

SALT SPRAY TEST REPORT

Company : Alltek Marine Electronics Corp.
 Address : 7F, No. 605, Ruei Guang Rd., Neihu Dist., Taipei 114,
Taiwan, R.O.C.
 Sample Name : AIS Class B Transponder
 Date Received : MAR 15, 2013
 Date Tested : MAR 15, 2013 ~ APR 12, 2013

TESTING LABORATORY IS ACCREDITED BY:

IEC/IECQ 17025 certificate of independent test laboratory approval

Certificate No. : 1.72.0031

ISO 17025 accredited in respect of laboratory is approved by TAF

Certificate No. : L0835-120910

ISO 9001 certificate is approved by TUV CERT certification body of TUV NORD Cert GmbH

WE HEREBY CERTIFY THAT:

The test(s) shown in the attachment were conducted according to the indicating procedures. We assume full responsibility for the accuracy and completeness of these tests and vouch for the qualifications of all personnel performing them.

	Name	Signature	Date
Test Engineer	Gin Lu	<i>Gin Lu</i>	Oct 30, 2013
Manager	Longson Lin	<i>Longson Lin</i>	Oct 30, 2013

NOTE :

1. This report will be invalid if reproduced in part or altered in any way.
2. This report refers only to the specimen(s) submitted to test, and is invalid if used otherwise.
3. This report is ONLY valid with the examination seal and signature of this institute.
4. The tested specimen(s) will only be preserved for thirty days from the date issued, not collected by the applicant.



REVISIONS HISTORY

Rev.	Issue Date	Revisions	Effect page
A	April 24, 2013	Initial issre	All
B	April 25, 2013	Correct typo at Section 1.1	2
C	June 25, 2013	Modify software version at Section 1.1	2
D	July 09, 2013	Modify Multi-list information at Section 1.1	2
E	October 30, 2013	1) Add Revisions History 2) Add edition number and publish year at Section 2.3	3

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1. GENERAL INFORMATION

1.1 DESCRIPTION OF UNIT

Manufacturer : Alltek Marine Electronics Corp.

Sample name : AIS Class B Transponder

Model name : CAMINO-108W

Hardware : M-PCB-B108MBV1

Software : V1.2.6

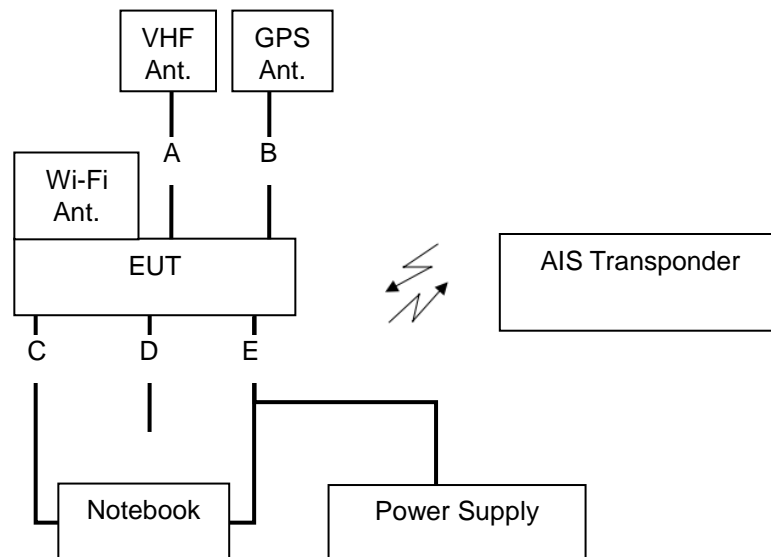
Sample quantity : 1 unit

Multi-list information :

Multi-list	Difference within models
CAMINO-108W	AIS Class B Transponder with Wi-Fi
CAMINO-108	AIS Class B Transponder

Note : This information is provided by the Alltek Marine Electronics Corp.

