

VULCAN

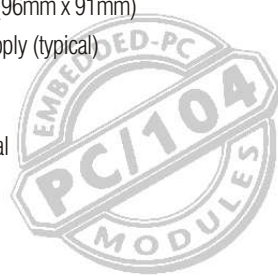
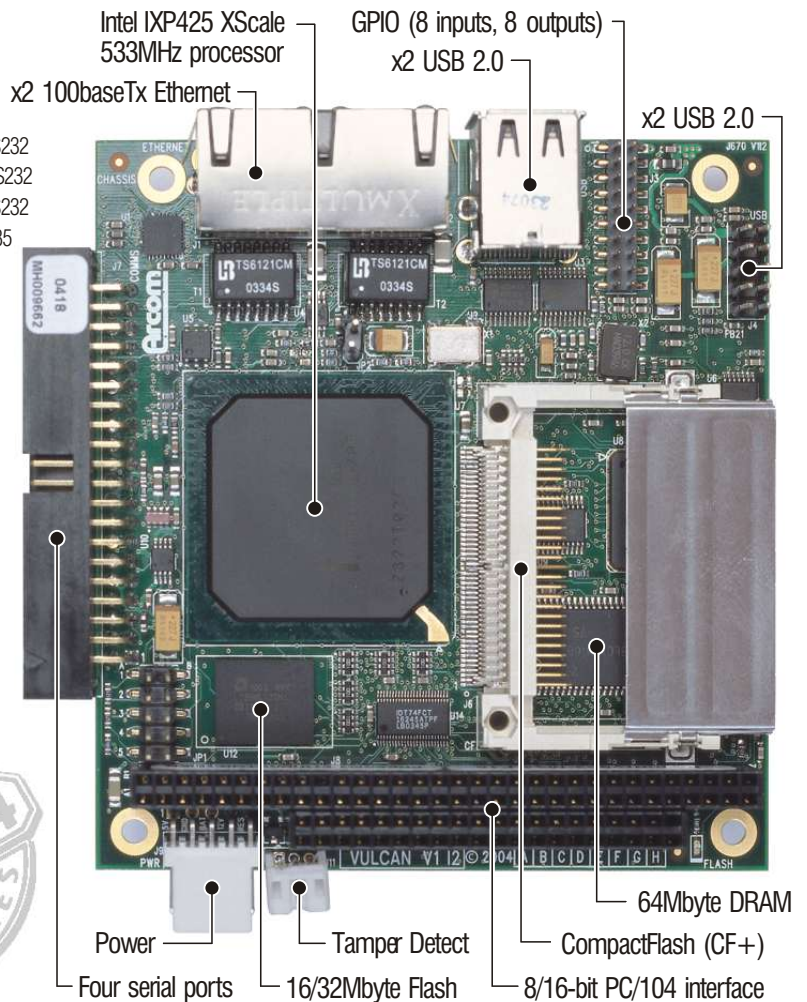
PC/104 format 533MHz Intel® IXP425 XScale® communications processor

Features

- Intel IXP425 XScale 533MHz network processor (ARM* architecture v.5TE compliant)
 - 32K data cache / 32K instruction cache and 2K mini-data cache
 - Low power RISC technology
- Up to 64Mbytes of soldered SDRAM (133MHz 32-bit data bus)
- Up to 32Mbytes AMD MirrorBit® Flash
- 256Kbytes battery backed SRAM (using external battery)
- x2 10/100baseTx Ethernet MACs (RJ45 jacks with Speed & Link/Activity LEDs)
- Second Ethernet port includes hardware accelerated cryptography (encryption/authentication)
- x4 USB v2.0 host ports - Philips ISP1561 (two USB type A connectors and two headers)
- Serial ports
 - 16550 UART: up to 921.6Kbits/sec - (64byte Tx/Rx FIFO) - Tx, Rx, CTS, RTS only via RS232
 - 16550 UART: up to 115Kbits/sec - (16byte Tx/Rx FIFO) - full modem control lines via RS232
 - 16550 UART: up to 921.6Kbits/sec - (64byte Tx/Rx FIFO) - Tx, Rx, CTS, RTS only via RS232
 - 16550 UART: up to 115Kbits/sec - (16byte Tx/Rx FIFO) - Tx, Rx only via RS422 or RS485
- Type II CompactFlash expansion (CF+ for both memory cards and Wi-Fi with hot swap support)
- Security Features
 - Hardware accelerated encryption (DES, 3DES, AES) and authentication (SHA-1 and MD5)
 - Dallas DS2401 Silicon Serial Number device (48-bit unique ID)
 - Tamper detect (switch) input for enclosure intrusion
 - Watchdog timer #1 generates complete board reset on timeout (selectable from 1ms to 60s)
 - Watchdog timer #2 generates CPU reset or interrupt on timeout (selectable up to 64s using a 32-bit register)
- 8 buffered digital inputs / 8 buffered digital outputs (+5V tolerant)
- Real time clock - Dallas DS1302 (with local 5 day back-up)
- JTAG port for system setup and debugger tools
- Industry standard PC/104 format 3.8" x 3.6" (96mm x 91mm)
- Power requirements 3.5W @ + 5V only supply (typical)
- Operating temperature range
 - 20°C to +70°C (-4°F to +158°F) standard
 - 40°C to +85°C (-40°F to +185°F) industrial
- RoHS compliant

