

Manufacturer: **Hatteland Technology AS**
 Product: **3U Rackmount Marine Server/Computer**
 Typenumber: **HTS31470-iy-AC Axxxxxx**
 Where "y" = CPU and "x" = Configurations

Last Revised: **13 Dec 2024**
 Revision#: **24**

3U Rackmount Marine Server/Computer

Overview:

The HTS31470 3U series industrial & marine certified 19" rack computers are designed with latest 10th generation architecture. A huge variety of I/O such as NMEA 0183 ports, serial interface, USB, Gigabit Ethernet ports, PCIe slots for extensions, High end Nvidia graphics, will fulfill a wide range of industrial and maritime applications. Rugged and ready for most critical and harsh installations.

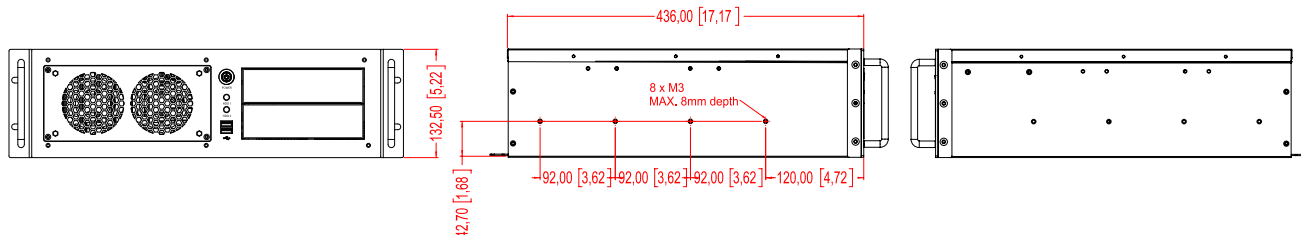
- High Performance Intel® 10 gen - i3-i5-i7 or i9 CPU
- Wide range of approved options for:
Professional Nvidia Graphics Cards, Network, COM Ports (RS-422/485/232, CAN), Digital I/O and Storage
- Fully IEC 60945/IACS E10 tested, DNVGL-CG-0339, Type approvals ongoing



FRONT VIEW

SIDE VIEW

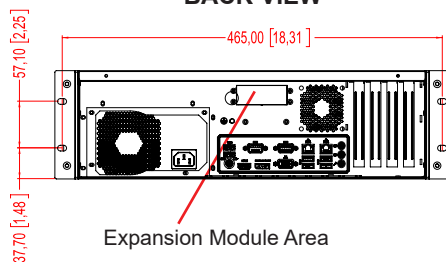
SIDE VIEW



TOP VIEW

BOTTOM VIEW

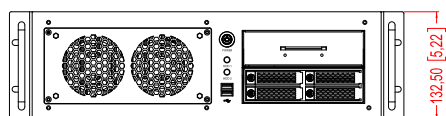
BACK VIEW



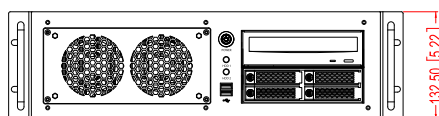
Expansion Module Area

Factory Options:

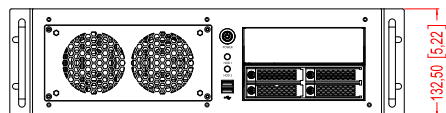
Smart Card Reader + 4-bay



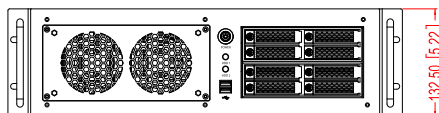
DVD-RW/CD-RW + 4-bay



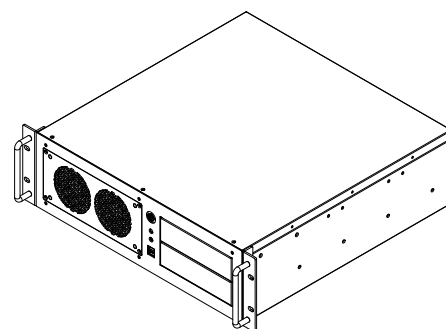
4-bay



8-bay



DIMETRIC VIEW



Dimensions might be shown with or without decimals and indicated as mm [inches]. Tolerance on drawings is +/- 1mm. For accurate measurements, check relevant DWG file.

