

MN15G1601

Type		MN15G1601 (under development)	
ROM (×8-Bit)		16 K	
RAM (×4-Bit)		512	
Number of Instructions		103	
Minimum Instruction Execution Time		0.5 μs at 1/4 frequency dividing (at 3.0 V to 5.5 V, 8 MHz) 1.0 μs at 1/4 frequency dividing (at 2.4 V to 5.5 V, 4 MHz) 2.0 μs at 1/8 frequency dividing (at 2.0 V to 5.5 V, 4 MHz)	
Interrupts		• Reset • IRQ1 • IRQ2 • IRQ3	
Timer Counter		Timer Counter 0 : 8-Bit × 1 (Event Count, Pulse Output, Simple Pulse Width Measurement, PWM Output, Remote Control Carrier Output) Clock Source . . . 1/2, 1/8, 1/32, 1/128 of System Clock, 1/1, 1/4, 1/16, 1/64 of XI(OSC) Oscillation Clock Timer Counter 1 : 8-Bit × 1 (Event Count, Pulse Output, Remote Control Carrier Output) Clock Source . . . 1/2 of System Clock, 1/1, 1/2 ¹⁴ of OSC Oscillation Clock, 1/1, 1/2 ⁶ of XI Oscillation Clock Possible 16-Bit cascade connection with timer counter 0 Timer Counter 2 : 8-Bit × 1 (Event Count, Pulse Output, Simple Pulse Width Measurement, PWM Output, Remote Control Carrier Output, One-Shot Timer Output, Trigger start PWM Output, Trigger start Timer Output) Clock Source . . . 1/2 of System Clock, 1/1, 1/2 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, TCI Input Timer Counter 3 : 8-Bit × 1 (Event Count, Pulse Output, Remote Control Carrier Output, High-Functional PWM Output) Clock Source . . . 1/2 of System Clock, 1/1, 1/2 of OSC Oscillation Clock, 1/1 of XI Oscillation Clock, TCI Input Possible 16-Bit cascade connection with timer counter 2 Watchdog Timer	
Serial Interface		Serial : 8-Bit × 1 (Synchronous Type) Clock Source . . . 1/1, 1/2 of System Clock, $\overline{\text{SBT}}$ pin Input	
I/O Pins	I/O	35	• Common use 31 • Specified pull-up Resistor available 27 (Software Programmable) • Specified output architecture available Nch Open drain / Push-Pull 31 (Software Programmable)

Electrical Characteristics

Supply Current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating Supply Current	IDD1	fosc = 8 MHz		4	9	mA
	IDD2	fosc = 4 MHz		2	6	mA
	IDD3	fosc = 32 768 kHz		80	200	μA
Supply Current at HALT	IDD4	fosc = 4 MHz		0.6	1.2	mA
	IDD5	fosc = 32 768 kHz		40	100	μA
Supply Current at STOP	IDD6	ACZ = 1/2 VDD, Ta = 25 °C		5	10	μA
	IDD7	ACZ = 1/2 VDD, Ta = -40 °C to +85 °C			40	μA
	IDD8	Ta = 25 °C		0.01	2	μA
	IDD9	Ta = -40 °C to +85 °C			30	μA
Auto reset current consumption	IDD10				t • b • f	μA

(Ta = -40 °C to +85 °C, VDD = 5.0 V, VSS = 0 V)

A/D Converter Characteristics

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
A/D Conversion Relative Error		Vref = 5 V			±3	LSB
A/D Conversion Time		fosc = 4 MHz, 1/4 dividing	12		28	μs
Analog Input Voltage	VIA		VSS		Vref	V

(Ta = -40 °C to +85 °C, VDD = 5.0 V, VSS = 0 V)

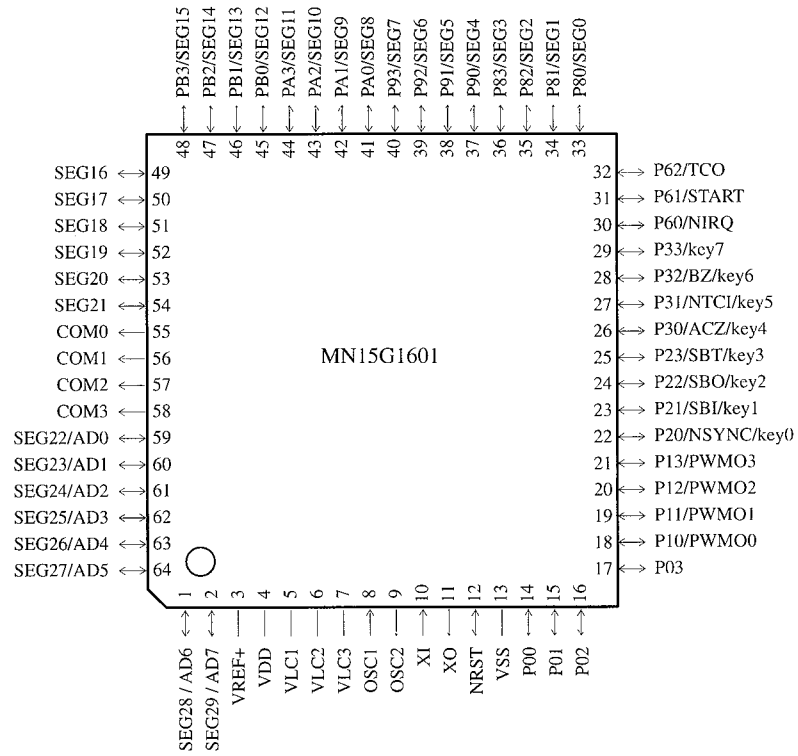
A/D Inputs	10-Bit × 8ch (with S/H)
LCD	30 Segment • 2 Common • 1/2 Duty, 30 Segment • 3 Common • 1/3 Duty, 30 Segment • 4 Common • 1/4 Duty
Zero-Cross Inputs	1
Special Ports	Buzzer Output (1 kHz, 2 kHz, 4 kHz fosc = at 4 MHz)
Notes	Auto-Reset circuit selectable (Mask option)
Package	LQFP064-P-1414

Support Tool

In-Circuit Emulator	PX-ICE1500 + PX-PRB15G1601	
EPROM built-in Type	Type	MN15GP1601
	ROM (× 8-Bit)	16 K
	RAM (× 4-Bit)	512
	Minimum Instruction Execution Time	0.5 μs at 1/4 frequency dividing (at 3.0 V to 5.5 V, 8 MHz) 1.0 μs at 1/4 frequency dividing (at 2.4 V to 5.5 V, 4 MHz) 2.0 μs at 1/8 frequency dividing (at 2.3 V to 5.5 V, 4 MHz)
	Package	LQFP064-P-1414

See the next page for pin assignment.

Pin Assignment



LQFP064-P-1414