



Marine & Offshore

Certificate number: 27219/B0 BV

File number: AP 4274

Product code: 4484H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Kongsberg Maritime AS
Horten - NORWAY

for the type of product

MARITIME DEDICATED COMPUTERS

Maritime Touch Screen Computers

Models: 8" AIPC, 13.3" AIPC, 13.3" AIPC-XXL and 13.3" IPC

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.
IEC 60945 (2002)

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate is a renewal of certificate N° 27219/A1 BV expiring on 13/07/2017

This certificate will expire on: 13 Jul 2022

For Bureau Veritas Marine & Offshore,

At BV OSLO, on 16 Jun 2017,

Rune MARSTEIN

Rune Marstein



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. 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/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Maritime Touch Screen Computer comprising the following models:

8" AIPC (HD 08T21 KMC-EP1-CACP)

13.3" AIPC (HD 13T21 KMC-EP1-CACP)

13.3" AIPC-XXL (HD 13T21 KMC-EP7-CACP)

13.3" IPC (HD 13T21 KMC-EP9-CACP)

1.1 - Common characteristics:

	8" AIPC	13.3" AIPC / AIPC-XXL
LCD Type:	Chimei Innolux Colour TFT with LED Backlight	Chimei Innolux Colour TFT with CCFL Backlight
Touch Sensor	Panjit - 8" MINIOS PCTS W/ KEY	Panjit - 13.3" MINIOS PCTS W/ KEY
Processor:	1 x Intel® Atom™ N450 1.6 GHz, 667 MHz FSB	1 x Intel® Atom™ N450 1.6 GHz, 667 MHz FSB
Memory:	512 MB DDR2 667 MHz - Aplus	512 MB DDR2 667 MHz - Aplus
Storage:	1 x 8 GB 1.8" SATA-II SSD PQI S982-II	1 x 8 GB 2.5" SATA-II SSD (AIPC Ver.) 2 x 64 GB 2.5" SATA-II SSD (AIPC-XXL Ver.) PQI S982-II
I/O Ports:	2 x Ethernet LANs - 2 x RJ45 2 x CAN 2 x USB 2.0 1 x Digital HS (Highside Switch) 3 x Digital Relay Output - (Watchdog, System) 2 x Digital Input (Int. Power, Ext. Power) 1 x RS422	2 x Ethernet LANs - 2 x RJ45 2 x CAN 2 x USB 2.0 1 x Digital HS (Highside Switch) 3 x Digital Relay Output - (Watchdog, System) 2 x Digital Input (Int. Power, Ext. Power) 1 x RS422
Power Supply:	Dual 24 VDC Input Hatteland Display PSU - 60W	Dual 24 VDC Input Hatteland Display PSU - 60W
IP Index:	IP 66/20 (Front/Rear)	IP 66/20 (Front/Rear)
OS:	MS® Windows, Linux	MS® Windows, Linux

	13.3" IPC
LCD Type:	Chimei Innolux Colour TFT with CCFL Backlight
Touch Sensor	Panjit - 13.3" MINIOS PCTS W/ KEY
Processor:	Intel® Core™ 2 Duo P8400 - 2.26 GHz
Memory:	4 GB DDR2 non-ECC 800 - Aplus
Storage:	SSD: 2.5" 80 GB SATA-II + 2.5" 64 GB SSD SATA-II PQI S982-II
I/O Ports:	4 x Ethernet LANs - 2 x RJ45 2 x CAN 4 x USB 2.0 1 x Digital HS (Highside Switch) 3 x Digital Relay Output - (Watchdog, System) 2 x Digital Input (Int. Power, Ext. Power) 1 x RS422 1 x DVI-I
Power Supply:	Dual 24 VDC Input Hatteland Display PSU - 60W
IP Index:	IP 66/20 (Front/Rear)
OS:	MS® Windows, Linux

1.2 - Specific characteristics of LCD Displays:

	Manufacturer Type	Native Resolution	Display Format	Contrast Ratio	Light Intensity (cd/m²)
8" AIPC	Chimei Innolux G080Y1-T01	800x480	16:9	600:1	600
13.3" AIPC / AIPC-XXL / IPC	Chimei Innolux G133I1-L02	1280x800	16:10	800:1	400

1.3 - Firmware Versions:

	Watchdog	MB/VC*
8" AIPC	110114R0V01	V0.6
13.3" AIPC / AIPC-XXL / IPC	110114R0V01	V0.6

* Mother Board / Video Controller.

2. DOCUMENTS AND DRAWINGS:**KONGSBERG:**

Data Sheets No. 347716C, 347717C, 344718C and 347719B, all undated.

HATTELAND:

Excel File, Mini OS Part List dated 2012.10.22

Statement, DOC100984-4, Rev. 04 dated 26th March 2012.

3. TEST REPORTS:**DNV Technical Reports:**

EMC & Environmental Testing of Panel Computer HD08T21KMC, Report No. 2011-3419 Rev. 01, dated 2011.10.13

EMC & Environmental Testing of Panel Computer HD13T21KMD, Report No. 2010-3604 Rev. 01, dated 2010.12.13

EMC Testing - HT B21EA STC, Report No. 2012-3095 Rev. 01, dated 2012.05.09.

Nemko:

EMC Test Report - HT B21EA STC, Report No. E11201.01, dated 2012.01.03.

Note: Above equipment was tested and Approved according to IEC 60945 4th edition (except Salt Mist Test not carried out).

4. APPLICATION / LIMITATION:

4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships and IEC 60945.

4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

4.3 - BUREAU VERITAS Environmental Category, **EC Code: 21**

4.4 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zone.

4.5 - To be flush mounted only.

4.6 - Only Hardware and Firmware successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.

4.7 - The Panel Computers intended for the presentation of navigation-related information on the bridge of a ship shall be tested according to the requirements of IEC 62288.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The **Maritime Touch Screen Computers** are to be supplied by **Kongsberg Maritime AS** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **Kongsberg Maritime AS** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - **Kongsberg Maritime AS** has declared to Bureau Veritas the following production site(s):

Kongsberg Maritime AS
P.O. Box 1009, 3194 Horten
NORWAY

6. MARKING OF PRODUCT:

According to IEC 60945.

7. OTHERS:

7.1 - It is **Kongsberg Maritime AS** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate No. 27219/A1 BV issued on 15 Aug. 2013 by the Society.

*** END OF CERTIFICATE ***