



UK Approved Body Authorised
by the MCA



Marine Equipment UK Assessment Module B Type Examination Certificate

This is to certify that TUV SUD BABT UNLIMITED did undertake the relevant type approval procedures for the type of equipment identified below, which was found to be in compliance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended, under Annex 1 of the listed Amendment of MSN 1874 for the types of equipment identified.

MSN 1874 Amendment	Amendment 8
Certificate Holder and Manufacturer	Raymarine Limited Marine House Cartwright Drive Fareham United Kingdom PO15 5JR
Product(s)	Pathfinder 16 CAT3 Radar System Pathfinder 19 CAT3 Radar System Pathfinder 22 CAT2 Radar System Pathfinder 24 CAT2 Radar System
Product Sector	Navigation Equipment
Product Type	UK/4.64 Radar Equipment (CAT 2 and CAT 3)

and on the basis of the Technical Data and information detailed in the Annex to this certificate.

Valid from: 12 March 2024

(Thomas J. Twynam)

Expiry Date: 27 February 2029

TÜV SÜD BABT is a UKAS accredited Certification Body No. 0172.
This certificate has been issued in accordance with the TÜV SÜD Testing, Certification, Validation and Verification Regulations and constitutes page 1 of the combined Certificate and Annex.
The Conditions for the validity of this certificate are listed in the Annex.
For further details related to this certification please contact BABT@tuvsud.com



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Annex to Marine Equipment UK Conformity Assessment Module B Type Examination Certificate



1 Equipment Description

Radar System (Category 2 and Category 3)

1.1 Models

Model
Pathfinder 16 CAT3 Radar System
Pathfinder 19 CAT3 Radar System
Pathfinder 22 CAT2 Radar System
Pathfinder 24 CAT2 Radar System

1.1.1 System Components^{Note 1}

Model	Description
E70661-IMO	Pathfinder 16" Radar Display
E70662-IMO	Pathfinder 19" Radar Display
E70663-IMO	Pathfinder 22" Radar Display
E70664-IMO	Pathfinder 24" Radar Display
E70621-IMO	Cyclone Pro Open Array 110W Pedestal
E70630	Cyclone 6 ft Antenna
E70648	VCM100 Voltage Converter Module
A80792	Pathfinder Data Collection Unit (DCU)
A80788	Pathfinder Trackball

1.2 Software^{Note 2}

Identity	Description
Pathfinder Application Software	Version 1.0
Operating SW Raymarine Lighthouse	Version 4.5
Cyclone Pro Software	Version 2.41
Pathfinder DCU	Version 2.007

2 Assessed Requirements

2.1 MSN 1874 Amendment 8 Annex 1

2.2 Compliance Requirements for UK/4.64 Row 2 of 2^{Note 3}

Type approval requirements	Carriage and Performance Requirements
SOLAS 74 Reg V/18 IMO Res.MSC.36(63)-(1994 HSC Code) 14 IMO Res.MSC.97(73)-(2000 HSC Code) 14	SOLAS 74 Reg. V/19, IMO Res. A.278(VIII), IMO Res. A.694(17), IMO Res. MSC.36(63)-(1994 HSC Code) 13, IMO Res. MSC.97(73)-(2000 HSC Code) 13. IMO Res. MSC.191(79), IMO Res. MSC.192(79), IMO Res. MSC.302(87), IMO MSC.1/Circ.1349, ITU-R M.1177-4 (04/11).

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Assessed Testing Standards	
IEC 60945:2002 incl. IEC 60945 Corr. 1:2008	IEC 61162-1:2016
IEC 61162-2 Ed.1.0:1998-09	IEC 61162-450:2018
IEC 62288 Ed. 3.0:2021	IEC 62388 Ed. 2.0: 2013-06 incl. IEC 62388 Corr 1:2014
IEC 62923-1:2018	IEC 62923-2:2018.

3 Technical Documentation

3.1 Declaration of Conformity

DOC UK Modified 2024-02-23

3.2 User Guide

Pathfinder Radar System Installation & Commissioning Instructions 81417 Revision 3
Pathfinder Display Operator's Instructions 81416 Revision 2

3.3 Test Reports

3.3.1 IEC 60945:2002 incl. IEC 60945 Corr. 1:2008

TRA-057423-38-00B	Issued	2022-05-19
TL22253	Issued	2022-07-04
75958876-04 Issue 02	Issued	2024-02-23
16R096CR	Issued	2016-03-03
75958876 Report 02 Issue 1	Dated	2024-01-16
Salt Mist Waiver	Dated	2024-02-26
Salt Mist Waiver - NSI	Dated	2024-02-21
Salt Mist Waiver - DCU	Dated	2024-02-21
11656-R01	Dated	2024-02-26

3.3.2 IEC 62388 Ed. 2.0: 2013-06 incl. IEC 62388 Corr 1:2014

TP_0953_1048 Wind_Tunnel ESO Test v1	Dated	2021-05-04
596704-1-1	Dated	2021-02-17
75958876 Report 01 Issue 2	Dated	2024-02-23
75950287-04 Issue 01	Issued	2021-04-23
RAY-PFR-STR-001 Issue 1	Dated	2024-02-12

3.3.3 IEC 62288 Ed. 3.0:2021

75958876 Report 02 Issue 1	Dated	2024-01-16
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3.3.4 IEC 61162-1:2016, IEC 61162-2 Ed.1.0:1998-09 & IEC 61162-450:2018

19/N0584	Dated	2019-12-09
75958876 Report 06 Issue 1	Issued	2024-02-16
75958876 Report 08 Issue 1	Issued	2024-02-27
75958876 Report 09 Issue 1	Issued	2024-02-22
75958876 Report 10 Issue 1	Issued	2024-02-22

3.3.5 IEC 62923-1 & IEC 62923-2 :2018

75958876 Report 06 Issue 2	Issued	2024-02-20
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3.4 Build Status

3.4.1 Hardware

Pathfinder Hardware Data Pack Revision 1, RAY_PF_DP_0001	Dated	2024-02-23
DP076-P1B6_Schematic	Dated	2024-02-23
DP076-P1B6_BOM	Dated	2024-02-23

3.5 Notes


- Note 1 Installations should include only one radar scanner connected to a single display.
- Note 2 This approval remains valid for equipment including subsequent minor software amendments which have been formally accepted in accordance with the Testing, Certification, Validation and Verification Regulation.
- Note 3 The product(s) listed meet(s) the requirements of IEC 62923-1 for EUT function type P.

4 Conditions of Validity

This certificate ceases to be valid if the manufacturer makes any changes or modifications to the approved equipment, which have not been notified to, and agreed with TUV SUD BABT or a person appointed by TUV SUD BABT to perform that role.

During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved Body.

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 Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an approved body.

Signature: 
(Thomas J. Twynam)

Date: 2024-03-12

On behalf of TUV SUD BABT UNLIMITED