IC-INT-VMEb

Intel® Xeon® D-15xx VME SBC

The **IC-INT-VMEb**, powered by an Intel® Xeon D Series – Broadwell DE processor, offers unparalled performance to VME legacy applications to provide ruggedized and highly secure solutions.
The Intel ® Xeon D-1500 family brings the performance of Intel Xeon processor into a dense, low-power system on a chip. With its Intel® 64 Broadwell microarchitecture and its HyperThreading technology, the processing throughput and the application performance are greatly enhanced. Floating point processing is drastically improved by the Advanced Vextor Extension (AVX2) Instruction Set Extension offering an ideal open system for demanding time critical applications.
The **IC-INT-VMEb** is delivered with its own Boot Loader. This capability to master UEFI firmware allows Interface Concept to implement specific functions of services for accurate power-up sequences.

RoHS✓

Description

The **IC-INT-VMEb** is available with up to eight cores. When delivered with its VME interface, it implements the VME64x FPGA interface developed by Interface Concept to prevent obsolescence risks.

One Gigabit Ethernet port is available at the front while three Gigabit Ethernet ports on the backplane provide compliance with VITA31.1 standard regarding packet switched architecture. These four ports support 1588 and virtualization.
Two PMC(PCI-X)/XMC (PCIe) slots enhance the SBC flexibility through the addition of system-specific mezzanines.

If faster processing for wide band analog signals is required, the **IC-INT-VMEb** implements , as an option, a new high-end Xilinx Serie-7 FPGA, interfacing the CPU (PCIe x 4) and an optional HPC connector to plug FMC modules (VITA 57.1), provided by IC or third party.

This FPGA is dedicated to customer's proprietary applications, IC supporting several VHDL functions (UART, HDLC, GPIOs, Video capture,…)

Optionally, the **IC-INT-VMEb** also implements one or two SATA connectors to accommodate 2"5 disks, allowing building the Data Storage module of a system (RAID software).

Main features

Processor Unit
- One Intel® Xeon® Processor D-1548 (or D-1527)
  - Core speed = 2.0 GHz (or 2.2 GHz)
  - Cache = 12 MB (or 6 MB)
  - Thermal design power = 45W (35W)
- DDR4 with ECC (up to 2*8 GB)
- Boot flash memory
- Calendar clock with supercap backup
- Thermal monitor sensor

Storage subsystem
- On-board SATA SSD (up to 16 GB)
- Up to 4 * SATA ports on P0

Communication subsystem
- 4 * Gigabit Ethernet ports (1588, Virtualization)
- 4 * USB ports (1 front/ 3 rear)
- 1 * console port (front or rear)
- 3 * multimode serial ports (RS422, RS485, RS232)
- HDMI/DVI output (optional)

I/O subsystem
- VME64x
- Two PMC/XMC slots(slot 0 compatible with VITA35 P4V2-64ac . From Pn6 12differential pairs available on P2 and upt to 8 differentail pairs available on P0)
- Open FPGA (Xilinx®Kintex-7) interfaced with up to 80 differential pairs/ single ended and 4GTP lanes to an optional FMC slot.

Accessories
- 6U Rear Transition Module

The **IC-INT-VMEb** is available in air-cooled and conduction cooled (without front IO) versions compliant with VITA 47 classes.

IC-INT-VMEb

Intel® Xeon® D-15xx VME SBC

On-board firmware

Interface Concept Single Board Computers based on Intel CPUs use the new UEFI firmware technology.

This **Boot Loader**, **developed, tested and customizable by our R&D team**, implements all the initializations and optimized PBITs while ensuring the shortest boot time before launching the UEFI shell or loading the Operating System from storage devices (CD, DVD, HDD, USB…) or network.

When the final application is running, Runtime services remain in memory allowing thus the user to access UEFI variables for monitoring (e.g. PBIT results) or setup operations.

On request, we can even customize the Boot Loader to keep only what is strictly necessary for customer's applications.

OS support

Interface Concept provides LSP Linux® distributions (IC SDK, others...) and VxWorks 6.9.
For Windows and other OS, please consult us.

Interface features

VMEbus 64x interface (P1/P2)
►DTB Master : A16/24/32/64 ; D08-D64, SCT, BLT, MBLT, 2eVME
►DTB Slave : A16/24/32/64 ; D08-D64, SCT, BLT, MBLT, 2eVME
►Arbiter : RR/PRI/SGL
►Interrupt : handler/generator with IRQ[1..7]
►System controller

Front connectors :
►1 * Gigabit Ethernet port (RJ45)
►1 * console port
►1 * USB

PMC/XMC slot 0
►PCI-X up to 100MHz
►PCIe x8

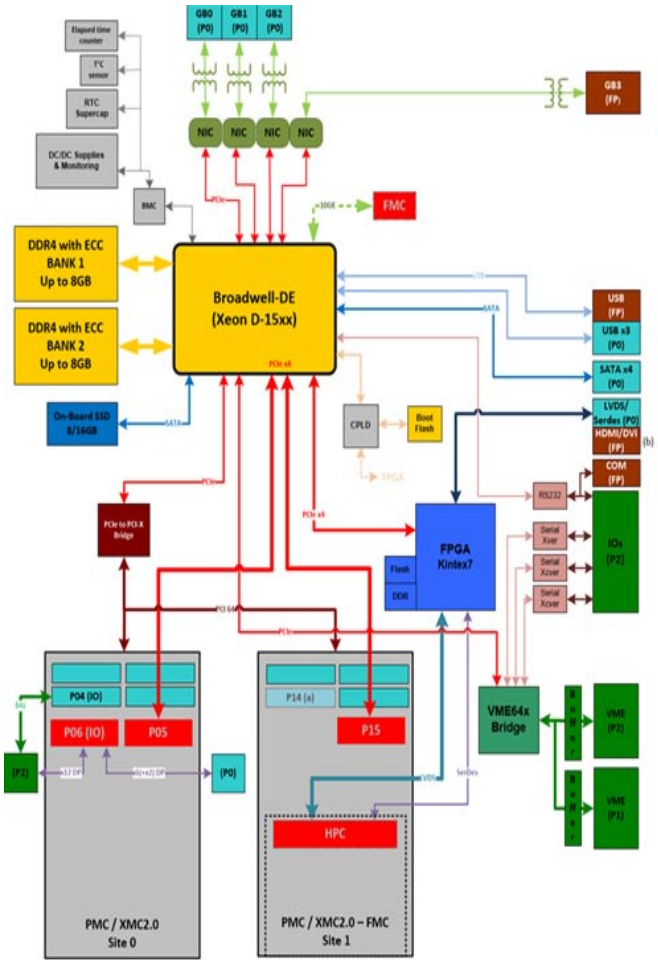
PMC/XMC slot 1
►PCI-X up to 100MHz
►PCIe x8

P0 connector
►3 * Giga Ethernet (Compliant with Vita31.1)
►3 * USB2
►Up to 4 * Sata
►1 * DVI (optional)
►IOs (from Pn6)

P2 connector
►Pn4 I/Os : PMC0 I/Os routed on P2 (VITA35 P4V2-64ac)
►4*UARTs
►I/Os (from Pn6)

Miscellaneous
►IPMI (VITA 38)
►HPC connector (exclusive with one PMC/XMC slot) to connect an FMC to the FPGA.

Block Diagram



Environmental Specifications:

Please consult the **IC-INT-VMEb** page at **www.interfaceconcept.com**.

Ordering Information:

Please contact our sales department : tel. **+33 (0)2 98 573 030** - email : **info@interfaceconcept.com**

This document supersedes any earlier documentation relating to the products referred to herein. The information contained in this document is current at the date of publication. It may subsequently be updated or withdrawn without notice.

Corporate Headquarters • 29000 QUIMPER • FRANCE • TEL +33 (0)2 98 573 030 • FAX +33 (0)2 98 573 000
info@interfaceconcept.com