

IC-DC2-VMEa Intel VME64x VITA 31.1 SBC

IC-DC2-VMEa is a VME64x-VITA31.1 processor board with the latest Intel Core 2 Duo processor based on a new micro-architecture. This technology extends the energy efficient philosophy first delivered in Intel's mobile Banias micro-architecture and greatly enhances it with many new and leading edge micro-architectural innovations as well as existing Netburst features. The new microarchitecture includes key features such as EM64T, Intel® Wide Dynamic Execution, Intel Intelligent Power Capability, Intel Advanced Smart Cache, Intel Advanced Digital Media Boost and Intel Smart Memory Access.

The 2eSST capabilities of the **IC-DC2-VMEa** provides up to 300MB/s peak transfer rate across the VMEbus. Moreover the backward compatibility protects existing investments.

IC-DC2-VMEa can be used in many highly integrated applications like Leading-edge computing, Embedded network control, Signal processing, etc.



Description

Processor Unit

IC-DC2-VMEa is powered by the Intel Core 2 Duo mobile processor built on 65-nm technology. The board can be equipped with the T7400 (2.16 GHz) or the L7400 (1.5 GHz) processors. The three operating modes of Intel 64 architecture are available: legacy IA-32 mode (32-bit for OS, drivers and applications), compatibility mode (64-bit OS, drivers, 32-bit applications) and 64-bit mode.

IC-DC2-VMEa runs as a system controller or a standard board. An automatic detection can be used with the VME64x backplane. The VMEbus interface is based on a combination of the Tundra Tsi148 VME bridge and the latest generation of Texas Instrument transceivers. This design allows the switching speed required by the 2eSST protocol on all the backplane.

IC-DC2-VMEa implements the E7520 North bridge. This chipset provides two DDR2-ECC memory controllers (one soldered bank and one optional SODIMM extension), it also operates as a multi-channel PCI-Express bridge. The 6300ESB south bridge adds IO functions such as: PCI-X / PCI-e, USB2, IDE, SATA, etc. Four triple-speed Ethernet ports based on the Intel 82571 fill out the communication features of the board. Two XMC/PMC mezzanine slots are available: one 32/64-bit 33/66MHz PCI/PCI-X and one 32-bit/33MHz. The two slots are compliant with the Vita42.3 (PCI-Express). Thanks to its SATA and IDE controllers, **IC-DC2-VMEa** can manage directly several storage devices.

Moreover the board implements on-board an USB2 high-speed Flash Drive controller and Nand Flash compatible with Mass Storage Device Class. This bootable on-board mass drive can be used as a RAID disk unit with dual-channel capability.

IC-DC2-VMEa can be used with many major RTOS and Linux.

Main features

Dual Core 2 Processor Unit

- ▶ L7400 @1,5 GHz or T74000 @1.7 GHz.
- ▶ FSB 533 or 667 MHz.
- ▶ L1 caches: 32KB Inst. and 32KB Data per core.
- ▶ 4 MB of L2 shared cache.
- ▶ 512MB, 1 or 2 GB of SDRAM-DDR2 with ECC.
- ▶ BIOS Flash.
- ▶ Optional soldered Disk Flash.
- ▶ 32KB of NVRAM (non-volatile memory).
- ▶ Real Time clock and four 32 bit-timers.
- ▶ Calendar clock with supercap backup.
- ▶ Temperature sensor and monitoring.

I/O subsystem

- ▶ VME64x with 2eSST (Tsi148)
 - ▶ Two XMC/PMC slots with one Pn4 (64 IO) on P2 rows A/C.
 - ▶ Four Ethernet 10/100/1000TX ports with:
 - Support for Jumbo frames
 - Host offloading, Packet filtering, VLAN, etc.
 - Two ports routed on rear P0 Vita 31.1 compliant and two on RJ45 front connectors.
 - ▶ Two RS232 serial interfaces: one front and one on P2.
 - ▶ Four USB2 controllers: two channels on P0, one front and one used by the USB2.0 Flash drive channel.
 - ▶ GPIO on P0.
- Two channels SATA controllers, one port on P0 and one port available through an optional front board connector.

Accessories

- ▶ 6U Rear Transition Module (RTM) providing: Giga Ethernet RJ45, USB2 and console ports, SATA connector and an HD68 connector for the PMC IO.

IC-DC2-VMEa is provided in standard and extended grades.

