

MN675048 / 58

Type	MN675048 / 58	
ROM (x8-bit)	64K / 80K	
RAM (x8-bit)	1024 / 1280	
Minimum Instruction Execution Time	With Main Clock operated	0.279µs (at 4.5 to 5.5V, 14.32MHz)
	With Sub-clock operated	143µs (at 2.7 to 5.5V, 14.32MHz internal dividing) 122µs (at 2.7 to 5.5V, 32.768kHz)
Interrupts	<ul style="list-style-type: none"> • RESET • Runaway • External 0, 1, 2 / Key Input (P50 to 54) • Input Capture 0, 1 • Timer 0 / Timer 6 • Timer 1 • Timer 2 • Timer 3 / Cylinder FG • Timer 4 / Synchronous Output / Continuous Synchronous Output • Serial 0 • Serial 1 / A/D Conversion / Remote Control Receive 	
Timer Counter	<p>Timer Counter 0 : 16-bit x 1 (Timer Output, Output Compare)</p> <p>Clock Source 1/1, 1/2, of System Clock, 1/16, 1/32 of OSC Oscillation Clock, 1/512 of XI Oscillation Clock or OSC Oscillation Clock</p> <p>Interrupt Source Overflow of Timer Counter 0, Coincidence of Output Compare Register 0 and Timer Counter 0</p> <p>Timer Counter 1 : 16-bit x 1 (Timer Output, Event Count [CTL Signal], Synchronous Serial Clock Generator)</p> <p>Clock Source 1/1, 1/2, of System Clock, 1/16, 1/32 of OSC Oscillation Clock, CTL Signal</p> <p>Interrupt Source Overflow of Timer Counter 1</p> <p>Timer Counter 2 : 16-bit x 1 (Timer Output, Input Capture, [DCTL Specified Edge], DCTL Signal Duty Judge)</p> <p>Clock Source 1/1, 1/2 of System Clock, 1/16, 1/24, 1/32, 1/48 of OSC Oscillation Clock</p> <p>Interrupt Source Overflow of Timer Counter 2, DCTL Specified Edge Input, Timer-2 Shift Register 4-bit Counter Underflow, Coincidence of Timer-2 Shift Register and Timer-2 Shift Register compare-register</p> <p>Timer Counter 3 : 16-bit x 1 (Timer Output, Serial Index Search)</p> <p>Clock Source 1/1, 1/2 of System Clock, 1/16, 1/32 of OSC Oscillation Clock</p> <p>Interrupt Source Overflow of Timer Counter 3</p> <p>Timer Counter 4 : 16-bit x 1 (Timer Output, Event Count [P92 Input])</p> <p>Clock Source 1/16, 1/32 of OSC Oscillation Clock, External Clock Input</p> <p>Interrupt Source Overflow of Timer Counter 4</p> <p>Timer Counter 5 : 16-bit x 1 (Timer Output, Watchdog)</p> <p>Clock Source 1/8 of OSC Oscillation Clock, XI Oscillation Clock</p> <p>Interrupt Source 1/2¹¹, 1/2¹², 1/2¹³ of Timer Counter 5, Overflow (PI)</p> <p>Timer Counter 6 : 30-bit x 1 (Timer Output, Clock function [Maximum 4 hours], Buzzer Output)</p> <p>Clock Source 1/32, 1/64, 1/256, 1/512 of OSC Oscillation Clock, XI Oscillation Clock, 1/2 of System Clock</p> <p>Interrupt Source 1 second Output, 1 minute Output, 1 hour Output, 4 hour Output</p> <p>Timer Counter 7 : 8-bit x 1 (Simple Remote Control Reception)</p> <p>Clock Source 1/8, 1/16, 1/32, 1/64 of System Clock</p> <p>Interrupt Source 8th Overflow of Timer Counter 7</p>	

Serial Interface	Serial 0 : 8-bit x 1 (Synchronous Type) (Transfer direction of MSB/LSB selectable, Start Condition function, FIFO • 8 or 16-bit length Transmission/Reception[8bits by 8 stages]) Clock Source 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128, of System Clock, Timer 4 Output 2 dividing, SBT0 Pin Input Serial 1 : 8-bit x 1 (Synchronous Type) (Transfer direction of MSB/LSB selectable, Start Condition function, Simple I ² C function) Clock Source 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128, of System Clock, Timer 4 Output 2 dividing, SBT1 pin Input	
I/O Pins	I/O	60 • Common use 41 Port 0, 1, 4, 5, 6, 7, A, B, by -bit
	Input	14 • Common use . 14
	Output	1 • Common use 1
A/D Inputs	8-bit x 12ch (without S/H)	
PWM	10-bit x 2ch (at Repetition Cycle 143μs, 14 32MHz), 11-bit x 2ch (at Repetition Cycle 286μs, 14 32MHz), 14-bit x 1ch (at Repetition Cycle 2288μs, 14 32MHz)	
ICR	16-bit x 5ch	
OCR	16-bit x 7ch, 8-bit x 1ch	
Special Ports	Buzzer Output, Tri-state Output (PTO) VLP Pin, Synchronous Output 7, Tri-state Synchronous Output 4 Remote Control Receive, CTL Amp, FG Amp built-in, 1/2 Output of OSC Oscillation Clock (2 Vpp), 1/4 Output of OSC Oscillation Clock (1 Vpp), Error Amp etc built-in	
Notes	VISS/VASS Detector function	
Package	QFP100-P-1818, QFP100-P-1818B	

