

Manufacturer: **Hatteland Technology AS**
 Product: **Industrial Marine Computer (Standard Models)**
 Type: **HT20370-ww-xx yzzzzzz**
 where ww=CPU type (i3,i5,i7), xx=Power Input (AC, DC),
 y=manufacturing site, zz=configuration

Last Revised: **23 Sep 2022**
 Revision#: **15**

Marine Computer (Standard Models)

Features:

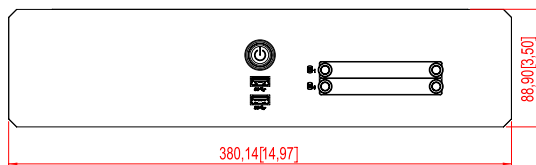
The HT20370 model is the successor to the best in class and highly successful ENIX-2087 computer. The new model incorporates latest processor technologies and enhanced feature sets, thus providing greater versatility for high-end maritime system applications.

The HT20370 models are high-end platforms with an enhanced chassis that includes external disc bays at the front. The i3, i5 or i7 processor options ensure state of the art computing performance is delivered; while the extensive feature options allows for the HT20370 to be built up to a quasi-Server capability.

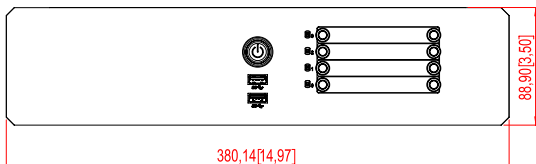
By default equipped with 2 x front side bays for 2 x SSDs with the option of 4 x removable front side disc bays, onboard raid, M.2, 4 x PCI-e slots, memory up to 64GB RAM, 6 x USB, 4 x LAN ports, 3 x Signal outputs (2 x DP+ and 1 x USB-C) and more, making the HT20370 the most versatile rugged PC solution for the professional maritime segment.



FRONT VIEW (2-Bay model)

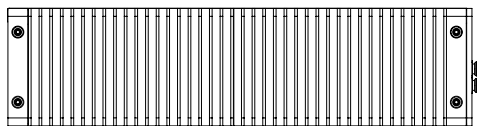


FRONT VIEW (4-Bay model)

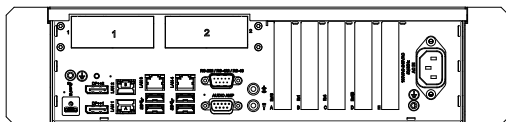


For 4-bay model: Contact your sales representative at Hatteland Technology for details.

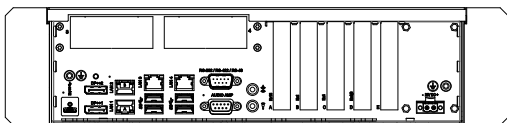
SIDE VIEW



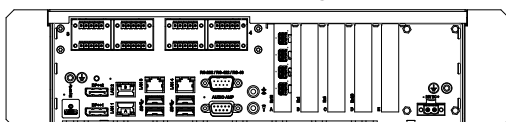
BACK VIEW (AC)



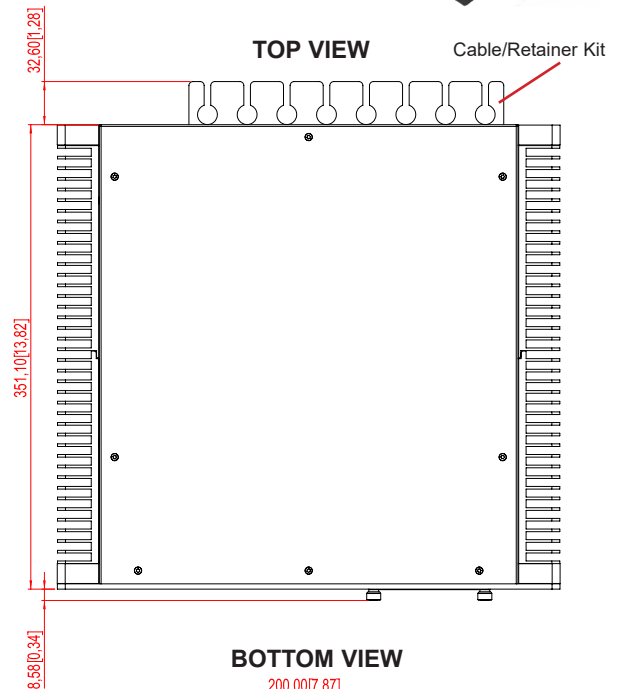
BACK VIEW (DC)



