

Manufacturer: **Hatteland Technology AS**
 Product: **Compact Computer**

Type: **HT 221Hx STC-yzz-wzzz**
 where x=CPU type, y=OS, w=Power Input, z=configuration

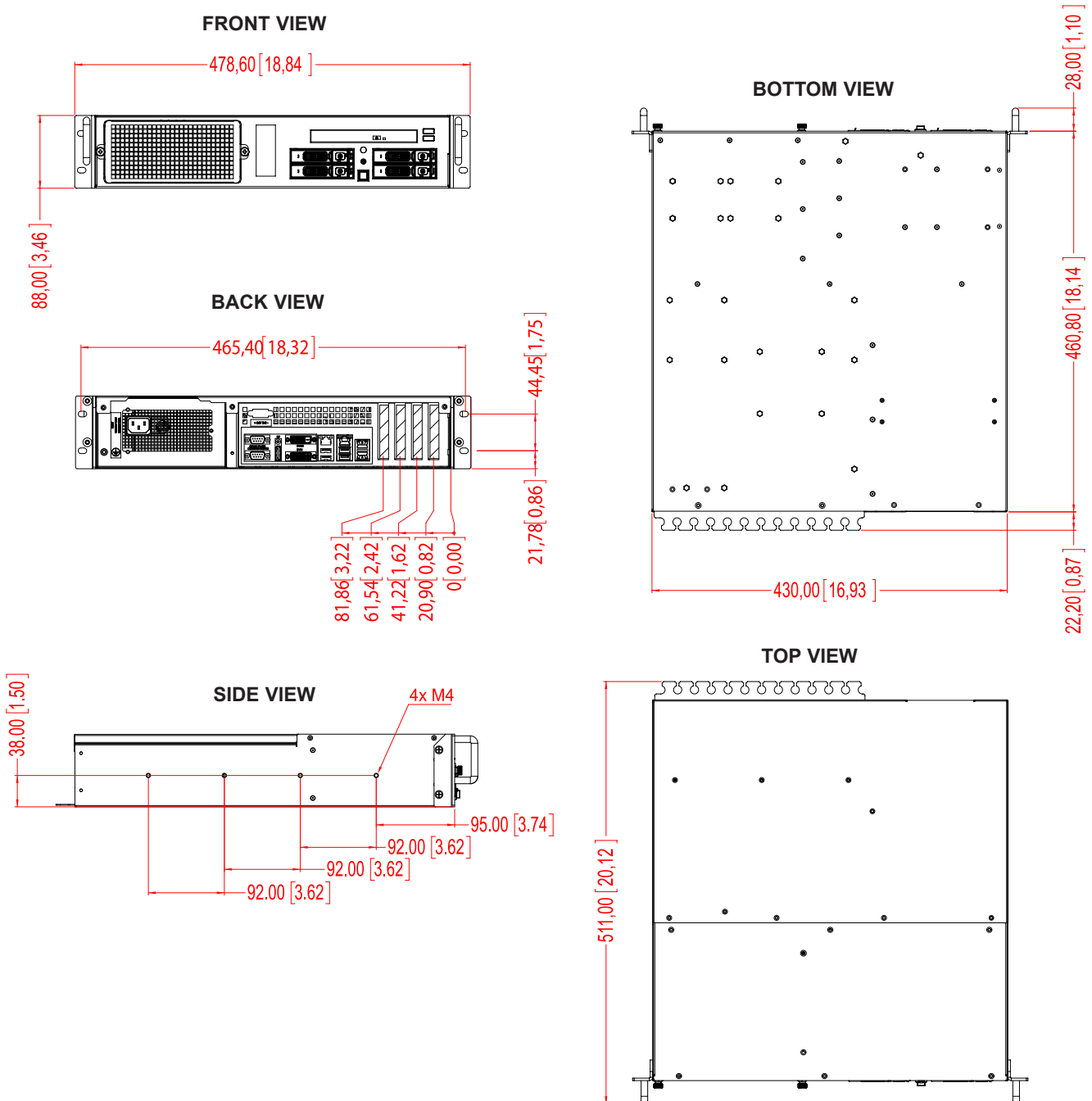
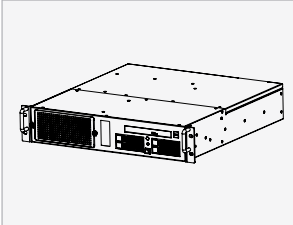
Last Revised: **02 Oct 2019**
 Revision#: **22**

Rackmount Computer

Features:

The HT 221 2U 19" rack computer is a high performance type approved computer solution for demanding maritime environments. Available with a suite of latest generation processors, from an entry-level i3 as well as i5 and i7 variants, the computer's capability is scalable to suit the system integrator requirements and any cost considerations.

