



REPORT

For
Acura Embedded Systems Inc.

Unit # 1, 7711 128 Street
Surrey, British Columbia,
V3W 4E6, Canada

Date: January 25, 2011
Report No.: 9990-1S
Revision No.: 0
Project No.: 9990
Equipment: Mobile Computer System
Part/Model No.: PowerBrick / AcuBrite Series

ONE STOP GLOBAL CERTIFICATION SOLUTIONS



3133-20800 Westminster Hwy, Richmond, BC
V6V 2W3, Canada
Phone: 604-247-0444
Fax: 604-247-0442
www.labtestcert.com

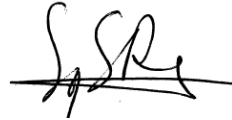
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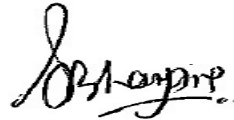
TEST REPORT

Report reference No......: 9990-1S
Report Revision History: Rev_0: Issued January 25, 2011

Tested by
(printed name and signature): Eugen Rapa



Approved by
(printed name and signature): Sandeep Bhayana



Date of issue: January 25, 2011

Note: By signing this report, both the Testing Technician and the Reviewer hereby declare to abide by the applicable LabTest policies:
1.) Statement of Independence # 3014 (LabTest Employees),
2.) Independence, Impartiality, and Integrity #1039, clause 11 (Engineering Service Subcontractors), or
3.) Independence, Impartiality, and Integrity #1019, clause 3.5 (Testing Subcontractors).

Testing Laboratory Name: LabTest Certification Inc.
Address: 3133 – 20800 Westminster Hwy, Richmond, B.C. V6V 2W3

Test Location Name: Same as Test Laboratory
Address: Same as Test Laboratory

Applicant's Name: Acura Embedded Systems Inc.
Address: Unit # 1, 7711 128 Street, Surrey, B.C., V3W 4E6

Test specification

Test Procedure.....: MIL-STD-810F Method 501.4: Procedure II
• High temperature test

MIL-STD-810F Method 502.4: Procedure II
• Low temperature test

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Test item description Mobile Computer System
Manufacturer Acura Embedded Systems Inc.
Part and/or type reference PowerBrick / AcuBrite Series
Serial numbers ACPB311007008, AC10ATOM0420, ACU8N10300579

Particulars: test item vs. test requirements

Test case verdicts

Test case does not apply to the test object : (N)/A

Test item does meet the requirement : (F)ail

Test item does not meet the requirement .. : (P)ass

Testing

Date of receipt of test item : September 15, 2010

Date(s) of performance of test : September 17, 2010 thru September 20, 2010

Appendix A: Test Data

General remarks

"This report is not valid as a CB Test Report unless appended by an approved CB Testing Laboratory and appended to a CB Test Certificate.

The test result presented in this report relate only to the object(s) tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

- Throughout this report a comma is used as the decimal separator.
- Throughout this report a period is used as the decimal separator.

Mobile Computer System

List of Tested Components

Item	Description	Manufacturer	Model Number
1	Mobile Computer	Acura Embedded Systems	PowerBrick ATOM
2	Mobile Computer	Acura Embedded Systems	PowerBrick 3.1
3	LED Backlit	Acura Embedded Systems	Acubrite
4	Cellular Modem WiFi Router	Acura Embedded Systems	AcuConnect

Summary of Testing:

Test No.	TEST	VERDICT
1	High temperature test: o 60°C for 4 hrs	P
2	Low temperature test: o -40°C for 4 hrs	P

Test Equipment Used

Item	Type	Equipment No	Calibration date		Calibration Certificate No	Calibration Laboratory
			Last	Due		
1	Humidity/Temperature Data Logger	58	November 13, 2009	November 13, 2010	0145532	Veriteq
2	Temperature Chamber	23	Not required	Not required	Not required	Not required

