



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

BSH P.O. Box 30 12 20 20305 Hamburg Germany

Kelvin Hughes Ltd.
Martin S. Taylor
New North Road
Heinault, Ilford
IG6 2UR Essex
UK

Hamburg Office

Ihr Antrag auf Baumusterprüfung von Navigationsausrüstung vom 26.09.07
Your application for type examination of navigation equipment dated 26.09.07

Date
23.10.2007
Extension
+ 49 (0) 40 3190 - 7300
Reference
(please quote in your answer)
46162/0020717/07

Bescheid über die Anerkennung einer nationalen Zulassung eines EU-Mitgliedstaates

Notification of acceptance of a national type approval of a EU member state

Sehr geehrter Herr Taylor,
Dear Mr. Taylor,

für der vereinfachte Schiffdatenschreiber mit der Bezeichnung
Manta Digital S-VDR

For the Simplified Voyage Data Recorder equipment with the type designation Manta Digital S-VDR

wird mit anliegendem Zertifikat Nr. **QQ-TAN-01/04-01R6 vom 15.02.2007**
an approval is granted with attached certificate no. QQ-TAN-01/04-01R6 dated 15.02.2007

für MCA(UK) ausgesprochene Zulassung vom Bundesamt für Seeschifffahrt
und Hydrographie (BSH) für die Anwendung auf Schiffen unter Deutscher Flag-
ge akzeptiert.

*Will be accepted by the Federal Maritime and Hydrographic Agency (BSH) for the use on german
flag vessels.*

Bedingungen

Conditions

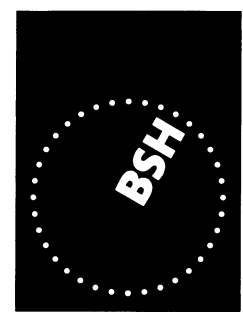
Diese Anerkennung erlischt bei Fristablauf, Rücknahme oder Widerruf.
Der Widerruf kann ausgesprochen werden, wenn die serienmäßig gefe-
tigten nautischen Ausrüstungsgegenstände nicht mit dem zugelassenen
Baumuster übereinstimmen.

*This acceptance expires after lapse of time, withdrawal or revocation. A revocation may be
ordered if navigational equipment manufactured in serial production is not in compliance
with the type-tested prototype.*

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20359 Hamburg
Germany
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posteingang@bsh.de
www.bsh.de

Bank transfer to:
Bundeskasse Kiel
zugunsten BSH
Account:
Deutsche Bundesbank
Bank code 210 000 00
No. 210 010 30

IBAN:
DE42 2100 0000 0021 0010 30
BIC: MARKDEF1210



BUNDESAMT FÜR
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Auflagen

Obligations

Der Hersteller oder sein bevollmächtigter Vertreter hat sicherzustellen, dass alle auf Grund dieses Bescheids gefertigten nautischen Ausrüstungsgegenstände mit den geprüften Unterlagen und mit dem Baumuster übereinstimmen.

The manufacturer or his authorized representative has to ensure that navigational equipment manufactured on the basis of this acceptance, is in compliance with the approved documentation and the type-approved prototype.

Jeder serienmäßig auf Grund dieses Bescheids gefertigte Bestandteil des nautischen Ausrüstungsgegenstandes muss an gut sichtbarer Stelle und in dauerhafter Form mit der Gerätebeschriftung entsprechend der europäischen Norm EN 60945 gekennzeichnet sein und darf mit der Baumusternummer (Nummer der Baumusterprüfbescheinigung) versehen werden. Ausgenommen davon sind Bauteile, die in der unter Wasser liegenden Außenhaut des Schiffes eingebaut werden.

Every navigational equipment component which is produced in series on the basis of this acceptance must be marked permanently and visibly with the equipment identification according to the European standard EN 60945 type and may be marked with the approval number (number of the type approval certificate). This does not apply to components installed in the vessel's outside plating below the waterline.

Der Hersteller oder sein bevollmächtigter Vertreter hat den vom Bundesamt für Seeschifffahrt und Hydrographie betrauten Personen zu gestatten, durch stichprobenartige Nachprüfungen festzustellen, ob serienmäßig hergestellte Ausrüstungsgegenstände dem geprüften Baumuster entsprechen. Das Bundesamt für Seeschifffahrt und Hydrographie kann zu diesem Zweck beim Hersteller oder seinem bevollmächtigten Vertreter Proben anfordern oder entnehmen.

