S1C17121

EPSON
EXCEED YOUR VISION

Low Power 16-bit Single Chip Microcontroller

- Low Power MCU (Operating voltage 1.8V, 1.2uA/ SLEEP, 2.7uA/ HALT)
- 128K-Byte Flash Memory, 12KB RAM
- High quality, stable display LCD driver (72SEG x 32COM or 88SEG x 16COM) with voltage booster
- Infrared Remote Controller with Carrier Generator
- S1C17 High Performance 16-bit RISC CPU Core with C Optimized Compact Code and Serial ICE Support

■ DESCRIPTIONS

The S1C17121 is a 16-bit MCU featuring high-speed low-power operations, compact dimensions, and wide address space. A/D converter and R/F converter are built in and sensor of various analog I/F can be connected. It is suitable for the application of health care product, sports watch and meter module etc. with sensor that is required a small size and micro display in the battery driven.

■ FEATURES

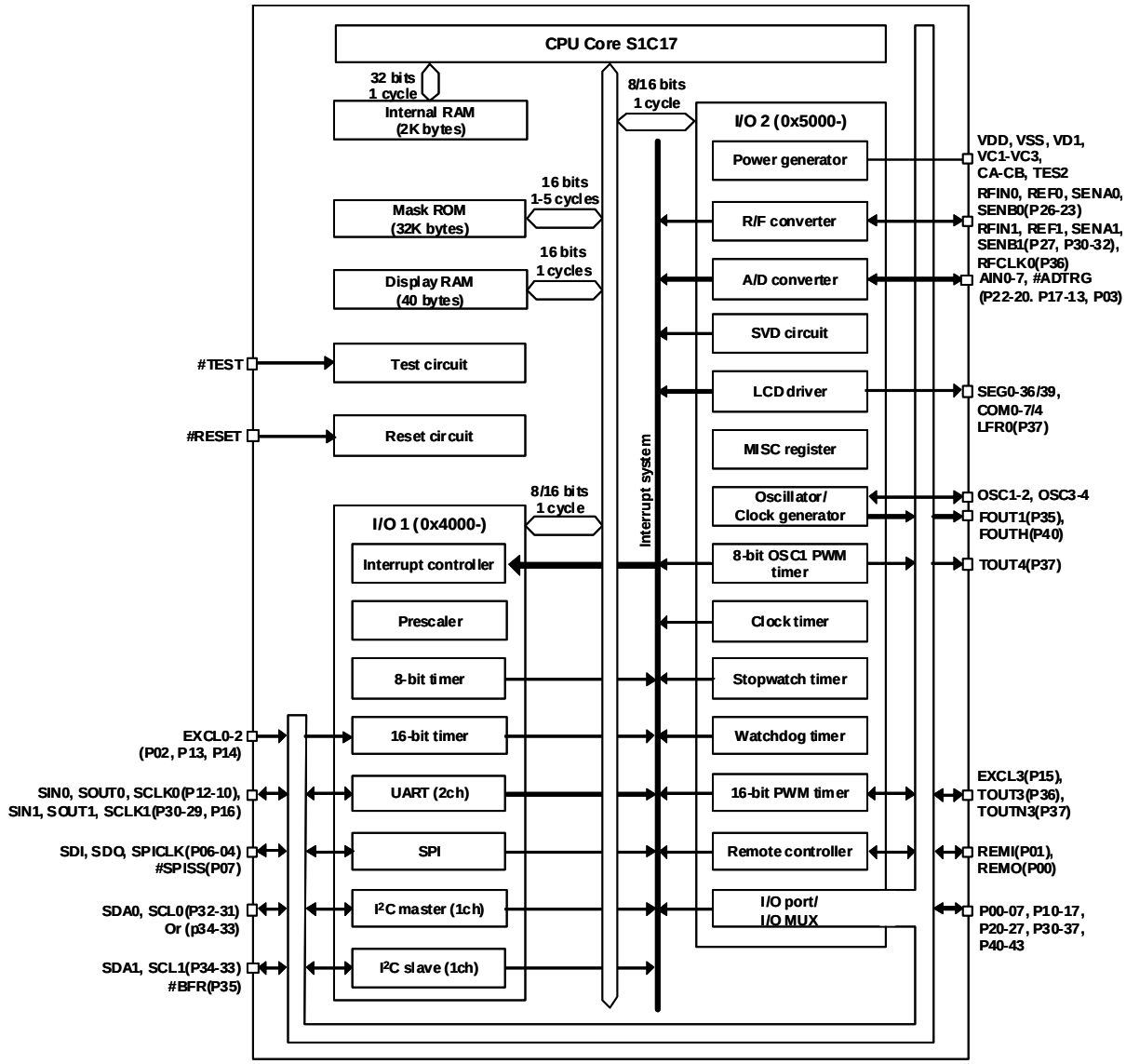
●CPU	Epson original 16-bit RISC CPU core S1C17 16-bit x 16-bit + 32-bit product-sum processor 16 bit ÷ 16bit division arithmetic unit
●IOSC oscillator circuit	2.7 MHz (typ) Oscillating start up 5 μs (max.) Boot Clock (External components not required.)
●OSC3 oscillator circuit	Crystal oscillator circuit or ceramic oscillator circuit, 4.2 MHz (max.) or external clock input
●OSC1 oscillator circuit	Crystal oscillator circuit 32.768 kHz (typ)
●Internal ROM	32 Kbytes (for both instructions and data)
●Internal RAM	2 Kbytes
●Internal display RAM	40 bytes
●A/D Converter	10 bit resolution 8ch
●R/F Converter	DC oscillation/AC oscillation/External input 2ch.
●Input/output port	Max. 36-bit general purpose input/output (shared with peripheral circuit input/output pins)
●Serial interface	SPI (master/slave) 1ch. I^2C (master) 1ch. I^2C (slave) 1ch. UART (230,400bps, IrDA1.0 compatible) 2ch. Remote controller (REMC) 1ch.
●Timer	8-bit timer (T8F) 2ch. 16-bit timer (T16) 3ch. PWM timer (T16E) 1ch. Clock timer (CT) 1ch. Stopwatch timer (SWT) 1ch. Watchdog timer (WDT) 1ch. 8-bit OSC1 PWM timer (T8OSC1) 1ch.
●LCD driver	36 SEG x 8 COM or 40 SEG x 4 COM (1/3 bias) Internal booster power supply circuit (16-value programmable contrast)
●Supply voltage detector	15-value programmable (1.8 V to 3.2 V)
●Interrupt	NMI, P Port Input interrupt 3ch. Serial Interface interrupt 5ch. Timer interrupt 9ch. LCD, SVD, ADC, RFC interrupt
●Power supply voltage	1.8 V to 3.6 V (for normal operations)
●Operating temperatures	-40°C to 85°C (When A/D converter is used -40°C to 50°C)
●Current consumption	SLEEP mode: 0.15 μA typ. (OSC1=OFF, IOSC=OFF, OSC3=OFF) HALT mode: 0.9 μA typ. (OSC1=32kHz, IOSC=OFF, OSC3=OFF, PCKEN=0x0, LCD OFF) 1.9 μA typ. (OSC1=32kHz, IOSC=OFF, OSC3=OFF, PCKEN=0x0, LCD ON (All LCD On, maximum contrast, VC2 standard)) When operating: 7 μA typ. (OSC1=32kHz, IOSC=OFF, OSC3=OFF, LCD OFF) 250 μA typ. (OSC1=OFF, IOSC=OFF,

OSC3=1MHz ceramic oscillator)

● Shipping form

TQFP14-100 12 mm x 12 mm body, 0.4 mm pitch
VFBGA7H-144 7 mm x 7 mm, body, 0.5 mm pitch
Chip

■ Block Diagram



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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/

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