



Marine &amp; Offshore

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USCG Module B number: 165.123 / EC2690

This certificate is not valid when presented without the full attached schedule composed of 7 sections  
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Notified Body 2690 - MARINE EQUIPMENT DIRECTIVE 2014/90/EU

## EC TYPE EXAMINATION CERTIFICATE

as per Module B of Directive 2014/90/EU of the European Parliament and of the Council of 23 July 2014 as transposed in the French Regulations and Commission Implementing Regulation (EU) 2021/1158 of 22 June 2021

This certificate is issued to:

**TOKYO KEIKI INC. Marine Systems Company**

Yaita - JAPAN

for the type of product

**ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEM (ECDIS) WITH BACKUP, AND RASTER CHART DISPLAY SYSTEM (RCDS)**

EC-8100/8600 series

**Requirements:**

SOLAS 74 Convention as amended, Regulations V/18, V/19, V/27, X/3

IMO Res. MSC.36(63) -(1994 HSC Code)- as amended, 13

IMO Res. MSC.97(73) -(2000 HSC Code)- as amended, 13

IMO Res. A.694(17)

IMO Res. MSC.191(79), MSC.232(82), MSC.302(87)

IMO MSC.1/Circ.1503.Rev.1

IEC 60945 (2002) + /Corr. 1 (2008),

IEC 61162 series: IEC 61162-1 (2016) - IEC 61162-2 ed1.0 (1998-09) - IEC 61162-3 ed1.2 Consol. with am1 ed. 1.0 (2010-11) and am2 ed. 1.0 (2014-07) - IEC 61162-450:2018,

IEC 61174 Ed. 4.0 (2015),

IEC 62288 Ed. 2.0 (2014-07),

IEC 62923-1:2018,

IEC 62923-2:2018.

This certificate is issued on behalf of the French Maritime Authorities to attest that Bureau Veritas Marine & Offshore did undertake the relevant type-examination procedures for the product identified above which was found to comply with the relevant requirements of the Directive 2014/90/EU of the European Parliament and of the Council of 23 July 2014 as transposed in the French Regulations.

**This certificate will expire on: 05 Jul 2026****For Bureau Veritas Marine & Offshore Notified Body 2690,**

At BV KOBE, on 04 Dec 2021,

Shinichi Takemoto



This certificate does not allow to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark ) to the products corresponding to this type. To this end, the production-control phase module (D, E or F) of Annex II of the Directive is to be complied with and controlled by a written inspection agreement with a notified body.

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. Bureau Veritas Marine & Offshore is designated by the French Maritime Authority as a "notified body" under the terms of the French Regulations Division 140 Chapter 140-2. 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:**

Tokyo Keiki ECDIS EC-8100/8600, EC-8100K/8600K consist of:

- Tokyo Keiki ECDIS EC-8100/8600 deck stand
- Tokyo Keiki ECDIS EC-8100K/8600K console mount

#### **1.1 Hardware modules:**

#	Component	Type / Version
1	Control Unit	ACU-001/ACU-002
2	Main Display Unit	19inch LCD : ADU-004 (EC-8100) 26inch LCD : ADU-003 (EC-8600)
3	Operation unit	AOP-001/AOP-002
4	Serial I/F unit	AIF-001
5	Optional slave display unit	19inch LCD : ADU-004 26inch LCD : ADU-003
6	Optional RADAR overlay unit	ARD-001/ARD-002

#### **1.2 Software:**

#	Component	Type / Version
1	ECDIS	Ver.1.9.x
2	C-Map SDK	Ver.6.0.x
3	RCDS SDK	Ver.4.1.x
4	Presentation library	Ed.4.0
5	Operation unit AOP-001	Ver.2.x
6	Operation unit AOP-002	Ver.3.x
7	Optional RADAR overlay unit	Ver.1.x
8	Operating System	Microsoft Windows Embedded Standard 7 (WS7P) Microsoft Windows10 IoT Enterprise LTSC 2019

### **2. DOCUMENTS AND DRAWINGS:**

2.1 - Drawings: 18996758, 18996676, 18996650, 18996642, 18996675, 18996632, 18996634, 18992067, 18992072, 18992068, 18992073, 18996636, 18992069, 18992074, 18996633, 18992076, 18992075, 18996652, 18992079, 18992078, 18996639, 18996674, 18996641, 18992025, 18992027, 18996689, 18996654, 18996655, 18991820, 18991821, 18996759