The manufacturer or his authorized representative has to allow to persons authorized by the Federal Maritime and Hydrographic Agency to take random samples to prove whether equipment manufactured in serial production is in compliance with the type-approved prototype. Therefore, the Federal Maritime and Hydrographic Agency may take or demand samples from the manufacturer or his authorized representative.

Es wird empfohlen, jedem ausgelieferten Ausrüstungsgegenstand eine vollständige Kopie der Baumusterprüfbescheinigung beizufügen.

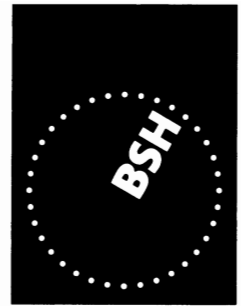
It is recommended that a complete copy of the certificate is provided with each equipment delivery.

Hinweise

remarks

Das Bundesamt für Seeschifffahrt und Hydrographie behält sich vor, weitere Auflagen zu erteilen.

The Federal Maritime and Hydrographic Agency reserves the right to impose additional obligations.



BUNDESAMT FÜR
SEESCHIFFFAHRT
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Rechtsbehelfsbelehrung

Notice on legal remedies available

Gegen diesen Bescheid kann innerhalb eines Monats nach Bekanntgabe Widerspruch erhoben werden. Der Widerspruch ist beim Bundesamt für Seeschifffahrt und Hydrographie, Bernhard-Nocht-Str. 78, 20359 Hamburg, schriftlich oder zur Niederschrift einzulegen.¹

Objection to this document may be filed within one month after notification. The objection must be filed in writing to, or put on record at, Federal Maritime and Hydrographic Agency, Bernhard-Nocht-Str. 78, 20359 Hamburg, Germany.

Anlage(n) Baumusterprüfbescheinigung Nr. **QQ-TAN-01/04-01R6**
Gebührenbescheid 790057041232

Attachment(s) *Type examination certificate no. QQ-TAN-01/04-01R6*
Invoice 790057041232

Mit freundlichen Grüßen

Best Regards

I.A

On Behalf

A handwritten signature in black ink, appearing to be 'P. Preuss', written over a faint circular stamp or watermark.

P. Preuss

¹ Der deutsche Text ist verbindlich.
The german text is authentic.



UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND
CERTIFICATE OF TYPE APPROVAL

Applicant:-
Kelvin Hughes Ltd
New North Road, Hainault
Ilford, Essex, IG6 2UR
United Kingdom

Manufacturer:-
Kelvin Hughes Ltd
New North Road, Hainault
Ilford, Essex, IG6 2UR
United Kingdom

This is to certify that the applicant has submitted details of a:-

Shipborne Simplified Voyage Data Recorder (S-VDR)

Of a type known and designated as:-

MantaDigital S-VDR

(Comprising component parts as described in schedules attached)

and that this has been assessed and tested, and is CERTIFIED as complying with:-

IEC 61996-2: 2006 "Part 2:- Simplified voyage data recorder (S-VDR)"

IEC 60945:2002 "General Requirements for Marine Navigational Equipment"

(being Operational requirements - Methods of testing and test results, performance specification), published by the International Electrotechnical Commission. IEC 60945 is also published by the British Standards Institution as BS EN60945 :2002.

It is also CERTIFIED that the equipment conforms to performance standards not inferior to those adopted by the International Maritime Organisation, and which are contained in Resolution MSC 163(78) and Resolution A694(17).

SIGNED:

DATE of ISSUE: 15th February 2007

DATE of EXPIRY : 19th December 2009

P J Goddard Authorised Signatory

Certificate Number: QQ-TAN-01/04-01R6

This Certificate is Valid until expiry date shown, subject to the standard conditions of issue printed on the attached schedule

QinetiQ
Cody Technology Park
Ively Road, Farnborough
Hampshire. GU14 0LX



Maritime and Coastguard Agency
The MCA is an Executive Agency of
the Department for Transport

The QinetiQ Group PLC (formerly known as DERA) is specified as a "person" under the terms of The Merchant Shipping (Delegation of Equipment Approval) Regulations 1996, and this certificate is issued under the authority given in Merchant Shipping Notice No MSN 1735..

Certificate of Type Approval - Schedule 1

MantaDigital S-VDR System (Original Processor)

The applicant declared that the following units when combined form an operational Marine Shipborne Voyage Data Recording system. The units below have been assessed & tested and satisfactory details of these units were included in the technical file.

