

XScale PC/104 Computer with LCD Panel Support SBC1670



Features

- ✓ 520MHz Low-power ARM processor
- √ 800 x 600 Color LCD interface
- √ 10/100BASE-T Ethernet
- ✓ Five serial ports
- ✓ Debounced keypad interface
- ✓ Extended temperature available

The SBC1670 packs a fast Intel XScale RISC processor with lots of memory into a PC/104-sized board. The efficient, industry-standard ARM architecture allows the SBC1670 to draw little power at its full 520MHz clock speed. This reduces power supply and cooling requirements. Onboard I/O includes LCD support, a debounced keypad interface, five serial ports, 10/100BASE-T Ethernet, USB, and CompactFlash.

In its stackthrough version, the SBC1670 is an ideal computer to plug into a custom OEM I/O

card. Immediately and easily, an advanced engine is available for software development.

With up to 64MB of onboard linear flash, and 128MB of SDRAM, many complex operating systems, such as Linux and Windows CE can be run. However, if additional storage capacity is required, the CompactFlash connector allows hundreds of megabytes of removable storage.

And, if additional capabilities are needed, PC/104 expansion allows a wide variety of I/O cards to be stacked on the SBC1670.

Software Support

Linux Windows CE VxWorks® RTOS C, compilers [Items above in Section 6]

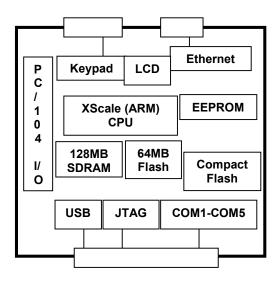
Compatible Hardware

PC/104 expansion cards [Items above in Section 4] RS232/RS485 devices Custom

Mounting/Packaging

Standoffs, STDOFF01 [Items above in Section 5] ENC104-4 FPKIT-6.4T FPKIT-10.4T Custom

email: info@embeddedsys.com



Technical Details:

The SBC1670 core is an Intel PXA270 XScale processor running at up to 520 MHz. This variation of the industry-standard ARM architecture is a RISC processor that is designed for low-power operation and still supports many user-interface options.

The PXA270 allows compatibility with 32-bit operating systems. The PXA270 also integrates many peripherals. A host USB port, an interrupt controller, three 16C550 UARTs, a watchdog timer, and an SDRAM controller are all present.

Complex user interface needs can be met with the built-in LCD interface, keypad inputs, and audio I/O. The LCD interface supports STN, DSTN, and TFT panels up to 800 x 600 pixels. The six keypad inputs are debounced and can be used for digital I/O if not needed for switches. The audio interface has line-level inputs and outputs and uses a standard AC97 CODEC.

The memory subsystem on the SBC1670 allows many programs to be run without any external storage. 128 Mbytes of synchronous DRAM

(SDRAM) is more than sufficient for many complex programs and operating systems.

The 64-Mbyte Flash memory contains the bootloader, operating system, and user application code space. A portion of the flash can be allocated as a read/write flash drive.

If a larger program or data storage space is required, or if removability is needed, the CompactFlash interface can provide hundreds of megabytes of storage.

Five serial ports allow communication with many different devices. COM1 through COM5 are 16C550-compatible UARTs (with transmit and receive FIFOs). Of these serial ports, COM1-COM4 have RS-232 transceivers, and have RTS and CTS modem control lines. COM5 is set up for half-duplex RS-485 communication with jumperable termination resistors.

The PC/104 connector provides support for both 8-bit and 16-bit I/O expansion boards. The default configuration is non-stackthrough connectors,

allowing the SBC1670 to be the bottom card in a **Processor Core Section:** Intel PXA270 stack. The stackthrough option (SBCOPT16ST) allows the SBC1670 to be plugged into a 312 or 520 MHz clock rate custom-designed OEM I/O board as a StrongARM v5TE instruction set programmable controller. **On-board Memory:** ☐ 64-128MB Synchronous DRAM For application development, the SBC1670 32-64MB of linear flash for bootloader. supports a number of alternatives. 32-bit operating systems such as Linux and Windows CE can be operating system, and application booted on the SBC1670. All have full tool suites available, including compilers and debuggers. Watchdog Timer: Other operating systems may also be available. Program must refresh watchdog timer periodically, or system will be reset For pre-configured sets of options, Micro/sys can Enabled through software provide OEMs with a single part number for ordering. In addition, custom versions of the COM1-COM5 Serial Ports: Five async serial ports SBC1670 are available. Please call Micro/sys Technical Sales for details. 16C550-compatible □ RTS and CTS modem controls on COM1-COM4 Specifications: □ RS232 on COM1-COM4 ☐ Half-duplex RS485 on COM5 with Mechanical: jumperable termination □ PC/104 standard 3.55" (plus I/O region) x 3.775" x 0.6" 10/100BASE-T Ethernet Port: Installed CompactFlash card extends past 10/100 Ethernet port edge of board opposite the PC/104 Standard RJ45 connector connector ☐ If installed, Ethernet connector on top side **LCD Graphics Port:** has height of 0.453". Components on the Interfaces to STN, DSTN, or TFT panels bottom side have a maximum height of Resolutions up to 800 x 600 0.134". Keypad I/O: **Power Requirements:** Six input signals with pull-up resistors □ +5v ±5% at 720mA max Programmable debounce period Off-board 3.6v battery can supply power if Interrupt generated on key press sleep mode is enabled JTAG Interface: **Environmental:** Debug unit has hardware break points and □ Operating range 0° to +70°C 256-entry trace history buffer ET-version operating range -40° to +85°C IEEE 1149.1 JTAG compatible □ -40° to +85°C storage

USB Interface:

□ USB v1.1

USB host controller

email: info@embeddedsvs.com

□ 5%-95% relative humidity, non-condensing

| PC | /104 Interface: Non-stackthrough PC/104 connectors Standard mounting holes 8-bit and 16-bit PC/104 module support | SBC1670-520-ET | PXA270 CPU, 520MHz, 64MB RAM, 32MB Flash, Ethernet, -40° to +85°C operating temperature | |
|-------------------------|---|-------------------|--|--|
| | I/O accesses supported, memory accesses not supported | DK1670 | No charge development kit, available with first | |
| | Stackthrough option available | | order only | |
| | (SBCOPT16ST) | SDK-Linux-1670 | Linux Development kit | |
| Coi | mpactFlash Interface: | | (must also purchase 1670OPT50) | |
| | Supports Type I or II CompactFlash | SDK-WinCE-1670 | WinCE Development kit | |
| | Not hot-swappable | | (must also purchase 1670OPT55) | |
| DK1670 Development Kit: | | 1670OPT3 | 128MB SDRAM | |
| | Free with first SBC1670 purchase | 1670OPT6 | 64MB Flash | |
| | Breakout cable to COM1-COM4 | 1670OPT45 | AC97 Audio Interface | |
| | Download cable and utilities | 1670OPT50 | Bootloader and Linux in | |
| | Documentation, schematics, sample | | flash | |
| | software | 1670OPT55 | Bootloader and sample | |
| | | | WinCE image in flash | |
| External Connections: | | | | |
| | 40-pin header for COM1-COM4, USB, | Related Products: | | |
| | JTAG | CA4124 | Breakout cable to four DB9 | |
| <u> </u> | 40-pin high-density header for LCD 8-pin modular RJ45 jack for Ethernet | BA4124 | COM port connectors Breakout assembly to four DB9 COM port connectors. | |

Ordering Information:

1/8" phono jacks for audio I/O2-pin locking header for reset

Single Board Computer:

input

SBC1670 PXA270 CPU, 312MHz,

64MB RAM, 32MB Flash,

Ethernet

3-pin removable terminal strip for power

SBC1670-520 PXA270 CPU, 520MHz,

64MB RAM, 32MB Flash,

Ethernet

SBC1670-ET PXA270 CPU, 312MHz,

64MB RAM, 32MB Flash, Ethernet, -40° to +85°C operating temperature

| | COM port connectors |
|------------|---------------------------|
| BA4124 | Breakout assembly to four |
| | DB9 COM port connectors, |
| | RS485, USB, JTAG |
| SBCOPT16ST | Stackthrough PC/104 |
| CF-FL128 | 128MB CompactFlash Card |
| CF-FL256 | 256MB CompactFlash Card |
| CF-FL512 | 512MB CompactFlash Card |
| | |

Cables nominally 15", other lengths available

VxWorks trademark Wind River