

# **MILITARY COMPUTER SOURCE-BOOK®**

**EDITION 3 · SPRING · 2015**



## ***WHAT'S INSIDE?***

- Custom Systems and Services
- Case Studies
- Transit Case and Rack Integration Services and Systems
- Military Computer Systems
- Commercial Computer Systems
- Portable Computer Systems
- Rugged LCDs and Keyboards
- Raid Disk Storage

***CALL TODAY!***

800-787-4913

***VISIT OUR  
WEBSITE***

[chassis-plans.com/mc](http://chassis-plans.com/mc)

Complimentary 2015 Calendar: [chassis-plans.com/mccal](http://chassis-plans.com/mccal)

To Receive Future Source-Books Visit: [chassis-plans.com/mcml](http://chassis-plans.com/mcml)

## HOW TO SHOP

### ORDER BY PHONE

800.787.4913

### FAX YOUR ORDER

858.571.6146

### EMAIL YOUR ORDER

sales@chassisplans.com

### MAIL YOUR ORDER

Chassis Plans, LLC.  
10123 Carroll Canyon Rd.  
San Diego, CA 92131

### TECHNICAL SUPPORT HOTLINE

858.571.4330

### KEY CODE

Please have your Key Code available when ordering or when calling in at any time. The Key Code is located on the back cover.

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## COMPLIMENTARY 2015 CALENDAR

[chassis-plans.com/mccal](http://chassis-plans.com/mccal)



## GENERAL ORDERING INFORMATION

### PURCHASE ORDERS

Please include your Tax I.D. number, billing address, contact, and phone number, shipping address, our model number, model name and price, and shipping instructions. Please reference any quotation you may have received. New customers requesting terms must provide credit information.

### ORDER CANCELLATIONS

Only written cancellations are considered valid. Some cancellation charges may apply. Contact us at 800.787.4913 prior to cancellation.

### PRICES

Prices and quotations are valid for 30 days. Prices are F.O.B. origination. Shipping charges and insurance are additional unless otherwise noted. Prices and product specifications are subject to change without notice and are subject to discontinuance.

### SHIPPING

Standard shipping within the continental United States is via Ground. If you desire another method of shipping, we are happy to oblige. We can prepay and add to your invoice or we can use your shipping number.

### PAYMENT

All invoices are due Net 30 days from the date of shipment with approved credit. Please call 800.787.4913 to establish an account prior to placing your order. We also accept all major credit cards. Orders must be shipped to the credit card billing address unless another address is on file with the credit card company.

### TWO YEAR LIMITED WARRANTY

All integrated computer systems come standard with a two-year limited warranty against manufacturing and material defects. All LCDs, keyboards and other accessory products are protected by a two-year limited warranty. This warranty policy covers replacement or repair of the original product at Chassis Plans' option and is made solely to the purchaser. It also assumes that the product has not been modified or subjected to unusual physical or electrical stress. This warranty is void for any product damaged due to improper packaging when returned for RMA purposes. See [chassis-plans.com](http://chassis-plans.com) for full warranty information.

### HOURS OF OPERATION

Monday - Friday, 8:00am to 5:00pm, Pacific Time.

# CUSTOM COMPUTER SYSTEM DESIGN AND MANUFACTURE

Not all applications can be served by an off-the-shelf solution. Chassis Plans' design philosophy is to provide you ruggedly engineered, cost-effective, and highly customized military-grade computers and LCD displays. Seeking a turnkey solution for your custom military rackmount system? Chassis Plans efficiently collaborates with clients to design the highest quality computing systems and LCDs. Chassis Plans' engineers have provided custom solutions to a wide variety of military and defense customers since 1985. With an extensive database of off-the-shelf designs to draw upon, we'll be able to quickly create you a custom system that exactly meets your application and environmental requirements.

## HARSH ENVIRONMENTS

As intended for the rigors of military deployment, these systems are designed to meet or exceed the requirements of MIL-S-901D and MIL-STD-810G as required by the application. Other environmental requirements can be accommodated on request.

### ALTITUDE

- MIL-STD-810, Method 500.5

### HIGH TEMPERATURE

- MIL-STD-810, Method 501.5

### LOW TEMPERATURE

- MIL-STD-810, Method 502.5

### HUMIDITY

- MIL-STD-810, Method 507.5

### TRANSPORT VIBRATION

- MIL-STD-810, Method 514.6

### BENCH HANDLING SHOCK

- MIL-STD-810, Method 516.6



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## ***CUSTOM SYSTEM DEFINITION PROCESS***

It starts with our Sales Engineers. Our sales professionals are your first contact and will work closely with you to design a system that seamlessly meets your application and environmental requirements. Our Sales Engineers work with a dedicated Field Application Engineer (FAE), as well as the Engineering Department, to structure the basic design concept. The assigned engineer will create a system drawing showing size and component layout, system features, cooling management, shock and vibration management, etc. This concept will be modified based on client feedback, until you are 100% satisfied your design requirements are met.

## ***MODIFIED COTS OR FROM SCRATCH?***

Chassis Plans has a large selection of standard products that can serve as the basis for your specific design. By utilizing off-the-shelf hardware, coupled with application-specific modifications, a client can realize significant cost savings and quicker deployment time. Modifications can include something as simple as custom paint and/or logos or front panel modifications for product identification. Rear panel modifications are available to accommodate specific I/O cards, connectors, or a doghouse for an all-circular mil connector interface. Virtually any component in a standard product is eligible for modification.

Sometimes, an application mandates a custom solution. Chassis Plans' team of engineers can help you to define these custom requirement and bring the design to fruition. The Chassis Plans team has been responsible for more custom rugged computer systems and enclosures than anybody else in the field.

## ***ENGINEERING DEPARTMENT & TOOLS***

Tools are only as good as the craftsmen using them, and Chassis Plans offers you the best rackmount computer engineering staff in the business. This engineering team offers a wide variety of skills and experience in military computer and LCD design. These engineers have extensive tenure in the LCD and military computer markets and can ensure your design exceeds your expectations.

Chassis Plans is certified to ISO 9001:2008 standards, indicating that our engineering documentation and management standards meet the rigorous industry requirements of the ISO Certifying body. Full revision control and traceability for all engineered components and manufactured systems assures viable long-term support.





# CASE STUDIES

**PRODUCT:** RUGGEDIZED 4U HIGHLY CUSTOMIZED COMPUTING PLATFORM

**MARKET:** MILITARY - ARMY / MARINE CORPS

**SEGMENT:** C4ISR

Starting with its standard, ruggedized, M4U-20 4U rackmount computer, Chassis Plans modified the system to accept a custom PCI Express backplane with two PCIe system host boards (SHBs) to create an ultra-compact client/server configuration running Windows XP and UNIX. The standard design was enhanced to improve cooling and air filtration for deployment to harsh desert environments, and custom card retention was added for improved protection against shock and vibration for the heavy SHBs. This unit, along with a ruggedized display, is currently integrated into a transit case for two-person lift portability. These units are currently deployed by the United States Army and Marine Corps to all corners of the globe.



**PRODUCT:** MODIFIED COTS 3U TELEMETRY SYSTEM

**MARKET:** MILITARY - WEAPONS DEVELOPMENT

**SEGMENT:** TELEMETRY AND DATA ACQUISITION

Chassis Plans often functions as a “behind the scenes” OEM systems manufacturer. For this project the customer had a requirement for a new product for a military telemetry application. Chassis Plans modified a standard computer to provide a custom 3U rackmount system that incorporates a 5.7” touch screen LCD, as well as a replaceable application specific control and indicator panel. The chassis was extended to add a dog house to the rear for custom input and output interfaces. The customer tailors the systems for their customers by adding their proprietary plug-in cards and software.



**PRODUCT:** CUSTOM AIRCRAFT MOUNTED CAMERA CONTROLLER

**MARKET:** MILITARY - REMOTE SURVEILLANCE

**SEGMENT:** UAV (UNMANNED AERIAL VEHICLE) SUPPORT

The client required a computer system to mount into a Lear aircraft for use as an ISR camera controller. This project had strict design requirements relating to SWaP (Size, Weight, and Power) as well as form-factor, vibration and crash worthiness. The unit had compact form factor dimensions of 13.75” x 12” x 6.5”, weighed 25lbs, and was designed to meet the rugged requirements of RTCA/DO-160D, Section 8, for airborne equipment. All input and output connections utilized MIL-SPEC locking connectors for positive cable connection while in flight. The system was integrated using rugged, low-power components.



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& KEYBOARDS

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**PRODUCT: MODIFIED COTS 4U PERSISTENT SURVEILLANCE RADAR CONTROLLER**

**MARKET: MILITARY - ALL BRANCHES**

**SEGMENT: SURVEILLANCE / RADAR**

This client required a custom 4U computer that would provide three PCIe System Host Boards for their processor-intensive radar-based persistent surveillance system. Rack space was at a premium, and 1U enclosures would not accept their plug-in cards. Using a standard mil-grade enclosure as a baseline, Chassis Plans fit three high-performance computing engines into a single 4U chassis. This military-grade design exactly fit their requirements for world wide deployment into harsh environments. Included in the system was custom card retention to ensure problem-free deployment, accommodating their proprietary hardware, and painted their color with their logo silk screened on the door.



**PRODUCT: CUSTOM TETHERED ULTRA-RUGGED LCD FOR HUMVEE INSTALLATION**

**MARKET: MILITARY - ARMY / MARINES**

**SEGMENT: MOBILE MOUNTED WAR FIGHTER PROTECTION**

Our client had developed a 360° camera and motion detection system to detect sniper threats to mounted troops in Humvees. They required an ultra-rugged daylight readable display for remote viewing and control of camera and sensor data. Chassis Plans developed a sealed display system milled from two solid aluminum billets and equipped with appropriate mounting hardware, allowing the display to be attached to a seat back as well as carried outside of the vehicle. Daylight readability was achieved by incorporating a high bright display with a bonded 3mm (chemically strengthened) safety glass overlay that incorporated a circular polarizer and other proprietary display enhancements. A touch screen was provided for system control.



**PRODUCT: CUSTOM SHIPBOARD INTELLIGENT ANTENNA**

**MARKET: MILITARY - NAVY**

**SEGMENT: COMMUNICATIONS**

This custom enclosure system was developed for an external shipboard application (mounted on the mast) for wireless high-bandwidth point-to-point communications between ships. The enclosure was designed to meet Navy shipboard environmental requirement for MIL-S-901D, Grade A, as well as extremes of MIL-STD-810G for salt exposure, temperature, moisture, wind loads and icing. The custom housing was manufactured from cast aluminum and then milled into its final form. The radome was fabricated from fiberglass-impregnated Teflon. A PC104 computer stack, power supply and control circuitry were included inside. Extended temperature (-40°C to +80°C Operating), conformal coated components were used throughout the system.



# TRANSIT CASE AND RACK INTEGRATION SERVICES



Properly specifying, documenting and integrating racks and transit cases are difficult and time consuming. Chassis Plans can lower your total system cost by providing your organization with a turn-key integrated rack or transit case system. We build your configuration and provide you with one part number. You will receive professionally engineered and integrated systems instead of boxes of disparate parts from multiple vendors. We accept system responsibility for third-party components such as UPSs, network switches, power distribution, environmental systems, and so forth. Chassis Plans will work with you from the specification stage, to configuration, all the way to post-delivery technical support. One single purchase order instead of dozens! Our goal is to streamline your system acquisition for lower total system cost.



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## INTEGRATION SERVICES MANAGEMENT

- Clarify the Application and Environment
- Define Processing Needs, Memory Requirement, Drives, I/O Requirements
- Select an Appropriate Computer, Display and Keyboard
- Select the Appropriate Motherboard or Single Board Computer/Backplane
- Select the Right Power Supply
- Select Appropriate Drives
- Define and Select Other I/O (Video, Communications, Analog/Digital, Etc.)
- Specify Operating System and Application Software
- Define Environmental and Safety Certifications
- Complete System Documentation: BOM, Drawings, Assembly Instructions, Source Control
- Complete Revision Control for Components, BIOS, OS, Golden Disks
- Complete Turnkey Solutions Meeting Your Application Requirements
- All Rack Hardware Including Breakout Panels, Cabling, Shelves, UPSs
- Partnered With Several Case and Rack Manufacturers
- Integration and Management of third Party or Customer Supplied Equipment and Software
- Primary Customer Support for All Third Party Hardware & Software
- Cooling Optimized Solutions
- Feature Rich Designs
- Multiple Power Supply Options
- Appropriately Engineered Shipping Crates / Pallets
- Components Assembled in the USA
- Systems Engineered To Perform®





# TCS6U FAMILY

## 6U MILITARY-GRADE INTEGRATED TRANSIT CASE SYSTEMS





ASSEMBLED  
IN THE USA



EASY  
CUSTOMIZATION

MIL-STD  
810



REVISION  
CONTROL

The TCS6U family is a pre-configured transit case system offering stunning display technology with a tri-fold LCD supporting 1280 x 1024 resolution for each panel, the latest long-life motherboards, processors and chip sets in a 2U military-grade computer with a variety of slot configurations, a rugged sealed keyboard with a 38mm trackball, and a mil-grade UPS to ensure filtered, clean power. Order as a turn-key, pre-tested system ready to run your application software. Your Configuration - One Part Number™ for ease of acquisition.

Please contact your Sales Engineer for current configuration information and pricing.

### ELECTRICAL FEATURES

- All components are Revision Controlled for Long Availability
- Components Designed to Meet or Exceed MIL-STD-810G
- Option for MIL-STD-461 Compliance
- Stunning Tri-fold LCD with 1280 x 1024 Each Panel
- LED Backlights on LCD panels
- Latest Genesis Military-Grade LCD Controller
- Extended Temperature Option for System
- Option for Bonded Anti-Reflective, EMI and Touch Screens on LCDs
- Sealed Military-Grade Keyboard & 38mm Trackball
- Latest Long-Availability Motherboard Selection
- Options for Core 2 Duo/Quad, Core i5/i7 and XEON E5 (6/8 core) Processors
- Up to 256GB of RAM
- Four 3-1/2" Hard Drives (rotating media or SSD)
- Variety of Slot Configurations Including Multiple PCIe x16
- Three Horizontal Full-Height or Seven Vertical Low-Profile Plug-in Cards

### MECHANICAL FEATURES

- 6U Loadmaster Transit Case by ECS
- Incredibly Durable TCS Reinforced Composite Material
- Watertight End Caps
- Shock-Isolated Components
- Easily Removable Shock-Isolated Inner Rack
- Mil-Grade 5052-H32 Aluminum Construction for Computer, LCD and Keyboard
- Computer and LCD Front Panels are Milled Aluminum Billet for Strength
- Self-Locking Stainless Steel Hardware
- Captive Fasteners Where Appropriate
- Computer Provides Three High-Flow, High-MTBF Aluminum Body Fans
- SysCool® Adaptive Fan Controller in Computer
- Front Door on Computer Provides Air Filter and Honeycomb EMI Filter
- System Designed, Assembled and Supported in the USA

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## OFF-THE-SHELF RUGGEDIZED

# MILITARY-GRADE BACKMOUNT SYSTEMS

Chassis Plans' rugged military-grade systems are available in 1U through 5U (3U coming soon). These systems were designed from the ground up to ensure reliable operation when installed in your harshest environments. The different sizes all share a common design theme and all offer unparalleled performance.

### CHASSIS FEATURES

- Rugged 5052-H32 Aircraft Grade Aluminum
- Milled Solid Billet Front Panel
- EMI / Environmental Gasket on Front Panel
- Formed Welded Front Door
- Shock-Mounted Hard Drive Bays
- High-Reliability, Long-Life, High-Velocity Fans
- SysCool® Intelligent Fan Controller/Alarm Board
- 45PPI Air Filter with Optional Honeycomb EMI Filter
- ANSI/VITA 40-2003 Compliant Alarm LEDs
- Stainless Steel Self-Locking Hardware

### ELECTRONICS FEATURES

- High-Performance Long-Availability Motherboards
- Intel® Core® i5, i7 Options
- XEON® E3/E5 Processor, Single/Dual (4/8/10 Core)
- Multiple Chipset Options
- Multiple Slot Options Including Four PCIe x16 Slots
- Multiple Hard Drive Options—Fixed & Removable
- High Performance Graphics
- Intel® Roadmap Components for Long Term Availability
- Single & Redundant Power Supplies to 1500W

### LCD POWER ALTERNATIVE

Chassis Plans' 2U-5U military grade computer systems offer an optional Exterior Power Jack to provide power to connected Chassis Plans LCD displays. By running the display with the computer system's power supply, this Exterior Power Jack option can provide many benefits:

- Reduction in the number of required cables
- Elimination of additional equipment, i.e., a power brick
- Reduction in total system weight and cost

To enjoy these benefits, power up your new display with a Chassis Plans' server.



## CHASSIS CONSTRUCTION

The enclosures in the Chassis Plans military product lineup are ruggedly built specifically to survive harsh environments typical of military applications. We start with lightweight but strong aircraft grade 5052-H32 aluminum alloy. We install a large number of stainless steel self-locking fasteners to hold it all together and not loosen in high-vibration environments. The lid is held with captive screws to prevent losing hardware in the field.

The front panel is formed from a solid 1/4-inch thick aluminum billet. Into that we install an environmental and EMI gasket. The front door is welded and machined for a tight seal and held closed with multiple captive screws. We install a washable 45PPI air filter and an optional honeycomb EMI filter into the door to keep dirt out and EMI in.

## HARSH ENVIRONMENTS

As intended for the rigors of military deployment, these systems are designed to meet or exceed the requirements of MIL-S-901D and MIL-STD-810G to the following. Other environmental requirements can be accommodated on request.

### ALTITUDE

- 12,000 ft. Operational
- 40,000 ft. Storage
- Method 500.5

### HIGH TEMPERATURE

- 60 °C Operational, 85 °C Storage
- Method 501.5

### LOW TEMPERATURE

- 0 °C Operational, -20 °C Storage
- Method 502.5

### HUMIDITY

- 5-95%, Non-condensing
- Method 507.5

### TRANSPORT VIBRATION

- US Highway Truck and Air Transport
- Method 514.6

### BENCH HANDLING SHOCK

- Procedure VI, 20G @ 11ms
  - Method 516.6
- (Depends on Installed Components)

## COOLING

These systems are equipped with ultra-high MTBF fans providing positive chassis pressure and more than enough air flow for cooling these high power systems. A SysCool® Intelligent Adaptive Fan Control Board runs the fans at the optimum speed to ensure reliable operation with minimum fan noise. The front panel LED indicators follow the ANSI/VITA 40-2003 standard for unambiguous alarm notification.

## MOTHERBOARDS

We offer you these systems with a selection of high-quality long-life motherboards providing a selection of chip sets and processors including Core i5/i7 and 4/6/8/10/12 core single and dual XEON. Chip sets and processors are on Intel's Road Map for ensured future availability for multi-year program deployment. A variety of slot configurations allow installation of virtually any plug-in card. One example is a motherboard offering four PCIe x16 slots on double-wide spacing, which is perfect for constructing a four card GPU server. These are full bandwidth x16 slots and are not switched as on a backplane.

## DISK DRIVES

Enterprise-grade drives are offered for superior performance and reliability. The drives are shock mounted and can be fixed or removable. Rotating media or SSDs can be installed depending on your mission requirements. Systems offer options for slim DVDRW drives including Blu-Ray.



# M1U-20 FAMILY

## 1U MILITARY-GRADE RACKMOUNT SYSTEMS



### FEATURES

- Only 20" Deep
- Single or Dual 8 or 10 Core XEON E5 CPU's
- 2x PCIe x16 (Gen 3.0) Card Slots
- Up to 3x 2-1/2" Shock-Isolated Removable Drives, and 1x Slim DVD
- 5x Fans with SysCool® Intelligent Fan Controller
- Front Panel Smart Card Reader (Optional)
- Redundant Power Supply

MIL-STD  
810

REVISION  
CONTROL

MIL-STD  
461

ASSEMBLED  
IN THE USA

MIL-S  
901D

The M1U-20 system is ideal for those seeking a rugged rackmount 1U system designed to perform in confined spaces. A unit with high computational speed for military applications, the M1U-20 offers Intel® E5 processing power. Provision is made for (2x) PCI-e x16 (Gen 3.0) add-in cards secured with Delrin® blocks for high shock/vibration environments. Uniquely offered with an attached front door with installed air filter and optional EMI filter, this feature serves to protect the drive bays and other components from dust and dirt, as well as shielding compliant with MIL-STD-461F EMI.

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
M1U2012	XEON E5-2658 XEON E5-2428L	2.1 (10 Cores) 1.8 (8 Cores)	1 or 2	C606	512 GB	JBOD 0, 1, 5	PCIe - 2 x16 (Gen 3.0) with 2-Slot Riser Card



## CHASSIS SPECIFICATIONS

### PHYSICAL DIMENSIONS

- 1.75" (H) x 19.0" (W) x 20.0" (D)
- 20 lbs. Fully Configured, Varies by Configuration

### POWER SUPPLY

- Output Power 600W
- Redundant configuration
- Input 100 to 240Vac, 50/60Hz Auto Switching High Efficiency
- Other Options Available

### COOLING

- 5X 40mm Fans, 18CFM Each, Mounted Mid-Chassis
- Fans Are Aluminum Body 100,000 Hour MTBF
- Air Filter Mounted In Front Door
- SysCool® Intelligent Fan Control and Alarm Board

### FRONT PANEL DETAILS

- Power On/Off Momentary Switch, Alarm Reset Switch
- 2x USB
- LEDs - Power On, HDD Activity, Fan Fail, Over Temperature Alarm
- Single Front Door With 4 Thumbscrews, 45PPI Air Filter In Door
- Optional Honeycomb EMI Filter in Front Door

### DRIVE BAYS

- 3x 2-1/2" Hard Drive Bays
- Drives are Shock Mounted
- Slim DVDRW Installed Standard

### EXPANSION SLOTS

- 2x PCIe x16 (Gen 3.0)

### ENVIRONMENT

- Operating Temperature: 0° to 45°C (32° to 113°F)
- Storage Temperature: -40° to 70°C (-40° to 158°F)
- Humidity: 5 to 95% RH Non-condensing

## HARSH ENVIRONMENTS

Designed to meet or exceed MIL-STD-810G to the below specifications.

### ALTITUDE

- 12,000 ft. Operational
- 40,000 ft. Storage
- Method 500.5

### HIGH TEMPERATURE

- 45°C Operational, 70°C Storage
- Method 501.5

### LOW TEMPERATURE

- 0°C Operational, -40°C Storage
- Method 502.5

### HUMIDITY

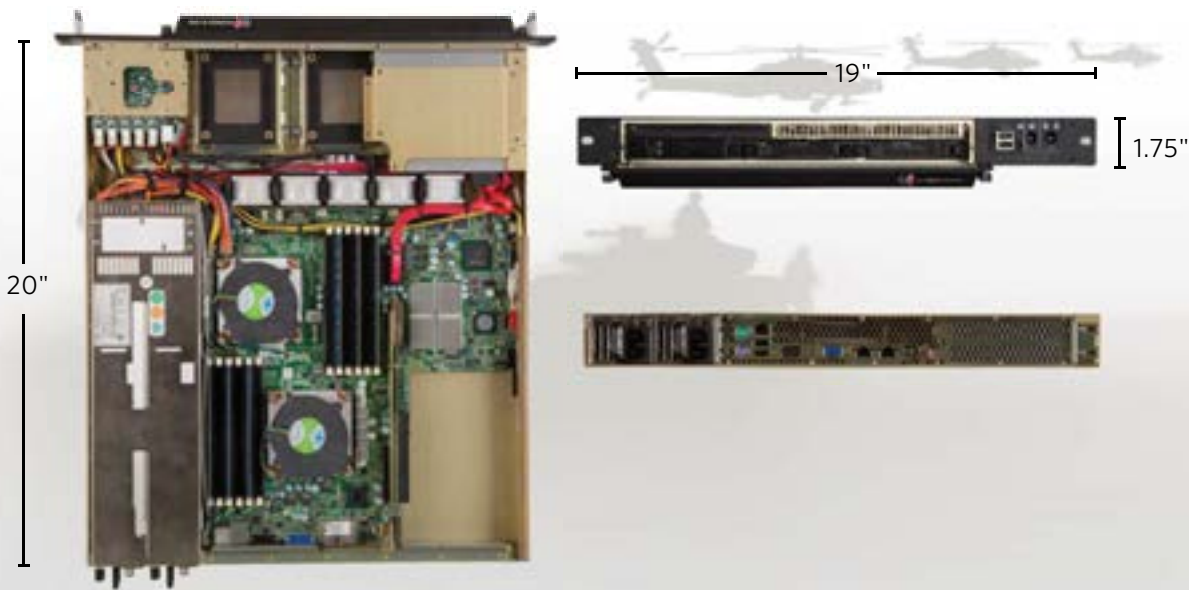
- 5-95%, Non-condensing
- Method 507.5

### TRANSPORT VIBRATION

- US Highway Truck and Air Transport
- Method 514.6

### BENCH HANDLING SHOCK

- Procedure VI, 20G @ 11ms
- Method 516.6



# M2U-20 FAMILY

## 2U MILITARY-GRADE RACKMOUNT SYSTEMS



### FEATURES

- Only 20" Deep
- Core-i5/i7 Options (1st to 4th Generation)
- XEON E3/E5, Single and Dual Options, 4/8/10 Cores
- 3x Horizontal or Seven Vertical Plug-in Card Slots
- Up to 4x 3-1/2" or 6x 2-1/2" Drives, Fixed or Removable, Shock-Isolated
- 3x High Performance Fans with SysCool® Fan Controller
- Single or Redundant Power Supply

MIL-STD  
810

REVISION  
CONTROL

MIL-STD  
461

ASSEMBLED  
IN THE USA

MIL-S  
901D

The M2U-20 system offers high performance with a variety of processor and chipset options including the latest Intel® i7 and E5 series and up to 256GB of high speed RAM. Two configurations offer three side-mounted full-height or seven vertical low-profile plug-in cards. The heavier horizontal full-height cards are secured in place with Delrin® blocks for high vibration and shock environments. The system is exceptionally well cooled with three 80mm high-velocity, high-reliability fans for high-power CPUs in hot environments.

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
M2U2001	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
M2U2007	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
M2U2008	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
M2U2009	XEON E5-2658 XEON E5-2428L	2.1 1.8	1 or 2	C606	256 GB	JBOD 0, 1, 5	Horizontal - PCIe - 3 x8 Vertical - PCIe - 3 x8, 1 x4, 1 x1, PCI 1
M2U2013	Core i7-4770 Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3

## CHASSIS SPECIFICATIONS

### PHYSICAL DIMENSIONS

- 3.5" (H) x 19.0" (W) x 20.0" (D)
- 27 lbs. Fully Configured,  
Varies by Configuration

### POWER SUPPLY

- Output Power 600W
- Single or Redundant options
- Input 100 to 240Vac, 50/60Hz  
Auto Switching High Efficiency
- Other Options Available

### COOLING

- 3x 80mm Long-Life Fans, 42CFM  
Each, Mounted Mid-Chassis
- Fans Are Aluminum Body  
100,000 Hour MTBF
- Air Filter Mounted In Front Door
- SysCool® Intelligent Fan Control  
and Alarm Board

### FRONT PANEL DETAILS

- Power On/Off Momentary switch,  
Alarm Reset Switch
- 2x USB
- LEDs - Power On, HDD Activity
- Single Front Door with 3  
Thumbscrews
- 45PPI Washable Air Filter  
Mounted in Front Door
- Optional Honeycomb EMI Filter in  
Front Door

### DRIVE BAYS

- 4x 3-1/2" or 6x 2-1/2" Hard Drive  
Bays
- Drives are Shock Isolated
- Slim DVDRW Installed Standard

### EXPANSION SLOTS

- Systems can be configured with  
3x Horizontal Slots with Riser  
Card or with 7x Vertical Slots for  
Low-profile Cards.

### ENVIRONMENT

- Operating Temperature: 0° to  
60°C (32° to 140°F)
- Storage Temperature: -20° to  
85°C (-40° to 185°F)
- Humidity: 5 to 95% RH  
Non-condensing

## HARSH ENVIRONMENTS

Designed to meet or exceed  
MIL-STD-810G to the below  
specifications.

### ALTITUDE

- 12,000 ft. Operational
- 40,000 ft. Storage
- Method 500.5

### HIGH TEMPERATURE

- 60°C Operational, 85°C Storage
- Method 501.5

### LOW TEMPERATURE

- 0°C Operational, -20°C Storage
- Method 502.5

### HUMIDITY

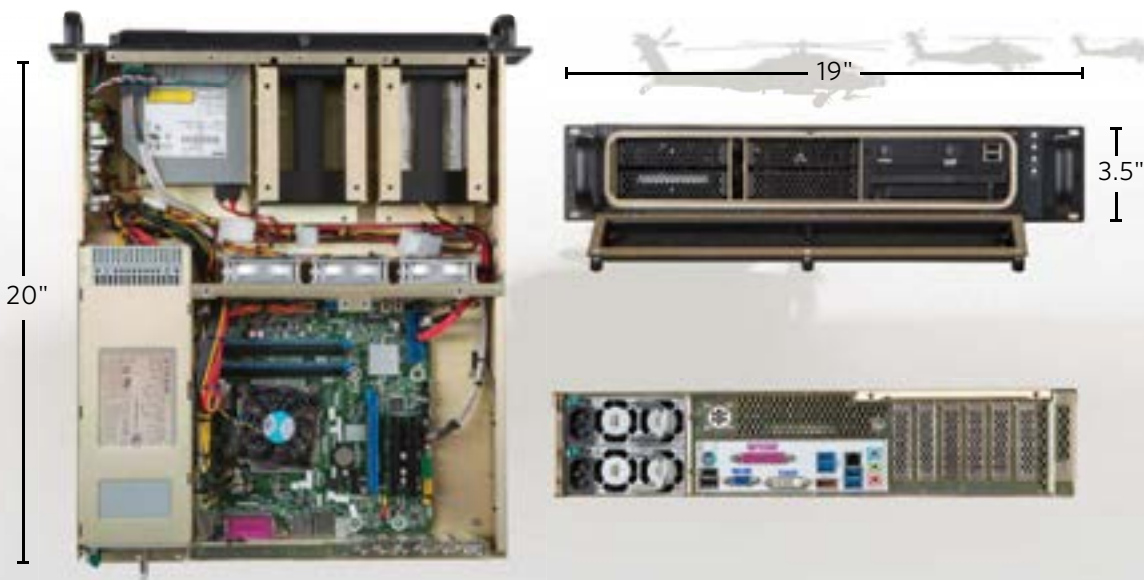
- 5-95%, Non-condensing
- Method 507.5

### TRANSPORT VIBRATION

- US Highway Truck and  
Air Transport
- Method 514.6

### BENCH HANDLING SHOCK

- Procedure VI, 20G @ 11ms
- Method 516.6



# M4U-20 FAMILY

## 4U MILITARY-GRADE RACKMOUNT SYSTEMS



### FEATURES

- Only 20" Deep
- Core-i5/i7 Options (1st to 4th Generation)
- XEON E3/E5, Single and Dual Options, 4/8/10 Cores
- Motherboard with Seven Plug-in Card Slots
- Up to 3x 5-1/4" Drive Bays, Fixed or Removable, with Slim DVD
- 2x High Performance Fans with SysCool® Fan Controller
- Single or Redundant Power Supply

MIL-STD  
810

REVISION  
CONTROL

MIL-STD  
461

ASSEMBLED  
IN THE USA

MIL-S  
901D

The M4U-20 system is a short 20" and is perfect for transit case installation with its rugged construction. The system offers the highest performance with a variety of processor and chipset options including the latest Intel® i7 and E5 series and up to 256GB of high-speed RAM. A card hold-down system secures plug-in cards in high vibration and shock environments to ensure reliable operation. The system is well cooled with two 92mm high-velocity, high-reliability fans for high-power CPUs in hot environments.

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
M4U2001	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
M4U2007	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
M4U2008	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
M4U2009	XEON E5-2658 XEON E5-2428L	2.1 1.8	1 or 2	C606	256 GB	JBOD 0, 1, 5	Horizontal - PCIe - 3 x8 Vertical - PCIe - 3 x8, 1 x4, 1 x1, PCI 1
M4U2013	Core i7-4770S Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3



## CHASSIS SPECIFICATIONS

### PHYSICAL DIMENSIONS

- 7.0" (H) x 19.0" (W) x 20.0" (D)
- 45 lbs. Fully Configured,  
Varies by Configuration

### POWER SUPPLY

- Output Power 600W
- Single or Redundant options
- Input 100 to 240Vac, 50/60Hz  
Auto Switching High Efficiency
- Other Options Available

### COOLING

- 2 x 92mm Long-Life Fans, 60CFM  
Each, Mounted Front Panel
- Fans Are Aluminum Body  
100,000 Hour MTBF
- Air Filter Mounted In Front Door
- SysCool® Intelligent Fan Control  
and Alarm Board

### FRONT PANEL DETAILS

- Power On/Off Momentary  
Switch, Alarm Reset Switch
- 2x USB
- LEDs - Power On, HDD Activity,  
Over Temperature, Fan Failure
- Single Front Door with 3  
Thumbscrews
- 45PPI Washable Air Filter in Door
- Optional Honeycomb EMI Filter  
in Door

### DRIVE BAYS

- 3x Horizontal 5-1/4" Reduced-  
Height Drive Bays
- Multiple Options for Hot Swap  
Drives
- Slim DVD

### EXPANSION SLOTS

- 7x Card Slots With Card Hold  
Down Bracket

### ENVIRONMENT

- Operating Temperature: 0° to  
60°C (32° to 140°F)
- Storage Temperature: -20° to  
85°C (-4° to 185°F)
- Humidity: 5 to 95% RH  
Non-condensing

## HARSH ENVIRONMENTS

Designed to meet or exceed  
MIL-STD-810G to the below  
specifications.

### ALTITUDE

- 12,000 ft. Operational
- 40,000 ft. Storage
- Method 500.5

### HIGH TEMPERATURE

- 60°C Operational, 85°C Storage
- Method 501.5

### LOW TEMPERATURE

- 0°C Operational, -20°C Storage
- Method 502.5

### HUMIDITY

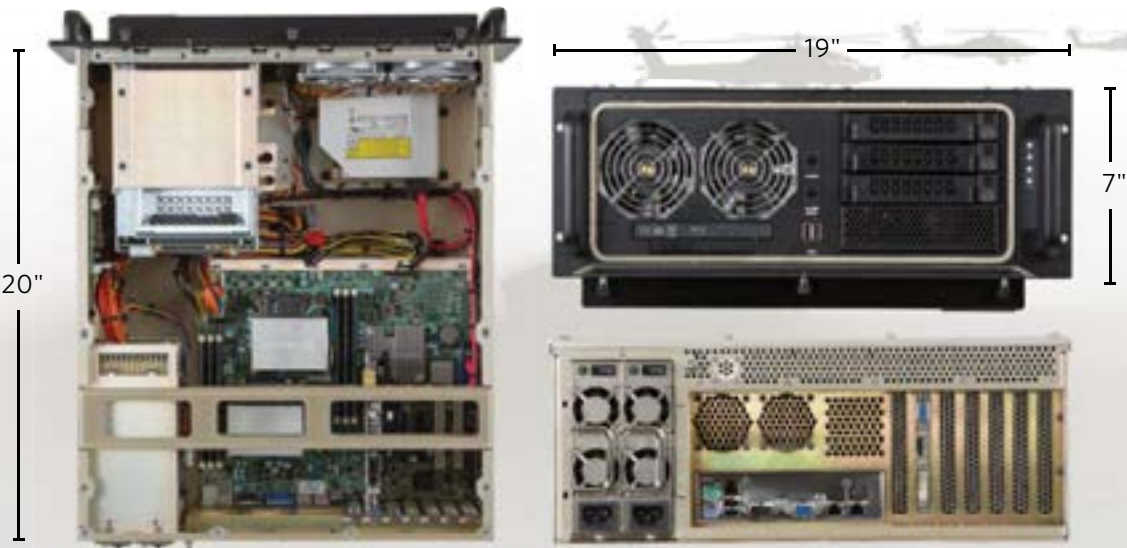
- 5-95%, Non-condensing
- Method 507.5

### TRANSPORT VIBRATION

- US Highway Truck and  
Air Transport
- Method 514.6

### BENCH HANDLING SHOCK

- Procedure VI, 20G @ 11ms
- Method 516.6



# M4U-26 FAMILY

## 4U MILITARY-GRADE RACKMOUNT SYSTEMS



### FEATURES

- 26.4" Deep
- Support for 11-Slot 13.2" x 15.2" Motherboards
- Support for Up To 20-Slot Passive Backplanes
- XEON E3/E5, Single and Dual Options, 4/8/10 Cores
- 3x 5-1/4" Drive Bays
- 3x High Performance Fans with SysCool® Fan Controller
- Single or Redundant Power Supply

MIL-STD  
810

REVISION  
CONTROL

MIL-STD  
461

ASSEMBLED  
IN THE USA

MIL-S  
901D

The M4U-26 system is optimized for high-performance 11-slot motherboards (13.2 x 15.2") offering either four x16 PCIe slots on double width spacing or ten x8 slots. The double-wide x16 slots allow the installation of such boards as GPU processors for ultimate performance. A card hold-down secures the plug-in cards in high vibration and shock environments to ensure reliable operation. Outstanding cooling is provided by the three 120mm high-performance fans to cool the highest power system in high-temperature environments.

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count
M4U2610	E5-2658 E5-2428L	2.1 1.8	1 or 2	C600-A	512 GB	JBOD 0, 1, 5	PCIe - 4 x16 (3.0), 1 x8 (3.0), 1 x4 (2.0)
M4U2611	E5-2658 E5-2428L	2.1 1.8	1 or 2	C602	512 GB	JBOD 0, 1, 5	PCIe - 10 x8 (3.0), 1 x4 (2.0)

## CHASSIS SPECIFICATIONS

### PHYSICAL DIMENSIONS

- 7.0" (H) x 19.0" (W) x 26.4" (D)
- 47 lbs. Fully Configured,  
Varies by Configuration

### POWER SUPPLY

- Output Power 600W
- Single or Redundant options
- Input 100 to 240Vac, 50/60Hz  
Auto Switching High Efficiency
- Other Options Available

### COOLING

- 3x 120mm Long-Life Fans,  
120CFM Each, Mounted Mid  
Chassis
- Fans Are Aluminum Body  
200,000 Hour MTBF
- Air Filter Mounted In Front Door
- SysCool® Intelligent Fan Control  
and Alarm Board

### FRONT PANEL DETAILS

- Power On/Off Momentary switch,  
Alarm Reset Switch
- 2x USB
- LEDs - Power On, HDD Activity,  
Over Temperature, Fan Failure
- Single Front Door with 3x  
Thumbscrews
- 45PPI Washable Air Filter in Door
- Optional Honeycomb EMI Filter  
in Door

### DRIVE BAYS

- 3x Horizontal 5-1/4" Half-Height  
Drive Bays
- Multiple Options for Hot Swap  
Drives
- Slim DVD

### EXPANSION SLOTS

- 7, 11, or 20x Card Slots With Card  
Hold-Down Bracket

### ENVIRONMENT

- Operating Temperature: 0° to  
60°C (32° to 140°F)
- Storage Temperature: -40° to  
70°C (-40° to 158°F)
- Humidity: 5 to 95% RH  
Non-condensing

## HARSH ENVIRONMENTS

Designed to meet or exceed  
MIL-STD-810G to the below  
specifications.

### ALTITUDE

- 12,000 ft. Operational
- 40,000 ft. Storage
- Method 500.5

### HIGH TEMPERATURE

- 60°C Operational, 70°C Storage
- Method 501.5

### LOW TEMPERATURE

- 0°C Operational, -40°C Storage
- Method 502.5

### HUMIDITY

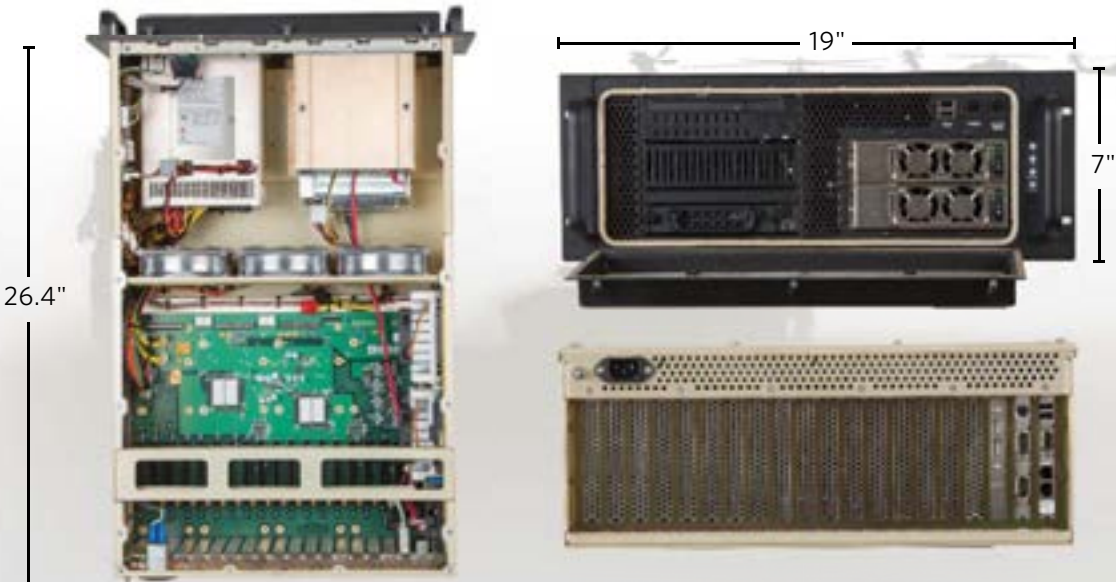
- 5-95%, Non-condensing
- Method 507.5

### TRANSPORT VIBRATION

- US Highway Truck and  
Air Transport
- Method 514.6

### BENCH HANDLING SHOCK

- Procedure VI, 20G @ 11ms
- Method 516.6



# M5U-22 FAMILY

## 5U MILITARY-GRADE RACKMOUNT SYSTEMS



### FEATURES

- Only 22" Deep
- Support for 11-Slot 13.2" x 15.2" Motherboards
- Support for Up To 20-Slot Passive Backplane
- XEON E3/E5, Single and Dual Options, 4/8/10 Cores
- Up To 4x 3-½" Drive Bays
- 3x High Performance Fans with SysCool® Fan Controller
- 3+1 Redundant Power Supply

MIL-STD  
810



MIL-STD  
461



The M5U-22 system is optimized for large, high-performance, power hungry 11-slot motherboards with systems offered providing four double-wide x16 PCIe slots or ten x8 PCIe slots. The short 22" depth allows installation in areas that require a minimum depth chassis such as a transit case or submarine. The M5U-22 system is ideal for high power applications such as a GPU server platform powered by a reliable 3+1 redundant 1500W power supply. The system is cooled by three high-velocity, 200K hrs. MTBF 120mm fans.

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count
M5U2210	E5-2658 E5-2428L	2.1 1.8	1 or 2	C600-A	512 GB	JBOD 0, 1, 5	PCIe - 4 x16 (3.0), 1 x8 (3.0), 1 x4 (2.0)
M5U2211	E5-2658 E5-2428L	2.1 1.8	1 or 2	C602	512 GB	JBOD 0, 1, 5	PCIe - 10 x8 (3.0), 1 x4 (2.0)



## CHASSIS SPECIFICATIONS

### PHYSICAL DIMENSIONS

- 8.75" (H) x 19.0" (W) x 22" (D)
- 62 lbs. Fully Configured  
Varies by Configuration

### POWER SUPPLY

- Output Power 1500W
- 3+1 Redundant Configuration
- Input 100 to 240Vac, 50/60Hz  
Auto Switching High Efficiency
- Other Options Available

### COOLING

- 3x 120mm Long-Life Fans,  
120CFM Each, Mounted Front  
Panel
- Fans Are Aluminum Body  
200,000 Hour MTBF
- Air Filter Mounted in Front Door
- SysCool® Intelligent Fan Control  
and Alarm Board

### FRONT PANEL DETAILS

- Power On/Off Momentary switch,  
Alarm Reset Switch
- 2x USB
- LEDs - Power On, HDD Activity,  
Over Temperature, Fan Failure
- Single Front Door with 3x  
Thumbscrews
- 45PPI Washable Air Filter in Door
- Optional Honeycomb EMI Filter  
in Door

### DRIVE BAYS

- 4x 3-1/2" Hard Drive Bays
- Multiple Options for Hot Swap  
Drives
- Slim DVD

### EXPANSION SLOTS

- 7, 11 or 20x Card Slots With Card  
Hold Down Bracket

### TRANSPORT

- Operating Temperature: 0° to  
50°C (32° to 122°F)
- Storage Temperature: -20° to  
70°C (-4° to 158°F)
- Humidity: 5 to 95% RH  
Non-condensing

## HARSH ENVIRONMENTS

Designed to meet or exceed  
MIL-STD-810G to the below  
specifications.

### ALTITUDE

- 12,000 ft. Operational
- 40,000 ft. Storage
- Method 500.5

### HIGH TEMPERATURE

- 50°C Operational, 70°C Storage
- Method 501.5

### LOW TEMPERATURE

- 0°C Operational, -20°C Storage
- Method 502.5

### HUMIDITY

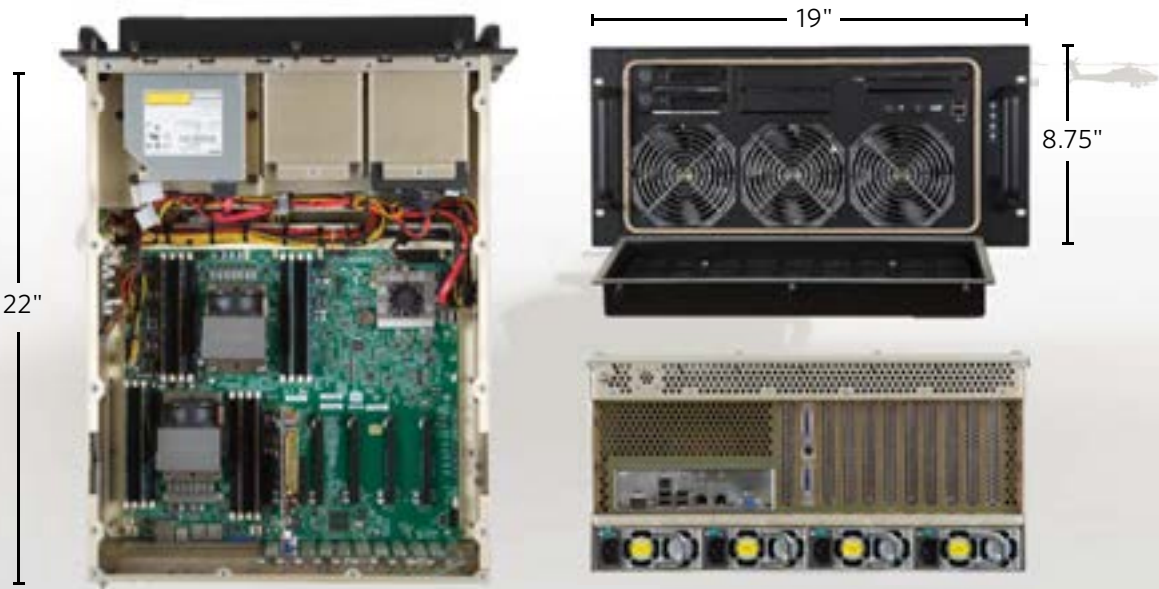
- 5-95%, Non-condensing
- Method 507.5

### TRANSPORT

- US Highway Truck and  
Air Transport
- Method 514.6

### BENCH HANDLING SHOCK

- Procedure VI, 20G @ 11ms
- Method 516.6



## OFF-THE-SHELF

# COMMERCIAL GRADE COMPUTERS

Chassis Plans' commercial grade systems are available in 1U through 5U. These systems provide cost-effective solutions with quick delivery fit for use where your environment is harsher than an office IT space but less severe than where our fully rugged military-grade systems should be used. These systems offer revision control, for consistent long-term program deployment, and easy customization for when an off-the-shelf solution does not quite fit your requirements. Assembled in the USA for great quality and support.

### CHASSIS FEATURES

- Steel Construction
- Cost-Effective Solutions
- Revision Control for Long-Term Consistency
- Easy Customization to Your Requirements
- Variety of Drive Configurations
- Variety of Slot Configurations
- Front Door On Some Models
- Short Chassis Depths with Some Models
- Custom Paint and/or Logo Available
- Fit 19" Rack Systems

### ELECTRONICS FEATURES

- High-Performance, Long-Availability Motherboards
- Intel® Core® i5, i7 Options
- XEON® E3/E5 Processor, Single/Dual (4/8/10 Core)
- Multiple Chipset Options
- Multiple Slot Options Including Four PCIe x16 Slots
- Multiple Hard Drive Options—Fixed & Removable
- High-Performance Graphics
- Intel® Roadmap Components for Future Availability
- Single & Redundant Power Supplies to 1500W



C112 FAMILY

1U COTS CONFIGURED RACKMOUNT SYSTEM



FEATURES

- Only 16" Deep
- Core-i5/i7 Options (1st to 4th Generation)
- XEON E3/E5, Single and Dual Options, 4/8/10 Cores
- 1x PCIe x16 Plug-In Card Slot
- 1x Internal Hard Drive, 1x Slim DVD
- 3x Cooling Fans
- 400W Power Supply



The C112 Series is a very short 1U system at only 16" deep. This is a perfect system for space constrained applications. Three motherboard options provide i5/i7 or XEON E3 performance. A single horizontal card slot provides for a single PCIe x16 card. Mounted in the front panel are a slim DVDRW drive and a single internal 3-1/2" hard drive is provided. The system is cooled by three 40mm fans mounted mid-chassis and a 400W power supply provides ample power. A front door protects the system.

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& KEYBOARDS

RAID DISK STORAGE

ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
C11201	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16GB	JBOD	Horizontal - PCIe - 1 x16
C11207	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD	Horizontal - PCIe - 1 x16
C11208	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD	Horizontal - PCIe - 1 x16
C11213	Core i7-4330S Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD	Horizontal - PCIe - 1 x16

# C105 FAMILY

## 1U COTS CONFIGURED RACKMOUNT SYSTEM



### FEATURES

- Only 21.3" Deep
- Core-i5/i7 Options (1st to 4th Generation)
- XEON E3 Option
- 1x PCIe x16 Plug-In Card Slot
- 1x Internal Hard Drive, 1x Slim DVD
- 5x Cooling Fans
- 400W Power Supply



The C105 Series is 1U by 21.3" and offers four motherboard choices providing Core-i5/i7 or XEON E3 performance. These systems provide a good balance of size versus performance. A single horizontal card slot supports a PCIe x16 plug-in card. Mounted in the front panel is a slim DVDRW, and two internal fixed 3-1/2" hard drives can be fitted. Cooling is provided by four 40mm fans mounted mid-chassis and two 40mm fans mounted on the rear panel. The power supply is rated at 400W. The front door protects the system.

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
C10501	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16GB	JBOD 0, 1	Horizontal - PCIe - 1 x16
C10507	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD 0, 1	Horizontal - PCIe - 1 x16
C10508	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD 0, 1	Horizontal - PCIe - 1 x16
C10513	Core i7-4330S Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD 0, 1	Horizontal - PCIe - 1 x16



C213 FAMILY

2U COTS CONFIGURED RACKMOUNT SYSTEM



FEATURES

- Only 17.7" Deep
- Core-i5/i7 Options (1st to 4th Generation)
- XEON E3 Option
- 3x Plug-In Card Slots
- 1x 5-1/4" and 1x 3-1/2" External, 3x 3-1/2" Internal Drive Bays
- 3x Cooling Fans
- 400W Power Supply



The C213 Series is an ultra-short 17.7" deep and is perfect for your space constrained application. Four choices of motherboards offer Core-i5 / i7 or XEON E3 performance. Three horizontal plug-in card slots are provided offering a PCIe x16 option. A 5-1/4" drive bay is populated with a DVDRW, and three internal 3-1/2" drives can be configured as a RAID array. Cooling is provided by three 80mm fans. A 500W power supply is standard. A front door protects the system.

ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
C21301	Core i5-660	3.33	1	Q57	16GB	JBOD 0, 1	Horizontal - PCIe - 1 x16, 1 x4, PCI 1
	Core i7-860	2.8					Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
C21307	Core i7-3770	3.9	1	Q67	32 GB	JBOD 0, 1	Horizontal - PCIe - 1 x16, 1 x4, PCI 1
	Core i5-3550S	3.7					Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
	Core i7-2600	3.4					
	Core i5-2400	3.1					
C21308	XEON E3-1275	3.4	1	C216	32 GB	JBOD 0, 1	Horizontal - PCIe - 1 x16, 2 x4
	XEON E3-1225	3.1					Vertical - PCIe - 2 x16, 2 x4, PCIe Mini 1, PCI 3
C21313	Core i7-4330S	3.9	1	Q87	32 GB	JBOD 0, 1	Horizontal - PCIe - 1 x16, 1 x4, 1 x1
	Core i5-4570S	3.6					Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3

# C220 FAMILY

## 2U COTS CONFIGURED RACKMOUNT SYSTEM



### FEATURES

- Only 22.4" Deep
- Core-i5/i7 Options
- XEON E3 Option
- 3x Horizontal or Seven Vertical Plug-in Card Slots
- 4x 5-1/4", 1x 3-1/2", 2x Internal 3-1/2" Drive Bays
- 4x Cooling Fans
- 500W Power Supply



The C220 Series provide Core i5/i7 or XEON E3 performance in a short 2U 22.4" deep chassis. Three horizontal or seven vertical card slots are provided. A wide variety of card slot options allow you to install your choice of plug-in cards. Four 5-1/4" drives are offered, one populated with a DVDRW drive. Two internal 3-1/2" drives are available. A high quality 500W power supply is provided. This system is ideal for your small area installation.

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
C22001	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
C22007	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
C22008	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 2 x4 Vertical - PCIe - 2 x16, 2 x4, PCIe Mini 1, PCI 3
C22013	Core i7-4330S Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, 1 x1 Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3

C221 FAMILY

2U COTS CONFIGURED RACKMOUNT SYSTEM



FEATURES

- 25.6" Deep
- Core-i5/i7 Options
- XEON E3/E5, Single and Dual Options, 4/8/10 Cores
- 3x Plug-In Card Slots
- 4x 5-1/4", 1x 3-1/2", 2x Internal 3-1/2" Drive Bays
- 4x Cooling Fans
- 600W Power Supply



The C221 Series provide server-class performance in only 2U high supporting EATX motherboards. Three horizontal plug-in card slots are provided supporting full-length cards. A wide variety of slot configurations allows you to install your choice of plug-in cards. Four 5-1/4" drives can be configured for fixed or removable operation and support a RAID array. Two additional internal 3-1/2" drives can be fitted. Cooling is provided by four mid-chassis 80mm fans. A single or redundant 600W power supply provides ample power for your high-performance system.

ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
C22101	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
C22107	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, PCI 1 Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
C22108	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD 0, 1, 5	Horizontal - PCIe -1 x16, 2 x4 Vertical - PCIe - 2 x16, 1 x4, PCIe Mini 1, PCI 3
C22110	XEON E5-2658 XEON E5-2428L	2.1 1.8	1 or 2	C602	512 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x8, 1 x4 Vertical - PCIe - 4 x16, 1 x8, 1 x4
C22113	Core i7-4330S Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD 0, 1, 5	Horizontal - PCIe - 1 x16, 1 x4, 1 x1 Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3

CUSTOM SYSTEMS  
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COMPUTER SYSTEMS

RUGGED LCDS  
& KEYBOARDS

RAID DISK STORAGE

# C313 FAMILY

## 3U COTS CONFIGURED RACKMOUNT SYSTEM



### FEATURES

- Only 20.7" Deep
- Core-i5/i7 Options
- XEON E3/E5, Single and Dual Options, 4/8/10 Cores
- 7x Plug-In Card Slots
- 2x 5-1/4" and 1x 3-1/2" Drive Bays, 7x Internal 3-1/2" Drives
- Four Cooling Fans
- 600W Power Supply, Single or Redundant



The C313 Series is a short 20" deep and only 3U high, allowing installation in your space-constrained spaces. The selection of high-performance motherboards offer Core-i5/i7 and XEON E3/E5 power for your application and cost-effective pricing. Two 5-1/4" drive bays can be configured as fixed or removable, and seven internal 3-1/2" drives can be configured as RAID. Two 92mm and two 60mm fans provide ample cooling. A front door with air filter protects the system.

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
C31301	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
C31307	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
C31308	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 2 x16, 1 x4, PCIe Mini 1, PCI 3
C31309	XEON E5-2658 XEON E5-2428L	2.1 1.8	1 or 2	C602	256 GB	JBOD 0, 1, 5	Vertical - PCIe - 3 x8, 1 x4, 1 x1, PCI 1
C31313	Core i7-4330S Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3



C346 FAMILY

3U COTS CONFIGURED RACKMOUNT SYSTEM



FEATURES

- 25.6" Deep
- Core-i5/i7 Options
- XEON E3/E5, Single and Dual Options, 4/8/10 Cores
- 7x Plug-In Card Slots
- 6x 5-1/4" Drive Bays, Fixed or Removable
- 2x Internal Fixed Drives, 1x 3-1/2" Drive Bay
- 4x Cooling Fans
- 600W Power Supply, Single or Redundant

ASSEMBLED  
IN THE USA

REVISION  
CONTROL

EASY  
CUSTOMIZATION

The C346 Series systems offer superb performance choices in a low 3U package. EATX motherboards offer server- class operation supporting single and dual 4/8/10 core high-performance XEON processors. Six 5-1/4" drives can be configured as fixed or removable and support RAID arrays. Seven vertical plug-in slots and a wide selection of slot configurations will support your choice of plug-in cards. Ample cooling for power hungry systems is provided by four mid-chassis fans. A 600W single or redundant power supply is offered.

ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
C34601	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
C34607	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
C34608	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 2 x16, 1 x4, PCIe Mini 1, PCI 3
C34609	XEON E5-2658 XEON E5-2428L	2.1 1.8	1 or 2	C602	256 GB	JBOD 0, 1, 5	Vertical - PCIe - 3 x8, 1 x4, 1 x1, PCI 1
C34610	XEON E5-2658 XEON E5-2428L	2.1 1.8	1 or 2	C602	512 GB	JBOD 0, 1, 5	Vertical - PCIe - 4 x16, 1 x8, 1 x4
C34613	Core i7-4330S Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3

# C402 FAMILY

## 4U COTS CONFIGURED RACKMOUNT SYSTEM



### FEATURES

- Only 17.8" Deep
- Core-i5/i7 Options
- XEON E3/E5, Single and Dual Options, 4/8/10 Cores
- 7x Plug-In Card Slots
- 3x 5-1/4" Drive Bays, Fixed or Removable
- 1x 3-1/2" Drive Bay
- 2x Cooling Fans with Filter
- 600W Power Supply, Single or Redundant



The C402 Series systems are the ideal solution for space-constrained applications. At only 17.8" deep, they will easily fit any short-depth rack. They offer superb performance with Core i5/i7 and XEON E3/E5 processor options. Three 5-1/4" drives can be configured as fixed or removable in a RAID array. Cooling is ample with two 92mm fans. A selection of plug-in card slot choices allow you to fit your choice of boards. A hold-down bar secures the plug-in cards.

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
C40201	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
C40207	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
C40208	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 2 x16, 1 x4, PCIe Mini 1, PCI 3
C40209	XEON E5-2658 XEON E5-2428L	2.1 1.8	1 or 2	C602	256 GB	JBOD 0, 1, 5	Vertical - PCIe - 3 x8, 1 x4, 1 x1, PCI 1
C40213	Core i7-4330S Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3

C414 FAMILY

4U COTS CONFIGURED RACKMOUNT SYSTEM



FEATURES

- Only 20.1" Deep
- Core-i5/i7 Options
- XEON E3/E5, Single and Dual Options, 4/8/10 Cores
- 7x Plug-In Card Slots
- 3x 5-1/4" Drive Bays, Fixed or Removable
- 1x 3-1/2" -Drive Bay
- 2x Cooling Fans with Filter
- 600W Power Supply, Single or Redundant



The C414 Series systems are our number-one seller for a variety of reasons. They are competitively priced with a good feature set and great value. The ATX motherboard offers Core i5/i7 and XEON E3/E5 processors to hit your performance point. A variety of plug-in card slot configurations are available. Three 5-1/4" drives can be configured as fixed or removable drives. Two huge 120mm fans cool the system. A card-hold down bar secures the plug-in cards.

ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
C41401	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
C41407	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
C41408	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 2 x16, 1 x4, PCIe Mini 1, PCI 3
C41409	XEON E5-2658 XEON E5-2428L	2.1 1.8	1 or 2	C602	256 GB	JBOD 0, 1, 5	Vertical - PCIe - 3 x8, 1 x4, 1 x1, PCI 1
C41413	Core i7-4330S Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3

CUSTOM SYSTEMS  
& SERVICES

TRANSIT CASE  
SERVICES & SYSTEMS

MILITARY  
COMPUTER SYSTEMS

COMMERCIAL  
COMPUTER SYSTEMS

PORTABLE  
COMPUTER SYSTEMS

RUGGED LCDS  
& KEYBOARDS

RAID DISK STORAGE

# C431 FAMILY

## 4U COTS CONFIGURED RACKMOUNT SYSTEM



### FEATURES

- 26.4" Deep
- Core-i5/i7 Options
- XEON E3/E5, Single and Dual Options, 4/8/10 Cores
- 7x Plug-In Card Slots
- 6x 5-1/4" Drives Bays Fixed or Removable
- 1x 3-1/2" Drive Bay
- 4x Cooling Fans with a Filter in the Door
- 700W Power Supply, Single or Redundant



The C431 Series provide server-class operation in a 4U system. Dual processor EATX motherboards provide up to 512GB of high-speed RAM, and a variety of PCI Express slot configurations allows for installation of a wide variety of plug-in cards. XEON 8 and 10 core processors will power your application. Six 5-1/4" drive bays can be configured with fixed or removable drives and set up in a RAID configuration. A 700W power supply can be single or redundant. A card hold-down bar secures the plug-in cards.

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
C43101	Core i5-660	3.33	1	Q57	16GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
	Core i7-860	2.8					
C43109	XEON E5-2658	2.1	1 or 2	C602	256 GB	JBOD 0, 1, 5	Vertical - PCIe - 3 x8, 1 x4, 1 x1, PCI 1
	XEON E5-2428L	1.8					
C43110	XEON E5-2658	2.1	1 or 2	C602	512 GB	JBOD 0, 1, 5	Vertical - PCIe - 4 x16, 1 x8, 1 x4
	XEON E5-2428L	1.8					
C43111	XEON E5-2658	2.1	1 or 2	C602	512 GB	JBOD 0, 1, 5	Vertical - PCIe - 10 x8, 1 x4
	XEON E5-2428L	1.8					
C43113	Core i7-4330S	3.9	1	Q87	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3
	Core i5-4570S	3.6					



# C528 FAMILY

## 5U COTS CONFIGURED RACKMOUNT SYSTEM



### FEATURES

- 26.4" Deep
- XEON E5, 8 or 10 Core Options
- 4x PCIe x16 Double-Wide or 10x PCIe x8 Card Slot Options
- 8x 5-1/4" Drives, Fixed or Removable
- 1x 3-1/2" Drive Bay
- 4x Cooling Fans with a Filter in the Door
- 1350W Redundant Power Supply



The C528 Series systems offer server-class performance with 8 and 10 core XEON processors. Up to 512GB of high-speed RAM can be populated for memory intensive applications. Eight 5-1/4" drive bays allow a wide variety of drive configurations with fixed or removable carriers and a selection of RAID setups. The 1550W N+1 redundant power supply provides more than enough power for anything you can configure in this system. And the selection of PCI Express slot counts allow you to install a wide variety of plug-in cards including up to four double-wide x16 cards.

CUSTOM SYSTEMS  
& SERVICES

TRANSIT CASE  
SERVICES & SYSTEMS

MILITARY  
COMPUTER SYSTEMS

COMMERCIAL  
COMPUTER SYSTEMS

PORTABLE  
COMPUTER SYSTEMS

RUGGED LCDS  
& KEYBOARDS

RAID DISK STORAGE

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count
C52810	XEON E5-2658	2.1	1 or 2	C600-A	512 GB	JBOD 0, 1, 5	PCIe - 4 x16 (3.0), 1 x8 (3.0), 1 x4 (2.0)
	XEON E5-2428L	1.8					
C52811	XEON E5-2658	2.1	1 or 2	C602	512 GB	JBOD 0, 1, 5	PCIe - 10 x8 (3.0), 1 x4 (2.0)
	XEON E5-2428L	1.8					

## OFF-THE-SHELF RUGGEDIZED **PORTABLE COMPUTERS**

Many mobile applications require the functionality of a full-size computer with multiple drives and plug-in cards for which a laptop or tablet will not suffice. Chassis Plans offers two models of high-quality portable computers with the features you require. These systems offer the same functionality of a desktop computer with the advantage of all necessary peripherals built in. These rugged portable PCs are designed for applications such as computer forensics, UAV flight control systems, remote GIS and mapping, and flight line data acquisition, analysis, and control.

### **CHASSIS FEATURES**

- Rugged Aluminum Alloy Construction
- 17" 1280 x 1024 and 21.5" 1920 x 1080 TFT LCDs
- Fits ATX Motherboard
- Seven Full Height Card Slots
- Variety of Drive Configurations
- High Flow Cooling Fans
- Various Power Supply Options
- Detachable Full Feature Keyboard
- Padded Wheeled Transit Case Included

### **ELECTRONICS FEATURES**

- High-Performance, Long-Availability Motherboards
- Core i5 and i7 Processor Options
- XEON E3 4 Core Option
- Multiple Chipset Options
- Multiple Card Slot Options
- Multiple Hard Drive Options—Fixed & Removable
- High-Performance Graphics
- Intel Roadmap Components for Future Availability
- Single and Redundant Power Supplies



# P321 FAMILY

## PORTABLE COMPUTER



### FEATURES

- 3x 21.5" SXGA 1920 x 1080 LCDs
- Core i5/i7 Processor Options
- XEON E3 Option
- 6x 3-1/2" Hot Swap Drive Carriers
- 3x 5-1/4" Drive Bays
- 7x Plug-In Card Slots with 1x PCIe x16
- Detachable Keyboard
- 1000W Power Supply

ASSEMBLED  
IN THE USA

REVISION  
CONTROL

EASY  
CUSTOMIZATION

MIL-STD  
810

The P321 is unique in offering three 21.5" 1920 x 1080 resolution LCD displays with LED backlights in a portable computer system. Effective viewing area is 5760 x 1080. The displays in the P321 system are connected to high-performance Graphics Processor offering outstanding video performance. The motherboard choices provide ample processing power. Six hot swap drive carriers provide up to 24TB of RAID storage. Three 5-1/4" drive bays offer expansion. Seven plug-in cards are accommodated and held in place with a card hold-down bar. A full feature detachable keyboard is included. Also included is a wheeled padded transit case.

### ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
P32101	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
P32107	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
P32108	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 2 x16, 1 x4, PCIe Mini 1, PCI 3
P32113	Core i7-4330S Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3

## SYSTEM SPECIFICATIONS

### PHYSICAL DIMENSIONS

- 15.3" (H) x 21.1" (W)  
x 11.7" (D) (Closed)
- 15.3" (H) x 59.1" (W)  
x 11.7" (D) (Open)
- 55 lbs (Varies by Configuration)

### LCD FEATURES

- Three 21.5" TFT Displays
- 1920 x 1080 Each (5760 x 1080  
Effective)
- 250cd/m<sup>2</sup> Brightness
- 1000:1 Contrast
- 160° Viewing Angle
- 5ms Response Time
- Anti-Glare Hard Coat Standard

### POWER SUPPLY

- Output Power 1000W
- Single or Redundant options
- Input 90 To 260Vac, 50/60Hz  
Auto Switching High Efficiency
- Other Options Available



### COOLING

- 1x 120mm External Fan
- Positive Chassis Pressure

### CHASSIS DETAILS

- Rugged Aluminum Construction
- Accommodates an ATX  
Motherboard
- 7x Full Height Card Slots
- Rubber Corner Bumpers
- Detachable Full-Feature Keyboard

### DRIVE BAYS

- 6x 3-1/2" Hot Swap Hard Drive  
Bays
- 3x 5-1/4" Drive Bays
- RAID 0, 1, and 5 Supported
- Slim DVDRW Installed Standard

### ENVIRONMENT

- Operating Temperature: 0° to  
50° C (32° to 122° F)
- Storage Temperature: -20° to  
60° C (-4° to 140° F)
- Humidity: 5 to 95% RH  
Non-condensing





P370 FAMILY  
PORTABLE COMPUTER



FEATURES

- 17" SXGA 1280 x 1024 TFT LCDs
- Core i5/i7 Processor Options
- XEON E3 Option
- 2x 5-1/4" and 1x 3-1/2" Drive Slots
- 7x Plug-In Card Slots with 1x PCIe x16
- Detachable Keyboard
- 600W ATX Power Supply

ASSEMBLED  
IN THE USA

REVISION  
CONTROL

EASY  
CUSTOMIZATION

MIL-STD  
810

The P370 offers one 17" 1280 x 1024 resolution LCD display in a portable computer system. A touch screen can be fitted and optional enhancement filters can be provided for improved viewing. Pre-configured systems provide a choice of Core i5/i7 or XEON E3 high-performance processors. Up to 16GB of DDR3 memory can be installed in the Core i5 and i7 systems. A full feature detachable keyboard is included. Also included is a wheeled padded transit case.

- CUSTOM SYSTEMS & CASE STUDIES
- TRANSIT CASE SERVICES & SYSTEMS
- MILITARY COMPUTER SYSTEMS
- COMMERCIAL COMPUTER SYSTEMS
- PORTABLE COMPUTER SYSTEMS

- RUGGED LCDS & KEYBOARDS
- RAID DISK STORAGE

ORDERING GUIDE

LATEST TECHNOLOGY SUPPORTED—CALL NOW!

Model Number	Processor	Speed GHz	Number of CPUs	Chip Set	Max Ram	Raid	Slot Count (Dependent on Riser Card)
P37001	Core i5-660 Core i7-860	3.33 2.8	1	Q57	16GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 2 x1, PCI 3
P37007	Core i7-3770 Core i5-3550S Core i7-2600 Core i5-2400	3.9 3.7 3.4 3.1	1	Q67	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 4
P37008	XEON E3-1275 XEON E3-1225	3.4 3.1	1	C216	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 2 x16, 1 x4, PCIe Mini 1, PCI 3
P37013	Core i7-4330S Core i5-4570S	3.9 3.6	1	Q87	32 GB	JBOD 0, 1, 5	Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3

SYSTEM  
SPECIFICATIONS

PHYSICAL DIMENSIONS

- 14.1" (H) x 17.1" (W) x 9.0" (D)
- 29 lbs (Varies by Configuration)

LCD FEATURES

- One 17" TFT Display
- 1280 x 1024 Each (3840 x 1024 Effective)
- 300cd/m² Brightness
- 800:1 Contrast
- 160° Viewing Angle
- 5ms Response Time
- Anti-Glare Hard Coat Standard

POWER SUPPLY

- Output Power 650W
- Single or Redundant options
- Input 90 To 260Vac, 50/60Hz Auto Switching High Efficiency
- Other Options Available



COOLING

- 2x 120mm External Fans
- Positive Chassis Pressure

CHASSIS DETAILS

- Rugged Aluminum Construction
- Accommodates an ATX Motherboard
- 7x Full Height Card Slots
- Rubber Corner Bumpers
- Detachable Full Feature Keyboard

DRIVE BAYS

- 2x 5-1/4" and 1x 3-1/2" Hard Drive Bays, 1x 3-1/2" Drive Bay
- RAID 0, 1, and 5 Supported
- Slim DVDRW Installed Standard

ENVIRONMENT

- Operating Temperature: 0° to 50°C (32° to 122°F)
- Storage Temperature: -20° to 60°C (-4° to 140°F)
- Humidity: 5 to 95% RH Non-condensing



# RUGGED MILITARY GRADE RACKMOUNT LCD DISPLAYS



Utilizing the highest quality LCD displays and keyboards, Chassis Plans' rackmount keyboards, rackmount LCD monitors, and monitors with keyboards are assembled with pride in the USA. All share a rugged military-grade design philosophy to provide systems that will reliably perform in the harshest military environments. The LCD panels are enterprise grade for high performance and extended availability. LCD enhancements include bonded anti-reflective oleophobic and EMI overlays. Hi-bright panels for direct sunlight use are available. The LCD controllers are mil-grade providing the inputs and features you need to meet your mission objectives.

## CHASSIS FEATURES

- Lightweight Rugged 5052-H32 Aircraft-Grade Aluminum
- Milled Solid Billet Front Panel (1U and 2U Displays)
- Extended Availability Enterprise-Grade LCD Panels
- Extended Temperature Option: -20°C to +70°C Operating
- Bonded Oleophobic Anti-Reflective Overlay Options
- Bonded EMI Filter Option for MIL-STD-461 Compliance
- Variety of LCD Resolutions
- Variety of Keyboards
- 12VDC, 110/220VAC, 28VDC
- Designed to Meet MIL-S-901D and Tested to MIL-STD-810G

## CONTROLLER FEATURES

- High Performance Military Grade LCD Controllers
- aRGB, DVI-D, HDMI, Composite Video Inputs
- Optional HD & SD Component and HD-SDI Inputs
- Picture-In-Picture / Picture-By-Picture
- Image Up / Down Scaling
- Variable Aspect
- Freeze and Zoom Function
- Auto Setup and Wide Screen Detection
- RS232 and Ethernet Remote Command Protocol
- Text Overlay Function
- Custom Display Scaling

# TFX TRI-FOLD

## 2U RACKMOUNT MILITARY-GRADE LCD DISPLAY



### FEATURES

- Only Tri-Fold Rugged Military Display with Height of 2U
- Long Life 19" TFT LCDs with LED Backlight
- 1280 x 1024 Max Resolution Per Panel
- Extended Temperature (-20° to +70°C) Option
- aRGB, DVI-D, HDMI, Composite Video Inputs
- Bonded Oleophobic Anti-Reflective Glass Option
- Military-Grade LCD Controller



The TFX is a rugged military-grade high performance 2U rackmount LCD display offering three 19" TFT LCD displays with per panel resolution of 1280 x 1024. The TFX is the only tri-fold display that fits in 2U. Display options include a bonded oleophobic anti-reflective glass cover and a bonded ITO EMI filter. The system is built to military standards and includes a military-grade wide temperature range LCD controller and other rugged components. The highly sophisticated controller accepts aRGB, DVI-D, and HDMI inputs. The TFX also includes an audio amplifier with speakers.



### ORDERING GUIDE

TFX1-191	Standard Temperature Display
TFX1-192	Extended Temperature Display



DISPLAY  
SPECIFICATIONS

PHYSICAL DIMENSIONS

- 3.5" (H) x 24.0" (D)  
x 19.0" (W) Closed
- 19.2" (H) x 24.0" (D)  
x 50.0" (W) Open
- 37 lbs

EXTENDED  
TEMPERATURE DISPLAY

- -20° to 70°C Operating  
Temperature
- 1500cd/m² Brightness
- 800:1 Contrast Ratio
- 160° Viewing Angle

STANDARD  
TEMPERATURE DISPLAY

- 5° to 65°C Operating  
Temperature
- 350cd/m² Brightness
- 1500:1 Contrast Ratio
- 170° Viewing Angle
- Anti-Glare Hardcoat Standard

DISPLAY ENHANCEMENTS

- Bonded Oleophobic  
Anti-Reflective Glass Overlay
- Bonded EMI Shield

VIDEO CONTROLLER  
FEATURES

- ARGB (15 Pin VGA)
- DVI-D Input
- HDMI 1.3
- Image Up/Down-Scaling
- Picture-In-Picture
- Picture-By-Picture
- Variable Aspect
- Freeze & Zoom Function
- Wide Screen Mode Detection
- Auto Picture Setup
- Memory Buffer
- RS-232 Serial Command Protocol
- Ethernet Command Protocol
- Text Overlay Function

POWER OPTIONS

- 85-260VAC, 47-63Hz
- Mil-Std-704/1275A 28VDC
- 12VDC

HARSH ENVIRONMENTS

Designed to meet or exceed  
MIL-STD-810G to the below  
specifications.

ALTITUDE

- 10,000 ft. Operational,  
30,000 ft. Storage
- MIL-STD-810, Method 500.5

HIGH TEMPERATURE

- 70°C Operational, 80°C Storage
- MIL-STD-810, Method 501.5

LOW TEMPERATURE

- -20°C Operational, -30°C Storage
- MIL-STD-810, Method 502.5

HUMIDITY

- 5-95%, Non-condensing
- MIL-STD-810, Method 507.5

BLOWING SAND AND DUST

- Procedures I and II
- MIL-STD-810, Method 510.5

TRANSPORT VIBRATION

- US Highway Truck and Air  
Transport
- MIL-STD-810, Method 514.6

BENCH HANDLING SHOCK

- Procedure VI, 20G @ 11ms
- MIL-STD-810, Method 516.6



# CCX-17/19 DISPLAYS

## 1U RACKMOUNT MILITARY-GRADE LCD KEYBOARD



### FEATURES

- 1U High Rugged Military Design
- Short 24.4" Deep Clamshell Design
- Rigorously Tested to MIL-STD-810G
- Long Life 17" or 19" LCD with LED Backlight
- 1280 x 1024 Max LCD Resolution
- Extended Temperature (-20° to +70°C) Operation (17")
- Sealed Keyboard with Hula Point or Glide Point Mouse Pointer
- Bonded Oleophobic Anti-Reflective and/or MIL-STD-461 EMI Overlay
- Two Mil-Grade LCD Controller Options



The CCX rackmount LCD keyboard drawers offer all the features you need for your harsh environment application. This extremely rugged, military-grade design has passed a rigorous set of MIL-STD-810G tests. The LCDs are best in class offering LED backlights and long product availability. A variety of sophisticated military-grade LCD controllers are offered to accommodate virtually any input signal including DVI-D, HDMI, VGA, Video and even HD Component. Rugged 5052-H32 aluminum construction and sealed, NEMA4 spill-proof keyboards are standard features.



### ORDERING GUIDE

CCX-17	17" LCD, 1280 x 1024 (Extended Temperature)
CCX-19	19" LCD, 1280 x 1024

DISPLAY SPECIFICATIONS

PHYSICAL DIMENSIONS

- 1.75" (H) x 24.4" (D) x 19.0" (W)
- 21 lbs

17" LCD FEATURES

- LED Backlight
- -20° to 70°C Operating Temperature
- 350cd/m<sup>2</sup> Brightness
- 1000:1 Contrast Ratio
- 30ms Response
- 160° Viewing Angle
- Anti-Glare Hardcoat Standard

19" LCD FEATURES

- LED Backlight
- 0° to 50°C Operating Temperature
- 350cd/m<sup>2</sup> Brightness
- 1000:1 Contrast Ratio
- 5ms Response
- 160° Viewing Angle
- Anti-Glare Hardcoat Standard

DISPLAY ENHANCEMENTS

- Bonded Oleophobic Anti-Reflective Glass Option
- Bonded EMI Shield Option

VIDEO CONTROLLER FEATURES

- ARGB (15 Pin VGA)
- DVI-D Input
- HDMI 1.3
- Composite Video Input
- PAL / NTSC / SECAM
- Sync On Green/Composite
- HD Component YPbPr
- SD Component YCbCr
- Image Up/Down-Scaling
- Picture-In-Picture
- Picture-By-Picture
- Variable Aspect
- Freeze & Zoom Function
- Wide Screen Mode Detection
- Auto Picture Setup
- Memory Buffer
- RS-232 Serial Command Protocol
- Ethernet Command Protocol
- Text Overlay Function  
Depends on Controller Selected

POWER OPTIONS

- 85-260VAC, 47-63Hz
- Mil-Std-704/1275A 28VDC
- 12VDC

KEYBOARD FEATURES

- 97 Keys Sealed Silicone Rubber Keyboard with Touch Pad
- 113 Keys Sealed Silicone Rubber Keyboard with Hula Point
- Sealed Spill-Proof Design
- Full-Travel Keyboard Feel
- Tactile Keystroke

HARSH ENVIRONMENTS

Designed and tested to meet or exceed MIL-STD-810G to the below specifications.

