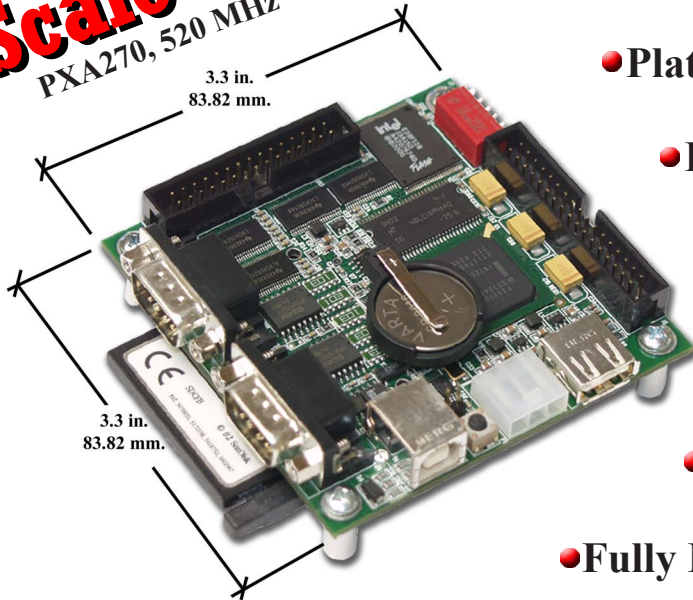


Enterprises, Inc.

2985 Theatre Drive, Paso Robles, CA 93446
Phone (805) 239-9737 Web Site: www.rlc.com

XScale-Lite

PXA270, 520 MHz



- Windows CE 5.0 OS Pre-Installed
- Platform Builder Not Required
- Expandable On-Board I/O
- Visual Studio Ready
- Application Ready
- Over 40 Demos Provided
- Fully Integrated And Complete

Embedded Computer

The **NEW XScale-Lite** 32-Bit Embedded Single Board Computers feature a Windows CE 5.0 operating system pre-installed and can easily run your applications written in Microsoft Visual Basic, Visual C#, or Visual C++. The XScale-Lite is the smallest unit available from R.L.C. Enterprises, Inc. Key hardware features include an Intel XScale PXA270 RISC Processor, DRAM and FLASH Memory, Solid State Disk, Real Time Clock, RS-232 Serial Ports (2), Optional LCD Color Graphics Display, Compact Card Slot, SD Card Slot, USB Host Port(1), USB Client Port (1), Digital I/O (16), Pulse Width Modulation (2), and much more. Remote debug, drag and drop, and software development via USB is fully supported.

Hardware Features

- Intel XScale PXA270 RISC Processor
- 520 MHz Clock Speed
- 16 Mega-bytes On-Board FLASH
- 32 Mega-bytes On-Board DRAM
- Compact, Small Footprint
- Color LCD Display Port
- Compact Card Interface
- SD Card Interface
- RS-232 Serial COM Ports (2)
- USB Host Port (1)
- USB Client Port (1)
- Real Time Clock (Battery Backed)
- Pulse Width Modulation (2)
- Digital I/O (16)

