S1C33205



32-bit Single Chip Microcontroller

- High-speed 32-bit RISC Core
- Built-in SDRAM Controller
- Multiply Accumulation
- 10-bit ADC
- Built-in 8K-byte RAM

■ DESCRIPTIONS

The S1C33205 is a CMOS 32-bit microcomputer composed of a CMOS 32-bit RISC core, RAM, DMA, timers, SIO, PLL and other circuits. Featuring high-speed operation, low current consumption, and including a SDRAM controller, this microcomputer allows direct connection of external SDRAM, making it ideal for use with PDAs and other portable devices. In addition, since the microcomputer incorporates an A/D converter and PWM and is capable of multiply-accumulate operations, digital signal processing such as speech synthesis processing can be accomplished with a single chip.

■ FEATURES

● CMOS LSI 32-bit parallel processing S1C33000 RISC core

Main clock
50MHz (Max., 15MHz external clock input)

● Sub clock 32.768kHz (Typ., crystal)

● Instruction set 16-bit fixed length, 105 instructions

(MAC instruction is included, 2 cycles)

● Internal RAM size 8,192 bytes

● SDRAM controller Supports 1M × 16-bit to 16M × 16-bit SDRAMs

Capable of access either in 8 or 16 bits Capable of burst reads and single writes

● Clock timer 1 channel

◆ Programmable timer
 ◆ PWM timer
 ◆ Watchdog timer
 ★ 6 channels and 16 bits × 6 channels
 ★ 6 channels and 16 bits × 6 channels
 ★ 7 Realized with a 16-bit programmable timer
 ★ 8 bits × 6 channels and 16 bits × 6 channels
 ★ 8 bits × 6 channels and 16 bits × 6 channels
 ★ 8 bits × 6 channels and 16 bits × 6 channels
 ★ 8 bits × 6 channels and 16 bits × 6 channels
 ★ 9 PWM timer
 ★ 16-bit programmable timer

Serial interface 4 channels

Clock synchronization type and asynchronization type are selectable.

Usable as an infrared ray (IrDA) interface.

● 10-bit A/D converter Successive approximation type, 8 input channels

High-speed DMA
Intelligent DMA
I/O port
I/O port
I/O port : 60 bits

I/O port : 69 bits

Internal interrupts: 29 types

External bus interface24-bit address bus, 16-bit data bus, 7 chip enable pins

DRAM, SDRAM and burst ROM may be connected directly.

● Shipping form QFP15-128pin

● Supply voltage Core voltage : 1.8 to 3.6V

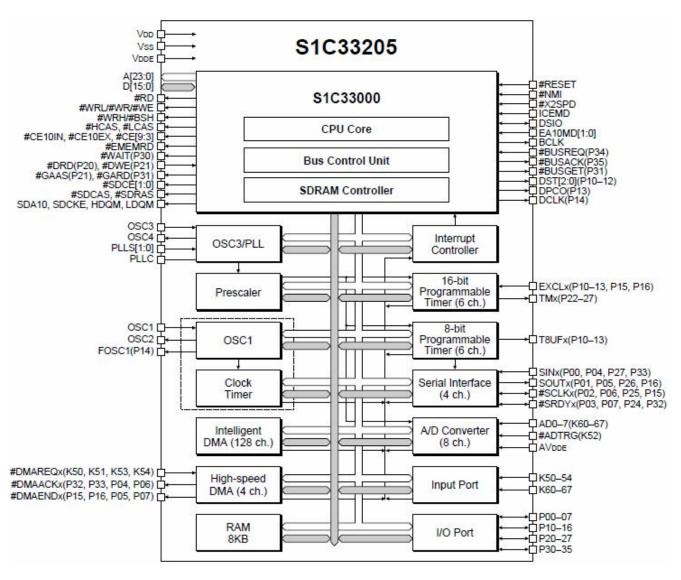
I/O voltage: 1.8 to 5.5V

● Current consumption SLEEP state: 3.5µW (3.3V)

RUN state: 200mW (3.3V, 50MHz Typ.)

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■ Block Diagram



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