

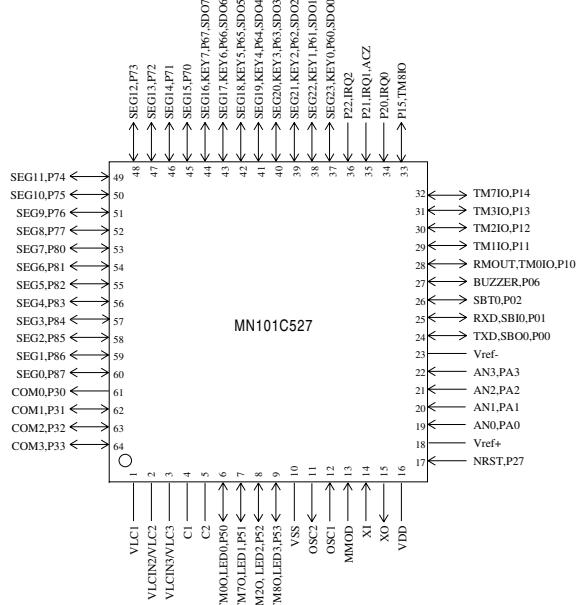
□ MN101C527

Type	MN101C527
ROM (x8-bit)	16 K
RAM (x8-bit)	1.5 K
Package	LQFP064-P-1414 *Pb free, TQFP064-P-1010B *Pb free (under development)
Minimum Instruction Execution Time	0.1 μ s (at 4.5 V to 5.5 V, 20 MHz) 0.238 μ s (at 2.7 V to 5.5 V, 8.39 MHz) 61 μ s (at 2.0 V to 5.5 V, 32.768 kHz)
Interrupts	• RESET • Watchdog • External 0 • External 1 • External 2 • External 4 (key interrupt dedicated) • Timer 0 • Timer 1 • Timer 2 • Timer 3 • Timer 6 • Timer 7 (2 systems) • Timer 8 • Time base • Serial 0 (2 systems) • A/D conversion finish
Timer Counter	Timer counter 0 : 8-bit \times 1 (square-wave/8-bit PWM output, event count, generation of remote control carrier, simple pulse width measurement) (square-wave/PWM output to large current terminal P50 possible) Clock source 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 0 Timer counter 1 : 8-bit \times 1 (square-wave output, event count, synchronous output event) Clock source 1/2, 1/8 of system clock frequency; 1/1, 1/4, 1/16, 1/8192, 1/32768 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 1 Timer counter 0, 1 can be cascade-connected. Timer counter 2 : 8-bit \times 1 (square-wave output, additional pulse type 10-bit PWM output, event count, synchronous output event, simple pulse width measurement) (square-wave/PWM output to large current terminal P52 possible) Clock source 1/2, 1/4 of system clock frequency; 1/1, 1/4, 1/16, 1/32, 1/64 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 2 Timer counter 3 : 8-bit \times 1 (square-wave output, event count, generation of remote control carrier, serial 0 baud rate timer) Clock source 1/2, 1/8 of system clock frequency; 1/1, 1/4, 1/16, 1/64, 1/128 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency; external clock input Interrupt source coincidence with compare register 3 Timer counter 2, 3 can be cascade-connected. Timer counter 6 : 8-bit freerun timer Clock source 1/1 of system clock frequency; 1/1, 1/4096, 1/8192 of OSC oscillation clock frequency; 1/1, 1/4096, 1/8192 of XI oscillation clock frequency Interrupt source coincidence with compare register 6 Timer counter 7 : 16-bit \times 1 (square-wave/16-bit PWM output [cycle / duty continuous variable], event count, synchronous output event, pulse width measurement, input capture) (square-wave/PWM output to large current terminal P51 possible) Clock source 1/1, 1/2, 1/4, 1/16 of system clock frequency; 1/1, 1/2, 1/4, 1/16 of OSC oscillation clock frequency; 1/1, 1/2, 1/4, 1/16 of external clock input frequency Interrupt source coincidence with compare register 7 (2 lines)

Timer Counter (Continue)		<p>Timer counter 8: 16-bit \times 1 (square-wave/16-bit PWM output [duty continuous variable], event count, pulse width measurement, input capture) (square-wave/PWM output to large current terminal P53 possible)</p> <p>Clock source 1/1, 1/2, 1/4, 1/16 of system clock frequency; 1/1, 1/2, 1/4, 1/16 of OSC oscillation clock frequency; 1/1, 1/2, 1/4, 1/16 of external clock input frequency</p> <p>Interrupt source agreement with compare register 8</p> <p>Timer counters 7, 8 can be cascade-connected. (square-wave output, input capture, pulse width measurement is possible as a 32-bit timer.)</p> <p>Time base timer (one-minute count setting)</p> <p>Clock source 1/1 of OSC oscillation clock frequency; 1/1 of XI oscillation clock frequency Interrupt source 1/128, 1/256, 1/512, 1/1024, 1/8192, 1/32768 of clock source frequency</p> <p>Watchdog timer</p> <p>Interrupt source 1/65536, 1/262144, 1/1048576 of system clock frequency</p>										
Serial Interface		<p>Serial 0 : synchronous type/UART (full-duplex) \times 1</p> <p>Clock source 1/2, 1/4 of system clock frequency; 1/2 pulse output of timer counter 3; 1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency</p>										
I/O Pins	I/O	42	<ul style="list-style-type: none"> Common use Specified pull-up resistor available Input/output selectable (bit unit) Specified pull-down resistor partially selectable 									
	Input	7	<ul style="list-style-type: none"> Common use Specified pull-up resistor available Specified pull-down resistor partially selectable 									
A/D Inputs		10-bit \times 4-ch. (with S/H)										
LCD		<ul style="list-style-type: none"> 24 segments 4 commons Static 1/2, 1/3, or 1/4 duty <p>LCD power supply separated from VDD (usable if $VDD \leq VLCD \leq 5.5$ V), built-in LCD power step-up circuit (3/2, 2 and 3 times) and built-in LCD shunt resistance</p>										
Special Ports		Buzzer output, remote control carrier signal output, high-current drive port										
Electrical Characteristics												
Supply current												
Operating supply current	Symbol	Condition	Limit									
			min	typ	max							
Supply current at HALT	IDD1	fosc = 8.39 MHz, VDD = 5 V		10	25							
	IDD2	fx = 32 kHz, VDD = 3 V		30	100							
Supply current at STOP	IDD3	fx = 32 kHz, VDD = 3 V, Ta = 25°C			8							
	IDD4	fx = 32 kHz, VDD = 3 V, Ta = -40°C to +85°C			30							
	IDD5	VDD = 5 V, Ta = 25°C			2							
		VDD = 5 V, Ta = -40°C to +85°C			35							

See the next page for pin assignment and support tool.

Pin Assignment



LQFP064-P-1414 *Pb free

TQFP064-P-1010B *Pb free (under development)

Support Tool

In-circuit Emulator	PX-ICE101C / D + PX-PRB101C52-TQFP064-P-1010B-M PX-ICE101C / D + PX-PRB101C52-LQFP064-P-1414-M										
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