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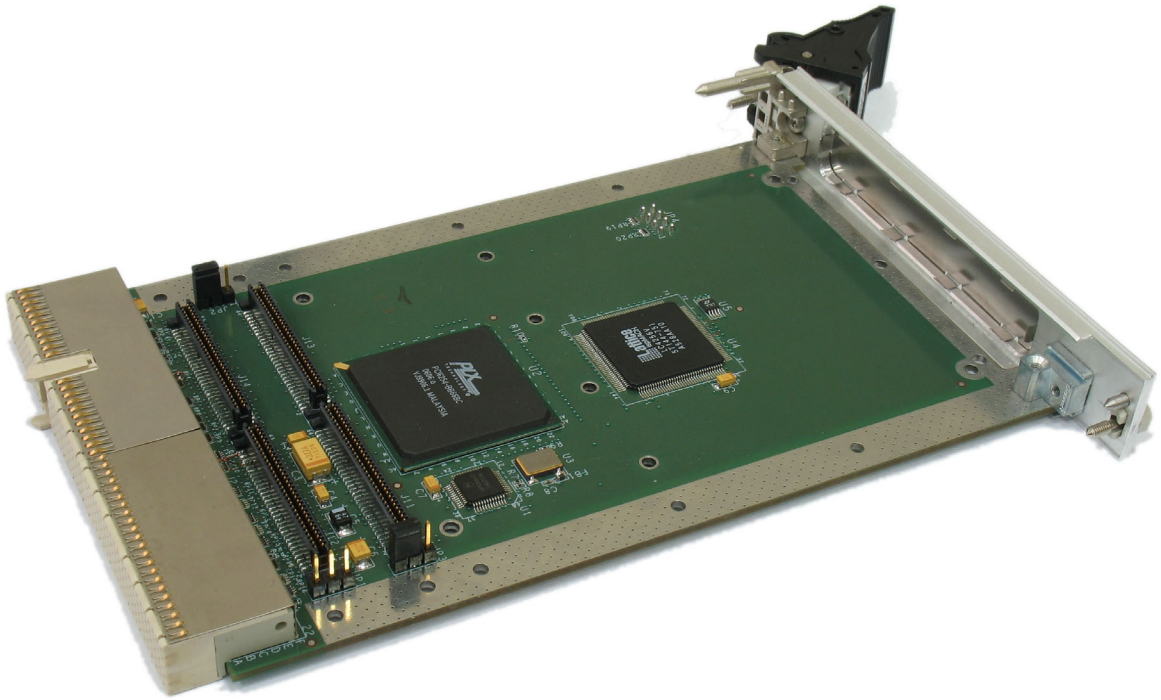
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Find the *Aitech Defense Systems 1CM900-A0-00* at our website: *Click HERE*

# CM900

## Rugged 3U PMC Carrier Expansion Card



- Rugged 3U CompactPCI Carrier Board
- Occupies Single Slot
- Transparent and PrPMC Versions
- CompactPCI Interface Supports 32-bit @ 66 MHz
- PMC Interface Supports 64-bit @ 66 MHz Through PCI-PCI Bridge
- PMC Connectors are IEEE 1386.1 Compliant, J4 is Wired as per PICMG 2.3 Rev.1.0 Specification
- Front Panel Area for PMC I/O
- IEEE 1386-2001 or ANSI/ VITA 20-2001 Compliant PMC Slot
- PICMG 2.0, Rev. 3.0 Compliant
- All 64 PMC I/O Pins Routed to J2 Connector
- Conduction and Air Cooled Versions
- Three Ruggedization Levels

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## CM900 Rugged PMC Carrier Expansion Card

As the processing power of SBCs continues to increase, expanding system functionality by means of PCI Mezzanine Cards (PMCs) is frequently the method of choice for maximizing performance while minimizing system size, power consumption, and cost.

To facilitate expandability beyond the PMC sites on CompactPCI SBCs, Aitech has developed the CM900 PMC Carrier. The CM900 provides an additional active interface between the CompactPCI backplane and a PMC, for each available CompactPCI slot. Up to 6 CM900 boards with various PMCs may be employed in a single system.

