## PRELIMINARY PRODUCT INFORMATION SHARP



SHARP's New Line of MCUs and System-on-Chips

### **APPLICATIONS:**

White Goods

**Industrial Control** 

Smart Toys

# LH79524 32-bit System-on-Chip with Color LCD Controller

### **FEATURES**

- ARM720TTM Core
  - High Performance (77.4 MHz)
  - 8KB cache
  - MMU
- 16KB On-chip SRAM
- 10/100 BaseT Ethernet MAC
- USB 2.0 Full Speed Device
- Clock and Power Management
  - Low Power Modes Active, Standby, Sleep, Stop1, Stop2
- Color LCD Controller
  - 16-bit (65,536) Direct Mode Color
    - Up to VGA  $(800 \times 600)$
  - 8-bit (256) Direct or Palletized Color
    - Up to XGA  $(1,024 \times 768)$
  - 16-bit Video Bus
  - Supports STN, TFT, HR-TFT, AD-TFT
- Ten Input, 10-bit A/D Converter with Integrated Touch Screen Controller
- Four DMA Channels
- SDRAM Controller
- NAND Flash Support
- Serial Interfaces
  - Three 16C550 UARTs, with 9-bit capability
  - Classic IrDA (115 Kbit/s)
  - SSP
  - I<sup>2</sup>C
  - I<sup>2</sup>S Codec Interface
- External Bus Interface
  - Six Chip selects Providing Glueless Interface to Off-Chip Memories and Peripherals
  - 24 Address Bits
  - 32 Data Bits

- Real Time Clock (RTC)
  - Operates from 32 kHz XTAL
- 88 GPIO, 8 GPI
- Three 16-bit Counter/Timers with Capture/Compare/PWM Capability
- · Watchdog Timer
- Low Voltage Detector
- JTAG Debug Interface and Boundary Scan
- 3.3 V Operating Voltage
- On-chip 3.3 V to 1.8 V Linear Regulator
- -40°C to +85°C Operating Temperature
- 208-ball CABGA Package

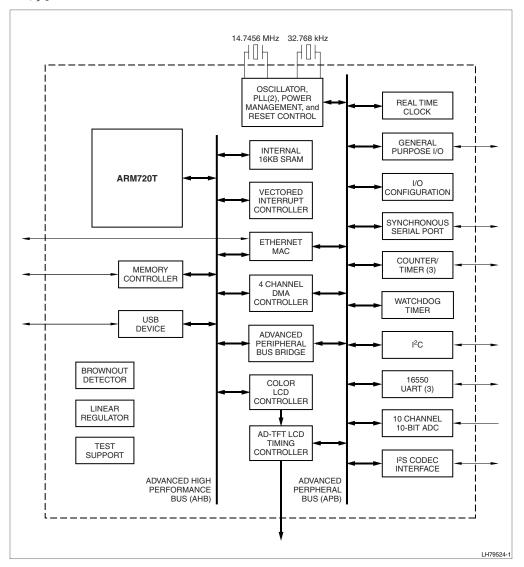
### DESCRIPTION

The LH79524 is a low cost microcontroller that utilizes the ARM720T core integrated with a wide variety of functions including the capability to control STN, color STN, TFT, HR-TFT, and AD-TFT displays with up to 65,536 colors. Other functions include: 16KB of on-chip SRAM, 10/100 BaseT Ethernet MAC, USB 2.0 Full Speed Device, three UARTs, SSP, I $^2$ C, I $^2$ S, three 16-bit Counter/Timers, Analog to Digital Converter with integrated Touch Screen controller, SDRAM Controller, Watchdog Timer, and Low Voltage Detector. The LH79524 operates up to 77.4 MHz at 3.3 V over the industrial temperature range of -40 $^{\circ}$ C to +85 $^{\circ}$ C and is offered in a 208-ball CABGA package.

SHARP's LH79524 design provides low power, exceptional performance, good flexibility, and great value in a 32-bit processor with a full 32-bit external data bus.

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### LH79524 BLOCK DIAGRAM



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