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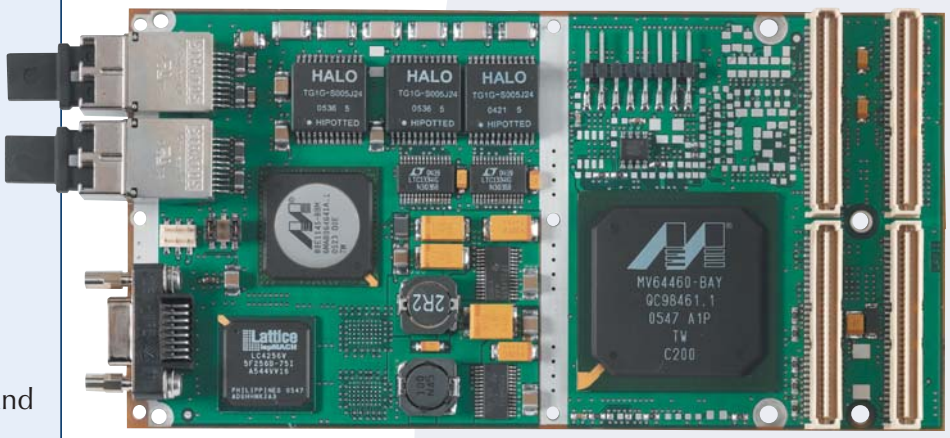
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# PMCD3

## Multifunction PMC (Ethernet/Serial/Firewire)

- Multifunction PMC based on Marvell Discovery III integrated system controller:
  - Up to three active Gigabit Ethernet ports (copper & optical options)
  - Two fast sync / async serial ports
  - Two standard async serial ports
  - Up to three Firewire ports
  - Elapsed Time Indicator
- Five air- and conduction-cooled ruggedization levels
- Comprehensive operating system and Deployed Test software support




The PMCD3 offers a range of I/O features including copper and optical Gigabit Ethernet, serial and Firewire (IEEE 1394b) ports and is designed to complement Radstone's market-leading range of single board computers.

The PMCD3 provides up to five Ethernet ports in total (three copper and two optical), three of which can be active at any one time. Two copper ports are dedicated to rear I/O with a third capable of routing to either the front or rear (factory build option). The two optional optical ports are dedicated to front I/O via fully rugged low profile optical receivers.

Two fast sync/async serial ports are implemented via the Marvell Discovery III integrated system controller while two further async serial ports are implemented via the dual UART.

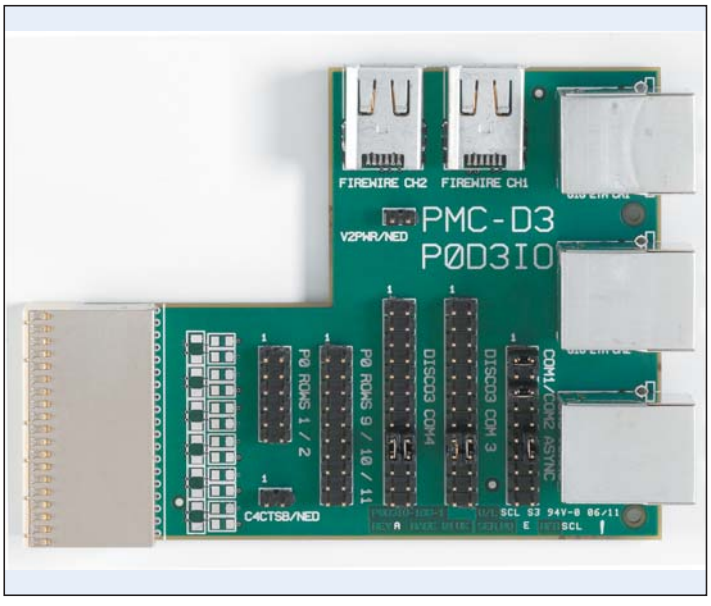
A maximum of three Firewire ports are available with two ports dedicated to rear I/O only and a third, if required, routed to the front.

Radstone's comprehensive software support package includes driver support for VxWorks, LynxOS and INTEGRITY.

