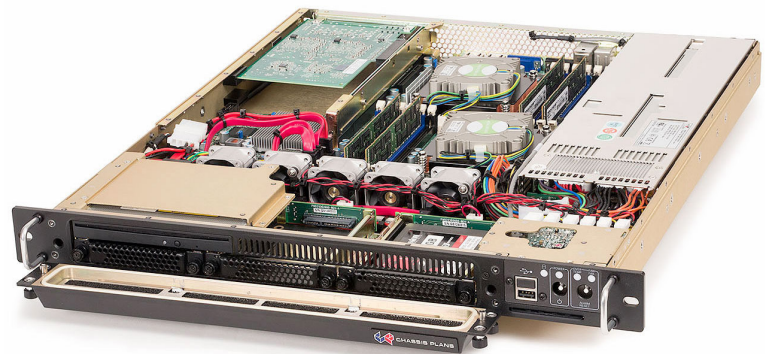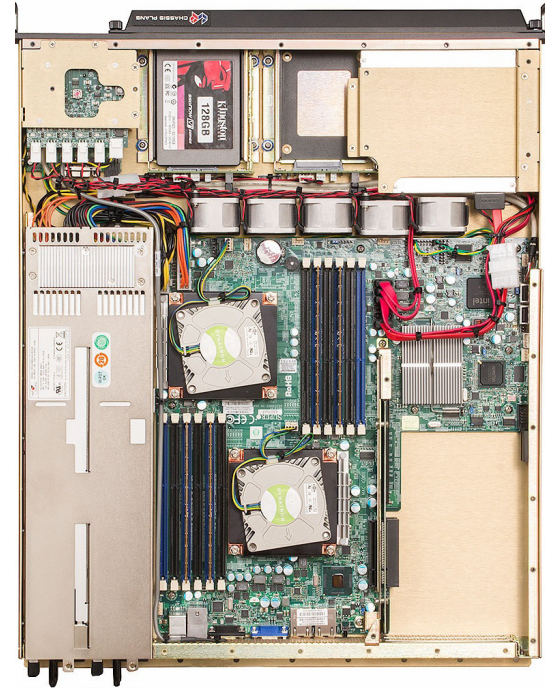# M1U-20 | 1U HIGH PERFORMANCE COMPUTER

1U COMPUTER

Our M1U-20 computing platform is a high-powered system in a small form factor, appropriate for computationally intense military applications. It has exceptional strength and built-in redundancy, is low weight, and contains our proprietary SysCool® thermal management system. SysCool® extends the life of the computing system, reduces power consumption, and lowers overall system noise levels. The M1U-20 system is ideal for those seeking a rugged rackmount 1U system designed to perform in confined spaces. Uniquely offered with an attached front door with integrated air (or optional EMI) filter serves to protect the drive bays and other components from dust and dirt, as well as shielding that is compliant for MIL-STD-461 EMI.

APPLICATIONS

- Airborne Operations
- Land-based Operations
- Seaborne Operations
- Telemetry
- Diagnostics
- Simulation
- C4ISR
- Communications
- Imaging
- Persistent Surveillance
- UAVs
- Automation
- Severe Environment Operations

Who We Are

CP Technologies designs, fabricates and integrates standard and customized high-performance computing platforms and LCD monitors for military, industry, and commercial applications.

Using COTS components, CP Technologies provides solutions for customers who need reliable systems that will operate in a variety of harsh conditions and who require revision control and hardware consistency for multi-year programs.

CP Technologies is an ITAR Registered and SBA-certified small business that has been operating in Southern California for over a twenty years.

**Assembled in the USA
ISO 9001:2015 Certified
ITAR Registered**

CP Technologies
10840 Thornmint Road
San Diego, CA 92127
cp-techusa.com
858.571.4330

