



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

**APPLICATIONS:**

- White Goods
- Industrial Control
- Smart Toys

# LH79525 16/32-bit System-on-Chip with Color LCD Controller

## FEATURES

- ARM720T™ 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
  - 12-bit (4,096) Direct Mode Color
    - Up to VGA (800 × 600)
  - 8-bit (256) Direct or Palletized Color
    - Up to XGA (1,024 × 768)
  - 12-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
  - 16 Data Bits

- Real Time Clock (RTC)
  - Operates from 32 kHz XTAL
- 72 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
- 176-pin LQFP Package

## DESCRIPTION

The LH79525 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 4,096 colors. Other functions include: 16KB of on-chip SRAM, 10/100 BaseT Ethernet MAC, USB 2.0 Full Speed Device, three UARTs, SSP, I<sup>2</sup>C, I<sup>2</sup>S, three 16-bit Counter/Timers, Analog to Digital Converter with integrated touch screen controller, SDRAM Controller, Watchdog Timer, and Low Voltage Detector. The LH79525 operates up to 77.4 MHz at 3.3 V over the industrial temperature range of -40°C to +85°C and is offered in a 176-pin LQFP package.

SHARP's LH79525 design provides low power, exceptional performance, good flexibility, and great value in a 32-bit processor with a 16-bit external data bus.

