SBS V5C

VME Bus (SBC) Single Board Computer

Limited Availability
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https://www.artisantg.com/60113-6

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V5C

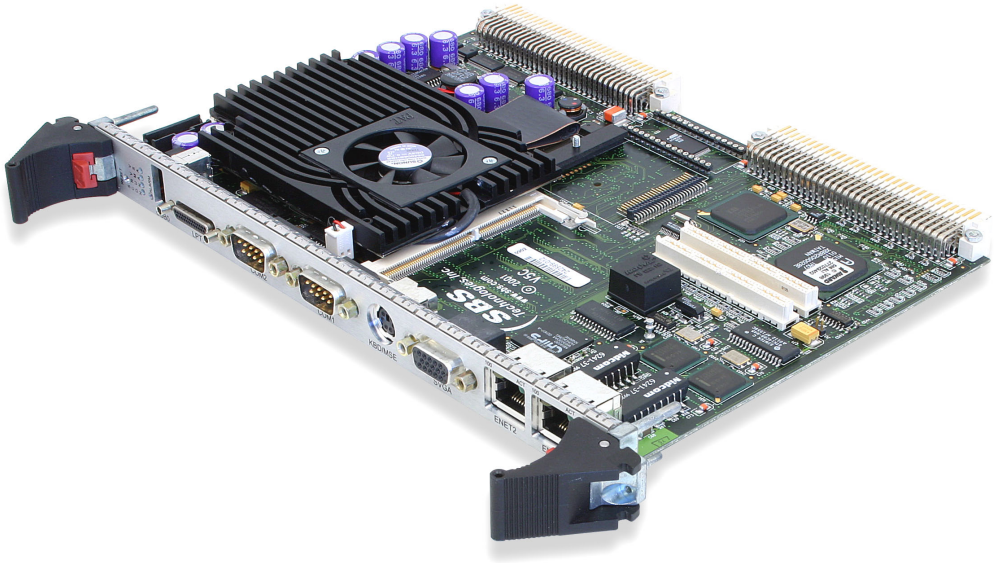
6U VMEBus Embedded PC with Dual Ethernet

Single Board Computers

Features

- Compatible with PC99 Design Specification
- Socket 370 Processor Pentium® III (to 1000 MHz* w/100MHz Front Side Bus) or Celeron® (to 600 MHz* w/66 MHz Front Side Bus)
- Memory sizes up to 1 GB
- Level 2 cache on CPU
- 4 MB 69030 Video RAM
- Dual 10/100Base TX Ethernet
- Fast SCSI-2 interface with Wide option
- Enhanced IDE Hard Disk interface and option for 2nd IDE
- USB, COM1, COM2, LPT1, Mouse and keyboard port
- PCI Expansion interface for Triple PMC Carrier Card (TPMCC)
- VME64-compliant with Universe II PCI to VMEbus interface w/5-row P1/P2
- 32 KB NVSRAM with Auto-Store
- VMEbus hardware-controlled byte swapping.
- Compact Flash Disk on second IDE
- Flash Disk-On-Chip

* Up to currently available processor speeds (consistent with product power requirements).



V5C is a high-performance single board embedded computer for the VMEbus. It can be configured with either a Pentium® III or Celeron® processor. The architecture is designed around the PCI local bus. The V5C is designed for real-world performance with advanced memory technologies, processing speeds up to 1000 MHz, SVGA GUI-Accelerated PCI Bus video, Fast SCSI 2/wide, Dual High Speed 10/100BaseT Ethernet and VMEbus VME64 Block Mode Transfer capability. This results in high-end workstation performance in a single-slot VMEbus card.

The V5C Embedded PC is compatible with software that complies with the PC99 Design Guide, so it supports the wide variety of off-the-shelf software available for Pentium-base computers. SBS Technologies provides driver-level support for several common operating systems including Linux, and Windows NT®, as well as real-time operating systems such as QNX Systems Limited QNX®, and Wind River Systems VxWorks®.

The V5C features new architecture based on the high-speed PCI bus. As a result, peripherals such as video and Ethernet, as well as the VME interface have a high-bandwidth connection to the processor. The V5C is designed to provide all the features of a complete PC99-compatible motherboard (excluding audio), along with additional features such as dual Ethernet Controllers, SCSI-2 and hardware extensions necessary for VMEbus Master/Slave capability. The V5C implements the advanced third-generation ALI Aladdin-Pro II® chipset that is fully compatible with industry-standard PC hardware and software. For a fast and flexible interface to the VMEbus, the V5C uses the Tundra Universe® II VMEbus Interface Controller.

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Specifications

Processor - Socket 370
- Scalable processing power with flexible processor design
- Pentium III with up to 1000 MHz and 100 MHz FSB
- Celeron with up to 600 MHz and 66 MHz FSB

* Up to currently available processor speeds (consistent with product power requirements).

Level 2 Cache
- L2 cache (integration with CPU dependent on processor option)

System Memory
- 256 MB SDRAM on-board memory (default)
- 256 MB and 512 MB options
- 128 MB to 512 MB with soldered chips
- SODIMM Expansion socket for memory upgrade to 1 GB

SVGA Video
- 69030 Dual HiGVideo™ accelerator
- 4 MB Embedded SDRAM memory
- VGA and SVGA-compatible
- 1600 x 1200 screen resolution (max.)
- Low power

Disk Interfaces
- Integrated floppy disk controller for one or two 1.44 MB 3.5-in. floppy disk drives through rear P2
- IDE interface supporting two IDE drives
- Fast SCSI-2 interface through P2

Enhanced IDE Drive
- Bus mastering EIDE interface through P2
- IDE supports two IDE drives with enhanced PIO access modes
- Secondary IDE supports on-board CompactFlash™ disk or IDE drives through VME P2

On-Board CompactFlash™ Slot
- On-board CompactFlash drive slot, compatible with standard units such as SanDisk™ CompactFlash

Fast SCSI-2 Interface
- Symbios® 53C875E SCSI processor
- Fast SCSI-2 device support in asynchronous or synchronous mode
- Data rates up to 20 MB/s in synchronous mode
- Wide SCSI data rates of 40 MB/s in synchronous mode
- Active SCSI terminators provided on-board to simplify SCSI chain termination

Ethernet
- Two Intel® 82559ER Ethernet Controllers with integrated PHY
- IEEE 802.3-compatible
- Dual front-panel RJ-45 connectors

PCI Bus
- Ali® ALADDiN-Pro 2 1543C North Bridge Controller
- 32-bit 33 MHz PCI local bus

PMC Expansion Slots
- High-density PMC expansion connector
- Triple PMC Carrier Card (TPMCC)
- 32-bit/33 MHz PCI interface
- Fully PCI-compliant PMV for embedded systems
- Isolation and software access to PMC modules through PCI bridge chip on TPMCC
- Concurrent PCI bus transactions for primary and secondary PCI buses

VME Bus
- Tundra Universe II™ VMEbus interface controller
- Programmable byte-swapping capability to integrate to 6800-configured VMEbus
- Support for Intel® 32, Motorola® 32, and Intel® 16 byte-swapping modes
- Configuration: DTB Master, Option A32/A24/A16, D32/D16/D08(E0), RMV
- Configuration: DTB Slave, Option A32/A24/A16, D32/D16/D08, RMV
- Interrupter: Programmable, 1 of 7
- Interrupt Handler: Programmable, 1H(1–7)
- Requester: Programmable, BR(3, 2, 1, 0) Option ROR and RWD
- Arbiter: RRS, PRL, SGL
- Block Mode Transfer: Master and slave BLT and MBLT D64/D32/D16
- Disk interfaces provided onVME P2 connector
- Extended VME signals on VME P2 (row B)
- Floppy, IDE, and SCSI signals on VME P2 (row A and C)
- SCSI Wide, Secondary IDE, and second USB on VME P2 (row D and Z)

Serial Interface
- Ali® Aladdin-Pro 2 1543C Super I/O Controller
- Dual serial port interfaces: COM1—RS-232, COM2—RS-232/422/485
- IBM® PC compatibility
- Signals:TxD, RxD, RTS, CTS, DSR, DTR, DCD, RI
- Front-panel DB9 connector for each port

Parallel Interface
- Ali® Aladdin-Pro 2 1543C Super I/O Controller
- Single parallel port (LPT1)
- Centronics parallel, PS/2bi-directional compatibility
- Buffered parallel interface
- Micro-miniature DB-25 front-panel connector

Mouse/Keyboard Interface
- Ali® Aladdin-Pro 2 1543C Super I/O Controller
- Microsoft® mouse and PS/2-style keyboard compatibility
- Mouse and keyboard resident in a single connector, with reverse IBM standard (keyboard default, mouse through adapter)
- Mini-DIN “Y” adapter cable provided
- Mini-DIN circular 6-pin front-panel connector

USB Interfaces
- Ali® Aladdin-Pro 2 1543C Super I/O Controller
- USB0 routed to standard USB connector on front panel
- USB1 routed to P2 expansion

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Power Requirements

- +5 VDC @ 5A with 256 MB at 566 MHz (typical)
- +12 VDC @ 100mA maximum (CPU and memory dependent)
- -12 VDC @ (dependent on PMC modules installed)

Physical Characteristics

- 160 mm x 233 mm (dual Eurocard) 6U x 4HP
- Multi-layer printed circuit, FR-4
- 94 V-0 flammability rating (UL recognized manufacturers)

Temperature

- Operating: 0° to 55° C, inlet air
- Storage: -40° to 85° C

Cooling

- 100 LFM forced air, minimum required for cooling

Humidity

- 10 to 95% relative humidity, non-condensing

Shock

- Operating: 6G maximum
- Storage: 10G maximum

Programmable Board Configuration

- Configuration set by firmware (reduces need for jumpers)
- Software configuration options set by embedded set-up utility or application software
- Reliable and easy board setup (usually without having to remove board from chassis)

Support

- Software support packages available for Linux®, Windows NT®, Windows 2000®, QNX®, and VxWorks®

Ordering Information

V5C Embedded PC

V5C XXXX - YY - Z

XXXX = Memory (contact SBS for memory capacities available)
YYY = CPU speed in MHz (contact SBS for CPU speeds available)
Z = Front-panel option (contact SBS for availability, please specify if V5B compatibility is required).

Options and Accessories

TPMCC	Single-slot PCI mezzanine carrier card on PCI bus 1
VME-TB21	P2 adapter for floppy and IDE/SCSI cabling
CA25P24	24-in. 25-pin Micro-D parallel cable assembly
FDOCk-XX	Flash Disk-On-Chip up to 144 MB
VME-62XX	IDE hard disk, 3.5-in. floppy (contact SBS for capacities available)
VME-TB51	5-row DIN enhancements
COMFLASH-XXX	Compact Flash

Software Options

Windows NT	Microsoft Windows NT
Windows 2000	Microsoft Windows 2000
Windows XP	Microsoft Windows XP
UNISDK-NT	Universe Software Developers Kit / NT
UNISDK-XP	Universe Software Developers Kit / XP
UNISDK-Linux	Universe Software Developers Kit / Linux
VxWSP-V5C	VxWorks Board Support Package
V5C-SDK-XP	V5C Software Developers Kit
V5C-BSP-NT	V5C Board Support Package

