



**SHARP®**

## LH77790A

Includes:

ARM7DI CPU Core

Cache Memory

Local SRAM

Memory and Peripheral Interface

DRAM Controller

Three on-board UARTs

Serial Infrared (SIR) Interface

Pulse Width Modulator (PWM)

LCD Controller

Counter/Timers

Interrupt Controller

Parallel I/O

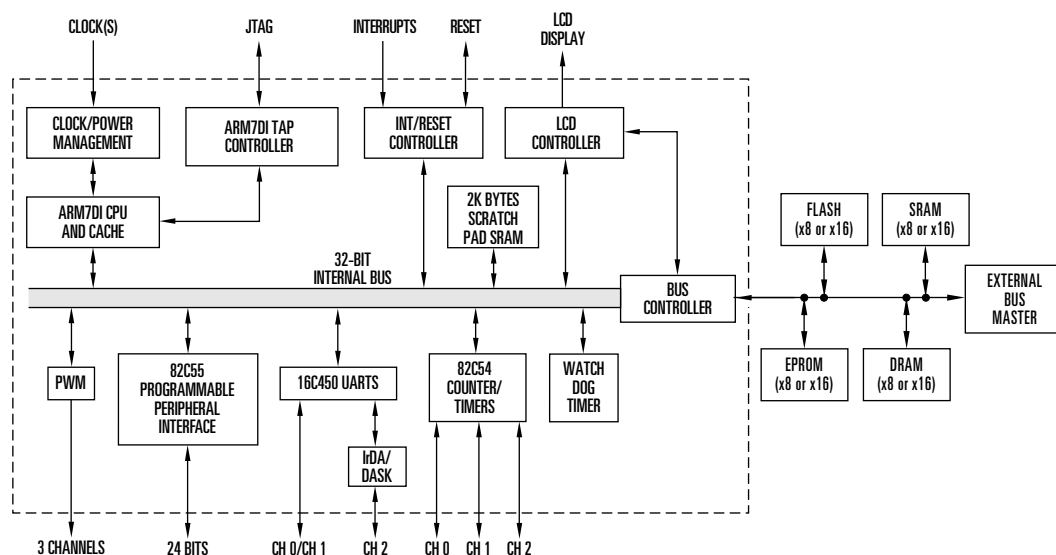
# LH77790A EMBEDDED MICROCONTROLLER

Sharp's LH77790A is an ARM7DI™ RISC-based microcontroller designed to meet the requirements of advanced portable systems. Its high level of integration—including instruction/data cache and static RAM—makes it ideal for handheld, battery-operated devices required to deliver high-speed performance and low power consumption. It also provides direct interface capability to monochrome LCDs, keyboards, non-volatile memory (typically Flash), RAM, and other communications ports and external peripherals.

By serving as an application-ready, “system-on-a-chip” solution, the LH77790A gives designers substantial opportunity to reduce external components, save area, reduce power requirements and lower system cost. It comes complete with valuable features like an LCD controller, no-glue memory interface (SRAM/DRAM/EEPROM/Flash), UARTs with infrared capability, PWMs, parallel I/O, counter/timers and power management.

The LH77790A is fabricated using Sharp's low-cost, high-volume

0.65  $\mu\text{m}$  process technology. It comes housed in a 176-pin thin quad flat pack (TQFP) package, offering easy integration in space constrained designs. Sharp's efficient design tools for hardware and software offer features to speed development even more and drastically reduce design turnaround time.



LH77790A Block Diagram

## FEATURES:

- Highly Integrated Single Chip
- 32-Bit ARM7DI™ CPU Core
- 2 KB Data/Instruction Cache
- 2 KB Static RAM (4 KB Without Cache)
- Programmable Clock and Power Management
- Programmable LCD Controller (passive, simple color, DMTN)
- On-Chip Interrupt Controller
- Three UARTs — 16450-class
- IrDA/DASK Infrared Interface
- Three Pulse Width Modulator Channels
- No-Glue Memory Interface
- On-Chip DRAM Controller
- 24-Bit Programmable Peripheral Interface
- Three 16-Bit Counter/Timer Channels
- Hardware Watchdog Timer
- Dual Voltage Range Operation
- 5 V TTL—25 MHz
- 3.3 V LVTTTL—16.7 MHz
- Package: 176-Pin TQFP

## APPLICATIONS:

- Point-of-Sale
- Handheld Inventory Control Systems
- Barcode Scanners
- Industrial Instrumentation
- Medical Equipment
- GPS
- Handheld Communication Devices
- Games
- Personal Digital Assistants

For more information,  
visit Sharp's web site:  
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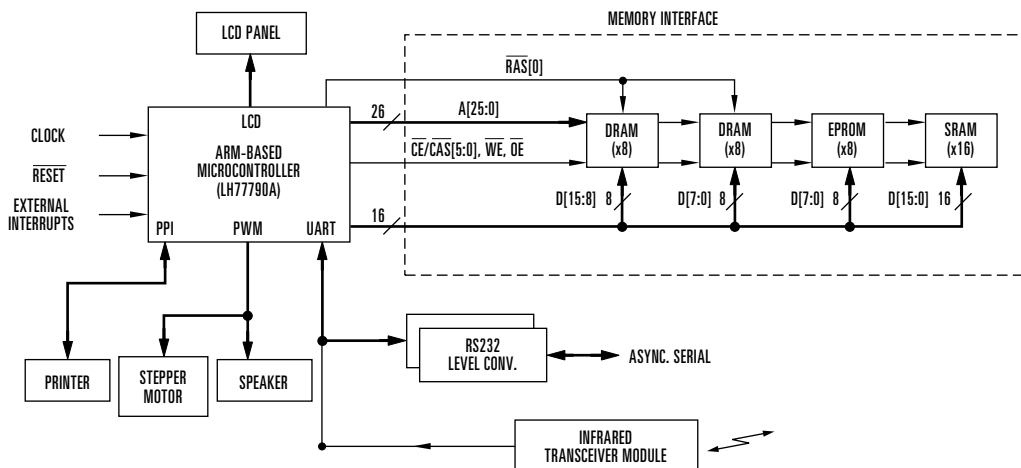
Sonninstr. 3  
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LH77790A Application Example

System on Chip Business Unit  
Complete System Solutions

SHARP®

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