



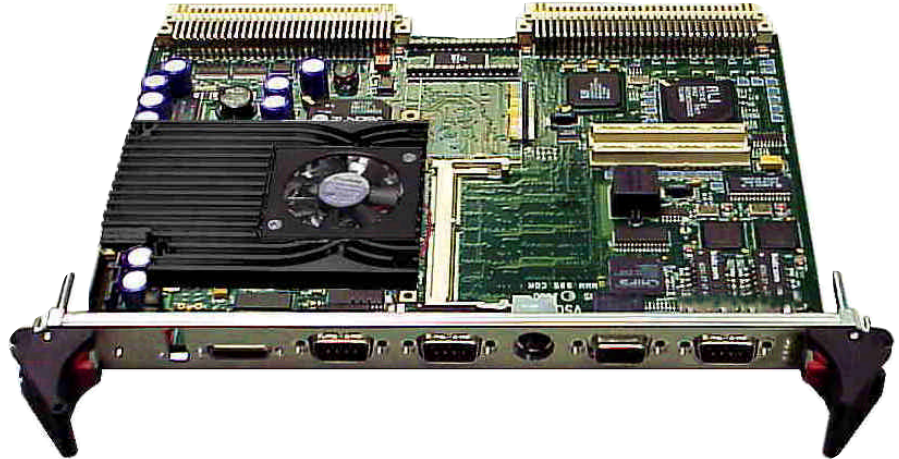
# V5CXT

VMEbus Embedded PC  
Extended Temperature

Single Board  
Computers

## Features

- Compatible with PC99 Design Specification
- Socket 370 Celeron™ (to 566MHz w/66MHz Front Side Bus)
- Memory sizes up to 1 Gigabyte
- Level 2 cache on CPU
- 69030 4 MB video RAM
- Dual 10/100BaseT twisted pair Ethernet (custom DB9 connector)
- Fast SCSI-2 interface w/wide option
- Enhanced IDE hard disk interface and 2<sup>nd</sup> IDE option
- USB, COM1, COM2, LPT1, mouse, and keyboard port
- PCI Expansion Interface for triple PMC carrier card (TPMCC)
- VME64 compliant via Universe II PCI to VMEbus interface
- Auto store 32kB NVSRAM
- VMEbus hardware controlled byte swapping
- Compact Flash disk on second IDE
- Flash Disk-On-Chip



**V5CXT** is a high performance single board embedded computer for the VMEbus, with a Celeron™ processor. Using an architecture based around a local PCI bus, the V5CXT is designed for maximum real-world performance. This performance is further enhanced by the use of advanced memory technologies, processor speeds to 566MHz, SVGA GUI accelerated PCI bus video, Fast SCSI-2/wide, dual high speed 10/100BaseT Ethernet on a custom DB9 connector, and VMEbus VME64 block mode transfer capability. The result is high-end workstation performance in only one VMEbus slot.

The V5CXT embedded PC is compatible with software written compliant to the PC99 Design Guide. Therefore it can run the wide variety of off-the-shelf software available for Pentium® based computers. SBS has driver-level support for a number of 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 V5CXT features 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 V5CXT has been designed to provide all the features of a complete PC99 compatible motherboard (w/sound excluded), along with additional features such as two built-in Ethernet ports, SCSI-2, and hardware extensions necessary for VMEbus master/slave capability. The V5CXT incorporates an advanced third generation Ali Aladdin-Pro II® chipset that is completely compatible with industry standard PC hardware and software. For a fast and flexible interface to the VMEbus, the V5CXT uses the industry standard Tundra Universe II™ VMEbus interface controller.

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# Specifications

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## Processor Support

- Choice of Socket 370 processors, allowing processor selection that best suits the application needs
- Celeron with 66 MHz front side bus

## Level 2 Cache

- L2 cache incorporated within CPU architecture is a function of CPU style

## System Memory

- 256MB SDRAM default onboard memory
- Options for 128, 256 and 512MB
- SODIMM expansion socket for memory upgrade

## SVGA Video

- 69030 Dual HiQVideo™ Accelerator
- 4MB embedded SDRAM memory
- Compatible with VGA and SVGA video modes
- 1600 x 1200 maximum screen resolution
- Low power consumption

## Disk Interfaces

- Integrated floppy disk controller for one or two 1.44MB 3.5" floppy disk drives through rear I/O P2
- IDE interface supporting two IDE drives
- Fast SCSI-2 interface through P2

## Enhanced IDE Interface

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

## On Board Compact Flash Slot

- On board compact flash drive slot, compatible with standard units such as Sandisk™ ATA Flashdrive

## Fast SCSI-2 Interface

- Symbios 53C875E SCSI processor
- Fast SCSI-2 interface supports up to seven peripherals
- Supports Fast SCSI-2 devices in either asynchronous or synchronous modes
- Data rates of up to 20MB/s in synchronous mode
- Wide SCSI data rates of 40MB/s in synchronous mode
- Active SCSI terminators provided onboard to simplify SCSI chain termination

## Ethernet

- Intel 82559ER on board Ethernet interface
- Dual 10/100BaseT (Twisted-Pair) physical interfaces
- Fully IEEE 802.3 compatible
- Accessible from custom DB9 front panel connector

## PCI Bus

- ALi Aladdin-Pro II 1621 North Bridge controller
- Clock rate 33 MHz

## PC/AT Bus

- ALi Aladdin-Pro II 1543C South Bridge controller
- Clock rate 8.0 MHz

## PCI Bus (PMC) Expansion

- High-density PMC expansion connector
- Uses Triple PCI Mezzanine Carrier Card (TPMCC)
- Allows easy integration of widely used PCI Mezzanine Cards (PMC)
- PMC is fully PCI compliant and facilitates the needs of an embedded system
- Isolation and software access to the PMC expansion interface provided through PCI bridge chip on TPMCC
- Concurrent operation on primary and secondary PCI busses

## VMEbus Interface

- Tundra Universe II™ VMEbus interface controller
- Programmable byte-swapping capability for integration into the traditionally 68000-oriented VMEbus
- Supported Byte-swapping modes are Intel 32, Motorola 32 and Intel 16
- Configuration: DTB Master, Option A32/A24/A16, D32/D16/D08(E0), RMW
- Configuration: DTB Slave, Option A32/A24/A16, D32/D16/D08(E0), RMW
- 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/Slave BLT and MBLT D64/D32/D16
- Disk interfaces are provided on the VMEP2 connector
- Row B of the VMEP2 connector provides extended VMEbus signals
- Rows A and C provide Floppy, IDE, and SCSI signals
- Rows D and Z provide SCSI Wide, Secondary IDE and USB2

## Serial Interface

- ALi Aladdin-Pro II 1543C Super I/O controller
  - Two serial port interfaces
  - IBM™ PC compatibility
  - COM1 = RS-232 interface
  - COM2 = RS-232/422/485 interface
  - Signals provided: Rx/D, Tx/D, RTS, CTS, DSR, DTR, DCD, RI
  - DB9 connector
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### Parallel Interface

- ALi Aladdin-Pro II 1543C super I/O controller
- One parallel port interface (LPT1)
- Centronics parallel, PS/2 Bi-directional compatibility
- Buffered parallel interface
- Micro-miniature DB25S connector

### Mouse/Keyboard Interface

- ALi Aladdin-Pro II 1543C super I/O controller
- Microsoft Mouse and PS/2 style keyboard compatibility
- Mouse and keyboard both resident in a single 6-pin mini connector, with reverse IBM standard:  
(Keyboard default, mouse through adapter)
- Mini-DIN "Y" adapter cable provided with V5CXT
- 6-pin circular mini-DIN connector

### USB Interfaces

- ALi Aladdin-Pro II 1543C super I/O controller
- USB1 is a standard USB connector located on front panel
- USB2 is incorporated in the P2 expansion

### Power Requirements

- +5VDC @ 6A with 256kB at 850MHz (typical)
- +12VDC @ 100mA maximum (mem. & CPU dependent)
- -12VDC @ (Dependent on PMC card current usage)

### Physical Characteristics

- Size: 160 mm x 233 mm (Dual Eurocard) 6U x 4HP
- Construction: Multi-layer printed circuit, FR-4
- Flammability rating of 94V-0 by UL recognized mfrs

### Temperature

- Operating: -40° to +70°C inlet air
- Storage: -40°C to 85°C

### Cooling

- 100LFM forced air, minimum required for cooling

### Humidity

- 10 to 95% relative humidity, non-condensing

### Shock

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

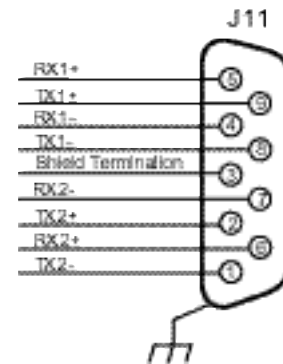
### Programmable Board Configuration

- Configured largely by software, reducing the need for hardware jumpers
- Software configuration options are set by the embedded setup utility or by user software
- Reliable board setup easily facilitated, usually without removal from the chassis

### Support

- Software support packages are available for Windows NT®, Windows 2000®, Linux, QNX® and VxWorks®
- Technical support is provided for all SBS Technologies board products

## Custom Ethernet DB9 Connector



## Ordering Information

### V5CXT Embedded PC

V5CXT - XXXX - YYY - Z

XXXX = Memory \*

YYY = CPU Speed in MHz \*

Z = Front Panel Option (Contact factory for availability)

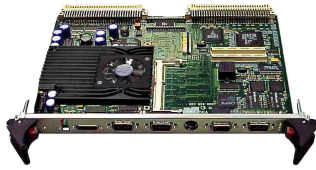
\* Contact factory for capacities available

### Options and Accessories

TPMCC	Single-Slot Triple PMC Carrier on PCI Bus 1
VME-TB21	P2 Adapter for Floppy and IDE/SCSI Cabling
CA25P24	24" 25 pin Micro-D Parallel Cable Assembly
FDOCK-XX	Flash Disk-on-Chip up to 144 MB
VME-62XX	IDE Hard Disk, 3.5" Floppy (Contact factory for capacities available)
VME-TB51	5-Row DIN enhancements
VME-XXXX	5-Row DIN Drive
COMFLASH-XXX	Compact Flash

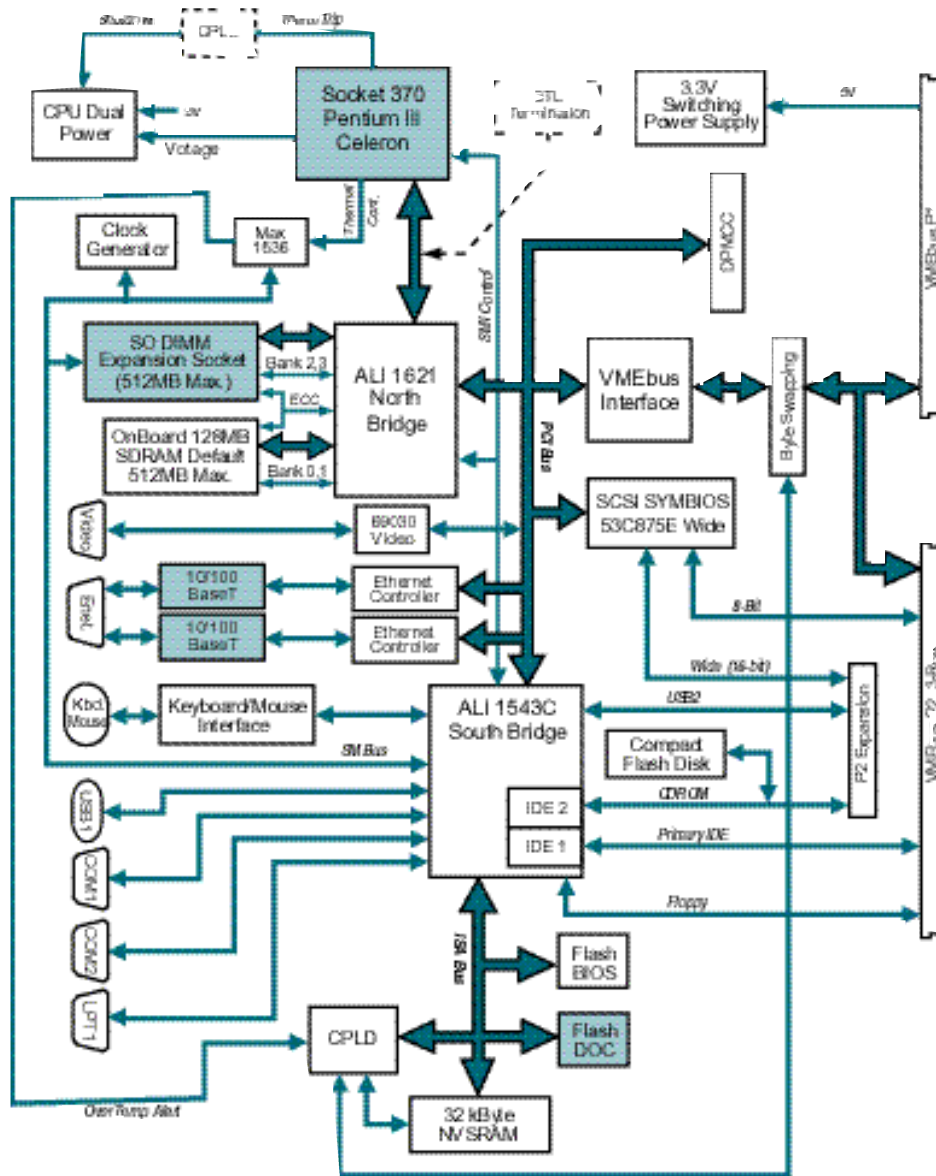
### Software Options

Windows NT	Microsoft Windows NT
Windows 2000	Microsoft Windows 2000
WINNTSP	Microsoft Windows NT Support Software
QNXSP	QNX Support Package
VXWSP	VxWorks Support Package
LinuxSP	Linux Support Package



# V5CXT

## Block Diagram



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