1.2 UNIT OPERATING CONDITION:



EUT Cable Type		Signal Cable Description
A	VHF cable	Shielded, 10m
B	GPS cable	Shielded, 10m
C	Mini USB to USB cable	Shielded, 1.8m
D	NMEA 2000 Cable	Shielded, 0.6m
E	Power/Data cable	Shielded, 1.4m

2. SALT SPRAY TEST

2.1 TEST EQUIPMENT

Model	Serial Number	Calibration Date
Vötsch VSC/KWT 1000	59566059630010	NOV. 12, 2012
THERMOTRON SM-32-7800 (USA)	34381	MAR. 08, 2012

2.2 LABORATORY AMBIENCE CONDITION

Temperature : 23 ± 3 °C

Relative humidity : $55 \% \pm 3 \%$ (RH)

2.3 REFERENCE DOCUMENT

The test based on IEC 60068-2-52 severity 1 (Second edition 1996-01)

2.4 TEST CONDITION

2.4.1 Salt spray

Units are non-operating.

Test temperature : 35°C

Concentration : Salt solution concentration is at $5 \pm 1\%$ of salt. The solution is prepared by dissolving $5 \pm 1\%$ of salt in 95% of distilled water. The measurement is based on the weight of salt.

Salt solution pH value : 6.5 ~ 7.2 at temperature $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$

Salt deposit rate : 1~2 mls/80 cm² /hr

2.4.2 Temp./Humidity storage

Place the unit into the temperature chamber

Test temperature storage : 40°C

Test Humidity storage : 93% (RH)

Test cycle : Dwell for 2 hours at the salt spray; Dwell for 6days and 22 hours at the humidity storage

Number of cycles : 4 cycles

2.5 SUMMARY OF TEST

After testing, visual inspection showed corrosion trace on the unit, but unit function was normal.

Attachment 1 : Photo of units before salt spray test



Attachment 2 : Photo of salt spray test setup

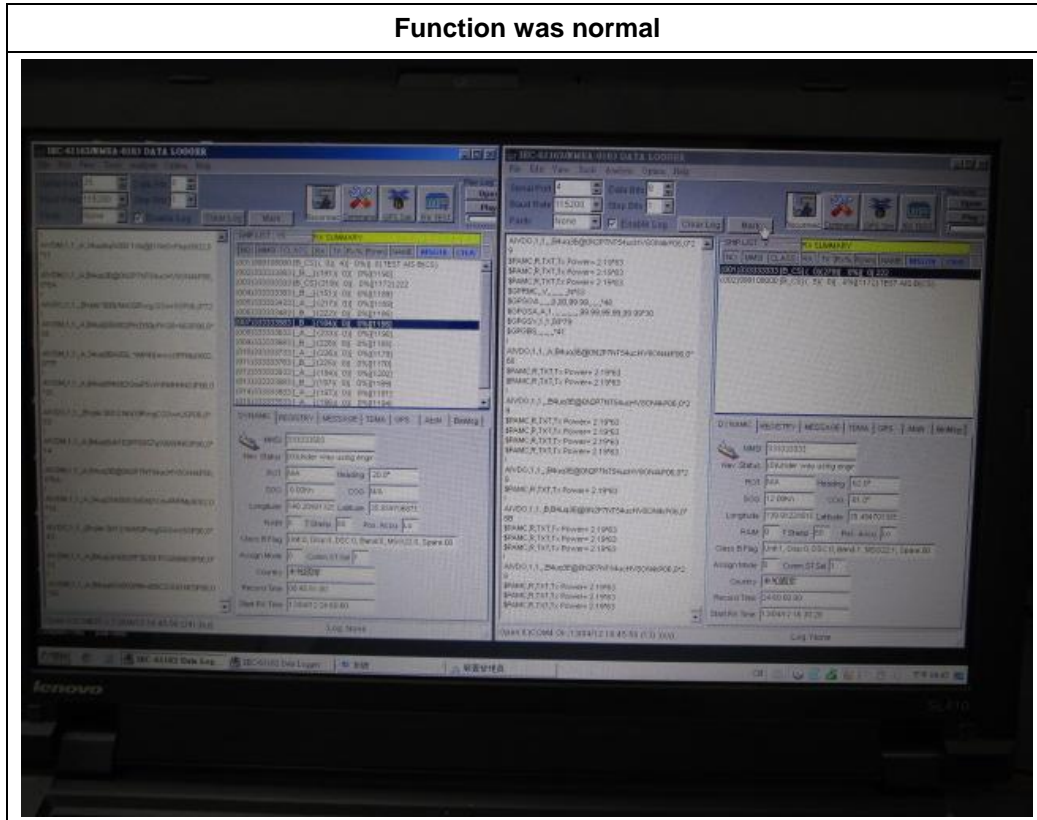
Salt spray



Temp./Humidity storage



Attachment 3 : Photo of units after salt spray test



Unit appearance

After testing (No cleaning)

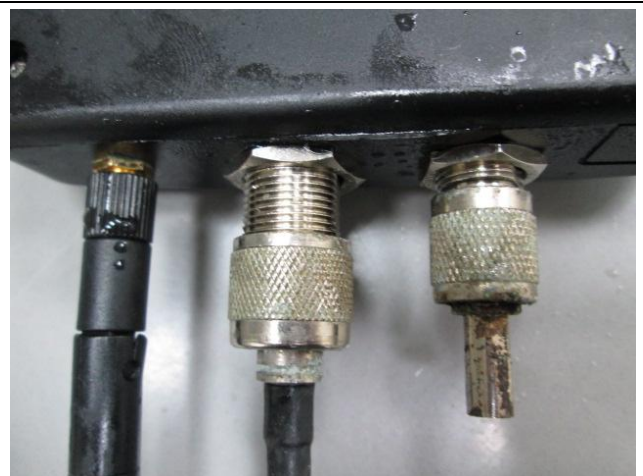
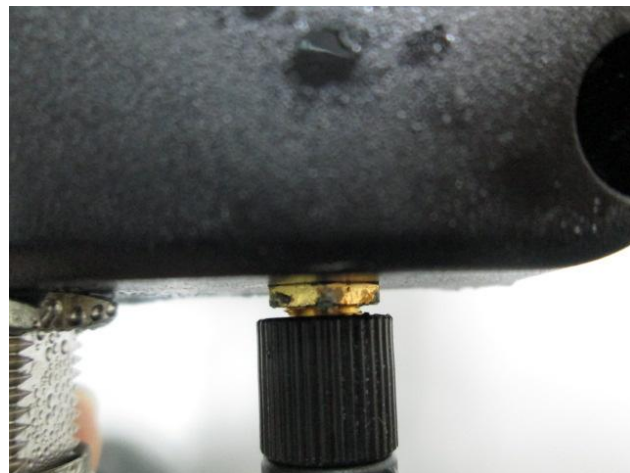
1 cycle



Unit appearance

After testing (No cleaning)

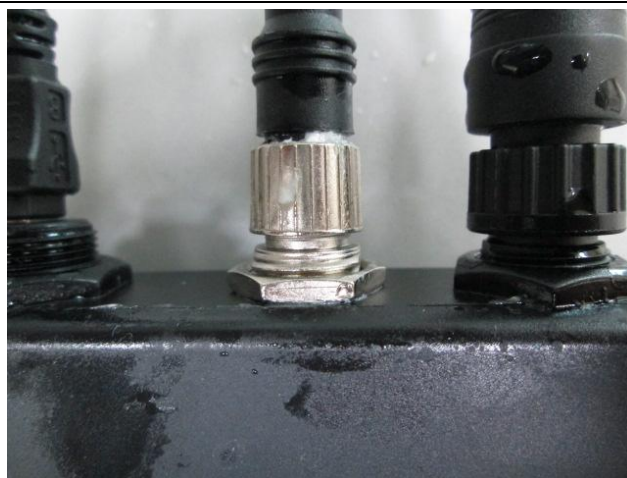
2 cycles



Unit appearance

After testing (No cleaning)

2 cycles



Unit appearance

After testing (No cleaning)

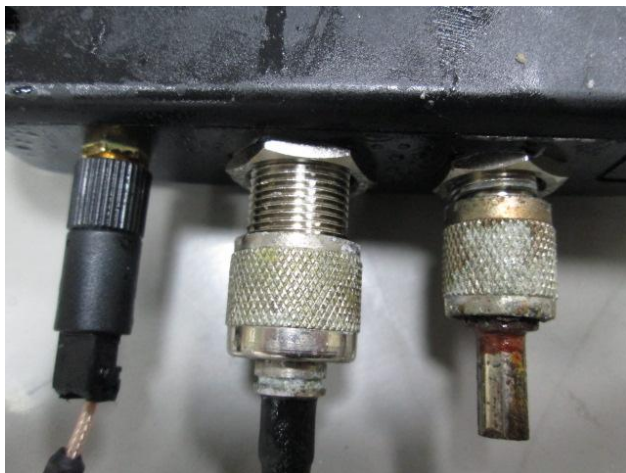
3 cycles



Unit appearance

After testing (No cleaning)

3 cycles



Unit appearance

After testing (No cleaning)

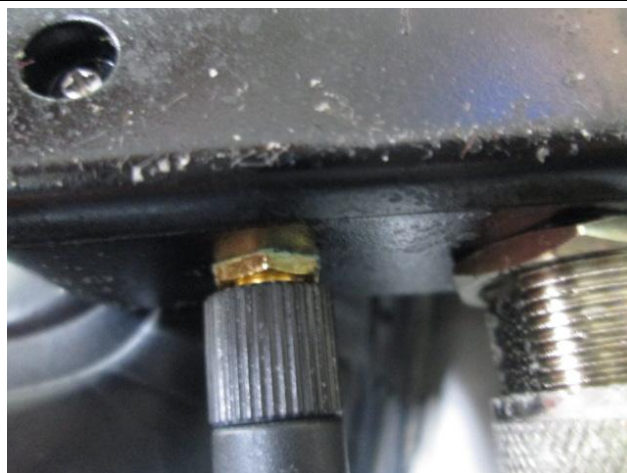
4 cycles



Unit appearance

After testing (No cleaning)

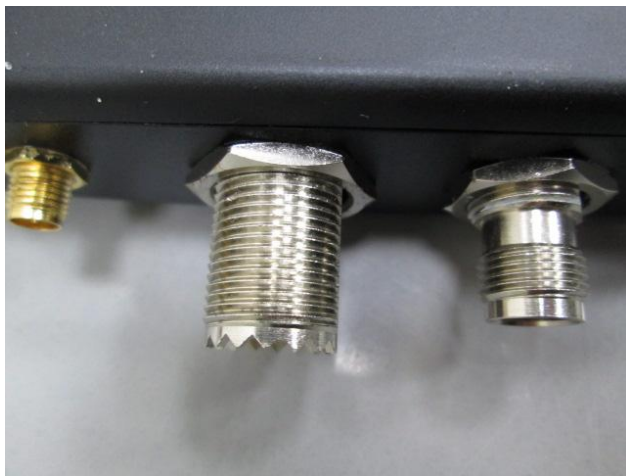
4 cycles



Unit appearance

After cleaning

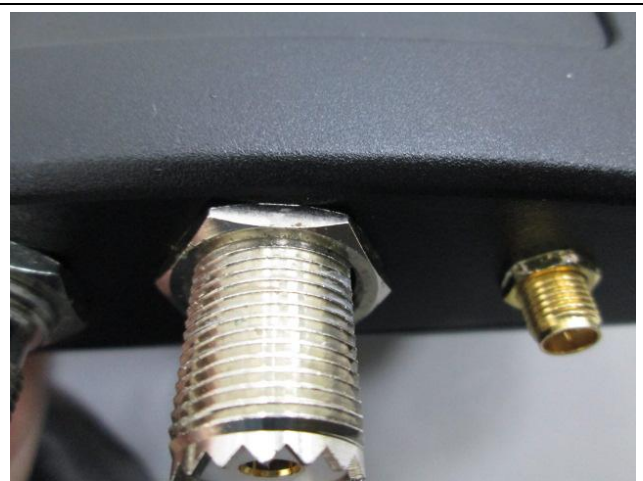
Showed corrosion trace on the unit



Unit appearance

After cleaning

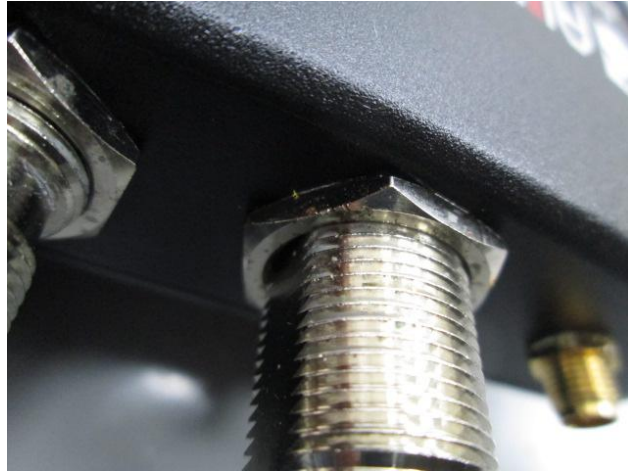
Showed corrosion trace on the unit



Unit appearance

After cleaning

Showed corrosion trace on the unit



Attachment 4 : Graph of temp./humidity storage test

