



## Main Features

- Onboard Intel® 2nd Generation Core™ i7-2610UE, 1.5Ghz
- 4 x USB ports
- Dual M12 connector for Intel® 82574L GbE LAN ports
- 1 x VGA display output
- 2 x RS232
- 2 x PS/2 for keyboard and mouse
- 1 x external CFast socket
- 1 x Mini-PCIe with two antenna holes
- Support +24VDC power input
- Dual Cold Swappable 2.5" SSD tray
- Supports ATX power mode, WoL, LAN teaming and PXE function

## Product Overview

nTUF Series stands for NEXCOM Tough Computer mainly applied to ECDIS, Radar and Positioning system applications in Marine Bridge and Control Room. The nTUF 610 Marine Fanless Computer is based on Intel® 2nd Generation Core™ i7 platform providing the highest graphic and computing performance with versatile interfaces for Marine peripherals connection. The nTUF 610 features with 4 x USB 2.0, 2 x M12 GbE LAN port, 1 x VGA, 1 x DVI-D, 2 x DB9 RS232, 2 x PS/2, 1 x CFast socket and two cold swappable 2.5" SSD trays on the front panel. In the rear side, the nTUF 610 offers 4 x Digital Input, 4 x Digital Output and 4 x NMEA ports with 2KV optical isolation protection. The isolated +24VDC input in nTUF 610 is designed for Marine applications followed by IEC60945 regulations.

Powered by Intel® Core™ i7 platform, the superior computing and graphic performance enable the nTUF 610 an ideal solution for Marine ECDIS Navigation applications. The nTUF 600 and nTUF 610 have been certified by DNV, compliant to DNV 2.4, IACS-E10 and IEC60945 standards. With DNV certification, nTUF system can be easily applied to integrated bridge system, vessel automation system, ECDIS application for all vessels like bulk carriers, workboat, cruise, sea patrol..etc.

## Specifications

### CPU Support

- Onboard Intel® 2nd Generation Core™ i7-2610UE (4M Cache 1.5Ghz)
- Intel® QM67 PCH

### Main Memory

- 1 x DDR3 SO-DIMM sockets, support up to 2GB DDR3 1066/1333 SDRAM, un-buffered and non-ECC

### I/O Interface-Front

- ATX power on/off switch
- HDD access/power status LEDs
- LAN1 & LAN2 Status LEDs
- 4 x USB 2.0 ports
- 2 x M12 GbE LAN ports
- Intel® 82574L GbE LAN controller on board
- 1.5KV ESD/surge protection
- 1 x VGA output & 1 x DVI-D display output
- 1 x HDMI  
(only work when optional MXM 3.0 graphic module is installed)
- Audio jack (speaker-out & Mic-in)
- 2 x antenna holes
- 2 x DB9, RS232

- 2 x PS/2 for keyboard & mouse
- 2 x cold swappable 2.5" HDD tray
- 1 x external screwed type CFast socket
- 3-pin +24VDC input
- 1 x external fuse

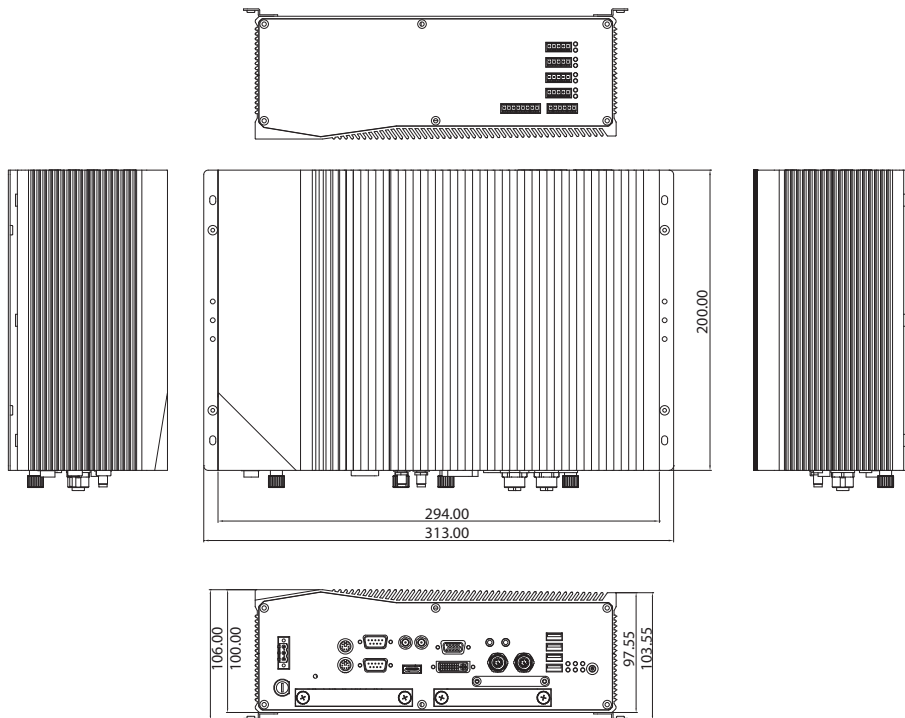
### I/O Interface-Rear

- 4 x Digital Input: 6-pin screw terminals  
Voltage level: 5V, TTL-level digital input
- 4 x Digital Output: 8-pin screw terminals  
+36VDC with 100mA relay
- 4 x NMEA interfaces  
Signal: TX/RX signals  
2KV optical isolation protection

### Device

- 2 x 2.5" SSD driver bay
- 1 x external CFast socket
- 1 x Mini-PCIe socket  
Default: support optional Wi-Fi module  
Option: support optional 3.5G module

## Dimension Drawing



### Power Requirements

- DC input range: +16V to 30VDC input
- Nominal DC input: +24VDC input with 1.5KV isolation protection
- Pin definition: Positive, Negative and Chassis Ground

### Dimensions

- 294mm (W) x 200mm (D) x 100mm (H) (11.6" x 7.9" x 3.94")

### Construction

- Aluminum chassis with fanless design

### Environment

- Operating temperature:  
Ambient with air flow: -25°C to 55°C  
(Follow Protected device type in IEC60945, E10 and DNV Standards)
- Storage temperature: -20°C to 80°C
- Relative humidity: 10% to 93% (non-condensing)

### Certifications

- IEC60945 4th
- IACS E10
- DNV 2.4

### OS Support Lists

- Windows XP 32bits and 64bits
- Windows 7 32bits and 64bits
- Windows CE 6.0

## Ordering Information

### Barebone

- **nTUF 610 (P/N: 10M00061000X2)**  
Intel® 2nd generation Core™ i7-2610UE 1.5GHz Marine Fanless Computer