MAIN UNITS Comprising:-

MantaDigital S-VDR Processor	VDR-A12	*1
or Data Acquisition Unit	VDR-A1	*1
Fixed Protective capsule	VDR-A5 or -A15 or -A18 or - A19	*2, 3
or Float-Free Protective capsule	VDR-A16 or A17	*2, 3
Remote Status and Alarm Module	VDR-A9	*1, 4
Microphone Units	VDR-A6 (Internal) or VDR-A7 (External)	*1, 5
Data Interface Unit	VDR-A4	*1, 6
Switch Interface Unit	VDR-A4-1	*1, 6

SOFTWARE:-

Data Acquisition S/W (ZM 1912)	Version 1.7	*7
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----- End of List -----

NOTES:-

1. These units are either identical or have a technical analogy to units of the Kelvin Hughes NDR-2002 VDR system that is Type Approved under Certificate number QQ-MED-10/02-01R.
2. The fixed protective capsules are OEM units supplied from either Smiths Group or L3 Communications Inc. The float-free capsule is from McMurdo Ltd or Jotron Electronics AS.
3. Standard protective capsules are equipped with 1.75 or 2GB of memory, greater memory capacity available.
4. Optional if VDR Processor/Data Acquisition Unit is easily accessible on Bridge.
5. Up to 12 microphones may be fitted, external units for exposed bridge wings or similar.
6. Optional, multiple units may be fitted but each one will use 1, IEC 61162-1, serial data port in the VDR Processor/Data Acquisition Unit.
7. This approval is valid for equipment including minor software revisions where written details of any modifications have been submitted to and accepted by QinetiQ.

Technical Characteristics

PARAMETER	PROVISION	COMMENT
IEC 61162-1 SERIAL (NMEA) PORTS	16	Conformity to IEC 61162-1:2000. Inputs are configurable to IEC 61162-2: 1998 for AIS. Messages - VDM, VDO ALR, TXT. Designated ZDA & GGA/GLL message can trigger an alarm.
ANALOGUE SIGNAL PORTS	Up to 16 per DIU fitted	Provision made by inclusion of VDR-A4 external data interface unit for Voltage, Current and Closing-contact inputs. Can also take pulse log and Gyrocompass.
RADAR VIDEO PORT	2	RGB + H/V Sync or Composite Sync available, VESA DMTS standards to 1280 x 1024 at 85Hz are covered Presence check and alarm
BRIDGE AUDIO CHANNELS	Up to 12 microphones	Proprietary. 4 recording channels each of up to 3 microphones Acoustic integrity check every 12 hrs
RADIOCOMMS AUDIO CHANNELS	2	Transmit & Receive inputs (600Ω/0dBm) on channels.
Protective Capsule	Fixed or Float Free Available	Two Protective Capsules for fixed deck installation and a Float free option are available.
RECORDING DURATION	>12 Hours	Parallel recording onto removable Hard-Disk, Protective capsule memory may be downloaded to hard disk.
RESERVE POWER	2 Hours	From internal batteries. All functional inputs recorded during reserve power operation
TEMPERATURE RANGE Exposed & IEC 945 CLASS Protected	-25°C to +70°C -15°C to +55°C.	— Protective Capsules, Exterior Microphone Units — All other units
POWER SOURCE	110/220V AC 24V DC	Power supply input to VDR-A1 or VDR-A12 is AC only. automatic AC & DC switching options are available..

Conditions of Issue of this certificate are printed the reverse of this sheet.

QinetiQ
Cody Technology Park
Ively Road, Farnborough
Hampshire. GU14 0LX

Certificate Number QQ-TAN-01/04-01R6



Certificate of Type Approval - Schedule 2

MantaDigital S-VDR System (New Processor)

1. Issue 15.06.2004

The applicant declared that the following units when combined form an operational Marine Shipborne Voyage Data Recording system. The units below have been assessed & tested and satisfactory details of these units were included in the technical file.

MAIN UNITS Comprising:-

MantaDigital Processor	MDP-A5 (S-VDR) or MDP-A8 (S-VDR/ECDIS)	*1
or	MDP-A3 (VDR) or MDP-A7 (VDR/ECDIS)	*1
C/W Ancillary Battery Enclosure	MDP-A10	
Fixed Protective capsule	VDR-A5 or -A15 or -A18 or -A19	*2, 3
or Float-Free Protective capsule	VDR- A16 or A17	*2, 3
Remote Status and Alarm Module	VDR-A9	*4
Microphone Units	VDR-A6 (Internal) or VDR-A7 (External)	*5

OPTIONAL UNITS:-

Data Interface Unit	VDR-A4	*6
Switch Interface Unit	VDR-A4-1	*6
Removable 2.5" Hard Disk Drive (HDD)	MDP-A149	

SOFTWARE:-

Data Acquisition S/W (ZM 1912)	Version 1.7	*7
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----- End of List -----