Photos



Picture 1 - Mobile Computer System: Mobile Computer PowerBrick 3.1



Picture 2 - Mobile Computer System: Mobile Computer PowerBrick ATOM



Picture 3 – Rugged Cellular WiFi Router: AcuConnect



Picture 4 – High Bright LED backlit Monitor: Acubrite



Picture 5 – Low Temperature Test setup inside of Test Chamber



Picture 6 – High Temperature Test Setup inside the Test Chamber

Appendix A – Test Data Section

1) High Temperature Test:

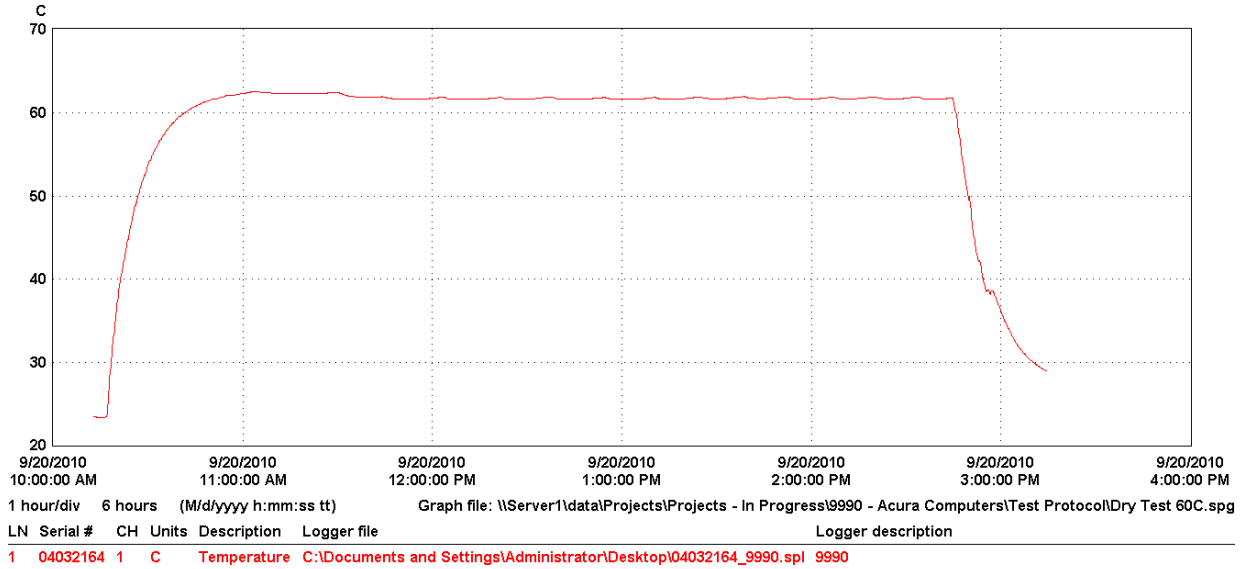
METHOD
MIL-STD-810F
(Clause 501.4: Procedure II)

Procedure II – Operation

- Step 1. With the test item placed in the chamber in its operational configuration, install any additional temperature sensors necessary to measure the maximum temperature response of the test item, ensuring the functioning components are included.
- Step 2. From the test plan, identify the maximum operational temperature for the materiel, whether it is constant or cyclic. If constant, go to Step 3.
- Step 3. Constant temperature exposure. Adjust the chamber air conditions to the required steady state temperature (and humidity, if applicable) at which the materiel must operate.
- Step 4. Maintain the chamber conditions at least two hours following test item temperature stabilization. If not possible to instrument internal components, base the additional soak time on thermal analysis to ensure temperature stabilization throughout the test item.
- Step 5. Conduct as thorough a visual examination of the test item as possible considering chamber access limitations, and document the results for comparison with pretest data.
- Step 6. Operate the test item and allow its temperature to re-stabilize. Conduct an operational checkout of the test item in accordance with the test plan and document the results for comparison with pretest data.

Test Data:

The equipment was installed in a temperature chamber at 60°C for 4 hours.



Equipment was operating during conditioning and testing; functional test was performed following the 4 hour soak period at 60°C and it was also performed after equipment was stable at the room temperature. No hazards to the unit observed and equipment was working normally.

