



EUROPEAN UNION RECOGNISED ORGANISATION (EU RO) MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

Certificate No:
MRA0000003
Revision No:
5

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to

Hatteland Technology AS
AKSDAL, Norway

for

Touch Screen i.e. a Display Monitor or a Video Screen that is also an Input Device

with type designation(s)

TFT Displays JH 15T15/15T17/19T12/19T14/20T17/22T11/23T12/23T14/26T11/27T11 MMD, JH 19T14 STD and HM 20T07 MIL

The product is found to comply with

EU RO Mutual Recognition Technical Requirements for Touch Screen i.e. a Display Monitor or a Video Screen that is also an Input Device
IEC 60945 Ed. 4 (2002-08) Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results

Intended service

Touch display for alarm and monitoring systems subject to classification.

Temperature [°C]: -15°C to 55°C
Vibration: ±1 mm / 0.7 g
EMC: All locations including bridge and open deck
IP Code: IP22 standalone, IP66 when sealed to console

This is to certify:

that the Product referred to herein has been inspected for the Manufacturer, pursuant to the relevant requirements of the European Union Recognised Organisation Mutual Recognition procedure, required by Article 10.1 of EU Regulation 391/2009, and has been found in accordance with those requirements.

This Certificate is valid until **2025-08-31**.

Issued at **Høvik** on **2021-12-17**

DNV local station: **Haugesund**

Approval Engineer: **Ståle Sneen**

for **DNV**

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Trond Sjøvåg
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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.



Form code: MRTA 201

Revision: 2021-03

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Product description

Series 1 G1- and Series 1 G2 TFT Display monitors from Hatteland Technology AS, as listed below:

Display Type No.	Description	Power supply options ¹⁾	Compass safe distance [cm]	
			Standard	Steering
JH 15T15 MMD	Maritime Multi Display, Series 1 G1	A, D	125 – 130	85 – 100
JH 15T17 MMD	Maritime Multi Display, Series 1 G1	A, D	130	100
JH 15T17 MMD-xRy	Maritime Multi Display, Series 1 G2	M	110	70
JH 19T12 MMD	Maritime Multi Display, Series 1 G1	A, D, M	105 – 160	75 – 105
JH 19T14 MMD	Maritime Multi Display, Series 1 G1	A, D, M	65 – 160	35 – 105
JH 19T14 MMD-xRx-Sxxx	Maritime Multi Display, Series 1 G2 (slim)	M	65	40
JH 19T14 MMD-xRx	Maritime Multi Display, Series 1 G2	A, M	65	40
JH 20T17 MMD	Maritime Multi Display, Series 1 G1	A, D	80	40
JH 20T17 MMD-xRx	Maritime Multi Display, Series 1 G2	M	110	70
JH 22T11 MMD	Maritime Multi Display, Series 1 G1	A, D, M	160	90
JH 23T12 MMD	Maritime Multi Display, Series 1 G1	A	160	105
JH 23T14 MMD	Maritime Multi Display, Series 1 G1	A, M	60	25
JH 23T14 MMD-xRx	Maritime Multi Display, Series 1 G2	M	110	70
JH 26T11 MMD	Maritime Multi Display, Series 1 G1	A, M	125	80
JH 27T11 MMD	Maritime Multi Display, Series 1 G1	A	50	30
JH 19T14 STD	Industrial Display	A, M	85	45
HM 20T07 MIL	Military Display	A, D	115	70

- 1) A = 115/230VAC – 50/60Hz
 D = 24VDC
 M = 115/230VAC – 50/60Hz + 24VDC

Compass safe distance differs for the different configurations of displays of type JH 15T15, JH 19T12, and JH 19T14.

The type approved configurations are described by the respective data sheets listed under Type Approval documentation.

Overview of tested firmware versions and revision history up to date of issue of this certificate are listed in Hatteland Technology's Firmware statement No. DOC101670-1 rev.1, LET_DNVGL20200907AK rev.1 and LET_DNVGL_20210126-3 rev.3 listed under Type Approval documentation.

Series 1 Brackets (optional accessories):

Bracket Type No.	Displays of Equivalent Size
JH 19BRD STD-A1	JH 19T02 MMD, JH 19T12 MMD, JH 19T14 MMD
JH 22BRD STD-A1	JH 22T11 MMD
JH 23BRD STD-A1	JH 23T02 MMD, JH 23T12 MMD, JH 23T14 MMD
JH 26BRD STD-A1	JH 26T11 MMD
JH 27BRD STD-A1	JH 27T11 MMD

Manufactured by

Hatteland Technology
 Eikeskogvegen 52, 5570 Aksdal, Norway

Application/Limitation

The Type Approval covers all hardware listed under Product description. The display monitors are intended for use in alarm and monitoring systems subject to classification.

The dimming function is programmable and needs to be verified through functional testing when used in a system subject to classification.

Type Approval documentation

Displays

Type number Overview: IND100780-1 rev.11, 2011-09-29 – (Series 1 Displays),

LET_DNV20170301AK rev.1 – (Type approval request),
LET_DNVGL20200907AK rev.1 – (Renewal request),
LET_DNVGL_20210126-3 rev.3 – (Update request).

User Manuals: INB10036-1 rev.37, dated 2019-11-26 – (MMD Series 1),
INB10036-2 rev.8, dated 2014-03-10 – (STD Series 1),
INB10036-4 rev.00_01, dated 2020-12-11 – (MMD Series 1 G2),
INB100005-8 rev.7, dated 2018-06-01 – (HM20T07 MIL Series).

Data Sheets: DS JH 15T15 MMD-xxx-Axxx rev.18, dated 2009-06-25,
DS JH 15T17 MMD-xxx-Axxx HW00 rev.24, dated 2013-10-18,
DS JH 15T17 MMD-xxx-Axxx rev.07, dated 2016-09-23,
DS JH 15T17 MMD-xRy-yyyy rev.02, dated 2021-01-25,
DS JH 19T12 MMD-xxx-Axxx rev.17, dated 2009-06-25,
DS JH 19T14 MMD-xxx-Axxx HW00 rev.26, dated 2013-08-16,
DS JH 19T14 MMD-xxx-Axxx rev.09, dated 2016-09-23,
DS JH 19T14 MMD-xxx-Sxxx HW00 rev.13, dated 2013-02-12,
DS JH 19T14 MMD-xxx-Sxxx rev.11, dated 2016-09-23,
DS JH 19T14 MMD-yRx-Sxxx rev.02, dated 2021-01-25,
DS JH 19T14 MMD-yRx-xxxx rev.02, dated 2021-01-25,
DS JH 20T17 MMD-xxx-Axxx rev.32, dated 2020-01-08,
DS JH 20T17 MMD-yRx-xxxx rev.00_05, dated 2021-01-25,
DS JH 22T11 MMD-xxx-Axxx rev.33, dated 2019-04-09,
DS JH 23T12 MMD-xxx-Axxx rev.20, dated 2009-07-16,
DS JH 23T14 MMD-xxx-Axxx rev.29, dated 2019-04-09,
DS JH 23T14 MMD-yRx-xxxx rev.02, dated 2021-01-25,
DS JH 26T11 MMD-xxx-Axxx rev.29, dated 2014-07-24,
DS JH 27T11 MMD-xxx-Axxx rev.26, dated 2013-10-18,
DS JH 19T14 STD-AA1-AAAA rev.17, dated 2013-10-18,
DS HM 20T07 MIL-A1 rev.23, dated 2016-01-08,
DS HM 20T07 MIL-Hx rev.11, dated 2016-01-08.

Sales Drawing: A001100-1 rev.1, dated 2007-07-09 – (HM 20T07 MIL),
A001240-1 rev.1, dated 2008-01-04 – (JH 19T12 MMD),
A001242-1 rev.1, dated 2008-01-08 – (JH 15T15 MMD, JH 15T17 MMD),
A001463-1 rev.1, dated 2008-08-26 – (JH 19T14 STD),
A001467-1 rev.1, dated 2008-08-29 – (JH 19T14 MMD),
A001506-1 rev.1, dated 2008-09-11 – (JH 20T17 MMD),
A001524-1 rev.1, dated 2008-11-12 – (JH 23T12 MMD, JH 23T14 MMD),
A001530-1 rev.1, dated 2008-10-03 – (JH 27T11 MMD),
A001755-1 rev.1, dated 2009-02-10 – (JH 20T07 MIL-H1),
A001761-1 rev.1, dated 2009-02-18 – (JH 20T07 MIL-H2),
A001782-1 rev.1, dated 2009-03-03 – (JH 22T11 MMD),
A002219-1 rev.1, dated 2010-06-28 – (JH 19T14 MMD Slim Frame),
A002278-1 rev.2, dated 2011-05-25 – (JH 26T11 MMD),
A012385 rev.1, dated 2020-09-02 – (JH 19T14 MMD-xRx-xxxx),
A012388 rev.1, dated 2020-07-08 – (JH 23T14 MMD-xRx-xxxx),
A012401 rev.1, dated 2020-07-08 – (JH 20T17 MMD-xRx-xxxx),
A012407 rev.1, dated 2020-09-02 – (JH 19T14 MMD-xRx-Sxxx),
A012412 rev.1, dated 2020-09-02 – (JH 15T17 MMD-xRx-xxxx).

Test reports: Technical report E501841-4A, dated 2005-01-17 – (JH 19T01/20T04/23T02 MIL-E1/E2),
Technical report 2005 3127 rev.03, dated 2005-08-29 – (JH 15T05 MMD-A1/A2),
Technical report 2006-3533 rev.01, dated 2007-03-28 – (HM 20T07 MIL-E1),
Technical report 2007-3008 rev.01, dated 2007-03-13 – (HM20T07 MIL-E1),
Technical report 2008 3076 rev.01, dated 2008-02-07 – (JH 15T15 MMD-AA1-AAAA),
Technical report 2008 3142 rev.01, dated 2008-03-11 – (JH 23T12 MMD-AA1-AAAA),
Technical report 2008-3143 rev.01, dated 2008-03-11 – (JH 19T12 MMD-AA1-AAAC),
Technical report 2008-3146 rev.01, dated 2008-03-11 – (JH 19T12 MMD-DA1-AAAA),
Technical report 2008-3190 rev.02, dated 2008-04-16 – (JH 19T12 MMD -AA1-AAAA),
Technical report 2008 3207 rev.01, dated 2008-04-16 – (JH 23T12 MMD-AA1-AOAC),
Technical report 2008-3324 rev.02, dated 2009-02-04 – (JH 15T17 MMD-DA1-AOAA),
Technical report 2008-3464 rev.02, dated 2008-09-26 – (JH 27T11 MMD-AA1-AABA),
Technical report 2008-3511 rev.01, dated 2008-10-16 – (JH 20T17 MMD-AA1-AABA),
Technical report 2015-20567 rev.0, dated 2015-05-11 – (JH 20T17 MMD-AA1-AABA),
Technical report 2008-3528 rev.02, dated 2009-04-14 – (JH 19T14 MMD-AA1-AOAA),

Technical report 2009-3097 rev.02, dated 2009-06-26 – (JH 19T14 MMD-AA1-AABR),
Technical report 2009-3442 rev.01, dated 2009-08-11 – (JH 19T14 MMC-AA1-AABR),
Technical report 2010-1681 rev.01, dated 2010-11-16 – (JH 19T14 MMD-MA1-SABA),
Technical report 2010-3124 rev.03, dated 2011-02-22 – (JH 23T14 MMD-MA1-Axxx),
Technical report 2010-3134 rev.01, dated 2010-04-08 – (JH 19T14 MMD-MA1-AAAA),
Technical report 2010-3247 rev.02, dated 2010-05-10 – (JH 15T17 MMC-MA1-SORA),
Technical report 2010-3421 rev.01, dated 2010-10-05 – (JH 20T17 MMD-DA1-AAAR),
Technical report E09749.02 rev.02, dated 2010-08-17 – (JH 22T11 MMD-AA1-AOBA),
Technical report E10092.01 rev.01, dated 2010-04-20 – (JH 23T14 MMD-MA1-AABA),
Technical report E12045.00 rev.00, dated 2012-02-05 – (JH 15T17 MMD-DA1-AABA),
Technical report 2011-3396 rev.02, dated 2012-07-11 – (JH 26T11 MMD-MA1-AOBC),
Technical report 2011-3494 rev.01, dated 2011-11-24 – (JH 15T17 MMD-AA1-AABA),
Technical report 2012-3107 rev.01, dated 2012-03-05 – (JH 15T17 MMD-AA1-AABA),
Technical report 2013-3038 rev.0, dated 2013-04-03 – (JH 19T14 MMD-MA1-AAAA),
Technical report 2009-3196 rev.01, dated 2009-04-21 – (HM 20T07 NMD-CF8),
Technical report 2009-3214 rev.03, dated 2009-04-30 – (HM 20T07 NMD-CF8),
Technical report 2015-20588 rev.0, dated 2015-08-24 – (HD 19T21 MMC-M2D-MBAA),
Technical report 2015-20589 rev.0, dated 2015-06-15 – (HD 15T21 MMC-M2N-PCAA),
Technical report 2011-3273 rev.01, dated 2011-10-04 – (JH 22T11 MMD-AA1-AOBC),
Technical report 2012-3081 rev.01, dated 2012-02-29 – (HD 15T21 STD-MA1-FAGA),
Technical report 2010-3253 rev.01, dated 2010-05-05 – (JH 20T17 MMD-DA1-AAAA),
Technical report 190123001T rev.1, dated 2019-05-15 – (HD 16T30 MMC-MX7-4AMJ1E-ES-1),
Technical report 200909004T rev.1, dated 2020-12-16 – (JH 23T14 MMD-MR4-AOBC-ES),
Technical report 200909005T rev.1, dated 2020-12-10 – (JH 19T14 MMD-AR4-AABR-ES),
Technical report 190115002T rev.1, dated 2019-05-15 – (HD 21T30 MMC-AY7-4APL2B-ES),
Technical report 2018-21185-2 rev.0, dated 2018-04-10 – (HM 32T22 RMD-MA1-6OVP-ES),
Technical report CEBDLB-WTW-P21070682 rev.1, dated 2021-12-17 – (JH 23T14 MMD-MA1-AABA),
Technical report CEBDLB-WTW-P21100660, dated 2021-12-03 – (JH 20T17 MMD-MR1-AAAA),
Technical report CEBDLB-WTW-P21100461, dated 2021-12-03 – (JH 22T11 MMD-AA1-AAAA).

Statements: IEC 60945 & IACS E10 Statement DOC101328-1 rev.06,
IEC 60945 & IACS E10 Statement DOC208483-1 rev.01 – (JH 19T14 MMD-xRx),
IEC 60945 & IACS E10 Statement DOC208227-1 rev.01 – (JH 23T14 MMD-xRx),
IEC 60945 & IACS E10 Statement DOC208239-1 rev.02 – (JH 15T17 MMD-xRx),
IEC 60945 & IACS E10 Statement DOC208240-1 rev.01 – (JH 20T17 MMD-xRx),
Firmware statement DOC101670-1 rev.1, dated 2013-10-02 – (Series 1 redesign),
Corrosion statement DOC100732-9 rev.9, dated 2013-10-02 – (Series 1 including brackets ++)
IACS E10 Rev.7 Compliance Statement DOC208787-1 rev.4, dated 2021-12-16.

Brackets

Sales Drawing: - rev.04, undated – (JH 15TBR STD-B1),
A000067-1 rev.-, dated 2002-01-17 – (17", 19" Slim and 20" Series 1),
A001915-1 rev.01, dated 2009-06-02 – (JH 19BRD STD-A1),
A002247-1 rev.01, dated 2010-08-30 – (JH 19BRD STD-B1),
A001891-1 rev.01 dated 2009-05-28 – (JH 22BRD STD-A1),
A001916-1 rev.01 dated 2009-06-02 – (JH 23BRD STD-A1),
A002408-1 rev. - dated 2013-07-01 – (JH 26BRD STD-A1),
A001411-1 rev.01 dated 2008-06-03 – (JH 27BRD STD-A1).

Test Reports: Technical Report 2008-3326 rev.01, dated 2008-06-25 – (JH 19BRD STD-A1),
Technical Report 2008-3327 rev.02, dated 2011-10-14 – (JH 27BRD STD-A1),
Technical Report 2013-3114 rev.01, dated 2013-03-21 – (HD TMB SX1-C1).

Assessment report: EU RO MR TA PQA scheme periodical assessment checklist, DNV Haugesund 2020-09-04.

Marking of product

Manufacturer's name: Hatteland Technology AS
Type No.: Main type as listed under product description + 7 characters to describe the options
Unique serial No.
Date of manufacture: YYYYMMDD
Power supply ratings: Input voltage as listed under product description + power rating (W)

Other conditions

The monitors have been verified for compliance with EU RO Mutual Recognition Technical Requirements for Touch Screen i.e. a display monitor or a video screen that is also an input device version 0.2, dated 2020-04-28, and for Display Monitors, Video Screens, Terminals version 0.4, dated 2019-07.

Applicable tests according to IACS Unified Requirements E10 rev. 7 and rev. 8 have been verified. Applicable tests for protected equipment according to IEC 60945 (Fourth edition - 2002) including Corrigendum 1 have additionally been verified.

Environmental test parameters

Temperature: -15°C and 55°C
Vibration: ±1 mm / 0.7 g
EMC: All locations including bridge and open deck
Enclosure: IP22 standalone, IP66 when sealed to console (IP ratings according to IEC 60529)

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed annually and at renewal of this certificate.

Generic Statement for EU RO MR Type Approval Certificate

When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.

In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- American Bureau of Shipping (ABS);
- Bureau Veritas (BV);
- China Classification Society (CCS);
- Croatian Register of Shipping (CRS);
- DNV;
- Indian Register of Shipping (IRS);
- Korean Register (KR);
- Lloyd's Register Group Ltd. (LR);
- Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);
- Polish Register of Shipping (PRS);
- RINA Services S.p.A. (RINA);
- Russian Maritime Register of Shipping (RS).

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).