

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Abaco Systems / SBS VP9* at our website: *Click HERE*

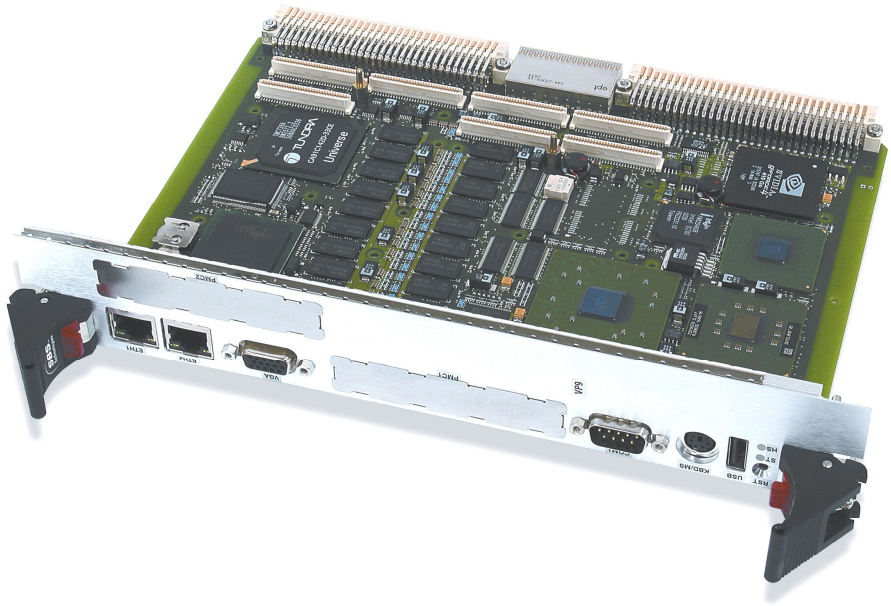
VP9

High Performance – High Modular 6U VMEbus Embedded Computer

Single Board Computers

Features

- Intel® Pentium®M processor, 1.4 GHz to 1.8 GHz and Intel® Celeron® M processor 1.0 GHz and 1.3 GHz
- Ultra compact, 2 slot with front panel I/O
- Extensive Software support
- Up to 2 GB DDR SDRAM (200MHz) with ECC
- Flash drive or local 2.5” hard disk
- VGA/LCD up to 1600 x 1200
- Two Gigabit Ethernet ports10/100/1000 BaseT front or rear optional
- VITA 31.1-2003-compliant
- Two PMC extension slots, one 64-bit/133 MHz and one 32-bit/33 MHz
- Ultra ATA/100 onboard, primary channel mixed with PMC 32/33 rear I/O
- 2x serial I/O with FIFOs RS-232/422/485 interface
- USB 2.0 ports one front, two rear
- Watchdog, temperature sensors
- Optional –40 °C / +85 °C
- Custom specific, low cost assembly versions
- RoHS compliant with version 3.x



VP9 is a 6U VMEbus all-in-one CPU board with a low power Intel® Pentium® M processor and dual Gigabit Ethernet channels compliant to VITA 31.1. The VP9 is designed to meet the needs of embedded application developers addressing markets like industrial automation, medical, scientific, imaging, telecommunication, military and aerospace. The dual slot wide front panel allows to install on the VP9 two PMC modules and a hard disk or flash drive in parallel. This compact all-in-one CPU module is very well suited for I/O intensive applications.

The VP9 platform is designed to support processors starting with 1 GHz up to 1.8 GHz. It offers low power consumption and eliminates the need for on-board fans. The design is ready to accept future higher performance Intel Pentium M processor versions.

