



EC TYPE EXAMINATION (MODULE B) CERTIFICATE

No. 03-001538/031239

THIS IS TO CERTIFY:

That Croatian Register of Shipping did undertake the relevant type approval procedures for the equipment identified below which was found to be in compliance with requirements of Marine Equipment Directive (MED) 96/98/EC as last amended by directive (EU)2015/559, subject to any conditions in the schedule attached hereto.

TYPE AND DESCRIPTION OF PRODUCT

Electronic chart display and information system - ECDISwith type designation **Simrad E50xx ECDIS System**

ANNEX A.1 NO AND ITEM DESIGNATION

A.1/4.30 – Electronic chart display and information system (ECDIS)

MANUFACTURER:

**NAVICO HOLDING AS, Nyåskaiveien 2,
4374 Egersund – Norway**

REGULATIONS AND STANDARDS (in accordance with Annex A.1, Directive)

SOLAS 1974 as amended, Reg. V/19

IMO Res. A.694(17) , IMO Res. MSC.191(79) , IMO Res. MSC.232(82) and IMO SN.1/Circ.266.

NOTICE:

1. Further details of the product and conditions for certification are given overleaf.
2. 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 the notified body named on this certificate.
3. 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.
4. The Mark of Conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-control phase module (D, E, or F) of ANNEX B of the Directive is fully complied with and controlled by a written inspection agreement with a notified body.
5. In case limitations of use apply, these should be indicated of in the Schedule of Approval.

Issued by Croatian Register of Shipping, notified body number 2489.

This certificate is valid until: **2020-07-28**Place and date: **Split, 2016-07-28**

Seal

Signature

Marinko Popović, dipl.ing.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Simrad E50xx ECDIS System consists of the following components:

	Component	Item name	Part No.
1.	ECDIS processor	Simrad E5000	000-11780-00x and 151-10379-00x
2.	24" Monitor for ECDIS application	Simrad M5024	000-11781-00x and 151-10380-00x
3.	27" Monitor for ECDIS application	Simrad M5027	000-12726-00x
4.	Wireless Trackball mouse	Logitech M570	000-12262-00x;
5.	Trackball (Option),	LTSX 50N8	000-12375-00x;
6.	Alarm panel (with 24" Monitor only)	Simrad E0102	000-12264-00x and 151-10381-00x;
7.	NMEA 0183- NMEA 2000 gateway (Option),	Simrad SI80	000-10425-00x.

2. APPLICATION/LIMITATION OF USE

The Simrad E50xx ECDIS is not tested for compliance with IEC 61174 Ed. 4.0 (2015-08) – Annex G (ECDIS in the RCDS mode of operation) and Annex H (Alarms and indicators in the RCDS mode of operation).

ECDIS system is not additionally tested for operation beyond the normal range between 85 degrees South latitude and 85 degrees North latitude. New interface requirements have been added and tested for communication with BNWAS, VDR, BAM, MSI, INS as well as route transfer.

System is to be installed in a protected environment.

3. DESIGN DRAWINGS AND SPECIFICATIONS

Simrad E50xx ECDIS system overview Rev. 2.0 – NPD Documents Library;

Simrad E50xx ECDIS Installation Manual, part number 988-10782-00x;

Simrad E50xx ECDIS Operation Manual, part number 988-10788-00x;

Simrad E0102 Alarm panel manual, part number 988-10826-00x;

Simrad M50xx monitor manual, part number 988-10795-00x;

Simrad SI80 manual, part number 988-10475-00x.

4. TYPE TEST RECORDS/LABORATORY RECOGNITION STATUS

Performance testing – IEC 61174 Ed. 4.0 (2015-08), CRS witnessed – Egersund 06-16- June 2016 & Ensenada 02-04 May 2016;

Environmental testing – IEC 60945(2002) including Corrigendum 1(2008), CRS witnessed-Egersund 05-06 July 2016;

Serial interface testing – IEC 61162-1(2010) & IEC 61162-2 (1998), CRS witnessed-Egersund 17-18 January 2015.;

Presentation of navigation information – IEC 62288 Ed.2 (2014-07), CRS witnessed-Egersund 06-16- June 2016;

Ethernet interconnection for VDR & Route Transfer – IEC61162-450 Ed.1.0 (2011-06), CRS witnessed-Egersund 06-16- June 2016;

CRS letters of approval – 221/TE/VB/031120 and 1880/TSE/VB/031239.

5. MATERIALS OR COMPONENTS REQUIRED TO BE TYPE APPROVED OR TYPE TESTED

Simrad E5000 dual core processor (Part of Simrad E50xx ECDIS) might be used as a part of additional, independent information system if type approved.

6. OTHER MATERIALS AND/OR COMPONENT

Simrad E50xx ECDIS system dual installation is found to comply with the requirements for ECDIS with Back-up arrangements.

7. PRODUCTION SURVEY REQUIREMENTS

The manufacturer is allowed to affix the Mark of Conformity to equipment referred and to issue a Declaration of Conformity as long as either of the following is fulfilled:

Module D – The quality system for production and testing shall be approved by the Notified Body or,

Module E – The quality system for inspection and testing shall be approved by the Notified Body or,

Module F – Compliance of the product in this EC Type Examination Certificate is to be verified by the Notified Body who shall also issue a Certificate of Conformity.

