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Certificate No:
MED-MB-1078-16
MED Item No. : A.1/4.30

EC TYPE EXAMINATION CERTIFICATE

as per Module B
of European Council Directive 96/98/EC on Marine Equipment (MED)

THIS IS TO CERTIFY that KR Hellas Ltd., designated by the Hellenic Republic of Greece as Notified Body according to Council Directive 96/98/EC on Marine Equipment as amended, did undertake the EC Type Examination procedures for the product identified below according to the following specific standards and that the product is found to meet the specific standards in compliance with the requirements of Annex A.1, Section 1, item No. A.1/4.30 and Annex B, Module B in Council Directive 96/98/EC as amended by Commission Directive 2014/93/EU:

Manufacturer	**Name**	:	**SAMYUNG ENC CO., LTD.**
	Address	:	**69, Sangni-ro, Yeongdo-gu, Busan, Korea**
Product Name (A.1 item designation)		:	**Electronic chart display and information system(ECDIS) with backup**
Product type (Model)		:	**SCD-2300**
Specific Standards		:	**SOLAS 1974 as amended, Reg. V/18, V/19 and X/3, IMO Res.MSC.36(63) - (1994 HSC Code) 13, IMO Res.MSC.97(73) - (2000 HSC Code) 13, IMO Res. A.694(17), IMO Res. MSC.191(79) IMO Res. MSC.232(82), IMO SN.1/Circ.266, IEC 60945(2002) including IEC 60945 Corrigendum 1(2008), IEC 61162 Series, IEC 61174(2008) and IEC 62288 Ed.1.0 (2008)**

This certificate is issued at Athens on 1st April 2016, under the authority of the Hellenic Republic of Greece by KR Hellas Ltd., Notified Body No. 2198.

This certificate is valid until 31st March 2021.

(KRH Endorse)

Shin Jeong-do
CEO of KR Hellas Ltd

Notified Body No.2198

Any person not a party to the contract pursuant which this document is delivered may not assert a claim against KRH for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgment, fault or negligence committed by personal of KRH in establishment or issuance of this document, and in connection with any activities for which it may provide. In this provision KRH shall mean the KR Hellas Ltd. as well as all its subsidiaries, directors, officers, employees and any other acting on be half of KR Hellas Ltd.

Attachment to EC Type Examination Certificate (1/4)

Type examination documentation:

- T.C.F.(Technical Construction File) including bellowing main document was reviewed and approved from Korean Register of Shipping on 17th December 2015.

Document No.	Title	Version	Date
N11-3090-05	PC / SCD-2300-PC	A	12. 10. 2015
N11-3090-04	Monitor / SCD-2300-M23	A	12. 10. 2015
N11-3090-06	Key board / IGK1	A	12. 10. 2015
N11-3090-03	Mouse / k72337	A	12. 10. 2015
N11-3090-02	Combiner / ZNC-580	A	12. 10. 2015
N11-3090-01	AC-DC Converter/ CS50-24	A	12. 10. 2015
N11-3090-00	Circuit breaker / BS32C	A	12. 10. 2015
N11-3000-00	Noise filter / RMS-2016	A	12. 10. 2015
N11-3090-08	NMEA Converter / ZNC-401	A	12. 10. 2015
N11-3090-09	Radar scan converter / XIR-3000	A	12. 10. 2015
N11-3010-04	Internal assembly	A	16. 10. 2015
S10-9290-BD	Block-diagram	A	12. 10. 2015
S00-9260-B0	Connection diagram	B0	30. 09. 2015
N11-3000-00	SCD-2300	A1	16. 10. 2015
N11-3010-16	SCD-2300 NAME TAG	A3	14. 09. 2015
SY-R-SW09 & SY-R-SW05	Test procedure for SCD-2300	-	-
-	User's manual	Ver.9A	-

Attachment to EC Type Examination Certificate (2/4)

Test reports:

Tested according to the following standards ;

- Performance test, IEC 61174 (Edition 3.0, 2008)
- Environmental test, IEC 60945 (Edition 4.0, 2002) including IEC 60945 Corrigendum 1(2008)
- Serial interface test, IEC 61162-1 (Edition 4.0, 2010)
- Performance test, presentation, IEC 62288 (Edition 1.0, 2008)