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## Features

| | | | |
|---|---|---|---|
| System Controller | Marvell Discovery III | The feature set of the Marvell Discovery III integrated system controller includes two PCI-X interfaces and a range of communications peripherals, all on a single chip. On the PMCD3 it provides a PCI-X 133-capable interface to PMC connectors, a 64-bit /33 MHz interface to the Firewire chip set, three Ethernet MACs, and two fast sync / async serial ports | |
| Memory | 4 MBytes | Optional fit | |
| Ethernet ports | 10/100/1000 BaseT<br>Three active ports (five in total)<br>ETH 1,2,3,4,5 | Up to five Gigabit Ethernet ports are provided from the Discovery III, three of which can be active at any time. All five ports can be connected on a single card (two optical and three copper) and traffic can be switched by software between all five ports – but only three can be active at the same time | |
| | | Copper interfaces | Two of the copper ports are dedicated to rear I/O (J14). The third port can be routed either to the rear (J14) or to a front panel micro-D connector |
| | | Optical interfaces | Both optical interfaces are front I/O only via Stratos Lightwave low profile rugged optical transceivers, which are available in SX and LX versions |
| Serial ports | COM 1,2 | Async only, provided from the DUART to J14. Both channels are software selectable to be RS232/422/485 (up to 3 Mbits/second) | |
| | COM 3,4 | Async / Sync capable, provided from the Discovery III integrated system controller to J14. Both channels are software selectable to be RS232 / 422 or 485 (up to 8 Mbits/second) | |
| Firewire ports | FW 1,2 | Up to three ports implemented via Texas Instruments TSB81BA3 / TSB82AA2 chip set<br>Two ports are dedicated to rear I/O only, with the 3rd port (if required) routed to front (micro-D connector). The number of ports is defined at build time<br>Note :If two rear I/O ports are selected, one serial port (COM 4) loses its sync capability | |
| DMA engines | Four available | 4-channel Independent DMA controller | |
| ETI | Elapsed Time Indicator | Maxim DS1682 - records total on-time and number of events occurred. | |
| Software | Full Radstone software support | Radstone's Deployed Test strategy is fully implemented with a combination of BIT (comprehensive power-up built-in test firmware) and BCS (Background Condition Screening) for non-destructive, continuous on-line testing. Also included in Radstone's COTS software support are drivers for Wind River's VxWorks, Green Hills Software's INTEGRITY and LynuxWorks' LynxOS. | |




### *PMCD3 Rear Transition Module*

For easy access to all the rear I/O functionality of the PMCD3, a Rear Transition Module (P0D3IO) is offered which interfaces to a J0 type connector either on the backplane or on a host card Rear Transition Module.

**Figure 1: PMCD3 Paddle card example**

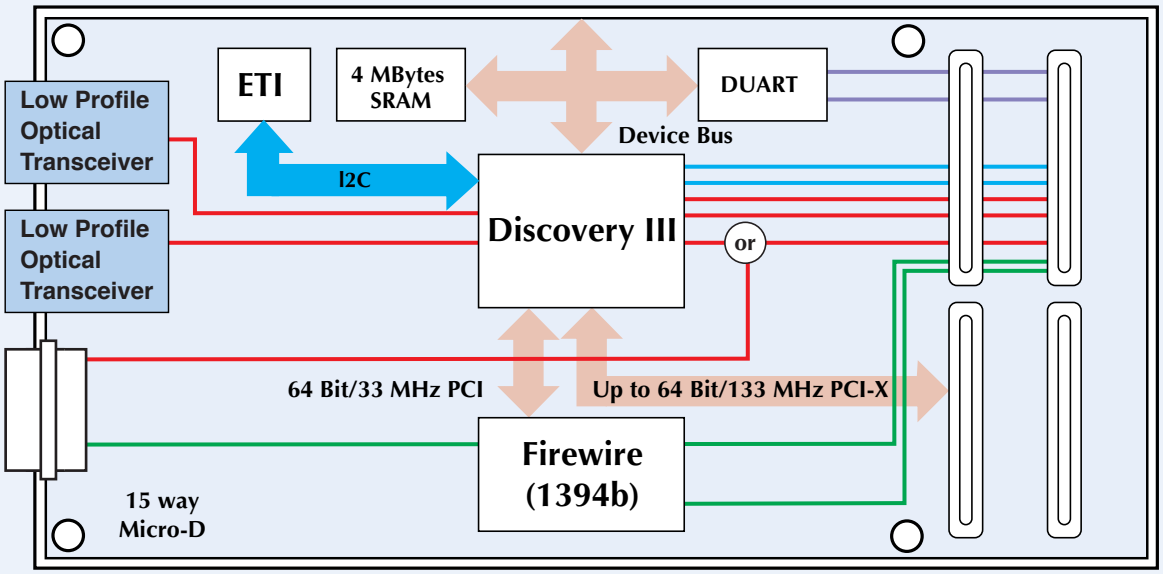



Figure 1: PMCD3 Functional Block Diagram

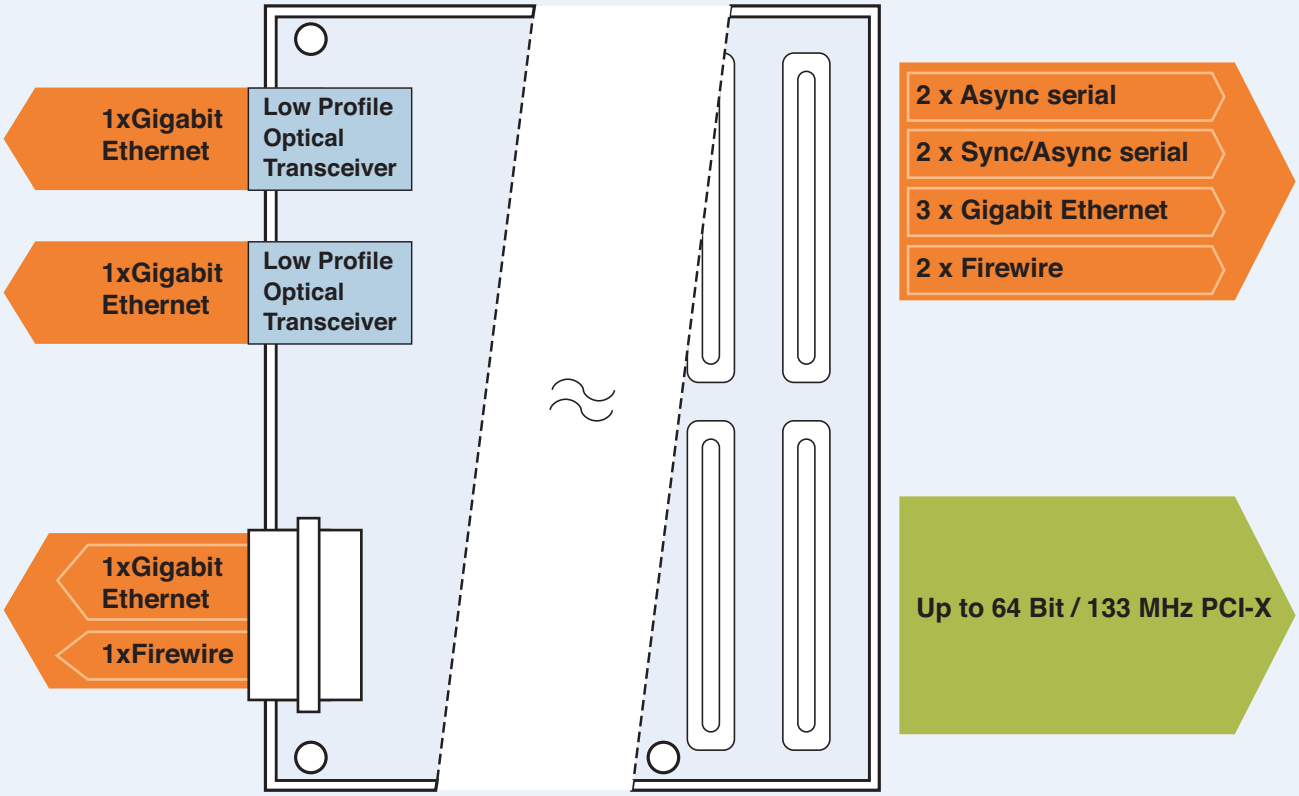



**Figure 2:** PMCD3 I/O Diagram

## Standard Ordering Information

| Sales Code | Description |
|---|---|
| **PMCD3-1300** | Level 1 air-cooled, 3 x rear I/O Gigabit Ethernet ports, 4 x rear I/O serial ports (RS232/422/485) |
| **PMCD3-2300** | Level 2 air-cooled as above with conformal coating |
| **PMCD3-3300** | Level 3 air-cooled as above with conformal coating |
| **PMCD3-4300** | Level 4 conduction-cooled as above with conformal coating |
| **PMCD3-5300** | Level 5 conduction-cooled as above with conformal coating |


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