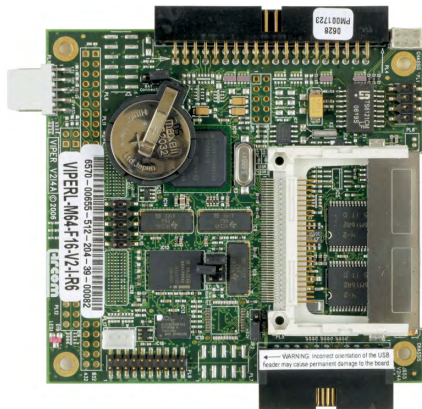# VIPER-Lite

200MHz PXA255 XScale® single board computer

The VIPER-Lite is an ultra low power single board computer based on the 200MHz PXA255 XScale RISC processor. The PXA255 is an implementation of the Intel® XScale microarchitecture combined with a comprehensive set of integrated peripherals including: flat panel graphics controller, DMA controller, interrupt controller, real time clock and multiple serial ports.

The VIPER-Lite 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 1.5W maximum power consumption. It also supports a very low power standby mode.

Typical applications

The VIPER-Lite provides a cost effective solution for a range of applications including:

- Multimedia interface panels. The VIPER-Lite is ideal for use 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 three serial channels and the Ethernet port makes the VIPER-Lite ideal as a communications gateway, protocol converter or wireless network management device.

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

Features

- PXA255 XScale 200MHz processor (ARM* architecture v.5TE compliant)
  - 32k data cache/32K instruction cache
  - Low power RISC technology
- Up to 64MB SDRAM
- Up to 32MB Intel StrataFlash (P30)
- TFT/STN flat panel graphics controller (up to 640 x 480 x 16-bit colour)
- 10/100baseTx Ethernet controller – SMSC 91C111
- Three high performance UART channels:
  - 16550 up to 230.4kb/s: full modem control lines via RS232 (this channel can be factory fitted for TTL signals)
  - 16550 up to 921.6kb/s: Tx, Rx, CTS and RTS via RS232
  - 16550 up to 230.4kb/s: Tx, Rx only via RS232
- One USB client (device) port (PXA255)
- Integrated peripherals:
  - Battery-backed real time clock
  - I^2C controller
  - 48 channel programmable interrupt controller
  - 16 channel DMA controller
  - 4 channel interval timer (OS Timer)
  - 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, Transaction biSafe FAT for Windows® CE and TrueFFS for VxWorks®)
- 1MB BootROM
- Eight buffered digital inputs/eight buffered digital outputs (+5V tolerant)
- 3V Lithium battery for backup of real time clock
- Operating current 340mA @ 5V (typical), 50mA @ 5V (deep sleep)
- Real time clock, accuracy 1 minute/month @ 25°C
- Small footprint: 96mm x 91mm (3.8" x 3.6")
- Operating temperature: -20°C to +70°C
- Humidity: 10% to 90% (non-condensing)

Tailored option

The VIPER-Lite is a sub-equipped variant of the VIPER board. Intermediate build states are also available, subject to minimum order quantities and batch sizes, allowing volume users to tailor the features provided by the board to their application thereby optimising the cost performance calculation.

Development Kits

The VIPER-Lite is supported with a rapid application Development Kit for embedded Linux.

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