The VP9 provides a unique feature set, including up to 2 GB DDR SDRAM (200MHz) with ECC, three independent on-board PCI buses, support for the VME64x backplane, two PMC interfaces (64-bit/133 MHz and 32-bit/33 MHz). High level of functional integration (VGA/TFT, Gigabit Ethernet, serial interfaces, etc.) within two slots, gives users the freedom to use the PMC interfaces as extension for their applications. This combined with a custom specific assembly service provides optimized price/performance for all kinds of OEM applications. Rugged needs addressed with optional extended temperature range of up to -40 °C to +85 °C.

Special features include two serial channels with flexible RS-232 or RS-422/485 interfacing and LCD controller. Supported operating systems are Windows® XP, VxWorks®, Linux®, QNX and LynxOS® on request.

VP9 version 3.x is RoHS compliant.

Specifications

VME64 - Tundra Universe IID
- Industry standard CA91C142D PCI to VMEbus controller
- Full VMEbus system controller
- FIFOs for write posting, DMA controller with linked list support
- Master/slave transfer modes: BLT, ADOH, RMW, LOCK
- A32/A24/A16 and D64(MBLT)/D32/D16/D8
- Geographical Addressing

Processor - µFCBGA, Low Power Design
- Scalable processing power with flexible processor design
- Intel Pentium M processor: 1.4 GHz to 1.8 GHz
- Intel Celeron M processor: 1.0 GHz and 1.3GHz
- High efficiency on-board switching regulator (DC/DC)
- Fanless cooling with heat sink

Contact factory for latest CPU versions

Chipset – Intel E7501/P64H2/ICH4
- 400 MHz system bus to processor
- PCI burst mode transfers up to 512 MB/s (64-bit/133 MHz)
- Two 64-bit wide PCIbusses with 66 MHz
- One 32-bit wide PCIbus with 33 MHz

Cache	Level 1	Level 2
Pentium M (90nm)	32 KB	2048 KB, full speed
Pentium M (130nm)	32 KB	1024 KB, full speed
Celeron M (90nm)	32 KB	512 KB, full speed
Celeron M (130nm)	32 KB	512 KB, full speed

Memory – DDR 200
- High-speed registered DDR SDRAM
- 72-bit wide with error correction (ECC)
- 512 MB to 2 GB with soldered chips

Dual Gigabit Ethernet – Intel 82546GB
- Highly integrated Dual Channel Ethernet Controller with 64-bit/66 MHz PCI local bus mastering
- 64 KB Transmit and Receive FIFO
- 10/100/1000BaseT auto-negotiation
- Versions with front I/O available
- Rear Ethernet: VITA 31.1-2003 compliant

Hard Disk or Flash Drive
- Internal 2.5” IDE hard disk or 2.5” flash drive (for extended temperature range and higher shock/vibration immunity)

PMC Extension Slots - IEEE P1386/1386.1
- One high bandwidth 64-bit/133 MHz PMC and one 32-bit/33 MHz PMC interface
- Enhancement to processor PMC standard VITA 32-2003 (non-monarch)
- Cardbus adapter available on PMC2

Note: The 32-bit/33 MHz PMC slot is not available with VGA or Ethernet on the front, IDE secondary installed

Serial I/O - RS232/422/485
- Two async. 16550 compatible full duplex serial channels at rear I/O
- High-speed transfer up to 115.2 kbaud with 16 byte FIFOs
- User selectable RS232/422/485 interface
- COM1 optional available at front

VGA and LCD – NVIDIA® GeForce™4 420 Go
VP9 board version 2.x only
- 256-bit 3D and 2D graphics accelerator
- On-chip 32 Mbytes frame buffer (66-190 MHz)
- 32-bit/66 MHz PCI interface
- Dual CRTC/Simultaneous Dual Display
- 350 MHz Palette-DAC for analog VGA (up to 1600 x 1200)
- DVI-I interface (PanelLink®) for TFT displays up to 1024 x 768, single channel DVI (165 MHz), EDID display PnP supported
- Fully compliant support for OpenGL™ 1.2 for all supported Windows operating systems and Linux

