S1C33210

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Mobile Access Gateway IC

- 32-bit RISC CPU
- HDLC controller
- Three serial I/O (SIO) interfaces
- PDC, PHS, and CdmaOne interfaces*1
- Multiply-and-accumulate instructions
- 8 Kbytes of built-in RAM
- Built-in analog-to-digital converter
- High-speed DMA and intelligent DMA
- Low power consumption

*1: These interfaces require the software modem module.

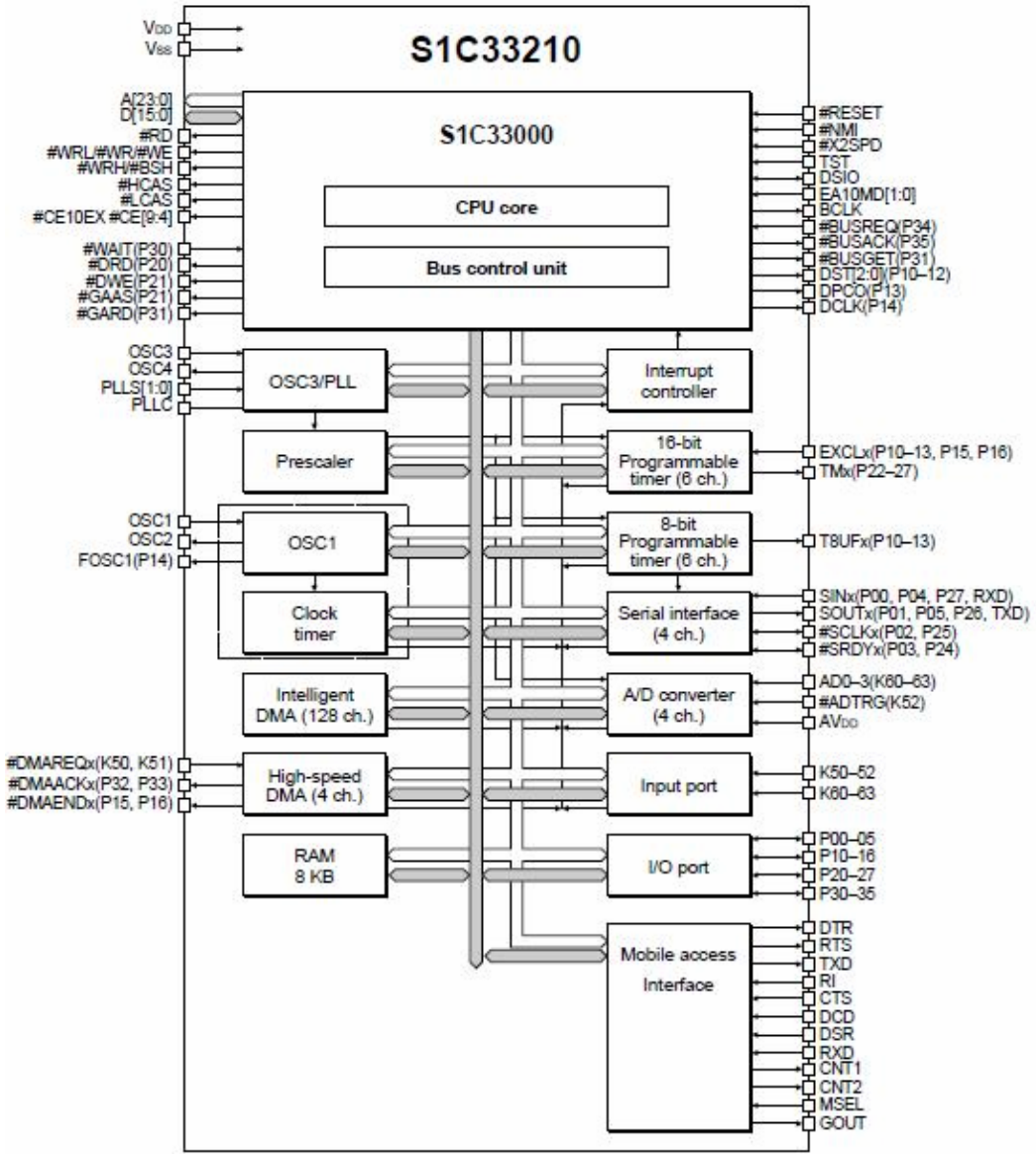
■ DESCRIPTIONS

The SIC33210 single-chip microcomputer consists of the S1C33000 CMOS 32-bit RISC CPU core plus an HDLC controller, three serial I/O (SIO) interfaces, 8 Kbytes of built-in RAM, a direct memory access (DMA) controller, timers, an analog to-digital converter, and other components. The device features both high-speed operation and low power consumption. The HDLC controller, serial I/O (SIO) interfaces, and other components necessary for mobile access make this device ideal for data communications adapters, PDAs, and other portable information equipment. The multiply-and-accumulate instructions and analog-to-digital converter support voice recognition, voice synthesis, and other forms of digital signal processing for use in portable multimedia terminals.

■ FEATURES

●CMOS LSI 32-bit parallel processing	S1C33000 RISC core
●Main clock	50 MHz (Max., with built-in 4× phase-locked loop)
●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
●Clock timer	1 channel
●Programmable timer	8 bits × 6 channels and 16 bits × 6 channels
●PWM timer	Application for 16-bit programmable timer
●Watchdog timer	Realized with a 16-bit programmable timer
●PDC interface	1 channel Control interface represents application for serial I/O (SIO) interface
●PHS interface	1 channel Control interface represents application for serial I/O (SIO) interface. Supports both 32 and 64 kbps. Built-in I.460 speed conversion.
●HDLC controller	1 channel
●Serial interface	3 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 : 7 bits, I/O port : 27 bits These pins double as I/O pins for the onboard peripherals.
●Interrupt controller	External interrupts : 10 types Internal interrupts: 29 types
●External bus interface	24-bit address bus, 16-bit data bus, 7 chip enable pins DRAM and burst ROM may be connected directly.
●Shipping form	QFP15-128pin
●Supply voltage	Internal operating voltage: 2.7 to 3.6 V I/O levels: 2.7 to 3.6 V
●Current consumption	In SLEEP mode: 4 µW Typ. During normal operation: 230 mW Typ. at 3.3 V, 50 MHz

■ Block Diagram



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