



4-bit Single Chip Microcomputer

- Original Architecture Core CPU
- Low Current Consumption
- High Speed Operation in Low Voltage

DESCRIPTION

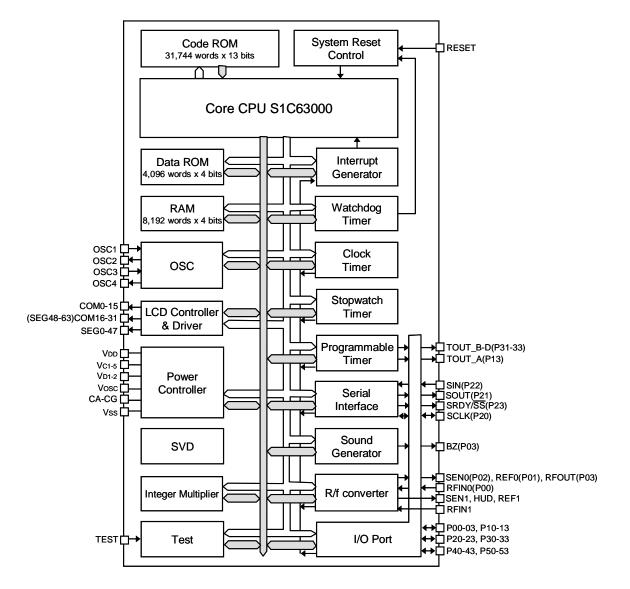
The S1C63632 is a microcomputer which has a 4-bit CPU S1C63000 as the core CPU, ROM (31,744 words \times 13 bits), RAM (8,192 words \times 4 bits), multiply-divide circuit, serial interface, watchdog timer, programmable timer, time base counters (2 systems), a dot matrix LCD driver that can drive a maximum 1,536dots of LCD panel, and an R/f converter that can measure temperature and humidity using sensors such as a thermistor. The S1C63632 features low current consumption, this makes it suitable for battery driven clocks and watches with temperature and humidity measurement functions.

FEATURES

OSC1 oscillation circuit		32.768 kHz (Typ.) crystal oscillation circuit	
OSC3 oscillation circuit		4.2 MHz (Max.) ceramic or 1.8 MHz (Typ.) CR oscillation circuit (*1)	
Instruction set		Basic instruction: 47 types (411 instructions with all)	
	Addressing mode: 8 types		
Instruction execution time	During operation at 32.768 kHz:61 µsec		
	During operation at 4 MHz:	0.5 µsec 1 µsec 1.5 µsec	
ROM capacity	Code ROM: 31,744 words × 13		
	Data ROM: 4,096 words × 4 bit	S	
RAM capacity	Data memory: 8,192 words × 4 bit	S	
	Display memory: 2,048 bits		
I/O port	24 bits (pull-down resistors may be incor	porated *1	
	Shared with 4 serial I/F I/O pir	ns, 4 R/f converter I/O pins,	
	and 6 special output pins *2)		
Serial interface	1 port (8-bit clock synchronous system)		
LCD driver	48 segments × 32 commons, 56 segmen	its x 24 commons, or	
	64 segments × 16 commons (*2)		
Time base counter	Clock timer		
	Stopwatch timer (1/1000 sec, with direct	key input function)	
Programmable timer	16-bit timer × 4 ch.	16-bit timer x 4 ch.	
5	(each 16-bit timer is configurable to two 8	3-bit timer channels *2)	
Watchdog timer	Built-in	,	
Sound generator	With envelope and 1-shot output function	IS	
R/f converter 2 ch., CR oscillation type, 20-bit counter			
	Supports resistive humidity sensors		
Multiply-divide circuit 8-b	t accumulator × 1 ch.		
	Multiplication: 8 bits × 8 bits -> 16-bit pro	duct	
		Division: 16 bits ÷ 8 bits -> 8-bit quotient and 8-bit remainder	
upply voltage detection (SVD) circuit Programmable 16 detection voltage levels (*2)			
External interrupt	Key input interrupt:	8 systems	
Internal interrupt	Clock timer interrupt: 8 system		
	Stopwatch timer interrupt:	4 systems	
	Programmable timer interrupt:	16 systems	
	Serial interface interrupt:	1 system	
	R/f converter interrupt:	3 systems	
Power supply voltage 1.6	to 5.5 V		
Operating temperature range	-40 to 85°C		
Current consumption (Typ.)	During SLEEP (32 kHz)	0.08 μA	
	During HALT (32 kHz)	0.6 µA	
	During running (32 kHz)	2.5 µA	
	During running (4 MHz)	320 µA	
Shipment form		QFP20-144pin, VFBGA10H-144 or die form	
	*1: Can be selected with mask option	*2: Can be selected with	
software	· · · · · · · · · · · · · · · · · · ·		

S1C63632

BLOCK DIAGRAM



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