UNITRONIX Pty Ltd
PO Box 486, Morisset NSW 2264
NSW: Tel: 61 2 4977 3511 Fax: 61 2 4977 3522
WA: Tel: 61 8 9455 2424 Fax: 61 8 9455 2458
unitsyd@unitronix.com.au www.unitronix.com.au

"You Provide the Idea
We Supply The Solution"

ATR-3500 Series Rugged MicroTCA Enclosure

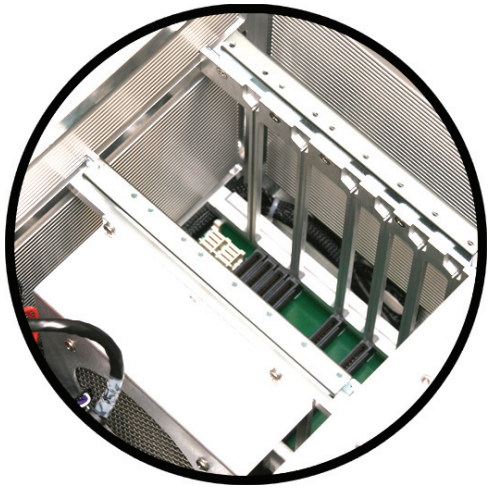
Features

- Conduction Cooled Solution, Utilizing Standard MicroTCA™ Boards
- Completely Sealed Electronics Compartment
- Six-Slot MicroTCA™ Backplane, Consisting of One-Power Module Slot, One-MCH Slot, and Four-AMC Slots
- Designed and Engineered with Extremely Tight Tolerances Along with Precision Machined Card Guides, to Insure Proper Board Seating and a Reduction in Connector Stress
- Available in MicroTCA™, CompactPCI™, or VPX Backplanes
- Able to Accommodate Standard Front Panels or, Dawn's Special Rugged Panels
- Complete with **RuSH**™ System Health Monitor. Ensures Correct System Operation by Monitoring Temperatures, Voltages, Humidity, and Fans, as well as Controlling Fans for Optimum System Performance

Front I/O Panel

Overview

The ATR-3500 Series enclosure offers a rugged solution, typically found in expensive conduction cooled platforms, with the benefit of using standard inexpensive MicroTCA™ boards. This is made possible by Dawn's revolutionary, **Thermal Exchanged Flow™ (TEF)** Cooling System, The TEF uses a two stage cooling system consisting of a completely sealed inner-housing and a forced air outer-housing. The inner-housing incorporates the power module, MCH module, and up to four AMC modules. The heat is conducted from the inner-housing via dip-brazed aluminum fins. The hot air is then exhausted from the outer-housing using two 165_{CFM} fans.



Open View Showing Dip Brazed Aluminum Fins

Technical Specifications

Backplane

Type: MicroTCA 6-Slot Backplane

Power Module Slot: One Full Single Height Power Supply Module

MCH Module Slot: One Full Single Height MCH Module

AMC Module Slots: One Full Single Height AMC Module, and Three Mid Single Height AMC Modules

System Monitoring / Control

Type: **RuSH**™ System Health Monitor

Monitors: Temperature and Humidity of inner-housing and fan speeds of inner and outer-housings

Controls: Fan speeds of inner and outer-housings fans

Thermal Exchanged Flow™ (TEF) Cooling

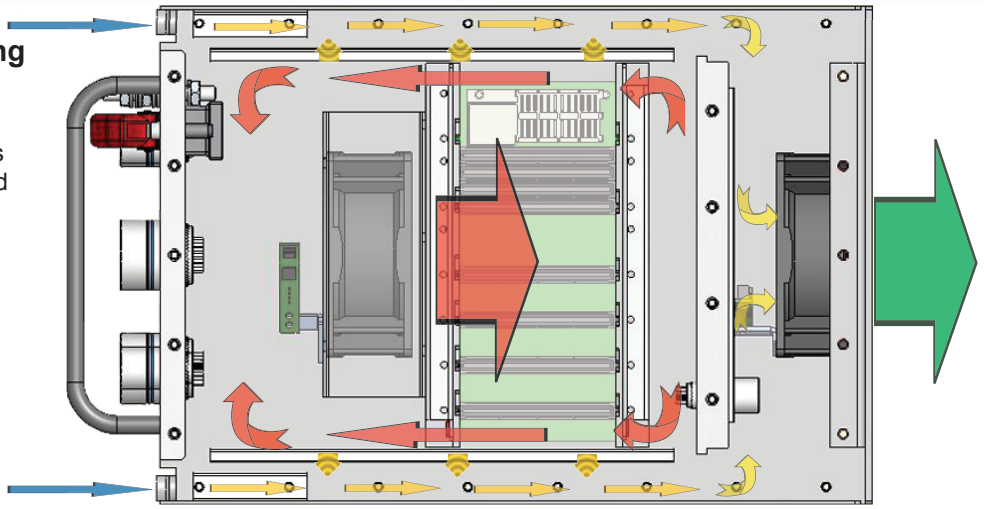
Hot air is circulated via 165_{CFM} fan inside a completely sealed electronics housing

Hot air is then exchanged from the electronics housing, via dip brazed fins to the outer forced air housing

Ambient air is pulled through two plenums located in the front of the outer forced air housing

The ambient air is circulated through the Dip Brazed Fins

The hot air radiating from the Dip Brazed Fins is exhausted through the rear via two 165_{CFM} fans



Technical Specifications

Material

Enclosure Housing: 6061-T6 Aluminum (Inner and Outer Housing)

Heat Exchange Fins: 3003 Aluminum

Finish

Color: Black (Standard), Other Colors Available by Request

Paint: CARC procedure per MIL-DTL-53072, Primer two part epoxy per MIL-P-85582, Epoxy top coat per MIL-PRF -22750

Base Metal Parts: Chemical conversion coating per MIL-DTL-5541, CLASS 1A

Mechanical

Access: Top cover and Bottom covers are removable, installed with flat head stainless steel screws and environmental gaskets.

Dimensions: 12.62_{inches} Long x 8.80_{inches} Wide x 10.62_{inches} Tall

Weight: ~16_{lb} without Power Module, MCH Module, and AMC Module

Mounting: Installation of enclosure adaptable to ARINC 404A specifications utilizing J-hooks per MIL-C-172B and in accordance with MIL-F-877731/2 to include two rear guide pin receiving bushings.

Cooling

Type: Thermal Exchanged Flow™ (TEF)

Fans: Three 90_{mm}, 165_{CFM} Fans @ 1399_{RPM} (One Fan used to circulate Inner-housing air, and two used to exhaust hot air from outer housing

Heat Exchange Fins: Dip-Brazed Dip construction which incorporates a machined Sub Structure with aluminum plain fin radiators and outer plenum's on sides and rear. Dip brazed process meets MIL-B-7883

Heat Dissipation: ~40_{Watts} per Slot

Front Panel

Power Switch: Guarded Toggle Switch for Power On/Off

LED Indicator: Power On/Off

Power Input: Mil Circular Power input Shell size 13-4

I/O: One Mil Circular RJ45, One Mil Circular 19-35, Three Mil Circular 11-35

System Monitoring / Control

Type: RuSH™ System Health Monitor

Monitors: Temperature and Humidity of inner-housing and fan speeds of inner and outer-housings

Controls: Fan speeds of inner and outer-housings fans

Environmental

Operating Temperature: -20^{O}_{C} to $+70^{O}_{C}$

Storage Temperature: -50^{O}_{C} to $+120^{O}_{C}$

Humidity: <95% non-condensing

Shock: 15_{G} @ $^{1}/_{2}$ Sine Wave (Any Axis)

Vibration: 7.7_{G} @10_{Hz} to 2_{KHz} Random Swept (1_{Hour} Each Axis)

Military Standards

MIL-HDBK-5400: Electronic Equipment, Airborne General Specification

MIL-STD-130: Marking for Shipment and Storage

MIL-STD-882C: System Safety Requirements

MIL-STD-810F: Environmental Engineering Considerations and Laboratory Tests

MIL-STD-901D: High Impact Shipboard Equipment and System Requirements

MIL-STD-461E: Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment

MIL-STD-2036: General Requirements for Electronic Equipment Specifications

MIL-STD-1857: Grounding and Bonding

MIL-STD-1472F: Human Engineering

Industrial Standards

FED-STD-595: Colors Used in Government Procurement

AWS C3.7: American Welding Society Specification for Brazing

ASTM-B209: Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate

Dawn VME Products® • 47915 Westinghouse Drive, Fremont CA. 94539
Phone: (510) 657-4444 • Toll Free: (800) 258-3296 • Fax: (510) 657-3274
Web Site: www.dawnvme.com • Email: sales@dawnvme.com