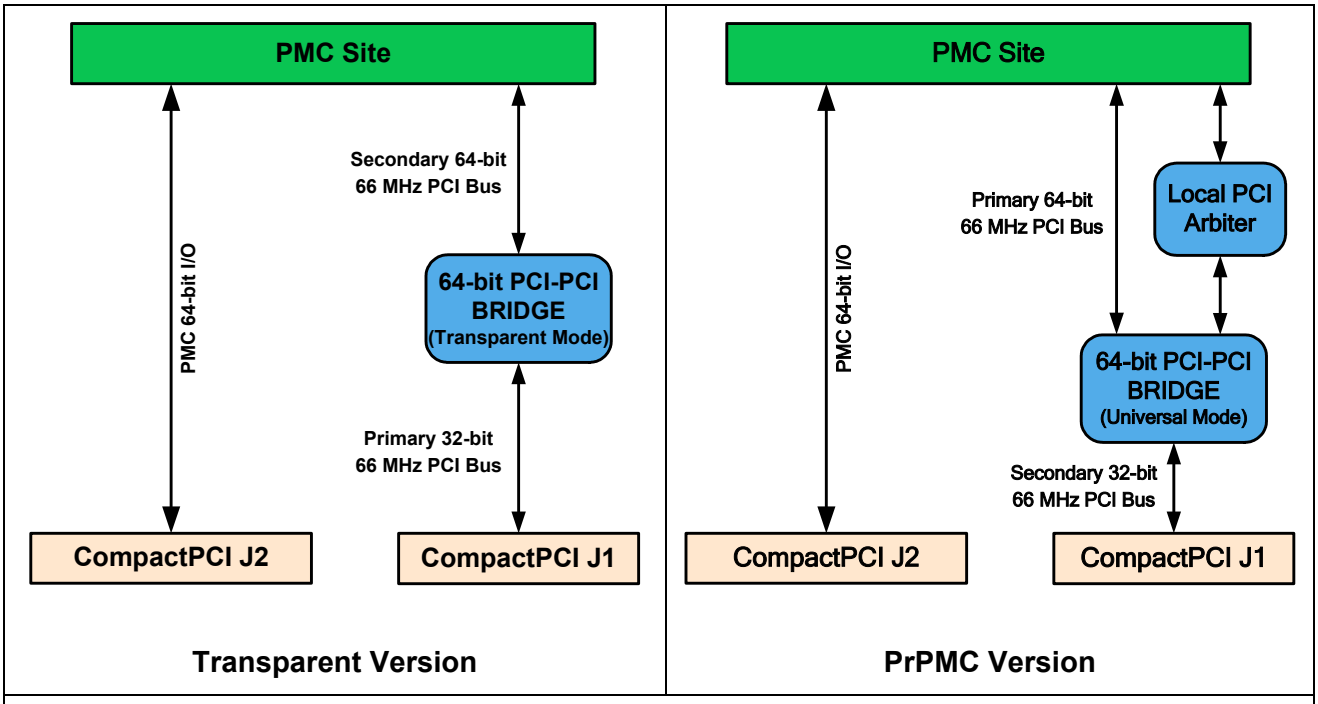
Two version of the CM900 are available: Transparent and PrPMC. The Transparent CM900 is designed for PMCs without processors, and which host resources controlled and handled by the System Controller SBC. The PrPMC CM900 hosts PMCs with processors, as well as other PMCs.

The architecture of the Transparent CM900 version is based on a PCI-PCI bridge operating in Transparent mode, connecting the primary 32-bit 66 MHz cPCI bus to a secondary 64-bit 66 MHz PCI bus on which the PMC site resides. A total of 64 PMC I/O lines are routed to the J2 CompactPCI connector. Air-cooled versions of the CM900 also provide front panel access to PMCs equipped with front panel features.

The PrPMC CM900 version is based on a PCI-PCI bridge operating in Universal mode. This card hosts a PrPMC that can serves as either the CompactPCI system controller or as a peripheral board. The PCI-PCI bridge automatically configures itself as a transparent or non-transparent bridge, depending on the slot into which it is inserted.

Designed for harsh environment applications, the 3U form factor CM900 is available in commercial and rugged, air-cooled or conduction-cooled configurations.

With its extremely low power consumption (1.65 W maximum), the CM900 expands capabilities while consuming minimum resources.




**CM900 Block Diagram**


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## Functional Description

### *Bus Architecture*

Two different architectures are employed for the CM900 versions.

The Transparent CM900 is used for standard PMC modules that do not have a local processor. The PMC's resources are controlled by the system controller host processor, and all software is executed on the host processor. This version includes a PCI-PCI bridge operating in Transparent mode, mapping all CM900 PCI space to the CompactPCI space, primary PCI bus is connected to the CompactPCI and secondary PCI bus is connected to the PMC slot.

The PrPMC CM900 is used for hosting processor PMCs. When installed with a processor PMC, the CM900 can serve as either the CompactPCI system controller or as a peripheral board. The CM900 employs a PCI-PCI Bridge operating in Universal mode, which automatically configures itself as a Transparent bridge when installed in the system controller slot or as a non-Transparent bridge when installed in any other slot.

