

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

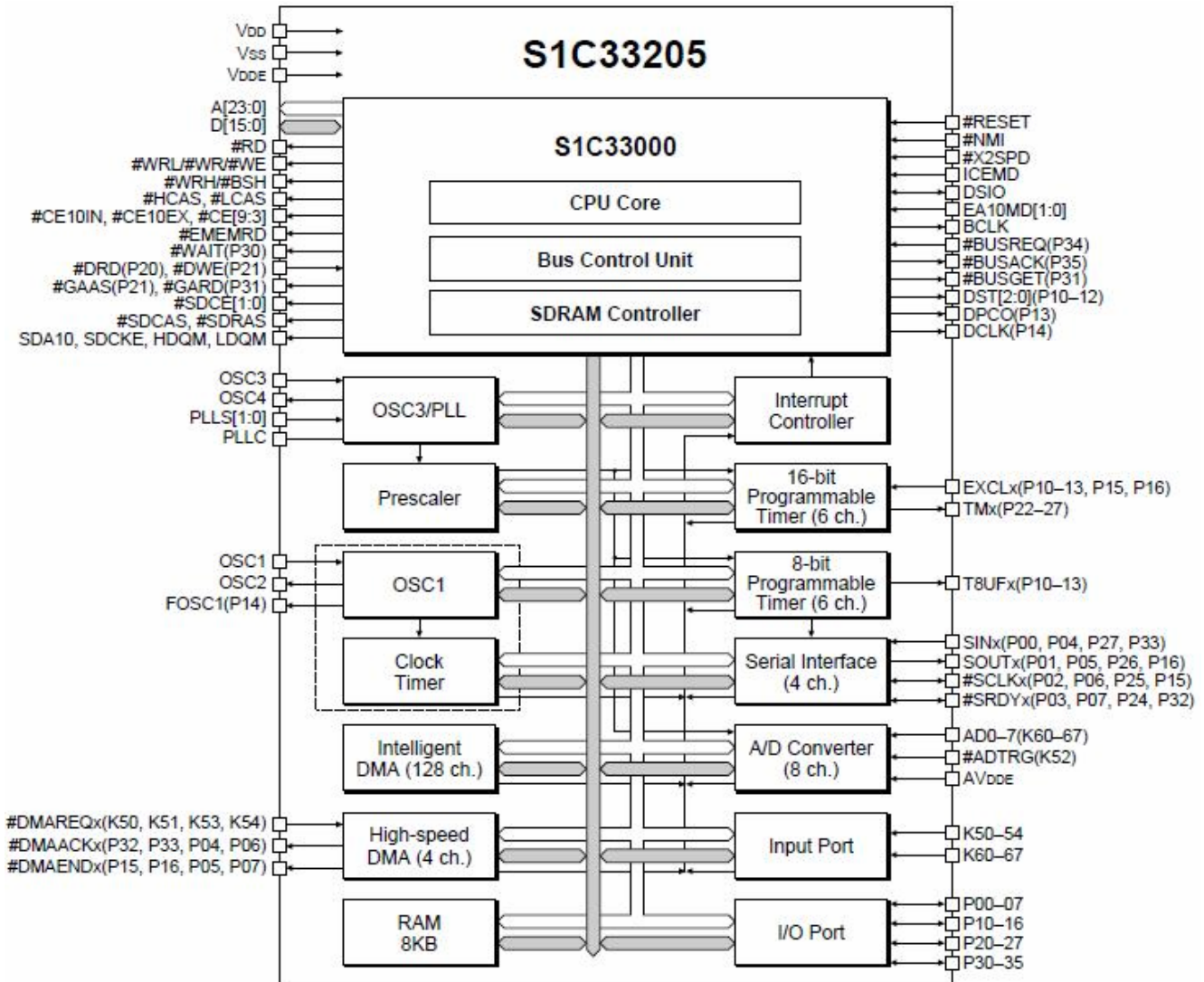
The S1C33205 is a CMOS 32-bit microcomputer composed of a CMOS 32-bit RISC core, RAM, DMA, timers, SIO, PLL and other circuits. Featuring high-speed operation, low current consumption, and including a SDRAM controller, this microcomputer allows direct connection of external SDRAM, making it ideal for 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 8 bits × 6 channels and 16 bits × 6 channels
- PWM timer Realized with a 16-bit programmable timer
- Watchdog timer Realized with a 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 4 channels
- Intelligent DMA 128 channels
- I/O port Input port : 13 bits
I/O port : 69 bits
- Interrupt controller External interrupts : 13 types
Internal interrupts: 29 types
- External bus interface 24-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.)

S1C33205

■ Block Diagram



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