Software Features

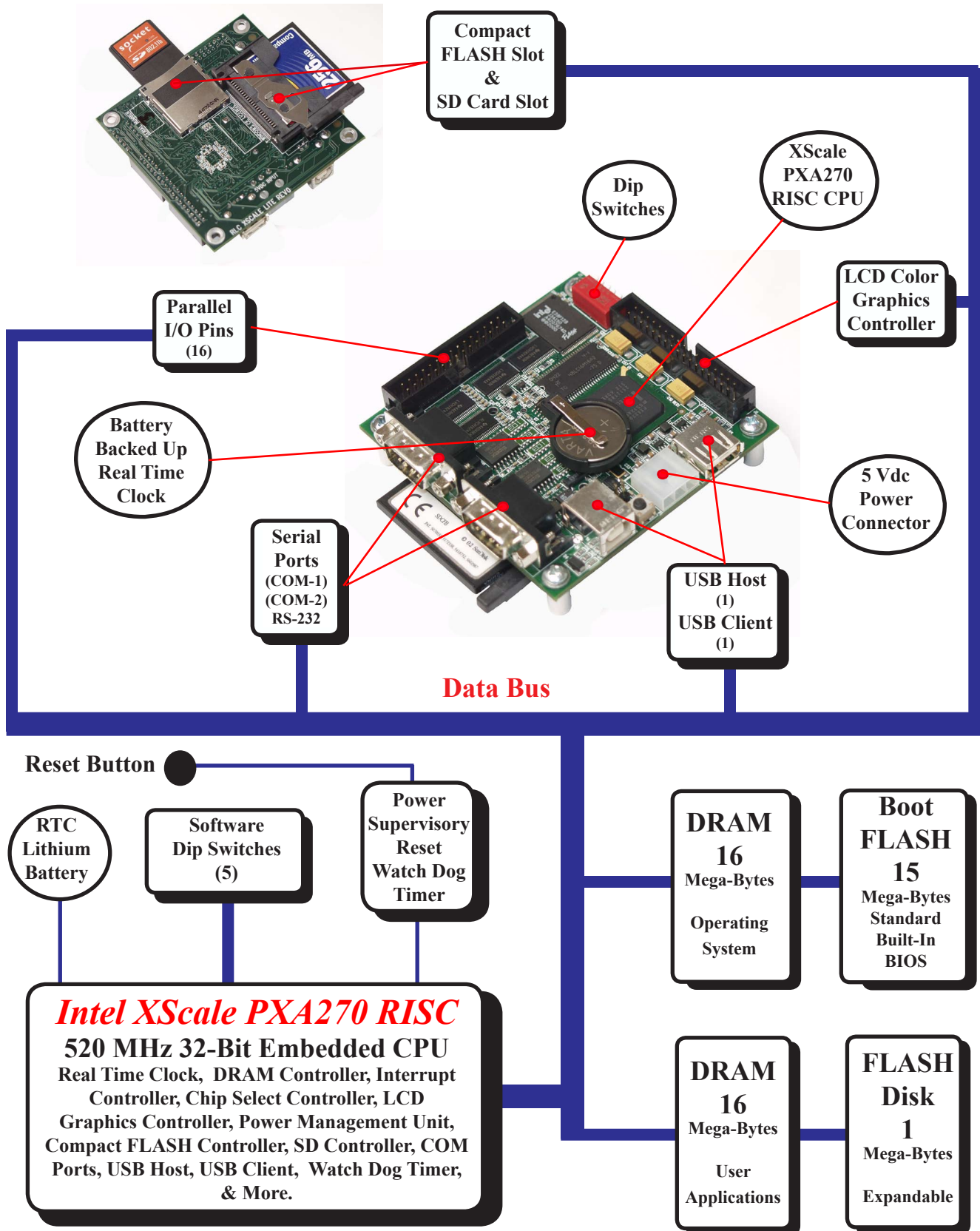
- Windows CE 5.0 Pre-Loaded
- Microsoft Compact Framework 2.0
- Visual Studio 2005/2008 Supported
- Visual Basic Supported
- Visual C# Supported
- Visual C++ Supported
- Remote Debug Supported
- Remote Display Supported
- Demo Programs With Source Code

The Future of Embedded Controllers™

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XScale is a Trademark of Intel Corp. Windows is a trademark of Microsoft Corp.

XScale-Lite

On-Board I/O and Functionality Block Diagram



XScale-Lite Description

Intel XScale RISC CPU

The **XScale-Lite** features the Intel XScale PXA270 RISC processor chip. The chip provides a 520 Mhz, low-power CPU and a complete set of Windows CE compatible peripherals suitable for embedded applications. Fully integrated compatible peripherals include an LCD graphics controller, DRAM controller, Compact FLASH controller, SD Controller, Real Time Clock, Watch-Dog-Timer, two RS-232 serial ports, one USB host port, one USB client port, and more. The Intel XScale RISC CPU is targeted for low power embedded applications that require high performance. The XScale-Lite is fully supported by the Microsoft Visual Studio 2005/2008 and the Microsoft Embedded Visual Tools for application development using Visual Basic, C#, and Visual C++.

Standard I/O Interfaces

The **XScale-Lite** provides (2) RS-232 Serial Ports, (1) USB Host Port, (1) USB Client Port, (16) Parallel I/O lines, and more. These standard I/O interfaces and features are made available on standard connectors on the CPU board. Software drivers and demonstration programs with source code are provided for each of these I/O functions.

COM / Serial Ports

The **XScale-Lite** provides two (2) standard serial ports (COM-1, COM-2). Each serial port provides RS-232 receivers and drivers for Tx, Rx, RTS, and CTS signals on a standard DB-9 connector. Drivers for the COM ports are provided in the RLC Windows CE 5.0 operating system that comes pre-installed on the XScale-Lite.

On-Board FLASH/DRAM Memory

The **XScale-Lite** provides 32 MB of high speed DRAM and 16 MB of on-board FLASH memory. Additional FLASH memory may also be added using ATA FLASH cards via the USB, Compact FLASH, or using SD Card interface. All necessary drivers are built into the operating system. A BIOS with built-in loader and flash programmer is contained in a protected region of the on-board BOOTFLASH memory. The Windows CE file system is compatible to a standard Windows desktop platform, therefore, program transfers into FLASH DISK memory space using standard drag and drop and your desktop Windows Explorer are fully supported.

