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Find the *Abaco Systems / SBS VR7822K8-0BC0* at our website: ***Click HERE***

VR7

Single Slot Celeron™/Pentium® III PC 6U VMEbus Embedded Computer

Features

- Celeron™ 300 to 566 MHz
- Pentium® III 500 to 850 MHz
- Low power mobile CPUs
- Ultra compact, 1 slot only
- Embedded NT, Windows® 98, Windows® 2000, Windows NT®, QNX, VxWorks®, MS-DOS®
- Up to 512 MB SDRAM with ECC
- 1.8" FlashDrive up to 512 MB
- VGA/LCD up to 1600x1200 4(2) MB high-speed SDRAM
- Fast Ethernet 10/100 Mb
- MIL-STD-1553
- SCSI up to 20 MB/s
- Ultra ATA/33
- PMC extension slot
- Four serial I/O with FIFOs RS-232/422/485 interface
- Two IEEE 1284 parallel ports
- Two USB connectors
- Watchdog, NMI ticker, temperature sensor
- Single +5 volt supply only
- Optional -40°/+85° C
- Conduction cooling
- High shock and vibration immunity with stiffener bars and wedge locks
- Conformal coating
- Custom specific, low cost assembly versions



VR7 is a 6U VMEbus all-in-one Celeron™/Pentium® III single board computer designed to meet the needs of embedded application developers addressing markets like industrial automation, medical, scientific, imaging, telecommunication, military and aerospace.

The ultra compact single slot, all-in-one design with flexible processor and memory configurations, and an impressive array of on-board peripherals includes video interface, Ethernet, SCSI, optional MIL-STD-1553, and PMC extension. This combined with a custom specific assembly service provides optimized price/performance for all kinds of OEM applications.

Rugged needs are addressed with optional conduction cooling and extended temperature range of up to -40° to +85° C, increased shock and vibration immunity using stiffener bars and wedge locks, and conformal coating.

Special features include four serial channels with flexible RS-232 or RS-422 interfacing, LCD controller and single +5V supply. Supported operating systems are Windows® 2000, Windows NT®, Windows® 98, QNX, VxWorks®, LynxOS®, Linux®, MS-DOS® and others.

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Specifications

VME64 - Tundra Universe IIB
- Industry standard CA91C142B PCI to VMEbus controller
- Up to 60-70 MB/s transfer rate (64-bit MBLT, coupled transfer, transfer rate depends on slave access speed)
- Full VMEbus controller FIFOs for write posting
- DMA controller with linked list support
- Master/slave transfer modes: BLT, ADOH, RMW, LOCK, RETRY, A32/A24/A16 and D64(MBLT)/D32/D16/D8

Processor - Socket 370 (FCPGA) or BGA2
- Scalable processing power with flexible processor design
- Celeron: 566 MHz & mobile Celeron: 300 MHz
- Pentium III: 700, 850 MHz & Mobile PIII: 500, 700 MHz (please see price list for latest CPU versions)
- High efficiency on-board switching regulator (DC/DC)
- Fanless cooling with heatsink

Performance
- 128MB RAM, 1024 x 768 64K color, ST34502LW HD

		Winstone 99	
CPU	Frequency	Business	High End
Celeron	566 MHz	21.1	31.8
Mobile Celeron	300 MHz	18.5	22.0
Mobile PIII	500 MHz	22.9	34.4
Mobile PIII	700 MHz	24.9	40.6
Pentium III	700 MHz	24.9	40.6
Pentium III	850 MHz	25.8	44.3

Chipset
- Intel 82443BX (Intel 82443GX with 512 MB), 82371EB
- 100 MHz system bus with Pentium III and Mobile Pentium III
- 66 MHz system bus with Celeron
- PCI burst mode transfers faster than 110 MB/s, 32-bit wide PCIbus (33 MHz)

Cache
- Celeron level 1: 32 KB
- Celeron level 2: 128 KB, full speed
- Pentium III level 1: 32 KB
- Pentium III level 2: 256 KB, full speed
- Values valid for Mobile processors

Memory - PC66/100
- High-speed SDRAM
- 64 to 512 MB, 72-bit wide with error correction (ECC)
- Rugged design with soldered chips

FlashDrive
- Internal 1.8" IDE FlashDrive (up to 512 MB) for extended temperature range and higher shock/vibration immunity

PMC Extension Slot - IEEE P1386/1386.1
- 32-bit/33 MHz PCIbus interface with front and rear I/O
- Supports ccPMC Draft standard Vita 20 - 199x with N-style

VGA and LCD - CT 69030/6900
- 64-bit Windows accelerator and LCD flat panel interface
- On-chip high-speed 4/2 MB synchronous DRAM (83 MHz)
- Flexible 9-, 12-, 15-, 18- or 24-bit panel TFT interface

CRT Resolutions	CT 69030	CT 69000
1024x768	16M @100 Hz	64K @100 Hz
1280x1024	16M @75 Hz	256 @75 Hz
1600x1200	64K @60 Hz	-

Fast Ethernet - AMD 79C973A
- 10/100 Mb/s controller with PCI local bus DMA
- 12 Kb FIFO buffers for Receive and Transmit
- 10BaseT and 100BaseTX auto-negotiation interface

SCSI - SYM 53C860
- SCSI controller with PCI local bus DMA
- SCSI transfer speed up to 20 MB/s
- Active low power termination on-board

EIDE
- Ultra ATA/33 sync.
- DMA mode up to 33 MB/s
- PIO mode 4 and bus master IDE up to 16 MB/s
- Three devices supported via local EIDE connector and rear I/O

MIL-STD-1553 - DDC BU-61688
- Device supporting BC, RT and MT mode, 128 KB shared RAM (limited access to max. 8 KB shared RAM BU-61588 compatible)
- Transceiver with long and short stub interface

Serial I/O - RS-232/422/485
- Four asynchronous 16550-compatible full-duplex serial channels
- High-speed transfer up to 115.2 kb with 16 byte FIFOs
- COM1-4: User selectable RS-232, RS-422, or RS-485 interface

Parallel Port
- Two bi-directional
- IEEE 1284-compatible enhanced parallel port (including EPP and ECP)

Floppy
- One channel 3.5" floppy drive controller
- 720 KB and 1.44 MB

USB 1.0
- Two 12 Mb/s universal serial bus channels

Keyboard and Mouse
- PS/2 compatible

Real-Time Clock
- RTC 146818 compatible

CMOS RAM
- 114 bytes non-volatile CMOS RAM

Backup
- On-board Li-battery (500 mAh) or +5V standby

EEPROM
- 4 kbit serial EEPROM for non-volatile user data

Watchdog
- Activates reset under software control (550 ms)

Temperature Sensor
- Local and remote temperature (CPU case) software readable from -65°C to +127°C, 1.0°C increments

NMI-Ticker
- User programmable NMI timer 0.3 to 18 ms

LED
- On-board LED (red) user programmable

BIOS Features
- AMIBIOS, in-system programmable Flash ROM, CPU, memory and IDE auto-detection/selection
- Integrated VGA, Ethernet and SCSI BIOS ROM
- Password protection, BIOS post, system and video BIOS shadowing
- Extensive setup with remappable serial/parallel ports
- Diskless, keyboardless, and videoless operation

Power Requirements
- +5V: Required
- +3.3V, ±12V: Only if required by mounted PMC module

Power Allowances - PMC Slot

- +5V, +3.3V: total power max. 7.5W
- ±12V: 50 mA each

Power Consumption

- Typical current +5 Volt, 128 MB RAM without keyboard, hard disk, modules, etc.
- Idle values measured at DOS prompt, maximum power saving
- Operating values measured at DOS prompt, no power saving

CPU	Frequency	Idle	Operating
Mobile Celeron	300 MHz	1.9 A	2.8 A
Mobile PIII	500 MHz	1.9 A	3.1 A
Mobile PIII	700 MHz	2.0 A	3.5 A
Pentium III	700 MHz	2.0 A	5.0 A
Pentium III	850 MHz	2.1 A	5.8 A

Mechanical

- 6U, 1-slot wide
- 233mm x 160mm x 20mm (includes FlashDrive)

MTBF

- Calculations are available in accordance with MIL-HDBK-217. Please contact factory for details.

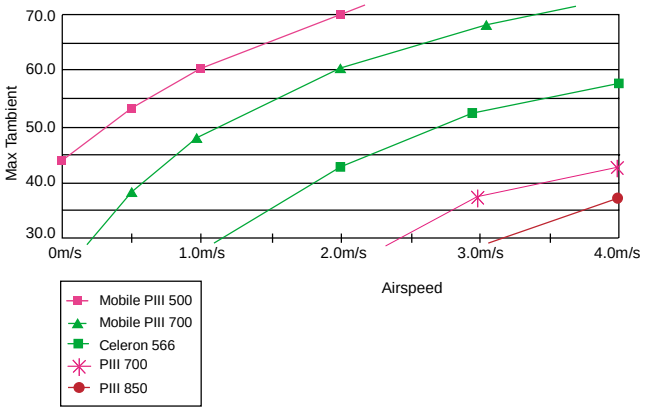
Safety

- All PWBs are manufactured with a flammability rating of 94V-0 by a UL recognized manufacturer.

Temperature Ranges (except N-style)

- Highest reachable operating temperature depends on processor type, speed and ambient conditions (airflow) as shown below
- All values under typical conditions without PMC module
- Complete board may be limited to a smaller temperature range by mounted PMC module

	Operating	Storage
Standard	0˚ to 70˚ C	-40˚ to +85˚ C
Extended	-40˚ to +70˚ C	-40˚ to +85˚ C



Extended Temperature Ranges (N-style)

- Operating: -40˚ to +85˚ C
- Storage: -55˚ to +105˚ C
- Highest reachable operating temperature depends on processor type, speed and ambient conditions (card edge temp.)
- All values under typical conditions without ccPMC module
- Complete board may be limited to a smaller temperature range by mounted ccPMC module

CPU	Frequency	Max. Card Edge Temp.
Mobile Celeron	300 MHz	85˚ C
Mobile PIII	500 MHz	85˚ C
Mobile PIII	700 MHz	79˚ C
Pentium III	700 MHz	59˚ C
Pentium III	850 MHz	53˚ C

Humidity

- Operating: 5% to 95% @40˚C, 15,000 ft (4.5 km) altitude
- Storage: 5% to 95% @40˚C, 40,000 ft (12 km) altitude

Shock and Vibration (C-, I-, E-, R-style)

- C-, I-style: 12g / 6ms, $2g_{rms}$ @5Hz to 100Hz
- E-, R-style: 20g / 6Ms, $2g_{rms}$ @5Hz to 2000Hz

Shock and Vibration (N-style)

- 40g / 11ms, 5 shocks in each direction
- 100g / 6ms, 5 shocks in each direction
- $14g_{rms}$, 5 Hz to 2000 Hz, 30 minutes/axis

Test Reports

- Thermal and Shock & Vibration Test Reports are available. Please contact the factory for more information.

Styles

Styles	C	I	E	R	N*1
Front-panel	□	□	□	□	-
Front stiffener	-	-	-	-	□
Middle stiffener	-	-	□	□	□
Wedge locks	-	-	-	-	□
Parts soldered	-	-	□	□	□
Li-Battery	□	□	-	-	-
Ext. temperature	-	□	-	□	□
Conformal coating	-	-	-	□	□
Conduction cooled	-	-	-	-	□

*1 with Mobile Pentium III and Mobile Celeron only

Rear I/O with Transition Module VTM1

Function	P2 (a+c)	P2 (d+z)	P0
VGA	10-pin	-	-
10/100Base-TX	10-pin	-	-
Multi-I/O*1	26-pin	-	-
LED	on-board	-	-
EIDE*2	-	-	44-pin, 2.0 mm
PMC	-	-	68-pin, 0.63 mm
COM 1+2	(2) 10-pin	-	-
COM 3+4	-	(2) 10-pin	-
LPT 1	-	26-pin	-
LPT 2	-	-	26-pin
LCD	-	-	40-pin
SCSI	50-pin	-	-
MIL-STD-1553	-	-	yes
Floppy	-	26-pin, 1.25 mm	-

*1 Multi-I/O connector with keyboard, mouse, two USB, reset, watchdog, and speaker

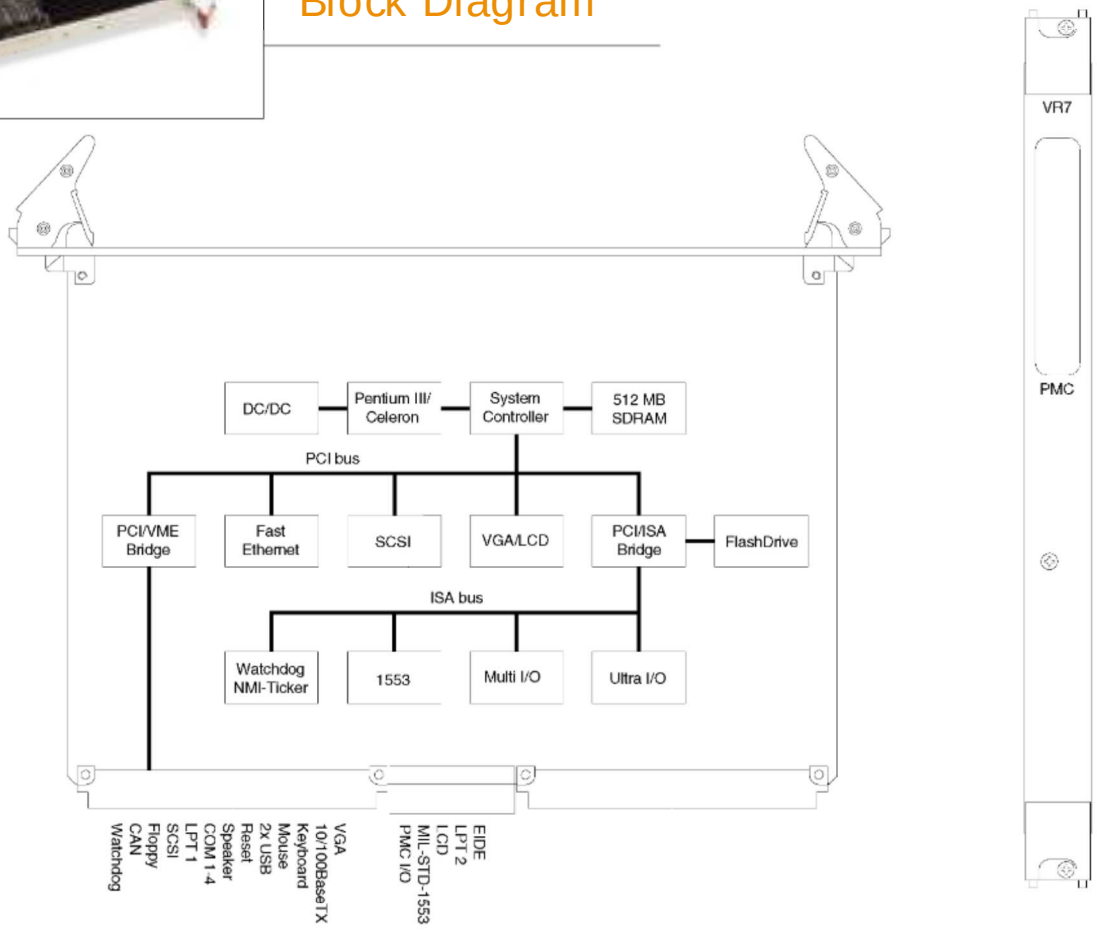
*2 Additional 44-pin on-board connector for FlashDrive

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VR7

Block Diagram



Ordering Information

Hardware Accessories

VTM1	I/O transition module for VME-64x backplanes
YPF01VM0C	Front-panel 3U/4TE, with reset, LED, VGA, keyboard, mouse, speaker, two USB1, for VTM1
SC304F	Floppy disk 3.5" ,19" box: 3U/4TE cable
SC306HI10G0	IDE hard disk 3.5" ,10 GB,19" box: 3U/6TE cable
YLBCOM304A	Ribbon cable for 2x COM, 3U/4TE front-panel
YLBVGA304B	Flat cable for VGA & 2x COM,3U/4HP front-panel
YLBLPT308A	Flat cable for LPT, Ethernet (RJ45), keyboard & mouse (2x miniDIN), 3U/8TE front-panel

Chassis

SCC784TM05VR7
Starter cage: 19" , 7U, 84TE card cage, 5x 6U VME-64 slots;
3x fan, 250W power supply +3.3V/12A, +5V/22A, +12V/7A,
-5V/0.3A, -12V/0.8A, EMC, CD-ROM, 3.5" floppy drive,
10 GB hard disk, I/O transition module (VTM11) with front panels
(YLBCOM304A, YLBVGA304A, YLBLPT308A), 0°C/+50° C,
use for VR76xxxx-xxxx and VR78xxxx-xxxx only

VMEbus Software

DOS-VME	VME driver for MS-DOS
W98-VME	VME-DLL and I/O driver for Windows 98
WNT-VME2	VME-DLL and I/O driver for Windows NT
QNX-VME	VMEbus driver for QNX
VxWorks	see Operating Systems

Operating Systems

DOS-MD600x	MS-DOS operating system
WIN-98xC	Windows 98 operating system
WIN-NT4xC	Windows NT 4.x operating system
WIN-2000xC	Windows 2000 operating system
QNX-11252	QNX4 operating system
QNX-11294	QNX4, Photon microGUI
VXW-BVX7	VxWorks board support package, Tornado 1 (without SCSI driver, with VMEbus driver)
VXW2-BVX7	VxWorks board support package, Tornado 2 (with VMEbus driver)
WIN-ENT4xE	Windows Embedded NT 4.x

Special chassis, supplies, backplanes and drives upon request.

6301 Chapel Hill Road, Raleigh, NC 27607-5115
Tel 919.851.1101 • Fax 919.851.2844 • info.government@sbs.com • www.sbs.com

Memminger Str. 14, D-86159 Augsburg Germany
Tel +49 (821) 5034-0 • Fax +49 (821) 5034-119 • info.government@sbs.com • www.sbs.com

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