The CM900's architecture was designed to maximize utilization of all bus interfaces. The CompactPCI interface supports 32-bit at 66 MHz operation, and is fully compliant with PCI Rev. 2.3.

### *Interrupt Routing*

The CM900 directly routes the four CompactPCI interrupt lines (INTA# – INTD#) to the four PMC interrupt pins (INTA# – INTD#).

### *PMC Slot*

The CM900 accommodates a PMC expansion site operating at 64-bit and 66 MHz, and is fully compliant with PCI Rev. 2.3.

The PMC slot is capable of hosting IEEE1386/1386.1-2001 compliant air-cooled and VITA 20-2001 compliant conduction-cooled PMC modules.

The PMC slot supports universal PCI I/O signaling levels – 3.3 V and 5.0 V.

### *I/O Routing*

I/O for the PMC is routed to the CompactPCI J2 connector in accordance with PICMG 2.3 Rev.1.0. A total of 64 PMC I/O lines are routed.

### *Front Panel Features*

The air-cooled version of the board has a front panel with cutouts, to accommodate PMCs with front panels and front panel features (I/O connectors, switches, indicators, etc.)

## Mechanical Features

The CM900 is available in both air-cooled and conduction-cooled mechanical formats. Both are single slot 3U modules.

A custom metal frame integral to the conduction-cooled version of the CM900 provides excellent rigidity and shock resistance. The frame also provides an array of stiffeners to support rugged PMC boards.

### *Dimensions and Form Factor*

- Air-cooled: per PICMG 2.0 R3.0
- Conduction cooled: per ANSI/VITA 30-1991

### *Weight*

- Air-cooled: < 300g (0.7 lbs)
- Conduction-cooled: < 300g (0.7 lbs)

### *Thermal Management*

Careful mechanical design, including custom heatsinks combined with a metal frame, provides optimal heat dissipation for the PMCs.

The CM900 provides both primary and secondary thermal interface support for conduction-cooled PMCs (CCPMC).

### *Power Requirements*

The CM900 receives all its power, +5.0 V and +3.3 V, from the CompactPCI backplane as defined in the CompactPCI specification.

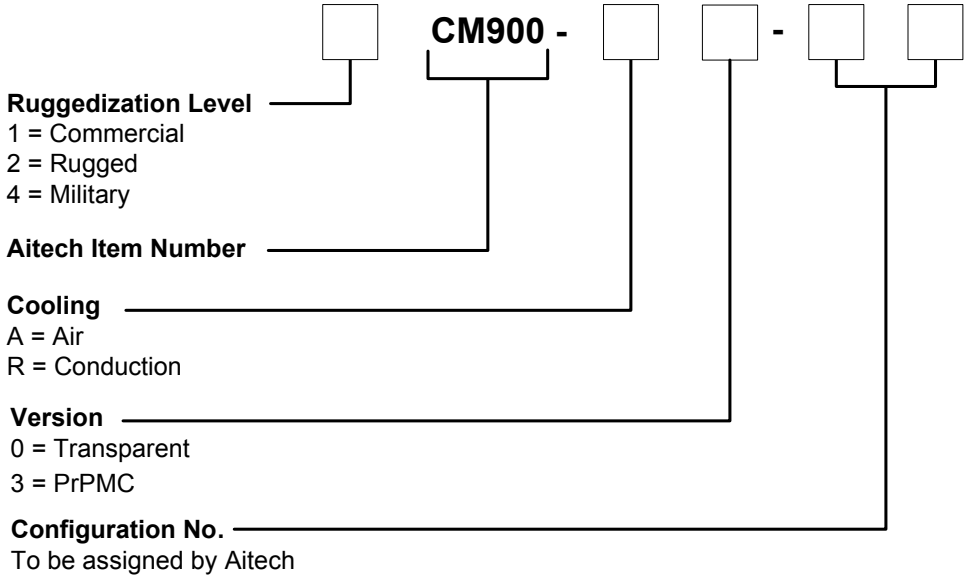
Power consumption of the CM900 (not including the PMC's power consumption) is as follows:

| | |
|---|---|
| +3.3 V (± 5%) | 0.5 A |
| +5.0 V (± 5%) | 0 |
| +12 V (± 10%) | 0 A |
| –12 V (± 10%) | 0 A |

## Environmental Features

Please Refer to the Aitech Ruggedization Datasheet.

## Ordering Information for the CM900




**Example:** 2CM900-R0-00

For alternate configurations or more information about the CM900 or any Aitech product, please contact Aitech Defense Systems sales department at (888) Aitech-8 (248-3248).

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