DNV·GL

Certificate No:
TAA00001D5

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Personal Computer

with type designation(s)
M-Vision series

Issued to
Moxa Inc.
New Taipei City, Taiwan

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft
IEC 60945 Ed. 4 (2002-08) Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	**B**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**Required protection according to relevant rules shall be provided upon installation on board**

Issued at **Høvik** on **2017-08-31**
This Certificate is valid until **2018-06-30**.
DNV GL local station: **Kaohsiung**

for **DNV GL**

Approval Engineer: **Nils Jarem**

Odd Magne Nesvåg
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Job Id: **262.1-017091-2**
Certificate No: **TAA00001D5**

Product description

MOXA Panel Computer and Display, M-Vision series:

MOXA Panel Computer	MOXA Display	Display size	Compass safe distance	
			Standard	Steering
MPC-226a	MD-226	26”	135 cm	75 cm
MPC-224a	MD-224	24”	180 cm	80 cm
MPC-219a	MD-219	19”	180 cm	80 cm

a= CPU type: 0 : Intel Celeron, 3 : Intel Core i3, 5 : Intel Core i5, 7 : Intel Core i7

Ratings: 24 VDC
115 to 230 VAC, 50/60 Hz

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate
If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After certification the clause for software control will be put into force.

Software control
All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV GL for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Type Approval documentation

Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.
Applicable tests for protected equipment according to IEC 60945, 4th edition (2002) except for 3.10 salt mist test.
Applicable tests according to IACS Unified Requirements E10, Rev.5.
Test of serial interfaces according to IEC 61162-2: Ed.1, 1998, for MPC series computers on NMEA 0183 ports only.
Color verification: According to IEC 61174:2015-08 Ed. 4.0 §6.7.3.1 (with reference to IEC 62288:2014, Annex G.1).

Marking of product

- Type as defined in product description
- Manufacturer name: Moxa Inc. Taiwan
- Power supply: 115 ~ 230 VAC / 24VDC

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE