

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Personal Computer**

with type designation(s)

**HP EliteDesk 800 G4 Small Form Factor (SFF) and Tower (TWR) PC**

Issued to

**Mariner Systems (UK) Ltd.  
WOKINGHAM, BERKSHIRE, United Kingdom**

is found to comply with

**DNV GL rules for classification – Ships, offshore units, and high speed and light craft****Application :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.****Approved only with Mariner Kit shown on page 2.****Location classes:**

<b>Temperature</b>	<b>D</b>
<b>Humidity</b>	<b>B</b>
<b>Vibration</b>	<b>A</b>
<b>EMC</b>	<b>B</b>
<b>Enclosure</b>	<b>Required protection according to DNV GL Rules shall be provided upon installation on board</b>

Issued at **Høvik** on **2019-02-25**for **DNV GL**This Certificate is valid until **2024-02-24**.DNV GL local station: **Newcastle-upon-Tyne**Approval Engineer: **Ståle Sneen****Marta Alonso Pontes  
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.



Job Id: **262.1-030296-1**  
Certificate No: **TAA0000270**

## Product description

HP EliteDesk 800 G4 Small Form Factor (SFF) and Tower (TWR) Personal Computer.  
Verified for nominal supply voltage: 230 V ~ 50 Hz and 115 V ~ 60 Hz

## Application/Limitation

Approval **ONLY** applies when used in conjunction with Mariner Systems (UK) Ltd:

### Mariner Kit:

MS2510 HP EliteDesk 800 G4 TWR PC (Desktop configuration)  
MS2520 HP EliteDesk 800 G4 TWR PC (Tower configuration)  
MS2530 HP EliteDesk 800 G4 SFF PC (Horizontal mount)  
MS2540 HP EliteDesk 800 G4 SFF PC (Vertical mount)

Only to be installed together with in-line power filter RF 1004-MST-C.

Shielded cable is required for connection to Ethernet port.

HP EliteDesk 800 G4 TWR PC:

Steering, Standby and Emergency Compass Safe Distance 1.0 Degree deflection: 600 mm  
Standard Compass Safe Distance 0.3 Degree deflection: 700 mm

HP EliteDesk 800 G4 SFF PC:

Steering, Standby and Emergency Compass Safe Distance 1.0 Degree deflection: 600 mm  
Standard Compass Safe Distance 0.3 Degree deflection: 700 mm

## Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

### Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After certification the clause for software control will be put into force.

### Software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV GL for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

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## **Type Approval documentation**

Report TL18114 Issue 1, HP EliteDesk 800 G4 Tower (TWR) PC1, dated 2018-11-21  
Report TL18115 Issue 1, HP EliteDesk 800 G4 Small Form Factor (SFF) PC1, dated 2018-11-21  
Report TL18116 Issue 1, HP EliteDesk 800 G4 Small Form Factor (SFF) PC2, dated 2018-11-21  
QuickSpecs HP EliteDesk 800 G4 and HP EliteOne 800 G4 Business Desktops PCs, doc. c06040430 – DA 16286 – Worldwide – Version 17, dated 2018-11-14  
QuickSpecs AMD Radeon R7 430 2GB LP 2 DP PCIe x16 GF, doc. C06042166 – DA16278 – Worldwide – Version 2, dated 2018-06-11  
Mariner Type Approval Test Requirements – Issue 13, dated 2017-11-10  
Mariner Systems (UK) Ltd, HP EliteDesk 800 G4 PC series – Component Options, doc. HP 800 G4 Components Nov 18, dated 2018-11-23  
Data sheet NVIDIA Quadro P400, dated 2017-02  
Data sheet Moxa CP-114EL/EL-I 4-port RS-232/422/485 PCI Express boards with optional 2 kV isolation, dated 2017-09-07  
Filter type RF 1004-MST-C, Dwg. No. DS 103-MST, Issue No. 0.1  
MS2510 Assembly, Dwg. No. MS2510\_A, Issue No.1, dated 2018-11-12  
MS2520 Assembly, Dwg. No. MS2520\_A, Issue No.1, dated 2018-11-12  
MS2530 Assembly, Dwg. No. MS2530\_A, Issue No.1, dated 2018-11-12  
MS2540 Assembly, Dwg. No. MS2540\_A, Issue No.1, dated 2018-11-12

## **Tests carried out**

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.  
Shock test (15g, 11ms, repeated 20 times for each axis) according to EN 60068-2-27:2009.  
Applicable tests for protected equipment according to IEC 60945, 4<sup>th</sup> edition (2002), except section 8.12 'Corrosion'.

## **Marking of product**

Mariner Kit Number + HP product label, as listed under Application/Limitation.

## **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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE