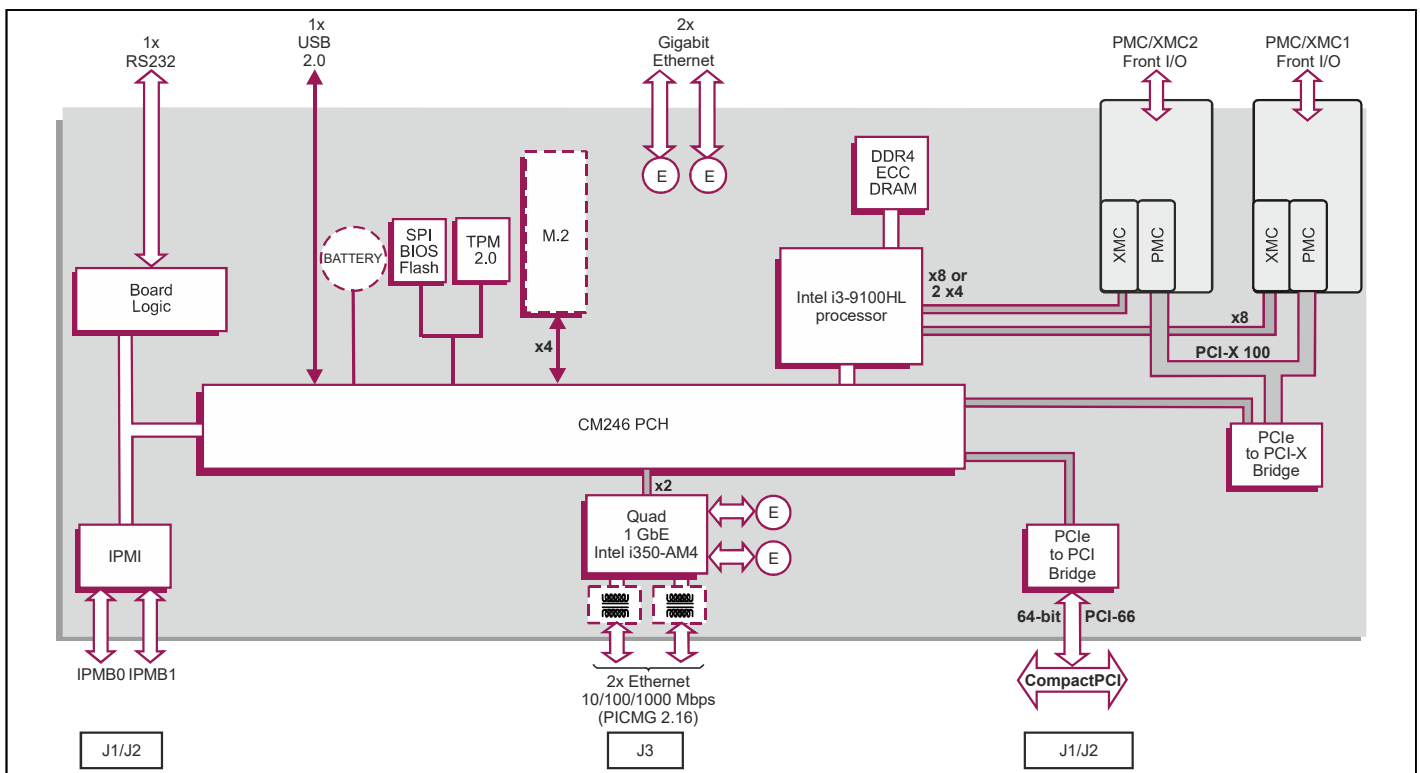
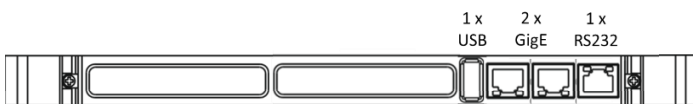


6U CompactPCI® Processor Board based on 9th Generation Intel® Core™ i3 Processor

Key Features

PP F84/m3d is a single slot, air-cooled CompactPCI® board with sufficient performance and capabilities to enable customers to extend system life-cycles.

- Based on a 4-core 9th Generation Intel® Core™ i3-9100HL processor
- Two XMC/PMC module slots for local I/O expansion
- Local solid-state storage options
- Two front Gigabit Ethernet ports



6U CompactPCI Processor Board

- air-cooled 6U CompactPCI computing board utilizing a 9th Gen Intel Core™ processor

Central Processor

- 4-core Intel Core™ i3-9100HL Processor:
 - 6 Mbytes SmartCache, up to 1.6 GHz
- utilizes the Intel CM246 Platform Controller Hub

DRAM

- 16 Gbytes soldered DDR4 ECC DRAM:
 - single bit error correction
 - dual channel architecture
- accessible from processor and CompactPCI bus

Mass Storage Interface

- 1 x M.2 SSD site on-board supporting:
 - Type 2230, 2242, 2260 and 2280 device
 - x4 PCIe interface (M-key)
 - NVMe Express (NVMe™) logical device interface
 - NVMe 1.3 compatible

Gigabit Ethernet Interfaces

- Four 1 Gigabit Ethernet interfaces
- 2 x front panel interfaces via an RJ45 connectors
- 2 x rear interfaces via J3:
 - support for PICMG 2.16 R1.0 - Packet Switching Backplane (build option)
- implemented by an Intel I350-AM4 controller

Dual PMC/XMC Interfaces

- dual PMC/XMC interfaces:
 - front panel I/O
- PMC sites support:
 - 32/64-bit, 33/66MHz PCI bus
 - 64-bit, 100MHz PCI-X™ bus
 - 5V and 3.3V signaling
- XMC sites support:
 - both support x8 PCI Express (PCIe)
 - XMC site 2 can also support 2 x4 PCI Express
 - PCIe Gen 1, Gen 2 (and optionally Gen 3)
 - XMC VPWR +5V
- XMC connector type (build option) determines the maximum PCIe operational speed:
 - up to Gen 2, VITA 42 XMC (color black)
 - up to Gen 3, VITA 61 XMC 2.0 (color white)

Serial Interfaces

- Serial interface:
 - 1 x Tx/Rx RS232 accessed via a front panel RJ45 connector
- 16550 compatible UART

Graphics Interfaces

- No graphics interfaces are exposed on this board

Other Peripheral Interfaces

- PC Real Time Clock
- watchdog timer; 32-bit Long Duration Timer with processor interrupt ability; chipset timer
- voltages monitor; CPU temperature and board temperature monitors; all accessible via IPMI
- 1 x USB 2.0 port accessed via a front panel USB Type A connector

IPMI

- PICMG 2.9 R1.0 (System Management):
 - implements IPMB0/IPMB1 interfaces
- Baseboard Management Controller
- supports 8 Kbytes of non-volatile memory

Software Support

- supports Linux
- for other operating systems contact Concurrent Technologies for further information, e.g. Windows VxWorks

Firmware Support

- UEFI 2.7 boot firmware (BIOS):
 - dual BIOS SPI Flash EPROMs
 - implements Secure Boot
- implements Intel Boot Guard
- LAN boot firmware included

Board Security Packages

- Trusted Platform Module (TPM 2.0)

CompactPCI Interface

- compliant with PICMG 2.0 R3.0; 3.3V or 5V signaling levels (universal signaling support)
- 33/66 MHz, 32/64-bit interface accessed via J1/J2 connectors
- PICMG 2.1 R2.0 Hot Swap compliant
- operates as System Slot controller or in a Peripheral slot (auto-selected on insertion to backplane)
- option to disable CompactPCI interface (Satellite Mode):
 - receives power from CompactPCI bus
 - board can be hot swapped

Safety

- PCB (PWB) manufactured with a flammability rating of UL94V-0

Electrical Specification

- typical current figures (based on 4-core CPU (25W) 16 GBytes DRAM):
 - +5V @ 1.7 A
 - +3.3V @ 3.2 A
 - +12V and -12V, both @ 0.0A
- +12V and -12V are not required, but are routed to PMC/XMC sites

Environmental Specification

- operating temperature:
 - 0 C to +55 C (N-Series)
- non-operating temperature: -40 C to +85 C
- 5% to 95% Relative Humidity, non condensing:

Mechanical Specification

- 6U form-factor:
 - 9.2 inches x 6.3 inches (233mm x 160mm)
- single slot: 0.8 inches (20.3mm)
- connectors: IEC-1076-4-101 for J1-J3:
- operating shock: 20g, 11ms, sine
- operating vibration:
 - 5Hz-2000Hz at 2g, 0.38mm peak displacement

Legacy Board Compatibility

- PP F84/m3d rear plug compatibility with the popular PP 833/x9x family