



The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Laboratory

A2LA has accredited

TRW AUTOMOTIVE - VALIDATION LABORATORY

Farmington Hills/Livonia, 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 17th day of December 2009.



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

President & CEO
For the Accreditation Council
Certificate Number 1358.01
Valid to October 31, 2011
Revised January 11, 2010

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 17025:2005¹

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ELECTRICAL (AEMCLAP²)

Valid to: October 31, 2011

Certificate Number: 1358.01

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

Test Technology

Test Method(s)

***AEMCLRP⁽²⁾ (Rev. 4) Recognized Tests
and Addendum May 25, 2007***

Electrostatic Discharge (ESD)
Appendix D
(Chrysler, Ford, GM)
Test Set-up/Location Designation:
ESD Benches #1 and #2

ISO 10605 (2001);
DC-11224 (2007/06) Sections 10.1, 10.2;
ES-XW7T-1A278-AC (CI 280);
GMW 3097 (2006) Section 3.6

Pin Conducted Emissions (PCE)
Appendix E
(Chrysler)
Test Set-up/Location Designation:
Screen Room RFA

DC-11225 (2007/07) Annex A

RF Conducted Emissions
Appendix F
(Chrysler, Ford, GM)
Test Set-up/Location Designation:
Absorption Chambers TDK1 and TDK2

CISPR 25 (2002) Sections 6.2, 6.3;
DC-11224 (2007/06) Sections 6.2, 6.3;
ES-XW7T-1A278-AC (CE420);
GMW 3097 (2006) Section 3.3.2

Test Technology

***AEMCLRP⁽²⁾ (Rev. 4) Recognized Tests
and Addendum May 25, 2007***

RF Radiated Emissions

*Appendix G
(Chrysler, Ford, GM)
Test Set-up/Location Designation:
Absorption Chambers TDK1 and TDK2*

Direct Injection (DRFI)

*Appendix H
(Chrysler)
Test Set-up/Location Designation:
DRFI Bench #1*

Bulk Current Injection (BCI)

*Appendix I
Substitution Method
(Chrysler, Ford, GM)
Test Set-up/Location Designation:
BCI Chambers RFB and RFD*

Transverse Electromagnetic (TEM) Cell

*Appendix J (200 V/m up to 400MHz)
Test Set-up/Location Designation:
TEM Cells IF8 and EM1*

Absorber-Lined Shielded Enclosure (ALSE)

*Appendix K
(Chrysler, Ford, GM,)
Test Set-up/Location Designation:
Absorption Chambers TDK1 and TDK2 (table top ground
plane)
Absorption Chamber TDK1(without table top ground plane)*

Absorber-lined Shielded Enclosure

Radar Pulse Only
*Appendix M
(Chrysler, Ford, GM)
Test Set-up/Location Designation:
Absorption Chambers TDK1 and TDK2*

Non-AEMCLRP Tests

***Radiated Immunity -
Tri-Plate***

*Test Set-up/Location Designation:
Absorption Chambers TDK1 and TDK2*

Test Method(s)

CISPR 25 (2002), Clause 6.4;
DC-11224 (2007/06) Section 6.4;
ES-XW7T-1A278-AC (RE 310);
GMW 3097 (2006) Section 3.3.1

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) Sections 7.3, 7.4;
ES-XW7T-1A278-AC (RI 114);
GMW 3097 (2006) Section 3.4.2

ISO 11452-2 (2004) ;
DC 11224 (2007/06), Section 7.2;
ES-XW7T-1A278-AC (RI 114);
GMW 3097 (2006) Section 3.4.2

TSC 7508G-1;
TSC 7026G;
ES-XW7T-1A278-AB;
SAE J1113-25;
ES 96200-00

Test Technology

Non-AEMCLRP Tests

Conducted Immunity

Test Set-up/Location Designation:

EMC Lab

Test Method(s)

SAE J113-2;
DC-10615;
LP-388C-33;
LP-388C-65;
ES 96200-00;
7Z0440;
GMW 3097 (2004/2006)

Conducted Immunity - Direct Injection

Test Set-up/Location Designation:

EMC Lab

DC-10614;
ISO/IEC 11452-7;
PF-10540A,
PF-9326;
SAE J1113-3

Bulk Current Injection (BCI), Closed Loop

Test Set-up/Location Designation:

BCI Chambers RFB and RFD

SAE J1113-4;
ISO/IEC 11452-4;
GMW 9112P;
ES 96200-00;
990110 01;
7Z0443,
7Z0446

Bulk Current Injection (BCI), Substitution

Test Set-up/Location Designation:

BCI Chambers RFB and RFD

DC-10614;
ISO/IEC 11452-4;
ES-XW7T-1A278-AB;
GMW 3097 (2004);
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124

Conducted Transient Emissions

Test Set-up/Location Designation:

EMC Lab

ISO/IEC 7637 Part 2;
DC-10614;
ES-XW7T-1A278-AB/AC;
GMW 3097 (2004/2006);
GMW 3097 and GMW 3100 (2001);
990110 01;
7Z0485



Test Technology

Non-AEMCLRP Tests

Immunity to Voltage Fluctuations (Dropouts, Dips, Cranking, Ramp Up/Down)

Test Set-up/Location Designation:
EMC Lab

Magnetic Field Immunity

Test Set-up/Location Designation:
EMC Lab

Over/Under, Reverse, Jump Start, Defective Regulator Voltages

Test Set-up/Location Designation:
EMC Lab

Supply Voltage Transients

Test Set-up/Location Designation:
EMC Lab

Test Method(s)

DC-10615;
ES-XW7T-1A278-AB/AC;
GMW 3172;
TSC 7001G;
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124;
TSC7021G;
ES 96200-00;
990110 01;
7Z0444

DC-10614;
ES-XW7T-1A278-AB/AC;
GMW 3097 (2004/2007);
GMW 3100;
ES 96200-00;
990110 01;
7Z0450

DC-10615;
ES-XW7T-1A278-AB/AC;
GMW 3172 (2004/2007);
TSC 7001G;
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124;
ES 96200-00;
990110 01

SAE J1113-11;
ISO 7637-2;
ISO 7637-3;
DC-10614;
Ford ES-XW7T-1A278-AB/AC;
GMW 3097 (2004/2006);
GMW 3097 and GMW 3100 (2001);
TSC 7001G;
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124;
ES 96200-00;
990110 01;
7Z0441;
7Z0471



Test Technology

Non-AEMCLRP Tests

Radiated Immunity (TEM Cell)

Test Set-up/Location Designation:
TEM Cells IF8 and EM1

Test Method(s)

TSC 7006G;
TSC 7006G-4;
TSC 7025G;
TSC 7025G-2;
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124;
ES 96200-00;
ISO 11452-2;
DC-10614;
SAE J1113-24

Radiated Immunity (Free Field)

Test Set-up/Location Designation:
Absorption Chambers TDK1 and TDK2

SAE J1113-21;
TSC 7006G;
TSC 7006G-4;
TSC 7025G;
TSC 7025G-2;
ES 96200-00;
990110 01;
7Z0449;
7Z0480;
ISO 11452-2;
DC-10614;
GMW 3097 (2004)

Radiated Emissions

Test Set-up/Location Designation:
Absorption Chambers TDK and TDK2

TSC 7508G;
TSC 7508G-1;
TSC 7026G;
TSC 7026G-1;
7794Z-TA0_0000_C46-2-5620_E;
ES 96200-00;
990110 01;
7Z0472;
DC-10614;
ES-XW7T-1A278-AB/AC;
GMW 3097

Conducted Emissions

Test Set-up/Location Designation:
Absorption Chambers TDK1 and TDK2

DC-10614;
LP-388C-41;
ES-XW7T-1A278-AB/AC;
GMW 3097 (2004)



Test Technology

Non-AEMCLRP Tests

Electrostatic Discharge

Test Set-up/Location Designation:
ESD Benches #1 and #2

Test Method(s)

TSC 7018G Jul 2003 r1;
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124;
ES 96200-00;
990110 01;
7Z0445,
7Z0483;
DC-10614;
ES-XW7T-1A278-AB;
GMW 3097 (2004);
SAE J1113-13;
LP 388C-65

***Absorber-lined Shielded Enclosure
Radar Pulse Only***

Test Set-up/Location Designation:
Absorption Chambers TDK1 and TDK2

GMW 3097 (2004)

¹ This accreditation covers testing performed at the main laboratory listed above, and at the satellite laboratory indicated.

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Test Technology

***AEMCLRP⁽²⁾ (Rev. 4) Recognized Tests
and Addendum May 25, 2007***

Electrostatic Discharge (ESD)

Appendix D
(Chrysler, Ford, GM)
Test Set-up/Location Designation:
EMC-00T

Test Method(s)

ISO 10605 (2001);
DC-11224 (2007/06) Sections 10.1, 10.2;
ES-XW7T-1A278-AC (CI 280);
GMW 3097 (2006) Section 3.6

Pin Conducted Emissions (PCE)

Appendix E
(Chrysler)
Test Set-up/Location Designation:
EMC Lab

DC-11225 (2007/07) Annex A



Test Technology

***AEMCLRP⁽²⁾ (Rev. 4) Recognized Tests
and Addendum May 25, 2007***

RF Radiated Emissions

Appendix G

(Chrysler, Ford, GM)

Test Set-up/Location Designation:

EMC-00A and EMC-00R

Bulk Current Injection (BCI)

Appendix I

Substitution Method

(Chrysler, Ford, GM)

Test Set-up/Location Designation:

EMC-00A and EMC-00R

Absorber-Lined Shielded Enclosure (ALSE)

Appendix K

Table top ground plane

(Chrysler, Ford, GM)

Test Set-up/Location Designation:

Anechoic Room

RF Conducted Emissions

Appendix F

(Chrysler, Ford, GM)

Test Set-up/Location Designation:

EMC-00A

Absorber-lined Shielded Enclosure

Radar Pulse Only

Appendix M

(Chrysler, Ford, GM)

Test Set-up/Location Designation:

Absorption Chamber EMC-00A

Transverse Electromagnetic (TEM) Cell

Appendix J

(200 V/m up to 400 MHz)

(Chrysler)

Test Set-up/Location Designation:

Tem Cells IF8 and EMI

Test Method(s)

CISPR 25 (2002), Clause 6.4;
DC-11224 (2007/06) Section 6.4;
ES-XW7T-1A278-AC (RE 310);
GMW 3097 (2006) Section 3.3.1

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 11452-2 (2004);
DC-11224 (2007/06) Sections 7.3, 7.4;
ES-XW7T-1A278-AC (RI 114);
GMW 3097 (2006) Section 3.4.2

CISPR 25 (2002) Sections 6.2, 6.3;
DC-11224 (2007/06) Sections 6.2, 6.3;
ES-XW7T-1A278-AC (CE420);
GMW 3097 (2006) Section 3.3.2

ISO 11452-2 (2004);
DC 11224 (2007/06), Section 7.2;
ES-XW7T-1A278-AC (RI 114);
GMW 3097 (2006) Section 3.4.2

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

Test Technology

Non-AEMCLRP Tests

***Radiated Immunity -
Tri-Plate***

(Toyota, Ford, Hyundai, Kia)
Test Set-up/Location Designation:
Absorption Chamber EMC-00A

Conducted Immunity

(Chrysler, GM, Hyundai, Kia, Subaru, Fiat)
Test Set-up/Location Designation:
EMC Lab

Bulk Current Injection (BCI), Closed Loop

(GM, Hyundai, Kia, Fiat)
Test Set-up/Location Designation:
EMC-00A and EMC-00R

Bulk Current Injection (BCI), Substitution

(Chrysler, Ford, GM, Subaru, Honda)
Test Set-up/Location Designation:
EMC-00A and EMC-00R

Conducted Transient Emissions

(Chrysler, GM, Ford, Subaru, Fiat)
Test Set-up/Location Designation:
EMC Lab

Test Method(s)

TSC 7508G-5;
TSC 7026G;
ES-XW7T-1A278-AB;
SAE J1113-25;
ES 96200-00

SAE J113-2;
DC-10615;
LP-388C-33;
LP-388C-65;
ES 96200-00;
7Z0440;
GMW 3097 (2004/2006)

SAE J1113-4;
ISO/IEC 11452-4;
GMW 9112P;
ES 96200-00;
990110 01;
7Z0443;
7Z0446

DC-10614;
ISO/IEC 11452-4;
ES-XW7T-1A278-AB;
GMW 3097 (2004);
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124;
A2-NSEA-06-017

ISO/IEC 7637 Part 2;
DC-10614;
ES-XW7T-1A278-AB/AC;
GMW 3097 (2004/2006);
GMW 3100 (2001);
990110 01;
7Z0485;
A2-NSEA-06-017