TECHNICAL DESCRIPTION

Computer Specifications:

• Motherboard	: Intel® Q470E, Industrial long-life motherboard
• System Chipset	: Intel® Q470E
• Operating System	: See table below for options
• Processor	: See table below for options
• Memory/RAM	: See table below for options
• Storage Devices	: See table below for options
• PCIe Slots	: #1 PCIe 3.0 x16/x8/x4 #2 PCIe 3.0 x4 #3 PCIe 3.0 x8 (Shared PCIe with #1, when used #1 x8) #4 PCIe 3.0 x4
• Graphics Chipset Onboard	: Intel® UHD Graphics 630
• Graphics Card preinstalled	: See table below for options
• BIOS	: AMI UEFI
• Audio	: Realtek ALC887 HD, High Definition Audio. Line-In/ Line-Out/ Mic-In
• Ethernet Onboard	: 2 x Gb LAN
• LAN1	: Intel® I225LM with 10/100/1000/2500 Mbps
• LAN2	: Intel® I219LM with 10/100/1000 Mbps, support AMT/vPro
• 2 x USB 3.2 (Gen1)	
• 4 x USB 3.2 (Gen2), 2 x USB2.0	
• YES	
• 2 x COM (RS-232/422/485)	
• ACPI	
• 256 Segments, 0, 1, 2...255 sec/min	
• YES	
• YES	
• YES	
• YES	
• TPM 2.0, Firmware Raid	

External Connector Type:

1 x DP1.2 + 1 x VGA + 1 x HDMI2.0a
3 x 3.5mm MiniJack
1 x RJ-45
1 x RJ-45
2 x USB Type A
6 x USB Type A
1 x PS2
2 x DB9M

Power Specifications:

Power Supply:

- Power 115-230VAC 50-60Hz : 1 x 700W - Autorange 1 x Std. IEC inlet
- Power Consumption: 135.4W (typ*) - 875W (max)
- MIL-STD-1399 (SECTION 300B) Type 1 (115VAC). Section 5.3.7, Current waveform (emission) test - Oblique wave currents over 3% of basic load current:
AH03: 26.31%, AH05: 5.22%

*Power Consumption: Numbers are specified as the unit is delivered from factory. All additional installed equipment like USB, PCIe and similar loads have to be added to power consumption. Note that total extra load have to be multiplied by 1.5 to compensate for efficiency in internal power converters. Typical power consumption varies a lot with computer load. We measure with 25% of max computer load.

Available Computer Configurations:

Type	Description	Size/Specification
CPU	1 x Intel® Core™ i3-10100E 1 x Intel® Core™ i5-10500E 1 x Intel® Core™ i7-10700E 1 x Intel® Core™ i9-10900E	4-Core 3.20GHz - 3.80GHz, 6MB Cache 6-Core 3.10GHz - 4.20GHz, 12MB Cache 8-Core 2.90GHz - 4.50GHz, 16MB Cache 10-Core 2.80GHz - 4.70GHz, 20MB Cache
Memory	DDR4 DIMM 260-pin	- Uses 4 slots, available sizes are: 2x16GB (32GB), 4x16GB (64GB), 4x32GB (128GB)
Storage	2.5"/M.2 SSD SATA	- 240GB (0.9PBW), 480GB (1.2PBW), 960GB (3.4PBW), 1.92TB (7.1PBW) *contact sales for lager SSD capacity
OS Option	Microsoft® Windows® Server 2016/2019 64bit, Windows 10 IOT Enterprise 2021 LTSC. Windows Server 2022. Windows 11 2024.	

Factory Mounted Options:

- NVIDIA T400: PCIe 3.0 x16, 3x mini DP, 4 GB GDDR6
- NVIDIA T1000: PCIe 3.0 x16, LowProfile, 8 GB GDDR6
- NVIDIA RTX 4000 Ada: PCIe 4.0 x16, 4x DP 1.4a, 20 GB GDDR6 *Pending
- X710T2L / X710T2BLK: Intel® Network Adapter (10GbE), 2 x RJ45
- I350T4V2 / I350T4V2BLK: Intel® Network Adapter (1GbE), 4 x RJ45
- X710DA2 / X710DA2BLK: Intel® Fiber Network Adapter (10GbE), 2 x SFP+
- X710DA4 / X710DA4BLK: Intel® Fiber Network Adapter (10GbE), 4 x SFP+
- CP-114EL-1 ELEK KIT: 4xCOM,PCIe x1,1xDB44F to 4xDB9M isolated, RS-232/422/485)
- SX-118A: Parallel Port LPT, DB25F, Bi-Dir. ECP/EPP, PCIe x1 card
- 1 x PCA100297-1: Digital IO Isolated, 4 IN + 4 OUT
- or 1 x PCA100298-1: LAN 10/100Mbps, 2 ports (RJ45) module
- or 1 x PCA100309-1: Dual Isolated RS-232, 2xDB9 module
- or 1 x HTA2020002-AD1033: CAN isolated, 2 channel module
- or 1 x HTA2020002-SLCAN: Socket CAN isolated, 2 channel module
- or 1 x PCA200828-1: COM RS-422/485 isolated NMEA 4 channel, 5-pin T. Block 3.81

