# MIC-3082A

**12U CompactPCI® Enclosure with 21-slot 6U Backplane and Redundant Power Supply (CT Bus and Rear I/O)**

**NEW**

## Features

- 12U-high enclosure for 6U CompactPCI boards 5U-high 20-slot rack mount chassis 0.5 U per server - ultra high density
- 21-slots 6U CompactPCI backplane 18 node slots/2 fabric slots
- Multiple backplane configuration available for various applications (1/2/4 segments) Modularized, front-accessible, and hot-swappable fan, power supply, and server board. All front-accessible form factors of sever blades, power modules, and a fan module
- Seven hot-swappable server blades
- Hot-swappable fan modules
- Supports packet switch backplane specification (PICMG 2.16)
- Supports computer telephony specification (PICMG 2.5)
- 1120 W + 1120 W 4+4 hot-swappable load-sharing AC/DC power supplies
- Dual-power domain backplane isolates catastrophic power failures
- Six hot-swappable fans and blowers/chassis management module
- Build in intelligent chassis management module, optional backplane combination (MIC-3924B-A)
- Design for NEBS level 3 and ETSI installations, independent alarm and management module
- One serial port for emergency dialing out through modem

## Introduction

The MIC-3082A 12U general purpose multi-segment packet switched platform is an extremely flexible, high-availability platform, configurable for both compute-intensive and I/O-intensive applications. It is one of several telecom building blocks from Intel, built on the PICMG* 2.16 specification, providing OEM equipment designers with carrier-grade, standards-based solutions. This high-capacity CompactPCI platform features innovative power and cooling. In addition to its high availability features, the MIC-3082A platform is highly modular, scalable, and extremely serviceable. It is designed to inter operate with Advantech high-performance CPU boards and packet switched backplane products, and with third-party boards meeting PICMG 2.16 specifications.

### Flexible Backplane Configurations

The backplane is flexible and can accommodate multiple configurations suitable to your applications.

**Blade servers -** Supports up to 18 independent servers communicating over the PICMG 2.16-compliant Ethernet backplane (slots 2-19) with dual switch blades.

**Single system -** One PCI segment with total 18 slots available for your application with optional switch capability.

**Dual system -** Two independent PCI segments which allow two redundant systems

**Quad system -** Four independent PCI segments which allow multiple systems in one chassis.

The MIC-3082A has a 64-bit PCI-to-PCI bridge module to extend the number of I/O slots. All slots support IEEE 1101.11, with 80mm-deep transition cards in the rear-panel I/O section, directly behind the backplane. Each node and fabric slot may be independently configured for 3.3V or 5V I/O operation.

System block diagram is shown as Figure 1.

### Chassis Management Module

The MIC-3082A includes one Advantech chassis management module (CMM), MIC-3924B, is an 95 x 100 mm removable module that installs and operates in the back of chassis. The MIC-3924B is the central management component for all Advantech PICMG 2.16-compliant processor boards.

### Redundant Power Subsystems and Dual-Domain Architecture

The MIC-3082A platform supports a redundant, scalable power solution, accommodating up to eight power supplies, divided into two separate power subsystems. Each delivers power to one of the two power domains on the backplane. Each power subsystem supports N+N redundant power supplies and receives input power from redundant DC or AC inputs. This is critical in central office locations where two power plants deliver redundant DC input into high-availability devices. These two power subsystems maintain isolation of these inputs to ensure that failure of one will not affect the power input of the other.

For high availability, and to isolate catastrophic events, the backplane is divided into two separate power domains. Each power domain supports one fabric slot and nine node slots. (see Figure 2).

### Cooling Architecture

With 1120 W power supplies, the MIC-3082A platform provides more than 56 W per slot or can house three hot-swappable fan and blower trays, serviceable from the front. The top blower cools the front card cage area, and the middle fan cools the power supplies, sucking cool air into the card cage. The two rear fans complete the cooling. All fans are in a N+1 redundant cooling architecture. (see Figure 3).
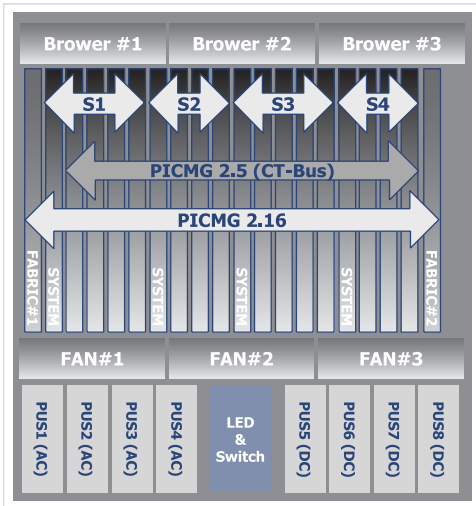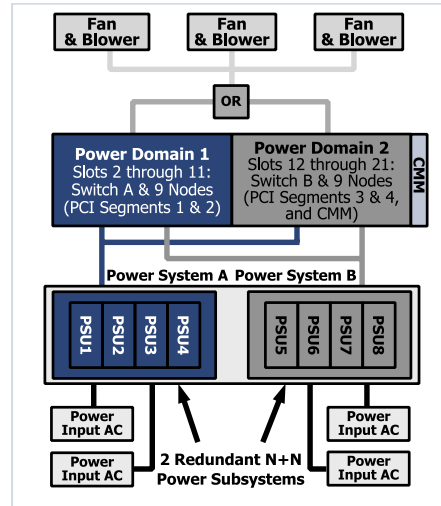
**Figure-1: Component Layout of MIC-3082A**