2.2 - MED-B-9870 Certificate by DNV EC-8100/8600\_IEC61174 Ed.3

2.3 - MED-B-7910 Certificate by DNV EC-8000/8500\_IEC61174 Ed.3

2.4 - 00910-2004-AQ-KOB-JAB ISO9001\_certificate

2.5 - Hardware Descriptions : CMRC-16-110 Basic Specifications EC-8100, CMRC-16-111 Basic Specifications EC-8600, CMRC-16-108 Hardware Design Specifications EC-8100/8600 with diagrams

2.6 - Software Descriptions : CMRC-16-189 Software Specifications\_EC-8100/8600\_EC-8000/8500, CMRC-16-150 ECDIS ver.1.9.0 release note, CMRC-16-107 Webmanagement system report

2.7 - E18-6570 Operator's Manual EC-8100/8600,EC-8000/8500

2.8 - Installation Instructions : CMRC-16-109 InstallationManual EC-8100/8600, CMRC-16-143 EC-8x00 Service Menu Manual

2.9 - Information for witness testing : CMRC-16-103 Agenda & memorandum of witness testing, CMRC-12-060 C-MAP Simulator User's Manual, CMRC-14-114 BAM Simulator 1.1 User's Manual, CMRC-14-145 VDR Simulator Operator Manual, DATE20080123 RDTSIM Instructions, CMRC-16-138 Route Transfer simulator user manual, CMRC-16-173 Sentence simulator user manual

2.10 - CMRC-16-108 Hardware Design Specifications for ECDIS EC-8100/8600/8100K/8600K Rev.1.1, dated July 2016

2.11 - CMRC-16-453 Hardware Components List for ECDIS EC-8100/8600/8100K/8600K, dated 16 Dec. 2016

#### **For modification B0 version :**

2.12 - CMRC-16-356 FMEA EC-8100-8600

2.13 - 170S-19-A017 Statement to BV 2019-08-19

2.14 - 170S-19-A020E-Risk requirement - Declaration ECDIS 2019-09-12

2.15 - 170S-19-A021 Statement to BV 2019-09-13

#### **For modification C0 version :**

2.16 - Document No. CMRC-16-108 - Hardware Design Specifications for ECDIS EC-8100/8600/8100K/8600K - Rev.1.2, issued by TOKYO KEIKI INC. and dated Sept 2020

2.17 - Document No.: 171X-20-A018 - Statement about IEC standard compliance is unchanged in this application., issued by

TOKYO KEIKI INC. and dated 25 Sept 2020

2.18 - Dwg. 18996917 - Control Unit - Rev.0, issued by TOKYO KEIKI INC. and dated 24 Sept 2020

2.19 - Dwg. 18996959 - Control Unit - Rev.2, issued by TOKYO KEIKI INC. and dated 23 Sept 2020

2.20 - Dwg. 18996918 - Control Unit (layout drawing) - Rev.0, issued by TOKYO KEIKI INC. and dated 24 Sept 2020

2.21 - Dwg. 18996958 - System Block Diagram - Rev.2, issued by TOKYO KEIKI INC. and dated 23 Sept 2020

**For modification C1 version :**

2.22 - CMRC-21-117 EC-8600/8100 Alert list dated 15th July 2021

2.23 - EC-8x00 Alert list dated 18th Aug 2021

2.24 - ECDIS Operator's Manual (E18-6570D) Modifications dated 23rd Aug 2021

2.25 - Doc. No. E18-6570D - EC-8100/8600, EC-8000/8500 Operator's Manual dated July 2021

**3. TEST REPORTS:**

3.1 - CMRC-16-128 IEC61174 Ed.3\_Test report\_EC-8100,8600,EC-8000,8500 Dated 04-08/08/2014 issued by TOKYO KEIKI INC.

3.2 - CMRC-16-125 IEC61174 Ed.3 6.8.14\_retest report\_EC-8100,8600,EC-8000,8500 Dated 29/09/2014 issued by TOKYO KEIKI INC.

3.3 - CMRC-16-124 IEC61174 Ed.3 Annex F\_Test report\_EC-8100, EC-8600 Dated 08/08/2014 issued by TOKYO KEIKI INC.

3.4 - CMRC-16-126 IEC61174 Ed.3\_Annex\_F\_Test report\_EC-8100,8600,EC-8000,8500 Dated 01-02/10/2014 issued by TOKYO KEIKI INC.

3.5 - CMRC-16-127 IEC61174 Ed.3\_Annex\_G\_Test report\_EC-8100,8600,EC-8000,8500 Dated 29-30/09/2014 issued by TOKYO KEIKI INC.

3.6 - CMRC-16-121 IEC62288 Ed.1\_Test report\_EC-8100,8600,EC-8000,8500 Dated 04/08/2014 issued by TOKYO KEIKI INC.

3.7 - CMRC-16-122 IEC62288 Ed.2\_Test report (Differences from Ed.1)\_EC-8100,8600,EC-8000,8500 Dated 29/09-2014-01/10/2014 issued by TOKYO KEIKI INC. and witnessed by DNV-GL surveyor

3.8 - CMRC-14-206 IEC62288 Ed.2 Annex.A 1.6b\_retest report\_EC-8100,8600,EC-8000,8500 Dated 29/09-2014-01/10/2014 issued by TOKYO KEIKI INC.

3.9.1 - CMRC-16-123 IEC61162-450 Ed.1\_Test report\_EC-8100,8600 Dated 04/08/2014 issued by TOKYO KEIKI INC. and witnessed by DNV-GL surveyor

3.9.2 - CMRC-16-144 IEC61162-450 Ed.1\_Test report\_EC-8100,8600,EC-8000,8500 Dated 25-29/04/2016, 26/05/2016 issued by TOKYO KEIKI INC. and witnessed by BV surveyor

3.9.3 - CMRC-16-260 IEC61162-450 Ed.1 + IEC61162-450 AMD 1\_Test Report\_EC-8100,8600,8000,8500 Dated 29/09/2016 issued by TOKYO KEIKI INC and witnessed by BV surveyor

3.10 - CMRC-16-129 IEC61996-1 Ed.2 Annex E\_Test report\_EC-8100,8600 Dated 04/08/2014 issued by TOKYO KEIKI INC. and witnessed by DNV-GL surveyor

3.11 - CMRC-16-130 IEC61996-1 Ed.2 Annex G\_Test report\_EC-8100,8600 Dated 04/08/2014 issued by TOKYO KEIKI INC. and witnessed by DNV-GL surveyor

3.12 - CMRC-16-131 IEC62388 Ed.2 TT Scenario 1, 5\_Test report\_EC-8100,8600,EC-8000,8500 Dated 07/08/2014 issued by TOKYO KEIKI INC. and witnessed by DNV-GL surveyor

3.13 - CMRC-16-132 IHO S63 Ed.1.1\_Test report\_EC-8100,8600,EC-8000,8500 Dated 06/08/2014 issued by TOKYO KEIKI INC. and witnessed by DNV-GL surveyor

3.14.1 - CMRC-16-119 IEC61162-1 Ed.4\_Test report\_EC-8100,8600 Dated 04-08/08/2014 issued by TOKYO KEIKI INC. and witnessed by DNV-GL surveyor

3.14.2 - CMRC-16-261 IEC61162-1 Ed.4 Annex B\_Test Report\_EC-8100,8600,8000,8500 Dated 29/09/2016 issued by TOKYO KEIKI INC and witnessed by BV surveyor

3.15 - CMRC-16-120 IEC61162-2 Ed.1\_Test report\_EC-8100,8600 Dated 04/08/2014 issued by TOKYO KEIKI INC. and witnessed by DNV-GL surveyor

3.16 - CMRC-16-105 IEC60945 Ed.4\_Test report\_EC-8100,8600 Dated 05/06/ - 19/08/2014 issued by TOKYO KEIKI INC. and witnessed by DNV-GL surveyor

3.17 - CMRC-16-133 Memorandum for type testing of EC-81008600 and EC-8000(-A)8500(-A)

3.18 - CMRC-15-069 LCD Conformance test report for EC-8100 8600\_26inch Dated 25-26/03/2015 issued by TOKYO KEIKI INC. and witnessed by DNV-GL surveyor

3.19 - CMRC-15-085 LCD Conformance test report for EC-8100 8600\_19inch Dated 25-26/03/2015 issued by TOKYO KEIKI INC. and witnessed by DNV-GL surveyor

3.20 - CMRC-16-075 Rev.1 IEC61174 Ed.4\_Test report\_EC-8100,8600,EC-8000,8500 Dated 29/09/2016 issued by TOKYO KEIKI INC. and witnessed by BV surveyor

3.21 - CMRC-16-076 Rev.1\_S-64 Ed.3.0.1\_Test report\_EC-8100,8600,EC-8000,8500 Dated 29/09/2016 issued by TOKYO KEIKI and witnessed by BV surveyor INC & CMRC-16-180\_S-64 Ed.3.0.1 Screenshot report attached

3.22 - CMRC-16-171 Rev.1 - IEC62288 Ed.2\_Test report\_EC-8100,8600,EC-8000,8500 Dated 29/09/2016 issued by TOKYO KEIKI INC and witnessed by BV surveyor

3.23 - CMRC-16-142 IEC61996-1 Ed.2 AnnexE&G\_Test report\_EC-8100,8600,EC-8000,8500 Dated 25-29/04/2016 issued by

TOKYO KEIKI INC. and witnessed by BV surveyor

3.24 - CMRC-16-342\_Test Report\_Checking the IHO S-52 Presentation Library Ed.4.0\_EC-8000,8500,EC-8100,8600 Dated 19/10/2016 issued by TOKYO KEIKI INC.