VGA and LCD – ATI MOBILITY™ RADEON™
VP9 board version 3.x only, RoHS version
- 128/256-bit 2D, 3D and multimedia graphics accelerator
- Local DDR memory (16 MB or 64 MB) @ 125 MHz to 200 MHz
- 32-bit/66 MHz PCI interface
- Dual independent CRT controllers to support two asynchronous simultaneous display paths
- RAMDAC (300 MHz to 400 MHz) for analog VGA (1600 x 1200)
- TDMS transmitter up to 165 MHz (1024 x 768 at 60 Hz); DVI
- Full support of OpenGL 1.3 (Windows) and xFreeX86 (Linux)
- Support for DirectX 6.0 to DirectX® 8.1 under Windows

EIDE
- Ultra ATA/100 sync. DMA mode up to 100 MB/s
- PIO mode 4 and bus master IDE up to 16 MB/s
- Two devices supported via local EIDE connector and two devices alternative with PMC32/33 rear I/O

General Purpose I/O Port
- 8 bits general purpose I/O
- Multiplexed with DVI output

USB 2.0
- One USB 2.0 connector at front
- Two universal serial bus channels at rear

Keyboard and Mouse
- PS/2 compatible

Real-time clock
- RTC 146818 compatible, on-board Li-battery

CMOS RAM
- 242 bytes non-volatile CMOS RAM

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

Watchdog
- Watchdog 1: 4.8 s to 76 s, 0.6 s increments
- Watchdog 2: 1 min to 255 min, 1 min increments
- User programmable

Timer
- Activates IRQ under software control (200 µs - 20 ms)

Temperature Sensor
- CPU die software readable from –65 °C to +127 °C, 1 °C increments and 3 board, heat sink, card edge temperature sensors

LED
- Front panel LED System control

BIOS Features

- New AMI BIOS Core 8, in-system programmable Flash ROM
- CPU, memory and IDE auto-detection/selection
- Integrated VGA, and Ethernet BIOS ROM
- USB Mass Storage support and booting capability (Floppy, HDD, CDROM)
- Password protection, BIOS post, system and video BIOS shadowing
- Extensive setup with remappable serial/parallel ports
- Operation without disk, keyboard and video
- Remote BIOS through serial port

Software

- The following software is supported to the extent listed below.

OS	On Request	Available
WIN XP	-	√
QNX 6	-	√
VxWorks	-	√
Lynx OS	√	-
Linux	-	√

Front and Rear I/O (with transition module VTM21)

- The pinouts of the transition module connectors (rear I/O) corresponds to standard PC connectors (press-fit cables).

Function	Front	Rear P2/P0
DVI-I	-	√ [4]
VGA	√	√ [1]
Eth 1	√ [2]	√ [2]
Eth 2	√ [2]	√ [2]
Keyb+Mouse	√	√
Reset	√	√
LEDs	√	√
USB 2.0 1-3	3	1–2
IDE primary	-	√ [3]
IDE secondary	onboard	-
COM 1-2	1	1, 2
GPIO (8 pins)	-	√ [4]
PMC 1 64-bit/133MHz	√	√
PMC 2 32-bit/33 MHz	√	√ [3]

[1] Rear DVI-I connector for DVI and VGA
[2] Either front or rear as an order option
[3] Full PMC (32-bit/33 MHz) rear I/O without IDE primary
Partly PMC (32-bit/33 MHz) rear I/O with IDE primary
[4] DVI-I (DVI-D pins) are shared with GPIO pins

Styles (Non-RoHS) (RoHS)	**C** **1**	**I** **3**
Front Panel	yes	yes
Front Stiffener	no	no
Middle Stiffener	no	no
Wedge Locks	no	no
Parts Soldered	yes	yes
Li-Battery	yes	yes
Extended Temp.	no	yes
Conformal Coating	no	no
Conduction Cooled	no	no

