

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB0000315
Revision No:
1

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Simplified voyage data recorder (S-VDR)

with type designation(s)
HMT-100A

Issued to

Headway Technology Group (Qingdao) Co., Ltd.
Qingdao, Shandong Province, China

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2022/1157**,

item No. MED/4.47. SOLAS 74 as amended, Regulation V/20, IMO Res. A.694(17), IMO Res. MSC.163(78), IMO Res. MSC.191(79), IMO Res. MSC.302(87), IMO Res. MSC.493(104)

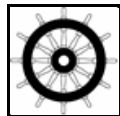
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2028-09-21**.

Issued at **Hamburg** on **2023-09-22**

DNV local station:
Qingdao NB & CMC

Approval Engineer:
Jörg Rebel



Notified Body
No.: **0098**

for DNV SE

Christine Mydlak-Röder
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU. This certificate remains valid unless suspended, withdrawn, recalled or cancelled. Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

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-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled. Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

The simplified voyage data recorder (S-VDR) type HMT-100A contains of the following equipment:

<i>Designation</i>	<i>Type designation</i>	<i>Software vers.</i>
Main Cabinet Unit with One Long-term Data Recording unit	HMT-101A	3.2.x
VDR Remote Alarm Unit	HMT-105	3.1.x
Microphones (internal)	HMT-103	
Microphones (external)	HMT-104	
Final recording medium	H100A-PDC	3.1.x
Float free recording medium	H100-FPDC	3.1.x
Remote Acquisition Unit	HMT-102	3.1.x

Playback software version: 2.1.x
 Configuration software : 1.3.x

Documentation:

Installation manual:	HMT/QW-824-67	Ver. B (2023-09-20)
Operation manual:	HMT/QW-824-68	Ver. B (2023-09-22)
Investigation authority manual:	HMT/QW-824-69	Ver. B (2014-12-20)

Type Examination documentation

Test report : QTC-522000015, KS-2014-08103, 57013069, NX 14248, Functional test report dated 2015-05-08, improvement report dated 2015-05-27, JECZ S202301006 dated 2023-01-18, HMT-QD-23-18 dated 2023-09-22.

Tests carried out

- Environmental and EMC testing: IEC 60945 (2002) incl. Corrigendum 1 (2008)
- Interface testing: IEC 61162-1 (2016), IEC 61162-2 (1998) and IEC 61162-450 (2018)
- Presentation testing: IEC 62288 (2014)
- Bridge alert management testing: IEC 62923-1 (2018) and IEC 62923-2 (2018)
- Performance testing: IEC 61996-2 (2007)

Marking of product

According to IEC 60945, Sect.4.9:

The product to be marked with following information, where practicable:

- Identification of the manufacturer,
- Equipment type number or model identification under which it was type tested,
- Serial number of the unit,
- Compass safe distance.

Alternatively, the marking may be presented on a display at equipment start-up, and in case of fixed equipment compass safe distance may be given in the equipment manual.

END OF CERTIFICATE

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB0000353
Revision No:
1

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Voyage data recorder (VDR)

with type designation(s)
HMT-100A

Issued to

Headway Technology Group (Qingdao) Co., Ltd.
Qingdao, Shandong Province, China

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2022/1157,**

item No. MED/4.29. SOLAS 74 as amended, Regulations V/18, V/20 & X/3, IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87), IMO Res. MSC.333(90), IMO Res. MSC.471(101), IMO Res. MSC.494(104)

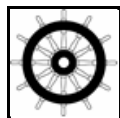
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2028-09-21**.

Issued at **Hamburg** on **2023-09-22**

DNV local station:
Qingdao NB & CMC

Approval Engineer:
Jörg Rebel



Notified Body
No.: **0098**

for **DNV SE**

Christine Mydlak-Röder
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

The voyage data recorder (VDR) type HMT-100A contains of the following equipment:

<i>Designation</i>	<i>Type designation</i>	<i>Software vers.</i>
Main Cabinet Unit with One Long-term Data Recording unit	HMT-101A	3.2.x
VDR Remote Alarm Unit	HMT-105	3.1.x
Microphones (internal)	HMT-103	
Microphones (external)	HMT-104	
Final recording medium	H100A-PDC	3.1.x
Float free recording medium	H100-FPDC	3.1.x
Remote Acquisition Unit	HMT-102	3.1.x
Playback software version:		2.1.x
Configuration software :		1.3.x

