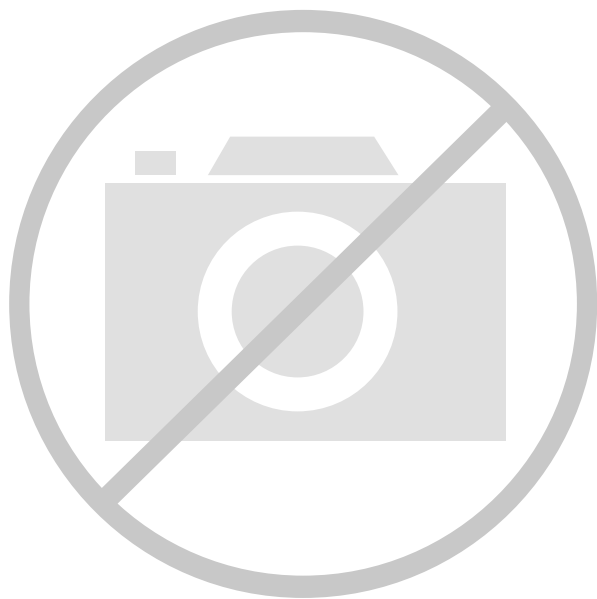




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What is "[Embedded - Microcontrollers](#)"?

"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "[Embedded - Microcontrollers](#)"

Details

Product Status	Active
Core Processor	S1C17
Core Size	16-Bit
Speed	8.2MHz
Connectivity	I ² C, IrDA, SPI, UART/USART
Peripherals	LCD, PWM, WDT
Number of I/O	19
Program Memory Size	32KB (32K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	2K x 8
Voltage - Supply (Vcc/Vdd)	1.8V ~ 3.6V
Data Converters	A/D 4x10b
Oscillator Type	Internal
Operating Temperature	-25°C ~ 70°C (TA)
Mounting Type	Surface Mount
Package / Case	48-TQFP
Supplier Device Package	-
Purchase URL	https://www.e-xfl.com/product-detail/epson/s1c17611d101000

16-bit Single Chip Microcontroller

- Low Power MCU(operating voltage 1.8V, 0.75uA/SLEEP, 2.5uA/HALT)
- Flash memory(32KByte), 8.2MHz high speed operating at 1.8V power voltage
- LCD driver: max 12 segment, 8seg x 8com or 12seg x 4com
- Analog I/F: A/D converter(INL/DNL Max. 1.5LSB), R/F converter
- RISC CPU core S1C17: the compact code optimized for C, and high throughput of an instruction / clock, supports serial ICE

■ DESCRIPTIONS

The S1C17611 is a 16-bit MCU featuring high-speed low-power operations, compact dimensions, wide address space and on-chip ICE. 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
Multiplier/divider (COPRO)
 - 16 bit x 16 bit multiplier/16 bit ÷ 16 bit divider
 - 16 bit x 16 bit + 32 bit product-sum operation
- 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, 8.2 MHz (max.)
or external clock input
- OSC1 oscillator circuit
Crystal oscillator circuit 32.768 kHz (typ.)
- Internal Flash memory
32 Kbytes (for both instructions and data)
Allows 1,000 rewrites (min.)
Read/write protection function
Allows onboard rewriting with the ICD Mini (S5U1C17001H) debug tool and self-rewriting via software.
- Internal RAM
2 Kbytes
- Internal Display RAM
12 bytes
- A/D Converter
10 bit resolution 4ch
- R/F Converter
DC oscillation/AC oscillation/External input 1ch.
- Input/output port
Max. 19-bit general purpose input/output
(shared with peripheral circuit input/output pins)
- Serial interface
SPI (master/slave) 1ch.
I2C (master) 1ch.
I2C (slave) 1ch.
- Timer
UART (460,800 bps, IrDA1.0 compatible) 1ch.
8-bit timer (T8F) 1ch.
16-bit timer (T16) 3ch.
PWM timer (T16E) 2ch.
Clock timer (CT) 1ch.
Stopwatch timer (SWT) 1ch.
Watchdog timer (WDT) 1ch.
8-bit OSC1 PWM timer (T8OSC1) 1ch.
- LCD driver
8 SEG x 8 COM or 12 SEG x 4 COM (1/3 bias)
- Power supply voltage detection (SVD) circuit
Internal booster power supply circuit (16-value programmable oncontrast)
- Interrupt
15-value programmable (1.8 V to 3.2 V)
NMI, P Port Input interrupt 3ch.
Serial Interface interrupt 4ch.
Timer interrupt 9ch.
- Power supply voltage
LCD, SVD, ADC, RFC interrupt
1.8 V to 3.6 V (for normal operations)
2.7 V to 3.6 V (for flash deletion/programing)
Including voltage regulator circuit (with binary programmable operating voltage)
- Operating temperatures
-25°C to 70°C
- Current consumption
SLEEP mode: 0.6 μA typ. (OSC1=OFF, IOSC=OFF, OSC3=OFF)