Power Requirements

- +5 V, +3.3 V Required
- ±12 V Only if required by installed PMC module

Power Consumption - typical operating current

- w/o keyboard, hard disk, modules, Ethernet (no link), measured at DOS prompt, no power savings

Processor, Memory	5 V	3.3 V	Total Power
1.0 GHz, 1 GB	1.8 A	5.9 A	28.5 W
1.3 GHz, 1 GB	2.2 A	5.9 A	30.5 W
1.4 GHz, 2 GB	2.0 A	5.9 A	29.5 W
1.6 GHz, 2 GB	2.7 A	5. 9A	33.0 W
1.8 GHz, 2 GB	2.5 A	5.9 A	32.0 W

- w/o keyboard, hard disk, modules, Windows XP, 3D graphics active. Both Gigabit Ethernet channels linked, CPU running at instruction mix for maximum power consumption.

Processor, Memory	5 V	3.3 V	Total Power
1.0 GHz, 1 GB	2.4 A	7.5 A	36.8 W
1.3 GHz, 1 GB	4.6 A	7.5 A	47.8 W
1.4 GHz, 2 GB	2.7 A	7.5 A	38.3 W
1.6 GHz, 2 GB	5.4 A	7.5 A	51.8 W
1.8 GHz, 2 GB	4.8 A	7.5 A	48.8 W

Power Allowances - PMC slot

- +5 V, +3.3 V Total power max. 7.5 W
- ±12 V 100 mA each

Mechanical

- 6U, 2 slot wide
- 233 x 160 x 40.64 mm (including hard disk)

Temperature

- Note: For detailed information about the operating temperature behavior of the board of any style it is absolutely necessary to consult the manual. The processor type and speed, altitude, the use or not use of Ethernet or video, ambient conditions and the type of cooling influences the board temperature range.

	Operating	Storage
Standard	0 °C to +70 °C	–40 °C to +85 °C
Extended	–40 °C to +85 °C	–40 °C to +85 °C

Humidity

- Operating: 5 – 95 % @ 40 °C
- Storage: 5 – 95 % @ 40 °C

Altitude

- Operating: 15.000 ft. (4.5 km)
- Storage: 40.000 ft. (12 km)

Shock (3 axis, up & down, 5 hits / direction)

- Style (C, I, 1, 3): 12 g / 6 ms

Vibration (30 minutes each axis)

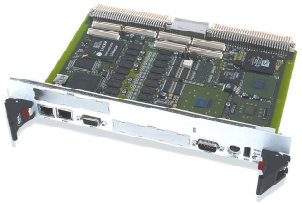
- Style (C, I, 1, 3): 2 g rms @ 5 to 100 Hz

MTBF

- Calculations are available in accordance with MIL-HDBK-217. Please contact SBS Technologies.