Observation:

Final Result: P

2)Low Temperature Test:

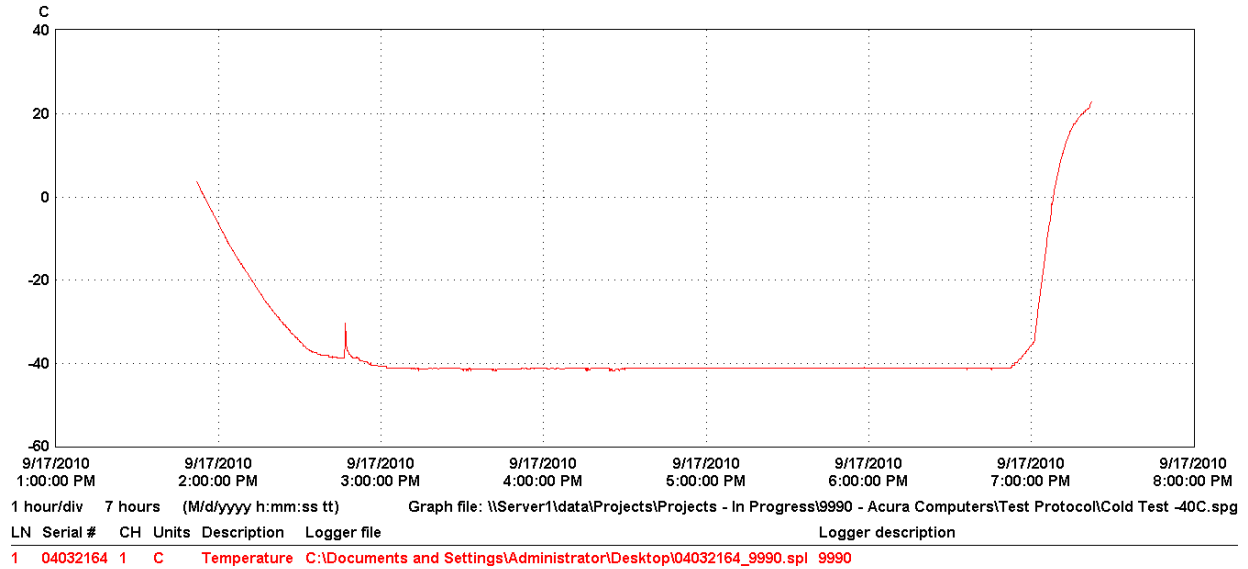
METHOD
MIL-STD-810F
(Clause 502.4: Procedure II)

4.5.3 Procedure II - Operation

- Step 1. With the test item in the test chamber, adjust the chamber air temperature to the low operating temperature of the test item as specified in the test plan. Maintain at least two hours following temperature stabilization of the test item.
- Step 2. Conduct as complete a visual examination of the test item as chamber access limitations will allow.
- Step 3. Document the results.
- Step 4. Conduct an operational checkout of the test item as in paragraph 4.5.1.2, Step 6.
- Step 5. Document the results.
- Step 6. Proceed to step 7 of this procedure.
- Step 7. Adjust the chamber air temperature to standard ambient and maintain until temperature stabilization of the test item has been achieved.
- Step 8. Conduct a complete visual examination of the test item.
- Step 9. Document the results.
- Step 10. If appropriate, conduct an operational checkout and record results for comparison.

Test Data:

The equipment was installed in a temperature chamber at -40°C for 4 hours.



Equipment was operating during conditioning and testing; functional test was performed following the 4 hour soak period at -40°C and it was also performed after equipment was stable at the room temperature. No hazards to the unit observed and equipment was working normally.