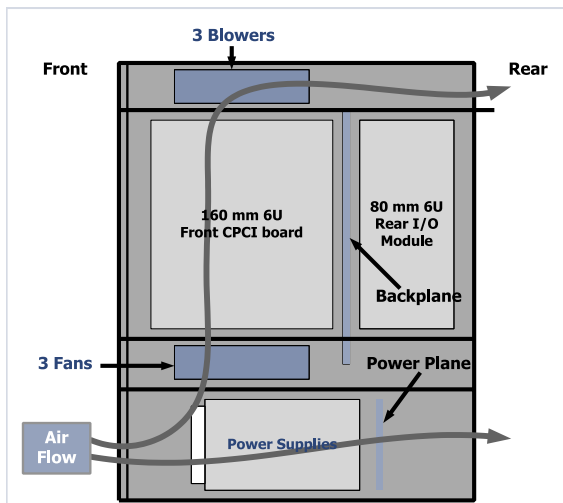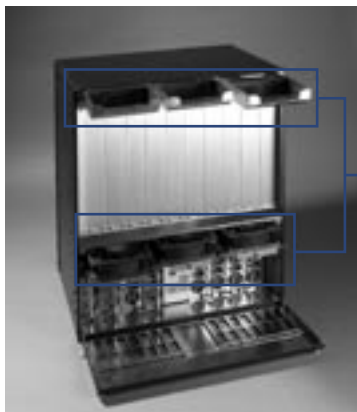**Figure-2: MIC-3082A Power Architecture**



**Figure-3: MIC-3082A Side view for air-flow**



21-slots backplane 18 node slots/
2 fabric slots

1120 W + 1120 W 4+4 hot-swappable
load-sharing AC/DC power supplies



hot-swappable
fans and blowers



Supports IEEE
1101.11 real I/O
transition boards

Intelligent alarm
module, detecting
system power, fan
speed and CPU
temperature

# Specifications

| | | | | | | |
|---|---|---|---|---|---|---|
| **Backplane** | Node Slot | 6U CompactPCI x18, transition x18 (80 mm, IEEE1101.11 compatible) support single board computer or peripherals | | | | |
| | Fabric Slot | 6U redundant PICMG 2.9 10/100/1000 Ethernet Fabric x2 | | | | |
| | Bus | Four 32/64-bit, 33/66 MHz PCI bus | | | | |
| | DimensionVI/O Voltage | + 3.3 V/+ 5 V | | | | |
| **Bridge module** | Controller | Intel DEC21154 | | | | |
| | Bus | 32/64-bit, 33/66 MHz | | | | |
| | VI/O Voltage | + 3.3 V/+ 5 V (selectable) | | | | |
| **Cooling** | Fan | 3 (151 CFM) in the middle of middle of chassis (inlet) | | | | |
| | Blower | 3 (40 CFM)  on the chassis top (outlet) | | | | |
| **Power Requirement** | Input | AC 100 ~ 240 V @ 47 ~ 63 Hz, full range<br>DC - 48 V (- 38 ~ - 72 V input range) | | | | |
| | Output | 840 W N+N redundant AC and DC (w/PFC and dual inputs) | | | | |
| | AC (4 Modules) | +3.3 V* | +5 V* | -5 V | +12 V | -12 V | +5 Vsb |
| | Max. Load | 58 A | 86 A | 2 A | 30 A | 2 A | 3 A |
| | Min. Load | 0.3 A | 2.0 A | 0.0 A | 0.5 A | 0.0 A | 0.0 A |
| | DC (4 Modules) | +3.3 V* | +5 V* | -5 V | +12 V | -12 V | +5 Vsb |
| | Max. Load | 58 A | 86 A | 2 A | 30 A | 2 A | 3 A |
| | Min. Load | 0.3 A | 2.0 A | 0.0 A | 0.5 A | 0.0 A | 0.0 A |
| **Environment** | | Operating | | Non-Operating | | |
| | Temperature | 0 ~ 45 °C (32 ~ 113 °F) | | -20 ~ 60 °C (-4 ~ 140 °F) | | |
| | Humidity | 20 ~ 90 % @ 40 °C, non-condensing | | 10 ~ 95 % @ 40 °C, non-condensing | | |
| | Shock | 10 G | | 30 G | | |
| | Vibration (5-500 Hz) | 1.0 Grms | | 2.0 Grms | | |
| **Physical** | Dimensions (W x H x D) | 440 x 533 x 431 mm (17.3" x 21" x 17") | | | | |
| | Weight | 40 Kg (88.1 lb)23 kg (50.66 lb)20.0 kg | | | | |
| **Reliability** | MTBF | Backplane | | Fan module | Power supply | |
| | | 800,000 hours | | 50,000 hours @ 25 °C | 100,000 hours @ 70% load | |
| **Serviceability** | MTTR | 5 minutes | | | | |
| **Compliance** | Standard | PICMG 2.0 R3.0 CompactPCI Core Specification | | | | |
| | | PICMG 2.1 R2.0 CompactPCI Hot-Swap Specification | | | | |
| | | PICMG 2.5 R1.0 CompactPCI Computer Telephony Specification | | | | |
| | | PICMG 2.9 R1.0 CompactPCI System Management Specification | | | | |
| | | PICMG 2.16 R1.0 CompactPCI Packet Switching Backplane Specification | | | | |
| | EMI/Safety | CE, TUV, UL,FCC | | | | |

\* Maximum output 520 W for +5 V and +3.3 V for either four AC or DC

## Recommended Configurations

| Enclosure | CPU Board | Rear I/O Board |
|---|---|---|
| MIC-3082A | MIC-3369A-Mx | RIO-3309C-A |
| | MIC-3358A-Mx | RIO-3309C-A |
| | MIC-3368E-A | MIC-3308C-A |

## Flexible Backplane Configurations

| Number of PCI segment | Bridge boards | Setting |
|---|---|---|
| 1 | 3 | Figure 1 |
| 2 | 2 | Figure 2 |
| 4 | 0 | Figure 3 |

PS: see detailed setting in manual

## Ordering Information

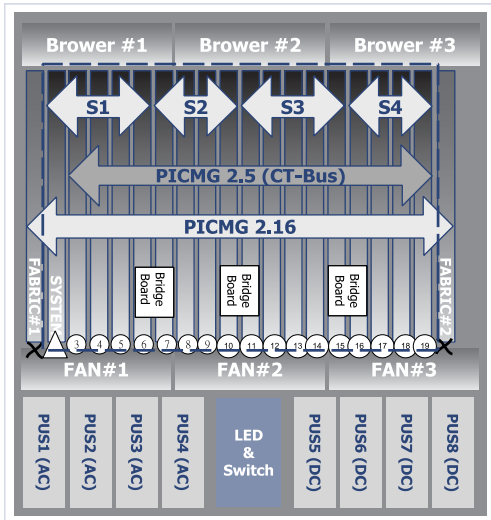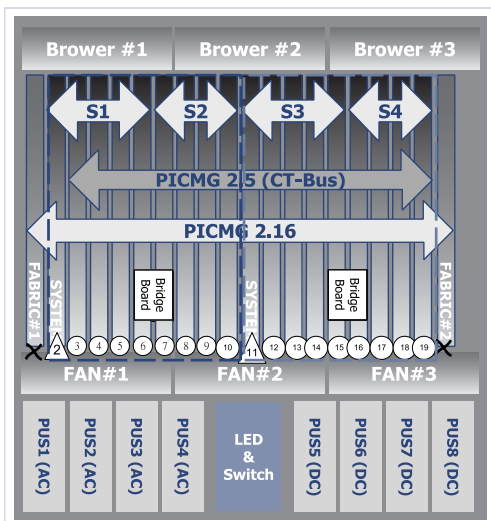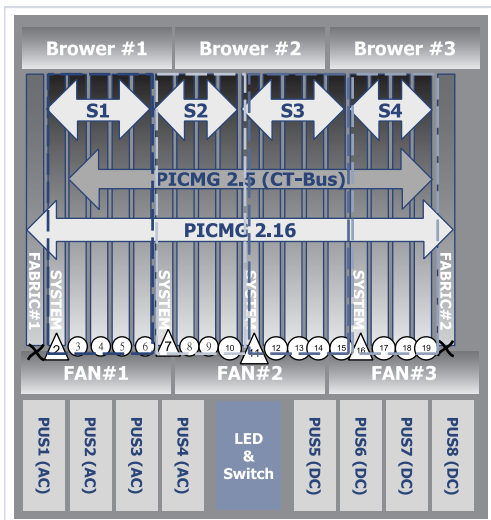| Part Number | Power Distribution | PSU P/N |
|---|---|---|
| MIC-3082A-AD | 1120W+1120W<br>(4AC+4DC) | AC: 1757984010<br>DC: 1757984011 |
| MIC-3082A-AA | 1120W+1120W<br>(4AC+4AC) | AC: 1757984010<br>AC: 1757984010 |

**Figure 1**



**Figure 2**



**Figure 3**