

# MN6755486 / 675556

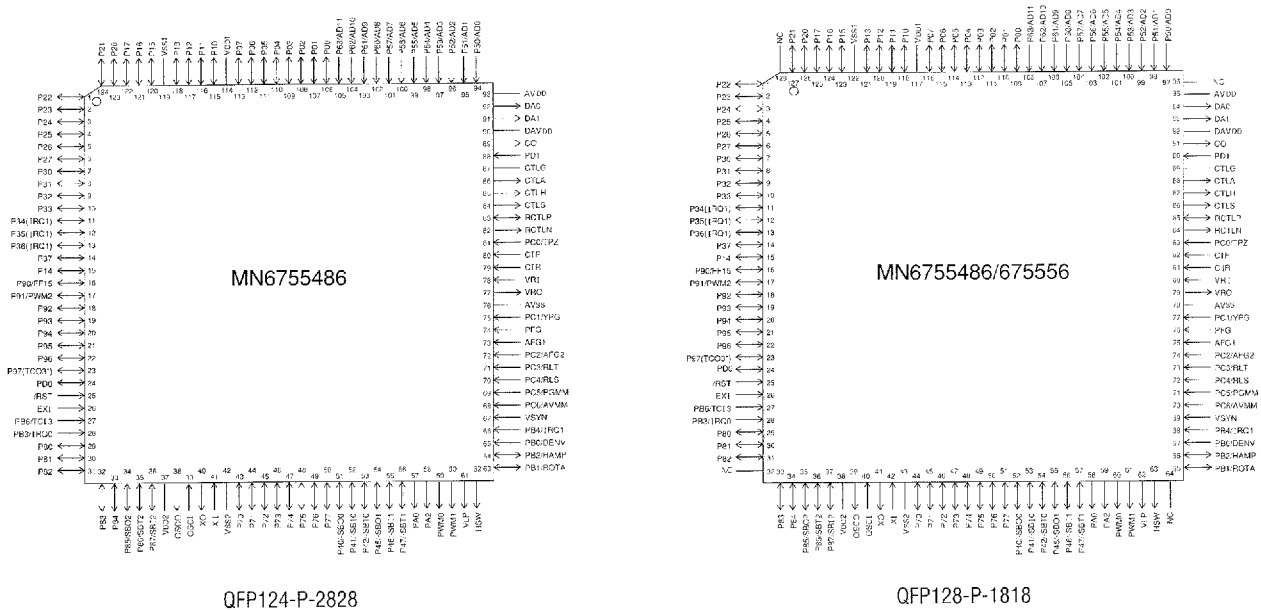
<b>Type</b>	<b>MN6755486 / 675556</b>	
<b>ROM (x8-bit)</b>	48K / 64K	
<b>RAM (x8-bit)</b>	1024 / 1536	
<b>Minimum Instruction Execution Time</b>	With Main Clock operated	<b>0.25µs (at 3.0 to 4.0V, 16MHz) : MN6755486 (128pin), MN675556 0.33µs (at 4.0 to 5.5V, 12MHz) : MN6755486 (124pin)</b>
	With Sub-clock operated	<b>122µs (at 2.2 to 4.0V, 32kHz) : MN6755486 (128pin), MN675556 122µs (at 2.2 to 5.5V, 32kHz) : MN6755486 (124pin)</b>
<b>Interrupts</b>	<ul style="list-style-type: none"> <li>• RESET • Runaway • External 0 • External 1 (4 Input Expandable) • Cylinder FG • Capstan FG</li> <li>• HSW • VSYNC • General-use Capture • Free Running Counter • CTL • Winding Reel FG</li> <li>• Feeding Reel FG • Timer 0 to 5 • Synchronous Output • Continuous Synchronous Output • DMA</li> <li>• Direction Detection • Serial 0, 1, 2 • A/D</li> </ul>	
<b>Timer Counter</b>	<p><b>Timer Counter 0 : 16-bit x 1</b> (Synchronous Interrupt function)            Clock Source .....System Clock, XI Oscillation Clock, 1/32 of OSC Oscillation Clock            Interrupt Source .....Overflow of Timer Counter 0, Coincidence of Output Compare Register</p> <p><b>Timer Counter 1 : 16-bit x 1</b> (Event Count, Synchronous Serial Clock Generator)            Clock Source .....System Clock, 1/32 of OSC Oscillation Clock, AFG Frequency Dividing Signal            Interrupt Source .....Overflow of Timer Counter 1</p> <p><b>Timer Counter 2 : 16-bit x 1</b> (Event Count, Input Capture, Synchronous Interrupt function)            Clock Source .....System Clock, 1/32, 1/48 OSC Oscillation Clock            Interrupt Source .....Overflow of Timer Counter 2, DCTL Signal Edge,            Bit Counter Underflow of Shift Register,            Coincidence of Compare Register and Shift Register</p> <p><b>Timer Counter 3 : 16-bit x 1</b> (Timer Output [Possible at Mask Option], Event Count, Serial Index Search)            Clock Source .....System Clock, 1/32 of OSC Oscillation Clock, TC13 Input            Interrupt Source .....Overflow of Timer Counter 3</p> <p><b>Timer Counter 4 : 16-bit x 1</b> (Event Count, Linear Time Count)            Clock Source .....1/32 of OSC Oscillation Clock, CTL Signal            Interrupt Source .....Overflow of Timer Counter 4</p> <p><b>Timer Counter 5 : 30-bit x 1</b> (Clock, Buzzer Output)            Clock Source .....System Clock, XI Oscillation Clock, 1/32, 1/256 of OSC Oscillation Clock            Interrupt Source .....Overflow of Timer Counter (Interrupts for second, minutes, and hours can be created.)</p> <p><b>Watchdog Timer : 19-bit x 1</b> (Watchdog)            Clock Source .....OSC Oscillation Clock, XI Oscillation Clock,            Interrupt Source .....Watchdog Timer period 65.6ms (fosc=at 16MHz), 84.7ms (fosc=at 12MHz),            128ms (XI=at 32kHz)</p>	
<b>Serial Interface</b>	<p>Serial 0 : 8-bit x 1 (Synchronous Type) (Transfer direction of MSB/LSB selectable, Start Condition function)            Clock Source .....1/2, 1/4, 1/8 of System Clock, 1/256 of OSC Oscillation Clock,            1/2 of Timer Counter 1, <math>\overline{\text{SBT0}}</math> Pin Input</p> <p>Serial 1 : 8-bit x 1 (Synchronous Type) (Transfer direction of MSB/LSB selectable, Start Condition function)            Clock Source .....1/2, 1/4, 1/8 of System Clock, 1/256 of OSC Oscillation Clock,            1/2 of Timer Counter 1, <math>\overline{\text{SBT1}}</math> Pin Input</p> <p>Serial 2 : 8-bit x 1 (Synchronous Type) (Transfer direction of MSB/LSB selectable, Start Condition function)            Clock Source .....1/2, 1/4, 1/8 of System Clock, 1/256 of OSC Oscillation Clock,            1/2 of Timer Counter 1, <math>\overline{\text{SBT0}}</math> Pin Input</p>	

<b>I/O Pins</b>	<b>I/O</b>	<b>64</b>	• Common use : 32
	<b>Input</b>	<b>27</b>	• Common use
	<b>Output</b>	<b>4</b>	
<b>A/D</b>	8-bit x 12ch (without S/H)		
<b>D/A</b>	13-bit x 2ch		
<b>PWM</b>	8-bit x 2ch (at Repetition Cycle 32µs, 16MHz), 14-bit x 1ch (at Repetition Cycle 1.024ms, 16MHz)		
<b>ICR</b>	18-bit x 3ch, 16-bit x 5ch		
<b>OCR</b>	16-bit x 2ch		
<b>FGICR</b>	9-bit x 1ch, 11-bit x 3ch		
<b>Simple Remote-control Reception Function</b>	On-chip 4:3 majority-verdict circuit and general-use capture circuit (IRQ0 input)		
<b>Special Ports</b>	Real Time Output [16 (with DMA function), 4 (4-state Synchronous Output), 8 (2-state Synchronous Output)], CTL Amp, DMA, Reel FG Input		
<b>Notes</b>	VISS/VASS Detector function		
<b>Package</b>	MN6755486 : QFP124-P-2828, QFP128-P-1818 MN675556 : QFP128-P-1818		

**Support Tool**

<b>In-Circuit Emulator</b>	Mr. ICE / 1860 (made by Computex Co. Ltd.)
<b>Piggyback</b>	Use <b>EP67556</b> as piggy in QFP124-P-2828 / QFP128-P-1818 package.
<b>EPROM built-in Type</b>	Use <b>MN67P55646</b> [ES (Engineering Sample) available] in QFP124-P-2828 / QFP128-P-1818 package.

**Pin Assignment**



NC : Nothing connected with pin.

See the next page for electrical characteristics.

## Electrical Characteristics

### Supply Current (MN6755486 (128pin), MN675556)

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating Supply Current	IDD1	fosc=16M, STBH (ANACNT, #A9)='01'		30	50	mA
Supply Current at STOP	IDD2	Oscillation halt, No load STBH (ANACNT, #A9)='00'			10	μA
Supply Current at SLOW	IDD3	VDD=3V, XI=32kHz, STBH=0, No load		250	500	μA
Supply Current at HALT	IDD4	VDD=3V, XI=32kHz, STBH=0, No load		5	10	μA

(Ta=25°C, VDD=5.0V, VSS=0V)

### A/D Converter Characteristics (MN6755486 (128pin), MN675556)

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
A/D Conversion Absolute Error					±3	LSB
A/D Conversion Relative Error					±3	LSB
A/D Conversion Time		fosc=16MHz		3.25		μs
Analog Input Voltage			0.32		2.88	V

(Ta=25°C, VDD=5.0V, VSS=0V)

### Supply Current (MN6755486 (124pin))

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
Operating Supply Current	IDD1	fosc=16M, STBH (ANACNT, #A9)='01'		30	55	mA
Supply Current at STOP	IDD2	Oscillation halt, No load STBH (ANACNT, #A9)='00'			10	μA
Supply Current at SLOW	IDD3	VDD=3V, XI=32kHz, STBH=0, No load			500	μA
Supply Current at HALT	IDD4	VDD=3V, XI=32kHz, STBH=0, No load		5	10	μA

(Ta=25°C, VDD=5.0V, VSS=0V)

### A/D Converter Characteristics (MN6755486 (124pin))

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
A/D Conversion Absolute Error					±3	LSB
A/D Conversion Relative Error					±3	LSB
A/D Conversion Time		fosc=12MHz		4.33		μs
Analog Input Voltage			0.5		4.5	V

(Ta=25°C, VDD=5.0V, VSS=0V)