Report No.	Title of Report	Inspection & Test Institutes	Date
KRH-MED-0195-2015	Report of conformity assessment for Module B	Korean Register of shipping	14. 03. 2016
SY-R-160304-02	Test report for IEC 61174 (Edition 3.0, 2008) & IEC 62288 (Edition 1.0, 2008)	SAMYUNG ENC CO., LTD.	11. 03. 2016
SY-R-SW05	Test report for IEC 61162-1 (Edition 4.0, 2010)	SAMYUNG ENC CO., LTD.	11. 03. 2016
KOMERI-0314-14T2969	Test report for IEC 61174 (Edition 3.0, 2008) & IEC 62288 (Edition 1.0, 2008) & IEC 60945 (Edition 4.0, 2002)	Korea Marine Equipment Research Institute	25. 08. 2015
KOMERI-0601-14T2959	Test report for environment test	Korea Marine Equipment Research Institute	25. 08. 2015
KOMERI-0306-14T2962	Test report for environment test	Korea Marine Equipment Research Institute	25. 08. 2015
KOMERI-0314-14T2963	Test report for environment test	Korea Marine Equipment Research Institute	25. 08. 2015
KOMERI-0311-14T2961	Test report for EMC & environment test	Korea Marine Equipment Research Institute	25. 08. 2015
KOMERI-0602-14T2958	Test report for environment test	Korea Marine Equipment Research Institute	25. 08. 2015
KOMERI-0314-14T2960	Test report for environment test	Korea Marine Equipment Research Institute	25. 08. 2015

Attachment to EC Type Examination Certificate (3/4)

Product particulars:

SCD-2300 ECDIS is consisting of the following components;

Hardware modules :

Component	Type	Manufacture	Notes
Main processing unit	SCD-2300-PC	MAXANICT	All components shall be consistent with the approved T.C.F
LCD Monitor	SCD-2300-M23	MAXANICT	
Keyboard	IGK1	iMagic	
Trackball	K72337	Kensington	
Combiner	ZNC-580	Zinnos	
AC/DC Power supply	CS50-24	POWERPLAZA	
Circuit breaker	BS32C	LSIS	
Noise filter	RMS-2016	Orient Electronics	
NMEA Converter (Option)	ZNC-401	Zinnos	
RADAR SCAN CONVERTER (Option)	XIR-3000	RUSSELL TECHNOLOGIES INC	

Software modules :

- SCD-2300 software version OE2
- IHO Presentation Library version 3.4
- IHO Object Catalogue edition 3.1.2
- Operating System : Windows 7

Application/Note/Limitations of Use:

1. The installation shall be verified and tested onboard according to installation manuals.
2. A dual installation of SCD-2300 ECDIS is found to comply with the requirements for ECDIS with Back-up arrangements.
3. Instructions for installation, use and maintenance to be available in the ship's official language.
4. SCD-2300 ECDIS doesn't be provided with raster chart display system(RCDS).

Attachment to EC Type Examination Certificate (4/4)

Marking of product:

1. Marking of product for identification

   Each product shall be marked with for traceability as follows:

   - Manufacturer's name
   - Type designation & Serial Number

2. Mark of Conformity

   The manufacturer is allowed to affix the Mark of Conformity ⊙ according to Article 11 in the Council Directive 96/98/EC on marine equipment and issue a Declaration of Conformity, only when the module D or E or F of Annex B in the directive is fully complied with.

Conditions of the validity:

1. The products are to be manufactured in accordance with the approved production quality assurance system(Module D) or approved product assurance system (Module E), or are to be subjected to product verification (Module F) of the Council Directive 96/98/EC on Marine Equipment as amended.
2. If the Directive or the applied Standard(s) is amended, the product is to be re-approved in accordance with the amended requirements prior to it being supplied to vessels to which the amended Directive or Standard(s) apply. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this certificate invalid.
3. The Manufacturer must inform the "Notified Body" of all modifications which may affect compliance with the requirements.
4. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.

Remark

- None

End of Certificate