Market
Military

Application
Airborne Mission Computer Application

Challenge
Design and manufacture a forced-air conduction-cooled modified ½-ATR chassis for an airborne mission computer tech refresh with 3U OpenVPX card cage and backplane, and modified COTS MIL-STD-704F 3-phase AC-input power supply.

Concerns
Program required adaptation to a specific legacy form factor to allow drop-in replacement for a tech refresh.

How can we help reduce your risk?
Atrenne Computing Solutions can help you with all of your application-specific backplane and chassis requirements. The solutions that you see on our website are just a small sample of what we have done. Please browse our solutions and contact us for a consultation.

Designed for an airborne mission computer tech refresh application, this Hybricon ruggedized ATR solution (Solution 87-187) is a modified ½-ATR chassis that supports an application-specific 12-slot 3U OpenVPX backplane and a modified COTS MIL-STD-704F3-phase AC input 233W power supply with 50msec holdup. Operating at 0 - 40kft and -40 to +49°C, the chassis is part of Atrenne computing Solutions’ industry-leading Hybricon line of high performance chassis and backplane solutions that feature innovative design for dependable operation in today’s data-intensive, rugged aerospace and military applications.

- Modified ½-ATR per specific legacy form factor
- 8.25” x 5.24” x 16.31” (H x W x D)
- Application-specific 3U OpenVPX backplane
  - (10) 3U OpenVPX 1.0” pitch slots
  - (1) 3U MIL-STD-704F ANSI/VITA 62 power supply slot
  - (1) 3U AC/DC input / holdup power supply slot
- Application-specific I/O panel CCA
- Modified COTS MIL-STD-704F 3-PHASE 400 Hz AC-input 233W Power Supply with 50msec holdup
- -40 to +49°C
Specifications

**Physical**
- **Width**: 5.24"
- **Height**: 8.25"
- **Depth**: 16.31"
- **Weight**: 21 lbs. including power supply
- **Construction**: Brazed aluminum

**Environmental**
- **Operating Temperature**: -40 to +71°C ambient
- **Altitude**: 0 ft MSL to 40,000 ft MSL

**Cooling**
- Air-cooled sidewalls utilizing platform cooling:
  - -40 to +49°C at MSL,
  - -40 to -15.4°C at 40,000 ft.
- Rear air intake, side air exhaust ports
  - 11 lb./min KW @ +49°C at MSL;
  - 1.8 lb./min KW @ -15.4°C at 40kft

**Vibration**
- MIL-STD810 Method 514.6 Procedure 1 - General Vibration

**EMC**
- MIL-STD-461E: CE102, CS101, CS114, CS115, CS116, RE102, RS103

**Power/Electrical**

<table>
<thead>
<tr>
<th>Power/Electrical</th>
<th>3-phase 115VAC 400 Hz per MIL-STD-704F</th>
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</thead>
<tbody>
<tr>
<td><strong>AC Input</strong></td>
<td>(1) Modified COTS 3U MIL-STD-704F DC/DC power supply, DC Outputs total 233W:</td>
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<tr>
<td></td>
<td>- 3.3V @ 0.25A</td>
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<tr>
<td></td>
<td>- 3.3V @ 10A</td>
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<td></td>
<td>- 5V @ 39A</td>
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<td></td>
<td>- +12V @ 0.16A</td>
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<tr>
<td></td>
<td>- -12V @ 0.16A</td>
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<tr>
<td><strong>Power Supply</strong></td>
<td>(1) Modified COTS 3U AC/DC input/holdup power supply with 50msec holdup</td>
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<tr>
<td><strong>Backplane</strong></td>
<td>3U OpenVPX connectors</td>
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<tr>
<td></td>
<td>DC/DC power supply: ANSI/VITA 62 power supply connector</td>
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<tr>
<td></td>
<td>AC/DC input card: Positronic connector</td>
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<tr>
<td></td>
<td>2MM HM I/O panel connectors</td>
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<tr>
<td><strong>Connector Pitch</strong></td>
<td>VPX slots: 1.0” pitch</td>
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<tr>
<td></td>
<td>VITA 62 slot: 0.8” pitch</td>
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<tr>
<td></td>
<td>AC/DC input slot: 1.2” pitch</td>
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**Construction**
- **Top & Bottom**: Aluminum 5052
- **Card Cage Brazement**: Dip brazed aluminum 6061

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