Observation:

Final Result: P

Appendix B – ISO 17025:2005 Accreditation Certificate

International Accreditation Service

CERTIFICATE OF ACCREDITATION

This is to signify that

LABTEST CERTIFICATION, INC.
3133-20800 Westminster Highway
Richmond, British Columbia V6V 2W3
Canada

Testing Laboratory TL-367
(Revised February 11, 2010)

has met the requirements of the IAS Accreditation Criteria for Testing Laboratories (AC89), has demonstrated compliance with ANS/ISO/IEC Standard 17025:2005, *General criteria for the competence of testing and calibration laboratories*, and has been accredited, commencing August 14, 2009, for the test methods listed in the approved scope of accreditation.


Patrick V. McCullen
Vice President


C. P. Ramani, P.E.
President

(see attached scope of accreditation for fields of testing and accredited test methods)

Print Date: 02/19/2010 Page 1 of 4

This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation, revocation, or expiration of accreditation. See the IAS Accreditation Listings on the web at www.iasonline.org for current accreditation information, or contact IAS directly at (562) 699-0541.

International Accreditation Service

SCOPE OF ACCREDITATION

LabTest Certification, Inc. TL-367
 (Revised February 11, 2010)

LabTest Certification, Inc.
 3133-20800 Westminster Hwy
 Richmond, British Columbia V6V 2W3
 Canada

Kavinder Dhillon
 President & CEO
 (604) 247-0444

FIELDS OF TESTING	ACCREDITED TEST METHODS
Gas and plumbing	ANSI Z21.1; ANSI Z21.19/1.6; ANSI Z21 50, ANSI Z21.57; ANSI Z21.89/CGA1.18; B45 series; B125; B140.0; B140.1; B140.3; B140.4; B140.8; B140.9.3; CGA 1.16; AS 4551/Ag101; AS 4553/AG 103; AS 4563; AS 2658; EN 30-1-1; EN 30-1-2; EN 30-1-3; EN 30-1-4; EN 30-2-1; EN 30-2-2
Electrical, EMC, and electro-mechanical	AS 4268.1, 4268.2, AS/NZS 1044, 1053, 2064, 3548, 3652, 4051, 4251.1, 4251.2, 62040.2; CISPR 11 / EN55011; CISPR 14 / EN55014; CISPR 15 / EN55015; CISPR 22 / EN55022; CISPR 24 / EN55024; EN 12895, 301 489, 300 386, 50083-2, 50090-2-2, 50091-2, 50121-1, 50121-2, 50121-3-1, 50121-3-2, 50121-4, 50121-5, 50130-4, 50263, 50270, 50293, 50295, 50370-1, 50370-2, 50428, 50470-1, 55012, 55013, 55103-1, 55103-2, 55103-3, 60204-31, 60439-1, 60669-2-1, 60669-2-1, 60669-2-2, 60669-2-3, 60730-1, 60730-2-11, 60730-2-13, 60730-2-14, 60730-2-18, 60730-2-5, 60730-2-6, 60730-2-7, 60730-2-8, 60730-2-9, 60870-2-1, 60945, 61204-3, 61326, 61543, 61547, 61547, 617-2001, 618, 619, 620, 62040-2; FCC Part 15, 18; GB 13837 (CISPR 13); GB 4943, 9254, 7000.1, 7000.10, 7000.11, 7000.12, 2313, 8898, 15143, 14045, 17743, 13836, 13837; GB/T 9383; GB/T 17618; GB 17625.1, 2; GB/T 17626.2, 17626.4.

August 14, 2009
Commencement Date


 C. P. Ramani, P.E.
 President

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International Accreditation Service