S1C17611

HALT mode: 2.0 μ A typ. (OSC1=32 kHz, IOSC=OFF, OSC3=OFF, PCKEN=0x0, LCD OFF)

3.0 μ A typ. (OSC1=32 kHz, IOSC=OFF, OSC3=OFF, PCKEN=0x0, LCD ON (All LCD On, maximum contrast, V_{c2} standard))

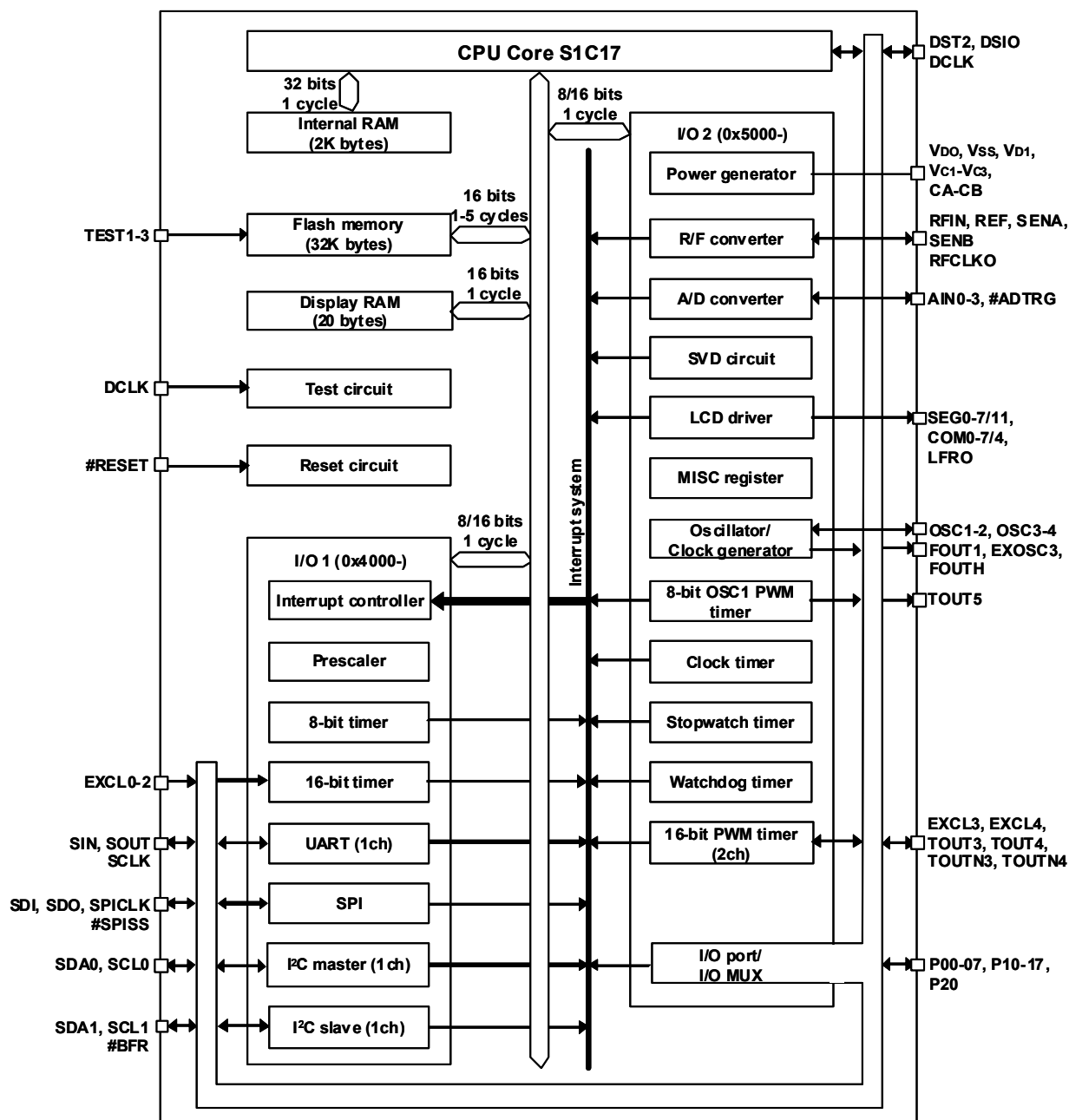
When operating: 12 μ A typ. (OSC1=32 kHz, IOSC=OFF, OSC3=OFF, LCD OFF)

400 μ A typ. (OSC1=OFF, IOSC=OFF, OSC3=1 MHz ceramic oscillator)

● Configuration as shipped

QFP12-48 7 mm x 7 mm body, 0.5 mm pitch
Bare chip 100 μ m pitch

■ BLOCK DIAGRAM



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