The extensive feature sets of this platform include 4 removable front side disc bays, onboard raid, memory up to 16GB RAM, RS232, 422, 485 support, USB, multiple LAN ports, DVI-I and Display ports and more, making the HT 221 the ideal type approved slim line Rack PC solution.



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: (Standard model)

<ul style="list-style-type: none"> Operating System Support : None, customized image or see table below. Storage Devices : 4 x Removeable SSD/HDD tray in front, see table below Media Drive : 1 x DVD-RW/CD-RW Dual Recorder/Player Processor : 1 x Intel® Core™ i5-4570S Quad Core Processor 2.9GHz, FSB:1600MHz, 6MB Cache or see table below. Memory/RAM : Max 16GB possible (Dual Channel DDR3 1600 204pin SO-DIMM), see table below Graphics : Intel HD Graphics 4600 integrated Graphics Capabilities : Direct3D 11.1 w/Shader Model 5.0, OpenCL 1.2, OpenGL 4.2/3.3 (Linux). Max memory available for use: 1.7GB Max Graphics Resolution : Max 1920 x 1200 @ 60Hz for DVI-I/VGA/DVI-D. Max 3840 x 2160 (4K UHD) @ 60Hz for DP (DisplayPort) System Chipset : Intel® Q87 BIOS : AMI BIOS PCI Slots : 1 x PCI v2.3, 32-bit/33MHz, 3V and 5V Interface, Half/Low Profile & Half Length PCIe Slots : 1 x PCI Express x16 + 1 x PCI Express x4 + 1 x PCI Express x1, all Half/Low Profile & Half Length Ethernet #1 : 2 x 10/100/1000Mbps, Intel® I217/I210 Gigabit LAN supports Intel® Teaming Ethernet #2 : 2 x 10/100/1000Mbps, Realtek 8111E Gigabit LAN Serial Port #1 : 1 x RS-232 Baud Rate: Max ~256Kbps Serial Port #2 : 1 x RS-422/RS-485 Baud Rate: Max ~256Kbps USB Ports #1 : 2 x USB2.0 (<5m) ports in front USB Ports #2 : 1 x USB2.0 (<5m) + 1 x USB1.1 (<10m) / USB2.0 (<5m) ports in rear USB Ports #3 : 2 x USB3.0 (<3m) ports in rear PC-Speaker : Yes, onboard Audio : Realtek ALC892-CG HD Audio supports 5.1 channel (Note: for sound outputs, hardware option is required, see Factory Options) 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, Wakeup, Intel® Management Engine. True power on after power fail. 	External Connector Type: 1 x DVI-I + 1 x DVI-D + 1 x DP 2 x RJ-45 2 x RJ-45 1 x DB9M 1 x DB9M 2 x USB Type A 2 x USB Type A 2 x USB Type A
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Power Supply Options:

<ul style="list-style-type: none"> 115&230VAC - 50/60Hz 	: Power Consumption - Operating: 70W typical : Model HT 221Hx STC-xxx-Axxx (330W)	External Connector Type: STD IEC
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Available Computer Configurations:

Type	Description	Size/Specification
CPU	1 x Intel® Core™ i5-4570S or 1 x Intel® Core™ i7-4770S or 1 x Intel® Core™ i3-4330	- Quad Core 2.9GHz, Front Side Bus: 1600MHz, 6MB Cache - Quad Core 3.1GHz, Front Side Bus: 1600MHz, 8MB Cache - Dual Core 3.5GHz, Front Side Bus: 1600Mhz, 4MB Cache
Memory	DDR3 SO-DIMM 204-pin	- Uses 2 slots, available sizes are 2x2GB, 2x4GB, 2x8GB
Storage	2.5" SSD SATA, Multi Level (MLC)	- 240GB (599TBW),480GB (945TBW),960GB (1750TBW)
Storage	2.5" HDD SATA	- 1TB
OS	Embedded Enterprise (WEE): Microsoft® Windows® 7 Professional SP1 32/64bit, Microsoft® Windows® 7 Ultimate SP1 32/64bit, Microsoft® Windows® Embedded 8.1 Industry Pro MultiLang 32/64bit, Microsoft® Windows® Server 2008R2 64bit, Microsoft® Windows® Server 2012 64bit, Microsoft® Windows® Server 2012R2 64bit, Windows® 10 IoT Enterprise 2016 LTSB (64bit). Linux: openSUSE® 11.4, Fedora™ 15, Ubuntu® 10.04 LTS, Ubuntu® 12.04 LTS.	
Notes	Review "SSD Selection Guide" in manual. 32bit or 64bit versions available where applicable.	

Factory Mounted Options:

*If 1600x1200 resolution is used, DVI signals must be set to CVT-RB mode manually. Max Resolution: 2048x1536

<ul style="list-style-type: none"> M9140-E512LAF: Matrox®9140 LP Graphics Card,PCIe x16,4xDVI-I,512MB* CP114EL-I: 4 Ports COM Card, PCIe x1, 1xDB44F to 4xDB9M isolated, RS-232/422/485) i350F2BLK: Intel® Ethernet Server Adapter I350-F2, FiberLAN (2 x LC Fiber Optic) ZIA0001310-B = CAN isolated, 2 channel* PCA100297-1 = Digital IO Isolated, 4 IN + 4 OUT* PCA100293-1: COM RS-422/485 isolated NMEA 4 channel* PCA100293-2: COM RS-422/485 isolated NMEA 4 channel External 	<ul style="list-style-type: none"> PCA100298-1: LAN 10/100Mbps, 2 ports (RJ45)* VSD100944-1: 2W Amp.Audio Mono/Stereo(1xDB9F+2x3.5mm) VSD100920-1: 2 x PS/2 5pin mini (Keyboard + Mouse inputs) VSD100922-1: Additional USB ports: 2 x USB2.0 82976: Additional USB ports: 2 x USB3.0 SX-118A: 1xParallel Port LPT, DB25F, Bi-Dir. ECP/EPP, PCIe x1 card Variations of Storage, RAM Memory and Operating System
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Available Accessories:

*Only 1 module can be factory installed. All listed options; review User Manual for possible HW combinations.

<ul style="list-style-type: none"> 1282219-KD: 2 x 20" ball bearing sliding rail and mount kit 19" Rack 1282220-KD: 2 x 26" ball bearing sliding rail and mount kit 19" Rack JH C01MF A-A: 1 x USB Cable 1m, Type A-Chassis mount receptacle HT 00300 MSOS: OS options -> http://www.hatteland-display.com/os HT 00273 OPT-A1: 4 x Digital IN/OUT isolated, USB ext. module HT 00262 OPT-A1: 4 x RS-422/RS-485 isolated, USB ext. module 	<ul style="list-style-type: none"> HT 00263 OPT-A1: 4 x RS-232 COM non-isolated, USB ext. module HT 00264 OPT-A1: 1 x CAN isolated, 2 channel, USB ext. module HT 00274 OPT-A1: 2 x LAN 10/100Mbps, RJ45, USB ext. module H732S10Q20-0005100: 1 x Replacement Front Air Filter HD 000TR SX1-A1: 1 x Removeable Front Tray 2.5" Empty HD xxxxy SX1-z1: 1 x Removeable Front Tray 2.5" w/Storage Device*
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*Where xxx=Size of device. yy=GB,TB. z=S (SSD), z=H (HDD) - Choose Storage Device from table above.

MECHANICAL DESCRIPTION

Physical Specifications:

<ul style="list-style-type: none"> W:430.00 [16.93"] x H:88.00 [3.46"] x D:460.80 [18.14"] mm [inch] Weight: 10 kg (approx) 4 x Removeable SSD/HDD tray in front (2.5" size) Power button, power led, reset button and SSD/HDD LED Black (EP0301-4040627) Heavy-duty steel 2U Rackmount chassis with handles Easy Removeable Front Air Filter (spare part accessory available) Supports rear cable strain relief bracket kit (included) with grounding thread Supports rear PCI card support holder, fixed to chassis 2 x Internal Cooling fans in front (80x80mm)

Environmental Considerations:

<ul style="list-style-type: none"> Operating : Temperature -15 to +55°C - Humidity up to 95% Storage : Temperature -20 to +60°C - Humidity up to 95%
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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.

Compass Safe Distance: Standard: 200cm - Steering: 130cm

APPROVALS & CERTIFICATES

IEC 60945 4th (EN 60945:2002)	These products have been tested / type approved by the following classification societies:	EU RO MR - Mutual Recognition (covers DNV, BV, ABS, GL, NK and LRS certificates)
IACS I10	EN61162	