SCOPE OF ACCREDITATION

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Electrical, EMC, and electro-mechanical (cont)	17626.5; GB/T 17626.6, 17626.8, 17626.11; GB 4343.1 (CISPR 14.1), 4343.2 (CISPR 14.2); GB 4824; HKTA 1001, 1005, 1007, 1022; ICES-001, 003; JIS T 0601-1-2; IEC/EN/AS/KN: 60601-1-2; IEC/EN/AS/KN/JIS C: 61000-3-2, 61000-3-3, 61000-4-2, 61000-4-3, 61000-4-4, 61000-4-5, 61000-4-6, 61000-4-8, 61000-4-9, 61000-4-11, 61000-4-12, 61000-4-13, 61000-6-1, 61000-6-2, 61000-6-3, 61000-6-4; IEC/EN/AS/KN: 61326; RSS-130, 136, 138, 182, 187, 210, 213, 215, 243, 310; MIL-STD-461E, MIL-STD-462D; KN60601-1-2; KN301 489; KN22, 24; YD 1032; YD/T 965, 968, 993, 1103; C22.2 No. 0, .1, .17, .4, 6, 8, 9, 10, 12, 14, 15, 18, 24, 36, 37, 40, 43, 53, 61, 63, 64, 68, 71.1, 71.2, 72, 73, 81, 85, 89, 94, 99, 100, 101, 104, 107.1, 107.2, 108, 109, 110, 112, 113, 114, 117, 122, 125, 139, 141, 147, 149, 156, 157, 158, 164, 166, 167, 168, 169, 173, 177, 184, 187, 191, 195, 205, 207, 213, 217, 218.1, 218.2, 223, 224, 225, 231, 234, 236, 243, 247, 250, 60065; CSA-E60079-0, -6, -11, -15; CSA-E60335-1, -2; CSA-E60730-1, -2; CSA-E60745-1, -2; CSA-E61010-1, -2; CSA E742; IEC/EN 60335-1, -2; IEC/EN 60730-1, -2; IEC/EN 60745-1, -2; IEC/EN 61010-1, -2; IEC/EN 60601-1, -2; IEC/EN 60065; IEC/EN 60079-0, -6, -11, -15; IEC/EN 60950-1, -2; IEC/EN 60529; IEC/EN 60945; IEC/EN 60598-1, -2; IEC/EN 61347-1; UL 48, 50, 73, 197, 499, 507, 508, 508A, 745-1, 751, 763, 778, 858, 867, 875, 924, 935, 982, 987, 998, 1004, 1012, 1026, 1261, 1310, 1431, 1472, 1563,

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Electrical, EMC, and electro-mechanical (cont)	1564, 1585, 1598, 1647, 1795, 1993, 1995, 6500, 60079-0, 60079-6, 60079-11, 60079-15, 60335-1, 60335-2, 60601-1, 60601-2, 60730-1, 60730-2, 60745-1, 60745-2, 60950-1, 61010-1, 61010-2; ISO EN 61000-3-2 (Equipment input current less than or equal to 16 Amps/Phase), 61000-4-3
Environmental and Energy	IEC/EN 60068-2-1, 2-2, 2-6, 2-30; IEC/EN 60092-101; IEC/EN 60695-2-2; MIL-STD-810: Method 500.4, 501.4, 502.4, 503.4, 506.4, 507.4, 510.4, 512.4, 514.5; RTCA-DO-160E: Section 4, 5, 6, 7.2, 8, 10, 12, 16, 17, 25; CAN/CSA C-300; CAN/CSA C-814; Qualification Criteria for Bottled Water Cooler Version 1.1 - May 2004; Qualification Criteria for Compact Fluorescent Lamps Version 3.0 - October 2003; Qualification Criteria for Decorative Light Strings Version 1.3 - March 9, 2007; Qualification Criteria for Residential Light Fixtures Version 4.0; Qualification Criteria for Home Audio and DVD Equipment; ISO 9806-1, 9806-2, 9806-3; SRCC 100-08, SRCC TM-1, SRCC-150, CSA-F378, CSA-F379, EN 12975-1, EN 12975-2, ASHRAE-93
Maritime	ABYC Standards A-3, A-7, A-26, A-27, A-28, A-30 and A-31; E-2 and E-11; H-22; P-14, P-17, P-18, P-21, P-22, P-24 and P-27; EN 28846, 28848, 28849, 29775, 60092-507; EN ISO 10133, 12216, 13297, 13929, 14895, 15083, 8847, 8849, 10239, 10240, 10592; 1995/A1, 11105, 11192, 9097:1994/A1, IACS E1 – E21
Appliances	CSA B 140.0-3

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END OF REPORT