

CI010-2080

6U OpenVPX Single Board Computer with BuiltSAFE®

Safely accelerate data intensive radar and sensor workloads

- Dual Intel® Xeon® D-1700 SoC 10-core processors
- AVX512 and AI neural network inference accelerators
- Advanced system-on-chip (SOC) with integrated 40GB/s Ethernet
- PCIe global memory mapping via PCIe switch
- Safety certifiable with complete DO-254 and DO-178C artifacts
- Rugged, DO-160, MIL-STD-810G



TECHNICAL SPECIFICATIONS

Processor

(2) Intel® Xeon® D-1700 @ 2 GHz, 10-core (total 20 cores)

Vector processing, AVX-512 acceleration and VNNI

Memory

64 GB of DDR4-2666 ECC

32 GB per processor (2 channels)

128 GB of on-board SSD (SATA flash)

4 GB per processor

I/O

(4) x8 PCIe3 (Gen3) from PCIe switch (with NTB port support) configurable as 2x16, upstream/downstream

(4) 40 GB-KR4 Ethernet

- 2 per Processor

(4) 10/100/1000 SGMII Ethernet

- 2 per processor

(4) UART (3.3 V, HSUART)

- 2 per processor

(4) USB 2.0 - 2 per processor

(2) USB 3.0 (with DCI) - 1 per processor

Switch / Bridge

ExpressLane™ PEX8764, 64-lane, 16-port, PCIe 3.0 multi-host switch

2 NT ports

BuiltSAFE® Proven Elements

DO-254 hardware up to DAL-C

DO-178C board management features and processor board support packages up to DAL-D

Design and information assurance

Debug

Intel® direct connect interface (DCI) allows debugging of Intel® targets via USB 3.0 port

UART via backplane can also be used

Development

Rear transition module capability

TECHNICAL SPECIFICATIONS

BuiltSAFE® Board Management Features

- Board management controller (BMC)
- Built-in-test (BIOS and software)
- Temperature monitoring
- Watchdog (using internal processor mechanism)
- Error reporting (temp/voltage alarm)
- Reset management
- Power sequencing
- Debug and maintenance mode
- Security trusted platform module (TPM 2.0, secure boot)
- EEPROM
- Elapsed time counter

Board Support Packages (BSP)

- WindRiver VxWorks 7.0
- UEFI firmware based on Intel Slim Bootloader for faster boot
- BuiltSAFE® board monitoring package
- Linux
- Greenhills
- Deos
- LynxOS
- PikeOS

Mechanical

- 6U OpenVPX, 1.2" slot pitch, ANSI/VITA 65-2017
- MULTIGIG RT3 (up to 25Gbps)
- SLT6-PAY-4F1Q2U2T slot profile
- VITA 46 / VPX REDI VITA 48.8 / VITA 65-2017, VITA 46.11
- SGMII, PCIe 3.0, USB 2.0/3.0
- VITA 48.8 air-flow-through cooling

Rugged and Low Power

- Operating temp: -26° C to 55° C
- DO-160G
- MIL-STD-810G CHG1
- MIL-STD-1686C
- MIL-STD-202H
- 100 W - 120 W power consumption

Export Control Classification (ECCN)

- ECCN US: 5A992.c / ECN CH: -
- HTS / tariff nbr: 8471.50.0150 / 8471.5000
- LIC: NLR
- Origin: Switzerland

Product Ordering and Options

- CI010-2080 - 6U OpenVPX dual Intel® Xeon® D-1700 SoC Processor
- RTM-2080 - RTM for CI010-2080

Related Hardware

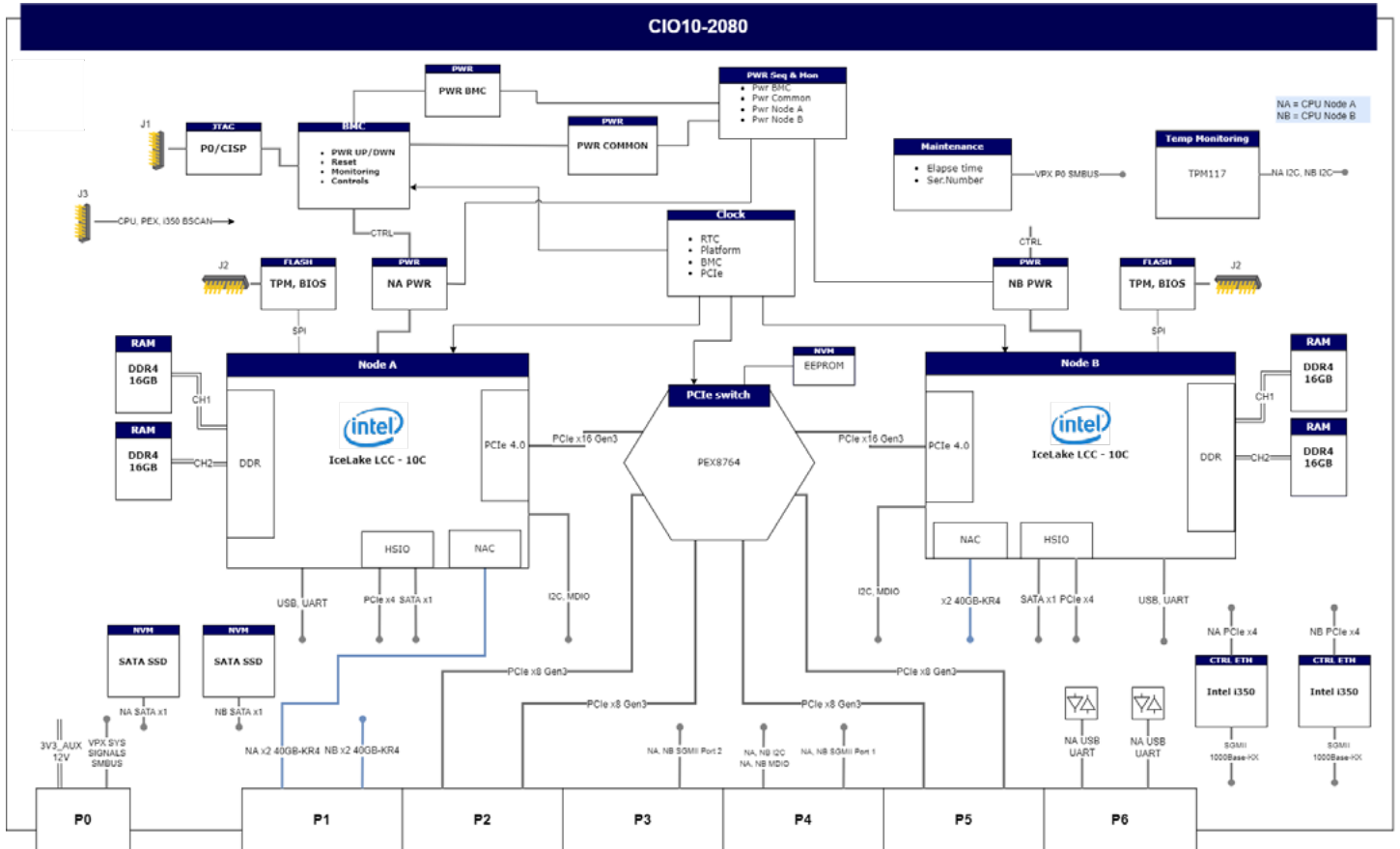
- FIOVU-2180 - 6U OpenVPX dual XILINX Virtex® UltraScale+™ XCVU9P