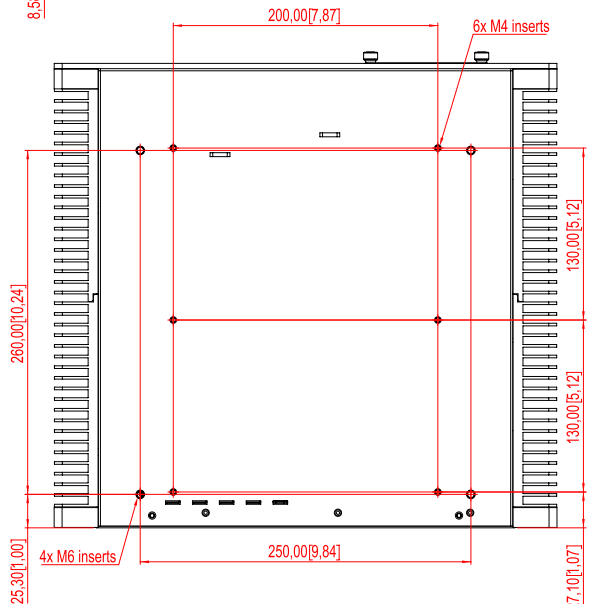
BACK VIEW w/Factory Options



TOP VIEW



BOTTOM 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:

• Installed Operating System	: Windows® 10 IoT Enterprise 2019 LTSC (64bit)	
• Supported Storage	: 2 or 4 x SATA 3.0 (6GB/s) in Removable SSD tray in front (2.5" size). See table below for options	
• Processor	: 1 x Intel® Core™ i5-9500TE, 6-Core 2.20GHz - 3.60GHz, 9MB Cache - See table below for options	
• Memory/RAM	: 1 x 8GB (single channel) installed - Max 64GB possible - Dual Channel available - See table below for options	
• Graphics	: Intel® UHD 630	1 x USB-C + 2 x DisplayPort 1.2
• Graphics Capabilities	: DirectX Support 12.0, Shader Model 6.4, OpenGL 4.5, Vulkan 1.1.97	
• Max Graphics Resolution	: Max 3840 x 2160 (4K UHD) @ 60Hz for DP (DisplayPort)	
• System Chipset	: Intel® Q370	
• BIOS	: UEFI, ACPI support	
• PCIe Slots	: 1 x PCIe 3.0 x16 (reserved for additional Graphics Card, See Factory Mounted options below)	
	: 1 x PCIe 3.0 x4 (x8 socket) + 1 x PCIe 3.0 x4 + 1 x PCIe 3.0 x1	
• M.2 Storage (PCIe options)	: 1 x M.2 2280 M-key (one SATA + NVMe4)	
	: 1 x M.2 2230 E-Key (PCIe + USB for WiFi)	
• Ethernet #1-2	: 2 x LAN 10/100/1000Mbps, Intel® i211AT, Support for Intel® Teaming	2 x RJ-45 Teaming
• Ethernet #3-4	: 2 x LAN 10/100/1000Mbps, Realtek RTL8111H	2 x RJ-45
• USB Ports #1-2	: 2 x USB 3.1 (<3m) ports in front	2 x USB Type A
• USB Ports #3-6	: 4 x USB 3.1 (<3m) ports in rear	4 x USB Type A
• USB Ports #7	: 1 x USB-C (DisplayPort - Power Distribution enabled)	1 x USB-C
• Serial Port #1	: 1 x RS-232/RS-422/RS-485 un-isolated Baud Rate: Max 115.2Kbps	1 x DB9M
• Audio Onboard	: Realtek HD Audio supports 2.0 channel, Mic. in, Line out	2 x 3.5mm Audio Jack
• Audio Amplified	: 2W, Stereo/Mono supported	1 x DB9F
• Power Manager	: ACPI	
• Watchdog Timer	: Reset: 1 sec.~255 min. and 1 sec. or 1 min./step	
• H/W Status Monitor	: Temperatures, voltages & cooling fan status. Auto throttling control if CPU overheats	
• Other Features	: LAN Wakeup, USB Boot, Trusted Platform Module 2.0 (TPM2.0), Firmware Raid, Intel® Management Engine. True power on after power fail.	

Power Supply:	: Power Consumption - Operating: 40W Typical - 240W Max
• Single DC: 24VDC	
• Single AC: 100-240V AC - 50/60Hz	

External Connector Type:
1 x 2-pin Terminal Block 5.08
STD IEC

Available Computer Configurations:

Type	Description	Size/Specification
CPU	1 x Intel® Core™ i3-9100TE 1 x Intel® Core™ i5-9500TE 1 x Intel® Core™ i7-9700TE	4-Core 2.20GHz - 3.20GHz, 6MB Cache 6-Core 2.20GHz - 3.60GHz, 9MB Cache 8-Core 1.80GHz - 3.80GHz, 12MB Cache
Memory	DDR4 - SO-DIMM 260-pin	- Uses 2 slots, Single or Dual Channel (where applicable), available sizes are: Single Channel: 1x8GB (2400MHz) Dual Channel: 2x8GB (2400MHz), 2x16GB (2400MHz), 2x32GB (2666MHz)
Storage	2.5" SSD SATA	- 240GB (0.9PBW), 480GB (1.2PBW), 960GB (3.4PBW), 1.9TB (7.1PBW)
OS Option	Microsoft® Windows® Server 2016/2019 64bit, Windows® 10 IoT Enterprise 2019 LTSC (64bit). Linux: Kernel 4.1x or later version	

