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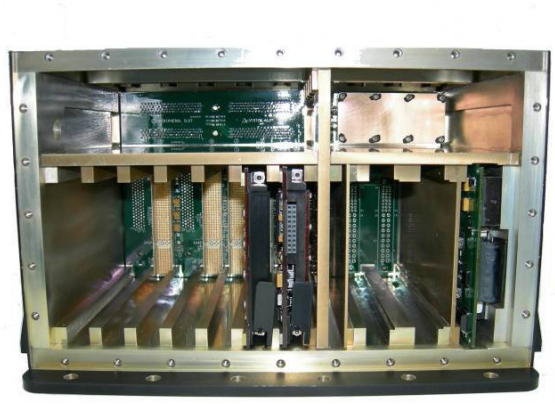
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Find the *Aitech Defense Systems E901* at our website: ***Click HERE***

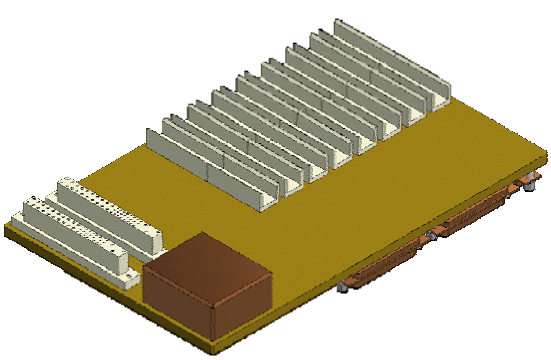
E901

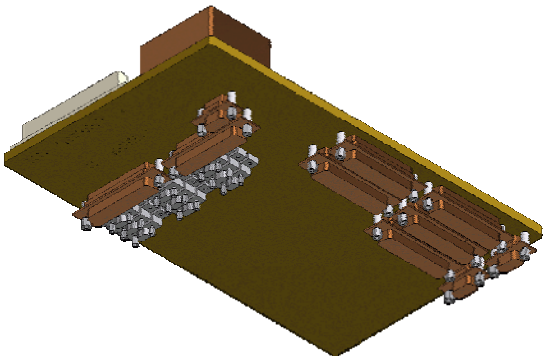
3U CompactPCI Enclosure





- ***Rugged Chassis Specially Designed for High Reliability Space Applications***
- ***28 Vdc/140 W Radiation Tolerant and Latch-up Immune Power Supplies***
- ***Optional 28V/140W Aitech P217 Power Supply can also be used***
- ***5-Slot 3U CompactPCI Compliant Backplane***
- ***Cold Plate Conduction Cooling***
- ***Faraday Cage Design for Enhanced EMI/RFI Performance***
- ***Complete EMI/RFI Power Line Filtering***
- ***Can Accommodate Up to 3 High-Speed I/O Interfaces (Tested to 200Mbps)***
- ***No Wire Harnessing between the Backplane and Front Panel to Increase Overall System Reliability (see sample backplane below)***





Aitech Defense Systems Inc.
A member of the Ai-Rugged Group
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Overview

The Aitech E901 is a cold plate cooled 5-Slot 3U CompactPCI compliant rugged computer enclosure, specially designed for space applications. The power supplies provide standard CompactPCI bus voltages and additional outputs in +15VDC, -15VDC and a dedicated +12VDC to power external equipment.

Sturdy Mechanical Design

The design of the E901 has been optimized to provide maximum strength with minimum weight. Constructed of durable CNC machined 6061-T6 aluminum, the chassis is assembled using stainless steel fasteners to prevent corrosion. Often-used threads have self-locking stainless steel helicoils to withstand severe vibration and shock. All connectors are located on the front panel of the enclosure for easy access. All external surfaces, with the exception of the cold plate interface, are hard anodized coated for excellent corrosion resistance. The cold plate-mating surface is precision machined to ensure excellent heat transfer to the cold plate, and it is configurable to meet any customer-mounting requirements.

Board Capacity

The E901 accommodates 8 standard 3U CompactPCI boards with 0.8 inch pitch per VITA 30.1-2002.

CompactPCI Backplane

The backplane is 3U CompactPCI compliant with J1 and J2 connectors in all slots. By eliminating an intermediate wire harness, all the signals are routed within the backplane to the corresponding front panel I/O connectors.