Partnering with



TECHNICAL SPECIFICATIONS

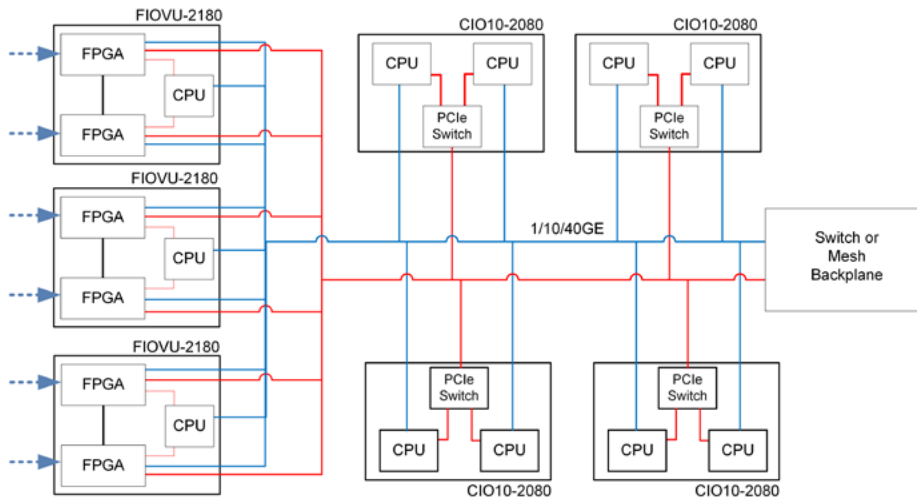
CIO10-2080 Block Diagram



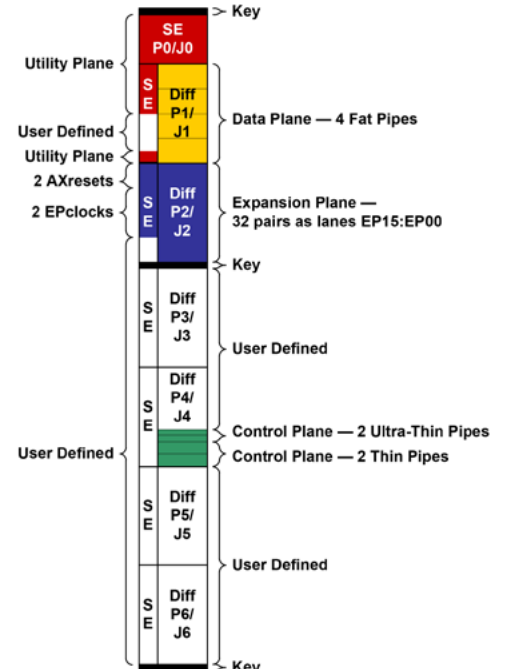
TECHNICAL SPECIFICATIONS

High-Performance Subsystem with CIO10-2080 and FIOVU-2180 Block Diagram

CIO10-2080 dual processor boards can be combined with FIOVU-2180 dual FPGA boards to form a high-performance, safety-certifiable subsystem. The diagram below illustrates how these boards can be interconnected via PCIe and Ethernet to create a subsystem featuring high-performance FPGAs and processors ideal for advanced, next-generation safety certified systems.



Slot Profile Block Diagram



Corporate Headquarters

50 Minuteman Road
 Andover, MA 01810 USA
 +1 978.967.1401 tel
 +1 866.627.6951 tel
 +1 978.256.3599 fax

International Headquarters
 Mercury International

Avenue Eugène-Lance, 38
 PO Box 584
 CH-1212 Grand-Lancy 1
 Geneva, Switzerland
 +41 22 884 51 00 tel

Learn more

Visit: mrcy.com/contact-us

Contact: mission@mrcy.com



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