Electrical Characteristics

Supply Current

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating Supply Current	IDD1	At 14 32MHz Operation, No load		30	60	mA
	IDD2	14 32MHz Oscillation, SLOW Operation, No load		2	5	mA
Supply Current at STOP	IDSP	Oscillation halt, No load			20	μA
Supply Current at HALT	IDHT	14 32MHz Oscillation, No load			5	mA

(Ta=25±2°C, VDD=5.0V, VSS=0V)

A/D Converter Characteristics

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Differential Nonlinearity	ΔNLAD				±3	LSB
A/D Conversion Time	tAD	fosc=14 32MHz		8		μs
Analog Input Voltage			0.5		4.5	V

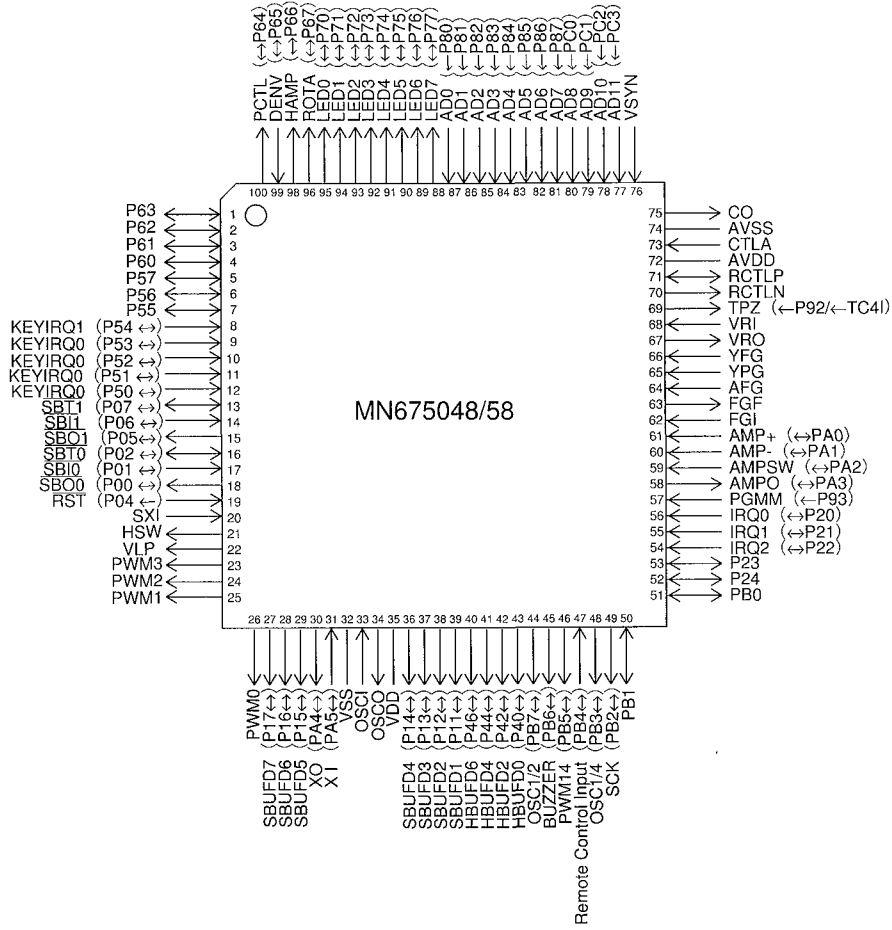
(Ta=25±2°C, VDD=5.0V, VSS=0V)

See the next page for support tool and Pin assignment.

Support Tool

In-Circuit Emulator	PX-ICE1880-2 + PX-PRB67508	
EPROM built-in Type	Type	MN67P5068 [ES (Engineering Sample) available]
	ROM (x 8-bit)	96K
	RAM (x 8-bit)	1560
	Minimum Instruction Execution Time	0.279µs (at 4.5 to 5.5V, 14.32MHz)
	Execution Time	122µs (at 2.7 to 5.5V, 32.768kHz)
	Package	QFP100-P-1818, QFP100-P-1818B

Pin Assignment



QFP100-P-1818 / QFP100-P-1818B