

VIPER

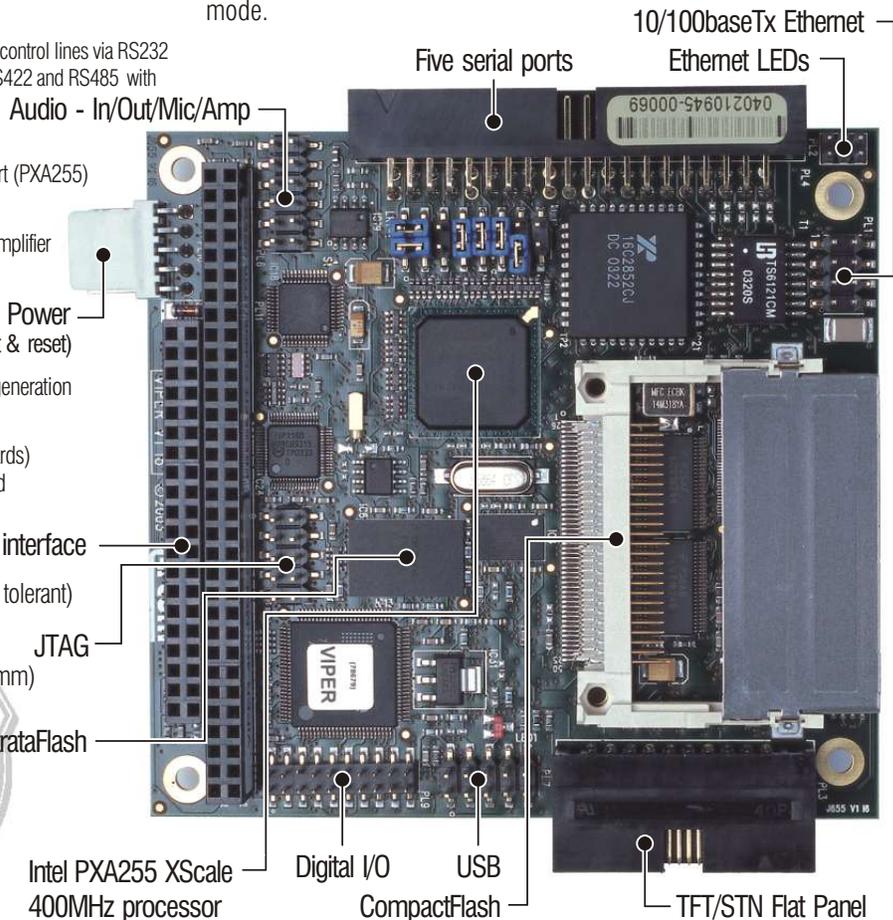
PC/104 format 400MHz Intel® PXA255 XScale® embedded controller

Features

- Intel PXA255 XScale 400MHz processor (ARM* architecture v.5TE compliant)
 - 32K data cache / 32K instruction cache
 - Low power RISC technology
- Up to 64Mbytes SDRAM
- Up to 32Mbytes Intel StrataFlash
- 256Kbytes battery backed SRAM (using external battery)
- TFT/STN flat panel graphics controller (up to 800 x 600 x 16-bit color)
- 10/100baseTx Ethernet controller - SMSC 91C111
- Five high performance UART channels
 - 16550 up to 230.4Kbits/sec : full modem control lines via RS232 (this channel can be factory fitted for TTL signals)
 - 16550 up to 230.4Kbits/sec : Tx, Rx, CTS and RTS via RS232
 - 16550 up to 230.4Kbits/sec : Tx, Rx only via RS232
 - 16550 up to 115Kbits/sec with 128byte Tx/Rx FIFO : full modem control lines via RS232
 - 16550 up to 115Kbits/sec with 128byte Tx/Rx FIFO : Tx, Rx for RS422 and RS485 with auto-RTS control for line turnaround
- Dual USB host controller v1.1 - Philips ISP1160
 - can be factory configured for 1 USB host and 1 USB client port (PXA255)
- Integrated peripherals
 - audio controller with AC97 codec (LM4548) & 250mW stereo amplifier
 - real time clock
 - 48 channel programmable interrupt controller
 - 16 channel DMA controller
 - 4 channel interval timer (OS Timer) (inc. battery input & reset)
 - watchdog timer (270ns to 19 minutes) with interrupt or reset generation
- Drive support
 - CompactFlash (hot swap Type II socket for memory and I/O cards)
 - Onboard resident Flash drive (with JFFS2 support for Linux and Microsoft T-FAT for Windows® CE .NET)
- 1Mbyte BootROM (for RedBoot™) 8/16-bit PC/104 interface
- 8 buffered digital inputs / 8 buffered digital outputs (+5V tolerant)
- JTAG port for test and debugging
- Industry standard PC/104 format 3.8" x 3.6" (96mm x 91mm)
- Operating current
 - 320mA @ 5V (typical)
 - 100mA @ 5V (standby)
- Operating temperature range
 - 20°C to +70°C (-4°F to +158°F) standard
 - 40°C to +85°C (-40°F to +185°F) extended

Description

The VIPER is an ultra low power PC/104 compatible single board computer based on the Intel® 400MHz PXA255 XScale® RISC processor. The PXA255 is an implementation of the Intel XScale microarchitecture combined with a comprehensive set of integrated peripherals including, a flat panel graphics controller, DMA controller, interrupt controller, real time clock and multiple serial ports. The VIPER board offers a long list of features making it ideal for power sensitive embedded communications and multimedia applications. The board has been designed to take advantage of the power saving modes of the PXA255 RISC processor and other onboard peripherals to achieve an incredible 1.9W maximum power consumption. The VIPER also supports a very low power standby mode.



Specifications

Temperature

- Operating -20°C to +70°C (-4°F to +158°F) standard
- Operating -40°C to +85°C (-40°F to +185°F) extended

Humidity

- 10% to 90% (non-condensing)

Real Time Clock stability

- +/- 1min/month @ 25°C (77°F)

Firmware

- RedBoot (boot loader and file transfer utility for embedded Linux)
- eboot (boot loader for Windows CE .NET)

RTC Battery Input

- connected via 5 pin power connector
- maximum discharge current 2µA

Dimensions

- PC/104 compatible format (8/16-bit modules)
- 3.775" x 3.550" (96mm x 91mm)

Weight

- 96 grams

MTBF (based on MIL-HDBK-217F using generic failure prediction)

- 90,000 hours

Associated Products

VIPER ICE Enclosure

Arcom's range of **Industrial Compact Enclosures (ICE)** offers our customers easy to use system solutions for embedded SBC applications. The VIPER ICE is available as two options:

- a simple low cost aluminum enclosure which provides easy connection to all the onboard devices and includes the VIPER-UPS power supply system.
- similar design enclosure with a 5.5in color TFT Q-VGA (320 x 240) flat panel display and analog touchscreen mounted in the lid. This can easily be attached to an existing front panel assembly to create a ready-to-go panel PC solution.

- Input voltage range 10 - 36V DC (10 - 25V AC)
- Battery backed operation for over 2 hours of normal operation
- RJ45 Ethernet connector with activity and link LEDs
- 4 D-sub 25 connector positions for I/O expansion
- 5 D-sub 9 connectors for serial ports
- Space for 2 PC/104 expansion modules and OEM wired/wireless modem
- Audio jacks for full audio support
- 2 USB connectors
- Standard VESA mounting plate locations



Check our website for more details

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Specifications are subject to change and do not form part of any contract. All trademarks are recognized.

Ordering Information

VIPER-M64-F32

VIPER-M64-F32I (industrial temperature range -40°C to +85°C)

VIPER-M64-F16

VIPER-M64-F16I (industrial temperature range -40°C to +85°C)

Standard product includes PC/104 stack-through connector. Contact Arcom for non-stack through options.

Typical Applications

Multimedia interface panel

Use the VIPER in space constrained enclosures or mounted directly behind a flat panel for Windows CE based multimedia machine control applications. The ultra-low power dissipation means you don't need a fan or ventilation for system cooling.

Communications gateway

The combination of embedded Linux with five serial channels, dual USB and the Ethernet port makes the VIPER ideal as a communications gateway, protocol converter or wireless network management device.

Telemetry

The VIPER can be configured to communicate using wired dial-up modem technology for remote telemetry based monitoring or for wireless LAN & Bluetooth solutions using CompactFlash plug-in cards.

Telematics

The low power consumption, wide operating temperature range of the VIPER combined with VIPER-UPS (un-interruptible power supply) product serves as a reliable platform for telematics solutions including taxis, trucks, railway wagons and buses.

VIPER-Lite

The VIPER-Lite board is a low cost single board computer 3.8" x 3.6" (96mm x 91mm) based on Intel's 200MHz PXA255 XScale RISC processor. The features include a flat panel graphics controller, 10/100baseT Ethernet, 3 serial ports, USB client (device) interface, digital I/O, onboard Flash memory and CompactFlash (CF+) expansion.



VIPER Development Kits

Arcom offers ready-to-run rapid application Development Kits supporting Window CE .NET, embedded Linux (with optional RTLinux and Java technology) and VxWorks 5.5. Contact the Arcom Design & Build services team to discuss your support requirements for other embedded operating systems.



VIPER-UPS (wide input voltage, un-interruptible power supply)

The VIPER-UPS serves as a 5V DC power supply and battery back up system for the VIPER. The UPS accepts between 10 - 36V DC (10 - 25V AC) input and generates the +5V supply for the VIPER and display. In addition to this, it includes an intelligent battery charger/switch capable of using either the onboard 500mAh NiMH battery or an external sealed lead acid rechargeable battery. The onboard NiMH battery will maintain normal VIPER operation for more than 2 hours or 18 hours when the VIPER enters its standby mode.