8. ONBOARD INSTALLATION AND MAINTENANCE REQUIREMENTS

The ECDIS E50xx shall be supplied by 12V or 24V DC in accordance with Installation Manual.

The installation on board shall be verified and tested according to Installation & Operation Manual.

9. MARKING AND IDENTIFICATION

Subject to compliance with the conditions in this Schedule of Approval which forms part of certificate, and those of Articles 10.1(i) and 11 of the Directive, the Manufacturer is allowed to affix the "Mark of Conformity" to the Product described herein.

2489/yy (yy = last two digits of year mark affixed)

10. OTHERS

SOFTWARE:

Item name	SW version
E50xx ECDIS system software version	2.0.x.yyyy
Chart Library Presentation	4.0.x
SDK Version	2.0

APPENDIX – TYPE EXAMINATION DOCUMENTATION

	Document title	Identification number	Revision index
1.	E50xx System Context	NPD Documents Library	Rev. 2.0
2.	SIMRAD MO24-T Monitor, Touch, High Bright	EMC Technologies Test Report No. 140122.1	10 th June 2014.
3.	NAVICO – EMC Addendum Comparison MO24-P monitor with MO24-T	Control No. : AAC20140622-00	10 th February 2014
4.	MO50xx Difference to MOxx	-	Rev. 3
5.	SIMRAD NSO-II Marine Processor	EMC Technologies Test Report No. 130409.1	25 th June 2013
6.	E5000 ECDIS processor Comparison with NSO evo 2 computer	-	8 th January 2015
7.	NSO EVO II – overview over reports	Project Number 42271	8 th August 2014
8.	System 1: IS40 Pro, OP40, MO16-T, MO19-T, NSO EVO II, Logitech Wireless Trackball M570; System 2: MO24-T, NSO EVO II, Kensington Orbit Trackball with Scroll Ring	MET Report: ESLU42271-IEC	25 th August 2014
9.	System 1: IS40 Pro, OP40, MO16-T, MO19-T, NSO EVO II, Logitech Wireless Trackball M570; System 2: MO24-T, NSO EVO II, Kensington Orbit Trackball with Scroll Ring	MET Report: EMCS42271-EN 60945	25 th August 2014
10.	Simrad Monitor M50xx IEC 60945 – item 8.12 corrosion (waiver)	-	18.12.2014.

11.	<i>NSO evo2 Processor IEC 60945 – item 8.12 corrosion (waiver)</i>	-	15.01.2015
12.	<i>Logitech M570 Wireless USB Trackball</i>	<i>EMC Technologies Test Report No 140721.1</i>	2 nd September 2014
13.	<i>Power Failure Alarm Panel</i>	<i>DNV MED-B Certificates</i>	<i>Certificates 8315 & 8316</i>
14.	<i>Addendum for EO102 – Alarm Panel</i>	-	12 th January 2015
15.	<i>Heading control system AP70, AP80</i>	<i>DNV MED-B Certificates</i>	<i>Certificates 7837 & 7912</i>
16.	<i>MET Laboratories – ISO 17025 accreditation</i>	<i>A2LA Certificate No. 591.02</i>	<i>Revised 06/02/2014</i>
17.	<i>EMC Technologies – ISO 17025 accreditation</i>	<i>IANZ – No. 424</i>	<i>Issue 41 08/09/14</i>
18.	<i>NSI scroll & roll trackball – Test report</i>	<i>Delta Test Report DANAK-19/14502</i>	19 September 2014
19.	<i>NAVICO Monitors – Compass safe distance</i>	<i>BSH Certificate No.881</i>	2014-10-30
20.	<i>M5024 ECDIS Colour Monitor – Colour Calibration & Visual Verification, Test Report</i>	<i>Part # 000-11781-001</i>	Rev. 15 & 21
21.	<i>CNR – Istituto Nazionale di Ottica – Simrad 24” monitor, Optical test (IEC62288)</i>	<i>3F-RT14009</i>	Sept. 26, 2014
22.	<i>Koncar Institute – Zagreb, Simrad 27” monitor, EMC Test Report</i>	<i>21583EMC16051</i>	17.6.2016.
23.	<i>Koncar Institute – Zagreb, Simrad 27” monitor, IEC60945 Test Report</i>	<i>21580ALL008</i>	28.06.2016.
24.	<i>EMC Addendum - NAVICO</i>	<i>AEP20160630-00</i>	30 June 2016
25.	<i>M5027 ECDIS Colour Monitor – Colour Calibration & Visual Verification, Test Report</i>	<i>Part # 000-12726-001</i>	Rev. 25 2016-05-04
26.	<i>CNR – Istituto Nazionale di Ottica – Simrad 27” monitor, Optical test (IEC62288)</i>	<i>3F-RT16008</i>	July 22, 2016
27.	<i>Navico declaration – M5027 Optical tests</i>	<i>DAP20160720-01</i>	20. July 2016
28.	<i>Navico – M5027 Sound Test</i>	<i>EG-CE-20160705-01</i>	2016-07-05

- END OF CERTIFICATE -