Description

The VULCAN is a low power PC/104 compatible single board computer based on the Intel® IXP425 XScale® network processor. The IXP425 is an implementation of the ARM compliant, Intel XScale microarchitecture combined with communication peripherals including, 2 high speed Ethernet MACs, hardware accelerated cryptography, 2 high speed serial ports, a local PCI interface and DMA controller. The VULCAN board adds to the IXP425 features with 2 further serial ports, 4 USB 2.0 ports, real time clock and expansion via the CompactFlash (CF+) port & PC/104 bus.



- Development Kits
- Embedded Boards**
- PCs & Enclosures
- Wireless & RFID
- Industrial Networking
- Design & Build

Specifications

Operating Temperature

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

Humidity

- 10% to 90% (non-condensing)

Real Time Clock accuracy

- +/- 1min/month @ 25°C

Firmware

- RedBoot (boot loader and file transfer utility for embedded Linux)

SRAM and RTC battery backup

- connected via 5 pin power connector
- 2.7 to 3.3V
- typical discharge current 2µA
- onboard SuperCap™ for 5 day backup of RTC

Dimensions

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

Weight

- 96 grams

Ordering Information

VULCAN-533-M64-F16 Fitted with 64Mbytes DRAM and 16Mbytes Flash
VULCAN-533-M64-F16I (industrial temperature range 40°C to +85°C)
VULCAN-533-M64-F32 Fitted with 64Mbytes DRAM and 32Mbytes Flash
VULCAN-533-M64-F32I (industrial temperature range 40°C to +85°C)

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

RoHS Compliance

The VULCAN SBC is available as a RoHS-6 compliant option. This is designated by a -R6 suffix on the order code. Please contact our Sales team to discuss your requirements.



Typical Applications

Communications gateway

The VULCAN is ideal for high speed embedded communications solutions which require secure encryption and authentication. Use the CF+ port to connect Wi-Fi cards or a wireless cellular modem to implement rugged industrial wireless gateway products.

Remote data acquisition

Using the VULCAN, it is now possible to remotely connect to equipment situated out in-the-field to retrieve critical data which previously may have required an engineer to visit the site. Alternatively, the VULCAN could be used to automatically dial out and alert service personnel that the site needs attention.

Associated Products

VULCAN-Lite is a small footprint 266MHz Intel IXP420 XScale communications controller

The VULCAN-Lite is a low cost single board computer based on the 266MHz Intel IXP420 XScale network processor. Features include dual 10/100baseT Ethernet ports, digital I/O, RTC, onboard Flash memory and CompactFlash expansion



Check our website for more details

VULCAN Development Kit

Arcom offers a ready-to-run application Development Kit for the VULCAN supporting embedded Linux.

Contact the Arcom Design & Build services team to discuss your support requirements for other embedded operating systems.



VULCAN ICE Enclosure

Arcom's range of **Industrial Compact Enclosures** (ICE) offers our customers an easy to use system solution for embedded SBC applications.

- Power connector for +5V DC input
- 3 RS-232 (D-sub 9 plugs)
- 1 RS-422/485 (D-sub 9 plug)
- 2 10/100baseTx Ethernet RJ45 jacks
- 2 USB 2.0 Type A connectors
- 1 Digital I/O (D-sub 25 socket)
- Expansion for a PC/104 add-on module
- Tamper detect switch on the enclosure lid
- System reset switch



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