Product Specifications

Product number	S1C31D50
CPU core	ARM® Cortex®-M0+ 32-bit RISC processor
Flash memory	192 kB (for both program and sound data)
RAM	8 kB (22 kB when not playing audio)
HW Processor	Sound decoding (original Epson format, 15.625 kHz sampling rate, 2-channel mixing, voice speed conversion
	Self-memory check function (built-in Flash & RAM, external QSPI-Flash)
Sound DAC	Sampling rate: 15.625 kHz, mono
Serial interfaces	UART, SPI, and I2C: 3 channels each. QSPI: 1 channel
Analog-digital converter	8 inputs, max. (12-bit successive-approximation ADC)
Supply voltage detector	32 level (1.7 V – 4.3 V)
DMA	4 channels (memory ⇔ memory, memory ⇔ peripheral)
Radio-frequency converter (RFC)	1-channel, low-resistance sensor A-D conversion, CR oscillation with 24-bit counters
Infrared remote controller	1 channel (can be used to generate EL lamp driving waveforms)
Timers	16-bit timer (8 channels), 16-bit PWM (2 channels), watchdog timer (WDT), real-time clock (RTC)
Power supply voltage	1.8 V - 5.5 V
SPI-Flash interface voltage	3.3 V (3.0 V – 3.6 V)
Operating frequency	16 MHz (VD1 voltage mode: mode 0) 2 MHz (VD1 voltage mode: mode 1)
Power consumption*	RUN: 250 uA/MHz (VD1 voltage mode: mode 0) RUN: 155 uA @ 1 MHz (VD1 voltage mode: mode 1) SLEEP: 0.43 uA, RTC mode: 0.9 uA
I/O ports	Max. 91 Of which up to 32 may be Universal Port Multiplexers (UPMUX)
Packages	TQFP12-48 (size: 7 mm x 7 mm. Pin pitch: 0.5 mm) TQFP13-64 (size: 10 mm x 10 mm. Pin pitch: 0.5 mm) TQFP14-80 (size: 12 mm x 12 mm. Pin pitch: 0.5 mm) QFP15-100 (size: 14 mm x 14 mm. Pin pitch: 0.5 mm)

*At typical environmental values, SLEEP mode, RTCA = On, 25 degrees Celsius