Color Display

The **XScale-Lite** features a built-in color LCD graphics display controller. You can use this interface to add a variety of LCD displays. This interface is through a 34-pin ribbon cable connection. The Windows CE operating system that is provided on the XScale-Lite has many display drivers built into the operating system. Custom displays may also be adapted to use this interface.

Compact/SD Card Slots

One (1) Compact FLASH slot and one (1) SD card slot is provided. Ethernet, Wireless Ethernet, Modem, SD FLASH and Micro hard drives are supported.

**Shown with optional
6.4 in. LCD display**



**All connections made
via simple 34-pin
ribbon cable**

Also available:

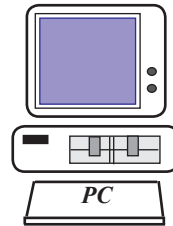
**3.5 in, 6.5 in., and 8.4 in. Sunlight Readable LCD Displays,
or 5.7 in., 8.4 in., and 10.4 in. TFT LCD Displays**

Software Application Development

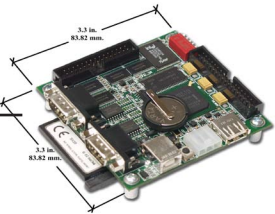
Our custom Windows CE 5.0 platform is pre-installed onto all of the **XScale-Lite** Embedded Single Board Computers. It is so complete that you can start writing your application the same day you receive your development kit! Platform Builder is not needed with our units. We save you months of unnecessary work, get a jump start on your project with one of our units!

R.L.C. development systems provide all the necessary hardware and software needed to develop software applications using Microsoft Visual Studio 2005/2008. Demonstration programs are pre-installed, ready to run, and are also provided on a separate CD with source/project files included for your own use. Software remote debugging and file/program transfers are fully supported using a simple USB cable.

Visual Studio 2005/2008



USB



Visual Basic, Visual C++ and Visual C#

I/O And User Interfaces Specifications

Serial Ports:

Two (2) serial ports COM-1 and COM-2, provide DTE style (Rx, Tx, RTs, CTS) RS-232 signals. DB-9M locking connectors are provided on the back of the main CPU board. A null-modem is not required to connect directly to a PC.

Parallel / Digital I/O Ports:

Sixteen (16) Bits of parallel I/O are provided. They are arranged in groups of 8-bits. Each 8-bit port can be used as Input or Output. The lines are TTL compatible with up to 50 mA of source and sink ability per channel. A maximum of 300 mA for all 16 channels.

CF & SD Memory Card Interface:

One (1) Compact and one (1) SD card slot is supplied to support Ethernet, Modem or FLASH memory cards. Software drivers are included in the pre-installed Windows CE 5.0 operating system.

USB Ports (2):

One (1) USB host and one (1) USB client ports are provided, version 1.1. The pre-installed operating system includes drivers for Active Synchron, Remote Display, keyboard, mouse, and USB FLASH sticks.

General Specifications

Power Requirements:

Regulated 5 Vdc
Full power mode: 655 mW (without display)
Suspend mode: 100 mW (without display)

CPU Clock Speed:

Intel 32-Bit Intel XScale PXA270 RISC processor running at 520 Mhz.

Boot Time:

Unit will boot in 3-5 seconds.

Environmental Testing:

-10 to +60 C with air flow and no condensation.

On-Board Memory:

32 Mega-Bytes of DRAM, 16 Mega-Bytes of on-board FLASH.

Extended Temperature Option

The XScale-Lite is also available in an extended temperature version, the XScale-Lite-ET. It has all of the same functionality as the regular XScale-Lite computer boards, just modified with special extended temperature parts to meet the extreme temperature specifications. Each unit is tested in an environmental chamber to make sure that the unit will boot and run at temperatures between -40 to +85 C. Each unit comes with a certificate that guarantees it has met the temperature specifications.

Display And Touch Screen Options

LCD Display Options: (Off-The Shelf)

RLC offers a 5.7 in., 6.4 in., 8.4 in., or a 10.4 in. color TFT (640x480, 64,000 Colors) VGA LCD Display. RLC also offers a 3.5 in., 6.5 in., and 8.4 in. sunlight readable, extended temperature color LCD display. With no extra configurations or integration, these displays can plug directly into the XScale-Lite. These displays include integrated power supply, backlight generator, backlight controls and an integrated resistive touch screen.