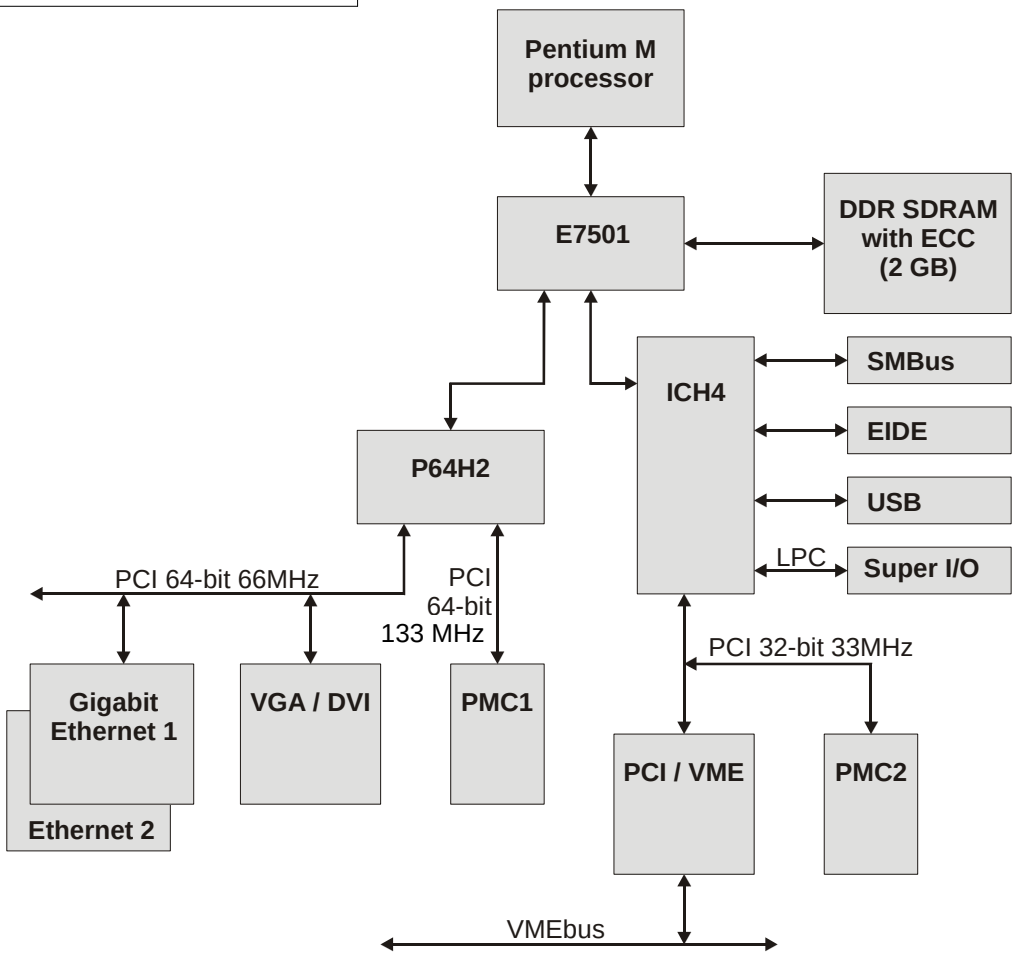
Safety

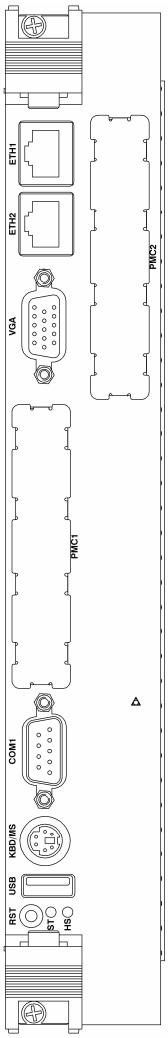
- Designed to meet standard UL1950, CE class A, FCC-A



VP9

Block Diagram





Ordering Information

Hardware Accessories

VTM21:	I/O transition module for 6U backplane (IEEE 1101.11-1998 compliant)
SCC784UM05VP9:	VP9 starter cage, 19", 7U, 84HP, 5 VME64 slots, fans, HDD and DVD
ZKADVI2VGA:	DVI-I to VGA DSUB HD15 adapter
ZKAAPS2SPLIT:	Cable for keyboard and mouse on front panel

Operating Systems

Extensive operating systems support is available (see page 3).
Chassis with power supplies, backplanes and drives on request.
For detailed information and further options, contact SBS.

Corporate Headquarters
7401 Snaproll NE
Albuquerque, NM 87109
Tel 505.875.0600 Fax 505.875.0400
Email info@sbs.com

European Headquarters
Memminger Str. 14
D-86159 Augsburg, Germany
Tel +49-821-5034-0 Fax +49-821-5034-119
Email aug-info@sbs.com

For additional contact information, please visit our web site *at* www.sbs.com

Specifications subject to change without notice. All trademarks and logos are property of their respective owners.
©2006 SBS Technologies, Inc. 20060628

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP