

EU-TYPE EXAMINATION (MODULE B) CERTIFICATE

Radio Equipment Directive (RED) 2014/53/EU

PHOENIX TESTLAB
Notified Body Number **0700**



This is to certify that:

PHOENIX TESTLAB did undertake the relevant type examination procedures for the radio equipment identified below which was found to be in compliance with the essential requirements of Radio Equipment Directive (RED) 2014/53/EU subject to any conditions in the annex attached hereto.

Certificate No.	20-110220
Manufacturer	Alltek Marine Electronics Corp.
Address	14F-2, No. 237, Sec. 1, Datong Rd., Xizhi Dist., New Taipei City 22161, Taiwan
Product Description	AIS Class B transponder, with GPS (CAMINO-108W: with additional WLAN)
Brand Name / Model Name	AMEC / CAMINO-108, CAMINO-108W

The radio equipment meets the following essential requirements

Article 3.1 a): Health and Safety	Conform
Article 3.1 b): Electromagnetic Compatibility	Conform
Article 3.2: Effective and Efficient Use of Radio Spectrum	Conform
Additional Essential Requirements: Article 3.3 g): Access to emergency services	Conform

Date of issue:	2020-02-14	Expiry date:	2021-08-06
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This certificate remains valid unless cancelled or revoked, provided the conditions in the attached annex are complied with. The conditions for the validity of this certificate are listed in the Annex.

The attached Annex forms part of this certificate. This certificate consists of 4 pages.



Signed by Klaus Knörig
Notified Body

Annex

Technical description

Frequency Range	156.025 MHz to 162.025 MHz (AIS Transponder) 2412 MHz to 2472 MHz (WLAN) 1575.42 MHz (GPS, receive-only)
Channel Separation	25 kHz (AIS Transponder)
Modulation scheme	GMSK / FM (AIS Transponder)
Transmit Power	33 dBm \pm 1.5 dB conducted (AIS Transponder) 19.4 dBm EIRP (WLAN)
Hardware Version	M-PCB-B108MBV11 (CAMINO-108) M-PCB-B601WFBV1 (Option for CAMINO-108W)
Software Version	V1.2.8
Operating temperature range	-15°C to +55°C

System Components

Main Unit	AIS Class B Transponder
VHF antenna	TENTA-11, max. gain 2.86 dBi
GPS antenna	ANT-21 or GA-22
WLAN antenna	M-ANT-SAA04-05005G-01, peak gain 2 dBi (at 2.4 GHz)

Approval documentation

Operator's Manual	CAMINO-108 AIS Class B User Manual V1.24
Block Diagram	Block Diagram of CAMINO-108 / CAMINO-108W
Circuit Diagram	Schematic_M-PCB-B108IOBV1 Schematic_M-PCB-B108MBV11, 2018-04-11 Schematic_M-PCB-B601WFBV1
Operational Description	Operational Description
PCB Layout	PCB layout_M-PCB-B108IOBV1 PCB layout_M-PCB-B108MBV11, 2018-04-11 PCB layout_M-PCB-B601WFBV1
Parts List	Parts list_M-PCB-B108IOBV1 Parts list_M-PCB-B108MBV11, 2020-02-10 Parts list_M-PCB-B601WFBV1
EU Declaration of Conformity	Declaration of Conformity, 2020-02-11
Declaration of compliance Article 10(2) and Article 10(10)	Declaration of Compliance, 2016-09-07
Declarations letters	Declaration of Equality CAMINO-108W, 2016-05-13 Declaration letter GPS module, 2020-02-11



Approval documentation

Label	Label drawing CAMINO-108, CAMINO-108W
External / Internal photos	External and internal photos CAMINO-108, CAMINO-108W
Risk assessment	Risk assessment CAMINO-108, CAMINO-108W
Hardware / Software information	Hardware and software versions CAMINO-108, CAMINO-108W, 2020-02-11
TCF Waiver Document	Technical Construction File Waiver Document AIS Class B Transponder, CAMINO-108, CAMINO-108W
Antenna specifications	Antennas v1.4, Antennas v1.5
Description of modifications	Modified area of CAMINO-108/108W, new GNSS receiver Technical Note: Compatibility Test of CAMINO-108 GPS Function between u-blox AMY-6M and u-blox EVA-M8M, document no. TN-CAMINO-108-GPS-01, Issue 1.0, 2019-12-11
EU-Type Examination Certificates	Based on EU-Type Examination Certificates #18-110134a, 2018-01-23 issued by the Notified Body PHOENIX TESTLAB GmbH

Applied Standards and Test Reports

Specification	Laboratory	Test Report Number / Version
EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013	DEKRA	SN1908014
EN 62311:2008	QuieTek Corporation	1620048R-SACEP56V00 V2.0
EN 301 843-1 V2.1.1 EN 301 843-2 V2.1.1	QuieTek Corporation	1620048R-RFCEP01V00-A
EN 60945 Ed. 4:2002 clauses 9, 10, 12.2	QuieTek Corporation	135096R-ITCEP26V01 V2.0
IEC 60945: 2002-08 Chapter 9 and Chapter 10	DEKRA	1720081A-S-CUSTOM
IEC 60945 Ed. 4.0:2002	SGS	HC20045/2017
IEC 60945 Ed. 4.0:2002	SGS	HC50235A/2018
IEC 60945 Ed. 4.0:2002, section 8.7	SGS	HHD0021A/2016
EN 301 489-1 V2.1.0 EN 301 489-3 V2.1.0	QuieTek Corporation	1620048R-RFCEP01V00
EN 301 489-1 V2.1.0 EN 301 489-17 V3.1.0	QuieTek Corporation	1620048R-RFCEP02V00 V2.0
EN 300 440 V2.1.0	QuieTek Corporation	1620048R-RFCEP10V01
EN 300 440 V2.1.1	DEKRA	1720081A-S-2-CUSTOM
IEC 62287-1 Ed. 2:2010 clause 11 and Annex C.4	Phoenix Testlab	F130840E1
EN 300 328 V2.1.0	QuieTek Corporation	1620048R-RFCEP24V00 V2.0
IEC 61108-1 Ed. 2:2003	BSH	BSH/4543/001/4143083/16
IEC 62287-1 Ed. 2:2010 + A1:2013 clauses 10,12,13 and Annex C.3	Phoenix Testlab	F130840E2 2 nd Version


Applied Standards and Test Reports

Specification	Laboratory	Test Report Number / Version
IEC 62287-1 Ed. 2.1:2013 clause 10.6.1.3	Phoenix Testlab	F162340E1
IEC 62287-1 Ed. 3.0:2017 clauses 11.2, 11.3.1, 11.1.2, 11.3.2	Phoenix Testlab	F172634E1
ITU-R M.1371-5 (2014)	BSH	Certificate No. BSH/4542/001/4322516/13
EN 60945 Ed. 4:2002 IEC 62287-1 Ed. 2:2010 EN 60068-2-1:2008 EN 60068-2-2:2008 EN 60068-2-78:2002	Phoenix Testlab	U130840E1, 4th Version
IEC 62287-1 Ed. 2:2010 clause 9.2.1	SGS Taiwan	HC30037A/2013
IEC 60068-2-52 Ed. 2:1996	IST	HS1303150050A-1
EN 60945 clause 11.2	BSH	Compass safe distance, Certificate No. 813/1
IEC 62287-1 Ed. 2:2010 clause 9.4	QuieTek Corporation	SN1307032-A, Rev. 2
IEC 62287-1 Ed. 2:2010 clause 9.2.2	SGS Taiwan	HCD0137A/2009
IEC 60529 Ed. 2.1:2001	SGS Taiwan	HCD0137A/2009
IEC 60529 Ed. 2.2: 2013	SGS	HH40002A/2017
IEC 60529 Ed. 2.2: 2013	SGS	HHD0021B/2016

Limitations / Restrictions

- None -

Notes

1. This certificate will not be valid if the manufacturer makes any changes or modifications to the approved equipment, which have not been notified to, and agreed with PHOENIX TESTLAB.
2. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/them being placed on the market.
3. The manufacturer shall take all measures necessary so that the manufacturing process and its monitoring ensure conformity of the manufactured radio equipment with the approved type described in the EU-type examination certificate and with the requirements of Directive 2014/53/EU that apply to it.
4.  The manufacturer shall affix the CE marking to each item of radio equipment that is in conformity with the type described in the EU-type examination certificate and satisfies the applicable requirements of the Directive.
5. The manufacturer shall draw up a written EU declaration of conformity for each radio equipment type and keep it at the disposal of the national authorities for 10 years after the radio equipment has been placed on the market. The EU declaration of conformity shall identify the radio equipment type for which it has been drawn up. A copy of the EU declaration of conformity shall be made available to the relevant authorities upon request.