ALTITUDE

- 10,000 ft. Operational, 30,000 ft. Storage
- MIL-STD-810, Method 500.5

HIGH TEMPERATURE

- 17" = 70°C Operational, 80°C Storage
- 19" = 50°C Operational, 60°C Storage
- MIL-STD-810, Method 501.5

LOW TEMPERATURE

- 17" = -20°C Operational, -30°C Storage

- 19" = 0°C Operational, -20°C Storage
- MIL-STD-810, Method 502.5

HUMIDITY

- 5-95%, Non-condensing
- MIL-STD-810, Method 507.5

BLOWING SAND AND DUST

- Procedures I and II
- MIL-STD-810, Method 510.5

TRANSPORT VIBRATION

- US Highway Truck and Air Transport
- MIL-STD-810, Method 514.6

BENCH HANDLING SHOCK

- Procedure VI, 20G @ 11ms
- MIL-STD-810, Method 516.6



# CCX-15 DISPLAY

## 1U HI-BRIGHT RACKMOUNT LCD KEYBOARD



### FEATURES

- 1U High Rugged Military Design
- Rigorously Tested to MIL-STD-810G
- Long Life 15" LCD with LED Backlight
- 1024 x 768 Max LCD Resolution
- Extended Temperature (-30° to +70°C) Operation
- Sealed Keyboard with Hula Point or Glide Point Mouse Pointer
- Bonded Oleophobic Anti-Reflective and/or MIL-STD-461 EMI Overlay
- Two Mil-Grade LCD Controller Options

### DISPLAY SPECIFICATIONS

#### PHYSICAL DIMENSIONS

- 1.75" (H) x 24.4" (D) x 19.0" (W)
- 18 lbs
- Harsh Environments - Meets MIL-STD-810G

#### LCD FEATURES

- 15" 1024 x 768 Display
- Sunlight Readable Transflective Technology
- LED Backlight
- -30° to 70°C Operating Temperature
- 950cd/m<sup>2</sup> Brightness
- 1000:1 Contrast Ratio
- 17ms Response
- 160° Viewing Angle

#### DISPLAY ENHANCEMENTS

- Bonded EMI Shield Option
- Bonded Oleophobic Anti-Reflective Cover Glass Option

The CCX-15 is a rugged military grade high performance 1U rackmount clamshell LCD keyboard offering a 15" transfective display with LED backlighting and bonded oleophobic Anti-Reflective cover glass. The combination of high brightness, transfective technology and anti-reflective coating makes this display "pop" in direct sunlight. The CCX-15 is designed to meet MIL-S-901D and MIL-STD-810G and includes a solid milled aluminum front panel, lightweight 5052-H32 aluminum construction and locking stainless hardware throughout. Electrical components are selected for their inherent ruggedness and mounted to enhance that.

### VIDEO CONTROLLER FEATURES

- ARGB (15 Pin VGA)
- DVI-D Input
- HDMI 1.3
- Composite Video Input
- PAL / NTSC / SECAM
- Sync On Green/Composite
- HD Component YPbPr
- SD Component YCbCr
- Image Up/Down-Scaling
- Picture-In-Picture
- Picture-By-Picture
- Variable Aspect

- Freeze & Zoom Function
- Wide Screen Mode Detection
- Auto Picture Setup
- Memory Buffer
- RS-232 Serial Command Protocol
- Ethernet Command Protocol
- Text Overlay Function  
Depends on Controller Selected

### POWER OPTIONS

- 85-260VAC, 47-63Hz
- Mil-Std-704/1275A 28VDC
- 12VDC

### ORDERING GUIDE

CCX-15	15" LCD, 1024 x 768 Extended Temperature
--------	--

# CCXR-17 DISPLAY

## 1U SIDE ACCESS LCD KEYBOARD



### FEATURES

- 1U High Rugged Military Design
- Unique Short-Depth Side-Access (Patent Pending)
- Long Life 17" LCD with LED Backlight
- 1280 x 1024 Max Resolution Per Panel
- Extended Temperature (-20° to +70°C) Operation
- Built-in 4-Port KVM
- Models for Right or Left Access



The CCXR-17 is a side-access, space efficient, military-grade, high-performance 1U rackmount clamshell LCD keyboard offering an extended-temperature 17" TFT display. The unique patent-pending side-access feature minimizes required aisle space by placing the operator next to the rack instead of sitting or standing in the aisle. There is no other 1U LCD keyboard which offers this space saving feature. Included are a single DVI-D port and a 4-port VGA KVM. Optional LCD enhancements include a bonded MIL-STD-461 EMI shield and/or bonded oleophobic anti-reflective glass overlay.



### ORDERING GUIDE

CCXR-17	17" LCD, Short Depth Side Access LCD Keyboard
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CUSTOM SYSTEMS  
& CASE STUDIES

TRANSIT CASE  
SERVICES & SYSTEMS

MILITARY  
COMPUTER SYSTEMS

COMMERCIAL  
COMPUTER SYSTEMS

PORTABLE  
COMPUTER SYSTEMS

RUGGED LCDS  
& KEYBOARDS

RAID DISK STORAGE



## DISPLAY SPECIFICATIONS

### PHYSICAL DIMENSIONS

- 1.75" (H) x 24.4" (D) x 19.0" (W)
- 20 lbs with KVM

### LCD FEATURES

- 17" TFT LCD with LED Backlight
- -20° to 70°C Operating Temperature
- 350cd/m<sup>2</sup> Brightness
- 1000:1 Contrast Ratio
- 160° Viewing Angle
- Anti-Glare Hardcoat Standard

### VIDEO CONTROLLER FEATURES

- DVI-D and VGA Inputs
- Up Scaling to Fit Input To Panel
- Brightness, Contrast, RGB Adjust
- Color Temperature Adjust
- Input Source Select
- Conformal Coated
- RS-232 Serial Command Protocol

### DISPLAY ENHANCEMENTS

- Bonded Oleophobic Anti-Reflective Glass Option
- Bonded EMI Shield Option

### KVM FEATURES

- 4 Ports
- VGA Video Inputs
- PS/2 and USB Keyboard/Mouse Signals
- Hotkey Operation
- Auto Scan Option

### POWER OPTIONS

- 85-260VAC, 47-63Hz
- Mil-Std-704/1275A 28VDC
- 12VDC

### KEYBOARD FEATURES

- 97 Keys Sealed Silicone Rubber Keyboard with Touch Pad
- 113 Keys Sealed Silicone Rubber Keyboard with Hula Point
- Sealed Spill-Proof Design
- Full-Travel Keyboard Feel
- Tactile Keystroke

## HARSH ENVIRONMENTS

Designed to meet or exceed MIL-STD-810G to the below specifications.

### ALTITUDE

- 10,000 ft. Operational, 30,000 ft. Storage
- MIL-STD-810, Method 500.5

### HIGH TEMPERATURE

- 70°C Operational, 80°C Storage
- MIL-STD-810, Method 501.5

### LOW TEMPERATURE

- -20°C Operational, -30°C Storage
- MIL-STD-810, Method 502.5

### HUMIDITY

- 5-95%, Non-condensing
- MIL-STD-810, Method 507.5

### BLOWING SAND AND DUST

- Procedures I and II
- MIL-STD-810, Method 510.5

### TRANSPORT VIBRATION

- US Highway Truck and Air Transport
- MIL-STD-810, Method 514.6

### BENCH HANDLING SHOCK

- Procedure VI, 20G @ 11ms
- MIL-STD-810, Method 516.6



# CPX1-241 DISPLAY

## 9U 24" RACKMOUNT LCD DISPLAY



### FEATURES

- 9U High Rugged Military Design
- Designed to Meet MIL-S-901D and MIL-STD-810G
- Long Life 24" LCD with LED Backlight
- 1920 x 1200 Max LCD Resolution
- Bonded Oleophobic Anti-Reflective and/or MIL-STD-461 EMI Overlay
- Optional Infrared Multi-Touch Touch Screen
- Advanced Mil-Grade LCD Controller
- Supports Virtually Any Input Signal



The CPX1-241 mount-on-rack display is ideal for many rugged military applications, particularly ones that require extensive screen space, e.g., HD video plus a dashboard with gauges. The display has an InfraRed Touch Screen and supports Multi Touch Gesture technology (Windows 7/8). A bonded oleophobic anti-reflective glass overlay is standard and an optional micromesh EMI Filter is available. The advanced military grade LCD controller accepts virtually any video signal with optional HD-SDI. The controller provides advanced features such as picture-in-picture, picture-by-picture and text overlay. An amplifier and speakers are included.



### ORDERING GUIDE

CPX1-241	Mount-On-Rack 24", 1920 x 1600
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CUSTOM SYSTEMS  
& CASE STUDIES

TRANSIT CASE  
SERVICES & SYSTEMS

MILITARY  
COMPUTER SYSTEMS

COMMERCIAL  
COMPUTER SYSTEMS

PORTABLE  
COMPUTER SYSTEMS

RUGGED LCDS  
& KEYBOARDS

RAID DISK STORAGE

## DISPLAY SPECIFICATIONS

### PHYSICAL DIMENSIONS

- 15.47" (H) x 3.2" (D) x 23" (W)
- 26 lbs

### LCD FEATURES

- 24" LCD
- 1920 x 1200 Resolution
- LED Backlight
- 300cd/m<sup>2</sup> Brightness
- 1000:1 Contrast Ratio
- 14ms Response
- 178° Viewing Angle

- 0° to 50°C Operating Temperature
- Standard Bonded Oleophobic Anti-Reflective Glass Overlay
- Optional Bonded MicroMesh EMI Filter
- Standard 2W Audio Amp with Speakers

### DISPLAY ENHANCEMENTS

- Bonded EMI Shield Option
- Multi-Touch Touch Screen Option

### VIDEO CONTROLLER FEATURES

- ARGB (15 Pin VGA)
- DVI-D Input
- HDMI 1.3
- Composite Video Input \*
- PAL / NTSC / SECAM \*
- Sync On Green/Composite \*
- HD Component YPbPr \*
- SD Component YCbCr \*
- HD-SDI - SMPTE259M, 4.2.2 \*
- 3G HD-SDI 424M 4.4.4 \*
- Image Up/Down-Scaling
- Picture-In-Picture
- Picture-By-Picture
- Variable Aspect
- Freeze & Zoom Function
- Wide Screen Mode Detection
- Auto Picture Setup
- Memory Buffer
- RS-232 Serial Command Protocol
- Ethernet Command Protocol
- Text Overlay Function
- Infra-Red Remote Control
- \* = Available Options

### POWER OPTIONS

- 85-260VAC, 47-63Hz
- Mil-Std-704/1275A 28VDC
- 12VDC

## HARSH ENVIRONMENTS

Designed to meet or exceed MIL-STD-810G to the below specifications.

### ALTITUDE

- 10,000 ft. Operational, 30,000 ft. Storage
- MIL-STD-810, Method 500.5

### HIGH TEMPERATURE

- 50°C Operational, 60°C Storage
- MIL-STD-810, Method 501.5

### LOW TEMPERATURE

- 0°C Operational, -20°C Storage
- MIL-STD-810, Method 502.5

### HUMIDITY

- 5-95%, Non-condensing
- MIL-STD-810, Method 507.5

### BLOWING SAND AND DUST

- Procedures I and II
- MIL-STD-810, Method 510.5

### TRANSPORT VIBRATION

- US Highway Truck and Air Transport
- MIL-STD-810, Method 514.6

### BENCH HANDLING SHOCK

- Procedure VI, 20G @ 11ms
- MIL-STD-810, Method 516.6



# CPX-17/19/201 DISPLAY

## 8U RACKMOUNT LCD



### FEATURES

- 8U High Rugged Military Design
- Designed to Meet MIL-S-901D and MIL-STD-810G
- Long Life 17" or 19" LCD with LED Backlight & 1280 x 1024 Resolution
- Long Life 20.1" LCD with LED Backlight & 1600 x 1200 Resolution
- Extended Temperature (-20° to +70°C) Operation (17")
- Bonded Oleophobic Anti-Reflective and/or MIL-STD-461 EMI Overlay
- Multiple Mil-Grade LCD Controller Options



The CPX-17, -19 and -201 rackmount LCD displays offer all the features you need for your harsh environment application. These extremely rugged, military-grade displays are engineered to meet MIL-S-901A and MIL-STD-810G. The LCDs are best in class offering LED backlights and revision controlled long product availability. Sophisticated military-grade LCD controllers are offered to accommodate virtually any input signal including DVI-D, HDMI, VGA, Video, HD Component and even HD-SDI. Rugged 5052-H32 aluminum construction is a standard feature. An optional RhinoTouch® multi-touch touch screen is available.