NOTES:-

1. The MDP-A7 or MDP-A8 processor may also run the KH version 3.xx electronic chart software as an additional facility unconnected with the S-VDR function, the performance of the S-VDR function is unaffected by this additional facility. The approval status of this ECS software is defined in certificate 6579 / 080330 / 2004 issued by BSH, Germany on 30/01/2004.
2. The fixed protective capsules are OEM units supplied from either Smiths Group or L3 Communications Inc. The float-free capsule is from McMurdo Ltd or Jotron Electronics AS.
3. Standard protective capsules are equipped with 1.75 or 2GB of memory, greater memory capacity available
4. Optional if VDR Processor Unit is easily accessible on Bridge.
5. Up to 12 microphones may be fitted, external units for exposed bridge wings or similar.
6. Multiple units may be fitted but each one will use 1, IEC 61162-1, serial data port in the VDR Processor Unit.
7. This approval is valid for equipment including minor software revisions where written details of any modifications have been submitted to and accepted by QinetiQ.

Technical Characteristics

PARAMETER	PROVISION	COMMENT
IEC 61162-1 SERIAL (NMEA) PORTS	16	Conformity to IEC 61162-1:2000. Inputs are configurable to IEC 61162-2: 1998 for AIS. Messages - VDM, VDO ALR, TXT. Designated ZDA & GGA/GLL message can trigger an alarm.
ANALOGUE SIGNAL PORTS	Up to 16 per DIU fitted	Provision made by inclusion of VDR-A4 external data interface unit for Voltage, Current, pulse log, Gyro, and Closing-contacts.
RADAR VIDEO PORT	2	RGB + H/V Sync or Composite Sync available, VESA DMTS standards to 1280 x 1024 at 85Hz are covered. Presence check and alarm
BRIDGE AUDIO CHANNELS	Up to 12 microphones	Proprietary. 4 recording channels each of up to 3 microphones Acoustic integrity check every 12 hrs.
RADIOCOMMS AUDIO CHANNELS	2	Transmit & Receive inputs (600Ω/0dBm) on channels.
PROTECTIVE CAPSULE	Fixed or Float Free Available	Protective Capsules for fixed deck installation and Float free option are available.
RECORDING DURATION	>12 Hours	Parallel recording onto removable Hard-Disk. Protective capsule memory may be downloaded to hard disk.
RESERVE POWER	2 Hours	Dedicated internal batteries in MDP-A10 unit. All functional inputs recorded during reserve power operation
TEMPERATURE RANGE Exposed & IEC 945 CLASS Protected	-25°C to +70°C -15°C to +55°C.	--- Protective Capsules, Exterior Microphone Units --- All other units
POWER SOURCE	110/220V AC 24V DC	Power supply input to Processor unit is AC only. - automatic AC & DC switching options are available.

Conditions of Issue of this certificate are printed the reverse of this sheet.

QinetiQ
Cody Technology Park
Ively Road, Farnborough
Hampshire. GU14 0LX

Certificate Number QQ-TAN-01/04-01R6

**Certificates of Type Approval
(maritime work) model 001-2 (revision 1)**

**Certificates of Type Approval
Conditions of Issue**

1. Each Certificate will be used in its entirety and not reproduced in part.
2. This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested.
3. This certificate remains valid for a period of 5 years unless cancelled or revoked, provided any conditions contained in the schedule are complied with and the equipment remains satisfactory in service.
4. The approval status conferred by each certificate will apply only to the aspects of the equipment's performance defined by, and tested to, the specifications printed on that certificate.
5. Each unit of apparatus forming part of an equipment will have prominently marked on it the description given to it in the Certificate.
6. Each unit of an equipment will be marked with the minimum safe distance at which it should be mounted from a standard magnetic compass.
7. No unit of apparatus shall be advertised or labelled as "approved" or "certified" on behalf of the Maritime and Coastguard Agency (MCA), Department of Transport, DERA or QinetiQ in any sense other than that it is a type that has been assessed as satisfactory against the specification;

The manufacturer must advise QinetiQ of any future changes to the design or production of the equipment which might affect the equipment performance.

For minor modifications to the equipment, factory test results provided to QinetiQ by the manufacturer can be considered on a case-by-case basis. These test results will be reviewed by the QinetiQ, in consultation with the test facility which conducted the original Type Approval tests on the equipment.

QinetiQ will advise the manufacturer if there is a need for further testing.

If an equipment manufacturer wishes to have the type approved equipment designated under alternative names (e.g. agent/distributor's name and model number), a separate application should be completed and sent to QinetiQ.