

## Low Power 16-bit Single Chip Microcontroller

- Low power MCU (Operating voltage 1.65V ~, Power consumption SLEEP 1 uA, HALT 3.3 uA)
- High code density and high processing power 16bitRISC C17CPU, optimize to C, serial ICE
- 64KB ROM, 4KB RAM
- 10-bit ADC 4ch
- Small package: 48 pins WCSP

### ■ DESCRIPTIONS

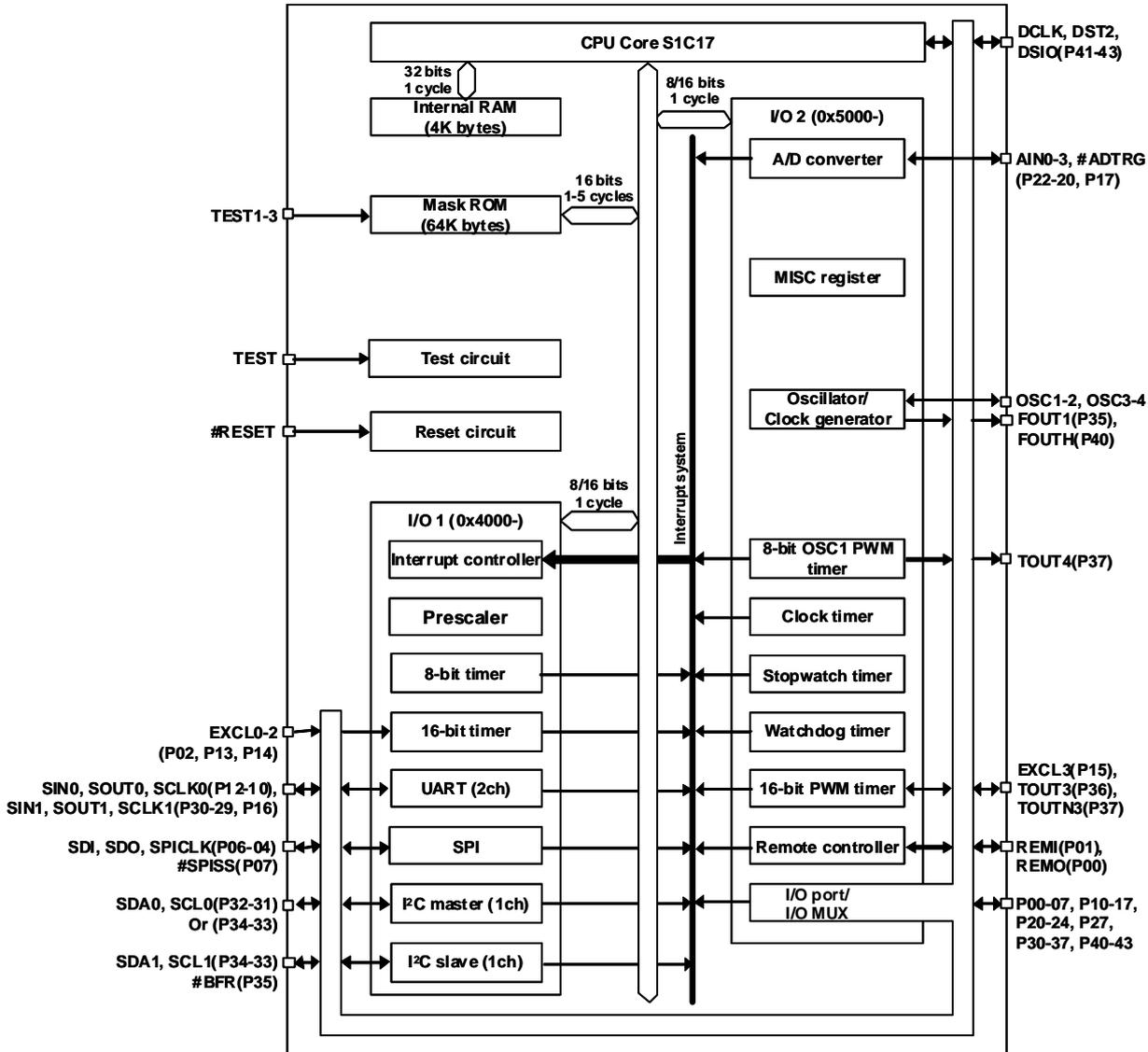
The S1C17003 is a 16-bit MCU featuring high-speed low-power operations, compact dimensions, wide address space and on-chip ICE. A/D converter is built in and sensor of various analog I/F can be connected. It is suitable for the application of health care product, sports watch and meter module etc. with 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
● OSC3 oscillator circuit	Crystal oscillator circuit or ceramic oscillator circuit, 20 MHz (max.)
● OSC1 oscillator circuit	Crystal oscillator circuit 32.768 kHz (typ.)
● Internal MASK ROM	64 Kbytes (for both instructions and data)
● Internal RAM	4 Kbytes
● A/D Converter	10 bit resolution 4ch
● Input/output port	Max. 30-bit general purpose input/output port, 4-bit input only port
● Serial interface	SPI (master/slave) 1ch. I <sup>2</sup> C (master) 1ch. I <sup>2</sup> C (slave) 1ch. UART (460,800bps, 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.
● Interrupt	NMI, P Port Input interrupt 3ch. Serial Interface interrupt 5ch. Timer interrupt 9ch.
● Power supply voltage	HVDD(I/O) : 1.65 to 3.6V LVDD(Core) : 1.65 to 1.95V AVDD(I/O) : 2.7V to 3.6V
● Operating temperatures	-40°C to 85°C
● Current consumption	SLEEP mode: 1 μA (typ.) off/1.8V HALT mode: 3.3 μA (typ.) 32kHz/1.8V When operating: 4.0 mA (typ.) 20MHz/1.8V
● Shipping form	TQFP12-64pin (7 mm x 7 mm x 1.2 mm, 0.4 mm pin pitch) WCSP-48pin (3.124 mm x 3.124 mm x 0.78 mm, 0.4 mm ball pitch) Chip

# S1C17003

## ■ Block Diagram



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