Key product features

1. Embedded circuits that will reduce the number of components in customers' products, save board space, and shrink software development times

- Embedded oscillator stability: ±1% (when operating at 16 MHz in an operating temperature range of 0-85°C
- Embedded EEPROM (electrically erasable programmable read-only memory)
- Supply voltage detector (SVD) circuit that does not require an external power supply supervisor
- Real-time clock
- Analog-digital converter
- A universal port multiplexer (UPMUX) that allows software to select the input/output function to be assigned to each port
- Three types of serial communications interfaces
- Generator circuit for infrared remote-control output signal

2. Low-voltage and low-current consumption that extend battery life

- Guaranteed operating range: 1.8 V - 5.5V
- Current consumption in SLEEP mode: 0.25µA
- Power consumption in RUN mode: 170µA/MHz

Product specifications

Model No.	S1C17M40
CPU core	16-bit RISC processor with multiply and accumulation unit and multiplier/divider
Flash memory	48 kilobytes
EEPROM	256 bytes
RAM	2 kilobytes
Operating voltage	Guaranteed operating range: 1.8 V - 5.5V
Current consumption	SLEEP mode: 0.25µA (typical) RUN mode: 170µA/MHz (typical)
Supply voltage detector	VDD: 32 levels (1.7 to 5.0 V) / external voltage: 32 levels (1.7 to 5.0 V)
LCD driver	36 SEG x 5-8 COM (max.) 40 SEG x 1- 4 COM (max.)
Infrared remote controller	1 channel (can be used to generate EL lamp driving waveforms)
Analog-digital converter	3 inputs (12-bit successive-approximation ADC) TQFP12-48 pin package 4 inputs (12-bit successive-approximation ADC) QFP13-64 pin package
Timers	16-bit PWM timer: 3 channels 16-bit timer: 4 channels Watchdog timer Real-time clock
Serial interfaces	UART (3 ch.), SPI (2 ch.), and I2C (1 ch.) interfaces

I/O ports	54 max. 32 of these ports support universal port multiplexers (UPMUX)
Package	TQFP12-48 (pin pitch: 0.5 mm) QFP13-64 (pin pitch: 0.5 mm)