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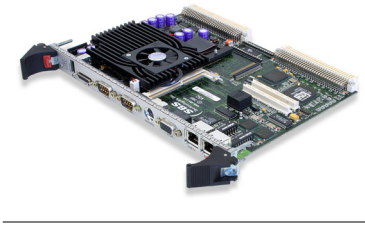
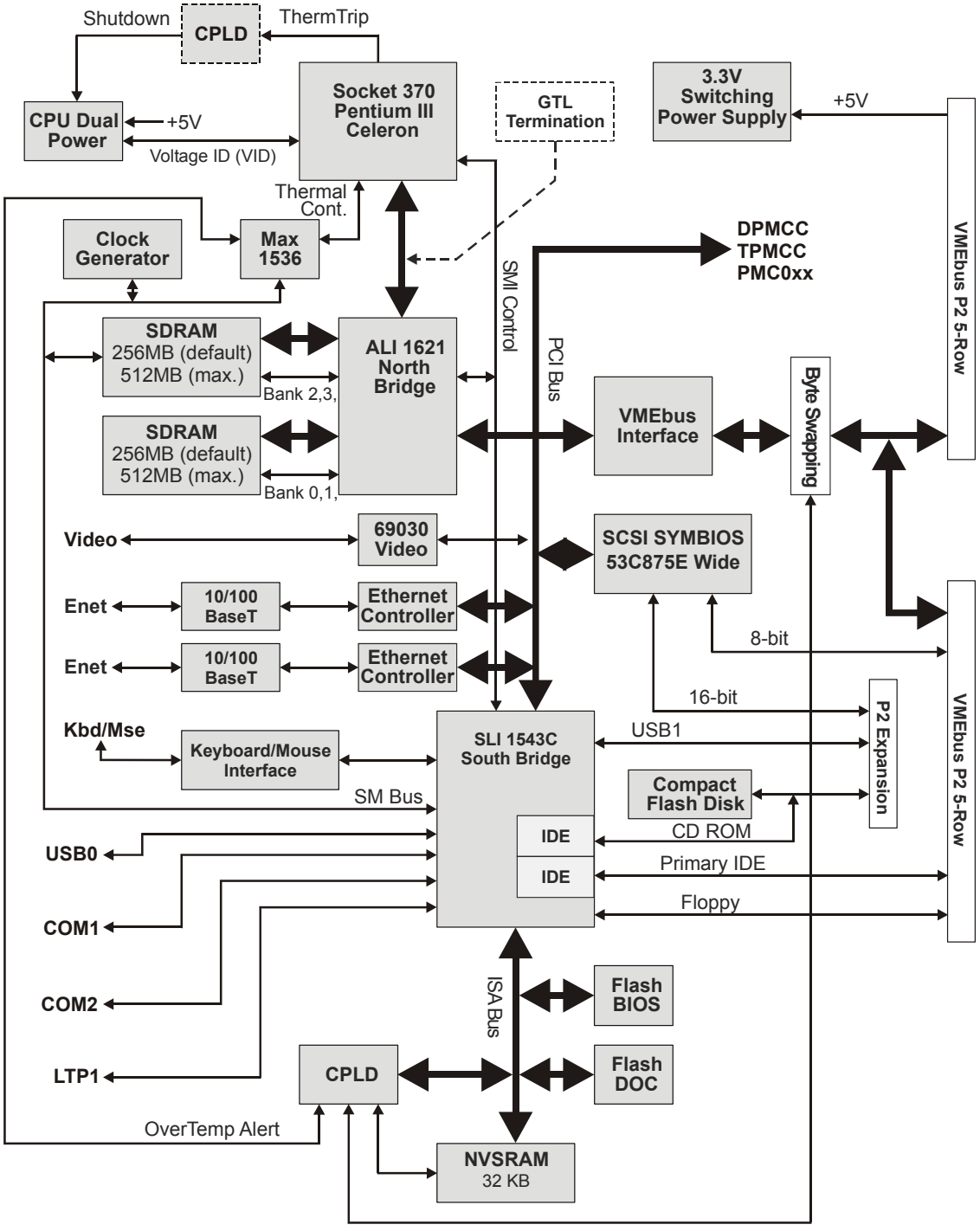


V5C

Block Diagram



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