Front configurations 2 x 5 1/4" trays - Available options for each tray listed below:

- None, i.e. covered with blinds
- CST-US777AK9563, Smart card reader
- 90DD01Y0-B20010, DVD-RW/CD-RW
- MB994SK-1B, 4x2.5" SATA drive bay

Available Accessories:

*Where xxx=Size of device. yy=GB,TB. z=S (SSD), z=H (HDD) - Choose Storage Device from table above.

- HT 00225 OPT-A1: 2 x 26" ball bearing sliding rail & mounting kit for 19" Rack
- HT 00224 OPT-A1: 2 x 20" ball bearing sliding rail & mounting kit for 19" Rack
- JH C01MF A-A: 1 x USB Cable 1m, Type A-Chassis mount receptacle
- VSDDPVA340 / HT DPM2VGA-A1: 1 x DP to VGA adapter
- RC3473 / HT DPM2DVI-A1: 1 x DP to DVI adapter
- HT RET STD-A3: 1 x Cable/Retainer Kit
- HT 00300 MSOS: OS options -> www.hattelandtechnology.com/os
- HT 00262 OPT-A1: 4 x RS-422/RS-485 isolated, USB ext. module
- HT 00263 OPT-A1: 4 x RS-232 COM non-isolated, USB ext. module
- HT PCI KIT-A1: L-shape bracket kit for PCIe card support - top
- HT PCI KIT-A2: L-shape bracket kit for PCIe card support - back
- HT 00264 OPT-A1: 1 x CAN isolated, 2 channel, USB ext. module
- HT 00264 OPT-A2: 1 x SLCAN isolated, 2 channel, USB ext. module
- HT 00274 OPT-A1: 2 x LAN 10/100Mbps, RJ45, USB ext. module
- HT 00273 OPT-A1: 4 x Digital IN/OUT isolated, USB ext. module
- HD 000TR SX1-A1: 1 x Removable Tray 2.5" Empty
- HD 000TR SX2-A3: 1 x Removable Tray 2.5" w/4xM3x4mm Phillips Countersunk Screws
- HD xxxxy SX1-z1: 1 x Removable Tray 2.5" w/Storage Device*
- QSP-MINIDP/DPV3: DP adapter for Nvidia Graphics Card
- ZA-A390: Mini DP to DVI(female)
- ZA-A391: Mini DP to HDMI(female)

MECHANICAL DESCRIPTION

Environmental Considerations:

• Operating	: Temperature -15°C to +55°C
• Storage	: Temperature -20°C to +70°C
• Humidity	: Up to 95% (Operating / Storage)
• Shock - Vibration	: 5g/11ms - 0.7g (IEC 60945 / IACS E10)
• Air Pressure Maximum Altitude	: Operating: 4000m - Storage: 12912m
• Air Pressure Maximum Altitude (Bonded)	: Operating: 3000m - Storage: 3000m
• Compass Safe Distance	: Standard: 285cm - Steering: 180cm

Lifetime Considerations:

Even though the test conditions for bridge units provide for a maximum operating temperature of 55°C, continuous operation of all electronic components should, if possible, take place at ambient temperatures of only 25°C. This is a necessary prerequisite for long life and low service costs.

Physical Specifications:

- W:465.70 [18.31"] x H:132.50 [5.22"] x D:436.00 [17.17"] mm [inch]
- Weight: Approx. 13kg / 28lbs
- Black (EP0301-4040627) Heavy-duty steel 3U Rackmount chassis with handles
- 2 x Internal Cooling fans in front (80x80mm)
- Easy Removable Front Air Filter (spare part accessory available)
- Power Button, Power LED, Activity LEDs SSD
- Product Carton Size and Weight:
- L:560.00 [22.05"] x W:240.00 [9.45"] x H:480.00 [18.90"] mm [inch]
- Approx. 15.0 kg / 33.0 lbs

APPROVALS & CERTIFICATES

Tested / type approved by the following classification societies:

IEC 60945 4th (EN 60945:2002)
CCS - China Classification Society
KR - Korean Register of Shipping

IACS E10
BV - Bureau Veritas
LRS - Lloyd's Register of Shipping

ClassNK - Nippon Kaiji Kyokai
EU RO MR - Mutual Recognition by DNV

ABS - American Bureau of Shipping
MIL-STD-1399, Section 300B