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Find the *Aitech Defense Systems E192* at our website: ***Click HERE***

E192

Rugged 3U CompactPCI Enclosure



- ***Rugged 2 slot, 3U CompactPCI Powered Enclosure***
- ***Designed for Harsh Mechanical, Climatic, Chemical and Electrical Stresses***
- ***Environmentally Sealed Enclosure for Conduction-Cooled modules***
- ***Compact and Lightweight for 2 Standard ANSI/VITA 30.1-2002 Conduction-cooled, 3U CompactPCI Modules***
- ***Conduction-cooled via Chassis Baseplate***
- ***28VDC Power Input per MIL-STD-704 with environmentally sealed, EMI/EMC-compliant Power Input Filter***
- ***Standard Output, High Performance, Modular and Removable Power Supply***
- ***Customized Front Panel – Circular MIL-DTL-38999 Connectors***

Aitech Defense Systems Inc.
A member of the Ai-Rugged Group
9301 Oakdale Avenue, Chatsworth, CA 91384
Tel: (818) 700-2000 Fax: (818) 350-6888 e-mail: sales@rugged.com web: www.rugged.com

Overview

Aitech's E192 cold plate cooled enclosure is built to be rugged and reliable as well as lightweight and compact. EMI/RFI protected and environmentally sealed, the E192 is capable of withstanding extreme environmental conditions of altitude, temperature, moisture, shock, vibration, EMI and chemical exposure, making it ideal for use in military and aerospace environments.

Mechanical Design

The E192 chassis utilizes a bonded and fastened construction technique and is made of durable CNC machined 6061-T6 aluminum. Stepped corner joints enhance the structural and EMI integrity. All fasteners are stainless steel and removable panel threaded holes have self-locking stainless steel helicoils to withstand severe vibration and shock.

Board Capacity

The E192 accommodates 2 conduction-cooled 3U CompactPCI board per VITA 30.1-2002 with 0.8 inch pitch, and a 3U conduction-cooled power supply.

CompactPCI Backplane

The backplane is 3U CompactPCI compliant with J1 and J2 connectors in all slots.

DC input power is routed to the power supply via a separate screened harness so as to prevent radiated or conducted EMI.

Transition Module

All I/O signals from both CompactPCI slots are routed via the transition module to the Rear I/O Transition Module access panel with standard D-connectors that can be easily customized for specific applications.

Access Panels

Removable front and rear access panels features a flexible configuration of user-defined circular connectors, one for input power and all others for I/O. All connectors are located on the rear access panel.

Thermally Efficient

The conduction-cooled, VITA30.1-2002 compliant boards are environmentally sealed within the chassis.

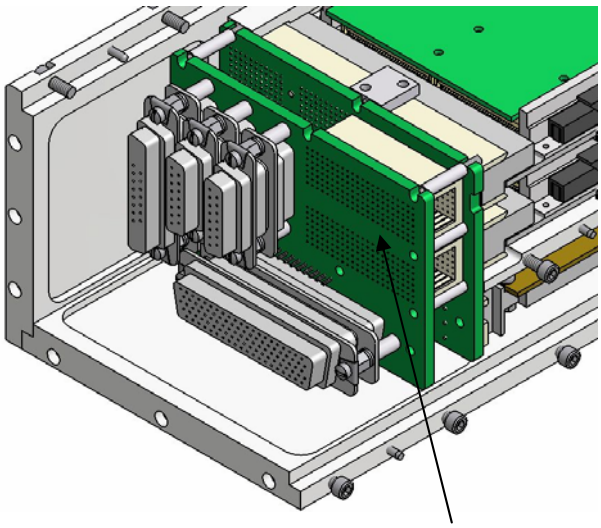
The CompactPCI boards are positively clamped to the side walls of the chassis providing a direct thermal path to the base plate.

The power supply's DC to DC converters come in direct contact with the base plate.

Electro-Magnetic Compatibility

Aitech's E192 minimizes radiated emissions and susceptibility interference with these features:

- Bolted corners with conductive surfaces provide 2.5 milliohms or less of DC resistance
- Conductive O-ring gaskets provide environmental and electro-magnetic sealing
- Separately shielded input power assembly
- Line filter capacitors on the input power assembly eliminate conducted emissions



User Backplane I/O Transition Module

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Environmental Sealing

The E192 is sealed against intrusion of external environment contaminants found in military applications, including: humidity, sand and dust, and contaminant splash. Enclosure mating surfaces are sealed with silicon rubber O-ring seals. Connectors and other accessories are protected also in the same manner.

Corrosion Resistant Finish

External surfaces of the E192 are finished with either epoxy paint or chemical conversion coated for excellent corrosion resistance. The finish is available in standard military colors with nonstandard colors available upon request. Internal surfaces are chemical conversion coated for corrosion resistance and electrical conductivity. All finishes and components are fungus resistant.

High Performance Power Supply

The removable power supply module provides continuous high current, high efficiency operation, under the most adverse conditions. The power supply may be easily replaced by the user to avoid enclosure maintenance downtime.

Major features include:

- Two DC-DC converter modules to provide four isolated outputs
- Minimum of 500V isolation from input to output, eliminating any possibility of ground loops
- Outputs are protected against short-circuit and overvoltage
- Input protected against reverse polarity high voltages, ripple and spikes
- Thermal shutdown capability
- For memory retention capabilities, the power supply holds up the output power rails for an additional 4 msec (min) after input drops under 18VDC
- Options for additional output hold-up times are available and dependent on output loading

Power Supply Specifications

- **Thermal Characteristics**

  Thermal Shutdown 100°C to +110°C

- **Input Power**

  Voltage Range (DC) 18V to 36VDC

  Nominal Input Voltage 24V

  Reverse Polarity Protected 0 to 40VDC

- **Transient Suppression**

  Meets requirements of:
  - MIL-STD-1275AT (with minor exceptions)
  - MIL-STD-704D

- **Isolation Resistance**

  >1MΩ at 250V input to output or chassis.

- **Power Supply Output Power**

	Outputs			
	1	**2**	**3**	**4**
Voltage (VDC)	+5	+3.3	+12	-12
Current (A)	18	11	1	1
Ripple/Noise (P-P mV)	<50	<50	<100	<100

- **Total Output Power** 140 W
- **Hold-up Circuit**

  Enables all outputs for at least 4 ms after input Drops under 18 VDC.

- **General Parameters**

  Power Fail Warning >4 ms

  Efficiency >75%

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General Specifications

- **Dimensions**

  4.88” x 10.69” x 3.50” (W x D x H)

  Maximum external dimensions:
  6.64” x 11.38” x 3.50” (W x D x H), includes connectors and mounting flanges.

- **Power Dissipation Capability**
  More than 50 W at 71 °C ambient free air temperature at sea level, with cold plate temperature of 55 °C, (internal temperature is maximum 85 °C at card edge).

Environmental Specifications

- **Operating Cold Plate Temp.** -55°C to +85°C

- **Non-operating Temp.** -55°C to +125°C

- **Humidity**
  5%-95% relative humidity with condensation

- **Vibration**
  Sine: Cycling of 10 g (max) at 5 to 500 Hz
  Random: 16 g RMS at 20 to 2000 Hz
  Transportation: Loose cargo vibration

- **Shock** - Single half-sine shocks:
  40 g peak, 3 axes, 11 ms duration

- **Transit Drop*** 1 ft. drop on concrete

- **Bench Handling**
  4-in unpackaged drop at a 45° angle to simulate conditions during servicing.

- **Altitude / Low Pressure**
  Operating: Up to 70,000 ft
  Storage: Up to 70,000 ft

- **Salt Fog** 5% salt spray

- **Fine Dust** Wind and fine dust particles

- **EMI/RFI**

  Per MIL-STD-461D, part IV with line filter:
  - CS101 (20 Hz – 50 KHz)
  - CE102 (10 KHz – 10 MHz)
  - CS114 (10 KHz – 400 MHz)
  - RE102 (10 KHz – 10 GHz)

- **Weight**
  Less than 9 lbs
  (Conduction-cooled boards not included)

* Packed in suitable shipping/cargo container

For more information about the E192 or other Aitech products, please contact Aitech Defense Systems Sales Department at 888-248-3248

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