Documentation:

Installation manual:	HMT/QW-824-67	Ver. B (2023-09-20)
Operation manual:	HMT/QW-824-68	Ver. B (2023-09-22)
Investigation authority manual:	HMT/QW-824-69	Ver. B (2014-12-20)

Type Examination documentation

Test report : QTC-522000015, KS-2014-08103, 57013069, NX 14248, Functional test report dated 2015-05-08, improvement report dated 2015-05-27, JECZ S202301006 dated 2023-01-18, HMT-QD-23-18 dated 2023-09-22.

Tests carried out

- Environmental and EMC testing: IEC 60945 (2002) incl. Corrigendum 1 (2008)
- Interface testing: IEC 61162-1 (2016), IEC 61162-2 (1998) and IEC 61162-450 (2018)
- Presentation testing: IEC 62288 (2014)
- Bridge alert management testing: IEC 62923-1 (2018) and IEC 62923-2 (2018)
- Performance testing: IEC 61996-1 (2013) including Corrigendum 1 (2014) and including Amendment 1 (2021)

Marking of product

According to IEC 60945, Sect.4.9:

The product to be marked with following information, where practicable:

- Identification of the manufacturer,
- Equipment type number or model identification under which it was type tested,
- Serial number of the unit,
- Compass safe distance.

Alternatively, the marking may be presented on a display at equipment start-up, and in case of fixed equipment compass safe distance may be given in the equipment manual.

END OF CERTIFICATE

QS - CERTIFICATE OF ASSESSMENT - EC (MODULE D)

Certificate No:
MEDD000017R
Revision No:
1

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Quality System for the products

with type designation(s) as specified in the Appendix to this Certificate

Issued to

Headway Technology Group (Qingdao) Co., Ltd.
Qingdao, Shandong Province, China

is found to comply with the applicable requirements.

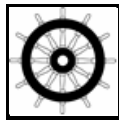
The quality system has been assessed with respect to the procedure of conformity assessment described in Annex II, Module D in the directive 2014/90/EU and regulation (EU) 2022/1157.

This Certificate is valid until **2028-09-21**.

Issued at **Hamburg** on **2023-09-22**

DNV local unit:
Qingdao NB & CMC

Approval Engineer:
Jörg Rebel

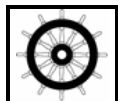


Notified Body
No.: **0098**

for **DNV GL SE**

Christine Mydlak-Röder
Head of Notified Body

The manufacturer is allowed to affix the U.S. Coast Guard approval number(s) as stated in the appendix attached hereto and as allowed by the "Agreement between the European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment", signed February 27th, 2004, and amended by Decision No 1/2023 dated May 26th, 2023.



0098/yyyy

0098: Notified Body number undertaking quality surveillance
yyyy: The year in which the mark is affixed

The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate authorizes the manufacturer in conjunction with the valid EC Type Examination (Module B) Certificate(s) of the equipment listed before to affix the Mark of Conformity (wheelmark) to the product described herein.

This certificate loses its validity if the manufacturer makes any changes to the approved quality system, which have not been notified to, and agreed with the notified body named on this certificate. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

The Manufacturer has to apply for periodical audits to verify the maintenance and application of the quality system every 12 months.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



APPENDIX

Item no. MED/4.29 Voyage data recorder (VDR)

Type designation	EC Type-Examination Certificate No.	Expiry date	Notified Body No.	USCG approval number
HMT-100A ¹	MEDB0000353 Rev.1	2028-09-21	0098	165.150/EC0098 /MEDB0000353 Rev.1

Item no. MED/4.47 Simplified voyage data recorder (S-VDR)

Type designation	EC Type-Examination Certificate No.	Expiry date	Notified Body No.	USCG approval number
HMT-100A ¹	MEDB0000315 Rev.1	2028-09-21	0098	165.151/EC0098 /MEDB0000315 Rev.1

Places of production

- 1.Headway Technology Group (Qingdao) Co., Ltd., No.32, Keyuan Jing 6 Road, Laoshan Area,, Qingdao, China