drop Test	GMW3172 (2005-2008) Section 5.2.5;
Ignition Off Draw	DC 10615 (2007-06) Section 6.2
Supply Voltage Dropout Test	GMW3172 (2005-2008) Section 5.2.6; DC 10615 (2007-06) Section 7.2
Supply Voltage Dips Test	DC 10615 (2007-06) Section 7.3
Engine Cranking Low Voltage – Resembling Cold Cranking	DC 10615 (2007-06) Section 7.4
Engine Cranking Low Voltage – Warm Cranking Stop Start	DC 10615 (2007-06) Section 7.5
Supply Voltage Ramp Up	DC 10615 (2007-06) Section 7.6
Supply Voltage Ramp Down	DC 10615 (2007-06) Section 7.7
Defective Regulation	DC 10615 (2007-06) Section 8.1
Load Dump	DC 10615 (2007-06) Section 8.3
Immunity to Short Circuits in the Supply Voltage Input and Load Output Lines	DC 10615 (2007-06) Section 9.1
Immunity to Short Circuits in I/O Signal Lines	DC 10615 (2007-06) Section 9.2
Resistance to Overload	DC 10615 (2007-06) Section 9.3
Superimposed Alternating Voltage Test	GMW3172 (2005-2008) Section 5.2.7
Supply Voltage Ripple	DC 10615 (2007-06) Section 6.3
Supply Switch Deactivation	DC 10615 (2007-06) Section 7.1

Test Technology

Test Method(s)

Non-AEMCLAP Tests (continued)

Open Circuit Tests	GMW3172 (2005-2008) Section 5.2.8
Ground Offset Test	GMW3172 (2005-2008) Section 5.2.9; DC 10615 (2007-06) Section 9.5
Power Offset Test	GMW3172 (2005-2008) Section 5.2.10; DC 10615 (2007-06) Section 9.4
Dielectric Strength (Withstand Voltage)	GMW3191 Section 4.4.2
Insulation Resistance	SAE/USCAR-30
Contact Resistance	SAE/USCAR-30
Terminal Electric Tests	SAE/USCAR-2 Revision 4; SAE/USCAR-2
Dry Circuit Resistance	Section 5.3.1
Voltage Drop	Section 5.3.2; GMW3191 Section 4.2.2
Maximum Test Current Capability	Section 5.3.3
1008 Hour Current Cycling	Section 5.3.4
Connector Electrical Tests	SAE/USCAR-2 Revision 4; SAE/USCAR-2
Isolation Resistance	Section 5.5.1; GMW3191 Section 4.4.1
Connector Electrical Tests	SAE/USCAR-17 Revision 2
Standing Wave Ratio and Insertion Loss	
RF Leakage (IEC 61726 Method)	

Laboratory supports the various mechanical tests shown on certificate 1804.01 that includes the monitoring of electrical parameters, use of programmable load boxes, data acquisition systems, resistance, interface communications, voltage and current measurements that are enveloped under the following process measurement values.

AC Voltage	1mV to 1100V
DC Current	(0 to 500) A
AC Current	(0 to 500) A
DC Voltage	(0 to 1100) V
Resistance	(0 to 330) Mohms
Duration	(.1 μ s . to continuous)

Using the test methods and specifications listed above as well as customer supplied methods within the parameters listed above.

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 Addendum May 25, 2007 with Chrysler Addendum to DC-11224 (2007/06) and DC-11225 (2007/07) with Addendum to DC-11224/5 Rev A dated April, 2008 and Ford Corrections or Requirements to ES-XW7T-1A278-AC Updated June 7, 2006 and September 18 2007).

The AEMCLRP 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. If any items are not covered by AEMCLRP Rev.4 or there are any conflicts among the documents, the actual issued test method standards of Chrysler, Ford Motor Company and General Motors Corporation and OEM issued corrections/addendums these will supersede AEMCLRP Rev. 4 and Addendum May 25, 2007.