

**APPLICATIONS:**

- Motor Control
- Test and Measurement
- Instrumentation

# LZ87010 8-bit Flash Microcontroller

## FEATURES

- 8-Bit, 8051 Enhanced CPU Core:
  - Two-clock Machine Cycle  
(6 × Performance Boost over Standard 8051 CPU Core)
  - Two-wire Debug Interface with Breakpoint and Trace
- 20 MHz - 40 MHz Operating Frequency at 3.3 V
  - Equivalent to 240 MHz (MAX.) Standard 8051
- Flexible Internal Clocking Architecture
- 64KB Built-In Flash Memory
  - Flash Memory In-circuit Serially Programmable
- External Program Memory Expansion Capability
  - Supports Reads and Writes
- 4KB Internal MOVX SRAM
- 256 Bytes Scratchpad RAM
- Six 16-bit Multifunction Timer/Counters
  - Two General Purpose
  - Two with Capture/Compare/PWM Capability
  - Two with Compare/PWM Capability
- Serial Interfaces
  - Two UART/SIO
  - Baud Rate Converter for UART 1
  - One I<sup>2</sup>C
- A/D Converter
  - Eight Channel, 12-Bit Resolution
- D/A Converter
  - Two Channel, 8-bit Resolution
  - Waveform Generator Capability
- Sixteen High Current Output Pins
  - 10 mA (TYP.), 16 mA (MAX.) Each
- Up to 56 GPIO
- Watchdog Timer
- Low Power Modes: Active, Power Down, Idle
- 3.3 V Power Supply
- -40°C to +85°C Operating Temperature
- 100-Pin LQFP Package

## DESCRIPTION

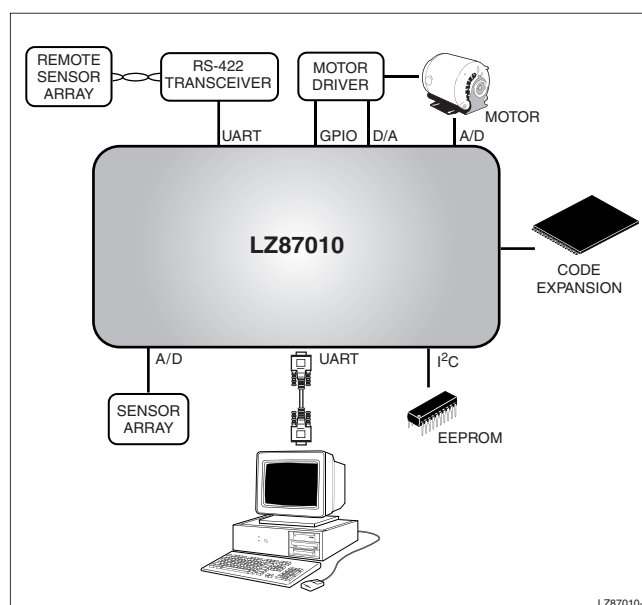
The LZ87010 is an 8-bit, 8051-based microcontroller that adds 64KB of integrated Flash memory, two UART/SIOs, I<sup>2</sup>C, and several multifunction timers. It also incorporates an 8-channel 12-bit A/D converter, two separate 8-bit D/A converters, and low power modes of operation.

The 8051 Enhanced Core provides a performance boost, six times that of a standard 8051 core operating at the same frequency and has built-in 2-wire debug support. It is software-compatible with 8031/8051 series parts.

The LZ87010 operates from 20 MHz - 40 MHz over the industrial temperature range of -40°C to +85°C.

SHARP's LZ87010 design provides low power, exceptional performance, good flexibility, and great value in an 8-bit processor.

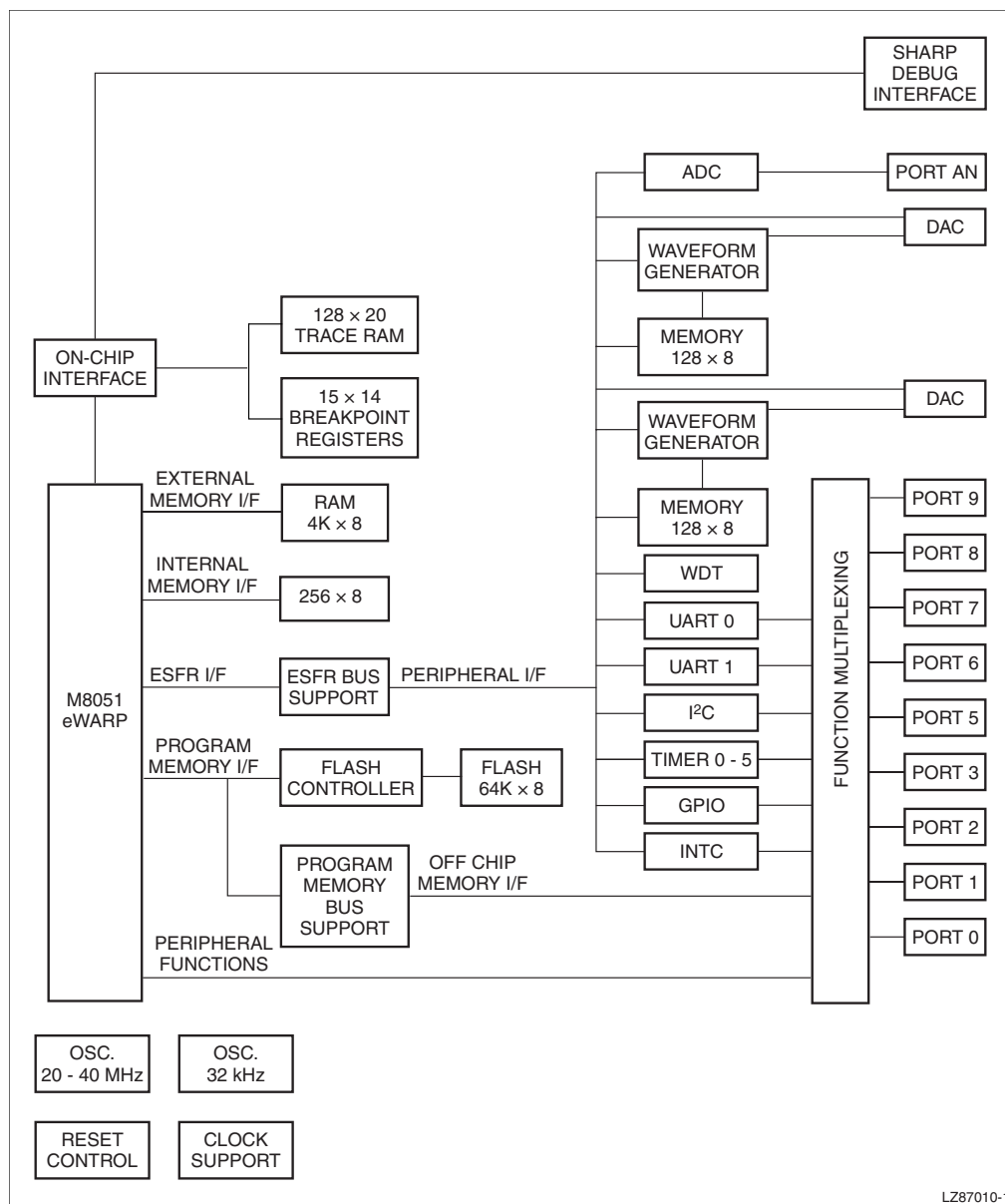
## SYSTEM APPLICATION EXAMPLE



# PRELIMINARY PRODUCT INFORMATION

# SHARP

## LZ87010 BLOCK DIAGRAM



LZ87010-1

## SHARP<sup>®</sup>

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Fax (49) 40-2376-2232

#### Asia

SHARP Corporation  
Osaka, Japan  
Ph (81) 6-6621-1221  
Fax (81) 6117-725300

Product Information: 1-800-642-0261

World Wide Website: <http://www.sharpsma.com>

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