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

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To Receive Future Source-Books Visit: chassis-plans.com/mcml
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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

## 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 for full warranty information.

### HOURS OF OPERATION
Monday - Friday, 8:00am to 5:00pm, Pacific Time.

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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

More information: www.chassis-plans.com/m3p01 · (800) 787-4913
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.
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.
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.
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.
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®
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 onLCDs
• 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
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/ES 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.

More information: www.chassis-plans.com/m3p08 · (800) 787-4913
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.

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.

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)
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.
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

More information: www.chassis-plans.com/m3p10 · (800) 787-4913
**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

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**

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More information: www.chassis-plans.com/m3p12 · (800) 787-4913
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

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.

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

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

More information: www.chassis-plans.com/m3p12 · (800) 787-4913
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**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Processor</th>
<th>Speed GHz</th>
<th>Number of CPUs</th>
<th>Chip Set</th>
<th>Max Ram</th>
<th>Raid</th>
<th>Slot Count (Dependent on Riser Card)</th>
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</table>
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 5-¼” 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

HIGH TEMPERATURE
• 60˚C Operational, 85˚C Storage

LOW TEMPERATURE
• 0˚C Operational, -20˚C Storage

HUMIDITY
• 5–95%, Non-condensing
• Method 507.5

TRANSPORT VIBRATION
• US Highway Truck and Air Transport

BENCH HANDLING SHOCK
• Procedure VI, 20G @ 11ms

Environment
More information: www.chassis-plans.com/m3p14 · (800) 787-4913
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 5-1/2” Drive Bays
• 3x High Performance Fans with SysCool® Fan Controller
• Single or Redundant Power Supply

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

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<td>C600-A</td>
<td>512 GB</td>
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<td>512 GB</td>
<td>JBOD 0, 1, 5</td>
<td>PCIe - 10 x8 (3.0), 1 x4 (2.0)</td>
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More information: www.chassis-plans.com/m3p16 · (800) 787-4913
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
- 4SPPI Washable Air Filter in Door
- Optional Honeycomb EMI Filter in Door

DRIVE BAYS
- 3x Horizontal 5-¼” 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

More information: www.chassis-plans.com/m3p16 · (800) 787-4913
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.

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<th>Model Number</th>
<th>Processor</th>
<th>Speed GHz</th>
<th>Number of CPUs</th>
<th>Chip Set</th>
<th>Max Ram</th>
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<th>Slot Count</th>
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<td>C600-A</td>
<td>512 GB</td>
<td>JBOD 0, 1, 5</td>
<td>PCIe - 4 x16 (3.0), 1 x8 (3.0), 1 x4 (2.0)</td>
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<td>M5U2211</td>
<td>E5-2658</td>
<td>2.1</td>
<td>1 or 2</td>
<td>C602</td>
<td>512 GB</td>
<td>JBOD 0, 1, 5</td>
<td>PCIe - 10 x8 (3.0), 1 x4 (2.0)</td>
</tr>
</tbody>
</table>

More information: www.chassis-plans.com/m3p18 · (800) 787-4913
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
- 4SPPI Washable Air Filter in Door
- Optional Honeycomb EMI Filter
  in Door

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
- 4SPPI 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

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

ALTIMETRY
- 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

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

More information: www.chassis-plans.com/m3p18 · (800) 787-4913
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
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.

**ORDERING GUIDE**

<table>
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<tr>
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<th>Slot Count (Dependent on Riser Card)</th>
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</table>
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.

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<table>
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</table>

More information: www.chassis-plans.com/m3p22 · (800) 787-4913
### 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.

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<tr>
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**More information:** www.chassis-plans.com/m3p23 · (800) 787-4913
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

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<th>Speed GHz</th>
<th>Number of CPUs</th>
<th>Chip Set</th>
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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

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Processor</th>
<th>Speed GHz</th>
<th>Number of CPUs</th>
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More information: www.chassis-plans.com/m3p25 · (800) 787-4913
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

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<th>Model Number</th>
<th>Processor</th>
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<th>Number of CPUs</th>
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Core i7-860 | 3.33  
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| 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 x3, 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 |

More information: www.chassis-plans.com/m3p26 · (800) 787-4913
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

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

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<th>Number of CPUs</th>
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More information: www.chassis-plans.com/m3p27 · (800) 787-4913
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

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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.

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<td>JBOD 0, 1, 5</td>
<td>Vertical - PCIe - 2 x16, 1 x4, PCIe Mini 1, PCI 3</td>
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<td>JBOD 0, 1, 5</td>
<td>Vertical - PCIe - 3 x8, 1 x4, 1 x1, PCI 1</td>
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<td></td>
<td>XEON E5-2428L</td>
<td>1.8</td>
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<td>Q87</td>
<td>32 GB</td>
<td>JBOD 0, 1, 5</td>
<td>Vertical - PCIe - 1 x16, 1 x4, 1 x1, PCI 3</td>
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<td>Core i5-4570S</td>
<td>3.6</td>
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</tr>
</tbody>
</table>

More information: www.chassis-plans.com/m3p29  (800) 787-4913
# 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

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

More information: www.chassis-plans.com/m3p30 · (800) 787-4913
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.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Processor</th>
<th>Speed GHz</th>
<th>Number of CPUs</th>
<th>Chip Set</th>
<th>Max Ram</th>
<th>Raid</th>
<th>Slot Count</th>
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</thead>
<tbody>
<tr>
<td>C52810</td>
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<td>1 or 2</td>
<td>C600-A</td>
<td>512 GB</td>
<td>JBOD 0, 1, 5</td>
<td>PCIe - 4 x16 (3.0), 1 x8 (3.0), 1 x4 (2.0)</td>
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<td>C52811</td>
<td>XEON E5-2658</td>
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<td>1 or 2</td>
<td>C602</td>
<td>512 GB</td>
<td>JBOD 0, 1, 5</td>
<td>PCIe - 10 x8 (3.0), 1 x4 (2.0)</td>
</tr>
</tbody>
</table>
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

More information: www.chassis-plans.com/m3p32 · (800) 787-4913
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

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

MODEL NUMBER | PROCESSOR | SPEED GHz | NUMBER OF CPUS | CHIP SET | MAX RAM | RAID | SLOT COUNT
---|---|---|---|---|---|---|---
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

More information: www.chassis-plans.com/m3p33 · (800) 787-4913
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/m² 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

More information: www.chassis-plans.com/m3p33 · (800) 787-4913
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.

**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

**ORDERING GUIDE**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Processor</th>
<th>Speed GHz</th>
<th>Number of CPUs</th>
<th>Chip Set</th>
<th>Max Ram</th>
<th>Raid</th>
<th>Slot Count (Dependent on Riser Card)</th>
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<td>Vertical - PCIe - 1 x1, 1 x4, 1 x1, PCI 3</td>
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<td>Core i5-4570S</td>
<td>3.6</td>
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</table>
**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

More information: www.chassis-plans.com/m3p35 · (800) 787-4913
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

More information: www.chassis-plans.com/m3p37 · (800) 787-4913
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

<table>
<thead>
<tr>
<th>TFX1-191</th>
<th>Standard Temperature Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFX1-192</td>
<td>Extended Temperature Display</td>
</tr>
</tbody>
</table>

More information: www.chassis-plans.com/m3p38 · (800) 787-4913
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

DISPLAY ENHANCEMENTS
• Bonded Oleophobic
• Anti-Reflective Glass Overlay
• Bonded EMI Shield

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

- ALTIMETRY
  • 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

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

HARSH ENVIRONMENTS

More information: www.chassis-plans.com/m3p38 · (800) 787-4913
**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**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCX-17</td>
<td>17” LCD, 1280 x 1024 (Extended Temperature)</td>
</tr>
<tr>
<td>CCX-19</td>
<td>19” LCD, 1280 x 1024</td>
</tr>
</tbody>
</table>

More information: www.chassis-plans.com/m3p40 - (800) 787-4913
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/m² 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/m² 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

More information: www.chassis-plans.com/m3p40 · (800) 787-4913
**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°C 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/m² Brightness
- 1000:1 Contrast Ratio
- 17ms Response
- 160° Viewing Angle

**DISPLAY ENHANCEMENTS**

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

**POWER OPTIONS**

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

The CCX-15 is a rugged military grade high performance 1U rackmount clamshell LCD keyboard offering a 15” transflective display with LED backlighting and bonded oleophobic Anti-Reflective cover glass. The combination of high brightness, transflective 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.

**ORDERING GUIDE**

| CCX-15 | 15” LCD, 1024 x 768 Extended Temperature |

More information: www.chassis-plans.com/m3p42 · (800) 787-4913
**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 |

More information: [www.chassis-plans.com/m3p43](http://www.chassis-plans.com/m3p43) - (800) 787-4913
**DISPLAY SPECS**

**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/m² 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

**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

**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

**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

**DESIGNED TO MEET OR EXCEED**

MIL-STD-810G to the below specifications.

**AL TITUDE**
- 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

More information: www.chassis-plans.com/m3p43 · (800) 787-4913
**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 |

More information: www.chassis-plans.com/m3p45 · (800) 787-4913
**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/m² Brightness
- 1000:1 Contrast Ratio
- 14ms Response
- 178° Viewing Angle

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

**HARSH ENVIRONMENTS**

**ALTIMETRY**
- 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

**TRANSIT 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

**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

More information: www.chassis-plans.com/m3p45 · (800) 787-4913
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

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More information: www.chassis-plans.com/m3p47 · (800) 787-4913
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/m² 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/m² 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/m² 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

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

More information: www.chassis-plans.com/m3p47 · (800) 787-4913
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.
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

ORDERING GUIDE

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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

ORDERING GUIDE

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<td>CKC-BX</td>
<td>USB</td>
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<td>CKC-CX</td>
<td>PS/2</td>
<td>Touch Pad</td>
</tr>
<tr>
<td>CKC-DX</td>
<td>USB</td>
<td>Touch Pad</td>
</tr>
</tbody>
</table>

More information: www.chassis-plans.com/m3p50 · (800) 787-4913
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.
**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
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
Mail Room: If the person above is no longer with your organization, please route this to the Engineering Manager.

RUGGED MILITARY-GRADE RACKMOUNT 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