TECH SPECS

COMPUTER SPECIFICATIONS

CPU	Single or Dual Intel® Xeon® Processor E5-2658 (20M, 2.10 GHz, 8.0 GT/s Intel® QPI)
	Single or Dual Intel® Xeon® Processor E5-2648L (20M, 1.80 GHz, 8.0 GT/s Intel® QPI)
CHIPSET	Intel® C606, QPI up to 8.0 GT/s
MEMORY CAPACITY	(16x) 240-pin DDR3, Max. 512GB
STORAGE	Up to (3x) shock-isolated 2.5" removable drives, standard 500GB, 7200 RPM, 64GB cache. Other rotating media and solid state storage sizes available
RAID OPTION	JBOD, RAID 0, 1, 5
OPTICAL DRIVE	Slim Slot-Fed 8x DVDRW
EXPANSION SLOTS	(2x) PCIe x16 (Gen 3.0), 1(x) 6.7" 1(x) 10.0" Max Length
REAR I/O	(1x) DB-9 RS232 serial port, (2x) RJ45 GbE LAN ports, (4x) USB 2.0 ports, (1x) RJ45 dedicated IPMI, DB-15 VGA port (1x) UID switch
ONBOARD GRAPHICS	G200 (Renesas SH7757 BMC)
AUDIO	N/A
LAN	Dual Intel® i350 Gigabit Ethernet ports (1x) Realtek® RTL8211E PHY (Dedicated IPMI)
FRONT USB PORTS	(2x) ports USB 2.0
SYSTEM COOLING	(5x) 40mm, 18.4 CFM, 100K hour MTBF cooling fans Proprietary SysCool™ intelligent adaptive fan controller and temperature alarm circuit board
MOTHERBOARD CAPACITY	Designed for EATX-sized motherboard (12" X 13")
POWER SUPPLY	Redundant 600W 110/220 Volt AC Other power options available

EXPANSION CAPACITY

- 3(x) 2.5" Drive Bays, Shock-Isolated
- 1(x) Slim Slot-Fed Optical Drive
- 1(x) Flash Card Reader Bay (optional)
- 2(x) PCIe x 16 (3.0) Card Slots

FRONT DOOR FEATURES

Milled aluminum with four captive closure fasteners
Milled channel with RF/EMI/environmental gasket
Attenuating EMI honeycomb fi lter with 45 PPI (washable) air filter rated to UL 94 HF-1

TECH SPECS

CHASSIS SPECIFICATIONS

DIMENSIONS	19" X 1.75" X 20" (482.6mm X 44.5mm X 508mm)
WEIGHT	19.6 lbs (approximate weight. Varies with configuration)
CONSTRUCTION	Front Panel: 0.187" milled 5052-H32 aircraft-grade aluminum Enclosure Body: 0.062" 5052-H32 aircraft-grade aluminum Rear Slot Panel: 18 gauge CRS, zinc plated
POWDERCOATING	Black per MIL-PRF-24712, Type IV, Class 3, Cardinal C214-BK110 polyester semi-gloss, fine texture
PLATING	Chem-Film per MIL-C-5541F, Class 1A

HARSH ENVIRONMENTS

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

ALTITUDE	12,000 ft Operational, 40,000 ft Storage MIL-STD-810, Method 500.6
HIGH TEMPERATURE	60°C Operational, 70°C Storage MIL-STD-810, Method 501.6
LOW TEMPERATURE	-10°C Operational, -40°C Storage MIL-STD-810, Method 502.6
HUMIDITY	5-95%, Non-condensing MIL-STD-810, Method 507.6
BLOWING SAND AND DUST	MIL-STD-810, Method 510.6
TRANSPORT VIBRATION	MIL-STD-810, Method 514.7
BENCH HANDLING SHOCK	MIL-STD-810, Method 516.7 Procedure VI

ENGINEERED TO YOUR SPECIFICATIONS

- In-house engineering department
- Design and build of rapid prototypes. Experience with solving difficult customer application problems through knowledge of the industry and custom system design and manufacturing capability
- Our Engineers use Solid Works 3D CAD modeling software for mechanical design and thermal simulation
- Design experience with MIL-STD-167, MIL-STD-461, MIL-STD-810, and MIL-S-901, in addition to FCC, UL, CE, and country specific agency requirements

REVISION CONTROL & CONFIGURATION MANAGEMENT

- Our Program Managers will assure your products are revision controlled for the life of the program
- Configuration Management to assure TAA Compliance and system compatibility
- One part number for life of the program
- Counterfeit and obsolescence management

FACILITY AND TEST

- All integration work is performed in a state-of-the-art, ESD-controlled facility
- Our facility has 23,000 sqft and has dedicated 12,000 sqft to manufacturing and 3,000 sqft to engineering
- Operate to anti-static standard ANSI/ESD S20.20-2007 and electronics assembly standard IPC-A-610, Revision E-2010

QUALITY COUNTS

- ISO 9001:2015 Certified
- 100% system inspection before shipment
- All integrated systems undergo a minimum 24-hour system test and burn-in before shipment to the customer
- Assistance with 3rd party verification of system specifications
- 5-year warranty on all servers and 3-year warranty on LCD monitor products
- TAA compliant
- Built in the USA

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