

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

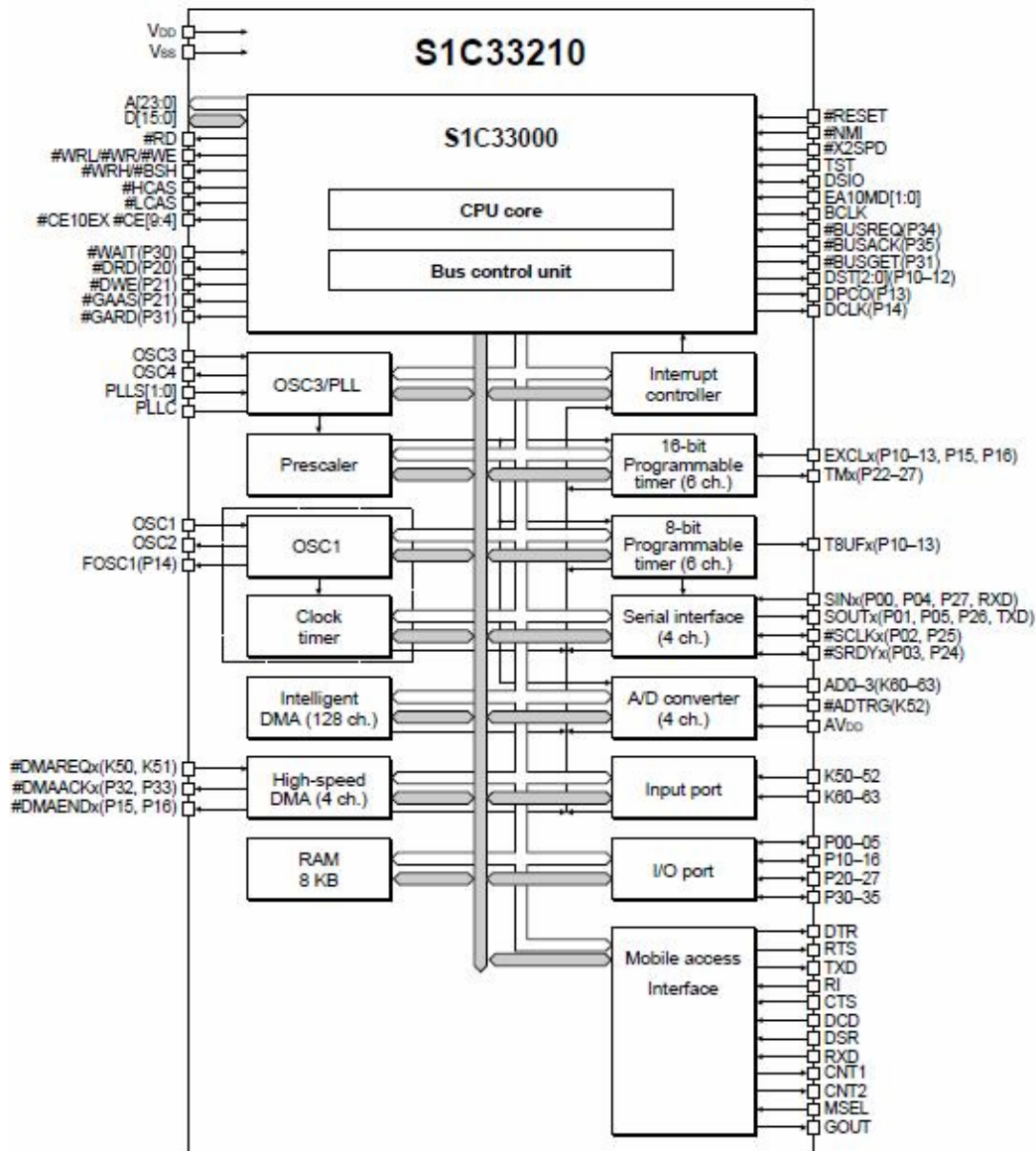
The S1C33210 single-chip microcomputer consists of the S1C33000 CMOS 32-bit RISC CPU core plus an HDLC controller, three serial I/O (SIO) interfaces, 8 Kbytes of built-in RAM, a direct memory access (DMA) controller, timers, an analog-to-digital converter, and other components. The device features both 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 1.460 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 |

S1C33210

■ Block Diagram



NOTICE:

No part of this material may be reproduced or duplicated in any form or by any means without the written permission of Seiko Epson. Seiko Epson reserves the right to make changes to this material without notice. Seiko Epson does not assume any liability of any kind arising out of any inaccuracies contained in this material or due to its application or use in any product or circuit and, further, there is no representation that this material is applicable to products requiring high level reliability, such as, medical products. Moreover, no license to any intellectual property rights is granted by implication or otherwise, and there is no representation or warranty that anything made in accordance with this material will be free from any patent or copyright infringement of a third party. This material or portions thereof may contain technology or the subject relating to strategic products under the control of the Foreign Exchange and Foreign Trade Law of Japan and may require an export license from the Ministry of Economy, Trade and Industry or other approval from another government agency.

All brands or product names mentioned herein are trademarks and/or registered trademarks of their respective companies.

©Seiko Epson Corporation 2009, All rights reserved.

SEIKO EPSON CORPORATION

SEMICONDUCTOR OPERATIONS DIVISION

IC Sales Department

IC International Sales Group

421-8 Hino, Hino-shi, Tokyo 191-8501, JAPAN

Phone: +81-42-587-5814 FAX: +81-42-587-5117

■ Epson semiconductor website

http://www.epson.jp/device/semicon_e/

Document code: 411876000

First issue Dec, 2009