April 2002

S1C38000 32-Bit Single Chip RISC Microcomputer

The S1C38000 32-Bit Single Chip RISC Microcomputer provides a complete single chip solution for a variety of embedded applications. The S1C38000 utilizes an ARM 720TDMI processor core providing high performance and low power while a feature rich set of embedded peripherals compliment the device.The popular S1D13706 Color LCD Controller is an integral part of this device with it's dedicated embedded display buffer giving it substantial performance increase over similar devices using "shared" memory architectures.

This high level of integration provides a low cost, low power, single chip solution to meet the demands of embedded markets such as Mobile Communications devices and Palm-size PCs, where board size and battery life are major concerns.

FEATURES

ARM720T Core

- ARM7TDMI plus 8K Byte Cache and MMU
- 48MHz @ 2.5v
- 24MHz @ 2.0v
- Boundary Scan Test Access Port (JTAG) Embedded ICE
- Embedded ICE

S1D13706 Color LCD Controller

- Embedded Display Buffer (112KB)
- Low-latency CPU interface
- Programmable Resolutions
- Color depths: 1/2/4/8/16 bpp modes supported
- STN LCD support
- Active Matrix LCD support
- 'Direct' Reflective Active Matrix support
- SwivelView™ (90°, 180°, 270° hardware rotation of displayed image)
- "Picture-in-Picture Plus"

External Memory Interface (128M Bytes Total)

- SDRAM support (up to 2 banks)
- SRAM support
- EPROM support
- Flash support

(up to 4 banks)

Serial Communications Interface

- 2 channel UART (with 16 byte Transmit/Receive FIFO)
- IrDA 1.1 physical layer protocol
- FIR (4.0 Mbps) and SIR support

DMA

- Total of 4 DMA channels
- 2 configurable external channels
- Up to 4 internal channels supported
- Single and Demand transfer mode support

USB Client

- Revision 1.1 Compliant

Serial Peripheral Interface

- 2 channel SPI: one master, one master/slave capable

PLL

- 32.768KHz input
- 6MHz input

A/D Converter

- 4 channel, 10-bit A/D converter

Timers

- Watchdog Timer with output pin
- Real Time Clock
- 5 channel 16-bit general purpose timers

PWM Module

- 2 channels
- 8/16-bit PWM interface with 8 byte FIFO

Generic Peripheral Bus Interface

- Compact Flash compatible

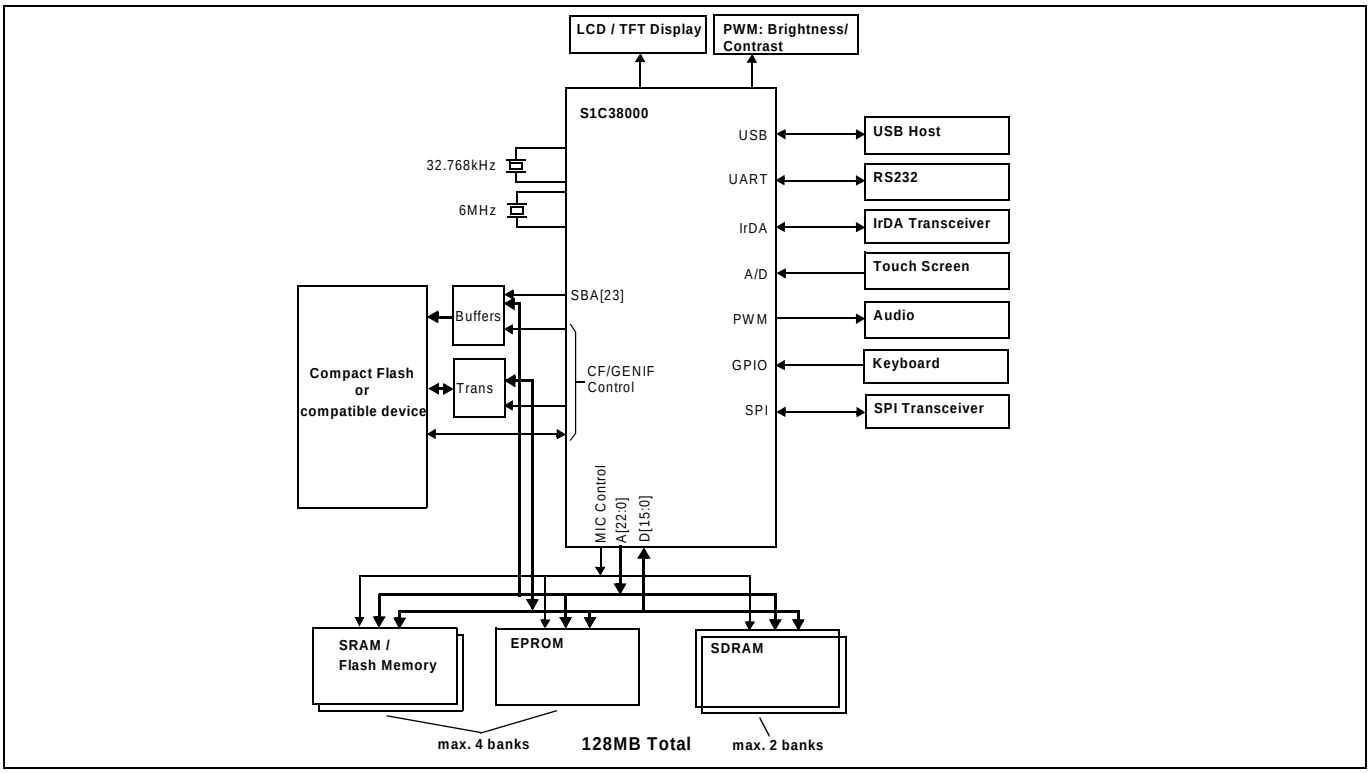
Miscellaneous

- Interrupt Controller
- General Purpose IO
- Clock Management
- Power Management

Package

- 208-pin HQFP8-208-S1
- 239-pin CFLGA

■ SYSTEM BLOCK DIAGRAM



CONTACT YOUR SALES REPRESENTATIVE FOR THESE COMPREHENSIVE DESIGN TOOLS:

- S1C38000 Technical Manual
- S1C38000 Evaluation Boards
- Software Utilities

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