Factory Mounted Options:

• PNY NVIDIA Quadro P620: PCIe 3.0 x16, 4 x mDP 1.4, 2GB GDDR5	* For all Factory Mounted Options, review User Manual for possible HW combinations.
• PNY NVIDIA T600: PCIe 3.0 x16, 4 x mDP 1.4, 4GB GDDR6	• ZIA0001310-SLCAN: Socket CAN isolated, 2 channel module*
• CP-114EL-I ELEK KIT: 4xCOM,PCIe x1,1xDB44F to 4xDB9M isolated, RS-232/422/485)	• SX-118A: 1 x Parallel Port LPT, DB25F, Bi-Dir. ECP/EPP, PCIe x1 card
• X710DA2 / X710DA2BLK: Intel® Fiber Network Adapter (10GbE), 2 x SFP+	• PCA100298-1: LAN 10/100Mbps, 2 ports (RJ45) module*
• X710T2L / X710T2LBLK: Intel® Network Adapter (10GbE), 2 x RJ45	• PCA100297-1: Digital IO Isolated, 4 IN + 4 OUT module*
• I350T4V2 / I350T4V2BLK: Intel® Network Adapter (1GbE), 4 x RJ45	• PCA200828-1: COM RS-422/485 isolated NMEA 4 ch., 5-pin T. Block 3.81*
• ZIA0001310-B: CAN isolated, 2 channel module*	• PCA100309-1: Dual Isolated RS-232, 2xDB9 module*
	• VSDxxxxxx-x: Additional USB ports. Pending.

Available Accessories:

• HT RMK STD-E1: 2U Rack Mount Kit 19" - HT20xxx	• HT 00262 OPT-A1: 4 x RS-422/RS-485 isolated, USB ext. module
• HT 00225 OPT-A1: 2 x 26" ball bearing sliding rail & mount kit for 19" Rack	• HT 00263 OPT-A1: 4 x RS-232 COM non-isolated, USB ext. module
• HT 00224 OPT-A1: 2 x 20" ball bearing sliding rail & mount kit for 19" Rack	• HT 00264 OPT-A1: 1 x CAN isolated, 2 channel, USB ext. module
• HT MBK STD-E1: Desktop Mounting Kit HT20xxx - Plate Shaped	• HT 00264 OPT-A2: 1 x CAN isolated, 2 channel, socketCAN USB ext. module
• JH C01MF A-A: 1 x USB Cable 1m, Type A-Chassis mount receptacle	• HT 00274 OPT-A1: 2 x LAN 10/100Mbps, RJ45, USB ext. module
• HT 00300 MSOS: OS options -> http://www.hattelandtechnology.com/os	• HD 000TR SX1-A1: 1 x Removable Tray 2.5" Empty
• HT 00273 OPT-A1: 4 x Digital IN/OUT isolated, USB ext. module	• HD xxxxy SX1-z1: 1 x Removable Tray 2.5" w/Storage Device*
• VSDDPVGA340 / HT DPM2VGA-A1: 1 x DP to VGA adapter	• HD 000TR SX2-A3: 1 x Removable Tray 2.5" w/4xM3x4mm Phillips Countersunk Screws
• RC3473 / HT DPM2DVI-DF-A1: 1 x DP to DVI adapter	• HDMI adapter or P620/T600 Graphics Card: QSP-MINIDP/HDMIV2
• HT MBK STD-F1: Mounting Bracket Kit HT20xxx - L-Shaped	• VGA adapter or P620/T600 Graphics Card: QSP-MINIDP/VGA
• DVI-D adapter for P620/T600 Graphics Card: QSP-MINIDP/DVIV2	• HT RET STD-A3: 1 x Cable Retainer/Relief Kit (included w/delivery)
• DP adapter or P620/T600 Graphics Card: QSP-MINIDP/DPV3	

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

MECHANICAL DESCRIPTION

Physical Specifications:

Product Dimensions and Weight:
• W:380.14 [14.97"] x H:88.90 [3.50"] x D:351.10 [13.82"] mm [inch]
• Weight: Approx 7.5kg / 16.5lbs
• 2U chassis, Aluminum Alloy
• 2 x Removable SSD tray in front (2.5" size)
• Power/Reset/Power LED Combined Function
Product Carton Size and Weight:
• L:580.00 [22.83"] x W:160.00 [6.30"] x H:470.00 [18.50"] mm [inch]
• Weight: Approx. 10.0 kg / 22.0 lbs

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
• Compass Safe Distance	: Standard: 150cm - Steering: 130cm

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.

APPROVALS & CERTIFICATES

IEC 60945 4th (EN 60945:2002)	These products have been tested / type approved by the following classification societies: (*= Pending)	EU RO MR - Mutual Recognition by DNV
ABS - American Bureau of Shipping*	IACS E10	BV - Bureau Veritas*
	EN61162	ClassNK - Nippon Kaiji Kyokai
	CCS - China Classification Society	