3.25 - CMRC-17-095\_Test Report\_Interface with NAVTEX EC-8100,8600,EC-8000,8500 Dated 04/04/2017 issued by TOKYO KEIKI INC. and witnessed by BV surveyor.

**For modification B0 version :**

3.26 - CMRC-19-006 IEC61162-1 Ed.5\_Test report\_ECDIS Type Test Report for Approval EC-8100, 8600, 8100K and 8600K Dated 12/06/2019, issued by TOKYO KEIKI INC. and witnessed by BV surveyor.

**For modification C0 version :**

3.27 - Document No. CMRC-20-171 - Regressive Test REPORT of the ACU-002 New CPU board and SSD issued by TOKYO KEIKI INC.

3.28 - Document No. CMRC-21-018 - ENVIRONMENTAL TEST REPORT of the ACU-002 New CPU board and SSD issued by TOKYO KEIKI INC.

3.29 - Document No. CMRC-20-150 - Regarding IEC 60945 (2002) + /Corr. 1 (2008) Type Test Report of the new ACU-002 CPU and ACU-002 SSD issued by TOKYO KEIKI INC.

**For modification C1 version :**

3.30 - Document No. CMRC-21-125 IEC 62923 -1 Ed.1.0 / -2 Ed.1.0 (2018) Test Report EC-8100/8600, EC-8100K/8600K - rev.1 - issued by TOKYO KEIKI INC. and dated Aug 2021.

**4. APPLICATION / LIMITATION:**

4.1 - As per requirements of Regulations stated on front page of this certificate.

4.2 - The following component(s) shall comply with the requirements of MED2014/90/EU, as amended, and be wheelmarked:

- Tokyo Keiki ECDIS EC-8100/8600, EC-8100K/8600K

4.2 - Only Hardware and Software 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.

4.3 - A dual installation of ECDIS EC-8100, 8600, 8100K, 8600K, 8000, 8500, 8000K, 8500K complies with requirements for ECDIS with backup arrangement.

4.4 - ECDIS EC-8100/8600, EC-8100K/8600K comply with the requirements for processing and presentation of MSI messages received via NAVTEX.

**5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - This certificate alone does not allow the applicant to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark) to the products corresponding to this type. To this end, the production-control phase module D Production Quality Assurance or module E Product Quality Assurance or module F Product Verification of Annex II of the Directive is to be complied with and controlled by a written inspection agreement with a Notified Body.

5.2 - For information concerning the production phase modules, **TOKYO KEIKI INC. Marine Systems Company** has declared the following manufacturing site(s):

**333-4, Azuma-cho  
329-2136 Yaita  
JAPAN**

**6. MARKING OF PRODUCT:**

6.1 - Reference is made to MED 2014/90/EU chapter 2.

In particular Article 10.3 specifies that the wheelmark shall be followed by the identification number of the Notified Body involved in the production control phase (module D, E or F) and by the year in which the mark is affixed (4 digits or last 2 digits).

6.2 - In pursuance of the EU/US MRA+, and in accordance with the Council Decision 2004/425/EC of 21 April 2004 amended by Decision 1/2018 of 18 February 2019, the product(s) marked as per MED 2014/90/EU may be marked with the USCG conformity marking as authorized by the Notified Body undertaking surveillance module.

6.3 - Maker's name or trademark,

- Serial number of the units,

- Equipment type number or model identification under which it was type-tested.

6.4 - Alternatively, the marking may be presented on a display at equipment start-up.

6.5 - The title and version of each software element included in the installed software system shall be either marked or displayed on command on the equipment.

6.6 - When the marking and the title and version of the software are displayed only on the display, such information shall also be included in the equipment manual.

6.7 - Minimum safe distance at which the equipment may be mounted from a standard and a steering magnetic compass.

**7. OTHERS:**

- 7.1 - It is **TOKYO KEIKI INC. Marine Systems Company** 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 MED Type Examination Certificate n° 44785/B0 MED issued on 19 Oct 2019 by the Society.

**\*\*\* END OF CERTIFICATE \*\*\***