Test Technology

Non-AEMCLRP Tests

Immunity to Voltage Fluctuations (Dropouts, Dips, Cranking, Ramp Up/Down)

(Chrysler, Ford, GM, Hyundai, Kia, Subaru, Honda, Toyota, Fiat)

Test Set-up/Location Designation:
EMC Lab

Magnetic Field Immunity

(Chrysler, Ford, GM, Hyundai, Kia, Fiat)

Test Set-up/Location Designation:
EMC Lab

Over/Under, Reverse, Jump Start, Defective Regulator Voltages

(Chrysler, Ford, GM, Hyundai, Kia, Subaru, Honda, Toyota, Fiat)

Test Set-up/Location Designation:
EMC Lab

Test Method(s)

DC-10615;
ES-XW7T-1A278-AB/AC;
GMW 3172;
TSC 7001G;
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124;
TSC7021G;
ES 96200-00 HKMC;
990110 01;
7Z0444;
A2-NSEA-06-017

DC-10614;
ES-XW7T-1A278-AB/AC;
GMW 3097 (2004/2007);
GMW 3100;
ES 96200-00;
990110 01;
7Z0450

DC-10615;
ES-XW7T-1A278-AB/AC;
GMW 3172 (2004/2007);
TSC 7001G;
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124;
ES 96200-00;
990110 01;
A2-NSEA-06-017

Test Technology

Non-AEMCLRP Tests

Supply Voltage Transients

(Chrysler, Ford, GM, Hyundai, Kia, Subaru, Honda, Toyota, Fiat)

Test Set-up/Location Designation:
EMC Lab

Radiated Immunity (TEM Cell)

(Chrysler, Hyundai, Kia, Subaru, Honda, Toyota)

Test Set-up/Location Designation:
TEM Cells IF8 and EM1

Radiated Immunity (Free Field)

(Chrysler, GM, Hyundai, Kia, Subaru, Fiat, Toyota)

Test Set-up/Location Designation:
Absorption Chamber EMC-00A

Test Method(s)

SAE J1113-11;
ISO 7637-2 ;
ISO 7637-3;
DC-10614;
ES-XW7T-1A278-AB/AC;
GMW 3097 (2004/2006);
GMW 3097 and GMW 3100 (2001);
TSC 7001G;
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124;
ES 96200-00;
990110 01;
7Z0441;
7Z0471;
A2-NSEA-06-017

TSC 7006G;
TSC 7006G-4;
TSC 7025G;
TSC 7025G-2;
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124;
ES 96200-00;
ISO 11452-2;
DC-10614;
SAE J1113-24;
A2-NSEA-06-017

SAE J1113-21;
TSC 7006G;
TSC 7006G-4;
TSC 7025G;
TSC 7025G-2;
ES 96200-00;
990110 01;
7Z0449;
7Z0480;
ISO 11452-2;
DC-10614;
GMW 3097 (2004);
A2-NSEA-06-017

Test Technology

Test Method(s)

Non-AEMCLRP Tests

Radiated Emissions

(Chrysler, Ford, GM, Hyundai, Kia, Subaru, Honda, Toyota, Fiat)

Test Set-up/Location Designation:
Absorption Chamber EMC-00A

TSC 7508G;
TSC 7508G-1;
TSC 7026G;
TSC 7026G-1;
7794Z-TA0_0000_C46-2-5620_E;
ES 96200-00;
990110 01;
7Z0472;
DC-10614;
ES-XW7T-1A278-AB/AC;
GMW 3097;
A2-NSEA-06-017

Conducted Emissions

(Chrysler, Ford, GM)

Test Set-up/Location Designation:
EMC-00A and EMC-00R

DC-10614;
LP-388C-41;
ES-XW7T-1A278-AB/AC;
GMW 3097 (2004)

Electrostatic Discharge

(Chrysler, Ford, GM, Hyundai, Kia, Subaru, Honda, Toyota, Fiat)

Test Set-up/Location Designation:
EMC-00T

TSC 7018G Jul 2003 r1;
7794Z_S3V_0000;
7794Z-TA0_0000_C46-2-5620_E;
7794Z_SNAA_0000_SNAA_F_2124;
ES 96200-00;
990110 01;
7Z0445,
7Z0483;
DC-10614;
ES-XW7T-1A278-AB;
GMW 3097 (2004);
SAE J1113-13;
LP 388C-65;
A2-NSEA-06-017

² 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.