### ORDERING GUIDE

CPX-17	17" LCD, 1280 x 1024 Extended Temperature
CPX-19	19" LCD, 1280 x 1024
CPX-201	20.1" LCD, 1600 x 1200

CUSTOM SYSTEMS  
& CASE STUDIES

TRANSIT CASE  
SERVICES & SYSTEMS

MILITARY  
COMPUTER SYSTEMS

COMMERCIAL  
COMPUTER SYSTEMS

PORTABLE  
COMPUTER SYSTEMS

RUGGED LCDS  
& KEYBOARDS

RAID DISK STORAGE



## DISPLAY SPECIFICATIONS

### PHYSICAL DIMENSIONS

- 14.00" (H) x 3.15" (D) x 19.0(W)
- 20 lbs

### 17" LCD FEATURES

- LED Backlight
- -20° to 70°C Operating Temperature
- 350cd/m<sup>2</sup> Brightness
- 1000:1 Contrast Ratio
- 30ms Response
- 160° Viewing Angle
- Anti-Glare Hardcoat Standard

### 19" LCD FEATURES

- LED Backlight
- 0° to 50°C Operating Temperature
- 350cd/m<sup>2</sup> Brightness
- 1000:1 Contrast Ratio
- 5ms Response
- 170° Viewing Angle
- Anti-Glare Hardcoat Standard

### 20.1" LCD FEATURES

- LED Backlight
- 0° to 50°C Operating Temperature
- 260cd/m<sup>2</sup> Brightness
- 1000:1 Contrast Ratio
- 30ms Response

- 160° Viewing Angle
- Anti-Glare Hardcoat Standard

### DISPLAY ENHANCEMENTS

- Bonded Oleophobic Anti-Reflective Glass Option
- Bonded EMI Shield Option
- Multi-Touch Touch Screen Option

### VIDEO CONTROLLER FEATURES

- ARGB (15 Pin VGA)
- DVI-D Input
- HDMI 1.3
- Composite Video Input \*
- PAL / NTSC / SECAM \*
- Sync On Green/Composite \*
- HD Component YPbPr \*
- SD Component YCbCr \*
- Image Up/Down-Scaling
- Picture-In-Picture
- Picture-By-Picture
- Variable Aspect
- Freeze & Zoom Function
- Wide Screen Mode Detection
- Auto Picture Setup
- Memory Buffer
- RS-232 Serial Command Protocol
- Ethernet Command Protocol
- Text Overlay Function
- Depends on Controller Selected
- \* = Available Options

### POWER OPTIONS

- 85-260VAC, 47-63Hz
- Mil-Std-704/1275A 28VDC
- 12VDC
- 48VDC

## HARSH ENVIRONMENTS

Designed to meet or exceed MIL-STD-810G to the below specifications.

### ALTITUDE

- 10,000 ft. Operational, 30,000 ft. Storage
- MIL-STD-810, Method 500.5

### HIGH TEMPERATURE

- 17" = 70°C Operational, 80°C Storage
- 19"/20.1" = 50°C Operational, 60°C Storage
- MIL-STD-810, Method 501.5

### LOW TEMPERATURE

- 17" = -20°C Operational, -30°C Storage

- 19"/20.1" = 0°C Operational, -20°C Storage

- MIL-STD-810, Method 502.5

### HUMIDITY

- 5-95%, Non-condensing
- MIL-STD-810, Method 507.5

### BLOWING SAND AND DUST

- Procedures I and II
- MIL-STD-810, Method 510.5

### TRANSPORT VIBRATION

- US Highway Truck and Air Transport
- MIL-STD-810, Method 514.6

### BENCH HANDLING SHOCK

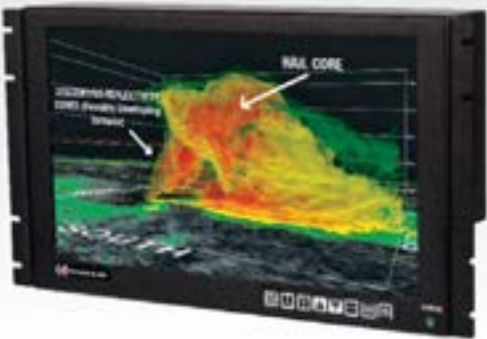
- Procedure VI, 20G @ 11ms
- MIL-STD-810, Method 516.6





# CPX2-173 DISPLAY

## 6U HI-BRIGHT WIDE-SCREEN RACKMOUNT LCD



### FEATURES

- 6U High Rugged Military Design
- Designed to Meet MIL-S-901D and MIL-STD-810G
- Long Life Wide-Screen 17.3" LCD with LED Backlight
- 1920 x 1080 Max LCD Resolution
- Extended Temperature (0° to +70°C) Operation
- Hi-Bright Daylight Readable Option
- Bonded Oleophobic Anti-Reflective and/or MIL-STD-461 EMI Overlay
- Two Mil-Grade LCD Controller Options Supporting HD-SDI

### DISPLAY SPECIFICATIONS

#### PHYSICAL DIMENSIONS

- 10.47" (H) x 3.2" (D) x 19.0" (W)
- 9.7 lbs

#### LCD FEATURES

- 17.3" 1920 x 1080 Display (Wide-Screen High Definition)
- LED Backlight
- 0° to 70°C Operating Temperature
- 400cd/m<sup>2</sup> (Standard) or 1000cd/m<sup>2</sup> (Hi-Bright) Brightness
- 600:1 Contrast Ratio
- 40ms Response
- 160° Viewing Angle

#### DISPLAY ENHANCEMENTS

- Bonded EMI Shield Option
- Bonded Oleophobic Anti-Reflective Cover Glass Option
- RhinoTouch Touch Screen Option

The CPX2-173 is a rugged military-grade, high-performance 6U rackmount LCD display offering a wide-screen 1920 x 1080 17.3-inch display with LED backlighting. Optional bonded oleophobic anti-reflective cover glass, ITO EMI filter and other LCD enhancements are available. An enhanced hi-bright display is available for daylight viewability. The CPX2-173 is designed to meet MIL-S-901D and MIL-STD-810G with lightweight 5052-H32 aluminum construction and locking stainless hardware throughout. Electrical components are selected for their inherent ruggedness and mounted to enhance that. An optional RhinoTouch® touch screen is available.

#### VIDEO CONTROLLER FEATURES

- ARGB (15 Pin VGA)
- DVI-D Input
- HDMI 1.3
- Display Port
- HD-SDI & 3G HD-SDI
- Composite Video Input
- PAL / NTSC / SECAM
- Sync On Green/Composite
- HD Component YPbPr
- SD Component YCbCr
- Image Up/Down-Scaling
- Picture-In-Picture

- Picture-By-Picture
- Variable Aspect
- Freeze & Zoom Function
- Wide Screen Mode Detection
- Auto Picture Setup
- Memory Buffer
- RS-232 Serial Command Protocol
- Ethernet Command Protocol
- Text Overlay Function
- Depends on Controller Selected

#### POWER OPTIONS

- 85-260VAC, 47-63Hz
- Mil-Std-704/1275A 28VDC
- 12VDC

### ORDERING GUIDE

CPX2-1731	17.3" Wide-Screen LCD, 1920 x 1080 Standard Brightness
CPX2-1732	17.3" Wide-Screen LCD, 1920 x 1080 Enhanced Hi-Bright Daylight Viewable

CUSTOM SYSTEMS  
& CASE STUDIES

TRANSIT CASE  
SERVICES & SYSTEMS

MILITARY  
COMPUTER SYSTEMS

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COMPUTER SYSTEMS

PORTABLE  
COMPUTER SYSTEMS

RUGGED LCDS  
& KEYBOARDS

RAID DISK STORAGE

# CKX RACKMOUNT KEYBOARD



## FEATURES

- Rackmount - Utilizes 1RU (1.75")
- Waterproof / Dustproof Assembly
- High Quality NEMA4 Sealed 83-Key Keyboard
- Sealed Optical 38mm Trackball
- Ergonomic Wrist Rest
- Lightweight Aluminum Construction
- Solid Bearing Slides
- Captive Thumb Screws

MIL-S  
901D



ASSEMBLED  
IN THE USA



MIL-STD  
810



## ORDERING GUIDE

Model	Interface
CKX-AP	PS/2
CKX-BU	USB

# CKC RACKMOUNT KEYBOARD



## FEATURES

- Rackmount - Utilizes 1RU (1.75")
- High Quality 83-Key Keyboard
- Optical Track Ball or Touch Pad
- Ergonomic Wrist Rest
- Lightweight Aluminum Construction
- Solid Bearing Slides
- Captive Thumb Screws



MIL-STD  
810

## ORDERING GUIDE

Model	Interface	Pointing Device
CKC-AX	PS/2	Track Ball
CKC-BX	USB	Track Ball
CKC-CX	PS/2	Touch Pad
CKC-DX	USB	Touch Pad

## RUGGED MILITARY-GRADE

# HIGH PERFORMANCE STORAGE

High-performance, high-speed, enterprise-grade disk storage delivering a fast response and the right intelligence to battlefield decision makers is what today's command and control infrastructure is all about. Today's C4ISR infrastructure is an incredibly complex system of hardware, software and networks - all working together to Find, Fix, Track, Target, Engage and Assess the enemy in as short a time as possible. Intelligence fused from multiple input sources such as SIGINT, IMINT and MOVINT create a complete and integrated picture of the battlefield which requires large amounts of reliable data storage. It is essential that the network centric storage systems used to support these mission-critical applications provide maximum uptime and complete redundancy to ensure decision makers have more information all of the time.

### CHASSIS FEATURES

- Wide Range of Drive Options
- 2U Chassis with 12 or 24 Drives
- Built-In Redundancy in Controllers and Power Supplies
- Redundant, Hot Swap Components
- 2-1/2" and 3-1/2" SAS, SATA or SSD Drives
- 1 To 3 Terabyte Energy-Saving Enterprise-Grade Drives
- DC Power Options
- Tested To Meet NEBS Level 3
- Tested To Meet MIL-STD-810F

### CONTROLLER FEATURES

- RAID 0, 1, 3, 5, 6, 10, 50
- Optional Snapshot Capability
- Additional Data Protection with Full Volume Copies
- Built-In Schedule Capability
- Dual or Single Raid Controller or JBOD
- Data Rates Up To 8GB/Sec FC or 6GB/Sec SAS
- OS Support - Windows, Linux, Solaris
- Low Latency Cache Mirroring
- Battery-Free Cache Backup
- 1.6GB/Sec Read / 1.3GB/Sec Write
- Same Sector Cache Hits Of 375,000 IOPS



CUSTOM SYSTEMS  
& CASE STUDIES

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COMPUTER SYSTEMS

RUGGED LCDS  
& KEYBOARDS

RAID DISK STORAGE

# HIGH PERFORMANCE 2U RAID DISK ARRAYS

## SA2U-12EHP

- Ultra-High IOPS Performance - 375,000 IOPS
- Data Rates Up To 4Gb/sec
- Rugged - Tested to NEBS Level 3 and MIL-STD-810F
- 12 SAS, SATA or SSD Drives
- Redundancy Built In - Drives, Controllers & Power
- Supports Raid 0, 1, 3, 5, 6, 10, 50 or JBOD
- Full Volume Copies and Snapshot Capability

## SA2U-24

- 24 2-1/2" SAS, SATA or SSD Drives
- Data Rates Up To 3Gb/sec
- Can Daisy-Chain Up To 7 Additional Units
- Redundancy Built In - Drives, Controllers & Power
- Supports Raid 0, 1, 3, 5, 6, 10, 50 or JBOD
- Full Volume Copies and Snapshot Capability
- Low Latency Cache Mirroring

## SA2U-4000

- 24 2-1/2" SAS or SSD Drives
- Data Rates Up To 8Gb/sec
- Rugged - Tested to NEBS Level 3 and MIL-STD-810G
- Redundancy Built In - Drives, Controllers & Power
- Supports Raid 0, 1, 3, 5, 6, 10, 50 or JBOD
- Full Volume Copies and Snapshot Capability
- 99.999% Uptime Availability



SA2U-12EHP



SA2U-24 / SA2U-4000

## ORDERING GUIDE

Model	Number of Drives	Drive Type	Capacity Sys Max	Performance IOPS MB/Sec	Drive Support
SA2U-12EHP	12	3.5"	1-12 TB 108 TB	375,000/1,580	SAS 15K, SATA 7200, SSD
SA2U-24	24	2.5"	1-12 TB 60 TB	144,000/1,160	SAS 7200, 10K & 15K
SA2U-4000	12 24	3.5" 2.5"	36 TB 24 TB	5200MB/s Reads 3000MB/s Writes	SAS 10K, 15K, Nearline, SSD

# TOP SELLERS



## CPX1-241 24-INCH

### 9U MILITARY-GRADE RACKMOUNT LCD DISPLAY

#### FEATURES

- Full 1920 x 1200 Resolution
- Long Life 24-Inch LCD with LED Backlight
- Designed to Meet or Exceed MIL-STD-810G and MIL-S-901D
- aRGB, DVI-D, HDMI, HD-SDI, 3G HD-SDI Video Inputs
- Optional Composite, HD Component YPbPr, SD Component YCbCr Inputs
- Picture-in-Picture/Picture-by-Picture
- Bonded Anti-Reflective Cover Glass with Oleophobic Coating
- IR Touch Screen Supporting Multi-Touch Option
- Bonded EMI Filter Option
- Military-Grade LCD Controllers

**See page 45 for more information**

## M1U-20 FAMILY

### 1U MILITARY-GRADE RACKMOUNT SYSTEMS

#### FEATURES

- Only 20" Deep
- Designed to Meet or Exceed MIL-STD-810G and MIL-S-901D
- Single and Dual 8 or 10 Core XEON E5 CPU's
- Two x16 (Gen 3.0) Card Slots
- Up to Three 2-1/2" Removable Drives, and One Slim DVD
- Five Fans with SysCool® Intelligent Fan Controller
- Front Panel Smart Card Reader (Optional)
- Redundant Power Supply

**See page 10 for more information**





KEY CODE

Mail Room: If the person above is no longer with your organization, please route this to the Engineering Manager.

## ***RUGGED MILITARY-GRADE BACKMOUNT COMPUTERS***

### ***FEATURES***

- Rugged 5052-H32 Aircraft Grade Aluminum
- Milled Solid Billet Front Panel
- EMI/Environmental Gasket on Front Panel
- Formed Welded Front Door
- Shock Mounted Hard Drive Bays
- High-Reliability Long-Life High-Velocity Fans
- SysCool® Intelligent Fan Controller / Alarm Board
- 45PPI Air Filter with optional Honeycomb EMI Filter
- ANSI/VITA 40-2003 Compliant Alarm LEDs
- Stainless Self Locking Hardware
- Long-Life Revision-Controlled Components for Multi-Year Program Deployment

***SEE PAGE 8 FOR  
MORE INFORMATION.  
CALL TOLL FREE 800-787-4913***

MC215