Front Panel

The chassis front panel is fully customizable to meet customer I/O connector requirements. The middle section of the front panel is available for up to 9 high-speed I/O connectors.

Thermally Efficient

The E901 is conduction cooled through the specially designed sidewalls. Heat is channeled from the power supplies and CompactPCI boards to the cold plate, resulting in a highly efficient thermal design. The chassis can dissipate more than 75 W of heat to a 55ºC cold plate with 15ºC ΔT to card rails.

Electro-Magnetic Compatibility

Aitech's E901 minimizes EMI/RFI emissions and susceptibility with these features:

- Metal-to-metal clamping with conductive surfaces and fasteners
- Shielded power supply boards
- Shielded power cabling
- Metallic partition between the power supply and VME sections
- Faraday cage input power line filter mounted to the backplane
- Isolated chassis ground and optional connection between chassis GND and signal GND

Corrosion Resistant Finish

External surfaces of the E901 are hard anodize coated for excellent corrosion resistance. As an option, epoxy paint is available with nonstandard colors upon request.

Internal surfaces are chemical conversion coated for corrosion resistance and electrical conductivity. All finishes and components are fungus resistant.

High Performance Power Supplies

The removable power supplies provide continuous high current, high efficiency operation, under the most adverse conditions. The power supplies are designed to meet Low Earth Orbit radiation requirements using radiation tolerant, latch-up immune DC-DC converters.

Major power supply features include:

- Radiation tolerant, latch-up immune, ES screened DC-DC converters
- Extensive input filtering
- Under-voltage input lockout circuit
- Fully isolated inputs and outputs, eliminating the possibility of ground loops
- Monolithic heatsink for efficient power supply cooling and EMI shielding

- Health status output signal routed to backplane I/O connectors
- Outputs protected against
  - Short circuits
  - Thermal breakdown
  - Over-voltage transients
  - Overshoot
- Input protected against
  - Reverse polarity
  - Over-voltage transients

Power Supply Specifications

- **Input Power**
  Voltage Range (DC) 20 V to 36 V (28 V nominal)
- **Isolation Resistance**
  500 V to output or enclosure
- **Total Output Power** 140 W
- **Efficiency** > 80%
- **Total Ionization Dose** > 25 krad (Si)
- **Latch-up Immune** LET of 37 MeV•cm^2/mg
- **Output Power:**

Power Supply Output Voltages and Currents				
Nominal (V)	**Minimum (V)**	**Maximum (V)**	**Current (Amp)**	**Noise (mVpp)**
+3.30V	3.23	3.37	9.1	50mVpp to 10MHz
+5.00V	4.8	5.2	8.0	50mVpp to 10MHz
+12.00V	11.40	12.60	3.3	External Device Dependent
+15.00V	+14.25	+15.75	0.75@ 15V	50mVpp to 10MHz
-15.00V	-14.25	-15.75	0.75@-15V	50mVpp to 10MHz
+12.00V	11.52	12.48	0.25	50mVpp to 10MHz
-12.00V	-11.52	12.48	0.25	50mVpp to 10MHz

Environmental Specifications

- **Operating Cold Plate Temp.** -55 °C to +70 °C
- **Non-operating Temp.** -55 °C to +125 °C
- **Humidity**
  0%-95% non- condensing
- **Vibration** 16 G_{rms} at 20-2000Hz
- **Shock** 40 g terminal sawtooth/11 ms or half SINE
- **Bench Handling**
  4-in unpackaged drop at a 45° angle to simulate conditions during servicing
- **Pressure** Ground to space vacuum
- **EMI/RFI**
  Meets emanation and susceptibility limits

MTBF

- **S_F** > 693,088 hours @ 50° C
- **M_L** > 113,892 hours @ 50° C





General Specifications

- **Dimensions**

  Maximum external dimensions with four mounting flanges:
  12.95 x 9.20 x 7.09 in (L x W x H)

- **Weight**

  Less than 20.2 lbs without boards

- **Power Dissipation Capability**

  Exceeds 75 W with CompactPCI boards using a 55 °C cold plate (maximum ΔT of 25 ºC at card edge).

Accessories

Aitech offers a wide range of custom mounting options and cable sets.

For more information about Aitech's rugged and military VME enclosures or any Aitech product, please contact your local sales representative or our sales office.

For more information about the E901 or any Aitech product,

please contact Aitech Defense Systems sales department at (888) AITECH-8 (888-248-3248).

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